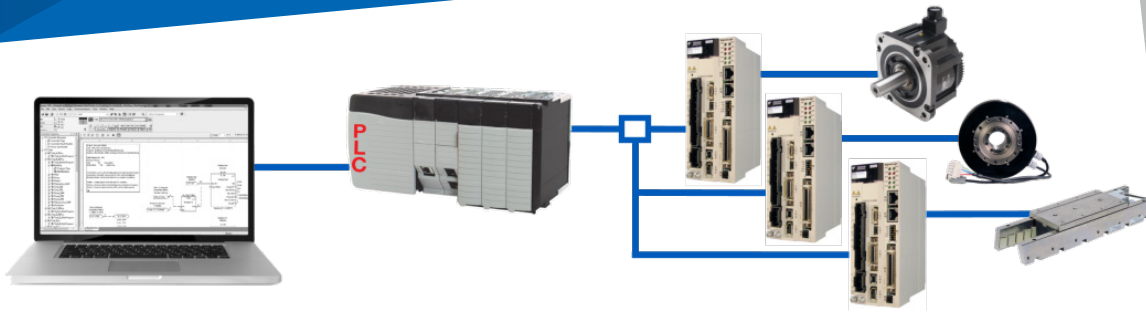# YASKAWA

SigmaLogic™

Sigma-5 SERVOPACK Option

EtherNet/IP™

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

With SigmaLogic, it is 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.

SigmaLogic allows users to utilize Yaskawa written, Yaskawa tested Add On Instructions in RSLogix5000 software, with a ControlLogix or CompactLogix PLC. No other Yaskawa programming software is required. Adding SigmaLogic opens up a range of automation improvements.

- Perform functions including point-to-point and blended space moves, jogging, homing, and gearing to an external decoder

- Use direct commands or a 200-point configurable sequence table

- Utilize the extra 8 inputs and 8 outputs on the SigmaLogic servo system in an indexing sequence table, or in your PLC application

- The LogicWorks™ v2 software utility may be used to download SigmaLogic sequence and configuration data

- Contains all the features of a Sigma-5 servo system:
    - Tuningless mode automatically adjusts for load-to-rotor inertia mismatches up to 20:1, 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
    - 20-bit absolute encoders
    - 50W to 15kW. 100, 230 or 480 VAC input
    - UL/CE/RoHS
    - Integrated safety (Safe Torque Off)

Yaskawa-written, Yaskawa tested AOIs

- Configurable sequence table

- Extension of Sigma-5 servo family

Sequence Table with LogicWorks™ V2

- 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
MAG_Yaskawa	Motion Axis "Gearing" Move
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
Gear On
Gear Off
Superimpose Move on Gear
Torque Move
High Speed Index
Rotary Absolute Move with Shortest Path

Model Number Designation

SGDV   R70   A   E   1   A   002000   B00

Σ-V Series SGDV Servopack

Current

Code	100V (Single Phase) Applicable Servomotor Max. Capacity kW	Code	200 V (Three Phase) Applicable Servomotor Max. Capacity kW	Code	400 V (Three Phase) Applicable Servomotor Max. Capacity kW
R70	0.05	R70	0.05	1R9	0.05
R90	0.1	R90	0.1	3R5	1.0
2R1	0.2	1R6	0.2	5R4	1.5
2R8	0.4	2R8	0.4	8R4	2.0
		3R8	0.5	120	3.0
		5R5	0.75	170	5.0
		7R6	1.0	210	6.0
		120	1.5	260	7.5
		180	2.0	280	11
		200	3.0	370	15
		330	5.0		
		470	6.0		
		550	7.5		
		590	11		
		780	15		

Design Revision

Code	Specifications
A	Design Revision A

Option Function

Code	Specifications
B00	SigmaLogic

Motor Type

Code	Specifications
1	Rotary Servo Motor

Options

Code	Specifications
002000A	Base-mounted, varnish (standard)
008000	Single-phase, 200VAC Input (model SGDV-120AE1A008000B00)

Voltage

Code	Specifications
F	100 VAC
A	200 VAC
D	400 VAC

Interface

Code	Specifications
E	Option Command Architecture

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