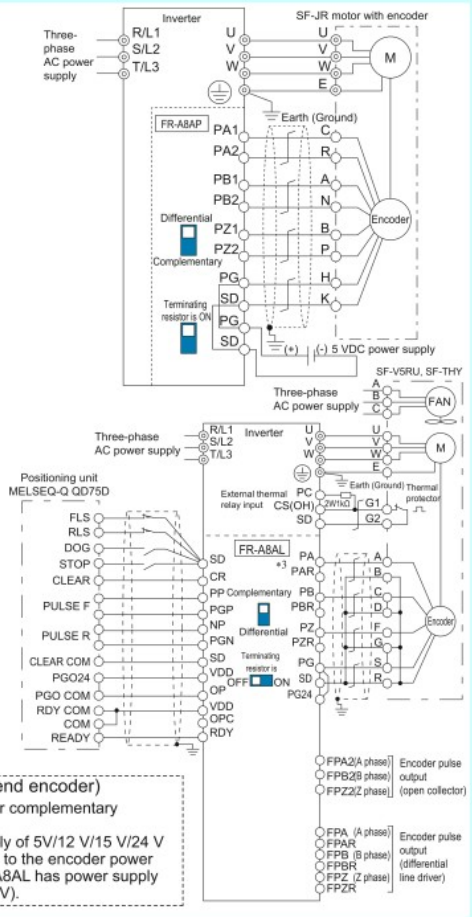
<<FR-A8AP, FR-A8AL, FR-A8APD, FR-A7AP, FR-A7AL>>

●Specifications

Function		Description	
Orientation control		Repeated positioning accuracy	±1.5°
		Permissible speed	Encoder-mounted shaft speed (6000 r/min with 1024 pulse encoder) The motor and encoder-mounted shaft should be coupled with a speed ratio of 1 to 1.
Encoder feedback control		Speed variation ratio	±0.1% (to the speed 3600 r/min)
Vector control	Speed control	Speed control range	1:1500 (both driving/regeneration *1)
		Speed variation ratio	±0.01% (to the speed 3000 r/min)
		Speed response	130 Hz (30 Hz for FR-E800)
	Torque control	Torque control range	1:50
		Absolute torque accuracy	±10% *2
		Repeated torque accuracy	±5% *2
	Position control (available for FR-A8AL, FR-A7AL)	Pulse input type	Forward rotation pulse train + reverse rotation pulse train Pulse train + sign A phase pulse train + B phase pulse train
		Repeated positioning accuracy	±1.5° (motor shaft end)
		Power supply	24 V power supply output for interface driver is provided
		Maximum input pulse frequency	Differential line receiver: 500k pulses/s Open collector: 200k pulses/s
		Electronic gear setting	1/50 to 20
Encoder pulse division output (available for FR-A8AL, FR-A8APD, FR-A7AL)		Output circuit method	Open collector and differential line driver
		Permissible load	Open collector output: 24 VDC, max 50 mA Differential line driver output: 40 mA
Machine end orientation control (available for FR-A8AL, FR-A7AL)		Repeated positioning accuracy	±1.5°
		Permissible speed	Encoder-mounted shaft speed (6000 r/min)

*1 Regeneration unit (option) is necessary for regeneration.
*2 With online auto tuning (adaptive magnetic flux observer), dedicated motor, rated load
*3 FR-A7AL uses two option connectors of an inverter. When using FR-A7AL, only one more built-in option can be used.

●Connection diagram (Sink logic)



<<FR-A8APR>>

●Specifications

Function		Description	
Orientation control		Repeated positioning accuracy	±1.5° Depends on the load torque, moment of inertia of the load or orientation, creep speed, position loop switching position, etc.
		Permissible speed	Resolver-mounted shaft speed (6000 r/min). The drive shaft and resolver-mounted shaft must be coupled directly or via a belt without any slip. Gear changing shafts cannot be applied.
Resolver (encoder) feedback control		Speed variation ratio	±0.1% (100% means 3600 r/min)
Vector control	Speed control	Speed control range	1:1500 (both driving/regeneration *1)
		Speed variation ratio	±0.01% (100% means 3000 r/min)
		Speed response	20 Hz (40 Hz during fast-response operation)
		Maximum speed	400 Hz
	Torque control	Torque control range	1: 50
		Absolute torque accuracy	±10% *2
		Repeated torque accuracy	±5% *2
	Position control	Repeated positioning accuracy	±1.5° (at motor shaft end)
		Maximum input pulse frequency	100k pulses/s (Terminal JOG)
		Positioning feedback pulse	4096 pulses/rev
		Electronic gear setting	1/50 to 20
		In-position width	0 to 32767 pulses
		Error excess	0 to 400k pulses

*1 Regeneration unit (option) is necessary for regeneration
*2 With online auto tuning (adaptive magnetic flux observer), dedicated motor, rated load

●Connection diagram