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Cable Specifications and Peripheral Devices

Ratings and specifications for peripheral devices, as well as cable specifications for servo amplifiers are summarized in the tables below.

⚠ CAUTION

- **Do not bundle or run power and signal lines together in the same duct.**
  Keep power and signal lines at least 11.81” (30cm) apart.
- **Use twisted pair or shielded multi-core twisted pair wires for signal and encoder (PG) feedback lines.**
- **The maximum lengths for signal lines are as follows:**
  Maximum of 9.84ft (3m) for reference input lines.
  Maximum of 16.4ft (5m) for PG feedback lines.

Cable Specifications

The following table provides wire size specifications:

External Terminal Name		SGDF Terminal Symbol	Wire Size AWG [in^2 (mm^2)]	
			A1C☐	A2C☐
for 24VDC	Main circuit power input terminals	CN3 pins No. 2, 3	20 AWG [HIV 0.0008 (0.5)]	
	Servomotor connection terminals	U, V, W		
	Ground terminal	⏚	12 AWG [HIV 0.005 (3.5)]	

Notes:1. Wire sizes were selected for three cables per bundle at 40°C ambient temperature with the rated current.
2. Use cables with a minimum withstand voltage of 60V for main circuits.
3. If cables are bundled in PVC or metal ducts, consider the reduction ratio of the allowable current.
4. Use heat-resistant cable under high ambient or panel temperatures where normal vinyl cable will rapidly deteriorate.

The following table shows types of cables. It is used in conjunction with the preceding tables.

Cable Type		Temperature Rating of Conductor °C
Name	Composition	
PVC	Standard polyvinyl chloride cable	—
—	Heat-resistant vinyl cable	80

The following table specifies the appropriate cables for CN1 and CN2 servo amplifier connectors.

Wire sizes were selected with the expectation of three cables per bundle, at an ambient temperature of 40°C, at the rated current level.

Connector Name	Signal	Description	Specification
I/O Signal Connector	CN1	Cable	Use twisted pair or shielded twisted pair wire.
		Applicable wire	28AWG
		Finished cable Dimension	Φ0.24in (Φ6.1mm) maximum
PG Signal Connector	CN2	Cable	Use Yaskawa cable, or shielded twisted pair wire.
		Applicable wire	Use 22 AWG [0.0005 in^2 (0.34mm^2)] for the encoder power supply and 26 AWG [0.0002 in^2 (0.14mm^2)] for other signals. These conditions permit wiring distances up to 16.4ft (5m).
		Finished cable Dimension	Φ0.3in (Φ7.5mm) maximum

Peripheral Device Types and Capacities

Main Circuit Power Supply	Model		Applicable Servomotor	Power Supply Capacity per Servo Amplifier (W)	MCCB or Fuse Capacity A*	Recommended Noise Filter		Magnetic Contactor
	Capacity (W)	SGDF-				Model	Specifications	
24VDC	10	A1C☐	SGMM-A1S	27.6	5	MYB-1206-33 (Nemic-Lambda)	Single-phase 250VAC 6A	Contactor (30A) or equivalent
	20	A2C☐	SGMM-A2S	40.1				

Note: *Operating characteristics at 25°C: 200% for 2s minimum; 700% for 0.01s minimum.

Peripheral Device Manufacturers

If the Nemic-Lambda noise filter is unavailable, please contact one of the other manufacturers to obtain a suitable substitute.

Nemic-Lambda:
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(800) 367-5566
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