Process sensors

Pressure sensors
Pages: 156 - 175

Sensors and transmitters monitor system pressure in hydraulic and pneumatics.

Flow sensors
Pages: 176 - 191

Flow sensors, magmeters, and ultrasonic flow meters detect the flow rate of liquids and gases.

Level sensors
Pages: 192 - 207

Point and continuous level sensors detect level of liquids, powders, granular solids and plastics.

Temperature sensors
Pages: 208 - 225

Modular temperature monitoring products provide feedback in temperature control applications.

Industrial networks

AS-i networking
Pages: 226 - 239

Networks sensors and actuators with plug-and-play functionality.

Safety networking
Pages: 240 - 251

Safety at Work connects safety components directly to the AS-i network.

RFID systems

RFID
Pages: 252 - 253

A high frequency or UHF platform. The antennas are able to read/write multiple tags up to 10 meters.
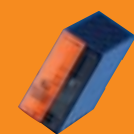
Machine condition

Vibration sensors
Pages: 254 - 257

Continuously monitor machine's vibration level to prevent equipment failure.

efector Metris
Pages: 258 - 259

In-line flow meter monitors compressed air systems and specialty gases.

Power supplies

Power supplies
Pages: 260 - 263

Power supplies provide the voltage for sensors, actuators, and other electronic loads.

Wiring technology

M8 Pico cordsets
Pages: 264 - 265

Quick disconnect M8 Pico cordsets and field wirable connectors for electrical wiring.

M8 Pico wiring block systems
Pages: 266 - 269

Quick disconnect wiring blocks offer plug-and-play functionality.

M12 Micro cordsets
Pages: 270 - 273

4-pin Micro DC cordsets and field wirable connectors.

M12 Micro wiring block systems
Pages: 274 - 275

4-port and 8-port M12 Micro DC wiring blocks and patchcords.

1/2" Micro AC cordsets
Pages: 276 - 277

3-pin Micro AC cordsets and field wirable connectors.

IO-Link

The foundation of Industry 4.0

ifm offers a variety of IO-Link I/O master blocks and IO-Link compatible sensors.

Today's sensors have evolved from standard switches with simple on/off capabilities to highly intelligent devices with built-in microprocessors that process large amounts of data. This data has been trapped with no pathway to the control system ... until now.

Introducing IO-Link

IO-Link is a communication interface that unlocks trapped data in the existing sensor's electronics and transmits the data via a pure digital signal to the controller. By simply replacing the Ethernet I/O block with a version that has IO-Link capabilities and using IO-Link enabled sensors, the intelligence in industrial sensors is unlocked. IO-Link provides:

- Simple plug-and-play replacement of sensors; easy real-time recipe changes, and diagnostic feedback on the sensor's operation
- Continuous monitoring of machine vibration in real-time allowing equipment to be serviced as needed instead of at scheduled intervals
- A better understanding of the cost of production by monitoring energy usage
- Mass production of quality parts by determining exact tolerances
- Improved product efficiency by tracing valuable assets throughout the manufacturing process

The foundation of Industry 4.0 is utilizing real-time data from the plant floor. By having full access to sensor data and transmitting the data to the controller via IO-Link, plant operators can analyze the data to make adjustments to machines with greater accuracy, eliminate downtime and maximize overall equipment effectiveness.

IO-Link is a worldwide open-standard protocol for connecting sensors and devices and does not require any special wiring.

To get started…

Use an IO-Link master with existing wiring and IO-Link enabled sensors. LineRecorder device software offers easy and fast parameter setting, and more.

IO-Link sensors in this catalog are noted with the symbol

		Position Sensors						Motion Control	Vision Sensors
Company	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Search Bar

◉ IO-Link Benefits

▶ Analog vs. IO-Link digital

Conventional: Analog signals require multiple analog-to-digital conversions that affect the accuracy of the sensor's output signal.

IO-Link: Requires only one analog-to-digital conversion. This avoids conversion losses of up to 1% accuracy.

▶ Sensor parameterization

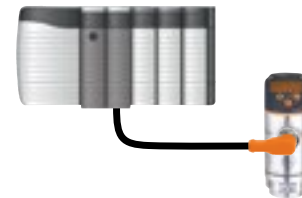**Conventional:** Change parameters via on-board pushbuttons.

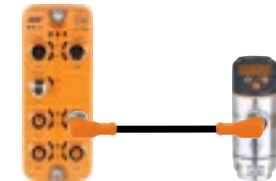**IO-Link:** Sensors can be parameterized remotely by PLC.

▶ Automatic device replacement

Conventional: If a sensor needs to be replaced, the sensor must be re-programmed with pushbuttons.

IO-Link: Data is automatically uploaded to a sensor. No need for manual parameterization.
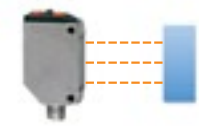
▶ Diagnostic information for predictive maintenance

Conventional: It is not possible to obtain diagnostic information without changing or adding wiring in the PLC.

Ex. Clean lens 100% excess gain

IO-Link: Transfers diagnostic information on existing wiring allowing for predictive maintenance.

Ex. Dirty lens 40% excess gain

Pure digital signal: IO-Link transmits a pure digital signal value that is noise-immune and more reliable than conventional analog signals.

Remote parameterization: Access to all available parameters of the sensors can be reached through the plc without the need for external software and local sensor display.

PLUG and PLAY

Simple plug-and-play sensor replacement: IO-Link restores the sensor or actuator parameters automatically when replacing and servicing the sensors.

Recipe changes: Recipe changes can be made to multiple sensors from your controller. Downtime and production changeover is minimized.

Sensor health: On existing wiring, additional diagnostic information can be transferred for easier fault location and predictive indication.

Not a fieldbus dependent system: IO-Link can be added to most existing control architectures with minimal cost.

www.sazehgostarsgp.com

@sazehgostar_paytakht

Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277

Typical controls architecture

In a standard ethernet architecture, sensors can only transmit simple on / off or analog signals to the plc.

Process instruments use multiple analog cards which increase costs and limit the number of I/O.

LMT level

TAD temperature

PI pressure

SA flow
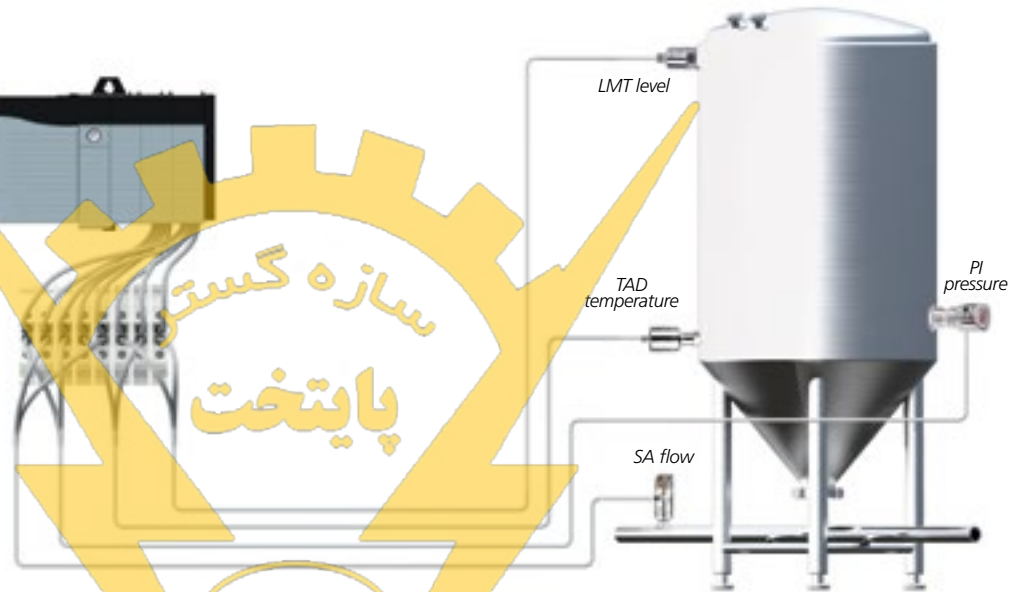
IO-Link controls architecture

IO-Link is a communication interface that unlocks trapped data in sensors and transmits the data via a pure digital signal to the plc.

Ethernet IP

An IO-Link Master located in the field near the sensors, uses existing fieldbus protocol, such as Ethernet IP.

Existing standard cables are used with IO-Link.

LMT level

TAD temperature

PI pressure

SA flow

	IO-Link	Position Sensors						Motion Control	Vision Sensors
Company	*IO-Link*	*Inductive*	*Capacitive*	*Cylinder / valve position*	*Photoelectrics/ lasers/fiber optics*	*Distance / Application specific*	*Ultrasonic*	*Encoders / Speed monitors*	*2D / 3D inspection*
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Search Bar

⬖ **IO**-Link **system overview for process**
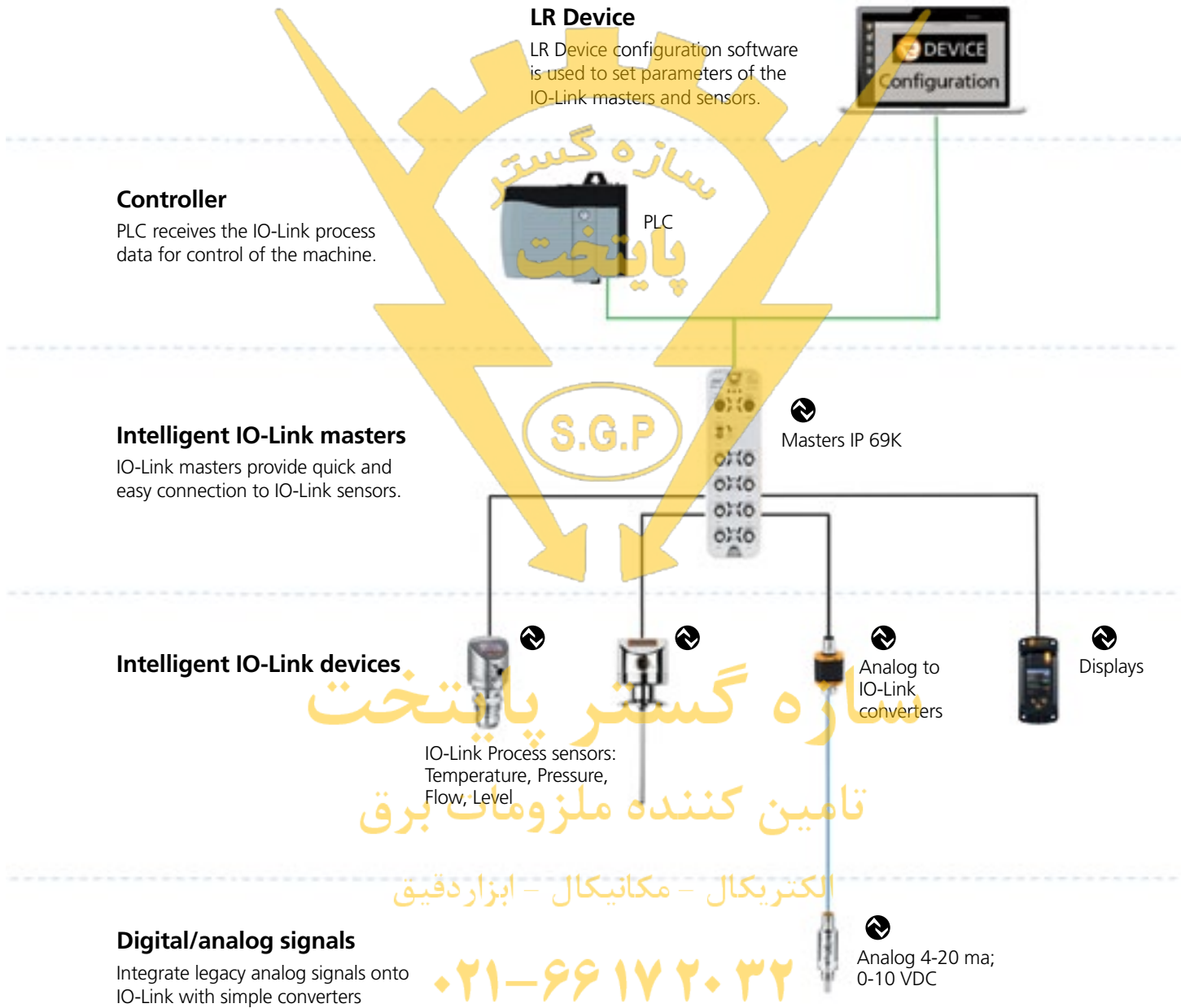
LR Device

LR Device configuration software is used to set parameters of the IO-Link masters and sensors.

Controller

PLC receives the IO-Link process data for control of the machine.

PLC

Intelligent IO-Link masters

IO-Link masters provide quick and easy connection to IO-Link sensors.

Masters IP 69K

Intelligent IO-Link devices

IO-Link Process sensors: Temperature, Pressure, Flow, Level

Analog to IO-Link converters

Displays

Digital/analog signals

Integrate legacy analog signals onto IO-Link with simple converters

Analog 4-20 ma; 0-10 VDC

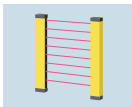| Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277

IO-Link – process industry applications

Cooling water monitoring in the foundry

°C
m³/h
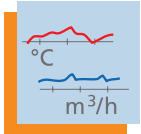
The cooling system in a typical furnace is critical to its proper machine operation and to the process of producing quality parts. Accurate cooling of the elements improve the life cycle and safety of the machine. In order to do this, several flow parameters of the cooling water, such as temperature and flow need to be accurately monitored. This requires multiple sensors and installation points throughout the machine.
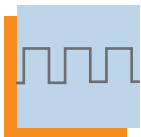
Additional functions with IO-Link data

ifm's SM magmeter flow sensor via IO-Link transmits flow rate, temperature and a totalizer value using a standard 3-wire cable.

IO-Link eliminates multiple costly analog cards, extra pipe fittings, numerous termination points and excessive stock inventory.

Media detection in process tanks

The ifm LMT level sensor is used as a switch to determine the low and high level or pump run dry condition in tank applications. Typically, the feedback will be "on" when the media is present and "off" when there is no media.

Additional functions with IO-Link data

With IO-Link, additional information is accessible from the LMT sensor. The real digital process value is available to determine the type of the media, such as water or milk, etc. The IO-Link value can be used to differentiate between medium and build-up on the sensing face.

Identification of the media is critical, especially in the washing process. Once the media is flushed out of the tank, the cleaning process can be started to maximize production time.

	IO-Link	Position Sensors					Motion Control	Vision Sensors
Company	◉ *IO-Link*	*Inductive*	*Capacitive*	*Cylinder / valve position*	*Photoelectrics / lasers / fiber optics*	*Distance / Application specific*	*Ultrasonic*	*Encoders / Speed monitors*	*2D / 3D inspection*
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Continuous tank level measurement

The PI pressure sensor provides a 4…20 mA and switching output. Traditional analog signals can be prone to EMC disturbances and need to be scaled to show the real pressure of the system at the plc. High and low pressure spikes are stored in the sensor, which may be an indication of a challenge, but this information has no direct access to the control system.

Additional functions with IO-Link

With IO-Link, real pressure values can be accessed without the need to scale the signal. For example, a pressure sensor rated from 0 to 100 inH_2O, the same value range is accurately transmitted to the control system without the need for scaling.

By retrieving high and low pressure values from the sensor, any unexpected pressure spikes and dips can be monitored directly. This is important because it can lead to sensor failure or contaminated products.

Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277

To 24 VDC power supply

Ethernet connection

T-splitter

Power supply distribution with T-splitters

- Masters with 4 or 8 configurable ports, IO-Link, digital inputs or digital outputs (< 200mA)
- Standard M12 T-coded power cables reduces cost of power connection (up to 4A)
- IO-Link 1.1 compatible with COM1, COM2, COM3
- 2 Ethernet ports 10/100 Base-TX with integrated switch
- IO-Link Masters and sensors are configurable via LR Device software

Type	Description	Interface	Part No.	List Price (1-pc.)
① IO-Link Master block				
	4-port IO-Link IP69K module	Profinet	**AL1101**	**$327.00**
	8-port IO-Link IP69K module	Profinet	**AL1103**	**$385.00**
	4-port IO-Link IP69K module	Ethernet/IP	**AL1121**	**$327.00**
	8-port IO-Link IP69K module	Ethernet/IP	**AL1123**	**$385.00**

② M12 male Ethernet cable, IP69K

Type	Description	Part No.	List Price (1-pc.)
	straight, 2 m MPPE	**EVF518**	**$22.00**
	straight, 5 m MPPE	**EVF519**	**$38.00**
	straight, 10 m MPPE	**EVF520**	**$64.00**
	straight, 20 m MPPE	**EVF521**	**$116.00**
	straight, 50 m MPPE	**EVF522**	**$272.00**

③ M12 to M12 Ethernet Patchcord, IP69K

Type	Description	Part No.	List Price (1-pc.)
	straight/straight, 0.25 m MPPE	**EVF528**	**$25.00**
	straight/straight, 0.5 m MPPE	**EVF529**	**$26.00**
	straight/straight, 1 m MPPE	**EVF530**	**$28.00**
	straight/straight, 2 m MPPE	**EVF531**	**$34.00**
	straight/straight, 5 m MPPE	**EVF532**	**$49.00**

⑥ M12 Power Cables

Type	Description	Part No.	List Price (1-pc.)
	Straight, 5 m PUR	**EVF483**	**$43.00**
	Straight, 10 m PUR	**EVF484**	**$88.00**
	Right angle, 2 m PUR	**EVF488**	**$43.00**
	Right angle, 5 m PUR	**EVF489**	**$88.00**

④ M12 Power Patchcord (17 AWG), IP69K

Type	Description	Part No.	List Price (1-pc.)
	straight/straight, 0.5 m MPPE	**EVF491**	**$42.00**
	straight/straight, 1 m MPPE	**EVF492**	**$45.00**
	straight/straight, 2 m MPPE	**EVF493**	**$46.00**
	straight/straight, 5 m MPPE	**EVF494**	**$50.00**
	straight/straight, 10 m MPPE	**EVF495**	**$57.00**
	straight/straight, 20 m MPPE	**EVF496**	**$67.00**
	straight/right angle, 0.5 m MPPE	**EVF505**	**$42.00**
	straight/right angle, 1 m MPPE	**EVF506**	**$45.00**
	straight/right angle, 2 m MPPE	**EVF507**	**$46.00**
	straight/right angle, 5 m MPPE	**EVF508**	**$52.00**
	straight/right angle, 10 m MPPE	**EVF509**	**$57.00**
	straight/right angle, 20 m MPPE	**EVF510**	**$67.00**

⑤ T-splitter

Type	Description	Part No.	List Price (1-pc.)
	T-splitter M12	**EBF009**	**$27.00**

Search Bar	Company	IO-Link	Position Sensors		Cylinder/valve position	Photoelectrics/lasers/fiber optics	Distance/Application specific	Ultrasonic	Motion Control	Vision Sensors
		IO-Link	Inductive	Capacitive					Encoders/Speed monitors	2D/3D inspection
	1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Power supply distribution using flat cables

- *Masters with 4 or 8 configurable ports, IO-Link, digital inputs or digital outputs (< 200mA)*

- *Standard M12 power connection reduces cost of power connection (up to 4A)*

- *IO-Link 1.1 compatible with COM1, COM2, COM3*

- *2 Ethernet ports 10/100 Base-TX with integrated switch*

- *IO-Link Masters and sensors are configurable via LR Device software*

Type	Description	Interface	Part No.	List Price (1-pc.)
1 IO-Link Master block				
	4-port IO-Link IP69K module	Profinet	**AL1101**	**$327.00**
	8-port IO-Link IP69K module	Profinet	**AL1103**	**$385.00**
	4-port IO-Link IP69K module	Ethernet/IP	**AL1121**	**$327.00**
	8-port IO-Link IP69K module	Ethernet/IP	**AL1123**	**$385.00**

2 M12 male Ethernet cable, IP69K

Type	Description	Part No.	List Price (1-pc.)
	straight, 2 m MPPE	**EVF518**	**$22.00**
	straight, 5 m MPPE	**EVF519**	**$38.00**
	straight, 10 m MPPE	**EVF520**	**$64.00**
	straight, 20 m MPPE	**EVF521**	**$116.00**
	straight, 50 m MPPE	**EVF522**	**$272.00**

3 M12 to M12 Ethernet Patchcord, IP69K

Type	Description	Part No.	List Price (1-pc.)
	straight/straight, 0.25 m MPPE	**EVF528**	**$25.00**
	straight/straight, 0.5 m MPPE	**EVF529**	**$26.00**
	straight/straight, 1 m MPPE	**EVF530**	**$28.00**
	straight/straight, 2 m MPPE	**EVF531**	**$34.00**
	straight/straight, 5 m MPPE	**EVF532**	**$49.00**

4 Flat cable

Type	Description	Part No.	List Price (1-pc.)
	AS-i flat cable, grey PVC, 100 m	**U71002**	**$373.00**
	AS-i flat cable, black TPE-PVC compound, 100 m	**E74310**	**$603.00**

5 Flat cable to M12 taps

Type	Description	Part No.	List Price (1-pc.)
	Flat cable splitter, IP69K, stainless steel	**E70354**	**$43.00**
	FC insulation displacement connector	**E70454**	**$31 .00**

6 M12 Power Patchcord (17 AWG), IP69K

| Type	Description	Part No.	List Price (1-pc.)
	straight/straight, 1 m MPPE	**EVF492**	**$45.00**
	straight/straight, 2 m MPPE	**EVF493**	**$42.00**
	straight/straight, 5 m MPPE	**EVF494**	**$50.00**
	straight/straight, 10 m MPPE	**EVF495**	**$57.00**
	straight/straight, 20 m MPPE	**EVF496**	**$67.00**
	straight/right angle, 1 m MPPE	**EVF506**	**$45.00**
	straight/right angle, 2 m MPPE	**EVF507**	**$46.00**
	straight/right angle, 5 m MPPE	**EVF508**	**$52.00**
	straight/right angle, 10 m MPPE	**EVF509**	**$57.00**
	straight/right angle, 20 m MPPE	**EVF510**	**$67.00**

Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277

Typical controls architecture

In a standard ethernet architecture, sensors transmit simple on / off or analog signals to the plc.

Multiple process sensors ensure reliable operation of a hydraulic power unit.

- Multiple analog cards are required and can be expensive
- Result in complex wiring
- Number of I/O is limited due to PLC space limitation

TR temperature

PN pressure

LR level
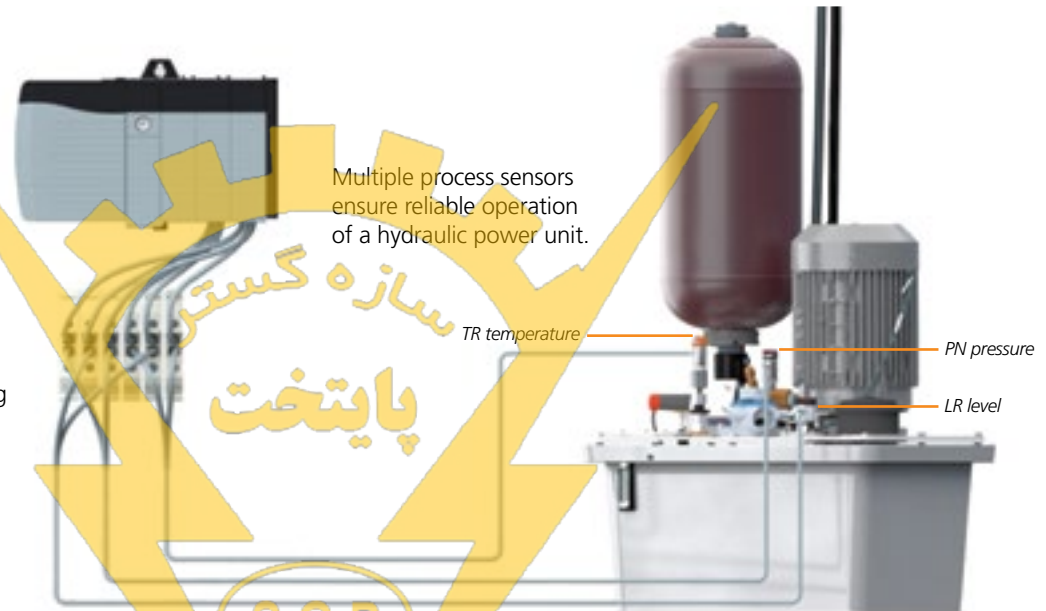
⬡ IO-Link controls architecture

👍 IO-Link unlocks trapped data in sensors and transmits the data via a pure digital signal to the plc.

Multiple process sensors ensure reliable operation of a hydraulic power unit.

Ethernet IP

- No input cards
- No complex wiring
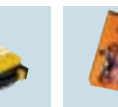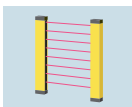- Sensor values are actual – no scaling is necessary

TR temperature

PN pressure

LR level

Existing standard cables are used with IO-Link.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
Company	⬡ IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Search Bar

◉ **IO**-Link **system overview for industrial automation**
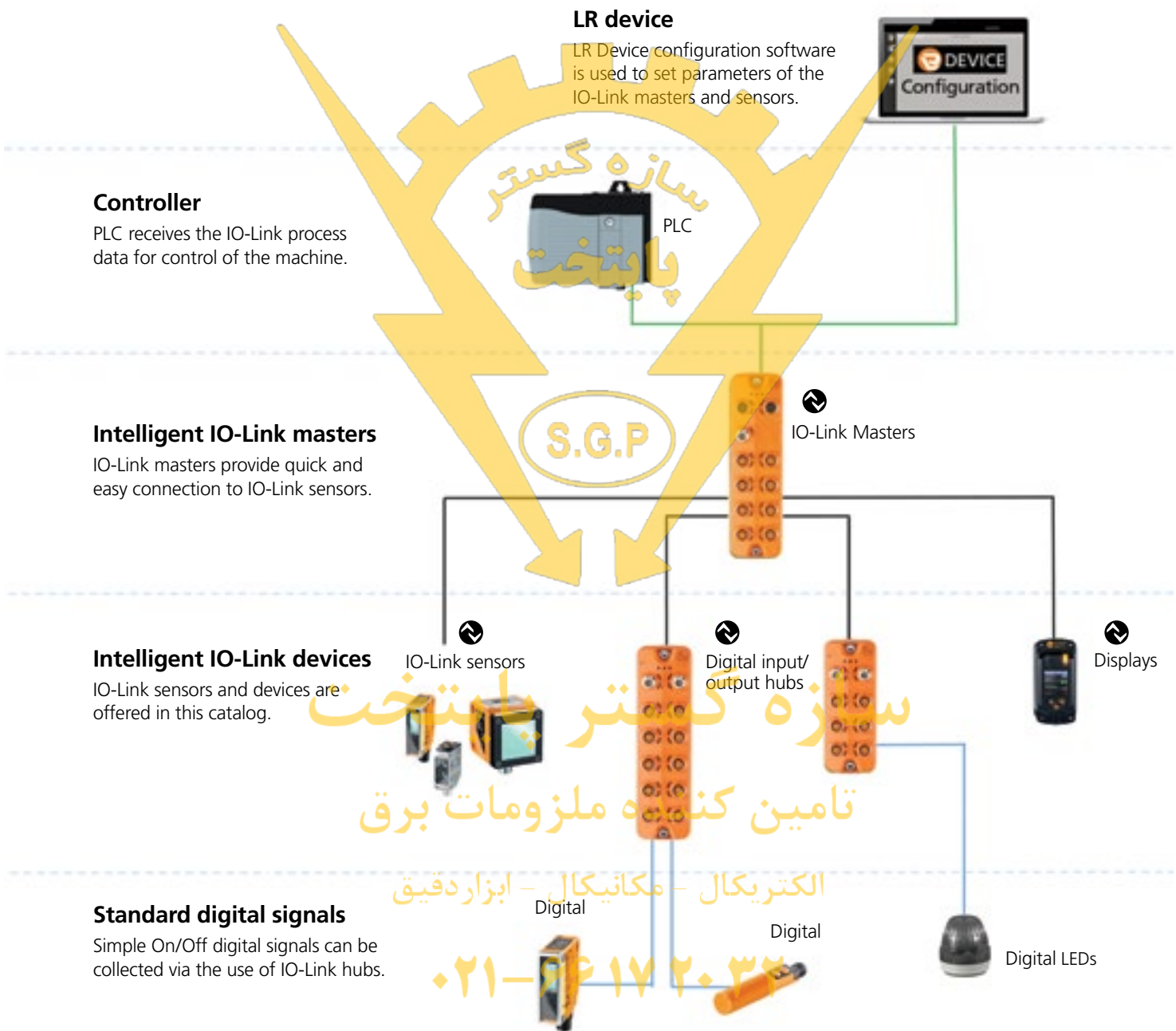
LR device
LR Device configuration software is used to set parameters of the IO-Link masters and sensors.

DEVICE Configuration

Controller
PLC receives the IO-Link process data for control of the machine.

PLC

Intelligent IO-Link masters
IO-Link masters provide quick and easy connection to IO-Link sensors.

IO-Link Masters

Intelligent IO-Link devices
IO-Link sensors and devices are offered in this catalog.

IO-Link sensors

Digital input/output hubs

Displays

Standard digital signals
Simple On/Off digital signals can be collected via the use of IO-Link hubs.

Digital

Digital

Digital LEDs

www.sazehgostarsgp.com

@sazehgostar_paytakht

| Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	*Pressure*	*Flow*	*Level*	*Temperature*	*AS-i network*	*Safety systems*	*RF identification systems*	*Diagnostic systems*	*Power supplies*	*Cordset solutions*
144 - 155	*156 - 175*	*176 - 191*	*192 - 207*	*208 - 225*	*226 - 239*	*240 - 251*	*252 - 253*	*254 - 259*	*260 - 263*	*264 - 277*

IO-Link – automation industry applications

Compressed gas meter for recording energy consumption
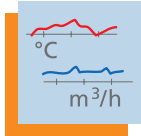
Leaks are a significant source of wasted energy in compressed air systems, can contribute to problems with system operations and cause system pressures to fluctuate. This, in turn, can lead the air-operated equipment to function less efficiently and possibly affect production. Unnecessary cycling may occur and increase the run time. Maintaining the equipment becomes more critical. ifm's SD air flow sensor allows for the detection and elimination of expensive line leakages.

Additional functions with IO-Link data

Implementing compressed air monitoring systems are typically cost prohibitive, but with IO-Link this doesn't have to be the situation.

Using the SD air flow sensor, IO-Link transmits multiple process values over a single cable, such as flow rate, temperature and totalizer values eliminating numerous and costly analog cards.

Since this one sensor can transmit multiple process signals, extra pipe fittings, sensors and wires are eliminated and ultimately streamlines inventory. The savings from detecting wasted energy and reduction in total installation costs allow for a quick return on investment.

Vacuum sensors monitor suction grippers

PLUG and PLAY

PN7 Series vacuum sensors detect the required vacuum for proper operation of suction grippers. If the minimum values are not reached, the suction gripper remains in its initial position so as to prevent damage to the workpieces and systems. The high-pressure compressed air network (175 psi) and the low-pressure compressed air network (87 psi) is monitored.

Additional functions with IO-Link data

Sometimes a sensor must be replaced and then reconfigured. If the PN7 vacuum sensor needs to be replaced, IO-Link's automatic device replacement feature can copy the parameters to the new sensor. This saves time and prevents possible errors in setting the switch points.

The vacuum sensor can also be used as an on/off switch or analog functionality via IO-Link, allowing one sensor to handle both digital and analog applications. IO-Link reduces cost and inventory stocking requirements.
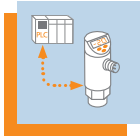
Company	IO-Link	Position Sensors						Motion Control	Vision Sensors
	◈ IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Collision check on the assembly platform

Optical distance sensor Series O1D detects if the assembly platform is free of the car body. Before the car body is conveyed within the area, the hanger will be lowered and only then will the car assembly be securely positioned. The mounting position of the O1D is critical and often cannot be parameterized without stopping the assembly line if the application must change.
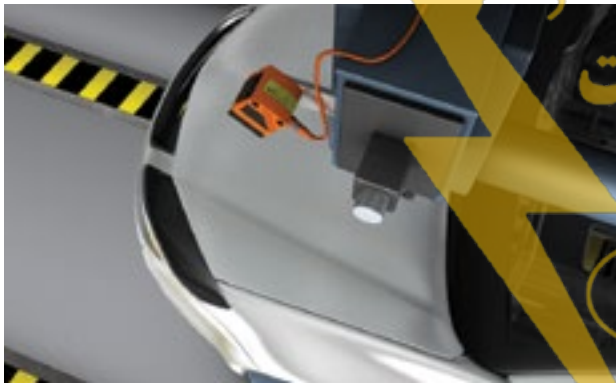
Additional functions with IO-Link data

Remote parameterization is key in this application. ifm's O1D distance sensor is mounted in an inaccessible location and cannot be adjusted without stopping the production line.

As different production models are changed within the application, IO-Link enables the sensor's parameters to be changed remotely via the controller. No need to stop the line!

سازه گستر پایتخت

تامین کننده ملزومات برق

الکتریکال – مکانیکال – ابزاردقیق

۰۲۱–۶۶ ۱۷ ۲۰ ۳۲

www.sazehgostarsgp.com

@sazehgostar_paytakht

Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277

Standard Line – power supply distribution with T-splitters

To 24 VDC power supply

6

2 Ethernet connection

5

T-splitter

4

3

1

1

- Standard Line masters with 4 or 8 configurable ports, IO-Link, digital inputs or digital outputs (< 200mA)

- Standard M12 T-coded power cables reduces cost of power connection (up to 4A)

- IO-Link 1.1 compatible with COM1, COM2, COM3

- 2 Ethernet ports 10/100 Base-TX with integrated switch

- IO-Link Masters and sensors are configurable via LR Device software

Type	Description	Interface	Part No.	List Price (1-pc.)
1 IO-Link Master block				
	4-port IO-Link master, IP67	Profinet	**AL1100**	**$249.00**
	8-port IO-Link master, IP67	Profinet	**AL1102**	**$334.00**
	4-port IO-Link master, IP67	Ethernet/IP	**AL1120**	**$286.00**
	8-port IO-Link master, IP67	Ethernet/IP	**AL1122**	**$334.00**

2 M12 to RJ45 Ethernet Patchcords

Type	Description	Part No.	List Price (1-pc.)
	Cross-over patchcord, 2 m PVC	**E11898**	**$45.00**
	Cross-over patchcord, 5 m PUR	**E18422**	**$54.00**
	Cross-over patchcord, 10 m PUR/PC	**E18423**	**$69.00**

3 M12 to M12 Ethernet Patchcords

Type	Description	Part No.	List Price (1-pc.)
	Ethernet cable, 0.5 m PVC	**E12422**	**$57.00**
	Ethernet cable, 2 m PVC	**E21138**	**$88.00**
	Ethernet cable, 5 m PVC	**E21139**	**$95.00**
	Ethernet cable, 10 m PVC	**E21137**	**$117.00**
	Ethernet cable, 20 m PVC	**E12423**	**$137.00**

6 M12 Power Cables

Type	Description	Part No.	List Price (1-pc.)
	Straight, 5 m PUR	**EVC707**	**$22.00**
	Straight, 10 m PUR	**EVC708**	**$27.00**
	Right angle, 5 m PUR	**EVC712**	**$22.00**
	Right angle, 10 m PUR	**EVC713**	**$27.00**

4 M12 Power Patch cables

Type	Description	Part No.	List Price (1-pc.)
	straight/straight, 0.5 m PUR	**EVC717**	**$23.00**
	straight/straight, 1 m PUR	**EVC718**	**$24.00**
	straight/straight, 2 m PUR	**EVC719**	**$26.00**
	straight/straight, 5 m PUR	**EVC720**	**$32.00**
	straight/straight, 10 m PUR	**EVC721**	**$40.00**
	straight/straight, 20 m PUR	**EVC722**	**$51.00**
	straight/right angle, 0.5 m PUR	**EVC731**	**$23.00**
	straight/right angle, 1 m PUR	**EVC732**	**$24.00**
	straight/right angle, 2 m PUR	**EVC733**	**$26.00**
	straight/right angle, 5 m PUR	**EVC734**	**$32.00**
	straight/right angle, 10 m PUR	**EVC735**	**$40.00**
	straight/right angle, 20 m PUR	**EVC736**	**$51.00**

5 T-splitter

Type	Description	Part No.	List Price (1-pc.)
	T-splitter M12	**EBC116**	**$25.00**

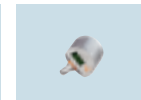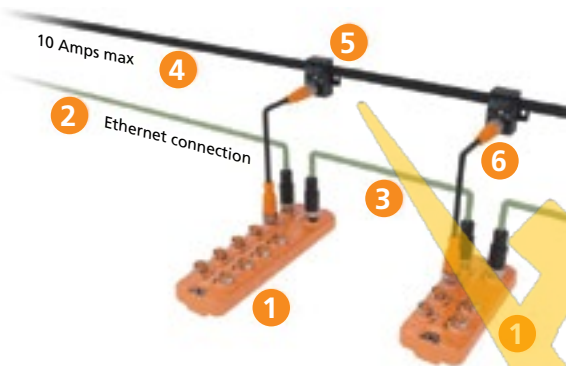|	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
Company	*⟲ IO-Link*	*Inductive*	*Capacitive*					*Encoders / Speed monitors*	*2D / 3D inspection*
Search Bar									
1 - 5	*6 - 21*	*22 - 55*	*56 - 61*	*62 - 71*	*72 - 111*	*112 - 117*	*118 - 119*	*120 - 127*	*128 - 143*

Standard Line – power supply distribution with flat cables

- *Standard Line masters with 4 or 8 configurable ports, IO-Link, digital inputs or digital outputs (< 200mA)*

- *Standard M12 power connection reduces cost of power connection (up to 4A)*

- *IO-Link 1.1 compatible with COM1, COM2, COM3*

- *2 Ethernet ports 10/100 Base-TX with integrated switch*

- *IO-Link Masters and sensors are configurable via LR Device software*

Type	Description	Interface	Part No.	List Price (1-pc.)
1 IO-Link Master block				
	4-port IO-Link master, IP67	Profinet	**AL1100**	**$249.00**
	8-port IO-Link master, IP67	Profinet	**AL1102**	**$334.00**
	4-port IO-Link master, IP67	Ethernet/IP	**AL1120**	**$286.00**
	8-port IO-Link master, IP67	Ethernet/IP	**AL1122**	**$334.00**

2 M12 to RJ45 Ethernet Patchcords

Type	Description	Part No.	List Price (1-pc.)
	Cross-over patchcord, 2 m PVC	**E11898**	**$45.00**
	Cross-over patchcord, 5 m PUR	**E18422**	**$54.00**
	Cross-over patchcord, 10 m PUR/PC	**E18423**	**$69.00**

3 M12 to M12 Ethernet Patchcords

Type	Description	Part No.	List Price (1-pc.)
	Ethernet cable, 0.5 m PVC	**E12422**	**$57.00**
	Ethernet cable, 2 m PVC	**E21138**	**$88.00**
	Ethernet cable, 5 m PVC	**E21139**	**$95.00**
	Ethernet cable, 10 m PVC	**E21137**	**$117.00**
	Ethernet cable, 20 m PVC	**E12423**	**$137.00**

4 Flat cable

Type	Description	Part No.	List Price (1-pc.)
	Reverse polarity protected, black EPDM, 100 m	**E74015**	**$229.00**
	Reverse polarity protected, black TPE, 100 m	**E74215**	**$438.00**

5 Flat cable to M12 taps

Type	Description	Part No.	List Price (1-pc.)
	FC insulation displacement connector	**E70483**	**$19.00**
	FC insulation displacement connector	**E70485**	**$12.00**

6 M12 Power Patch cables

Type	Description	Part No.	List Price (1-pc.)
	straight/straight, 1 m PUR	**EVC718**	**$24.00**
	straight/straight, 2 m PUR	**EVC719**	**$26.00**
	straight/straight, 5 m PUR	**EVC720**	**$32.00**
	straight/straight, 10 m PUR	**EVC721**	**$40.00**
	straight/straight, 20 m PUR	**EVC722**	**$51.00**
	straight/right angle, 1 m PUR	**EVC732**	**$24.00**
	straight/right angle, 2 m PUR	**EVC733**	**$26.00**
	straight/right angle, 5 m PUR	**EVC734**	**$32.00**
	straight/right angle, 10 m PUR	**EVC735**	**$40.00**
	straight/right angle, 20 m PUR	**EVC736**	**$51.00**

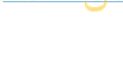| Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
144 - 155	156 - 175	176 - 191	192 - 207	208 - 225	226 - 239	240 - 251	252 - 253	254 - 259	260 - 263	264 - 277

Power Line – Power supply distribution with daisy-chain power supply
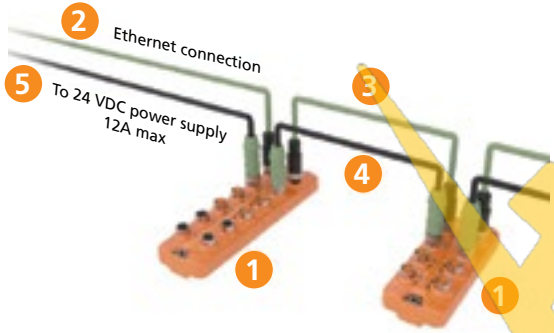
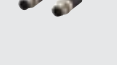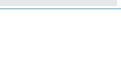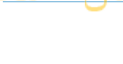- *Power Line masters with 4 or 8 configurable ports, IO-Link, digital inputs or digital outputs (< 200mA)*
- *Integrated fieldbus switch for daisy chaining modules*
- *Innovative M12 T-coded cables can be daisy-chained between modules; rated up to 12A.*
- *IO-Link 1.1 compatible with COM1, COM2, COM3*
- *2 Ethernet ports 10/100 Base-TX with integrated switch*
- *IO-Link Master and sensors are configurable via LR Device software*

② Ethernet connection

⑤ To 24 VDC power supply 12A max

Type	Description	Interface	Part No.	List Price (1-pc.)
① IO-Link Master block				
	4-port IO-Link master	Profinet	**AL1200**	$321.00
	8-port IO-Link master	Profinet	**AL1202**	$375.00
	4-port IO-Link master	Ethernet/IP	**AL1220**	$321.00
	8-port IO-Link master	Ethernet/IP	**AL1222**	$375.00

② M12 to RJ45 Ethernet Patchcords

Type	Description	Part No.	List Price (1-pc.)
	Cross-over patchcord, 2 m PVC	**E11898**	$45.00
	Cross-over patchcord, 5 m PUR	**E18422**	$54.00
	Cross-over patchcord, 10 m PUR/PC	**E18423**	$69.00

③ M12 to M12 Ethernet Patchcords

Type	Description	Part No.	List Price (1-pc.)
	Ethernet cable, 0.5 m PVC	**E12422**	$57.00
	Ethernet cable, 2 m PVC	**E21138**	$88.00
	Ethernet cable, 5 m PVC	**E21139**	$95.00
	Ethernet cable, 10 m PVC	**E21137**	$117.00
	Ethernet cable, 20 m PVC	**E12423**	$137.00

④ M12 T-Coded Power Patchcords

Type	Description	Part No.	List Price (1-pc.)
	60 V AC, PUR, 0.5 m	**E12425**	$58.00
	60 V AC, PUR, 2 m	**E12426**	$67.00
	60 V AC, PUR, 5 m	**E12427**	$85.00
	60 V AC, PUR, 10 m	**E12428**	$115.00
	60 V AC, PUR, 20 m	**E12429**	$174.00

⑤ M12 T-Coded Power Cables

Type	Description	Part No.	List Price (1-pc.)
	TPU, 2 m	**E12430**	$39.00
	TPU, 5 m	**E18519**	$55.00

۰۲۱-۶۶۱۷۲۰۳۲

www.sazehgostarsgp.com

@sazehgostar_paytakht

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics/ lasers/fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143

Search Bar

Accessories

- Expand the functionality of IO-Link masters with IO-Link hubs, displays and converters

- LineRecorder Device software for easy parameter configuration of IO-Link sensors and masters

Type	Description	Part No.	List Price (1-pc.)
IO-Link Hubs			
	Input hub – 4-ports; capable of 8 inputs, IP67	AL2400	$116.00
	Input hub – 8-ports; capable of 16 inputs, IP67	AL2401	$141.00
	Output hub – 6-ports; capable of 12 outputs, IP67	AL2330	$180.00
	Output hub – 6-ports; capable of 12 outputs, IP69K	AL2230	$208.00
Configuration Software			
	LineRecorder Device, software for remote parameter setting and monitoring of all connected sensors. Automatically identifies all IO-Link masters and IO-Link sensors within the ethernet network. Decreases commissioning time; Optimizes the device replacement process; Easy graphical visuals.	QA0011	$110.00
	USB IO-Link master cable for parameter setting	E30390	$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	$51.00
IO-Link Display			
	Module displays process values of ifm IO-Link sensors – includes full graphic TFT display – mounts in-line	E30430	$140.00
IO-Link Converter			
	Compact device converts 4...20 mA analog signal to IO-Link communication, M12 connection	DP2200	$118.00

ℹ **Who developed IO-Link?**

IO-Link is a consortium of sensors and plc manufacturers dedicated to unlocking the trapped data in sensors. The main goal of the consortium is to enable users to extract sensor intelligence without adding cost.

Safety Technology	Process Sensors				Industrial Networks		ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
142 - 153	154 - 173	174 - 189	190 - 205	206 - 223	224 - 237	238 - 249	250 - 251	252 - 257	258 - 261	262 - 275