IAI
Quality and Innovation

Field Network Controllers

ROBO Cylinder Position Controller PowerCON 150 PCON-CA

ROBO Cylinder Position Controller High-thrust Motor Type PCON-CFA

PCON Controllers Now Support Field Networks

1 Supporting seven major field networks

DeviceNet, CC-Link, PROFIBUS-DP, CompoNet, MECHATROLINK (I, II), EtherCAT and EtherNet/IP are supported. Key features include wire-saving, direct numerical specification, position number specification, and current position read.

2 PCON-CFA for high-thrust motors

	Supported actuators
PCON-CA	ROBO Cylinder RCP4 / RCP3 / RCP2 series
PCON-CFA	ROBO Cylinder RCP2-RA8C / RA8R / RA10C / HS8C / HS8R series ROBO Cylinder splash-proof RCP2W-SA16C / RA10C series

List of Models

ROBO Cylinder Position Controller PowerCON 150 <PCON-CA>

External view										
I/O type		Positioner type	Pulse-train type	Field network type						
				DeviceNet	CC-Link	PROFIBUS	CompoNet	MECHATROLINK	EtherCAT	EtherNet/IP
				DeviceNet connection specification	CC-Link connection specification	PROFIBUS-DP connection specification	CompoNet connection specification	MECHATROLINK connection specification	EtherCAT connection specification	EtherNet/IP connection specification
I/O type model code		NP/PN	PLN/PLP	DV	CC	PR	CN	ML	EC	EP
Standard price	Incremental specification	-	-	-	-	-	-	-	-	-
	Simple absolute specification: With absolute battery	-	-	-	-	-	-	-	-	-
	Simple absolute specification: With absolute battery unit	-	-	-	-	-	-	-	-	-
	Simple absolute specification: No absolute battery	-	-	-	-	-	-	-	-	-

ROBO Cylinder Position Controller High-thrust Motor Type <PCON-CFA>

External view										
I/O type		Positioner type	Pulse-train type	Field network type						
				DeviceNet	CC-Link	PROFIBUS	CompoNet	MECHATROLINK	EtherCAT	EtherNet/IP
				DeviceNet connection specification	CC-Link connection specification	PROFIBUS-DP connection specification	CompoNet connection specification	MECHATROLINK connection specification	EtherCAT connection specification	EtherNet/IP connection specification
I/O type model code		NP/PN	PLN/PLP	DV	CC	PR	CN	ML	EC	EP
Standard price	Incremental specification	-	-	-	-	-	-	-	-	-

Model Number

<Controller>

PCON — CA — ☐ — I — ☐ — ☐ — 0 — ☐ — ☐

Series	Type	Motor type	Encoder type	I/O type	I/O cable length	Power supply voltage	Simple absolute specification	Actuator mounting specification
PCON	CA		I			0		

Type

CA	Standard type

Encoder type

I	Incremental

Motor type

20P	20 frame pulse motor
20SP	20 frame pulse motor (RCP3-RA2 high-thrust type dedicated)
28P	28 frame pulse motor
28SP	28 frame pulse motor (RCP2-RA3C dedicated)
35P	35 frame pulse motor
42P	42 frame pulse motor
56P	56 frame pulse motor

I/O type

NP	PIO (NPN) specification
PLN	Pulse-train (NPN) specification
PN	PIO (PNP) specification
PLP	Pulse-train (PNP) specification
DV	DeviceNet connection specification
CC	CC-Link connection specification
PR	PROFIBUS-DP connection specification
CN	CompoNet connection specification
ML	MECHATROLINK connection specification
EC	EtherCAT connection specification
EP	EtherNet/IP connection specification

I/O cable length

0	No cable
2	2 m
3	3 m
5	5 m

* If a network connection specification (I/O type = DV, CC, PR, CN, ML, EC or EP) is selected, the I/O cable length becomes "0" (no cable).

Power supply voltage

0	DC24V

Simple absolute specification

(Blank)	Incremental specification
AB	Simple absolute specification (With absolute battery)
ABU	Simple absolute specification (With absolute battery unit)
ABUN	Simple absolute specification (No absolute battery)

Actuator mounting specification

(Blank)	Screw fastening specification
DN	DIN rail mounting specification

* The mounting specification for the absolute battery unit (screws mounting or DIN rail mounting) conforms to the mounting specification for the controller.

<Controller>

* The PCON-CFA does not support the simple absolute specification.

PCON — CFA — ☐ — I — ☐ — ☐ — 0 — ☐

Series	Type	Motor type	Encoder type	I/O type	I/O cable length	Power supply voltage	Actuator mounting specification
PCON	CFA		I			0	

Type

CFA	High-thrust motor type

Encoder type

I	Incremental

Motor type

60P	60 frame pulse motor
86P	86 frame pulse motor

I/O type

NP	PIO (NPN) specification
PLN	Pulse-train (NPN) specification
PN	PIO (PNP) specification
PLP	Pulse-train (PNP) specification
DV	DeviceNet connection specification
CC	CC-Link connection specification
PR	PROFIBUS-DP connection specification
CN	CompoNet connection specification
ML	MECHATROLINK connection specification
EC	EtherCAT connection specification
EP	EtherNet/IP connection specification

I/O cable length

0	No cable
2	2 m
3	3 m
5	5 m

* If a network connection specification (I/O type = DV, CC, PR, CN, ML, EC or EP) is selected, the I/O cable length becomes "0" (no cable).

Power supply voltage

0	DC24V

Actuator mounting specification

(Blank)	Screw fastening specification
DN	DIN rail mounting specification

Specification Table

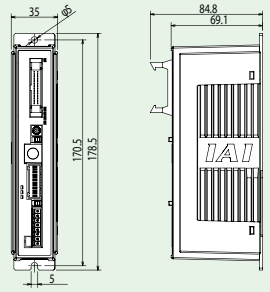
Item				Description	
				PCON-CA	PCON-CFA
Number of controlled axes				1 axis	
Power supply voltage				24 VDC ± 10%	
Load capacity (Current consumption of controlled axes included) (Note 1)	RCP2 RCP3	Motor type	20P, 28P, 28SP	1A max.	
			42P, 56P	2.2A max.	
			60P, 86P		6A max.
	RCP4	Motor type	42P, 56P	High-output setting disabled: 2.2 A max.	
				High-output setting enabled: 3.5 A rated / 4.2 A max.	
Power supply for electromagnetic brake (for actuators with brake)				24 VDC ± 10%, 0.15 A (max.)	
Rush current (Note 2)				8.3 A	10 A
Momentary power failure resistance				500 µs max.	
Applicable encoder				Incremental encoder of 800 pulses/rev in resolution	
Actuator cable length				20 m max.	
External interface	PIO specification			Dedicated 24-VDC signal input/output (NPN or PNP selected) --- Up to 16 input points, up to 16 output points / Cable length: 10m max.	
	Field network specification			DeviceNet, CC-Link, PROFIBUS, CompoNET, MECHATROLINK, EtherCAT, EtherNet/IP	
Data setting/input method				PC software, touch-panel teaching pendant	
Data retention memory				Position data and parameters are saved in the non-volatile memory (The memory can be written any number of times.)	
Operation modes				Positioner mode / Pulse-train control mode (Selectable by parameter setting)	
Number of positions in positioner mode				Up to 512 points for the positioner type, up to 768 points for the network type (Note) The number of positioning points varies depending on the PIO pattern selected.	
Pulse-train interface	Input pulse			Differential method (line driver method): 200 kpps max. / Cable length: 10 m max.	
				Open collector method: Not supported * If the host uses open-collector output, convert the open-collector pulses to differential pulses using the AK-04 (available as an option).	
	Command pulse magnification (electronic gear ratio: A/B)			1/50 < A/B < 50/1 Setting range of A and B (set by parameters): 1 to 4096	
	Feedback pulse output			None	
Isolation resistance				500-VDC 100 MΩ or more	
Electric shock protection mechanism				Class I basic isolation	
Mass (Note 3)	Incremental specification			Screw fastening type: 250 g or less DIN rail securing type: 285 g or less	Screw fastening type: 270 g or less DIN rail securing type: 305 g or less
	Simple absolute specification (190 g of battery weight included)			Screw fastening type: 450 g or less DIN rail securing type: 485 g or less	
Cooling method				Natural air cooling	Forced air cooling
Environment	Ambient operating temperature			0 to 40°C	
	Ambient operating humidity			85%RH or less (non-condensing)	
	Operating ambience			Not exposed to corrosive gases	
	Protection degree			IP20	

Note 1) The value increases by 0.3 A for the field network specification.
Note 2) After the power is turned on, rush current will flow for approx. 5 msec (at 40°C). Take note that the rush current varies depending on the impedance of the power-supply line.
Note 3) The value increases by 30 g for the field network specification.

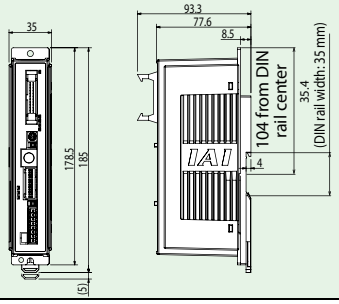
External Dimensions

<PCON-CA>

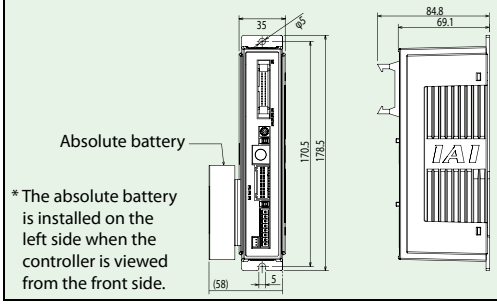
Incremental specification / Screw fastening specification



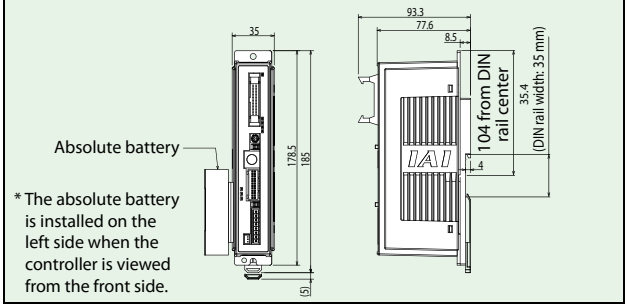
Incremental specification / DIN rail mounting specification



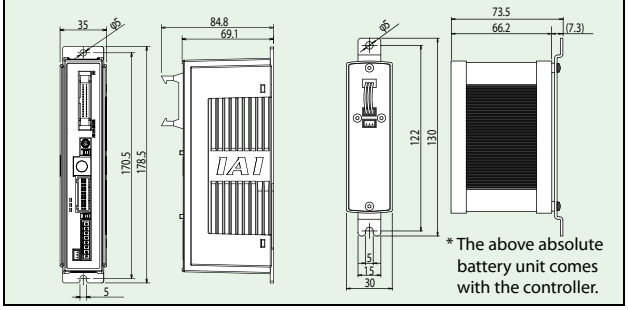
Simple absolute specification With absolute battery / Screw fastening specification



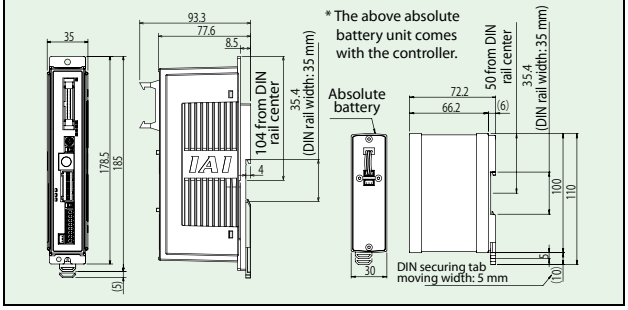
Simple absolute specification With absolute battery / DIN rail mounting specification



Simple absolute specification With absolute battery unit / Screw fastening specification

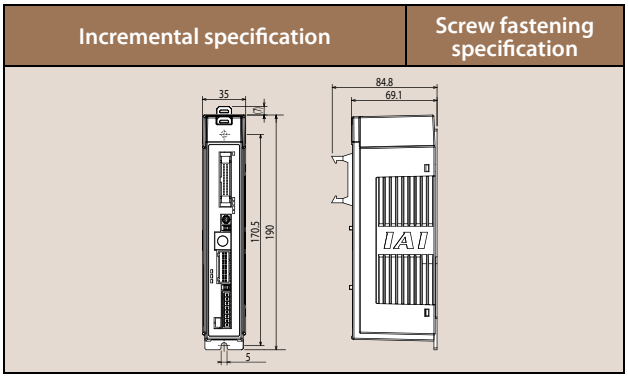


Simple absolute specification With absolute battery unit / DIN rail mounting specification



<PCON-CFA>

Incremental specification / Screw fastening specification



Incremental specification / DIN rail mounting specification