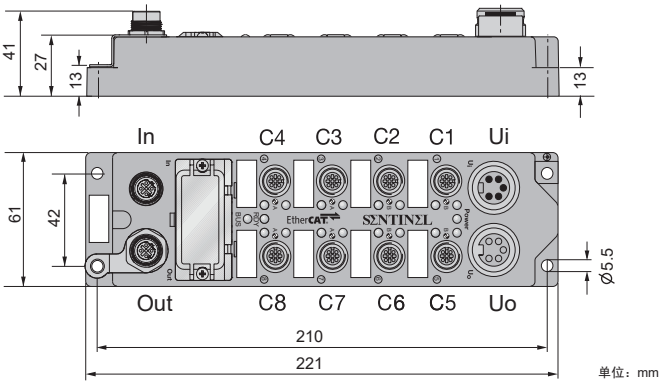
Compact I/O Module for EtherCAT

8 IO-Link Master Channels

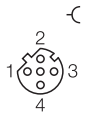
ELCT-8IOL-004B



- EtherCAT 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
- IO-Link master port M12 A-coded
- Metal connector with high-strength plastic housing
- Impact and vibration resistance
- Fully potted module electronics
- Protection classes IP67

Modle	ELCT-8IOL-004B
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 , Female
Common IO	Not supported, Pin 2 needs to be empty
Port supply current	Rated 1A, max 2A: UB from pins 1,3; Among: C1...C4, C5...C8 ≤ 4A each. Max 2A: UL from pins 2,5; Among: C1,C2, C5,C6 ≤ 4A each.
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 (C3 C4 C7 C8)+Class B (C1 C2 C5 C6)
IO-Link specification	Protocol 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)
EtherCAT	
Number of communication interface	2
Transmission standed	100Base-TX
Auto-negotiation	Supported
Auto-MDI/MDIX	Supported
Maximum transmission rate	100Mbit/s
Autoscan	The EtherCAT scanning function can automatically scan the IO-Link Device connected to the port
Interface type	M12, D-coded, Female
Operating temperature	-20...+55 ℃

Bus Connector M12



1 = TD+ (YE)
2 = RD+ (WH)
3 = TD - (OG)
4 = RD - (BU)

IO-LINK Port Connector M12

1 = +24V(U_B)
2 = L+(U_L)
3 = 0V(U_B)
4 = C/Q (IO-Link)
5 = L-(U_L)

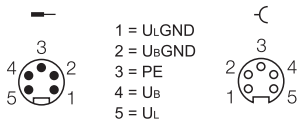
C1 C2 C5 C6

IO-LINK Port Connector M12

1 = +24V(U_B)
2 = NC
3 = 0V(U_B)
4 = C/Q (IO-Link)
5 = NC

C3 C4 C7 C8

Power Supply Connector 7/8”

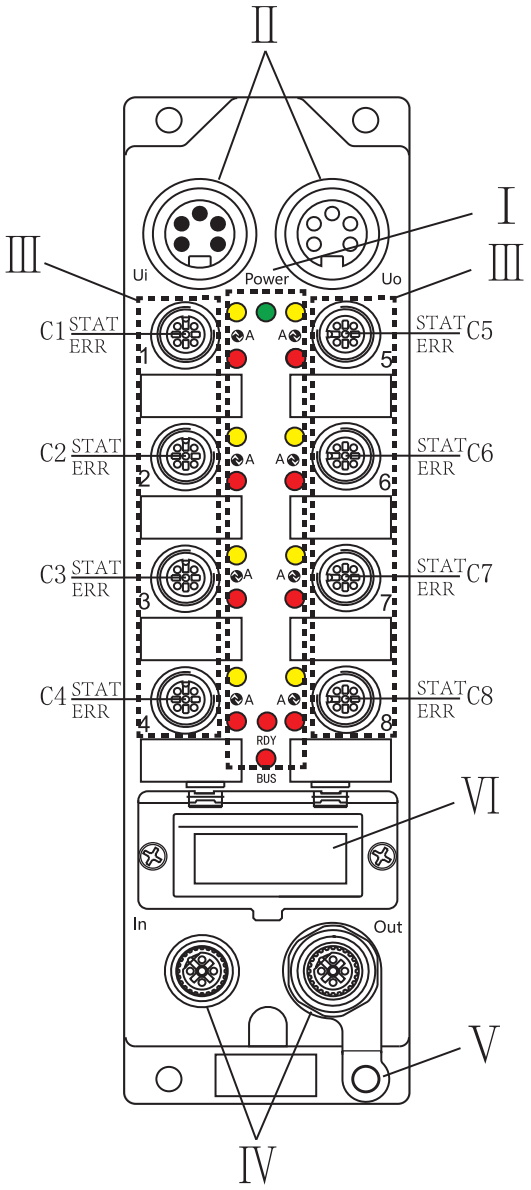


1 = U_LGND
2 = U_BGND
3 = PE
4 = U_B
5 = U_L

Ui Uo

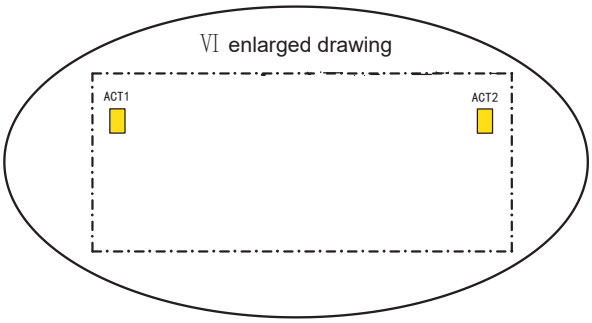
Note: UB is the module power supply, UL is the load power supply

		Description	
I	Module LEDS	LED name	Detailed introduction
		POWER	Green LED lights: ON:The module power supply (Ub) is normal OFF:The module power supply is disconnected
		BUS	Green LED lights: OFF:The module is in the "INIT" state Fast flash:The module is in the "Pre-operational" state Slow flash:The module is in the "Safe-operational" state ON: The module is in the "OP" state
		RDY	Red LED lights: Flash: IO-Link is not ready OFF: IO-Link is ready ON: There is an error in the IO-Link port, which is inconsistent with the configuration
		STAT	Yellow LED lights : The IO-Link communication status of the port（C1 - C8） ON : The IO-Link communication is normal OFF: The IO-Link communication is not established
		ERR	Red LED light: Working state of the port ON : The port is working abnormally; please Check the IO-Link cable and parameter setting of IO-Link in configuration OFF: No error in this port; IO-Link Communication is normal OR this port is closed or deactivated in EtherCAT configuration
II	Power suppy	Ui (left) : power suppy input , 7/8", 5-pin , male Uo (right) : power suppy output , 7/8", 5-pin , female	
III	IO-Link PORT	• M12 A-code 、5-pin ; Pin 4 is IO-LINK ; Pin2 is empty , No external signals can be connected. • C* in the figure represents the *th port ; The STAT represents the communication status indicator lamp ; The ERR represents the working status indicator lamp. • For example, C1 STAT/ERR represents that the port is PORT1, The LED above the right of the port is STAT and the LED below is ERR. • A total of 4 IO-Link Class A ports and 4 IO-Link Class B ports, each with independent STAT& ERR Note : Please close the port in the EtherCAT configuration when not used , Try not to let the module have a red light.	
IV	Bus	In (left) : EtherCAT Bus in , M12 , D-Code , 5-pin , female Out (right) : EtherCAT Bus out , M12 , D-Code , 5-pin , female	
V	PE	Ground connection	
VI	Network status LEDS	ACT1	Bus in ,Green LED lights : ON : Physical connections have been established OFF: No connection Flash: This port has data exchange
		ACT2	Bus out ,Green LED lights : ON : Physical connections have been established OFF: No connection Flash: This port has data exchange



IO-Link Device Status

Name	Data type	Description
8 Port IO-Link Current Status	USINT	Status of 8 IO-Link ports 0: Communication is interrupted 1: Normal communication Bit0 : PORT1 current state Bit4 : PORT5 current state Bit1 : PORT2 current state Bit5 : PORT6 current state Bit2 : PORT3 current state Bit6 : PORT7 current state Bit3 : PORT4 current state Bit7 : PORT8 current state
8 Port IO-Link Error Status	USINT	Error Status of 8 IO-Link ports 0: There is no error 1: Error occurred Bit0 : PORT1 Error status Bit4 : PORT5 Error status Bit1 : PORT2 Error status Bit5 : PORT6 Error status Bit2 : PORT3 Error status Bit6 : PORT7 Error status Bit3 : PORT4 Error status Bit7 : PORT8 Error status
Error Times_Port1 Error Times_Port2 Error Times_Port3 Error Times_Port4 Error Times_Port5 Error Times_Port6 Error Times_Port7 Error Times_Port8	USINT	Number of port errors Starting from module power-on, Accumulate the number of times the IO-LINK device is cut off. The module is powered on again, and the number of errors is cleared.



Automatic scanning function

After the module is powered on, it automatically detects and establishes communication with the IO-Link Device connected to the 8 ports.If the EtherCAT does not communicate properly at this time, you will scan the EtherCAT module and the IO-Link Device for each port.You can also manually make changes to the Slots in the EtherCAT module.

Note: If EtherCAT has normal communication with EtherCAT Master, the module will connect to eight IO-Link ports following the Slots parameter in the configuration.If you want to scan the 8-port connected Device, first remove the configuration of the EtherCAT module, disconnect it from the EtherCAT Master, and then repower on the EtherCAT module before performing automatic scanning.