Pushbuttons and selector switches

- Simple and snap on installation
- Highly conductive contacts
- Robust for severe ambient conditions
- Contact operation: double breaking action, direct opening operation and self cleaning
- Plastic and metal enclosure.

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BUTTON ACTUATORS Ø22mm
- Spring return flush, extended and shrouded
- Push-push flush and extended
- Mushroom-head
- Mechanical reset
- Illuminated.

Page 7-8 and 12
7-31 and 34

DOUBLE AND TRIPLE TOUCH ACTUATORS Ø22mm
- Double touch with or without indicator
- Triple touch.

Page 7-9 and 12
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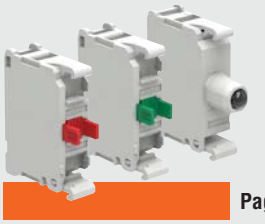
SELECTOR SWITCHES Ø22mm
- Short lever
- Long lever
- Key
- Knob
- Illuminated.

Page 7-13 to 15

PILOT LIGHTS Ø22mm
- Monoblock LED.

MONOBLOCK BUZZERS Ø22mm
- Continuous or pulse tone.

COMMUNICATION INTERFACES Ø22mm
- USB
- RJ45.



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ADD-ON ELEMENTS, ACCESSORIES AND SPARE PARTS FOR PUSHBUTTONS AND SELECTOR SWITCHES
- Mounting adapter
- Contact elements
- LED integrated elements
- Lamp holders
- Labelling and label holders
- Bulbs.

Page 7-25

CONTROL STATIONS
- 1 to 6 holes option without actuators
- Complete units with 1 button.

Page 7-14
7-36

POTENTIOMETERS Ø22mm
- Potentiometer included in the product with graduated scale.
- Metal potentiometer drives with:
  – graduated scale
  – variable index.

Page 7-37

METAL JOYSTICKS Ø22mm
- 2 directions
- 4 directions
- 2 directions with mechanical interlock
- 4 directions with mechanical interlock
- Complete with contact elements.

Page 7-44

METAL CONTROL STATIONS
- Without actuators (from 1 to 16 holes)
- Version without holes.

Lovato electric

QUALITY TOUCH!

LOW ACTUATOR PROFILE

The external actuator bezel has a low profile and reduced front thickness.

CUSTOMISING CAPABILITY

To simplify stock management, the series includes actuators without cap or lens and separate caps and lenses for quick installation or replacement on spring return and push-push types; all these are sold as accessories.

HIGH DEGREE OF PROTECTION IP66, IP67 and IP69K

The actuators have been tested to guarantee a degree of protection per IEC/EN IP66, IP67, IP69K and UL Type 4X, appropriate for use even in extreme ambient conditions.

ELEGANT STYLE AND ERGONOMIC DESIGN

All the series elements have an ergonomic design and, at the same time, particular care has been given to minimum detail aesthetics.

LONG ACTUATOR MECHANICAL LIFE

High performance characteristics assure 5,000,000 cycle mechanical life for spring-return actuators, 1,000,000 for double and triple touch units and 300,000 for emergency-stop types.

MATERIALS RESISTANT TO OILS, SOLVENTS AND HYDROCARBONS

USAGE AT EXTREME TEMPERATURE CONDITIONS

Operation temperature range between -25° and +70°C.

cULus, EAC, RINA and CCC CERTIFICATIONS.

QUICK AND EASY ACTUATOR INSTALLATION

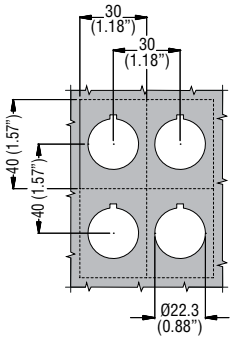
- Actuator fixing on the mounting surface, through a Ø22mm/0.87" drilled hole, is obtained using its **threaded ring**, easily rotated by hand or by socket spanner/wrench.

- There is an **anti-rotation fastener**, duly sized to avoid actuator rotation on the mounting surface and to give an orientation reference point for users during panel installation and during contact fitting on the actuator.
- This anti-rotation fastener collapses inside the gasket to allow fitting also when drilled holes are round without reference index.
- The sealing gasket for the actuator mounting surface has a gripping action (suction effect) offering additional adhesion properties.

- The mounting adapter and the actuators each have **clearly visible reference** indications making the snap-on fitting between the two easy and intuitive.

- Electrical contact and LED elements are **snapped onto** the mounting adapter.
- **The activation of the middle contacts is standard supplied** on all non-illuminated spring return and push-push button or selector switch actuators.

REDUCED DIMENSIONS AND INTERAXIS



Minimum pitch:
- 30x40mm/1.18x1.57" between drillings for two actuators on a mounting surface
- 30x55mm/1.18x2.16" between drillings for two double and triple-touch actuators or when spring clamp contacts are used.

- Total depth, from the external mounting surface to the end of the first contact element is just 43mm/1.69".

CONTACT ELEMENTS

- Miniaturised size
- High electric conductivity - 5V 1mA
- Up to 9 contact elements can be installed
- Available versions: Front and base mount with screw terminals while front-mount only with faston and spring-clamp terminals
- Contact operation: double breaking action, direct (positive) action operation and wiping effect.

HIGH-LUMINOSITY LED ELEMENTS

- Miniaturised size
- Long electrical life: 100,000h
- Versions for base mounting and with screw or spring-clamp terminals
- Overvoltage protection
- Withstand vibrations
- Protection against stray currents in wiring
- Flickering phenomenon reduction
- Steady and flashing light versions
- Supply voltages:
  - 12...30VAC/DC
  - 85...140VAC
  - 185...265VAC
- Test elements installed beside and connected with the relative LED element allow checking if all LED elements of the installation are working properly.

DOUBLE AND TRIPLE TOUCH ACTUATORS

- IEC **IP66, IP67, IP69K** and **UL Type 4X** degree of protection
- Double touch button actuators, with 2 flush or 1 flush and 1 extended buttons
- Triple touch button actuators with 2 flush and middle extended butons
- Versions with or without indicator.

MECHANICAL RESET BUTTONS

- Rod adjustment directly on acutator front (1...4mm/0.04...0.16").

- Up to 6 contact elements can be mounted

ADAPTER FOR DIN RAIL MOUNTING

- Permits the fitting of the Platinum and 8 LM2T series buttons on DIN rail, in panels and modular boxes. Only 35mm/1.38" wide (2 modules).

EMERGENCY STOP ACTUATORS

- Actuator structure suitable to warrant direct opening operation with mechanical latching for emergency stopping per **ISO 13850** and **IEC/EN 60947-5-5**.
- Auto-monitor contact elements are available with functions to:
  - Constantly control the correct installation (mounting adapter and NC contact with the actuator) and proper operation of the NC contact
  - Open the circuit in the case of malfunctions (e.g. the contact detaches from the mounting adapter due to strong vibrations or shock).

- There is a green line around the actuator body to spot when the emergency stop is at rest or activated.
- Use of **Ronis keys**
- Various accessories available (e.g. yellow E-stop disks, padlockable protection and rubber actuator boots).

SHROUD

- Suitable for all Platinum and 8 LM2T mushroom-head latch buttons, guarantees protection against accidental on-board machinery contact.

SELECTOR SWITCH ACTUATORS

- Lever design assures excellent grip

- **High visibility** on front or side and actuator inscription shows exact switch position

- Use of **Ronis keys**

- **Activation of the middle contacts is standard supplied** on 2 and 3 position selector switches.

MONOBLOCK POTENTIOMETERS

- Potentiometer included in the product.
- Protection rating IP66, IP67 and IP69K and UL Type 4X.
- Resistance values from 1 to 500kΩ.

METAL CONTROL STATIONS

- IP66 and IP67 protection degree.
- From 1 to 16 holes version.
- 1 hole version with actuator protection.
- Version without holes.

PILOT LIGHTS

- Protection rating IP66, IP67, IP69K and UL Type 4X for LED monoblock pilot lights and pilot light heads.
- Long life and low consumption.

MONOBLOCK BUZZERS

- Continuous or pulse-tone monoblock buzzers in a single product.
- IP40 version (90dB/10cm) and IP66, IP67, IP69K and UL Type 4X, version (80dB/10cm) available.

COMMUNICATION INTERFACES

- Protection rating IP65, UL Type 4X.
- USB and RJ45 for Ethernet types with data transmission in both directions.
- USB type 3.0 (backward compatible with USB 2.0).

PLASTIC CONTROL STATIONS

- IP66, IP67, IP69K and UL Type 4X protection degrees.
- Empty pushbutton stations with 1 to 6 way option and complete control stations with various mushroom-head stop buttons
- Quick installation and wiring ease with the relative base-mount contact and LED elements, snap in place on the base
- Installation of screw and spring-clamp terminal contact and LED elements also on the internal cover surface.

Pushbutton actuators, spring return

LPC B10...

LPC B20...

LPC B30...

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (without mounting adapter). Spring return.			
LPC B102	Black	10	0.025
LPC B103	Green	10	0.025
LPC B104	Red	10	0.025
LPC B105	Yellow	10	0.025
LPC B106	Blue	10	0.025
LPC B108	White	10	0.025
Extended (without mounting adapter). Spring return.			
LPC B202	Black	10	0.027
LPC B203	Green	10	0.027
LPC B204	Red	10	0.027
LPC B205	Yellow	1	0.027
LPC B206	Blue	1	0.027
LPC B208	White	1	0.027
Shrouded (without mounting adapter). Spring return.			
LPC B302	Black	10	0.027
LPC B303	Green	10	0.027
LPC B304	Red	10	0.027
LPC B305	Yellow	1	0.027
LPC B306	Blue	1	0.027
LPC B308	White	1	0.027

Push-push button actuators

LPC Q10...

LPC Q20...

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (without mounting adapter). Push on-push off.			
LPC Q102❶	Black	10	0.025
LPC Q103❶	Green	10	0.025
LPC Q104❶	Red	10	0.025
LPC Q105❶	Yellow	1	0.025
LPC Q106❶	Blue	1	0.025
LPC Q108❶	White	1	0.025
Extended (without mounting adapter). Push on-push off.			
LPC Q202❶	Black	10	0.027
LPC Q203❶	Green	10	0.027
LPC Q204❶	Red	10	0.027
LPC Q205❶	Yellow	1	0.027
LPC Q206❶	Blue	1	0.027
LPC Q208❶	White	1	0.027

❶ **Use contact elements LPX C10A (EM) and LPXC01 (NC) only.**
Contact elements LPX C10 (NO) and LPX C01D (LB) cannot be fitted on these actuators.
For the number of contacts that can be fitted, see the indication here to the side.

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL/CSA: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life:
- Spring return actuators: 5,000,000 cycles
- Push-push actuators: 500,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements for spring-return button actuators
See page 7-20, 7-23 or 7-24.

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). Up to 9 contacts can be fitted: 3 each on the left, middle and right, one behind the other. They can also be fitted internally on the cover surface of LPZ control stations, up to 3 elements per actuator.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPXCS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw
Base mount types snap into LPZ control station base. See example on page 7-27.		
Up to 3 contacts can be fitted per control station actuator.		
1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

Contact elements for push-push button actuators
See page 7-20.
Type: LPX C10A (1EM)
LPX C01 (1NC)
Contacts snap onto the adapter and also internally on the cover surface of LPZ control stations.
Up to 6 contacts can be fitted: 2 each on the left, middle and right, one behind of the other; up to 3 elements per control station actuator.

All these actuators are standard supplied with action plug for middle contacts.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Mechanical reset buttons, complete unit, spring return

LPC R1196

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (5.2mm/0.2" stroke). Adjustable length 0-150mm/5.9". Complete with shaft (without mounting adapter). Spring return.			
LPC R1002	Black	10	0.038
LPC R1003	Green	10	0.038
LPC R1004	Red	10	0.038
LPC R1006	Blue	10	0.038
LPC R1196❶	Blue (RESET)	10	0.038
Extended (5.2mm/0.2" stroke). Adjustable length 0-150mm/5.9". Complete with shaft (without mounting adapter). Spring return.			
LPC R2004	Red	1	0.040

❶ With "RESET" caption on actuator.
E.g. Not suitable for LPZ control stations.

Pushbutton actuators, spring return, with symbol

LPC B11...

LPC B21...

Order code	Symbol	Colour	Qty per pkg	Wt
			n°	[kg]
Flush (without mounting adapter). Spring return.				
LPC B1102	O	Black	10	0.025
LPC B1104		Red	10	0.025
LPC B1113	I	Green	10	0.025
LPC B1118		White	10	0.025
LPC B1123	II	Green	1	0.025
LPC B1128		White	1	0.025
LPC B1132	STOP	Black	1	0.025
LPC B1134		Red	10	0.025
LPC B1142	←❶	Black	10	0.025
LPC B1148		White	10	0.025
LPC B1152	↑❷	Black	10	0.025
LPC B1158		White	10	0.025
LPC B1163	START	Green	10	0.025
LPC B1168		White	1	0.025
LPC B1176	R	Blue	1	0.025
LPC B1178		White	1	0.025
LPC B1196	RESET	Blue	10	0.025
LPC B1502	◄|►	Black	10	0.025
LPC B1512	►|◄	Black	10	0.025
Extended (without mounting adapter). Spring return.				
LPC B2102	O	Black	10	0.027
LPC B2104		Red	10	0.027
LPC B2132	STOP	Black	1	0.027
LPC B2134		Red	10	0.027

❶ Arrow symbol can be used to indicate right or left.
❷ Arrow symbol can be used to indicate up or down.

Operational characteristics
- Any mounting position allowed
- Fine rod adjustment (1-4mm/0.04-0.16") on front with screwdriver by removing actuator cap for mechanical reset buttons
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life: 5,000,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations except for LPC R... types.
The mounting adapter directly snaps onto the actuator.

Contact elements for mechanical reset buttons
See page 7-20 or 7-23.

Type		Termination
Front mount types snap onto LPX AU120 mounting adapter (to purchase separately), if any contacts are needed. Up to 6 contacts can be fitted: 3 each on the left and right, one behind the other.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPX CS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw

Contact elements for spring-return button actuators
See pages 7-20, 7-23 or 7-24.

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). Up to 9 contacts can be fitted: 3 each on the left, middle and right; one behind the other. They can also be fitted internally on the cover surface of control stations LPZ, up to 3 elements per actuator.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPX CS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw
Base-mount types snap into LPZ control station base. See example on page 7-27.		
Up to 3 contacts can be fitted per control station actuator.		
1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

The LPC B... actuators are standard supplied with action plug for middle contacts.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Pushbutton actuators, spring return, with symbol

LPC B1253

Order code ❹❺	Symbol	Colour	Qty per pkg	Wt
			n°	[kg]
Spring return (without mounting adapter).				
LPCB**❶**0218**❸**	ϟ❻	❸	50	0.027
LPCB**❶**0220**❸**	OPEN	❸	50	0.027
LPCB**❶**0221**❸**	CLOSED	❸	50	0.027
LPCB**❶**0222**❸**		❸	50	0.027
LPCB**❶**0223**❸**		❸	50	0.027
LPCB**❶**0225**❸**	+	❸	50	0.027
LPCB**❶**0226**❸**	–	❸	50	0.027
LPCB**❶**0227**❸**		❸	50	0.027
LPCB**❶**0228**❸**		❸	50	0.027
LPCB**❶**0229**❸**		❸	50	0.027
LPCB**❶**0230**❸**	ALTO	❸	50	0.027
LPCB**❶**0231**❸**	BASSO	❸	50	0.027
LPCB**❶**0232**❸**	SX	❸	50	0.027
LPCB**❶**0233**❸**	DX	❸	50	0.027
LPCB**❶**0234**❸**	MAN	❸	50	0.027
LPCB**❶**0235**❸**	AUTO	❸	50	0.027
LPCB**❶**0238**❸**	TRIP	❸	50	0.027
LPCB**❶**0239**❸**	TEST	❸	50	0.027
LPCB**❶**0240**❸**		❸	50	0.027
LPCB**❶**0241**❸**		❸	50	0.027
LPCB**❶**0242**❸**		❸	50	0.027
LPCB**❶**0243**❸**		❸	50	0.027
LPCB**❶**0244**❸**		❸	50	0.027
LPCB**❶**0245**❸**		❸	50	0.027
LPCB**❶**0246**❸**		❸	50	0.027
LPCB**❶**0247**❸**		❸	50	0.027
LPCB**❶**0248**❸**		❸	50	0.027
LPCB**❶**0249**❸**		❸	50	0.027
LPCB**❶**0252**❸**		❸	50	0.027
LPCB**❶**0253**❸**		❸	50	0.027
LPCB**❶**0254**❸**		❸	50	0.027
LPCB**❶**0255**❸**		❸	50	0.027
LPCB**❶**0256**❸**	START STOP	❸	50	0.027
LPCB**❶**0257**❸**	III	❸	50	0.027
LPCB**❶**0258**❸**	IV	❸	50	0.027
LPCB**❶**0259**❸**		❸	50	0.027
LPCB**❶**0260**❸**		❸	50	0.027
LPCB**❶**0261**❸**		❸	50	0.027
LPCB**❶**0262**❸**		❸	50	0.027
LPCB**❶**0263**❸**		❸	50	0.027
LPCB**❶**0264**❸**		❸	50	0.027
LPCB**❶**0265**❸**		❸	50	0.027
LPCB**❶**0266**❸**		❸	50	0.027
LPCB**❶**0267**❸**		❸	50	0.027
LPCB**❶**0268**❸**		❸	50	0.027
LPCB**❶**0269**❸**		❸	50	0.027

❶ Add letter "L" if illuminated type is required.
❷ For the type of actuator, add: 1 for flush or 2 for extended.
❸ Add the actuator colour: 2 black only for non-illuminated type; 3 green, 4 red, 5 yellow, 6 blue, 8 white or 7 transparent for illuminated version.
❹ Products available on specific request for a minimum multiple quantity of 50 pieces per type.
❺ Consult Technical support for assistance; see contact details or inside front cover.
❻ Symbol indicating dangerous voltage (IEC 60417 5036-a).

Examples of complete order codes:
LPC B2 25 8 – extended non-illuminated white pushbutton with + symbol
LPC BL1 68 5 – flush illuminated yellow pushbutton actuator with ⚠ symbol.

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL/CSA: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life: 5,000,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements
See page 7-20, 7-23 or 7-24

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). Up to 9 contacts can be fitted: 3 each on the left, middle and right, one behind the other. They can also be fitted internally on the cover surface of LPZ control stations, up to 3 elements per actuator.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPX CS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw
Base-mount types snap into LPZ control station base. See example on page 7-27.		
Up to 3 contacts can be fitted per control station actuator.		
1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

All these actuators are standard supplied with action plug for middle contacts.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14

Mushroom head pushbutton actuators

LPC B614...

LPC B674...

LPC B6344

LPC B6634

LPC B6644

LPC B684...

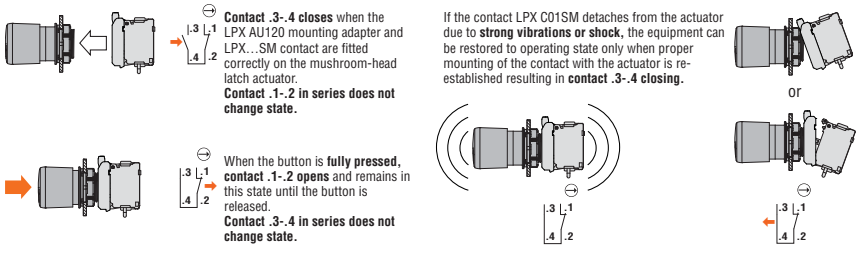
Order code	Colour	Qty per pkg	Wt
		n°	[kg]
SPRING RETURN. Ø40mm/1.6" (without mounting adapter).			
LPC B6142	Black	10	0.033
LPC B6143	Green	10	0.033
LPC B6144	Red	10	0.033
LPC B6145	Yellow	10	0.033
LPC B6146	Blue	10	0.033
Ø60mm/2.4" (without mounting adapter).			
LPC B6162	Black	10	0.038
LPC B6163	Green	10	0.038
LPC B6164	Red	10	0.038
LPC B6165	Yellow	10	0.038
LPC B6166	Blue	10	0.038
LATCH, PULL TO RELEASE Ø40mm/1.6" (without mounting adapter). For normal stopping.			
LPC B6742	Black	10	0.097
For emergency stopping, ISO 13850 compliant.			
LPC B6744	Red	10	0.097
LATCH, TURN TO RELEASE Ø40mm/1.6" (without mounting adapter). For normal stopping.			
LPC B6342	Black	10	0.046
LPC B6344	Red	10	0.046
Ø30mm/1.2" (without mounting adapter). For emergency stopping, ISO 13850 compliant.			
LPC B6634	Red	10	0.079
Ø40mm/1.6" (without mounting adapter). For emergency stopping, ISO 13850 compliant.			
LPC B6644	Red	10	0.079
LATCH, TURN KEY TO RELEASE Ø40mm/1.6" (without mounting adapter). Key code n° 455. For normal stopping.			
LPC B6842	Black	10	0.083
LPC B6842R❶	Black	1	0.083
For emergency stopping, ISO 13850 compliant.			
LPC B6844	Red	10	0.083
LPC B6844R❶	Red	1	0.083

❶ Versions with different key codes.
Complete with the numeric code of the key.
The following versions are available: 421E, 458A, 520E, 3131A, 3433E.
Example of complete code: LPC B6844R 421E.

Normal operation of auto-monitor contact mounted on surface or on cover of control stations

In case of detachment of only the contact element and/or of the mounting adapter with contact element

With contact type LPX C01SM



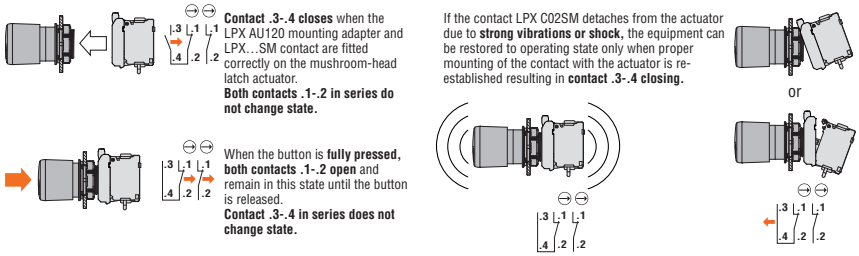
Contact .3-.4 closes when the LPX AU120 mounting adapter and LPX...SM contact are fitted correctly on the mushroom-head latch actuator.
Contact .1-.2 in series does not change state.

When the button is **fully pressed, contact .1-.2 opens** and remains in this state until the button is released.
Contact .3-.4 in series does not change state.

If the contact LPX C01SM detaches from the actuator due to **strong vibrations or shock,** the equipment can be restored to operating state only when proper mounting of the contact with the actuator is re-established resulting in **contact .3-.4 closing.**

or

With contact type LPX C02SM



Contact .3-.4 closes when the LPX AU120 mounting adapter and LPX...SM contact are fitted correctly on the mushroom-head latch actuator.
Both contacts .1-.2 in series do not change state.

When the button is **fully pressed, both contacts .1-.2 open** and remain in this state until the button is released.
Contact .3-.4 in series does not change state.

If the contact LPX C02SM detaches from the actuator due to **strong vibrations or shock,** the equipment can be restored to operating state only when proper mounting of the contact with the actuator is re-established resulting in **contact .3-.4 closing.**

or

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life:
- Mushroom head spring return buttons: 5,000,000 cycles
- Mushroom head latch buttons: 300,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements
See page 7-20, 7-23 or 7-24.

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). For SPRING-RETURN types, up to 9 contacts can be fitted: 3 each on the left, middle and right, one behind the other. For LATCH types, up to 4 contacts can be fitted. They can also be fitted internally on the cover surface of LPZ control stations, up to 3 elements per actuator.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPXCS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw
Base-mount types snap into LPZ control station base. See example on page 7-27. Up to 3 contacts can be fitted per control station actuator.		
1NO	LPX CB10	Screw
1NC	LPX CB01	Screw
AUTO-MONITOR CONTACT with MUSHROOM-HEAD LATCH TYPES only: 2 elements max of this type can be mounted. Extra two contacts can be fitted on the right. Two elements per actuator can be fixed internally on the cover surface of LPZ control stations of which one auto-monitor type. No LED element can be installed.		
Auto-monitor 1NC	LPX C01SM	Screw (2 stacked in the middle - LPX AU120 pos.1/3-4/6)
1NO	LPX C10	Screw (2 stacked on the right)
	LPX CF10	Faston (2 stacked on the right)
1NC	LPX C01	Screw (2 stacked on the right)
	LPX CF01	Faston (2 stacked on the right)
AUTO-MONITOR CONTACT with MUSHROOM-HEAD LATCH TYPES only: 2 elements max of this type can be mounted. Only one of this type per actuator can be fixed internally on the cover surface of LPZ control stations. No LED element can be installed.		
Auto-monitor 2NC	LPX C02SM	Screw (2 stacked)

All these actuators are standard-supplied with action plug for middle contacts.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Double-touch actuators, spring return

LPC B71...

LPC B72...

new

Order code	Colour	Symbols	Qty per pkg	Wt
			n°	[kg]
Two flush pushbuttons (without mounting adapter). Both spring return.				
LPC B7112	Black/Red	—	5	0.030
LPC B7113	Green/Red	—	5	0.030
LPC B7114	White/Black	—	5	0.030
LPC B7122	Black/Red	I-O	5	0.030
LPC B7123	Green/Red	I-O	5	0.030
LPC B7124	White/Black	I-O	5	0.030
LPC B7133	Green/Red	Start/Stop	5	0.030
LPC B7191	Black/Black	↑ ↓	5	0.030
One extended and one flush pushbuttons (without mounting adapter). Both spring return.				
LPC B7212	Black/Red	—	1	0.030
LPC B7213	Green/Red	—	5	0.030
LPC B7214	White/Black	—	1	0.030
LPC B7222	Black/Red	I-O	5	0.030
LPC B7223	Green/Red	I-O	5	0.030
LPC B7224	White/Black	I-O	1	0.030
LPC B7233	Green/Red	Start/Stop	5	0.030

Triple-touch actuators, spring return

LPC B73...

Order code	Symbols	Qty per pkg	Wt
		n°	[kg]
One middle extended buttons (without mounting adapter). Spring return.			
LPC B7345	STOP	5	0.030
LPC B7355	↑ STOP ↓	5	0.030
LPC B7365	→ STOP ←	5	0.030
LPC B7375	↗ STOP ↙	5	0.030

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life: 1,000,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements
See page 7-20, 7-23 or 7-24.

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). For DOUBLE-TOUCH actuators, up to 6 contacts can be fitted: 3 on the left, 3 on the right. For TRIPLE-TOUCH actuators, up to 9 contacts can be fitted: 3 each on the left, middle and right, one behind the other. They can also be fitted internally on the cover surface of LPZ control stations: 2 for double-touch and 3 elements for triple-touch.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPXCS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw
Base-mount types snap into LPZ control station base. See example on page 7-27. For DOUBLE-TOUCH actuators, 2 contacts need to be fitted, one on the left and one on the right. For TRIPLE-TOUCH actuators, 3 contacts need to be fitted: one each on the left, middle and right.		
1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Selector switch actuators lever

LPC S1...

Order code	Type of positions	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter).			
LPC S120		10	0.037
LPC S121		10	0.037
3 position (without mounting adapter).			
LPC S130		10	0.037
LPC S131		10	0.037
LPC S132		10	0.037
LPC S133		10	0.037

Selector switch actuators long lever

LPC S2...

Order code	Type of positions	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter).			
LPC S220		10	0.040
LPC S221		10	0.040
3 position (without mounting adapter).			
LPC S230		10	0.040
LPC S231		10	0.040
LPC S232		10	0.040
LPC S233		10	0.040

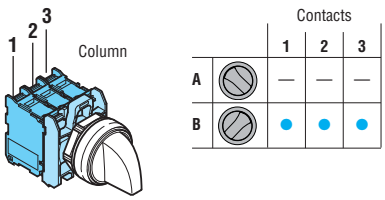
Selector switch actuators key

LPC S3...

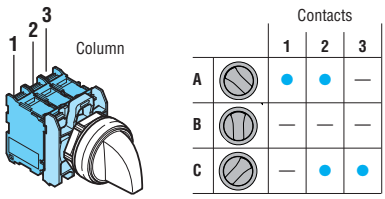
Order code	Type of positions	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter).			
LPC S320		10	0.060
LPC S320R❶		1	0.060
LPC S321		10	0.060
LPC S321R❶		1	0.060
LPC S340		10	0.060
LPC S340R❶		1	0.060
3 position (without mounting adapter).			
LPC S330		10	0.060
LPC S330R❶		1	0.060
LPC S331		10	0.060
LPC S331R❶		1	0.060
LPC S332❷		10	0.060
LPC S332R❶❷		1	0.060
LPC S333❷		10	0.060
LPC S333R❶❷		1	0.060
LPC S350		10	0.060
LPC S350R❶		1	0.060
LPC S360		10	0.060
LPC S360R❶		1	0.060
LPC S370❷		10	0.060
LPC S370R❶❷		1	0.060
LPC S380❷		10	0.060
LPC S380R❶❷		1	0.060
LPC S390❷		10	0.060
LPC S390R❶❷		1	0.060

❶ Versions with different key codes.
Complete with the numeric code of the key.
The following versions are available: 421E, 458A, 520E, 3131A, 3433E.
Example of complete code: LPC S320 R421E.
❷ Available only on specific request

Contact activation of 2-position selector switch



Contact activiation of 3-position selector switch



Operational characteristics
- Any mounting position allowed
- Standard key types supplied with key code n° 455
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Mechanical life: 1,000,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements
See page 7-20, 7-23 or 7-24.

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). Up to 6 contacts can be fitted: 2 each on the left, middle and right or 3 each on the left and right, one behind the other. They can also be fitted internally on the cover surface of LPZ control stations, up to 3 elements per actuator.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPXCS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw

Base-mount types snap into LPZ control station base.
See example on page 7-27.

Up to 3 contacts can be fitted per control station actuator.

1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

Activation of the middle contacts is coupled to the side contacts; the relative mechanism pins are standard supplied.

The middle contact activation, with respect to the right and left side contact, can be changed by the user, if required, by removing one or both mechanism pins. Consult the relative instructions available online in the Downloads section at www.LovatoElectric.com.

Type of position
- Maintained position.
- Spring return position.
- • Key extraction position.

Rotation angles
2 position

3 position

Special versions
Versions with coloured keys are available upon request.
Consult Technical support; see contact details on inside front cover.

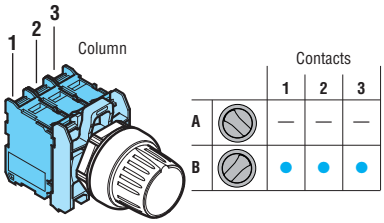
Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Selector switch actuators knob

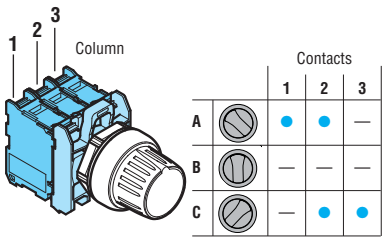
LPC S4...

Order code	Type of positions	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter)			
LPC S420		10	0.037
LPC S421		10	0.037
3 position (without mounting adapter).			
LPC S430		10	0.037
LPC S431		10	0.037
LPC S432		10	0.037
LPC S433		10	0.037

Contact activation of 2-position selector switch



Contact activation of 3-position selector switch



Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Mechanical life: 1,000,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements
See page 7-20, 7-23 or 7-24.

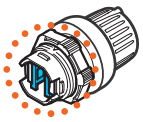
Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). Up to 6 contacts can be fitted: 2 each on the left, middle and right or 3 each on the left and right, one behind the other. They can also be fitted internally on the cover surface of LPZ control stations, up to 3 elements per actuator.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPXCS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw

Base-mount types snap into LPZ control station base.
See example on page 7-27.

Up to 3 contacts can be fitted per control station actuator.

1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

Activation of the middle contacts is coupled to the side contacts; the relative mechanism pins are standard supplied.



The middle contact activation, with respect to the right and left side contact, can be changed by the user, if required, by removing one or both mechanism pins. Consult the relative instructions available online in the Downloads section at www.LovatoElectric.com.

Type of position
Maintained position.
Spring return position.

Rotation angles
2 position

3 position

Certifications and compliance
Certifications obtained:UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC (pending), RINA (pending).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Illuminated button actuators, spring return

LPC BL10…

LPC BL20…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (without mounting adapter). Spring return.			
LPC BL103	Green	10	0.025
LPC BL104	Red	10	0.025
LPC BL105	Yellow	10	0.025
LPC BL106	Blue	10	0.025
LPC BL107	Transparent	10	0.025
Extended (without mounting adapter). Spring return.			
LPC BL203	Green	10	0.027
LPC BL204	Red	10	0.027
LPC BL205	Yellow	10	0.027
LPC BL206	Blue	10	0.027
LPC BL207	Transparent	10	0.027

Illuminated push-push button actuators

LPC QL10…

LPC QL20…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (without mounting adapter). Push on-push off.			
LPC QL103❶	Green	10	0.025
LPC QL104❶	Red	10	0.025
LPC QL105❶	Yellow	10	0.025
LPC QL106❶	Blue	10	0.025
LPC QL107❶	Transparent	10	0.025
Extended (without mounting adapter). Push on-push off.			
LPC QL203❶	Green	10	0.027
LPC QL204❶	Red	10	0.027
LPC QL205❶	Yellow	10	0.027
LPC QL206❶	Blue	10	0.027
LPC QL207❶	Transparent	10	0.027

❶ **Use contact elements LPX C10A (EM) and LPXC01 (NC) only.**
Contact elements LPX C10 (NO) and LPX C01D (LB) cannot be fitted on these actuators.

Illuminated mushroom head button actuators

LPC BL614…

LPC BL664…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
SPRING RETURN. Ø40mm/1.6" (without mounting adapter).			
LPC BL6143	Green	10	0.035
LPC BL6144	Red	10	0.035
LPC BL6145	Yellow	10	0.035
LPC BL6146	Blue	10	0.035
LPC BL6148	White	1	0.035
LATCH, TURN TO RELEASE. Ø40mm/1.6" (without mounting adapter). For normal stopping.			
LPC BL6643	Green	1	0.040
LPC BL6645	Yellow	1	0.040
LPC BL6646	Blue	1	0.040
For emergency stopping, ISO 13850 compliant.			
LPC BL6644	Red	10	0.040

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life:
- Spring-return actuators: 5,000,000 cycles
- Push-push actuators: 500,000 cycles
- Spring-return mushroom-head actuator: 5,000,000 cycles
- Latch mushroom-head actuators: 300,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements for illuminated spring-return and mushroom-head latch actuators
See page 7-20, 7-23 or 7-24.

Type		Termination
Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately). For TYPES LPC BL1/BL2/BL61…up to 6 contacts can be fitted: 3 each on the left and right, one behind the other. For TYPES LPC BL66…up to 4 contacts can be fitted: 2 each on the left and right, one behind the other. They can also be fitted internally on the cover surface of LPZ control stations, up to 2 elements per actuator in addition to the LED element in the middle position.		
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPX CS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw

Base-mount types snap into LPZ control station base.
See example on page 7-27.
Up to 2 contacts can be fitted per control station actuator in addition to the LED element in the middle position.

1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

Contact elements for illuminated push-push button actuators
See page 7-20.
Type: LPX C10A (1EM)
LPX C01 (1NC)
Contacts snap onto LPX AU120 adapter and also internally on the cover surface of LPZ control stations.
Up to 4 contacts can be fitted: 2 each on the left and right, one behind the other; up to 2 elements per control station actuator in addition to the LED element in the middle position.

LED light elements
See pages 7-22 to 24.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Double-touch actuators, spring return, white indicator

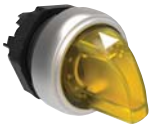
LPC BL71...

LPC BL72...

new

Order code	Colour	Symbol	Qty per pkg	Wt
			n°	[kg]
Two flush pushbuttons (without mounting adapter). Both spring return.				
LPC BL7112	Black/Red	—	5	0.030
LPC BL7113	Green/Red	—	5	0.030
LPC BL7114	White/Black	—	1	0.030
LPC BL7122	Black/Red	I-O	5	0.030
LPC BL7123	Green/Red	I-O	5	0.030
LPC BL7124	White/Black	I-O	5	0.030
LPC BL7133	Green/Red	Start/Stop	5	0.030
LPC BL7191	Black/Black	↑ ↓	5	0.030
One extended and one flush pushbuttons (without mounting adapter). Both spring return.				
LPC BL7212	Black/Red	—	1	0.030
LPC BL7213	Green/Red	—	5	0.030
LPC BL7214	White/Black	—	1	0.030
LPC BL7222	Black/Red	I-O	1	0.030
LPC BL7223	Green/Red	I-O	5	0.030
LPC BL7224	White/Black	I-O	5	0.030
LPC BL7233	Green/Red	Start/Stop	5	0.030

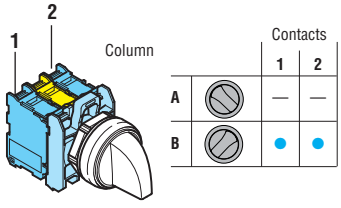
Illuminated selector switch actuators



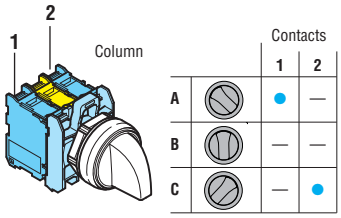
LPC SL1...

Order code	Colour	Type of positions	Qty per pkg.	Wt
			n°	[kg]
2 position (without mounting adapter).				
LPC SL1203	Green	∨	10	0.025
LPC SL1204	Red		10	0.025
LPC SL1205	Yellow		10	0.025
LPC SL1206	Blue		10	0.025
LPC SL1208	White		10	0.025
LPC SL1213	Green	◡	10	0.025
LPC SL1214	Red		1	0.025
LPC SL1215	Yellow		1	0.025
LPC SL1216	Blue		1	0.025
LPC SL1218	White		10	0.025
3 position (without mounting adapter).				
LPC SL1303	Green	∨	10	0.025
LPC SL1304	Red		10	0.025
LPC SL1305	Yellow		10	0.025
LPC SL1306	Blue		10	0.025
LPC SL1308	White		10	0.025
LPC SL1313	Green	◡ ◡	10	0.025
LPC SL1314	Red		1	0.025
LPC SL1315	Yellow		1	0.025
LPC SL1316	Blue		1	0.025
LPC SL1318	White		10	0.025
LPC SL1323	Green	◡ ∨	10	0.025
LPC SL1324	Red		1	0.025
LPC SL1325	Yellow		1	0.025
LPC SL1326	Blue		1	0.025
LPC SL1328	White		10	0.025
LPC SL1333	Green	∨ ◡	10	0.025
LPC SL1334	Red		1	0.025
LPC SL1335	Yellow		1	0.025
LPC SL1336	Blue		1	0.025
LPC SL1338	White		10	0.025

Contact activation of 2-position selector switch



Contact activation of 3-position selector switch



Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mechanical endurance
Operating force: <0.5kg/1.1lb (actuator).
Mechanical life:
- Double-touch: 1,000,000 cycles.
- Selector switches: 1,000,000 cycles.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Actuators are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations.
The mounting adapter directly snaps onto the actuator.

Contact elements
See page 7-20, 7-23 or 7-24.

Type		Termination

Front-mount types snap onto LPX AU120 mounting adapter (to purchase separately).
For DOUBLE-TOUCH TYPES, up to 6 contacts can be fitted: 3 each on the left and right, one behind the other.
For SELECTOR SWITCHES, up to 4 contacts can be fitted: 2 each on the left and right, one behind the other.
They can also be fitted internally on the cover surface of LPZ control stations, up to 2 elements per actuator in addition to the LED element in the middle position.

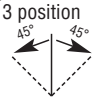
1NO	LPX C10	Screw
	LPX CF10	Faston
	LPX CS10	Spring clamp
1EM	LPX C10A	Screw
1NC	LPX C01	Screw
	LPX CF01	Faston
	LPX CS01	Spring clamp
1LB	LPX C01D	Screw

Base-mount types snap into LPZ control station base.
See example on page 7-27.
Up to 2 contacts can be fitted per control station actuator in addition to the LED element in the middle position.

1NO	LPX CB10	Screw
1NC	LPX CB01	Screw

Selector switch type of positions
∨ Maintained position.
◡ Spring return position.

Selector switch rotation angles
2 position


3 position


LED light elements
See pages 7-22 to 7-24.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Pilot light heads

LPL...

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Without mounting adapter.			
LPL 3	Green	10	0.024
LPL 4	Red	10	0.024
LPL 5	Yellow	10	0.024
LPL 6	Blue	10	0.024
LPL 7	Transparent	10	0.024
LPL 1187	Transparent ϟ ❶	10	0.024

❶ With symbol indicating dangerous voltage (IEC/EN 60417 5036-a).

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
Polyamide.

Mounting adapter
See page 7-20.
Type: LPX AU120.
Pilot light heads are installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/ 1.69lbft) also on the cover of LPZ control stations, with LED element in central position.
The mounting adapter directly snaps onto the actuator.

LED light elements
See pages 7-22 to 7-24.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

LED integrated monoblock pilot lights steady light

LPM...

new

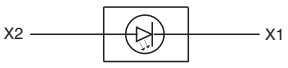
Order code	Rated auxiliary supply voltage	LED colour	Qty per pkg	Wt
			n°	[kg]
LPM LA1	12VAC/DC	Orange	10	0.021
LPM LA3		Green	10	0.021
LPM LA4		Red	10	0.021
LPM LA5		Yellow	10	0.021
LPM LA6		Blue	10	0.021
LPM LA7		Transparent	10	0.021
LPM LB1	24VAC/DC	Orange	10	0.021
LPM LB3		Green	10	0.021
LPM LB4		Red	10	0.021
LPM LB5		Yellow	10	0.021
LPM LB6		Blue	10	0.021
LPM LB7		Transparent	10	0.021
LPM LD1	48VAC/DC	Orange	10	0.021
LPM LD3		Green	10	0.021
LPM LD4		Red	10	0.021
LPM LD5		Yellow	10	0.021
LPM LD6		Blue	10	0.021
LPM LD7		Transparent	10	0.021
LPM LE1	110...120VAC	Orange	10	0.024
LPM LE3		Green	10	0.024
LPM LE4		Red	10	0.024
LPM LE5		Yellow	10	0.024
LPM LE6		Blue	10	0.024
LPM LE7		Transparent	10	0.024
LPM LM1	230VAC	Orange	10	0.024
LPM LM3		Green	10	0.024
LPM LM4		Red	10	0.024
LPM LM5		Yellow	10	0.024
LPM LM6		Blue	10	0.024
LPM LM7		Transparent	10	0.024

Operational characteristics
- Nominal frequency: 50-60Hz
- Supply voltage: 12VAC/DC, 24VAC/DC, 48VAC/DC, 110VAC, 230VAC (-15%...+10% Ue)
- Consumption: ≤20mA
- Installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on cover of LPZ control stations
- Electrical life: >30,000 hours
- Screw termination
- Side cable entry
- Maximum tightening torque: 0.8Nm
- Ambient conditions:
  - Operating temperature: -25...+70°C
- Degree of protection:
  - per IEC/EN: IP66, IP67 and IP69K on front; IP20 at rear
  - per UL: Type 1, 2, 3R, 4, 4X, 12, 12K on front.

Materials
Polyamide.

Maximum conductor cross section
1 or 21.5mm² or AWG16 cables.

Wiring diagram



Certifications and compliance
Certifications obtained: cULus, EAC, CCC (pending).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Monoblock potentiometers

LPC PA...

Order code	Resistance value	Qty per pkg.	Wt
		n°	[kg]
LPC PA001	1kΩ	10	0.040
LPC PA002	2.5kΩ	10	0.040
LPC PA005	5kΩ	10	0.040
LPC PA010	10kΩ	10	0.040
LPC PA050	50kΩ	10	0.040
LPC PA100	100kΩ	10	0.040
LPC PA500	500kΩ	10	0.040

General characteristics
Monoblock potentiometers are typically used for regulating the parameters of many devices (e.g. the speed of the electric motors through static converters).
The monoblock body design permits direct use of the potentiometer by panel fitting with fixing ring and subsequent tightening of cables into the built-in terminal block.
The potentiometer is made with Cermet technology, which ensures stable, constant resistance values over time. The, UL-certified, range is made for resistance values from 1 to 500kΩ. All potentiometers are IP66, IP67, IP69K and UL Type 4X, which means that they can be used in demanding ambient conditions.

Operational characteristics
- Rated insulation voltage Ui: 250VAC
- Impulse withstand voltage Uimp: 4kV
- Potentiometer included in the product
- Monoblock body with 1-turn graduated scale
- Any fitting position permitted
- Installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations
- Resistive material: cermet
- Operation: linear
- Resistance tolerance: ±10%
- Max. power: 1W (70°C)
- Mechanical endurance: 25,000 operations
- Mechanical travel: 290°
- Side cable entry
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K on front
  - Per IEC/EN: IP20 at rear
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K on front.

Materials
Polyamide.

Maximum conductor cross section
Screw terminal connections with three separate connections:
- Min. cable 0.5mm^2 / AWG24
- Max. cable 2.5mm^2 / AWG14
- Maximum tightening torque: 0.5Nm/0.37lbft
- Flat-head screwdriver: 0.6x3.5mm/0.02x0.14".

Certifications and compliance
Certifications obtained: cULus, EAC, CCC (pending).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

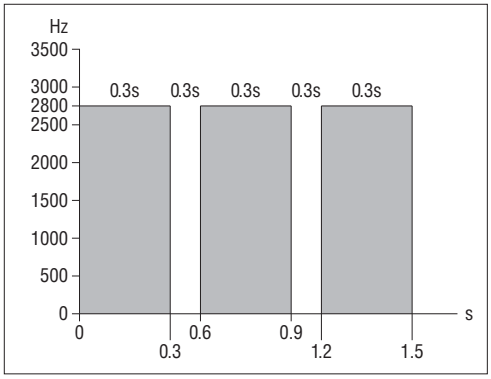
Monoblock buzzers

LPC ZS...

LPC ZS...IP

Order code	Voltage	Sound intensity at 2800Hz	Qty per pkg.	Wt
	[V]	[dB/10cm]	n°	[kg]
Continuous or pulse tone, IP40 version.				
LPC ZSA	9...15VAC/DC	90	1	0.020
LPC ZSB	18...30VAC/DC	90	1	0.020
LPC ZSE	85...140VAC/DC	90	1	0.020
LPC ZSM	185...265VAC/DC	90	1	0.020
Continuous or pulse tone, IP66, IP67, IP69K, UL Type 4X version.				
LPC ZSAIP	9...15VAC/DC	80	1	0.020
LPC ZSBIP	18...30VAC/DC	80	1	0.020
LPC ZSEIP	85...140VAC/DC	80	1	0.020
LPC ZSMIP	185...265VAC/DC	80	1	0.020

Pulse-tone sound graph



General characteristics
Monoblock buzzers are used as sound indicators in automation systems and on-board machinery in the production processes.
Long life, low consumption values, compact size and the use of materials, in accordance with the North American market, are the main features of this product.

Operational characteristics
- Rated frequency: 50…60Hz
- Supply voltage: 9..15VAC/DC, 18..30VAC/DC, 85..140VAC/DC, 185..265VAC/DC
- Maximum absorption: 20mA-0.30W (type 9..15VAC/DC), 15mA-0.40W (type 18..30VAC/DC), 5.5mA-0.80W (type 85..140VAC/DC), 3.5mA-0.95W (type 185..265VAC/DC)
- Minimum activation voltage: >4V (type 9..15VAC/DC), >8V (type 18..30VAC/DC), >15V (type 85..140VAC/DC), >25V (type 185..265VAC/DC)
- Impulse withstand voltage Uimp: 4kV
- Installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations
- Service life: 30,000 hours (permanently powered)
- Side cable entry
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection (type LPC ZS...IP):
  - per IEC/EN: IP66, IP67, IP69K on front and IP20 at rear
  - per UL: Type 1, 2, 3R, 4, 4X, 12, 12K on front.

Materials
Polyamide.

Maximum conductor cross section
Screw terminal connections with three separate connections:
- Min. cable 0.5mm² / AWG24
- Max. cable 2.5mm² / AWG14
- Maximum tightening torque: 0.5Nm/0.37lbft
- Flat-head screwdriver: 0.6x3.5mm/0.02x0.14".

Certifications and compliance
Certifications obtained: cULus, EAC, CCC (pending), RINA (pending).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

USB and RJ45 communication interfaces

LPC D01

LPC D05

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
LPC D01	USB interface, A/A female type connection	1	0.018
LPC D01 L050	USB interface, A/A female connection with 0.5m long cable	1	0.050
LPC D01 L100	USB interface, A/A female connection with 1m long cable	1	0.080
LPC D03	USB interface, A/B female type connection	1	0.018
LPC D05	USB interface, B/A female type connection	1	0.018
LPC D06	RJ45 interface, Ethernet connection type	1	0.026
LPC D06 L100	RJ45 interface, Ethernet connection with 1m long cable	1	0.090

General characteristics
USB and RJ45 communication interface connectors are used in industrial environments, which in recent years have seen an increase in the number of connections between machines, production lines, equipment and measuring instruments. These interfaces provide the transmission of data in both directions between the various devices.

Operational characteristics
- Rated insulation voltage for LPCD01, LPCD03, LPCD05: 5VAC/DC
- Rated insulation voltage for LPCD06: 24VAC
- Interface mechanical endurance: ≥750 insertions
- Installed through a Ø22mm/Ø0.87" drilling with a threaded fixing ring (Tmax = 2.3Nm/1.69lbft) also on the cover of LPZ control stations
- Transmission characteristics for LPCD01, D03, D05: 5Gbps (625MB/sec)
- Transmission characteristics for LPCD06: 10 Gigabit Ethernet IEEE 802.3an-2006
- Rated current for LPCD01, LPCD03, LPCD05: 1.8A
- Rated current for LPCD06: 1.5A
- Insulation resistance: ≥100MOhm
- Contact resistance for LPCD01, LPCD03, LPCD05: ≤30mOhm
- Contact resistance for LPCD06: ≤40mOhm
- USB connector class: 3.0 (backward compatible with USB class 2.0)
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP65 on front (with cap mounted)
  - Per IEC/EN: IP20 at rear
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K on front (with cap mounted)

Materials
Polyamide.

Certifications and compliance
Certifications obtained: cULus, EAC, CCC (pending), RINA (pending).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Accessories and spare parts


LPX A130


LPX A140


LPX AU00


LPX AU01


LPX P01


LPX B0


LPX B104


LPX B203


LPX BL105


LPX BL206

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
LPX A127	Transparent diffuser for double-touch buttons	10	0.001
LPX A130	Threaded plug for unused drilled holes (grey)	10	0.007
LPX A140	Action plug for centre contact	50	0.001
LPX A150	Rod for mechanical reset button (l=150mm)	10	0.006
LPX A170	Spare standard key set for selector switches or mushroom-head buttons, key code n° 455	10	0.008
LPX A170R❶	Spare key set for selector switches or mushroom head buttons, LPC...R type	1	0.008
LPX AU00	Plastic threaded ring for actuator fixing	20	0.002
LPX AU01	Metallic threaded ring for actuator fixing	20	0.015
LPX P01	M20 cable gland with threaded ring for LPZ control stations	50	0.012
LPX B0	Flush-extended spring return actuator with no cap	10	0.013
LPX B3	Shrouded spring return actuator with no cap	10	0.014
LPX Q0	Flush-extended push-push actuator with no cap	10	0.013
LPX QL0	Illuminated flush-extended push-push actuator with no lens	10	0.013
Flush cap for spring-return actuators.			
LPX B102	Black	10	0.002
LPX B103	Green	10	0.002
LPX B104	Red	10	0.002
LPX B105	Yellow	10	0.002
LPX B106	Blue	10	0.002
LPX B108	White	10	0.002
Extended cap for spring-return actuators.			
LPX B202	Black	10	0.003
LPX B203	Green	10	0.003
LPX B204	Red	10	0.003
LPX B205	Yellow	10	0.003
LPX B206	Blue	10	0.003
LPX B208	White	10	0.003
Flush lens for illuminated spring-return actuators.			
LPX BL103	Green	10	0.002
LPX BL104	Red	10	0.002
LPX BL105	Yellow	10	0.002
LPX BL106	Blue	10	0.002
LPX BL107	Transparent	10	0.002
Extended lens for illuminated spring-return actuators.			
LPX BL203	Green	10	0.003
LPX BL204	Red	10	0.003
LPX BL205	Yellow	10	0.003
LPX BL206	Blue	10	0.003
LPX BL207	Transparent	10	0.003

❶ Versions with different key code. Complete with the numeric code of the key. The following versions are available: 421E, 458A, 520E, 3131A, 3433E
Example of complete code: LPX A170R421E.

Accessories and spare parts


LPX AU100


LPX AU105


LPX AU108
LPX AU109


LPX AU158


8 LM2T A185


LPX AU159


LPX DIN

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
LPX AU100	Label holder for engraved plastic LPX AU109 label	50	0.001
LPX AU109	Engravable silver plastic label to use with LPX AU100 holder	50	0.002
LPX AU105	Label holder for engraved plastic LPX AU108 label	50	0.003
LPX AU108	Engravable silver plastic label to use with LPX AU105 holder	50	0.002
LPX AU13❶❷	Rubber boot for flush button LPC B1/BL1/R1...	10	0.006
LPX AU14❶❷	Rubber boot for buttons LPC B2/3..., LPC BL2... and LPC R2...	10	0.009
LPX AU157	Rubber boot for double and triple-touch buttons, transparent	10	0.007
LPX AU167❷❸	Rubber boot for mushroom head buttons, LPC B63/B66/B67/ BL66... transparent	10	0.012
LPX AU158❷❹	Padlockable protection, Ø5-8mm locks or buttons LPC B66/B67/ B68/BL664...; for LPC B634... Ø5-6mm/0.2-0.24" locks only.	10	0.005
LPX AU159❷❹	Shroud for buttons LPC B63..., LPC B66/67/68/BL666...	10	0.010
LPX DIN	Adapter for mounting LPC... buttons on DIN rail 35mm/1.38" wide (2 modules)	10	0.008
Other accessories.			
8 LM2T A161	Ø30mm/1.2" hole size adapter set for 22mm/ 0.87" (use 2 per hole)	10	0.002
8 LM2T A185	Yellow selector protection shroud for knob type only	10	0.004
8 LM2T A200	Socket spanner/wrench for fixing ring fitting, metal	1	0.184

❶ For flush and extended push buttons, complete the order code by adding the digit of the required colour:
2 (black); 3 (green); 4 (red); 5 (yellow); 6 (blue); 7 (transparent); 8 (white).
For illuminated push buttons, add only digit 7 (transparent).
❷ Cannot be used when LPX AU100 or LPX AU105 is fitted.
❸ Cannot be used when LPX AU158 is fitted.
❹ Cannot be used when LPX AU167 is fitted.

Labels with text for LPX AU100 legend holder

8 LM2T AGB230

Order code	Text	Qty per pkg	Wt
		n°	[kg]
General use.			
8 LM2T AU206	Blank for writing	50	0.001
8 LM2T AU207	Sheet with 108 labels for laser printing❶	1❷	0.005
8 LM2T AU208❸	Sheet with 108 customized text❶	1❷	0.005
8 LM2T AGB210	LATCH	50	0.001
8 LM2T AGB211	OPEN	50	0.001
8 LM2T AGB212	STOP	50	0.001
8 LM2T AGB213	GENERAL STOP	50	0.001
8 LM2T AGB214	STOP RESET	50	0.001
8 LM2T AGB215	FORWARD	50	0.001
8 LM2T AGB216	CLOSE	50	0.001
8 LM2T AGB217	RIGHT	50	0.001
8 LM2T AGB218	LOWER	50	0.001
8 LM2T AGB219	DEACTIVATED	50	0.001
8 LM2T AGB220	EMERGENCY	50	0.001
8 LM2T AGB221	OFF	50	0.001
8 LM2T AGB222	REVERSE	50	0.001
8 LM2T AGB223	ON	50	0.001
8 LM2T AGB237	TRIP	50	0.001
8 LM2T AGB224	SLOW	50	0.001
8 LM2T AGB225	START	50	0.001
8 LM2T AGB226	RESET	50	0.001
8 LM2T AGB226	RESET	50	0.001
8 LM2T AGB227	RAISE	50	0.001
8 LM2T AGB228	LEFT	50	0.001
8 LM2T AGB229	POWER ON	50	0.001
8 LM2T AGB225	START	50	0.001
8 LM2T AGB230	STOP	50	0.001
8 LM2T AGB214	STOP-RESET	50	0.001
8 LM2T AGB231	FAST	50	0.001
For selector switches.			
8 LM2T AI232	ARR-MAR	50	0.001
8 LM2T AI233	AUTO-MAN	50	0.001
8 LM2T AI234	AUTO-O-MAN	50	0.001
8 LM2T AI242	MAN-O-AUTO	50	0.001
8 LM2T AI235	FWD-O-REV	50	0.001
8 LM2T AI236	ON - OFF.	50	0.001
8 LM2T AI241	MAN-AUTO	50	0.001
8 LM2T AGB232	STOP-START	50	0.001
8 LM2T AGB236	OFF-ON	50	0.001
International labels for push-buttons.			
8 LM2T AU200	O	50	0.001
8 LM2T AU201	I	50	0.001
8 LM2T AU202	II	50	0.001
International labels for selector switches.			
8 LM2T AU203	O-I	50	0.001
8 LM2T AU204	I-II	50	0.001
8 LM2T AU205	I-O-II	50	0.001

❶ Recommended use with LPX AU109 label.
❷ Sheet with 108 adhesive labels.
❸ Complete code with required label text.

General characteristics
The labels have indelible scratch-proof black lettering on metalised grey polycarbonate background (adhesive).

Special versions
Labels in different languages are available.
Consult Technical support; see contact details on inside front cover.

Plastic disk for mushroom head pushbuttons

LPX AU113

LPX AU115


LPX AU124

LPX AU110

new

Order code	Text	Qty per pkg.	Wt
		n°	[kg]
LPX AU112	EMERGENZA ARRESTO Ø90mm/3.5”	10	0.005
LPX AU114	EMERGENZA ARRESTO Ø60mm/2.4”	10	0.003
LPX AU113	EMERGENCY STOP Ø90mm/3.5”	10	0.005
LPX AU115	EMERGENCY STOP Ø60mm/2.4”	10	0.003
LPX AU124	IEC60417-5630 symbol according to ISO 13850 Ø90mm/3.5”	10	0.005
LPX AU123	IEC60417-5630 symbol according to ISO 13850 Ø60mm/2.4”	10	0.005
LPX AU118	ARRET D’URGENCE / NOT-AUS/ PARO EMERGENCIA Ø60mm/2.4”	10	0.003
LPX AU110	Adhesive label EMERGENCY STOP (34.5x65mm/1.36x2.56”) for LPC B63/663/664/ 67/68/BL66...buttons	12	0.001

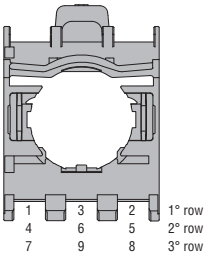
General characteristics
The disks are made of non-adhesive plastic.
Plastic disks cannot be used with LPX AU158 and LPX AU159 protection.

Mounting adapter

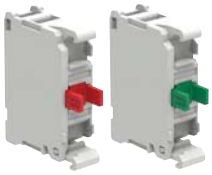
LPX AU120

Order code	Description	Qty per pkg	Wt
		n°	[kg]
LPX AU120	Mounting adapter	10	0.019

Rear view
(reference for element installation)



Contact elements



LPX C...

LPX C01SM LPX C02SM

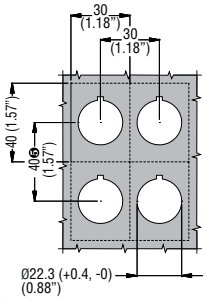
LPX E...

LPX CF01 LPX CF10

Order code	Function	Qty per pkg	Wt
		n°	[kg]
Screw termination. Without mounting adapter.			
LPX C10❶	.3 .4 NO❶	10	0.011
LPX C10A	.7 .8 EM❷	10	0.011
LPX C01 ⊖	.1 .2 ⊖ NC❸	10	0.011
LPX C01D❶ ⊖	.5 .6 ⊖ LB❶❹	10	0.011
Screw termination. Without mounting adapter. Auto-monitor contact elements for non-illuminated latch mushroom-head pushbuttons.			
LPX C01SM❶ ⊖	⊖ .3 .1 .4 .2 1NC❶❸	1	0.022
LPX C02SM❶ ⊖	⊖ ⊖ .3 .1 .1 .4 .2 .2 2NC❶❸	1	0.033
Screw termination. With mounting adapter.			
LPX E10❶	.3 .4 NO❶	10	0.029
LPX E01 ⊖	.1 .2 ⊖ NC❸	10	0.029
Faston termination. Without mounting adapter.			
LPX CF10❶	.3 .4 NO❶	10	0.012
LPX CF01 ⊖	.1 .2 ⊖ NC❸	10	0.012

❶ **Use LPX C10A (EM) or LPX C01 (NC) type only with push-push actuators.**
Not suitable for push-push actuators.
❷ **Normally open contact with early-make operation and suitable for push-push actuators.**
❸ Direct (positive) opening action ⊖ in accordance with IEC/EN 60947-5-1.
❹ Normally closed contact with late break operation.

Drillings - Minimum recommended distances



❺ When using Faston, pitch is 85mm/3.35" minimum.

Operational characteristics
- Any mounting position allowed.
- All LPX C… types snap onto LPX AU120 mounting adapter:
  - See the combinations given under "Contact elements" in the right-hand column for each type of pushbutton and selector switch.
  - A maximum of 3 contacts or 2 contacts and 1 LED element (LPX L… mounted in the middle position) can be fixed internally on the cover surface of LPZ control stations.
- A maximum of 2 LPX C…SM contacts can be installed on LPX AU120 adapter exclusively on non-illuminated mushroom-head latch actuators:
  - In pos. 1-3 (on the left side only of LPX AU120; refer to REAR VIEW drawing), one only LPX C01SM or LPX C02SM element can be fitted.
  - One extra LPX…SM can be installed in pos. 4-6 (stacked behind the LPX…SM on the LPX AU120)
  - With LPX C01SM, a maximum of two contacts LPX C0… or LPX C1… can be fitted on the right side in LPX AU120 pos. 2 and 5, one behind the other.
  - On the internal surface of LPZ control station covers, one only LPX C01SM or LPX C02SM contact can be mounted on LPX AU120 pos. 1 (on the left). With LPX C01SM, one extra element LPX C0… or LPX C1… can be fitted on the right (LPX AU120 pos. 2).
  - No LED element can be used with LPX C…SM types.
- Maximum tightening torque for screw terminals: 1Nm/0.74lbft
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - IP20 for screw termination
  - IP00 for Faston termination.

General characteristics of contact elements
Wiping effect, dual scraping-oscillating action
IEC rated insulation voltage: 690V
IEC rated thermal current Ith: 10A
Conductivity: 5V 1mA
UL/CSA and IEC/EN 60947-5-1 designation: A600 Q600.

IEC/EN operational characteristics in AC15 category:

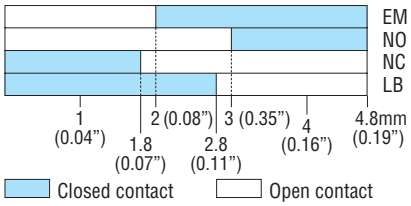
[V]	12	24	48	120	240	400	480	500	600
[A]	6	6	6	6	6	3	1.5	1.4	1.2

IEC/EN operational characteristics in DC13 category:

[V]	12	24	48	125	250	440	500	600
[A]	3	3	1.5	0.55	0.27	0.15	0.13	0.1

Short-circuit protection fuse: max calibre: 10A gG/SC.
Contact resistance: ≤20mΩ.
Terminals: Clamp screw with washer.
Faston 1x6.35mm(0.25") or 2x2.8mm(0.11").

Stroke of contact elements



Maximum conductor cross section for screw terminals
1 or 2 2.5mm² or AWG14 cables.

Mechanical and electrical endurance
Operating force: ≤0.5kg/1.1lb (auxiliary contacts).
Electrical life: 1,000,000 cycles for LPXC10/01/E10/01, LPX C01SM/02SM, LPXCF10/01; 600,000 cycles for LPXC10A/01D.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standard: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

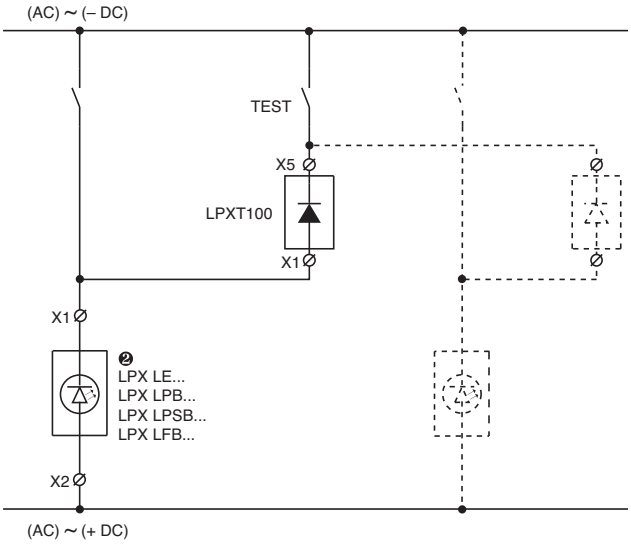
Test elements for steady-light LED elements

LPX T...

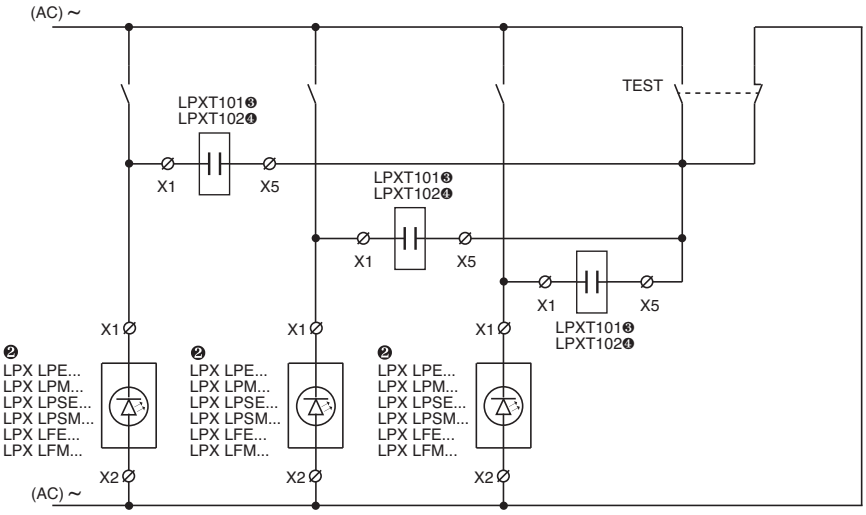
Order code	Description	Qty per pkg	Wt
		n°	[kg]
LPX T100❶❷	Use with LED elements in AC/DC, types LPX LE… (all), LPX LFB…, LPX LPB and LPX LPSB…	10	0.011
LPX T101❷	Use with LED elements at 85-140VAC for types LPX LFE… LPX LPE… and LPX LPSE…	10	0.011
LPX T102❷	Use with LED elements at 185-265VAC for types LPX LFM…, LPX LPM… and LPX LPSM…	10	0.011

❶ Whenever test circuits include illuminated actuators connected with paralleled load, use two LPX T100 for each LED element.
Refer to the wiring diagram below or online in the Downloads section at www.LovatoElectric.com
❷ With DC supply only for LPX T100 type, the LED element works at full voltage and brightness while with AC supply for all LPX T… types, the LED element works at half voltage with reduced brightness level.

For LPX T100 test element



For LPX T101 and LPX T102 test elements



❸ Use with LPX LFE…, LPX LPE… or LPX LPSE… type.
❹ Use with LPX LFM…, LPX LPM… or LPX LPSM… type.

Operational characteristics

- Supply voltage:
  - LPX T100 test element:
    - 12...30VAC/DC for LPX LEB/LFB/LPB/LPSB...
    - 85...140VAC/DC for LPX LEE...
    - 185...265VAC/DC for LPX LEM...
  - LPX T101 test element: 85-140VAC
  - LPX T102 test element: 185-265VAC
- For use with LED elements LPX LPBB/LPBE/LPBM… types, consult Technical support; see contact details on inside front cover
- Electrical life: 100,000 hours
- Any mounting position allowed
- Snap onto LPX AU120 mounting adapter beside the LED element or stacked behind contact elements; also internally on the LPZ control station cover
- Maximum tightening torque for screw terminals: 1Nm/0.74lbft
- Ambient conditions:
  - Operating temperature: -25…+70°C
  - Storage temperature: -40…+85°C
- Degree of protection: IP20.

Mounting adapter

Type: LPX AU120. See page 7-20.
The mounting adapter directly snaps onto the actuator fixed to the mounting surface.

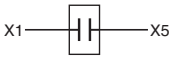
Maximum conductor cross section

1 or 2 2.5mm² or AWG 12 cables.

Wiring Diagram

For LPX T100

For LPX T101 - LPX T102



Certifications and compliance

Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

LED elements steady light

LPX LP...

Total protection against overvoltages and stray currents in wiring, to reduce flickering phenomenon and withstand vibrations.

Order code	Rated supply voltage	LED colour	Qty per pkg.	Wt
	[V]		n°	[kg]
Steady light, screw termination. Supplied without mounting adapter.				
LPX LP B3	12...30V AC/DC	Green	10	0.016
LPX LP B4		Red	10	0.016
LPX LP B5		Yellow	10	0.016
LPX LP B6		Blue	10	0.016
LPX LP B8		White	10	0.016
LPX LP E3	85...140V AC	Green	10	0.016
LPX LP E4		Red	10	0.016
LPX LP E5		Yellow	10	0.016
LPX LP E6		Blue	10	0.016
LPX LP E8		White	10	0.016
LPX LP M3	185...265V AC	Green	10	0.016
LPX LP M4		Red	10	0.016
LPX LP M5		Yellow	10	0.016
LPX LP M6		Blue	10	0.016
LPX LP M8		White	10	0.016

LPX LE...

Simple protection against overvoltages and to withstand vibrations.

Order code	Rated supply voltage	LED colour	Qty per pkg.	Wt
	[V]		n°	[kg]
Steady light, screw termination. Supplied without mounting adapter.				
LPX LE B3	12...30V AC/DC	Green	10	0.016
LPX LE B4		Red	10	0.016
LPX LE B5		Yellow	10	0.016
LPX LE B6		Blue	10	0.016
LPX LE B8		White	10	0.016
LPX LE E3	85...140V AC/DC	Green	10	0.016
LPX LE E4		Red	10	0.016
LPX LE E5		Yellow	10	0.016
LPX LE E6		Blue	10	0.016
LPX LE E8		White	10	0.016
LPX LE M3	185...265V AC/DC	Green	10	0.016
LPX LE M4		Red	10	0.016
LPX LE M5		Yellow	10	0.016
LPX LE M6		Blue	10	0.016
LPX LE M8		White	10	0.016

LED elements flashing light

LPX LF...

Total protection against overvoltages and stray currents in wiring, to reduce flickering phenomenon and withstand vibrations.

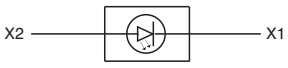
Order code	Rated supply voltage	LED colour	Qty per pkg.	Wt
	[V]		n°	[kg]
Flashing light, screw termination. Supplied without mounting adapter.				
LPX LF B3	18...30V AC/DC	Green	10	0.016
LPX LF B4		Red	10	0.016
LPX LF B5		Yellow	10	0.016
LPX LF B6		Blue	10	0.016
LPX LF B8		White	10	0.016
LPX LF E3	85...140V AC	Green	10	0.016
LPX LF E4		Red	10	0.016
LPX LF E5		Yellow	10	0.016
LPX LF E6		Blue	10	0.016
LPX LF E8		White	10	0.016
LPX LF M3	185...265V AC	Green	10	0.016
LPX LF M4		Red	10	0.016
LPX LF M5		Yellow	10	0.016
LPX LF M6		Blue	10	0.016
LPX LF M8		White	10	0.016

Operational characteristics
- Rated frequency: 50-60Hz
- Auxiliary supply voltage:
  - LPX LP… with steady light: 12...30VAC/DC; 85...140VAC; 185...265VAC
  - LPX LE… with steady light: 12...30VAC/DC; 85...140VAC/DC; 185...265VAC/DC
  - LPX LF… flashing light: 18...30VAC/DC; 85...140VAC, 185...265VAC
- Maximum consumption for:
  - LPX LP… steady light and LPX LF… flashing light: 17mA-0.50W (12...30VAC/DC); 20mA-0.40W (85...140VAC); 18mA-0.55W (185...265VAC)
  - LPX LE… steady light: 11mA-0.33W (12...30VAC/DC); 5mA-0.72W (85...140VAC/DC); 3mA-0.67W (185...265VAC/DC)
- Total protection for LPX LP… and LPX LF… types:
  - Against overvoltages
  - Against stray currents in wiring
  - To reduce flickering phenomenon
  - To withstand vibrations
- Minimum activation voltage:
  - LPX LP... steady light: 4V-1mA (12...30VAC/DC); 30V-4mA (85...140VAC); 55V-4mA (185...265VAC)
  - LPX LE... steady light: 4V-0.5mA (12...30VAC/DC); 15V-0.4mA (85...140VAC/DC); 35V-0.3mA (185...265VAC/DC)
  - LPXLF.. flashing light: 5V-1.5mA (18...30VAC/DC); 13V-1.5mA (85...140VAC); 25V-1.5mA (185...265VAC)
- Simple protection for LPX LE… types
  - Against overvoltages
  - To withstand vibrations
- Electrical life: 100,000 hours
- Snap onto LPX AU120 mounting adapter in the middle position for each illuminated actuator, also internally on the LPZ control station cover
- No other element can be stacked behind LED elements
- Any mounting position allowed
- Maximum tightening torque: 1Nm/0.74lbft
- Ambient conditions:
  - Operating temperature: -25...+70°C (-25...+60°C for LPX LE...)
  - Storage temperature: -40...+85°C
- Degree of protection: IP20.

Mounting adapter
See page 7-20. Type: LPX AU120.
The mounting adapter directly snaps onto the actuator fixed to the mounting surface.

Maximum conductor cross section
1 or 2 2.5mm² or AWG12 cables.

Wiring diagram



Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Contact elements with spring-clamp terminals

LPX CS01 LPX CS10

Order code	Function	Qty per pkg	Wt
		n°	[kg]
Spring-clamp termination. Without mounting adapter.			
LPX CS10❶	.3 NO❶ .4	10	0.010
LPX CS01 ⊖	.1 ⊖ NC❷ .2	10	0.010

❶ **Not suitable for push-push actuators.**
❷ Direct (positive) opening action ⊖ in accordance with IEC/EN 60947-5-1

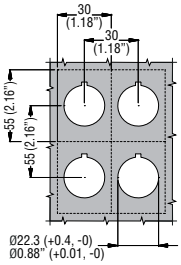
LED elements steady light with spring-clamp terminals

LPX LPS…

Order code	Rated supply voltage	LED colour	Qty per pkg	Wt
	[V]		n°	[kg]
Steady light, with spring-clamp termination. Without mounting adapter.				
LPX LPS B3	12...30VAC/DC	Green	10	0.015
LPX LPS B4		Red	10	0.015
LPX LPS B5		Yellow	10	0.015
LPX LPS B6		Blue	10	0.015
LPX LPS B8		White	10	0.015
LPX LPS E3	85...140VAC	Green	10	0,015
LPX LPS E4		Red	10	0.015
LPX LPS E5		Yellow	10	0.015
LPX LPS E6		Blue	10	0.015
LPX LPS E8		White	10	0.015
LPX LPS M3	185...265VAC	Green	10	0.015
LPX LPS M4		Red	10	0.015
LPX LPS M5		Yellow	10	0.015
LPX LPS M6		Blue	10	0.015
LPX LPS M8		White	10	0.015

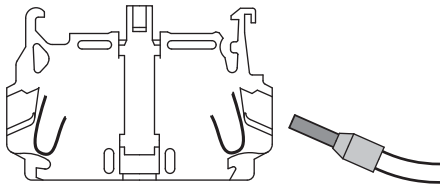
Total protection against overvoltages and stray currents in wiring, to reduce flickering phenomenon and withstand vibrations.

Drillings - Minimum recommended distances

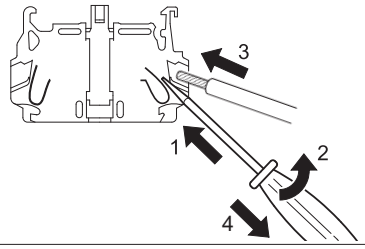


Push-in wiring technology for rigid cables or with ferrules only - no screwdriver needed
Cable retaining force guaranteed over time even in presence of vibrations and/or impacts

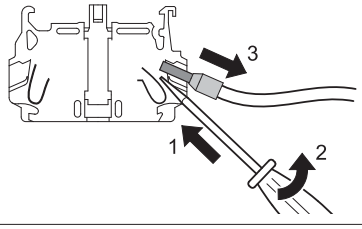
Push-in technology



Wiring with flat-blade screwdriver
(for flexible bare cable without terminal)



Cable removal
(always using flat-blade screwdriver)



Operational characteristics
- Any mounting position allowed
- Elements snap onto LPX AU120 adapter, also internally on LPZ control station cover with maximum of 3 LPX CS… contact or 2 LPX CS… contact and 1 LPX LPS… LED elements (in middle position) per actuator
- No other element can be stacked behind LED elements
- See the combinations given under “Contact elements” in the right-hand column for each type of pushbutton and selector switch
- Suitable for applications with vibration and/or impact work conditions; cable retaining force guaranteed over time in these conditions
- For use with the test elements, see page 7-20
- Wiring also possible after installation with stacked contacts
- Ambient conditions:
  - Operating temperature: -25…+70°C
  - Storage temperature: -40…+85°C
- Degree of protection: IP20.

Mounting adapter
See page 7-20.
Type : LPX AU120.
The mounting adapter directly snaps onto the actuator fixed to the mounting surface.

General characteristics
CONTACT ELEMENTS
Wiping action and dual scraping-oscillating effect
IEC rated insulation voltage: 690V
IEC rated thermal current Ith: 10A
Conductivity: 1mA 5V
UL/CSA and IEC/EN 60947-5-1 designation: A600 Q600.

IEC/EN operational characteristics in AC15 category:

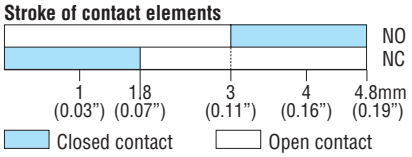
[V]	12	24	48	120	240	400	480	500	600
[A]	6	6	6	6	3	1.9	1.5	1.4	1.2

IEC/EN operational characteristics in DC13 category:

[V]	12	24	48	125	250	440	500	600
[A]	3	3	1.5	0.55	0.27	0.15	0.13	0.1

Short circuit protection fuse: max calibre: 10A gG/SC.
Contact resistance: ≤20mΩ.
Terminals: Spring clamps.

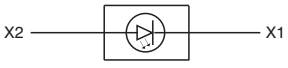
Stroke of contact elements



Mechanical and electrical endurance of contact elements
Opening force: ≤0,5kg/1.1lb
Electrical life: 1.000.000 cycles for LPX CS10 and LPX CS01.

LED ELEMENTS
- Rated frequency: 50-60Hz
- Supply voltage: 12...30VAC/DC; 85...140VAC; 185...265VAC
- Maximum consumption: 17mA-0.50W (12...30VAC/DC); 20mA-0.40W (85...140VAC); 18mA-0.55W (185...265VAC)
- Total protection:
  - Against overvoltages
  - Against stray currents in wiring
  - To reduce flickering phenomenon
  - To withstand vibrations
- Minimum activation voltage: 4V-1mA (12...30VAC/DC); 30V-4mA (85...140VAC); 55V-4mA (185...265VAC)
- Electrical life: 100,000 hours.

Wiring diagram for LED elements



Maximum conductor cross section
1 or 2 2.5mm² or AWG14 cables. For 2.5mm² section, use rounded cable terminal with metal end at least 10mm

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Contact elements, base mount on LPZ control stations

LPX CB...

Order code	Function	Qty per pkg	Wt
		n°	[kg]
Screw termination. Direct snap-on mounting on LPZ... control station base.			
LPX CB10❶	.3 .4 NO❶	10	0.012
LPX CB01 ⊖	.1 .2 ⊖ NC❷	10	0.012

❶ **Not suitable for push-push actuators.**
❷ Direct opening operation ⊖ in accordance with IEC/EN 60947-5-1.

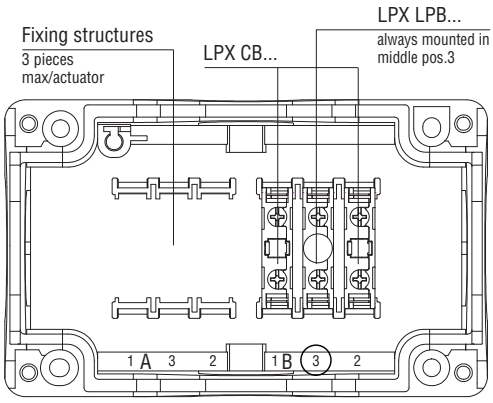
LED elements, steady light base mount on LPZ control stations

LPX LPB...

Order code	Rated supply voltage	LED color	Qty per pkg.	Wt
	[V]		n°	[kg]
Screw termination. Steady light. Direct snap-on mounting on LPZ... control station base.				
LPX LPB B3	12...30V AC/DC	Green	10	0.016
LPX LPB B4		Red	10	0.016
LPX LPB B5		Yellow	10	0.016
LPX LPB B6		Blue	10	0.016
LPX LPB B8		White	10	0.016
LPX LPB E3	85...140V AC	Green	10	0.016
LPX LPB E4		Red	10	0.016
LPX LPB E5		Yellow	10	0.016
LPX LPB E6		Blue	10	0.016
LPX LPB E8		White	10	0.016
LPX LPB M3	185...265V AC	Green	10	0.016
LPX LPB M4		Red	10	0.016
LPX LPB M5		Yellow	10	0.016
LPX LPB M6		Blue	10	0.016
LPX LPB M8		White	10	0.016

Total protection against overvoltages and stray currents in wiring, to reduce flickering phenomenon and withstand vibrations.

Mounting position on the LPZ control station base



Operational characteristics
- Any mounting position allowed
- Snap-on mounting into fixing structures of LPZ control station base
- Maximum of 3 LPX CB... contact or 2 LPX CB... contact and 1 LPX LPB... LED elements (in middle pos. 3) for each actuator of LPZ control stations
- See the combinations given under "Contact elements" in the right-hand column for each type of pushbutton and selector switch
- For use with test elements, consult Technical support; see contact details on inside front cover
- Maximum tightening torque for screw terminals: 1Nm
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection: IP20.

General characteristics

CONTACT ELEMENTS
Wiping action and dual scraping-oscillating effect
IEC rated insulation voltage: 690V
IEC rated thermal current Ith: 10A
Conductivity: 5V 1mA
UL/CSA and IEC/EN 60947-5-1 designation: A600 Q600.

IEC/EN operational characteristics in AC15 category:

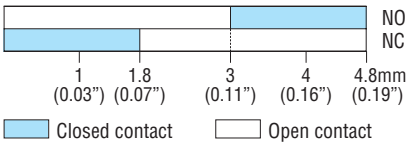
[V]	12	24	48	120	240	400	480	500	600
[A]	6	6	6	6	3	1.9	1.5	1.4	1.2

IEC/EN operational characteristics in DC13 category:

[V]	12	24	48	125	250	440	500	600
[A]	3	3	1.5	0.55	0.27	0.15	0.13	0.1

Short circuit protection fuse: max calibre: 10A gG/SC
Contact resistance: ≤20mΩ
Terminals: Clamp screw and washer.

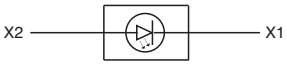
Stroke of contact elements



Mechanical and electrical endurance of contact elements
Opening force: ≤0,5kg/1.1lb
Electrical life: 1,000,000 cycles for LPX CB10 and LPX CB01.

LED ELEMENTS
- Rated frequency: 50...60Hz
- Supply voltage: 12...30VAC/DC; 85...140VAC; 185...265VAC
- Maximum consumption: 17mA-0.50W (12...30VAC/DC); 20mA-0.40W (85...140VAC); 18mA-0.55W (185...265VAC)
- Total protection:
  - Against overvoltages
  - Against stray currents in wiring
  - To reduce flickering phenomenon
  - To withstand vibrations
- Minimum activation voltage:
  - steady light LPX LPB.....: 4V-1mA (12...30VAC/DC); 30V-4mA (85...140VAC); 55V-4mA (185...265VAC)
- Electrical life: 100,000 hours.

Wiring diagram for LED elements



Maximum conductor cross section
1 or 2 2.5mm² or AWG14 cables.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Without actuators

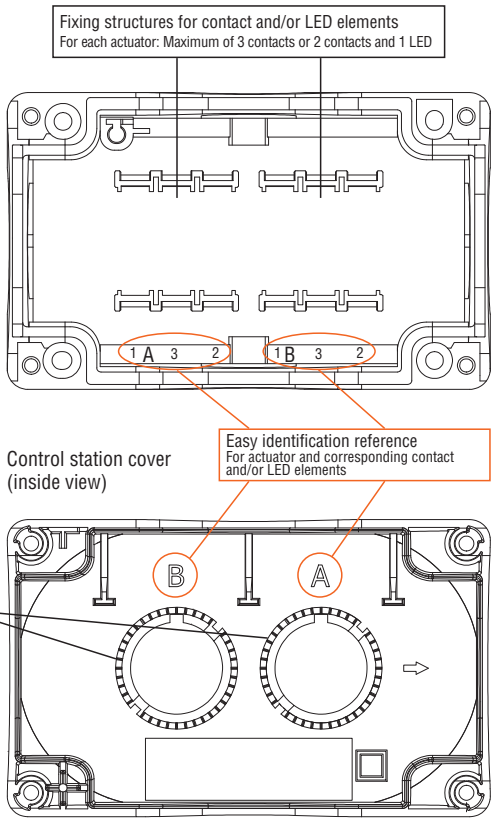
LPZ P1 A5

LPZ P2 A5

LPZ P3 A8

Order code	Description	Cover colour	Qty per pkg	Wt
			n°	[kg]
LPZ P1 A5	For 1 actuator	Yellow	1	0.107
LPZ P1 A8	For 1 actuator	Grey	1	0.107
LPZ P2 A5	For 2 actuators	Yellow	1	0.152
LPZ P2 A8	For 2 actuators	Grey	1	0.152
LPZ P3 A8	For 3 actuators	Grey	1	0.187
LPZ P4 A8	For 4 actuators	Grey	1	0.200
LPZ P5 A8	For 5 actuators	Grey	1	0.240
LPZ P6 A8	For 6 actuators	Grey	1	0.290

Control station base



General characteristics

CONTROL STATIONS WITHOUT ACTUATOR
- 1 to 6 holes
- Compact dimensions
- Easy wiring for base-mount contact and LED elements; possible use of screw and spring-clamp terminal contact or LED elements on the inside surface of the cover using LPX AU120 mounting adapter
- Numerous cable entries.

CONTROL STATIONS WITH ACTUATOR
Standard supplied with actuator, label holder and STOP legend label excluding types with yellow cover, and one base-mount NC contact.

Operational characteristics

- Cable entry:
  - LPZ P1… knockouts:
    - M16/PG11 (1 at rear and 1 on left side)
    - M20/M25/PG13.5/PG16 (1 each on top and bottom)
  - LPZ P2... knockouts:
    - M16/PG11 (2 at rear)
    - M20/PG13.5 (1 on each side)
    - M20/M25/PG13.5/PG16 (1 each on top and bottom)
  - LPZ P3/P4/P5/P6 A8 knockouts:
    - M16/PG11 (2 at rea)
    - M20/PG13.5 (2 on each side)
    - M20/M25/PG13.5/PG16 (1 each on top and bottom)
- Any mounting position allowed
- Tightening torque of cover screws Tmax: 1.8Nm/16lbin
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C
- Degree of protection:
  - Per IEC/EN: IP66, IP67 and IP69K
  - Per UL: Type 1, 2, 3R, 4,4X, 12K.

Materials

Polycarbonate.

Certifications and compliance

Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, CCC, RINA. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508A for types without actuators / UL508 for types complete with actuator, CSA C22.2 n° 14.

With one actuator

LPZ P1 B8 02

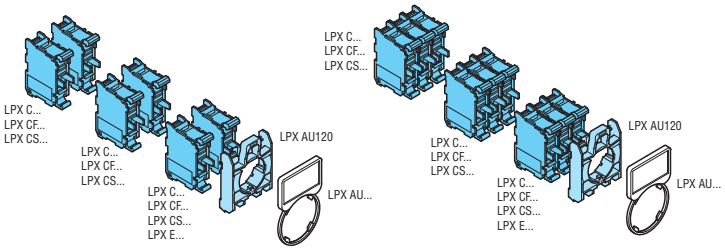
LPZ P1 B5 03

Order code	Control station description	Actuator description	Qty per pkg	Wt
			n°	[kg]
LPZ P1 B8 01	Grey, 1 way LPZ P1 A8	Mushroom-head button LPC B6744 with STOP legend	1	0.150
LPZ P1 B8 02	Grey, 1 way LPZ P1 A8	Mushroom-head button LPC B6344 with STOP legend	1	0.135
LPZ P1 B5 02	Yellow, 1 way LPZ P1 A5	Mushroom-head button LPC B6344	1	0.135
LPZ P1 B5 03❶	Yellow, 1 way LPZ P1 A5	Mushroom-head button LPC B6644	1	0.150

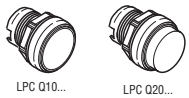
❶ Version with red emergency stop, turn to release and yellow cover compliant with ISO 13850.

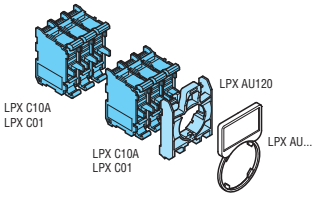
COMBINATIONS FOR PUSHBUTTONS AND SELECTOR SWITCHES

SPRING-RETURN BUTTONS

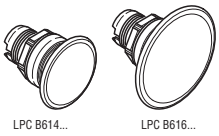


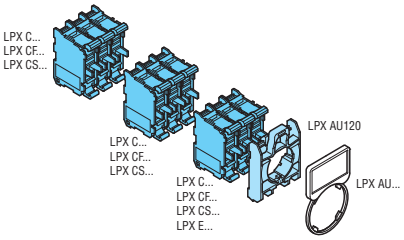
PUSH-PUSH BUTTONS



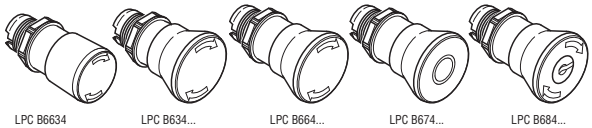


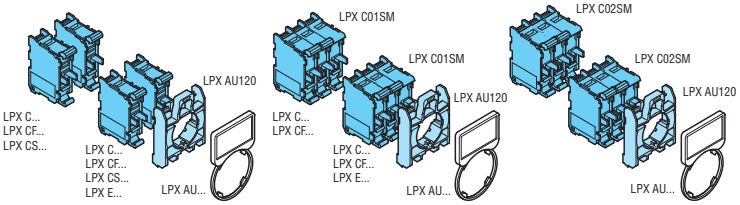
MUSHROOM-HEAD SPRING-RETURN BUTTONS



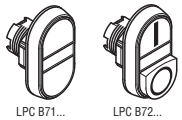


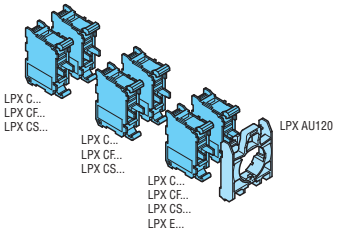
MUSHROOM-HEAD LATCH BUTTONS



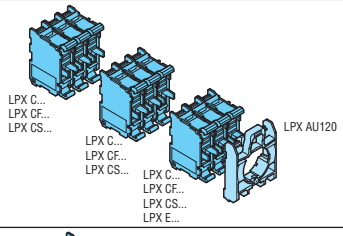


DOUBLE-TOUCH BUTTONS

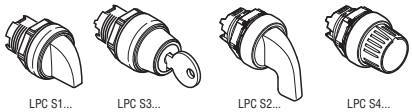


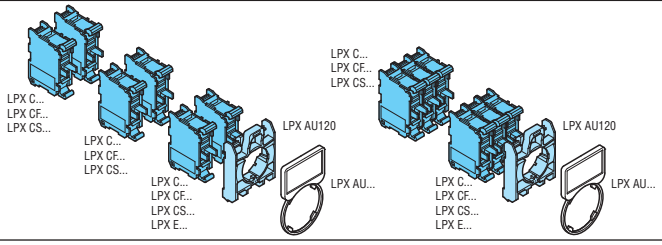


TRIPLE-TOUCH BUTTONS

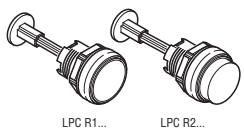


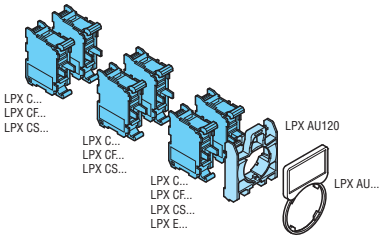
SELECTOR SWITCHES





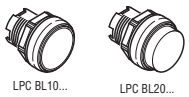
MECHANICAL SPRING-RETURN RESET BUTTONS

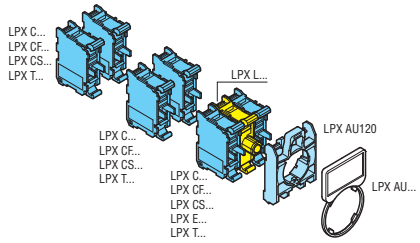




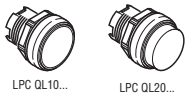
COMBINATIONS FOR ILLUMINATED PUSHBUTTONS AND SELECTOR SWITCHES

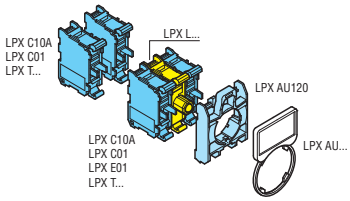
SPRING-RETURN BUTTONS



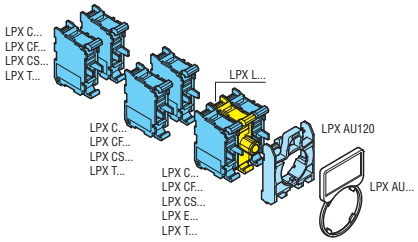


PUSH-PUSH BUTTONS

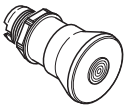


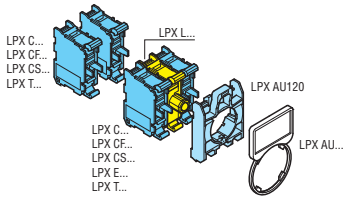


MUSHROOM-HEAD SPRING-RETURN BUTTON

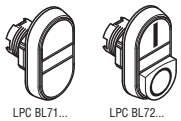


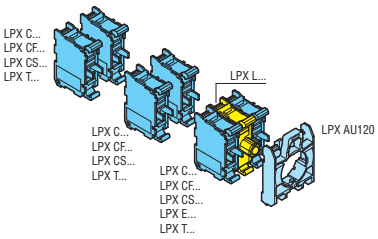
MUSHROOM-HEAD LATCH BUTTON



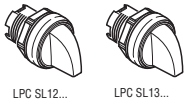


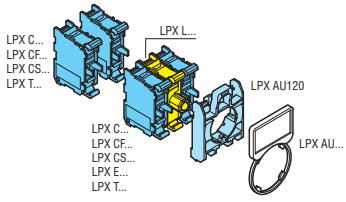
DOUBLE-TOUCH BUTTONS





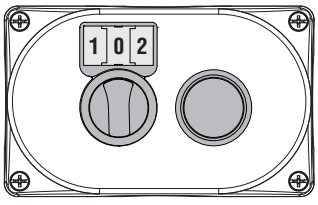
2 AND 3 POSITION SELECTOR SWITCHES

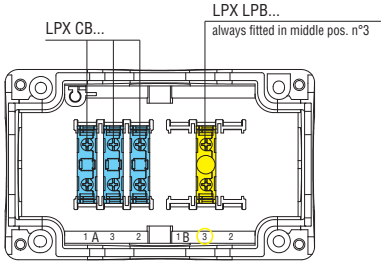




CONTROL STATIONS

Example of 2 way control station equipped with selector switch, label holder and label along with pilot light





Pushbutton actuators, spring return


8 LM2T B10…


8 LM2T B20…


8 LM2T B30…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (without mounting adapter). Spring return.			
8 LM2T B102	Black	10	0.033
8 LM2T B103	Green	10	0.033
8 LM2T B104	Red	10	0.033
8 LM2T B105	Yellow	10	0.033
8 LM2T B106	Blue	10	0.033
8 LM2T B108	White	10	0.033
Extended (without mounting adapter). Spring return.			
8 LM2T B202	Black	10	0.035
8 LM2T B203	Green	10	0.035
8 LM2T B204	Red	10	0.035
8 LM2T B205	Yellow	10	0.035
8 LM2T B206	Blue	10	0.035
8 LM2T B208	White	10	0.035
Shrouded (without mounting adapter). Spring return.			
8 LM2T B302	Black	10	0.035
8 LM2T B303	Green	10	0.035
8 LM2T B304	Red	10	0.035
8 LM2T B305	Yellow	10	0.035
8 LM2T B306	Blue	10	0.035
8 LM2T B308	White	10	0.035

Push-push button actuators


8 LM2T Q10…


8 LM2T Q20…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush (without mounting adapter). Push on-push off.			
8 LM2T Q102❶	Black	10	0.033
8 LM2T Q103❶	Green	10	0.033
8 LM2T Q104❶	Red	10	0.033
8 LM2T Q105❶	Yellow	10	0.033
8 LM2T Q106❶	Blue	10	0.033
8 LM2T Q108❶	White	10	0.033
Extended (without mounting adapter). Push on-push off.			
8 LM2T Q202❶	Black	10	0.035
8 LM2T Q203❶	Green	10	0.035
8 LM2T Q204❶	Red	10	0.035
8 LM2T Q205❶	Yellow	10	0.035
8 LM2T Q206❶	Blue	10	0.035
8 LM2T Q208❶	White	10	0.035

❶ **Use contact elements EM (8 LM2T C10A) and NC (8LM2T C01) only.** Contact elements NO (8LM2T C10) and LB (8LM2T C01D) cannot be fitted on these actuators. For the number of contact elements, refer to indications in the right-hand column.

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65
  - Per UL/CSA: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator).
Mechanical life:
- Spring-return actuators: 1,000,000 cycles
- Push-push actuators: 500,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations.

Contact elements for spring-return actuators
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (1EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (1LB)
Contact elements snap onto the mounting adapter.
Up to 6 contacts can be fitted: 2 each on the left, middle and right, one behind the other.
Up to 3 contacts per actuator can be internally fitted on the cover surface of LPZ control stations.
To use contact elements in the middle position, install the action plug LM2T A140 on the actuator; see page 7-38.

Contact elements for push-push button actuators
See page 7-41.
Type: LM2T C10A (1EM)
LM2T C01 (1NC)
Contact elements snap onto the mounting adapter.
Up to 2 contacts can be fitted: 1 each on the right and left.
Up to 2 contacts per actuator can be internally fitted on the cover surface of LPZ control stations (only one on the right and/or on the left).

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14

Mechanical reset button, complete unit, spring return

8 LM2T R1196

Order code	Colour	Qty per pkg.	Wt
		n°	[kg]
Flush (5.2mm/0.2” stroke). Adjustable length 0-140mm/5.5”. Spring return (complete with shaft and mounting adapter)❷			
8 LM2T R1002	Black	10	0.065
8 LM2T R1003	Green	10	0.065
8 LM2T R1004	Red	10	0.065
8 LM2T R1006	Blue	10	0.065
8 LM2T R1196❶	Blue (RESET)	10	0.065
Extended (5.2mm/0.2” stroke). Adjustable length 0-140mm/5.5”. Spring return (complete with shaft and mounting adapter)❷			
8 LM2T R2004	Red	10	0.067

❶ With “RESET”caption on actuator.
❷ No contact elements can be fitted.

Pushbutton actuators, spring return, with symbol

8 LM2T B11…

8 LM2T B21…

Order code	Symbol	Colour	Qty per pkg	Wt
			n°	[kg]
Flush (without mounting adapter). Spring return.				
8 LM2T B1102	O	Black	10	0.033
8 LM2T B1104		Red	10	0.033
8 LM2T B1113	I	Green	10	0.033
8 LM2T B1118		White	10	0.033
8 LM2T B1123	II	Green	10	0.033
8 LM2T B1128		White	10	0.033
8 LM2T B1132	STOP	Black	10	0.033
8 LM2T B1134		Red	10	0.033
8 LM2T B1142	←❶	Black	10	0.033
8 LM2T B1148		White	10	0.033
8 LM2T B1152	↑❷	Black	10	0.033
8 LM2T B1158		White	10	0.033
8 LM2T B1163	START	Green	10	0.033
8 LM2T B1168		White	10	0.033
8 LM2T B1176	R	Blue	10	0.033
8 LM2T B1178		White	10	0.033
8 LM2T B1196	RESET	Blue	10	0.033
8 LM2T B1502	◄|►	Black	10	0.033
8 LM2T B1512	►|◄	Black	10	0.033
Extended (without mounting adapter). Spring return.				
8 LM2T B2102	O	Black	10	0.035
8 LM2T B2104		Red	10	0.035
8 LM2T B2132	STOP	Black	10	0.035
8 LM2T B2134		Red	10	0.035

❶ Arrow symbol can be used to indicate right or left.
❷ Arrow symbol can be used to indicate up or down.

Operational characteristics
– Any mounting position allowed
– Ambient conditions:
  • Operating temperature: -25...+60°C
  • Storage temperature: -40...+70°C
– Degree of protection:
  • Per IEC/EN: IP65
  • Per UL/CSA: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator)
Mechanical life: 1,000,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87” drilling also on the cover of LPZ control stations.

Contact elements for spring-return actuators with symbols
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (1EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (1LB)
Contact elements snap onto the mounting adapter.
Up to 6 contacts can be fitted: 2 each on the left, middle and right, one behind the other.
Up to 3 contacts per actuator can be internally fitted on the cover surface of LPZ control stations.
To use contact elements in the middle position, install the action plug LM2T A140 on the actuator; see page 7-38.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IIEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Mushroom head pushbutton actuators

8 LM2T B614…

8 LM2T B616…

8 LM2T B624…

8 LM2T B634…

8 LM2T B6644

8 LM2T B654…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
SPRING RETURN. Ø40mm/1.6” (without mounting adapter).			
8 LM2T B6142	Black	10	0.037
8 LM2T B6143	Green	10	0.037
8 LM2T B6144	Red	10	0.037
8 LM2T B6145	Yellow	10	0.037
8 LM2T B6146	Blue	10	0.037
Ø60mm/2.4” (without mounting adapter).			
8 LM2T B6162	Black	10	0.043
8 LM2T B6163	Green	10	0.043
8 LM2T B6164	Red	10	0.043
8 LM2T B6165	Yellow	10	0.043
8 LM2T B6166	Blue	10	0.043
LATCH, PULL TO RELEASE. Ø40mm/1.6” (without mounting adapter). For normal stopping.			
8 LM2T B6242	Black	10	0.105
8 LM2T B6244	Red	10	0.105
LATCH, TURN TO RELEASE. Ø40mm/1.6” (without mounting adapter). For normal stopping.			
8 LM2T B6342	Black	10	0.054
8 LM2T B6344	Red	10	0.054
Ø40mm/1.6” (without mounting adapter). For emergency stopping, ISO 13850 compliant.			
8 LM2T B6644	Red	10	0.087
LATCH, TURN KEY TO RELEASE. Ø40mm/1.6” (without mounting adapter). For normal stopping.			
8 LM2T B6542	Black	10	0.091
8 LM2T B6542G❶		1	0.091
8 LM2T B6544	Red	10	0.091
8 LM2T B6544G❶		1	0.091

❶ Versions with different key codes.
Complete with the numeric code of the key. The following versions are available: 501, 502, 503, 504, 505, 506, 507, 508, 509, 510.
Example of complete code: 8 LM2T B6542G505.

Operational characteristics
– Any mounting position allowed
– Ambient conditions:
  • Operating temperature: -25...+60°C
  • Storage temperature: -40...+70°C
– Degree of protection:
  • Per IEC/EN: IP66 for mushroom buttons (IP65 for LM2T B654...)
  • Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K except for 8 LM2T B616 which is Type 1, 2, 3R, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator).
Mechanical life:
– Mushroom head spring return buttons: 1,000,000 cycles
– Mushroom head latch buttons: 300,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87” drilling also on the cover of LPZ control stations.

Contact elements
SPRING RETURN MUSHROOM - HEAD BUTTONS
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (1EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (1LB)

Contact elements snap onto the mounting adapter.

Up to 6 contacts can be fitted: 2 each on the left, middle and right, one behind the other.
Up to 3 contacts per actuator can be internally fitted the cover surface of LPZ control stations.
To use contact elements in the middle position, install on the action plug LM2T A140 on the actuator; see page 7-38.

LATCH MUSHROOM - HEAD BUTTONS
Up to 6 contacts can be fitted: 2 each on the left, middle and right, one behind the other. (for LM2T B624... and LM2T B6644 max 4 contacts).
Up to 3 contacts per actuator can be internally fitted the cover surface of LPZ control stations.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Double-touch actuators, spring return

8 LM2T B71...

8 LM2T B72...

Order code	Colour	Symbols	Qty per pkg	Wt
			n°	[kg]
Two flush push-buttons (without mounting adapter). Both spring return.				
8 LM2T B7112	Black/Red	none	5	0.044
8 LM2T B7113	Green/Red	none	5	0.044
8 LM2T B7114	White/Black	none	5	0:044
8 LM2T B7122	Black/Red	I-O	5	0.044
8 LM2T B7123	Green/Red	I-O	5	0.044
8 LM2T B7124	White/Black	I-O	5	0.044
8 LM2T B7133	Green/Red	Start/Stop	5	0.044
One extended and one flush push-button (without mounting adapter). Both spring return.				
8 LM2T B7212	Black/Red	none	5	0.044
8 LM2T B7213	Green/Red	none	5	0.044
8 LM2T B7214	White/Black	none	5	0.044
8 LM2T B7222	Black/Red	I-O	5	0.044
8 LM2T B7223	Green/Red	I-O	5	0.044
8 LM2T B7224	White/Black	I-O	5	0.044
8 LM2T B7233	Green/Red	Start/Stop	5	0.044

Triple-touch actuators, spring return

8 LM2T B73...

Order code	Symbols	Qty per pkg.	Wt
		n°	[kg]
Triple-touch actuator (without mounting adapter). Spring return.			
8 LM2T B7345	STOP	5	0.044
8 LM2T B7355	STOP	5	0.044
8 LM2T B7365	STOP	5	0.044
8 LM2T B7375	STOP	5	0.044

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP40.
  - Per UL/CSA: Type 1.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator)
Mechanical life: 1,000,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations.

Contact elements
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (LB)
Contact elements snap onto the mounting adapter.

FOR DOUBLE-TOUCH BUTTONS
Up to 4 contacts can be fitted: 2 each on the left and right, one behind the other.
Up to 2 contacts per actuator can be internally fitted on the cover surface of LPZ control stations, 1 on the left and right.

FOR TRIPLE-TOUCH BUTTONS
Up to 6 contacts can be fitted: 2 each on the left, middle and right, one behind the other.
Up to 3 contacts per actuator can be internally fitted on the cover surface of LPZ control stations.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Selector switch actuators short lever

8 LM2T S1...

Order code	Type of position	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter).			
8 LM2T S120		10	0.049
8 LM2T S121		10	0.049
3 position (without mounting adapter).			
8 LM2T S130		10	0.049
8 LM2T S131		10	0.049
8 LM2T S132		10	0.049
8 LM2T S133		10	0.049

Selector switch actuators long lever

8 LM2T S2...

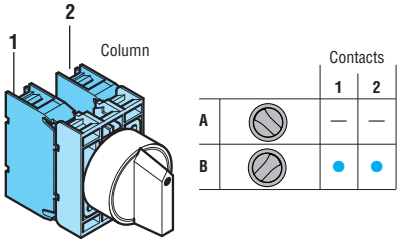
Order code	Type of position	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter).			
8 LM2T S220		10	0.050
8 LM2T S221		10	0.050
3 position (without mounting adapter).			
8 LM2T S230		10	0.050
8 LM2T S231		10	0.050
8 LM2T S232		10	0.050
8 LM2T S233		10	0.050

Selector switch actuators key

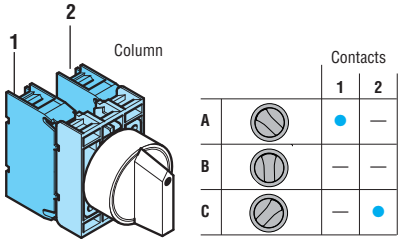
8 LM2T S3...

Order code	Type of position	Qty per pkg	Wt
		n°	[kg]
2 position (without mounting adapter).			
8 LM2T S320		10	0.079
8 LM2T S320G❶		1	0.079
8 LM2T S321		10	0.079
8 LM2T S321G❶		1	0.079
8 LM2T S340		10	0.079
8 LM2T S340G❶		1	0.079
3 position (without mounting adapter).			
8 LM2T S330		10	0.080
8 LM2T S330G❶		1	0.080
8 LM2T S331		10	0.080
8 LM2T S331G❶		1	0.080
8 LM2T S332❷		10	0.080
8 LM2T S332G❶❷		1	0.080
8 LM2T S333❷		10	0.080
8 LM2T S333G❶❷		1	0.080
8 LM2T S350		10	0.080
8 LM2T S350G❶		1	0.080
8 LM2T S360		10	0.080
8 LM2T S360G❶		1	0.080
8 LM2T S370❷		10	0.080
8 LM2T S370G❶❷		1	0.080
8 LM2T S380❷		10	0.080
8 LM2T S380G❶❷		1	0.080
8 LM2T S390❷		10	0.080
8 LM2T S390G❶❷		1	0.080

Contact activation for 2-position selector switch



Contact activation of 3-position selector switch



Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65
  - Per UL/CSA: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Mechanical life: 300,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59").
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations.

Contact elements
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (1EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (1LB)
Contact elements snap onto the mounting adapter.
Up to 4 contacts can be fitted: 2 each on the left and right, one behind the other.
Up to 2 contacts per actuator can be internally fitted on the cover surface of LPZ control stations, 1 on the left and right.
For combination with more than 4 contacts, consult Technical support for advice; see contact details on inside front cover.

Type of positions
- Maintained position.
- Spring return position.
- • Key extraction position.

Rotation angles
2 position

3 position

Special versions
Versions with coloured keys are available upon request.
Consult our Technical support; see contact details on inside front cover.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

❶ Versions with different key codes. Complete with the numeric code of the key. The following versions are available: 501; 502; 503; 504; 505; 506; 507; 508; 509; 510. Example of complete code: 8 LM2T S320G505.
❷ Available only on specific request.

Illuminated button actuators, spring return

8 LM2T BL10...

8 LM2T BL20...

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush with side visibility (without mounting adapter). Spring return.			
8 LM2T BL103	Green	10	0.033
8 LM2T BL104	Red	10	0.033
8 LM2T BL105	Yellow	10	0.033
8 LM2T BL106	Blue	10	0.033
8 LM2T BL107	Transparent	10	0.033
Extended (without mounting adapter). Spring return.			
8 LM2T BL203	Green	10	0.035
8 LM2T BL204	Red	10	0.035
8 LM2T BL205	Yellow	10	0.035
8 LM2T BL206	Blue	10	0.035
8 LM2T BL207	Transparent	10	0.035

Illuminated button actuators push-push

8 LM2T QL10...

8 LM2T QL20...

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Flush with side visibility (without mounting adapter). Push on-push off.			
8 LM2T QL103❶	Green	10	0.033
8 LM2T QL104❶	Red	10	0.033
8 LM2T QL105❶	Yellow	10	0.033
8 LM2T QL106❶	Blue	10	0.033
8 LM2T QL107❶	Transparent	10	0.033
Extended (without mounting adapter). Push on-push off.			
8 LM2T QL203❶	Green	10	0.035
8 LM2T QL204❶	Red	10	0.035
8 LM2T QL205❶	Yellow	10	0.035
8 LM2T QL206❶	Blue	10	0.035
8 LM2T QL207❶	Transparent	10	0.035

❶ **Use contact elements EM (8LM2T C10A early make) and NC (8LM2T C01) only.**
Contact elements NO (8LM2T C10) and LB (8LM2T C01D late break) cannot be used with these actuators. For the number of contact elements, refer to the right-hand column.

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator).
Mechanical life:
- Spring return buttons: 1,000,000 cycles
- Push-push buttons: 500,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations.

Contact elements for illuminated spring-return buttons
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (LB)
Contact elements snap onto the mounting adapter.
Up to 4 contacts can be fitted, 2 each on the left and right one behind the other, when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used (see page 7-42 or 43).
On the cover of LPZ control stations, up to 2 contacts per actuator can be internally fitted, 1 each on the right and/or left, when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used in the middle position.
Instead when using lamp-holder LM2T YL... or LM2T GL..., up to 2 contacts only can be fitted one behind the other (see page 7-42).

Contact elements for illuminated push-push buttons
See page 7-41.
Type: LM2T C10A (EM)
LM2T C01 (1NC)
Contact elements snap onto the mounting adapter.
Up to 2 contact elements can be fitted with one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... (see page 7-40 or 41).
On the cover of LPZ control stations, up to 2 contacts per actuator can be internally fitted, 1 each on the right and/or left, when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used in the middle position.
Only 1 contact can be fitted with lamp-golders LM2T YL..., LM2T GL... (see page 7-42).

Lamp-holder elements
See page 7-42 and 43.

Lamps
Maximum recommended power: 1.2W.
See page 7-38.

Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Illuminated mushroom head button actuators

8 LM2T BL614...

8 LM2T BL624...

Order code	Colour	Quantity per pkg.	Wt
		n°	[kg]
SPRING RETURN. Ø40mm/1.6" (without mounting adapter)..			
8 LM2T BL6143	Green	10	0.043
8 LM2T BL6144	Red	10	0.043
8 LM2T BL6145	Yellow	10	0.043
8 LM2T BL6146	Blue	10	0.043
8 LM2T BL6148	White	10	0.043
LATCH, PULL TO RELEASE. Ø40mm/1.6" (without mounting adapter).			
8 LM2T BL6243	Green	2	0.105
8 LM2T BL6244	Red	2	0.105
8 LM2T BL6245	Yellow	2	0.105
8 LM2T BL6246	Blue	2	0.105
8 LM2T BL6248	White	2	0.105

Double touch actuators, spring return, white indicator

8 LM2T BL71...

8 LM2T BL72...

Order code	Colour	Symbol	Quantity per pkg.	Wt
			n°	[kg]
Two flush pushbuttons (without mounting adapter). Both spring return.				
8 LM2T BL7112	Black/Red	none	5	0.044
8 LM2T BL7113	Green/Red	none	5	0.044
8 LM2T BL7114	White/Black	none	5	0.044
8 LM2T BL7122	Black/Red	I-O	5	0.044
8 LM2T BL7123	Green/Red	I-O	5	0.044
8 LM2T BL7124	White/Black	I-O	5	0.044
8 LM2T BL7133	Green/Red	Start/Stop	5	0.044
One extended and one flush pushbuttons (without mounting adapter). Both spring return.				
8 LM2T BL7212	Black/Red	—	5	0.044
8 LM2T BL7213	Green/Red	—	5	0.044
8 LM2T BL7214	White/Black	—	5	0.044
8 LM2T BL7222	Black/Red	I-O	5	0.044
8 LM2T BL7223	Green/Red	I-O	5	0.044
8 LM2T BL7224	White/Black	I-O	5	0.044
8 LM2T BL7233	Green/Red	Start/Stop	5	0.044

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65 for mushroom-head actuators; IP40 for double-touch actuators.
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K except for 8 LM2T BL71... and 8 LM2T BL72... which are Type 1.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator).
Mechanical life: 1,000,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations.

Contact elements
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (1EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (1LB)
Contact elements snap onto the mounting adapter.

MUSHROOM-HEAD BUTTONS
Can be mounted on the mounting adapter:
- Up to 4 contacts, 2 each on the left and right, one behind the other, when one of the lamp-holders: LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... is used or 2 contacts LM2T M... (see page 7-40 or 41).
- On the cover of LPZ control station, up to 2 contacts per actuator can be internally fitted, 1 each on the right and/or left, when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used in the middle position.
- Up to 2 contacts, one over the other, when one of the lamp-holders type: LM2T YL... or LM2T GL... is used (see page 7-40).

DOUBLE-TOUCH BUTTONS
Up to 4 contacts can be fitted: 2 each on the left and right.
Up to 2 contacts per actuator can be internally fitted on the cover of LPZ control stations, 1 each on the right and/or left when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used in the middle position.

Lamp-holder elements
See page 7-42 and 43.

Lamps
Maximum recommended power: 1.2W.
See page 7-38.

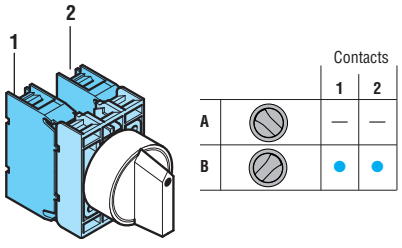
Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Illuminated selector switch actuators

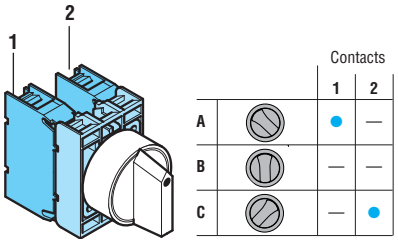
8 LM2T SL1...

Order code	Colour	Type of positions	Qty per pkg	Wt
			n°	[kg]
2 position (without mounting adapter).				
8 LM2T SL1203	Green		10	0.025
8 LM2T SL1204	Red		10	0.025
8 LM2T SL1205	Yellow		10	0.025
8 LM2T SL1206	Blue		10	0.025
8 LM2T SL1208	White		10	0.025
8 LM2T SL1213	Green		10	0.025
8 LM2T SL1214	Red		10	0.025
8 LM2T SL1215	Yellow		10	0.025
8 LM2T SL1216	Blue		10	0.025
8 LM2T SL1218	White		10	0.025
3 position (without mounting adapter).				
8 LM2T SL1303	Green		10	0.025
8 LM2T SL1304	Red		10	0.025
8 LM2T SL1305	Yellow		10	0.025
8 LM2T SL1306	Blue		10	0.025
8 LM2T SL1308	White		10	0.025
8 LM2T SL1313	Green		10	0.025
8 LM2T SL1314	Red		10	0.025
8 LM2T SL1315	Yellow		10	0.025
8 LM2T SL1316	Blue		10	0.025
8 LM2T SL1318	White		10	0.025
8 LM2T SL1323	Green		10	0.025
8 LM2T SL1324	Red		10	0.025
8 LM2T SL1325	Yellow		10	0.025
8 LM2T SL1326	Blue		10	0.025
8 LM2T SL1328	White		10	0.025
8 LM2T SL1333	Green		10	0.025
8 LM2T SL1334	Red		10	0.025
8 LM2T SL1335	Yellow		10	0.025
8 LM2T SL1336	Blue		10	0.025
8 LM2T SL1338	White		10	0.025

Contact activation of 2-position selector switch



Contact activation of 3-position selector switch



Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65
    IP40 for actuators.
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Operating force: 0.8kg/1.7lb (actuator).
Mechanical life: 300,000 cycles.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Actuators latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations.

Contact elements
See page 7-41.
Type: LM2T C10 (1NO)
LM2T CF10 (1NO Faston)
LM2T C10A (1EM)
LM2T C01 (1NC)
LM2T CF01 (1NC Faston)
LM2T C01D (1LB)
Contact elements snap onto the mounting adapter.
The following contacts can be fitted on the mounting adapter on 2-position illuminated buttons:
- Up to 4 contacts when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used (see page 7-40 or 41).
- On the cover of LPZ control station, up to 2 contacts per actuator can be internally fitted, 1 each on the right and/or left, when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used in the middle position.
- Up to 2 contacts when one of the lamp-holders type LM2T YL... or LM2T GL... is used (see page 7-40).

The following contacts can be fitted on the mounting adapter on 3-position illuminated buttons:
- Up to 4 contacts when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used (see page 7-40 or 41).
- On the cover of LPZ control station, up to 2 contacts per actuator can be internally fitted, 1 each on the right and/or left, when one of the lamp-holders type LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... is used in the middle position.

NOTE: No lamp-holder type LM2T YL... or LM2T GL... can be used.

Selector switch type of positions
Maintained position.
Spring return position.

Selector angles
2 position


3 position


Lamp-holder elements
See page 7-42 and 43.

Lamps
Maximum recommended power: 1.2W.
See page 7-38.

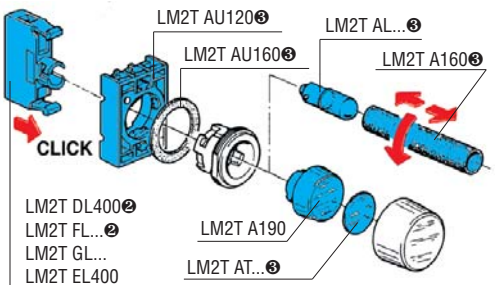
Certifications and compliance
Certifications obtained: UL Listed for USA and Canada, (cULus - File E93601), as Auxiliary Devices; EAC, RINA, LROS, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Pilot light heads

8 LM2T IL10…

Order code	Colour	Qty per pkg	Wt
		n°	[kg]
Without mounting adapter.			
8 LM2T IL103	Green	10	0.024
8 LM2T IL104	Red	10	0.024
8 LM2T IL105	Yellow	10	0.024
8 LM2T IL106	Blue	10	0.024
8 LM2T IL107	Transparent	10	0.024
8 LM2T IL1187	Transparent ϟ ❶	10	0.024

❶ With symbol indicating dangerous voltage (IEC/EN 60417 5036-a).



LM2T DL400❷
LM2T FL...❷
LM2T GL...
LM2T EL400
LM2T VL230❷
LM2T ZL230
LM2T T100
LM2T YL...
LM2T XL...❷
LM2T L...
LM2T M...

❷ The mounting adapter is supplied with LM2T AU120.
❸ Can be purchased separately. Refer to page 7-38, 7-39 or 42.

Operational characteristics
- Any mounting position allowed
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K.

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mounting adapter
See page 7-41.
Type: LM2T AU120.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Pilot light heads latch onto the mounting adapter by simple rotation through a Ø22mm/Ø0.87" drilling also on the cover of LPZ control stations and exclusively with one of the following lamp-holders, internally mounted in the middle position:
LM2T DL400, LM2T EL400, LM2T ZL230, LM2T L... or LM2T M... for each light head.

Lamp-holder elements
See page 7-42 and 43.

Lamps
Maximum recommended power: 1.2W.
See page 7-38.

Certifications and compliance
Certifications obtained: RINA, LROS, EAC, CCC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Potentiometer drives

8 LM2T P100
(with mounting adapter)

8 LM2T P110
(with mounting adapter)

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]
Complete with mounting adapter.			
8 LM2T P100❹	With graduated scale	10	0.070
8 LM2T P110❹	With variable index	10	0.070

❹ Potentiometer not included.

Operational characteristics
- Suitable for potentiometers with 6 and 6.3mm/0.24-0.25" diameter shaft and minimum 40mm/1.6" shaft length
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Any mounting position allowed
- Degree of protection: IP65 (warranted by potentiometers with a cylindrical shaft).

Materials
An aluminium and zinc alloy (zama) is used for the metal part whereas plastic parts are made of polyamide and polycarbonate.

Mechanical endurance
Mechanical life: 300,000 cycles.

Mounting adapter
Standard supply with actuator.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
Operators will latch onto the mounting adapter with a simple twist; not suitable for LPZ control stations.

Certifications and compliance
Certifications obtained: EAC, CCC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1.

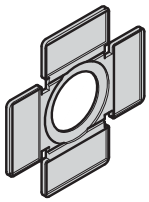
Joysticks

8 LM2T J...
(without mechanical interlock)

8 LM2T J...
(with mechanical interlock)

Order code	Type of positions	N° auxiliary elements	Qty per pkg	Wt
		NO	n°	[kg
Without mechanical interlock. Complete with auxiliary contact. Label holder excluded.				
8 LM2T J200		2	1	0.082
8 LM2T J201		2	1	0.082
8 LM2T J400		4	1	0.104
8 LM2T J401		4	1	0.104
With mechanical interlock in centre position. Complete with auxiliary contact. Label holder excluded.				
8 LM2T J210		2	1	0.082
8 LM2T J211		2	1	0.082
8 LM2T J410		4	1	0.104
8 LM2T J411		4	1	0.104

Accessories



8 LM2T AU101

Order code	Description	Qty per pkg	Wt
		n°	[kg]
8 LM2T AU101	2-4 directional holder for adhesive legends	10	0.004

Operational characteristics
- Any mounting position allowed
- LM2T J2... types can be used with LPZ control stations
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - Per IEC/EN: IP65
  - Per UL: Type 1, 2, 3R, 4, 4X, 12, 12K
  - IP20 for contact elements.

Materials
An aluminium and zinc alloy (zama) is used for the metal parts whereas plastic parts are made of polyamide and polycarbonate.
The sealing boot is made of NBR rubber.

Mechanical endurance
Mechanical life: 1,000,000 cycles.

General characteristics of contact elements
Wiping action and dual scraping-oscillating effect.
IEC rated insulation voltage: 690V
IEC rated thermal current Ith: 10A
UL/CSA and IEC/EN 60947-5-1 designation: A300 Q300.

IEC/EN operational characteristics in AC15 category:

[V]	12	24	48	120	240
[A]	6	6	6	6	3

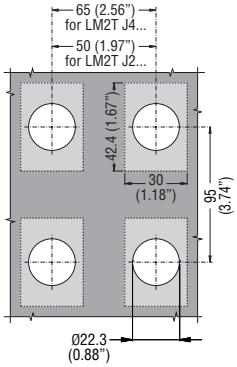
IEC/EN operational characteristics in DC13 category:

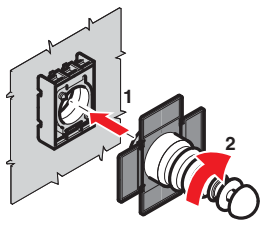
[V]	12	24	48	125	250
[A]	0.55	0.55	0.55	0.55	0.27

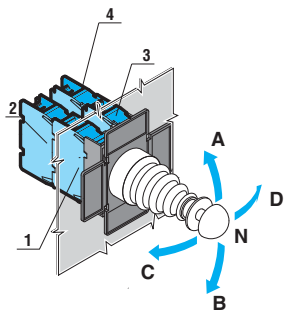
Short circuit protection fuse, max calibre: 10A gG/SC.
Contact resistance: ≤20mΩ.
Terminals: Clamp screw with washer
Maximum tightening torque: 1Nm/0.74lbft.

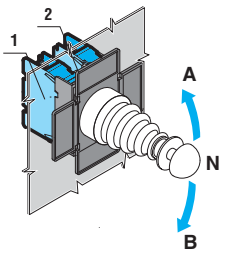
Mounting adapter and contact elements
The joystick is standard supplied with the mounting adapter and contact elements.
The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft).
The joystick latches onto the mounting adapter by simple rotation.
Contact elements snap onto the mounting adapter.
Two LM2T CJ... contacts are mounted on joystick LM2T J2... type and 4 LM2T CJ... contacts on LM2T J4... type.
The mounting adapter and contact elements of LM2T J2… types can be internally mounted on LPZ control stations covers.

Certifications and compliance
Certifications obtained: CCC, EAC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.









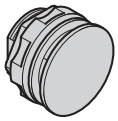
Joystick positions and contact activation

2 instable — 2 stable
4 instable — 4 stable

		A	B	C	D	N
LM2TCJ10	1	●				
LM2TCJ01	2		●			
LM2TCJ10	3				●	
LM2TCJ01	4			●		

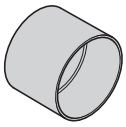
		A	B	N
LM2TCJ10	1	●		
	2		●	

Accessories and spare parts

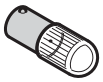


8 LM2T A130

8 LM2T A140



8 LM2T A185



8 LM2T AL...

Order code	Description	Qty per pkg	Wt
		n°	[kg
8 LM2T A12...❶	Coloured diffuser for double touch buttons	10	0.001
8 LM2T A130	Threaded plug for unused drilled holes (black)	10	0.007
8 LM2T A140	Action plug for centre contact	50	0.001
8 LM2T A150	Rod for mechanical reset button (l=140mm/5.5")	10	0.006
8 LM2T A160	BA9s bulb extractor	10	0.004
8 LM2T A161	Hole size adapter set for Ø30mm/1.2" to 22mm/0.87" (2 per hole)	10	0.002
8 LM2T A170	Spare key set for selector or mushroom head button	1	0.008
8 LM2T A170G❷	Spare key set for G series selector or mushroom-head button	1	0.008
8 LM2T A185	Selector switch protection shroud for short lever	10	0.004
8 LM2T A190	Diffuser for pilot light	10	0.003
8 LM2T ALA024	Filament bulb BA9s 24VAC/DC - 1.2W	100	0.002
8 LM2T ALB024	Filament bulb BA9s 24VAC/DC - 2W	100	0.003
8 LM2T ALB048	Filament bulb BA9s 48VAC/DC - 2W	100	0.003
8 LM2T ALB130	Filament bulb BA9s 130VAC/DC - 2W	100	0.003
8 LM2T ALL006❸	LED bulb BA9s 6VAC/DC	10	0.003
8 LM2T ALL024❸	LED bulb BA9s 24VAC/DC	10	0.003
8 LM2T ALL048❸	LED bulb BA9s 48VAC/DC	10	0.003
8 LM2T ALN130❹	Neon bulb ❺ BA9s 110...125VAC	100	0.003
8 LM2T ALN250❹	Neon bulb ❺ BA9s 220...250VAC	100	0.003
8 LM2T ALP130❹	Neon bulb ❻ BA9s 110...125VAC	100	0.003
8 LM2T ALP250❹	Neon bulb ❻ BA9s 220...250VAC	100	0.003

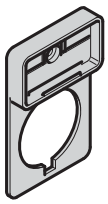
❶ Complete the order code by adding the digit of the selected colour: 3 (green); 4 (red); 5 (yellow); 6 (blue); 7 (transparent); 8 (white).
❷ Versions with different key code. Complete with the numeric code of the key. The following versions are available: 501; 502; 503; 504; 505; 506; 507; 508; 509; 510. Example of complete code: 8 LM2T A170G505. Coloured key versions are available on request; consult Technical support; see contact details on inside front cover.
❸ Add the digit of the selected colour: 3 (green); 4 (red); 5 (yellow). It is advisable to use the same colour of bulb as of the actuator to obtain adequate light emission.
❹ Neon bulbs emit an amber light and may not be suitable for use with green or blue pilot lights and illuminated actuators.
❺ Glass with diffuser lens.
❻ Plastic neon bulb.

Dimensions
page 7-52

Accessories and spare parts

8 LM2T AT...

8 LM2T AU100



8 LM2T AU105

8 LM2T AU108
8 LM2T AU106

8 LM2T AU170

8 LM2T AU159

LPX DIN

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
8 LM2T AT...❶	Printed label to be inserted in pilot lights and illuminated pushbuttons	50	0.001
8 LM2T AU100❷	Legend holder	50	0.001
8 LM2T AU105❷	Legend holder (for 8 LM2T AU106 paper or 8 LM2T AU108 plastic labels)	50	0.003
8 LM2T AU106	Blank paper label for writing (for LM2T AU105)	50	0.002
8 LM2T AU107	Transparent protection for LM2T AU106 label	50	0.001
8 LM2T AU108	Blank plastic label for engraving (for LM2T AU105)	50	0.002
8 LM2T AU13❸	IP66 boot for pushbuttons LM2T B1/R1...	10	0.006
8 LM2T AU14❸	IP66 boot for pushbuttons LM2T B2/B3//BL2/R2...	10	0.009
8 LM2T AU157	IP66 boot for double and triple buttons (transparent)	10	0.007
8 LM2T AU159	Shroud for buttons 8 LM2T B62/63/65/66..., 8 LM2T BL62...	10	0.010
LPX DIN	Adapter for mounting 8 LM2T... buttons on DIN rail 35mm/1.38" wide (2 modules)	10	0.008
8 LM2T AU167	IP66 protective boot for mushroom head buttons LM2T B62/B63... (transparent)	10	0.012
8 LM2T AU170	Actuator gasket	10	0.006

❶ Available only on specific request, consult Technical support; see contact details on inside front cover.
❷ To preserve actuators degree of protection (IP65) place their gasket between legend holder and mounting surface.
❸ For flush and extended push-buttons, complete the order code by adding the digit of the required colour: 2 (black); 3 (green); 4 (red); 5 (yellow); 6 (blue); 7 (transparent); 8 (white).
For illuminated push-buttons, add only digit 7 (transparent).

Labels with text for LM2T AU100 legend holder

8 LM2T AGB230

Order code	Text	Qty per pkg	Wt
		n°	[kg]
General use.			
8 LM2T AU206	Blank for writing	50	0.001
8 LM2T AU207	Sheet with 108 labels for laser printing❶	1❷	0.005
8 LM2T AU208❸	Sheet with 108 laser-printed labels❶	1❷	0.005
8 LM2T AGB210	LATCH	50	0.001
8 LM2T AGB211	OPEN	50	0.001
8 LM2T AGB212	STOP	50	0.001
8 LM2T AGB213	GENERAL STOP	50	0.001
8 LM2T AGB214	STOP RESET	50	0.001
8 LM2T AGB215	FORWARD	50	0.001
8 LM2T AGB216	CLOSE	50	0.001
8 LM2T AGB217	RIGHT	50	0.001
8 LM2T AGB218	LOWER	50	0.001
8 LM2T AGB219	OFF	50	0.001
8 LM2T AGB220	EMERGENCY	50	0.001
8 LM2T AGB221	OFF	50	0.001
8 LM2T AGB222	REVERSE	50	0.001
8 LM2T AGB223	ON	50	0.001
8 LM2T AGB237	THERMAL TRIP	50	0.001
8 LM2T AGB224	SLOW	50	0.001
8 LM2T AGB225	RUNNING	50	0.001
8 LM2T AGB226	RESET	50	0.001
8 LM2T AGB227	RAISE	50	0.001
8 LM2T AGB228	LEFT	50	0.001
8 LM2T AGB229	POWER ON	50	0.001
8 LM2T AGB225	START	50	0.001
8 LM2T AGB230	STOP	50	0.001
8 LM2T AGB214	STOP-RESET	50	0.001
8 LM2T AI231	FAST	50	0.001
For selector switches.			
8 LM2T AI232	STOP-START	50	0.001
8 LM2T AI233	AUTO-MAN	50	0.001
8 LM2T AI234	AUTO-O-MAN	50	0.001
8 LM2T AI242	MAN-O-AUTO	50	0.001
8 LM2T AI235	FWD-O-REV	50	0.001
8 LM2T AI236	ON - OFF	50	0.001
8 LM2T AI241	MAN-AUTO	50	0.001
8 LM2T AGB232	STOP-START	50	0.001
8 LM2T AGB236	OFF-ON	50	0.001
International labels for pushbuttons.			
8 LM2T AU200	O	50	0.001
8 LM2T AU201	I	50	0.001
8 LM2T AU202	II	50	0.001
International labels for selector switches.			
8 LM2T AU203	O-I	50	0.001
8 LM2T AU204	I-II	50	0.001
8 LM2T AU205	I-O-II	50	0.001

❶ Recommended use with LM2T AU206 blank label.
❷ Sheet with 108 adhesive labels.
❸ Complete code with label text required.

General characteristics
The labels have indelible scratch-proof black lettering on metalised grey polycarbonate background (adhesive).

Special versions
Labels in different languages are available.
Consult Technical support; see contact details on inside front cover.

Plastic disk for mushroom head pushbuttons

8 LPX AU123

new

new

Ordering code	Text	Qty per pkg	Wt
		n°	[kg]
Ø90mm/3.5".			
8 LM2T AU112	EMERGENCY STOP	10	0.005
8 LM2T AU113	EMERGENCY STOP	10	0.005
8 LPX AU124	IEC60417-5630 symbol according to ISO 13850	10	0.005
Ø60mm/2.4".			
8 LM2T AU114	EMERGENCY STOP	10	0.003
8 LM2T AU115	EMERGENCY STOP	10	0.003
8 LM2T AU118	ARRET D'URGENCE / NOT-AUS / PARO EMERGENCIA	10	0.003
8 LPX AU123	IEC60417-5630 symbol according to ISO 13850	10	0,005

General characteristics
The disks are made of non-adhesive plastic.
It is not possible use plastic disks with protection 8 LM2T AU159.

Special versions
The disk text in different languages is available.
Consult Technical support; see contact details on inside front cover.

Mounting adapter

8 LM2T AU120

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Only for metal series LM2T actuators.			
8 LM2T AU120	Mounting adapter	10	0.019

Contact elements

8 LM2T C...

8 LM2T E...

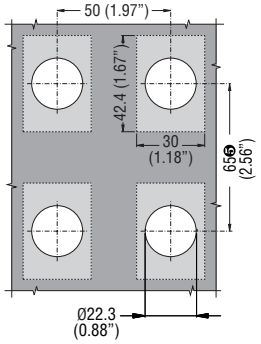
8 LM2T CF01

8 LM2T CF10

Order code	Function	Qty per pkg	Wt
		n°	[kg]
Screw termination. Without mounting adapter			
8 LM2T C10❶	.3 .4 NO❶	10	0.011
8 LM2T C10A	.7 .8 EM❷	10	0.011
8 LM2T C01 ⊖	.1 ⊖ .2 NC❸	10	0.011
8 LM2T C01D❶	.5 .6 LB❶❹	10	0.011
Screw termination. With mounting adapter.			
8 LM2T E10❶	.3 .4 NO❶	10	0.029
8 LM2T E01 ⊖	.1 ⊖ .2 NC❸	10	0.029
Faston termination Without mounting adapter			
8 LM2T CF10❶	.3 .4 NO❶	10	0.012
8 LM2T CF01 ⊖	.1 ⊖ .2 NC❸	10	0.012

❶ Use LM2T C10A (EM) or LM2T C01 (NC) type only with push-push actuators. **Not suitable for push-push actuators.**
❷ Normally open contact with early make operation.
❸ Direct (positive) opening action ⊖ in accordance with IEC/EN 60947-5-1.
❹ Normally closed contact with late break operation.

Drillings - Minimum recommended distances



❺ Using contacts with Faston elements, the minimum vertical pitch is 90mm/3.54".

Operational characteristics
- Any mounting position allowed
- The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft) also internally on LPZ control stations covers
- Contact elements snap onto the adapter
- Maximum tightening torque for screw terminals: 1Nm
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+70°C
- Degree of protection:
  - IP20 for contacts elements with screw termination
  - IP00 for contact elements with Faston termination.

General characteristics of contact elements
Wiping action and dual scraping and oscillating effect,
IEC rated insulation voltage: 690V
IEC rated thermal current Ith: 10A
Conductivity: 5V 10mA.
UL/CSA and IEC/EN 60947-5-1 designation: A600 Q600.
IEC/EN operational characteristics in AC15 category:

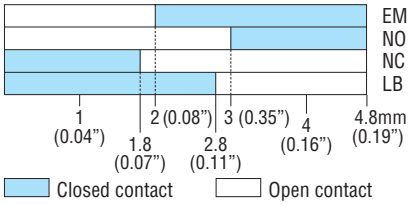
[V]	12	24	48	120	240	400	480	500	600
[A]	6	6	6	6	3	1.9	1.5	1.4	1.2

IEC/EN operational characteristics in DC13 category:

[V]	12	24	48	125	250	440	500	600
[A]	3	3	1.5	0.55	0.27	0.15	0.13	0.1

Short-circuit protection fuse: max. calibre 10A gG/SC
Contact resistance: ≤20mΩ
Terminals: Clamp screw with washer
Faston 1-6.35mm/0.25" or 2-2.8mm/0.11".

Stroke of contact elements



Maximum conductor cross section for screw terminals 1 or 2 2.5mm² or AWG12 cables.

Mechanical and electric endurance
Operating force: 0.5kg / 1.1lb (contact elements).
Electrical life:

LM2T C10	1,000,000 cycles
LM2T CF10	1,000,000 cycles
LM2T C01	1,000,000 cycles
LM2T CF01	1,000,000 cycles
LM2T C10A	600,000 cycles
LM2T C01D	600,000 cycles.

Certifications and compliance
Certifications obtained: RINA, LROS, EAC, CCC,
UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices.
Compliant with standards: IEC/EN 60947-1,
IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

Lamp-holder elements without mounting adapter

8 LM2T EL400
8 LM2T ZL230

8 LM2T YL...
8 LM2T GL...

Order code	Rated supply voltage	Type of bulb supplied	Qty per pkg	Wt
	[V] 50/60Hz		n°	[kg]
Direct supply.				
8 LM2T EL400❶	≤415VAC/DC	No	10	0.011
With resistor and diode.				
8 LM2T ZL230❹	230VAC	Yes 130V (2W)	10	0.015
With transformer❽.				
8 LM2T YL110❷	110...120VAC	Yes 24V (1.2W)	1	0.086
8 LM2T YL230❷	220...240VAC	Yes 24V (1.2W)	1	0.084
8 LM2T YL400❷	380...415VAC	Yes 24V (1.2W)	1	0.087
Flashing❽.				
8 LM2T GL048❷❸	24...48VAC	No	1	0.027
8 LM2T GL230❷❸	110...230VAC	No	1	0.027

Lamp-holder elements with mounting adapter

8 LM2T DL400

Order code	Rated supply voltage	Type of bulb supplied	Qty per pkg.	Wt
	[V] 50/60Hz		n°	[kg]
Direct supply.				
8 LM2T DL400❶	≤415VAC/DC	No	10	0.029

Test element for lamp-holders without mounting adapter

8 LM2T T100

Order code	Description	Qty per pkg.	Wt
		n°	[kg]
Test element for lamp-holders.			
8 LM2T T100	Test element ❺❻❼	10	0.011

❶ Filament bulb, BA9s U≤130VAC/DC max 2.6W (not supplied); maximum dimensions 11x28 mm.
For higher voltages, use neon bulbs.
❷ Not suitable for 3-position selectors.
❸ Filament bulb, BA9s (not supplied); maximum dimensions 11x28mm/0.4x1.1".
Use bulbs with rated voltage equal to that of the power supply.
Suitable for AC duty only.
E.g.: With 8 LM2T FL230, use 110VAC bulbs if power supply is 110VAC and 230VAC bulbs if power supply 230VAC. 2.6W max bulb rating.
❹ MultiLED bulbs must not be fitted.
❺ In case of test circuits for lamp-holders having load in parallel, two LM2T T100 elements are required for each bulb.
Refer to the wiring diagram attached to the product or consult Technical support; see contact details on inside front cover.
❻ In case of neon bulbs, consult Technical support; see contact details on inside front cover.
❼ Only use with lamp-holder elements:
• With direct supply
• With resistor and diode
❽ Not suitable for use with test element.

Operational characteristics
- Operating supply voltage limits for all types: -15…+10% Ue
- Any mounting position allowed
- The adapter is fixed to the mounting surface by means of incorporated screws (Tmax = 0.8Nm/0.59lbft) also internally on LPZ control stations covers
- Lamp-holder elements snap onto the adapter
- Only lamp-holder elements LM2T DL400, LM2T EL400, LM2T T100 and LM2T ZL230 can be used with LPZ control stations
- Maximum tightening torque: 1Nm/1.57lbft
- Ambient conditions:
  • Operating temperature: -25...+60°C
  • Storage temperature: -40...+70°C
- Degree of protection: IP20.

Mounting adapter
See page 7-41.
Type : LM2T AU120 for LM2T EL400, LM2T ZL230, LM2T YL..., LM2T GL... and/or LM2T T100.

Maximum conductor cross section
1 or 2 2.5mm² or AWG 12 cables.

Wiring diagrams
Direct supply
LM2T EL400
LM2T DL400

With resistor and diode
LM2T ZL230

With transformer
LM2T YL...

Flashing
LM2T GL...

Test element
LM2T T100

Certifications and compliance
Certifications obtained: RINA, LROS, GOST, CCC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.

LED elements steady light

8 LM2T L…

Order code	Supply voltage	LED colour	Qty per pkg.	Wt
	[V]		n°	[kg]
Screw termination. Supplied without mounting adapter.				
8 LM2T LB3❶	12…30VAC/DC	Green	10	0.016
8 LM2T LB4❶		Red	10	0.016
8 LM2T LB5❶		Yellow	10	0.016
8 LM2T LB6❶		Blue	10	0.016
8 LM2T LB8❶		White	10	0.016
8 LM2T LE3	85…140VAC	Green	10	0.016
8 LM2T LE4		Red	10	0.016
8 LM2T LE5		Yellow	10	0.016
8 LM2T LE6		Blue	10	0.016
8 LM2T LE8		White	10	0.016
8 LM2T LM3	185…265VAC	Green	10	0.016
8 LM2T LM4		Red	10	0.016
8 LM2T LM5		Yellow	10	0.016
8 LM2T LM6		Blue	10	0.016
8 LM2T LM8		White	10	0.016

❶ Only LM2T LB… type is suitable for use with LM2T T100 test element.

LED elements flashing light

8 LM2T M…

Order code	Supply voltage	LED colour	Qty per pkg.	Wt
	[V]		n°	[kg]
Screw termination. Supplied without mounting adapter.				
8 LM2T MB3❷	18…30VAC/DC	Green	10	0.016
8 LM2T MB4❷		Red	10	0.016
8 LM2T MB5❷		Yellow	10	0.016
8 LM2T MB6❷		Blue	10	0.016
8 LM2T MB8❷		White	10	0.016
8 LM2T ME3	85…140VAC	Green	10	0.016
8 LM2T ME4		Red	10	0.016
8 LM2T ME5		Yellow	10	0.016
8 LM2T ME6		Blue	10	0.016
8 LM2T ME8		White	10	0.016
8 LM2T MM3	185…265VAC	Green	10	0.016
8 LM2T MM4		Red	10	0.016
8 LM2T MM5		Yellow	10	0.016
8 LM2T MM6		Blue	10	0.016
8 LM2T MM8		White	10	0.016

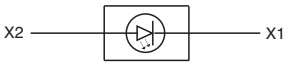
❷ Only LM2T MB… type is suitable for use with LM2T T100 test element.

Operational characteristics
- Rated frequency: 50-60Hz
- Supply voltage:
  - Steady light: 12...30VAC/DC; 85...140VAC; 185...265VAC
  - Flashing light: 18...30VAC/DC; 85...140VAC, 185...265VAC
- Maximum consumption:
  - Steady and flashing light: 17mA-0.50W (12...30VAC/DC); 20mA-0.40W (85...140VAC); 18mA-0.55W (185...265VAC)
- Protection:
  - Against overvoltages
  - Against stray currents in wiring
  - To reduce flickering phenomenon
  - To withstand vibrations
- Minimum activation voltage:
  - Steady light: 4V-1mA (12...30VAC/DC); 30V-4mA (85...140VAC); 55V-4mA (185...265VAC)
  - Flashing light: 5V-1.5mA (18...30VAC/DC); 13V-1.5mA (85...140VAC); 25V-1.5mA (185...265VAC)
- Electrical life: 100,000 hours
- Snap onto 8 LM2T AU120 mounting adapter in the middle position for each illuminated actuator, also internally on the LPZ control station cover
- No other element can be stacked behind LED elements
- Any mounting position allowed
- Maximum tightening torque: 1Nm
- Ambient conditions:
  - Operating temperature: -25...+60°C
  - Storage temperature: -40...+85°C
- Degree of protection: IP20.

Mounting adapter
See page 7-41. Type: LM2T AU120.
The adapter is fixed on the mounting surface by means of incorporated screws (Tmax=0,8Nm/0.59lbft).

Maximum conductor cross section
1 or 2 2.5mm^2 or AWG12 cables.

Wiring diagram



Certifications and compliance
Certifications obtained: EAC, CCC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14-95.

Enclosures with cut-outs for Ø22mm units


LPZ M1 A5


LPZ M1 A5P


LPZ M1 A8

new


LPZ M2 A5


LPZ M2 A8


LPZ M3 A8


LPZ M4 A8


LPZ M5 A8


LPZ M6 A8


LPZ M4C A8


LPZ M6C A8


LPZ M8C A8


LPZ M12C A8


LPZ M16C A8

Order code	Description	Cover colour	Qty per pkg.	Wt.
			n°	[kg]
With holes.				
LPZ M1 A5	For 1 actuator	Yellow	1	0.343
LPZ M1 A5P	For 1 actuator with shroud	Yellow	1	0.382
LPZ M1 A8	For 1 actuator	Grey	1	0.349
LPZ M2 A5	For 2 actuators	Yellow	1	0.456
LPZ M2 A8	For 2 actuators	Grey	1	0.458
LPZ M3 A8	For 3 actuators	Grey	1	0.603
LPZ M4 A8	For 4 actuators	Grey	1	0.581
LPZ M5 A8	For 5 actuators	Grey	1	0.680
LPZ M6 A8	For 6 actuators	Grey	1	0.671
With multiholes.				
LPZ M4C A8	For 4 actuators	Grey	1	0.570
LPZ M6C A8	For 6 actuators	Grey	1	0.660
LPZ M8C A8	For 8 actuators	Grey	1	1.060
LPZ M12C A8	For 12 actuators	Grey	1	1.360
LPZ M16C A8	For 16 actuators	Grey	1	1.650

General characteristics
Control stations made of aluminium alloy suitable for pushbuttons, selector switches and pilot lights Platinum and 8LM series. Maximum 3 contacts for operator (with mounting adapter) mounted on the cover.

Operational characteristics
– Cable entry❶: Ø21mm (for M20 or PG13.5 cable gland)
– Degree of protection:
  • IEC/EN: IP66 and IP67
  • UL: NEMA 4X
– Earth connection through threaded holes on the base and on the cover (screws supplied)
– Ambient conditions:
  • Operating temperature: -25...+70°C
  • Storage temperature: -40...+85°C.

Certifications and compliance
Certifications obtained: cULus for LPZM1A5...LPZM6A8 codes (series with holes).
Certifications pending: cULus for multiholes LPZM...C type.
Compliant with standards: IEC/EN 60947-5-1.

❶ Not available for multiholes LPZM...C type.

Order codes	Dimensions (X, Y, Z) [mm (in)]	n° of rows vertical	n° of rows horizontal
LPZ M1 A5/A8	80x80x73 (3.15x3.15x2.87")	1	1
LPZ M1 A5P	80x80x108 (3.15x3.15x4.25")	1	1
LPZ M2 A5/A8	80x130x73 (3.15x5.12x2.87")	1	2
LPZ M3 A8	80x170x73 (3.15x6.69x2.87")	1	3
LPZ M4 A8	80x170x73 (3.15x6.69x2.87")	1	4
LPZ M5 A8	80x230x73 (3.15x9.05x2.87")	1	5
LPZ M6 A8	80x230x73 (3.15x9.05x2.87")	1	6
LPZ M4C A8	80x170x73 (3.15x6.69x2.87")	2	2
LPZ M6C A8	80x230x73 (3.15x9.05x2.87")	2	3
LPZ M8C A8	160x160x90 (6.30x6.30x3.54")	4	2
LPZ M12C A8	170x190x90 (6.69x7.48x3.54")	4	3
LPZ M16C A8	190x250x90 (7.48x9.84x3.54")	4	4

Enclosures


LPZ M1 E5


LPZ M1 E8

new


LPZ M2 E8


LPZ M3 E8


LPZ M4 E8


LPZ M5 E8


LPZ M6 E8


LPZ M7 E8

Order code	Dimensions (X, Y, Z)	Cover colour	Qty per pkg.	Wt.
	[mm]		n°	[kg]
LPZ M1 E5	80x80x73 (3.15x3.15x2.87")	Yellow	1	0.346
LPZ M1 E8	80x80x73 (3.15x3.15x2.87")	Grey	1	0.352
LPZ M2 E8	80x130x73 (3.15x5.12x2.87")	Grey	1	0.462
LPZ M3 E8	80x170x73 (3.15x6.69x2.87")	Grey	1	0.600
LPZ M4 E8	80x230x73 (3.15x9.05x2.87")	Grey	1	0.680
LPZ M5 E8	160x160x90 (6.30x6.30x3.54")	Grey	1	1.100
LPZ M6 E8	170x190x90 (6.69x7.48x3.54")	Grey	1	1.400
LPZ M7 E8	190x250x90 (7.48x9.84x3.54")	Grey	1	1.700

General characteristics
Enclosures made of aluminium alloy suitable for pushbuttons, selector switches and pilot lights Platinum and 8LM series. The enclosures are supplied without any holes on the cover and on the base (no cable entry). Maximum 3 contacts for operator (with mounting adapter) mounted on the cover.

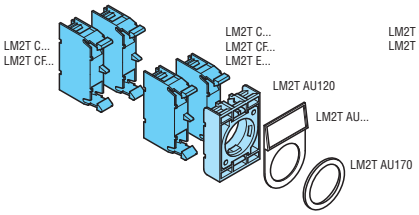
Operational characteristics
- Degree of protection:
  - IEC/EN: IP66 and IP67
  - UL: NEMA 4X
- Earth connection through threaded holes on the base and on the cover (screws supplied)
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+85°C.

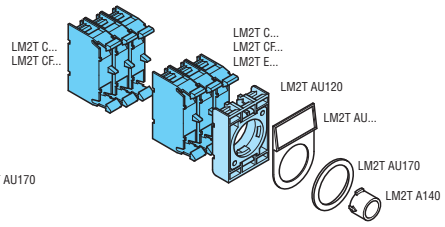
Certifications and compliance
Certifications pending: cULus.
Compliant with standards: IEC/EN 60947-5-1.

Order code	Max. operator number	n° of rows vertical	n° of rows horizontal
LPZ M1 E5/E8	1	1	1
LPZ M2 E8	2	1	2
LPZ M3 E8	4	1	3
LPZ M4 E8	6	1	5
LPZ M5 E8	8	4	2
LPZ M6 E8	12	4	3
LPZ M7 E8	16	4	4

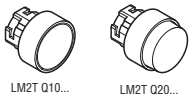
COMBINATIONS FOR METAL SERIES PUSHBUTTONS AND SELECTOR SWITCHES

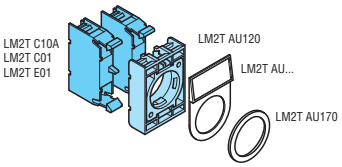
SPRING-RETURN BUTTONS



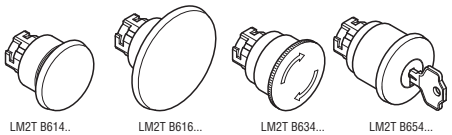


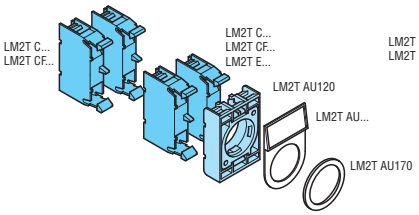
PUSH-PUSH BUTTONS

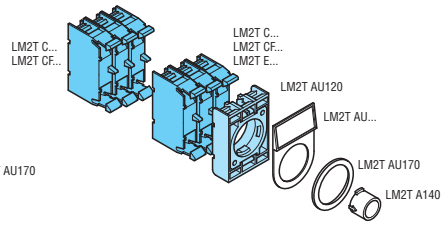




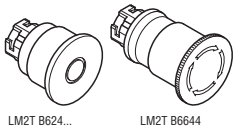
NORMAL STOPPING MUSHROOM-HEAD BUTTONS

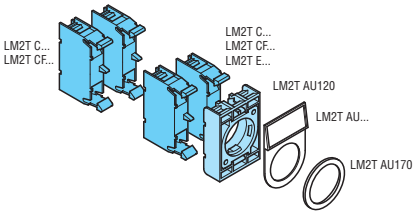




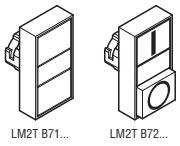


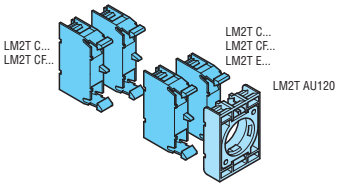
MUSHROOM-HEAD LATCH BUTTONS



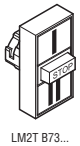


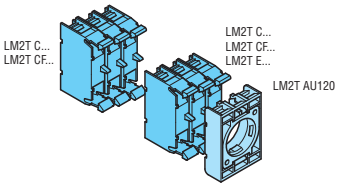
DOUBLE-TOUCH BUTTONS



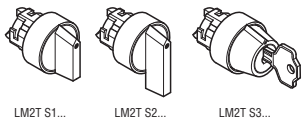


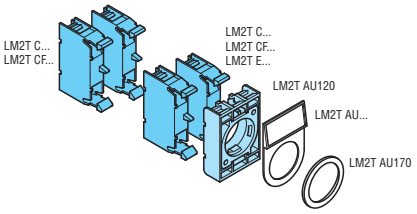
TRIPLE-TOUCH BUTTONS





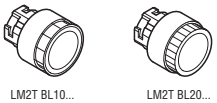
SELECTOR SWITCHES



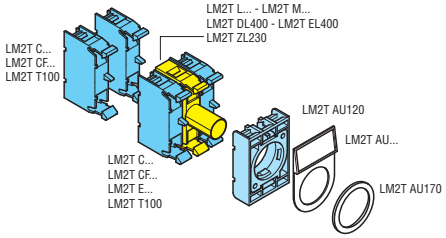


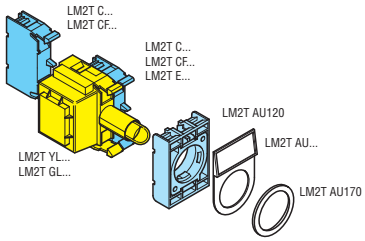
COMBINATION FOR METAL SERIES ILLUMINATED PUSHBUTTONS AND SELECTOR SWITCHES

SPRING-RETURN BUTTONS


LM2T BL10...

LM2T BL20...

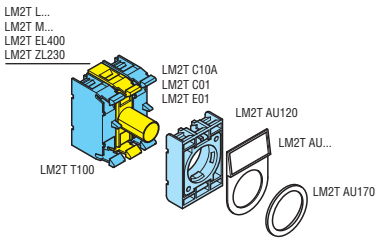


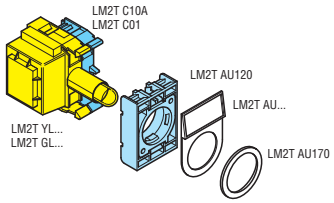


PUSH-PUSH BUTTONS


LM2T QL10...

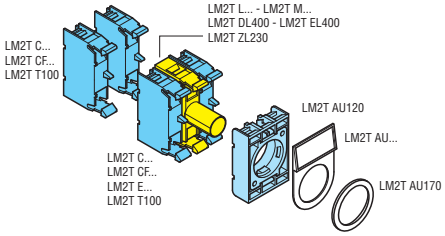
LM2T QL20...

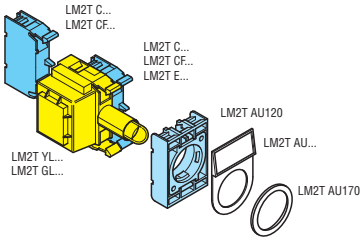




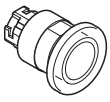
MUSHROOM-HEAD SPRING-RETURN BUTTON

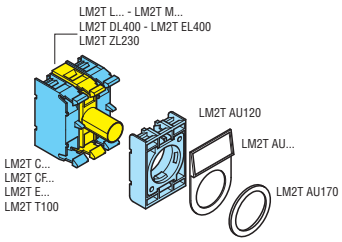

LM2T BL614...

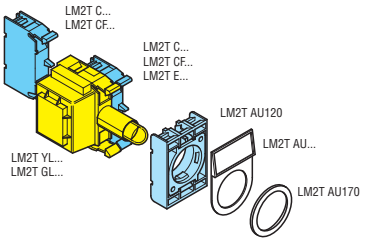




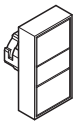
MUSHROOM-HEAD LATCH BUTTON

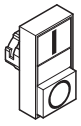

LM2T BL624...

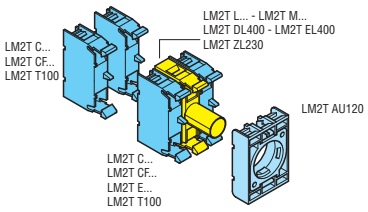




DOUBLE-TOUCH BUTTONS

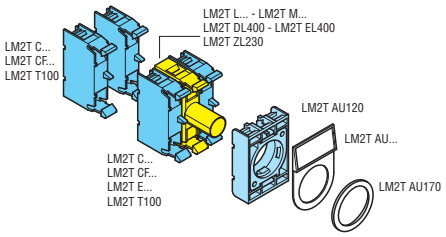

LM2T BL71...

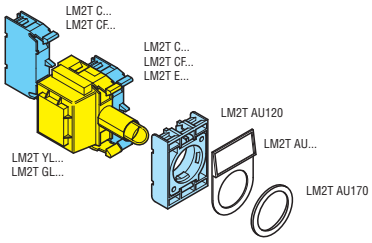

LM2T BL72...



2-POSITION SELECTOR SWITCHES

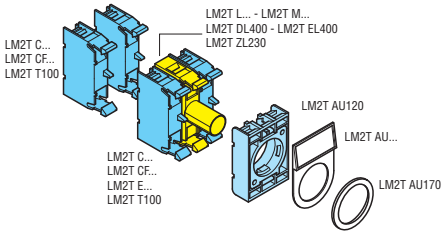

LM2T SL12...





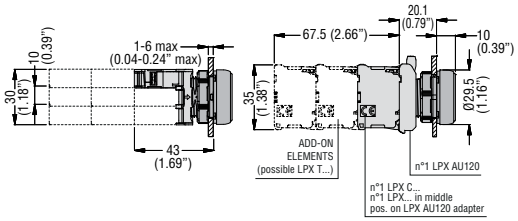
3-POSITION SELECTOR SWITCHES


LM2T SL13...

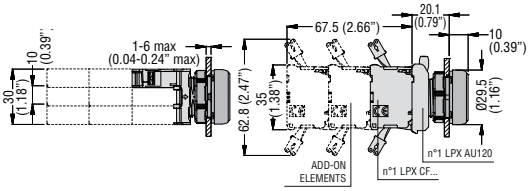


PLATINUM SERIES PUSHBUTTONS AND SELECTOR SWITCHES

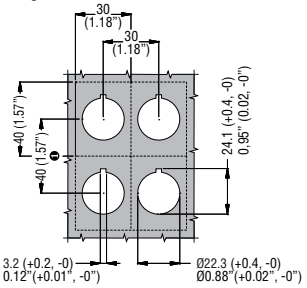
Flush pushbutton with screw terminal contact or LED or test elements



Flush pushbutton with Faston contact elements



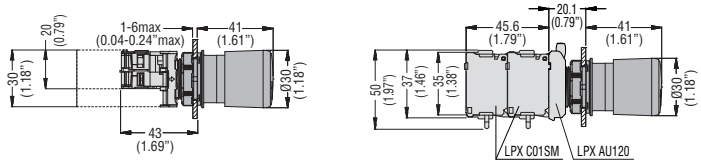
Drillings - Minimum recommended distances



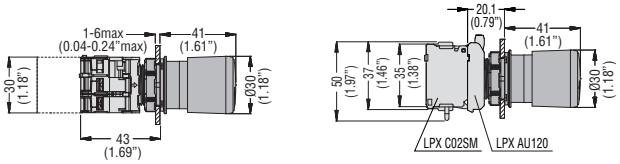
❶ When Faston contacts are used, the vertical pitch must be 85mm minimum.

Mushroom-head pushbutton with auto-monitor contacts

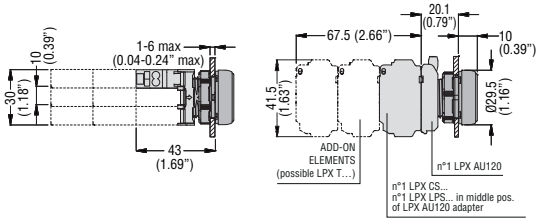
LPX C01SM



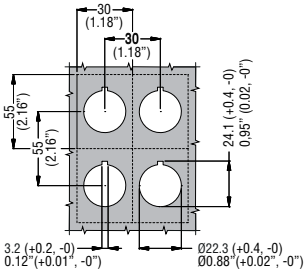
LPX C02SM



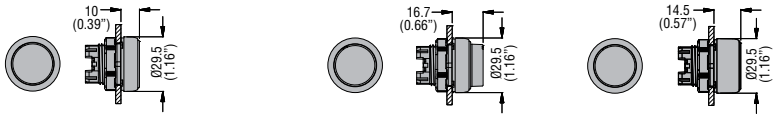
Flush pushbutton with test element and spring-clamp terminal contact or LED elements **LPX CS... - LPX LPS...**



Drillings – Minimum recommended distances with spring-clamp terminal contact or LED elements



Spring-return and push-push buttons



Flush
LPC B1...
Illuminated flush
LPC BL1...
LPX B0❷

Push-push
LPC Q1...
LPX Q0❷
Illuminated push-push
LPC QL1...

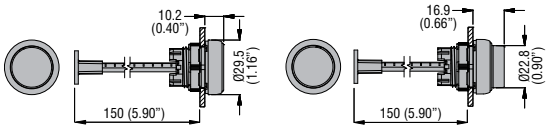
Extended
LPC B2...
Illuminated extended
LPC BL2...

Push-push
LPC Q2...
Illuminated push-push
LPC QL2...
LPX QL0❷

Shrouded
LPC B30...
LPX B3❷

❷ Complete with cap or lens.

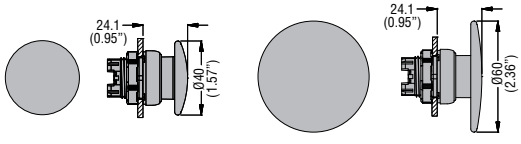
Mechanical buttons



Flush
LPC R1...

Extended
LPC R2004

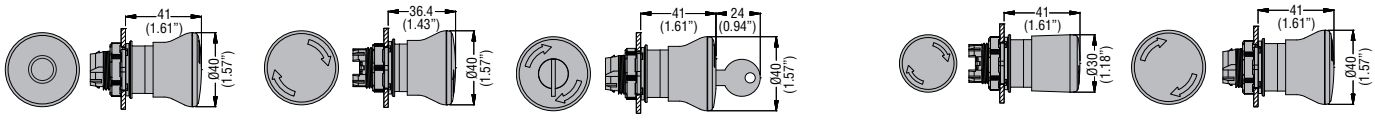
Mushroom-head button actuators



Spring return
LPC B614...
Illuminated spring return
LPC BL614...

Spring return
LPC B616...

Mushroom-head latch button actuators



Push-pull
LPC B674...

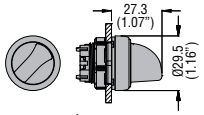
Turn to release
LPC B634...

Turn key to release
LPC B684...

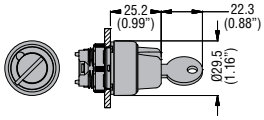
Turn to release
LPC B6634

Turn to release
LPC B6644
Illuminated turn to release
LPC BL664...

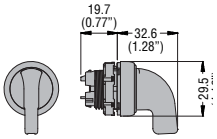
Selector switch actuators



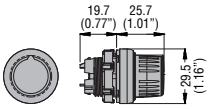
Lever
LPC S1...
Illuminated lever
LPC SL1...



Key
LPC S3...

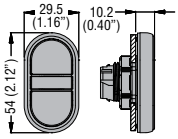


Long lever
LPC S2...



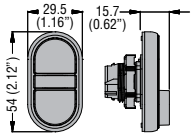
Knob
LPC S4...

Flush double-touch buttons with or without light indicator



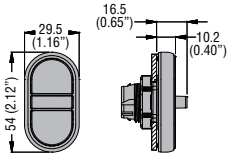
LPC B71... - LPC BL71...

Double-touch buttons with an extended button with or without light indicator



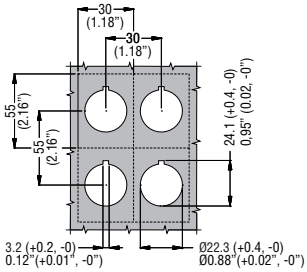
LPC B72... - LPC BL72...

Triple-touch button with middle extended button

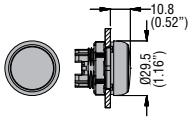


LPC B73...

Drillings - Minimum recommended distances

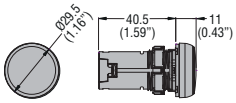


Pilot light head



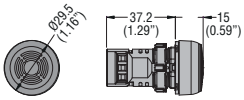
LPL...

LED-integrated monoblock pilot lights



LPM...

Monoblock buzzers

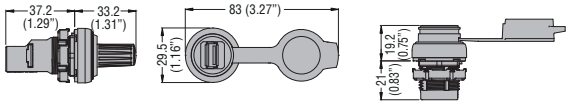


LPC ZS...

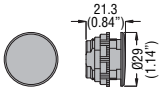
Monoblock potentiometer

LPC PA...

Communication interfaces **LPC D...**



Threaded plug for unused drilled holes

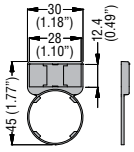


LPX A130

Knob selector switch protection

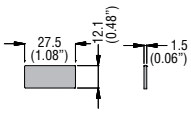
LM2T AU185

Label holder



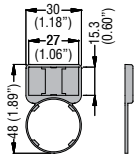
LPX AU100

Label



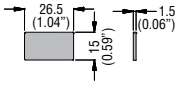
LPX AU109
LM2T A...2...

Label holder



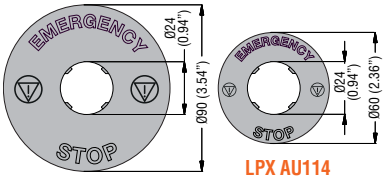
LPX AU105

Label



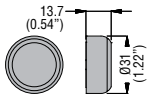
LPX AU108

Plastick disk for mushroom-head pushbuttons



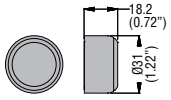
LPX AU112
LPX AU113
LPX AU114
LPX AU115
LPX AU118

Rubber boot for flush buttons



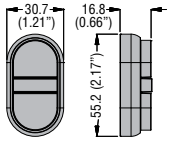
LPX AU13...

Rubber boot for extended buttons



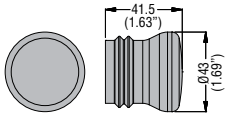
LPX AU14...

Double/triple button boot



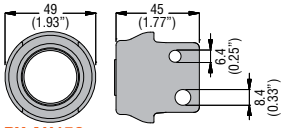
LPX AU157

Rubber boot for mushroom-head buttons



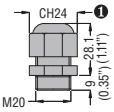
LPX AU167

Padlockable protection for mushroom-head latch buttons



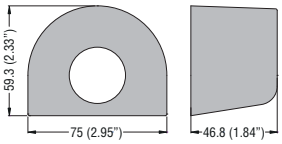
LPX AU158

Cable gland



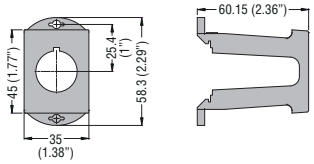
LPX P01

Shroud for mushroom-head latch buttons



LPX AU159

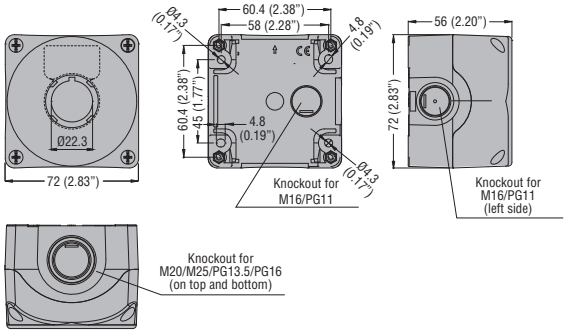
DIN rail adapter



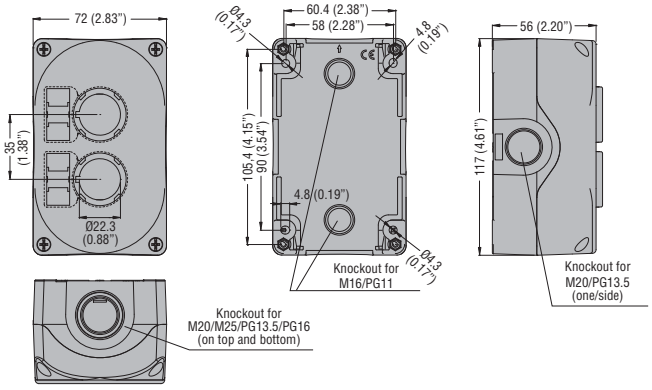
LPX DIN

CONTROL STATIONS WITHOUT ACTUATORS

LPZ P1 A5...
LPZ P1 A8...

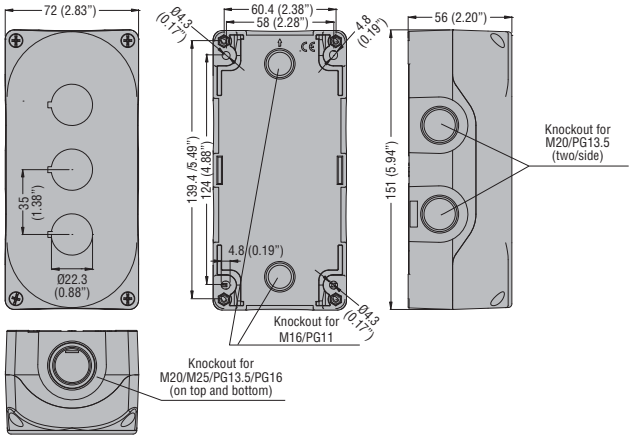


LPZ P2 A5...
LPZ P2 A8...

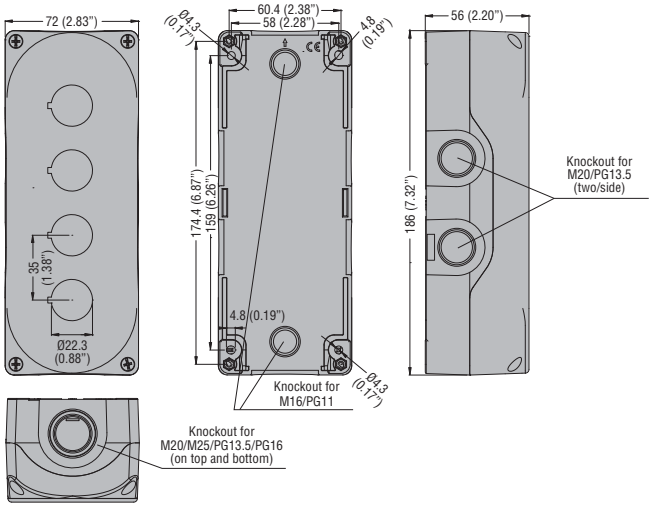


CONTROL STATIONS WITHOUT ACTUATORS

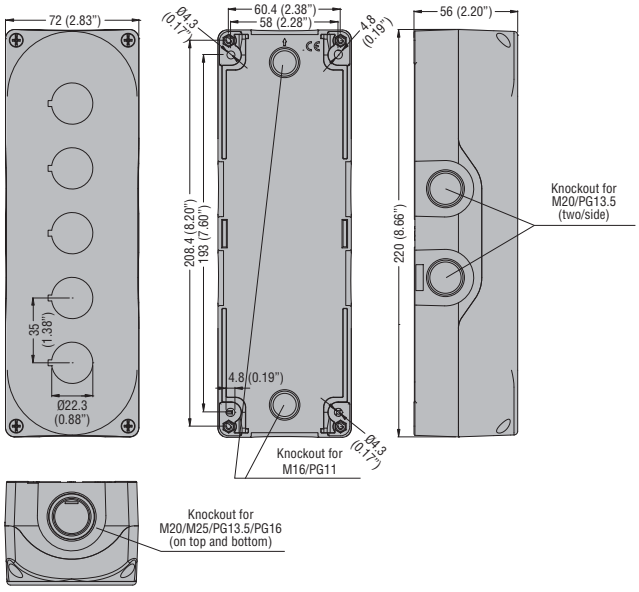
LPZ P3 A8



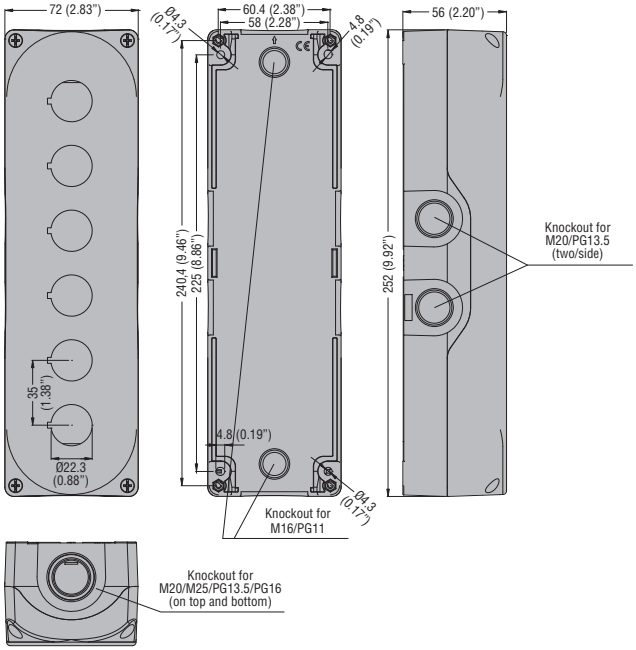
LPZ P4 A8



LPZ P5 A8

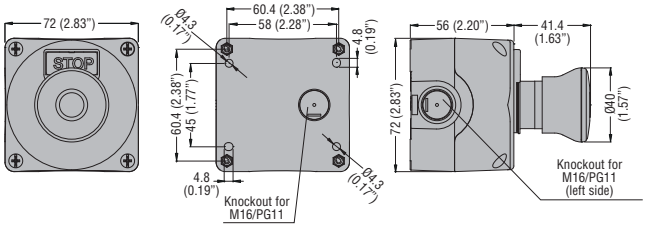


LPZ P6 A8

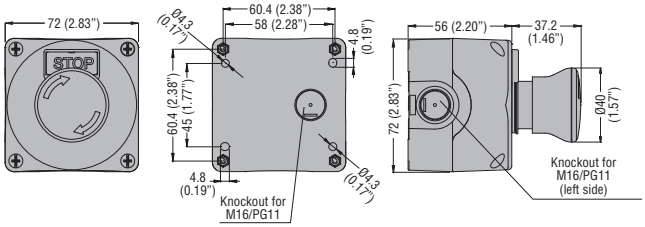


CONTROL STATIONS WITH ONE ACTUATOR

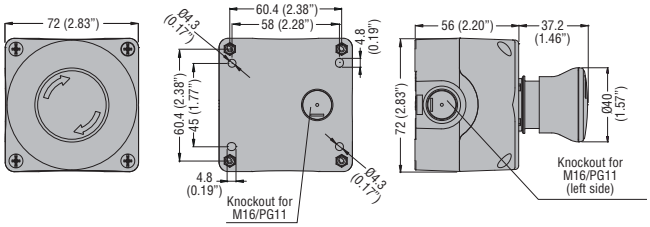
LPZ P1 B8 01



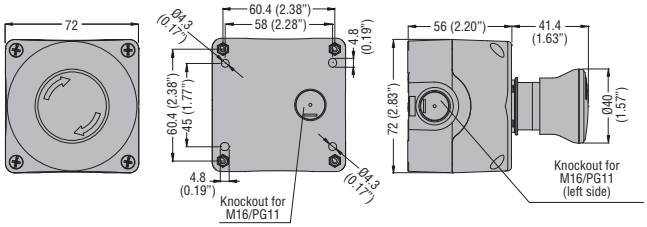
LPZ P1 B8 02



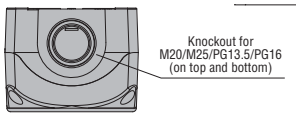
LPZ P1 B5 02



LPZ P1 B5 03

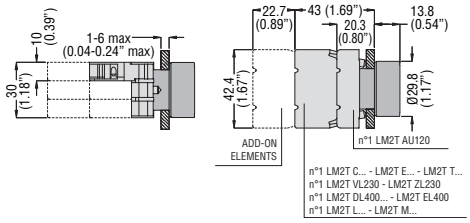


Top view for **LPZ P1...**

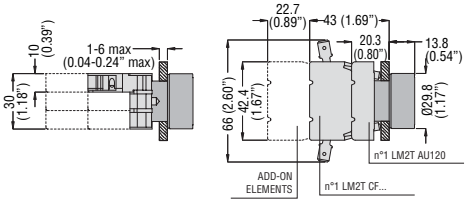


METAL PUSHBUTTONS AND SELECTOR SWITCHES 8 LM SERIES

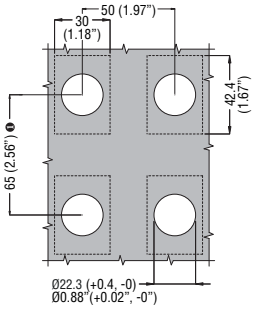
Flush pushbutton with contact or lamp-holder elements (direct or resistor-diode type) or test element



Flush pushbutton with Faston contact elements



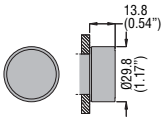
Drillings - Minimum recommended distances



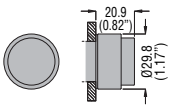
❶ When Faston contacts are used, the vertical pitch must be 90mm minimum.

7

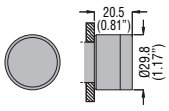
Pushbutton actuators



Flush
LM2T B1...
Push-push
LM2T Q1...

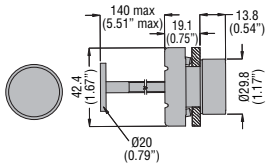


Extended
LM2T B2...
Push-push
LM2T Q2...
Illuminated extended
LM2T BL2...
Illuminated push-push
LM2T QL2...

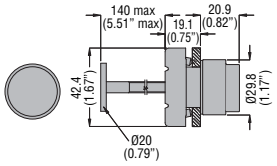


Shrouded
LM2T B30...
Illuminated flush
LM2T BL1...
Illuminated push-push
LM2T QL1...

Reset buttons (complete unit)

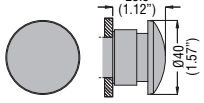


LM2T R1...

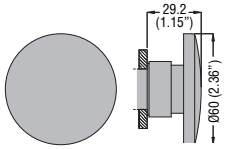


LM2T R2004

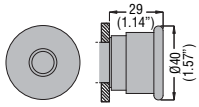
Mushroom-head button actuators



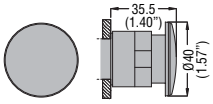
Spring return
LM2T B614...
Illuminated spring return
LM2T BL614...



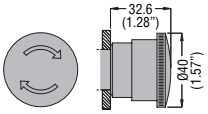
Spring return
LM2T B616...



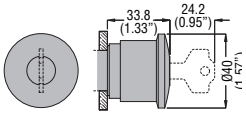
Push-pull
LM2T B624...



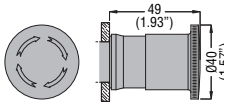
Illuminated push-pull
LM2T BL624...



Turn to release
LM2T B634...

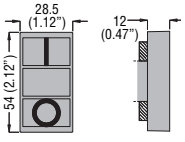


Turn key to release
LM2T B654...



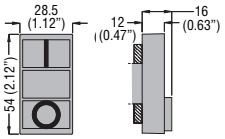
Turn to release
LM2T B6644

Double-touch actuators with or without indicator
2 flush buttons



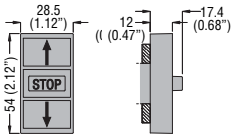
LM2T B71...
LM2T BL71...

Double-touch actuators with or without indicator
1 flush and 1 extended button



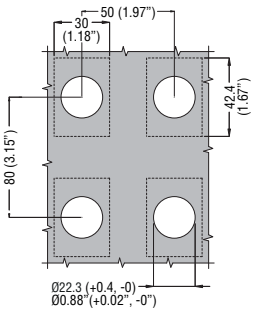
LM2T B72... -
LM2T BL72...

Triple-touch actuators with middle extended button

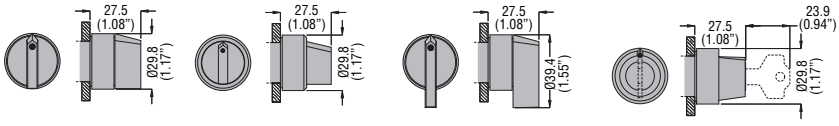


LM2T B73...

Drillings - Minimum recommended distances



Selector switch actuators



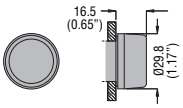
Knob
LM2T S1...

Illuminated knob
LM2T SL1...

Lever
LM2T S2...

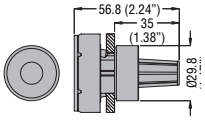
Key
LM2T S3...

Pilot light head



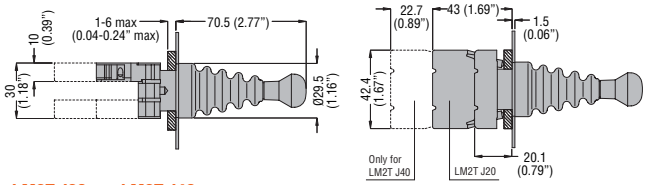
LM2T IL1...

Potentiometer drive



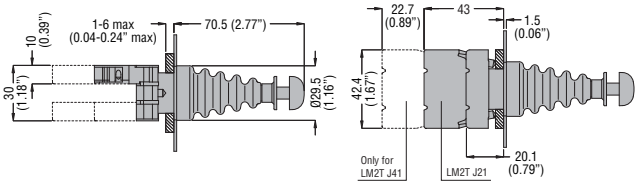
LM2T P100
LM2T P110

Joystick with free actuation lever



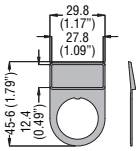
LM2T J20... - LM2T J40...

Joystick with mechanical latch lever



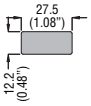
LM2T J21... - LM2T J41...

Label holder



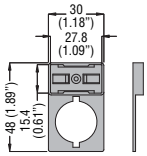
LM2T AU100

Label



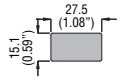
LM2T A...

Label holder



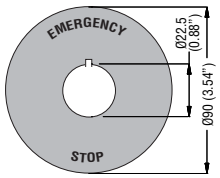
LM2T AU105

Label

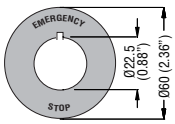


LM2T AU10...

Plastic disk for mushroom-head pushbuttons

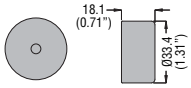


LM2T AU112
LM2T AU113



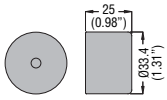
LM2T AU114
LM2T AU115
LM2T AU118

Rubber boot for flush buttons



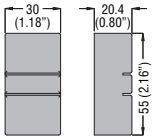
LM2T AU13...

Rubber boot for extended buttons



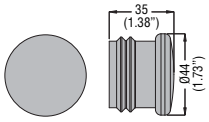
LM2T AU14...

Double/triple button boot



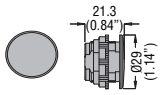
LM2T AU157

Rubber boot for mushroom-head buttons



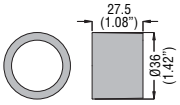
LM2T AU167

Threaded plug for unused drilled holes



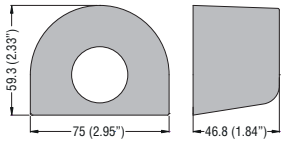
LM2T A130

Knob selector switch protection



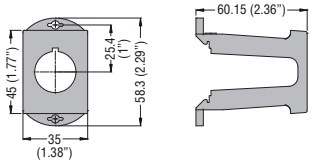
LM2T AU185

Shroud for mushroom-head latch buttons



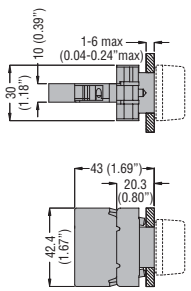
LM2T AU159

DIN rail adapter



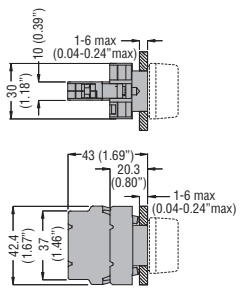
LPX DIN

Lamp-holder elements with direct supply or resistor and diode



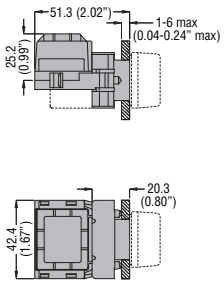
LM2T EL400
LM2T DL400
LM2T ZL230
LM2T VL230

LED steady or flashing light element



LM2T L... - LM2T M...

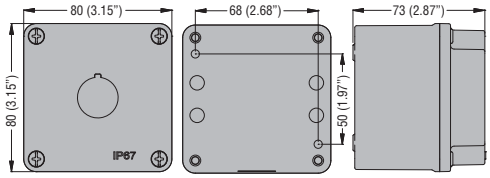
Transformer or flashing lamp holder element



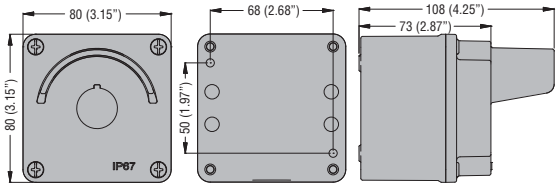
LM2T YL... - LM2T GL...

Metal control stations

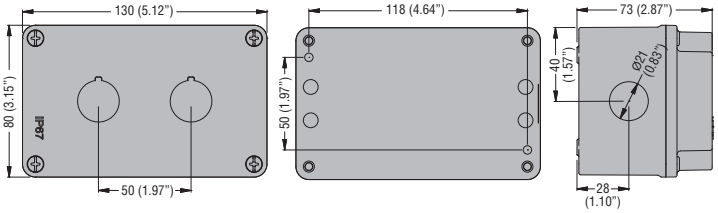
LPZ M1 A...



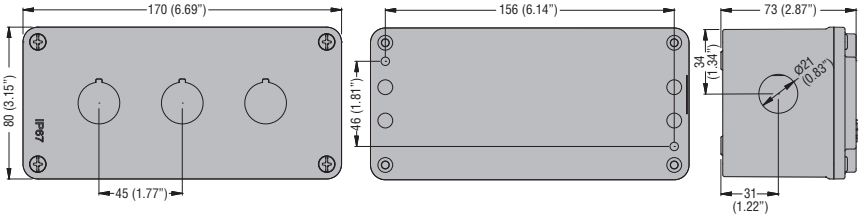
LPZ M1 A5P



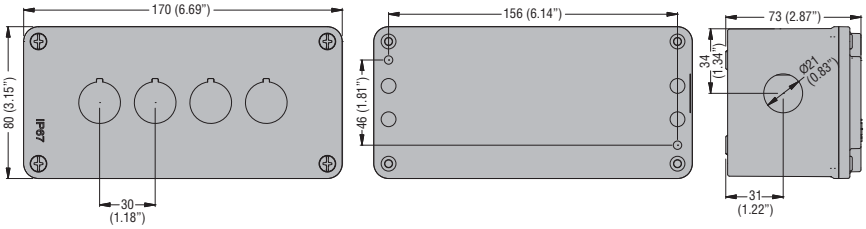
LPZ M2 A...



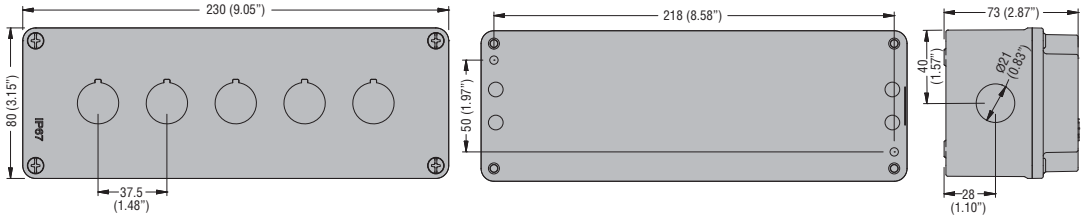
LPZ M3 A8



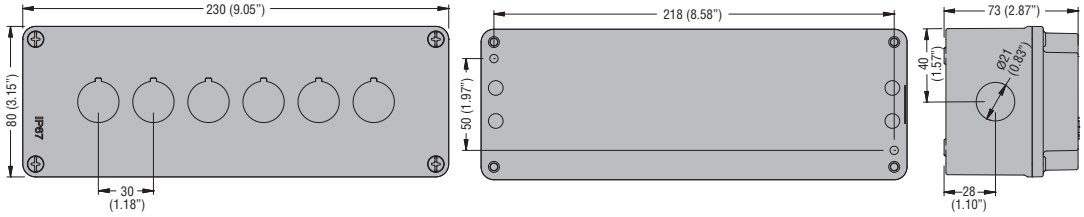
LPZ M4 A8



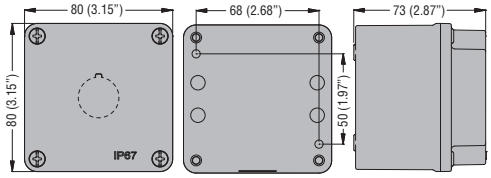
LPZ M5 A8



LPZ M6 A8



LPZ M1 E...



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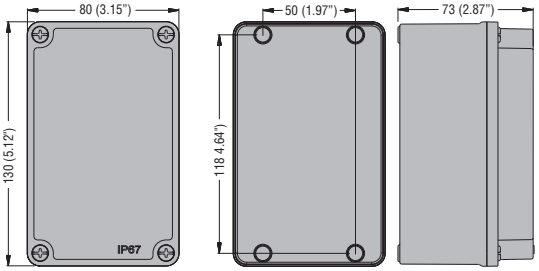
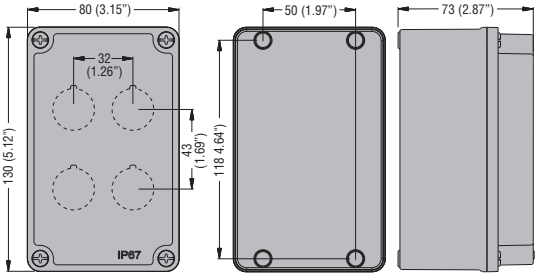
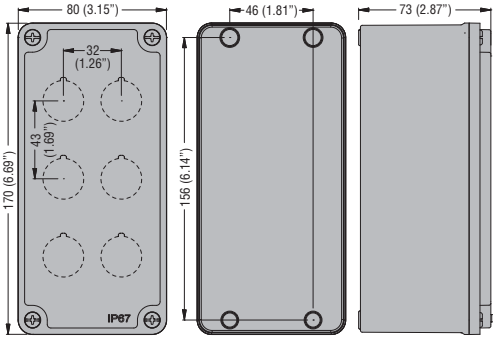


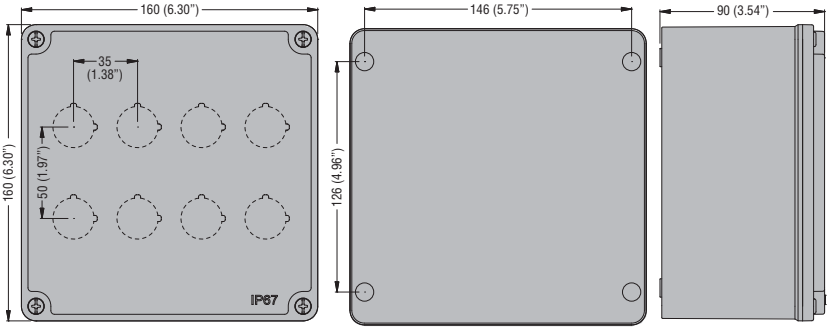
LPZ M4C A8 - LPZ M3 E8



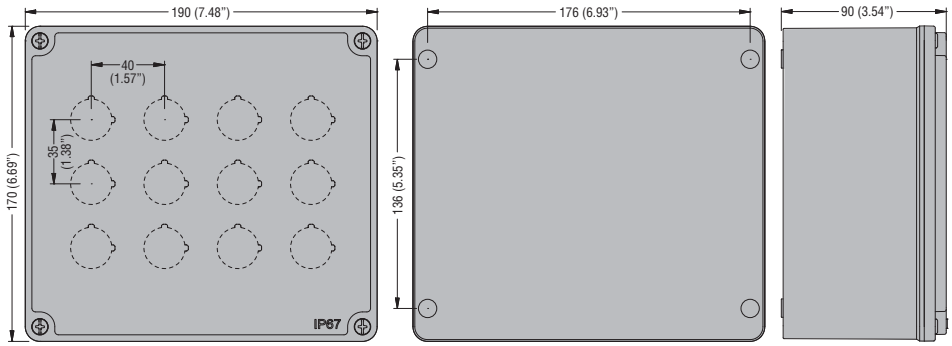
LPZ M6C A8 - LPZ M4 E8



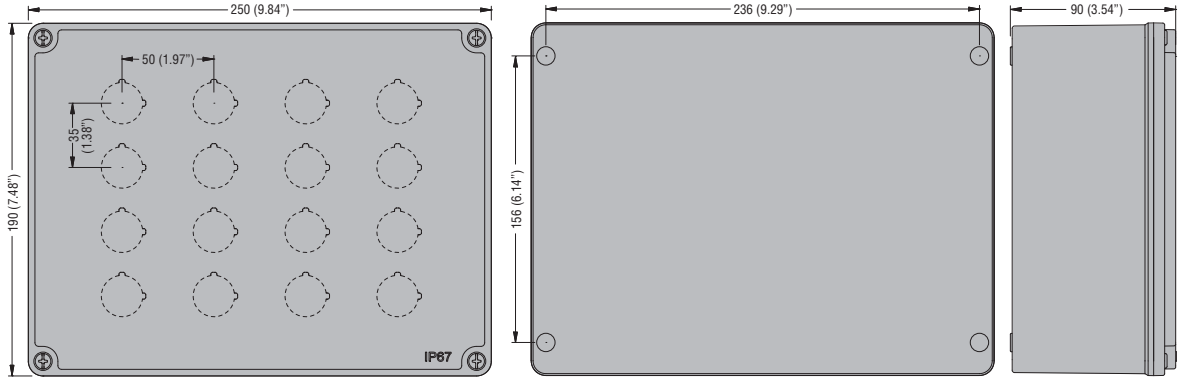
LPZ M8C A8 - LPZ M5 E8



LPZ M12C A8 - LPZ M6 E8



LPZ M16C A8 - LPZ M7 E8



FOR PUSHBUTTONS AND SELECTOR SWITCHES

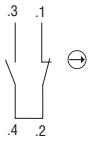
LPX C10 - LPX E10 - LPX CF10
LPX CS10 - LPX CB10
LM2T C10 - LM2T E10

LPX C10A
LM2T C10A

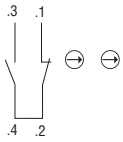
LPX C01 - LPX E01 - LPX CF01
LPX CS01 - LPX CB01
LPZ P1 B... - LM2T C01

LPX C01D
LM2T C01D

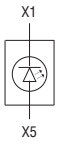
LPX C01SM



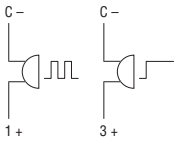
LPX C02SM



LPM...
LPX L...



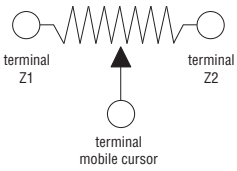
LPC ZS...



LPX T100

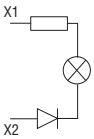
LPX T101
LPX T102

LPC PA...

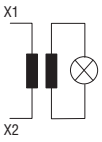


LM2T EL400
LM2T DL400

LM2T ZL230



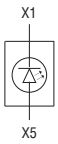
LM2T YL...



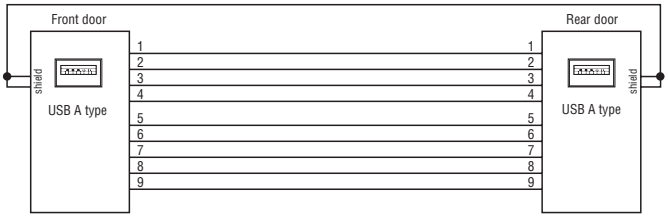
LM2T GL...

LM2T T100

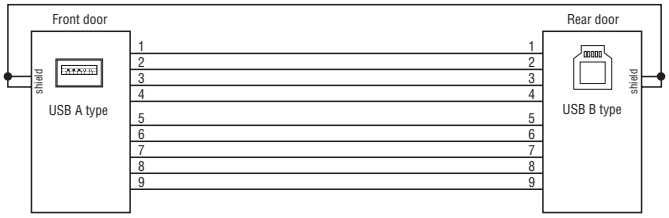
LM2T L...
LM2T M...



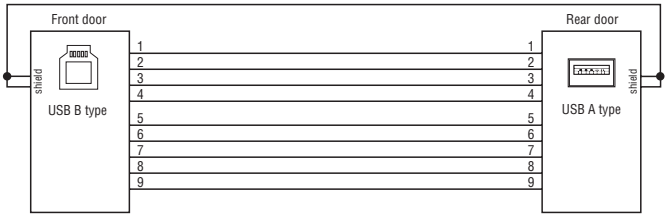
LPC D01



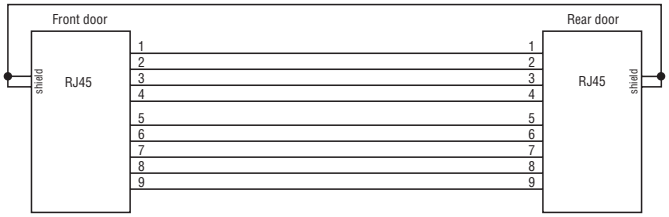
LPC D03



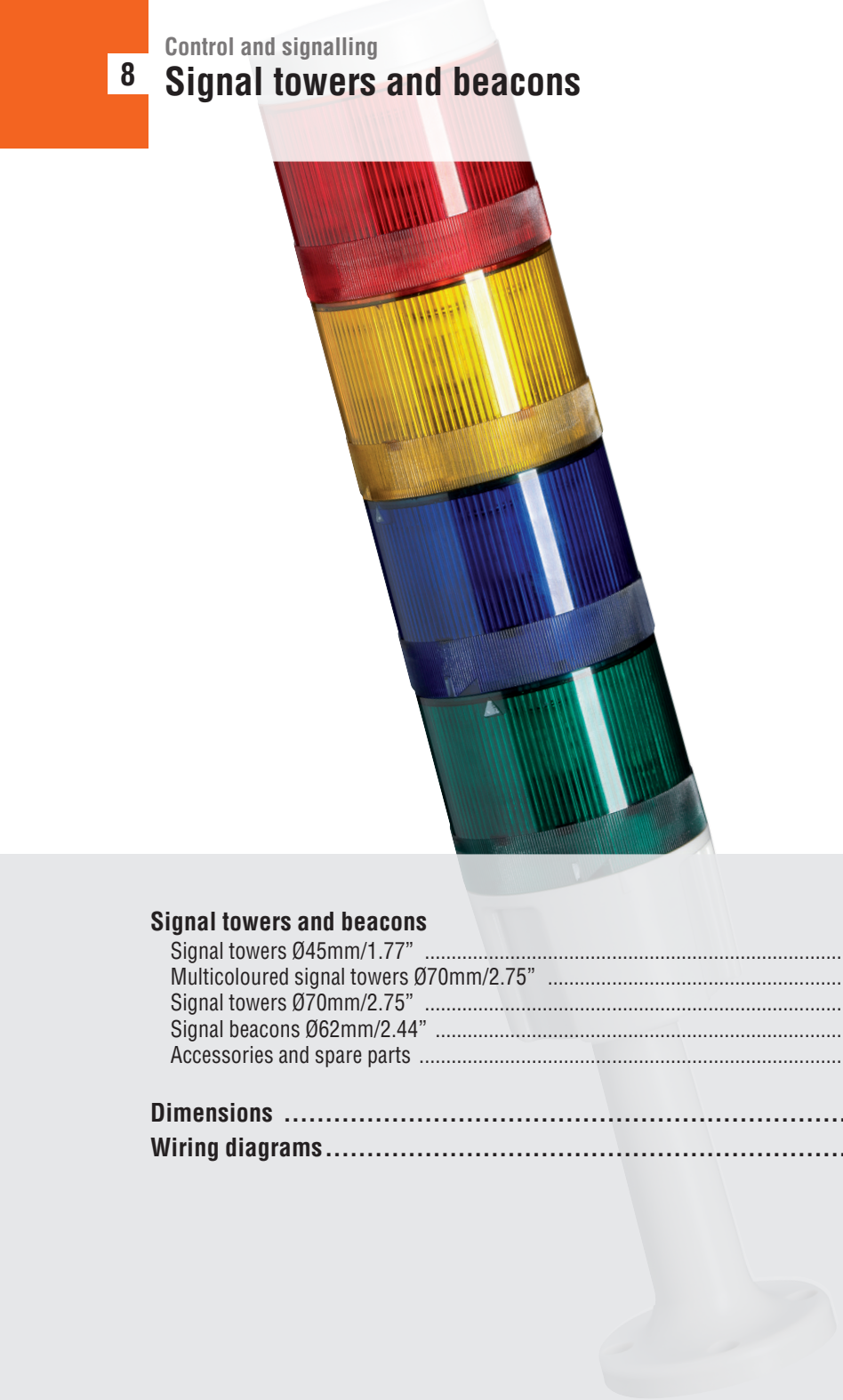
LPC D05



LPC D06



Signal towers and beacons



Signal towers Ø45mm/1.77”
- Supplied already assembled
- Steady light and pulsed or continuous sound modules

Multicoloured signal towers Ø70mm/2.75”
- Modular and combinations up to 5 modules
- Steady light and pulsed or continuous sound modules

Signal towers Ø70mm/2.75”
- Modular and combinations up to 7 modules
- Steady or blinking light, pulsed or continuous sound modules

Signal beacons Ø62mm/2.44”
- Steady or blinking light, pulsed or continuous sound modules.

Signal towers and beacons — SEC. - PAGE
Signal towers Ø45mm/1.77” ..... 8 - 2
Multicoloured signal towers Ø70mm/2.75” ..... 8 - 3
Signal towers Ø70mm/2.75” ..... 8 - 4
Signal beacons Ø62mm/2.44” ..... 8 - 6
Accessories and spare parts ..... 8 - 7

Dimensions ..... **8 - 10**
Wiring diagrams ..... **8 - 13**

Page 8-2

SIGNAL TOWERS Ø45mm/1.77”

- Signal towers supplied already assembled Ø45mm/1.77”
- Steady light modules
- Pulsed or continuous sound modules
- Built-in LED circuit.

Page 8-3

MULTICOLOURED SIGNAL TOWERS Ø70mm/2.75”

- Modular signal towers Ø70mm/2.75”
- Steady light multicoloured modules
- Pulsed or continuous sound multicoloured modules
- Built-in LED circuit.

Page 8-4 and 5

SIGNAL TOWERS Ø45mm/1.77”

- Signal towers supplied already assembled Ø45mm/1.77”
- Steady light modules
- Pulsed or continuous sound modules
- Incandescent and LED bulbs.

Page 8-6

MULTICOLOURED SIGNAL TOWERS Ø70mm/2.75”

- Modular signal towers Ø70mm/2.75”
- Steady light multicoloured modules
- Pulsed or continuous sound multicoloured modules
- Incandescent and LED bulbs.

Signal towers Ø45mm/1.77”

8 LT4 K02BG

8 LT4 K05BG

8 LT4 K09BG

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Steady light and pulsed or continuous sound light modules. Built-in LED circuit ❶.			
8 LT4 K02BG	Green, red, 24VDC	1	0.160
8 LT4 K03BG	Green, red with continuous or pulsed sound, 24VDC	1	0.240
8 LT4 K04BG	Green, orange, red, 24VDC	1	0.240
8 LT4 K05BG	Green, orange, red with continuous or pulsed sound, 24VDC	1	0.320
8 LT4 K06BG	Green, blue, orange, red, 24VDC	1	0.320
8 LT4 K07BG	Green, blue, orange, red, with continuous or pulsed sound, 24VDC	1	0.400
8 LT4 K08BG	White, green, blue, orange, red, 24VDC	1	0.400
8 LT4 K09BG	White, green, blue, orange, red, with continuous or pulsed sound, 24VDC	1	0.480

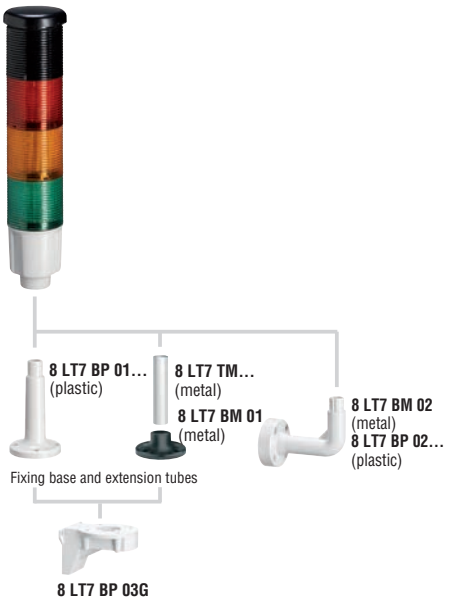
❶ For accessories and spare parts see page 8-7 and 8.

General characteristics
The Ø45mm/1.77” signal towers are supplied completely assembled with the possibility of up to 3 light modules with a sound module. The high-brightness LED circuit lighting ensures low consumption and long life.

Technical characteristics
- Supply voltage: 24VDC (±10%)
- Light module consumption: 37mA per module
- Sound module consumption: 15mA
- Sound intensity: 80dB/1m, pulsed or continuous sound
- Material: polycarbonate
- Connections: screw clamp terminals and maximum conductor section 1.5mm²/16 AWG
- Tightening torque: 0.5Nm/4.5lbin
- Operating temperature: -20…+50°C
- IEC degree of protection: IP54.

Certifications and compliance
Certifications obtained: cULus, EAC.
Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60947-1, UL508, CSA C22.2 n° 14.

Combinations



For accessories and spare parts see page 8-7 and 8.

Visual code	Red	Yellow Orange	Blue	Green	White
Meaning	Danger. Emergency.	Warning and Caution. Abnormal situation.	Mandatory command.	Normal situation. Regular operation.	No specific meaning.
Sound	Fast modulated repetition or high-pitch pulsing.	Continuous short sound.	Alternating sound at. constant tone	Constant and prolonged sound after an alarm.	Other sounds.
Correlated actions	Immediate intervention to deal with dangerous situation.	Control intervention required.	Intervention needed for mandatory action.	No specific action.	Depending on the situation.

Interpretation of light and sound signals for signal towers and beacons
Light and sound signals are a fundamental element for the safety of a system.
To avoid incorrect interpretations, a European standard has been introduced attributing an unambiguous meaning to visual or audible signals.
Each colour or sound alarm corresponds to a specific state of operation of the connected system and various levels of warning, as shown in the table above, according to EN 981-IEC/EN 60073 standards.
The white module can be assigned a meaning as desired.

Multicoloured signal towers Ø70mm/2.75”

8 LT7 3S …

8 LT7 3B …

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Steady light and pulsed or continuous sound multicoloured light modules. Built-in LED circuit ❶.			
8 LT7 3B 9A	Green, orange, red, 24VDC	1	0.090
8 LT7 3S2B 9A	Green, orange, red, with continuous or pulsed sound 24VDC	1	0.200
8 LT7 3B 9B	Blue, orange, red, 24VDC	1	0.090
8 LT7 3S2B 9B	Blue, orange, red, with continuous or pulsed sound 24VDC	1	0.200

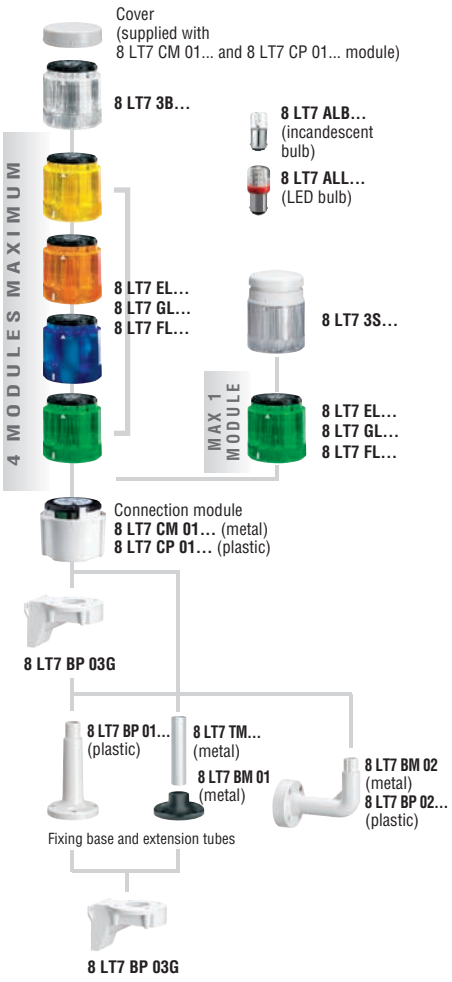
❶ For accessories and spare parts see page 8-7 and 8.

General characteristics
The multicoloured signal towers incorporate the possibility of up to 3 different colours in a single light module.
In the event of two or more alarms, the multicoloured module lights up in alternating colours corresponding to the event.
The multicoloured module must always be placed last, at the top of the tower, should it be used together with light modules 8LT7 EL… 8LT7 GL … or 8LT7 FL….

Technical characteristics
- Supply voltage: 24VDC (±10%)
- Light and sound module consumption: 90mA
- Sound intensity: 90dB/1m
- Material: polycarbonate
- Number of stackable elements: 4 with 8 LT7 3P modules, 1 with 8 LT7 3S modules
- Connections: screw clamp terminals and maximum conductor section 1.5mm²/16 AWG
- Tightening torque: 0.5Nm/4.5lbin
- Operating temperature: -20...+50 °C
- IEC degree of protection: IP65.

Certifications and compliance
Certifications obtained: cULus, EAC.
Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60947-1, UL508, CSA C22.2 n° 14.

Combinations



For accessories and spare parts see page 8-7 and 8.

Signal towers Ø70mm/2.75”






8 LT7 EL ...
8 LT7 GL ...
8 LT7 FL ...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Steady light modules. BA15d fitting ❶. Bulb (8 LT7 ALB... and 8 LT7 ALL...) not included.			
8 LT7 EL1	Orange	1	0.082
8 LT7 EL3	Green	1	0.082
8 LT7 EL4	Red	1	0.082
8 LT7 EL5	Yellow	1	0.082
8 LT7 EL6	Blue	1	0.082
8 LT7 EL8	White	1	0.082
Blinking light modules. BA15d fitting ❶. Bulb (8 LT7 ALB... and 8 LT7 ALL...) not included.			
8 LT7 GL B1	Orange, 24VAC/DC	1	0.083
8 LT7 GL B3	Green, 24VAC/DC	1	0.083
8 LT7 GL B4	Red, 24VAC/DC	1	0.083
8 LT7 GL B5	Yellow, 24VAC/DC	1	0.083
8 LT7 GL B6	Blue, 24VAC/DC	1	0.083
8 LT7 GL B8	White, 24VAC/DC	1	0.083
8 LT7 GL E1	Orange, 110...120VAC	1	0.083
8 LT7 GL E3	Green, 110...120VAC	1	0.083
8 LT7 GL E4	Red, 110...120VAC	1	0.083
8 LT7 GL E5	Yellow, 110...120VAC	1	0.083
8 LT7 GL E6	Blue, 110...120VAC	1	0.083
8 LT7 GL E8	White, 110...120VAC	1	0.083
8 LT7 GL M1	Orange, 230...240VAC	1	0.083
8 LT7 GL M3	Green, 230...240VAC	1	0.083
8 LT7 GL M4	Red, 230...240VAC	1	0.083
8 LT7 GL M5	Yellow, 230...240VAC	1	0.083
8 LT7 GL M6	Blue, 230...240VAC	1	0.083
8 LT7 GL M8	White, 230...240VAC	1	0.083
Flash light modules. With 4-joule xenon bulb ❶.			
8 LT7 FL B1	Orange, 24VAC/DC	1	0.092
8 LT7 FL B3	Green, 24VAC/DC	1	0.092
8 LT7 FL B4	Red, 24VAC/DC	1	0.092
8 LT7 FL B5	Yellow, 24VAC/DC	1	0.092
8 LT7 FL B6	Blue, 24VAC/DC	1	0.092
8 LT7 FL B8	White, 24VAC/DC	1	0.092
8 LT7 FL E1	Orange, 110...120VAC	1	0.092
8 LT7 FL E3	Green, 110...120VAC	1	0.092
8 LT7 FL E4	Red, 110...120VAC	1	0.092
8 LT7 FL E5	Yellow, 110...120VAC	1	0.092
8 LT7 FL E6	Blue, 110...120VAC	1	0.092
8 LT7 FL E8	White, 110...120VAC	1	0.092
8 LT7 FL M1	Orange, 230...240VAC	1	0.092
8 LT7 FL M3	Green, 230...240VAC	1	0.092
8 LT7 FL M4	Red, 230...240VAC	1	0.092
8 LT7 FL M5	Yellow, 230...240VAC	1	0.092
8 LT7 FL M6	Blue, 230...240VAC	1	0.092
8 LT7 FL M8	White, 230...240VAC	1	0.092

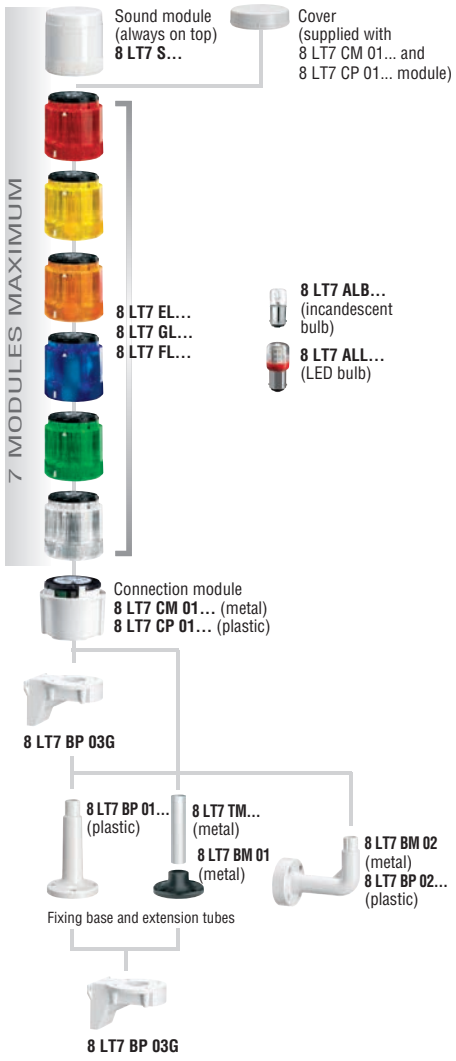
❶ For accessories and spare parts see page 8-7 and 8.

General characteristics
Signal towers are fundamental elements in manufacturing processes for the visual and audible signalling of the system status.
The signal towers can be assembled by stacking up to 7 modules, in the following sequence, starting from the top: red, yellow, orange, blue, green and white.

Technical characteristics
- Maximum operational voltage: 250VAC/DC
- Flash light and sound module consumption:
  - 8 LT7 FL B... in AC: 135mA
  - 8 LT7 FL B... in DC: 75mA
  - 8 LT7 FL E... 20mA
  - 8 LT7 FL M... 15mA
- Material: polycarbonate or anodised aluminium
- Number of stackable modules: 7
- Connections: screw clamp terminals and maximum conductor section 1.5mm²/16 AWG
- Tightening torque: 0.5Nm/4.5lbin
- Operating temperature: -20…+50°C (12VAC max. up to +40°C)
- IEC degree of protection: IP65.

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus - file E318016) as Power Circuit and motor-mounted Apparatus - Stackable tower lights.
Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60947-1, UL508, CSA C22.2 n° 14.

Combinations



For accessories and spare parts see page 8-7 and 8.

Signal towers Ø70mm/2.75”

8 LT7 S … G

8 LT7 S …

8 LT7 CM 01 G
8 LT7 CP 01 G

8 LT7 CM 01
8 LT7 CP 01

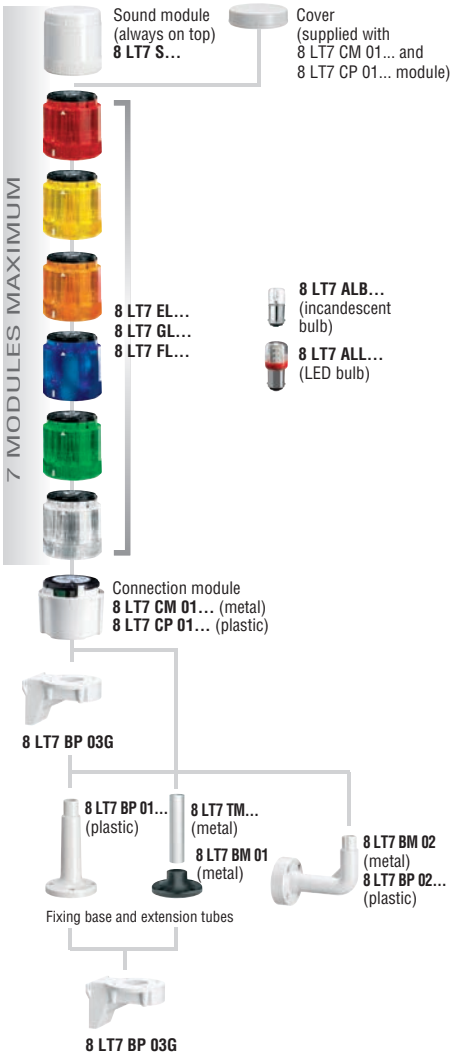
Order code	Description		Qty per pkg	Wt
			n°	[kg]
Pulsed or continuous sound modules, grey colour ❶.				
8 LT7 S0 BG	24VAC/DC, pulsed (90dB). IP54		1	0.240
8 LT7 S1 BG	24AC/DC, 16 sounds select. (max.80dB). IP65		1	0.240
8 LT7 S2 BG	24VAC/DC	puls. sound (78dB)❷ or continuous (75dB)❸. IP65	1	0.240
8 LT7 S2 EG	110...120VAC		1	0.240
8 LT7 S2 MG	230...240VAC		1	0.240
Pulsed or continuous sound modules, black colour ❶.				
8 LT7 S0 B	24VAC/DC, pulsed (90dB). IP54		1	0.240
8 LT7 S1 B	24AC/DC, 16 sounds select. (max.80dB). IP65		1	0.240
8 LT7 S2 B	24VAC/DC	puls. sound (78dB)❷ or continuous (75dB)❸. IP65	1	0.240
8 LT7 S2 E	110...120VAC		1	0.240
8 LT7 S2 M	230...240VAC		1	0.240
Connection modules and cover (bottom entry).				
8 LT7 CP 01G	For plastic tubes, grey colour		1	0.110
8 LT7 CM 01G	For metal tubes, grey colour		1	0.120
8 LT7 CP 01	For plastic tubes, black colour		1	0.110
8 LT7 CM 01	For metal tubes, black colour		1	0.120

❶ For accessories and spare parts see page 8-7 and 8.
❷ For 8 LT7 S2 B... = 84.5 dB.
❸ For 8 LT7 S2 B... = 82.6 dB.

Technical characteristics
- The sound module must always be placed last, on the top of the tower (it cannot be fitted with an 8 LT7 3... multicoloured module).
- Sound module consumption:
  - 8 LT7 S0 B...: 25mA
  - 8 LT7 S1 B...: 40mA
  - 8 LT7 S2 B...: 200mA
  - 8 LT7 S2 E...: 40mA
  - 8 LT7 S2 M...: 30mA
- Material: polycarbonate
- Max. number of sound modules: 1 per tower
- Connections: screw clamp terminals and maximum conductor section 1.5mm²/16 AWG
- Tightening torque: 0.5Nm/4.5lbin
- Operating temperature: -20…+50°C (12VAC max. up to +40°C)
- IEC degree of protection: IP65 (IP54 if 8 LT7 S0 B... sound module used).

Certifications and compliance
Certifications obtained: EAC, UL Listed, for USA and Canada (cULus - file E318016) as Power Circuit and motor-mounted Apparatus - Stackable tower lights.
Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60947-1, UL508, CSA C22.2 n° 14.

Combinations



For accessories and spare parts see page 8-7 and 8.

Signal beacons Ø62mm/2.44”






8 LB6 EL...
8 LB6 GL...
8 LB6 S2...

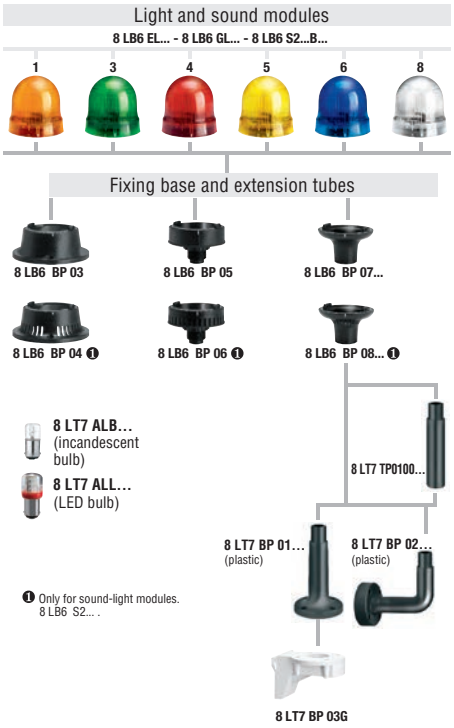
Order code	Description	Qty per pkg	Wt
		n°	[kg]
Steady light modules. BA15d fitting. Bulb (8 LT7 ALB... and 8 LT7 ALL...) not included.			
8 LB6 EL1	Orange	1	0.060
8 LB6 EL3	Green	1	0.060
8 LB6 EL4	Red	1	0.060
8 LB6 EL5	Yellow	1	0.060
8 LB6 EL6	Blue	1	0.060
8 LB6 EL8	White	1	0.060
Blinking or steady light modules. BA15d fitting. Bulb (8 LT7 ALB... and 8 LT7 ALL...) not included.			
8 LB6 GL B1	Orange, 12...48VAC/DC	1	0.060
8 LB6 GL B3	Green, 12...48VAC/DC	1	0.060
8 LB6 GL B4	Red, 12...48VAC/DC	1	0.060
8 LB6 GL B5	Yellow, 12...48VAC/DC	1	0.060
8 LB6 GL B6	Blue, 12...48VAC/DC	1	0.060
8 LB6 GL B8	White, 12-48VAC/DC	1	0.060
8 LB6 GL M1	Orange, 24...230VAC	1	0.060
8 LB6 GL M3	Green, 24...230VAC	1	0.060
8 LB6 GL M4	Red, 24...230VAC	1	0.060
8 LB6 GL M5	Yellow, 24...230VAC	1	0.060
8 LB6 GL M6	Blue, 24...230VAC	1	0.060
8 LB6 GL M8	White, 24...230VAC	1	0.060
Light and sound pulsed or continuous sound modules. Bulb included.			
8 LB6 S2 B1	Orange, 24VAC/DC (80dB)	1	0.060
8 LB6 S2 B3	Green, 24VAC/DC (80dB)	1	0.060
8 LB6 S2 B4	Red, 24VAC/DC (80dB)	1	0.060
8 LB6 S2 B5	Yellow, 24VAC/DC (80dB)	1	0.060
8 LB6 S2 B6	Blue, 24VAC/DC (80dB)	1	0.060
8 LB6 S2 B8	White, 24VAC/DC (80dB)	1	0.060

General characteristics
Signal beacons are fundamental elements in manufacturing processes for the visual and audible signalling of the system status.

Technical characteristics
- Maximum operational voltage: 250VAC/DC
- Sound module consumption: 8 LB6 S2...:150mA
- Material: polycarbonate
- Connections: screw clamp terminals and maximum conductor section 1.5mm²/16 AWG
- Tightening torque: 0.5Nm/4.5lbin
- Operating temperature: -20...+50°C
- IEC degree of protection: IP54 (IP30 if used with bases 8 LB6 BP 04, 8 LB6 BP 06, 8 LB6 BP 08...).

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60947-1.

Combinations



For signal towers and beacons

8 LT7 BP 01G

8 LT7 BP 01

8 LT7 BP 02G

8 LT7 BP 02

8 LT7 BP 03G

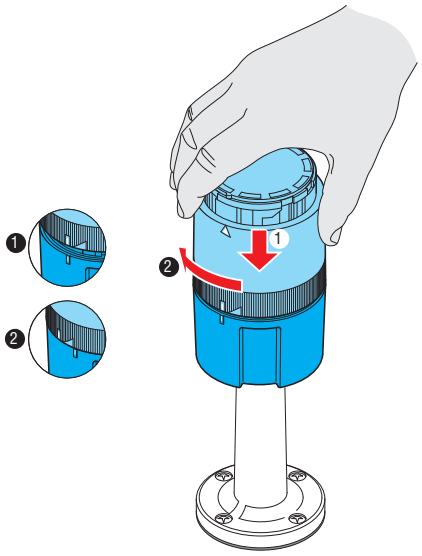
8 LT7 TP0100G

8 LT7 TP0100

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Fixing bases.			
8 LT7 BP 01G	Horizontal surface mount, plastic grey colour with 100mm/3.94” extension	1	0.045
8 LT7 BP 02G	Vertical wall mount, plastic, grey colour	1	0.078
8 LT7 BP 03G	90° vertical wall mount, grey colour	1	0.080
8 LT7 BP 01	Horizontal surface mount, plastic, black colour with 100mm/3.94” extension	1	0.045
8 LT7 BP 02	Vertical wall mount, plastic, black colour	1	0.078
Extension tube for plastic bases.			
8 LT7 TP 0100G	100mm/3.94”, grey colour	1	0.029
8 LT7 TP 0100	100mm/3.94”, black colour	1	0.029

General characteristics

The assembly operation for the signal towers is simple and fast and does not require the use of any tools.
The bayonet fitting with slight pressure and simple circular movement makes it possible to mount each element on top of the previous one. There are specific white marks to indicate the correct alignment.



For signal towers Ø70mm/2.75” and signal beacons Ø62mm/2.44”

8 LT7 ALB...

8 LT7 ALL...

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Incandescent bulbs, 5W, BA15d fitting.			
8 LT7 ALB A	12VAC/DC	10	0.006
8 LT7 ALB B	24VAC/DC	10	0.006
8 LT7 ALB E	130VAC/DC	10	0.006
8 LT7 ALB M	260VAC/DC	10	0.006
LED bulbs, BA15d fitting.			
8 LT7 ALL A4	Red, 12VAC/DC	10	0.010
8 LT7 ALL A8	White, 12VAC/DC	10	0.010
8 LT7 ALL B3	Green, 24VAC/DC	10	0.010
8 LT7 ALL B4	Red, 24VAC/DC	10	0.010
8 LT7 ALL B5❶	Yellow/Orange, 24VAC/DC	10	0.010
8 LT7 ALL B6	Blue, 24VAC/DC	10	0.010
8 LT7 ALL B8	White, 24VAC/DC	10	0.010
8 LT7 ALL E3	Green, 110...120VAC	10	0.010
8 LT7 ALL E4	Red, 110...120VAC	10	0.010
8 LT7 ALL E5❶	Yellow/Orange, 110...120VAC	10	0.010
8 LT7 ALL E6	Blue, 110...120VAC	10	0.010
8 LT7 ALL E8	White, 110...120VAC	10	0.010
8 LT7 ALL M3	Green, 230...240VAC	10	0.010
8 LT7 ALL M4	Red, 230...240VAC	10	0.010
8 LT7 ALL M5❶	Yellow/Orange, 230...240VAC	10	0.010
8 LT7 ALL M6	Blue, 230...240VAC	10	0.010
8 LT7 ALL M8	White, 230...240VAC	10	0.010

❶ Used with yellow or orange light modules.

Technical characteristics

– Consumption of bulb fitted on light modules:
- 8 LT7 ALB A: 420mA
- 8 LT7 ALB B: 210mA
- 8 LT7 ALB E: 43mA
- 8 LT7 ALB M: 22mA
- 8 LT7 ALL A...: <60mA
- 8 LT7 ALL B...: <30mA
- 8 LT7 ALL E...: <20mA
- 8 LT7 ALL M...: <20mA.

Compliance

Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60947-1, UL508, CSA C22.2 n° 14.

Multicoloured signal towers 70mm/2.75” and signal towers 70mm/2.75”

8 LT7 BM 01

8 LT7 BM 02

8 LT7 TM

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Fixing bases.			
8 LT7 BM 01	Horizontal surface mount, metal, black	1	0.099
8 LT7 BM 02	Wall mount, metal	1	0.184
Extension tubes for metal bases, anodised aluminium.			
8 LT7 TM 0100	120mm/4.72”	1	0.016
8 LT7 TM 0200	220mm/8.66”	1	0.024
8 LT7 TM 0300	320mm/12.60”	1	0.048
8 LT7 TM 0400	420mm/16.53”	1	0.064
8 LT7 TM 0500	520mm/20.74”	1	0.080
8 LT7 TM 1000	1020mm/40.16”	1	0.160

For signal beacons Ø62mm/2.44”

8 LB6 BP07G

8 LB6 BP03

8 LB6 BP05

8 LB6 BP07

8 LB6 BP08G

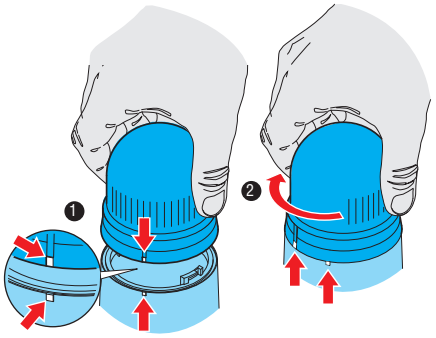
8 LB6 BP04

8 LB6 BP06

8 LB6 BP08

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Fixing bases for light modules.			
8 LB6 BP 07G	For extension connection, plastic, grey. Use with fixing bases 8 LP7 BP01G and 8 LP7 BP02G	1	0.020
8 LB6 BP 03	For horizontal mount, plastic, black	1	0.040
8 LB6 BP 05	For hole Ø22mm/0.87”, plastic, black	1	0.040
8 LB6 BP 07	For extension connection, plastic, black. Use with fixing bases 8 LP7 BP01 and 8 LP7 BP02	1	0.020
Fixing bases for light and sound modules.			
8 LB6 BP 08G	For extension connection, plastic, grey. Use with fixing bases 8 LP7 BP01G and 8 LP7 BP02G	1	0.020
8 LB6 BP 04	For horizontal mount, plastic, black	1	0.040
8 LB6 BP 06	For hole Ø22mm/0.87”, plastic, black	1	0.040
8 LB6 BP 08	For extension connection, plastic, black. Use with fixing bases 8 LP7 BP01 and 8 LP7 BP02	1	0.020

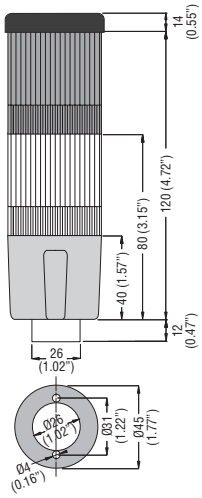
General characteristics
The assembly operation of the light and sound modules is simple and fast and does not require the use of any tools. There are specific white marks to indicate the correct alignment.



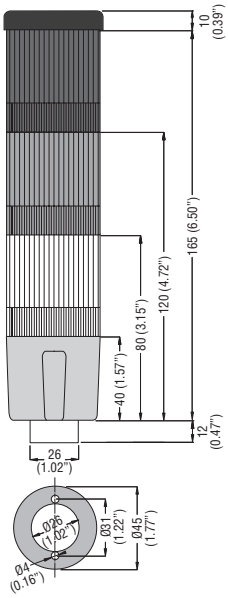
Dimensions
page 8-12

SIGNAL TOWERS Ø45mm/1.77”

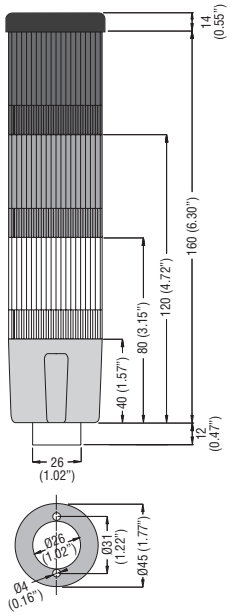
8 LT4 K02BG



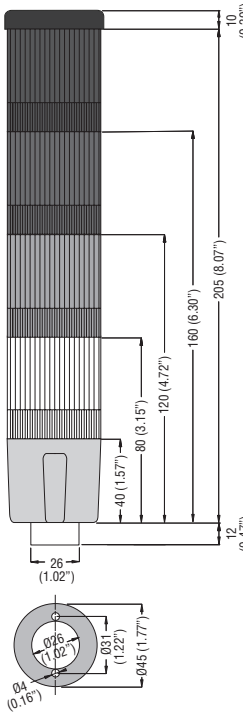
8 LT4 K03BG



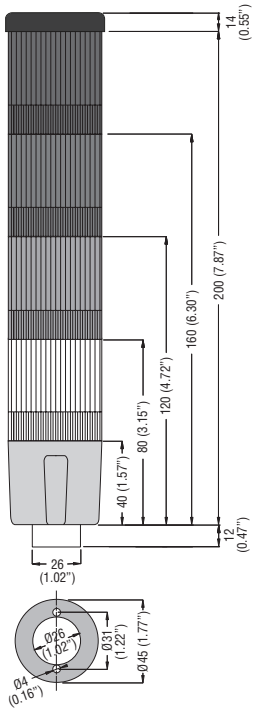
8 LT4 K04BG



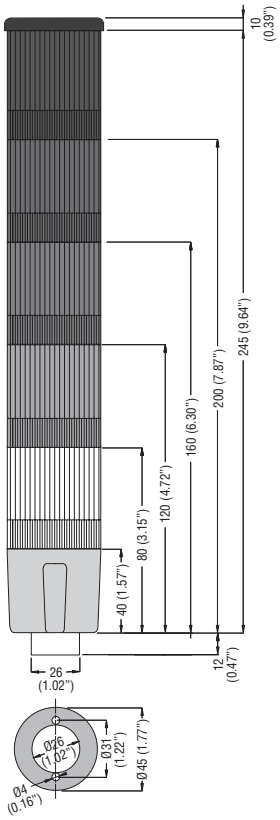
8 LT4 K05BG



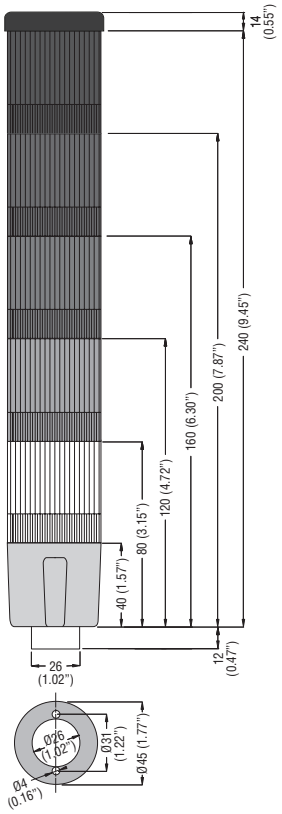
8 LT4 K06BG



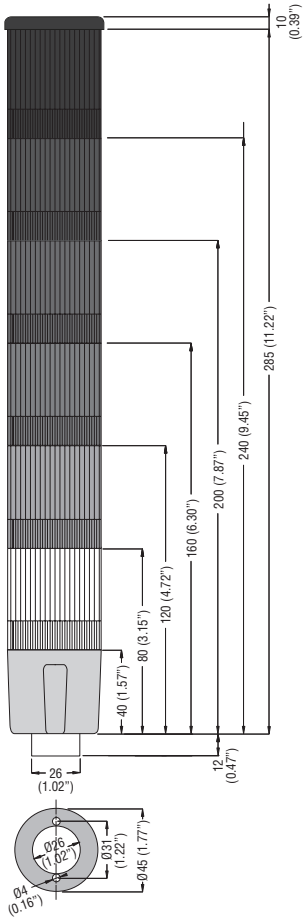
8 LT4 K07BG



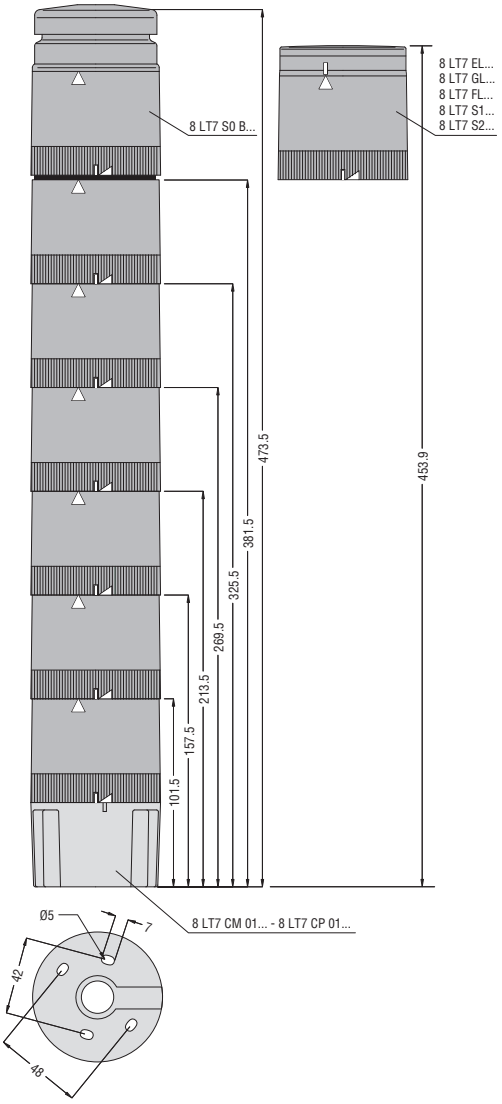
8 LT4 K08BG



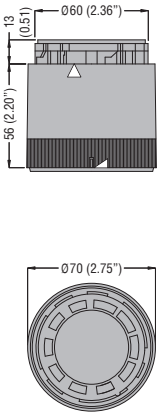
8 LT4 K09BG



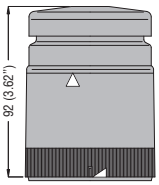
MULTICOLOURED SIGNAL TOWERS Ø70mm/2.75" AND SIGNAL TOWERS Ø70mm/2.75"

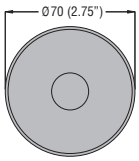


Light modules
8 LT7 EL...
8 LT7 GL...
8 LT7 FL...
8 LT7 3B...

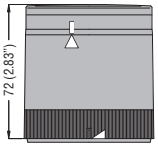


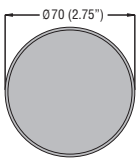
Sound modules
8 LT7 S0 B...
8 LT7 3B S2...



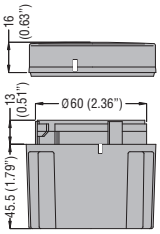


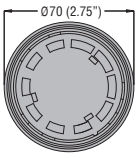
8 LT7 S1...
8 LT7 S2...





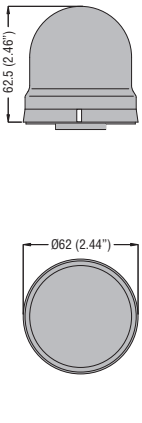
Bases
8 LT7 CM 01...
8 LT7 CP 01...



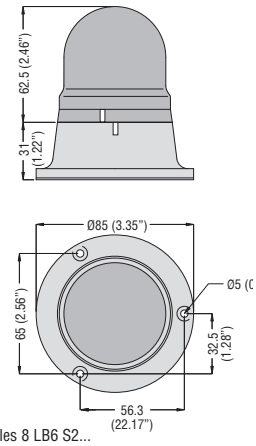


SIGNAL BEACONS Ø62mm/2.44”

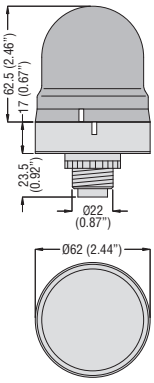
8 LB6 EL...
8 LB6 GL...
8 LB6 S2...



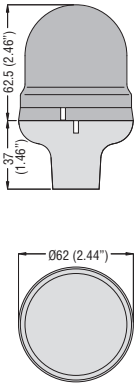
8 LB6...
with base **8 LB6 BP 03**
and **8 LB6 BP 04** ❶

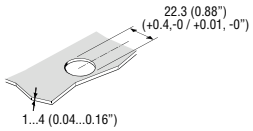


8 LB6...
with base **8 LB6 BP 05**
and **8 LB6 BP 06** ❶



8 LB6...
with base **8 LB6 BP 07...**
and **8 LB6 BP 08** ❶**...**

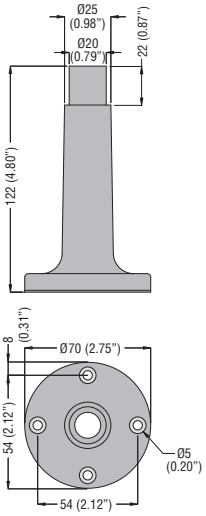




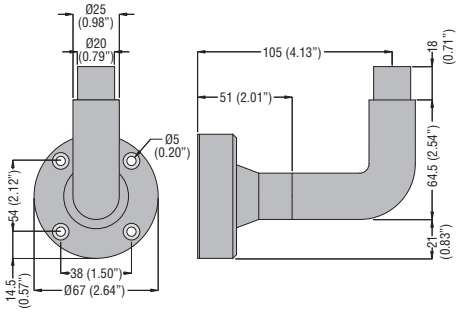
❶ With slits for light and sound modules 8 LB6 S2...

ACCESSORIES - Bases and extensions

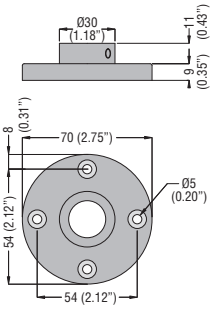
8 LT7 BP 01...



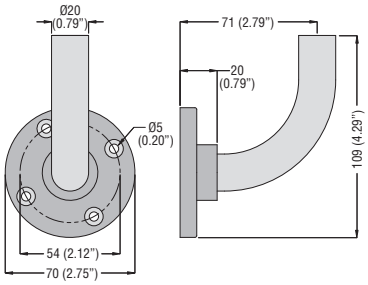
8 LT7 BP 02...



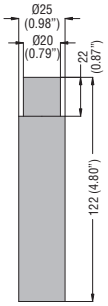
8 LT7 BM 01



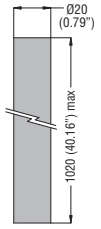
8 LT7 BM 02



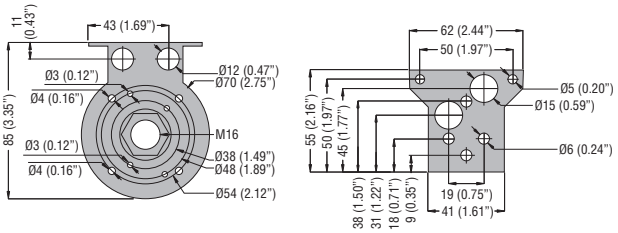
8 LT7 TP 0100...



8 LT7 TM...

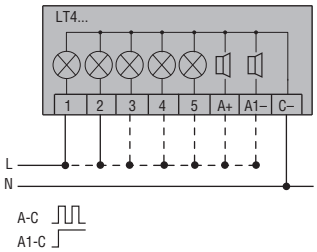


8 LT7 BP 03G

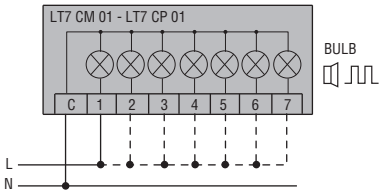


Wiring diagrams

ASSEMBLED SIGNAL TOWERS Ø45mm/1.77"
8 LT4...

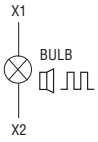


MULTICOLOURED SIGNAL TOWERS Ø70mm/2.75" AND SIGNAL TOWERS Ø70mm/2.75"
8 LT7...



Connect terminals C and 1 as indicated to power the first module. If other modules are fitted, the respective terminals must be connected accordingly.

SIGNAL BEACONS Ø62mm/2.44"
8 LB6...



Limit, micro and foot switches

- Dimensions to EN 50047 standards
- Dimensions compatible to EN 50047
- Dimensions to EN 50041 standards
- Direct opening action of NC contacts
- Extensive range of operating heads
- Versions complete with interchangeable and rotatable heads
- Versions with removable and interchangeable auxiliary contact blocks.

SEC. - PAGE

Metal and plastic limit switches, K series (dimensions to/compatible to EN 50047)
Top push rod plunger ..... 9 - 2
Top roller push plunger ..... 9 - 3
Roller centre push lever ..... 9 - 4
Roller side push lever ..... 9 - 5
Roller lever ..... 9 - 6
Adjustable roller lever ..... 9 - 8
Ceramic rod lever ..... 9 - 10
Adjustable rod lever ..... 9 - 11
Wobble stick, omnidirectional ..... 9 - 12
Hinge operating ..... 9 - 13
Slotted lever ..... 9 - 14
Key operated ..... 9 - 15
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PLASTIC AND METAL LIMIT SWITCHES K SERIES
- Dimensions to EN 50047 standards for KB and KM types
- Dimensions compatible to EN 50047 for KC and KN types
- Self-extinguishing polymer thermoplastic housing (KB-KC types)
- Aluminium-zinc alloy housing (KM-KN types)
- Removable and interchangeable auxiliary contact blocks
- Bi-directional versions
- Unique fixing mechanism of operating head
- IEC degree of protection IP65
- M20 cable entry; PG13.5 or 1/2 NPT entry available.

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METAL LIMIT SWITCHES PL SERIES
- Aluminium-zinc alloy housing
- Maximum of 2 auxiliary contacts
- IEC degree of protection IP40 and IP65
- PG11 cable entry.

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SAFETY SWITCHES WITH SOLENOID AND SEPARATE ACTUATOR
- Actuator locked by solenoid
- For safety applications up to:
  - safety integrety level (SIL), category 3: according to EN 62061
  - PLe according to EN ISO 13849-1
- Interlock with mechanical lock Type 2 according to EN ISO 14119
- Self-extinguishing polymer thermoplastic housing and actuator head
- IEC degree of protection IP65
- Three threaded conduit entries M20.

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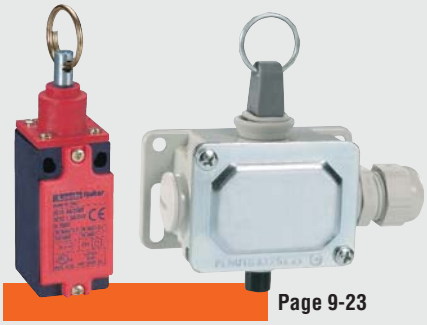
PREWIRED METAL LIMIT SWITCHES K SERIES
- Dimensions to EN 50047 stadards
- 2 metre long cable
- IEC degree of protection IP67.



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ROPE-PULL LEVER LIMIT SWITCHES FOR NORMAL STOPPING
- Self-extinguishing polymer thermoplastic housing
- Aluminium-zinc alloy housing
- IEC degree of protection IP40, IP65 and IP66
- PG11 and PG13.5 cable entry.

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PLASTIC MICRO SWITCHES K SERIES
- Polymer thermoplastic housing
- Changeover contact switch
- IEC degree of protection IP00 or IP20.

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PLASTIC LIMIT SWITCHES T SERIES
- Dimensions to EN 50041 standards
- Self-extinguishing polymer thermoplastic housing
- Heads rotate in 4 different 90° angle positions
- IEC degree of protection IP66
- PG13.5 cable entry.

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ROPE-PULL LEVER LIMIT SWITCHES FOR EMERGENCY STOPPING
- Compliant to ISO 13850 standards
- IEC degree of protection IP65 and IP66
- PG11 and PG13.5 cable entry.

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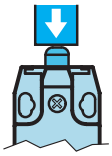
FOOT SWITCHES K SERIES
- Versions with or without protection cover
- Self-extinguishing polymer thermoplastic housing
- Aluminium-zinc alloy housing
- IEC degree of protection IP54 and IP65
- M20 cable entry.

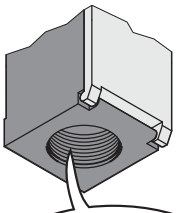
Lovato electric

Top push rod plunger

KB A... - KM A...



KC A... - KN A...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBA1S11P - KBA1S11N

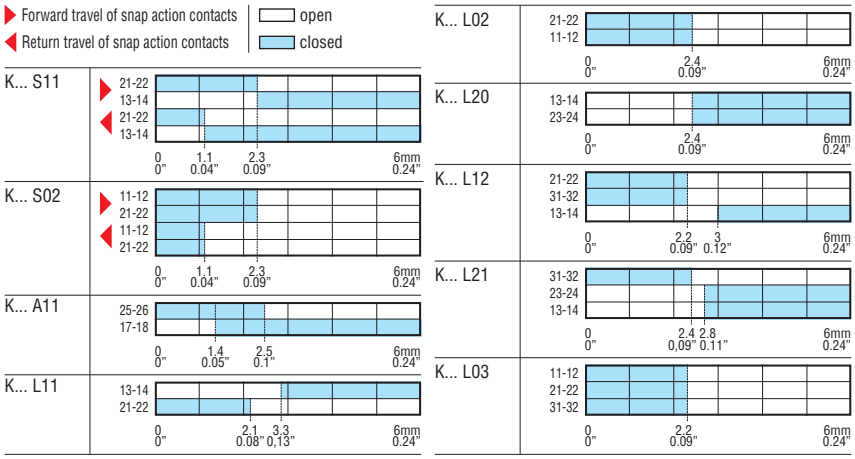
Order code Plastic body	Metal body	Contacts	Plunger material	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB A1 S11	**KM A1 S11**	1NO+1NC Snap action❶	Metal	5	❷
KB A1 S02	**KM A1 S02**	2NC Snap action❶	Metal	5	❷
KB A1 A11	**KM A1 A11**	1NO+1NC Slow action make before break❶	Metal	5	❷
KB A1 L11	**KM A1 L11**	1NO+1NC Slow action❶	Metal	5	❷
KB A1 L02	**KM A1 L02**	2NC Slow action❶	Metal	5	❷
KB A1 L20	**KM A1 L20**	2NO Slow action	Metal	5	❷
KB A1 L12	**KM A1 L12**	1NO+2NC Slow action❶	Metal	5	❷
KB A1 L21	**KM A1 L21**	2NO+1NC Slow action❶	Metal	5	❷
KB A1 L03	**KM A1 L03**	3NC Slow action❶	Metal	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC A1 S11	**KN A1 S11**	1NO+1NC Snap action❶	Metal	5	❷
KC A1 S02	**KN A1 S02**	2NC Snap action❶	Metal	5	❷
KC A1 A11	**KN A1 A11**	1NO+1NC Slow action make before break❶	Metal	5	❷
KC A1 L11	**KN A1 L11**	1NO+1NC Slow action❶	Metal	5	❷
KC A1 L02	**KN A1 L02**	2NC Slow action❶	Metal	5	❷
KC A1 L20	**KN A1 L20**	2NO Slow action	Metal	5	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N / 1.1lb
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

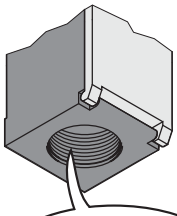
Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Top roller push plunger

KB B... - KM B...

KC B... - KN B...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBB1S11P - KBB1S11N

Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
			Ø11x4	n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB B1 S11	**KM B1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KB B2 S11	**KM B2 S11**		Metal	5	❷
KB B1 S02	**KM B1 S02**	2NC Snap action❶	Plastic	5	❷
KB B2 S02	**KM B2 S02**		Metal	5	❷
KB B1 A11	**KM B1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KB B2 A11	**KM B2 A11**		Metal	5	❷
KB B1 L11	**KM B1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KB B2 L11	**KM B2 L11**		Metal	5	❷
KB B1 L02	**KM B1 L02**	2NC Slow action❶	Plastic	5	❷
KB B2 L02	**KM B2 L02**		Metal	5	❷
KB B1 L20	**KM B1 L20**	2NO Slow action	Plastic	5	❷
KB B2 L20	**KM B2 L20**		Metal	5	❷
KB B1 L12	**KM B1 L12**	1NO+2NC Slow action❶	Plastic	5	❷
KB B2 L12	**KM B2 L12**		Metal	5	❷
KB B1 L21	**KM B1 L21**	2NO+1NC Slow action❶	Plastic	5	❷
KB B2 L21	**KM B2 L21**		Metal	5	❷
KB B1 L03	**KM B1 L03**	3NC Slow action❶	Plastic	5	❷
KB B2 L03	**KM B2 L03**		Metal	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC B1 S11	**KN B1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KC B2 S11	**KN B2 S11**		Metal	5	❷
KC B1 S02	**KN B1 S02**	2NC Snap action❶	Plastic	5	❷
KC B2 S02	**KN B2 S02**		Metal	5	❷
KC B1 A11	**KN B1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KC B2 A11	**KN B2 A11**		Metal	5	❷
KC B1 L11	**KN B1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KC B2 L11	**KN B2 L11**		Metal	5	❷
KC B1 L02	**KN B1 L02**	2NC Slow action❶	Plastic	5	❷
KC B2 L02	**KN B2 L02**		Metal	5	❷
KC B1 L20	**KN B1 L20**	2NO Slow action	Plastic	5	❷
KC B2 L20	**KN B2 L20**		Metal	5	❷

❶ Direct (positive) opening action ⊖ ; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

Ø11x4mm = Ø0.43x0.16".

General characteristics

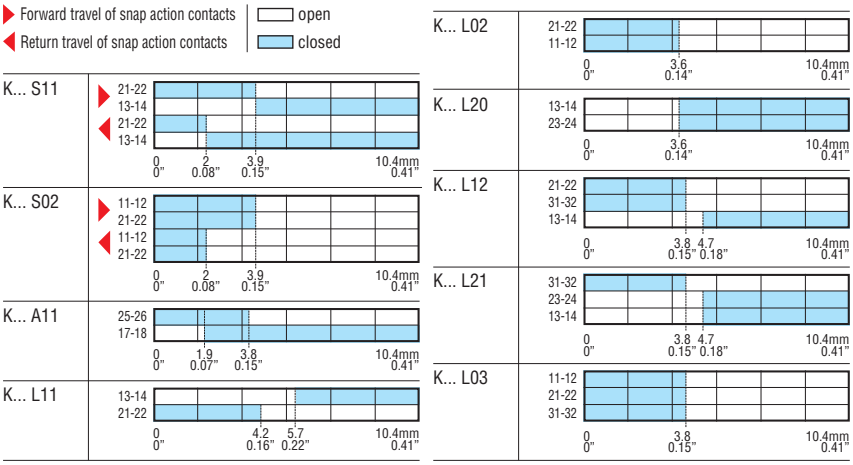
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 5N / 1.1lb
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance

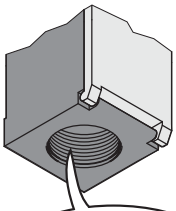
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Roller centre push lever

KB C... - KM C...

KC C... - KN C...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBC1S11P - KBC1S11N

Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
			Ø14x5	n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB C1 S11	**KM C1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KB C2 S11	**KM C2 S11**		Metal	5	❷
KB C1 S02	**KM C1 S02**	2NC Snap action❶	Plastic	5	❷
KB C2 S02	**KM C2 S02**		Metal	5	❷
KB C1 A11	**KM C1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KB C2 A11	**KM C2 A11**		Metal	5	❷
KB C1 L11	**KM C1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KB C2 L11	**KM C2 L11**		Metal	5	❷
KB C1 L02	**KM C1 L02**	2NC Slow action❶	Plastic	5	❷
KB C2 L02	**KM C2 L02**		Metal	5	❷
KB C1 L20	**KM C1 L20**	2NO Slow action	Plastic	5	❷
KB C2 L20	**KM C2 L20**		Metal	5	❷
KB C1 L12	**KM C1 L12**	1NO+2NC Slow action❶	Plastic	5	❷
KB C2 L12	**KM C2 L12**		Metal	5	❷
KB C1 L21	**KM C1 L21**	2NO+1NC Slow action❶	Plastic	5	❷
KB C2 L21	**KM C2 L21**		Metal	5	❷
KB C1 L03	**KM C1 L03**	3NC Slow action❶	Plastic	5	❷
KB C2 L03	**KM C2 L03**		Metal	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC C1 S11	**KN C1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KC C2 S11	**KN C2 S11**		Metal	5	❷
KC C1 S02	**KN C1 S02**	2NC Snap action❶	Plastic	5	❷
KC C2 S02	**KN C2 S02**		Metal	5	❷
KC C1 A11	**KN C1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KC C2 A11	**KN C2 A11**		Metal	5	❷
KC C1 L11	**KN C1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KC C2 L11	**KN C2 L11**		Metal	5	❷
KC C1 L02	**KN C1 L02**	2NC Slow action❶	Plastic	5	❷
KC C2 L02	**KN C2 L02**		Metal	5	❷
KC C1 L20	**KN C1 L20**	2NO Slow action	Plastic	5	❷
KC C2 L20	**KN C2 L20**		Metal	5	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

Ø14x5mm = Ø0.55x0.2".

General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
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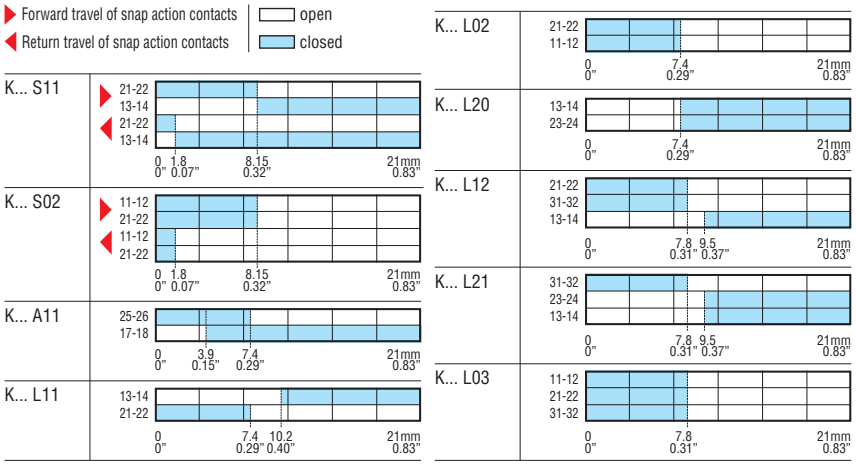
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 6N / 1.34lb
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

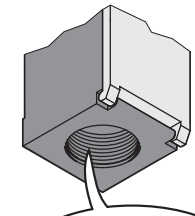
Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Roller side push lever

KB D... - KM D...

KC D... - KN D...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBD1S11P - KBD1S11N

Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
			Ø14x5	n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB D1 S11	**KM D1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KB D2 S11	**KM D2 S11**		Metal	5	❷
KB D1 S02	**KM D1 S02**	2NC Snap action❶	Plastic	5	❷
KB D2 S02	**KM D2 S02**		Metal	5	❷
KB D1 A11	**KM D1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KB D2 A11	**KM D2 A11**		Metal	5	❷
KB D1 L11	**KM D1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KB D2 L11	**KM D2 L11**		Metal	5	❷
KB D1 L02	**KM D1 L02**	2NC Slow action❶	Plastic	5	❷
KB D2 L02	**KM D2 L02**		Metal	5	❷
KB D1 L20	**KM D1 L20**	2NO Slow action	Plastic	5	❷
KB D2 L20	**KM D2 L20**		Metal	5	❷
KB D1 L12	**KM D1 L12**	1NO+2NC Slow action❶	Plastic	5	❷
KB D2 L12	**KM D2 L12**		Metal	5	❷
KB D1 L21	**KM D1 L21**	2NO+1NC Slow action❶	Plastic	5	❷
KB D2 L21	**KM D2 L21**		Metal	5	❷
KB D1 L03	**KM D1 L03**	3NC Slow action❶	Plastic	5	❷
KB D2 L03	**KM D2 L03**		Metal	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC D1 S11	**KN D1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KC D2 S11	**KN D2 S11**		Metal	5	❷
KC D1 S02	**KN D1 S02**	2NC Snap action❶	Plastic	5	❷
KC D2 S02	**KN D2 S02**		Metal	5	❷
KC D1 A11	**KN D1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KC D2 A11	**KN D2 A11**		Metal	5	❷
KC D1 L11	**KN D1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KC D2 L11	**KN D2 L11**		Metal	5	❷
KC D1 L02	**KN D1 L02**	2NC Slow action❶	Plastic	5	❷
KC D2 L02	**KN D2 L02**		Metal	5	❷
KC D1 L20	**KN D1 L20**	2NO Slow action	Plastic	5	❷
KC D2 L20	**KN D2 L20**		Metal	5	❷

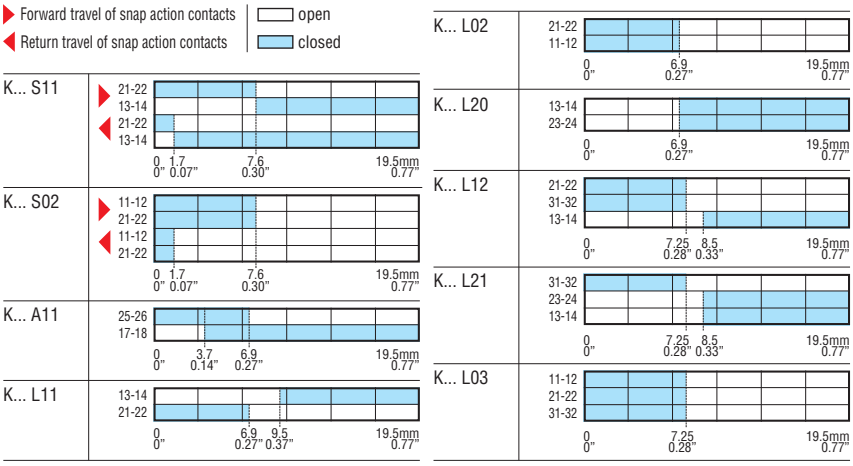
❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

Ø14x5mm = Ø0.55x0.2".

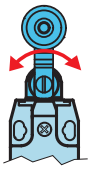
General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 6N / 1.34lb
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

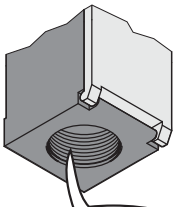


Roller lever plunger



KB E1... - KB E2...
KM E1... - KM E2...

KB E3... - KM E3...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBE1S11P - KBE1S11N

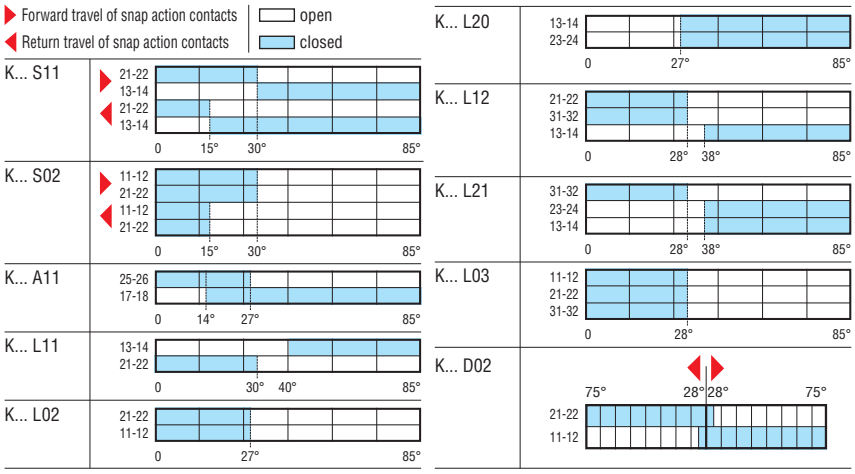
Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB E1 S11	**KM E1 S11**	1NO+1NC Snap action❸	Plastic❶	5	❹
KB E2 S11	**KM E2 S11**		Metal❶	5	❹
KB E3 S11	**KM E3 S11**		Rubber❷	5	❹
KB E1 S02	**KM E1 S02**	2NC Snap action❸	Plastic❶	5	❹
KB E2 S02	**KM E2 S02**		Metal❶	5	❹
KB E3 S02	**KM E3 S02**		Rubber	5	❹
KB E1 A11	**KM E1 A11**	1NO+1NC Slow action make before break❸	Plastic❶	5	❹
KB E2 A11	**KM E2 A11**		Metal❶	5	❹
KB E3 A11	**KM E3 A11**		Rubber❷	5	❹
KB E1 L11	**KM E1 L11**	1NO+1NC Slow action❸	Plastic❶	5	❹
KB E2 L11	**KM E2 L11**		Metal❶	5	❹
KB E3 L11	**KM E3 L11**		Rubber❷	5	❹
KB E1 L02	**KM E1 L02**	2NC Slow action❸	Plastic❶	5	❹
KB E2 L02	**KM E2 L02**		Metal❶	5	❹
KB E3 L02	**KM E3 L02**		Rubber❷	5	❹
KB E1 L20	**KM E1 L20**	2NO Slow action	Plastic❶	5	❹
KB E2 L20	**KM E2 L20**		Metal❶	5	❹
KB E3 L20	**KM E3 L20**		Rubber❷	5	❹
KB E1 L12	**KM E1 L12**	1NO+2NC Slow action❸	Plastic❶	5	❹
KB E2 L12	**KM E2 L12**		Metal❶	5	❹
KB E3 L12	**KM E3 L12**		Rubber❷	5	❹
KB E1 L21	**KM E1 L21**	2NO+1NC Slow action❸	Plastic❶	5	❹
KB E2 L21	**KM E2 L21**		Metal❶	5	❹
KB E3 L21	**KM E3 L21**		Rubber❷	5	❹
KB E1 L03	**KM E1 L03**	3NC Slow action❸	Plastic❶	5	❹
KB E2 L03	**KM E2 L03**		Metal❶	5	❹
KB E3 L03	**KM E3 L03**		Rubber❷	5	❹
BI-DIRECTIONAL. One bottom cable entry. Dimensions to EN 50047.					
KB E1 D02	**KM E1 D02**	2NC ❸ independent	Plastic❶	5	❺

❶ Ø19x5mm = Ø0.75x0,2".
❷ Ø50x10mm = Ø1.97"x0.39".
❸ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❹ Consult Technical support for information; see contact details on inside front cover.

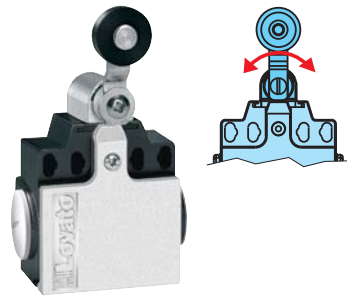
General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB types
  - A300 Q300 for KM types
- IEC rated insulation voltage Ui:
  - 690V for KB types
  - 440V for KM types
- IEC rated impulse withstand voltage Uimp:
  - 6kVAC for KB types
  - 4kVAC for KM types
- Class II insulation for KB only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB types - Self-extinguishing double-insulation polymer thermoplastic
  - KM types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating torque: 3Ncm / 4.25ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Roller lever plunger

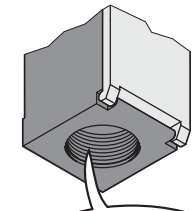


KC E1... - KC E2...
KN E1... - KN E2...

KC E3... - KN E3...

Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
				n°	[kg]
Two side cable entries. Dimensions compatible to EN 50047.					
KC E1 S11	**KN E1 S11**	1NO+1NC Snap action❸	Plastic❶	5	❹
KC E2 S11	**KN E2 S11**		Metal❶	5	❹
KC E3 S11	**KN E3 S11**		Rubber❷	5	❹
KC E1 S02	**KN E1 S02**	2NC Snap action❸	Plastic❶	5	❹
KC E2 S02	**KN E2 S02**		Metal❶	5	❹
KC E3 S02	**KN E3 S02**		Rubber	5	❹
KC E1 A11	**KN E1 A11**	1NO+1NC Slow action make before break❸	Plastic❶	5	❹
KC E2 A11	**KN E2 A11**		Metal❶	5	❹
KC E3 A11	**KN E3 A11**		Rubber❷	5	❹
KC E1 L11	**KN E1 L11**	1NO+1NC Slow action❸	Plastic❶	5	❹
KC E2 L11	**KN E2 L11**		Metal❶	5	❹
KC E3 L11	**KN E3 L11**		Rubber❷	5	❹
KC E1 L02	**KN E1 L02**	2NC Slow action❸	Plastic❶	5	❹
KC E2 L02	**KN E2 L02**		Metal❶	5	❹
KC E3 L02	**KN E3 L02**		Rubber❷	5	❹
KC E1 L20	**KN E1 L20**	2NO Slow action	Plastic❶	5	❹
KC E2 L20	**KN E2 L20**		Metal❶	5	❹
KC E3 L20	**KN E3 L20**		Rubber❷	5	❹
BI-DIRECTIONAL. Two side cable entries. Dimensions compatible to EN 50047.					
KC E1 D02	**KN E1 D02**	2NC ❸ independent	Plastic❶	5	❹

❶ Ø19x5mm = Ø0.75x0,2".
❷ Ø50x10mm = Ø1.97"x0.39".
❸ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❹ Consult Technical support for information; see contact details on inside front cover.

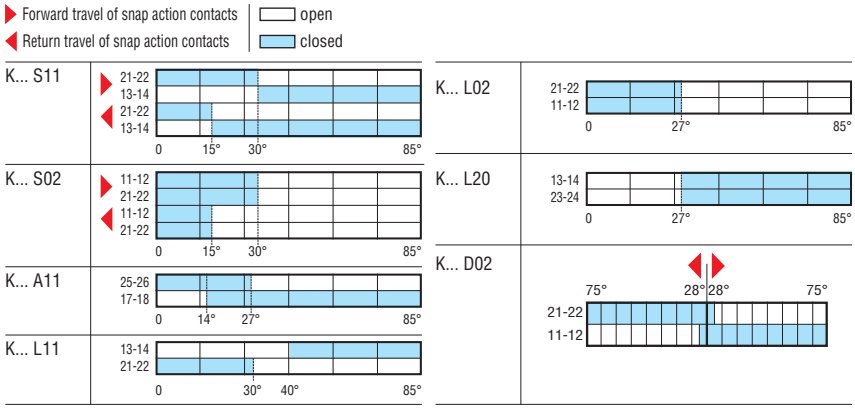


M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for ½ NPT, add N.
E.g. KCE1S11P - KCE1S11N

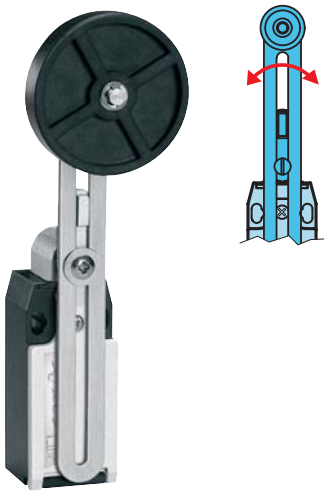
General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 90° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KC types
  - A300 Q300 for KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KC types
  - 440VAC for KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KC types
  - 4kV for KN types
- Class II insulation for KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and ½ NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating torque: 3Ncm/4.25ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

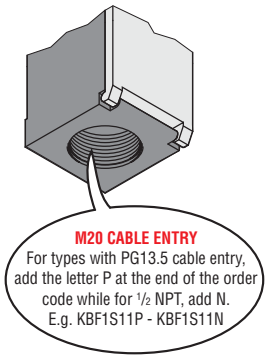
Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Adjustable roller lever

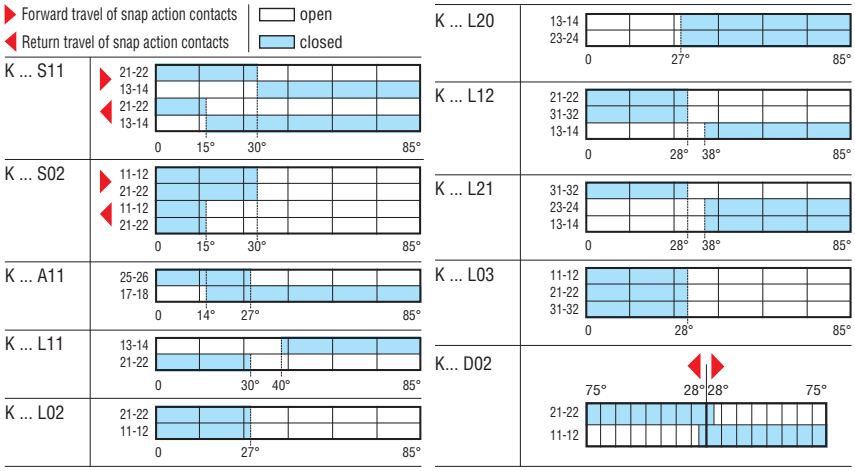


KB F... - KM F...



Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB F1 S11	**KM F1 S11**	1NO+1NC Snap action❹	Plastic❶	5	❺
KB F2 S11	**KM F2 S11**		Metal❶	5	❺
KB F3 S11	**KM F3 S11**		Rubber❷	5	❺
KB F4 S11	**KM F4 S11**		Rubber❸	5	❺
KB F1 S02	**KM F1 S02**	2NC Snap action❹	Plastic❶	5	❺
KB F2 S02	**KM F2 S02**		Metal❶	5	❺
KB F3 S02	**KM F3 S02**		Rubber❷	5	❺
KB F4 S02	**KM F4 S02**		Rubber❸	5	❺
KB F1 A11	**KM F1 A11**	1NO+1NC Slow action make before break❹	Plastic❶	5	❺
KB F2 A11	**KM F2 A11**		Metal❶	5	❺
KB F3 A11	**KM F3 A11**		Rubber❷	5	❺
KB F4 A11	**KM F4 A11**		Rubber❸	5	❺
KB F1 L11	**KM F1 L11**	1NO+1NC Slow action❹	Plastic❶	5	❺
KB F2 L11	**KM F2 L11**		Metal❶	5	❺
KB F3 L11	**KM F3 L11**		Rubber❷	5	❺
KB F4 L11	**KM F4 L11**		Rubber❸	5	❺
KB F1 L02	**KM F1 L02**	2NC Slow action❹	Plastic❶	5	❺
KB F2 L02	**KM F2 L02**		Metal❶	5	❺
KB F3 L02	**KM F3 L02**		Rubber❷	5	❺
KB F4 L02	**KM F4 L02**		Rubber❸	5	❺
KB F1 L20	**KM F1 L20**	2NO Slow action	Plastic❶	5	❺
KB F2 L20	**KM F2 L20**		Metal❶	5	❺
KB F3 L20	**KM F3 L20**		Rubber❷	5	❺
KB F4 L20	**KM F4 L20**		Rubber❸	5	❺
KB F1 L12	**KM F1 L12**	1NO+2NC Slow action❹	Plastic❶	5	❺
KB F2 L12	**KM F2 L12**		Metal❶	5	❺
KB F3 L12	**KM F3 L12**		Rubber❷	5	❺
KB F4 L12	**KM F4 L12**		Rubber❸	5	❺
KB F1 L21	**KM F1 L21**	2NO+1NC Slow action❹	Plastic❶	5	❺
KB F2 L21	**KM F2 L21**		Metal❶	5	❺
KB F3 L21	**KM F3 L21**		Rubber❷	5	❺
KB F4 L21	**KM F4 L21**		Rubber❸	5	❺
KB F1 L03	**KM F1 L03**	3NC Slow action❹	Plastic❶	5	❺
KB F2 L03	**KM F2 L03**		Metal❶	5	❺
KB F3 L03	**KM F3 L03**		Rubber❷	5	❺
KB F4 L03	**KM F4 L03**		Rubber❸	5	❺
BI-DIRECTIONAL. One bottom cable entry. Dimensions to EN 50047.					
KB F1 D02	**KM F1 D02**	2NC ❹ independent	Plastic❶	5	❺

❶ Ø19x5mm = Ø0.75x0.2".
❷ Ø50x10mm = Ø1.97x0.34".
❸ Ø50x10mm (Ø1.97x0.35") with offset alignment.
❹ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❺ Consult Technical support for information; see contact details on inside front cover.



General characteristics

The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 180° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

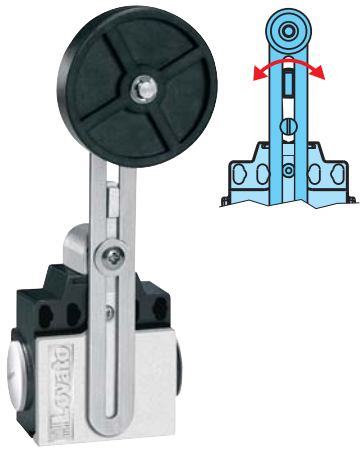
Operational characteristics

- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB types
  - A300 Q300 for KM types
- IEC rated insulation voltage Ui:
  - 690V for KB types
  - 440V for KM types
- IEC rated impulse withstand voltage Uimp:
  - 6kVAC for KB types
  - 4kVAC for KM types
- Class II insulation for KB only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB types - Self-extinguishing double-insulation polymer thermoplastic
  - KM types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 3Ncm/4.25ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance

Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

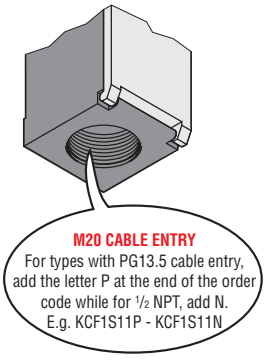
Adjustable roller lever



KC F... - KN F...

Order code Plastic body	Metal body	Contacts	Roller material	Qty per pkg	Wt
				n°	[kg]
Two side cable entries. Dimensions compatible to EN 50047.					
KC F1 S11	**KN F1 S11**	1NO+1NC Snap action❸	Plastic❶	5	❹
KC F2 S11	**KN F2 S11**		Metal❶	5	❹
KC F3 S11	**KN F3 S11**		Rubber❷	5	❹
KC F4 S11	**KN F4 S11**		Rubber off. align.❷	5	❹
KC F1 S02	**KN F1 S02**	2NC Snap action❸	Plastic❶	5	❹
KC F2 S02	**KN F2 S02**		Metal❶	5	❹
KC F3 S02	**KN F3 S02**		Rubber❷	5	❹
KC F4 S02	**KN F4 S02**		Rubber off. align.❷	5	❹
KC F1 A11	**KN F1 A11**	1NO+1NC Slow action make before break❸	Plastic❶	5	❹
KC F2 A11	**KN F2 A11**		Metal❶	5	❹
KC F3 A11	**KN F3 A11**		Rubber❷	5	❹
KC F4 A11	**KN F4 A11**		Rubber off. align.❷	5	❹
KC F1 L11	**KN F1 L11**	1NO+1NC Slow action❸	Plastic❶	5	❹
KC F2 L11	**KN F2 L11**		Metal❶	5	❹
KC F3 L11	**KN F3 L11**		Rubber❷	5	❹
KC F4 L11	**KN F4 L11**		Rubber off. align.❷	5	❹
KC F1 L02	**KN F1 L02**	2NC Slow action❸	Plastic❶	5	❹
KC F2 L02	**KN F2 L02**		Metal❶	5	❹
KC F3 L02	**KN F3 L02**		Rubber❷	5	❹
KC F4 L02	**KN F4 L02**		Rubber off. align.❷	5	❹
KC F1 L20	**KN F1 L20**	2NO Slow action	Plastic❶	5	❹
KC F2 L20	**KN F2 L20**		Metal❶	5	❹
KC F3 L20	**KN F3 L20**		Rubber❷	5	❹
KC F4 L20	**KN F4 L20**		Rubber off. align.❷	5	❹

❶ Ø19x5mm = Ø0.75x0.2".
❷ Ø50x10mm = Ø1.97x0.34".
❸ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❹ Consult Technical support for information; see contact details on inside front cover.
off. align. = offset alignment.

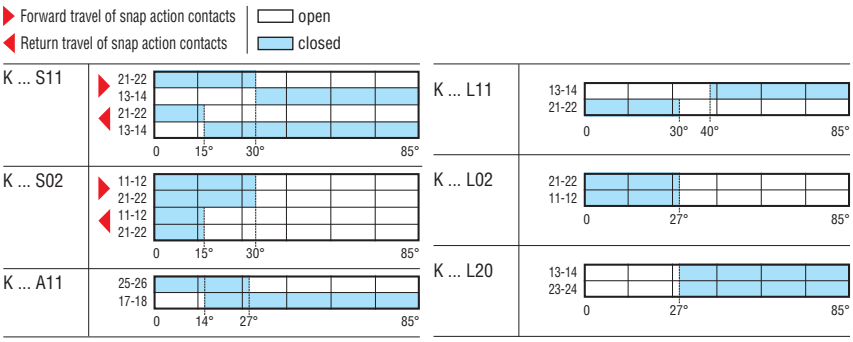


M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KCF1S11P - KCF1S11N

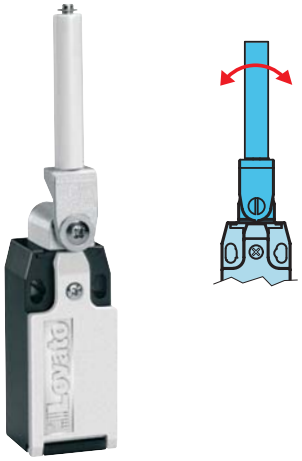
General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 180° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KC types
  - A300 Q300 for KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KC types
  - 440VAC for KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KC types
  - 4kV for KN types
- Class II insulation for KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 3Ncm/4.25ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

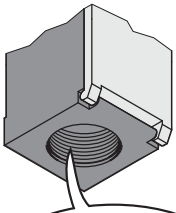


Ceramic rod lever



KB H... - KM H...

KC H... - KN H...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBH1S11P - KBH1S11N

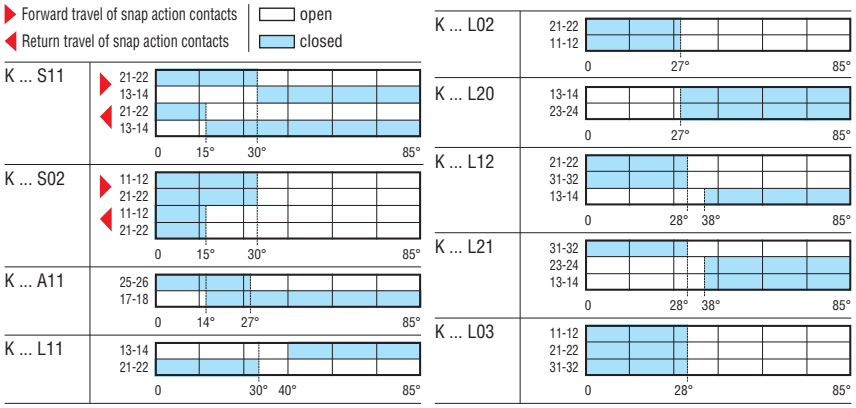
Order code Plastic body	Metal body	Contacts	Rod material	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB H1 S11	**KM H1 S11**	1NO+1NC Snap action❶	Ceramic	5	❷
KB H1 S02	**KM H1 S02**	2NC Snap action❶	Ceramic	5	❷
KB H1 A11	**KM H1 A11**	1NO+1NC Slow action make before break❶	Ceramic	5	❷
KB H1 L11	**KM H1 L11**	1NO+1NC Slow action❶	Ceramic	5	❷
KB H1 L02	**KM H1 L02**	2NC Slow action❶	Ceramic	5	❷
KB H1 L20	**KM H1 L20**	2NO Slow action	Ceramic	5	❷
KB H1 L12	**KM H1 L12**	1NO+2NC Slow action❶	Ceramic	5	❷
KB H1 L21	**KM H1 L21**	2NO+1NC Slow action❶	Ceramic	5	❷
KB H1 L03	**KM H1 L03**	3NC Slow action❶	Ceramic	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC H1 S11	**KN H1 S11**	1NO+1NC Snap action❶	Ceramic	5	❷
KC H1 S02	**KN H1 S02**	2NC Snap action❶	Ceramic	5	❷
KC H1 A11	**KN H1 A11**	1NO+1NC Slow action make before break❶	Ceramic	5	❷
KC H1 L11	**KN H1 L11**	1NO+1NC Slow action❶	Ceramic	5	❷
KC H1 L02	**KN H1 L02**	2NC Slow action❶	Ceramic	5	❷
KC H1 L20	**KN H1 L20**	2NO Slow action	Ceramic	5	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 45° angles.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating torque: 3Ncm/4.25ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

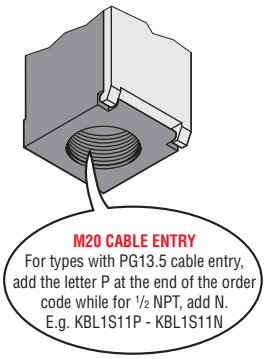
Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Adjustable rod lever

KB L... - KM L...

KC L... - KN L...



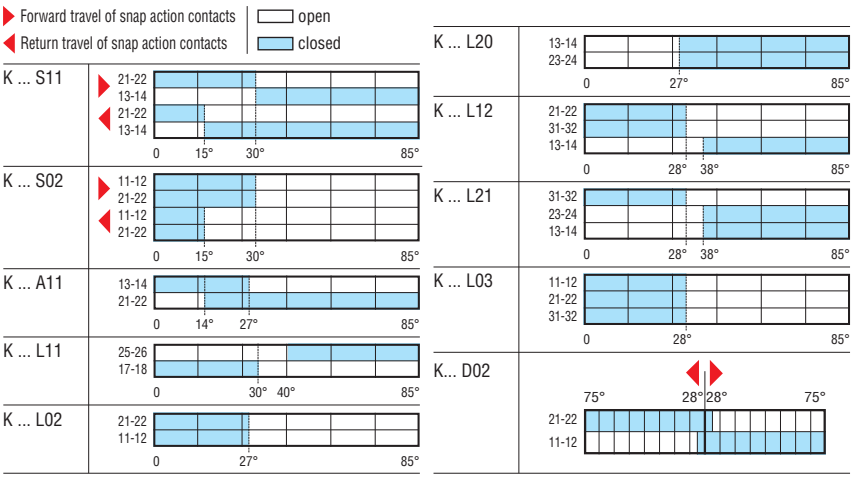
Order code Plastic body	Metal body	Contacts	Rod material	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB L1 S11	**KM L1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KB L2 S11	**KM L2 S11**		Steel	5	❷
KB L1 S02	**KM L1 S02**	2NC Snap action❶	Plastic	5	❷
KB L2 S02	**KM L2 S02**		Steel	5	❷
KB L1 A11	**KM L1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KB L2 A11	**KM L2 A11**		Steel	5	❷
KB L1 L11	**KM L1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KB L2 L11	**KM L2 L11**		Steel	5	❷
KB L1 L02	**KM L1 L02**	2NC Slow action❶	Plastic	5	❷
KB L2 L02	**KM L2 L02**		Steel	5	❷
KB L1 L20	**KM L1 L20**	2NO Slow action	Plastic	5	❷
KB L2 L20	**KM L2 L20**		Steel	5	❷
KB L1 L12	**KM L1 L12**	1NO+2NC Slow action❶	Plastic	5	❷
KB L2 L12	**KM L2 L12**		Steel	5	❷
KB L1 L21	**KM L1 L21**	2NO+1NC Slow action❶	Plastic	5	❷
KB L2 L21	**KM L2 L21**		Steel	5	❷
KB L1 L03	**KM L1 L03**	3NC Slow action❶	Plastic	5	❷
KB L2 L03	**KM L2 L03**		Steel	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC L1 S11	**KN L1 S11**	1NO+1NC Snap action❶	Plastic	5	❷
KC L2 S11	**KN L2 S11**		Steel	5	❷
KC L1 S02	**KN L1 S02**	2NC Snap action❶	Plastic	5	❷
KC L2 S02	**KN L2 S02**		Steel	5	❷
KC L1 A11	**KN L1 A11**	1NO+1NC Slow action make before break❶	Plastic	5	❷
KC L2 A11	**KN L2 A11**		Steel	5	❷
KC L1 L11	**KN L1 L11**	1NO+1NC Slow action❶	Plastic	5	❷
KC L2 L11	**KN L2 L11**		Steel	5	❷
KC L1 L02	**KN L1 L02**	2NC Slow action❶	Plastic	5	❷
KC L2 L02	**KN L2 L02**		Steel	5	❷
KC L1 L20	**KN L1 L20**	2NO Slow action	Plastic	5	❷
KC L2 L20	**KN L2 L20**		Steel	5	❷
BI-DIRECTIONAL. One bottom cable entry. Dimensions to EN 50047.					
KB L1 D02	**KM L1 D02**	2NC ❶ independent	Plastic❶	5	❷
KB L2 D02	**KM L2 D02**	2NC ❶ independent	Steel❶	5	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

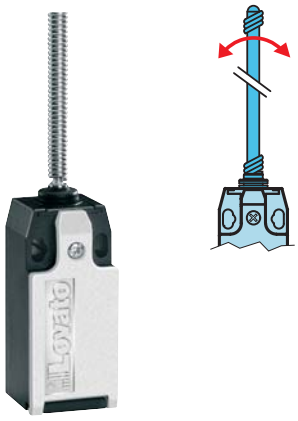
General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The heads have axial rotation of 90° angles (180° for KC and KN types).
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 3Ncm/4.25ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

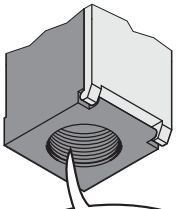


Wobble stick, omnidirectional



KB M1... - KM M1...

KC M2... - KN M2...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBM1S11P - KBM1S11N

Order code Plastic body	Metal body	Contacts	Rod material	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB M1 S11	**KM M1 S11**	1NO+1NC Snap action	Flexible	5	❶
KB M2 S11	**KM M2 S11**		Semirigid	5	❶
KB M1 S02	**KM M1 S02**	2NC Snap action	Flexible	5	❶
KB M2 S02	**KM M2 S02**		Semirigid	5	❶
KB M1 A11	**KM M1 A11**	1NO+1NC Slow action make before break	Flexible	5	❶
KB M2 A11	**KM M2 A11**		Semirigid	5	❶
KB M1 L11	**KM M1 L11**	1NO+1NC Slow action	Flexible	5	❶
KB M2 L11	**KM M2 L11**		Semirigid	5	❶
KB M1 L02	**KM M1 L02**	2NC Slow action	Flexible	5	❶
KB M2 L02	**KM M2 L02**		Semirigid	5	❶
KB M1 L20	**KM M1 L20**	2NO Slow action	Flexible	5	❶
KB M2 L20	**KM M2 L20**		Semirigid	5	❶
KB M1 L12	**KM M1 L12**	1NO+2NC Slow action	Flexible	5	❶
KB M2 L12	**KM M2 L12**		Semirigid	5	❶
KB M1 L21	**KM M1 L21**	2NO+1NC Slow action	Flexible	5	❶
KB M2 L21	**KM M2 L21**		Semirigid	5	❶
KB M1 L03	**KM M1 L03**	3NC Slow action	Flexible	5	❶
KB M2 L03	**KM M2 L03**		Semirigid	5	❶
Two side cable entries. Dimensions compatible to EN 50047.					
KC M1 S11	**KN M1 S11**	1NO+1NC Snap action	Flexible	5	❶
KC M2 S11	**KN M2 S11**		Semirigid	5	❶
KC M1 S02	**KN M1 S02**	2NC Snap action	Flexible	5	❶
KC M2 S02	**KN M2 S02**		Semirigid	5	❶
KC M1 A11	**KN M1 A11**	1NO+1NC Slow action make before break	Flexible	5	❶
KC M2 A11	**KN M2 A11**		Semirigid	5	❶
KC M1 L11	**KN M1 L11**	1NO+1NC Slow action	Flexible	5	❶
KC M2 L11	**KN M2 L11**		Semirigid	5	❶
KC M1 L02	**KN M1 L02**	2NC Slow action	Flexible	5	❶
KC M2 L02	**KN M2 L02**		Semirigid	5	❶
KC M1 L20	**KN M1 L20**	2NO Slow action	Flexible	5	❶
KC M2 L20	**KN M2 L20**		Semirigid	5	❶

❶ Consult Technical support for information; see contact details on inside front cover.

General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools.
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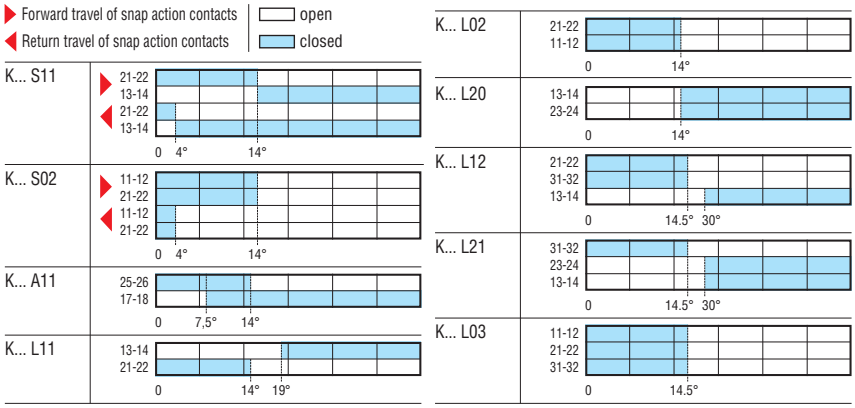
Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating torque: 1Ncm/1.42ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

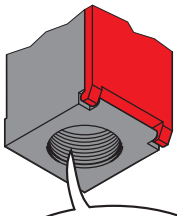
Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Hinge operating

KB P... - KM P...

KC P... - KN P...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBP1L11P - KBP1L11N

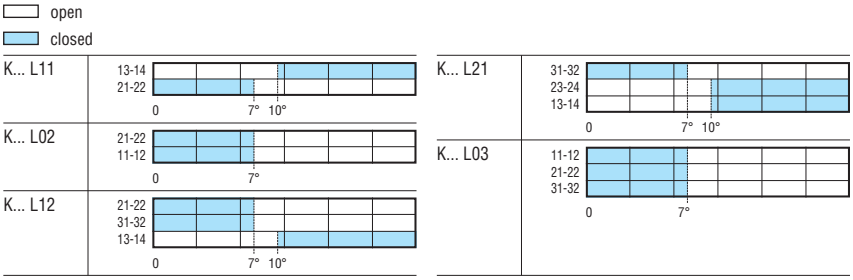
Order code Plastic body	Metal body	Contacts	Shaft features	Qty per pkg	Wt
				n°	[kg]
One bottom cable entry. Dimensions to EN 50047.					
KB P1 L11	**KM P1 L11**	1NO+1NC Slow action❶	Short cylinder	5	❷
KB P2 L11	**KM P2 L11**	1NO+1NC Slow action❶	Long solid	5	❷
KB P3 L11	**KM P3 L11**	1NO+1NC Slow action❶	Long solid w/ reduction	5	❷
KB P1 L02	**KM P1 L02**	2NC Slow action❶	Short cylinder	5	❷
KB P2 L02	**KM P2 L02**	2NC Slow action❶	Long solid	5	❷
KB P3 L02	**KM P3 L02**	2NC Slow action❶	Long solid w/ reduction	5	❷
KB P1 L12	**KM P1 L12**	1NO+2NC Slow action❶	Short cylinder	5	❷
KB P2 L12	**KM P2 L12**	1NO+2NC Slow action❶	Long solid	5	❷
KB P3 L12	**KM P3 L12**	1NO+2NC Slow action❶	Long solid w/ reduction	5	❷
KB P1 L21	**KM P1 L21**	2NO+1NC Slow action❶	Short cylinder	5	❷
KB P2 L21	**KM P2 L21**	2NO+1NC Slow action❶	Long solid	5	❷
KB P3 L21	**KM P3 L21**	2NO+1NC Slow action❶	Long solid w/ reduction	5	❷
KB P1 L03	**KM P1 L03**	3NC Slow action❶	Short cylinder	5	❷
KB P2 L03	**KM P2 L03**	3NC Slow action❶	Long solid	5	❷
KB P3 L03	**KM P3 L03**	3NC Slow action❶	Long solid w/ reduction	5	❷
Two side cable entries. Dimensions compatible to EN 50047.					
KC P1 L11	**KN P1 L11**	1NO+1NC Slow action❶	Short cylinder	5	❷
KC P2 L02	**KN P2 L02**	1NO+1NC Slow action❶	Long solid	5	❷
KC P3 L11	**KN P3 L11**	1NO+1NC Slow action❶	Long solid w/ reduction	5	❷
KC P1 L02	**KN P1 L02**	2NC Slow action❶	Short cylinder	5	❷
KC P2 L02	**KN P2 L02**	2NC Slow action❶	Long solid	5	❷
KC P3 L02	**KN P3 L02**	2NC Slow action❶	Long solid w/ reduction	5	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

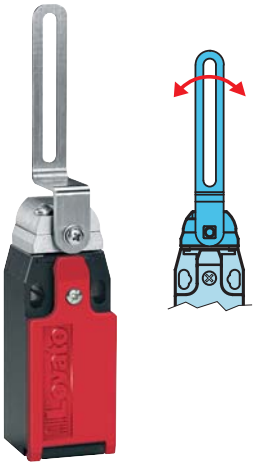
General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: 100,000 cycles
- B10d: 100,000 cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating torque: 15Ncm/21.2ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

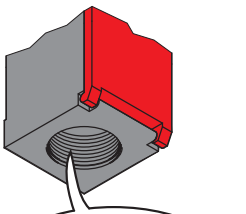


Slotted lever



KB Q... - KM Q...

KC Q... - KN Q...



M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KBQ1L11P - KBQ1L11N

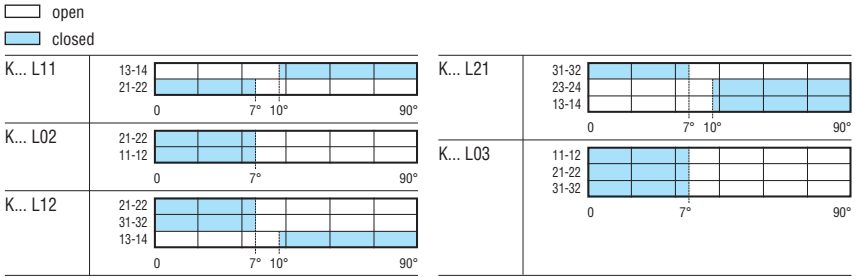
Order code Plastic body	Metal body	Contacts	Qty per pkg	Wt
			n°	[kg]
One bottom cable entry. Dimensions to EN 50047.				
KB Q1 L11	**KM Q1 L11**	1NO+1NC Slow action❶	5	❷
KB Q1 L02	**KM Q1 L02**	2NC Slow action ❶	5	❷
KB Q1 L12	**KM Q1 L12**	1NO+2NC Slow action❶	5	❷
KB Q1 L21	**KM Q1 L21**	2NO+1NC Slow action❶	5	❷
KB Q1 L03	**KM Q1 L03**	3NC Slow action❶	5	❷
Two side cable entries. Dimensions compatible to EN 50047.				
KC Q1 L11	**KN Q1 L11**	1NO+1NC Slow action❶	5	❷
KC Q1 L02	**KN Q1 L02**	2NC Slow action❶	5	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.

General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools.
The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: 100,000 cycles
- B10d: 100,000 cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KB-KC types
  - A300 Q300 for KM-KN types
- IEC rated insulation voltage Ui:
  - 690VAC for KB-KC types
  - 440VAC for KM-KN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KB-KC types
  - 4kV for KM-KN types
- Class II insulation for KB-KC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operators of aluminium-zinc alloy
- Housing:
  - KB-KC types - Self-extinguishing double-insulation polymer thermoplastic
  - KM-KN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating torque: 15Ncm/21.2ozin
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

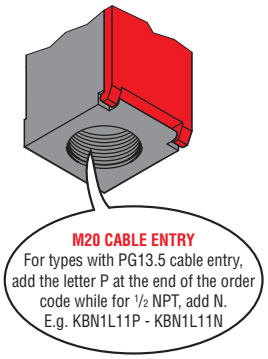
Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.



Key operated

KB N...

KC N...

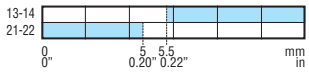


Order code Plastic body	Contacts	Key shape❷	Qty per pkg	Wt
			n°	[kg]
One bottom cable entry. Dimensions to EN 50047.				
KB N1 L11	1NO+1NC Slow action❶	Straight	5	0.092
KB N2 L11		Angled	5	0.092
KB N3 L11		Straight "T"	5	0.092
KB N4 L11		Angled "T"	5	0.092
KB N1 L02	2NC Slow action❶	Straight	5	0.092
KB N2 L02		Angled	5	0.092
KB N3 L02		Straight "T"	5	0.092
KB N4 L02		Angled "T"	5	0.092
KB N1 L12	1NO+2NC Slow action❶	Straight	5	0.096
KB N2 L12		Angled	5	0.096
KB N3 L12		Straight "T"	5	0.096
KB N4 L12		Angled "T"	5	0.096
KB N1 L21	2NO+1NC Slow action❶	Straight	5	0.096
KB N2 L21		Angled	5	0.096
KB N3 L21		Straight "T"	5	0.096
KB N4 L21		Angled "T"	5	0.096
KB N1 L03	3NC Slow action❶	Straight	5	0.096
KB N2 L03		Angled	5	0.096
KB N3 L03		Straight "T"	5	0.096
KB N4 L03		Angled "T"	5	0.096
Two side cable entries. Dimensions compatible to EN 50047.				
KC N1 L11	1NO+1NC Slow action❶	Straight	5	0.107
KC N2 L11		Angled	5	0.107
KC N3 L11		Straight "T"	5	0.107
KC N4 L11		Angled "T"	5	0.107
KC N1 L02	2NC Slow action❶	Straight	5	0.107
KC N2 L02		Angled	5	0.107
KC N3 L02		Straight "T"	5	0.107
KC N4 L02		Angled "T"	5	0.107

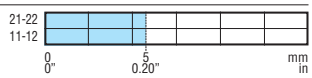
❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ The key is standard supplied.

open
closed

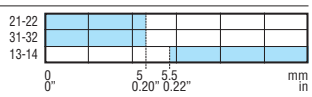
K... L11



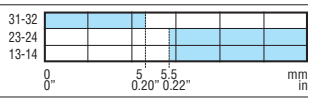
K... L02



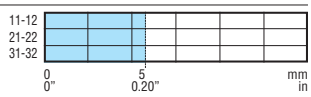
K... L12



K... L21



K... L03



General characteristics
The LOVATO ELECTRIC limit switches have been designed to satisfy requirements comprising quick installation, easy wiring, simple setup, modularity, sturdiness and constant reliability.
The body cover is hinged at the bottom and removable. The heads have axial rotation in any of 4 positions at 90° angles. The auxiliary contact blocks are removable assuring remarkable wiring ease.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: 100,000 cycles
- B10d: 100,000 cycles
- IEC conventional thermal current Ith: 10A
- UL/CSA and IEC/EN 60947-5-1 designation: A600 Q600
- IEC rated insulation voltage Ui: 690V
- IEC rated impulse withstand voltage Uimp: 6kV
- Class II insulation
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Housing and operators in self-extinguishing double-insulation polymer thermoplastic
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Operating force: 8N/1.8lb
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance
Certifications obtained: EAC, CCC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: EN 50047, IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

Accessories and spare parts for key operated switches

KX N1

KX N2

KX N3

KX N4

KX N5

Order code	Description	Qty per pkg	Wt
		n°	[kg]
K X N1	Straight key	5	0.013
K X N2	Angled key	5	0.013
K X N3	Straight "T" key	5	0.012
K X N4	Angled "T" key	5	0.012
K X N5	Toggle key	5	0.019

Contact blocks

K X B...

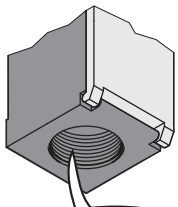
Order code	Contacts	Qty per pkg	Wt
		n°	[kg]
KX B S11	1NO+1NC Snap action❶❷	10	0.021
KX B S02	2NC Snap action❶❷	10	0.021
KX B A11	1NO+1NC Slow action make before break❶❷	10	0.021
KX B L11	1NO+1NC Slow action❷	10	0.021
KX B L02	2NC Slow action❷	10	0.021
KX B L20	2NO Slow action	10	0.021
KX B L12	1NO+2NC Slow action❷❸	10	0.026
KX B L21	2NO+1NC Slow action❷❸	10	0.026
KX B L03	3NC Slow action❷❸	10	0.026

❶ Not suitable for key operated KBN / KCN, hinged operating KBP / KCP / KMP / KNP and slotted lever KBQ / KCQ / KMQ / KNQ types.
❷ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❸ Not suitable for KC and KN types, KG and KR foot switches.

Body complete with contact block

KX CB... - KX CM...

KX CC... - KX CN...

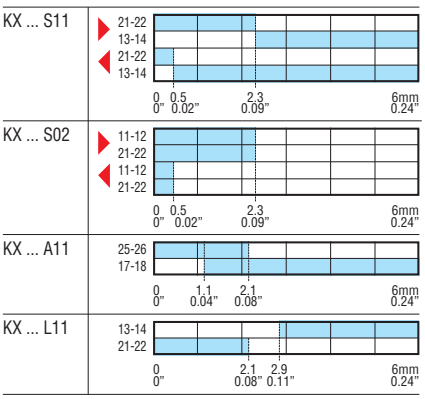


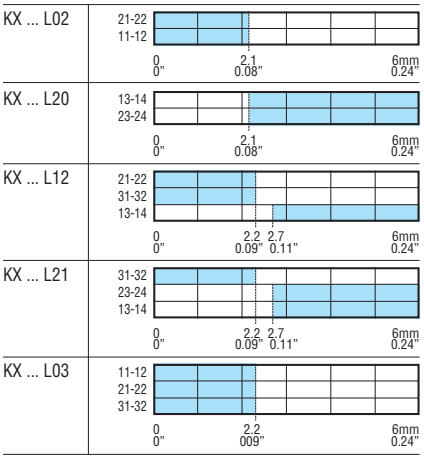
M20 CABLE ENTRY
For types with PG13.5 cable entry, add the letter P at the end of the order code while for 1/2 NPT, add N.
E.g. KXCCL11P - KXCCL11N

Order code Plastic body	Metal body	Contacts	Qty per pkg	Wt
			n°	[kg]
One bottom cable entry. Dimensions to EN 50047.				
KX CB S11	**KX CM S11**	1NO+1NC Snap action❶❷	10	❹
KX CB S02	**KX CM S02**	2NC Snap action❶❷	10	❹
KX CB A11	**KX CM A11**	1NO+1NC Slow action make before break❶❷	10	❹
KX CB L11	**KX CM L11**	1NO+1NC Slow action❷	10	❹
KX CB L02	**KX CM L02**	2NC Slow action❷	10	❹
KX CB L20	**KX CM L20**	2NO Slow action	10	❹
KX CB L12	**KX CM L12**	1NO+2NC Slow action❷❸	10	❹
KX CB L21	**KX CM L21**	2NO+1NC Slow action❷❸	10	❹
KX CB L03	**KX CM L03**	3NC Slow action❷❸	10	❹
Two side cable entries. Dimensions compatible to EN 50047.				
KX CC S11	**KX CN S11**	1NO+1NC Snap action❶❷	10	❹
KX CC S02	**KX CN S02**	2NC Snap action❶❷	10	❹
KX CC A11	**KX CN A11**	1NO+1NC Slow action make before break❶❷	10	❹
KX CC L11	**KX CN L11**	1NO+1NC Slow action❷	10	❹
KX CC L02	**KX CN L02**	2NC Slow action❷	10	❹
KX CC L20	**KX CN L20**	2NO Slow action	10	❹

❶ Not suitable for key operated KBN / KCN, hinged operating KBP / KCP / KMP / KNP and slotted lever KBQ / KCQ / KMQ / KNQ types.
❷ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❸ Not suitable for KC and KN types.
❹ Consult Technical support for information; see contact details on inside front cover.

Forward travel of snap action contacts
Return travel of snap action contacts
open
closed





General characteristics

The KXB contact blocks can be used with the K series of limit switches. Combinations of 2 contacts with slow or snap action and, for KB and KM types only, 3 slow action contacts are available.
The NC contacts have direct opening operation, a specific safety principle.
The particular four-point contacts warrant high conductivity in any sort of application. The removal of the contacts from the limit switch body provides remarkable wiring ease and reduces installation time as well.
The KX C... bodies, complete with auxiliary contacts, can be used as spare parts for the K series limit switches or coupled with the KX A... operating heads, to obtain complete limit switches in the required configurations.
The body cover is hinged at the bottom and removable to have the best access. Each body includes the innovative locking bayonet mechanism of the operating head. Plastic and metal types are available.

Operational characteristics

- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- conductivity: 10mA 5V
- UL/CSA and IEC/EN 60947-5-1 designation:
  - A600 Q300 for KX CB-KX CC types
  - A300 Q300 for KX CM-KX CN types
- IEC rated insulation voltage Ui:
  - 690VAC for KX CB-KX CC types
  - 440VAC for KX CM-KX CN types
- IEC rated impulse withstand voltage Uimp:
  - 6kV for KX CB-KX CC types
  - 4kV for KX CM-KX CN types
- Class II insulation for KX CB-KX CC only
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Housing:
  - KX CB-KX CC types - Self-extinguishing double-insulation polymer thermoplastic
  - KX CM-KX CN types - Aluminium-zinc alloy
- Cable entry: M20 standard supplied; PG13.5 and 1/2 NPT available (see the side note for details)
- Operating head fixing: Locking bayonet insert
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP20 for terminals
  - IEC degree of protection: IP65 for body housing.

Certifications and compliance

Certifications obtained: EAC for all; UL Listed for US and Canada (File E93601), as Auxiliary Devices for KX C... body types only. UL Recognized for USA and Canada (cURus - File E93601) as component - Auxiliary devices for contact blocks only; products having this type of marking are intended for use as components of complete workshop-assembled equipment.
Comply with standards: EN50047, IEC/EN 60947-1, IEC/EN60947-5-1, IEC/EN 60204-1, UL508, CSA C22.2 n° 14.

Operating heads


KX A A1


KX A B1


KX A B2


KX A C1


KX A C2


KX A D1


KX A D2


KX A E1


KX A E2


KX A E3


KX A F1


KX A F2


KX A F3


KX A F4


KX A H1


KX A L1


KX A L2

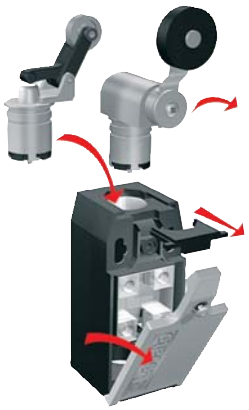

KX A M1


KX A M2

Order code	Description	Qty per pkg	Wt
		n°	[kg]
KX A A1	Top push rod plunger	5	0.013
KX A B1	Plastic top roller push plunger	5	0.020
KX A B2	Metal top roller push plunger	5	0.020
KX A C1	Plastic roller centre push lever	5	0.020
KX A C2	Metal roller centre push lever	5	0.020
KX A D1	Plastic roller side push lever	5	0.020
KX A D2	Metal roller side push lever	5	0.023
KX A E1	Plastic roller lever plunger	5	0.039
KX A E2	Metal roller lever plunger	5	0.048
KX A E3	Rubber Ø50x10mm❷ roller lever plunger	5	0.055
KX A F1	Adjustable plastic roller lever Ø19x5mm❶	5	0.055
KX A F2	Adjustable metal roller lever Ø19x5mm❶	5	0.065
KX A F3	Adjustable rubber Ø50x10mm❷ roller lever	5	0.065
KX A F4	Adjustable offset rubber Ø50x10mm❷ roller lever	5	0.081
KX A H1	Ceramic rod lever	5	0.056
KX A L1	Adjustable plastic rod lever	5	0.043
KX A L2	Adjustable stainless steel rod lever	5	0.050
KX A M1	Flexible wobble stick	5	0.032
KX A M2	Semirigid wobble stick	5	0.025

❶ Ø19x5mm = Ø0.75x0,2".
❷ Ø50x10mm = Ø1.97"x0.39".

General characteristics
The KX A... operating heads can be used as spare parts for the K series limit switches or coupled with the KX C... bodies to obtain complete limit switches in the required configurations.
The heads are made of metal and warrant sturdiness and operating reliability in all conditions.
The shape of the coupling section with the body of the K series switches permits to orient the head in any 45° angle position while the initial lever and rod position can be adjusted 360° at 15° angle positions.
The head fixing to the body is achieved by the innovative locking bayonet mechanism so there is no need of tools.
Tightening torque for eventual operating head actuator fixing is 0.8Nm/7lbin.



Cable glands and cable conduit


KX P...


KX P03

Order code	Description	Qty per pkg	Wt
		n°	[kg]
KX P01	M20 cable gland	50	0.009
KX P02	PG13.5 cable gland	50	0.009
KX P03	M20 rubber cable conduit	50	0.004

General characteristics
The cable glands are in plastic with either M20 or PG13.5 thread and provide to keep the cable in place and maintain the proper IP protection of the limit switch after installation.

Operational characteristics for cable gland
- Material: Self-extinguishing polyamide
- IEC degree of protection: IP68
- Gland seal with cable diameter: 6...12mm/0.24...0.47".

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: EN 50262, UL508.


KP A1...


KP A2...


KP B1...


KP B2...


KP B3...


KP B4...


KP B5...


KP B6...


KP B7...


KP B8...


KP E1...


KP E2...


KP F1...


KP L2...

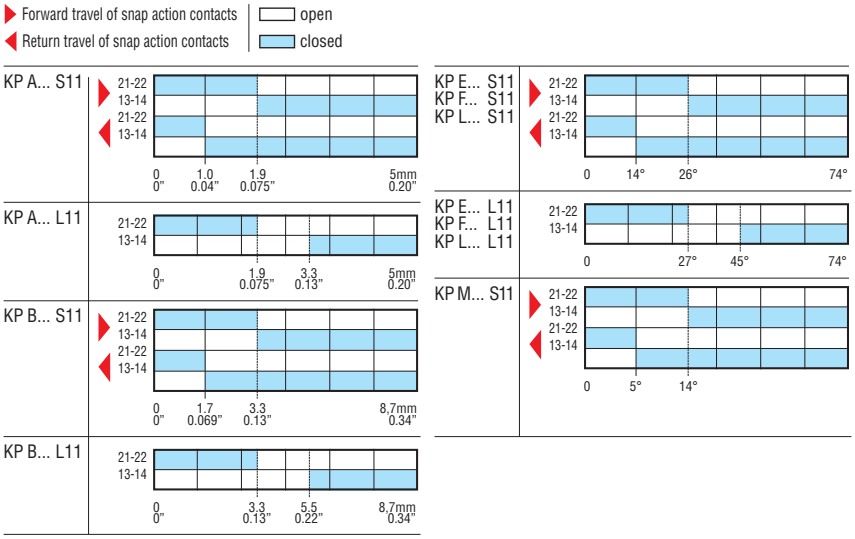

KP M2 S11

Order code	Contacts 1NO+1NC	Head material	Cable length ❷	Qty per pkg	Wt
			m	n°	[kg]
TOP PUSH ROD PLUNGER.					
KP A1 S11	Snap action❶	Metal	2	1	0.286
KP A1 L11	Slow action❶	Metal	2	1	0.286
KP A2 S11❸	Snap action❶	Metal	2	1	0.302
KP A2 L11❸	Slow action❶	Metal	2	1	0.302
TOP ROLLER PUSH PLUNGER.					
KP B1 S11	Snap action❶	Plastic	2	1	0.290
KP B1 L11	Slow action❶	Plastic	2	1	0.290
KP B2 S11	Snap action❶	Metal	2	1	0.290
KP B2 L11	Slow action❶	Metal	2	1	0.290
KP B3 S11❹	Snap action❶	Plastic	2	1	0.288
KP B3 L11❹	Slow action❶	Plastic	2	1	0.288
KP B4 S11❹	Snap action❶	Metal	2	1	0.296
KP B4 L11❹	Slow action❶	Metal	2	1	0.296
M12 HEAD TOP ROLLER PUSH PLUNGER.					
KP B5 S11	Snap action❶	Plastic	2	1	0.308
KP B5 L11	Slow action❶	Plastic	2	1	0.308
KP B6 S11	Snap action❶	Metal	2	1	0.310
KP B6 L11	Slow action❶	Metal	2	1	0.310
KP B7 S11❹	Snap action❶	Plastic	2	1	0.310
KP B7 L11❹	Slow action❶	Plastic	2	1	0.310
KP B8 S11❹	Snap action❶	Metal	2	1	0.310
KP B8 L11❹	Slow action❶	Metal	2	1	0.310
ROLLER LEVER PLUNGER.					
KP E1 S11	Snap action❶	Plastic	2	1	0.336
KP E1 L11	Slow action❶	Plastic	2	1	0.336
KP E2 S11	Snap action❶	Metal	2	1	0.336
KP E2 L11	Slow action❶	Metal	2	1	0.336
ADJUSTABLE ROLLER LEVER.					
KP F1 S11	Snap action❶	Plastic	2	1	0.344
KP F1 L11	Slow action❶	Plastic	2	1	0.344
ADJUSTABLE ROD LEVER.					
KP L2 S11	Snap action❶	Metal	2	1	0.342
KP L2 L11	Slow action❶	Metal	2	1	0.342
OMNIDIRECTIONAL WOBBLE STICK.					
KP M2 S11	Snap action❶	Metal	2	1	0.298

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ For prewired switches with 1m long cable only, add suffix 010 at the end of the order code.
Example: KP A1 S11 010 for prewired switch, top push metal rod plunger, with 1NO+1NC snap action contacts and 1m long cable.
❸ M12 head fixing.
❹ Roller operation perpendicular to switch body.

Operational characteristics
- 2 meters long cable❷ (5 core, each 0.75mm²/18 AWG)
- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- IEC conventional thermal current Ith: 10A
- conductivity: 10mA 5V
- UL/CSA and IEC/EN 60947-5-1 designation: B300 R300
- IEC rated insulation voltage Ui: 400VAC
- IEC rated impulse withstand voltage Uimp: 4kV
- Class I insulation
- Contact resistance: <25mΩ
- Body housing: aluminium - zinc alloy
- Operating force/torque:
  - KP A types: 15N/3.4lb
  - KP B types: 10N/2.2lb
  - KP E, KP F and KP L types: 0.08Nm/0.7lbin
  - KP M types: 0.1Nm/0.9lbin
- Tightening torque for switch fixing: 2.5Nm/22.1lbin
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP67 for body housing.

Certifications and compliance
Certifications obtained: EAC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, UL508, CSA C22.2 n° 14.



Top push rod plunger

TS1... - TL1...

TS2... - TL2...

Order code	Contacts	Plunger material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 01 10	1NO+1NC Snap action	Steel	1	0.120
TL1 01 10	1NO+1NC ❶ Slow action	Steel	1	0.120
With reset button on front.				
TS2 01 10	1NO+1NC Snap action	Steel	1	0.130
TL2 01 10	1NO+1NC ❶ Slow action	Steel	1	0.130

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

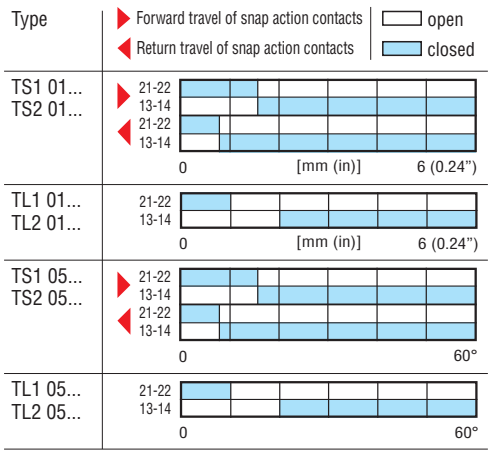
Roller lever

TS1... - TL1...

TS2... - TL2...

Order code	Contacts	Roller material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 05 20 A❷	1NO+1NC Snap action	Plastic Ø20x5	1	0.120
TS1 05 21 A		Metal Ø20x5	1	0.125
TS1 05 24 A❸		Rubber Ø50x10	1	0.135
TL1 05 20 A❷	1NO+1NC ❶ Slow action	Plastic Ø20x5	1	0.120
TL1 05 21 A		Metal Ø20x5	1	0.125
TL1 05 24 A❸		Rubber Ø50x10	1	0.135
With reset button.				
TS2 05 20 AS❷	1NO+1NC Snap action	Plastic Ø20x5	1	0.130
TS2 05 21 AS		Metal Ø20x5	1	0.135
TS2 05 24 AS❸		Rubber Ø50x10	1	0.145
TL2 05 20 AS❷	1NO+1NC ❶ Slow action	Plastic Ø20x5	1	0.130
TL2 05 21 AS		Metal Ø20x5	1	0.135
TL2 05 24 AS❸		Rubber Ø50x10	1	0.145

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Roller lever plunger limit switches with 30x5mm plastic roller are available and can be ordered substituting the number 20 with 23 in the above-given order codes.
❸ Roller lever plunger limit switches with 35x15mm rubber roller are available and can be ordered substituting the number 24 with 22 in the above-given order codes.
Ø20x5mm = Ø0.79x0.2".
Ø50x10mm = Ø1.97x0.39".
Ø30x5mm = Ø1.81x0.2".
Ø35x15mm = Ø1.38x0.59".



General characteristics
The TS-TL series limit switches are designed and manufactured according to European standards EN 50041 for dimensions.
The insulated housing of the limit switch is made of self-extinguishing thermoplastic giving excellent mechanical stability and is suitable, as a result, for assembly on machinery or installations in the general-purpose industrial field as well as saline environments (for example close by the sea).
The housing sturdiness allows mounting of limit switches in heavy duty applications.
The double-insulated housing of the limit switch warrants and protects internal circuits against shocks or impacts and in industrial environments, against accidental ingress of tools and accidental contact.
The contacts are dimensioned to ensure self cleaning of the silver-alloy contact surfaces. Contacts (NC) of the TL series have direct (positive) opening action to prevent sticking or welding.

Operational characteristics
- Maximum operating rate: 1200 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles (100,000 cycles only for reset button versions)
- IEC utilisation category:
  - DC13 duty: 1.5A 24V
  - AC15 duty: 6A 250V
- IEC conventional thermal current Ith: 6A
- IEC rated insulation voltage Ui: 250VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Cable connection: Self-releasing screw terminal
- Operating force: 6N/1.35lb (TS...01 and TL...01)
- Operating force: 3Ncm/4.25ozin (TS...05 and TL...05)
- TS...05 and TL...05 have axial rotation in any of 4 positions (90°)
- TS...05 and TL...05 have lever inclination, 360° adjustment
- Housing cable entry: PG13.5
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP66.

Certifications and compliance
Certifications obtained: EAC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1, EN 50041, UL508, CSA C22.2 n° 14.

Wobble stick, omnidirectional

TS1... - TL1...

Order code	Contacts	Rod material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 09 92	1NO+1NC Snap action	Flexible	1	0.115
TL1 09 92	1NO+1NC Slow action	Flexible	1	0.115

Key operated

TL2...

Order code	Contacts	Key shape ❸	Qty per pkg	Wt
			n°	[kg]
Without reset button. Front key withdrawal ❷.				
TL2 10 10	1NO+1NC ❶ Slow action	Straight	1	0.120
TL2 10 11		Angled	1	0.120
TL2 10 12		Angled "T"	1	0.120
TL2 10 13		Straight "T"	1	0.120

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Version with key withdrawal on the left or on the right is available; replace the last letter (A) of the order code respectively with S or D (e.g. TL2 10 10S - left or TL2 10 10D - right). For further assistance, consult Technical support for information; see contact details on inside front cover.
❸ The key is standard supplied.

A 20746

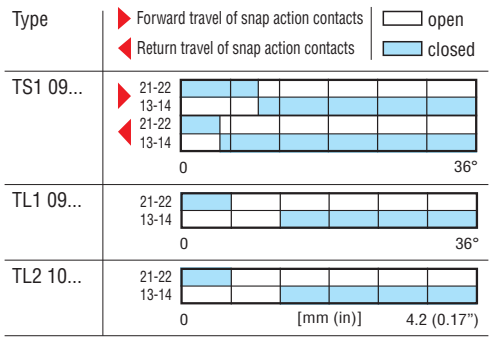
A 20747

P 32753

P 32752

A 20748

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Extra keys.			
A 20746	Straight key	10	0.013
A 20747	Angled key	10	0.013
P 32753	Angled "T" key	10	0.008
P 32752	Straight "T" key	10	0.008
A 20748	Toggle key	2	0.085



General characteristics
The TS-TL series limit switches are designed and manufactured according to European standards EN 50041 for dimensions.
The insulated housing of the limit switch is made of self-extinguishing thermoplastic giving excellent mechanical stability and is suitable, as a result, for assembly on machinery or installations in the general-purpose industrial field as well as saline environments (for example close by the sea).
The housing sturdiness allows mounting of limit switches in heavy duty applications.
The double-insulated housing of the limit switch warrants and protects internal circuits against shocks or impacts and in industrial environments, against accidental ingress of tools and accidental contact.
The contacts are dimensioned to ensure self cleaning of the silver-alloy contact surfaces. Contacts (NC) of the TL series have direct (positive) opening action to prevent sticking or welding.

Operational characteristics
- Maximum operating rate: 1200 cycles/h
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC utilisation category:
  - DC13 duty: 1.5A 24V
  - AC15 duty: 6A 250V
- IEC conventional thermal current Ith: 6A
- IEC rated insulation voltage Ui: 250VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operating torque: 1Ncm/1.42ozin (TS1 09... and TL1 09...)
- Operating force: 8N/1.8lb (TL2 10...)
- TL2 10... has axial rotation in any of 4 positions (90°)
- TL2 10... has vertical or sideways key withdrawal
- Housing cable entry: PG13.5
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP66.

Certifications and compliance
Certifications obtained: EAC, UL Listed for USA and Canada (cULus - File E93601) as Auxiliary Devices - Limit switches.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1, EN 50041, UL508, CSA C22.2 n° 14.

Top push rod plunger

PLN...A...

Order code	Contacts	Degree of protection	Qty per pkg	Wt
		IEC	n°	[kg]
PLN A1 A	1NC❶	IP40	1	0.240
PLN A1 A W		IP65	1	0.240
PLN A2 A	2NC❶	IP40	1	0.240
PLN A2 A W		IP65	1	0.240
PLN C1 A	1NO	IP40	1	0.240
PLN C1 A W		IP65	1	0.240
PLN C2 A	2NO	IP40	1	0.240
PLN C2 A W		IP65	1	0.240
PLN U1 A	1NO+1NC	IP40	1	0.240
PLN U1 A W		IP65	1	0.240

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Top roller push plunger

PLN...R...

Order code	Contacts	Degree of protection	Qty per pkg	Wt
		IEC	n°	[kg]
PLN A1 R	1NC❶	IP40	1	0.230
PLN A1 R W		IP65	1	0.230
PLN A2 R	2NC❶	IP40	1	0.230
PLN A2 R W		IP65	1	0.230
PLN C1 R	1NO	IP40	1	0.230
PLN C1 R W		IP65	1	0.230
PLN C2 R	2NO	IP40	1	0.230
PLN C2 R W		IP65	1	0.230
PLN U1 R	1NO+1NC	IP40	1	0.230
PLN U1 R W		IP65	1	0.230

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

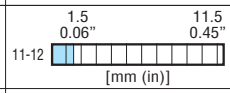
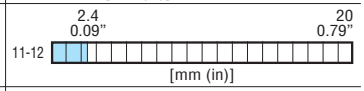
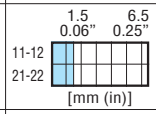
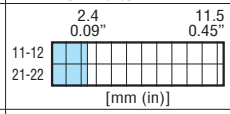
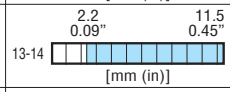
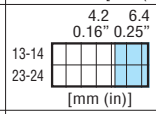
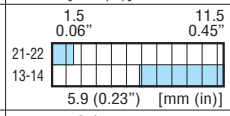
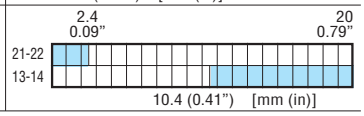
Roller centre push lever

PLN...H

PLN...HSB W

Order code	Contacts	Degree of protection	Qty per pkg	Wt
		IEC	n°	[kg]
PLN A1 H	1NC❶	IP40	1	0.270
PLN A1 H W		IP65	1	0.270
PLN A2 H	2NC❶	IP40	1	0.270
PLN A2 H W		IP65	1	0.270
PLN U1 H	1NO+1NC	IP40	1	0.270
PLN U1 H W		IP65	1	0.270
With offset roller.				
PLN A1 HSB	1NC❶	IP40	1	0.290
PLN A1 HSB W		IP65	1	0.290
PLN A2 HSB	2NC❶	IP40	1	0.290
PLN A2 HSB W		IP65	1	0.290
PLN U1 HSB	1NO+1NC	IP40	1	0.290
PLN U1 HSB W		IP65	1	0.290

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Type	Travel [mm (in)] — open / closed
PLN A1 A... PLN A1 R...	
PLN A1 H... PLN A1 HSB...	
PLN A2 A... PLN A2 R...	
PLN A2 H... PLN A2 HSB...	
PLN C1 A... PLN C1 R...	
PLN C2 A... PLN C2 R...	
PLN U1 A... PLN U1 R...	
PLN U1 H... PLN U1 HSB...	

General characteristics
The PLN types are for general purpose use. The extensive range of models with numerous of actuators and multiple contact configurations is the optimal solution to the diverse installation requirements.
Overall simple design, oversize contacts and choice materials ensure durable and safe operation. The metal alloy housing and resistant thermoplastic actuators warrant reliable heavy-duty features for any sort of operating conditions.
The PLN series limit switches are available with IEC IP40 or IP65 degree of protection; this characteristic is ensured by the use of appropriate sealing gasket.
The IEC IP65 version is easily identified by the "W" suffix of its order code and can be used in adverse ambient conditions.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- IEC utilisation category:
  - DC13 duty: 10A 24V
  - AC15 duty: 5A 250V, 3A 400V
- IEC conventional thermal current Ith: 10A
- IEC rated insulation voltage Ui: 400VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Housing cable entry: PG11 (PLN...W types only complete with cable gland)
- Cable connection: screw terminal with clamp suitable for cables up to 2.5mm² / AWG 14
- Tightening torque for switch fixing: 2.5Nm / 22.1lbin
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP40 / IP65 (see table indications).

Certifications and compliance
Certifications obtained: IMQ, EAC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, EN 81-1.

Latch and manual release

PLN A1 RAG

Order code	Contacts	Degree of protection	Qty per pkg	Wt
		IEC	n°	[kg]
Top roller push plunger.				
PLN A1 RAG	1NC ❶	IP40	1	0.220
PLN A1 RAG W	1NC ❶	IP65	1	0.230

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Manual reload and magnetic release

PL A1 AM

PL A1 RM W

Order code	Contacts	Degree of protection	Qty per pkg	Wt
		IEC	n°	[kg]
Top push rod plunger.				
PL A1 AM	1NC ❶	IP40	1	0.245
PL A1 AM W	1NC ❶	IP65	1	0.250
Top roller push plunger.				
PL A1 RM	1NC ❶	IP40	1	0.250
PL A1 RM W	1NC ❶	IP65	1	0.260

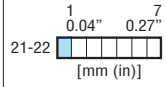
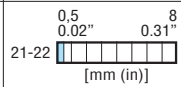
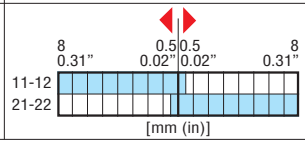
❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Bi-directional

PLN 978

Order code	Contacts	Degree of protection	Qty per pkg	Wt
		IEC	n°	[kg]
Rod plunger.				
PLN 978	2NC ❶ independent	IP65	1	0.265

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Type	Travel [mm (in)] (The arrows indicate the direction of operation)	open / closed
PLN A1 RAG PLN A1 RAG W		
PL A1 AM PL A1 AM W PL A1 RM PL A1 RM W		
PLN 978		

General characteristics
The PLN limit switches were initially made specifically for hoisting or lifting duty and then used in other diverse applications. The type with latch and manual release as well as the one with manual reload and magnetic release are designed so the switch remains opened after the switching of the NC contact. In the first instance, the contact closing is made by pushing the release button. In the second case, the reloading is obtained by pushing the shaft end or else pulling it from the top for the IP65 types.
The limit switches with dual operation can be replaced by two standard switches, for the stop control of moving mechanisms with two directions of running (e.g. automatic doors). It is equipped with two opposed operating mechanisms and one NC contact for each mechanism (i.e. 2NC).
The simple constructive design, oversize contacts and careful material combinations warrant safe and constant operation. The metal-alloy housing and the thermoplastic mechanism material of first-rate mechanical features assure reliability and durability with any type of operating condition.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- IEC utilisation category:
  - DC13 duty: 10A 24V
  - AC15 duty: 5A 250V, 3A 400V
- IEC conventional thermal current Ith: 10A
- IEC rated insulation voltage: 400VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Housing cable entry: PG11 (PL...W and PLN 978 types only complete with cable gland)
- Cable connection: screw terminal with clamp suitable for cables up to 2.5mm²/AWG 14
- Tightening torque for switch fixing: 2.5Nm/22.1lbin
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP40 / IP65 (see table indications).

Certifications and compliance
Certifications obtained: IMQ, EAC.
Compliant with standards: IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1.

Dimensions to EN 50047

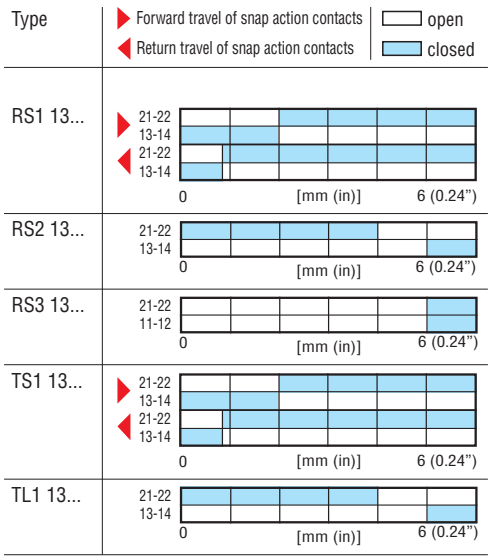
RS1 13 10
RS2 13 10
RS3 13 10

Order code	Contacts	Ring material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
RS1 13 10	1NO+1NC Snap action	Steel	1	0.090
RS2 13 10	1NO+1NC Slow action	Steel	1	0.090
RS3 13 10	2NO Slow action	Steel	1	0.090

Dimensions to EN 50041

TS1 13 - TL1 10

Order code	Contacts	Ring material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 13 10	1NO+1NC Snap action	Steel	1	0.117
TL1 13 10	1NO+1NC Slow action	Steel	1	0.117



General characteristics
The RS and T series limit switches are designed and manufactured according to European standards for dimensions and operating characteristics.
The double-insulated housing of the limit switch is made of glass-reinforced self-extinguishing polyamide resin to protect internal circuits against shocks or impacts and in industrial environments, against accidental ingress of tools and accidental contact.
The contacts are dimensioned to ensure self cleaning of the silver-alloy contact surfaces.

Operational characteristics
- Maximum operating rate: 3600 cycles/h for RS...13 10; 1200 cycles/h for T...13 10
- Switching speed: 0.5...1.5m/s
- Mechanical life: >10 million cycles
- IEC utilisation category
  - DC13 duty: 1.5A 24V
  - AC15 duty: 6A 250V
- IEC conventional thermal current Ith: 10A
- IEC rated insulation voltage Ui: 250VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Operating force: 25N/5.6lb
- Cable entry: PG11 for RS...13 10; PG13.5 for T...13 10
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm^2 max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP65 for RS...13 10; IP66 for T...13 10.

Certifications and compliance
Certifications obtained: EAC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1, EN 50041, UL508, CSA C22.2 n° 14.

PLN...AT...W

Order code	Contacts	Degree of protection	Operating force	Qty per pkg	Wt
		IEC	[N] / [lb]	n°	[kg]
Without reset button					
PLN U1 AT	1NO+1NC ❶	IP40	10 / 2.2	1	0.240
PLN U1 AT W		IP65	10 / 2.2	1	0.240
PLN U1 AT25	1NO+1NC ❶	IP40	25 / 5.6	1	0.240
PLN U1 AT25 W		IP65	25 / 5.6	1	0.240

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

P2L...

Order code	Contacts	Degree of protection	Operating force	Qty per pkg	Wt
		IEC	[N] / [lb]	n°	[kg]
Without reset button.					
P2L8 13 11	1NO+1NC ❶	IP65	40 / 9	1	0.459
P2L8 13 12		IP65	120 / 27	1	0.459
P2L10 13 11	2NO+2NC ❶	IP65	40 / 9	1	0.459
P2L10 13 12		IP65	120 / 27	1	0.459

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Type	Travel [mm (in)] — open / closed
PLN U1 AT...	1,5 (0.06") … 11 (0.43"); 13-14, 21-22; 6 [mm (in)] (0.24")
P2L 8...	11-12, 21-22; 0 [mm (in)] 10 (0.39")
P2L 10...	31-32, 41-42, 13-14, 23-24; 0 [mm (in)] 10 (0.39")

General characteristics
The PLN and P2L types are limit switches for general use. The simple constructive design, oversize contacts and careful material combinations warrant safe and constant operation. The metal-alloy housing and the thermoplastic mechanism material of first-rate mechanical features assure reliability and durability with any type of operating condition.

Operational characteristics
- Maximum operating rate: 3600 cycles/h
- Mechanical life: >10 million cycles
- IEC utilisation category
  - DC13 duty: 10A 24V
  - AC15 duty: 5A 250V; 3A 400V
- IEC conventional thermal current Ith: 10A for PLN types; 6A for P2L types
- IEC rated insulation voltage Ui: 400VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Cable entry: PG11 (PLN...W and P2L types only complete with cable gland)
- Cable connection: Self-releasing screw terminal suitable for cables up to 2.5mm²/AWG 14
- Tightening torque for switch fixing: 2.5Nm/2.21 lbin
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP40 / IP65 (see order code table indications).

Certifications and compliance
Certifications obtained: IMQ.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, EN 81-1.


RS13 13 10


TL13 13 10

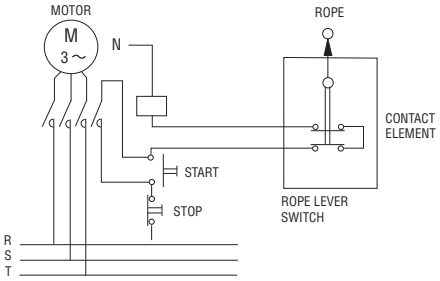
Order code	Contacts	Force	Qty per pkg	Wt
		[N]/[lb]	n°	[kg]
With reset button.				
RS13 13 10❷	1NO + 1NC❶	25/5.6	1	0.092
TL13 13 10❸	1NO + 1NC❶	25/5.6	1	0.125
PLN13 13 11	1NO + 1NC❶	60/13.5	1	0.248
P2L13 13 11	1NO + 1NC❶	40/9	1	0.459
P2L13 13 12	1NO + 1NC❶	120/27	1	0.459
P2L15 13 11	2NO + 2NC❶	40/9	1	0.459
P2L15 13 12	2NO + 2NC❶	120/27	1	0.459

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Dimensions according with EN50047.
❸ Dimensions according with EN50041.


PLN 13 13 11


P2L...

Example of wiring diagram




P33032


P33033

Accessories and spare parts

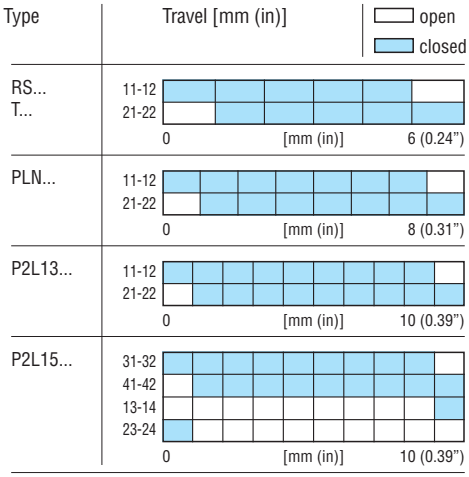
Order code	Description	Qty per pkg	Wt
		n°	[kg]
Accessories.			
P33032	Rope terminal clamp, Ø5mm	10	0.023
P33033	Rope eye, Ø5mm	10	0.007
P33034	Turnbuckle M6x60	10	0.061
P33035	Eye bolt M8	10	0.030
P33036	Steel rope, Ø5mm❶	100[m]	4.900

❶ The P33036 rope is sold in 100m/109.4yd roll; Ø5mm = Ø0.2".


P33034


P33035

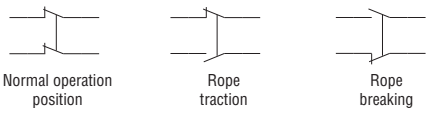

P33036



General characteristics
The rope-operated switches for emergency stop are mainly suitable for emergency stop or alarm systems for machinery which occupies a large space. This emergency stop can be achieved from any point when the rope is manually pulled each time.
The choice of the body, between plastic and metal, can satisfy the most diversified requirements for sturdiness and size.

Operational characteristics
- Maximum operating rate: 1800 cycles/h
- Mechanical life: 100,000 cycles
- IEC utilisation category
  - DC13 duty: 1.5A 24V (10A 24V only for PLN-P2L)
  - AC15 duty: 6A 250V (3A 400V only for PLN-P2L)
- IEC conventional thermal current Ith:
  10A for RS, TL and PLN; 6A for P2L
- IEC rated insulation voltage Ui:
  250VAC (400V for PLN-P2L)
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Cable entry: PG11 for RS, PLN and P2L types (PLN and P2L complete with cable gland); PG13.5 for TL13 only
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm² max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP65 (T type: IP66).

Operation



Certification and compliance
Certifications obtained: EAC for all; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit swtches for RS13 and TL13 types only.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, ISO 13850; also UL508, CSA-C22.2 n° 14 for RS and TL types.

Safety switches with solenoid

KE N1...

new

Order code	Key actuated contacts ❶	Solenoid actuated contacts ❶	Solenoid rated voltage	Qty per pkg	Wt
			[V]	n°	[kg]
Locked actuator with energised solenoid. Head orientation: front ❷❸.					
KE N1 E1024F	1NC	2NC+1NO	24V AC/DC	1	0.440
KE N1 E2024F	1NA	2NC+1NO		1	0.440
KE N1 E3024F	1NO+1NC	2NC		1	0.440
KE N1 E1120F	1NC	2NC+1NO	120V AC/DC	1	0.440
KE N1 E2120F	1NO	2NC+1NO		1	0.440
KE N1 E3120F	1NO+1NC	2NC		1	0.440
KE N1 E1230F	1NC	2NC+1NO	230V AC/DC	1	0.440
KE N1 E2230F	1NO	2NC+1NO		1	0.440
KE N1 E3230F	1NO+1NC	2NC		1	0.440
Locked actuator with de-energised solenoid. Head orientation: front ❷❸.					
KE N1 M1024F	1NC	2NC+1NO	24V AC/DC	1	0.440
KE N1 M2024F	1NO	2NC+1NO		1	0.440
KE N1 M3024F	1NO+1NC	2NC		1	0.440
KE N1 M1120F	1NC	2NC+1NO	120V AC/DC	1	0.440
KE N1 M2120F	1NO	2NC+1NO		1	0.440
KE N1 M3120F	1NO+1NC	2NC		1	0.440
KE N1 M1230F	1NC	2NC+1NO	230V AC/DC	1	0.440
KE N1 M2230F	1NO	2NC+1NO		1	0.440
KE N1 M3230F	1NO+1NC	2NC		1	0.440

❶ Contacts status are referred to the operating condition (KEN1E...:energised solenoid and inserted key actuator / KEN1M...: de-energised solenoid and inserted key actuator).

❷ Versions with different head orientation are available in order to insert the key actuator in left, right or back direction. Replace the last letter of the order code with L(left), R(right) or B(back). Consult Technical support for information

❸ Key actuator has to be ordered separately

Accessories and spare parts

KE X N1

KE X N2

KE X N5

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
KE X N1	Straight key	1	0.013
KE X N2	Angled key	1	0.013
KE X N5	Toggle key	1	0.019

General characteristics

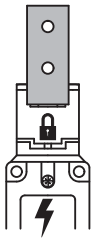
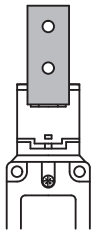
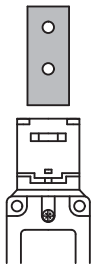
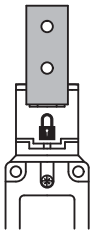
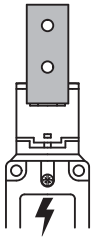
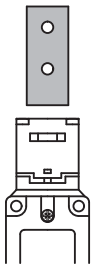
The safety switches with solenoid avoid access in hazardous areas until the receiving of an appropriate signal: the actuator key could be locked or released through a solenoid dependent upon it's powered state (locked actuator with energised solenoid for KNE1E... /locked actuator with de-energised solenoid for KEN1M...).
A manual emergency release is available.
Three different electric contact combinations are available.
Contacts are actuated separately by key actuator or by solenoid and allow to cover the installations' main common needs.

Operational characteristics

- For safety applications up to:
  - Safety integrety level (SIL), category 3 according to EN 62061
  - PLe according to EN ISO 13849-1
- Interlock with mechanical lock Type 2 according to EN ISO 14119.
- Actuator insertion force: 15N
- Release actuator extraction force: 30N
- Locked actuator holding force: 1200N
- Maximum operating rate: 600 cycles/h
- Mechanical life: 1.000.000 cycles
- B10d: 4.000.000 cycles
- IEC conventional thermal current: 10A
- IEC/EN60947-5-1 designation: A300 Q300
- AC15 duty:
  - 24V - 10A
  - 230V - 4A
- DC13 duty:
  - 24V - 4A
- IEC rated insulation voltage Ui: 250V
- Rated impulse withstand voltage: 2,5kV
- Short-circuit backup protection: 10A Gg
- Max solenoid consumption:
  - 24V: 8,3W
  - 120V: 8,1W
  - 230V: 6,8W
- IEC terminals degree of protection: IP20
- IEC body housing degree of protection: IP65
- Self-extinguishing polymer thermoplastic housing and actuator head
- Actuator head orientation cannot be modified by operator. Operation heads available in 4 axial positions (90°C)
- Cables entries: 3 x M20
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2,5Nm
  - Contact terminals: 0,8Nm
  - Body lid screw fixing: 0,8Nm
- Conductor section: 1 or 2 conductors 1,5mm^2 max
- Ambient conditions:
  - Operating temperature: -25…+55°C
  - Storage temperature: -40…+70°C
  - Pollution degree: 3.

Certifications and compliance

Certifications obtained: cULus, EAC (pending)
Compliant with standards: IEC/EN 60947-1,

		KEN1E...: locked actuator with energised solenoid			KEN1M...: locked actuator with de-energised solenoid		
	Key actuator status	inserted and locked	inserted and unlocked	not inserted	inserted and locked	inserted and unlocked	not inserted
	Solenoid status	energised	de-energised	-	de-energised	energised	-
							
	Contact activation						
KEN1...1...	Key actuator	11 12	11 12	11 12	11 12	11 12	11 12
	Solenoid	21 22	21 22	21 22	21 22	21 22	21 22
	Solenoid	33 34	33 34	33 34	33 34	33 34	33 34
	Solenoid	41 42	41 42	41 42	41 42	41 42	41 42
KEN1...2...	Key actuator	13 14	13 14	13 14	13 14	13 14	13 14
	Solenoid	21 22	21 22	21 22	21 22	21 22	21 22
	Solenoid	33 34	33 34	33 34	33 34	33 34	33 34
	Solenoid	41 42	41 42	41 42	41 42	41 42	41 42
KEN1...3...	Key actuator	13 14	13 14	13 14	13 14	13 14	13 14
	Solenoid	21 22	21 22	21 22	21 22	21 22	21 22
	Key actuator	31 32	31 32	31 32	31 32	31 32	31 32
	Solenoid	41 42	41 42	41 42	41 42	41 42	41 42


KS A1...


KS A2...


KS A3...


KS A4...


KS A9...


KS B1...


KS B2...


KS C1...


KS C2...


KS C3...


KS C9...


KS L1...


KS L2...


KS L3...


KSS C01


KSS CB2

Order code	Contacts	Terminals	Qty per pkg	Wt
			n°	[kg]
TOP PUSH ROD - METAL PLUNGER. Pin.				
KS A1 S	1NO/NC	Solder	10	0.031
KS A1 V	1NO/NC	Screw	10	0.031
KS A1 F	1NO/NC	Faston	10	0.032
TOP PUSH ROD - METAL PLUNGER. High rod plunger.				
KS A2 S	1NO/NC	Solder	10	0.033
KS A2 V	1NO/NC	Screw	10	0.033
KS A2 F	1NO/NC	Faston	10	0.034
TOP PUSH ROD - METAL PLUNGER. Low rod plunger.				
KS A3 S	1NO/NC	Solder	10	0.033
KS A3 V	1NO/NC	Screw	10	0.033
KS A3 F	1NO/NC	Faston	10	0.035
TOP PUSH ROD - METAL PLUNGER. M12 fixing head.				
KS A4 S	1NO/NC	Solder	10	0.052
KS A4 V	1NO/NC	Screw	10	0.052
KS A4 F	1NO/NC	Faston	10	0.053
PUSH BUTTON.				
KS A9 S	1NO/NC	Solder	10	0.034
KS A9 V	1NO/NC	Screw	10	0.034
KS A9 F	1NO/NC	Faston	10	0.035
TOP ROLLER PUSH PLUNGER. M12 fixing head.				
KS B1 S	1NO/NC	Solder	10	0.057
KS B1 V	1NO/NC	Screw	10	0.057
KS B1 F	1NO/NC	Faston	10	0.058
TOP ROLLER PUSH PLUNGER. M12 fixing head, 90° roller.				
KS B2 S	1NO/NC	Solder	10	0.057
KS B2 V	1NO/NC	Screw	10	0.057
KS B2 F	1NO/NC	Faston	10	0.060
ROLLER CENTRE PUSH LEVER. 26.6mm/1.05" long lever.				
KS C1 S	1NO/NC	Solder	10	0.036
KS C1 V	1NO/NC	Screw	10	0.036
KS C1 F	1NO/NC	Faston	10	0.037
ROLLER CENTRE PUSH LEVER. 48.5mm/1.91" long lever.				
KS C2 S	1NO/NC	Solder	10	0.037
KS C2 V	1NO/NC	Screw	10	0.037
KS C2 F	1NO/NC	Faston	10	0.038
ROLLER CENTRE PUSH LEVER. 38mm/1.5" long lever.				
KS C3 S	1NO/NC	Solder	10	0.037
KS C3 V	1NO/NC	Screw	10	0.037
KS C3 F	1NO/NC	Faston	10	0.038
ROLLER CENTRE PUSH LEVER. One-way roller lever.				
KS C9 S	1NO/NC	Solder	10	0.038
KS C9 V	1NO/NC	Screw	10	0.038
KS C9 F	1NO/NC	Faston	10	0.039
METAL LEVER. 63mm/2.48" long flat lever.				
KS L1 S	1NO/NC	Solder	10	0.035
KS L1 V	1NO/NC	Screw	10	0.035
KS L1 F	1NO/NC	Faston	10	0.037
METAL LEVER. 54mm/2.13" long flat lever.				
KS L2 S	1NO/NC	Solder	10	0.035
KS L2 V	1NO/NC	Screw	10	0.035
KS L2 F	1NO/NC	Faston	10	0.037
METAL LEVER. 168.3mm/6.63" long flat cylindrical lever.				
KS L3 S	1NO/NC	Solder	10	0.037
KS L3 V	1NO/NC	Screw	10	0.037
KS L3 F	1NO/NC	Faston	10	0.038
ACCESSORIES.❶				
KSS C01	Terminal shroud		10	0.007
KSS CB2	Terminal shroud with conduit		10	0.015

❶ Suitable only for KS...V.

Operational characteristics
- Maximum operating rate: 240 cycles/min
- Switching speed: 0.01...1m/s
- Operating speed: 0.05...1m/s
- Electrical life: 500,000 cycles
- Mechanical life: 20 million cycles
- IEC conventional thermal current Ith: 15A
- UL/CSA and IEC/EN 60947-5-1 designation: A600 P300
- conductivity: 10mA 5V
- IEC rating: AC15 240VAC 3A
- IEC rated insulation voltage Ui: 250VAC
- Contact resistance: <15mΩ
- Body housing: polymer thermoplastic
- Operating force:
  - KS A1-KS A4 and KS B types: 2.5N/9oz
  - KS A9 and KS C3 types: 1.5N/5.4oz
  - KS C1 types: 1N/3.6oz
  - KS C2 and KS L2: 1.3N/4.7oz
  - KS C9 types: 1.7N/6.1oz
  - KS L1 types: 6.4N/23oz
  - KS L3 types: 0.1N/0.36oz
- Tightening torque:
  - For M12 head fixing: 4.9...6.9Nm/3.6...5.1lbft
  - For side screws: 0.6...1Nm/0.44...0.74lbft
  - For terminal screws: 0.7...1Nm/0.52...0.74lbft
- Ambient conditions:
  - Operating termperature: -25...+70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP00 or IP20 with terminal shroud.

Certifications and compliance
Certifications obtained: EAC; UL Recognized for USA and Canada (File E172189) as Industrial Control Switches - Component; products having this type of marking are intended for use as components of complete workshop - assembled equipment.
Compliance with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n° 14.


KG2 00 ...
KG2 20 ...


KR2 00 ...


KG1 10 ...


KR2 10 ...
KR2 11 ...


KGD 003 - KGD 004

Order code Plastic body	Metal body	Model	Contacts	Qty per pkg	Wt
				n°	[kg]
ONE PEDAL FOOT SWITCHES. With free actuation.					
KG1 00 S11 ❸	**KR1 00 S11** ❸	Open	1NO+1NC Snap action ❶	1	❷
KG1 00 L11 ❸	**KR1 00 L11** ❸	Open	1NO+1NC Slow action ❶	1	❷
KG2 00 S11 ❸	**KR2 00 S11** ❸	With cover	1NO+1NC Snap action ❶	1	❷
KG2 00 L11 ❸	**KR2 00 L11** ❸	With cover	1NO+1NC Slow action ❶	1	❷
With safety lever.					
KG1 10 S11 ❸	**KR1 10 S11** ❸	Open	1NO+1NC Snap action ❶	1	❷
KG1 10 L11 ❸	**KR1 10 L11** ❸	Open	1NO+1NC Slow action ❶	1	❷
KG2 10 S11 ❸	**KR2 10 S11** ❸	With cover	1NO+1NC Snap action ❶	1	❷
KG2 10 L11 ❸	**KR2 10 L11** ❸	With cover	1NO+1NC Slow action ❶	1	❷
KG2 10 S22	**KR2 10 S22**	With cover	2NO+2NC Snap action ❶	1	❷
With pedal actuator lock.					
KG1 20 S11 ❸	**KR1 20 S11** ❸	Open	1NO+1NC Snap action ❶	1	❷
KG1 20 L11 ❸	**KR1 20 L11** ❸	Open	1NO+1NC Slow action ❶	1	❷
KG2 20 S11 ❸	**KR2 20 S11** ❸	With cover	1NO+1NC Snap action ❶	1	❷
KG2 20 L11 ❸	**KR2 20 L11** ❸	With cover	1NO+1NC Slow action ❶	1	❷
With two-stage safety lever.					
KG2 11 S22	**KR2 11 S22**	With cover	2NO+2NC 2-stage snap action ❶	1	❷

Order code Plastic body	Metal body	Model	Contacts (for each pedal)	Qty per pkg	Wt
				n°	[kg]
TWO PEDAL FOOT SWITCHES. With safety lever on both pedals.					
KGD 001 ❸	**KRD 001** ❸	Both w/cover	1NO+1NC Snap action ❶	1	❷
KGD 002	**KRD 002**	Both w/cover	2NO+2NC Snap action ❶	1	❷
Left pedal with free actuation and right pedal with safety lever.					
KGD 003 ❸	**KRD 003** ❸	Left open Right w/cover	1NO+1NC Snap action ❶	1	❷
KGD 004 ❹	**KRD 004** ❹	Left open Right w/cover	1NO+1NC Snap action ❶ 2NO+2NC Snap action ❶	1	❷

❶ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.
❷ Consult Technical support for information; see contact details on inside front cover.
❸ A possible second contact block can be fitted; blocks with only 2 contacts in total can be used. See accessories below and contact blocks on page 9-16.

General characteristics
The KG and KR foot switches are used to control machinery and other equipment, leaving the operator's hands free to do other functions. The sturdiness of the metal and plastic body and the wide range of the available versions provide the proper solution for each control need.
Main features are:
– Thermoplastic or metal version
  The plastic or metal body gives adequate robustness to the foot switch, for installation in all ambient and application conditions.
– Versions complete with or without pedal protection cover
  The cover assures protection against accidental foot switch operation, due to sudden tool or heavy material dropping or other shock or vibration. The type without cover, open version, is instead immediately accessible and is preferred when the most important pedal operation is to stop a machine.
– Versions with safety lever
  The safety mechanism prevents unintentional foot switch activation and excludes the pedal pressing if the operator's foot is not completely in place.
– Stable pedal base
  The foot switch is equipped with rubber feet and metal-reinforced base for a firm and non-sliding position and a more reliable and safe activation.

Operational characteristics
– Mechanical life: >10 million cycles
– Conventional thermal current Ith: 10A
– Designation to IEC/EN 60947-5-1:
  • A600 Q600 for KG types
  • A300 Q300 for KR types
– Tightening torque for contacts: 1Nm/0.74lbft
– Rated insulation voltage Ui:
  • 690VAC for KG types
  • 440VAC for KR types
– Rated impulse withstand voltage Uimp:
  • 6kV for KG types
  • 4kV for KR types
– Class II insulation (KG types only)
– Contact resistance: <10mΩ
– Short-circuit backup protection: 10A gG fuse
– Cable connection: self-releasing screw terminal
– Housing:
  • KG types - Self-extinguishing double-insulation polymer thermoplastic
  • KR types - Aluminium-zinc alloy
– Cable entry: M20
– Ambient conditions:
  • Operating temperature: -25...+70°C
  • Storage temperature: -40...+70°C
  • Pollution degree: 3
– IEC degree of protection:
  • IP20 for terminals
  • IP54 for body housing
  • IP65 available on request (add the letter S at the end of the order code. E.g. KG1 00 S11 S).

Certifications and compliance
Certifications obtained: EAC for foot switches and cURus for contacts only (see page 9-16 for details).
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, IEC/EN 60447.

Accessories


KX P...

KX P03

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Accessories.			
KGX 01	Kit of elements to activate 2° contact block ❹	10	0.039
KGX 02	Contact block mounting bracket	10	0.022
Cable glands and cable conduit.			
KX P01	M20 cable gland	50	0.009
KX P02	PG13.5 cable gland	50	0.009
KX P03	M20 rubber cable conduit	50	0.004

❹ A possible second contact block can be fitted on the left-hand pedal; blocks with only 2 contacts in total can be used. See accessories below and contact blocks on page 9-16.

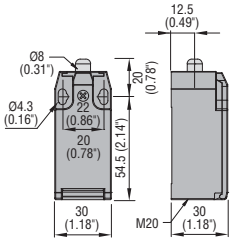
General characteristics
The cable glands are in plastic with either M20 or PG13.5 thread and provide to keep the cable in place and maintain the proper IP protection of the switch after installation.

Operational characteristics for cable gland
– Material: Self-extinguishing polyamide
– IEC degree of protection: IP68
– Gland seal with cable diameter: 6...12mm/0.24"...0.47".

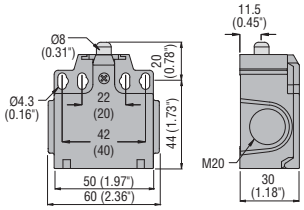
Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: EN 50262, UL508.

LIMIT SWITCHES K SERIES

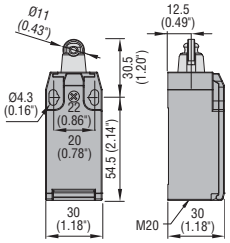
KB A1...
KM A1...



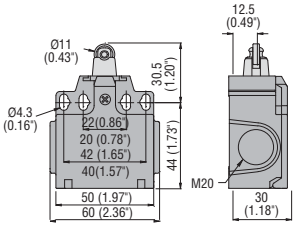
KC A1
KN A1



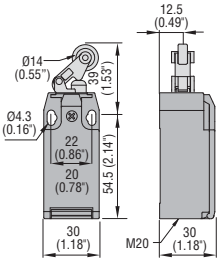
KB B1... - KB B2...
KM B1... - KM B2...



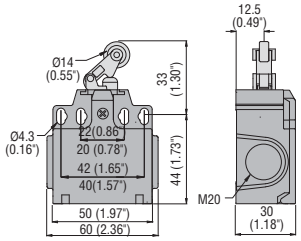
KC B1... - KC B2...
KN B1... - KN B2...



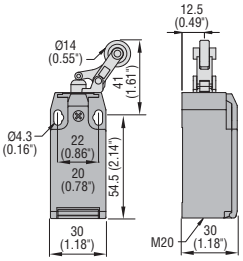
KB C1... - KB C2...
KM C1... - KM C2...



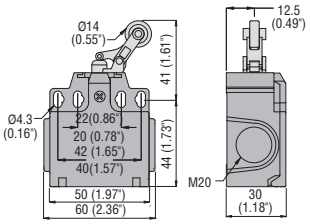
KC C1... - KC C2...
KN C1... - KN C2...



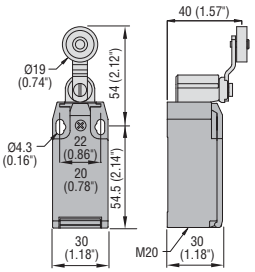
KB D1... - KB D2...
KM D1... - KM D2...



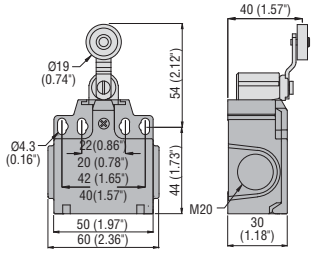
KC D1... - KC D2...
KN D1... - KN D2...



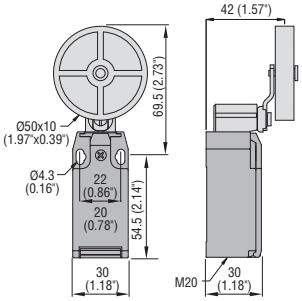
KB E1... - KB E2...
KM E1... - KM E2...



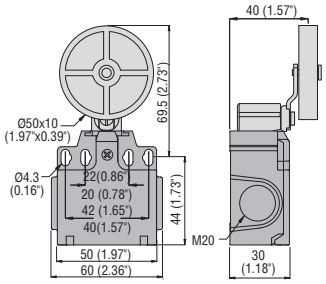
KC E1... - KC E2...
KN E1... - KN E2...



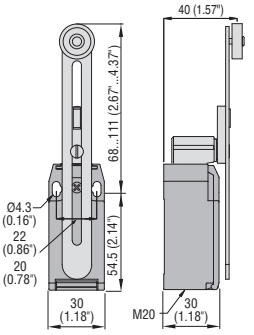
KB E3...
KM E3...



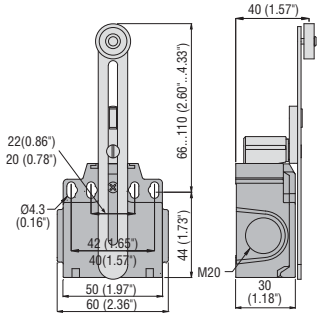
KC E3...
KN E3...



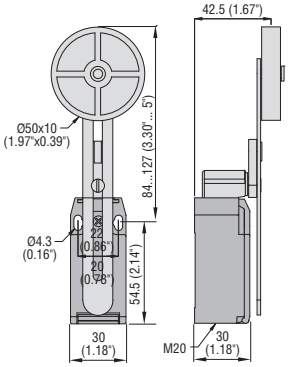
KB F1... - KB F2...
KM F1... - KM F2...



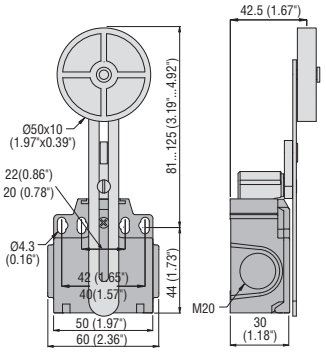
KC F1... - KC F2...
KN F1... - KN F2...



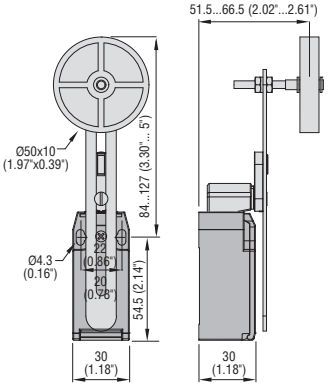
KB F3...
KM F3...



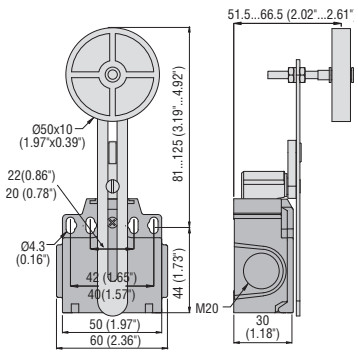
KC F3...
KN F3...



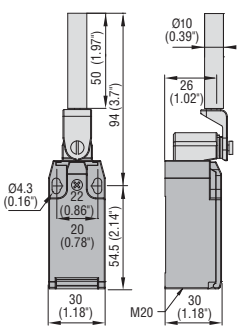
KB F4...
KM F4...



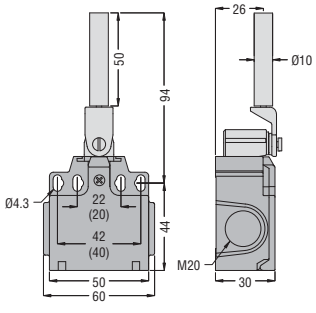
KC F4...
KN F4...



KB H1...
KM H1...

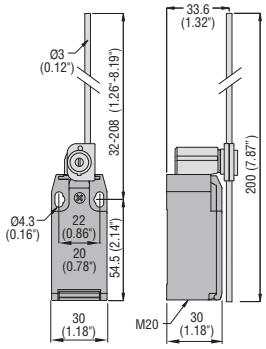


KC H1...
KN H1...

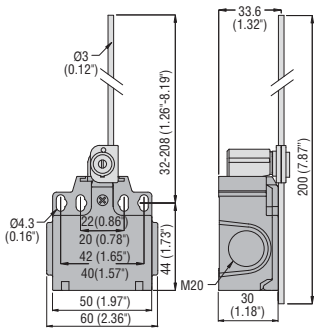


LIMIT SWITCHES K SERIES

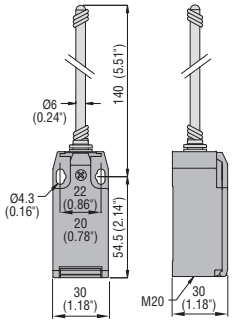
KB L1... - KB L2...
KM L1... - KM L2...



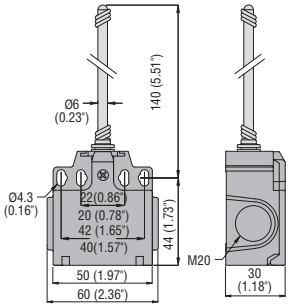
KC L1... - KC L2...
KN L1... - KN L2...



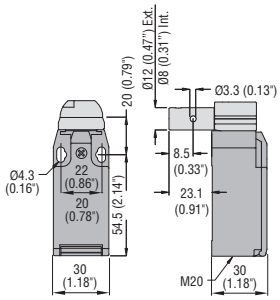
KB M1... - KB M2...
KM M1... - KM M2...



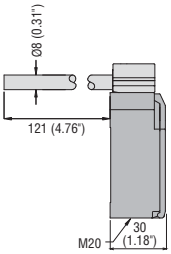
KC M1... - KC M2...
KN M1... - KN M2...



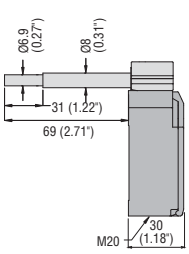
KB P1...
KM P1...



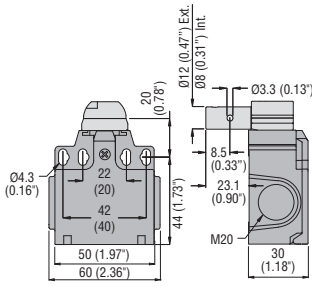
KB P2...
KM P2...



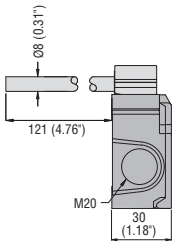
KB P3...
KM P3...



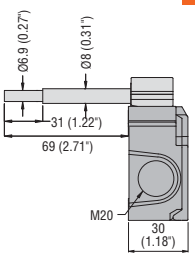
KC P1...
KN P1...



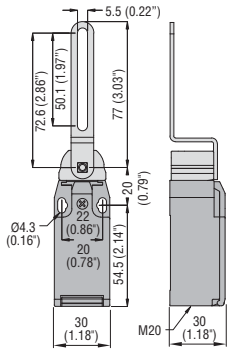
KC P2...
KN P2...



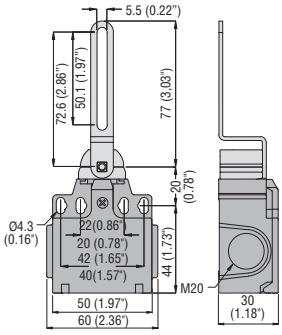
KC P3...
KN P3...



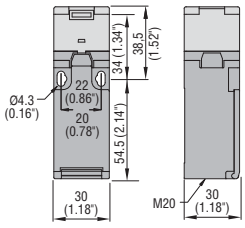
KB Q1 L...
KM Q1 L...



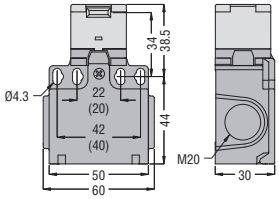
KC Q1 L...
KN Q1 L...



KB N1... - KB N2...
KM N1... - KM N2...

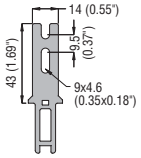


KC N...

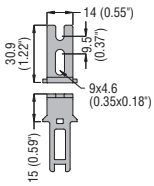


Keys

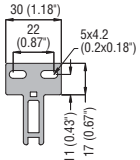
KX N1



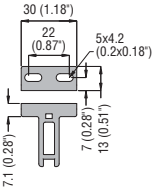
KX N2



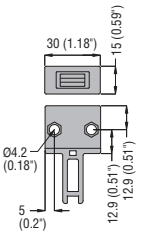
KX N3



KX N4

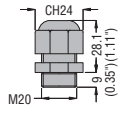


KX N5



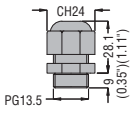
Cable glands

KX P01



CH = Spanner/Wrench

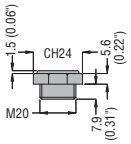
KX P02



CH = Spanner/Wrench

Cable conduit

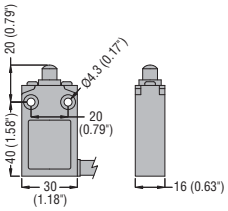
KX P03



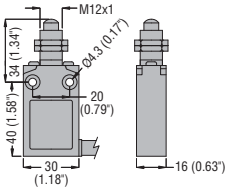
CH = Spanner/Wrench

PREWIRED METAL LIMIT SWITCHES, K SERIES

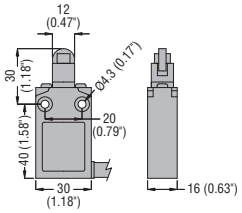
KP A1...



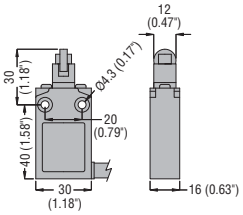
KP A2...



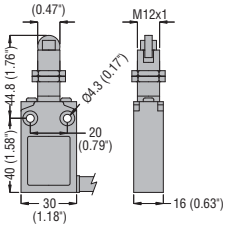
KP B1... - KP B2...



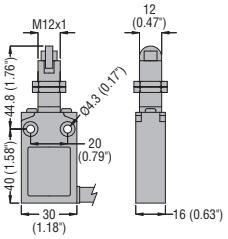
KP B3... - KP B4...



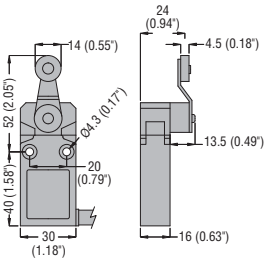
KP B5... - KP B6...



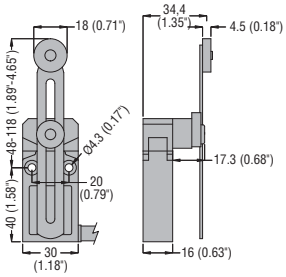
KP B7... - KP B8...



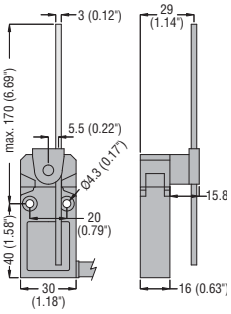
KP E1... - KP E2...



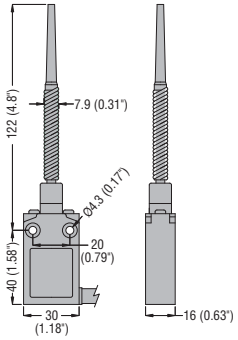
KP F1...



KP L2...

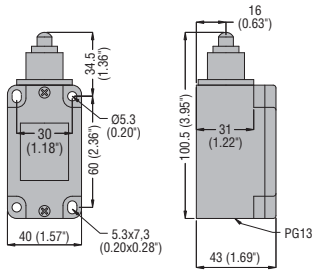


KP M2...

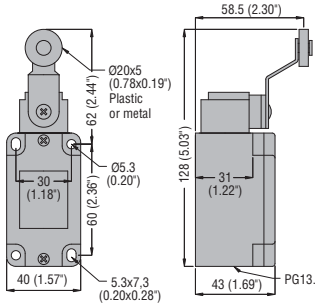


PLASTIC LIMIT SWITCHES, T SERIES

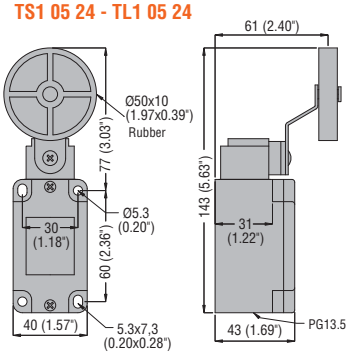
TS1 01... - TL1 01...



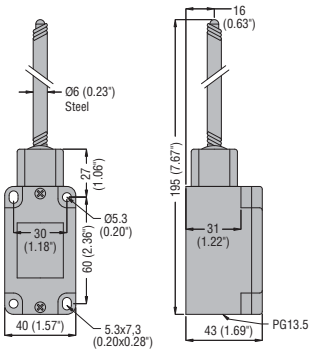
TS1 05 20 - TL1 05 20
TS1 05 21 - TL1 05 21



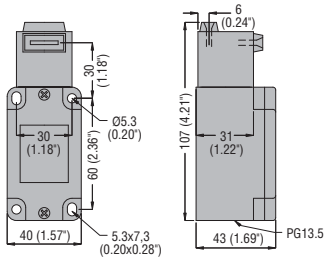
TS1 05 24 - TL1 05 24



TS1 09... - TL1 09...



TL2 10...



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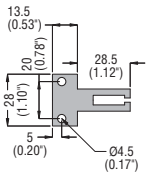
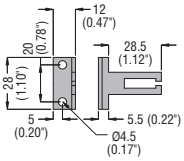
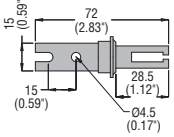
P32752



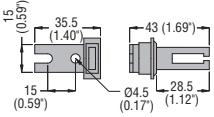
P32753



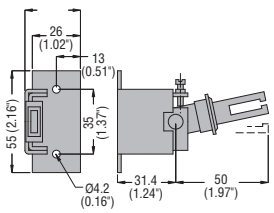
A20746



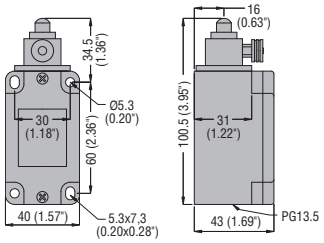
A20747



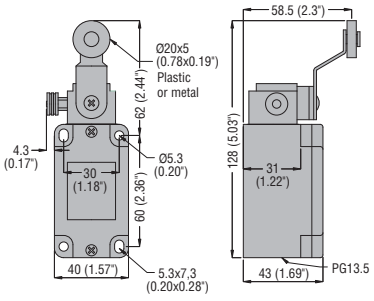
A20748



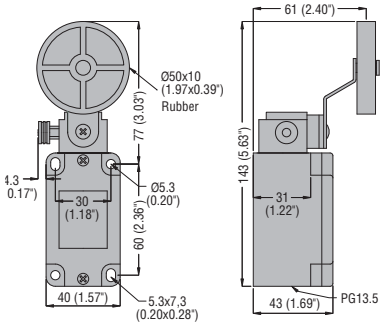
TS2 01... - TL2 01...



TS2 05 20 - TL2 05 20
TS2 05 21 - TL2 05 21

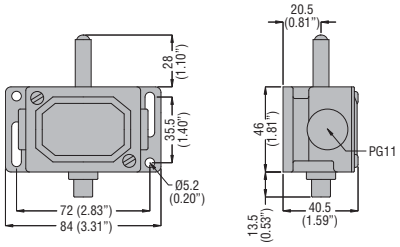


TS2 05 24 - TL2 05 24

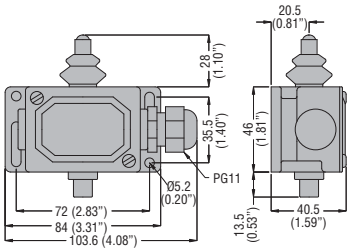


METAL LIMIT SWITCHES, PL SERIES

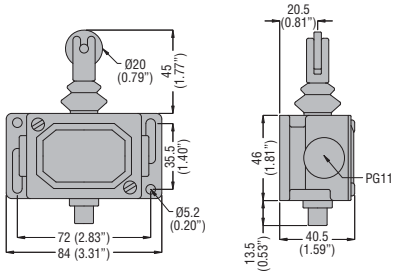
PLN...A



PLN...AW



PLN...R



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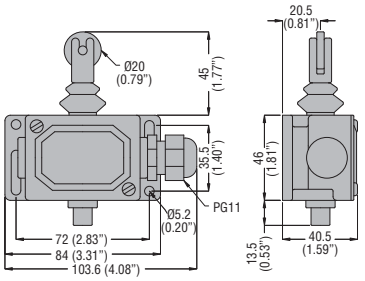
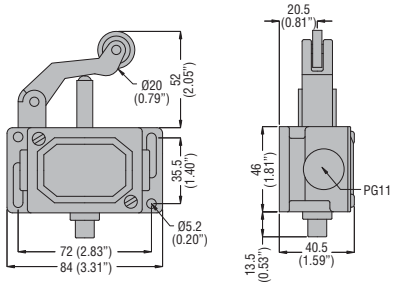
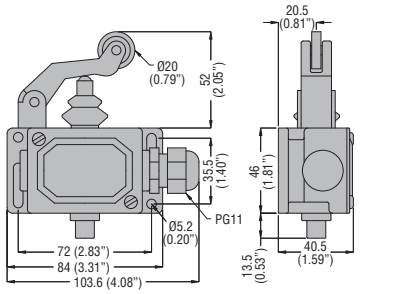


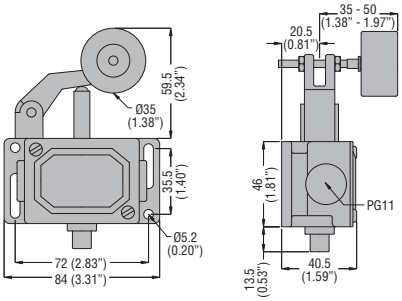
PLN...H



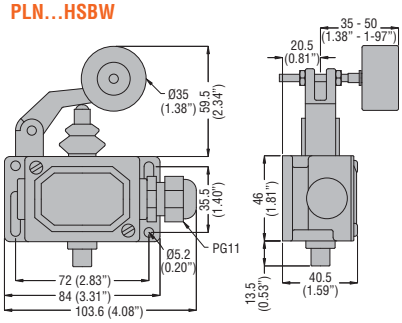
PLN...HW



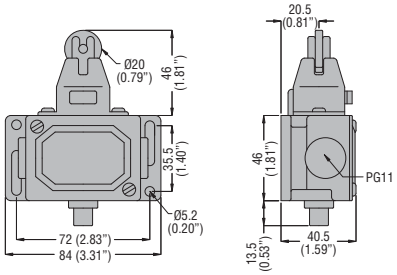
PLN...HSB



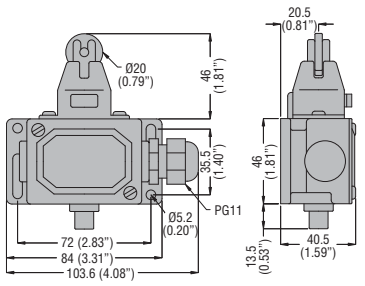
PLN...HSBW



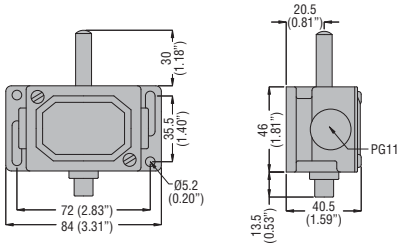
PLN A1 RAG



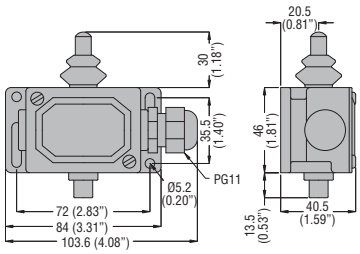
PLN A1 RAG W



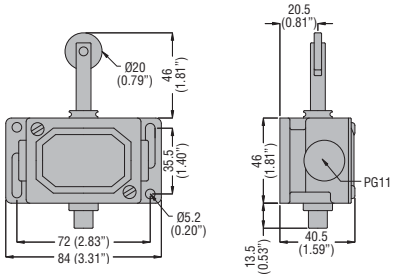
PLN A1 AM



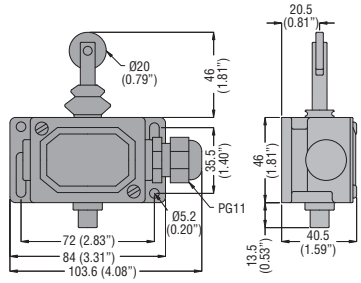
PL A1 AM W



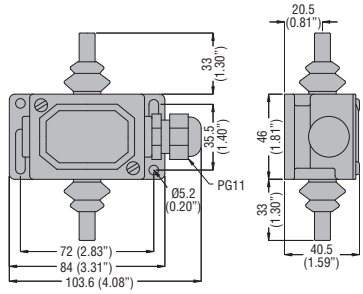
PL A1 RM



PL A1 RMW

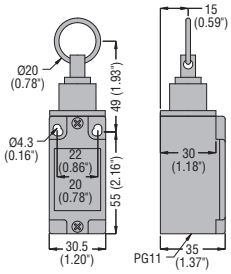


PLN 978

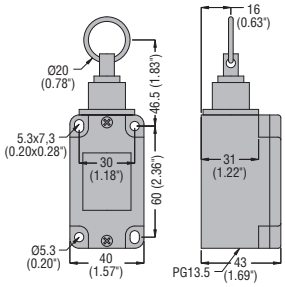


ROPE-PULL LEVER LIMIT SWITCHES FOR NORMAL STOPPING

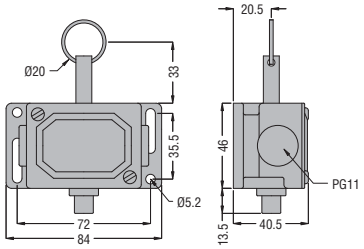
RS1 13... - RS3 13...



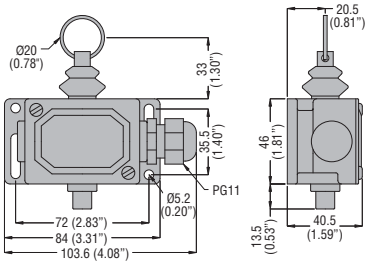
TS1 13... - TL1 13...



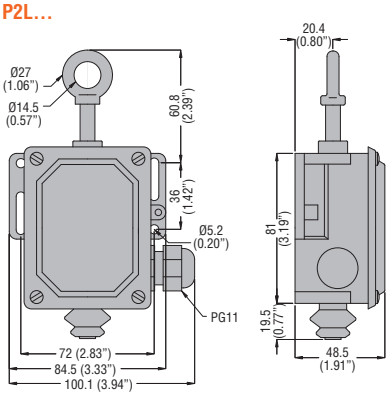
PLN...AT



PLN...ATW

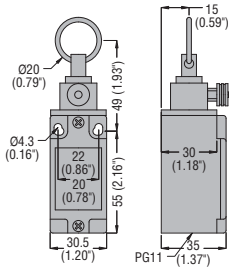


P2L...

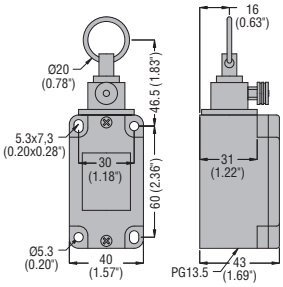


ROPE-PULL SAFETY LIMIT SWITCHES, ISO 13850 COMPLIANT

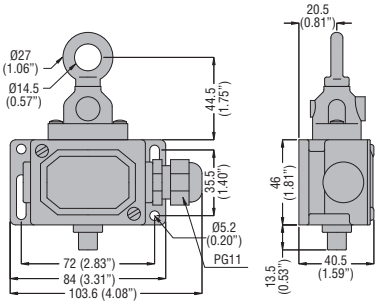
RS13 13 10



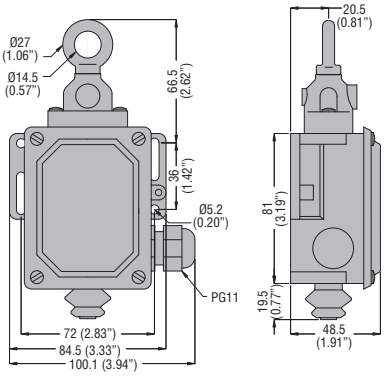
TL13 13 10



PLN13 13 11

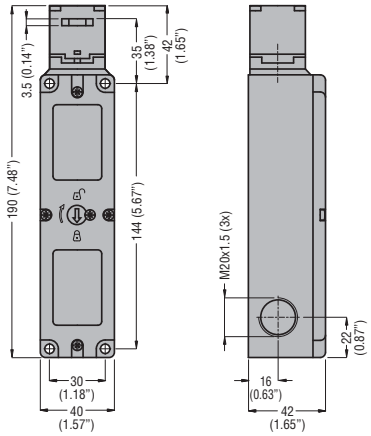


P2L 13... - P2L 15...

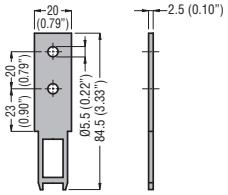


SAFETY SWITCHES WITH SOLENOID

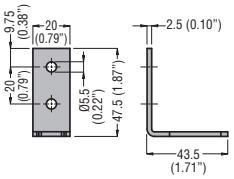
KE N1...



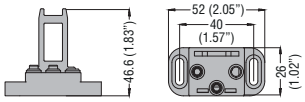
KEX N1



KEX N2

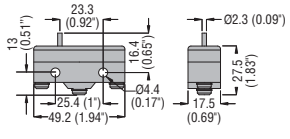


KEX N5

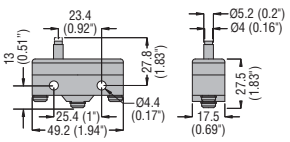


MICRO SWITCHES, K SERIES

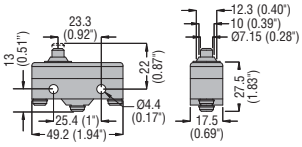
KS A1...



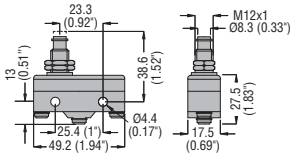
KS A2...



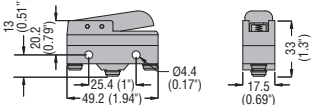
KS A3...



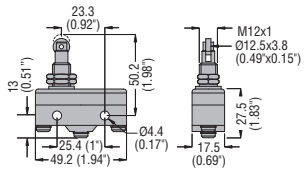
KS A4...



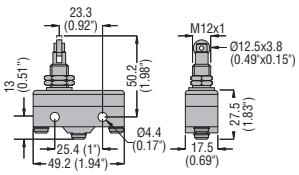
KS A9...



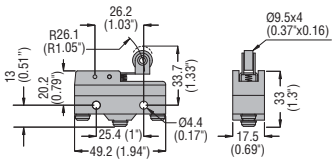
KS B1...



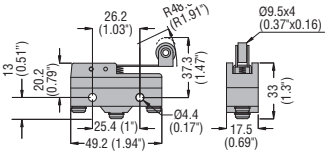
KS B2...



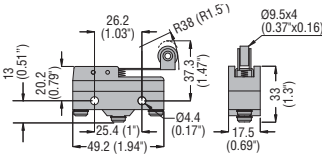
KS C1...



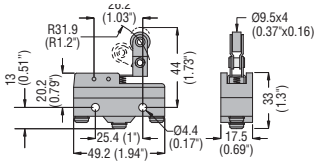
KS C2...



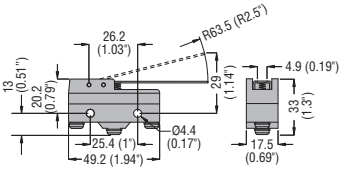
KS C3...



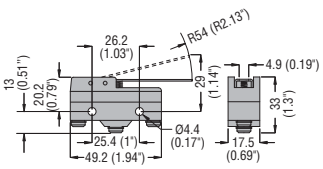
KS C9...



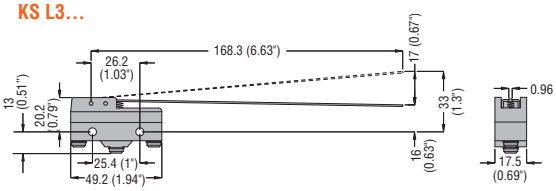
KS L1...



KS L2...

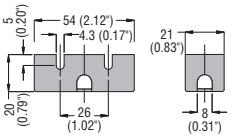


KS L3...

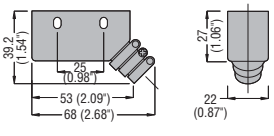


TERMINAL SHROUD

KSS C01

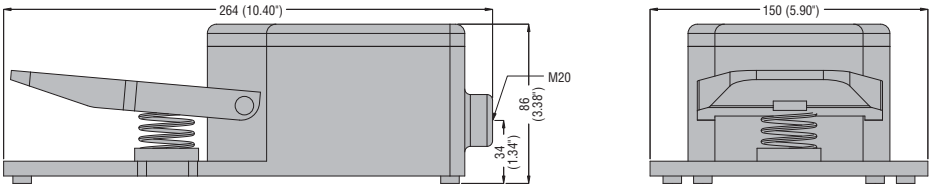


KSS CB2

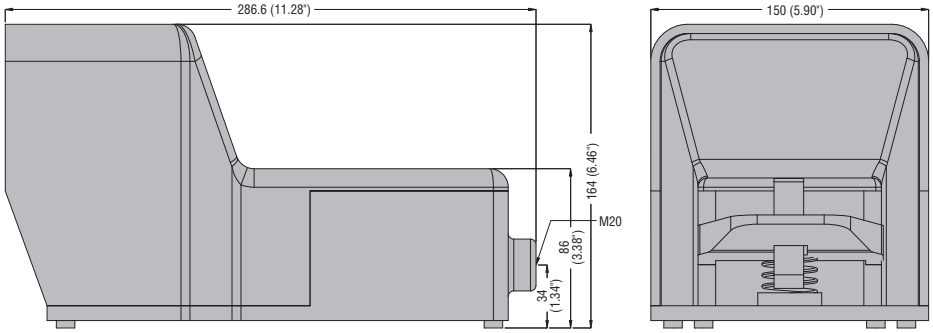


FOOT SWITCHES, K SERIES

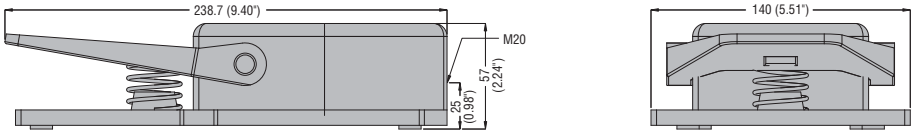
KG1



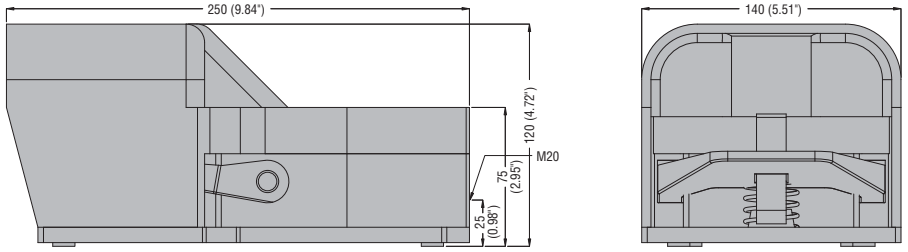
KG2



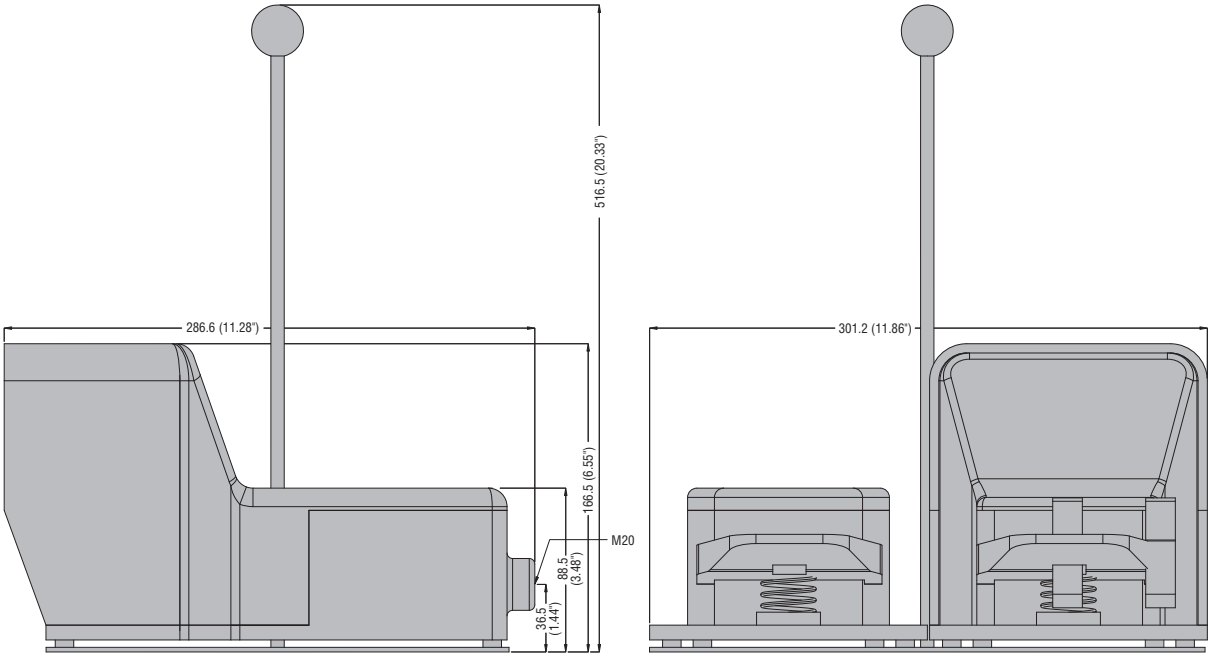
KR1



KR2

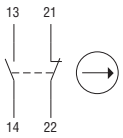


KGD



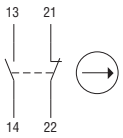
LIMIT SWITCHES, KB - KM - KC - KN TYPE

K...S11 — Snap action



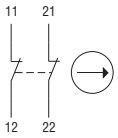
1NO + 1NC

K...L11 — Slow action



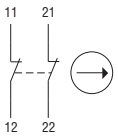
1NO + 1NC

K...L02 — Slow action



2NC

K...S02
K...D02 — Snap action

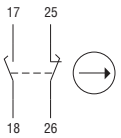


2NC

K...L20 — Slow action

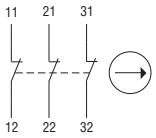
2NO

K...A11 — Slow action



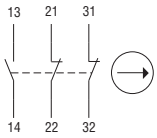
1NO + 1NC
make before break

K...L03 — Slow action



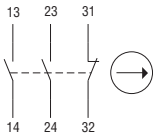
3NC

K...L12 — Slow action



1NO + 2NC

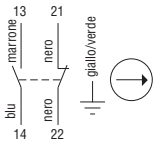
K...L21 — Slow action



2NO + 1NC

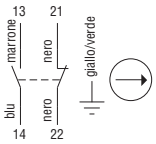
LIMIT SWITCHES, KP TYPE

KP...S11 — Snap action



1NO + 1NC

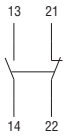
KP...L11 — Slow action



1NO + 1NC

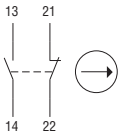
LIMIT SWITCHES, T TYPE

TS... — Snap action



1NO + 1NC

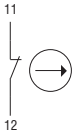
TL... — Slow action



1NO + 1NC

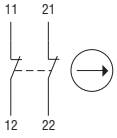
LIMIT SWITCHES, PL TYPE

PLN A1...



1NC

PLN A2...
PLN 978

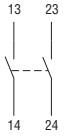


2NC

PLN C1...

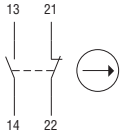
1NO

PLN C2....



2NO

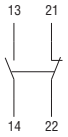
PLN U1...



1NO + 1NC

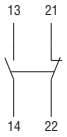
LIMIT SWITCHES FOR NORMAL STOPPING

RS1...
TS1... — Snap action



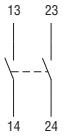
1NO + 1NC

RS2...
TL1... — Slow action



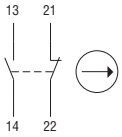
1NO + 1NC

RS3... — Slow action



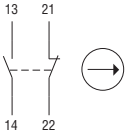
1NO + 1NC

PLN U1AT...



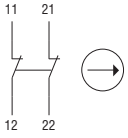
1NO + 1NC

PLN U1...



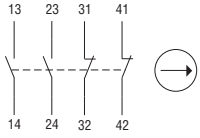
1NO + 1NC

P2L8...



2NO

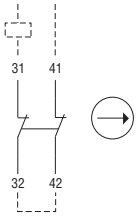
P2L10...



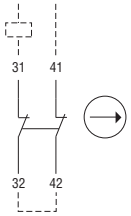
2NO + 2NC

LIMIT SWITCHES FOR EMERGENCY STOPPING

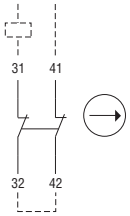
RS13...
TL13...



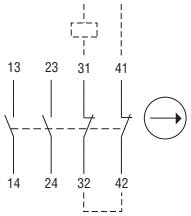
PLN13...



P2L13...



P2L15...



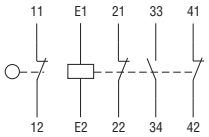
MICRO SWITCHES, KS TYPE

KS...

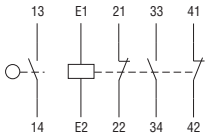
SAFETY SWITCHES WITH SOLENOID

Actuator inserted and unlocked

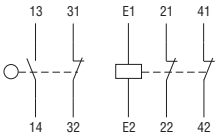
KEN1E1...KEN1M1...



KEN1E2...KEN1M2...

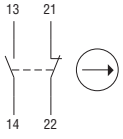


KEN1E3...KEN1M3...



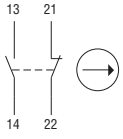
FOOT SWITCHES

K...S11 — Snap action



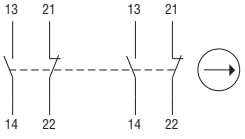
1NO + 1NC

K...L11 — Slow action



1NO + 1NC

K...S22 — Snap action



1NO + 1NC 1NO + 1NC

Rotary cam switches

- Suitable for circuit connection, changeover, switching on and off as well as motor starting
- Possible special circuit schemes
- IEC IP40 or IP65 front degree of protection
- 2-screw fixing
- Wide range of features.

	Sec. - Series	Page GX	Page GN
Special circuit scheme form	**10 -**	**2**	**2**
Front mount versions			
On/Off switches. U version, front mount	10 -	4	13
Changeover switches with or without 0 (OFF). U version, front mount	10 -	5	14
Motor switches. U version, front mount	10 -	6	15
Voltemeter switches. Ammeter switches. U version, front mount	10 -	7	16
On/Off switches. U11 version, front ring mount with handle operation for Ø22mm/Ø0.88” fixing	10 -	8	17
On/Off switches. U12 version, front ring mount with key operation for Ø22mm/Ø0.88” fixing	10 -	8	17
On/Off switches. U47 version, front snap on mount with handle operation for Ø22mm/Ø0.88” fixing	10 -	9	—
On/Off switches. U29D version, front snap on mount with key operation for Ø22mm/Ø0.88” fixing	10 -	9	—
Rear mount versions			
On/Off switches. Changeover switches. Voltmeter switches. Ammeter switches. O48 version, modular DIN rail (IEC/EN 60715) mount	10 -	10	—
Versions in enclosure			
On/Off switches. Changeover switches. P version	10 -	11	18
Motor switches. P version with rotating handle	10 -	11	18
On/Off switches. P25 version with padlockable handle	10 -	11	—
Accessories	**10 -**	**12**	**19**
Dimensions	**10 -**	**20**	**21**
Wiring diagrams	**10 -**	**23**	**23**
Technical characteristics	**10 -**	**24**	**24**

Page 10-4

GX SERIES

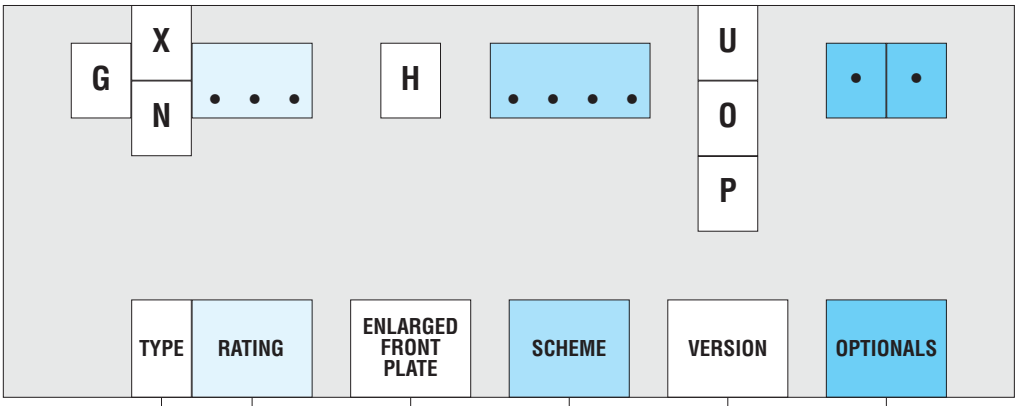
- IEC conventional free air thermal current Ith 16A...40A ratings
- Square-shaped contact body
- IEC IP20 degree of protection of contacts
- IEC IP65 degree of protection on front, standard supplied.

Page 10-13

GN SERIES

- IEC conventional free air thermal current Ith 16A...125A ratings
- Round-shaped contact body
- IEC IP00 degree of protection of contacts
- IEC IP40 degree of protection on front, standard supplied.

Order code structure



GX
IEC Protection:
Front = IP65
Contacts = IP20

GN
IEC Protection :
Front = IP40
Contacts = IP00

GX	GN
16A	16A
20A	20A
32A	25A
40A	32A
	40A
	63A
	125A

e.g.
90
91
10
92
99
100

U = Front mount
O = Rear mount
P = In enclosure

Insert H when an enlarged front plate is required
GX16 - GX20
GN12 - GN20 - GN25
from 48x48mm to 65x65mm

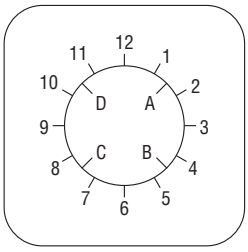
GX32 - GX40
GN32 - GN40 - GN63
from 65x65mm to 90x90mm

Front plate size:
48x48mm = 1.9x1.9in
65x65mm = 2.6x2.6in
90x90mm = 3.5x3.5in.

11	Front mount, with handle operation, for Ø22mm fixing
12	Front mount, with key operation, for Ø22mm fixing
18	35mm DIN rail mounting (IEC/EN 60715)
25	Red-yellow padlockable handle
47	Front mount, with handle operation, for snap on Ø22mm fixing (up to GX20 and GN25)
29D	Front mount, with key operation, for snap on Ø22mm fixing (up to GX20 and GN25)
48	Modular service cover, 35mm DIN rail mounting
4V	Front mount, with 4-screw fixing
51	IP65 front protection, for GN only
65	Red-yellow padlockable handle
88	Door coupling, with red-yellow padlockable handle (up to GX32, GN32)
98	Door coupling, with red-yellow padlockable handle (for GX40, GN40, GN63)
99	Door coupling, with red-yellow padlockable handle (for GN125)

Consult technical instructions I230 on our website for additional information (contact configurations, schemes, plate indications,etc).
Custom-built schemes are available on request; fill out the form on page 10-3.

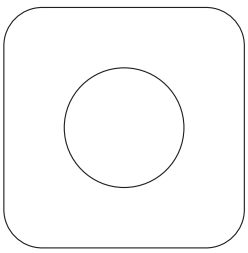
Example for ordering:
GX16 53 P = Changeover switch, 16A, 3 poles, 3 positions, 3 wafers in 90x90mm, IEC IP65 enclosure.
GN25 H 90 U 51 = On-Off switch, 25A, 1 pole, 2 positions, 1 wafer, with enlarged 65x65mm front plate and IEC IP65 protection, 2-screw fixing.



1	4	5	8	9	12	13	16	17	20	21	24	25	28	29	32	33	36	37	40	41	44	45	48
2	3	6	7	10	11	14	15	18	19	22	23	26	27	30	31	34	35	38	39	42	43	46	47

Plate indication	Pos.																								
		7																							
	C																								
		8																							
		9																							
		10																							
	D																								
		11																							
		12																							
		1																							
	A																								
		2																							
		3																							
		4																							
	B																								
		5																							
		6																							

Front plate



	Overlapping contacts		Closed contact in 2 or more positions	Open/ passing contact	Closed contact	Spring return
1	X		X		X	
				X		
2		X	X			X

BODY SHAPE: ☐ Square - GX ❶ ☐ Round - GN Amp rating .....

VERSION: ☐ Front mount ☐ Rear mount ☐ Enclosed ☐ Other .....

FINISH: ☐ Standard ❷ ☐ Red/yellow padlockable ☐ Special .....

FIXING: ☐ 2 screw ☐ 4 screw ☐ Snap

Q.ty:..... Company name and contact details: .....

.....

❶ Maximum 40A ratings for GX series.
❷ Standard suppliled finish is grey front plate while 0-12 indication and the handle are black; any other is considered special.
Also consult technical instructions I230 on the website www.LovatoElectric.com

U version front mount. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole – 1 wafer – scheme 90.					
GX16 90 U		16	□ 48	1	0.096
GX20 90 U		20	□ 48	1	0.096
GX32 90 U		32	□ 65	1	0.192
GX40 90 U		40	□ 65	1	0.194
Two-pole – 1 wafer – scheme 91.					
GX16 91 U		16	□ 48	1	0.100
GX20 91 U		20	□ 48	1	0.100
GX32 91 U		32	□ 65	1	0.204
GX40 91 U		40	□ 65	1	0.206
Three-pole – 2 wafers – scheme 10.					
GX16 10 U		16	□ 48	1	0.115
GX20 10 U		20	□ 48	1	0.115
GX32 10 U		32	□ 65	1	0.242
GX40 10 U		40	□ 65	1	0.244
Four-pole – 2 wafers – scheme 92.					
GX16 92 U		16	□ 48	1	0.118
GX20 92 U		20	□ 48	1	0.122
GX32 92 U		32	□ 65	1	0.252
GX40 92 U		40	□ 65	1	0.254

Front plate size:
48x48mm = 1.9x1.9”
65x65mm = 2.6x2.6”
90x90mm = 3.5x3.5”.

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5
GX32	32	1 1/2	3	3	7 1/2	15	15	15
GX40	40	2	5	5	10	15	15	18.5

General characteristics
- IEC 16...40A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP65 front degree of protection; IEC IP20 protection of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

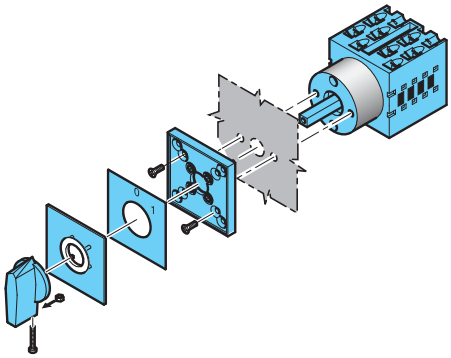
Selection guide
See page 10-24.

Optional
Enlarged front plate for GX16-GX20 (65x65mm instead of standard 48x48):
Add “**H**” after the switch rating in the order code
E.g. GX16**H** 10 U.

Enlarged front plate for GX32-GX40 (90x90mm instead of standard 65x65):
Add “**H**” after the switch rating in the order code
E.g. GX32**H** 10 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Example of U version switch mounting



Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

U version front mount. Changeover switches with 0 position. Changeover switches without 0 position

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
CHANGEOVER SWITCHES WITH 0. One-pole – 1 wafer – scheme 51.					
GX16 51 U		16	□ 48	1	0.098
GX20 51 U		20	□ 48	1	0.098
GX32 51 U		32	□ 65	1	0.210
GX40 51 U		40	□ 65	1	0.212
Two-pole – 2 wafers – scheme 52.					
GX16 52 U		16	□ 48	1	0.120
GX20 52 U		20	□ 48	1	0.120
GX32 52 U		32	□ 65	1	0.270
GX40 52 U		40	□ 65	1	0.272
Three-pole – 3 wafers – scheme 53.					
GX16 53 U		16	□ 48	1	0.148
GX20 53 U		20	□ 48	1	0.148
GX32 53 U		32	□ 65	1	0.327
GX40 53 U		40	□ 65	1	0.326
Four-pole – 4 wafers – scheme 75.					
GX16 75 U		16	□ 48	1	0.164
GX20 75 U		20	□ 48	1	0.172
GX32 75 U		32	□ 65	1	0.378
GX40 75 U		40	□ 65	1	0.380
CHANGEOVER SWITCHES WITHOUT 0. One-pole – 1 wafer – scheme 54.					
GX16 54 U		16	□ 48	1	0.098
GX20 54 U		20	□ 48	1	0.098
GX32 54 U		32	□ 65	1	0.212
Two-pole – 2 wafers – scheme 55.					
GX16 55 U		16	□ 48	1	0.124
GX20 55 U		20	□ 48	1	0.124
GX32 55 U		32	□ 65	1	0.266
Three-pole – 3 wafers – scheme 56.					
GX16 56 U		16	□ 48	1	0.148
GX20 56 U		20	□ 48	1	0.148
GX32 56 U		32	□ 65	1	0.318
Four-pole – 4 wafers – scheme 69.					
GX16 69 U		16	□ 48	1	0.164
GX20 69 U		20	□ 48	1	0.172
GX32 69 U		32	□ 65	1	0.380

Front plate size:
48x48mm = 1.9x1.9"
65x65mm = 2.6x2.6"
90x90mm = 3.5x3.5".

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5
GX32	32	1 1/2	3	3	7 1/2	15	15	15
GX40	40	2	5	5	10	15	15	18.5

General characteristics
- IEC 16...40A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP65 front degree of protection; IEC IP20 protection of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

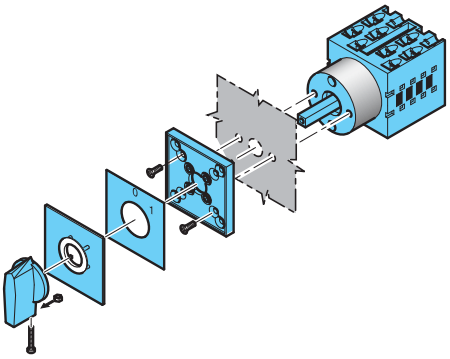
Selection guide
See page 10-24.

Optional
Enlarged front plate for GX16-GX20 (65x65mm instead of standard 48x48):
Add "**H**" after the switch rating in the order code
E.g. GX16**H** 52 U.

Enlarged front plate for GX32-GX40 (90x90mm instead of standard 65x65):
Add "**H**" after the switch rating in the order code
E.g. GX32**H** 52 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Example of U version switch mounting



Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

U version front mount. Motor switches

Order code		Ith AC1 IEC	IEC power AC23A	Front plate size	Qty per pkg	Wt.
		[A]	[kW]	[mm]	n°	[kg]
MOTOR SWITCHES. Reversing switches. Three-pole – 3 wafers – scheme 11.						
GX16 11 U		16	5	□ 48	1	0.138
GX20 11 U		20	7.5	□ 48	1	0.140
GX32 11 U		32	15	□ 65	1	0.316
GX40 11 U		40	18.5	□ 65	1	0.318
Pole-changing switches. 4 wafers – scheme 13.						
GX16 13 U		16	5	□ 48	1	0.166
GX20 13 U		20	7.5	□ 48	1	0.168
GX32 13 U		32	15	□ 65	1	0.400
GX40 13 U		40	18.5	□ 65	1	0.400
Star-delta switches. 4 wafers – scheme 12.						
GX16 12 U		16	5	□ 48	1	0.176
GX20 12 U		20	7.5	□ 48	1	0.176
GX32 12 U		32	15	□ 65	1	0.384
GX40 12 U		40	18.5	□ 65	1	0.386
3-pole motor reversing switches with spring return to 0. 3 wafers – scheme 26.						
GX16 26 U		16	5	□ 48	1	0.148
GX20 26 U		20	7.5	□ 48	1	0.148
GX32 26 U		32	18.5	□ 65	1	0.320

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5
GX32	32	1 1/2	3	3	7 1/2	15	15	15
GX40	40	2	5	5	10	15	15	18.5

General characteristics
- IEC 16...40A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP65 front degree of protection; IEC IP20 degree of protection of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

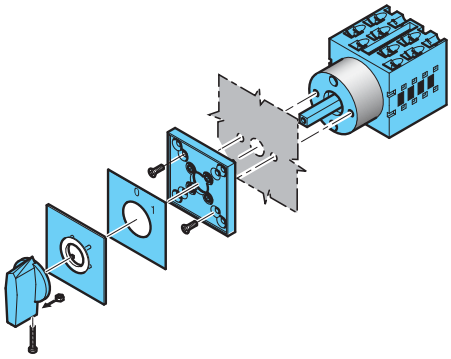
Selection
See page 10-24.

Optional
Enlarged front plate for GX16-GX20 (65x65mm instead of standard 48x48): Add "**H**" after the switch rating in the order code E.g. GX16**H** 11 U.

Enlarged front plate for GX32-GX40 (90x90mm instead of standard 65x65): Add "**H**" after the switch rating in the order code E.g. GX32**H** 11 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Example of U version switch mounting



Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

Valid for motor, voltmeter and ammeter switches:
Front plate size:
48x48mm = 1.9x1.9"
65x65mm = 2.6x2.6"
90x90mm = 3.5x3.5".

U version front mount. Voltmeter switches. Ammeter switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
VOLTMETER SWITCHES. Phase-Neutral L1-N/L2-N/L3-N – 2 wafers – scheme 68.					
GX16 68 U		16	□ 48	1	0.120
Phase-Phase L1-L2/L2-L3/L3-L1 – 2 wafers – scheme 67.					
GX16 67 U		16	□ 48	1	0.124
For 3 phase to phase voltage and 3 phase voltage readings 3 wafers – scheme 66.					
GX16 66 U		16	□ 48	1	0.152
For 1 phase voltage and 3 phase to phase voltage readings 3 wafers – scheme 60.					
GX16 60 U		16	□ 48	1	0.143
AMMETER SWITCHES. Direct L1-L2-L3 current readings – 5 wafers – scheme 97.					
GX16 97 U		16	□ 48	1	0.186
For L1-L2-L3 readings via 3 CTs – 4 wafers – scheme 98.					
GX16 98 U		16	□ 48	1	0.144

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5
GX32	32	1 1/2	3	3	7 1/2	15	15	15
GX40	40	2	5	5	10	15	15	18.5

General characteristics
- IEC 16A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP65 front degree of protection; IEC IP20 degree of protection of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

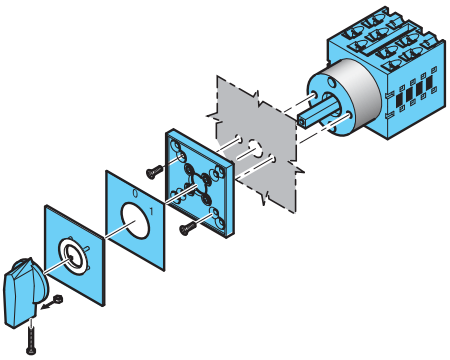
Selection
See page 10-24.

Optional
Enlarged front plate for GX16-GX20 (65x65mm instead of standard 48x48): Add "**H**" after the switch rating in the order code E.g. GX16**H** 11 U.

Enlarged front plate for GX32-GX40 (90x90mm instead of standard 65x65): Add "**H**" after the switch rating in the order code E.g. GX32**H** 11 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Example of U version switch mounting



Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

Valid for motor, voltmeter and ammeter switches:
Front plate size:
48x48mm = 1.9x1.9"
65x65mm = 2.6x2.6"
90x90mm = 3.5x3.5".

U11 version front ring mount with handle operation, for Ø22mm/Ø0.88" fixing. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole – 1 wafer – scheme 90.					
GX16 90 U11		16	—	1	0.100
Two-pole – 1 wafer – scheme 91.					
GX16 91 U11		16	—	1	0.100
Three-pole – 2 wafers – scheme 10.					
GX16 10 U11		16	—	1	0.120
Four-pole – 2 wafers – scheme 92.					
GX16 92 U11		16	—	1	0.123

U12 version front ring mount with key operation, for Ø22mm/Ø0.88" fixing. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole – 1 wafer – scheme 90.					
GX16 90 U12		16	—	1	0.122
Two-pole – 1 wafer – scheme 91.					
GX16 91 U12		16	—	1	0.122
Three-pole – 2 wafers – scheme 10.					
GX16 10 U12		16	—	1	0.140
Four-pole – 2 wafers – scheme 92.					
GX16 92 U12		16	—	1	0.146

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5
GX32	32	1 1/2	3	3	7 1/2	15	15	15
GX40	40	2	5	5	10	15	15	18.5

General characteristics
- IEC 16...40A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40 for U11 and U12; IEC IP20 protection of contacts
- Legend marking for U11 and U12 versions is only for reference.

Selection
See page 10-24.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

U47 version front snap on mount with handle operation, for Ø22mm/Ø0.88" fixing. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole – 1 wafer – scheme 90.					
GX20 90 U47		20	48	1	0.100
Two-pole – 1 wafer – scheme 91.					
GX20 91 U47		20	48	1	0.100
Three-pole – 2 wafers – scheme 10.					
GX20 10 U47		20	48	1	0.120
Four-pole – 2 wafers – scheme 92.					
GX20 92 U47		20	48	1	0.123

U29D version front snap on mount with key operation, for Ø22mm/Ø0.88" fixing. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole – 1 wafer – scheme 90.					
GX20 90 U29D		20	48	1	0.122
Two-pole – 1 wafer – scheme 91.					
GX20 91 U29D		20	48	1	0.122
Three-pole – 2 wafers – scheme 10.					
GX20 10 U29D		20	48	1	0.140
Four-pole – 2 wafers – scheme 92.					
GX20 92 U29D		20	48	1	0.146

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5

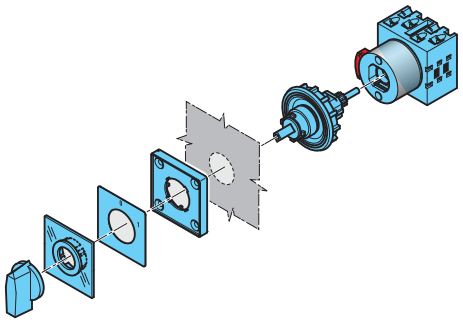
General characteristics
- IEC 20A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP65 front degree of protection; IEC IP20 protection of contacts.

Selection
See page 10-24.

Optional
Enlarged front plate for GX20 (65x65mm instead of standard 48x48):
Add "**H**" after the switch rating in the order code
E.g. GX20**H** 10 U47.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Example of U47 switch mounting



Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

048 version modular service cover 35mm DIN rail mount. ON/OFF switches. Changeover switches. Voltmeter switches. Ammeter switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Weight
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole – 3 wafers – scheme 90.					
GX16 90 048		16	45x54	1	0.110
Two-pole – 3 wafers – scheme 91.					
GX16 91 048		16	45x54	1	0.110
Three-pole – 3 wafers – scheme 10.					
GX16 10 048		16	45x54	1	0.118
Four-pole – 3 wafers – scheme 92.					
GX16 92 048		16	45x54	1	0.125
CHANGEOVER SWITCHES WITH 0. One-pole – 3 wafers – scheme 51.					
GX16 51 048		16	45x54	1	0.098
Two-pole – 3 wafers – scheme 52.					
GX16 52 048		16	45x54	1	0.122
Three-pole – 3 wafers – scheme 53.					
GX16 53 048		16	45x54	1	0.150
Four-pole – 4 wafers – scheme 75.					
GX16 75 048		16	45x54	1	0.170
VOLTMETER SWITCHES. Phase-Neutral L1-N/L2-N/L3-N – 3 wafers – scheme 68.					
GX16 68 048		16	45x54	1	0.130
Phase-Phase L1-L2/L2-L3/L3-L1 – 3 wafers – scheme 67.					
GX16 67 048		16	45x54	1	0.130
For 3 phase to phase voltage and 3 phase voltage readings 3 wafers – scheme 66					
GX16 66 048		16	45x54	1	0.156
AMMETER SWITCHES. Direct L1-L2-L3 current readings – 5 wafers – scheme 97.					
GX16 97 048		16	45x54	1	0.196
For L1-L2-L3 readings via 3 CTs – 4 wafers – scheme 98.					
GX16 98 048		16	45x54	1	0.150

Front cover size:
45x54mm = 1.8x2.1"

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5

General characteristics
- IEC 16A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40 front degree of protection; IEC IP20 degree of protection of contacts
- Suitable for screw fixing or mounting on 35mm DIN rail (IEC/EN 60175)
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; UL Listed, for USA and Canada (File E155982) as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1, UL508, CSA C22.2 n°14.

P version in enclosure with rotating handle. ON/OFF switches. Changeover switches

Orde code		IEC current AC1	Housing size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. Three poles - scheme 10.					
GX16 10 P		16	90x90	1	0.330
GX20 10 P		20	90x90	1	0.330
GX32 10 P		32	110x110	1	0.560
GX40 10 P		40	110x110	1	0.560
ON/OFF SWITCHES. Four poles - scheme 92.					
GX16 92 P		16	90x90	1	0.340
GX20 92 P		20	90x90	1	0.340
GX32 92 P		32	110x110	1	0.575
GX40 92 P		40	110x110	1	0.575
CHANGEOVER SWICTHES. Three poles - scheme 53.					
GX16 53 P		16	90x90	1	0.415
GX20 53 P		20	90x90	1	0.415
GX32 53 P		32	110x110	1	0.710
GX40 53 P		40	110x110	1	0.710
Four poles - scheme 75.					
GX16 75 P		16	90x90	1	0.430
GX20 75 P		20	90x90	1	0.430
GX32 75 P		32	110x110	1	0.760
GX40 75 P		40	110x110	1	0.760

General characteristics
- IEC 16...40A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual-breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IP65 degree of protection
- Top and bottom entry: 4 PG16 threaded knockouts for 90x90mm types and 4 PG21 for 110x110mm
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, IEC/EN 61058-1.

Valid for P - P25 versions:
Housing size:
90x90mm = 3.5x3.5”
110x110mm = 4.3x4.3”.

P version in enclosure with rotating handle. Motor switches

Order code		Ith AC1 IEC	IEC power AC23A	Housing size	Qty per pkg	Wt.
		[A]	[kW]	[mm]	n°	[kg]
MOTOR SWITCHES. Three-pole reversing switches - scheme 11.						
GX16 11 P		16	6.5	90x90	1	0.405
GX20 11 P		20	7.5	90x90	1	0.425
GX32 11 P		32	15	110x110	1	0.695
GX40 11 P		40	15	110x110	1	0.700

P25 version in enclosure with padlockable rotating handle. ON/OFF switches

Orde code		IEC current AC1	Housing size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. Three poles - scheme 10.					
GX16 10 P25		16	90x90	1	0.340
GX20 10 P25		20	90x90	1	0.345
GX32 10 P25		32	110x110	1	0.586
Four poles - scheme 92.					
GX16 92 P25		16	90x90	1	0.350
GX20 92 P25		20	90x90	1	0.350
GX32 92 P25		32	110x110	1	0.605

For indication and reference purposes only - No UL/CSA approval

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GX16	12	3/4	1	1 1/2	3	5	5	6.5
GX20	15	3/4	1 1/2	1 1/2	3	5	5	7.5
GX32	32	1 1/2	3	3	7 1/2	15	15	15
GX40	40	2	5	5	10	15	15	18.5

Accessories for GX series rotary cam switches

7 AO14 - 7 AR114 - 7 A114 - 7 AR214

7 A124 - 7 AR224

GX M1 - GX M2

GX M5 - GX M6

Order code	Description	Q.ty per pkg	Weight
		n.	[kg]
Black operating handle❶.			
7 AO14	For 48x48mm/1.9x19" front plate ☐ 6mm/0.24" for GX16-GX20	1	0.005
7 A114	For 65x65mm/2.6x2.6" front plate ☐ 7mm/0.28" for GX32-GX40 and GX16H-GX20H	1	0.010
7 AR214	For 90x90mm/3.5x3.4" front plate ☐ 7mm/0.28" for GX32H-GX40H	1	0.015
Black operating lever❶.			
7 A124	For 65x65mm/2.6x2.6" front plate ☐ 7mm/0.28" for GX32-GX40 and GX16H-GX20H	1	0.020
7 AR224	For 90x90mm/3.5x3.4" front plate ☐ 8mm/0.31" for GX32H-GX40H	1	0.038
IP40 face plate❶.			
GX M1	48x48mm/1.9x1.9" blank face plate	1	0.018
GX M2	65x65mm/2.6x2.6" blank face plate	1	0.023
IP40 face plate with legend plate.			
GX M5	48x60mm/1.9x2.6" blank face plate with legend plate	1	0.017
GX M6	65x80mm/2.6x3.1" blank face plate with legend plate	1	0.033

❶ Also suitable for GN series.

U version front mount. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One pole - 1 wafer - scheme 90.					
7 GN12 90 U		16	☐ 48	1	0.075
7 GN20 90 U		20	☐ 48	1	0.077
7 GN25 90 U		25	☐ 48	1	0.087
7 GN32 90 U		32	☐ 65	1	0.173
7 GN40 90 U		40	☐ 65	1	0.173
7 GN63 90 U		63	☐ 65	1	0.200
2 poles - 1 wafer - scheme 91.					
7 GN12 91 U		16	☐ 48	1	0.079
7 GN20 91 U		20	☐ 48	1	0.082
7 GN25 91 U		25	☐ 48	1	0.094
7 GN32 91 U		32	☐ 65	1	0.186
7 GN40 91 U		40	☐ 65	1	0.186
7 GN63 91 U		63	☐ 65	1	0.218
3 poles - 2 wafers - scheme 10.					
7 GN12 10 U		16	☐ 48	1	0.088
7 GN20 10 U		20	☐ 48	1	0.095
7 GN25 10 U		25	☐ 48	1	0.116
7 GN32 10 U		32	☐ 65	1	0.228
7 GN40 10 U		40	☐ 65	1	0.240
7 GN63 10 U		63	☐ 65	1	0.282
7 GN125 10 U		125	☐ 90	1	0.706
4 poles - 2 wafers - scheme 92.					
7 GN12 92 U		16	☐ 48	1	0.088
7 GN20 92 U		20	☐ 48	1	0.098
7 GN25 92 U		25	☐ 48	1	0.122
7 GN32 92 U		32	☐ 65	1	0.232
7 GN40 92 U		40	☐ 65	1	0.251
7 GN63 92 U		63	☐ 65	1	0.302
7 GN125 92 U		125	☐ 90	1	0.782

Front plate size:
48x48mm = 1.9x1.9"
65x65mm = 2.6x2.6"
90x90mm = 3.5x3.5".

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GN12	15	3/4	1	1 1/2	3	—	—	5.5
GN20	20	3/4	2	1 1/2	3	—	—	7.5
GN25	30	1 1/2	3	3	5	10	15	11
GN32	40	2	5	5	10	15	15	15
GN40	50	2	5	5	10	20	20	18.5
GN63	60	5	10	7 1/2	15	25	25	30
GN125	130	7 1/2	15	15	25	50	40	45

General characteristics
- IEC 16...125A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40 front degree of protection (for IP65 see Optional-front plate); IEC IP00 of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Optional
IEC IP65 front plate
Add **"51"** at the end of the order code.
E.g. 7 GN12 92 U **51**.

Enlarged plate for GN12-20-25 (65x65mm instead of 48x48)
Add the letter **"H"** after the switch size of the order code.
E.g. 7 GN12**H** 10 U.

Enlarged plate for GN32-40-63 (90x90mm instead of 65x65)
Add the letter **"H"** after the switch size of the order code.
E.g. 7 GN32**H** 10 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; CSA certified, for Canada and USA (File 207767) and UL Listed, for USA (File E155982), as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, UL508, CSA C22.2 n°14.

U version, front mount. Changeover switches with or without 0 (OFF)

Order code		IEC current AC1	Front plate size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
CHANGEOVER SWITCH WITH 0 (OFF). One-pole - 1 wafer - scheme 51.					
7 GN12 51 U		16	□ 48	1	0.078
7 GN20 51 U		20	□ 48	1	0.081
7 GN25 51 U		25	□ 48	1	0.090
7 GN32 51 U		32	□ 65	1	0.183
7 GN40 51 U		40	□ 65	1	0.194
7 GN63 51 U		63	□ 65	1	0.224
Two-pole - 2 wafers - scheme 52.					
7 GN12 52 U		16	□ 48	1	0.095
7 GN20 52 U		20	□ 48	1	0.098
7 GN25 52 U		25	□ 48	1	0.121
7 GN32 52 U		32	□ 65	1	0.232
7 GN40 52 U		40	□ 65	1	0.251
7 GN63 52 U		63	□ 65	1	0.302
7 GN125 52 U		125	□ 90	1	0.788
Three-pole - 3 wafers - scheme 53.					
7 GN12 53 U		16	□ 48	1	0.107
7 GN20 53 U		20	□ 48	1	0.115
7 GN25 53 U		25	□ 48	1	0.152
7 GN32 53 U		32	□ 65	1	0.285
7 GN40 53 U		40	□ 65	1	0.308
7 GN63 53 U		63	□ 65	1	0.377
7 GN125 53 U		125	□ 90	1	1.036
Four-pole - 4 wafers - scheme 75.					
7 GN12 75 U		16	□ 48	1	0.123
7 GN20 75 U		20	□ 48	1	0.134
7 GN25 75 U		25	□ 48	1	0.180
7 GN32 75 U		32	□ 65	1	0.334
7 GN40 75 U		40	□ 65	1	0.358
7 GN63 75 U		63	□ 65	1	0.468
7 GN125 75 U		125	□ 90	1	1.270
CHANGEOVER SWITCH WITHOUT 0 (OFF). One-pole - 1 wafer - scheme 54.					
7 GN12 54 U		16	□ 48	1	0.079
7 GN20 54 U		20	□ 48	1	0.082
7 GN25 54 U		25	□ 48	1	0.096
Two-pole - 2 wafers - scheme 55.					
7 GN12 55 U		16	□ 48	1	0.093
7 GN20 55 U		20	□ 48	1	0.100
7 GN25 55 U		25	□ 48	1	0.122
Three-pole - 3 wafers - scheme 56.					
7 GN12 56 U		16	□ 48	1	0.108
7 GN20 56 U		20	□ 48	1	0.115
7 GN25 56 U		25	□ 48	1	0.145
Four-pole - 4 wafers - scheme 69.					
7 GN12 69 U		16	□ 48	1	0.124
7 GN20 69 U		20	□ 48	1	0.134
7 GN25 69 U		25	□ 48	1	0.174

Front plate size:
48x48mm = 1.9x1.9" - 60x60mm = 2.6x2.6" - 90x90mm = 3.5x3.5".

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GN12	15	3/4	1	1 1/2	3	—	—	5.5
GN20	20	3/4	2	1 1/2	3	—	—	7.5
GN25	30	1 1/2	3	3	5	10	15	11
GN32	40	2	5	5	10	15	15	15
GN40	50	2	5	5	10	20	20	18.5
GN63	60	5	10	7 1/2	15	25	25	30
GN125	130	7 1/2	15	15	25	50	40	45

General characteristics
- IEC 16...125A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40 front degree of protection (for IP65 see Optional-front plate); IEC IP00 of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Optional
IEC IP65 front plate
Add **"51"** at the end of the order code.
E.g. 7 GN12 52 U **51**.

Enlarged plate for GN12-20-25 (65x65mm instead of 48x48)
Add the letter **"H"** after the switch size of the order code.
E.g. 7 GN12**H** 51 U.

Enlarged plate for GN32-40-63 (90x90mm instead of 65x65)
Add the letter **"H"** after the switch size of the order code.
E.g. 7 GN32**H** 51 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; CSA certified, for Canada and USA (File 207767) and UL Listed, for USA (File E155982), as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, UL508, CSA C22.2 n°14.

U version front mount. Motor switches

Order code		Ith AC1 IEC	IEC power AC23A	Front plate size	Qty per pkg	Wt
		[A]	[kW]	[mm]	n°	[kg]
MOTOR SWITCHES. Three-pole reversing switches - 3 wafers - scheme 11.						
7 GN12 11 U		16	6	□ 48	1	0.105
7 GN20 11 U		20	7.5	□ 48	1	0.111
7 GN25 11 U		25	11	□ 48	1	0.145
7 GN32 11 U		32	15	□ 65	1	0.278
7 GN40 11 U		40	18.5	□ 65	1	0.294
7 GN63 11 U		63	30	□ 65	1	0.366
7 GN125 11 U		125	45	□ 90	1	0.976
Pole changing switches - 4 wafers - scheme 13.						
7 GN12 13 U		16	6	□ 48	1	0.126
7 GN20 13 U		20	7.5	□ 48	1	0.134
7 GN25 13 U		25	11	□ 48	1	0.181
7 GN32 13 U		32	15	□ 65	1	0.342
7 GN40 13 U		40	18.5	□ 65	1	0.366
7 GN63 13 U		63	30	□ 65	1	0.465
7 GN125 13 U		125	45	□ 90	1	1.301
Star-delta switches - 4 wafers - scheme 12.						
7 GN12 12 U		16	6	□ 48	1	0.124
7 GN20 12 U		20	7.5	□ 48	1	0.134
7 GN25 12 U		25	11	□ 48	1	0.175
7 GN32 12 U		32	15	□ 65	1	0.343
7 GN40 12 U		40	18.5	□ 65	1	0.366
7 GN63 12 U		63	30	□ 65	1	0.465
7 GN125 12 U		125	45	□ 90	1	1.303
Three-pole reversing switches with spring return to 0 - 3 wafers - scheme 26.						
7 GN12 26 U		16	6	□ 48	1	0.106
7 GN20 26 U		20	7.5	□ 48	1	0.111
7 GN25 26 U		25	11	□ 48	1	0.144
Pole changing switches with reversing (Dahlander) - 6 wafers - scheme 20.						
7 GN12 20 U		16	6	□ 48	1	0.161
7 GN20 20 U		20	7.5	□ 48	1	0.165
7 GN25 20 U		25	11	□ 48	1	0.246

Front plate size:
48x48mm = 1.9x1.9"
65x65mm = 2.6x2.6"
90x90mm = 3.5x3.5".

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GN12	15	3/4	1	1 1/2	3	—	—	5.5
GN20	20	3/4	2	1 1/2	3	—	—	7.5
GN25	30	1 1/2	3	3	5	10	15	11
GN32	40	2	5	5	10	15	15	15
GN40	50	2	5	5	10	20	20	18.5
GN63	60	5	10	7 1/2	15	25	25	30
GN125	130	7 1/2	15	15	25	50	40	45

General characteristics
- IEC 16...125A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40 front degree of protection (for IP65 see Optional-front plate); IEC IP00 of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Optional
IEC IP65 front plate
Add **"51"** at the end of the order code.
E.g. 7 GN12 13 U **51**.

Enlarged plate for GN12-20-25 (65x65mm instead of 48x48)
Add the letter **"H"** after the switch size of the order code.
E.g. 7 GN12**H** 11 U.

Enlarged plate for GN32-40-63 (90x90mm instead of 65x65)
Add the letter **"H"** after the switch size of the order code.
E.g. 7 GN32**H** 11 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; CSA certified, for Canada and USA (File 207767) and UL Listed, for USA (File E155982), as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, UL508, CSA C22.2 n°14.

U version, front mount. Voltmeter switches. Ammeter switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
VOLTMETER SWITCHES. Phase-Neutral L1-N/L2-N/L3-N 2 wafers - scheme 68.					
7 GN12 68 U		16	□ 48	1	0.094
7 GN20 68 U		20	□ 48	1	0.099
Phase-Phase L1-L2/L2-L3/L3-L1 2 wafers - scheme 67.					
7 GN12 67 U		16	□ 48	1	0.094
7 GN20 67 U		20	□ 48	1	0.099
For 3 phase to phase voltages and 3 phase voltages 3 wafers - scheme 66.					
7 GN12 66 U		16	□ 48	1	0.116
7 GN20 66 U		20	□ 48	1	0.116
For 1 phase voltage and 3 phase to phase voltages 3 wafers - scheme 60.					
7 GN12 60 U		16	□ 48	1	0.105
7 GN20 60 U		20	□ 48	1	0.120
AMMETER SWITCHES. Direct L1-L2-L3 reading - 5 wafers - scheme 97.					
7 GN12 97 U		16	□ 48	1	0.132
7 GN20 97 U		20	□ 48	1	0.148
L1-L2-L3 reading via 3 current transformers 4 wafers - scheme 98.					
7 GN12 98 U		16	□ 48	1	0.115
7 GN20 98 U		20	□ 48	1	0.115

Front plate size:
48x48mm = 1.9x1.9”
65x65mm = 2.6x2.6”.

Type	UL/CSA general use [A]	UL/CSA horsepower ratings						Max IEC AC23 power [kW] at 400V
		1 phase		3 phases				
		120V	230V	200V	230V	480V	600V	
GN12	15	3/4	1	1 1/2	3	—	—	5.5
GN20	20	3/4	2	1 1/2	3	—	—	7.5

General characteristics
- IEC 16...20A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40 front degree of protection (for IP65 see Optional-front plate); IEC IP00 of contacts
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Optional
IEC IP65 front plate
Add **“51”** at the end of the order code.
E.g. 7 GN12 67 U **51**.

Enlarged plate for GN12-20-25 (65x65mm instead of 48x48)
Add the letter **“H”** after the switch size of the order code.
E.g. 7 GN12**H** 68 U.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; CSA certified, for Canada and USA (File 207767) and UL Listed, for USA (File E155982), as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, UL508, CSA C22.2 n°14.

U11 version front ring mount with handle operation for Ø22mm/Ø0.88" fixing. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole - 1 wafer - scheme 90.					
7 GN12 90 U11		16	—	1	0.078
7 GN20 90 U11		20	—	1	0.082
Two-pole - 1 wafer - scheme 91.					
7 GN12 91 U11		16	—	1	0.080
7 GN20 91 U11		20	—	1	0.084
Three-pole - 2 wafers - scheme 10.					
7 GN12 10 U11		16	—	1	0.092
7 GN20 10 U11		20	—	1	0.095
Four-pole - 2 wafers - scheme 92.					
7 GN12 92 U11		16	—	1	0.094
7 GN20 92 U11		20	—	1	0.100

U12 version front ring mount with key operation for Ø22mm/Ø0.88" fixing. ON/OFF switches

Order code		IEC current AC1	Front plate size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. One-pole - 1 wafer - scheme 90.					
7 GN12 90 U12		16	—	1	0.100
7 GN20 90 U12		20	—	1	0.104
Two-pole - 1 wafer scheme 91.					
7 GN12 91 U12		16	—	1	0.108
7 GN20 91 U12		20	—	1	0.112
Three-pole - 2 wafers - scheme 10.					
7 GN12 10 U12		16	—	1	0.129
7 GN20 10 U12		20	—	1	0.135
Four-pole - 2 wafers - scheme 92.					
7 GN12 92 U12		16	—	1	0.132
7 GN20 92 U12		20	—	1	0.139

General characteristics
- IEC 16...125A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IEC IP40; IEC IP00 of contacts for U11 and U12
- Legend marking for U11 and U12 versions is only for reference.

Selection guide
See page 10-24.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC; CSA certified, for Canada and USA (File 207767) and UL Listed, for USA (File E155982), as Manual Motor Controllers.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1, UL508, CSA C22.2 n°14.

P version in enclosure with rotating handle. ON/OFF switches. Changeover switches

Order code		IEC current AC1	Housing size	Qty per pkg	Wt
		[A]	[mm]	n°	[kg]
ON/OFF SWITCHES. Three-pole - scheme 10.					
7 GN12 10 P		16	75x75	1	0.168
7 GN20 10 P		20	75x75	1	0.227
7 GN25 10 P		25	75x75	1	0.258
7 GN32 10 P		32	90x90	1	0.392
7 GN40 10 P		40	110x110	1	0.453
7 GN63 10 P		63	110x110	1	0.766
Four-pole - scheme 92.					
7 GN12 92 P		16	75x75	1	0.174
7 GN20 92 P		20	75x75	1	0.222
7 GN25 92 P		25	75x75	1	0.278
7 GN32 92 P		32	90x90	1	0.411
7 GN40 92 P		40	110x110	1	0.411
7 GN63 92 P		63	110x110	1	0.625
CHANGEOVER SWITCHES. Three-pole - scheme 53.					
7 GN12 53 P		16	75x75	1	0.219
7 GN20 53 P		20	75x75	1	0.273
7 GN25 53 P		25	75x75	1	0.307
7 GN32 53 P		32	90x90	1	0.500
7 GN40 53 P		40	110x110	1	0.727
7 GN63 53 P		63	110x110	1	0.785
Four-pole - scheme 75.					
7 GN12 75 P		16	75x75	1	0.226
7 GN20 75 P		20	75x75	1	0.289
7 GN25 75 P		25	90x90	1	0.418
7 GN32 75 P		32	90x90	1	0.540
7 GN40 75 P		40	110x110	1	0.753
7 GN63 75 P		63	110x110	1	0.840

P version in enclosure with rotating handle. Motor switches

Order code		Ith AC1 IEC	IEC power AC23A	Housing size	Qty per pkg	Wt
		[A]	[kW]	[mm]	n°	[kg]
MOTOR SWITCHES. Three-pole reversing switches - scheme 11.						
7 GN12 11 P		16	5.5	75x75	1	0.216
7 GN20 11 P		20	7.5	75x75	1	0.271
7 GN25 11 P		25	11	75x75	1	0.299
7 GN32 11 P		32	15	90x90	1	0.482
7 GN40 11 P		40	18.5	110x110	1	0.508
7 GN63 11 P		63	30	110x110	1	0.750

General characteristics
- IEC 16...63A conventional free air thermal current Ith ratings
- Conductivity: 10mA 5V
- Extended mechanical and electrical life
- Rotation angles: 30°, 45°, 60° and 90°
- Silver-alloy dual breaking contacts
- Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1
- IP65 degree of protection
- Top and bottom entry:
  - 4 PG13.5 threaded knockouts for 75x75mm types
  - 4 PG16 threaded knockouts for 90x90mm types
  - 4 PG21 threaded knockouts for 110x110mm types
- Legend marking is standard supplied as illustrated in the order code table; any other on request.

Selection guide
See page 10-24.

Special versions
In addition to standard types, particular versions are available with special operating circuit schemes.
See page 10-2.

Certifications and compliance
Certifications obtained: EAC.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60947-5-1.

Valid for P - P25 versions:
Housing size:
75x75mm = 3x3”
90x90mm = 3.5x3.5”
110x110mm = 4.3x4.3”.

For indication and reference purposes only
No UL/CSA approval

Type	UL/CSA general use [A]	Max IEC AC23 power [kW] at 400V
GN12	15	5.5
GN20	20	7.5
GN25	30	11
GN32	40	15
GN40	50	18.5
GN63	60	30

Type	UL/CSA horsepower ratings					
	1 phase		3 phases			
	120V	230V	200V	230V	480V	600V
GN12	3/4	1	1 1/2	3	—	—
GN20	3/4	2	1 1/2	3	—	—
GN25	1 1/2	3	3	5	10	15
GN32	2	5	5	10	15	15
GN40	2	5	5	10	20	20
GN63	5	10	7 1/2	15	25	25

Accessories for GN series rotary cam switches

7 A019... - 7 A119...

7 A169...

7 A014 - 7 AR114 - 7 A114 - 7 AR214

7 AR124 - 7 A124 - 7 AR224

7 A180 - 7 A181

7 A441 - 7 A442 - 7 A443

GX M1 - GX M2

Order code	Description	Qty per pkg	Wt
		n°	[kg]
IEC IP20 finger protection shroud for supply terminals. For 2 wafers complete with screws and bracket.			
7 A0191	For GN12-GN20	1	0.017
7 A0192	For GN25	1	0.021
7 A119U	For GN32 U version	1	0.033
7 A119O	For GN32 O version	1	0.101
2-piece kit, snap-on fixing for 1 wafer.			
7 A1691	For GN40	1	0.005
7 A1692	For GN63	1	0.006
7 A1693	For GN125	1	0.020
7 A1694	For GN12-GN20	1	0.005
7 A1695	For GN25	1	0.005
Black operating handle❶.			
7 A014❸	For 48x48mm front plate ☐ 6mm/0.24" for GN12-GN20-GN25	1	0.005
7 AR114	For 65x65mm front plate ☐ 6mm/0.24" for GN12H-GN20H-GN25H	1	0.010
7 A114❸	For 65x65mm front plate ☐ 6mm/0.24" for GN32-GN40-GN63	1	0.010
7 AR214❸	For 90x90mm front plate ☐ 7mm/0.28" for GN125 and GN32H-GN40H-GN63H	1	0.013
Black operating lever❶.			
7 AR214❸	For 65x65mm front plate ☐ 6mm/0.24" for GN12H-GN20H-GN25H	1	0.019
7 A124	For 65x65mm front plate ☐ 7mm/0.28" for GN32-GN40-GN63	1	0.020
7 AR224❸	For 90x90mm front plate ☐ 8mm/0.31" for GN125 and GN32H-GN40H-GN63H	1	0.038
35mm DIN rail (IEC/EN 60715) base mounting piece for U version.			
7 A180	For GN12...GN25	1	0.011
7 A181	For GN32...GN63	1	0.018
Flexible rubber shroud❷.			
7 A441	Ø 58mm/2.3", 70mm/2.8" long for GN12 to GN25 with 2 elements	1	0.045
7 A442	Ø 58mm/2.3", 92mm/3.6" long for GN12 to GN25 with 4 elements	1	0.065
7 A443	Ø 58mm/2.3", 125mm/4,9" long for GN12 to GN25 with 6 elements	1	0.063
IP40 face plate❶.			
GX M1	48x48mm blank face plate	1	0.018
GX M2	65x65mm blank face plate	1	0.023

Front plate size:
48x48mm = 1.9x1.9"
65x65mm = 2.6x2.6"
90x90mm = 3.5x3.5".

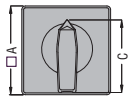
❶ Suitable for GN... types with IEC IP40 (standard supply). For GN...51 types, consult Technical support for information; see contact details on inside front cover.

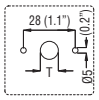
❷ Raises contact degree of protection from IEC IP00...IP20.

❸ Also suitable for GX series.

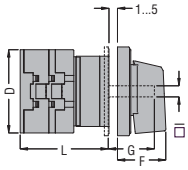
GX SERIES

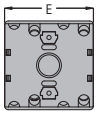
Front mount





Drilling for 2-screw fixing

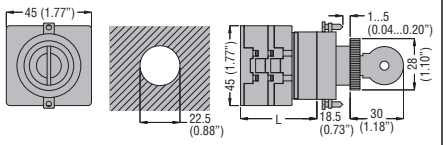




Rear view

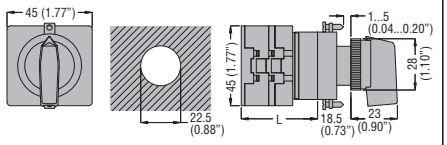
Type	Dimensions								L [mm (in)]					
	□ A	C	D	E	F	G	□ I	T	1 wafer	2 wafers	3 wafers	4 wafers	5 wafers	6 wafers
GX16 U	48 (1.89")	39.5 (1.55")	45 (1.77")	48 (1.89")	26.5 (1.04")	23.5 (0.92")	6 (0.24")	12 (0.47")	42.5 (1.67")	51 (2.00")	59.5 (2.34")	68 (2.67")	76.5 (3.01")	85 (3.35")
GX20 U	48 (1.89")	39.5 (1.55")	45 (1.77")	48 (1.89")	26.5 (1.04")	23.5 (0.92")	6 (0.24")	12 (0.47")	42.5 (1.67")	51 (2.00")	59.5 (2.34")	68 (2.67")	76.5 (3.01")	85 (3.35")
GX32 U	65 (2.56")	53 (2.09")	58 (2.28")	66 (2.59")	34.5 (1.36")	26 (1.02")	7 (0.27")	14 (0.55")	47.5 (1.87")	59.5 (2.34")	71.5 (2.81")	83.5 (3.29")	95.5 (3.75")	107.5 (4.23")
GX40 U	65 (2.56")	53 (2.09")	58 (2.28")	66 (2.59")	34.5 (1.36")	26 (1.02")	7 (0.27")	14 (0.55")	47.5 (1.87")	59.5 (2.34")	71.5 (2.81")	83.5 (3.29")	95.5 (3.75")	107.5 (4.23")

Front ring mount on Ø22mm drilling, 2-screw fixing



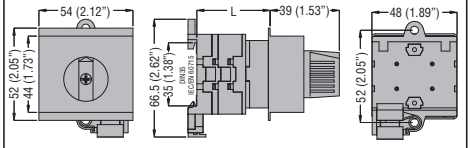
Type	L [mm (in)]			
	1 wafer	2 wafers	3 wafers	4 wafers
GX16	35 (1.37")	43.5 (1.71")	52 (2.04")	60.5 (2.38")

Front ring mount on Ø22mm drilling, 2-screw fixing



Type	L [mm (in)]			
	1 wafer	2 wafers	3 wafers	4 wafers
GX16	35 (1.37")	43.5 (1.71")	52 (2.04")	60.5 (2.38")

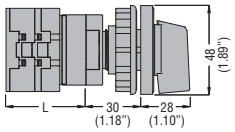
Modular mount



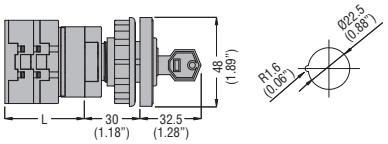
Type	L [mm (in)]		
	3 wafers	4 wafers	5 wafers
GX16	50 (1.37")	58.5 (2.30")	67 (2.64")

Snap on mount

GX...U47

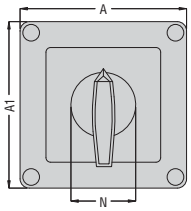


GX...U29D

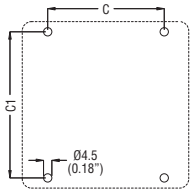


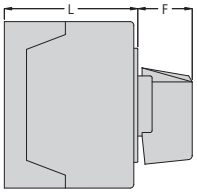
Type	L [mm (in)]			
	1 wafer	2 wafers	3 wafers	4 wafers
GX20	35 (1.37")	43.5 (1.71")	52 (2.04")	60.5 (2.38")

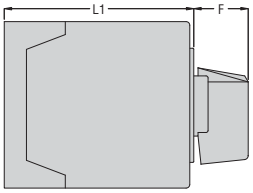
Mounting in enclosure

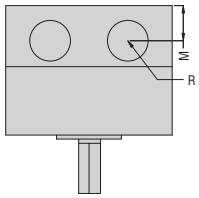


Drilling for enclosure fixing







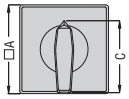


Type	Enclosure size	N° of wafers L	N° of wafers L1	A	A1	C	C1	F	M	N	L	L1	Protection degree	Cable glands R
GX16 **GX20**	90x90 (3.54"x3.54")	1-2 1-2	3-5 3-5	90 (3.54")	90 (3.54")	79 (3.11")	63 (2.48")	25❶ (0.98")	19 (0.74")	30 (1.18")	71.3 (2.80")	98.3 (3.87")	IP65	4 PG 16
GX32 **GX40**	110x110 (4.33"x4.33")	1-2	3-4	110 (4.33")	110 (4.33")	98.4 (3.87")	83 (3.26")	32❷ (1.25")	21 (0.82")	39.5 (1.55")	85.5 (3.36")	119.5 (4.70")	IP65	4 PG 21

❶ 28 (1.1") for ...P25 type.
❷ 38.5 (1.52") for ...P25 type.

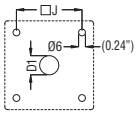
GN SERIES

Front mount

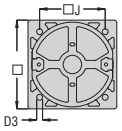


Wafer and front plate fixing on the door

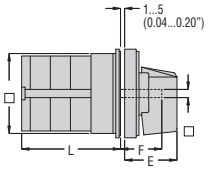
2-screw drilling
for types up to GN63



4-screw drilling for GN125
and "4V" suffix types only

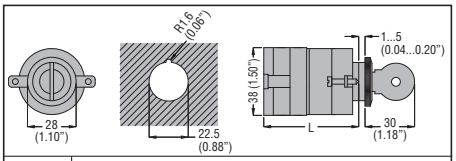


Rear view



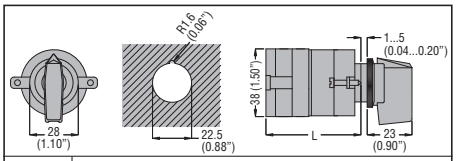
Type	Dimensions □ A	C	D1	D3	E	F	□ G	□ J	□ M	□ N	L 1 wafer	2 wafers	3 wafers	4 wafers	5 wafers	6 wafers
GN12	48 (1.89")	39.5 (1.55")	12 (0.47")	4.3 (0.17")	26.5 (1.04")	23.5 (0.92")	39 (1.53")	36 (1.42")	48 (1.89")	6 (0.24")	36.1 (1.42")	45.8 (1.80")	55.5 (2.18")	65.2 (2.57")	74.9 (2.95")	84.6 (3.33")
GN20	48 (1.89")	39.5 (1.55")	12 (0.47")	4.3 (0.17")	26.5 (1.04")	23.5 (0.92")	39 (1.53")	36 (1.42")	48 (1.89")	6 (0.24")	36.1 (1.42")	45.8 (1.80")	55.5 (2.18")	65.2 (2.57")	74.9 (2.95")	84.6 (3.33")
GN25	48 (1.89")	39.5 (1.55")	12 (0.47")	4.3 (0.17")	26.5 (1.04")	23.5 (0.92")	39 (1.53")	36 (1.42")	48 (1.89")	6 (0.24")	40.5 (1.59")	54.1 (2.13")	67.7 (2.66")	81.3 (3.20")	94.9 (3.74")	108.5 (4.27")
GN32	65 (2.56")	53 (2.09")	14 (0.55")	4.3 (0.17")	34.5 (1.36")	26 (1.02")	58.5 (2.30")	48 (1.89")	65 (2.56")	7 (0.27")	46.5 (1.83")	61.6 (2,442")	76.7 (3.02")	91.8 (3.61")	106.9 (4.21")	122 (4.80")
GN40	65 (2.56")	53 (2.09")	14 (0.55")	4.3 (0.17")	34.5 (1.36")	26 (1.02")	58.5 (2.30")	48 (1.89")	65 (2.56")	7 (0.27")	46.5 (1.83")	61.6 (2,442")	76.7 (3.02")	91.8 (3.61")	106.9 (4.21")	122 (4.80")
GN63	65 (2.56")	53 (2.09")	14 (0.55")	4.3 (0.17")	34.5 (1.36")	26 (1.02")	62 (2.44")	48 (1.89")	65 (2.56")	7 (0.27")	50.3 (1.98")	68.4 (2.69")	86.5 (3.40")	104.6 (4.12")	122.7 (4.83")	140.8 (5.54")
GN125	90 (3.54")	70.5 (2.77")	16 (0.63")	5.3 (0.21")	41.5 (1.63")	28 (1.10")	84 (3.31")	68 (2.68")	90 (3.54")	9 (0.35")	67.3 (2.65")	96.4 (3.79")	125.5 (4.94")	154.6 (6.09")	183.7 (7.23")	212.8 (8.38")

Front ring mount on Ø22mm drilling, 2-screw fixing



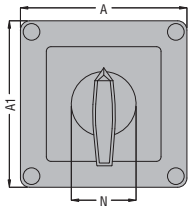
Type	L [mm] 1 wafer	2 wafers	3 wafers	4 wafers
GN12	41.5 (1.63")	51.1 (2.01")	60.7 (2.39")	70.3 (2.77")
GN20	42.1 (1.66")	51.8 (2.04")	61.5 (2.42")	71.2 (2.80")
GN25	46.5 (1.83")	60.1 (2.37")	73.7 (2.90")	87.3 (3.44")

Front ring mount on Ø22mm drilling, 2-screw fixing

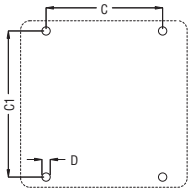


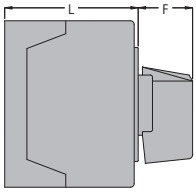
Type	L [mm] 1 wafer	2 wafers	3 wafers	4 wafers
GN12	41.5 (1.63")	51.1 (2.01")	60.7 (2.39")	70.3 (2.77")
GN20	42.1 (1.66")	51.8 (2.04")	61.5 (2.42")	71.2 (2.80")
GN25	46.5 (1.83")	60.1 (2.37")	73.7 (2.90")	87.3 (3.44")

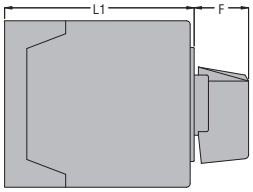
Mounting in enclosure

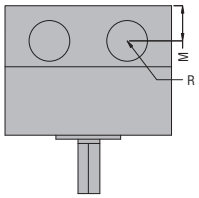


Drilling for enclosure fixing









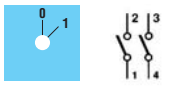
Type	Enclosure size	N° of wafers L	L1	A	A1	C	C1	D	F	M	N	L	L1	Protection degree	Conduits R
GN12 **GN20** **GN25**	75x75 (2.95x2.95")	1-2 1-2 1	3-4 3-4 2-3	75 (2.95")	75 (2.95")	64 (2.51")	50 (1.96")	4.5 (0.17")	19❶ (0.74")	14 (0.55")	28 (1.10")	57.5 (2.26")	79.8 (3.14")	IP65	4 PG 13.5
GN20 **GN25** **GN32** **GN40**	90x90 (3.54x3.54")	1-3 1-2 1-2 1	4-6 3-4 3-4 2-3	90 (3.54")	90 (3.54")	63 (2.48")	79 (3.11")	4.5 (0.17")	25❶ (0.98")	19 (0.74")	30 (1.18")	71.3 (2.80")	98.3 (3.87")	IP65	4 PG 16
GN32 **GN40** **GN63**	110x110 (4.33x4.33")	1-3 1-2 1-2	4-5 3-4 3-4	110 (4.33")	110 (4.33")	98.4 (3.87")	83 (3.27")	4.5 (0.18")	32❷ (1.25")	21 (0.82")	39.5 (1.55")	85.5 (3.37")	119.5 (4.70")	IP65	4 PG 21

❶ 28 (1.1") for P25 type with padlockable handle.
❷ 38.5 (1.52") for P25 type with padlockable handle.

90 - One-pole ON/OFF switch

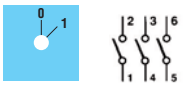
Number of wafers: 1
Switching angle: 60°

91 - Two-pole ON/OFF switch



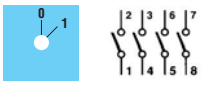
Number of wafers: 1
Switching angle: 60°

10 - Three-pole ON/OFF switch



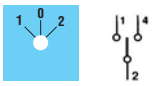
Number of wafers: 2
Switching angle: 60°

92 - Four-pole ON/OFF switch



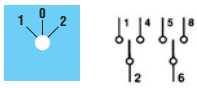
Number of wafers: 2
Switching angle: 60°

51 - 1-pole changeover / double throw switch with 0



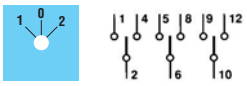
Number of wafers: 1
Switching angle: 60°

52 - 2-pole changeover / double throw switch with 0



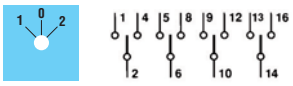
Number of wafers: 2
Switching angle: 60°

53 - 3-pole changeover / double throw switch with 0



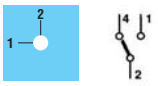
Number of wafers: 3
Switching angle: 60°

75 - 4-pole changeover / double throw switch with 0



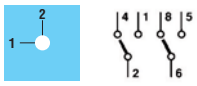
Number of wafers: 4
Switching angle: 60°

54 - 1-pole changeover / double throw without 0



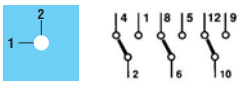
Number of wafers: 1
Switching angle: 90°

55 - 2-pole changeover / double throw without 0



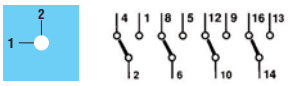
Number of wafers: 2
Switching angle: 90°

56 - 3-pole changeover / double throw without 0



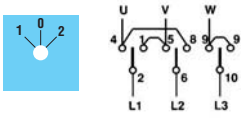
Number of wafers: 3
Switching angle: 90°

69 - 4-pole changeover / double throw without 0



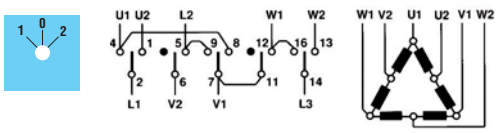
Number of wafers: 4
Switching angle: 90°

11 - 3-pole reversing switch



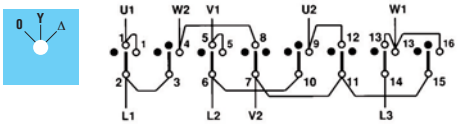
Number of wafers: 3
Switching angle: 60°

13 - Pole-changing switch with 0 (Dahlander)



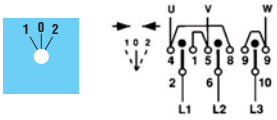
Number of wafers: 4
Switching angle: 60°

12 - Star-delta switch



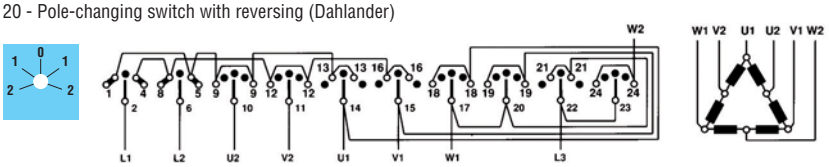
Number of wafers: 4
Switching angle: 60°

26 - Reversing switch, spring return to 0



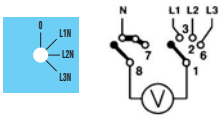
Number of wafers: 3
Switching angle: 30°

20 - Pole-changing switch with reversing (Dahlander)



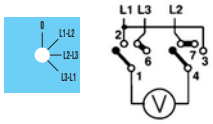
Number of wafers: 6
Switching angle: 60°

68 - Phase-neutral voltmeter switch



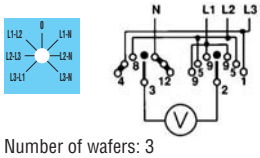
Number of wafers: 2
Switching angle: 30°

67 - Phase-phase voltmeter switch



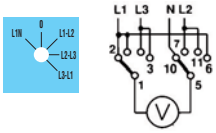
Number of wafers: 2
Switching angle: 30°

66 - Phase-phase phase-neutral voltmeter changeover / double throw



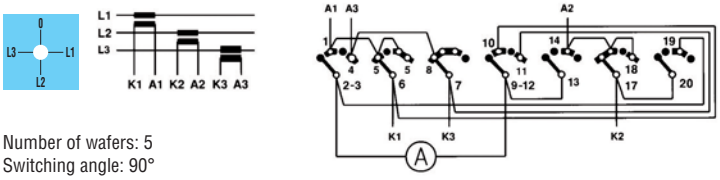
Number of wafers: 3
Switching angle: 30°

60 - Changeover / double throw switch 1 phase phase-neutral, 3 phase-phase voltages



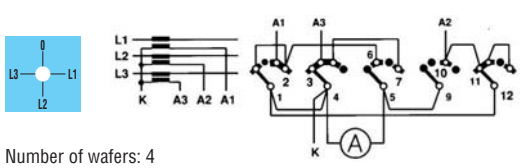
Number of wafers: 3
Switching angle: 30°

97 - Ammeter switch direct reading or via current transformer



Number of wafers: 5
Switching angle: 90°

98 - L1-L2-L3 current changeover / double throw switch



Number of wafers: 4
Switching angle: 90°

SELECTION GUIDE
The choice of a rotary cam switch and the relative type are based on the functional diagram and the type of application as well.

IEC standards provide a comprehensible and quick classification of the most frequent utilisation categories:
AC1: Connection and disconnection of non-inductive or slightly inductive loads ($\cos\varphi \geq 0.95$)
AC21: Resistance furnaces
AC3: Starting and switching off motors during running
AC23A: Switching of motor loads or other highly inductive loads
AC15: Control of electromagnetic loads

For DC applications. the rotary cam switches are used for the switching of minor loads or in control circuits. such as:
DC13: Control of electromagnets
DC21A: Switching of resistive loads
DC23: Switching of highly inductive loads

Other prescriptions and recommendations concerning the use of cam switches as auxiliary equipment of electrical machines are given in IEC/EN 60204-1 standards and specifically as given under utilisation.

UTILISATION
MAIN SUPPLY DISCONNECTING SWITCH WITH EMERGENCY-STOP OPERATION:
- Red operating handle with yellow background
- Lockable in open position (OFF).

EMERGENCY-STOP SWITCH
- Red operating handle with yellow background
- Independent operation and the breaking of the load circuit of switching devices before the opening of its main contacts
- Rated capacity is to be sufficient in order to break the sum of the rated operating currents of all the connected equipment
- Breaking capacity equal to the current of the largest motor when stalled (locked rotor) together with the total of the normal running currents of the other motors or loads.

MAIN SUPPLY DISCONNECTING SWITCH
- Used to disconnect all live electrical equipment from the power supply circuit
- Contact clearance distance is to comply with IEC/EN 60947-3 standards
- Provided with a means in order to be locked in the OFF position
- Selection of current breaking according to IEC AC1 and AC21 utilisation categories.

TYPE				GX16	GX20	GX32	GX40	GN12	GN20	GN25	GN32	GN40	GN63	GN125
Rated insulation voltage❶ Ui	IEC/EN		V	690	690	690	690	690	690	690	690	690	690	690
	UL/CSA		V	600	600	600	600	600	600	600	600	600	600	600
Rated impulse withstand voltage ❶ Uimp	IEC/EN 60947-3		kV	6	6	6	6	6	6	6	6	6	6	8
Conventional free air thermal current Ith	IEC/EN		A	16	20	32	40	16	20	25	32	40	63	125
	UL/CSA (general purpose use)		A	12	15	32	40	15	20	30	40	50	60	130
Rated operating voltage (switch disconnect) ❶			V	440	440	440	440	480	480	480	480	480	480	690
Operatioanl impulse voltage (switch disconnect)			kV	4	4	4	4	4	4	4	4	4	4	6
Maximum fuse size for short-circuit protection In (gG)		10kA	A	20	20	40	40	16	20	25	32	40	63	125
		25kA	A	16	16	35	35	10	16	25	32	40	63	100
		50kA	A	–	–	32	35	–	–	–	32	40	63	100
		63kA	A	–	–	–	35	–	–	–	–	40	63	100
Short-time withstand current Icw		1sec	A	250	250	800	800	200	250	400	800	1000	1600	2100
Rated operational current Ie	AC1/AC21A (IEC/EN)		A	16	20	32	40	16	20	25	32	40	63	125
	AC15 (IEC/EN)	110V	A	10	10	25	25	10	10	16	25	25	32	40
		220...230V	A	8	8	20	22	8	8	12	20	22	25	28
		380...400V	A	4	6	10	12	4	6	8	10	12	15	15
		660...690V	A	3	3.7	5.5	7.5	1.5	1.5	2	2	2	4	5
Motor power for switches in AC utilisation categories														
AC3	(IEC/EN)	220...230V	kW	3.5	3.7	7.5	7.5	2.5	3	5.5	7.5	8	11	18.5
	3 phases	380...440V	kW	4.5	5.5	11	15	4	5.5	7.5	11	15	18.5	37
		500...690V	kW	5.5	5.5	11	15	5.5	5.5	7.5	11	15	18.5	33
	1 phase (2 poles)	110V	kW	0.55	0.75	1.8	2.2	0.8	0.8	1.5	2.2	3	3.7	5
		220...230V	kW	1.5	1.8	3.5	4.4	1.5	2.2	3	4	6.5	6.5	11
		380...440V	kW	2.2	3	5.5	7	2.2	3	5.5	6.5	8	11.5	15
AC23A	(IEC/EN)	220...230V	kW	3.7	4	8	9	3	5	6.5	8	8	12.5	30
	3 phases	380...440V	kW	6.5	7.5	15	18.5	5.5	7.5	11	15	18.5	30	45
		500...690V	kW	7.5	7.5	15	15	7.5	7.5	11	18.5	22	30	37
	1 phase (2 poles)	110V	kW	0.75	0.75	2.2	3	0.8	0.8	1.5	2.2	3	3.7	5
		220...230V	kW	1.8	2.2	3.5	5.2	1.7	2.5	3.7	4	6	7.5	11
		380...440V	kW	3	3.5	6	7.5	3	3.7	5.5	7.5	11	12.5	15

❶ Valid for systems with earthed neutral, overvoltage category III, pollution degree 3.

TYPE			GX16	GX20	GX32	GX40	GN12	GN20	GN25	GN32	GN40	GN63	GN125
Motor power for direct-on-line control (UL/CSA-DOL) 3 phases	120V	HP	1.5	1.5	3	5	–	–	–	–	–	–	–
	230V	HP	3	3	7.5	10	3	3	–	–	–	–	–
	480V	HP	5	5	15	15	–	–	10	15	20	25	50
	600V	HP	5	5	15	15	–	–	–	–	–	–	40
1 phase (2 poles)	120V	HP	0.75	0.75	1.5	2	–	–	–	–	–	–	–
	230V	HP	1	1.5	3	5	–	–	–	–	–	–	–
Motor power for switches in DC utilisation categories													
1 contact DC21A	48V	A	16	20	32	40	12	20	25	32	40	63	125
	60V	A	16	20	32	40	12	20	25	32	40	50	80
Ie	110V	A	4	4	5	6	4	4	4	6	6	8	10
	220V	A	0.5	0.6	0.8	0.8	0.6	0.6	0.7	0.9	0.9	1	1.2
	440V	A	0.25	0.25	0.25	0.25	0.25	0.25	-	-	-	-	-
DC23A	24V	A	16(1)	20(1)	32(1)	40(1)	10(1)	20(1)	25(1)	32(1)	40(1)	50(1)	125(1)
	48V	A	16(2)	20(2)	32(2)	40(1)	10(2)	20(2)	25(2)	32(2)	40(2)	50(2)	125(2)
Ie	60V	A	16(3)	20(3)	32(3)	40(3)	10(3)	20(3)	25(3)	32(3)	40(3)	50(3)	125(3)
No. of contacts connected in series are indicated in brackets	110V	A	10(3)	10(3)	15(3)	20(3)	5(3)	10(3)	12(3)	15(3)	20(3)	25(3)	50(3)
	220V	A	7(4)	8(4)	12(4)	12(4)	5(4)	8(4)	10(4)	12(4)	12(4)	15(4)	20(4)
	24V	A	16	20	32	40	12	20	25	32	40	63	125
DC13	48V	A	14	16	25	32	10	16	20	25	32	40	100
	60V	A	12	12	16	16	8	12	16	16	16	28	50
Ie	110V	A	0.8	1	3	3	1	1	1.5	3	3	3.3	4
	220V	A	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.5	-	-	-
	440V	A	0.15	0.15	0.15	0.15	0.15	0.15	-	-	-	-	-
Power dissipation		W/pole	0.6	0.6	1.6	1.6	0.8	0.8	1.1	1.5	2.0	3.4	6.3
Mechanical life		cycles	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$3x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$5x10^6$	$1x10^6$
Terminal screw		M	3	3	4	4	3	3	3.5	4	4	5	2x5
Tightening torque	max	Nm	0.5	0.8	1.2	1.2	0.5	0.5	0.8	1.2	1.2	2	2
Conductor cross section	max. r/f	2 mm^2	2.5/2.5	2.5/2.5	10/6	10/6	2.5/2.5	2.5/2.5	4/4	6/4	10/6	16/10	50/50
		2 AWG	14/14	14/14	8/10	8/10	14/16	12/14	10/12	8/10	8/10	6/8	1/0 / 1/0
r: rigid/solid f: flexible/stranded	min. r/f	2 mm^2	0.5/0.5	0.5/0.5	1.5/1.5	1.5/1.5	0.5/0.5	0.5/0.5	0.5/0.5	1.5/1.5	1.5/1.5	2.5/2.5	2.5/2.5
		2 AWG	20/20	20/20	16/16	16/16	20/20	20/20	20/20	16/16	16/16	14/14	14/14
AMBIENT CONDITIONS													
Operating temperature		°C	-25...+55										
Storage temperature		°C	-40...+70										