

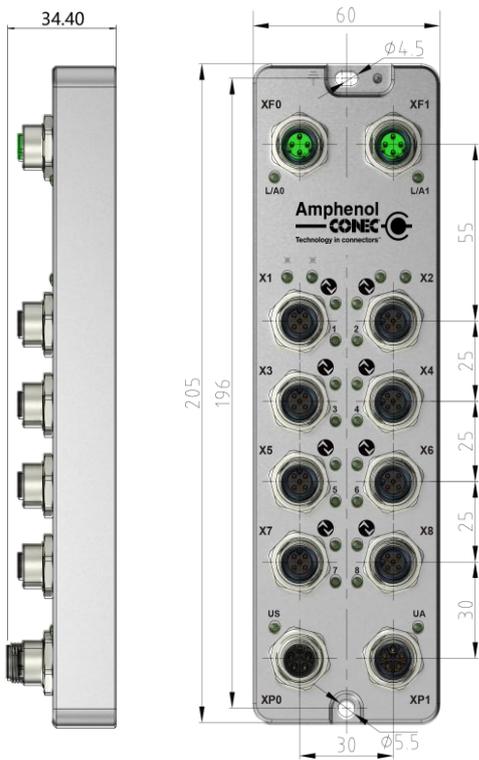
**Part number: 43-08009**  
**SAL-12L-FK4FE-FS4FE-I08FK5-12D-EC2FK4**

- EtherCAT protocol slave, IO-LINK master
- 8-channel IO-LINK M12 5PIN A-code interface
- Integrated Ethernet switch function
- Ports have short circuit, over-voltage, under-voltage, and reverse connection protection
- IP67 protection level



**Basic parameters**

Housing material	Aluminum Alloy
Housing color	Anodized black
Protection level	IP67, epoxy full potting
Dimension	205mm×60mm×34.4mm
Weight	515g
Operating temperature	-25°C...70°C
Storage/Transportation temperature	-40°C...85°C
Operating humidity	5%...95%
Storage/Transportation humidity	5%...95%
Operating atmospheric pressure	80KPa...106KPa
Storage/Transportation	80KPa...106KPa
I/O port tightening torque	M12:0.5Nm
Application Environment	According to EN-61131
Vibration test	According to IEC60068-2
Shock Test	According to IEC60068-27
Free drop test	According to IEC60068-32
Electromagnetic compatibility (EMC)	According to IEC61000-4-2, -3, -4
Certificate	CE, RoHS
Mounting hole size	Φ4.5mm×1, Φ5.5mm×1



**Module LED indicators**

PWR	Green: Power supply is normal
	Red: Module power supply is connected reversely
IO	Green: Channel signal is normal
	Red: Port power supply short circuit (pins 2 and 3)
LINK	Green: Link is normal, data communication is abnormal
	Yellow flashing: The link is normal and the data communication is normal
	Off: Link not established
RUN	Green: OP status
	Green slow flashing: SAFEOP state
	Green flashing: Pre-OP state
	Off: Init state
ERR	Red flashing: Communication error
	Off: The module is in normal state
IO-LINK	Green: Port operational (running) status
	Green flashing: port is connecting
	Green slow flashing: The port is in pre-operation state
	Off: The port is closed.
	Red: Power supply short circuit (pins 1, 3)

**I/O signal distribution table**

Input/Output	Byte	Bit0	Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7
	0	X1P2	X2P2	X3P2	X4P2	X5P2	X6P2	X7P2	X8P2

**Communication interface**

M12 D-code female



Pin	Definition	Description
1	TX+	Data sent +
2	RX+	Data received +
3	RX-	Data sent -
4	TX-	Data received -

**Port parameters**

Connection	2×M12 D-code; 4 pins, female
Physical Layer	Ethernet
Transfer speed	10/100 Mbps, full duplex
Characteristic	According to the protocol characteristics
Alarm function	Diagnostic alarm, process alarm
Minimum cycle time	1ms
Communication port tightening torque	M12:0.5Nm

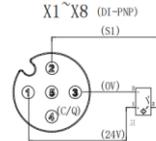
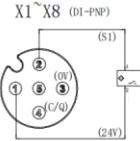
**IO-LINK port wiring diagram input (X1-X8)**

M12 A-code Female

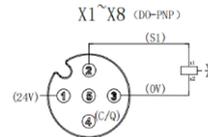


- 24VDC+
- Input/Output
- 0 V
- C/Q
- N/C

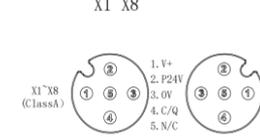
1. PNP input signal, that is, the jack is connected to the input



2. PNP type output signal, that



3. IO-LINK port connects to IO-LD



**IO-LINK parameters**

Number of ports	8×IO-LINK
IO-LINK connection mode	M12, 5-pin, A-code, female
IO-LINK version	1.1
Communication rate	COM1 (4.8Kbps)/COM2 (38.4Kbps)/COM3 (230.4Kbps)
Port voltage	type, 24VDC (follow US)
Port current	2A (follow US)
Port level	8 × CLASS A
Maximum data length of port	IN/OUT 32byte/32byte
Maximum network communication distance	≤100m
Maximum IO-LINK distance	≤20m
Digital input/output	8 points PNP (input and output adaptive)

**Input Parameters**

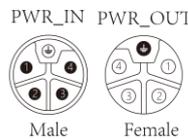
Input number	Max 8
Input port location	X1...X8
Input polarity	PNP
Input signal "0"	Low level 0~5V
Input signal "1"	High level 11~30V

**Output Parameters**

Output quantity	Max 8
Output port location	X1...X8
Output polarity	PNP
Output Current	Single channel max 2A
Port protection	Port power short circuit protection, port overload protection

**Power port**

M12 L-code male/female



Pin	Definition	Description
1	+24V Us	System/input power +24V
2	GND Ua	Output power GND
3	GND Us	System/input power GND
4	+24V Ua	Output power +24V
5	FE	Functional grounding

※Us is the system and input power supply, Ua is the output power supply

**Port parameters**

Power connection method	M12 5 pins L-code male/female
System power supply voltage US	18...30 VDC (type, 24VDC)
Auxiliary power supply voltage UA	18...30 VDC (type, 24VDC)
Total current IS/IA	12A
Static operating current IC	≤150mA
Overvoltage protection	enabled
Power reverse polarity protection	enabled
Power port tightening torque	M12:0.5Nm