



IO-Link HUB

IOL7 Series Hubs

User Manual




Nanjing Solidot Electronic Technology Co., Ltd. 2024

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1 Product Introduction

1.1 Product overview

IO-Link is the world's first standardized cross-vendor IO technology (IEC 61131-9), which is an open standard serial communication protocol. IOL7 series signaling hubs (hereinafter referred to as "HUB") support IO-Link communication, and can support a maximum of 16-channel digital input or 16-channel digital output. As an IO-Link slave, the IOL7 series signal hub (hereinafter referred to as "HUB") supports IO-Link communication and can support up to 16 channels of digital inputs or 16 channels of digital outputs.


1.2 Product Characteristics

- Up to IP67 protection for harsh industrial environments
- Simple and fast cabling for simultaneous power and data transmission
- Designed with IO-Link v1.1 specification
- Connects to a variety of IO-Link standard devices and standard switching signals
- LED status display, channel protection and diagnostics

This manual introduces the structure, product parameters and main functions of IOL7 series hubs.

2 Designation rules

2.1 Designation rules

IOL 7 - 16 00 B - M12 
(1) (2) (3) (4) (5) (6) (7)

Number	Definition	Description of values		
(1)	Product Technology	IOL: short for IO-Link		
(2)	protection class	7: IP67		
(3)	Number of input channels	16: 16 channel inputs	00: 0 channel input	
(4)	Number of output channels	00: 0 channel output	16: 16-channel output	C: Configurable input and output channels
(5)	Input and output channel type	B: PNP		A: NPN
(6)	I/O port	M12		M8
(7)	IO-Link port type	Default: Default Class-A	B: Class-B	E: Class-A with external power supply

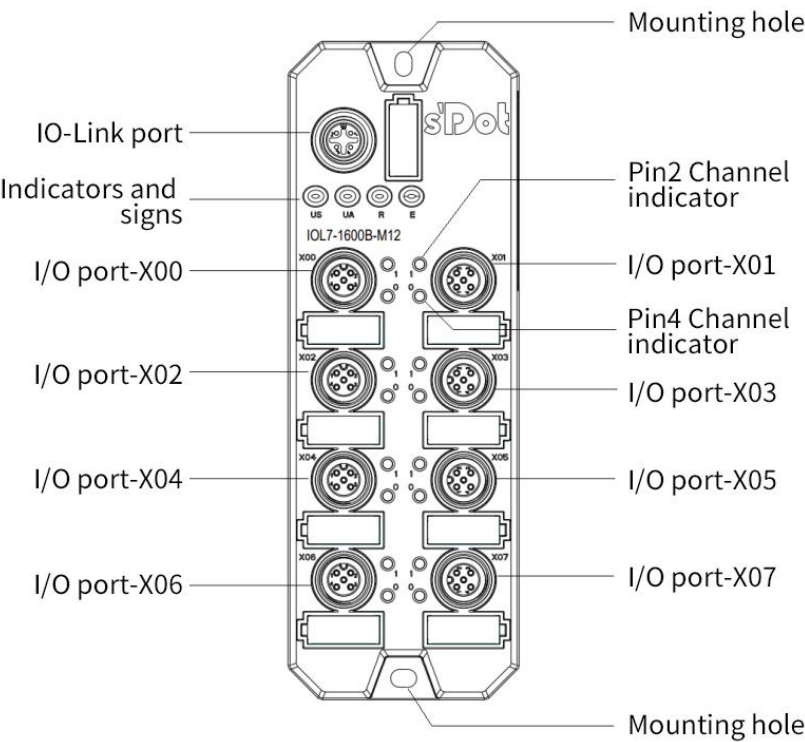
2.2 Model List

Model	Product Description
IOL7-1600B-M12	16-channel digital input IO-Link HUB, PNP type, IP67
IOL7-0016B-M12	16-channel digital output IO-Link HUB, PNP type, IP67
IOL7-16CB-M12	Configurable IO-Link HUB with up to 16 inputs or 16 outputs, PNP type, IP67
IOL7-1600A-M12	16-channel digital input IO-Link HUB, NPN type, IP67
IOL7-0016A-M12	16-channel digital output IO-Link HUB, NPN type, IP67
IOL7-16CA-M12	Configurable IO-Link HUB with up to 16 inputs or 16 outputs, NPN type, IP67

3 Panel

3.1 Hub Structure

Name of each part of the product

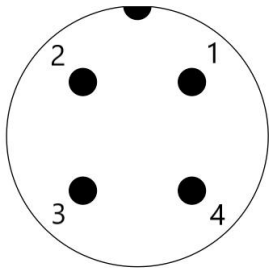


3.2 Indicator light function

Markings	Color	Status	Description
Power indicator US	Green	ON	Power supply is normal
		OFF	The product is not powered up or the power supply is abnormal
Power indicator UA	Green	ON	Normal power supply from auxiliary power supply or external power supply
		OFF	The product is not powered up or the auxiliary/external power supply is abnormal.
Communication indicator R	Green	ON	malfunctioning communications
		Flashing	Communication is normal
		OFF	Abnormal power supply
Input Channel Indicator	Green	ON	PNP type, channel signal input high
			NPN type, channel signal input low
		OFF	PNP type, channel signal input low
			NPN type, channel signal input high
Output Channel Indicator	Green	ON	PNP type, channel signal output high
			NPN type, channel signal output low
		OFF	PNP type, channel signal output low
			NPN type, channel signal output high
Fault indicator E	red (color)	ON	Over-temperature, low voltage, over-voltage, channel over-current or overload, short-circuit fault, abnormal equipment operation; channel line disconnection in input mode
		OFF	anomaly-free

3.3 IO-Link Port Definition

IO-Link port connection view (Class-A port, pin end) Description of definitions



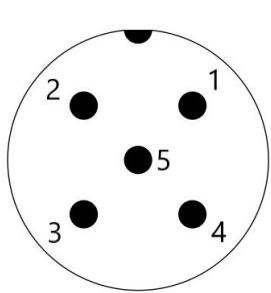
Pin	Function
1	Supply voltage, +24V
2	NC
3	0V, power supply GND
4	C/Q, IO-Link data transmission channels

Note: For Class-A port, the master connects to IOL7-0016B-M12 and IOL7-16CB-M12 which support output, can be configured to output high level from Pin2 to satisfy the higher drive capability, or Pin2 is not connected and the drive capability is directly provided by Pin1. the Pin2 supply voltage adopts the

common ground with the Pin1 supply voltage. It is not recommended that the IOL7-0016B-M12 and IOL7-16CB-M12 be connected to a Class-B port master, and it is prohibited for the Class-A port master to output a low level on Pin2.

IO-Link port connection view (Class-B port, pin end)

Description of definitions

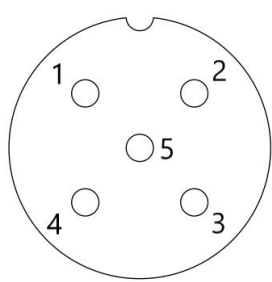


Pin	Function
1	Supply voltage, +24V
2	Auxiliary power supply P24
3	0V, power supply GND
4	C/Q, IO-Link data transmission channels
5	Auxiliary power supply N24

3.4 I/O Port Definitions

I/O Port Connection View (M12, Hole End)

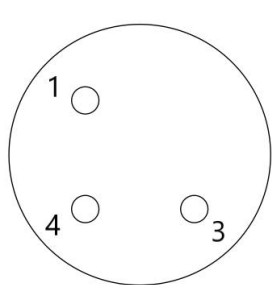
Description of definitions



Pin	Function
1	Supply voltage, +24V
2	DI/DO 1, signal input/output 1
3	0V, power supply GND
4	DI/DO 0, signal input/output 0
5	NC

I/O Port Connection View (M8, Hole End)

Description of definitions



Pin	Function
1	Supply voltage, +24V
3	0V, power supply GND
4	DI/DO, Signal Input/Output

4 Product Parameters

4.1 General parameter

Communications parameter			
Product Model	IOL7-1600B-M12	IOL7-0016B-M12	IOL7-16CB-M12
Vendor ID	1320 (0x0528)		
Vendor Name	SOLIDOT		
Device ID	2401001 (0x24A2E9)	2401002 (0x24A2EA)	2401003 (0x24A2EB)
IO-Link version	V1.1		
Communications rate	COM2 (38.4kbps)		
Minimum cycle time	4.5ms		
Process data length	2-byte input	2-byte output	2-byte input/output
Port Type	M12-A, 4Pin, Pin End		
Cable Length	≤ 20m (between HUB and Master)		
Electrical parameters			
Operating voltage (V)	24 VDC (18V to 30V)		
Current loss (mA)	No-load: 15mA		
Configurable inputs and outputs	NO		YES
I/O port	M12-A, 5Pin, Hole End		
Number of input channels	16	-	Maximum 16
Input Current	4mA	-	4mA
Input Channel Type	PNP	-	PNP
Input Filtering	configurable	-	configurable
Digital input protection against short circuits	Support	-	Support
Number of output channels	-	16	Maximum 16
Maximum output	-	0.5A	

current for a single channel		
Total output current	-	Maximum 2A
Output Channel Type	-	PNP

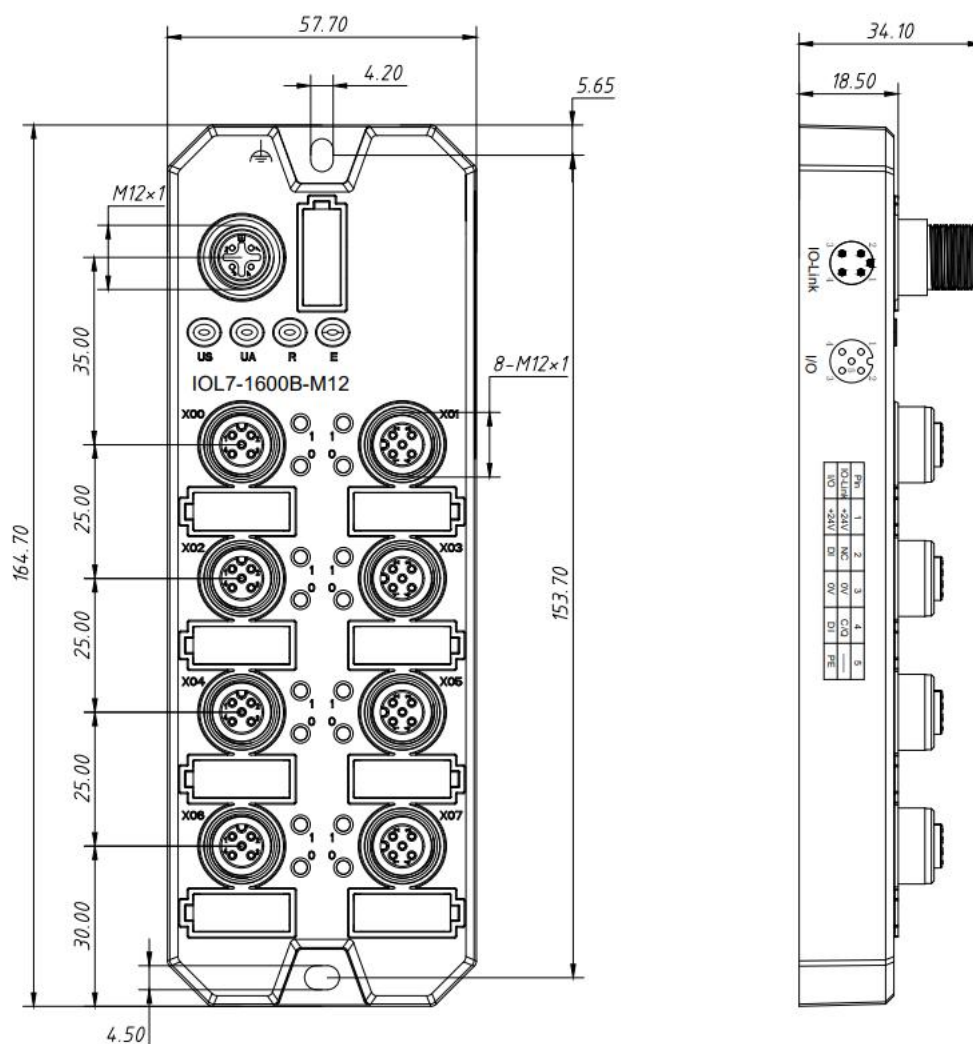
Communications parameter			
Product Model	IOL7-1600A-M12	IOL7-0016A-M12	IOL7-16CA-M12
Vendor ID	1320 (0x0528)		
Vendor Name	SOLIDOT		
Device ID	2401005 (0x24A2ED)	2401006 (0x24A2EE)	2401004 (0x24A2EC)
IO-Link version	V1.1		
communications rate	COM2 (38.4kbps)		
Minimum cycle time	4.5ms		
Process data length	2-byte input	2-byte output	2-byte input/output
Port Type	M12-A, 4Pin, Pin End		
Cable Length	≤ 20m (between HUB and master)		
Electrical parameters			
Operating voltage (V)	24 VDC (18V to 30V)		
Current loss (mA)	No-load: 15mA		
Configurable inputs and outputs	NO		YES
I/O port	M12-A, 5Pin, Hole End		
Number of input channels	16	-	Maximum 16
Input Current	4mA	-	4mA
Input Channel Type	NPN	-	NPN
Input Filtering	configurable	-	configurable
Digital input protection against short circuits	Support	-	Support
Number of output channels	-	16	Maximum 16
Maximum output current for a single channel	-	0.5A	
Total output current	-	Maximum 2A	
Output Channel Type	-	NPN	

4.2 Technical Parameters

Diagnostic	
communication status	LED indication
Pressure supply monitoring	Support
Temperature Detection	Support
Short circuit and overload protection	Support
Working environment	
Size	164.7 × 57.7 × 34.1 mm
weights	260g
operating temperature	-25°C~+70°C
Storage temperature	-40°C~+85°C
relative humidity	95%, non-condensing
protection class	IP67
Others	
Firmware Upgrade	Support
data storage	Support

5 Wiring instructions

5.1 Housing Dimensions



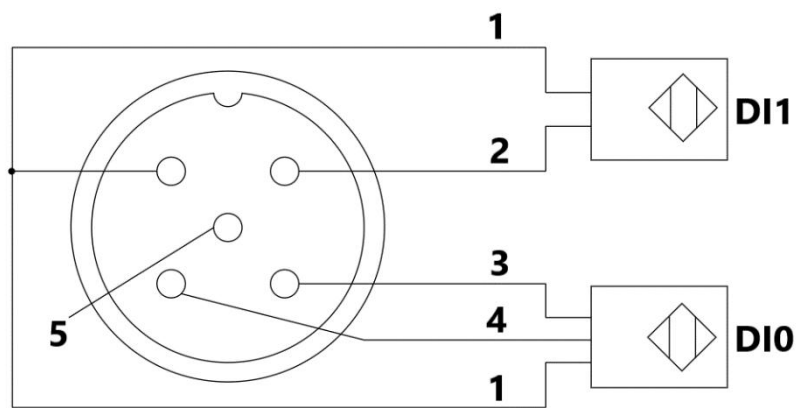
5.2 Wiring instructions

- For personal and equipment safety, it is recommended that the power supply be disconnected during wiring operations.
- IO-Link Master Port: Connect the IO-Link hub to any IO-Link master product with a standardized 3- or 4-pole cable.
- I/O Port: Connect IO-Link hubs to sensors or other devices with standardized five-conductor cables.

5.3 Wiring Example

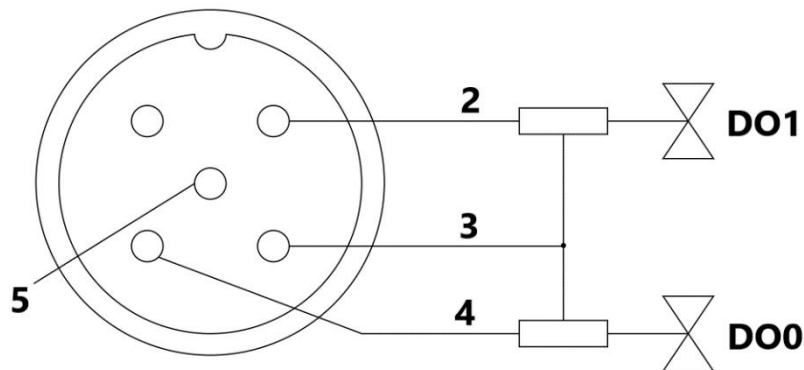
PNP type dual input signal

1 connector for 2 digital input signals



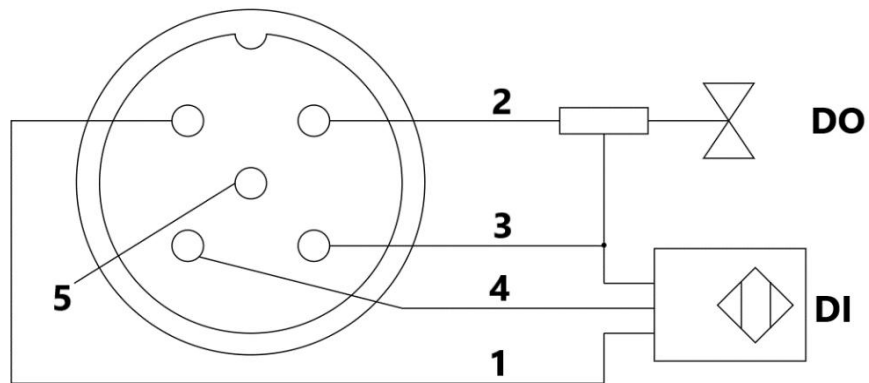
PNP type dual output signal

1 connector for 2 digital output signals

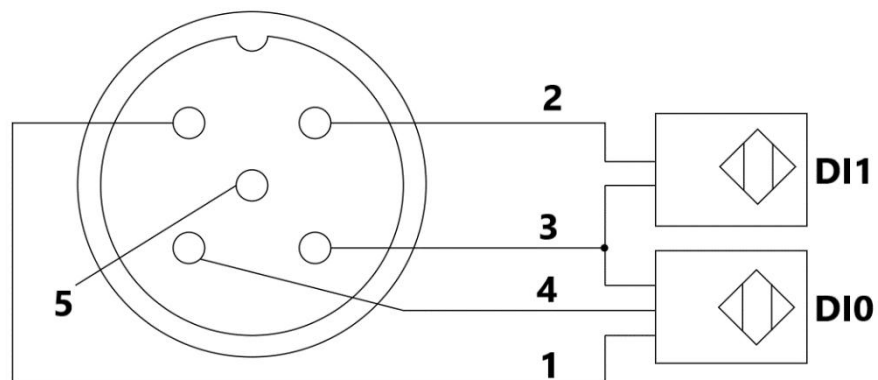


PNP type configurable input and output signals

1 connector configurable for 1 digital input and 1 digital output signal, 2 digital input signals or 2 digital output signals

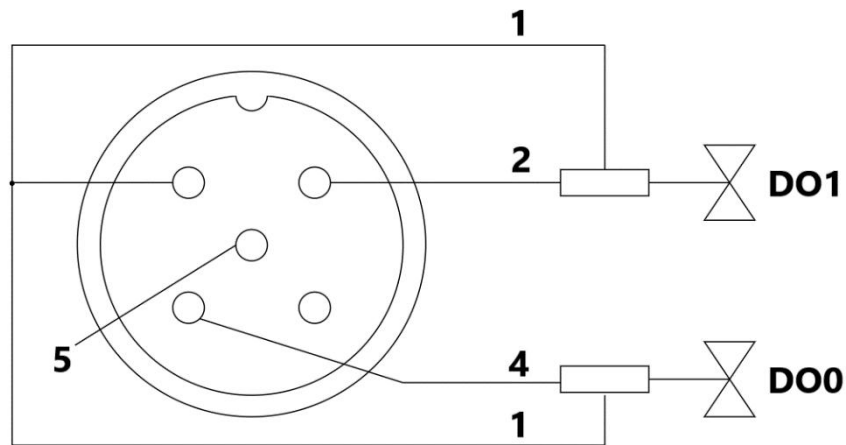
**NPN type dual input signal**

1 connector for 2 digital input signals

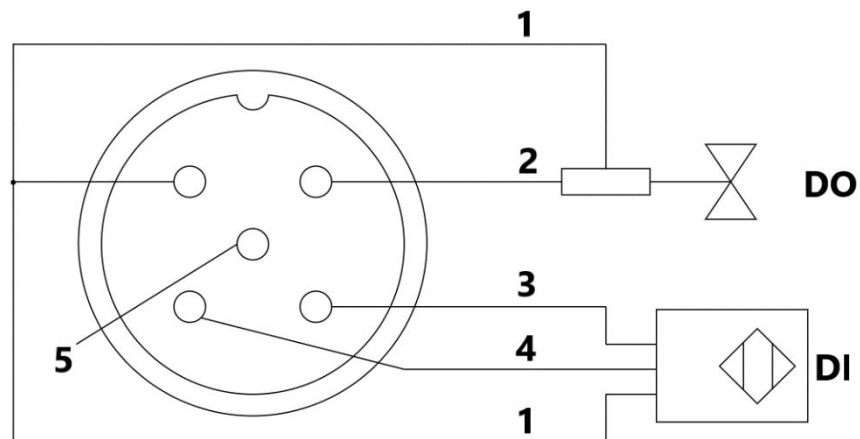


NPN type dual output signal

1 connector for 2 digital output signals

**NPN type configurable input and output signals**

1 connector configurable for 1 digital input and 1 digital output signal, 2 digital input signals or 2 digital output signals



6 Function Description

6.1 Process Data Mapping

Input data:

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9
offset bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Pin	X03-Pin2	X03-Pin4	X02-Pin2	X02-Pin4	X01-Pin2	X01-Pin4	X00-Pin2	X00-Pin4	X07-Pin2	X07-Pin4	X06-Pin2	X06-Pin4	X05-Pin2	X05-Pin4	X04-Pin2	X04-Pin4

Output data:

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9
offset bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Pin	X03-Pin2	X03-Pin4	X02-Pin2	X02-Pin4	X01-Pin2	X01-Pin4	X00-Pin2	X00-Pin4	X07-Pin2	X07-Pin4	X06-Pin2	X06-Pin4	X05-Pin2	X05-Pin4	X04-Pin2	X04-Pin4

6.2 ISDU Parameters

ISDU		Name	Access	Data type	Description
Index	Subindex				
0x0010	0x00	Supplier Name	R	64 String	Supplier SOLIDOT
0x0011	0x00	Supplier Information	R	64 String	www.solidotech.com
0x0012	0x00	Pseudolaric acid	R	64 String	Example: SDOT-IOL7-1600B-M 12
0x0013	0x00	Product ID	R	64 String	Example: IOL7-1600B-M12
0x0014	0x00	Product Information	R	64 String	I/O-HUB
0x0015	0x00	SN Code	R	64 String	-
0x0016	0x00	hardware version	R	64 String	-
0x0017	0x00	Firmware version	R	64 String	-
0x0018	0x00	application marking	R/W	32 String	Application marking:***
0x0019	0x00	Specific function marking	R/W	32 String	Specific functional identifiers:***
0x001a	0x00	Equipment location identification	R/W	32 String	Description of equipment location:***
0x0024	0x00	device status	R	1 UIntegerT	Note 1
0x0025	0x00	Detailed status of equipment	R	ArrayT of OctetStringT3	Note 2

Note 1: Device status definition, 0: device normal; 1: device needs maintenance; 2: device overrun; 3: device needs to check function; 4: device out of order, default 0

Note 2: Default 8*3 bytes, default 0x0, 0x0, 0x0

6.3 System command

index	Value	Function	Description
0x0002	0x80(128)	Device Reset	Device performs a reset
	0x81(129)	Application Reset	Apply reset
	0x82 (130)	Restore Factory Settings	Restore factory settings, all parameters are restored to default values
	0x83 (131)	Restore original delivery settings	The device restores the parameter to the original delivery value

6.4 Configuration parameters

Index	Subindex	Configuration Function Name	Access	Data type	Description
0x0041	0x00	input conversion	R/W	2 Unsigned	0: no reversion; 1: reversion; default 0x0000
0x0042	0x00	Configure the port direction	R/W	2 Unsigned	0: input; 1: output; default 0xFFFF
0x0044	0x00	Short circuit recovery	R/W	2 Unsigned	0: automatic recovery; 1: manual reset recovery; default 0x0000
0x0045	0x00	Output Failure Protection	R/W	16 Unsigned	0: Output 0V; 1: Output 24V; 2: Output keep the original state, default all 0
0x0046	0x00	Scope Setting	R/W	1 Unsigned	0 individual stand-alone setting; 1 overall setting; 2 group setting, default 0
0x0047	0x00	Overall Function Setting	R/W	See 6.5.6	See 6.5.6
0x0048	0x00	Grouping Function Setting	R/W	See 6.5.7	See 6.5.7
0x0049	0x00	Input Filter Time	R/W	16 Unsigned	See 6.5.8
0x004A	0x00	Input Hold Time	R/W	16 Unsigned	See 6.5.9

6.5 Functional parameter mapping

6.5.1 Input conversion (0x0041)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9
offset bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Pin	X03-Pin2	X03-Pin4	X02-Pin2	X02-Pin4	X01-Pin2	X01-Pin4	X00-Pin2	X00-Pin4	X07-Pin2	X07-Pin4	X06-Pin2	X06-Pin4	X05-Pin2	X05-Pin4	X04-Pin2	X04-Pin4

Note: b'0 not reversed, default value
b'1 reversed

6.5.2 Configure port direction (0x0042)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9
offset bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Pin	X03-Pin2	X03-Pin4	X02-Pin2	X02-Pin4	X01-Pin2	X01-Pin4	X00-Pin2	X00-Pin4	X07-Pin2	X07-Pin4	X06-Pin2	X06-Pin4	X05-Pin2	X05-Pin4	X04-Pin2	X04-Pin4

Note: b'0 input

b'1 output, default

6.5.3 Short circuit recovery (0x0044)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9
offset bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Pin	X03-Pin2	X03-Pin4	X02-Pin2	X02-Pin4	X01-Pin2	X01-Pin4	X00-Pin2	X00-Pin4	X07-Pin2	X07-Pin4	X06-Pin2	X06-Pin4	X05-Pin2	X05-Pin4	X04-Pin2	X04-Pin4

Note: b'0 Auto-recovery, default value

b'1 Manual reset recovery

6.5.4 Output Failure Protection (0x0045)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	120								112							
Pin	X00-Pin4								X00-Pin2							

Byte	2								3							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	3								4							
offset bit	104								96							
Pin	X01-Pin4								X01-Pin2							

Byte	4								5							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	5								6							
offset bit	88								80							
Pin	X02-Pin4								X02-Pin2							

Byte	6								7							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	7								8							
offset bit	72								64							
Pin	X03-Pin4								X03-Pin2							

Byte	8								9							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	9								10							
offset bit	56								48							
Pin	X04-Pin4								X04-Pin2							

Byte	10								11							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	11								12							
offset bit	40								32							
Pin	X05-Pin4								X05-Pin2							

Byte	12								13							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	13								14							
offset bit	24								16							
Pin	X06-Pin4								X06-Pin2							

Byte	14								15							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	15								16							
offset bit	8								0							
Pin	X07-Pin4								X07-Pin2							

Note: 0 communication failure output 0V low, default value

1 Communication failure output 24V high level

2 Communication failure outputs remain in their original state

6.5.5 Range setting (0x0046)

Parameter Configuration	Definition	Description
0	Individual	Independent setting for each port
1	Collective	All port overall settings
2	Grouped	Grouping settings. Group I (X00, X01, X02, X03); Group II (X04, X05, X06, X07)

Note: 1. Each time a change is made from a standalone setup to an overall setup, all ports will be adapted for configuration based on parameter 0x0047 (overall setup).

2. Each time a change is made from an individual setting to a group setting, all ports will be configured according to the parameter 0x0048 (group setting) for adjustment.

6.5.6 Overall Function Setting (0x0047)

IOL7-1600B-M12 (3 bytes)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	16								8							
Description	Input hold time 0~250 (2ms unit), default 0								Input filter time 0~10 (2ms unit), default 0: off							

Byte	2							
bit	7	6	5	4	3	2	1	0
subindex								3
offset bit								0
Description								Input reversion, 0: input not reversed; 1: input reversed, default 0

IOL7-0016B-M12 (2 bytes)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1															2
offset bit	8															0

Description	Output failure protection, 0: output 0V; 1: output 24V; 2: Outputs remain in their original state, default 0		Short circuit recovery, 0: automatic recovery; 1: manual reset recovery, default 0
-------------	---	--	---

IOL7-16CB-M12 (3 bytes)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	16								8							
Description	Input filter time setting value 0~10 (corresponding to 0~20ms, 2ms unit), 10: 20ms; 0: off, default off								Output failure protection, 0: output 0V; 1: output 24V; 2: output keep original state, default 0							
Byte	2															
bit	7	6	5	4	3	2		1		0						
subindex						3		4		5						
offset bit						2		1		0						
Description						Short circuit recovery, 0: automatic recovery; 1: manual reset recovery, default 0		Input reversion, 0: input not reversed; 1: Input reversion, default 0		Configure the port direction, 0: input; 1: output, default 1						

6.5.7 Grouping function setting (0x0048)

IOL7-1600B-M12 (6 bytes)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	40								32							
Description	Group 2 Input hold time 0~250 (2ms unit), default 0								Group 2 Input filter time 0~10 (2ms unit), default 0: off							

Byte	2							
bit	7	6	5	4	3	2	1	0
subindex								24
offset bit								0
Description								Group 2 Input reversion, 0: input not reversed; 1: input reversed, default 0

Byte	3								4							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	4								5							
offset bit	16								8							
Description	Group 1 Input hold time 0~250 (2ms unit), default 0								Group 1 Input filter time 0~10 (2ms unit), default 0: off							

Byte	5							
bit	7	6	5	4	3	2	1	0
subindex								6
offset bit								0
Description								Group 1 Input reversion, 0: input not reversed; 1: input reversed, default 0

IOL7-0016B-M12 (3 bytes)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	16								8							
Description	Group 2 output failure protection, 0: output 0V; 1: output 24V; 2: output keep original state, default 0								Group 1 output failure protection, 0: output 0V; 1: output 24V; 2: output keep original state, default 0							

Byte	2							
bit	7	6	5	4	3	2	1	0
subindex							3	4
offset bit							1	0

Description		Group 2 short circuit recovery, 0: automatic recovery; 1: manual reset recovery, default 0	Group 1 short circuit recovery, 0: automatic recovery; 1: manual reset recovery, default 0
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IOL7-16CB-M12 (5 bytes)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	32								24							
Description	Group 2 input filter time setting value 0~10 (corresponding to 0~20ms, 2ms unit), 10: 20ms; 0: off, default off								Group 2 output failure protection, 0: output 0V; 1: output 24V; 2: output keep original state, default 0							

Byte	2								3							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	3								4							
offset bit	16								8							
Description	Group 1 input filter time setting value 0~10 (corresponding to 0~20ms, 2ms unit), 10: 20ms; 0: off, default off								Group 1 output failure protection, 0: output 0V; 1: output 24V; 2: output keep original state, default 0							

Byte	4							
bit	7	6	5	4	3	2	1	0
subindex			5	6	7	8	9	10
offset bit			5	4	3	2	1	0
Description			Group 2 short circuit recovery, 0: automatic recovery; 1: manual reset recovery, default 0	Group 2 input reversion, 0: input not reversed; 1: Input reversion, default 0	Group 2 configures the port direction, 0: input; 1: output, default 1	Group 1 short circuit recovery, 0: automatic recovery; 1: manual reset recovery, default 0	Group 1 input reversion, 0: input not reverted; 1: Input reversion, default 0	Group 1 configures the port direction, 0: input; 1: output, default 1

6.5.8 Input filter time (0x0049)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	120								112							
Pin	X00-Pin4								X00-Pin2							

Byte	2								3							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	3								4							
offset bit	104								96							
Pin	X01-Pin4								X01-Pin2							

Byte	4								5							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	5								6							
offset bit	88								80							
Pin	X02-Pin4								X02-Pin2							

Byte	6								7							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	7								8							
offset bit	72								64							
Pin	X03-Pin4								X03-Pin2							

Byte	8								9							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	9								10							
offset bit	56								48							
Pin	X04-Pin4								X04-Pin2							

Byte	10								11							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	11								12							
offset bit	40								32							
Pin	X05-Pin4								X05-Pin2							

Byte	12								13							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	13								14							
offset bit	24								16							
Pin	X06-Pin4								X06-Pin2							

Byte	14								15							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	15								16							
offset bit	8								0							
Pin	X07-Pin4								X07-Pin2							

Note: For IOL7-1600B-M12, input filter time setting value 0~10 (corresponds to 0~20ms, 2ms unit), default 0: off;

IOL7-16CB-M12, Input Filter Time Definition, 10: 20ms; 0: off, default off.

6.5.9 Input Hold Time (0x004A)

Byte	0								1							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	1								2							
offset bit	120								112							
Pin	X00-Pin4								X00-Pin2							

Byte	2								3							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	3								4							
offset bit	104								96							
Pin	X01-Pin4								X01-Pin2							

Byte	4								5							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	5								6							
offset bit	88								80							
Pin	X02-Pin4								X02-Pin2							

Byte	6								7							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	7								8							
offset bit	72								64							
Pin	X03-Pin4								X03-Pin2							

Byte	8								9							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	9								10							
offset bit	56								48							
Pin	X04-Pin4								X04-Pin2							

Byte	10								11							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	11								12							
offset bit	40								32							
Pin	X05-Pin4								X05-Pin2							

Byte	12								13							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	13								14							
offset bit	24								16							
Pin	X06-Pin4								X06-Pin2							

Byte	14								15							
bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
subindex	15								16							
offset bit	8								0							
Pin	X07-Pin4								X07-Pin2							

Note: For IOL7-1600B-M12, input hold time setting value 0~250 (2ms unit), default 0

6.6 Diagnostic event

Level/qualification			event qualifier	Index	Device status values	Description	tackle
paradigm	Fault type	Example					
0xC0	0x30	0x04	0xF4 appears	0x4000	4	Overload/over-temperature events	Turn off the power to check the load
0x80	0x30	0x04	0xB4 does not appear	0x4000	0		
0xC0	0x20	0x04	0xE4 appears	0x5110	2	Mains overvoltage event	Checking the pressure supply
0x80	0x20	0x04	0xA4 does not appear	0x5110	0		
0xC0	0x20	0x04	0xE4 appears	0x5111	2	Mains low voltage event	
0x80	0x20	0x04	0xA4 does not appear	0x5111	0		