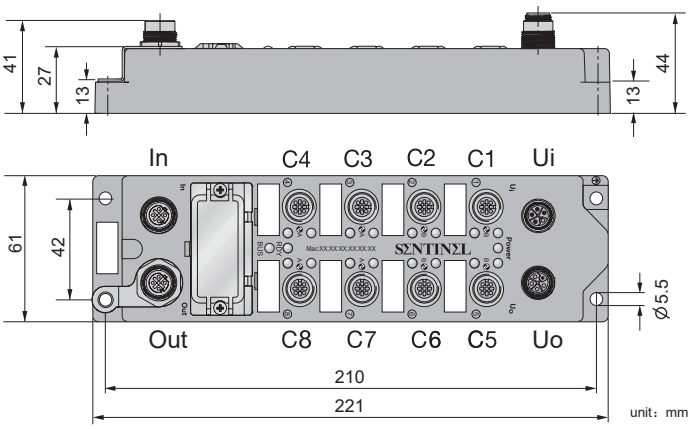
# Compact I/O Module for CC-Link IE Field Basic

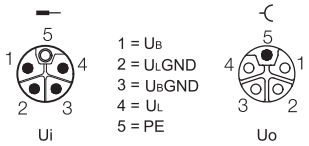
## 8 IO-Link Master Channels 4A+4B
## ELBC-8IOL-L04B




- 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 4 class A + 4 class B
- M12 ports for IO-Link master, 5-pin
- Impact and vibration resistance
- Fully potted module electronics
- Copper-plated nickel connector
- Protection classes IP67

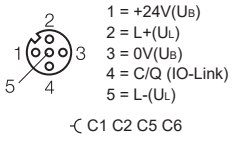
| Model | ELBC-8IOL-L04B |
|---|---|
| Supply voltage | 24VDC ± 10% |
| Operating current | < 200mA |
| Module power ($U_B$) | ≤8A |
| Load power ($U_L$) | ≤8A |
| **IO-LINK port parameters** | |
| Number of ports | 8 (C1...C8) |
| Connectivity inputs | M12 , A-code , 5-pin |
| Port supply current | Rated 1A, Max 2A: UB from pins 1,3; C1...C4, C5...C8 ≤ 4A each.<br>Max 2A: UL from pins 2,5; C1,C2, C5,C6 ≤ 4A each. |
| **IO-LINK parameters** | |
| SIO model | Not Supported |
| IO-Link Pin definition | Pin 4 in IO-LINK |
| IO-Link Port type | Class A (C3 C4 C7 C8)+Class B(C1 C2 C5 C6) |
| 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

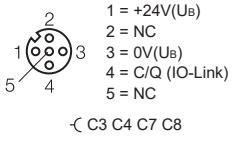



Note: UB supplies module, UL supplies load

### IO-LINK Port Connector M12

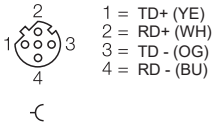



C1 C2 C5 C6

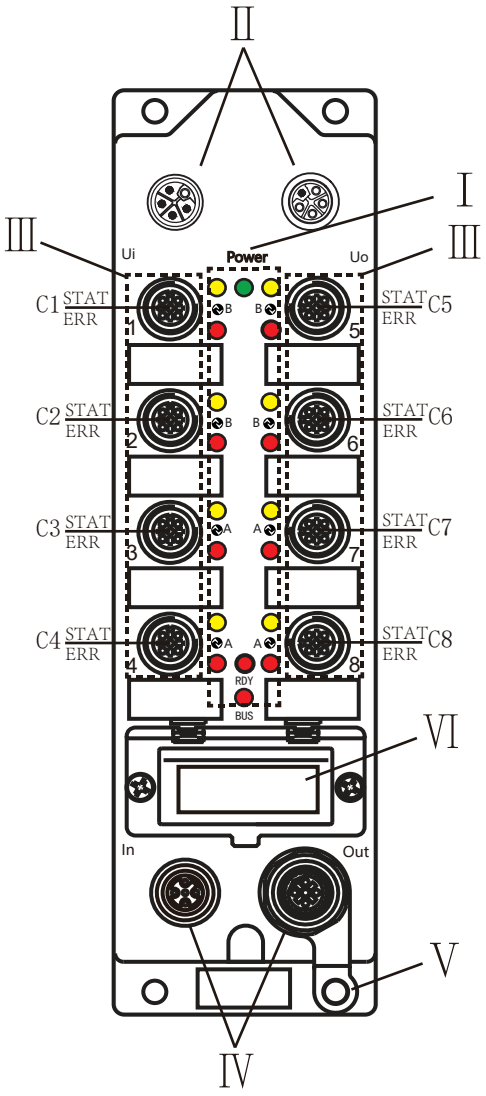



C3 C4 C7 C8

### Bus Connector M12



| | | Description | |
|---|---|---|---|
| I | Module LEDS | LED name | Detailed introduction |
| | | Power | Green LED: ON:The module power supply (Ub) is normal<br>OFF:The module power supply is disconnected |
| | | Bus | Green LED ON:CC-Link IEF Basic normal communication<br>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)<br>ON: IO-Link communication is normal<br>OFF: IO-Link communication is not established; |
| | | ERR | Red LED: IO-Link working status (C1-C8)<br>ON: The port is working abnormally; please check the IO-Link cable or the IO-Link port setting in the DIP<br>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<br>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.<br>• In the diagram, "C*" denotes a port. "STAT" and "ERR" represent communication and work status indicators, respectively.<br>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".<br>• There are eight independent IO-Link Class A ports, each with its own STAT and ERR. Class B devices require an external power supply.<br>**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<br>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:<br>ON:This port communication rate is 100M<br>OFF:This port communication rate is not 100M |
| | | ACT2 | Bus in , Yellow LED:<br>ON:connected; OFF:no connection; Flashing: data exchange |
| | | LINK1 | Bus out , Green LED:<br>ON:This port communication rate is 100M<br>OFF:This port communication rate is not 100M |
| | | ACT1 | Bus out , Yellow LED:<br>ON:connected; OFF:no connection; Flashing: data exchange |
| | IP address setting | ADDR_H is the high bit of the hexadecimal number of the address;<br>ADDR_L is the low bit of the hexadecimal number of the address;<br>The functions corresponding to different DIP switch settings are as follows:<br>0x00 — Operate according to the IP address assigned by the programming software<br>0x01 - 0xFF — Set the 4th part of the IP address. The first 3 parts follow the programming software<br>For example: ADDR_H is A, ADDR_L is 9, then ADDR is 0xA9 IP address is: 192.168.3.169;<br>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.<br>According to protocol specifications, one station will allocate RX 64 bits, RY 64 bits,<br>RWr 32 characters, RWw 32 characters.<br>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<br>Rotary code / Port: 8 7 6 5 4 3 2 1<br>For example: PORT_H:0x02; PORT_L:0x05; the corresponding binary is: 0010 0101 means: open ports C1, C3, C6, and close other ports;<br>**Note: After the rotation code is changed, it will take effect after re-powering** | |




## IO-Link Port Byte Mapping

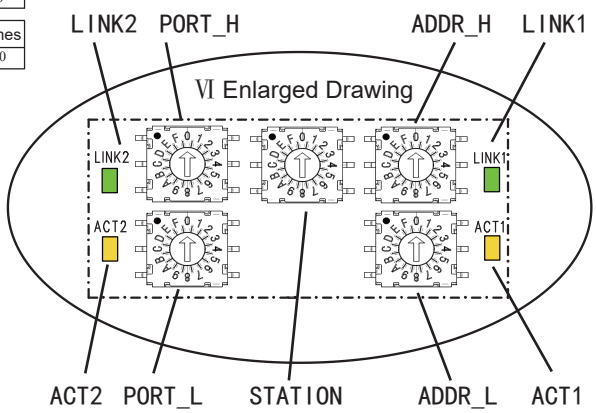
### IO-Link status

| | 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 |