YL212CEI8M1IO IO-Link master

Slim-line IO-Link master with EtherNet/IP™, Modbus TCP, OPC UA



Benefits

- Eight M12 IO-Link ports to EtherNet/IP™ which allows up to eight sensor or actuator connections on a single master
- Additional digital input on every port
- M12 L-Coded power connectors
- Robust IP67 slim-line housing design for machine mounting in harsh environments
- EtherNet/IP™ and Modbus/TCP access to IO-Link process, event and service data
- OPC UA support
- Integrated web server and IODD interpreter
- Dual Ethernet ports via M12, D-coded
- Multi-colour LEDs for device, network, and port status diagnostics
- Wide operating temperature: -25° to +60°C (-13° to 140°F)
- IO-Link V1.0 and V1.1 compatibility
- IO-Link COM1, COM2 and COM3 (230K baud rate)

Description

Y series of IO-Link masters fully satisfy the most demanding industrial communication needs.
YL212CEI8M1IO is machine mount fieldbus module with eight M12 IO-Link ports, compatible with IO-Link V1.0 and V1.1. It is a gateway solution with support for EtherNet/IP™ fieldbus system.
Thanks to a powerful web interface and integrated IODD interpreter it is possible to configure and diagnose the IO-Link master even from a tablet or smartphone and easily read, parameterize or configure the IO-Link devices connected. Thanks to IO-Link V 1.1 it is possible to replace a connected device by downloading all parameters into a replacement device automatically from the Master.
With Y series IO-Link masters it is possible to simultaneously provide data access via different communication protocols like EtherNet/IP™, Modbus/TCP and OPC UA to multiple controllers.

Main features

- Embedded web server and IODD interpreter to configure and access diagnostic information of the attached IO-Link devices and of the fieldbus module itself (e.g. setting the IP address and subnet mask) without the need of a specific software
- Possibility to store the configuration of all devices connected in the IO-Link master memory to allow the system to work even without a higher-level PLC and to enable error-proof sensor replacement with automatic parameterization
- IIoT ready, thanks to the integrated OPC UA interface that allows reliable, continuous and transparent data transfer between the field level (sensor/actuator) and higher-level cloud systems in full compliance with the Industry 4.0 requirements
- Daisy-chain power supply with standardized L-coded M12 connection technology allows a higher current rating of up to 16 A
- Industrial Ethernet components and a fully incapsulated housing for harsh environment applications
- Multi-colour LEDs with status and diagnostics information for each channel

Main functions

IO-Link masters allow to connect all sections of a plant in a single industrial network, from the management level (ERP) right down to the field level (sensors and actuators) to increase the availability and efficiency of machines and plants. In addition to this, Y series IO-Link masters are specifically designed to enable the complete integration into the industrial communication system.

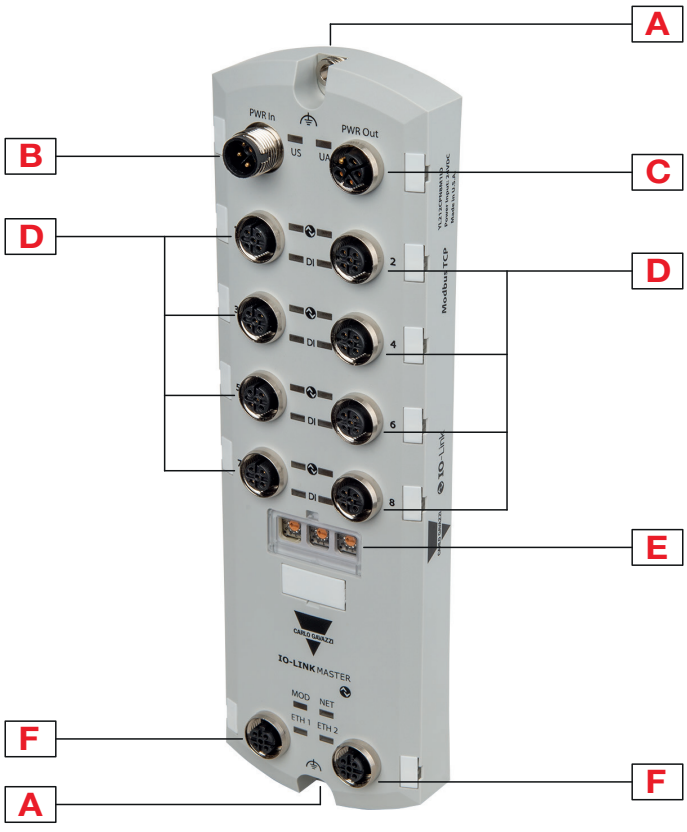
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References

Order code

YL212CEI8M1IO

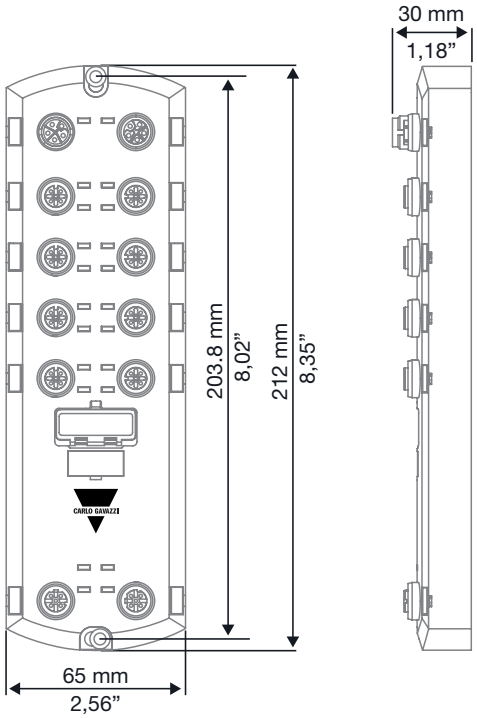
Structure



Element	Function
A	M4 hole for mounting
B	Power input port, M12, 5 pin, male connector
C	Power output port, M12, 5 pin, female connector
D	Input ports, M12, 5 pin, female connector
E	Rotary switches to set the IP address
F	Ethernet ports, M12, 4 pin

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Dimensions



Features

General

Configuration	Embedded web interface, IO-Link, EtherNet/IP and Modbus TCP
Data Storage	Automatic or Manual - Upload and/or Download
Device Validation	Yes
Data Validation	Yes
Diagnostics	IO-Link, EtherNet/IP™ and Modbus TCP
Powerful Web Interface	Provides: firmware upgradable; password protected with admin, operator, and user accounts; ISDU batch handling; load IODD files to configure the IO-Link Device; IODD Handler parses xml files making them readable and configurable; Log files; Save/Load configuration files
Upgradable Firmware	Yes (via web GUI)
Remote Parameterization	Yes

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Power Supply

Rated operating voltage U_e	20 - 30 VDC
Power consumption (module electronics)	120 mA @ 24 VDC
Power supply In	Module electronics and sensors (US) 16 A (max.) Actuator supply (UA) 16 A (max.)
Power supply Out	US 16 A (max.)* UA 16 A (max.)**

(*)US output available is determined by subtracting the following from the available input current.
- IO-Link Master module electronics current.
- Total C/Q current for all IO-Link ports.
- Total sensor supply current.

(**)UA output available is the same as the available UA input current.

Mechanical data

Housing material	Molded Polyamide 66 (potted)
Channels	8 x IO-Link / Digital I/O (configurable)
	8 x Digital Input DI
	2 x Ethernet
Weight	454 g
Installation	Machine or panel mount
	Two-hole M4 or 8 screws
Tightening torque	Fastening screws: 8 Nm Cable gland: ≤ 0.5 Nm

Environmental

Protection degree	IP67
Ambient temperature	Operating: -25°C to +60°C (-13°F to 140°F)
	Storage: -40°C to +70°C (-40°F to 158°F)
Ambient humidity (non-condensing)	Operating: 10% to 95%
	Storage: 10% to 95%
Shock / Vibrations	EN60068-2-6; EN60068-2-27
Altitude	0 - 2000m

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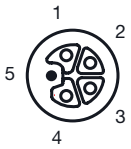
Compatibility and conformity

Immunity **European standard EN 61000-6-2**	EN/IEC 61131-2 and EN/IEC 61131-9: IEC 61000-4-2: Electrostatic Discharge IEC 61000-4-3: Radiated, Radio-Frequency IEC 61000-4-4: Fast transient/Burst IEC 61000-4-5: Surge IEC 61000-4-6: Conducted disturbance IEC 61000-4-8: Magnetic field IEC 61000-4-11: Dips and voltage variations
Emissions	European Standard EN 61000-6-4
	International Standard IEC 61000-6-4
	AS/NZS CISPR-11
	FCC Part15 Subpart B; Class A limit
	Canadian EMC requirements ICES-001
Safety	CSA C22.2 No. 61010-1-12 / CSA C 22.2 No. 61010-1-201
	UL 61010-1 / UL 61010-1-201
Vibration	IEC 60068-2-6
Mechanical Shock	IEC 60068-2-27
Environmental / Mechanical Test Approvals	IEC 61131-2; IEC 60529
Approvals	
Other	The components of this product comply with the requirements of the EMC/EMI directive 2014/30/EU, directive 2011/65/EU on the restriction of the use of certain hazardous substances (RoHS2)

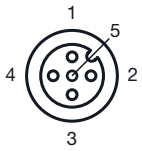
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Connectors

Power

Power connectors	1 x power input, 1 x power output	
Connector type	M12, L-coded, 4 + FE	
Pin-Out power In	Pin 1: US+ master electronics and sensor supply Pin 2: UA- actuator supply Pin 3: US- master electronics and sensor supply Pin 4: UA+ actuator supply Pin 5: functional earth	Male 
Pin-Out power Out	Pin 1: US+ / +V Pin 2: UA- / 0V Pin 3: US- / 0V Pin 4: UA+ / +V Pin 5: functional earth	Female 

IO-Link ports

Channels	8 x IO-Link / Digital I/O (configurable) 8 x DI	
Connector type	M12, A-coded Female, 5-position	
IO-Link version	Supports V1.0 and V1.1	
Pin-Out	Pin 1: L+ Pin 2: DI Pin 3: L- Pin 4: C/Q Pin 5: no connect	
Configurations per port	Pin 2: DI Pin 4 (configurable): IO-Link, DI (SIO mode), DO (SIO mode)	
Output Current L+/L-	1.6 A (Port 1) 1.0 A (Port 3) 500 mA (Port 2, 4 – 8; each)	
Output Current C/Q (port4)	200 mA	
Output Current per Master (C/Q & L+/L-)	6.7 A (max.)	
IO-Link Mode Transfer Rates	4.8K (COM1); 38.4K (COM2); 230.4K (COM3)	
Baud Rate Recognition	Automatic	
Cable Length (max.)	20 m	
Protection	Short circuit protection	

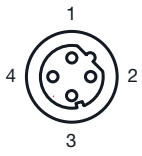
Digital input SIO mode (PIN 4)	
Input characteristics	IEC 61131-2 Type 1 and Type 3 compliant
Input threshold	High: 10.5 – 13.0V Low: 8.0 – 11.5V
Typical input current	3 mA
Cable length (max.)	30 m

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Digital output SIO mode (PIN 4)	
Typical Output Voltage	24 VDC
Output Current (max.)	200 mA
Output Current per Master	1.6 A (max.)
Lamp Load (max.)	4W
Protection	Short circuit protection
Output Function	PNP/NPN (Push-Pull)
Cable length (max.)	30 m

Digital input (PIN 2, dedicated)	
Input characteristics	IEC 61131-2 Type 1 and Type 3 compliant
Input threshold	High: 6.8 – 8.0V Low: 5.2 – 6.4V
Typical input current	3 mA
Reverse polarity protected	Yes (-40V to +40V)
Cable length (max.)	30m

Ethernet ports

Type	Industrial Ethernet	
Number of ports	2	
Connector type	Fieldbus M12 D-coded, 4-pin	
Pin-Out	Pin 1: Tx+ Pin 2: Rx+ Pin 3: Tx- Pin 4: Rx-	
Ethernet Specification	10/100BASE-TX	
Standards	IEEE 802.3: 10BASE-T IEEE 802.3u: 100BASE-TX	
Auto-MDI/MDI-X	Yes	
Auto-Negotiation	Yes	
Link Distance	100 m	
Cable Types	Unshielded/shielded twisted pair (Cat 5 or higher)	
IPv4 Addressing	Yes	

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Protocols

Ethernet/IP™ interface specifications

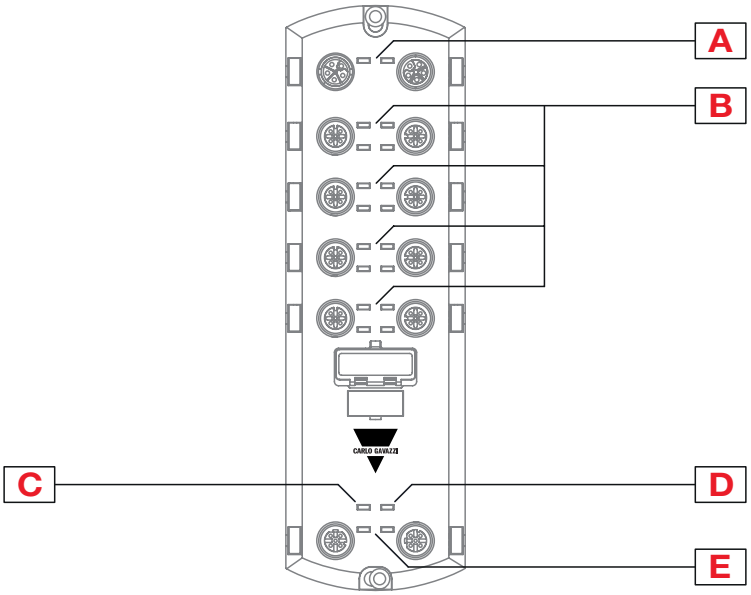
Supported PLCs	Including but not limited to: control logix, compact logix, RSLogix, SLC 500, PLC5, MicroLogix Other Class 1 or Class 3 EtherNet/IP PLCs may be supported
ISDU read and writes	Up to 40 individual commands in one EtherNet/IP message
ISDU commands	Selectable byte swapping (none, 16-bit, or 32-bit) Selectable payload sizes (4 to 232 bytes) ISDU block index ISDU sub-index Length of read or write Data payload
Web page configuration	Provides the following capabilities: port configuration for ISDU data, process data, transfer mode, read/write, write PDI to tag/file, and read PDO from tag/file. EtherNet/IP configuration: time to live (TTL) network value; multicast IP address allocation control; user-defined number of multicast IP addresses; user-defined multicast starting IP address; session encapsulation timeout
Diagnostics	Yes
Electronic data sheets (EDS)	Yes
Sample PLC programs	Yes

Modbus TCP (slave)

Supported controllers (modbus TCP masters)	PLC, HMI, SCADA, OPC Server
Supported clients	Any modbus TCP client, applications on phones/tablets
Web page configuration	Port configuration for ISDU response timeout, process data, and transfer mode
Diagnostics	Yes

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LED indication



Element	Function
A	US and UA status LEDs
B	IO-Link port and DI status LEDs
C	Module status LED
D	Network status LED
E	Ethernet port status LEDs

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