Good Thinking, Good Future

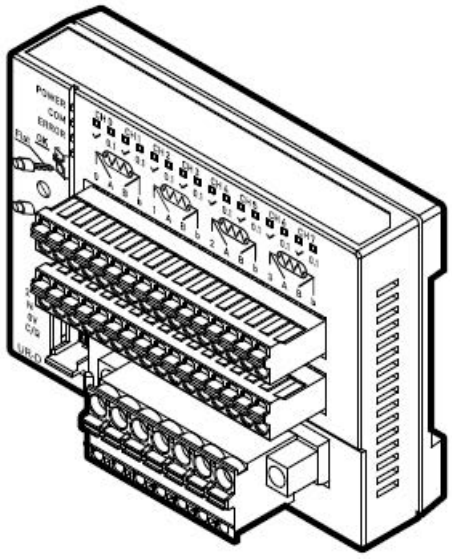
*FASTUS is a product brand of OPTEX FA.

IO-Link Hub

Temperature RTD, 8-input

UR-DS8RTD

User's Manual



OPTEX FA CO., LTD.

Introduction

Thank you for purchasing the UR-DS8RTD IO-Link Hub, Temperature RTD 8-input.

This manual includes the information required to use the UR-DS8RTD.

Read this manual carefully before use and fully understand the functions and performance before using UR-DS8RTD correctly. Also, keep this manual in a safe place after reading it, and always keep it handy.

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Revision history

First edition: April 2025

Second edition: December 2025 (Added explanation about Field Prime)

Third edition: March 2026 (Correction of typographical errors)

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Safety Precautions

Safety precautions for ensuring safe operation of this product are displayed as follows with the following symbols.

Precautions listed here describe important information about safety. Make sure to follow them accordingly.

Safety Symbols

⚠WARNING	Indicates that any improper operation or handling may result in moderate or minor injury, and in rare cases, serious injury or death. Also indicates a risk of serious property damage.
⚠CAUTION	Indicates that any improper operation or handling may result in minor injury or property damage.

⚠WARNING	
	Do not disassemble, repair, modify, deform under pressure or attempt to incinerate this product. Doing so may cause injury or fire.
	Do not use this product in water or in a location where it may be exposed to water. Do not use this product if wet. Doing so may cause a fire or damage the product.
	This product is not explosion-proof and should not be used around flammable or explosive gases or liquids. Doing so may cause ignition resulting in an explosion or fire.
	Do not use air dusters or any spray that uses flammable gas around the product or on the inside of the product. Doing so may cause ignition resulting in an explosion or fire.
	Do not use this product in environments other than industrial environments. If used in other environments, it may cause induction and radiation interference.
	Do not install this product or its cables in any of the following locations. Doing so may cause a fire, damage or a malfunction. 1. Locations where dust, salt, iron powders or vapor (steam) is present. 2. Locations subjected to corrosive gases or flammable gases. 3. Locations where water, oil or chemical splashes may occur. 4. Locations where heavy vibrations or impacts may occur. 5. Locations where the ambient temperature exceeds the rated range. 6. Locations subject to rapid temperature changes (or where condensation occurs). 7. Locations with strong electric or magnetic fields. 8. Outdoor locations or locations subject to direct light.
	Do not use the product at voltages or with AC power supplies that exceed the rated voltage. Doing so may cause a fire or damage the product.
	What to do in the event of a malfunction such as smoke being emitted from the product: If you detect any malfunction including emission of smoke, abnormal smells or sounds or the body becoming very hot, immediately stop operating the product and turn off the power. Failure to do so can cause fire. Repairing the product is dangerous and should in no way be performed by the customer. Contact an OPTEX FA sales representative for repairs.
	What to do if water enters the product: If water or any other liquid enters the product or the cable, immediately stop operating the product and turn off the power. Using the product in this condition may cause a fire.

⚠CAUTION	
	Do not touch this product or the cable with wet hands. Incorrect wiring can cause product failure or malfunction.
	When wiring this product, do so properly according to this manual and specified instruction manuals. Incorrect wiring can cause product failure or malfunction.
	Connect only specified cables to this product. Use of cables other than those specified can cause malfunction.
	Keep wiring separate from high voltage and motor circuits. Using the same wiring can cause malfunction or failure. If this is unavoidable, shield with a conductor such as an earthed conduit.
	Install this product as far away as possible from high-voltage equipment, equipment that generates large switching surges and equipment that generates noise, such as welding machines or inverter motors.
	Use this product with the end plate (sold separately) mounted to the DIN rail. Make sure locking mechanisms are locked before use.
	Tighten the mounting screws that attach the power terminal block to the main unit with a torque value of 0.25 N·m or less.
	Do not apply torsional stress to cables. Doing so can cause cables and connectors to malfunction. Secure the communications cable drawn out of this product within lengths of 30 cm to ensure no load is applied to the product.
	Do not drop this product or subject it to strong impact or vibrations. Doing so can cause malfunction.
	This product generates heat during operation, so do not maintain physical contact for long periods of time. Doing so can cause low-temperature burns, etc.
	Use this product within the rated range.
	Do not cut power during communication.
	Make sure to turn OFF the power before connecting or disconnecting cables and connectors. Connection or disconnection while running can cause malfunction.
	Always hold the connector when connecting or disconnecting cables and do not apply excessive force to cables.
	When removing a connector, do not touch the terminals inside the connector or allow foreign objects to get inside.
	When using power cables or commercially available switching regulators, make sure the frame ground (FG) is grounded.
	Wait until after transient state (approx. 2 sec.) when power is turned ON before use.
	Make sure to use an isolation transformer for DC power supply.
	If a surge occurs in the power supply used, use a surge absorber for the source of generation.
	If this product used in a manner not specified by the manufacturer, the protection provided by this product may be impaired.

1. Overview

■UR-DS8RTD

The IO-Link Hub UR-DS8RTD is a remote unit for reading up to 8 platinum resistance thermometers that measure the temperature of various objects with process input data from the IO-Link master.

■Compatible with Field Prime

Field Prime is a network technology that enables automatic reading of IODD files and achieves a communication distance of 100 m.

・Automatic IODD File Reading

By connecting to our IO-Link Master UR Series, products can be recognized without requiring IODD configuration.

This significantly reduces initial network setup work.

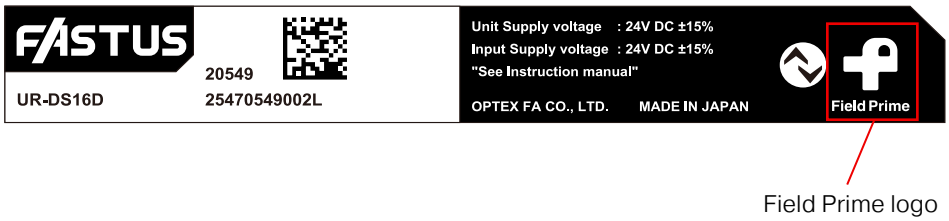
・Communication distance: 100 m

Connecting a Field Prime-compatible device (this unit) to the OPTEX FA IO-Link Master UR Series enables communication between the IO-Link Master and this unit over a maximum distance of 100 m. This feature is effective for large-scale equipment or situations requiring long-distance wiring.

UR-DS8RTD will support Field Prime starting November 2025.

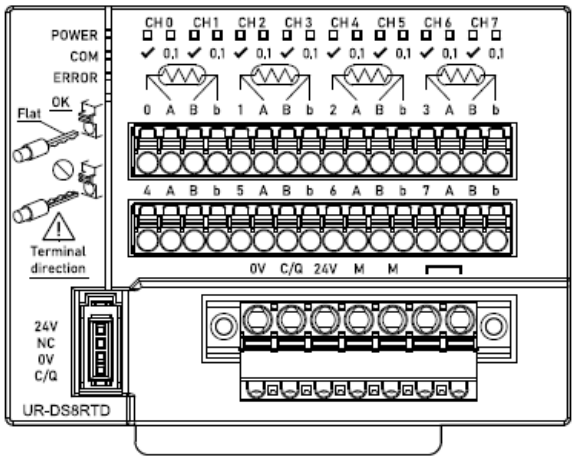
To confirm whether your device supports Field Prime, check the product label affixed to the top of the product for the Field Prime logo.

Example of a Product Label



Field Prime logo

2. Included Items





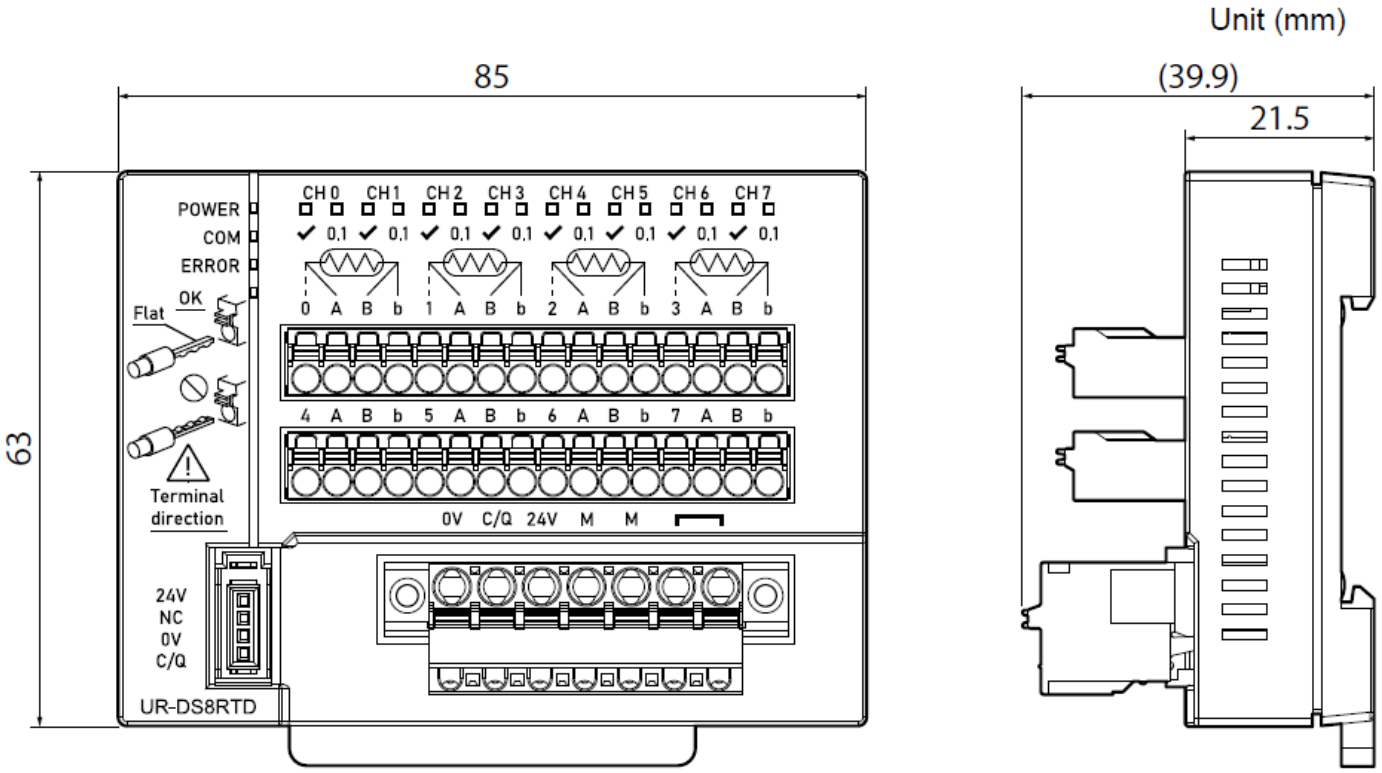
- UR-DS8RTD unit
- Platinum resistance thermometer input terminal block (2 pieces, attached to the unit)
- Power supply terminal block (Attached to the unit)

Instruction manual

If the terminal block is lost or damaged, order the following model.

Platinum resistance thermometer input terminal block:	UR-FD16A (1 pc.)
Power supply terminal block:	UR-FP7T

3. Dimensions



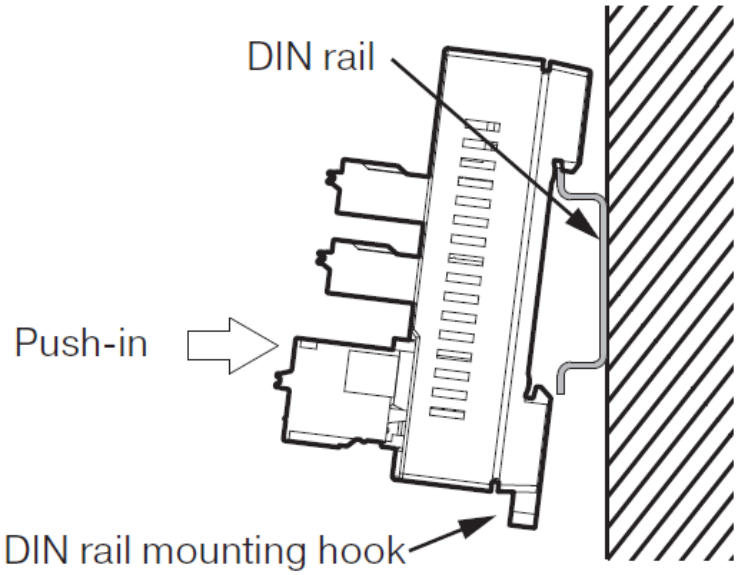
4. Installation

Follow the steps below to install this product.

1. Hook the upper hook on the back of the product to the DIN rail.

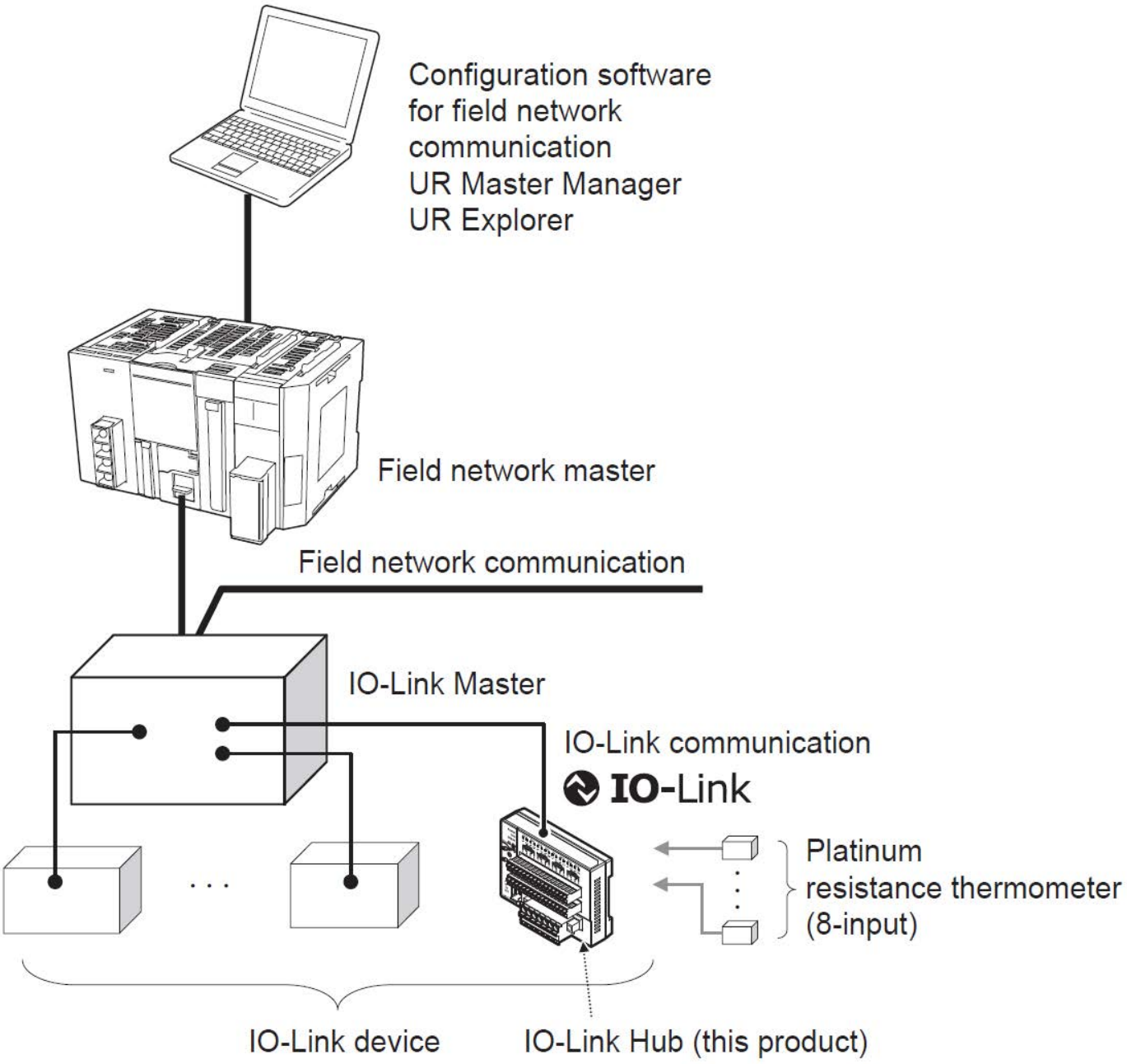
2. Push the lower side from the front.

3. Push the DIN rail mounting hook up to lock the product in place.



Install this product at least 10 mm away from an adjacent device and structure.

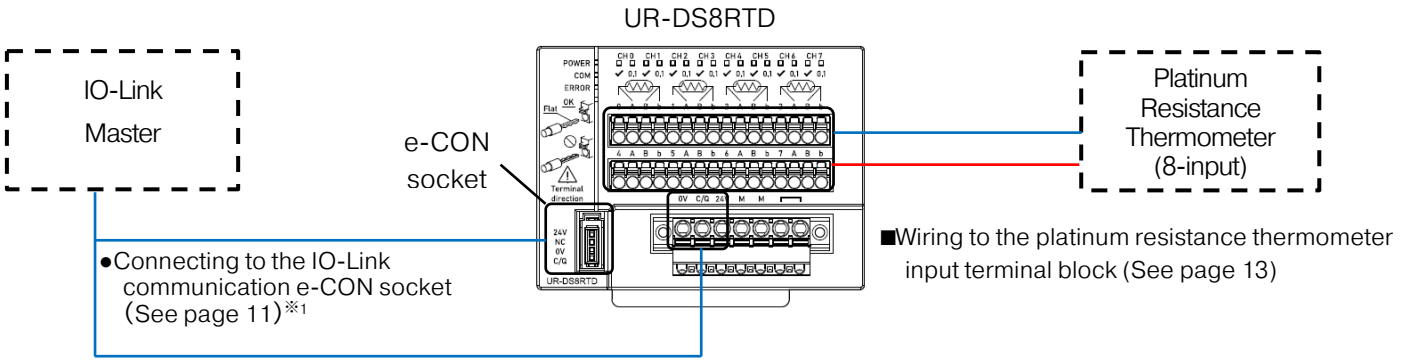
5. System Configuration



6. Connection

Connect the IO-Link master and external devices via IO-Link to the connectors and terminal blocks of UR-DS8RTD as shown below.

■ Connection overview

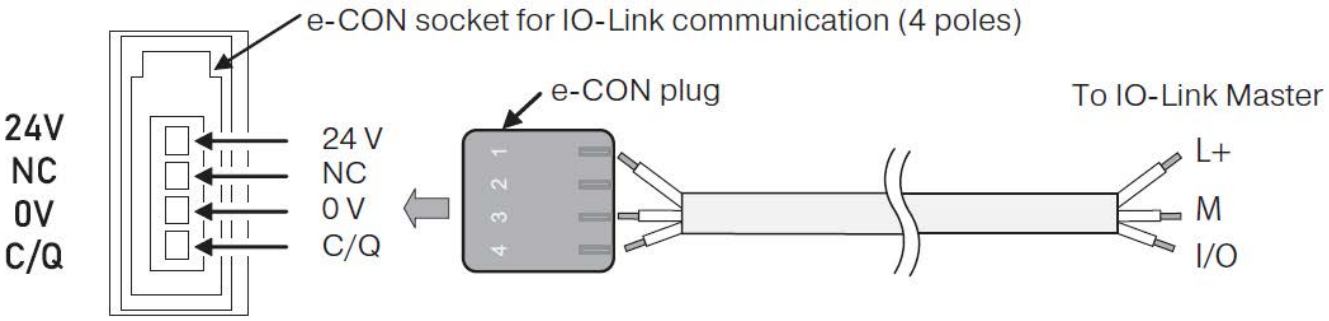


※1：The e-CON socket and power terminal block are connected internally, so either one of them should be connected.

■ Wiring to the IO-Link Master

Connect the IO-Link master to either the e-CON socket on this product or the IO-Link communication terminals on the power terminal block.

Connecting to the IO-Link communication e-CON socket



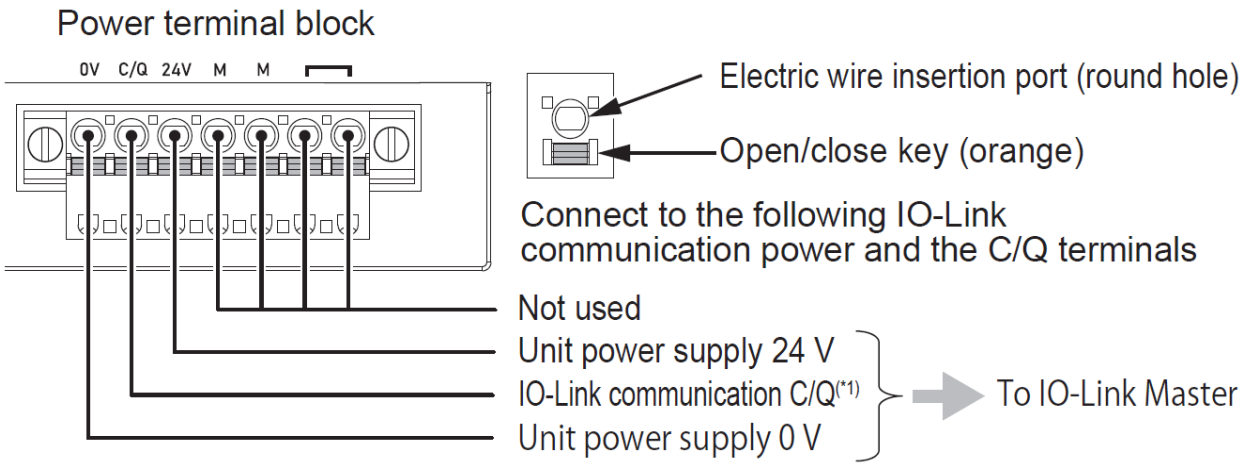
Connecting to the IO-Link communication terminals on the power terminal block

Connect the 0V, C/Q, 24 V terminals on the power terminal block to the IO-Link master.

Single wires, stranded wires or ferrules can be used, and the stripped length of single or stranded wires should be 10 mm.

Ferrule Manufacturer:	PHOENIX CONTACT
Model (Typical)：	AI05-10WH (In case of AWG20)
Applicable wire size：	AWG24 to 12
Cable length：	Maximum 20 m (Between IO-Link Master and IO-Link Hub)
	With the Field Prime-compatible IO-Link Master: Maximum 100 m

See the table on page14 for details on the combination of wire size and ferrule models.



*1: 0V, 24V and C/Q is connected internally with the IO-Link communication e-CON socket.

■ Wiring to the platinum resistance thermometer input terminal block

Connect the platinum resistance thermometer to the 16-pole platinum resistance thermometer input terminal blocks. Use the following ferrule to connect the platinum resistance thermometer to the platinum resistance thermometer input terminal block.

Ferrule Manufacturer: PHOENIX CONTACT

Model: AIxx-10yy (xx: Maximum wire diameter, yy: Color No.)

Note that if ferrules other than those listed above are connected, temperature accuracy cannot be guaranteed.

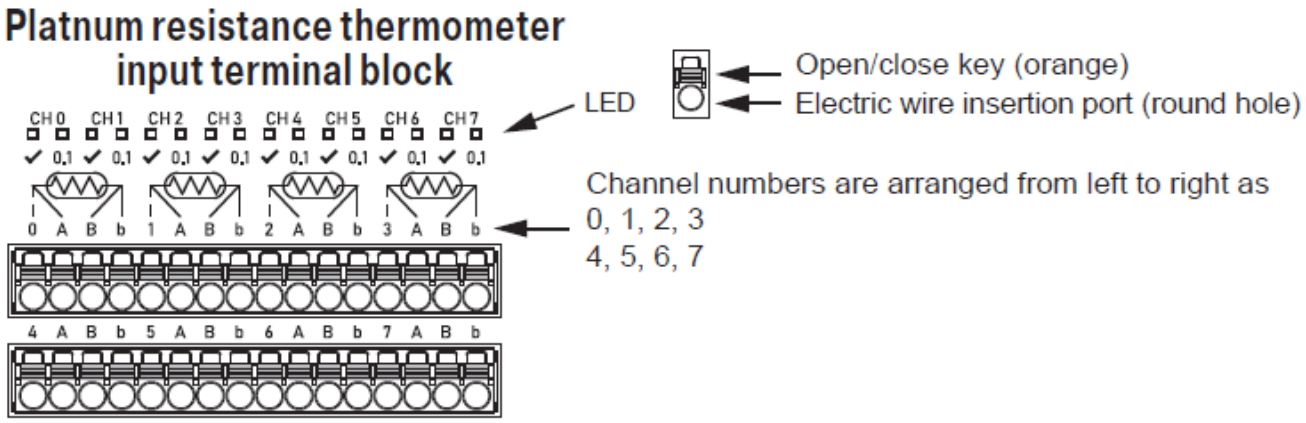
Wire size of platinum resistance thermometer: AWG24 to 18

See the table on page14 for details on the combination of wire size and ferrule models.

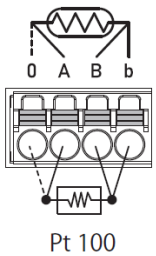
CAUTION! Inserting and removing the platinum resistance thermometer input terminal block from and to the Main Unit

Repeated insertion and removal of the platinum resistance thermometer terminal block may change the contact resistance, resulting in a decrease in measurement accuracy. In such cases, replace the connected platinum resistance thermometer terminal block. (Model: UR-FD16A)

The typical number of insertion/removals is 50 times.



The resistance thermometer is wired as shown in the figure below.



* The dashed lines are for 4-wire platinum resistance thermometers.

Ferrules

・For power terminal block

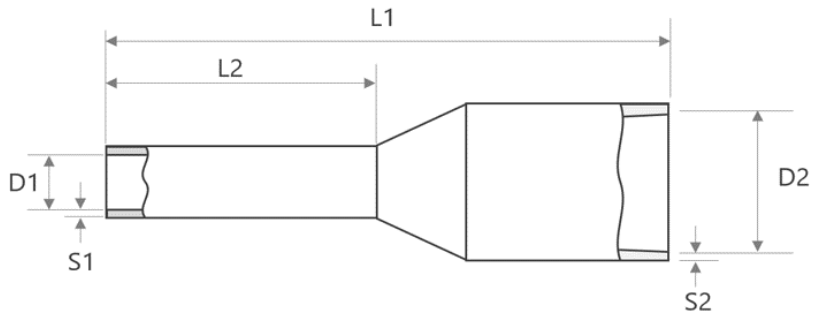
The ferrule model is AI0.5-10 WH (in case of AWG20) manufactured by PHOENIX CONTACT.

Refer to the table below for dimensions and ferrules other than those listed above.

・For platinum resistance thermometer input terminal blocks

Use only ferrules manufactured by PHOENIX CONTACT. If other ferrules are used, temperature accuracy cannot be guaranteed.

Refer to the table below for details on the combination of wire size and ferrule models.



(Unit: mm)

Terminal block	Wire size (AWG)	Ferrules from PHOENIX CONTACT							
		Model	Dimensions						Insulation Sleeve Color
			L1	L2	D1	S1	D2	S2	
Platinum Resistance Thermometer Input Terminal Block	24	AI 0.25-8 YE	12.50	8.00	0.80	0.15	2.00	0.25	Yellow
	22	AI 0.34-10 TQ	14.50	10.00	0.80	0.15	2.00	0.25	Turquoise
	20	AI 0.5-10 WH	16.00	10.00	1.10	0.15	2.50	0.25	White
	18	AI 1-10 RD	16.00	10.00	1.50	0.15	3.00	0.30	Red
Power Terminal Block	24	AI 0.25-8 YE	12.50	8.00	0.80	0.15	2.00	0.25	Yellow
	22	AI 0.34-10 TQ	14.50	10.00	0.80	0.15	2.00	0.25	Turquoise
	20	AI 0.5-10 WH	16.00	10.00	1.10	0.15	2.50	0.25	White
	18	AI 1-10 RD	16.00	10.00	1.50	0.15	3.00	0.30	Red
	16	AI 1.5-10 BK	16.50	10.00	1.80	0.15	3.40	0.30	Black
	14	AI 2.5-10 BU	17.00	10.00	2.30	0.15	4.20	0.30	Blue

* Ferrule descriptions are current as of November 2023.

Crimping tool

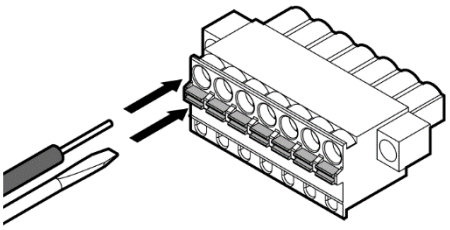
Use the CRIMPFOX6 crimping tool manufactured by PHOENIX CONTACT.

Crimping or inserting with other tools may result in a loss of measurement accuracy or damage to the terminal block when pulling ferrule out.

Wire installation method

1. Press the open/close key (orange) of the wire insertion port for installation with a precision flathead screwdriver.
2. Insert the wire from the wire insertion port while pressing the open/close key. Insert the wire until the tip reaches the bottom.
3. Release the open/close key to complete wiring. Pull gently to make sure it does not come loose.

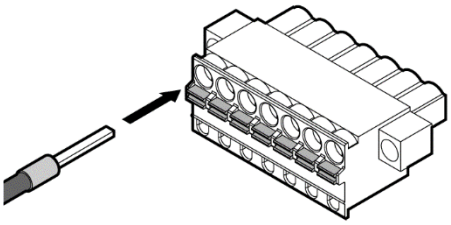
Example with Power supply terminal block



Wire with ferrule installation method

1. Insert the wire with the ferrule attached through the wire insertion port. Insert the ferrule until the tip of the ferrule reaches the bottom.
   (In the case of ferrule, it can be inserted without pressing the open/close key.)
2. Insert it until it reaches the bottom and the wiring is complete. Pull gently to make sure it does not come loose.

Example with Power supply terminal block

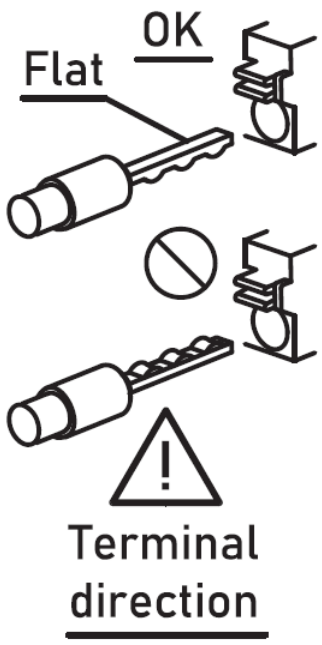


CAUTION! Wire with ferrule installation method to platinum resistance thermometer input terminal blocks

When inserting the ferrule into the terminal block, the flat side of the crimp should face the open/close key as shown in the illustration on the right.

Inserting the ferrule in a different direction may result in incorrect measurement.

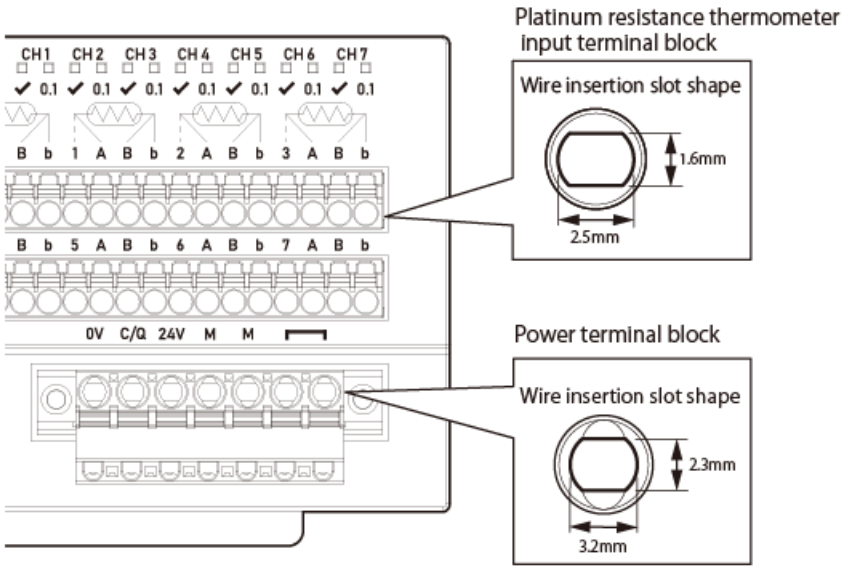
* Excessive insertion or removal of the ferrule or platinum resistance thermometer input terminal block may cause a change in contact resistance, which may degrade measurement accuracy.
  In this case, replace the ferrule of the connected platinum resistance thermometer.
  The typical number of insertions and removals is 50 times.



Wire insertion slot shape

Before inserting a wire or ferrule, check the shape of the wire insertion port below and the diameter and orientation of the wire or ferrule.

Inserting a wire or ferrule larger than the wire insertion port shown below may damage the terminal block.

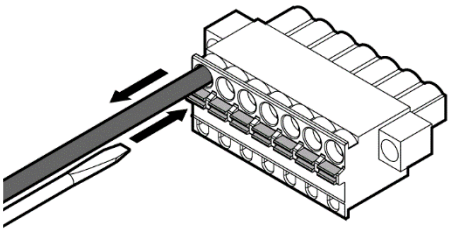


Wire removal

1. Press the open/close key (orange) of the wire insertion port to be removed with a precision flathead screwdriver.
2. Pull out the wire while holding down the open/ close key.

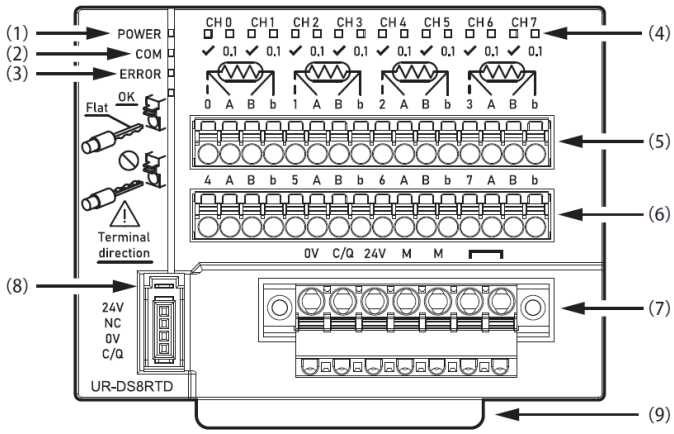
* If the ferrule is stuck inside the terminal block and cannot be removed, the terminal block may be damaged by forceful removal. If the ferrule is stuck, move the ferrule up, down, left, or right while pressing in the open/close key to remove the stuck part, and then pull it out.

Example with Power supply terminal block



For Platinum resistance thermometer input terminal blocks, pull out in the same way.

7. Part Names



No.	Name	Function
(1)	POWER LED (green)	Turns on when the unit power is turned on.
(2)	COM LED (green)	Illuminated: After startup, before IO-Link communication is established. 1 second on 0.1 second off: IO-Link communication established. 0.55 second on 0.55 second off: Find me 0.1 second on 0.1 second off: IO-Link communication cutoff
(3)	ERROR LED (red)	Turns on when IO-Link communication stops or some other error occurs.
(4)	Input type LED (orange)	"✓" is lit if a resistance thermometer is connected to each channel. It lights up if the process input data range is in units of 0.1°C.
(5)	Platinum resistance thermometers input terminal block (Channel 0 to 3)	Connect platinum resistance thermometers for channels 0 to 3.
(6)	Platinum resistance thermometers input terminal block (Channel 4 to 7)	Connect platinum resistance thermometers for channels 4 to 7.
(7)	Power terminal block (0 V, +24 V)	Supplies unit power (+24 V, 0 V) This seven-pole removable connector has a pitch of 5.08 mm and a rating of 12 A. It uses AWG 24 to 12 wires. Unit power (+24 V, 0 V) and C/Q are connected internally with the terminals of the e-CON socket, and either the power terminal block or e-CON socket can be connected to the IO-Link master.
(8)	e-CON socket (4-pole)	Unit power (+24 V, 0 V) and C/Q can be wired to the IO-Link master via the e-CON socket.
(9)	DIN rail mounting hook	Slides for attaching/removing the product to/from the DIN rail.

8. Specifications

■ General specifications

Item		Specifications
Power supply voltage		24 VDC +/-15% *1
Current consumption (For 24 VDC)		75 mA max. (With the Field Prime-compatible IO-Link Master: 95 mA max.)
Operating temperature		0 ... +55˚C (no freezing)
Operating humidity		5 ... 95% RH (no condensation)
Storage temperature		-25 ... +75˚C (no freezing)
Storage humidity		5 ... 95% RH (no condensation)
Vibration resistance		IEC 61131-2 compliant Vibration frequency: 5 ... 8.4 Hz, single amplitude: 3.5 mm Vibration frequency: 8.4 ... 150 Hz, constant acceleration: 10 m/s^2 (1.0 G)
Shock resistance		IEC 61131-2 compliant Peak acceleration: 150 m/s^2 (15G) 3 times each in X, Y, Z 3 directions (18 times total)
Atmosphere		No corrosive gas
Operating altitude		0 ... 2000 m
Installation location		In door use
Degree of protection		IP20
Measurement category		II
Pollution degree		2
Applicable regulations	EMC	EMC Directive (2014/30/EU) UK EMC (Electromagnetic Compatibility Regulations 2016)
	Environment	RoHS Directive (2011/65/EU), China RoHS (MIIT Order No. 32) UK RoHS (The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012)
Applicable standard		EN 61131-2 (Zone A)
Compatible DIN rail		TH35-7.5Fe, TH35-7.5Al
Cable length		Maximum 20 m (between IO-Link master and IO-Link Hub) With the Field Prime-compatible IO-Link Master: Maximum 100 m
Compatible wire		Power terminal block: AWG 24 ... 12 Platinum resistance thermometer input terminal block: AWG 24 ... 18
Material		Unit: PC; DIN rail mounting hook: POM; Terminal block: PA
Weight		Approx. 115 g (including terminal blocks, when not wired)
Included accessories		Instruction manual

*1：Use a Class 2 power supply or a power supply compliant with SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy Circuit) circuit standards.

■ IO-Link specifications

Item	Specifications
Host communication interface	IO-Link (operates as device)
Process input data byte count	16 bytes
Process output data byte count	1 byte
Minimum cycle time	1.2 ms
IO-Link revision	1.1.3
Communication speed	COM3 (230.4kbps)/ COM2 (38.4kbps) Switching by service data. (Default value: COM3)
Communication function operation power supply	IO-Link power supply

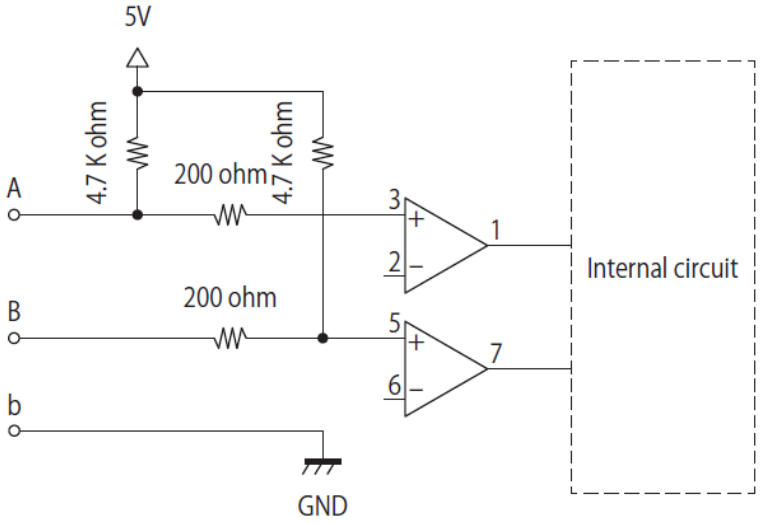
MEMO

・Instead of ”Application Reset”, the device offers "Restore factory settings".
・The device is developed with older software assets, therefore the device uses TYPE_0 in Preoperate.
・AccessLocks/@dataStorage is implemented.
・Common Profile is not supported due to insufficient memory capacity.

■ Input specifications of platinum resistance thermometer

Item	Specifications
Number of Input channels	8 channels
Compatible resistance thermometer	Pt100, 3-wire type
Maximum input current	Approx. 1 mA (When measured at 25 °C)
Measurement range	-200 ... +1000 °C
Accuracy	-200 ... -60 °C: ± 1.0 °C -60 ... +300 °C: ± 0.3 °C +300 ... +600 °C: ± 1.0 °C +600 ... +1000 °C: ± 2.0 °C (at ambient temperature of 25 °C)
Temperature characteristics	± 50 ppm/°C. (Within the ambient temperature range)
Resolution	16 bits
Dielectrics withstand voltage	500 VAC for one minute between platinum resistance thermometer input terminal batch and IO-Link batch.
Insulation resistance	10 Mega ohms between all I/O terminals and IO-Link terminals at 500 VDC
Inter-channel isolation	None (common)
Insulation method	Photocoupler, transformer insulation
Sampling cycle	2 ms

9. Input Circuit Diagram



10. Process Data

The process data exchanged by this product with the IO-Link master using IO-Link cyclic communication is as follows.

IO-Link process data is transferred in big endian format. The table below is also in big endian format.

The IO-Link master UR series from OPTEX FA transfers IO-Link process data converted into little endian format to the host network by default, so the byte order will be the reverse of that in the table below.

Process data	Byte	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Process input data *1	n+0	Channel 7 temperature upper byte							
	n+1	Channel 7 temperature lower byte							
	n+2	Channel 6 temperature upper byte							
	n+3	Channel 6 temperature lower byte							
	n+4	Channel 5 temperature upper byte							
	n+5	Channel 5 temperature lower byte							
	n+6	Channel 4 temperature upper byte							
	n+7	Channel 4 temperature lower byte							
	n+8	Channel 3 temperature upper byte							
	n+9	Channel 3 temperature lower byte							
	n+10	Channel 2 temperature upper byte							
	n+11	Channel 2 temperature lower byte							
	n+12	Channel 1 temperature upper byte							
	n+13	Channel 1 temperature lower byte							
	n+14	Channel 0 temperature upper byte							
	n+15	Channel 0 temperature lower byte							
Process output data	+0 *2	Channel 7	Channel 6	Channel 5	Channel 4	Channel 3	Channel 2	Channel 1	Channel 0
		Input range 0: up to 327.67°C, 1: up to 1000.0 °C							

*1 When the platinum resistance thermometer is not connected, the temperature data is 32767 (0x7FFF).

*2 When index number 74 (“Input range switching”) of the service data is “0”, this designation by process output data is valid. In case of “1”, the value is fixed in 0.01°C increments, and in case of “2”, the value is fixed in 0.1°C increments.

■ Word assignment

ex) When using the IO-Link master UR series of OPTEX FA (default setting: little endian)

＜Overview＞

Process data	Word No.	Byte	
		Upper	Lower
Process input data	N+0	Process input n+14	Process input n+15
	N+1	Process input n+12	Process input n+13
	N+2	Process input n+10	Process input n+11
	N+3	Process input n+8	Process input n+9
	N+4	Process input n+6	Process input n+7
	N+5	Process input n+4	Process input n+5
	N+6	Process input n+2	Process input n+3
	N+7	Process input n+0	Process input n+1
Process output data	N+0	N/A	Process output n+0

＜Detail＞

Process data	Word No.	Bit															
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Process input data	N+0	Channel 0 Temperature upper byte								Channel 0 Temperature lower byte							
	N+1	Channel 1 Temperature upper byte								Channel 1 Temperature lower byte							
	N+2	Channel 2 Temperature upper byte								Channel 2 Temperature lower byte							
	N+3	Channel 3 Temperature upper byte								Channel 3 Temperature lower byte							
	N+4	Channel 4 Temperature upper byte								Channel 4 Temperature lower byte							
	N+5	Channel 5 Temperature upper byte								Channel 5 Temperature lower byte							
	N+6	Channel 6 Temperature upper byte								Channel 6 Temperature lower byte							
	N+7	Channel 7 Temperature upper byte								Channel 7 Temperature lower byte							
Process output data	N+0	N/A								Channel 7	Channel 6	Channel 5	Channel 4	Channel 3	Channel 2	Channel 1	Channel 0

11. Service Data

The service data for this product that can be read and written via IO-Link ISDU handling is as follows.

Item	Index number	Subindex number	Read/Write	Backup subject	Data byte count	Default value	Setup value	Setting details
System command	2	0	W	—	1	—	130	Initialization of setting value
							131	Stops IO-Link communication after reverting setting values to default values (Back-to-Box)
Device lock	12	0	R/W	✓	2	0	0	Unlocks the storage function.
							2	Storage function lock.
Tag name	24	0	R/W	✓	32	*2	—	Can be used to set a name for this product, such as the device function or installation location.
Input range switching	74	0	R/W	✓	8	0	—	Switches the input range for channels 0 to 7. The first byte is the value of channel 0. For the meaning of each byte value, refer to the setup value of subindex numbers 1 to 8.
		1 to 8		✓	1	0	0	The input type is switched using process output data.
							1	Measures up to 327.67°C in 0.01°C increments.
							2	Measures up to 1000°C in 0.1°C increments.
Averaging time	79	0	R/W	✓	8	5	—	Sets the averaging time for channels 0 to 7. This time is the time required to follow up to 90% of the step variation in the measured value. In twice this time, it follows up to 99%.
		1 to 8		✓	1		0	20 ms
							1	40 ms
							2	80 ms
							3	160 ms
							4	320 ms
							5	640 ms
							6	1.23 s
							7	2.5 s
							8	5 s
							9	10 s
Internal temperature	161	0	R	—	2	—	-2739 to 10461	Returns the temperature on the internal board. The unit is 0.1°C.
Operating time	162	0	R	—	4	—	0 to 4294967295	Returns the internal operation time. The unit is 7.5 minutes.
Display unit character string	194	0	R/W	✓	1	0	0	Outputs temperature in degrees Celsius.
							1	Outputs temperature in degrees Fahrenheit.
Device identification request (Find me)	204	0	R/W	—	1	—	0	Disable the function of device identification requests.
							1	Enable the function of device identification requests. The COM LED flashes at 0.55 sec. intervals.
Communication speed switching	225	0	R/W	✓	1	0	0	COM 3
							1	COM 2

*1 R: Read only, W: Write only, R/W: Read/Write

2 The default value is 32 ""(asterisk) characters.

12. Events

Events occurring in this product.

Event code	Message	Details
0x4210	Temperature range has been exceeded	This occurs when the temperature on the circuit board exceeds 85°C. Generated every 10 minutes. Immediately lower the ambient temperature.
0x1801	The setting value memory write count has been exceeded	The write count of the flash memory saving the setting values has exceeded 500,000 times. While the service life will not immediately end, the operating time will no longer be updated. Replace this product promptly.

13. Troubleshooting

How to handle this product when it does not work properly or when problems occur.

Symptom	Checkpoints and countermeasures
POWER LED does not light up	Check that voltage is applied to the Unit power's 24 V and 0 V and the I/O power's L+ and M.
	Check that the power terminal block is fully inserted, and the wiring is correct.
IO-Link communication is not working COM LED remains lit	Check that voltage is applied to the Unit power's 24 V and 0 V and the I/O power's L+ and M.
	Check that the IO-Link Master communication signal (C/Q) and this product's C/Q terminal are connected and that the power terminal block is fully inserted.
	Check that the IO-Link Master setting is in IO-Link communication mode. (For IO-Link Master UR series, check the master parameter "M10. I/O setting".)
COM LED is flashing at 0.1-second intervals	IO-Link communication has broken off. Check the wiring between the IO-Link Master and C/Q.
	Check that the other IO-Link communication line (C/Q) and this product's C/Q line are not wired closely for several meters or more.
	Check that the power line (inverter or servo motor drive output line) is not wired closely for several meters or more.
	Check that the IO-Link master's power (24 V, 0 V) wiring is not separate from this product's 24 V and 0 V. Be sure to connect at least the 0 V for both securely.
	Check whether the IO-Link communication line (C/Q) is shorter than 20 m. (If both of IO-Link master and Device are Field Prime compatible, the length of IO-Link communication line is up to 100 m.)
Range switching is not possible with process output data	The setting value (input format or output format specification method) is set to specify the format with the setting value.
Conversion data for platinum resistance thermometer is not correct.	Check the Input Type LED that is lit to see if the input range switching is correct.
	Check the wiring of the platinum resistance thermometer to the terminal block for errors.
	Check the platinum resistance thermometer is other than Pt100.
	Check if the bit corresponding to the input range switching of the process output data of this product is set correctly. If the IO-Link master is UR series, check with the process data monitor.
	If IO-Link master is UR series, check whether the parameter "M40. Process input data words allocation" in master setting is 8 words (16 bytes).
	Check the wiring for the correct channel number connected to the IO-Link master.
	Check that the CPU unit connected to the host network is RUN and that the program controlling the process output data is operating properly.
	Check the process I/O data refresh allocation settings between the host network and the CPU Unit.

Symptom	Checkpoints and countermeasures
<Continued> Conversion data for platinum resistance thermometer is not correct.	Confirm that IO-Link communication with the IO-Link master is established. (COM LED blinks on for 1 second and off for 0.1 second.
	Check to see if the units displayed are different.
ERROR LED is lit	Once established, IO-Link communication is blocked.
Noise on temperature data	Use a mesh shielded wire with GND (M) on the platinum resistance thermometer. Also shorten the platinum resistance thermometer cable length to bring the distance closer.
	Increase the averaging time setting to an acceptable level.
	Check that the platinum resistance thermometer cable is parallel to the power line. If they are parallel, reroute them so that they are not parallel.

FASTUS

Attention: Not to be Used for Personnel Protection.

Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death.
These sensors do not include the self-checking redundant circuitry necessary to allow their use in personnel safety applications.
A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.
Please consult our distributors about safety products which meet OSHA, ANSI and IEC standards for personnel protection.

- Specifications are subject to change without prior notice.
- Specifications and technical information not mentioned here are written in Instruction Manual. Or visit our website for details.
- All the warnings and cautions to know prior to use are given in Instruction Manual.

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The information in this user's manual is correct as of March 2026.

UR-DS8RTD UM-E-003-2603