

Remote Coupler System PROFIBUS-DP version (For communication speed 1.5Mbps, built-in termination resistor)	
Remote	: RCD44T-211-PBC
Base	: RCD44E-211-PBC

Attention for Installation

(Read this section thoroughly before installation.)

Before using the Remote Sensor, read this manual carefully. During installation and operation, pay close attention to the safety aspect.

- ◆ Ensure the power is switched off during installation or maintenance operations.
- ◆ Use a regulated power supply, e.g. switch-model type. Simpler power supplies, such as a full-wave rectification type, will cause the permissible ripple rating to be exceeded and may cause malfunction.
- ◆ Ensure correct connections by reference to the wiring diagram.
- ◆ To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.
- ◆ When the resin (ABS or ABS + PBT) is used to the case or the transmission surface, please be sure to avoid organic solvent or liquid containing them to splash over.
- ◆ Please install cable end "wiring part" in so that there is no water and cutting fluid. (Water is transmitted to the internal from the cable core, there is a possibility of causing a problem such as short circuit or corrosion.)
- ◆ Please do not face Base part to a metal at all times to avoid metal overheating or damage of the components.
- ◆ When the unit keeps to be using under out-of-specification distance/center offset/overload status for long time, it may be damaged by overheating.

Specification

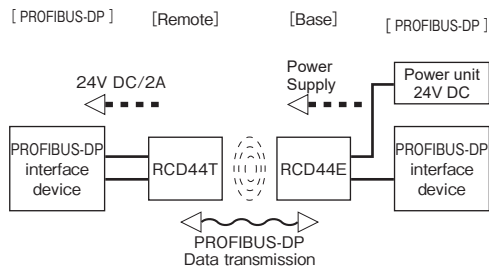
Remote : RCD44T-211-PBC

pin	signal(5pin)	Power(4pin)
1	Not use	+24V
2	Rx/Tx A	Not use
3	Not use	0V
4	Rx/Tx B	Not use
5	Not use	—

Please connect nothing to the unused pin.

Type number	RCD44T-211-PBC
Drive voltage	24V ± 1.5V DC
Drive current	≤ 2A
Transmitting distance	3...5mm
Center off-set	± 4mm
Termination resistor	built-in
Operating/Storage temperature	0...+50°C / -25...+70°C
Operating/Storage humidity	35 ~ 90%RH / 35 ~ 90%RH
Protection class	IP 67
Connector	Signal/Power M12 /5 pin female B coding/ M12 /4 pin female A coding
Material	Housing Aluminum anodized finish Active surface PA12
Bundled items	Ferrite core clamp (Gray x2 / White x1)

Construction of the System



[Function of each Component]

- Remote** : A unit that is mounted on the moving side. It communicates PROFIBUS-DP data with a Base and supplies power to connected each device.
- Base** : A unit that is mounted on the fixed side. It communicates PROFIBUS-DP data with a Remote and supplies power by non-contact.
- ◆ Please note that the signal may become unstable (false signal or chattering) when the transmission distance and the center offset are outside the specification range.
 - ◆ The inzone signal is a preliminary signal for confirming that the output signal is established within the specification range. Please note that it does not guarantee signals output outside the specification range.

Base : RCD44E-211-PBC

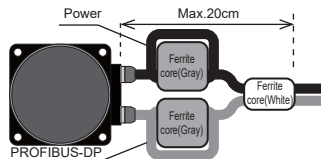
pin	signal(4pin)	Power(4pin)
1	Not use	+24V
2	Rx/Tx A	Not use
3	Not use	0V
4	Rx/Tx B	Not use
5	Not use	—

Please connect nothing to the unused pin.

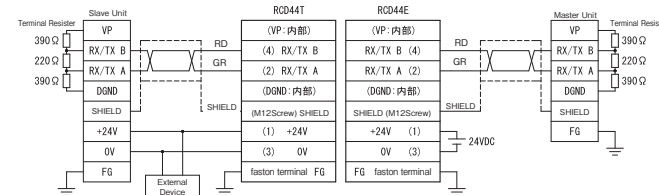
Type number	RCD44E-211-PBC
Supply voltage	24 V DC ± 5 % (include ripple)
Current consumption	≤ 3 A
Transmission signal	PROFIBUS-DP data
Transmission speed	1.5M bps
Termination resistor	built-in
Start-up time	≤ 2 sec*
Data delay time/jitter	3Tbit / Max.1/4bit
Operating/Storage temperature	0...+50°C / -25...+70°C
Operating/Storage humidity	35 ~ 90%RH / 35 ~ 90%RH
Protection class	IP 67
Connector	Signal/Power M12 /5 pin male B coding/ M12 /4 pin male A coding
Material	Housing Aluminum anodized finish Active surface PA12
Bundled items	Ferrite core clamp (Gray x2 / White x1)

* This means the time since the timing when a Remote part and a Base part are energized within the transmission area until the timing when the wireless signal transmission starts. It doesn't mean the time until the system as PROFIBUS-DP established.

Setting ferrite core clamp



Wiring between Master unit and Remote unit



Notes

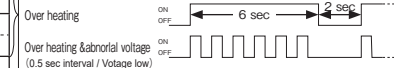
- Since RCD44 is naturally cooling system, it is recommended to install RCD44 in metal in order to reduce the influence of self-heating. The operating temperature should be within the specification with considering of self-heating.
- Attach ferrite core clamp to the power and signal line less than 20cm from a main part according to the above-mentioned Setting ferrite core clamp. Ferrite core clamp (Gray) : Signal line is 2 Turn , Power line is 2 Turn / Ferrite core clamp (White) : Signal line is 1Turn , Power line is 1Turn.
- RCD44 operates as repeater on PROFIBUS-DP BUS. It does not have a function as master unit or slave unit, and does not have FDL address.
- As terminate resistor is built-in, please sure to use RCD44 only at the end of BUS. Please connect Terminal resistor at the other end.
- For wiring of external power unit 24V DC and FG, please refer to wiring daigram above. Please ground RCD44 with FG tab.
- Please set the PROFIBUS-DP signal cable length to consider the total length of the entire network.
- Drive voltage/ Supply voltage is the value measured at the connector of Remote/ Base part. Please be noted that a drop voltage (the product of the current and the conductor resistance) will be caused at each power cable.
- Connectors and cables are not included in.
- Do not face two RCD44E(Base part) when they are powered. There is a possibility of breaking down.

LED indication

LED	Color	LED state	State
Power LED	Green	ON	The power supply* is supplied.
		OFF	The power supply* is not supplied.
		Blink	Over heating (turn on : 6s / turn off : 2s)
Remote part	Green	Blink	Drive voltage is low. (turn on : 0.5s / turn off : 0.5s)
		Blink	Supply voltage is low. (turn on : 0.5s / turn off : 0.5s)
Base part	Green	Blink	Supply voltage is high. (turn on : 0.1s / turn off : 0.1s)
		Blink	Supply voltage is high. (turn on : 0.1s / turn off : 0.1s)
Status LED	Yellow	ON	Inzone.
		OFF	No Remote (or Base) part is existing in the transmission area.

*Indicates External power supply at Base and indicates Base part at Remote.

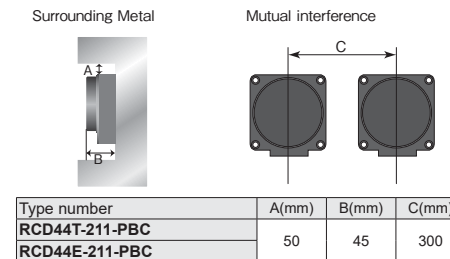
When temperature and voltage are abnormalities - - -
LED turned on for 6 sec changes to blink of the interval of 0.5 sec or 0.1 sec.



* When excessive heat is generated. It stops the power supply and once heat cool-down, RCD44E would be restarted.

Mutual Interference

In order to avoid influence of surrounding metal and mutual interference, keep the minimum distance as described below.



Transmitting Area Diagram (Non-flush mounted)

