



IO-LINK SOLUTIONS

# Enjoy IO-Link advantages with SMC

Expertise  
Passion  
Automation



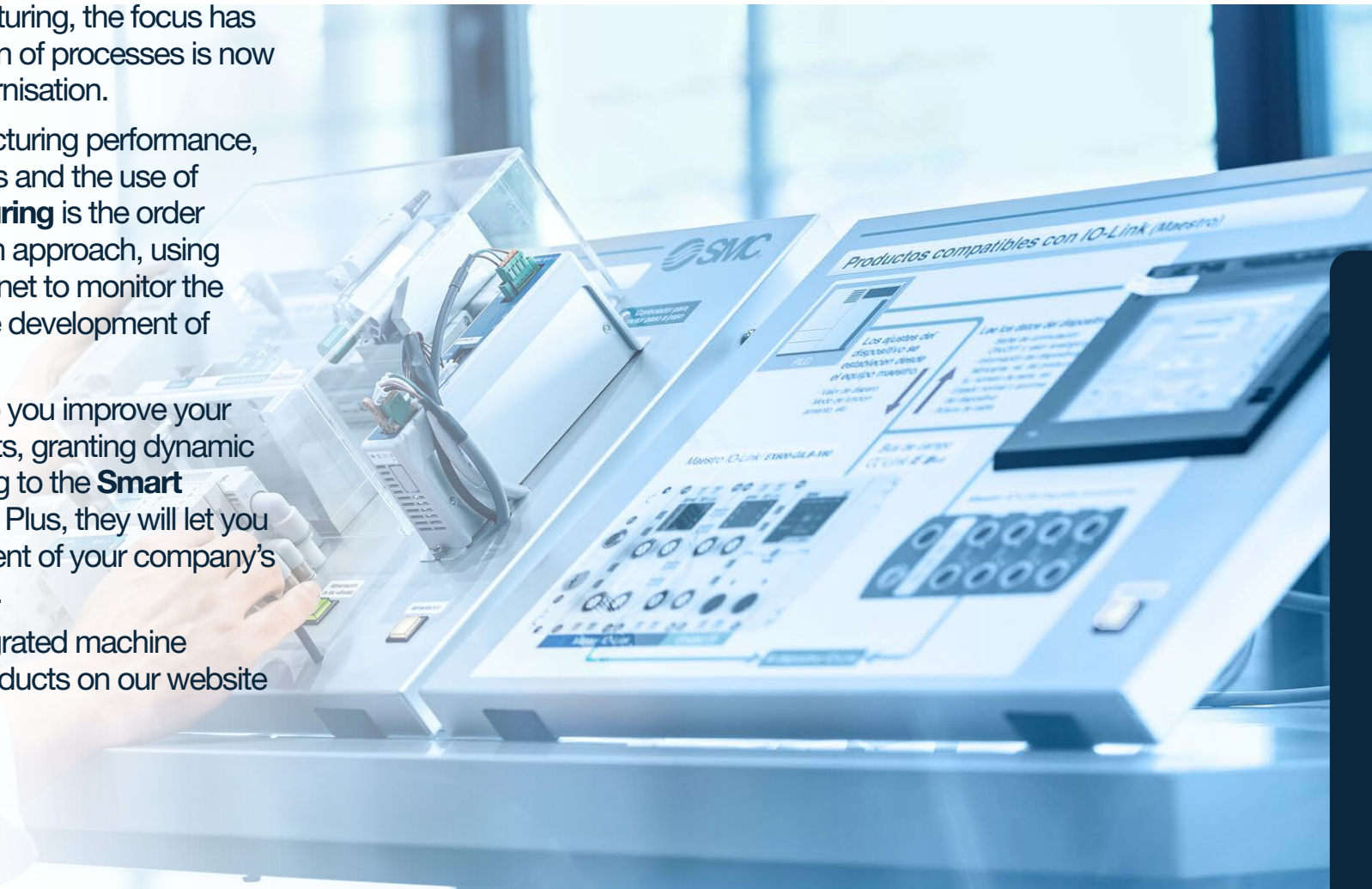
# IO-Link solutions

Hot on the heels of lean manufacturing, the focus has once again changed. Digitalisation of processes is now an essential part of factory modernisation.

With the goal to improve manufacturing performance, using more automated operations and the use of data analytics, **smart manufacturing** is the order of the day. This technology-driven approach, using machinery connected to the internet to monitor the production process, has seen the development of smart machine components.

SMC's IO-Link products can help you improve your productivity and reduce your costs, granting dynamic production processes and leading to the **Smart Flexibility** the industry is seeking. Plus, they will let you bet on the continuous improvement of your company's **industrial maintenance** strategy.

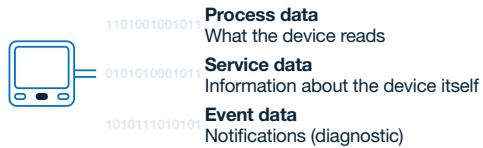
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# The advantages of IO-Link with SMC

## Increased data availability

There are **three primary data types** made available, which are categorized into cyclic data (data automatically transmitted on a regular basis) or acyclic data (data transmitted as needed or upon request).



## Product diagnostic

No need to wait for a process failure to replace a sensor. Devices are always being monitored to know the state of their health with **Event data**. Depending on the device, you can track if they are suffering excessive temperature, pressure, if they are out of range, internal default, etc.



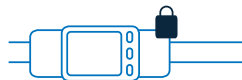
## Easy device replacement

**Plug & play** replacement simplifies the connection: a common connector for communication and power. Parameters are saved in the master, enabling **automatic setting** once the device is connected.



## Tamper free

The key-lock function keeps unauthorised persons from tampering with the settings.



## Standard wiring

The entire measured value **transmission is digital**, thus, all device **parameter are stored in the IO-Link master**. The data transfer is based on a 24 V signal and the **shielded wires are not required**.



## Remote access

Customised solutions force a **continuous change in parameters**. The overall setting control from the control system (PC) minimises time, increasing machine availability.



## Together these advantages result in:

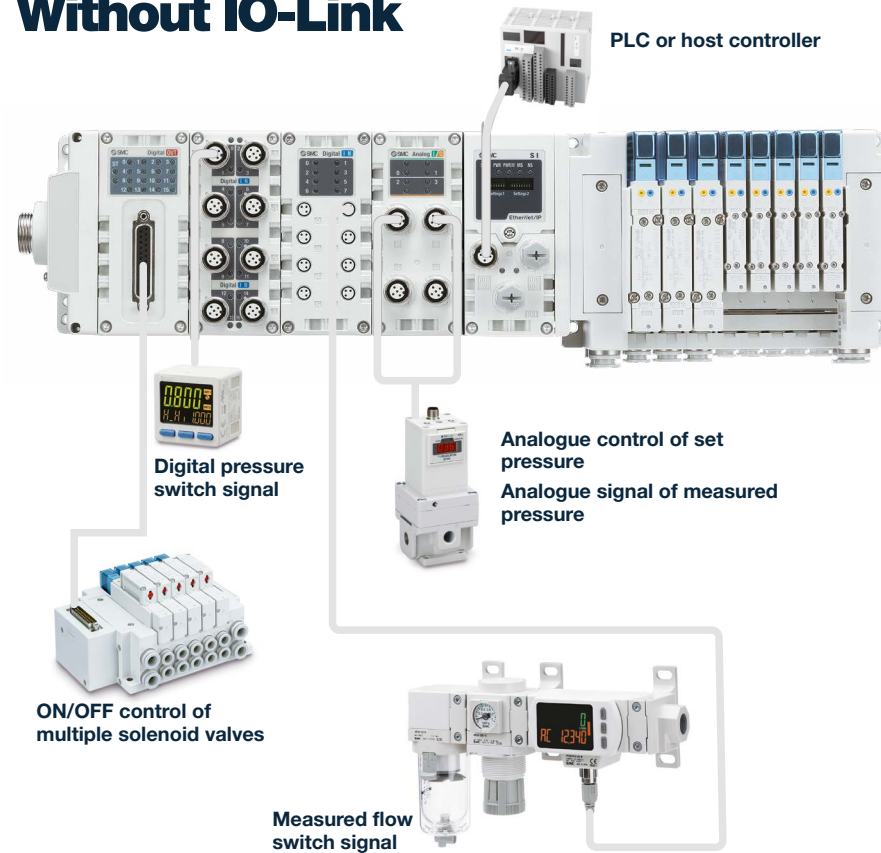
- Reduce overall costs
- Increase process efficiency
- Improve machine availability.

# Action in practice

## What will you obtain thanks to IO-Link?

- Time and money savings thanks to reduced wiring operations
- Intelligence and communication to the standard sensors without additional costs
- Reduce the number of components as well as spare parts thanks to the standardisation of input/output modules.

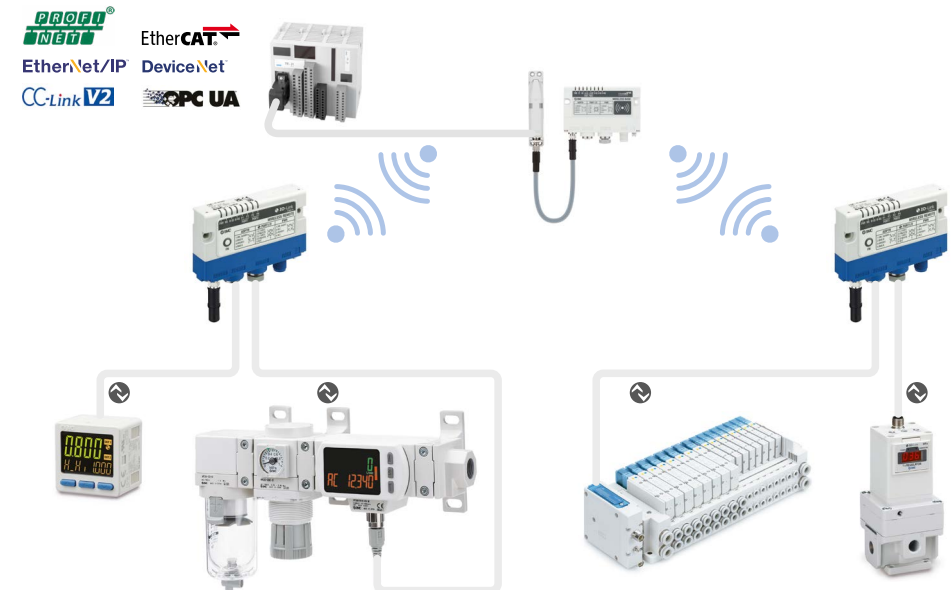
## Without IO-Link



## With IO-Link



## With IO-Link and wireless



# IO-Link products

New technology enables sensors and actuators to become smarter but...

## What is IO-Link really?

IO-Link (IEC61131-9) is an open standard serial communication protocol that allows the bi-directional exchange of data from sensors and devices that support IO-Link and are connected to a master. The IO-Link master can transmit this data over various networks, fieldbuses, or backplane buses, making the data accessible for immediate action or long-term analysis via an industrial information system (PLC, HMI, etc.).

Each IO-Link device has an IODD (IO Device Description) file that describes it and its IO-Link capabilities.



## 6 Wireless system



## 7 IO-Link master



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- 11** Static electricity control
- 12** Flow control
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- 16** Vacuum generation/management



## 19 Sensors

- 19** Flow sensors
- 22** Pressure & vacuum sensors
- 25** Position sensing
- 27** Environmental sensing

# Wireless system

## IO-Link compatible wireless compact remote system

### EXW1 Series



- Compact version
- IP67 environmental protection
- Master/device diagnosis function
- The data can be accessed from via PLC (setting tool)
- Device parameter setting function, automatic saving/writing.

Compact wireless base

Compact wireless remote



Communication distance: 100 m



| Part number  | Connector/Number of IO-Link ports | IO-Link port class |
|--------------|-----------------------------------|--------------------|
| EXW1-RLAPA8C | M12/4-port                        | Class A            |
| EXW1-RLBPA7C | M12/2-port                        | Class B            |

## IO-Link compatible wireless Air Management Hub

### EXA1 Series



- Includes IO-Link master port
- Wireless base or remote function
- Up to 100 m wireless communication range
- Protocols: EtherNet/IP™, EtherCAT®, PROFINET (base) or standalone (remote)
- Each base can communicate with up to 10 wireless remotes
- Easy combination with SMC air combination range size AC20/30/40/60.

| Part number | Description                                                              |
|-------------|--------------------------------------------------------------------------|
| EXA1-□-SA-L | Standalone (when wireless adapter is connected: wireless remote)         |
| EXA1-□-PN-L | PROFINET, OPC UA (when wireless adapter is connected: wireless base)     |
| EXA1-□-EN-L | EtherNet/IP™, OPC UA (when wireless adapter is connected: wireless base) |
| EXA1-□-EC-L | EtherCAT® (when wireless adapter is connected: wireless base)            |

□ AC body size symbol: 20 (AC20), 30 (AC30), 40 (AC40), 60 (AC60).

# IO-Link master

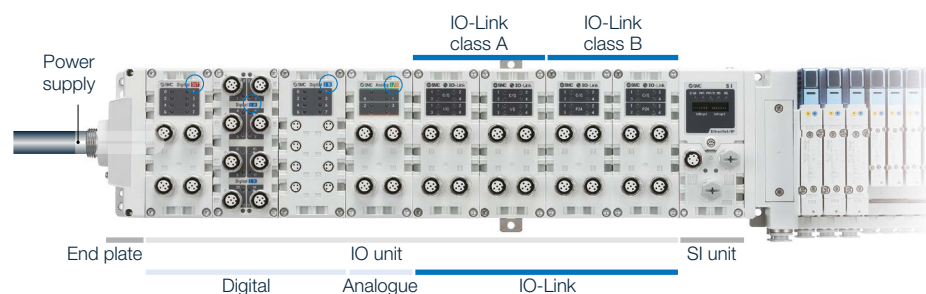
## IO-Link unit

### EX600-LAB1/LBB1 Series



- 2 models (port class A and port class B)
- Master/device diagnosis function
- The data can be accessed from via PC (setting tool)
- Device parameter setting function, automatic saving/writing.

| Part number | Communication protocol | Number of ports | Connector                        |
|-------------|------------------------|-----------------|----------------------------------|
| EX600-LAB1  | Port class A           | 4 ports         | M12 connector (5 pins)<br>4 pcs. |
| EX600-LBB1  | Port class B           |                 |                                  |



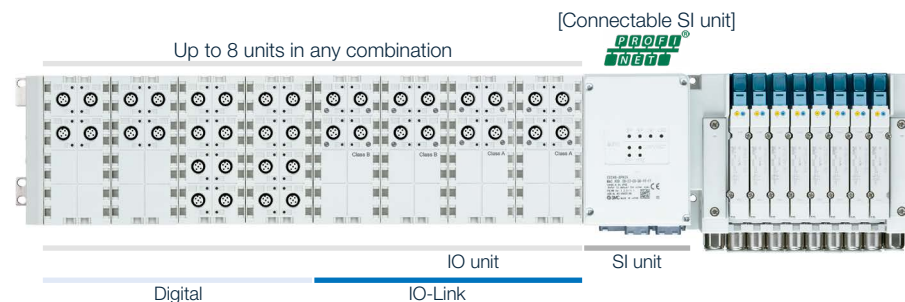
## IO-Link unit

### EX245-LA1/LB1 Series



- 2 models (port class A and port class B)
- Diagnosis is possible from the upper level communication
- The data can be accessed from via PC (setting tool)
- Device parameter setting function, automatic saving/writing.

| Part number | IO-Link module specification |
|-------------|------------------------------|
| EX245-LA1   | Class A (4-port)             |
| EX245-LB1   | Class B (4-port)             |



Shortcircuit detection, non-connected/misconnected device detection, number of valve operations exceeded, notification of port misconfiguration, conditions of diagnostic event (port, device).

# Actuators

## Distributed input/output control

### SI unit compatible with IO-Link

EX600-SEN7/SEN8 Series (EtherNet/IP™)

EX600-SEC3/SEC4 Series (EtherCAT®)

EX600-SPN3/SPN4/SPN31 Series (PROFINET)



- Protocols: EtherNet/IP™, EtherCAT®, PROFINET
- Applicable valve series: JSY, new SY, VQC, S0700, SV
- Up to 9 input/output/IO-Link master units (up to 4 IO-Link master units with EtherNet/IP™)
- Up to 1280 inputs/1280 outputs
- IP67 enclosure.

| Part number | Communication protocol   | Polarity of output           |
|-------------|--------------------------|------------------------------|
| EX600-SPN3  | PROFINET                 | Source/PNP (Negative common) |
| EX600-SPN31 | PROFINET + OPC UA server |                              |
| EX600-SEC3  | EtherCAT®                |                              |
| EX600-SEN7  | EtherNet/IP™             |                              |



Internal failure, abnormal internal temperature, shortcircuit detection (valve output wiring), open-circuit detection (valve output wiring), external power supply failure (valve power supply), number of valve operations exceeded.

### SI unit compatible with IO-Link

EX245-SPN1A/SPN2A/SPN3A Series



- Protocols: PROFINET
- Applicable valve series: JSY, SY, VQC
- Up to 8 input/output/IO-Link master units
- Up to 128 inputs/64 outputs
- IP65 enclosure.

| Part number | Communication protocol | Communication connector                        | Power supply connector                  |
|-------------|------------------------|------------------------------------------------|-----------------------------------------|
| EX245-SPN1A | PROFINET               | Push Pull connector (SCRJ): 2 pcs              | Push pull connector (24 V): 2 pcs       |
| EX245-SPN2A |                        | Push Pull connector (RJ45): 2 pcs.             |                                         |
| EX245-SPN3A |                        | M12 connector (4-pin, socket, D-coded): 2 pcs. | 7/8 inch connector (5-pin, plug): 1 pc. |



Internal failure, abnormal internal temperature, shortcircuit detection (valve output wiring), open-circuit detection (valve output wiring), external power supply failure (valve power supply), number of valve operations exceeded.

## Terminal unit

### EX600-T□ Series



- Connect up to 16 or 32 digital inputs to an IO-Link master
- Auto switch failure diagnostic function
- IO-Link communication of connected switch inputs.

| Part number | Number of inputs | Input type | Input connector    |
|-------------|------------------|------------|--------------------|
| EX600-TDX-1 | 32               | PNP        | M12 (4-pin) socket |
| EX600-TDX-2 | 16               |            | M8 (3-pin) socket  |



Auto switch failure diagnostic function.

# Solenoid output control

## SI unit compatible with IO-Link

### EX260-SIL1 Series



- Sends and receives ON/OFF signals + unit information/status
- Supports data update cycles of 1 ms or less (COM3)
- IO-Link master and SI unit can be connected with one cable (port class B).

For control of both manifold mounted solenoid valves and vacuum ejectors.  
JSY1000-E/JSY3000 + ZK2 Series.



| Part number | Output specification                     |
|-------------|------------------------------------------|
| EX260-SIL1  | 32 outputs, PNP (negative common/source) |



Shortcircuit detection, non-connected/misconnected device detection, number of valve operations exceeded, notification of port misconfiguration, conditions of diagnostic event (port, device).

## Clean design manifold valve

### JSY5000-H Series



- Enclosure IP69K
- External parts: FDA-compliant materials
- Up to 1600 l/min in single-unit and manifold design
- Low fluid accumulation and easy to clean.

| Part number           | Product type            | Type of actuation            |
|-----------------------|-------------------------|------------------------------|
| JJ5SY5-H11SKAN-□B-02F | Manifold without valves | —                            |
| JSY5103-5NZ-H         | Valve                   | 2-position (single)          |
| JSY5203-5NZ-H         |                         | 2-position (double)          |
| JSY5303-5NZ-H         |                         | 3-position (closed centre)   |
| JSY5403-5NZ-H         |                         | 3-position (exhaust centre)  |
| JSY5503-5NZ-H         |                         | 3-position (pressure centre) |

□ Number if valve stations (2 to 16).



# Static electricity control

## Bar type ionizer

### IZS51 Series



- High speed static neutralisation: as fast as 0.1 s
- Low maintenance cartridge
- Auto balance function
- 2 types of brackets are available: angle adjustment or space reduction
- Ionizers can be set with a remote controller
- Option for integrated 2-port valve for reduced consumption and installation labour.

| Part number        | Emitter cartridge type           | One-touch fitting [mm] | Bracket        |
|--------------------|----------------------------------|------------------------|----------------|
| IZS51-□TL-V6-3J3-B | High flow cartridge/<br>Tungsten | Ø 6 straight           | With bracket 1 |
| IZS51-□TL-V6-3J3-W |                                  |                        | With bracket 2 |
| IZS51-□TL-V8-3J3-B |                                  | Ø 8 straight           | With bracket 1 |
| IZS51-□TL-V8-3J3-W |                                  |                        | With bracket 2 |
| IZS51-□TL-VA-3J3-B |                                  | Ø 10 straight          | With bracket 1 |
| IZS51-□TL-VA-3J3-W |                                  |                        | With bracket 2 |
| IZS51-□CL-V6-3J3-B | High flow cartridge/<br>Silicon  | Ø 6 straight           | With bracket 1 |
| IZS51-□CL-V6-3J3-W |                                  |                        | With bracket 2 |
| IZS51-□CL-V8-3J3-B |                                  | Ø 8 straight           | With bracket 1 |
| IZS51-□CL-V8-3J3-W |                                  |                        | With bracket 2 |
| IZS51-□CL-VA-3J3-B |                                  | Ø 10 straight          | With bracket 1 |
| IZS51-□CL-VA-3J3-W |                                  |                        | With bracket 2 |

□ For bar length symbol (bar length): 35 (350 mm), 38 (380 mm), 44 (440 mm), 56 (560 mm), 62 (620 mm), 80 (800 mm), 110 (1100 mm), 128 (1280 mm), 158 (1580 mm), 188 (1880 mm), 230 (2300 mm) and 248 (2480 mm).



Ion generation ON/OFF signal and offset voltage data, auto balance ON/OFF signal, device information, normal or abnormal device status.

## Bar type/nozzle type ionizer

### ⊕ IZT40/41/42 Series

### ⊕ IZT43 Series



- Bar type (AC type and dual AC type available) and nozzle type available
- Potential amplitude: as low as 25 V or less
- Rapid neutralisation of static electricity: as fast as 0.1 s
- One controller can control a maximum of 4 ionizers
- Monitor and operate bars/nozzles which are installed in an inaccessible location
- Multiple alarms & functions.

| Part number     | Type                | One-touch fitting [mm] | Emitter cartridge type/Emitter material          |
|-----------------|---------------------|------------------------|--------------------------------------------------|
| IZT4□-■D36HL-JN | Bar type ionizer    | Ø 6 straight           | High speed deionising cartridge/<br>Tungsten     |
| IZT4□-■D38HL-JN |                     | Ø 8 straight           |                                                  |
| IZT4□-■D3AHL-JN |                     | Ø 10 straight          |                                                  |
| IZT43-D36HL-JN  | Nozzle type ionizer | Ø 6 straight           | High speed static neutralisation<br>cartridge    |
| IZT43-D36LL-JN  |                     | Ø 6 elbow              |                                                  |
| IZT43-L36HL-JN  |                     | Ø 6 straight           | Energy saving static neutralisation<br>cartridge |
| IZT43-L36LL-JN  |                     | Ø 6 elbow              |                                                  |

□ For ionizer model: 1 for AC type model, 2 for Dual AC type.

■ For bar length symbol (bar length): 16 (160 mm), 22 (220 mm), 34 (340 mm), 40 (400 mm), 46 (460 mm), 58 (580 mm), 64 (640 mm), 82 (820 mm), 112 (1120 mm), 130 (1300 mm), 160 (1600 mm), 190 (1900 mm), 232 (2320 mm) and 250 (2500 mm).



Ion generation ON/OFF signal offset voltage data, auto balance ON/OFF signal, device information (manufacturer, product part number, etc.), normal or abnormal device status.



# Flow control

## Flow controller for water

### FC3W-L Series



- Rated flow range: up to 40 l/min
- Inputs/outputs: IO-Link, analogue current/voltage with external control stop input
- Responsiveness: 10 s or less
- Grease-free.

| Part number       | Rated flow range [l/min (ANR)] | Port size | Fluid temperature range [ °C] |
|-------------------|--------------------------------|-----------|-------------------------------|
| FC3W504-F03-LN-NY | 0.5 to 4                       | G3/8      | 0 to 50                       |
| FC3W520-F04-LN-NY | 2 to 16                        | G1/2      |                               |
| FC3W540-F06-LN-NY | 5 to 40                        | G3/4      |                               |



Flow rate command value, valve opening position command value, measured flow rate value, valve opening position, control status, device information, normal or abnormal device status.

## Flow controller for air

### PFCA7 Series



- Inputs/outputs: IO-Link, NPN/PNP, analogue current/voltage
- Responsiveness: 0.5 s or less
- Control accuracy:  $\pm 3\%$  (F.S.)
- Grease-free.

| Part number   | Rated flow range [l/min (ANR)] | Port size | Analogue input |
|---------------|--------------------------------|-----------|----------------|
| PFCA710-C6-1N | 0.1 to 10                      | Ø 6       | 1 to 5 V       |
| PFCA710-F1-1N |                                | G1/8      |                |
| PFCA725-C6-1N | 0.2 to 25                      | Ø 6       |                |
| PFCA725-F1-1N |                                | G1/8      |                |
| PFCA750-C6-1N | 0.5 to 50                      | Ø 6       |                |
| PFCA750-F1-1N |                                | G1/8      |                |
| PFCA711-C6-1N | 1 to 100                       | Ø 6       | 4 to 20 mA     |
| PFCA711-F2-1N |                                | G1/8      |                |
| PFCA710-C6-2N | 0.1 to 10                      | Ø 6       |                |
| PFCA710-F1-2N |                                | G1/8      |                |
| PFCA725-C6-2N | 0.2 to 25                      | Ø 6       |                |
| PFCA725-F1-2N |                                | G1/8      |                |
| PFCA750-C6-2N | 0.5 to 50                      | Ø 6       |                |
| PFCA750-F1-2N |                                | G1/8      |                |
| PFCA711-C6-2N | 1 to 100                       | Ø 6       |                |
| PFCA711-F2-2N |                                | G1/8      |                |



Threshold value, operation mode, commanded flow rate, switch ON/OFF signal and analogue value device information, normal or abnormal device status, cable breakage.



## Air flow controller

### IN502-44/45/46 Series



- 3-screen display
- Outputs: IO-Link, NPN/PNP, analogue current/voltage
- Control accuracy:  $\pm 5\%$  (F.S.)
- Responsiveness: 0.5 s or less
- Greases: grease compatible with low dew point, white vaseline, grease for food
- Operation at power-off: flow rate zero, flow rate retention
- Enclosure: IP65.

| Part number | Rated flow range [l/min (ANR)] | Grease                                | Analogue input        |
|-------------|--------------------------------|---------------------------------------|-----------------------|
| IN502-44-6  | 50 to 500                      | Grease compatible with low dew points | 1 to 5 V or 0 to 10 V |
| IN502-44-8  |                                |                                       | 4 to 20 mA            |
| IN502-44-6B |                                | Grease for food                       | 1 to 5 V or 0 to 10 V |
| IN502-44-8B |                                |                                       | 4 to 20 mA            |
| IN502-45-6  | 100 to 1000                    | Grease compatible with low dew points | 1 to 5 V or 0 to 10 V |
| IN502-45-8  |                                |                                       | 4 to 20 mA            |
| IN502-45-6B |                                | Grease for food                       | 1 to 5 V or 0 to 10 V |
| IN502-45-8B |                                |                                       | 4 to 20 mA            |
| IN502-46-6  | 200 to 2000                    | Grease compatible with low dew points | 1 to 5 V or 0 to 10 V |
| IN502-46-8  |                                |                                       | 4 to 20 mA            |
| IN502-46-6B |                                | Grease for food                       | 1 to 5 V or 0 to 10 V |
| IN502-46-8B |                                |                                       | 4 to 20 mA            |



Threshold value, operation mode, flow rate command value, switch ON/OFF signal and analogue data, device information, normal or abnormal device status, cable breakage.

## Pressure control

## Electro-pneumatic regulator

### ITV-IL Series



- Applicable fluid: air
- Linearity:  $\pm 1\%$  F.S. or less
- Hysteresis: 0.5 % F.S. or less
- Repeatability:  $\pm 0.5\%$  F.S. or less.

| Part number   | Maximum flow rate [l/min] | Pressure range [MPa] | Port size |
|---------------|---------------------------|----------------------|-----------|
| ITV1010-ILF1N | 200                       | 0.1                  | G1/8      |
| ITV1030-ILF1N |                           | 0.5                  |           |
| ITV1050-ILF1N |                           | 0.9                  |           |
| ITV2010-ILF2N | 1500                      | 0.1                  | G1/4      |
| ITV2030-ILF2N |                           | 0.5                  |           |
| ITV2050-ILF2N |                           | 0.9                  |           |
| ITV3010-ILF4N | 4000                      | 0.1                  | G1/2      |
| ITV3030-ILF4N |                           | 0.5                  |           |
| ITV3050-ILF4N |                           | 0.9                  |           |



Internal failure, outside of rated range, set pressure reached (process data).

# Electric actuator control

## Step motor controller

### JXCL1/JXCLF Series



- Multiple compatible actuators: all 24 VDC stepper motor axis
- Two types of operation command: step no. defined operation and numerical data defined operation
- Current consumption: 100 mA or less
- Applicable electric actuators:
  - Absolute encoder: LEF, LEY/LEYG, LER, LEHF, LEKF, LES/LESH, LESYH
  - Incremental encoder: LEF, LEL, LEM, LEY/LEYG, LES/LESH, LEPY/LEPS, LER, LEH.

| Part number | Communication protocol        | Mounting       |
|-------------|-------------------------------|----------------|
| JXCL17      | IO-Link                       | Screw mounting |
| JXCL18      |                               | DIN rail       |
| JXCLF7      | IO-Link with STO sub-function | Screw mounting |
| JXCLF8      |                               | DIN rail       |



Applicable electric actuators, external power supply failure (control power supply), motor control related alarm, diagnostic bit (process data).



# e-Actuator integrated controller

## EQFSH/EQYH/EQYGH Series



- Easy to set up, just like air equipment!
- Battery-less absolute encoder
- Downsized with integrated controller, wiring saving, labour saving, programless, reduced adjustment time
- Annual CO<sub>2</sub> emissions: max. 59 % reduction (SMC comparison)
- The numerical values vary depending on the operating conditions.

| Part number     | Size | Type | Motor mounting position/Motor cover direction | Bearing type | Lead [mm] |
|-----------------|------|------|-----------------------------------------------|--------------|-----------|
| EQY16D1HA-□-BLA | 16   | Rod  | Inline/Left side                              | —            | 10        |
| EQY16D1HB-□-BLA |      |      | 5                                             |              |           |
| EQY16D3HA-□-BLA |      |      | Inline/Top side                               |              | 10        |
| EQY16D3HB-□-BLA |      |      |                                               |              | 5         |
| EQY16RHA-□-BLA  |      |      | Parallel/Right side                           |              | 10        |
| EQY16RHB-□-BLA  |      |      |                                               |              | 5         |
| EQY25HA-□-BLA   | 25   |      | Parallel/Top side                             |              | 12        |
| EQY25HB-□-BLA   |      |      |                                               |              | 6         |
| EQY25RHA-□-BLA  |      |      | Parallel/Right side                           |              | 12        |
| EQY25RHB-□-BLA  |      |      |                                               |              | 6         |
| EQY25DHA-□-BLA  |      |      | Inline                                        |              | 12        |
| EQY25DHB-□-BLA  |      |      |                                               |              | 6         |
| EQY32HA-□-BLA   | 32   |      | Parallel/Top side                             |              | 16        |
| EQY32HB-□-BLA   |      |      |                                               |              | 8         |
| EQY32RHA-□-BLA  |      |      | Parallel/Right side                           |              | 16        |
| EQY32RHB-□-BLA  |      |      |                                               |              | 8         |
| EQY32DHA-□-BLA  |      |      | Inline                                        |              | 16        |
| EQY32DHB-□-BLA  |      |      |                                               |              | 8         |

| Part number       | Size | Type      | Motor mounting position/Motor cover direction | Bearing type    | Lead [mm] |
|-------------------|------|-----------|-----------------------------------------------|-----------------|-----------|
| EQFS16D1HA-□-BLA  | 16   | Slider    | Inline/Left side                              | —               | 10        |
| EQFS16D1HB-□-BLA  |      |           |                                               |                 | 5         |
| EQFS16D3HA-□-BLA  |      |           | Inline/Top side                               |                 | 10        |
| EQFS16D3HB-□-BLA  |      |           |                                               |                 | 5         |
| EQFS16RHA-□-BLA   |      |           | Parallel/Right side                           |                 | 10        |
| EQFS16RHB-□-BLA   |      |           |                                               |                 | 5         |
| EQFS25HA-□-BLA    | 25   |           | Inline                                        |                 | 12        |
| EQFS25HB-□-BLA    |      |           |                                               |                 | 6         |
| EQFS25RHA-□-BLA   |      |           | Parallel/Right side                           |                 | 12        |
| EQFS25RHB-□-BLA   |      |           |                                               |                 | 6         |
| EQFS32HA-□-BLA    | 32   |           | Inline                                        |                 | 16        |
| EQFS32HB-□-BLA    |      |           |                                               |                 | 8         |
| EQFS32RHA-□-BLA   |      |           | Parallel/Right side                           |                 | 16        |
| EQFS32RHB-□-BLA   |      |           |                                               |                 | 8         |
| EQFS40HA-□-BLA    | 40   |           | Inline                                        |                 | 20        |
| EQFS40HB-□-BLA    |      |           |                                               |                 | 10        |
| EQFS40RHA-□-BLA   |      |           | Parallel/Right side                           |                 | 20        |
| EQFS40RHB-□-BLA   |      |           |                                               |                 | 10        |
| EQYG16MD2HA-□-BLA | 16   | Guide rod | Inline/Right side                             | Sliding bearing | 10        |
| EQYG25MDHA-□-BLA  | 25   |           |                                               |                 | Inline    |
| EQYG32MDHA-□-BLA  | 32   |           | 16                                            |                 |           |

- For stroke length symbol:
- Rod type: up to 500 mm
  - Slider type: up to 1200 mm
  - Guide type: up to 300 mm.



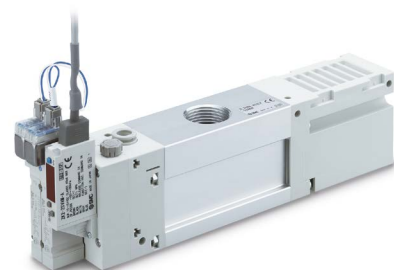
Position, speed, acceleration/deceleration, pushing force, current position, speed, force, target position reached signal, device information, normal or abnormal device status.



# Vacuum generation/management

## Multistage ejector

### ZL3/6 Series



- Energy-saving, large flow rate, 3-stage diffuser construction ejector
- Energy saving function selectable, with reduction of up to 90 %
- Suction flow rate up to 600 l/min, increased by 250 % compared to one-stage ejectors
- Supply valve/release valve combinations
- All-in-one design with integrated components to make it compact and lightweight.

| Part number        | Max. suction flow rate [l/min (ANR)] | Standard supply pressure [MPa] | Vacuum (2/V) port size | Pressure range [kPa] |
|--------------------|--------------------------------------|--------------------------------|------------------------|----------------------|
| ZL3MF06-K15LOZ-ELH | 300                                  | 0.35                           | G3/4                   | 0 to -101            |
| ZL3MF04-K15LOZ-ELH |                                      |                                | G1/2                   |                      |
| ZL6MF06-K15LOZ-ELH | 600                                  |                                | G3/4                   |                      |
| ZL6MF04-K15LOZ-ELH |                                      |                                | G1/2                   |                      |
| ZL3MF06-K15LOZ-VLH |                                      |                                | G3/4                   | -100 to 100          |
| ZL3MF04-K15LOZ-VLH |                                      |                                | G1/2                   |                      |
| ZL3HF06-K15LOZ-ELH | 300                                  | 0.5                            | G3/4                   | 0 to -101            |
| ZL3HF04-K15LOZ-ELH |                                      |                                | G1/2                   |                      |
| ZL6HF06-K15LOZ-ELH | 600                                  |                                | G3/4                   |                      |
| ZL6HF04-K15LOZ-ELH |                                      |                                | G1/2                   |                      |
| ZL3HF06-K15LOZ-VLH |                                      |                                | G3/4                   | -100 to 100          |
| ZL3HF04-K15LOZ-VLH | 300                                  |                                | G1/2                   |                      |



ON/OFF signal and analogue value, device information, normal or abnormal device status, cable breakage.

## Vacuum unit. Ejector system/Vacuum pump

### ZK2□A Series



- Advanced vacuum unit (ejector/pump/manifold systems) with low noise and high efficiency options.
- Energy saving digital vacuum switch: intermittent energising (supply/exhaust) only when vacuum decreases.
- More efficient 2-stage ejector: air consumption 30 % reduced.
- Dual 2 port valve (release valve/supply valve): can hold vacuum even when the power goes out or is turned off. Prevents the sudden dropping of workpieces.
- All-in-one design with integrated components to make it compact and lightweight.

| Part number    | Pressure range [kPa] | Nominal nozzle size [mm] | Energy saving function |
|----------------|----------------------|--------------------------|------------------------|
| ZK2□07K51HA-08 | 0 to -101            | Ø 0.7                    | No                     |
| ZK2□10K51HA-08 |                      | Ø 1.0                    |                        |
| ZK2□12K51HA-08 |                      | Ø 1.2                    |                        |
| ZK2□15K51HA-08 |                      | Ø 1.5                    |                        |
| ZK2□07K55HA-08 | -100 to 100          | Ø 0.7                    | Yes                    |
| ZK2□10K55HA-08 |                      | Ø 1.0                    |                        |
| ZK2□12K55HA-08 |                      | Ø 1.2                    |                        |
| ZK2□15K55HA-08 |                      | Ø 1.5                    |                        |

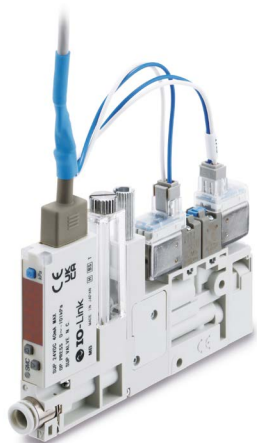
□ Body type: A for single unit, C for manifold



Threshold value, operation mode, ON/OFF signal and analogue value, device information, normal or abnormal device status, cable breakage.

## Compact vacuum unit

### ZQ□A Series



- Nozzle sizes: Ø 0.5, Ø 0.7, Ø 1.0
- Suction flow rate of up to 22 l/min
- Max. vacuum pressure of -80 kPa
- Pressure switch variations
- Various solenoid valve combinations (supply valve/release valve).

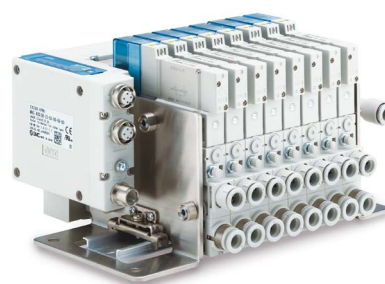
| Part number          | Pressure range [kPa] | Body type       | Lead wire                            |
|----------------------|----------------------|-----------------|--------------------------------------|
| ZQ101UA-K15LO-EL-00  | 0 to -101            | For single unit | Without lead wire with connector     |
| ZQ103MA-K15LO-EL-0   |                      | For manifold    |                                      |
| ZQ101UA-K15LO-VLH-00 | -100 to 100          | For single unit | Lead wire with connector for IO-Link |
| ZQ103MA-K15LO-VLH-0  |                      | For manifold    |                                      |
| ZQ101UA-K15LO-EL-33  | 0 to -101            | For single unit | Without lead wire with connector     |
| ZQ103MA-K15LO-VLH-3  |                      | For manifold    | Lead wire with connector for IO-Link |



Threshold value, operation mode, ON/OFF signal and analogue value, device information, normal or abnormal device status, cable breakage.

## Vacuum manifold for fieldbus system

### ZKJ Series



- Nozzle size: Ø 0.7, Ø 1.0, Ø 1.2, Ø 1.5
- Suction flow rate up to 74 l/min with a vacuum pressure of -89 kPa
- Max. valve flow rate: 415 l/min
- Exhaust sealing function for the quick release of workpieces
- Exhaust specifications: port exhaust, high-noise reduction silencer
- Easy to replace the filter element.

| Part number   | Manifold stations | U-side end plate and supply (P) port [mm] |
|---------------|-------------------|-------------------------------------------|
| ZZKJ04-KAN-L8 | 4                 | Ø 8 elbow one-touch fittings              |
| ZZKJ08-KAN-L8 | 8                 |                                           |
| ZZKJ12-KAN-L8 | 12                |                                           |
| ZZKJ16-KAN-L8 | 16                |                                           |



Real-time diagnosis (process data), request base diagnosis (service data), data storage function.

## Vacuum gripper system

### ZGS Series



- Foam size: 300 mm x 180 mm/ 200 mm x 120 mm.
- Suitable for the palletising and depalletising of corrugated cardboard, etc.
- Ejector unit. Combines all functions required for adsorption (ejector, supply valve/release valve, silencer, pressure switch).
- Can be used immediately by simply connecting 1 electrical cable and air piping.

| Part number            | Foam size [mm] | Thickness [mm]<br>(number of holes) | Number of ejector assemblies |
|------------------------|----------------|-------------------------------------|------------------------------|
| ZGSNHK-300180BS2-NW1C8 | 300 x 180      | 30<br>(39 holes)                    | 2                            |
| ZGSNHK-300180BS3-NW1C8 |                |                                     | 3                            |
| ZGSNHK-200120BS2-NW1C8 | 200 x 120      |                                     | 2                            |



Pressure measurement value, diagnostic information and output status for valves, normal or abnormal device status, device information.

## Compact vacuum unit, ejector

### ZB Series



- Energy saving design
- Supply valve with latching specification
- Compact and light weight.

| Part number        | Nominal nozzle size [mm] | Maximum suction flow [l/min (ANR)] | Supply valve    |
|--------------------|--------------------------|------------------------------------|-----------------|
| ZB0311-K15LO-EL-C4 | Ø 0.3                    | 2                                  | Normally closed |
| ZB0411-K15LO-EL-C4 | Ø 0.4                    | 3.5                                |                 |
| ZB0511-K15LO-EL-C4 | Ø 0.5                    | 4.5                                |                 |
| ZB0611-K15LO-EL-C4 | Ø 0.6                    | 10                                 |                 |



Threshold value, operation mode, ON/OFF signal and analogue value, device information, normal or abnormal device status, cable breakage.

# Sensors

## Flow sensors

### Digital flow switch manifold for water

PF3WB/C/S/R Series



- Applicable fluid: water
- Flow ranges: from 0.5 to 40 l/min
- Integrated basic/straight and remote supply/return types available
- Output: IO-Link and switch output (NPN/PNP)
- Up to 10 stations
- Repeatability: 2.0 % F.S.

| Part number          | Type          | Rated flow range [l/min] | Piping | Output                          |
|----------------------|---------------|--------------------------|--------|---------------------------------|
| PF3WB□F-704-03-LT-M  | Basic         | 0.5 to 4                 | G1/8   | IO-Link with temperature sensor |
| PF3WB□F-720-04-LT-M  |               | 2 to 16                  | G1/2   |                                 |
| PF3WB□F-740-06-LT-M  |               | 5 to 40                  | G3/4   |                                 |
| PF3WC□DF-704-03-LT-M | Straight      | 0.5 to 4                 | G1/8   | IO-Link with temperature sensor |
| PF3WC□DF-720-04-LT-M |               | 2 to 16                  | G1/2   |                                 |
| PF3WC□DF-740-06-LT-M |               | 5 to 40                  | G3/4   |                                 |
| PF3WR□BF-704-03-L-M  | Remote return | 0.5 to 4                 | G1/8   | IO-Link                         |
| PF3WR□BF-720-04-L-M  |               | 2 to 16                  | G1/2   |                                 |
| PF3WR□BF-740-06-L-M  |               | 5 to 40                  | G3/4   |                                 |

□ Number of stations, from 1 to 10.



Internal failure, abnormal internal temperature, outside of rated range, diagnostic bit (process data).

### Digital flow switch for water

PF3W7-L Series



- Applicable fluid: water
- 3 parameters visible on the screen
- Flow ranges: from 0.5 to 250 l/min
- Output: IO-Link and switch output (NPN/PNP)
- Repeatability: 2.0 % F.S.
- IP65 enclosure.

| Part number       | Rated flow range [l/min] | Applicable fluid                           | Piping | Output                       |
|-------------------|--------------------------|--------------------------------------------|--------|------------------------------|
| PF3W704-F03-LN-MZ | 0.5 to 4                 | Water and ethylene glycol aqueous solution | G3/8   | IO-Link: switch output (N/P) |
| PF3W720-F04-LN-MZ | 2 to 16                  |                                            | G1/2   |                              |
| PF3W740-F06-LN-MZ | 5 to 40                  |                                            | G3/4   |                              |
| PF3W711-F10-LN-MZ | 10 to 100                |                                            | G1     |                              |
| PF3W721-F12-LN-M  | 50 to 250                |                                            | G1 1/4 |                              |



Internal failure, abnormal internal temperature, outside of rated range, diagnostic bit (process data).

## Digital flow switch for large flow

### PF3A□H-L Series



- Applicable fluid: air and nitrogen
- 3-colour 2 or 4-screen display
- Flow ranges: from 10 to 12000 l/min
- Output: IO-Link, NPN/PNP and analogue/external input
- Built-in temperature and pressure sensor version available
- Repeatability:  $\pm 1$  F.S.
- Can be connected to air combination unit
- IP65 enclosure.

| Part number    | Rated flow range [l/ min] | Piping  | Applicable air combination unit | Output                                        | Integrated pressure & temperature sensor |
|----------------|---------------------------|---------|---------------------------------|-----------------------------------------------|------------------------------------------|
| PF3A7R5H-□     | 5 to 500                  | —       | AC20-D/AW30-D                   | Note 1)                                       | No                                       |
| PF3A701H-□     | 10 to 1000                |         | AC30-D/AW40-D                   |                                               |                                          |
| PF3A702H-□     | 20 to 2000                |         | AC40-D/AW30-D                   |                                               |                                          |
| PF3A704H-□     | 40 to 4000                |         | AC50-D/AC60-D                   |                                               |                                          |
| PF3A708H-□     | 80 to 8000                |         |                                 |                                               |                                          |
| PF3A703H-F10-□ | 30 to 3000                | G1      | —                               | IO-Link/Switch output and switch output (N/P) | Yes                                      |
| PF3A706H-F14-□ | 60 to 6000                | G1, 1/2 |                                 |                                               |                                          |
| PF3A712H-F20-□ | 120 to 12000              | G2      |                                 |                                               |                                          |
| PF3A8R5H-L2    | 5 to 500                  | —       | AC20-D/AW30-D                   |                                               |                                          |
| PF3A801H-L2    | 10 to 1000                |         | AC30-D/AW40-D                   |                                               |                                          |
| PF3A802H-L2    | 20 to 2000                |         | AC40-D/AW30-D                   |                                               |                                          |
| PF3A804H-L2    | 40 to 4000                |         | AC50-D/AC60-D                   |                                               |                                          |
| PF3A808H-L2    | 80 to 8000                |         |                                 |                                               |                                          |

□ L3 IO-Link: Switch output (N/P)/ Analogue voltage output External input.

L4 IO-Link: Switch output (N/P)/ Analogue current output External input.



Internal failure, abnormal internal temperature, outside of rated range, overflow error/accumulated flow error/over current error, diagnostic bit (process data).

## Digital flow switch, 2-colour display

### PF2M7-L Series



- Applicable fluid: dry air, nitrogen, carbon dioxide and argon
- Flow ranges: from 0.01 to 100 l/min
- Output: IO-Link, PNP/NPN or analogue (voltage/current)
- Repeatability:  $\pm 1.0$  % F.S.
- Consumption: 35 mA or less
- Flow adjustment valve option.

| Part number   | Rated flow range [l/min] | Piping                |
|---------------|--------------------------|-----------------------|
| PF2M701-C6-L□ | 0.01 to 1                | Ø 6 one-touch fitting |
| PF2M702-C6-L□ | 0.02 to 2                |                       |
| PF2M705-C6-L□ | 0.05 to 5                |                       |
| PF2M710-C6-L□ | 0.1 to 10                |                       |
| PF2M725-C6-L□ | 0.3 to 25                |                       |
| PF2M750-C6-L□ | 0.5 to 50                | Ø 8 one-touch fitting |
| PF2M711-C8-L□ | 1 to 100                 |                       |
| PF2M721-C8-L□ | 2 to 200                 |                       |

□ For output specification: — (IO-Link/NPN/PNP), 2 (IO-Link/NPN/PNP + NPN/PNP/External input), 3 (IO-Link/NPN/PNP + Analogue 1 to 5 V/0 to 10 V), 4 (IO-Link/NPN/PNP + Analogue 4 to 20 mA).



Over current error, outside of rated flow range, accumulated flow error, internal product malfunction.



## Digital flow switch, 3-colour/3-screen display

### PF2MC7-L Series



- Applicable fluid: dry air and nitrogen
- Flow ranges: 5 to 2000 l/min
- Output: PNP/NPN, analogue (voltage/current) and/or IO-Link
- Repeatability:  $\pm 0.1$  % F.S.  $\pm 1$  digit
- M8 standard connector
- IP65 enclosure.

| Part number      | Rated flow range [l/min] | Piping | Output                                          |
|------------------|--------------------------|--------|-------------------------------------------------|
| PF2MC7501-F04-L2 | 5 to 500                 | G1/2   | IO-Link, switch output (N/P) & external input   |
| PF2MC7501-F04-L3 |                          |        | IO-Link, switch output (N/P) & analogue voltage |
| PF2MC7501-F04-L4 |                          |        | IO-Link, switch output (N/P) & analogue current |
| PF2MC7102-F04-L2 | 10 to 1000               |        | IO-Link, switch output (N/P) & external input   |
| PF2MC7102-F04-L3 |                          |        | IO-Link, switch output (N/P) & analogue voltage |
| PF2MC7102-F04-L4 |                          |        | IO-Link, switch output (N/P) & analogue current |
| PF2MC7202-F06-L2 | 20 to 2000               | G3/4   | IO-Link, switch output (N/P) & external input   |
| PF2MC7202-F06-L3 |                          |        | IO-Link, switch output (N/P) & analogue voltage |
| PF2MC7202-F06-L4 |                          |        | IO-Link, switch output (N/P) & analogue current |



Internal failure, outside of rated range, overflow error/accumulated flow error, diagnostic bit (process data).

## Clamp-on type flow sensor for liquids

### PFUW Series



- General liquids (water, oil, chemical liquids, etc.)
- Detection method: ultrasonic method
- Rated flow ranges: from 0 to 100 l/min
- Output: IO-Link, NPN/PNP or analogue (voltage/current)
- Repeatability:  $\pm 2.0$  % F.S.
- Consumption: 85 mA or less
- IP65/IP67 enclosure.

| Part number | Rated flow range<br>[l/min (ANR)] | Output 1            | Output 2                               |
|-------------|-----------------------------------|---------------------|----------------------------------------|
| PFUW760-L3N | 0 to 60                           | IO-Link/NPN/<br>PNP | Analogue output (1 to 5 V ↔ 0 to 10 V) |
| PFUW760-L4N |                                   |                     | Analogue output (4 to 20 mA)           |
| PFUW711-L3N | 0 to 100                          |                     | Analogue output (1 to 5 V ↔ 0 to 10 V) |
| PFUW711-L4N |                                   |                     | Analogue output (4 to 20 mA)           |



Threshold value, operation mode, flow rate command value, switch ON/OFF signal and analogue value, device information, normal or abnormal device status, cable breakage.



# Pressure & vacuum sensors

## High-precision digital pressure switch for air & general fluids

ISE7□/ISE7□G/ISE79S Series



- Applicable fluid: air and general fluids
- 3 parameters visible on the screen
- Pressure ranges: from 0 to 50 MPa
- Output: IO-Link, NPN/PNP
- Repeatability:  $\pm 0.5$  % F.S. or less
- Metal housing, solid turnable body
- IP67 enclosure.

| Part number   | Rated pressure range [MPa] | Applicable fluid                                                             | Piping | Output                                                                                |
|---------------|----------------------------|------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------|
| ISE70-F02-L2  | 0 to 1                     | Air, non-corrosive gas, non flammable gas                                    | G1/4   | IO-Link: switch output 1 + switch output 2 (switch output: NPN or PNP switching type) |
| ISE71-F02-L2  | 0 to 1.6                   |                                                                              |        |                                                                                       |
| ISE70G-F02-L2 | 0 to 1                     | Liquid or gas that will not corrode materials of parts in contact with fluid |        |                                                                                       |
| ISE75G-F02-L2 | 0 to 2                     |                                                                              |        |                                                                                       |
| ISE76G-F02-L2 | 0 to 5                     |                                                                              |        |                                                                                       |
| ISE77G-F02-L2 | 0 to 10                    |                                                                              |        |                                                                                       |
| ISE78G-F02-L2 | 0 to 16                    |                                                                              |        |                                                                                       |
| ISE79S-F02-L2 | 0 to 50                    |                                                                              |        |                                                                                       |



Internal failure, abnormal internal temperature, outside of rated range, short-circuit detection, diagnostic bit (process data).

## High-precision digital pressure & vacuum switch for air & general fluids

ZSE20□(F)-L/ISE20□-L Series



- Applicable fluid: air and general fluids
- 3 parameters visible on the screen
- Pressure ranges: from -101 kPa to 2 MPa
- Output: IO-Link, NPN/PNP
- Repeatability:  $\pm 0.2$  % F.S.  $\pm 1$  digit
- IP65 enclosure.

| Part number   | Rated pressure range | Applicable fluid                                                  | Piping           | Output                                                                 |
|---------------|----------------------|-------------------------------------------------------------------|------------------|------------------------------------------------------------------------|
| ISE20B-L-M5   | 0 to 1 MPa           | Air, Non-corrosive gas,<br>Non flammable gas                      | M5 female thread | IO-Link/Switch: 1 output<br>(switch output: NPN or PNP switching type) |
| ZSE20B-L-M5   | 0 to -100 kPa        |                                                                   |                  |                                                                        |
| ZSE20BF-L-M5  | -100 to 100 kPa      |                                                                   |                  |                                                                        |
| ISE20C-L-F02  | -0.100 to 1 MPa      | Liquids and gases that do not corrode stainless steel 630 and 304 | G1/4             |                                                                        |
| ZSE20C-L-F02  | -0.101 to 0 kPa      |                                                                   |                  |                                                                        |
| ZSE20CF-L-F02 | -100 to 100 kPa      |                                                                   |                  |                                                                        |
| ISE20CH-L-F02 | -0.100 to 2 MPa      |                                                                   |                  |                                                                        |



Internal failure, abnormal internal temperature, outside of rated range, diagnostic bit (process data).

## Pressure sensor/switch for general fluids

### PSE570 Series



- Repeatability: up to  $\pm 0.2$  % (F.S.)
- Output: IO-Link, NPN/PNP
- PSE sensor set up tool available
- Enclosure: up to IP65.

| Part number   | Sensor range                        | Description                                                                           |
|---------------|-------------------------------------|---------------------------------------------------------------------------------------|
| PSE570-01-L2N | Positive pressure (0 to 1 MPa)      | IO-Link/Switch: 1 output + 2 outputs<br>(PNP or NPN switching type for switch output) |
| PSE573-02-L2N | Compound pressure (-100 to 100 kPa) |                                                                                       |



Measured values, device information, device status monitoring, cable breakage.

## Compact pneumatic pressure sensor/switch

### PSE540 Series



- Repeatability: up to  $\pm 0.2$  % (F.S.)
- Output: IO-Link, NPN/PNP
- PSE sensor set up tool available.

| Part number  | Sensor range                           | Port size                    | Description                                                               |
|--------------|----------------------------------------|------------------------------|---------------------------------------------------------------------------|
| PSE540-01-L  | Positive pressure<br>(0 to 1 MPa)      | R1/8 (with M5 female thread) | IO-Link/Switch: 1 output<br>(PNP or NPN switching type for switch output) |
| PSE540-M5-L  |                                        | M5 x 0.8                     |                                                                           |
| PSE540-R04-L |                                        | Ø 4 reducer                  |                                                                           |
| PSE540-R06-L |                                        | Ø 6 reducer                  |                                                                           |
| PSE541-01-L  | Negative pressure<br>(0 to -101 kPa)   | R1/8 (with M5 female thread) |                                                                           |
| PSE541-M5-L  |                                        | M5 x 0.8                     |                                                                           |
| PSE541-R04-L |                                        | Ø 4 reducer                  |                                                                           |
| PSE541-R06-L |                                        | Ø 6 reducer                  |                                                                           |
| PSE543-01-L  | Compound pressure<br>(-100 to 100 kPa) | R1/8 (with M5 female thread) |                                                                           |
| PSE543-M5-L  |                                        | M5 x 0.8                     |                                                                           |
| PSE543-R04-L |                                        | Ø 4 reducer                  |                                                                           |
| PSE543-R06-L |                                        | Ø 6 reducer                  |                                                                           |



Measured values, device information, device status monitoring, cable breakage.

# 3-screen display, 4-channel flow monitor PFG200 Series



- 2-tier, 3-screen and 3-colour display
- Repeatability:  $\pm 0.1\%$  (F.S.)
- Consumption: 55 mA or less
- IO-Link hub function available
- IP65 (front face), IP40 (others).

| Part number | Input/Output specification |
|-------------|----------------------------|
| PFG203      | IO-Link + PNP 4 outputs    |



Threshold value, operation mode, switch ON/OFF signal and position measurement value, device information, normal or abnormal device status, cable breakage.

# Multi-channel digital sensor monitor PSE200A Series



- 2-tier 3-screen and 3-colour display
- 4 channel monitor, up to 4 sensors can be connected
- Output: IO-Link, NPN/PNP
- IO-Link hub function available
- Simple 3-step setting.

| Part number | Input/Output                             | Unit specification           |
|-------------|------------------------------------------|------------------------------|
| PSE202A     | IO-Link + NPN 4 outputs or NPN 5 outputs | With unit selection function |
| PSE203A     | IO-Link + PNP 4 outputs or PNP 5 outputs |                              |
| PSE202A-M   | IO-Link + NPN 4 outputs or NPN 5 outputs | SI units only                |
| PSE203A-M   | IO-Link + PNP 4 outputs or PNP 5 outputs |                              |



Internal failure, outside of rated range, over current error, diagnostic bit (process data).

## Digital gap checker

### ISA3-L Series



- Rated distance range: 0.01 to 0.30 mm
- Output: IO-Link, NPN/PNP
- Repeatability: 5 µm or less (ISA3-FL)
- Supply port available on both sides
- IP67 enclosure.

| Part number | Type                                                  | Rated distance range [mm] | Port size | Operating pressure range [kPa] | Output specifications                                                                 |
|-------------|-------------------------------------------------------|---------------------------|-----------|--------------------------------|---------------------------------------------------------------------------------------|
| ISA3-FFL-1  | 1 station with straight cable<br>Without control unit | 0.01 to 0.03              | G1/8      | 100 to 200                     | IO-Link: switch output 1 + switch output 2 (switch output: NPN or PNP switching type) |
| ISA3-GFL-1  |                                                       | 0.02 to 0.15              |           |                                |                                                                                       |
| ISA3-HFL-1  |                                                       | 0.05 to 0.30              |           |                                |                                                                                       |



Internal failure, abnormal internal temperature, outside of rated range, shorrcircuit detection, internal product malfunction, diagnostic bit (process data).

## Position sensing

### Compact position sensor

#### D-MPG Series



- Monitor multiple positions using a single switch
- Electrical entry: grommet
- Power voltage: 18 to 30 VDC
- Current consumption: 25 mA or less.

| Part number | Teach unit lead wire | Sensor head lead wire [m] |
|-------------|----------------------|---------------------------|
| D-MPGB1     | M8 4 pin, 0.3 m      | 0.1                       |
| D-MPGC1     | M12 4 pin, 0.3 m     | 0.3                       |
| D-MPGB2     | M8 4 pin, 0.3 m      | 0.1                       |
| D-MPGC2     | M12 4 pin, 0.3 m     | 0.3                       |



Threshold value, operation mode, switch ON/OFF signal and position measurement value, device information, normal or abnormal device status.

## Actuator position sensor

### D-MP□ Series



- Applicable cylinders: MB, CQ2, MGP, CXSJ, CP96, C96, C55, CQS, MXH, MXS, MXQ□, MHZ, MHZL2, MHL2, MHF2 Series
- Measuring range: 25, 50, 100, 200 mm
- Output: IO-Link, NPN/PNP and analogue (0 to 10 V or 4 to 20 mA)
- Repeatability: 0.1 mm
- Teach pad: setting is available by simply touching the touch pad
- Consumption: 48 mA or less
- IP67 enclosure.

| Part number | Measuring range [mm] | Lead wire            |
|-------------|----------------------|----------------------|
| D-MP025A    | 25                   | Separate line, 2.0 m |
| D-MP025B    |                      | M8-4 pin, 0.3 m      |
| D-MP025C    |                      | M12-4 pin, 0.3 m     |
| D-MP050A    | 50                   | Separate line, 2.0 m |
| D-MP050B    |                      | M8-4 pin, 0.3 m      |
| D-MP050C    |                      | M12-4 pin, 0.3 m     |
| D-MP100A    | 100                  | Separate line, 2.0 m |
| D-MP100B    |                      | M8-4 pin, 0.3 m      |
| D-MP100C    |                      | M12-4 pin, 0.3 m     |
| D-MP200A    | 200                  | Separate line, 2.0 m |
| D-MP200B    |                      | M8-4 pin, 0.3 m      |
| D-MP200C    |                      | M12-4 pin, 0.3 m     |



Internal failure, abnormal internal temperature, reduced magnetic field strength.

## 2-in-1 auto switch

### D-MH2 Series



- Monitor multiple positions using a single switch
- Electrical entry: grommet
- Power voltage: 18 to 30 VDC
- Current consumption: 25 mA or less.

| Part number  | Number of set points | Electrical entry | Lead wire specification |
|--------------|----------------------|------------------|-------------------------|
| D-MH2CPSBPC  | 2                    | In-line          | M8 4-pin                |
| D-MH2CPVSBPC |                      | Perpendicular    |                         |
| D-MH2DPSBPC  | 3                    | In-line          |                         |
| D-MH2DPVSBPC |                      | Perpendicular    |                         |
| D-MH2CPSDPC  | 2                    | In-line          | M12 4-pin               |
| D-MH2CPVSDPC |                      | Perpendicular    |                         |
| D-MH2DPSDPC  | 3                    | In-line          |                         |
| D-MH2DPVSDPC |                      | Perpendicular    |                         |



Threshold value, operation mode, switch ON/OFF signal and position measurement value, device information, normal or abnormal device status, cable breakage.

# Environmental sensing

## Condensation checker

### PSH Series



- Applicable fluid: air, non-corrosive gas
- Relative humidity setting range: 0 to 100 %
- Relative humidity display accuracy:  $\pm 5\%$  RH  $\pm 1$  digit
- Temperature setting range: -5 to 55 °C
- Temperature display accuracy:  $\pm 3\%$  °C  $\pm 1$  digit
- 3-colour/ 2-screen display
- IP65.

| Part number | Rated pressure range [MPa] | Description                                                                          |
|-------------|----------------------------|--------------------------------------------------------------------------------------|
| PSH-LL-01-W | 0.3 to 1.0                 | IO-Link/Switch output 1 + Switch output 2 (switch output: NPN or PNP switching type) |



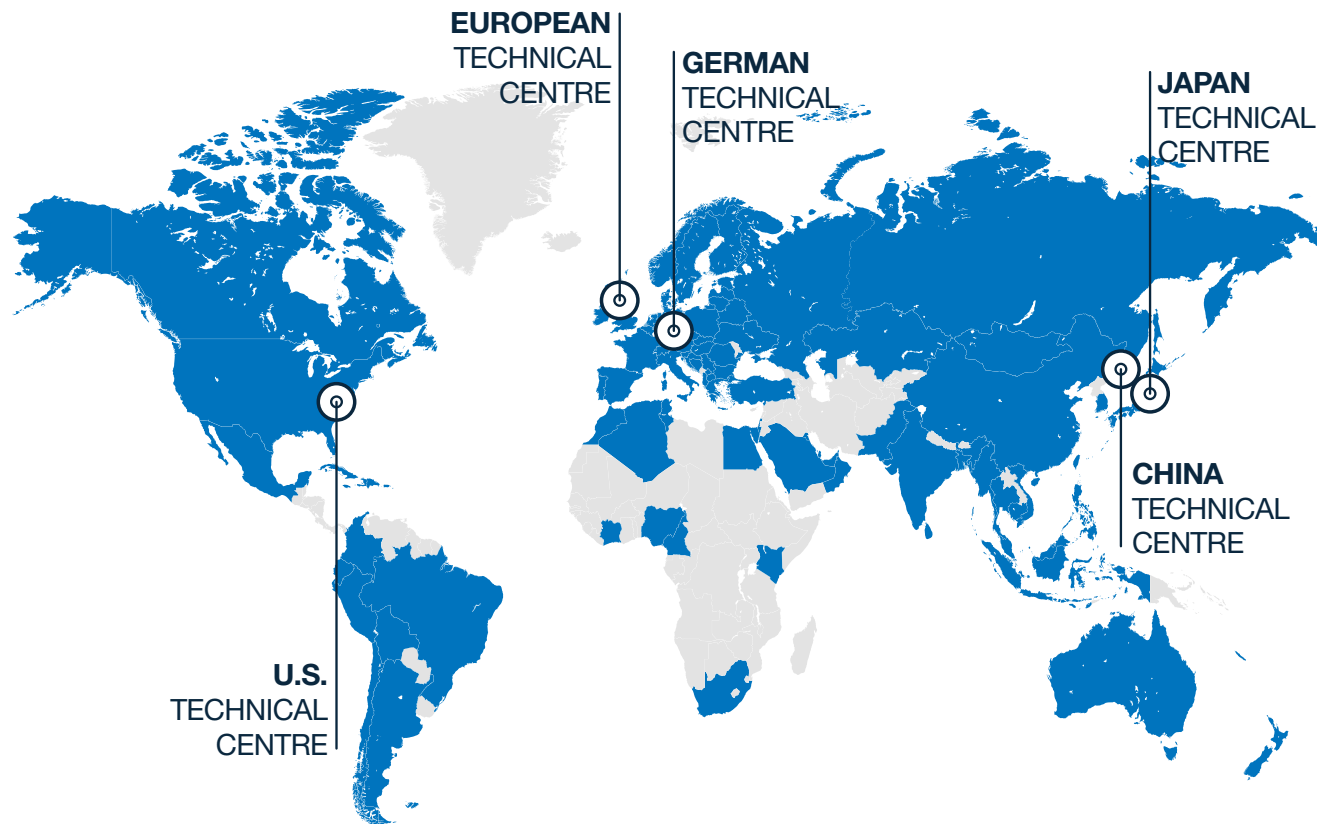
Relative humidity measurement value, temperature measurement value, system error diagnostic (process data).

# Our support network

## SMC's worldwide commitment

One of the things we do best at SMC is **being close to our customers**. Local support, on a global scale.

With **support** in over **500 locations** across **80 countries** and regions **worldwide**, our sales force of **7000 experts** maintains **close communication with customers**.



# SMC Business Continuity Plan

## Sustainable growth also means ensuring uninterrupted operations

We are committed to ensuring that SMC is prepared for any emergency and that our business activities will not stop in the event of such circumstances. SMC aims to fulfil our product supply responsibilities and maintain our customers' trust by contributing to both sustainable growth and the expansion of technological innovations.

SMC, as a comprehensive manufacturer of automatic control equipment that supports automation, is able to promptly provide products that meet our customers' needs anywhere in the world.

## Production BCP

### Ensure customer order fulfilment

Reliable delivery for you thanks to our 9 global logistic centres and 38 production sites worldwide. Moreover, flexibility to rapidly respond to any sudden change in the manufacturing environment.

## Finance BCP

### Safe & Solid financial base

In the event of an emergency, SMC can provide a safe and solid financial base (with cash, deposits, and equity capital) that will sufficiently cover the working capital and funds needed to rebuild buildings and the equipment required for business continuity. This is done to provide peace of mind to our customers and workers alike.

## Information security BCP

### Vital data kept safe

Strengthen information security for protection against computer viruses and cyberattacks, plus the installation of data centres to establish a disaster recovery system. Your information is safe with us.

## Engineering BCP

### Consistent technical support

2,000 engineers at our 5 technical centres around the globe.

## Sales BCP

### Consistent sales support

7,000 sales engineers worldwide ready to recommend the best solution for you. Over 80 global locations to make sure that wherever you are, we are there too.



Discover more



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