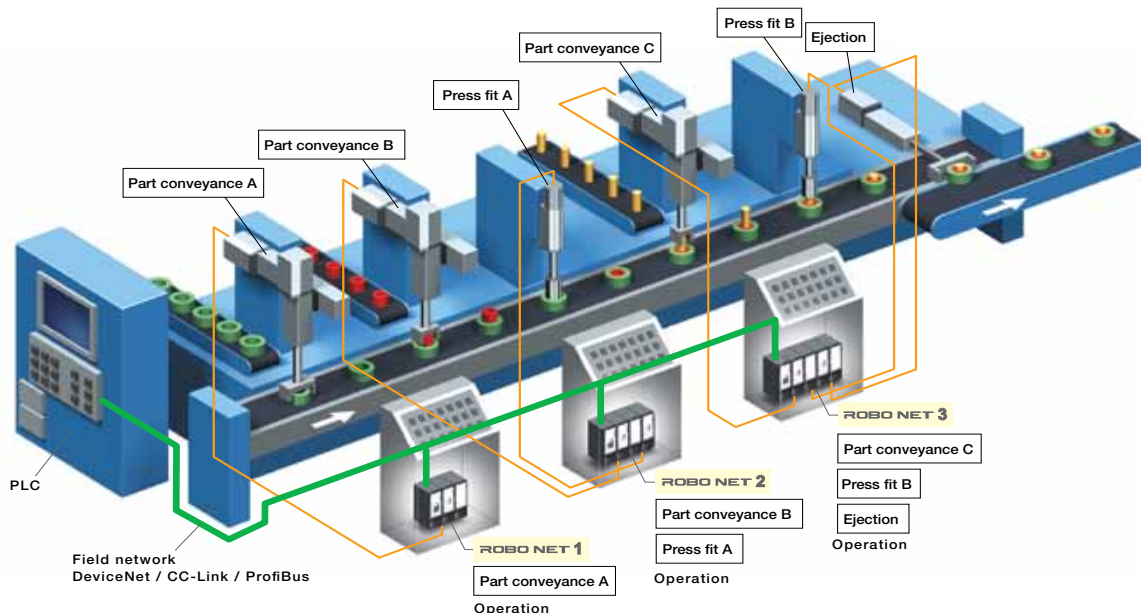# ROBO NET

■ Model :RGW-□/RACON/RPCON/RABU/REXT

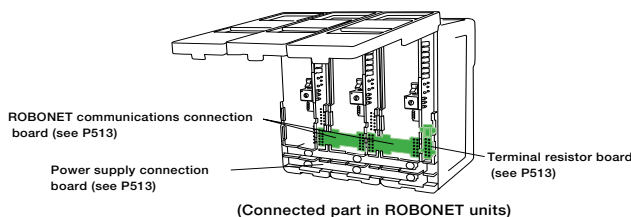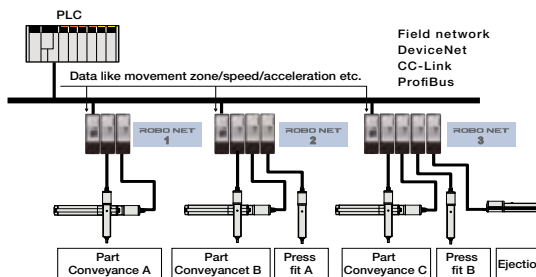For RCA2/RCA/RCL/RCP3/RCP2
Network Controller

ROBONET is a new type of control unit that freely operates ROBO Cylinders via a field network. They have less wiring and are more compact than past controllers, and by DIN rail mounting make it possible to vastly reduce wiring and installation labor.

Features

Press fit B
Ejection
Part conveyance C
Press fit A
Part conveyance B
Part conveyance A
PLC
Field network
DeviceNet / CC-Link / ProfiBus

ROBO NET 1
Part conveyance A
Operation

ROBO NET 2
Part conveyance B
Press fit A
Ejection
Operation

ROBO NET 3
Part conveyance C
Press fit B
Ejection
Operation

1 Reduced Wiring

By connecting each line of the I/O cables to lines wired to the PLC terminals with the field network, wiring processing is completed with one dedicated cable.
Also, since the unit can be coupled by just connecting with the unit connection board, the controller wiring work is greatly simplified.

PLC
Data like movement zone/speed/acceleration etc.
Field network
DeviceNet
CC-Link
ProfiBus

ROBO NET 1
ROBO NET 2
ROBO NET 3

Part Conveyance A
Part Conveyancet B
Press fit A
Part Conveyance C
Press fit B
Ejection

ROBONET communications connection board (see P513)
Power supply connection board (see P513)
Terminal resistor board (see P513)

(Connected part in ROBONET units)

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2 The robot can be moved by directly specifying numeric values for the move position/velocity/acceleration and other data.

Besides the conventional method of moving the robot to pre-taught positions it is also possible to operate the robot by sending information as a string of numeric data that contains position, velocity, acceleration, etc. values. This is effective for cases such as when the move position changes with each piece or when one wants to move the robot to an arbitrary position.

	ROBONET controller	Standard controller (ACON/PCON)
Movement by specifying positions	◯	◯
Movement by specifying direct values	◯	△
Specifying speed/acceleration	◯	(Not for PIO)
Current value output	◯	(Connectable with serial communication)

*ROBONET operates through a field network, and the standard controller operates with PIO.

3 Ultra-compact

Each unit is an ultra-compact size of 34mm wide by 100mm high x 73mm deep. Also, since there is no base unit and the main unit is coupled with connectors, the controller takes up little space for installation even if there are many units.

34 mm

100 mm

## 4 Can operate with a maximum of 16 axes.

Up to 16 controllers can be connected to one communication unit (Gateway R unit).
RACON units (controllers for RCA) and RPCON units (controllers for RCP2) can also be used together.

Communication unit

Up to 16 units can be connected
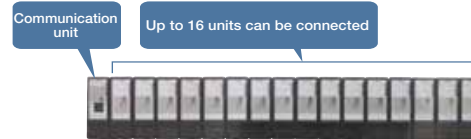
5 Controllers can be multiplexed.

Controllers can be multiplexed using an optional extension unit, so many axes can be connected even if there isn't much horizontal space.
Also, non-ROBONET controllers (SCON, PCON-CF, ERC2) can be connected to a ROBONET Gateway unit using the same extension unit.

PLC

Field Network

← Extension unit [REXT]

← Unit link cable (1m) [CB-REXT-SIO010]

Extension unit [REXT]
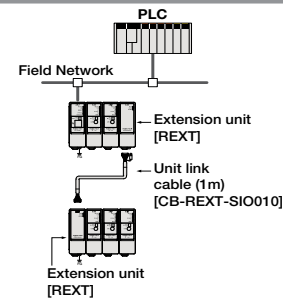
6 Simple absolute unit, when home return is not required

The simple absolute R unit allows operation for incremental specification axes without home return. Users can back up actuator encoder data even if the power is shut off, by installing a simple absolute R unit to a RACON unit (controller for RCA) or RPCON unit (controller for RCP2).
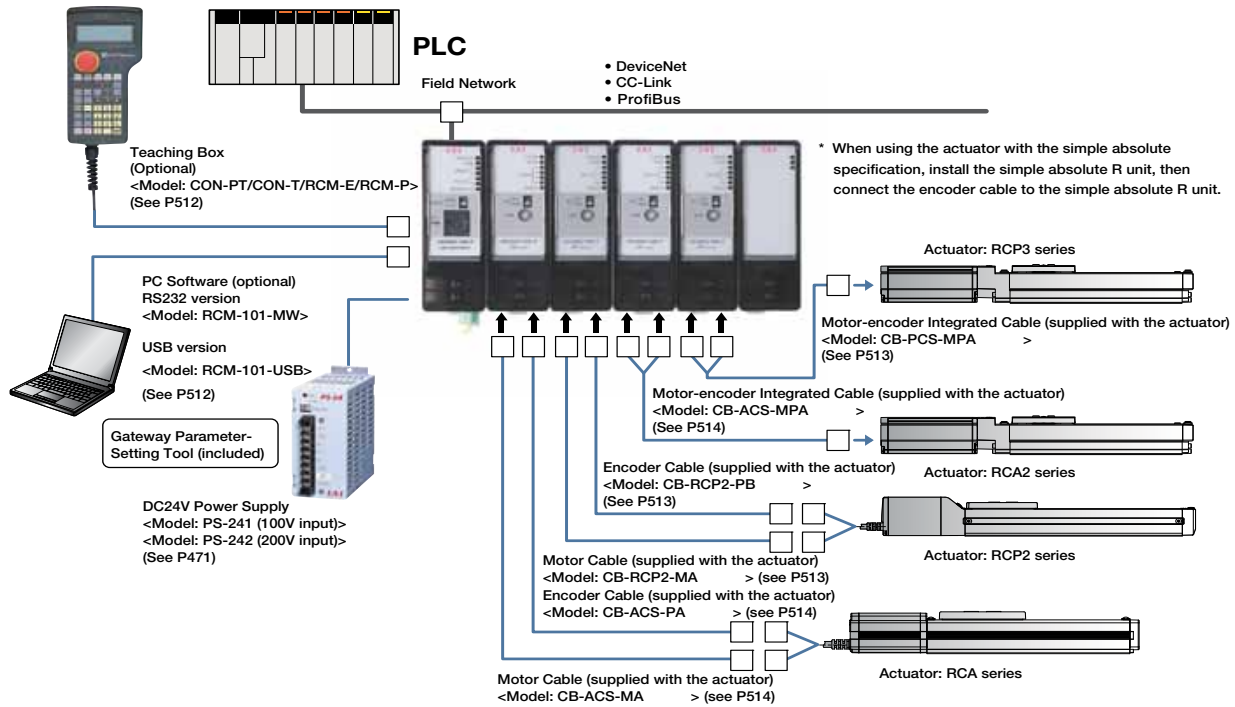
Simple absolute R unit

RACON RPCON

7 Mounting the DIN rail

The controller is installed with DIN rails, so it can be fastened and removed with one touch.

Slider Type
Mini
Standard
Controllers Integrated
Rod Type
Mini
Standard
Controllers Integrated
Table/Arm /Flat Type
Mini
Standard
Gripper/ Rotary Type
Linear Servo Type
Cleanroom Type
Splash-Proof
Controllers
PMEC /AMEC
PSEP /ASEP
ROBO NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL
XSEL
Pulse Motor
Servo Motor (24V)
Servo Motor (200V)
Linear Servo Motor

System configuration

PLC

Field Network
• DeviceNet
• CC-Link
• ProfiBus

Teaching Box
(Optional)
<Model: CON-PT/CON-T/RCM-E/RCM-P>
(See P512)

PC Software (optional)
RS232 version
<Model: RCM-101-MW>

USB version
<Model: RCM-101-USB>

(See P512)

Gateway Parameter-
Setting Tool (included)

DC24V Power Supply
<Model: PS-241 (100V input)>
<Model: PS-242 (200V input)>
(See P471)

* When using the actuator with the simple absolute
specification, install the simple absolute R unit, then
connect the encoder cable to the simple absolute R unit.

Actuator: RCP3 series

Motor-encoder Integrated Cable (supplied with the actuator)
<Model: CB-PCS-MPA   >
(See P513)

Motor-encoder Integrated Cable (supplied with the actuator)
<Model: CB-ACS-MPA   >
(See P514)

Actuator: RCA2 series

Encoder Cable (supplied with the actuator)
<Model: CB-RCP2-PB   >
(See P513)

Actuator: RCP2 series

Motor Cable (supplied with the actuator)
<Model: CB-RCP2-MA   > (see P513)
Encoder Cable (supplied with the actuator)
<Model: CB-ACS-PA   > (see P514)

Motor Cable (supplied with the actuator)
<Model: CB-ACS-MA   > (see P514)

Actuator: RCA series

ROBONET Extension Unit

If multiple ROBONET extension units (optional) are linked together they can reduce the lateral width
needed. It is also possible to connect individual controllers, such as SCON, etc. via the ROBONET.

[Unit Multiplex Set]
Model: REXT-SIO

(Set Contents)
ROBONET Extension Unit (Model: REXT) 2 pc
Unit Link Cable   1 pc
(Model: CB-REXT-SIO010)

PLC

Field Network

Extension unit
[REXT]

FG

Unit Link
cable (1m)
[CB-REXT-SIO010]
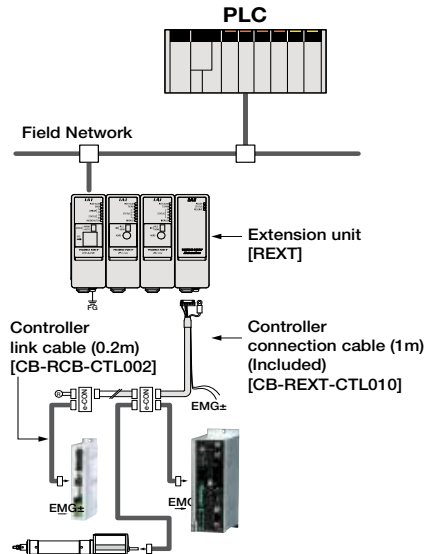
FG

Extension unit
[REXT]
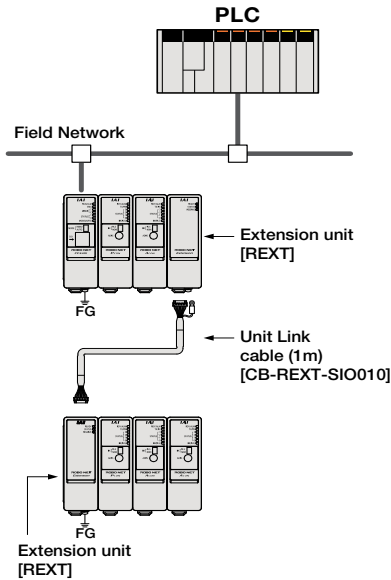
[Controller Connecting Set]
Model: REXT-CTL

(Set Contents)
ROBONET Extension Unit (Model: REXT) 1 pc
Controller Connection Cable   1 pc
(Model: CB-REXT-CTL010)

PLC

Field Network

Extension unit
[REXT]

Controller
link cable (0.2m)
[CB-RCB-CTL002]

EMG±

Controller
connection cable (1m)
(Included)
[CB-REXT-CTL010]

EMG±

EMG

505 ROBONET

Configuration unit

Required ROBONET units are ordered individually, and assembled as you see fit. If actuators are added later, they can be easily added simply by adding a RACON/RPCON unit.
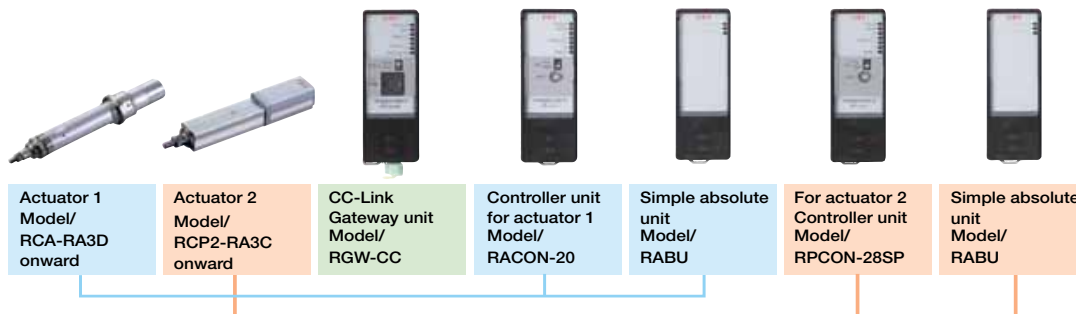

| Gateway R unit | RACON unit | RPCON unit | Simple absolute R unit | Extension unit |

Unit Name	Description	See Page
Gateway R unit	This unit is for connecting to a field network. Users can select from 4 types: DeviceNet, CC-Link, ProfiBus, and SIO. *This unit is required for using ROBONET.	P508 P509
RACON unit	This controller operates the RCA actuator. (One unit is necessary per actuator axis.) The incremental specification is the standard, but the simple absolute specification can also be used if the simple absolute R unit is used with it.	P510
RPCON unit	This controller operates the RCP2 actuator. (One unit is necessary per actuator axis.) The incremental specification is the standard, but the simple absolute specification can also be used if the simple absolute R unit is used with it.	P510
Simple absolute R unit	This is the back-up battery unit that retains actuator encoder data when the power is turned off.	P511
Extension unit	This unit makes it possible to reverse ROBONET connections, connect unit controllers (SCON/PCON-CF) to ROBONET, and conduct operation from a network.	P511

Ordering Method/Precautions

Required ROBONET units are ordered individually and assembled by the customer. Consequently, they can be added to or changed later.

<Ordering example> The following 2 actuator axes can be operated through CC-Link.
The models that would be best operated with the absolute specification are as follows.

| Actuator 1 Model/ RCA-RA3D onward | Actuator 2 Model/ RCP2-RA3C onward | CC-Link Gateway unit Model/ RGW-CC | Controller unit for actuator 1 Model/ RACON-20 | Simple absolute unit Model/ RABU | For actuator 2 Controller unit Model/ RPCON-28SP | Simple absolute unit Model/ RABU |

■ **Gateway Parameter Setting Tool**

A gateway parameter setting tool is necessary to set up the network when ROBONET is connected to a field network. This tool can be acquired at no cost.
(1) Download from the IAI website, or
(2) Acquire PC compatible software (included on CD).
A cable (cable included with PC software, model: CB-RCA-SIO050+RCB-CV-MW) is required to connect the PC to the controller when using the gateway parameter setting tool. If you do not have the PC software, please purchase a cable.

■ **PC Compatible Software Teaching Pendant**

Compatible PC software or a teaching pendant is required to enter position data, etc. to a ROBONET controller unit. ROBONET compatible PC software (Model: RCM-101-MW/USB) version is Ver. 6.00.04.00 or later. Teaching pendant compatible models and versions include: RCM-T and Ver. 2.06 and later, model: RCM-E/RCM-P and Ver. 2.08 and later. Model: CON-T is compatible with all versions from the earliest version.
Consult with our Sales Division if the version your equipment has needs to be updated.

IAI

ROBONET **506**

Operation Mode

ROBONET operates upon receiving commands from the PLC via the field network.
The following four operating modes are available. Select the most suitable mode for the operation or the control method.

	Name	Description
1	Positioner mode (1,2)	In this mode, operation is done by specifying position numbers, whose position data, speed, and acceleration have been entered to the position table in advance. A maximum of 768 position points can be saved.
2	Simple direct input mode	The position data is specified directly using a numerical value; the other settings, such as speed, acceleration, deceleration, positioning band, and pushing current limit are specified using a predefined position number. A maximum of 768 position points can be saved.
3	Direct input mode	The position data, speed, acceleration, deceleration, positioning band, and pushing current limit are all specified directly using numerical values. Since the settings are specified by their numerical values, there is no limit to the number of points that can be set.
4	Solenoid valve mode (1,2)	The number of positioning points is limited for a simpler operation. You can operate it using the same controls as a solenoid valve, just by sending a command with the target position number (start signal not required).

List of functions for operation modes

Item / Operation mode	Positioner 1 Mode	Simple immediate data Mode	Direct number designation mode	Positioner 2 Mode	Solenoid Valve Mode 1	Solenoid Valve Mode 2
Each axis field (both input and output)	4 words		8 words	2 words	2 words	
Fixed field (both input and output)	8 words (Command field usable)		8 words (Command field not usable)	8 words (Command field usable)	8 words (Command field usable)	
Number of set positions	768 positions/axis	768 positions/axis	–	768 positions/axis	7 positions/axis	3 positions/axis
Position No. designation operation	○	○	×	○	○	
Position data direct designation	×	○	○	×	×	
Direct designation of speed and acceleration/deceleration speed	×	×	○	×	×	
Direct designation of positioning band	×	×	○	×	×	
Pushing operation	○	○	○	○	○	
Completed position No. monitor	○	○	×	○	○	
Zone output monitor	○	○	○	○	○	
Position zone output monitor	○	○	×	○	○	
Teaching function	○	×	×	○	×	
Jog operation	○	○	○	○	×	
Incremental operation	○	○	○	○	×	
Status signal monitor (*1)	○	○	○	○	×	
Current position monitor (*1)	○	○	○	○	×	
Alarm code monitor (*1)	○	○	○	○	×	
Speed and current monitor (*1)	×	×	○	×	×	
Each axis monitoring function in in AUTO mode (*2)	○	○	○	○	○	
Command — Hand shake	○	○	×	○	○	
Command — Position table Reading/writing of data	○	○	×	○	○	
Command — Reading the current position	×	×	×	×	×	
Command — Broadcast	○	×	×	○	○	
Max. value for position data designation	9999.99mm (When command is used)	9999.99mm	9999.99mm	9999.99mm (When command is used)	9999.99mm (When command is used)	
Number of axes that can be connected	16	16	8	16	16	

*1: Each status signal monitor, current position monitor, alarm code monitor, and speed/current monitor can be viewed by accessing to each address of Gateway unit via PLC.

*2: Traditionally, monitoring each axis in AUTO mode is unavailable. However, monitoring each axis with Mode switch at "AUTO" is available with ROBONET by connecting the special touch panel to the TP connector.

*3: Independent acceleration and deceleration settings are not available. The setting applies to both accelerating and decelerating speeds.

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Sidebar navigation:
Slider Type · Mini · Standard · Controllers Integrated · Rod Type · Mini · Standard · Controllers Integrated · Table/Arm /Flat Type · Mini · Standard · Gripper/ Rotary Type · Linear Servo Type · Cleanroom Type · Splash-Proof · Controllers · PMEC /AMEC · PSEP /ASEP · ROBO NET · ERC2 · PCON · ACON · SCON · PSEL · ASEL · SSEL · XSEL · Pulse Motor · Servo Motor (24V) · Servo Motor (200V) · Linear Servo Motor

Configuration unit (Gateway R unit)

Gateway R Unit for DeviceNet

A communications unit to operate ROBONET via DeviceNet.

Model **RGW-DV**

Specifications

Item		Specifications		Item		Specifications			
Power		DC24V ±10%		DeviceNet Specifications	Comm. cable length (*1)	Comm. Speed	Max. network length	Max. branch length	Total branch length
Current consumption		600mA max.				500kbps	100m	6m	39m
DeviceNet Specifications	Comm. Standard	DeviceNet 2.0-certified interface module				250kbps	250m		78m
		Group 2 only server				125kbps	500m		156m
		Insulated node operating on network power supply				Note: When using a large cable for DeviceNet			
	Comm. Spec.	Master-slave connection	Bit strobe		No. occupied nodes	1 node			
			Polling	Environment Requirements	Ambient op. temperature	0~40ºC			
			Cyclic		Ambient op. humidity	95% RH or below (non-condensing)			
	Comm. Speed	500k/250k/125kbps (switchable by software)			Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.			
					Protection class	IP20			
					Weight	140g			
					Accessories	Terminal resistor board (model TN-1) Network connector, Emergency stop connector			

*1 If you wish to use T-junction communication, see the instructions manual for your master unit or PLC.

Network cable

Connector on Gateway Side
MSTBA2.5/5-G-5.08 ABGY AU
(Made by: Phoenix Contact)
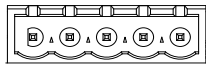
Connector on Cable Side
MSTB2.5/5-ST-5.08 ABGY AU
(Made by: Phoenix Contact)
= Standard accessory

Black Blue   White Red

Pin Color	Description
Black	Power cable negative (-) side
Blue	Comm. data Low side
–	Shield
White	Comm. data High side
Red	Power cable plus (+) side

Cable connector-compatible wiring

Item	Description
Wire diameter	Twisted wire: AWG24-12 (0.2~2.5mm²)
Stripped wire length	7mm

Gateway R Unit for CC-Link

A communications unit to operate ROBONET via CC-Link.

Model **RGW-CC**

Specifications

Item		Specifications		Item		Specifications				
Power Supply		DC24V ±10%		CC-Link Specifications	Error Control Method	CRC ($X^{16}+X^{12}+X^5+1$)				
Current consumption		600mA max.			Station occupancy	Remote device stations: ×1, 4 st.; ×4, 2 st.; ×8, 2 st				
CC-Link Specifications	Comm. Standard	CC-Link Ver2.0 (*1)			Comm. Cable Length (*2)	Comm. Speed (bps)	10M	5M	2.5M	625k	156k
	Comm. Speed	10M/5M/2.5M/625k/156kbps (switchable by software)				Total Cable Length (m)	100	160	400	900	1200
	Comm. Method	Broadcast polling method			Comm. Cable	Dedicated CC-Link cable				
	Sync. Method	Frame synchronization method		Environment Requirements	Ambient op. temperature	0~40ºC				
	Encoding Method	NRZI			Ambient op. humidity	95% RH or below (non-condensing)				
	Transf. Type	Bus format (EIA RS485 compliant)			Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.				
	Transf. Format	HDLC compliant			Protection class	IP20				
					Weight	140g				
					Accessories	Terminal resistor board (model TN-1) Network connector, Emergency stop connector Terminal resistor cable (110Ω/130Ω)				

*1 Certification acquired

*2 If you wish to use T-junction communication, see the instruction manual for your master unit or PLC.

Network cable

Connector on Gateway Side:
MSTBA2.5/5-G-5.08AU
(Made by Phoenix Contact)

Connector on Cable Side:
MSTB2.5/5-ST-5.08 ABGY AU
(Made by Phoenix Contact) =
Standard accessory

DA DB DG SLD FG
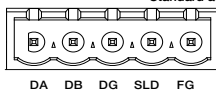
Signal Name	Description
DA	Communication line A
DB	Communication line B
DG	Ground
SLD	The shield and cable's shield are connected, then they are connected to "FG" and the chassis.
FG	Frame ground Connected to "SLD" and the chassis.

Cable connector-compatible wiring

Item	Description
Wire diameter	Twisted wire: AWG24-12 (0.2~2.5mm²)
Stripped wire length	7mm

IAI

Slider Type
Mini
Standard
Controllers Integrated
Rod Type
Mini
Standard
Controllers Integrated
Table/Arm /Flat Type
Mini
Standard
Gripper/ Rotary Type
Linear Servo Type
Cleanroom Type
Splash-Proof
Controllers
PMEC /AMEC
PSEP /ASEP
ROBO NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL
XSEL
Pulse Motor
Servo Motor (24V)
Servo Motor (200V)
Linear Servo Motor

Configuration unit (Gateway R unit)

Gateway R Unit for ProfiBus

A communications unit to operate ROBONET via ProfiBus.

Model RGW-PR

Specifications

	Item	Specifications		Item	Specifications
ProfiBus Specifications	Power Supply	DC24V ±10%	Environment Requirements	Ambient op. temperature	0~40℃
	Current Consumption	600mA max.		Ambient op. humidity	95% RH or below (non-condensing)
	Comm. Standard	DP slave		Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.
	Comm. Speed	9.6kbps~12Mbps		Protection class	IP20
	Comm. Cable Length	9.6kbps / 1500m		Weight	140g
		500kbps / 400m		Accessories	Terminal resistor board (model TN-1) Emergency stop connector
		1.5Mbps / 200m			
		3Mbps / 200m			
		12Mbps / 100m			

Network cable

Connector on Gateway Side:
D-Sub connector, 9-pin
socket side

5   1

9   6
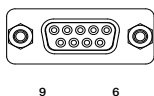
Pin No.	Signal Name	Description	Pin No.	Signal Name	Description
3	B-Line	Communication line B (RS485)	6	+5V	+5V output (insulated)
4	RTS	Request send	8	A-Line	Communication line A (RS485)
5	GND	Signal ground (insulated)	Housing	Shield	Connected to the cable's shield and the chassis.

* The matching connector (D-Sub 9-pin connector) is not included. * Pins 1, 2, 7, and 9 are not connected

Gateway R Unit for SIO

A communications unit for operating ROBONET from an XSEL controller or a Modbus-compatible communications unit, via serial communication.

Model RGW-SIO

Specifications

	Item	Specifications		Item	Specifications
SIO Specifications	Power Supply	DC24V ±10%	Environment Requirements	Ambient op. temperature	0~40℃
	Current consumption	600mA max.		Ambient op. humidity	95% RH or below (non-condensing)
	Comm. Type	RS485-compliant (Modbus protocol) 1 : 1 communication connection		Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.
	Comm. Method	Asynchronous method, half-duplex		Protection class	IP20
	Comm. Speed	230.4kbps max.		Weight	140g
	Cable Length	100m or less		Accessories	Terminal resistor board (model TN-1) Network connector, Emergency stop connector
	Recommended cable	2 pairs of twisted pair cables (shielded)			

Network cable

Connector on Gateway Side
MC1.5/4-G-3.5
(Made by Phoenix Contact)
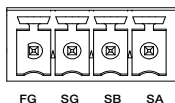
Connector on Cable Side:
MC1.5/4-ST-3.5
(Made by Phoenix Contact)
= Standard accessory

FG   SG   SB   SA

Signal Name	Description	
SA	Communication line A (+positive side)	Built-in RS485-compliant terminal resistor (220Ω)
SB	Communication line B (-negative side)	
SG	Signal ground	
FG	Frame ground connected to the chassis.	

Cable connector-compatible wiring

Item	Description
Wire diameter	Twisted wire: AWG28-16 (0.14~1.5mm^2)
Stripped wire length	7mm

Sidebar navigation:
Slider Type, Mini, Standard, Controllers Integrated, Rod Type, Mini, Standard, Controllers Integrated, Table/Arm /Flat Type, Mini, Standard, Gripper/Rotary Type, Linear Servo Type, Cleanroom Type, Splash-Proof, Controllers, PMEC/AMEC, PSEP/ASEP, ROBO NET, ERC2, PCON, ACON, SCON, PSEL, ASEL, SSEL, XSEL, Pulse Motor, Servo Motor (24V), Servo Motor (200V), Linear Servo Motor

Configuration unit (Controller unit)

RACON unit — Controller for RCA2/RCA series

Controller unit that is used for RCA2/RCA actuator operation with ROBONET.

Model RACON−①②−③

* In Model ①, input a motor power output. (See the following table.)
  ② will need the code "HA" or "LA" specified when a high acceleration/deceleration or power saving actuator is to be used. (Otherwise, leave it blank.)
  ③ input "ABU" only when a simple absolute unit is used. (Otherwise, leave it blank.)

Model	Compatible actuators
RACON-2②-③	RCL-SA1L / SA4L / SM4L / RA1L
RACON-5②-③	RCL-SA2L / SA5L / SM5L / RA2L
RACON-10②-③	RCA2-SA3C / RN3N / RP3N / GS3N / GD3N / SD3N / TC3N / TW3N / TF3N / TA4　RCL-SA3L / SA6L / SM6L / RA3L
RACON-20②-③	RCA-SA4 / SS4 / SA5 / SS5 / RA4 -20 / RG 4 -20 / A4R / A5R RCACR-SA4C / SA5　RCAW-RA4 -20 RCA2-SA4 / SA5 / TA6
RACON-20S-③	RCA-RA3 / RG 3 　RCAW-RA3 　RCA2-SA4 / TA5
RACON-30②-③	RCA-SA6 / SS6 / RA4 -30 / RG 4 -30 / A6R RCACR-SA6 　RCAW-RA4 -30 RCA2-SA6C / TA7C

Specifications

	Item	Specifications		Item	Specifications
General Specifications	Power Supply	DC24V ±10%	Environment Requirements	Ambient op. temperature	0~50°C
	Power Supply Capacity	5.1A max. (depends on the actuator)		Ambient op. humidity	95% RH or below (non-condensing)
	Operable Actuators	RCA series		Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.
	Positioning Points	768 points		Protection class	IP20
	Backup memory	EEPROM		Weight	200g
	Position Detection Method	Incremental encoder		Accessories	ROBONET connection board (model JB-1), Power connection board (model PP-1)
	Solenoid brake force-release	Brake release switch			
	Motor Cable	Model: CB-ACS-MA			
	Encoder Cable	Model: CB-ACS-PA			

RPCON unit — Controller for RCP3/RCP2 series

Controller unit that is used for RCP3/RCP2 actuator operation with ROBONET.

Model RPCON−①−②−③

* In Model ①, input a motor type. (See the following table.)

  ② input "ABU" only when a simple absolute unit is used. (Otherwise, leave it blank.)
  ③ should have the code "H" when an RCP3-SA4, SA5, SA6, or an RCP2(RCP2CR)-SA5 or SA6 is to be connected.

Model	Compatible actuators
RPCON-20P-②	RCP2-RA2C / GRSS / GRLS / GRS RCP3-SA2A / SA2B / RA2A / RA2B
RPCON-28P-②	RCP2-GRM / GR3LS / GR3SS / RTB / RTC / RTBL / RTCL RCP3-SA3C
RPCON-28SP-②	RCP2-RA3C / RGD3C
RPCON-35P-②-③	RCP3-SA4 / TA5
RPCON-42P-②③	RCP2-SA5 / SA6 / SS7 / BA6 / BA7 / RA4C / RG 4C /GR3LM / GR3SM RCP3-SA5 / SA6 / TA6 / TA7 RCP2CR-SA5C / SA6C / SS7C RCP2W-RA4C
RPCON-56P-②	RCP2-SA7 / SS8 / RA6C / RG 6C / RCP2CR-SA7C / SS8C RCP2W-RA6C

Specifications

	Item	Specifications		Item	Specifications
General Specifications	Power Supply	DC24V ±10%	Environment Requirements	Ambient op. temperature	0~50°C
	Power Supply Capacity	2A max.		Ambient op. humidity	95% RH or below (non-condensing)
	Operable Actuators	RCP2 series		Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.
	Positioning Points	768 points		Protection class	IP20
	Backup memory	EEPROM		Weight	200g
	Position Detection Method	Incremental encoder		Accessories	ROBONET connection board (model JB-1),
	Solenoid brake force-release	Brake release switch			Power connection board (model PP-1)
	Motor Cable	Model: CB-RCP2-MA			
	Encoder Cable	Model: CB-RCP2-PB			

IAI

ROBONET **510**

Sidebar navigation: Slider Type, Mini, Standard, Controllers Integrated, Rod Type, Mini, Standard, Controllers Integrated, Table/Arm /Flat Type, Mini, Standard, Gripper/ Rotary Type, Linear Servo Type, Cleanroom Type, Splash-Proof, Controllers, PMEC /AMEC, PSEP /ASEP, ROBO NET, ERC2, PCON, ACON, SCON, PSEL, ASEL, SSEL, XSEL, Pulse Motor, Servo Motor (24V), Servo Motor (200V), Linear Servo Motor

Simple absolute R unit

A data backup battery unit that can be attached to an RACON or RPCON controller to use an incremental actuator as an absolute type.

*1 One unit of the simple absolute R unit is required per RACON/RPCON unit.

Model RABU (for RACON and RPCON)

* When preparing a simple absolute R unit together with a controller unit (RACON/RPCON), write down "-ABU" to the end of the controller model, of which the simple absolute unit is installed.

Specifications

	Item	Specifications					Item	Specifications
General Specifications	Power Supply	DC24V ±10%				Environment Requirements	Ambient op. temperature	0~40°C
	Current consumption	300mA max.					Ambient op. humidity	95% RH or below (non-condensing)
	Battery used	Ni-MH battery, nickel-hydrogen cell battery					Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.
	Charging time	Approx. 78 hours					Protection class	IP20
	Battery life	3 yrs					Weight	330g
	Maximum rpm for absolute data retention	800	400	200	100		Accessories	ROBONET connection board (model JB-1) simple absolute connection board (model JB-1) power connection board (model PP-1)
	Absolute Data Retention Duration (h)	120	240	360	480			

Extension Unit

When too many ROBONET units are connected horizontally to fit into the controller board, use this unit to split them in the middle with a cable to create another row.
In addition, by attaching the extension unit to the end of the linked ROBONET units and using an external controller cable, you can operate a standalone controller SCON like any other ROBONET controller, over the network.

Model REXT (for RPCON and RACON)

Specifications

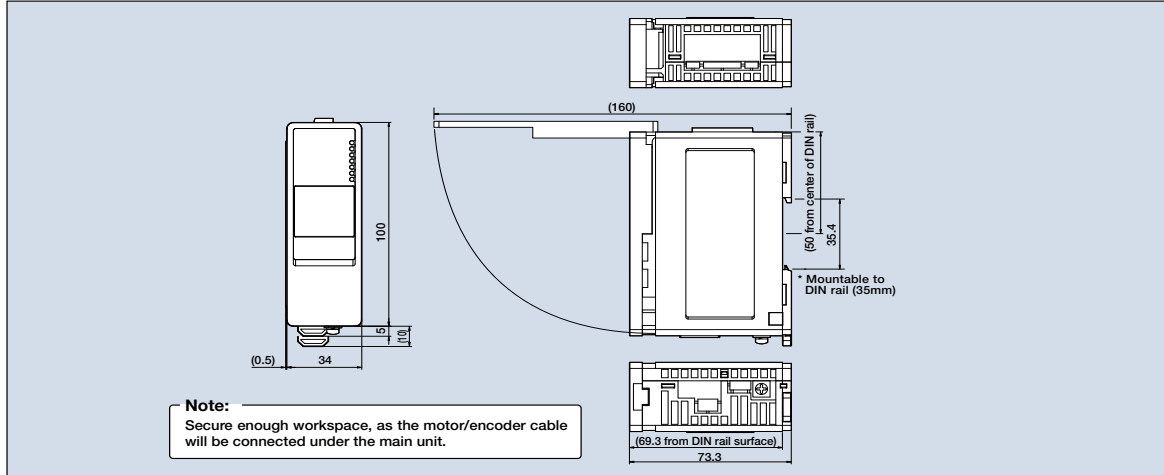|	Item	Specifications
General Specifications	Power Supply	DC24V ±10%
	Current consumption	100mA max.
Environment Requirements	Ambient op. temperature	0~40°C
	Ambient op. humidity	95% RH or below (non-condensing)
	Ambient op. environment	No corrosive or flammable gases, oil mist, or dust.
	Protection class	IP20
	Weight	140g
	Accessories	ROBONET connection board (model JB-1), Power connection board (model PP-1)

(Note) The cable used is different depending on whether you are creating a new row of linked units, or connecting a standalone controller.
For more information, see the ROBONET extension unit on P505.

External dimensional drawing

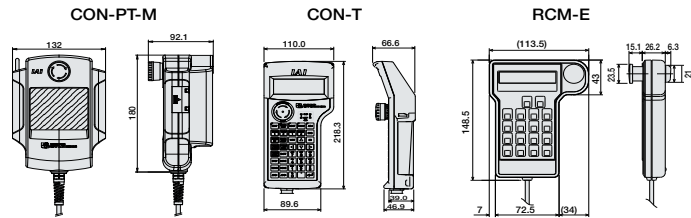External dimensions of Gateway R unit, RACON unit, RPCON unit, Simple Absolute R unit, and Extension unit are same.

(160)

100

(50 from center of DIN rail)
35.4

* Mountable to DIN rail (35mm)

(0.5) 34 5 (10)

(69.3 from DIN rail surface)
73.3

Note:
Secure enough workspace, as the motor/encoder cable will be connected under the main unit.

Option

Teaching Pendant

- **Features**
  A teaching device with functions for inputting positions, performing test runs, and monitoring.

- **Model**
  CON-PT-M (Touch panel teaching pendant)
  CON-T (Standard type)
  RCM-E (Simple teaching pendant)

- **Configuration**

Note:
The version of RCM-E that can be used with ROBONET is 2.08 or later.

5m
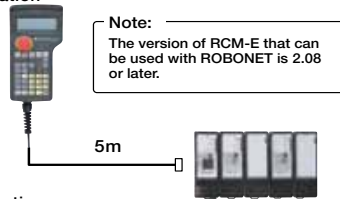
- **CON-T Options**
  - Wall-mounting hook
    Model **HK-1**
  - Strap
    Model **STR-1**

CON-PT-M	CON-T	RCM-E

132   92.1   110.0   66.6   (113.5)   15.1 26.2 6.3
180   218.3   148.5   43   23.5   21
89.6   99.0 46.9   7   72.5 (34)

Specifications

Item	CON-PT-M	CON-T	RCM-E
Data Input	O	O	O
Actuator motion	O	O	O
Ambient Operating Temp./Humidity	Temp: 0~40ºC; Humidity: 85% RH or below		
Ambient Operating Atmosphere	No corrosive gases. Especially no dust.		
Protection class	IP40	IP54	–
Weight	Approx. 750g	Approx. 400g	Approx. 400g
Cable Length		5m	
Display	3-color LED touch panel with backlight	20 char. × 4 lines LCD display	16 char. × 2 lines LCD display
Standard Price	–	–	–

PC Software (Windows Only)

- **Features**
  A startup support software for inputting positions, performing test runs, and monitoring. With enhancements for adjustment functions, the startup time is shortened.

- **Model**
  RCM-101-MW (with external device communications cable + RS232 conversion unit)

Note:
Only version 6.00.04.00 or later can be used with ROBONET.

- **Configuration**

PC Software (CD)

RS232 adapter
RCB-CV-MW
0.3m

5m
External device communications cable
CB-RCA-SIO050
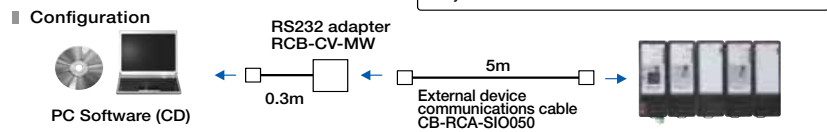
- **Model**
  RCM-101-USB (with external device communications cable + USB adapter + USB cable)
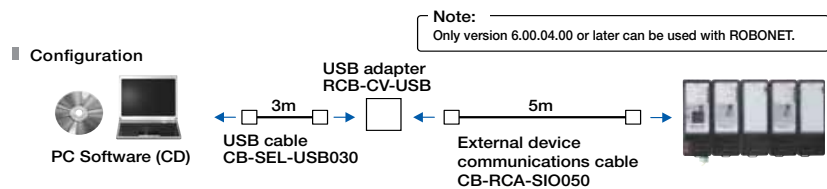
Note:
Only version 6.00.04.00 or later can be used with ROBONET.

- **Configuration**

PC Software (CD)

USB cable
CB-SEL-USB030
3m

USB adapter
RCB-CV-USB

5m
External device communications cable
CB-RCA-SIO050

IAI

Slider Type
Mini
Standard
Controllers Integrated
Rod Type
Mini
Standard
Controllers Integrated
Table/Arm /Flat Type
Mini
Standard
Gripper/ Rotary Type
Linear Servo Type
Cleanroom Type
Splash-Proof
Controllers
PMEC /AMEC
PSEP /ASEP
ROBO NET
ERC2
PCON
ACON
SCON
PSEL
ASEL
SSEL
XSEL
Pulse Motor
Servo Motor (24V)
Servo Motor (200V)
Linear Servo Motor

Option

DC24V Power Supply

Features

A 24V power supply for ROBO Cylinder that can output 17A of momentary current. Power supply units can be operated in parallel, and up to 5 units can be added if a unit runs out of capacity.

Model

PS-241
(100V input model)

PS-242
(200V input model)

Actuator vs. Power Supply Current

Controller type	Actuator type	Power Supply Current [A]		No. of connectible units for each unit of PS-24	
				Simultaneous servo ON for all axes*	No simultaneous servo ON for all axes*
RPCON PCON	RCP2, all models (note)	Rated (= Maximum)	2	8	8
RACON ACON	SA4, SA5 (20W)	Rated	1.3	3	6
		Maximum	4.4		
	SA6 (30W)	Rated	1.3	4	6
		Maximum	4		
	RA3 (20W)	Rated	1.7	3	5
		Maximum	5.1		
	RA4 (20W)	Rated	1.3	3	6
		Maximum	4.4		
	RA4 (30W)	Rated	1.3	4	6
		Maximum	4		

* Refers to the first servo ON after power-up.
(Note) Excluding HS8C, HS8R, and RA10C.
* For PSEL/ASEL, this is different depending on the number of axes and model.
  Please inquire for details.

Spare parts

When spare parts are necessary after purchasing the product, such as when replacing a cable, refer to a list of the models below.

ROBONET connection board (simple absolute connection board) Model JB-1
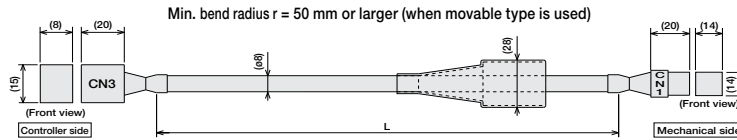
Terminal resistor board Model TN-1

Power connection board Model PP-1

Motor cable for RCP2

Model **CB-RCP2-MA**☐☐☐

* The standard cable for the motor cable is the robot cable. Selection is available.
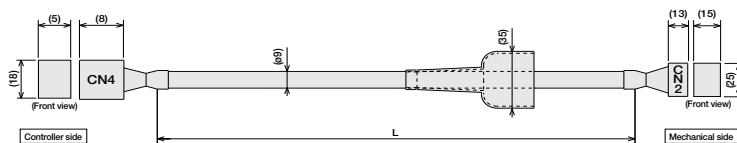* Enter the cable length (L) into ☐☐☐. Compatible to maximum of 20 meters. Ex.: 080 = 8m

Min. bend radius r = 50 mm or larger (when movable type is used)

Encoder Cable/Encoder Robot Cable for RCP2

Model **CB-RCP2-PB**☐☐☐**/CB-RCP2-PB**☐☐☐**-RB**

*The standard encoder cable is the normal cable. The robot cable is selectable as an option.
* Enter the cable length (L) into ☐☐☐. Compatible to maximum of 20 meters. Ex.: 080 = 8m
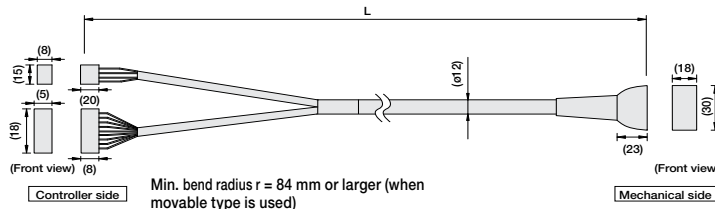

Min. bend radius r = 50 mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track.

Motor-encoder integrated type cable for RCP3/RCP2 (Limited to RCP2-GRSS/GRLS/GRST/SRA4R/SRGS4R/SRGD4R types)

Model **CB-PCS-MPA**☐☐☐

* Enter the cable length (L) into ☐☐☐. Compatible to a maximum of 20 meters.
  Ex.: 080 = 8 m

Min. bend radius r = 84 mm or larger (when movable type is used)
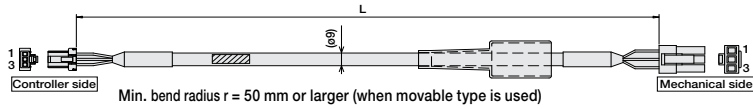
513 ROBONET

Spare parts

Motor Cable for RCA

Model CB-ACS-MA □□□

* Enter the cable length (L) into □□□ . Compatible to a maximum of 20 meters.
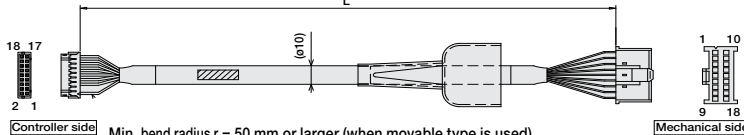Ex.: 080 = 8 m

Min. bend radius r = 50 mm or larger (when movable type is used)

Wire	Color	Signal	No.
AWG22 (crimped)	Red	U	1
	White	V	2
	Black	W	3

No.	Signal	Color	Wire
1	U	Red	AWG22 (crimped)
2	V	White	
3	W	Black	

Encoder Cable/Encoder Robot Cable for RCA

Model CB-ACS-PA □□□/CB-ACS-PA □□□-RB

*The standard encoder cable is the normal cable. The robot cable is selectable as an option.
* Enter the cable length (L) into □□□ . Compatible to maximum of 20 meters. Ex.: 080 = 8m

Min. bend radius r = 50 mm or larger (when movable type is used)
* Only the robot cable is to be used in a cable track.

CN2

Cable color Robot Cable	Standard Cable	Signal	Pin No.
White/Purple	Blue	LS+	18
White/Gray	Orange	LS–	17
Yellow	Green	BK+	16
Blue	Brown	BK–	15
White/Blue	Gray	ENA	14
White/Yellow	Red	ENA	13
White/Red	Black	ENB	12
White/Black	Yellow	ENB	11
Orange	Pink	ENZ	10
Green	Purple	ENZ	9
Purple	White	–	8
Gray	Blue/red	VPS	7
Red	Orange/White	5V	6
Black	Green/White	GND	5
–	–	–	4
–	–	–	3
–	–	–	2
Ground	Ground	F.G	1

Housing : PHDR-18VR (JST)
Contact : SPHD-001T-P0.5 (JST)

CN1

Pin No.	Signal	Cable color Standard Cable	Robot Cable
1	ENA	Gray	White/Blue
2	ENA	Red	White/Yellow
3	ENB	Black	White/Red
4	ENB	Yellow	White/Black
5	–	–	–
6	–	–	–
7	LS+	Blue	White/Purple
8	–	–	–
9	FG	Ground	Ground
10	ENZ	Pink	Orange
11	ENZ	Purple	Green
12	–	White	Purple
13	VPS	Blue/red	Gray
14	5V	Orange/White	Red
15	GND	Green/White	Black
16	LS–	Orange	White/Gray
17	BK–	Brown	Blue
18	BK+	Green	Yellow

Plug housing : XMP-18V (JST)
Socket contact : BXA-001T-P0.6 (JST)
Retainer : XMS-09V (JST)

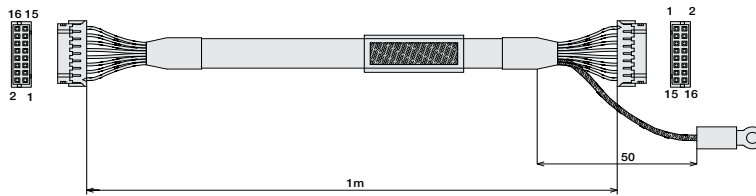### Motor-Encoder Integrated Cable for RCA2

Model CB-ACS-MPA □□□

* Enter the cable length (L) into □□□ . Compatible to a maximum of 20 meters.
Ex.: 080 = 8 m

Min. bend radius r = 84 mm or larger (when movable type is used)

Signal	Pin No.
U	1
V	2
W	3

(Wire color)
Red
Yellow
Black

	Pin No.	Signal
	A1	U
	B1	V
	A2	W
	B2	NC
	A3	NC
	B3	NC

		(Wire color)
BK+	16	Yellow (Red ●)
BK–	15	Yellow (Blue ●)
LS+	18	Pink (Red ●)
LS–	17	Pink (Blue ●)
A+	14	White (Red ●)
A–	13	White (Blue ●)
B+	12	Orange (Red ●)
B–	11	Orange (Blue ●)
Z+	10	Gray (Red ●)
Z–	9	Gray (Blue ●)
	8	Orange (Red ● Consecutive)
/PS	7	Orange (Blue ● Consecutive)
VCC	6	Gray (Red ● Consecutive)
GND	5	Gray (Blue ● Consecutive)
NC		
FG	1	Shield

	Pin No.	Signal
	A4	BK+
	A5	BK–
	B5	LS+
	A6	LS–
	B6	A+
	A7	A–
	B7	B+
	A8	Z+
	B8	Z–
	A9	
	B9	/PS
	A10	VCC
	B10	GND
	A11	NC
	B11	FG

Unit Link Cable for Extension Unit

Model CB-REXT-SIO010

DF11-16DS-2C

Signal	Pin No.	
/RSV1	16	Black 2/White
RSV1	15	Red 2/White
/ROUT	14	Black 2/Gray
ROUT	13	Red 2/Gray
/RSV0	12	Black 2/Orange
RSV0	11	Red 2/Orange
/ENA	10	Black 1/Pink
ENA	9	Red 1/Pink
COM2	8	Black 1/Yellow
COM1	7	Red 1/Yellow
SD–	6	Black 1/White
SD+	5	Red 1/White
RD+	4	Black 1/Gray
RD+	3	Red 1/Gray
EMG–	2	Black 1/Orange
EMG+	1	Red 1/Orange

Shield braiding

DF11-16DS-2C

	Pin No.	Signal
Black 2/White	16	/RSV1
Red 2/White	15	RSV1
Black 2/Gray	14	/ROUT
Red 2/Gray	13	ROUT
Black 2/Orange	12	/RSV0
Red 2/Orange	11	RSV0
Black 1/Pink	10	/ENA
Red 1/Pink	9	ENA
Black 1/Yellow	8	COM2
Red 1/Yellow	7	COM1
Black 1/White	6	SD–
Red 1/White	5	SD+
Black 1/Gray	4	RD–
Red 1/Gray	3	RD+
Black 1/Orange	2	EMG–
Red 1/Orange	1	EMG+

Ground

RAV1.25-3

–	FG

Wire color legend: <Color of dot> <Number>/<Color of insulation>

Controller Connection Cable for Extension Unit

Model CB-REXT-CTL010

37104-3122-000FL

Pin No.	Signal
4	N.C.
3	GND
2	SD–
1	SD+

White
Gray
Orange

Shield braiding

White
Gray
Orange

Gray
Orange

Gray
Orange

DF11-16DS-2C

Pin No.	Signal
16	/RSV1
15	RSV1
14	/ROUT
13	ROUT
12	/RSV0
11	RSV0
10	/ENA
9	ENA
8	COM2
7	COM1
6	SD–
5	SD+
4	RD–
3	RD+
2	EMG–
1	EMG+
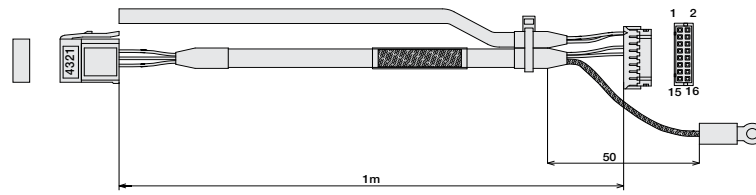
Ground

RAV1.25-3

–	FG

IAI

ROBONET **514**

Sidebar navigation:
Slider Type, Mini, Standard, Controllers Integrated, Rod Type, Mini, Standard, Controllers Integrated, Table/Arm /Flat Type, Mini, Standard, Gripper/ Rotary Type, Linear Servo Type, Cleanroom Type, Splash-Proof, Controllers, PMEC /AMEC, PSEP /ASEP, ROBO NET, ERC2, PCON, ACON, SCON, PSEL, ASEL, SSEL, XSEL, Pulse Motor, Servo Motor (24V), Servo Motor (200V), Linear Servo Motor