Photo-electric sensors
IO-Link Master

XZIOM8AM12PY

Presentation

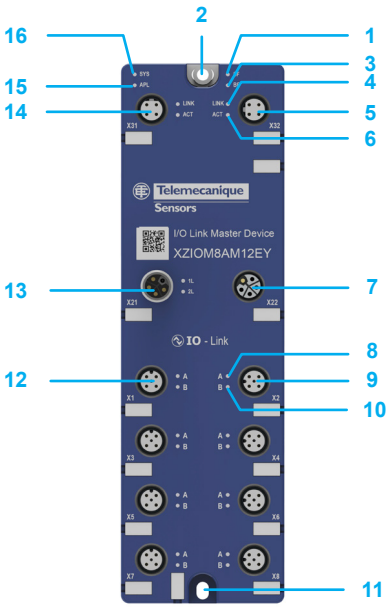
IO-Link is a point-to-point network communication protocol dedicated to sensors and actuators offering advantages such as increased productivity, simplified integration and reduced inventory.

It enables:
- Simplified connection of sensors and actuators to the upper-level control and monitoring system of an automated line
- Advanced diagnostic functions, through continuous monitoring of critical parameters such as signal quality and sensor status
- Reduced commissiong time due to fewer cables and hot swappable devices
- Integration with third-party devices, thanks to multiple fieldbus protocol support (PROFINET, Ethernet/IP)

Telemecanique Sensors offers a wide choice of IO-Link conformant devices, with various detection systems such as thru-beam, diffuse, polarised reflex, etc.

IO-Link system

An IO-Link system consists of the following components:
- IO-Link Master
- IO-Link devices (sensors, RFID readers, valves, motor starters, I/O modules)
- Cabling
- Engineering tool for integration and configuration of IO-Link devices (Simply Config IO-Link Master software *(1)*)



1 For Ethernet, module status LED (MS)
For PROFINET, system error LED (SF)
2 Fixing hole and functional earth (FE)
3 For Ethernet, network status LED (NS)
For PROFINET, bus failure LED (BF)
4 Link LED X32
5 Ethernet interface, M12, D-coded, port 2
6 Activity LED X32
7 Power Out
8 IO-Link status LED, port 2, channel A
9 IO-Link, port 2, M12, A-coded
10 IO-Link status LED, port 2, channel B
11 Fixing hole
12 IO-Link, port 1, M12, A-coded
13 Power In
14 Ethernet interface, M12, D-coded, port 1
15 Application status LED
16 System status LED

Description

IO-Link Masters

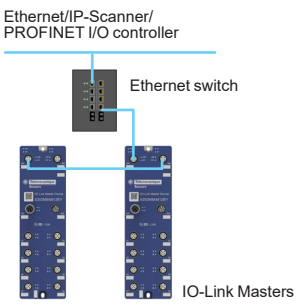
IO-Link Masters serve to capture digital inputs and outputs being conveyed between the PLC and the IO-Link devices.

Two types of IO-Link Master are available:
- **XZIOM8AM12EY** Ethernet Master, for devices connected to an Ethernet/IP network
- **XZIOM8AM12PY** PROFINET Master, for devices connected to a PROFINET network

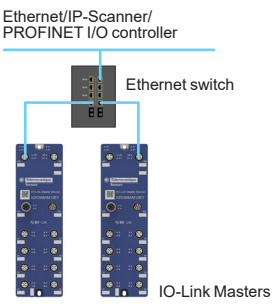
An IO-Link Master enables:
- On the sensor side: IODD file management, sensor configuration, port diagnosis
- On the Master side: Master configuration, firmware update, factory reset, Master diagnosis, MQTT setting

Example of installation in line or star topology

Line topology



Star topology



(1) Simply Config IO-Link software can be downloaded from our website.

IO-Link Master devices

Description	Protocol	Power consumption	Number of ports	Connector	Reference	Weight (kg)
IO-Link Master	Ethernet/IP	24V ⎓	8 class A	M12	**XZIOM8AM12EY**	0.405
	PROFINET	24V ⎓	8 class A	M12	**XZIOM8AM12PY**	0.405

IO-Link cables

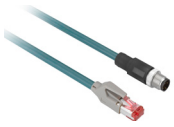
XZCPK75●L

XZCR26K26●L

Power cables

Description	Type of connector	End fittings	Length m		Reference	Weight (kg)
Single-ended, pre-wired, L-coded power cable (PUR)	Female	5-pin (4+FE)	2	1.5 mm²	**XZCPK75DL2**	0.255
			5	1.5 mm²	**XZCPK75DL5**	0.585
			2	1.5 mm²	**XZCPK75CL2**	0.255
			5	1.5 mm²	**XZCPK75CL5**	0.585
Jumper power cable (PUR)	Male/ Female	M12 5-pin/M12 5-pin	2	1.5 mm²	**XZCR25K25DL2**	0.285
			5	1.5 mm²	**XZCR25K25DL5**	0.615
			2	1.5 mm²	**XZCR26K26CL2**	0.285
			5	1.5 mm²	**XZCR26K26CL5**	0.615

Communication cables



XGSZ12E45●●

XGSZ22E45●●

Description	Type of connector	Length (m)	Reference
Ethernet copper cable	M12 D-coded to RJ45, straight/straight	3	**XGSZ12E4503**
		10	**XGSZ12E4510**
Ethernet copper cable, shielded	Jumper M12/RJ45, straight/elbowed	3	**XGSZ22E4503**
		10	**XGSZ22E4510**

IO-Link connector

TCSCTN011M11F

Description	Type of connector	End fittings	Reference	Weight (kg)
A-coded M12 T-connector	1 Male/2 Female	M12 5-pin/M12 5-pin	**TCSCTN011M11F**	0.035kg

Dimensions

XZIOM8AM12●Y

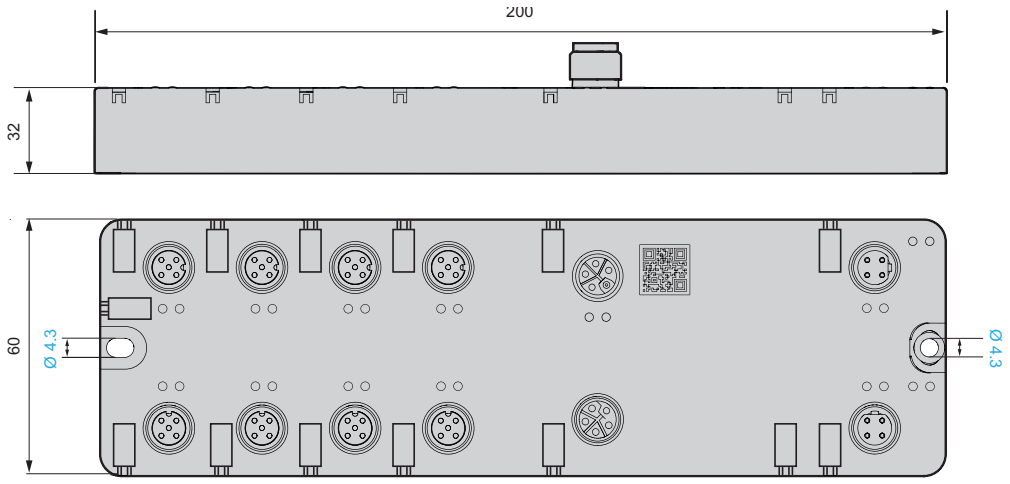


Photo-electric sensors
IO-Link Master

Product specifications

Reference			XZIOM8AM12EY	XZIOM8AM12PY
Function			Ethernet/IP IO-Link Master	ProfiNet IO-Link Master
Power supply 1L, 2L	Supply voltage 1L, 2L	**V**	⎓ 24, –25%/+30% (18…31.2)	
	Low voltage warning 1L	**V**	18.0 (± 5% at 25 °C) notification on,18.3 (± 5% at 25 °C) notification off	
	Overvoltage warning 1L	**V**	30.0 (± 5% at 25 °C) notification on, 29.7 (± 5% at 25 °C) notification off	
	Current consumption	**A**	1L: 0.1...16 (at 24 V DC) 2L: 0.01...16 (at 24 V DC)	
	Current consumption of supply port	**A**	Max. 16	
	Conductor cross-section	**mm²**	0.5…2.5	
	Connector		PWR IN: M12 L-coded, 5-pin, male PWR OUT: M12 L-coded, 5-pin, female	
	Torque	**Nm**	1.0	
	Reverse polarity protection		Yes	
	Power supply	**V**	24 ⎓ PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage)	
Total load	Maximum total load current	**A**	15.7	
Device	Dimensions (L x W x H)	**mm**	200 x 60 x 32	
	Weight	**g**	404	
	Housing		Plastic	
	Potting		Solvent-free electro-casting resin system based on 2 K polyurethane	
	Degree of protection		IP67 (EN 60529)	
	Protection class		III (EN 61140)	
	Mounting		Screw mounting on carrier, 2x M4	
Environmental conditions	Location of operation		Indoor	
	Ambient temperature (operation)	**°C**	-25...+70	
	Ambient temperature (storage)	**°C**	-40...+80	
	Maximum temperature change	**K/min**	3	
	Relative humidity		5%...95%	
	Degree of pollution		3 (EN 60664-1)	
	Altitude	**m**	0…2000	
	Overvoltage category		II (EN 60664-1)	
	Degree of protection		IP67 (EN 60529)	
	Protection class		III (EN 61140)	
Electrical characteristics	Insulation resistance	**V**	60 ⎓	
	Test voltage	**V**	550 ∿ RMS	
	Minimal creepage distance	**mm**	0.7	
Ethernet connector	Communication interface		Ethernet	
	Autonegotiation, autocrossover		Yes	
	Connector		2x M12, D-coded, female, 4-pin	
	Torque	**Nm**	1.0	
IO-Link connector	Connector		8x M12, A-coded, male, 5-pin	
	Torque	**Nm**	1.0	
	Operating modes		Pin 2: DI or DO Pin 4: IO-Link Master, DI or DO	
LEDs	SYS		System status, green/yellow	
	APL		Application status, red/green	
	MS		Module status (EtherNet/IP), red/green	-
	SF		-	System error (PROFINET), red
	NS		Network status (EtherNet/IP), red/green	-
	BF		-	Bus error (PROFINET), red
	LINK		Link status, green	
	ACT		Activity status, yellow	
	1L, 2L		Supply voltage status, red/green	
	A, B		Port status: red/green/yellow (yellow by simultaneous red and green)	
Compliance	RoHS		Yes	
Compliance with EMC guidelines	CE sign		Yes	
	UKCA sign		Yes	
	Emission		EN 61000-6-4/BS EN 61000-6-4	
	Immunity		EN 61000-6-2/BS EN 61000-6-2	

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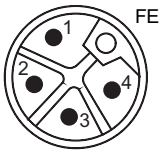
Wiring schemes

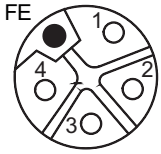
Power supply

M12 connector - 5 pins (4 + FE) - IO-Link

Supply voltage input



Supply voltage input

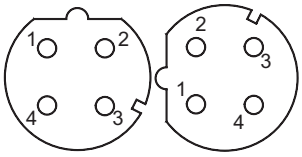


Pin	Signal	Wire colour	Description
1	1L+	Brown	24 V ⎓
2	2L-	White	Reference potential for 2L
3	1L-	Blue	Reference potential for 1L
4	2L+	Black	24 V ⎓ auxiliary/ control voltage U2L
FE	FE	Pink	Functional earth

Communication

M12 connector - D-coded - socket - 4 pins

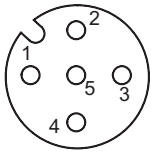
Ethernet



Pin	Signal	Wire colour	Description
1	TX+	Brown	Transmit data positive
2	RX+	White	Receive data positive
3	TX-	Blue	Transmit data negative
4	RX-	Black	Receive data negative

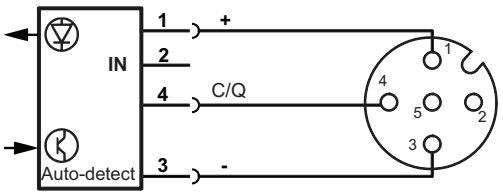
IO-Link ports (Class A)

M12 connector - 4 pins



Pin	Signal	Wire colour	Description
1	+	Brown	+24 V DC supply voltage U 1L for sensor/actuator
2	IN	White	Digital input/output channel B
3	-	Blue	Functional earth for 1L+
4	Q	Black	IO-Link data or Digital input/output channel A
5	-	-	Not connected

Auto-detect PNP/NPN or by IO-Link IO-Link



Derating curves

XZIOM8AM12EY and XZIOM8AM12PY