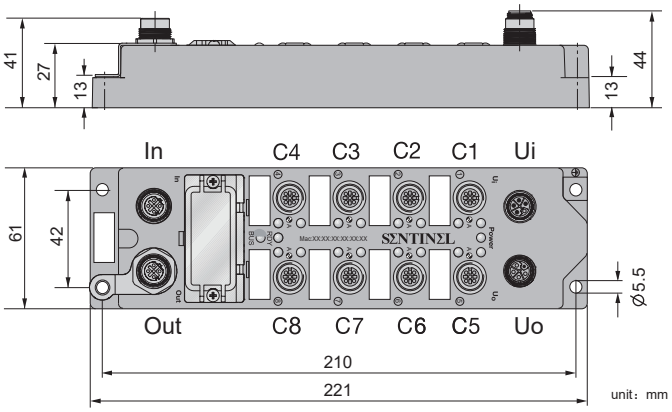
Compact I/O Module for CC-Link IE Field Basic

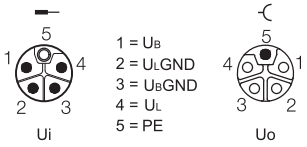
8 IO-Link Master Channels
ELBC-8IOL-L001



- CC-Link IE Field Basic remote I/O module
- Integrated Ethernet Switch
- Support 100Base-TX
- 2XM12,4-pin,D-code,Ethernet Fieldbus connection
- 8 IO-Link Master Channels
- IO-Link Protocol 1.1
- IO-Link master port class A
- M12 ports for IO-Link master, 5-pin
- Impact and vibration resistance
- Fully potted module electronics
- Copper-plated nickel connector
- Protection classes IP67

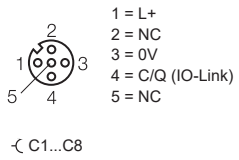
Model	ELBC-8IOL-L001
Supply voltage	24VDC ± 10%
Operating current	< 200mA
Supply current	>8A
IO-LINK port parameters	
Number of ports	8 (C1...C8)
Connectivity inputs	M12 , A-code , 5-pin
Common IO	Not supported, Pin 2 needs to be empty
Current supply per port	Maximum 2A The first pin provides current to the device C1...C4 Total current max 4 A C5...C8 Total current max 4 A
IO-LINK parameters	
SIO model	Not Supported (Pin 4 cannot be used as common IO)
IO-Link Pin definition	Pin 4 in IOL mode
IO-Link Port type	Class A The second pin is unused
IO-Link specification	Version 1.1
Frame type	Supports all specified frame types
Support Device	Maximum 32Bytes Input / 32Bytes Output
Transmission rate	4.8kbps(COM1) / 38.4kbps(COM2) / 230.4kbps(COM3)
CC-LINK IE Field Basic	
Number of communication interface	2
Transmission standed	100Base-TX
Auto-negotiation	Supported
Auto-MDI/MDIX	Supported
Maximum transmission rate	100Mbit/s
Fieldbus connection technology	2x M12, 4-pin, D-coded
Number of occupied stations	1...4
Default IPv4 address	192.168.3.*
IP address setting function	Support IPAddressSet port number: 61451;
Default subnet mask	255.255.255.0
Communication data format	the binary
Operating temperature	-20...+55℃

Power Supply Connector L-coded

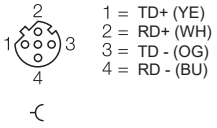


Note: UB supplies module, UL supplies load
Note: UL unneeded, Ui directly connects Uo

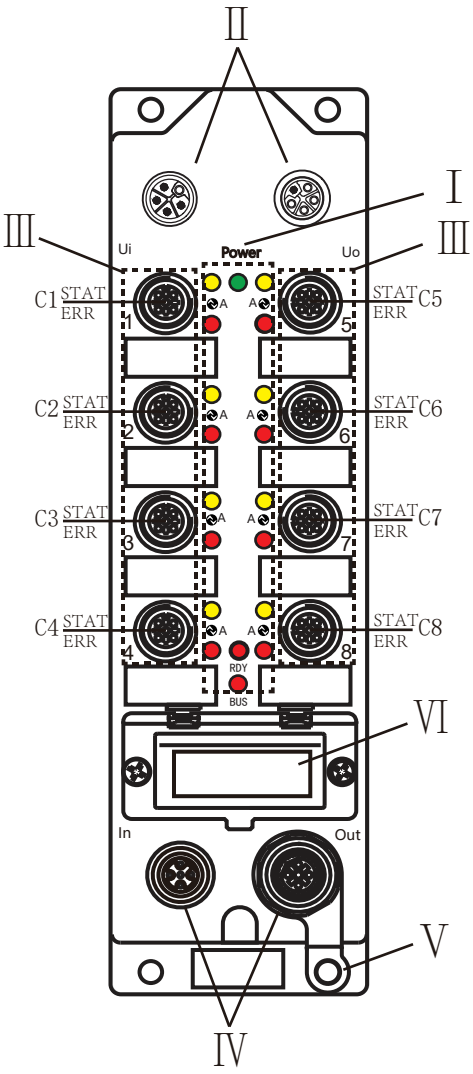
IO-LINK Port Connector M12



Bus Connector M12



		Description	
I	Module LEDS	LED name	Detailed introduction
		Power	Green LED: ON:The module power supply (Ub) is normal OFF:The module power supply is disconnected
		Bus	Green LED ON:CC-Link IEF Basic normal communication Red LED ON:CC-Link IEF Basic no communication
		RDY	Red LED ON:IO-Link port error, inconsistent with configuration
		STAT	Yellow LED: IO-Link communication status (C1 - C8) ON: IO-Link communication is normal OFF: IO-Link communication is not established;
		ERR	Red LED: IO-Link working status (C1-C8) ON: The port is working abnormally; please check the IO-Link cable or the IO-Link port setting in the DIP OFF: The port is normal; the IO-Link communicates normally or the port is closed or disabled during dialing
II	Power suppy	Ui (left) : Power suppy input , L-coded, 5-pin , male Uo (right) : Power suppy output , L-coded, 5-pin , female	
III	IO-Link PORT	• M12 A-code, 5-pin female connector; 4th pin is IO-Link, not compatible with SIO or standard IO mode. 2nd pin is vacant, no external signals allowed. • In the diagram, "C*" denotes a port. "STAT" and "ERR" represent communication and work status indicators, respectively. For instance, C1 STAT/ERR signifies PORT1, with the upper right LED indicating STAT, and the lower LED indicating ERR. Detailed instructions are in "I". • There are eight independent IO-Link Class A ports, each with its own STAT and ERR. Class B devices require an external power supply. **Note: Please turn off unused ports via rotary code, avoiding red lights on the module.**	
IV	Bus	In(left):CC-Link IEF Basic Bus in,M12,D-Code,4-pin,female Out(right):CC-Link IEF Basic Bus out,M12,D-Code,4-pin,female	
V	PE	Ground connection	
VI	Network status LEDS	LINK2	Bus in , Green LED: ON:This port communication rate is 100M OFF:This port communication rate is not 100M
		ACT2	Bus in , Yellow LED: ON:connected; OFF:no connection; Flashing: data exchange
		LINK1	Bus out , Green LED: ON:This port communication rate is 100M OFF:This port communication rate is not 100M
		ACT1	Bus out , Yellow LED: ON:connected; OFF:no connection; Flashing: data exchange
	IP address setting	ADDR_H is the high bit of the hexadecimal number of the address; ADDR_L is the low bit of the hexadecimal number of the address; The functions corresponding to different DIP switch settings are as follows: 0x00 — Operate according to the IP address assigned by the programming software 0x01 - 0xFF — Set the 4th part of the IP address. The first 3 parts follow the programming software For example: ADDR_H is A, ADDR_L is 9, then ADDR is 0xA9 IP address is: 192.168.3.169; Note: After the rotation code is changed, it will take effect after re-powering	
	Number of occupied stations	Rotary Code STATION: Sets the number of stations occupied; adjustable range 1~4. According to protocol specifications, one station will allocate RX 64 bits, RY 64 bits, RWr 32 characters, RWw 32 characters. Note: Changes to this rotary code will take effect upon power reset.	
	IO-Link port control	Rotary code PORT_H PORT_L: Control to open or close 8 IO-Link ports Rotary code / Port: 8 7 6 5 4 3 2 1 For example: PORT_H:0x02; PORT_L:0x05; the corresponding binary is: 0010 0101 means: open ports C1, C3, C6, and close other ports; **Note: After the rotation code is changed, it will take effect after re-powering**	



IO-Link Port Byte Mapping

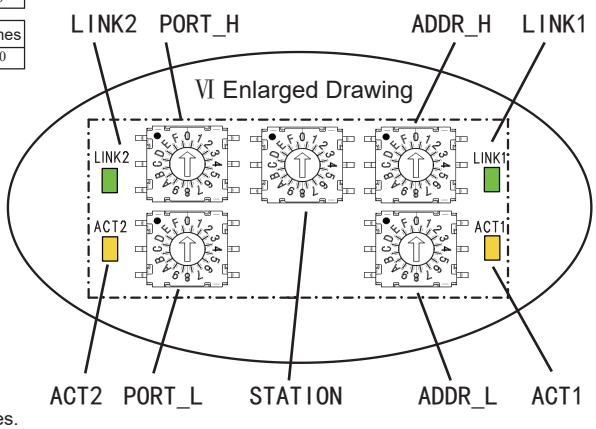
IO-Link status

	Record（1 for disconnected, 0 otherwise）								IO-Link status（1 for communication, 0 none.）							
RX	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
Port	C8	C7	C6	C5	C4	C3	C2	C1	C8	C7	C6	C5	C4	C3	C2	C1

	C4 port disconnection times				C3 port disconnection times				C2 port disconnection times				C1 port disconnection times			
RX	1F	1E	1D	1C	1B	1A	19	18	17	16	15	14	13	12	11	10

	C8 port disconnection times				C7 port disconnection times				C6 port disconnection times				C5 port disconnection times			
RX	2F	2E	2D	2C	2B	2A	29	28	27	26	25	24	23	22	21	20

	Byte Swap (1: Swap high and low bytes of the port 0: No swap, default byte order)							
RY	7	6	5	4	3	2	1	0
Port	C8	C7	C6	C5	C4	C3	C2	C1



IO-Link cyclic data

Occupies 1station 8bytes/port	
Port	RWr/RW wregister
C1	00h-03h
C2	04h-07h
C3	08h-0Bh
C4	0Ch-0Fh
C5	10h-13h
C6	14h-17h
C7	18h-1Bh
C8	1Ch-1Fh

Occupies 2station 16bytes/port	
Port	RWr/RW wregister
C1	00h-07h
C2	08h-0Fh
C3	10h-17h
C4	18h-1Fh
C5	20h-27h
C6	28h-2Fh
C7	30h-37h
C8	38h-3Fh

Occupies 3station 24bytes/port	
Port	RWr/RW wregister
C1	00h-0Bh
C2	0Ch-17h
C3	18h-23h
C4	24h-2Fh
C5	30h-3Bh
C6	3Ch-47h
C7	48h-53h
C8	54h-5Fh

Occupies 4station 32bytes/port	
Port	RWr/RW wregister
C1	00h-0Fh
C2	10h-1Fh
C3	20h-2Fh
C4	30h-3Fh
C5	40h-4Fh
C6	50h-5Fh
C7	60h-6Fh
C8	70h-7Fh

Note: RWr: Slave-to-master input; RWw: Master-to-slave output. Units: RWr/RWw - characters; IO-Link - bytes.
Below: character-byte relationship.

	IO-Link BYTE1 High Byte								IO-Link BYTE0 Low Byte							
RWr/RWw	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0