IO-Link Hub~~LKHA-xxxx-Qx (16bit)

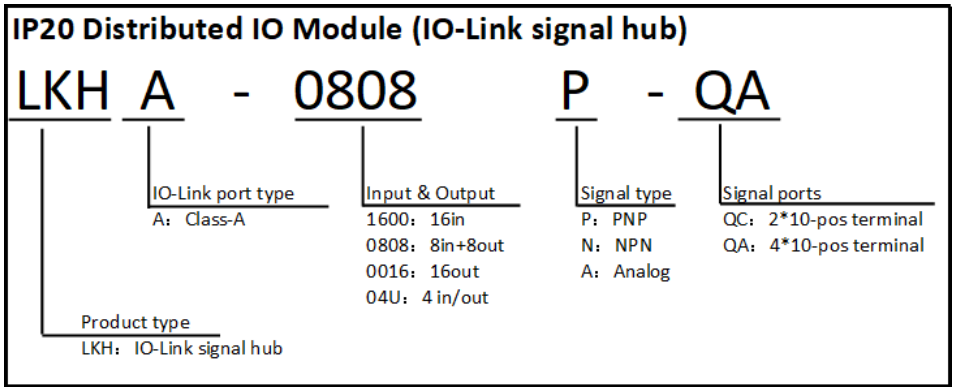
----Installation Manual

ELCO (Tianjin) Electronics Co., Ltd.
12/2023
Version 1.2

1.1 Scope of this manual:

This manual applies to the ELCO IO-Link signal Hub (16-bit Q, 13 types): LKHA-1600P-QC, LKHA-0808P-QC, LKHA-0016P-QC, LKHA-1600N-QC, LKHA-0808N-QC, LKHA-0016N-QC, LKHA-04UA-QC, LKHA-1600P-QA, LKHA-0808P-QA, LKHA-0016P-QA, LKHA-1600N-QA, LKHA-0808N-QA, LKHA-0016N-QA.

These 13 types of IO-Link hub use identical housings, with identical overall dimensions and connector types. There are differences in the signal types supported by different types of products. The coding rules are as follows:



Product overview:

1) LKHA-1600P-QC, LKHA-1600N-QC, LKHA-1600P-QA, LKHA-1600N-QA

Supply Voltage 24VDC, self-consumption max.100mA;

10-pos terminal module for

16 x Digital Input (Input Supply 24VDC/total 2A)

2) LKHA-0808P-QC, LKHA-0808N-QC, LKHA-0808P-QA, LKHA-0808N-QA

Supply Voltage 24VDC, self-consumption max.100mA;

10-pos terminal module for

8 x Digital Input (Input Supply 24VDC/total 2A)

and

8 x Digital Output (16 x 24VDC/500mA, max. in total 2A)

3) LKHA-0016P-QC, LKHA-0016N-QC, LKHA-0016P-QA, LKHA-0016N-QA

Supply Voltage 24VDC, self-consumption max.100mA;

10-pos terminal module for

16 x Digital Output (16 x 24VDC/500mA, max. in total 2A)

4) LKHA-04UA-QC

Supply Voltage 24VDC, self-consumption max.100mA;

10-pos terminal module for

4 x Analog Input (Input Supply 4 x 24VDC/total 2A)

or

4 x Analog Output (4 x 0-10V/0-20mA/4-20mA)

You can see the datasheet of 13 types in Section 2.1.

This product is specifically designed for industrial use and needs to be applied under specific conditions. This product serves as an IO-Link device and needs to be connected to the IO-Link master for use.

1.2 Basic knowledge requirements

Operators need to have basic knowledge in the fields of electrical and automation engineering. Any improper operation may cause harm to the equipment or human body.

This manual describes each component based on valid data at the time of release, and new components and parameter adjustments will be updated in the new version of the manual.

1.3 Guide:

This manual describes the hardware of IO-Link Signal Hub.

Covered topics are:

- Installation and wiring
- Commissioning and diagnostics
- Components
- Article numbers
- Technical specifications

1.4 Technical support:

Please contact your local ELCO representative or call hotline if you have any questions about the products described in this manual.

Additional information about ELCO products is available:

Corporate name: Tianjin Elco Automation Co., Ltd

Company address: No. 12, 4th XEDA Branch Road, Xiqing Economic-Technological Development Area ,Tianjin China

Website: http://www.elco-holding.com.cn/

TEL: +86 22 23888288

1.5 Electrical installation:

WARNING

Danger due to electrical voltage!

An unqualified installation can affect the use of the equipment or lead to equipment damage!

- Only qualified electrical engineering personnel may install the modules.
- Only operate on 24 V DC voltage.
- Power supply must be connected to limited power source (LPS).
- Use Copper Conductors Only. Use min. 22AWG for IO-Link port connector and min. 26AWG for Signal I/O connector.

ATTENTION

La tension pose un danger!

Une installation non conforme peut affecter l'utilisation de l'appareil ou causer des dommages à l'appareil!

- Seuls les ingénieurs électriciens qualifiés peuvent installer les modules.
- Fonctionne uniquement à 24 V DC.
- L'alimentation doit être connectée à une alimentation limitée (LPS).
- Utilisez uniquement des conducteurs en cuivre. Le connecteur de port io - LINK utilise un minimum de 22 AWG et le connecteur d'E / s de signal un minimum de 26 AWG.

1.6 Disclaimer of liability:

- Only qualified personnel may perform installation, commissioning, modification, inspection and retrofitting activities.
- Follow the applicable regulations and standards in the operating instructions and manual.
- Follow the safety regulations of the Employers' Liability Insurance Association and electrical engineering.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. We assume no liability for product damage or subsequent damage arising from non-observance of the regulations or improper handling of the products.

2.1 Datasheet

Ordering data	1		
Product type	LKHA-1600P-QC	LKHA-0808P-QC	LKHA-0016P-QC
Description	16 DI	8DI + 8DO	16 DO
	Class-A，M12，PNP		
Power supply			
Supply voltage	24 VDC（18...30 VDC）		
Circuit design	Limited power source		
Self consumption	Max. 100mA		
System & Input supply	Us，Max. 2A		
Output supply	-	Ua，Max. 2A	
Connections			
IO-Link	Class-A：1 x M12 A-code 4pin，Male		
Power supply	Included in IO-Link interface		
Signals	2* 10-Pos terminals		
Interface			
Input channels	16	8	-
Input supply current	Max. 2A in total		
Input type	PNP sensors，mechanical switches，dry contacts，etc..		
Input delay	1.6 ms		
Output channels	-	8	16
Output current	Max. 500mA per channel，2A in total		
Output type	Resistive, Pilot Duty		
Output frequency	Max. 100Hz		
Diagnostics			
Communication indication	LED indication，Communication message		
Voltage detection	Support，Low voltage alarm		
Short-circuit & Overload	Support，LED indication		
General data			
Enclosure rating	Open type		
Relative humidity	0~95 %		
Altitude	Max. 3000m		
Environment	Indoor use		

Ambient temperature	-20~50 °C
Dimensions（W*H*D）	91x70x39 mm
Weight	130g
Overvoltage Category	II
Pollution degree	2
Type	Open type

Ordering data	2		
Product type	LKHA-1600N-QC	LKHA-0808N-QC	LKHA-0016N-QC
Description	16 DI	8DI + 8DO	16 DO
	Class-A，M12，NPN		
Power supply			
Supply voltage	24 VDC（18...30 VDC）		
Circuit design	Limited power source		
Self consumption	Max. 100mA		
System & Input supply	Us，Max. 2A		
Output supply	-	Ua，Max. 2A	
Connections			
IO-Link	Class-A：1 x M12 A-code 4pin，Male		
Power supply	Included in IO-Link interface		
Signals	2* 10-Pos terminals		
Interface			
Input channels	16	8	-
Input supply current	Max. 2A in total		
Input type	NPN sensors，mechanical switches，dry contacts，etc..		
Input delay	1.6 ms		
Output channels	-	8	16
Output current	Max. 500mA per channel，2A in total		
Output type	Resistive, Pilot Duty		
Output frequency	Max. 100Hz		
Diagnostics			
Communication indication	LED indication，Communication message		
Voltage detection	Support，Low voltage alarm		
Short-circuit & Overload	Support，LED indication		

General data	
Enclosure rating	Open type
Relative humidity	0~95 %
Altitude	Max. 3000m
Environment	Indoor use
Ambient temperature	-20~50 °C
Dimensions（W*H*D）	91x70x39 mm
Weight	130g
Overvoltage Category	II
Pollution degree	2
Type	Open type

Ordering data	3
Product type	LKHA-04UA-QC
Description	4 AI/AO，Class-A，M12
Power supply	
Supply voltage	24 VDC（18...30 VDC）
Circuit design	Limited power source
Self consumption	Max. 100mA
Connections	
IO-Link	Class-A：1 x M12 A-code 4pin，Male
Power supply	Included in IO-Link interface
Signals	2* 10-Pos terminals
Interface	
Input channels	Max 4
Input supply current	Max. 2A in total
Input type	Current：0...20mA，4...20mA；Voltage：0...10V
Input Internal impedance	Current: 250Ω；Voltage: 1MΩ
Output channels	Max 4
Output type	Current：0...20mA，4...20mA；Voltage：0...10V
Output Internal impedance	Current: <450Ω；Voltage:>1kΩ
Resolution	16 bit
Switching time	12 ms
Measurement accuracy	± 0.3%

Diagnostics	
Communication indication	LED indication，Communication message
Voltage detection	Support，Low voltage alarm
Short-circuit & Overload	Support，LED indication
General data	
Enclosure rating	Open type
Relative humidity	0~95 %
Altitude	Max. 3000m
Environment	Indoor use
Ambient temperature	-20~50 °C
Dimensions（W*H*D）	91x70x39 mm
Weight	130g
Overvoltage Category	II
Pollution degree	2
Type	Open type

Ordering data	4		
Product type	LKHA-1600P-QA	LKHA-0808P-QA	LKHA-0016P-QA
Description	16 DI	8DI + 8DO	16 DO
	Class-A，M12，PNP		
Power supply			
Supply voltage	24 VDC（18...30 VDC）		
Circuit design	Limited power source		
Self consumption	Max. 100mA		
System & Input supply	Us，Max. 2A		
Output supply	-	Ua，Max. 2A	
Connections			
IO-Link	Class-A：1 x M12 A-code 4pin，Male		
Power supply	Included in IO-Link interface		
Signals	4* 10-Pos terminals		
Interface			
Input channels	16	8	-
Input supply current	Max. 2A in total		

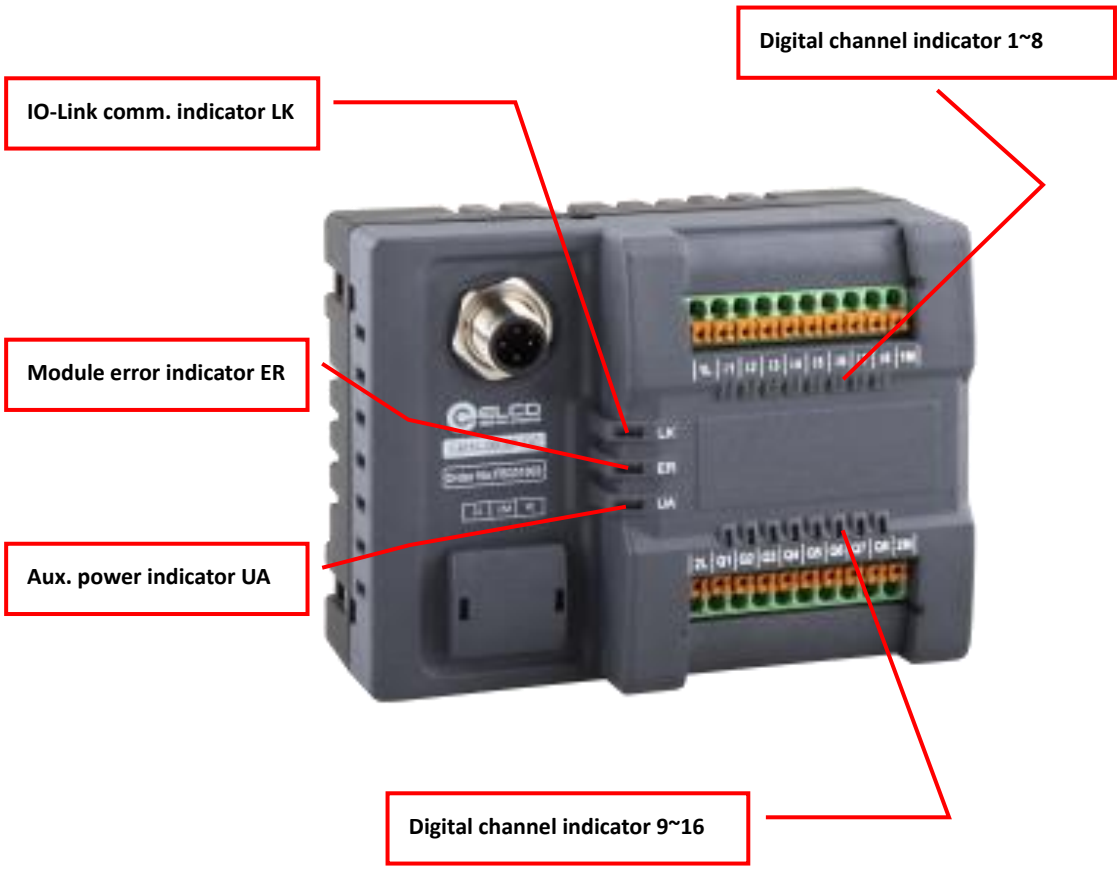
Input type	PNP sensors，mechanical switches，dry contacts，etc..		
Input delay	1.6 ms		
Output channels	-	8	16
Output current	Max. 500mA per channel，2A in total		
Output type	Resistive, Pilot Duty		
Output frequency	Max. 100Hz		
Diagnostics			
Communication indication	LED indication，Communication message		
Voltage detection	Support，Low voltage alarm		
Short-circuit & Overload	Support，LED indication		
General data			
Enclosure rating	Open type		
Relative humidity	0~95 %		
Altitude	Max. 3000m		
Environment	Indoor use		
Ambient temperature	-20~50 °C		
Dimensions（W*H*D）	91x70x39 mm		
Weight	130g		
Overvoltage Category	II		
Pollution degree	2		
Type	Open type		

Ordering data	5		
Product type	LKHA-1600N-QA	LKHA-0808N-QA	LKHA-0016N-QA
Description	16 DI	8DI + 8DO	16 DO
	Class-A，M12，NPN		
Power supply			
Supply voltage	24 VDC（18...30 VDC）		
Circuit design	Limited power source		
Self consumption	Max. 100mA		
System & Input supply	Us，Max. 2A		
Output supply	-	Ua，Max. 2A	
Connections			
IO-Link	Class-A：1 x M12 A-code 4pin，Male		

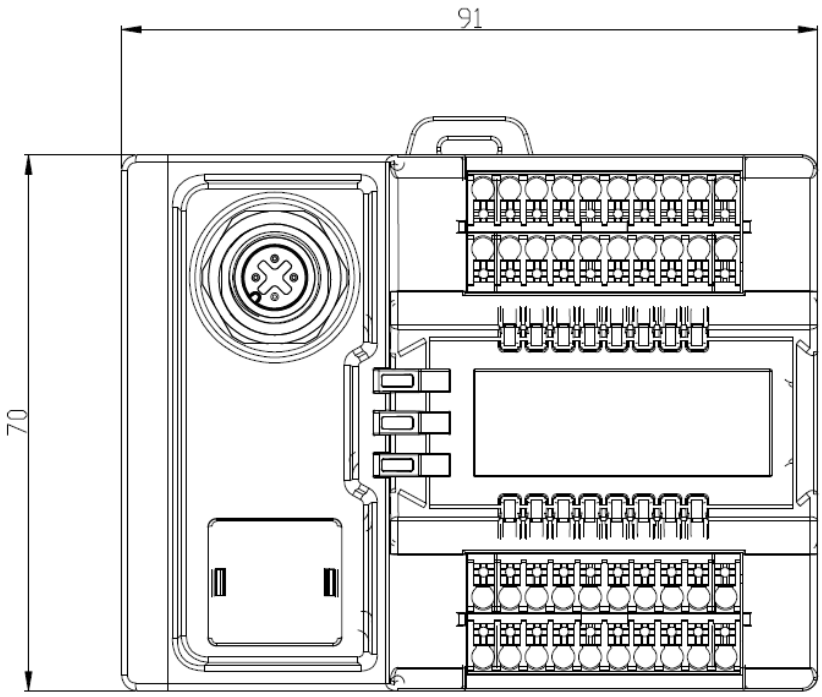
Power supply	Included in IO-Link interface		
Signals	4* 10-Pos terminals		
Interface			
Input channels	16	8	-
Input supply current	Max. 2A in total		
Input type	NPN sensors，mechanical switches，dry contacts，etc..		
Input delay	1.6 ms		
Output channels	-	8	16
Output current	Max. 500mA per channel，2A in total		
Output type	Resistive, Pilot Duty		
Output frequency	Max. 100Hz		
Diagnostics			
Communication indication	LED indication，Communication message		
Voltage detection	Support，Low voltage alarm		
Short-circuit & Overload	Support，LED indication		
General data			
Enclosure rating	Open type		
Relative humidity	0~95 %		
Altitude	Max. 3000m		
Environment	Indoor use		
Ambient temperature	-20~50 °C		
Dimensions（W*H*D）	91x70x39 mm		
Weight	130g		
Overvoltage Category	II		
Pollution degree	2		
Type	Open type		

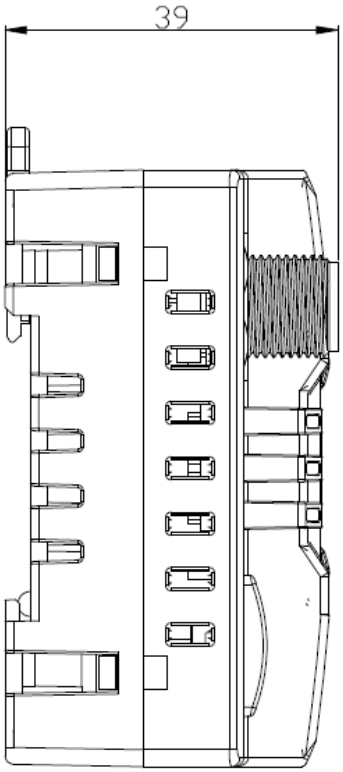
2.2 LED indicator

IO-Link signal hub indicator



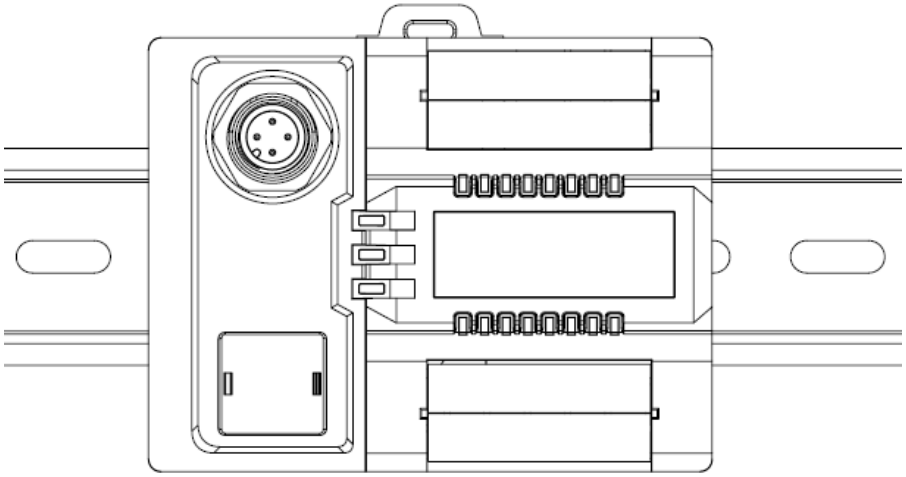
2.3 IO-Link signal hub dimensions

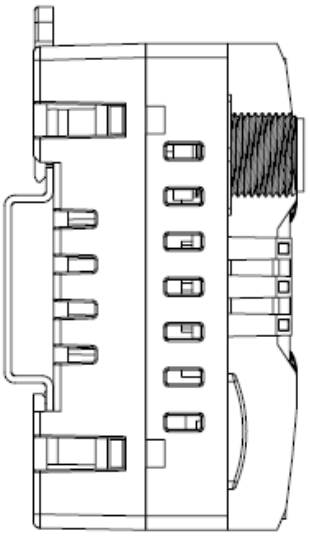




2.4 Mounting the module

This series of products can be directly installed on DIN35 standard rails

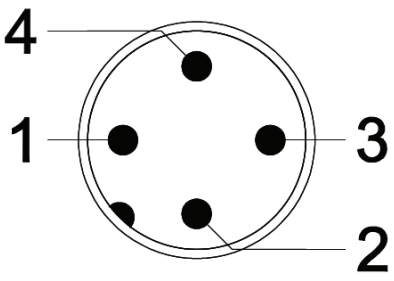




2.5 Wiring

Please make sure to cut off power supply when wiring to ensure safety.

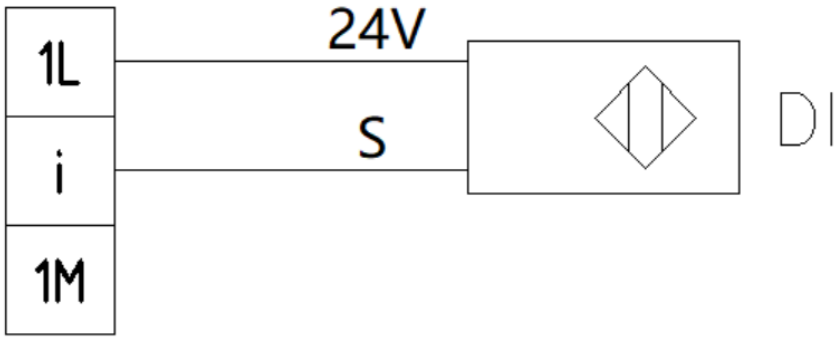
1）IO-Link port connector (M12 A-Code 4-pin, Male)



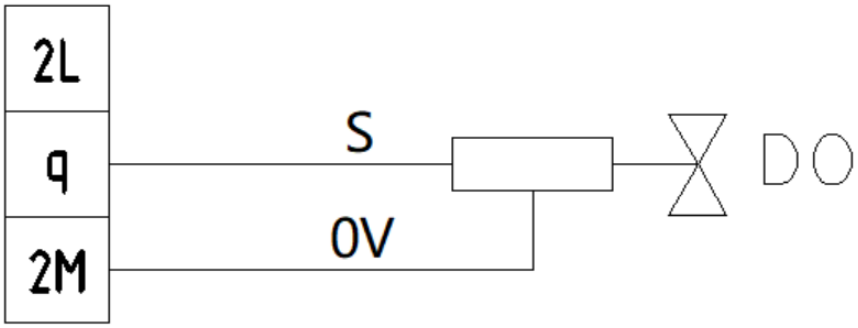
Terminal	Class-A
1	1L Power supply 24V+ (Us)
2	2L Power supply P24 (Ua)
3	1M&2M Power supply GND
4	IO-Link C/Q

2）Wiring example

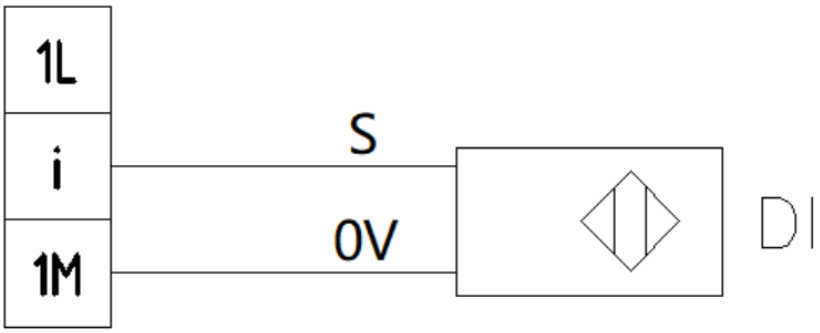
a）PNP input signal – LKHA-1600P-QC, LKHA-0808P-QC, LKHA-1600P-QA, LKHA-0808P-QA support this connection.



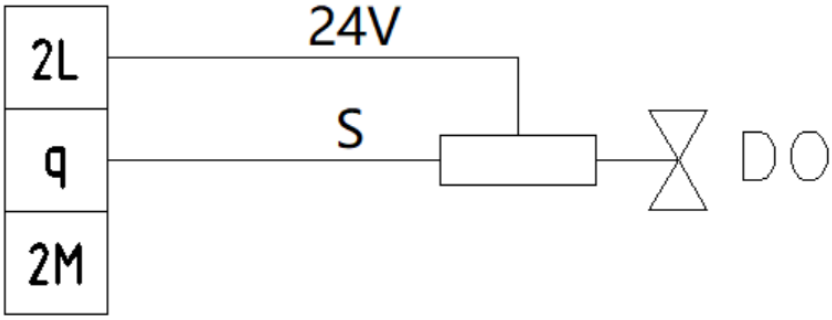
b）PNP output signal – LKHA-0808P-QC, LKHA-0016P-QC, LKHA-0808P-QA, LKHA-0016P-QA support this connection.



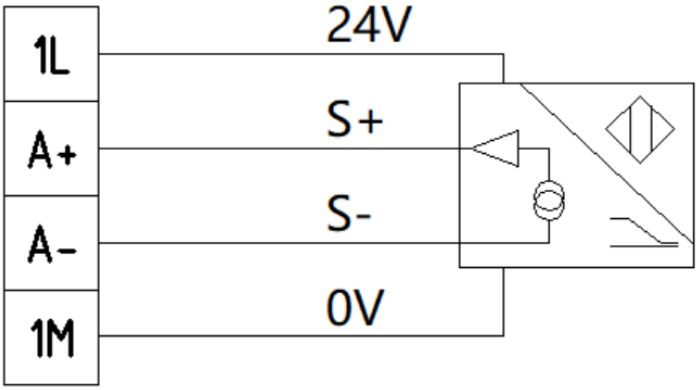
c） NPN input signal – LKHA-1600N-QC, LKHA-0808N-QC, LKHA-1600N-QA, LKHA-0808N-QA support this connection.



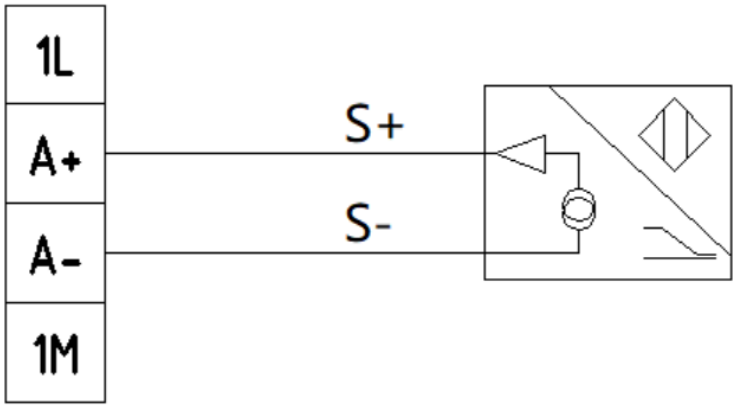
d） NPN output signal – LKHA-0808N-QC, LKHA-0016N-QC, LKHA-0808N-QA, LKHA-0016N-QA support this connection.



e）Analog input signal – LKHA-04UA-QC support this connection.



f）Analog output signal – LKHA-04UA-QC support this connection.



2.6 IO-Link signal hub indicator

Name	Status	Meaning	Fault cause
Module communication Indicator LK	Green flash	Receive IO-Link communication	-
	Off	No IO-Link signal received	1.Expansion cable failure 2.Master IO-Link port problem 3.Slave module is damaged
Module ERROR Indicator ER	Green	No error	-
	Red	Working abnormally	1. Power supply is abnormal 2.Channel abnormal (short circuit, overload, etc.) 3. Module is damaged
Power supply Indicator UA	Green	Supply voltage normal	
	Off	No power supply	1.Power supply cable failure 2. Module is damaged
Signal / status Indicator	Red	Abnormal signal	1.Signal overload or short circuit 2.Slave module is damaged
	Green	Have signal	-
	Off	No signal	-