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1. Description

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 IO-Link device module products of the ULK-EIP 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.

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.

Attention

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

There shall be a statement in the instructions that if the equipment is used in a manner not specified by the manufacturer, 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. 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.

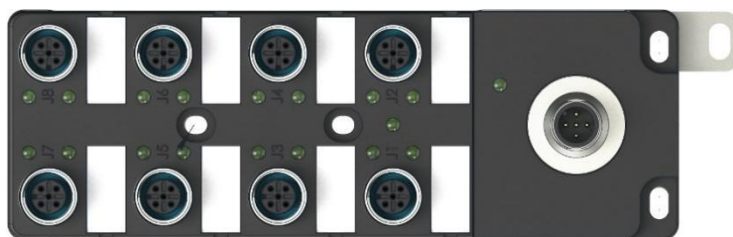
This IO-Link has the following features:

- ❖ 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-0808AIO-M2P6



4.1.1 ULK-0808AIO-M2P6 Specification

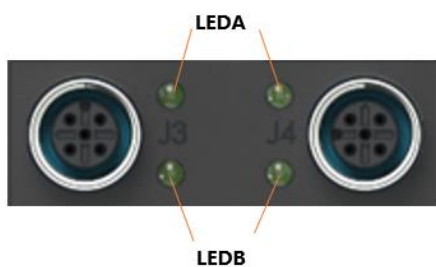
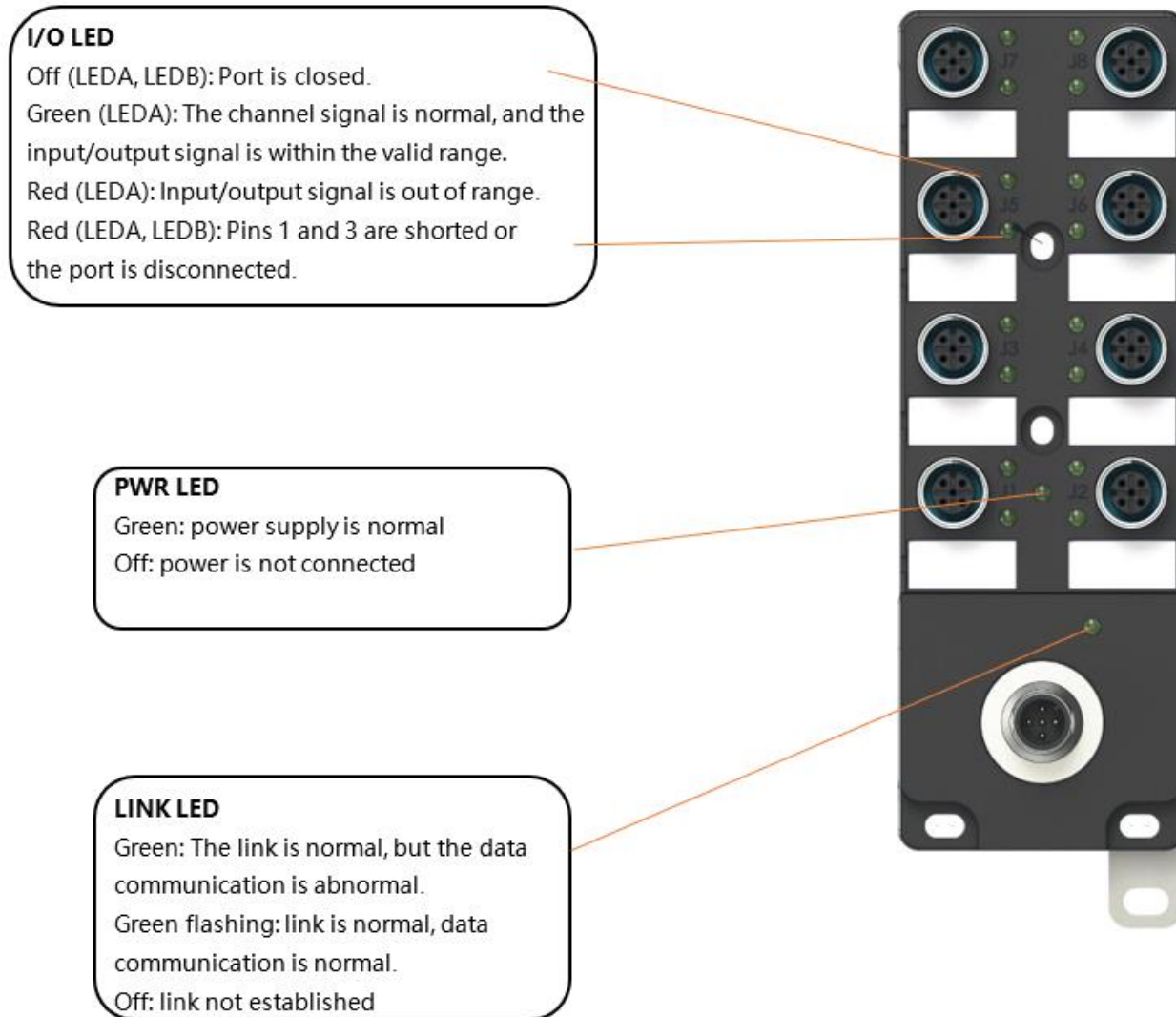
The technical specifications of ULK-0808AIO-M2P6 are as follows:

Basic parameters	
Housing material	PA6 + GF
Housing color	black
Protection level	IP67, fully potted with epoxy
Dimension	155mm×53mm×29mm
Weight	217g
Operating temperature	-25°C...70°C
Storage/transport temperature	-40°C...85°C
Operating humidity	5%...95%
Storage/transport humidity	5%...95%
Operating atmospheric pressure	80KPa...106KPa
Storage/Transport Atmosphere	80KPa...106KPa
I/O port tightening torque	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
Electromagnetic Compatibility (EMC)	according to IEC61000-4-2,-3,-4
Certification	CE, RoHS
Mounting hole size	Φ4.3mm ×4

Bus transfer	
Connection method	M12 A-code; 5 pins, female
Protocol	IOLINK
Transfer speed	38.4 kbit/s (COM2)
Characteristic	Compliant with the protocol Features
Alarm function	diagnostic alarm, process alarm
Minimum cycle time	55ms
Communication port tightening torque	M12:0.5Nm
Power supply	
Power connection method	M12, 5-pin, A-code, shared with bus transmission
System supply voltage	18..30 VDC (type.24VDC)
Total current IS/IA	≤1A
No-load current consumption	≤80mA
Overvoltage protection	enabled
Power reverse connection protection	enabled
Power port tightening torque	M12:0.5Nm
Port parameters	
Input and output quantity	8 channels current or voltage
Input and output port location	J1..J8
Current input and output range	0~20 mA 4~20 mA
Voltage input and output range	0~+5 VDC; 0~+10 VDC; +5~+10 VDC
Diagnosis	Contains self-diagnosis
Sensor power supply	24VDC
Ripple	< 1 %
Voltage input and output error	<±0.3% full scale
Current input and output error	<±0.3% full scale
Resolution	16 bit
Measurement display and output format	16 bit unsigned integer
Factory settings	0~+10 VDC input

4.1.2 ULK-0808AIO-M2P6 LED Definition

ULK-0808AIO-M2P6 is shown in the below figure.

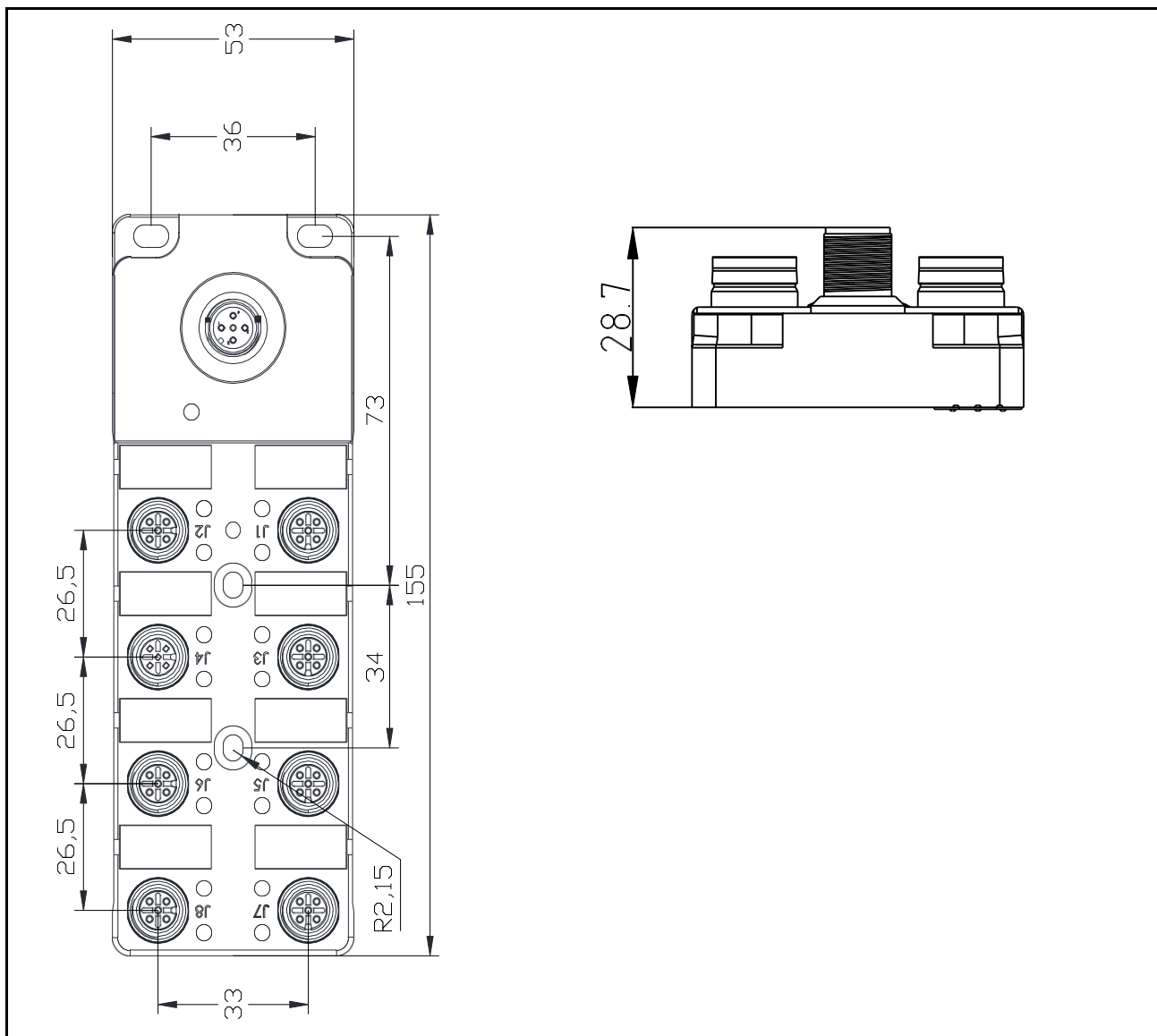


LED Definition		
	Status	Solution
PWR	Green: power supply is normal	
	Off: The module is not powered	Check power wiring
LINK	Green: The link is normal and data communication is abnormal.	Check the configuration of the module in the PLC
	Flashing green: The link is normal and data communication is normal.	
	Off: link not established	Check the connection cable/check the configuration of the module in the PLC
IO	Off (LEDA, LEDB): Port is closed	If you need to use it, please open the port in the settings
	Green (LEDA): The channel signal is normal and the input/output signal is within the valid range.	
	Red (LEDA): Input/output signal is out of range	Check that the analog sensor input/output current or voltage exceeds the module port measurement range
	Red (LEDA, LEDB): Pins 1 and 3 are short-circuited or the port is 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-0808AIO-M2P6 Dimension

The size of the ULK-0808AIO-M2P6 is 155mm × 53mm × 28.7mm, including 4 mounting holes of $\Phi 4.3$ mm, and the depth of the mounting holes is 10mm, as shown in the figure below:



5. Product Installation

5.1 Installation Precautions

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 more than 20mm between the modules.

5.1.2 Application

⚠ DANGER

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.

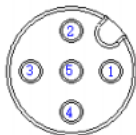
Attention If you feel that the product is abnormal, please stop using it immediately and contact the company after cutting off the power.

5.2 Hardware Interface

5.2.1 ULK-0808AIO-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	
	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	<p>1. V+</p> <p>2. N/C</p> <p>3. 0V</p> <p>4. C/Q</p> <p>5. N/C</p>
Female & Male	protocol	IOLINK	
	transfer speed	38.4 kbit/s (COM2)	
Pin definition	minumum cycle time	55ms	

IO-Link Port Definition

The IO-Link port uses a 3-pin connector, and the pins are defined as follows:

I/O Port Pin Definition																																																	
Port	Pin Definition			Address Distribution																																													
	M12 A-code Female	 <p>Class A</p> <p>1. V+</p> <p>2. AI+/AO+</p> <p>3. 0 V</p> <p>4. N/C</p> <p>5. FE</p>	<table border="1"> <thead> <tr> <th>Port</th> <th>Byte</th> <th>AIO</th> </tr> </thead> <tbody> <tr> <td rowspan="2">J1</td> <td>Byte0</td> <td>AIO1 LSB</td> </tr> <tr> <td>Byte1</td> <td>AIO1 MSB</td> </tr> <tr> <td rowspan="2">J2</td> <td>Byte2</td> <td>AIO2 LSB</td> </tr> <tr> <td>Byte3</td> <td>AIO2 MSB</td> </tr> <tr> <td rowspan="2">J3</td> <td>Byte4</td> <td>AIO3 LSB</td> </tr> <tr> <td>Byte5</td> <td>AIO3 MSB</td> </tr> <tr> <td rowspan="2">J4</td> <td>Byte6</td> <td>AIO4 LSB</td> </tr> <tr> <td>Byte7</td> <td>AIO4 MSB</td> </tr> </tbody> </table>	Port	Byte	AIO	J1	Byte0	AIO1 LSB	Byte1	AIO1 MSB	J2	Byte2	AIO2 LSB	Byte3	AIO2 MSB	J3	Byte4	AIO3 LSB	Byte5	AIO3 MSB	J4	Byte6	AIO4 LSB	Byte7	AIO4 MSB	<table border="1"> <thead> <tr> <th>Port</th> <th>Byte</th> <th>AIO</th> </tr> </thead> <tbody> <tr> <td rowspan="2">J5</td> <td>Byte8</td> <td>AIO5 LSB</td> </tr> <tr> <td>Byte9</td> <td>AIO5 MSB</td> </tr> <tr> <td rowspan="2">J6</td> <td>Byte10</td> <td>AIO6 LSB</td> </tr> <tr> <td>Byte11</td> <td>AIO6 MSB</td> </tr> <tr> <td rowspan="2">J7</td> <td>Byte12</td> <td>AIO7 LSB</td> </tr> <tr> <td>Byte13</td> <td>AIO7 MSB</td> </tr> <tr> <td rowspan="2">J8</td> <td>Byte14</td> <td>AIO8 LSB</td> </tr> <tr> <td>Byte15</td> <td>AIO8 MSB</td> </tr> </tbody> </table>	Port	Byte	AIO	J5	Byte8	AIO5 LSB	Byte9	AIO5 MSB	J6	Byte10	AIO6 LSB	Byte11	AIO6 MSB	J7	Byte12	AIO7 LSB	Byte13	AIO7 MSB	J8	Byte14	AIO8 LSB	Byte15
Port	Byte	AIO																																															
J1	Byte0	AIO1 LSB																																															
	Byte1	AIO1 MSB																																															
J2	Byte2	AIO2 LSB																																															
	Byte3	AIO2 MSB																																															
J3	Byte4	AIO3 LSB																																															
	Byte5	AIO3 MSB																																															
J4	Byte6	AIO4 LSB																																															
	Byte7	AIO4 MSB																																															
Port	Byte	AIO																																															
J5	Byte8	AIO5 LSB																																															
	Byte9	AIO5 MSB																																															
J6	Byte10	AIO6 LSB																																															
	Byte11	AIO6 MSB																																															
J7	Byte12	AIO7 LSB																																															
	Byte13	AIO7 MSB																																															
J8	Byte14	AIO8 LSB																																															
	Byte15	AIO8 MSB																																															

Pin 5 (FE) is connected to the ground plate of the module.

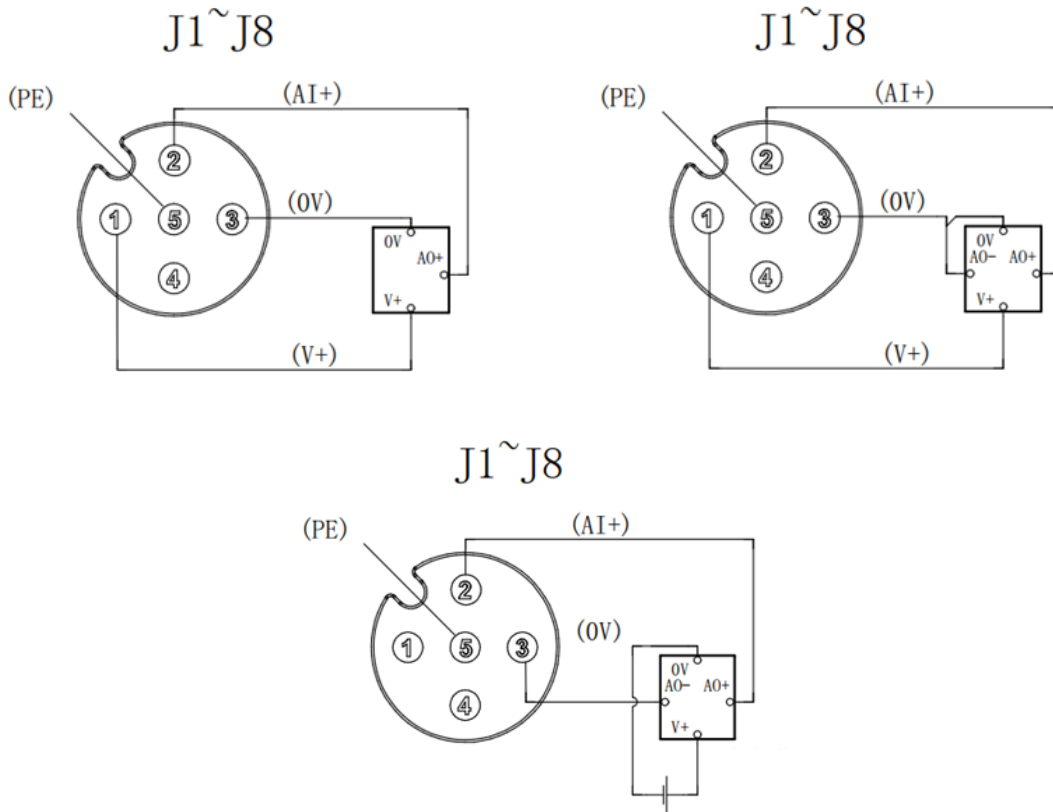
If the shielding layer of the connected temperature sensor needs to be grounded, please connect pin 5 to the shielding layer and ground the grounding plate of the module.

Note: Use 26AWG for signal input connector.

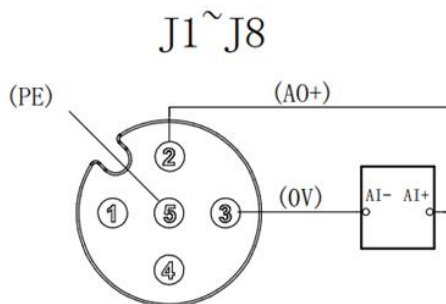
5.2.2 ULK-0808AIO-M2P6 Wiring Diagram

1. The voltage and current input signal, that is, the jack is connected to the analog sensor, is divided into three-wire and four-wire systems.

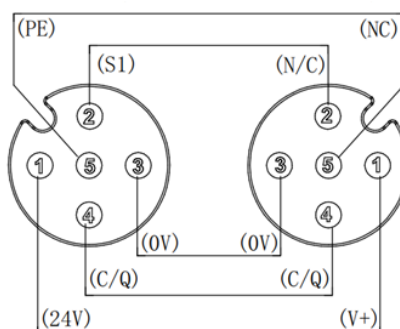
1. Input / Output Signal



2. Voltage and current type output signal, that is, the jack is connected to an analog actuator.



3. ULK-0808AIO-M2P6 substation is connected to the IO LINK port (pins 2 and 5 are allowed not to be wired).



5.2.3 ULK-0808AIO-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		
Voltage	0 V ~ 10 V	0~65535
	5 V ~ 10 V	0~65535
	0 V ~ 5 V	0~65535
Current	4~20ma	0~65535
	0~20ma	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. From this numerical value, the input signal can be calculated using the following formula:

Voltage input (0V-10V、5V - 10V、0V - 5V):

Input voltage[V]= Port input value* ((Vmax-Vmin) /65535) + Vmin

Input current (0-20mA、4-20mA):

Input current[mA]= Port input value* ((Imax-Imin) /65535) + Imin

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

Vmax, Imax, are the upper limit values of the selected input range, Vmin, Imin, are the lower limit values of the selected input range.

Example 1:

Analog mode is set to 0-10V.

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

If it is 0-10V, the analog input voltage range is 0V to 10V.

Therefore, Vmin = 0V, Vmax = 10V.

Input voltage [V] = 4660*((10-0)/65535) +0 = 0.711V

Example 2:

Analog mode is set to 4-20mA.

The digitized value read via IO-Link is 2468hex = 9320.

If 4-20 mA, the analog input current range is 4 mA to 20 mA.

Therefore, Imin = 4 mA and Imax = 20 mA.

Input current [mA] = 9320*((20-4)/65535) +4 = 6.275 mA

2. Dimensional data format

If it is a dimensional format, the measured voltage and current will be converted into mV and uA values, and this value will be sent as process data.

It is always treated as right-justified data and is in the form of a 16-bit value.

Voltage input (0V-10V, 5V – 10V, 0V – 5V):

If positive (MSB = 0):

Input voltage [V] = port input value/1000

Current input (0-20mA, 4-20mA):

Input current [mA] = port input value/1000

Example 1:

Analog mode is set to 0-10V.

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

In the case of a voltage input, the dimension of the dimensioned value is mV.

Input voltage [V] = 4660/1000 = 4.66V

Example 2:

Analog mode is set to 4-20mA.

The digitized value read via IO-Link is 3340hex = 13120.

If 4-20 mA, the analog input current range is 4 mA to 20 mA.

Therefore, Imin = 4 mA and Imax = 20 mA.

Input current [mA] = 13120/1000 = 13.12 mA

5.2.4 ULK-0808AIO-M2P6 Process Image Area Allocation

Eight-channel voltage and current analog interface process data table

AD8 Process Output Data									
Byte	Description								
	Function	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
0	NULL								
1	NULL								
2~3	Port1 process output data								
4~5	Port2 process output data								
6~7	Port3 process output data								
8~9	Port4 process output data								
10~11	Port5 process output data								
12~13	Port6 process output data								
14~15	Port7 process output data								
16~17	Port8 process output data								
AD8 Process Input Data									
Byte	Description								
	Function	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
0	Related alarms	NULL	NULL	NULL	InterSerialErr	InterVocErr	HighTemper	InterBusErr	LowUs
1	Exceeding the upper limit of measurement	Port8	Port7	Port6	Port5	Port4	Port3	Port2	Port1
2	Exceeding the lower limit of measurement	Port8	Port7	Port6	Port5	Port4	Port3	Port2	Port1
3	Short circuit or disconnection	Port8	Port7	Port6	Port5	Port4	Port3	Port2	Port1
4	Threshold set point1	Port8	Port7	Port6	Port5	Port4	Port3	Port2	Port1
5	Threshold set point2	Port8	Port7	Port6	Port5	Port4	Port3	Port2	Port1
6~7	Port1 process input data								
8~9	Port2 process input data								
10~11	Port3 process input data								
12~13	Port4 process input data								
14~15	Port5 process input data								
16~17	Port6 process input data								
18~19	Port7 process input data								
20~21	Port8 process input data								

Note: **The threshold needs to be set within the module parameter data.**

5.2.5 ULK-0808AIO-M2P6 Identification Data and Parameter Data

The identification data and parameter data are shown in the following table:

	DPP	ISDU		Object name	length	Measuring range	Default value
	index	index	sub-index				
Identification Data	07 hex			supplier ID	2 byte	Read only	
	08 hex			device ID	3 byte		
	09 hex						
	0A hex						
		10 hex	0	supplier name	8 byte		
		11 hex	0	supplier text	16 byte		
		12 hex	0	product name	14 byte		
		13 hex	0	product ID	8byte		
		14 hex	0	product text	14 byte		
		15 hex	0	serial number	3 byte		
		16 hex	0	hardware version	19 byte		
	17 hex	0	firmware version	19 byte			
	18 hex	0	application-specific tasks	3 byte			
	02 hex	0	standard commands	1 byte			
Parameter Data		F0hex	1-8	analog mode	8 byte	0hex- FFhex	00hex
		F5hex	1-8	process data format	8 byte	0..2	0
		F6hex	1-8	switch point 1	16 byte	0hex- FFFFhex	0
		F7hex	1-8	switch point 2	16 byte	0hex- FFFFhex	0
		F8hex	1-8	filter depth	8 byte	0hex- FFhex	0
		F9hex	1-8	input and output mode	8 byte	0hex- 1hex	0

The identification data is default data and cannot be modified.

Parameter data is changeable data,

1. F0hex analog mode has the following configuration:

00hex = voltage, 0V – 10V

01hex = current, 4mA – 20mA input and output with disconnection detection

02hex = voltage, 5V – 10V input and output with disconnection detection

04hex = voltage, 0V – 5V

05hex = current, 0mA – 20mA output with disconnection detection

FFhex = port closed

2. F5hex analog data format,

01hex = unsigned

02hex = V/A Units (mV, uA)

3. 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 threshold point 1 and threshold point 2 exceed the threshold point and the output is

3.1 **threshold point values must be set according to the process data format.**

4. F8hex filter depth,

The filtering depth is for each port, and the writeable value is 1~32, that is, every N data is sent out on average.

5, F9hex port direction

The port direction is used to set the input or output mode.

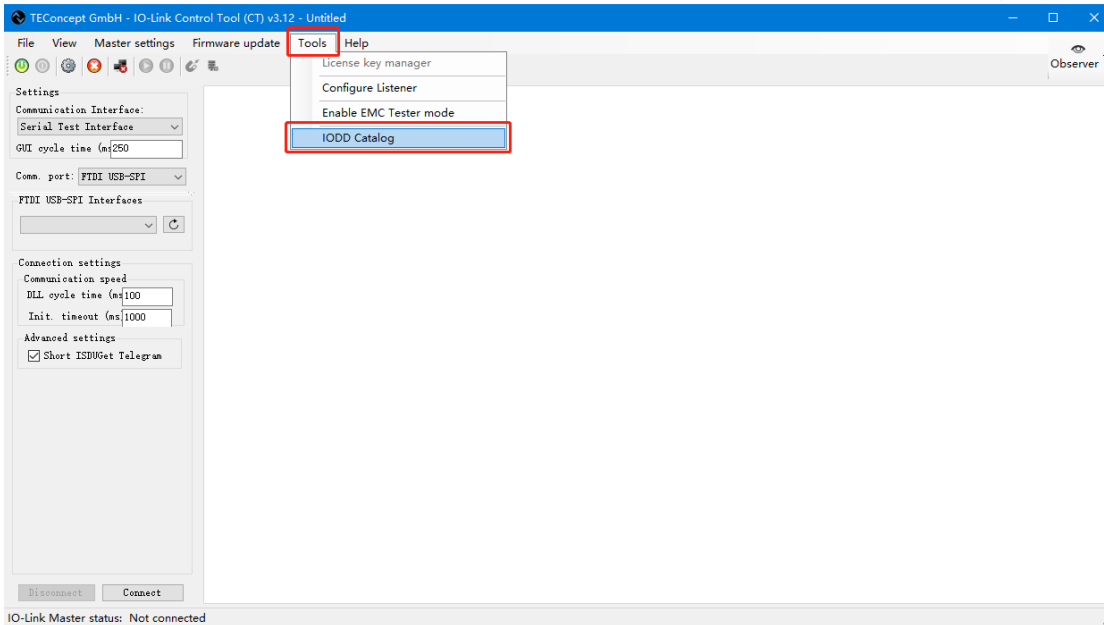
Pay attention to external wiring and electrical appliances before making changes.

6. Product Operation

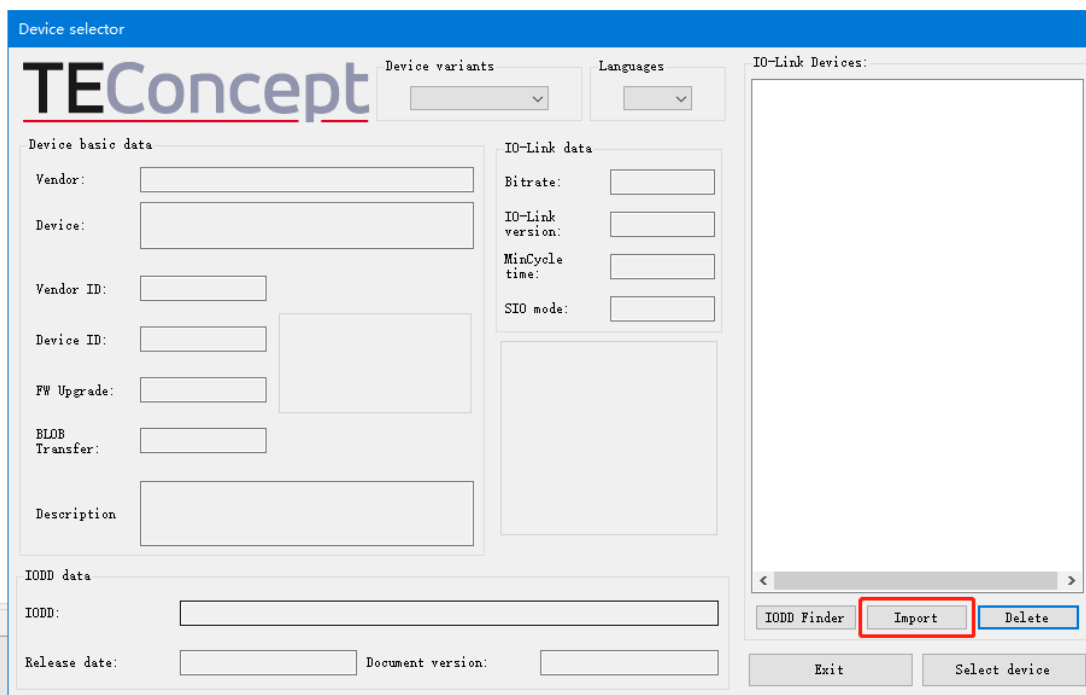
6.2 Configuration Using IODD

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

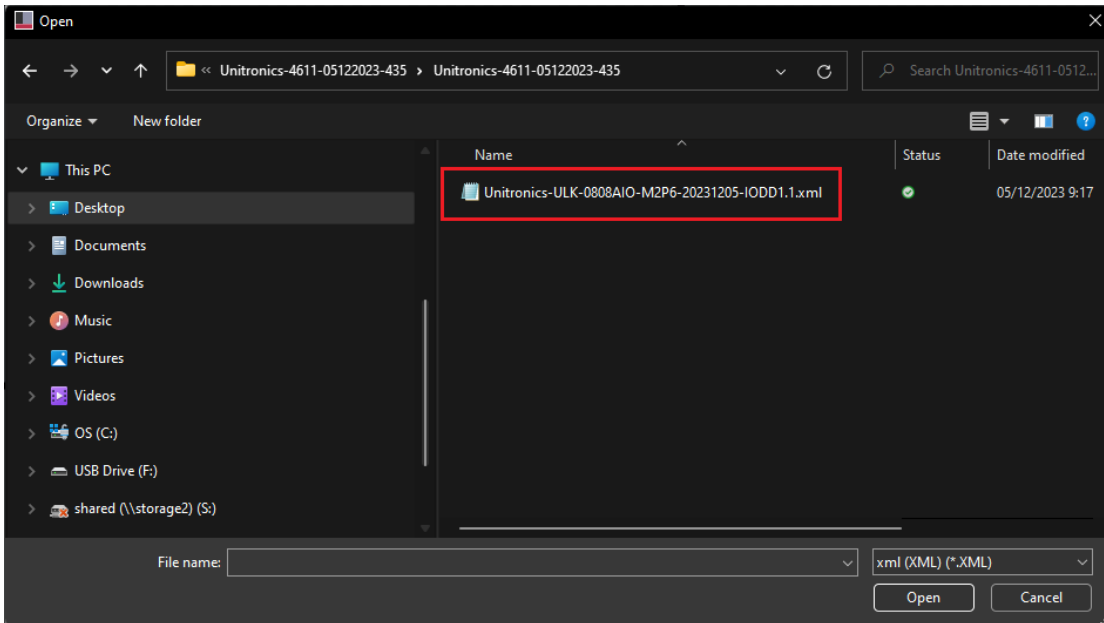
Open the software, select "Tools" in the menu bar, and click the "IODD Catalog" button.



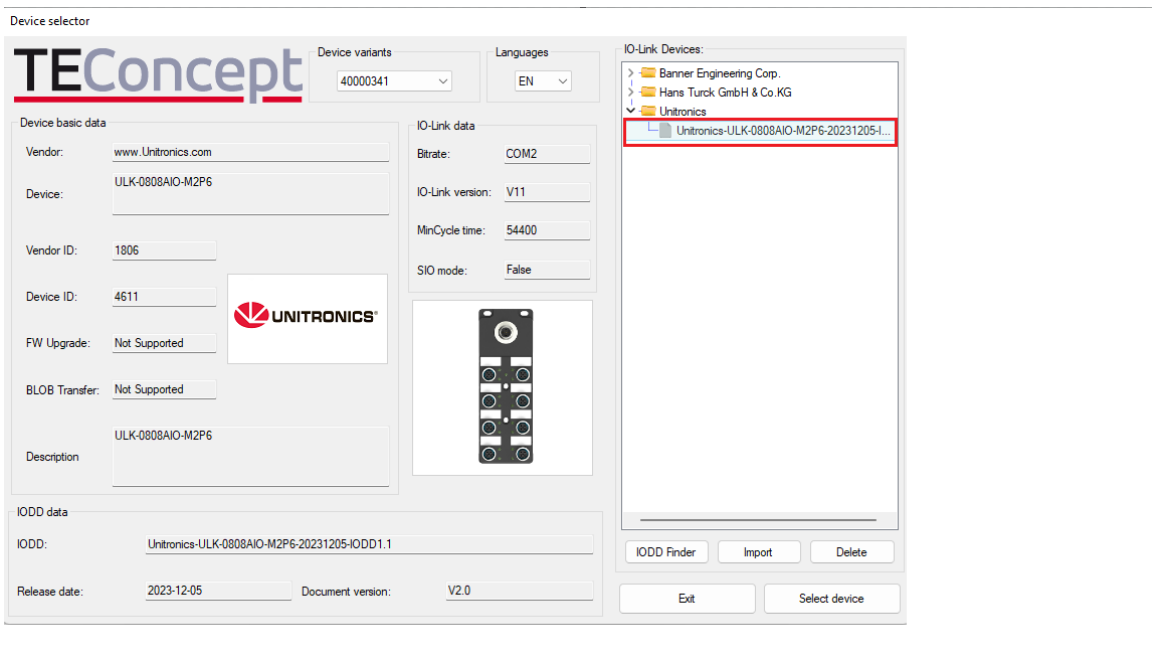
Enter the Device selector interface and click the "Import" button.



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-0808AIO-M2P6.

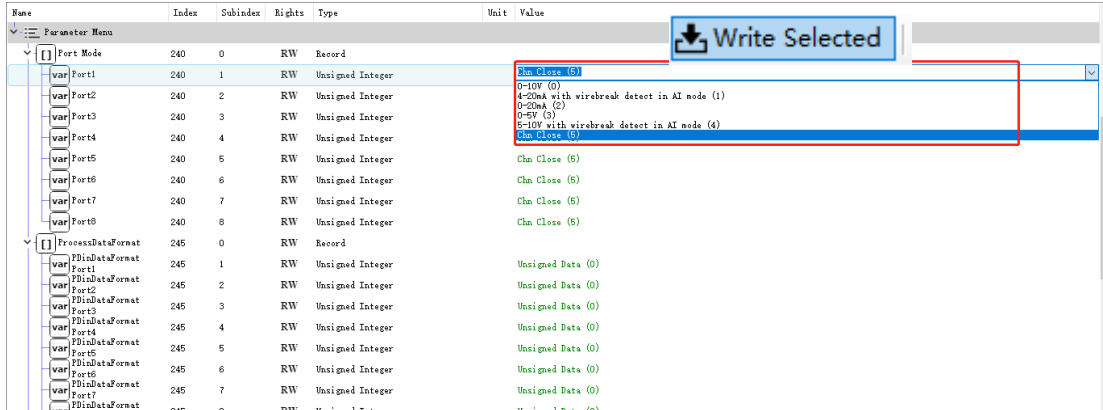


6.2.2 ULK-0808AIO-M2P6 Device Parameter Settings

The Port Mode parameter is the port mode setting.

The last 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 to download.

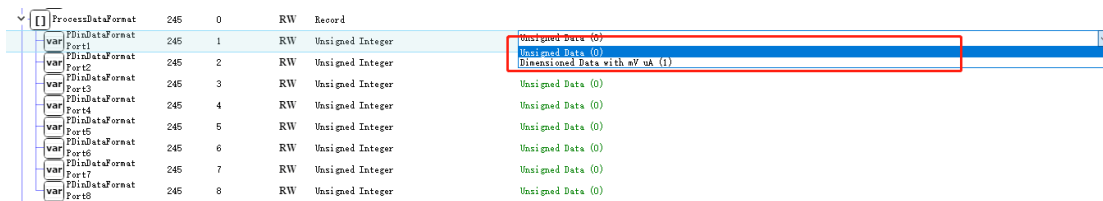
You need to click it every time you change it. This button will turn green after downloading.



Process Data Format is the input and output data mode selection, which is divided into unsigned data and voltage and current data.

The units of voltage and current data are mV and uA.

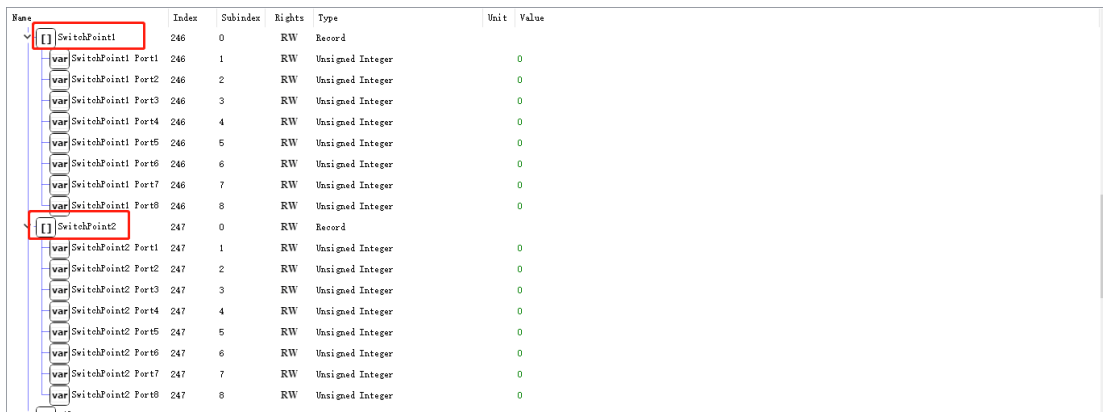
If the mode is modified, the corresponding threshold settings should also be modified according to the mode.



SwitchPoint1 and SwitchPoint2 are threshold settings. SwitchPoint1 is the high threshold and SwitchPoint2 is the low threshold.

If it is greater than SwitchPoint1 and less than SwitchPoint2, the corresponding threshold point 1 and threshold point 2 exceed the threshold judgment point (see the process data table) and the output is 1.

Note: That the threshold point value must be set according to the process data format.



The filtering depth is for each port, and the writeable value is 1~32, that is, every N data is sent out on average.

Name	Index	Subindex	Rights	Type	Unit	Value
FilterDeep	248	0	RW	Record		
var Filter Deep Port1	248	1	RW	Unsigned Integer		1
var Filter Deep Port2	248	2	RW	Unsigned Integer		1
var Filter Deep Port3	248	3	RW	Unsigned Integer		1
var Filter Deep Port4	248	4	RW	Unsigned Integer		1
var Filter Deep Port5	248	5	RW	Unsigned Integer		1
var Filter Deep Port6	248	6	RW	Unsigned Integer		1
var Filter Deep Port7	248	7	RW	Unsigned Integer		1
var Filter Deep Port8	248	8	RW	Unsigned Integer		1

Port direction is set to input or output mode.

Pay attention to external wiring and electrical appliances before making changes.

PortDirection	249	0	RW	Record		
var Direction Port1	249	1	RW	Unsigned Integer	Analog Input (0) Analog Input (1) Analog Output (1)	
var Direction Port2	249	2	RW	Unsigned Integer	Analog Input (0)	
var Direction Port3	249	3	RW	Unsigned Integer	Analog Input (0)	
var Direction Port4	249	4	RW	Unsigned Integer	Analog Input (0)	
var Direction Port5	249	5	RW	Unsigned Integer	Analog Input (0)	
var Direction Port6	249	6	RW	Unsigned Integer	Analog Input (0)	
var Direction Port7	249	7	RW	Unsigned Integer	Analog Input (0)	
var Direction Port8	249	8	RW	Unsigned Integer	Analog Input (0)	

6.2.4 ULK-0808AIO-M2P6 Device Input and Output Testing

Click "Process Data" to enter the process data. When you are online, you can perform data in real time to observe the PDIvalue Port N as the actual data of each port.

Name	Value	Formatted Value	Unit
△ Raw data	-	-	
▼ ProcessDataIn			
PdinValue Port1	(Unknown)	(Unknown)	
PdinValue Port2	(Unknown)	(Unknown)	
PdinValue Port3	(Unknown)	(Unknown)	
PdinValue Port4	(Unknown)	(Unknown)	
PdinValue Port5	(Unknown)	(Unknown)	
PdinValue Port6	(Unknown)	(Unknown)	
PdinValue Port7	(Unknown)	(Unknown)	
PdinValue Port8	(Unknown)	(Unknown)	

The Switchpoint1 and Switchpoint2 here are displayed by the identification of the logo identification of the threshold.

PD input: Validity: valid Plot

Name	Value	Formatted Value	Unit
SwitchPoint2 Port1	(Unknown)	(Unknown)	
SwitchPoint2 Port2	(Unknown)	(Unknown)	
SwitchPoint2 Port3	(Unknown)	(Unknown)	
SwitchPoint2 Port4	(Unknown)	(Unknown)	
SwitchPoint2 Port5	(Unknown)	(Unknown)	
SwitchPoint2 Port6	(Unknown)	(Unknown)	
SwitchPoint2 Port7	(Unknown)	(Unknown)	
SwitchPoint2 Port8	(Unknown)	(Unknown)	
SwitchPoint1 Port1	(Unknown)	(Unknown)	
SwitchPoint1 Port2	(Unknown)	(Unknown)	
SwitchPoint1 Port3	(Unknown)	(Unknown)	
SwitchPoint1 Port4	(Unknown)	(Unknown)	
SwitchPoint1 Port5	(Unknown)	(Unknown)	
SwitchPoint1 Port6	(Unknown)	(Unknown)	
SwitchPoint1 Port7	(Unknown)	(Unknown)	
SwitchPoint1 Port8	(Unknown)	(Unknown)	

Short or Wirebreak is a flag display for a port short circuit or wire break.

Short circuit occurs when port 1 and pin 3 are short circuited.

Wire break is valid when the range with wire break mode is selected, that is, 4~20mA, 5~10V input and output.

When, 0~20mA output.

IO-Link Mode: Process Data Input / Output

PD input: Validity: **valid**

Name	Value	Formatted Value	Unit
<input type="checkbox"/> Short or Wirebreak Port1	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port2	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port3	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port4	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port5	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port6	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port7	(Unknown)	(Unknown)	
<input type="checkbox"/> Short or Wirebreak Port8	(Unknown)	(Unknown)	

UnderFlow is a low-level overflow alarm, and OverFlow is a high-level overflow alarm. For example, the range is 0~10V. When it is lower than 0V, UnderFlow is set to 1, and when it is higher than 10V, OverFlow is set to 1.

IO-Link Mode: Process Data Input / Output

PD input: Validity: **valid**

Name	Value	Formatted Value	Unit
<input type="checkbox"/> UnderFlow Port1	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port2	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port3	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port4	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port5	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port6	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port7	(Unknown)	(Unknown)	
<input type="checkbox"/> UnderFlow Port8	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port1	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port2	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port3	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port4	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port5	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port6	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port7	(Unknown)	(Unknown)	
<input type="checkbox"/> OverFlow Port8	(Unknown)	(Unknown)	

LowUs is a low voltage alarm, InterBusErr is an internal bus error, HighTemper is a module chip temperature alarm that is too high, InterVolErr is a module chip internal voltage error, and InterSeriousErr is a serious internal module chip alarm.

Process Data

IO-Link Mode: Process Data Input / Output

PD input: Validity: **valid**

Name	Value	Formatted Value	Unit
<input type="checkbox"/> LowUS	(Unknown)	(Unknown)	
<input type="checkbox"/> InterBusErr	(Unknown)	(Unknown)	
<input type="checkbox"/> HighTemper	(Unknown)	(Unknown)	
<input type="checkbox"/> InterVolErr	(Unknown)	(Unknown)	
<input type="checkbox"/> InterSeriousErr	(Unknown)	(Unknown)	

The output data is the 8-port output setting. When selecting the output, if you select an unsigned number, it is 0~65535.

If it is a dimensional number, it is the voltage 0~10000mV and the current 0~20000mA.

PD output:

Set Validity:

Name	Value	Formatted Value	Unit
△ Raw data	0x00 0x00 0x00 0x00 0x00 0x00 0...		
ProcessDataOut			
<input type="checkbox"/> Pdout Value Port1	0	0	
<input type="checkbox"/> Pdout Value Port2	0	0	
<input type="checkbox"/> Pdout Value Port3	0	0	
<input type="checkbox"/> Pdout Value Port4	0	0	
<input type="checkbox"/> Pdout Value Port5	0	0	
<input type="checkbox"/> Pdout Value Port6	0	0	
<input type="checkbox"/> Pdout Value Port7	0	0	
<input type="checkbox"/> Pdout Value Port8	0	0	

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