

Driver Specifications

	Built-in Controller type	Pulse-Input Type
Maximum Input Pulse Frequency	—	Line Driver Output from controller: 500 kHz (at 50% duty) Open-collector Output from controller: 250 kHz (at 50% duty)
Input Signal	Photocoupler input Input signal voltage: 11.4 VDC~26.4 VDC	Photocoupler, Open-collector output: 11.4 VDC~26.4 VDC (AWO, CS, FREE, ALM-RST) Photocoupler, Open-collector output: 3 VDC~5.25 VDC (CW (PLS) +5 V, CCW (DIR) +5 V) Photocoupler, Open-collector output: 21.6 VDC~26.4 VDC (CW (PLS) +24 V, CCW (DIR) +24 V)
Output Signal	Photocoupler ·Open-collector output External use condition: 30 VDC maximum, 10 mA maximum	Photocoupler ·Open-collector output External use condition: 30 VDC maximum, 10 mA maximum (READY, ALM, TIM)
Number of Positioning Program	64	—
Positioning Operation	One-shot operation, Linked operation, Linked operation 2, Sequential mode, Direct mode	—
Other Operation	Continuous Operation, JOG Operation, Return-To-Home Operation, Test Operation	—
Control Module OPX-2A	○	—
Data Setting Software MEXE02	○	—

Built-in Controller (Stored Data) Type RS-485 Communication Specifications

Protocol	Modbus protocol (Modbus RTU mode)
Electrical Characteristics	EIA-485 compliance Twisted-pair wire (TIA/EIA-568B CAT5e or greater recommended) is used up to a total extension length of 50 m.
Sending and Receiving Method	Half-duplex communication Asynchronous mode (data: 8-bit, stop bit: 1-bit/2-bit, parity: none/odd/even)
Baud Rate	9600 bps/19200 bps/38400 bps/57600 bps/115200 bps
Connection Type	Up to 31 units can be connected to one programmable controller (master equipment).

General Specifications

		Driver	
		Built-in Controller Type	Pulse Input Type
Heat-Resistant Class	130 (B)	—	
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the following places: · Case – Motor windings · Case – Electromagnetic brake windings*1	100 MΩ or more when 500 VDC megger is applied between the following places: · PE terminal – Power supply terminal · Signal I/O terminal – Power supply terminal	
Dielectric Strength	Sufficient to withstand the following for 1 minute: · Case – Motor windings 1.5 kVAC 50 Hz or 60 Hz · Case – Electromagnetic brake windings 1.5 kVAC 50 Hz or 60 Hz*1	Sufficient to withstand the following for 1 minute: · PE terminal – Power supply terminal 1.5 kVAC 50 Hz or 60 Hz · Signal I/O terminal – Power supply terminal 1.8 kVAC 50 Hz or 60 Hz	
Operating Environment (In Operation)	Ambient Temperature	–10~+50°C (+14~+122°F) (non-freezing): Standard Type, TS and PS Geared Type 0~+50°C (+32~+122°F) (non-freezing): Package with Encoder 0~+40°C (+32~+104°F) (non-freezing): Harmonic geared type	
	Ambient Humidity	85% or less (non-condensing)	
	Atmosphere	No corrosive gases, dust. Avoid contact with water or oil.	
Temperature Rise	Temperature rise of the windings are 80°C (176°F) or less. Measured at rated current, at standstill, five phases energized measured (by the resistance change method).	—	
Degree of Protection	IP20	IP10	IP20
Stop Position Accuracy*3	±3 arc minutes (±0.05°)		
Shaft Runout	0.05 (0.002 in.) T.I.R mm*4	—	
Radial Play*5	0.025 mm (0.001 in.) Max. Load 5 N (1.12 lb.)	—	
Axial Play*6	0.075 mm (0.003 in.) Max. Load 10 N (2.2 lb.)	—	
Concentricity of Installing Pilot to the Shaft	0.075 (0.003 in.) T.I.R mm*4	—	
Perpendicularity of Installation Surface to the Shaft	0.075 (0.003 in.) T.I.R mm*4	—	

*1 Only for Built-in Controller Package

*2 When attaching a heat sink 200 mm×200 mm (7.87×7.87)×2 mm (0.08 in.), made from aluminum plate or higher.

*3 This value is measured at step angle 0.72°, under no load. (The value changes depends on the size of the load.)

*4 T.I.R. (Total Indicator Reading) : The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

*5 Radial Play : Displacement in shaft position in the radial direction, when a 5 N (1.12 lb.) load is applied in the vertical direction to the tip of the motor's shaft.

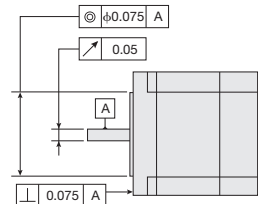
*6 Axial Play : Displacement in shaft position in the axial direction, when a 10 N (2.2 lb.) load is applied to the motor's shaft in the axial direction.

Note

● Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.

Encoder Specifications

Resolution	500 P/R
Output Mode	Incremental
Output Signal	3 channels
Output Circuit Type	Line Driver



■ Permissible Radial Load and Permissible Axial Load

Unit = N (lb.)

Type	Frame Size	Product Name	Gear Ratio	Permissible Radial Load					Permissible Axial Load	
				Distance from tip of shaft mm (in.)						
				0 (0)	5 (0.2)	10 (0.39)	15 (0.59)	20 (0.79)		
Standard Type	42 mm (1.65 in.)	RKS543	—	35 (7.8)	44 (9.9)	58 (13)	85 (19.1)	—	2.5 (0.56) <3.9 (0.87)> [3.1 (0.69)]	
		RKS544							3.1 (0.69) <4.5 (1.01)> [3.7 (0.83)]	
		RKS545							3.7 (0.83) <5.1 (1.14)> [4.3 (0.96)]	
	60 mm (2.36 in.)	RKS564		90 (20)	100 (22)	130 (29)	180 (40)	270 (66)	6.9 (1.55) <9.8 (2.2)> [7.5 (1.67)]	
		RKS566							8.8 (1.98) <11.8 (2.6)> [9.4 (2.1)]	
		RKS569							13.7 (3) <16.7 (3.7)> [14.7 (3.3)]	
	85 mm (3.35 in.)	RKS596		260 (58)	290 (65)	340 (76)	390 (87)	480 (108)	18.6 (4.1) <26.5 (5.9)> [19.6 (4.4)]	
		RKS599							29.4(6.6) <37.3 (8.3)> [30.4 (6.8)]	
		RKS5913							40.2 (9) <48.1 (10.8)> [41.2 (9.2)]	
TS Geared Type	42 mm (1.65 in.)	RKS543	3.6, 7.2, 10	20 (4.5)	30 (6.7)	40 (9)	50 (11.2)	—	15 (3.3)	
			20, 30	40 (9)	50 (11.2)	60 (13.5)	70 (15.7)	—		
	60 mm (2.36 in.)	RKS564	3.6, 7.2, 10	120 (27)	135 (30)	150 (33)	165 (37)	180 (40)	40 (9)	
			20, 30	170 (38)	185 (41)	200 (45)	215 (48)	230 (51)		
	90 mm (3.54 in.)	RKS596	3.6, 7.2, 10	300 (67)	325 (73)	350 (78)	375 (84)	400 (90)	150 (33)	
			20, 30	400 (90)	450 (101)	500 (112)	550 (123)	600 (135)		
PS Geared Type	42 mm (1.65 in.)	RKS545	5, 7.2, 10	73 (16.4)	84 (18.9)	100 (22)	123 (27)	—	50 (11.2)	
		RKS543	25, 36, 50	109 (24)	127 (28)	150 (33)	184 (41)	—		
	60 mm (2.36 in.)	RKS566	5	200 (45)	220 (49)	250 (56)	280 (63)	320 (72)	100 (22)	
			7.2, 10	250 (56)	270 (60)	300 (67)	340 (76)	390 (87)		
		RKS564	25, 36, 50	330 (74)	360 (81)	400 (90)	450 (101)	520 (117)		
	90 mm (3.54 in.)	RKS599	5, 7.2, 10	480 (108)	540 (121)	600 (135)	680 (153)	790 (177)	300 (67)	
			RKS596	25	850 (191)	940 (210)	1050 (230)	1190 (260)		1380 (310)
				36	930 (200)	1030 (230)	1150 (250)	1310 (290)		1520 (340)
				50	1050 (230)	1160 (260)	1300 (290)	1480 (330)		1710 (380)
Harmonic Geared Type	42 mm (1.65 in.)	RKS543	50, 100	180 (40)	220 (49)	270 (60)	360 (81)	510 (114)	220 (49)	
	60 mm (2.36 in.)	RKS564		320 (72)	370 (83)	440 (99)	550 (123)	720 (162)	450 (101)	
	90 mm (3.54 in.)	RKS596		1090 (240)	1150 (250)	1230 (270)	1310 (290)	1410 (310)	1300 (290)	

● The values inside the brackets < > represent the specification for the electromagnetic brake type.
 The values inside the brackets [] represent the specification for the encoder type.