


# IO-Link Compatible Products

 **IO-Link**



**3-Screen Display**  
High-Precision Digital  
Pressure Switch  
*ZSE20B(F)-L/  
ISE20B-L Series*



**3-Screen Display**  
High-Precision Digital  
Pressure Switch  
*ISE7 Series*  
**For Air**



**3-Screen Display**  
High-Precision Digital  
Pressure Switch  
*ISE7G Series*  
**For General Fluids**



**3-Color Display**  
Digital Flow Switch  
for Water  
*PF3W7-X445*



**Actuator Position  
Sensor**  
*D-MP Series*



**SI Unit**  
*EX260-SIL1-X207/  
X210*



**Electro-Pneumatic  
Regulator**  
*ITV10/20/30/  
30 Series*

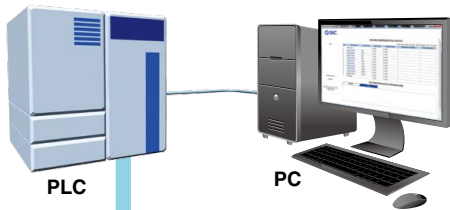


**Step Motor  
Controller**  
*JXCL1 Series*



**IO-Link Master**  
*EX600-GILB-X60*

# IO-Link Compatible Products

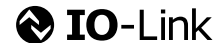


## Configuration File (IODD File)\*1

- Manufacturer
- Product part no.
- Set value

## \*1 IODD File:

IODD is an abbreviation of IO Device Description. This file is necessary for setting the device and connecting it to a master. Save the IODD file on the PC to be used to set the device prior to use.



IO-Link is an open communication interface technology between the sensor/actuator and the I/O terminal that is an international standard, IEC61131-9.

## Various fieldbuses

### Device settings can be set by the master.

- Parameter value
- Control data, etc.

### Read the device data.

- Sensor measured values and ON/OFF signals
- Device information and parameter values
- Status information and diagnostic data

### PROFINET compatible

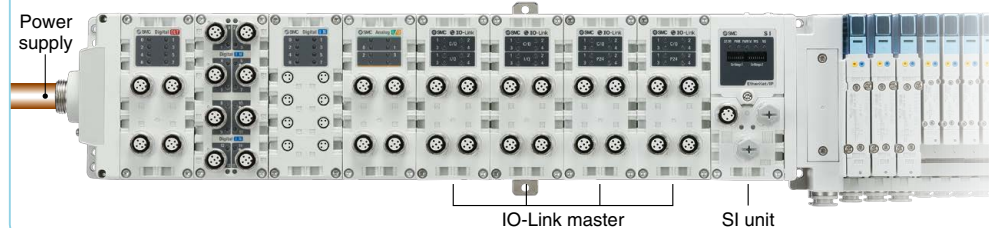
| SI unit                  | IO-Link master |
|--------------------------|----------------|
| EX600-SPN3<br>EX600-SPN4 | EX600-L□B1     |

### EtherNet/IP™ compatible

| SI unit        | IO-Link master |
|----------------|----------------|
| EX600-SEN3-X80 | EX600-L□B1     |

### CC-Link IE Field compatible





| SI unit        | IO-Link master |
|----------------|----------------|
| EX600-SCF□-X60 | EX600-GILB-X60 |







### IO-Link Master (Commercially available)



| Product                               |                | 3-Screen Display<br>High-Precision<br>Digital Pressure Switch | 3-Screen Display<br>High-Precision<br>Digital Pressure Switch<br>for Air | 3-Screen Display<br>High-Precision<br>Digital Pressure Switch<br>for General Fluids                               | 3-Screen Display<br>Multi-Channel<br>Digital Sensor Monitor        | 3-Screen Display<br>Digital Gap Checker  |                                     |
|---------------------------------------|----------------|---|--|---|--|--|-------------------------------------|
| Series                                |                | <a href="#">Click here</a><br><br>ZSE20B(F)-L/<br>ISE20B-L    | <a href="#">Click here</a><br><br>1.0 MPa<br>1.6 MPa<br>ISE70/ISE71-L2   | <a href="#">Click here</a><br><br>1.0 MPa<br>2.0 MPa<br>5.0 MPa<br>10 MPa<br>ISE70G/ISE75G-L2<br>ISE76G/ISE77G-L2 | <a href="#">Click here</a><br><br>PSE200A                          | <a href="#">Click here</a><br><br>ISA3-L |                                     |
| Process data size                     |                | 2-byte input  | 2-byte input   | 2-byte input  | 10-byte input  | 8-byte input                             |                                     |
| Diagnostic/Status monitoring function | Event data     | Internal failure  | ●  | ●   | ●  | ●  |                                     |
|                                       |                | Abnormal internal temperature                                 | ●  | ●   | ●  | ●  |                                     |
|                                       |                | Outside of rated range  | ●  | ●   | ●  | ●  | Below lower limit of pressure range |
|                                       |                | Short-circuit detection                                       |  | OUT2  | OUT2   |  | OUT2                                |
|                                       |                | Open-circuit detection  |  |   |  |  |                                     |
|                                       |                | External power supply failure                                 |  |   |  |  |                                     |
|                                       | Other          |   |  |   | Over current   | Pressure sensor failure                  |                                     |
| Process data                          | Diagnostic bit | ●   | ●  | ●   | Applied pressure error/<br>Differential pressure measurement error | Pressure diagnosis/Error diagnosis       |                                     |

| Product                               |              | 2-Color Display Digital Flow Switch   | 3-Color Display Digital Flow Switch   | 3-Color Display Digital Flow Switch for Large Flow  | 3-Color Display Digital Flow Switch for Water   |   |
|---------------------------------------|--------------|---|---|---|---|---|
| Series                                |              | <a href="#">Click here</a><br> | <a href="#">Click here</a><br> | <a href="#">Click here</a><br> | <a href="#">Click here</a><br> |   |
|                                       |              | <b>PF2M7-L</b>  | <b>PFMC7-L</b>  | <b>PF3A7□H-L</b>  | <b>PF3W-L</b><br><b>Manifold PF3WB/C/R</b>  |   |
| Process data size                     |              | 4-byte input  | 4-byte input  | 4-byte input  | 6-byte input  |   |
| Diagnostic/Status monitoring function | Event data   | Internal failure  | ●   | ●   | ●   | ● |
|                                       |              | Abnormal internal temperature   |   |   | ●   | ● |
|                                       |              | Outside of rated range  | ●   | ●   | ●   | ● |
|                                       |              | Short-circuit detection   |   |   |   |   |
|                                       |              | Open-circuit detection  |   |   |   |   |
|                                       |              | External power supply failure   |   |   |   |   |
|                                       |              | Other   | ●<br>Overflow error/Accumulated flow error  | ●<br>Overflow error/Accumulated flow error  | ●<br>Overflow error/Accumulated flow error/<br>Over current error   |   |
|                                       | Process data | Diagnostic bit<br>●<br>Flow diagnosis/Error diagnosis   | ●<br>Flow diagnosis/Error diagnosis   | ●<br>Flow diagnosis   | ●   |   |

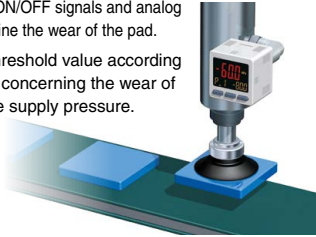
| Product                               |              | Actuator Position Sensor  | Valve SI Unit   | Electro-Pneumatic Regulator<br>Electronic Vacuum Regulator   | Step Motor Controller   |                                  |
|---------------------------------------|--------------|---|---|--|---|----------------------------------|
| Series                                |              | <a href="#">Click here</a><br> | <a href="#">Click here</a><br> | <a href="#">Click here</a><br> | <a href="#">Click here</a><br> |                                  |
|                                       |              | <b>D-MP025/D-MP050</b><br><b>D-MP100/D-MP200</b>  | <b>EX260-SIL1</b>   | <b>ITV10□0/20□0/30□0-IL</b><br><b>ITV2090-IL</b>   | <b>JXCL1</b>  |                                  |
| Process data size                     |              | 2-byte input  | 4-byte output   | 4-byte input<br>2-byte output  | 14-byte input<br>22-byte output   |                                  |
| Diagnostic/Status monitoring function | Event data   | Internal failure  | ●   | ●  |   |                                  |
|                                       |              | Abnormal internal temperature   | ●   | ●  |   |                                  |
|                                       |              | Outside of rated range  |   |  | ●   |                                  |
|                                       |              | Short-circuit detection   |   | ●<br>Valve output wiring   |   |                                  |
|                                       |              | Open-circuit detection  |   | ●<br>Valve output wiring   |   |                                  |
|                                       |              | External power supply failure   |   | ●<br>Valve power supply  |   | ●<br>Control power supply        |
|                                       |              | Other   | ●<br>Reduced magnetic field strength  | ●<br>Number of valve operations exceeded   |   | ●<br>Motor control related alarm |
|                                       | Process data | Diagnostic bit  | ●(Switch setting)<br>Device information   | ●<br>Set pressure reached  | ●<br>Motor control related alarm  |                                  |

# IO-Link Compatible Products

## Applications

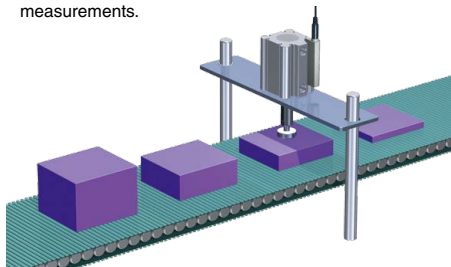
### Pressure Sensor (Employs predictive maintenance for the early detection of declining adsorption capacity)

- Monitors switch ON/OFF signals and analog values to determine the wear of the pad.
- Changes the threshold value according to the situation concerning the wear of the pad and the supply pressure.



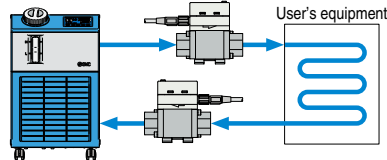
### Actuator Position Sensor (For the manufacturing of various machined products)

- Confirms the machining status and workpiece measurements.



### For the predictive maintenance of cooling water problems

- Monitors flow rate and temperature "switch ON/OFF signals" and "analog values" to determine the cooling status. The process and cooling status can be compared.

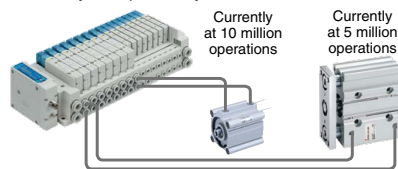


### Valve SI Unit (Employs preventive maintenance to prevent actuator malfunctions)

#### <Application Example>

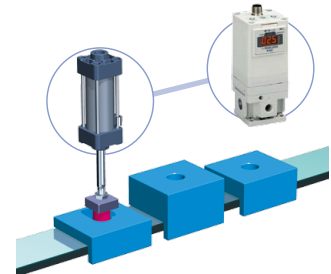
#### · Scheduled cylinder maintenance

The replacement time of the cylinder connected to the valve can be scheduled based on the valve cycle count. This enables scheduled maintenance to be performed before any unexpected cylinder failure occurs.



### Electro-Pneumatic Regulator (For the manufacturing of various products)

- The set pressure analog value can be changed to control the indentation pressure applied to each workpiece. This allows for a variety of products to be manufactured on the same line.





# IO-Link Compatible Products

## Pressure Switches

### High-Precision Digital Pressure Switch

#### ZSE20B(F)-L/ISE20B-L



- IO-Link version V1.1
- Process data length 2-byte input
- Transmission speed COM2 (38.4 kbps)
- Minimum cycle time 2.3 ms
- IO-Link port type Class A

IP65

| Series    | Applicable fluid | Type              | Rated pressure range |
|-----------|------------------|-------------------|----------------------|
| ZSE20BF-L | Air              | Compound pressure | -100 to 100 kPa      |
| ZSE20B-L  |                  | Vacuum pressure   | 0 to -100 kPa        |
| ISE20B-L  |                  | Positive pressure | 0 to 1 MPa           |

### High-Precision Digital Pressure Switch

#### ISE7□/7□G



- IO-Link version V1.1
- Process data length 2-byte input
- Transmission speed COM2 (38.4 kbps)
- Minimum cycle time 2.3 ms
- IO-Link port type Class A

IP67

| Series | Applicable fluid      | Type              | Rated pressure range |
|--------|-----------------------|-------------------|----------------------|
| ISE70  | Air                   | Positive pressure | 0 to 1 MPa           |
| ISE71  |                       |                   | 0 to 1.6 MPa         |
| ISE70G | Air<br>General fluids |                   | 0 to 1 MPa           |
| ISE75G |                       |                   | 0 to 2 MPa           |
| ISE76G |                       |                   | 0 to 5 MPa           |
| ISE77G |                       |                   | 0 to 10 MPa          |

## Digital Flow Switch

### Digital Flow Switch for Water

#### PF3W7□-X445



- IO-Link version V1.1
- Process data length 6-byte input
- Transmission speed COM2 (38.4 kbps)
- Minimum cycle time 3.5 ms
- IO-Link port type Class A

IP65

| Series       | Applicable fluid | Rated flow range |
|--------------|------------------|------------------|
| PF3W704-X445 | Water            | 0.5 to 4 L/min   |
| PF3W720-X445 |                  | 2 to 16 L/min    |
| PF3W740-X445 |                  | 5 to 40 L/min    |

## Position Sensor

### Actuator Position Sensor

Actuator stroke position is output with an analog signal.

#### D-MP025 D-MP050 D-MP100 D-MP200



- IO-Link version V1.1
- Process data length 2-byte input
- Transmission speed COM3 (230.4 kbps)
- Minimum cycle time 1.0 ms
- IO-Link port type Class A

IP67

| Series  | Measurement range |
|---------|-------------------|
| D-MP025 | 25 mm             |
| D-MP050 | 50 mm             |
| D-MP100 | 100 mm            |
| D-MP200 | 200 mm            |

## SI Unit

### SI Unit

**EX260-SIL1-X207**  
**EX260-SIL1-X210**



- IO-Link version V1.1
- Process data length 4-byte output
- Transmission speed COM3 (230.4 kbps)
- Minimum cycle time 0.8 ms

IP67

| Series                 | Number of outputs | IO-Link port type |
|------------------------|-------------------|-------------------|
| <b>EX260-SIL1-X207</b> | 32 outputs        | Class A           |
| <b>EX260-SIL1-X210</b> | 32 outputs        | Class B           |

## Electro-Pneumatic Regulator

### Electro-Pneumatic Regulator

**ITV10□0-X395**  
**ITV20□0-X395**  
**ITV30□0-X395**



- IO-Link version V1.1
- Process data length 2-byte input/2-byte output
- Transmission speed COM3 (230.4 kbps)
- Minimum cycle time 0.7 ms
- IO-Link port type Class A

IP65

| Series                              | Set pressure range |
|-------------------------------------|--------------------|
| <b>ITV1010/ITV2010/ITV3010-X395</b> | 0.005 to 0.1 MPa   |
| <b>ITV1030/ITV2030/ITV3030-X395</b> | 0.005 to 0.5 MPa   |
| <b>ITV1050/ITV2050/ITV3050-X395</b> | 0.005 to 0.9 MPa   |

## Step Motor Controller

### Step Motor Controller

**JXCL1**



- IO-Link version V1.1
- Process data length 14-byte input/22-byte output
- Transmission speed COM3 (230.4 kbps)
- Minimum cycle time 2.4 ms
- IO-Link port type Class A

IP40

| Series       | Number of axes | Compatible motor          |
|--------------|----------------|---------------------------|
| <b>JXCL1</b> | 1 axis         | Step motor (Servo/24 VDC) |

## IO-Link Master

### IO-Link Master

**EX600-GILB-X60**



- IO-Link version V1.1
- Process data length 32-byte input/32-byte output (per port)
- IO-Link port type Class A

IP67

| Series                | Number of ports | PLC communication protocol |
|-----------------------|-----------------|----------------------------|
| <b>EX600-GILB-X60</b> | 4 ports         | CC-Link IE Field           |

## Accessories

Please contact SMC for the communication cable with connector.

# IO-Link Compatible Products

 IO-Link

