

YASKAWA

SigmaLogic7 Compact™

Sigma-7 SERVOPACK Option



Motion Sequencing with Add On Instructions (AOIs) for Rockwell ControlLogix and CompactLogix PLCs

SigmaLogic7 Compact makes it possible to add the superior performance and unmatched reliability of a Yaskawa servo system to your machine, without leaving the familiar format of an existing programmable logic controller.

Users can now utilize Yaskawa written, Yaskawa tested Add On Instructions in RSLogix5000 software, with a ControlLogix or CompactLogix PLC. No other Yaskawa programming software is required. This opens up a range of automation improvements:

- Perform functions including point-to-point and blended space moves, as well as jogging and homing
- Use direct commands or a 200-point configurable sequence table
- Utilize the extra 7 inputs and 3 outputs on the SigmaLogic7 Compact servo system in an indexing sequence table, or in your PLC application
- The LogicWorks™ v2 software utility may be used to download sequence and configuration data
- Contains all the features of a Sigma-7 servo system:
 - Tuningless mode automatically adjusts for load-to-rotor inertia mismatches up to 30:1, allowing for the use of smaller motors and reduced gearing
 - Vibration suppression reduces noise during operation, improving tracking and settling time to yield machined parts with very smooth edges
 - 24-bit absolute encoders
 - 50W to 15kW. 100 or 230 VAC input
 - UL/CE/RoHS
 - Integrated safety (Safe Torque Off)



EtherNet/IP™

Yaskawa-written, Yaskawa tested AOIs

- Configurable sequence table
- Extension of Sigma-7 servo family

Sequence Table with



- Software utility to create individual move profiles and sequencing for the application
- Upload/download sequence table and configuration data to/from LogicWorks™
- Embedded monitoring and test functions

Add On Instructions (AOI)

- Yaskawa AOIs were created for full compatibility with all CompactLogix and ControlLogix PLCs using RSLogix5000 software v17 and above
- AOIs are named to be familiar to Rockwell users
- Right-click instruction help is available for all instructions when in the PLC programming environment
- Sample program in RSLogix5000 is available

| AOI Names | AOI Descriptions |
|---------------|---------------------------------------|
| MCFG_Yaskawa | Motion Axis Configuration |
| MSO_Yaskawa | Motion Axis Servo On |
| MSF_Yaskawa | Motion Axis Servo Off |
| MAS_Yaskawa | Motion Axis Stop |
| MAFR_Yaskawa | Motion Axis Fault Reset |
| MAM_Yaskawa | Motion Axis Move |
| MAJ_Yaskawa | Motion Axis Jog |
| MAHSP_Yaskawa | Motion Axis Home Set Position |
| MAH_Yaskawa | Motion Axis Homing |
| MAB_Yaskawa | Motion Axis "Blend" Move |
| MSQR_Yaskawa | Motion Axis Index Run Sequencer |
| MSQE_Yaskawa | Motion Axis Index Step Edit |
| MHSI_Yaskawa | Motion Axis High Speed Index |
| MTRQ_Yaskawa | Motion Axis Torque Control |
| MCLK_Yaskawa | Motion Axis Set Clock |
| MPLS_Yaskawa | Motion Axis Programmable Limit Switch |
| MRSE_Yaskawa | Motion Report Servo Error |

| Home Types |
|---|
| Set Position Directly |
| Home in Positive Direction to Hard Stop |
| Home in Negative Direction to Hard Stop |
| Home in Positive Direction to Limit w/o C-Pulse |
| Home in Negative Direction to Limit w/o C-Pulse |
| Home in Positive Direction to Limit w/C-Pulse |
| Home in Negative Direction to Limit w/C-Pulse |
| Home in Positive Direction to Input w/o C-Pulse |
| Home in Negative Direction to Input w/o C-Pulse |
| Home in Positive Direction to Input w/C-Pulse |
| Home in Negative Direction to Input w/C-Pulse |
| Home in Positive Direction to Hard Stop w/C-Pulse |
| Home in Negative Direction to Hard Stop w/C-Pulse |

| Move Types |
|---|
| Absolute Move |
| Absolute Move with Registration |
| Relative Move |
| Relative Move with Registration |
| Blended Move |
| Jog |
| Jog with Registration |
| Torque Move |
| High Speed Index |
| Rotary Absolute Move with Shortest Path |

Model Number Designation

SGD7S - 2R8 A Q0 A 000 F51

Σ-7 Series SERVOPACK 1st+2nd+3rd digits 4th digit 5th+6th digits 7th digit 8th+9th+10th digits 11th+12th+13th digits

1st+2nd+3rd digits Maximum Applicable Motor Capacity

| Voltage | Code | Spec. | Voltage | Code | Spec. | Voltage | Code | Spec. | |
|-----------------------|------|---------|----------------------|-------------------|---------|----------------------|------|--------|--------|
| Single-phase, 100 VAC | R70 | 0.05 kW | Three-phase, 200 VAC | R70 ^{*1} | 0.05 kW | Three-phase, 400 VAC | 1R9 | 500 W | |
| | R90 | 0.1 kW | | R90 ^{*1} | 0.1 kW | | 3R5 | 1.0 kW | |
| | 2R1 | 0.2 kW | | 1R6 ^{*1} | 0.2 kW | | 5R4 | 1.5 kW | |
| | 2R8 | 0.4 kW | | 2R8 ^{*1} | 0.4 kW | | 8R4 | 2.0 kW | |
| | | | | 3R8 | 0.5 kW | | | 120 | 3.0 kW |
| | | | | 5R5 ^{*1} | 0.75 kW | | | 170 | 5.0 kW |
| | | | | 7R6 | 1.0 kW | | | 210 | 6.0 kW |
| | | | | 120 | 1.5 kW | | | 260 | 7.5 kW |
| | | | | 180 | 2.0 kW | | | 280 | 11 kW |
| | | | | 200 | 3.0 kW | | | 370 | 15 kW |
| | | | | 330 | 5.0 kW | | | | |
| | | | | 470 | 6.0 kW | | | | |
| | | | | 550 | 7.5 kW | | | | |
| | | | | 590 | 11 kW | | | | |
| | | | | 780 | 15 kW | | | | |

*1: These models can be used with either a single-phase or three-phase power supply input

4th digit Voltage

| Code | Specification |
|------|---------------|
| A | 200 VAC |
| F | 100 VAC |
| D | 400 VAC |

8th+9th+10th digits Hardware Options Specification

| Code | Specification | Applicable Models |
|------|-----------------|-------------------|
| 000 | Without options | All models |

11th+12th+13th digits FT/EX Specification

| Code | Specification |
|------|--------------------------------------|
| F51 | Application function for SigmaLogic7 |

5th+6th digits Interface

| Code | Specification |
|------|---------------------|
| Q0 | SigmaLogic7 Compact |

7th digit Design Revision Order

A: Global design revision
B: 400 V global design revision