

SWITCH DISCONNECTORS




GL SERIES

 **Lovato**
electric

ENERGY AND AUTOMATION

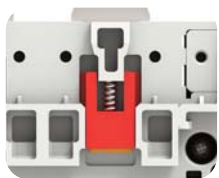
SWITCH DISCONNECTORS



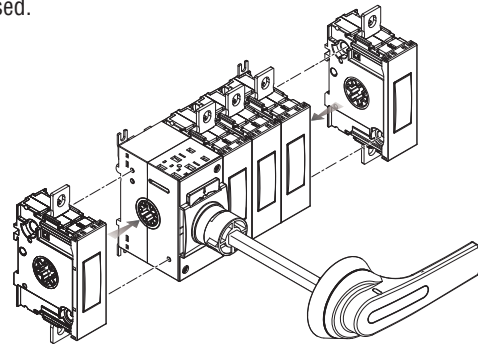
- COMPACT SIZE**
 The three-pole 160A to 315A AC21 switch disconnectors are made up of a body, merely 162mm wide.
- EASY INSTALLATION ON DIN RAIL**
 Switch disconnectors are mounted on DIN rail or on mounting plate by screw fixing.
- UL98 VERSION**
 Switch disconnectors are listed for USA and Canada, certified according to UL98/CSA C22.2 n° 4.
 
- FOUR POLE VERSION AVAILABLE**
 Switch disconnectors are supplied with three-pole configuration. To realize the four-pole version, a four-pole add-on can be purchased.



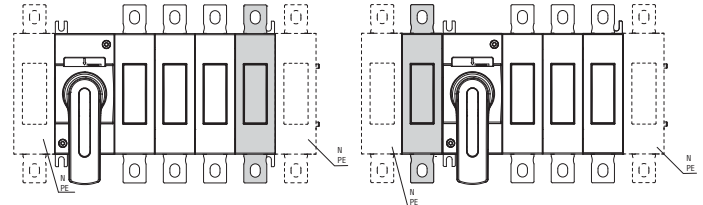
- FLEXIBLE INSTALLATION ORIENTATION**
 Switch disconnectors can be installed in all directions. The clips for screw fixing can be adjusted both in rotation and position (flexible fixing interaxis).



- ANTI-SLIDE INSERT FOR DIN RAIL**
 Two rubber pad inserts prevent the sliding of switch disconnectors on the DIN rail.



- COMPONENT FLEXIBILITY**
 It is possible to mount the fourth pole, neutral and earth/ground terminals on both sides of the switch disconnectors using 2 screws.



CHANGEOVER SWITCHES

- COMPACT SIZE**
 The four-pole 160A to 315A AC21 changeover switches are made up of a body, merely 221mm wide.
- EASY INSTALLATION**
 The changeover switches can be mounted on plate by screws.
- UL1008 VERSION**
 The changeover switches are listed for USA and Canada, certified according to UL1008/CSA C22.2 n° 178.
- FOUR POLE VERSION AVAILABLE**
 Changeover switches are already supplied assembled in three-pole and four-pole configuration.



Switch disconnectors

GL series 160A to 315A

● WIDE RANGE OF ACCESSORIES

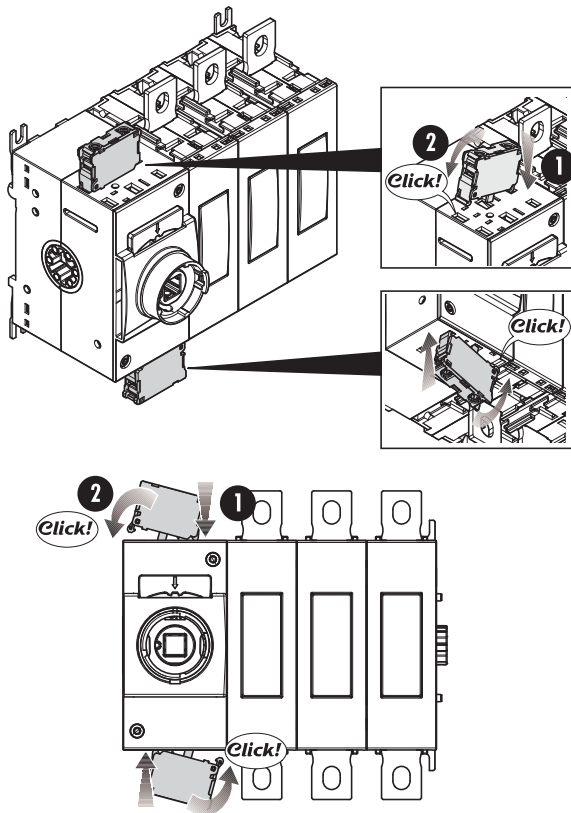
A wide choice of auxiliary contacts, terminal covers, phase barriers, terminal clamps, bridging bars, shafts and handles are available to satisfy every installation needs.

● HIGH IEC ELECTRICAL CAPABILITY

The rated currents in AC23 up to 250A - 690VAC are the highest of the category.

● ADD-ON AUXILIARY CONTACTS

The same add-on block is suitable for all the switch disconnectors and changeover switches. Contacts are mounted on main switching actuator (max 8 contacts).



● VISIBLE CONTACTS

Thanks to the window on the individual power poles the open or closed switch status is clearly visible at a distance.



● UL508A HANDLE VERSION

In compliance with UL508A standards, which require internal panel inspection by authorized personnel with power applied, pistol handles are available with defeatable feature of the door coupling when the switch disconnector or the changeover switch is closed, i.e. in ON position.

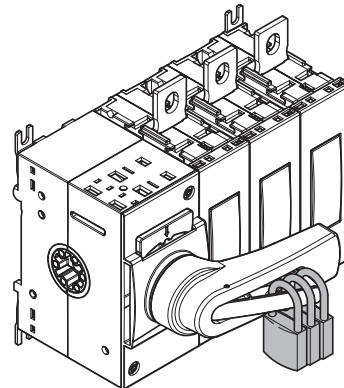
● IP66 AND NEMA 4X HANDLES

A wide range of screw fixing pistol grip handles is available with the maximum degree of protection on the market.



● PADLOCKABLE HANDLES

All direct and door coupling handles are equipped with integrated padlock mechanism.

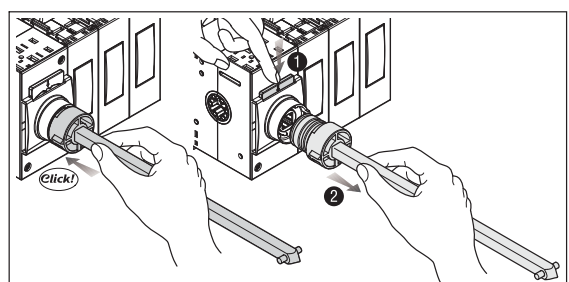


● HANDLES

Switch disconnectors and changeover switches are standard supplied without any handles. By purchasing the direct handle separately it is possible to realize the direct operating version. By purchasing a shaft extension and a door coupling handle separately it is possible to realize the door coupling version.

● SHAFT MOUNTING

Shafts can be mounted and removed very easily by snapping on the front of the switch. This feature allows fast installation and easy accessibility to the panel in case of maintenance.



Switch disconnectors

GL series 160A to 315A

IEC/EN three-pole switch disconnectors



GL...C1

Order code	IEC conventional free air thermal current I _{th} AC21A (≤690V)	IEC rated operational current I _e AC22A (≤690V) AC23A (≤415V)	Qty per pkg	Wt
[A]	[A]	[A]	n°	[kg]

Supplied without handle.
Complete the switch disconnector by selecting shaft extension and handle for door mount or the handle for direct operating version (see page 7).

GL0160 C1	160	160	1	1.500
GL0200 C1	200	200	1	1.500
GL0250 C1	250	250	1	1.500
GL0315 C1	315	250	1	1.500

UL98 three-pole switch disconnectors



GL0200 C1UL

Order code	General purpose current	Max. 3-phase horsepower rating	Qty per pkg	Wt
[A]	[HP/V]	n°	[kg]	

Supplied without handle.
Complete the switch disconnector by selecting shaft extension and handle for door mount or the handle for direct operating version (see page 7).

GL0200 C1UL	200	75/240 150/480 200/600	1	1.600
--------------------	-----	------------------------------	---	-------

IEC/EN fourth pole add-on



GLX42 0315

Order code	IEC conventional free air thermal current I _{th} AC21A (≤690V)	IEC rated operational current I _e AC22A (≤690V) AC23A (≤415V)	Qty per pkg	Wt
[A]	[A]	n°	[kg]	

Simultaneous closing operation as switch disconnector poles. For GL0160 C1...GL0315 C1 versions.

GLX42 0315	315	250	1	0.200
-------------------	-----	-----	---	-------

UL98 fourth pole add-on



GLX42 0200UL

Order code	General purpose current	Max. 3-phase horsepower rating	Qty per pkg	Wt
[A]	[HP/V]	n°	[kg]	

Simultaneous closing operation as switch disconnector poles. For GL0200 C1UL version.

GLX42 0200UL	200	75/240 150/480 200/600	1	0.200
---------------------	-----	------------------------------	---	-------

General characteristics

- 160 to 315A AC21 versions
- 200A general purpose according to UL98
- Compact dimensions and add-on fourth-pole
- Screw or 35mm DIN rail fixing
- Possibility to adjust the position of the clips for screw fixing on plate
- Visible contacts
- Maximum number of power poles: 4.

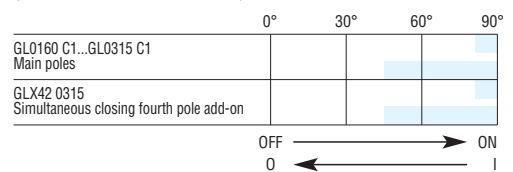
Operational characteristics

- Rated insulation voltage U_i: 1,000V
- Rated impulse withstand U_{imp}: 12kV
- Mechanical life:
 - 20,000 cycles.

Certifications and compliance

Certifications obtained: cULus according to UL98 / CSA C22.2 n°4 for GL...UL and GLX42...UL types.
Compliant with standards: IEC/EN 60947-3, IEC/EN 60947-1.

Strokes of GL poles
(main poles and add-on pole)



Switch disconnectors

GL series 160A to 315A

IEC/EN three-pole changeover switches



GLC...C1

Order code	IEC conventional free air thermal current I _{th} AC21A (≤690V)	IEC rated operational current I _e AC22A (≤690V) AC23A (≤415V)	Qty per pkg	Wt [kg]
[A]	[A]	n°	[kg]	

Supplied without handle.

Complete the changeover switch by selecting shaft extension and handle for door mount or the handle for direct operating version (see page 7).

GLC0160 C1	160	160	1	3.500
GLC0200 C1	200	200	1	3.500
GLC0250 C1	250	250	1	3.500
GLC0315 C1	315	250	1	3.500

IEC four-pole changeover switches



GLC...T4C1

Order code	IEC conventional free air thermal current I _{th} AC21A (≤690V)	IEC rated operational current I _e AC22A (≤690V) AC23A (≤415V)	Qty per pkg	Wt [kg]
[A]	[A]	n°	[kg]	

Supplied without handle.

Complete the changeover switch by selecting shaft extension and handle for door mount or the handle for direct operating version (see page 7).

GLC0160 T4C1	160	160	1	3.500
GLC0200 T4C1	200	200	1	3.500
GLC0250 T4C1	250	250	1	3.500
GLC0315 T4C1	315	250	1	3.500

UL1008 three-pole changeover switches



GLC0200 C1UL

Order code	General purpose current	Max. 3-phase horsepower rating	Qty per pkg	Wt [kg]
[A]	[HP/V]	n°	[kg]	

Supplied without handle.

Complete the changeover switch by selecting shaft extension and handle for door mount or the handle for direct operating version (see page 7).

GLC0200 C1UL	200	75/240 150/480 200/600	1	3.600
---------------------	-----	------------------------------	---	-------

UL1008 four-pole changeover switches



GLC0200 T4C1UL

Order code	General purpose current	Max. 3-phase horsepower rating	Qty per pkg	Wt [kg]
[A]	[HP/V]	n°	[kg]	

Supplied without handle.

Complete the changeover switch by selecting shaft extension and handle for door mount or the handle for direct operating version (see page 7).

GLC0200 T4C1UL	200	75/240 150/480 200/600	1	3.600
-----------------------	-----	------------------------------	---	-------

General characteristics

- 160 to 315A AC21A versions
- 200A general purpose according to UL1008
- Screw fixing on plate
- Visible contacts.

Operational characteristics

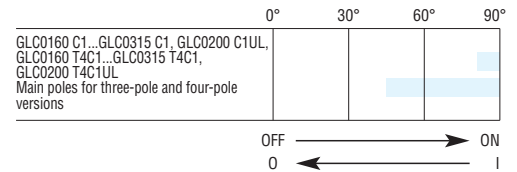
- Rated insulation voltage U_i: 1,000V
- Rated impulse withstand U_{imp}: 12kV
- Mechanical life:
 - 20,000 cycles.

Certifications and compliance

Certifications pending: cULus according to UL1008 for GLC...UL types.

Compliant with standards: IEC/EN 60947-6-1, IEC/EN 60947- 3.

Strokes of GLC poles



Switch disconnectors

GL series 160A to 315A
Accessories

Add-on blocks



GLX10 10EA



GLX10 01



GLX3 00



GLX3 01



GLX8...



GLX9...



GLX5...



GLX2...

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]

Auxiliary contacts.

GLX10 01	1NC with screw terminals	1	0.011
GLX10 10EA	1EB with screw terminals	1	0.011

Neutral terminal.

GLX3 00	For GL0160...GL0315	1	0.200
GLX3 01	For GL0160...GL0315	1	0.200

Earth/ground terminal.

GLX8 00	3-piece set, each covers 1 pole	1	0.011
GLX8 01	4-piece set, each covers 1 pole	1	0.011

One-pole terminal covers.

GLX9 00	6-piece set, each covers 1 pole	1	0.011
GLX9 01	8-piece set, each covers 1 pole	1	0.011

One-pole phase barrier (needed for voltages > 500V).

GLX5 00	1-piece set, each covers 1 pole	1	0.011
GLX5 01	3-piece set, each covers 1 pole	1	0.011

Terminal clamp sets for rigid and flexible cables.

GLX2 01	3-piece set, each covers 1 pole	1	0.011
GLX2 02	4-piece set, each covers 1 pole	1	0.011

One-pole bridging bars for changeover parallel connection GLC0160...GLC0315.

Operational characteristics of auxiliary contacts GLX10...

- Conventional free air thermal current I_{th}: 10A
- Rated insulation voltage: 690V
- Conductivity: 5V, 1mA
- UL/CSA and IEC/EN 60947-5-1 designation: A600 Q600
- Tightening torque: 0.8Nm/7.1lb.in
- Maximum 8 contacts for GL0160...GL0315 switch disconnectors
- Maximum 4 contacts for GLC0160...GLC0315 changeover switches.

Operational characteristics of neutral and earth/ground terminals GLX3...

- Add-on only on GL0160...GL0315 switch disconnectors
- Tightening torque: 15...22Nm/132.7...194.7lb.in.

Operational characteristics for terminal covers and phase barriers GLX8..., GLX9...

- Snap on mounting.

Operational characteristics for terminal clamps GLX5...

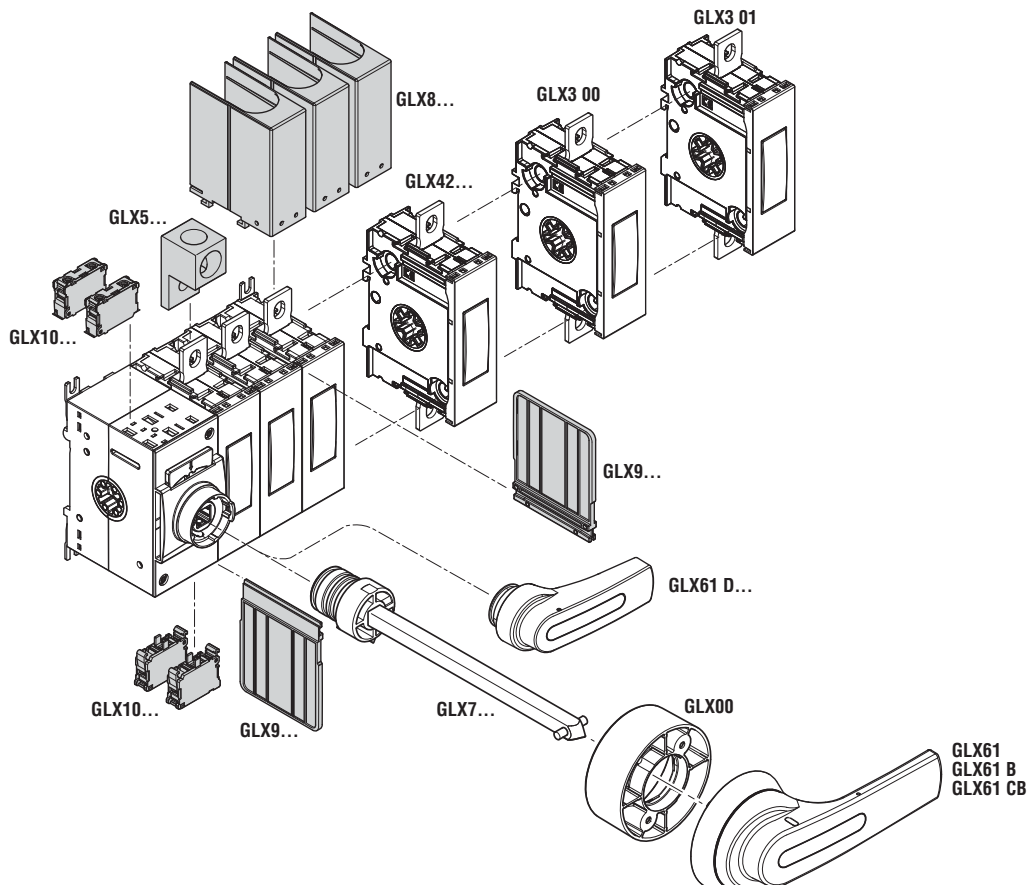
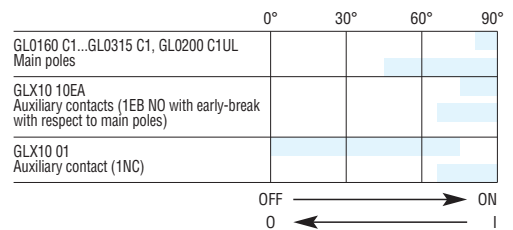
- Maximum conductor cross section: 120mm²/250kcmil
- Minimum conductor cross section: 16mm²/6AWG
- Tightening torque: 35Nm/309.7lb.in.

Certifications and compliance

Certifications obtained: cULus

Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3.

Strokes of GL poles
(main poles with add-on pole)



Switch disconnectors

GL series 160A to 315A
Accessories

Handles and shafts



GLX61 DB



GLX61 D



GLX61



GLX61 B



GLX61 CB



GLX00



GLX7...

Order code	Characteristics	Qty per pkg	Wt
		n°	[kg]

Direct operating handles.

GLX61 DB	For GL0160...GL0315 and GLC0160...GLC0315. Black	1	0.075
GLX61 D	For GL0160...GL0315. Red/yellow	1	0.075

Door coupling handles.

GLX61	For GL0160...GL0315. Screw fixing. 125mm lever length pistol handle - defeatable (req. UL508A). Red/yellow. □10mm	1	0.200
GLX61 B	For GL0160...GL0315. Screw fixing. 125mm lever length pistol handle - defeatable (req. UL508A). Black. □10mm	1	0.200
GLX61 CB	For GLC0160...GLC0315. Screw fixing. 125mm lever length pistol handle - defeatable (req. UL508A). Black. □10mm	1	0.200

Accessories for door coupling handles.

GLX00	Shaft alignment ring	1	0.040
--------------	----------------------	---	-------

Shaft extensions for door coupling handles GLX61, GLX61 B, GLX61 CB type.

GLX7 150 S10	150mm long. □10mm	1	0.120
GLX7 200 S10	200mm long. □10mm	1	0.155
GLX7 300 S10	300mm long. □10mm	1	0.240
GLX7 400 S10	400mm long. □10mm	1	0.280
GLX7 500 S10	500mm long. □10mm	1	0.310

Operational characteristics for direct operating handles

- Snap on mounting on switch disconnectors and changeover switches
- 1 to 3 padlocks in the Ø4...6mm.

Operational characteristics for door coupling handles

- Fixing handles interaxis: 28x40mm
- 1 to 3 padlocks in the Ø4...8mm
- Tightening torque: 1.5Nm/13.3lbin
- Degree of protection: IP66 and NEMA 4X for UL.

NOTE: Types GLX61, GLX61 B, GLX61 CB are UL/CSA Type 1, 4, 4X external use.

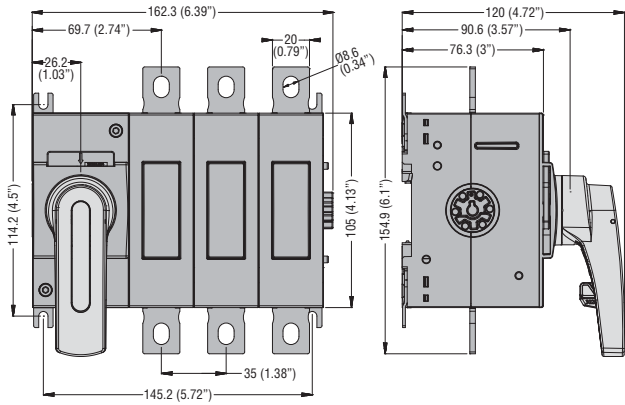
Certifications and compliance

Certifications obtained: cULus.
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3.

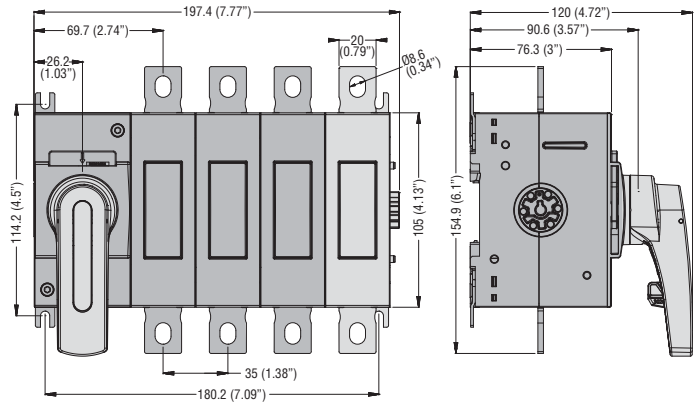
Switch disconnectors

Dimensions [mm]

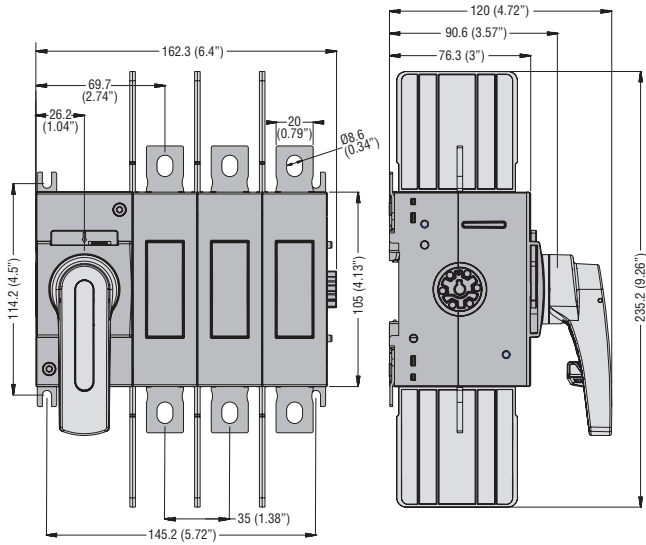
GL0160C1...GL0315C1



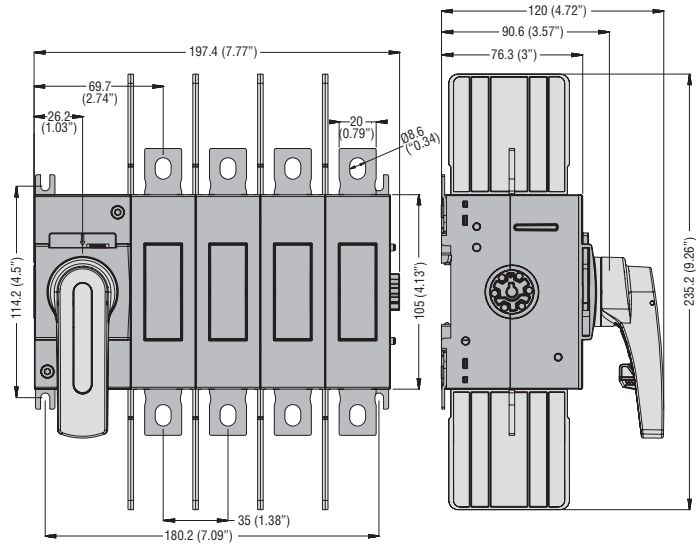
GL0160C1...GL0315C1 with add-on fourth pole GLX42 0315



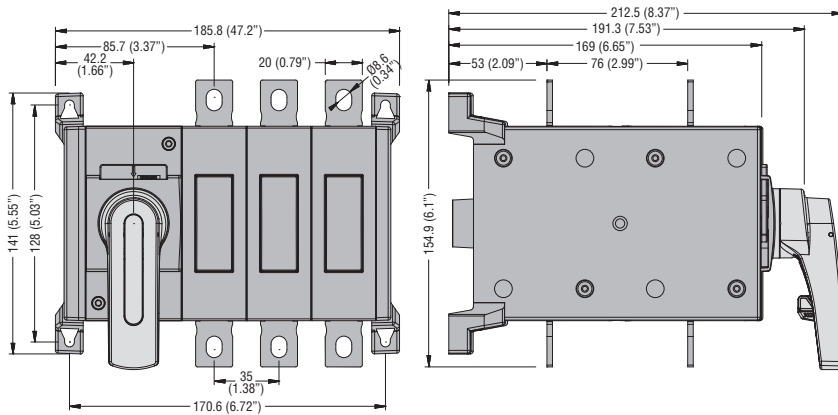
GL0200 C1UL



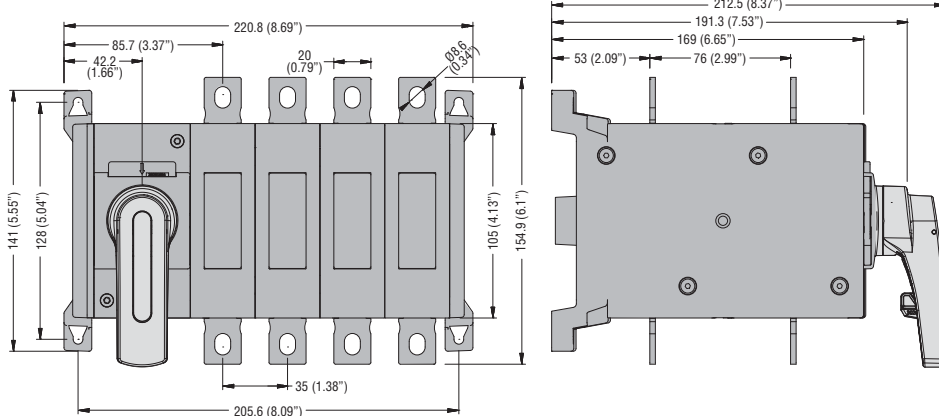
GL0200 C1UL with add-on fourth pole GLX42 0200UL



GLC0160C1...GLC0315C1



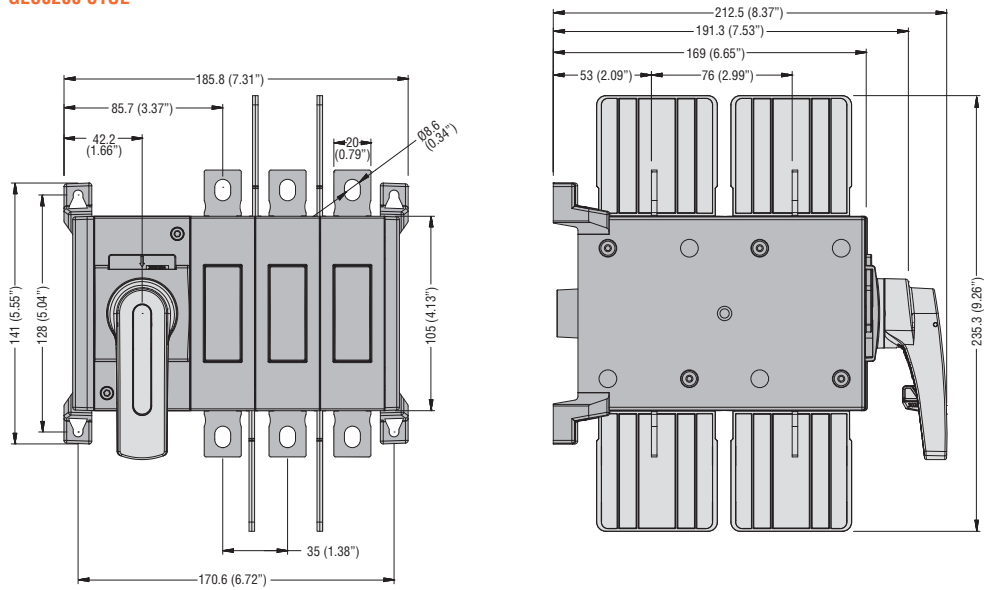
GLC0160T4C1...GLC0315T4C1



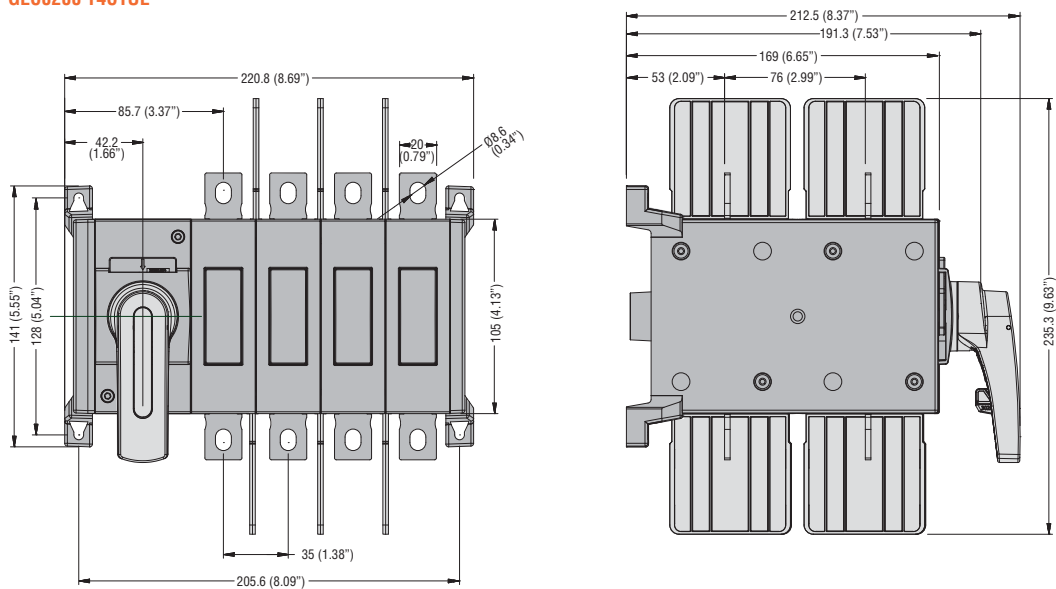
Switch disconnectors

Dimensions [mm]

GLC0200 C1UL



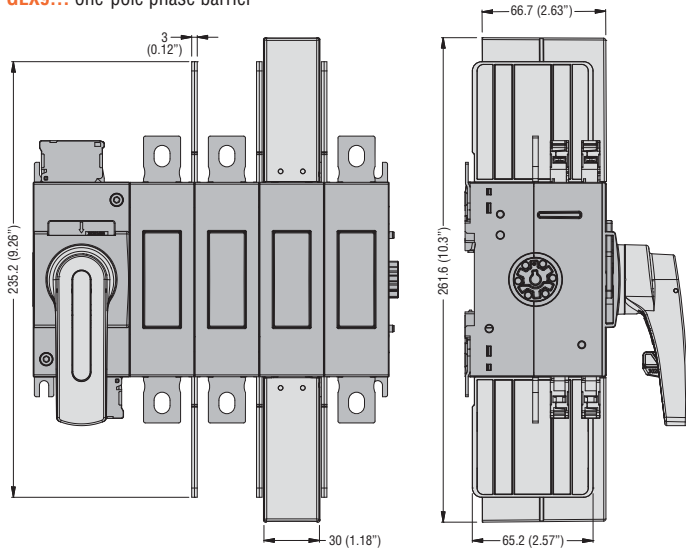
GLC0200 T4C1UL



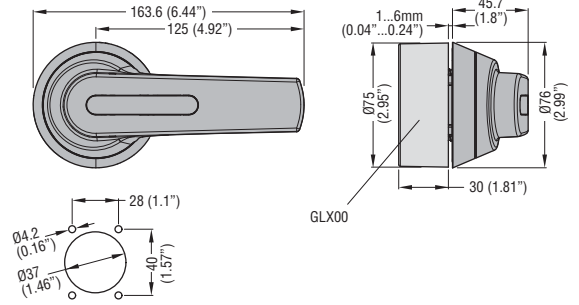
Switch disconnectors

Dimensions [mm]

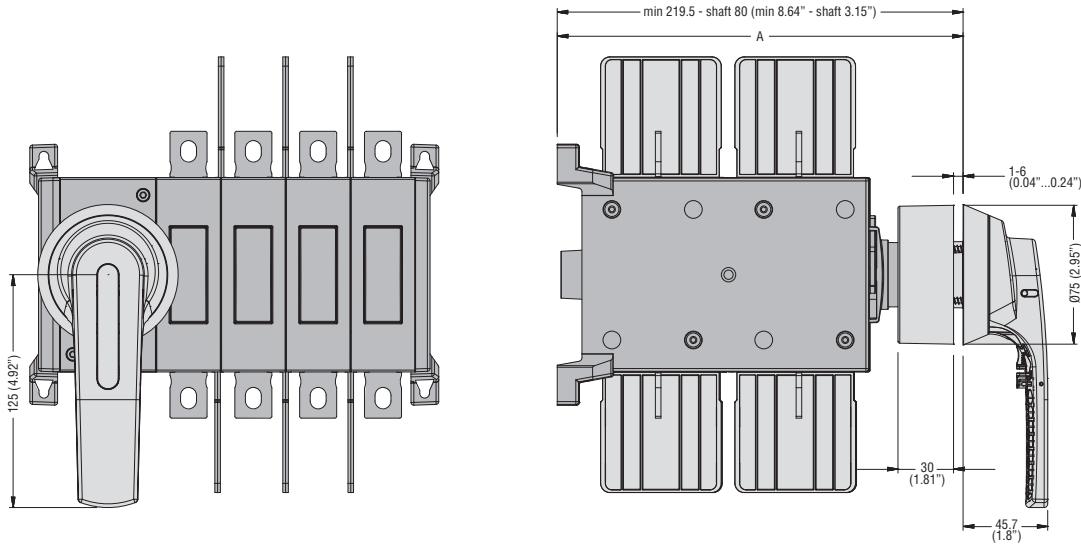
GLX8... terminal covers
GLX9... one-pole phase barrier



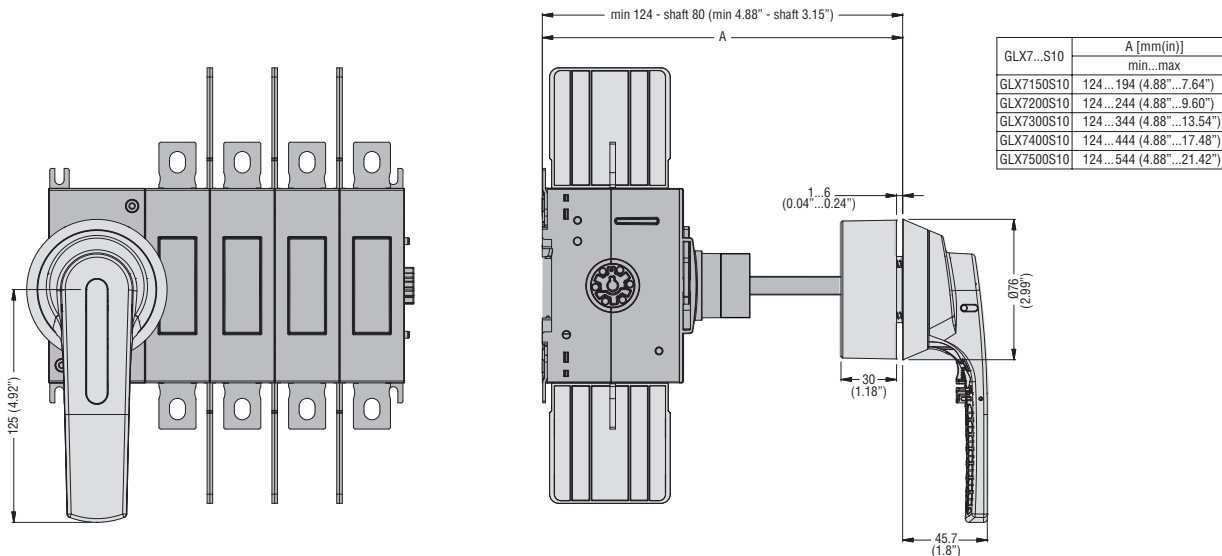
GLX61 - GLX61B - GLX61CB handles



GLX00 shaft alignment ring



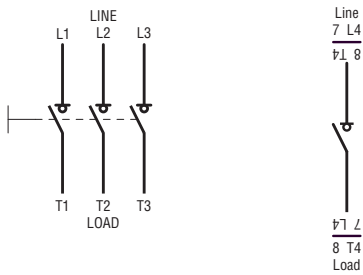
GLX7... shaft extensions for door coupling handles



GL SERIES 160A TO 315A SWITCH DISCONNECTORS

Three-pole
GL0160...GL0315...

Fourth pole
GLX42...



ADD-ON BLOCKS AND ACCESSORIES

Auxiliary contacts
GLX10 10EA

GLX10 01

Neutral terminal
GLX3 00

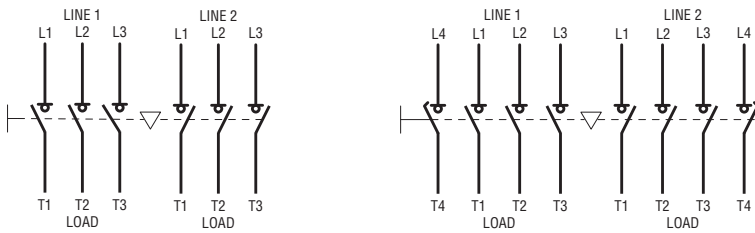
Earth/Ground terminal
GLX3 01



GL SERIES 160A TO 315A CHANGEOVER SWITCHES

Three-pole **GLC0160...GLC0315**

Four-pole **GLC0160 T4...GLC0315 T4**



Switch disconnectors

Technical characteristics
Switch disconnectors

TECHNICAL DATA ACCORDING TO IEC/EN 60947

TYPE	3-pole	GL0160...	GL0200... / GL0200...UL	GL0250...	GL0315...	
	4-pole	GLX42 0315				
CONTACT CHARACTERISTICS						
IEC conventional free air thermal current I _{th} (≤40°C)	A	160	200	250	315	
IEC rated insulation voltage U _i	V	1000				
IEC rated impulse withstand U _{imp}	kV	12				
IEC rated operational current I _e						
AC21A	400V	A	160	200	250	315
	500V	A	160	200	250	315
	690V	A	160	200	250	315
AC22A	400V	A	160	200	250	315
	500V	A	160	200	250	315
	690V	A	160	200	250	315
AC23A	400V	A	160	200	250	250
	500V	A	160	200	250	250
	690V	A	160	200	250	250
Power dissipation	W/pole	3.2	4	6.5	6.5	
IEC rated operational power						
AC23A	400V	kW	90	110	140	140
	690V	kW	144	200	250	250
IEC reactive power for control of capacitors 400V	kvar	80	100	115	145	
SHORT CIRCUIT PROTECTION						
Rated short-time current (1s) I _{cw}	kA rms	8				
Conditional short-circuit current	kA rms	100				
With fuse class gG	A	160	200	250	315	
Making capacity AC23A 400V	A	1600	2000	2500	2500	
Breaking capacity AC23A 400V	A	1280	1600	2000	2000	
Mechanical life	cycles	20000				
Terminal for busbars	mm	M8 x 25				
Tightening torque	Nm	15...22				
	lbin	132...194				
Conductor section min.	mm ²	70	95	120	185	
	AWG/ Kcmil	00	000	250	400	
AMBIENT CONDITIONS						
Temperature	Operating	°C	-25...+55			
	Storage	°C	-40...+70			
Maximum altitude	m	3000				
Mounting position	Normal	Vertical				
	Admissible	Any				
Fixing	By screw or on 35mm DIN rail (IEC/EN 60715)					

TECHNICAL DATA ACCORDING TO UL/CSA RATINGS

TYPE	3-pole	—	GL0200...UL	—	—
	4-pole	—	GLX42 0200UL	—	—
Compliance		—	UL98 CSA C22.2 N°4	—	—
General purpose current ratings	A	—	200	—	—
Max operating voltage	V	—	600	—	—
Horsepower ratings /motor FLA current three-phase	240V	HP/A	—	75/192	—
	480V	HP/A	—	150/180	—
	600V	HP/A	—	200/192	—
Short circuit ratings	KA rms	—	200	—	—
With fuse class J	A	—	200	—	—
Terminal kit lugs		—	GLX5...	—	—
Minimum enclosure dimensions at rated current	mm	—	400 x 250 x 150	—	—

Switch disconnectors

Technical characteristics Changeover switches

TYPE	3-pole	GLC0160...	GLC0200...	GLC0250...	GLC0315...	
	4-pole	GLC0160T4C1	GLC0200T4C1	GLC0250T4C1	GLC0315T4C1	
CONTACT CHARACTERISTICS						
IEC conventional free air thermal current I _{th} (≤40°C)	A	160	200	250	315	
IEC rated insulation voltage U _i	V	1000				
IEC rated impulse withstand U _{imp}	kV	12				
IEC rated operational current I _e						
AC31B	400V	A	160	200	250	315
	500V	A	160	200	250	315
	690V	A	160	200	250	315
AC32B	400V	A	160	200	250	315
	500V	A	160	200	250	315
	690V	A	160	200	250	315
AC33B	400V	A	160	200	250	250
	500V	A	160	200	250	250
	690V	A	160	200	250	250
AC21A	400V	A	160	200	250	315
	500V	A	160	200	250	315
	690V	A	160	200	250	315
AC22A	400V	A	160	200	250	315
	500V	A	160	200	250	315
	690V	A	160	200	250	315
AC23A	400V	A	160	200	250	250
	500V	A	160	200	250	250
	690V	A	160	200	250	250
Power dissipation	W/pole	3.2	4	6.5	6.5	
IEC rated operational power						
AC23A	400V	kW	90	110	140	140
	690V	kW	144	200	250	250
IEC reactive power for control of capacitors 400V	kvar	80	100	115	145	
SHORT CIRCUIT PROTECTION						
Rated short-time current (1s) I _{cw}	kA rms	8				
Conditional short-circuit current	kA rms	100				
With fuse class gG	A	160	200	250	315	
Making capacity AC23A 400V	A	1600	2000	2500	2500	
Breaking capacity AC23A 400V	A	1280	1600	2000	2000	
Mechanical life	cycles	10000				
Terminal for busbars	mm	M8 x 25				
Tightening torque	Nm	15...22				
	lbin	132...194				
Conductor section min.	mm ²	70	95	120	185	
	AWG/ Kcmil	00	000	250	400	
AMBIENT CONDITIONS						
Temperature	Operating	°C	-25...+55			
	Storage	°C	-40...+70			
Maximum altitude		m	3000			
Mounting position	Normal		Vertical			
	Admissible		Any			
Fixing			By screw			



ENERGY AND AUTOMATION

www.LovatoElectric.com

LOVATO ELECTRIC S.P. A.

via Don E. Mazza, 12
24020 Gorle (Bergamo) Italy

Tel +39 035 4282111
info@LovatoElectric.com



Follow us

The products described in this publication are subject to be revised or improved at any moment. Catalogue descriptions and details, such as technical and operational data, drawings, diagrams and instructions, etc., do not have any contractual value. In addition, products should be installed and used by qualified personnel and in compliance with the regulations in force for electrical systems in order to avoid damages and safety hazards.