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1. Introduction

1.1 Agreement

The following terms/abbreviations are used synonymously in this document:

IOL: IO-Link.

LSB: least significant bit.

MSB: most significant bit.

This device: equivalent to "this product", refers to the product model or series described in this manual.

1.2 Purpose

This manual contains all the information required to use the device correctly, including information on necessary functions, performance, usage, etc. It is suitable both for programmers and test/debugging personnel who debug the system themselves and interface it with other units (automation systems, other programming devices), as well as for service and maintenance personnel who install extensions or perform fault/error analysis.

Please read this manual carefully before installing this equipment and putting it into operation. This manual contains instructions and notes to help you step-by-step through installation and commissioning. This ensures trouble-free use of the product. By familiarizing yourself with this manual, you will gain the following benefits:

- ☞ ensuring safe operation of this device
- ☞ take advantage of the full capabilities of this device
- ☞ avoid errors and related failures
- ☞ reduce maintenance and avoid cost waste

1.3 Valid Scope

The descriptions in this document apply to the Unitronics ULK IO-Link device module series.

1.4 Declaration of Conformity

This product has been developed and manufactured in compliance with applicable European standards and guidelines (CE, ROHS). You can obtain these certificates of conformity from the manufacturer or your local sales representative.

1.5 Revise History

Version Information

Version	Revise Date	Reason for Revise
V1.0	2026.06.07	Initial Unitronics formatted release

2. Safety Instructions

2.1 Safety Symbols

Read these instructions carefully and inspect the equipment before attempting to install, operate, repair, or maintain it. The following special messages may appear throughout this document or on the equipment to indicate status information or to warn of potential hazards.

We divide the safety prompt information into four levels: "Danger", "Warning", "Attention", and "Notice".

DANGER	indicates a severely hazardous situation which, if not avoided, will result in death or serious injury
WARNING	indicates a hazardous situation which, if not avoided, could result in death or serious injury
ATTENTION	indicates a hazardous situation which, if not avoided, could result in minor or moderate injury
NOTICE	used to prompt information not related to personal injury



This is the DANGER symbol, which indicates an electrical hazard exists which, if instructions are not followed, will result in personal injury.



This is a WARNING symbol, which indicates an electrical hazard exists which, if instructions are not followed, could result in personal injury.

This is the "Attention" symbol. Used to warn you of a potential personal

Attention

injury hazard. Observe all safety instructions following this symbol to avoid injury or death.

Notice

This is the "Notice" symbol, which is used to warn the user of possible risks. Failure to observe this regulation may result in faulty of device.

2.2 General Safety

This equipment should only be installed, operated, serviced and maintained by qualified personnel. Qualified person is a person who has skills and knowledge concerning the construction and operation of electrical equipment, and its installation, and has received safety training to recognize and avoid the hazards involved.

If the equipment is used in a manner not specified by Unitronics, the protection provided by the equipment may be impaired.

Notice

User modifications and/or repairs are dangerous and will void the warranty and release the manufacturer from any liability.

Attention

Product maintenance can only be carried out by our personnel. Unauthorized opening and improper servicing of the product can result in extensive equipment damage or possibly personal injury to the user.

In the event of a serious malfunction, discontinue use of the equipment. Prevent accidental operation of the device. If repairs are required, please return the device to your local representative or sales office.

It is the operating company's responsibility to comply with locally applicable safety regulations.

Store unused equipment in its original packaging. This provides the best protection against impact and moisture for the device. Please ensure that the Ambient conditions comply with this relevant regulation.

2.3 Special Safety



A process started in an uncontrolled manner may endanger or be exposed to other equipment, therefore, before commissioning, make sure that the use of the equipment does not involve risks that may endanger other equipment or be endangered by other equipment risks of.

Power Supply

This device can only be operated with a current source of limited power, that is, the power supply must have overvoltage and overcurrent protection functions. In order to prevent the power failure of this equipment, affecting the safety of other equipment; or the failure of external equipment, affecting the safety of this equipment.

3. Product Overview

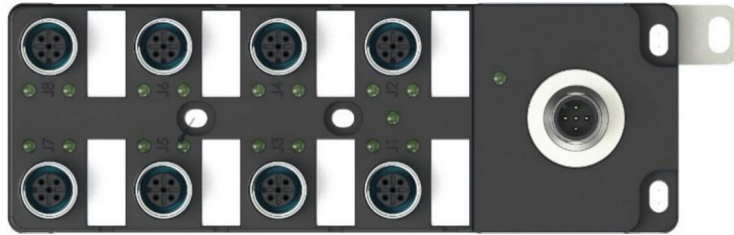
Establishing a connection between IO-Link devices and automation systems. As an integral part of the I/O system, the IO-Link device is usually used as a remote I/O and its back is installed on the surface of the control cabinet or other flat surfaces (screw size: M4; reference tightening torque: 1.5~2N·m), in which case it is packaged rated IP67. This IO-Link device communicates through the IO-Link protocol. This IO-Link has the following features:

- ≡ designed for industrial environments, it is a system applied to automated lines
- ≡ compact structure, suitable for usage scenarios with limited installation conditions
- ≡ IP67 high protection level, anti-interference design, suitable for demanding application environments

As a special reminder, IP rating is not part of UL certification.

4. Technical Parameters

4.1 ULK-08AIRT-M2P6



4.1.1 ULK-08AIRT-M2P6 Specification

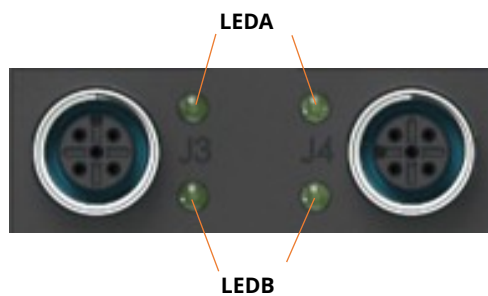
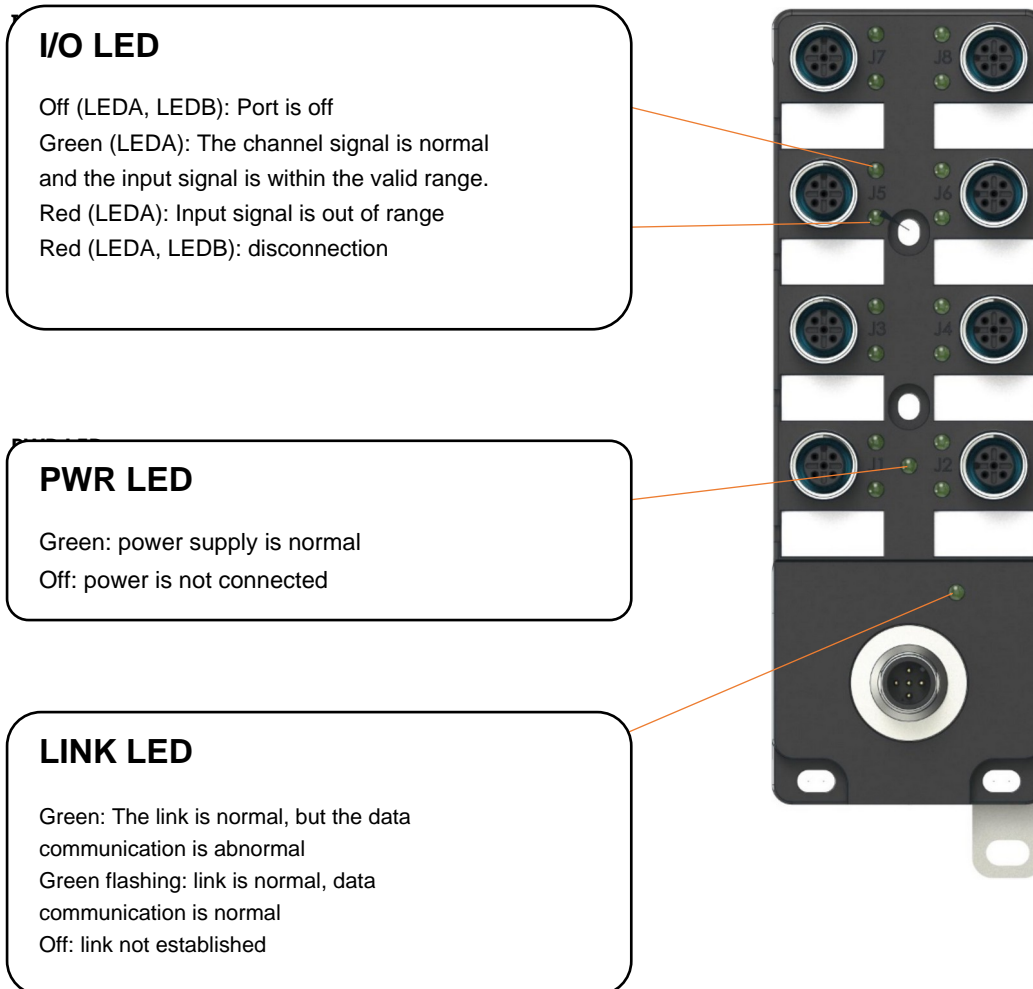
ULK-08AIRT-M2P6 specification is shown in the following:

Basic Parameters	Full Series
Housing Material	PA6 + GF
Housing Color	Black
Protection Level	IP67, epoxy full potting
Dimensions (W×H×D)	155mm×53mm×28.7mm
Weight	217g
Operating Temperature	-25°C...70°C
Storage Temperature	-40°C...85°C
Operating Humidity	5%...95%
Storage Humidity	5%...95%
Operating Atmospheric Pressure	80KPa...106KPa
Storage Atmospheric Pressure	80KPa...106KPa
Usage Environment	indoor use
Altitude	0...2000m
Pollution Degree	3
Tightening Torque (I/O)	M12:0.5Nm
Application Environment	according to EN-61131
Vibration Test	according to IEC60068-2
Impact Test	according to IEC60068-27
Free Drop Test	according to IEC60068-32
EMC	according to IEC61000-4-2,-3,-4
Certification	CE,RoHS
Mounting Hole Size	Φ4.3mm ×4

Data Transfer	
Connection Type	M12 A-code; 4-pins, Female
Protocol	IOLINK
Transfer Speed	38.4 kbit/s (COM2)
Characteristics	conforms to protocol
Alarm Function	diagnostic alarm, process alarm
Minimum Cycle Time	55ms
Tightening Torque (data port)	M12:0.5Nm
Power Supply	
Connection Type	M12, 5 pins, A-code, shared with data transfer
System Power Supply Voltage US	18...30 VDC (type.24VDC)
Total Current US/UA	≤1A
No-load Current Consumption	≤80mA
Overvoltage Protection	yes
Power Reverse Connection Protection	yes
Tightening Torque (power supply port)	M12:0.5Nm
Port Parameters	
Input Channel	8 way
Port Position	J1...J8
Load Type	Thermocouple, Thermal Resistance
Input Type Setting	<p>port closed</p> <p>PT100, PT500, PT1000: -200°C~+850°C</p> <p>J type thermocouple: -200°C~+1200°C</p> <p>K type thermocouple: -200°C~+1372°C</p> <p>E type thermocouple: -200°C~+1000°C</p> <p>N type thermocouple: -200°C~+1300°C</p> <p>R type thermocouple: 0°C~+1768°C</p> <p>S type thermocouple: 0°C~+1768°C</p> <p>Type B thermocouple: 400°C~+1820°C</p> <p>T-type thermocouple: -250°C~+400°C</p>
Wiring Method	PT100, PT500, PT1000: two wires/three wires/four wires J, K, E, N, R, S, B, T thermocouples: two wires
Diagnosis	Contains self-diagnostics
Filter Time Setting	0S-10S(default 0)
AD Conversion Method	ΔΣ method
PT100, PT500, PT1000 Input Measurement Error	PT100 two-wire system: <±0.3% full scale Others: <±0.2% of full scale
J, E, N, R, S, B Type Thermocouple Measurement Error	<±2°C
K-type Thermocouple Measurement Error	-200°C~0°C <±3°C 0°C~1300°C <±2°C
T-type Thermocouple Measurement Error	-250°C~0°C: <±0.7% 0°C~400°C: <±0.2%
Function Settings	<p>Disconnection detection (the value is cleared after disconnection)</p> <p>Detection of exceeding the upper and lower limits of measurement</p> <p>Upper and lower threshold setting and detection</p> <p>Cold Junction Compensation Display</p> <p>Whether the data has dimensions or not</p> <p>*Each channel is set independently</p>

4.1.2 ULK-08AIRT-M2P6 LED Definition

ULK-08AIRT-M2P6 LED is shown in the below figure.

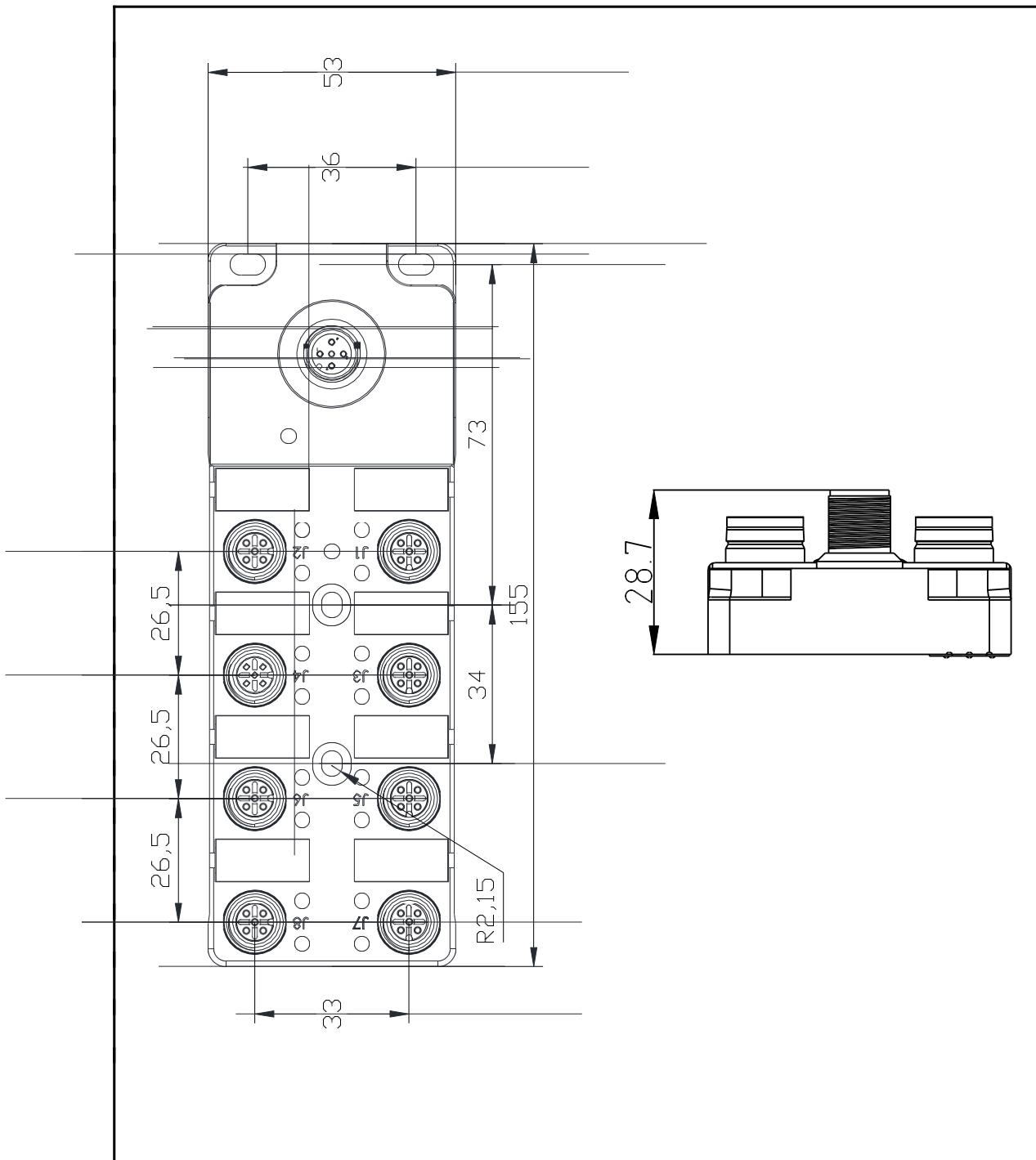


Module Indicator		
	Status	Solution
PWR	green: normal power supply	
	Off: no power supply	Check power cable
Link	Green: normal link, abnormal data transfer	Check module settings in PLC
	Green flash: normal link, normal data transfer	
	Off: no link established	Check wiring/module settings in PLC
IO	Off(LED A, LED B): port closed	If you need to use it, please open the port in the settings
	Green(LED A): normal channel signal, input signal is within the valid scope	
	Red(LED A): input signal is not within the scope	The temperature exceeds the module port measurement range
	Red(LED A, LED B): port disconnected	Check circuit connections for errors or malfunctions

Note: When the Link LED light is always off, if there is no abnormality in checking the cable and replacing other modules, it means that the product is working abnormally. Please contact the manufacturer for technical consultation.

4.1.3 ULK-08AIRT-M2P6 Dimension

The size of ULK-08AIRT-M2P6 is 155mm × 53mm × 28.7mm, including 4 Φ 4.3mm mounting holes. The depth of the mounting holes is 10mm, as shown in the figure below:



5. Product Installation

5.1 Installation Precautions

In order to prevent product malfunction, malfunction, or negative impact on performance and equipment, please observe the following items.

5.1.1 Installation Site

Notice

Please avoid installing near devices with high heat dissipation (heaters, transformers, large-capacity resistors, etc.)

Notice

Please avoid installing it near equipment with serious electromagnetic interference (large motors, transformers, transceivers, frequency converters, switching power supplies, etc.).

This product uses PN communication. Radio waves (noise) generated by transceivers, motors, inverters, switching power supplies, etc. may affect the communication between the product and other modules.

When these devices are around, it may affect the communication between the product and the module or damage the internal components of the module. When using this product near these devices, please confirm the effects before use.

Notice

When multiple modules are installed close to each other, the service life of the modules may be shortened due to the inability to dissipate heat. Please keep a distance of more than 20mm between the modules.

5.1.2 Application



Do not use AC power. Otherwise, there is a risk of rupture, seriously affecting the safety of personal and equipment.

Attention

Please use a power-limited current source to operate the device, that is, the power supply must have overvoltage and overcurrent protection functions. In order to prevent the power failure of this equipment, affecting the safety of other equipment; or the failure of external equipment, affecting the safety of this equipment.

Attention

Please avoid wrong wiring. Otherwise, there is a risk of rupture and burnout. It may affect the safety of personal and equipment.

5.1.3 Usage

Attention

Do not bend the cable within a radius of 40mm. Otherwise there is a risk of disconnection.

Attention


If you feel that the product is abnormal, please stop using it immediately and contact the company after cutting off the power.

5.2 Hardware Interface

5.2.1 ULK-08AIRT-M2P6 Interface Definition

Power Port Definition



The power port uses a 5-pin connector, and the pins are defined as follows:

Power Data Port Pin Definition			
Port	power supply	M12, 5 pins, A-code, Male	<p style="text-align: center;">Male</p>  <p style="text-align: center;">1. V+ 2. N/C 3. 0V 4. C/Q 5. N/C</p>
	input voltage	18...30 VDC (type.24VDC)	
	maximum current	1A	
	static working current I _C	≤80mA	
	power reverse polarity protection	yes	
M12	tightening torque	M12:0.5Nm	
	protocol	IO-Link	
Female & Male	transfer speed	38.4 kbit/s (COM2)	
	minumum cycle time	55ms	
Pin definition			

Note: Use 26AWG for power input connector.

IO-Link Port Definition

The IO-Link port uses a 5-pin connector, and the pins are defined as follows:

I/O Port Pin Definition							
Pin Definition		Address Distribution					
PT100/PT1000/PT500	J/K/E/N/R/S/B/T thermocouple						
M12(J1~J8)	M12(J1~J8)						
							
Class A	Class A						
1. RTD+	1. TC-						
2. Is+	2. N/C						
3. RTD-	3. TC+						
4. Is-	4. N/C						
5. FE	5. FE						
		Port	Byte	AI	Port	Byte	AI
		J1	Byte0	AI1 LSB	J5	Byte8	AI5 LSB
			Byte1	AI1 MSB		Byte9	AI5 MSB
		J2	Byte2	AI2 LSB	J6	Byte10	AI6 LSB
			Byte3	AI2 MSB		Byte11	AI6 MSB
		J3	Byte4	AI3 LSB	J7	Byte12	AI7 LSB
			Byte5	AI3 MSB		Byte13	AI7 MSB
		J4	Byte6	AI4 LSB	J8	Byte14	AI8 LSB
			Byte7	AI4 MSB		Byte15	AI8 MSB

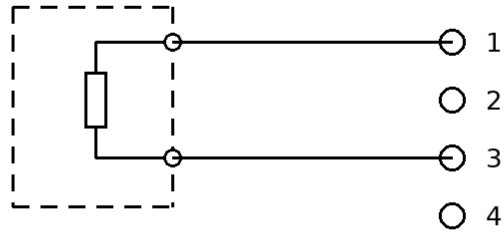
Pin 5 (FE) is connected to the ground plate of the module. If the shielding layer of the connected temperature sensor needs to be grounded, please connect pin 5 to the shielding layer and ground the grounding plate of the module.

Note: Use 26AWG for signal input connector.

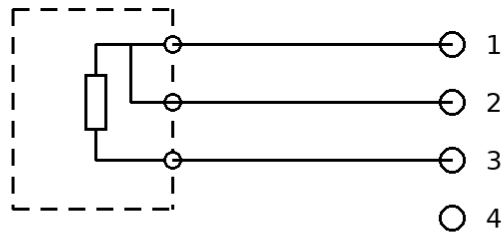
5.2.2 ULK-08AIRT-M2P6 Wiring Diagram

PT100/PT500/PT1000

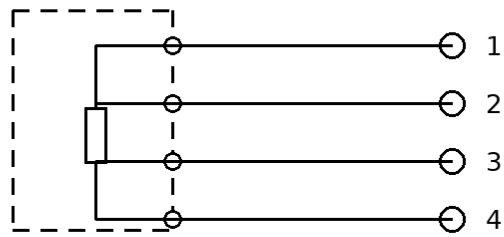
ULK-08AIRT-M2P6



2-wire



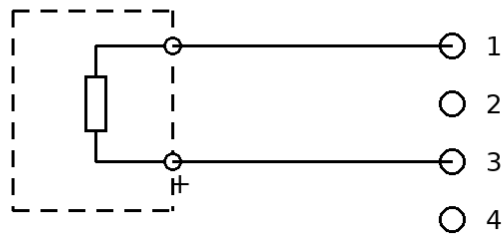
3-wire



4-wire

J/K/R/E/S/B/T thermocouple

ULK-08AIRT-M2P6



2-wire

5.2.3 ULK-08AIRT-M2P6 Signal Input Range and Data Format

1, Unsigned Data Format

each range corresponds to an unsigned value

Each Range Corresponds to an Unsigned Value			
Thermal Resistance	PT100	-200~850°C	0~65535
	PT500	-200~850°C	0~65535
	PT1000	-200~850°C	0~65535
Thermocouple	J	-200~1200°C	0~65535
	K	-200~1372°C	0~65535
	E	-200~1000°C	0~65535
	N	-200~1300°C	0~65535
	R	0~1768°C	0~65535
	S	0~1768°C	0~65535
	B	400~1820°C	0~65535
T	-250~400°C	0~65535	

In the case of unsigned data format, the selected input range is expressed as a number between 0000hex and full-scale values (FFFFhex (16-bit resolution)) according to the corresponding resolution. Based on this digital value, the input signal can be calculated by the following formula:

$$\text{Temperature [}^{\circ}\text{C]} = \text{port input value} * ((T_{\text{max}} - T_{\text{min}}) / 65535) + T_{\text{min}}$$

Note: The port input value is the digitized value of the input signal.

T_{max}, is the upper limit value of the selected input range, and T_{min}, is the lower limit value of the selected input range.

Example 1:

The temperature measurement mode is set to PT100

The digitized value read via IO-Link is 1234hex = 4660

Then the measuring temperature range is -200°C to 850°C

Therefore, $T_{min} = -200^{\circ}\text{C}$, $T_{max}=850^{\circ}\text{C}$

Temperature [T]= $4660 * ((850 - (-200)) / 65535) + (-200) = -125.34^{\circ}\text{C}$

2, Quantized Data Format

If it is in dimensional format, the measured temperature value will be converted to degrees Celsius and this value will be sent as process data.

It is always treated as right-aligned data and is in signed 16-bit form.

(1) MSB is 0, indicating a positive value, with 1 decimal place retained.

Temperature [$^{\circ}\text{C}$]=port input value/10

(2) MSB is 1, indicating a negative value, retaining 1 decimal place.

When the PLC data monitoring format is unsigned decimal:

Temperature [$^{\circ}\text{C}$]=(port input value-65536)/10

When the PLC data monitoring format is signed decimal:

Temperature [$^{\circ}\text{C}$]=port input value/10

For example:

The temperature measurement mode is set to PT100

(1) Positive value:

The digitized value read via IO-Link is 4D2hex = 1234

Temperature [$^{\circ}\text{C}$] = $1234 / 10 = 123.4^{\circ}\text{C}$

(2) Negative value:

The digitized value read via IO-Link is

Signed decimal display: FF00hex = -256

Temperature [$^{\circ}\text{C}$] = $-256 / 10 = -25.6^{\circ}\text{C}$

Unsigned decimal display: FF00hex = 65280

Temperature [°C] = (65280-65536)/10 = -25.6°C

5.2.4 ULK-08AIRT-M2P6 Process Image Area Allocation

eight-channel temperature module process data sheet

ULK-08AIRT-M2P6 Process Output Data									
Byte	Function Description								
	Description	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
0	reserve								
1	reserve								
2-3	port 1 process output data								
4-5	port 2 process output data								
6-7	port 3 process output data								
8-9	port 4 process output data								
10-11	port 5 process output data								
12-13	port 6 process output data								
14-15	port 7 process output data								
16-17	port 8 process output data								
ULK-08AIRT-M2P6 Process Input Data									
Byte	Function Description								
	Description	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
0	alarms							ISDU storage error	LowUS
1	CPOverRange	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
2	ICInterErr	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
3	short circuit or disconnection	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
4	> upper limit of measurement	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
5	< lower limit of measurement	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
6	threshold set point 1	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
7	threshold set point 2	port 8	port 7	port 6	port 5	port 4	port 3	port 2	port 1
8-9	cold junction compensation 1								
10-11	cold junction compensation 2								
12-13	port 1 process input data								
14-15	port 2 process input data								
16-17	port 3 process input data								
18-19	port 4 process input data								
20-21	port 5 process input data								
22-23	port 6 process input data								
24-25	port 7 process input data								
26-27	port 8 process input data								

Note: The threshold needs to be set in the module parameter data. For detailed explanation of parameter data, see page 27 of this manual.

5.2.5 ULK-08AIRT-M2P6 Identification Data and Parameter Data

The identification data and parameter data are shown in the table below,

	DPP	ISDU		object name	length	measuring range	defaults
	index	index	subindex				
Identification Data	07 hex			supplier ID	2 bytes	read only	
	08 hex			device ID	3 bytes		
	09 hex						
	0A hex						
		10 hex	0	supplier name	8 bytes		
		11 hex	0	supplier text	16 bytes		
		12 hex	0	product name	14 bytes		
		13 hex	0	product ID	8 bytes		
		14 hex	0	product text	14 bytes		
		15 hex	0	serial number	3 bytes		
		16 hex	0	hardware version	19 bytes		
		17 hex	0	firmware version	19 bytes		
	18 hex	0	application specific label	3 bytes			
	02 hex	0	standard command	1 byte			
Parameter Data		F0hex	1-8	port mode	8 bytes	0: off 1: PT100 2: PT500 3: PT1000 4: J type thermocouple 5: K-type thermocouple 6: E-type thermocouple 7: N-type thermocouple	0
		F1hex	1-8	RTD wiring mode	8 bytes	0: 2wire 1: 3wire 2: 4wire	0
		F5hex	1-8	process data format	8 bytes	0: dimensionless 1: Signed and dimensional	1
		F6hex	1-8	switch point 1	16 bytes	0hex- FFFFhex	0
		F7hex	1-8	switch point 2	16 bytes	0hex- FFFFhex	0
		F8hex	1-8	filter time	8 bytes	0 - 10 (s)	0

The identification data is the default data and cannot be modified.

Parameter data is changeable data,

1, F0hex the port mode has the following configuration,

00hex = port closed	06hex = E thermocouple
---------------------	------------------------

01hex = PT100 thermal resistance	07hex = N thermocouple
02hex = PT500 thermal resistance	08hex = R thermocouple
03hex = PT1000 thermal resistance	09hex = S thermocouple
04hex = J thermocouple	10hex = B thermocouple
05hex = K thermocouple	11hex = T thermocouple

2, F1hex RTD Wiring Mode,

00hex = 2-wire

01hex = 3-wire

02hex= 4-wire

3, F5hex Process Data Format,

00hex = dimensionless

01hex = signed and dimensioned

4, F6hex, F7hex threshold point,

Threshold point 1 is a high threshold, threshold point 2 is a low threshold, greater than threshold point 1 and less than threshold point 2, the corresponding output of threshold point 1 and threshold point 2 is 1, **the threshold point value must be set according to the process data format.**

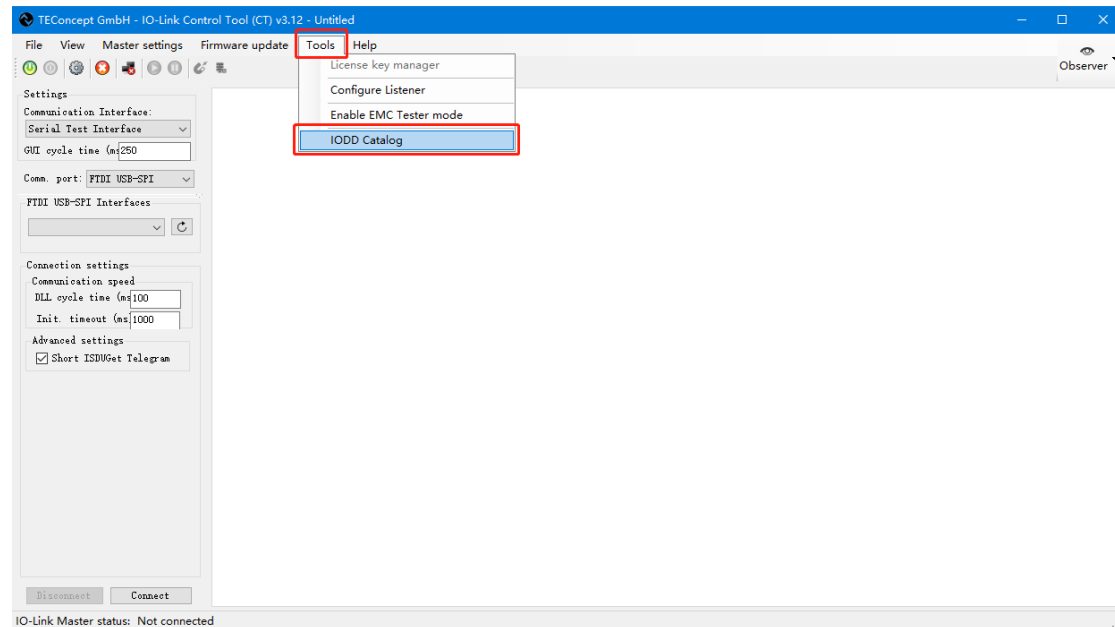
5, F8hex Filter Time,

The filtering time is for each port, and the writable value is 0~10, that is, an average sending is made every N seconds.

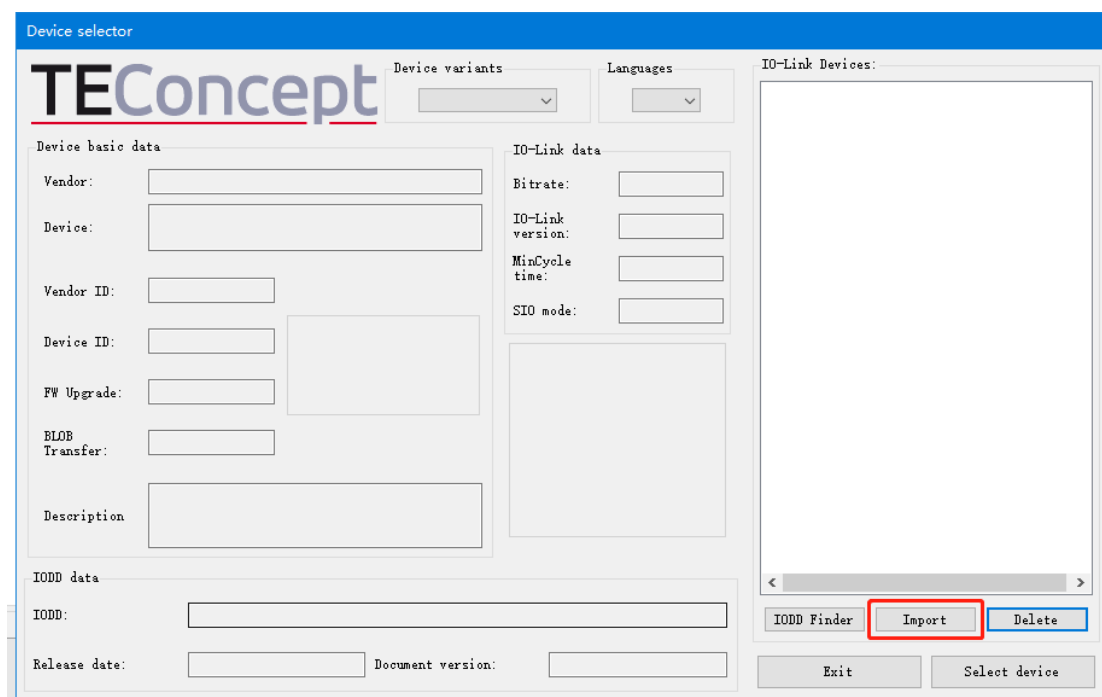
6.2 Configuration Using IODD

6.2.1 Import IODD File into IO-Link Control Tool (CT)

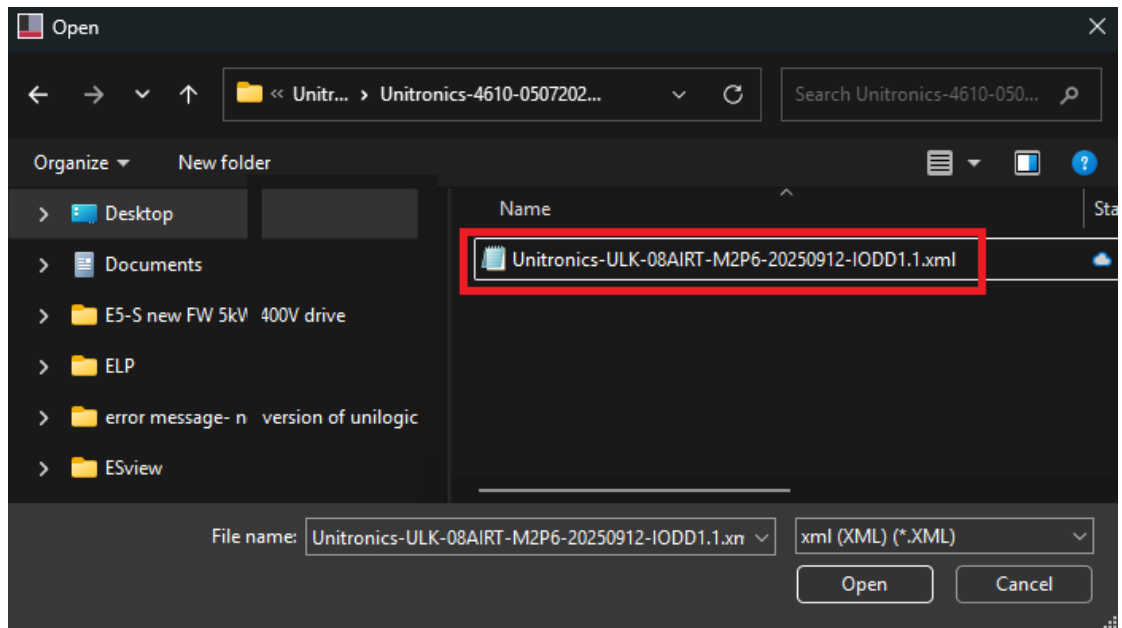
Open the software, select "Tools" in the menu bar, and click the "IODD Catalog" button



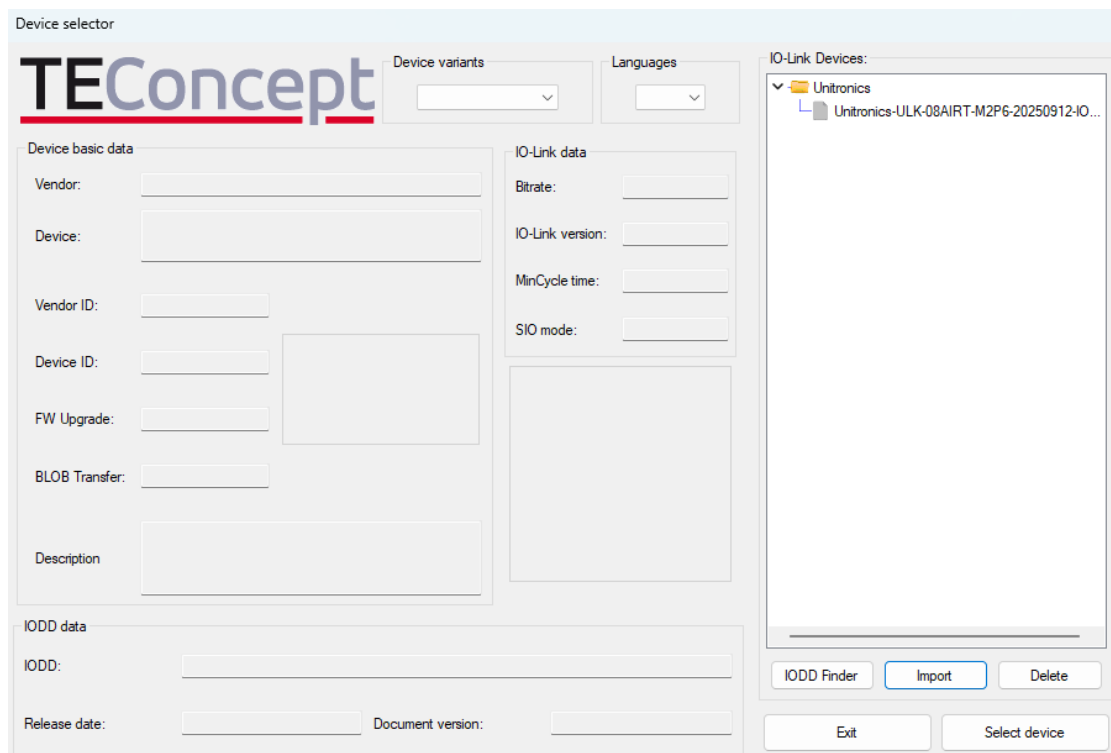
Enter the Device selector interface and click the "Import" button,



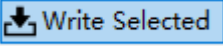
Find the IODD file, click on the file, and click to open,



In the Catalog, you can find that the Unitronics folder appears and contains the ULK-08AIRT-M2P6 file

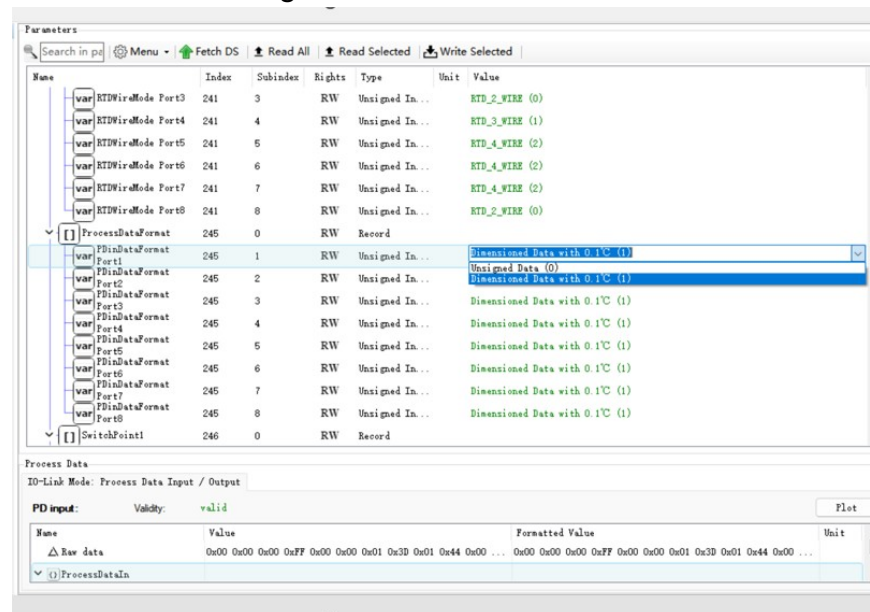


6.2.3 ULK-08AIRT-M2P6 Parameter Setting

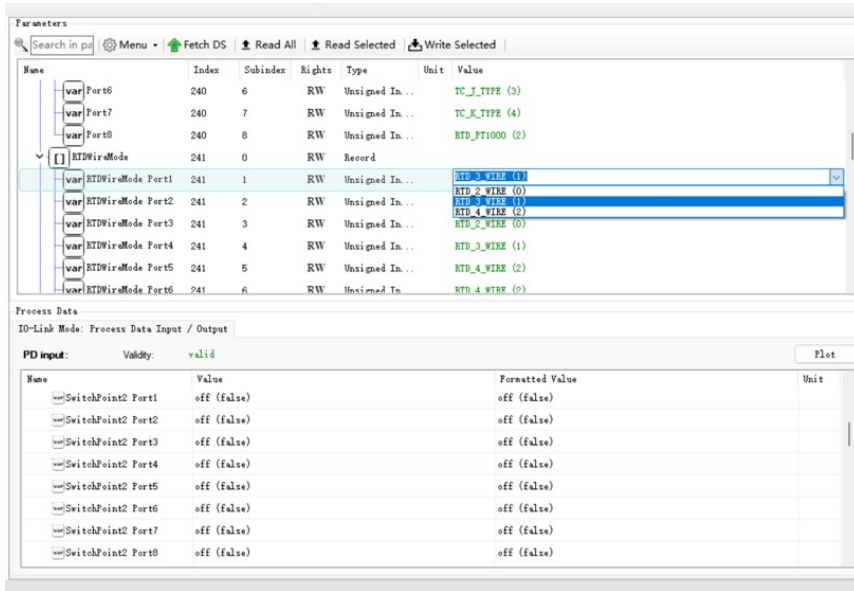
The Port Mode parameter is the port mode setting. The first item "Chn close" means the port is closed, that is, the port is not used. After setting, the option turns blue, and you need to click the  button.

You need to click every time you change it. button, the option will turn green downloading after downloading.

“ProcessDataFormat” is the process-data format selection. It includes unsigned dimensionless and signed dimensioned data formats.



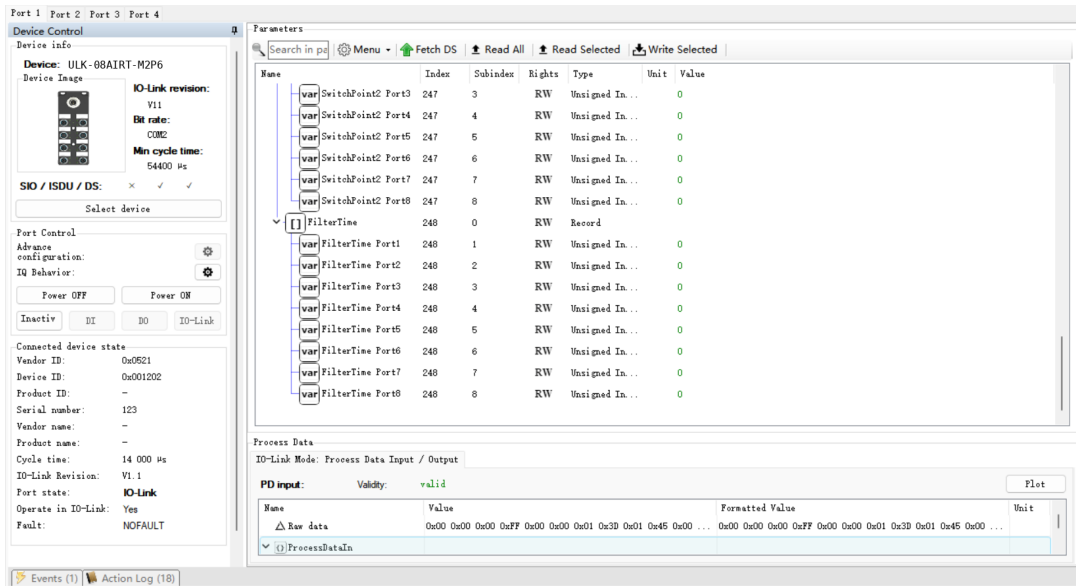
“RTDWireMode” selects the wiring method for RTD sensors.



SwitchPoint1 and SwitchPoint2 are the threshold setting, SwitchPoint1 is the high threshold, SwitchPoint2 is the low threshold, greater than SwitchPoint1 and less than SwitchPoint2, the corresponding threshold point 1 and threshold point 2 exceeds the threshold judgment point (see process data sheet) output is 1, **note that the threshold point value must be set according to the process data format,**



filter time The filter time is an average of data sent out every N seconds for each port. The writeable value is 0~10,



6.2.4 ULK-08AIRT-M2P6 Input Testing

The "Process Data" below is the process data, which can be observed in real time when online PdinValue Port N is the actual temperature data of each port, and the display format is related to the setting

In the figure below, ColdPoint1 and ColdPoint2 are the cold junction compensation values.

SwitchPoint1 and SwitchPoint2 are the display of exceeding threshold judgment flags,

Process Data
IO-Link Mode: Process Data Input / Output

PD input: Validity: valid Plot

Name	Value	Formatted Value	Unit
var ColdPoint1	330	330	
var ColdPoint2	319	319	
var SwitchPoint2 Port1	off (false)	off (false)	
var SwitchPoint2 Port2	off (false)	off (false)	
var SwitchPoint2 Port3	off (false)	off (false)	
var SwitchPoint2 Port4	off (false)	off (false)	
var SwitchPoint2 Port5	off (false)	off (false)	
var SwitchPoint2 Port6	off (false)	off (false)	
var SwitchPoint2 Port7	off (false)	off (false)	
var SwitchPoint2 Port8	off (false)	off (false)	

“**Wirebreak**” displays the disconnection flags of each port. If the port is set to be unused, no error will be reported for the port disconnection,

Process Data

IO-Link Mode: Process Data Input / Output

PD input: Validity: **valid** Plot

Name	Value	Formatted Value	Unit
<input type="checkbox"/> Wirebreak Port1	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port2	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port3	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port4	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port5	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port6	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port7	no short or wirebreak (false)	no short or wirebreak (false)	
<input type="checkbox"/> Wirebreak Port8	no short or wirebreak (false)	no short or wirebreak (false)	

“**UnderFlow**” is a low overflow alarm, and **OverFlow** is a high overflow alarm. For example, the range is -200~850°C, when it is lower than -200°C, UnderFlow is set to 1, and when it is higher than 850°C, OverFlow is set to 1,

Process Data

IO-Link Mode: Process Data Input / Output

PD input: Validity: **valid** Plot

Name	Value	Formatted Value	Unit
<input type="checkbox"/> UnderFlow Port1	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port2	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port3	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port4	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port5	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port6	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port7	under flow (true)	under flow (true)	
<input type="checkbox"/> UnderFlow Port8	under flow (true)	under flow (true)	
<input type="checkbox"/> OverFlow Port1	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port2	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port3	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port4	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port5	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port6	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port7	no over flow (false)	no over flow (false)	
<input type="checkbox"/> OverFlow Port8	no over flow (false)	no over flow (false)	

“**InterICErr**” is the internal error warning of the chip. The reasons for the warning are: cold junction failure, ADC voltage failure, noise, etc,

Process Data
IO-Link Mode: Process Data Input / Output

PD input: Validity: - Plot

Name	Value	Formatted Value	Unit
InterICErr Port1	(Unknown)	(Unknown)	
InterICErr Port2	(Unknown)	(Unknown)	
InterICErr Port3	(Unknown)	(Unknown)	
InterICErr Port4	(Unknown)	(Unknown)	
InterICErr Port5	(Unknown)	(Unknown)	
InterICErr Port6	(Unknown)	(Unknown)	
InterICErr Port7	(Unknown)	(Unknown)	
InterICErr Port8	(Unknown)	(Unknown)	

“**CPOverRange**” compensates for cold junction temperature out of range warning,

Process Data
IO-Link Mode: Process Data Input / Output

PD input: Validity: - Plot

Name	Value	Formatted Value	Unit
CPOverRange Port1	(Unknown)	(Unknown)	
CPOverRange Port2	(Unknown)	(Unknown)	
CPOverRange Port3	(Unknown)	(Unknown)	
CPOverRange Port4	(Unknown)	(Unknown)	
CPOverRange Port5	(Unknown)	(Unknown)	
CPOverRange Port6	(Unknown)	(Unknown)	
CPOverRange Port7	(Unknown)	(Unknown)	
CPOverRange Port8	(Unknown)	(Unknown)	

“**LowUS**” is a low voltage alarm, ISDU Store is an error in module parameter reading and writing,

Process Data
IO-Link Mode: Process Data Input / Output

PD input: Validity: - Plot

Name	Value	Formatted Value	Unit
CPOverRange Port4	(Unknown)	(Unknown)	
CPOverRange Port5	(Unknown)	(Unknown)	
CPOverRange Port6	(Unknown)	(Unknown)	
CPOverRange Port7	(Unknown)	(Unknown)	
CPOverRange Port8	(Unknown)	(Unknown)	
LowUS	(Unknown)	(Unknown)	
ISDU Store	(Unknown)	(Unknown)	