Tried and tested product improved: PI pressure sensor now with multiple resolution

Pressure sensors

Pressure peak and overload resistant ceramic measuring cell

Flush design with PTFE seal providing long-term stability

Permanent 150 °C medium temperature

Factory certificate for free download

Very high resolution thanks to 32 bits and IO-Link

High resolution thanks to IO-Link and 32 bits

For years the ifm pressure sensors of the PI series have proven their worth in the food and beverage industry. But even what is successful can be improved. The resolution of the measuring range was increased to 20,000 steps by implementing IO-Link and 32 bits. This is an enormous benefit, especially for hydrostatic level measurement with head pressure. This is because the actual pressure detection only takes place in a fraction of the measuring range.

An interesting feature for maintenance and commissioning is the simulation function which allows the sensor to transmit measured signals or error states to the controller.

The sensor is permanently resistant to 150 °C medium temperature. This is measured and additionally transmitted via IO-Link (accuracy 2.5 K).

Factory setting measuring range [bar]	Measuring range relative pressure [bar]	Order no.	
		G1 Asepto-flex Vario	G1 sealing cone
0…100	-1…100	-	PI1602
0…25	-1…25	PI1703	PI1803
0…16	-1…16	PI1714	PI1814
0…10	-1…10	PI1704	PI1804
0…6	-1…6	PI1715	PI1815
0…4	-1…4	PI1705	PI1805
0…2.5	-0.124…2.5	PI1706	PI1806
0…1.6	-0.1…1.6	PI1717	PI1817
0…1	-0.05…1	PI1707	PI1807
-1…1	-1…1	PI1709	PI1809
0…0.4	-0.05…0.4	PI1718	PI1818
0…0.25	-0.0124…0.25	PI1708	PI1808
0…0.1	-0.005…0.1	PI1789	PI1889

Further advantages and customer benefits

Ceramic measuring cell

The sensor has a high-purity ceramic measuring cell. This offers high resistance and long-term stability, even with frequent pressure peaks or overload. In addition, the ceramic is resistant to abrasive media. Unlike conventional sensors with a metallic diaphragm, no oil is required as a diaphragm seal, which could enter the medium in the event of damage. This is why the ceramic measuring cell offers maximum safety, especially in applications in the food and beverage industry as well as in the pharmaceutical industry.

Front-flush and maintenance-free

The measuring cell, which is flush with the process, gives deposits no chance. Only food-grade and maintenance-free sensor materials come into contact with the medium: stainless steel (316L/1.4435), PTFE (Teflon) and ceramic (Al3O2).

Optimised ventilation

The vent has been turned by 90° to the side compared to the previous sensors of the PI series. This prevents moisture from resting on the Goretex membrane if the sensor is mounted with the display facing upwards or downwards. In addition, the vent cap has a drip edge.

IO-Link

IO-Link not only allows digital transmission of the measured value without loss. The parameter setting of the sensor and the provision of diagnostic data, such as excess temperature or process value outside the measuring range, are also carried out via IO-Link. Alternatively, the sensor can of course also be configured on site using the conventional method with three pushbuttons and a setting menu.

Further technical data

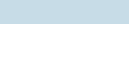|		
Operating voltage	[V DC]	20…30
Step response time analogue output	[ms]	30 (2-wire) / 7 (3-wire)
Accuracy / deviation (in % of the span) Deviation of the characteristics (to DIN IEC EN 62828-1) incl. zero point and span error, non-linearity, hysteresis		< ± 0.2
Medium temperature	[°C]	-25…150
Materials (wetted parts)		ceramic 99.9 %, PTFE, stainless steel (316L/1.4435)
Communication interface		IO-Link 1.1 COM2 (38.4 kbaud)

Accessories

Type	Description	Order no.
	Filter cover	E30483
	Filter cover vent tube	E30467
	Welding adapter Ø 60 mm with O-ring	E30150
	Aseptoflex Vario adapter Clamp 1-1.5" adapter with O-ring	E33201
Accessories IO-Link		
	IO-Link Bluetooth adapter	E30446
	IO-Link repeater	E30444
M12 connection cable		
	5 m, grey, MPPE cable	EVF004
	10 m, grey, MPPE cable	EVF005

ifm – close to you!

Precise compressed air measurement from its generation to the consumer

Flow sensors / flow meters

Exact allocation of energy costs due to precise consumption measurement

Improvement of energy efficiency via leakage monitoring

The basis for an energy management system according to EMAS or DIN EN ISO 50001

Pressure monitoring thanks to the integrated pressure sensor

Different process values being indicated simultaneously removes the need for multiple instruments

"All-in-one sensor" reduces costs

The SDG compressed air meter is a real all-rounder. Thanks to the additionally integrated sensors for pressure and temperature, the user can see four process values (flow rate, pressure, temperature and total consumption) at a glance, which provide information about the energy efficiency of his system.

Offering a wide portfolio of precise inline sensors from DN8 to DN250, ifm covers the complete range of applications.
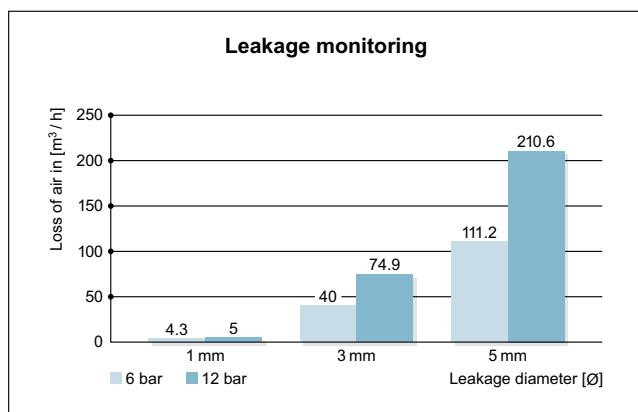
Energy monitoring at a glance

The process values can be effectively monitored at all times via the integrated TFT display, which allows for selection between four individually adjustable graphic layouts with flexible orientation. What is more, all process values can be transmitted quickly and easily via IO-Link.

Improvement of energy efficiency due to the integrated leakage monitoring in the installation

The precise flow monitoring allows for leakage detection and energy cost savings. In addition, the unit's high repeatability enables exact allocation of the costs of compressed air to the respective production line as well as optimised product cost calculation.

Leakage monitoring

Measuring range [m 3 /h]	Medium	Process connection	Order no.
8...2011	Air	Flange DN65	**SDG350**
12...2769	Air	Flange DN80	**SDG450**
19...4667	Air	Flange DN100	**SDG550**
43...10320	Air	Flange DN150	**SDG750**
73...17480	Air	Flange DN200	**SDG850**

Common technical data Type SD		
Flow		
Measuring range	[m 3 /h]	8…17480
Accuracy:		
Class 141	[%]	± (3.0 MV + 0.3 VMR)
Class 344	[%]	± (6.0 MV + 0.6 VMR)
Response time	[s]	0.1
Temperature		
Measuring range	[°C]	-10…60
Accuracy	[K]	± 0.5
Response time T09	[s]	0.5
Pressure		
Measuring range	[bar]	-1…16
Linearity error	[%]	<± 0.5 (BFSL)
Repeatability	[%]	± 0.2
Response time	[s]	0.05
Output signal		Switching output, analogue output, pulse output, IO-Link (configurable)

MV = value of the measuring range,
VMR = final value of the measuring range

Due to the integrated pressure measurement our compressed air sensors offer the possibility to monitor the general operating pressure of the compressed air system. By creating a pressure difference from generator to consumer, the pressure drop of the pipe system can also be monitored and optimised. But also a falling pressure, for example caused by dirty filter systems, is continuously detected.

Added value of pressure measurement
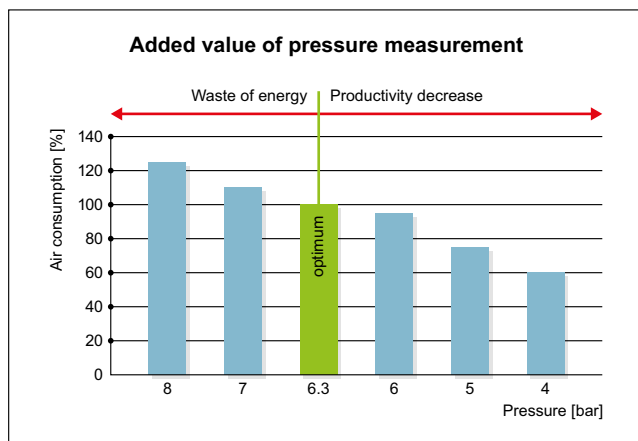
The basis for a consistent energy management system according to EMAS or DIN EN ISO 50001

Following EU directives on energy efficiency, all member states have undertaken to achieve energy savings. The requirement for obtaining energy tax reductions is the implementation of an energy management system. Combining the new compressed air meter with regular calibrations provides the optimum basis for this.

ifm – close to you!

Accurate detection of high-pressure cleaning

Flow sensors / flow meters

Robust housing for high-pressure applications up to 200 bar

Resistant to cleaning agents thanks to stainless steel components

Flexible: IO-Link, analogue, switching and frequency output

Integrated temperature sensor saves hardware costs

IO-Link enables documentation of cleaning operations

High-grade stainless steel

Broad measurement dynamics

Energy-efficient

Resistant

4...20 mA

IO-Link
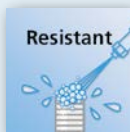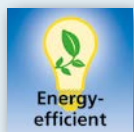
Fast and pressure-resistant

When documenting cleaning processes and high-pressure applications, the mechatronic measuring principle with its fast response time is the first choice. The integrated temperature sensor and the versatile diagnostic functions via IO-Link save both additional hardware costs and maintenance costs. Moreover, the use of a stainless steel housing makes the sensor resistant to standard cleaning agents.

Documentation of cleaning processes

All measured values can be transmitted to the controller in digital form, without any conversion losses, via IO-Link. Flow and temperature values can thus be easily documented for each cleaning process.

Type	Measuring range	Medium	Order no.
	1…50 l/min	Liquid media, water	**SBZ224**

Further advantages and customer benefits

Fast response time

The mechatronic measuring principle is characterised by an extremely fast response time allowing for even short spray bursts during the high-pressure cleaning process to be precisely recorded in terms of quantity.
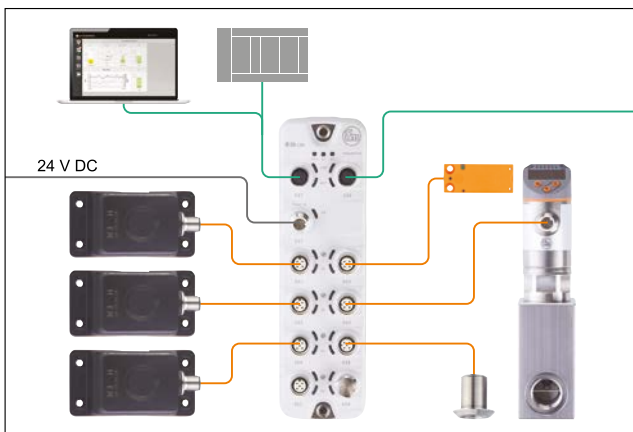
No inlet and outlet pipe lengths required

Turbulence and air bubbles do not impact the measurement. This allows for the sensor to be installed anywhere in the pipework.

Application example

With IO-Link, monitoring of a high-pressure cleaning system, including documentation of the cleaning processes, can be implemented easily and quickly with little hardware costs, for example for use in modern slaughterhouses. ifm offers all the required hardware and software components in order to also provide supermarket chains, among others, with the requested transparency.

Further technical data		
Pressure rating	[bar]	200
Response time	[s]	0.01
Materials (wetted parts)		Stainless steel (316 S 13 / 1.4401); Stainless steel (316L / 1.4404); O-ring: FKM
Operating voltage	[V DC]	18…30
Accuracy flow measurement		± (4 % MV + 1 % VMR)
Repeatability flow measurement		± 1 % VMR
Temperature measuring range	[°C]	-10…100
Accuracy temperature measurement	[K]	3
Protection rating		IP 65, IP 67
Output signal		Switching signal; analogue signal; frequency signal; IO-Link

MV = value of the measuring range,
VMR = final value of the measuring range

ifm – close to you!

Absolutely unique: measuring air gaps more accurately than ever before

Flow sensors / flow meters

Output of the air gap as an absolute value with repeat accuracy in the micrometre range

Accurate values at all times thanks to the pressure-compensated measuring principle

All important information including gap value, flow and pressure at a glance

The self-cleaning measuring channel even withstands the purge air pressure

Easy teaching of target status with just one click

IO-Link

Broad measurement dynamics

IP 65 IP 67

TEACH-IN

Display

4...20 mA
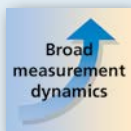
Permanently accurate position monitoring

The SDP air gap sensor detects the distance between the surface and object with consistent high accuracy and outputs it as an absolute value. The sensor reliably detects even a flat position on the surface, the so-called zero gap. Since the gap is calculated on the basis of pressure and flow, the measurement remains accurate at all times within the usual operating pressure range between 1 and 3 bars, regardless of pressure fluctuations, number and diameter of the nozzles.

High pressure rating with self-cleaning effect

The robust measuring pipe also withstands the purge air pressure. This eliminates the need to switch between flushing and measuring. Positive effect: the measuring element is also cleaned and malfunctions due to contamination are prevented.

Type	Medium	Measuring range [µm]	Process connection	Order no.
	Compressed air	0…400	G1/4 (DN8)	**SDP110**
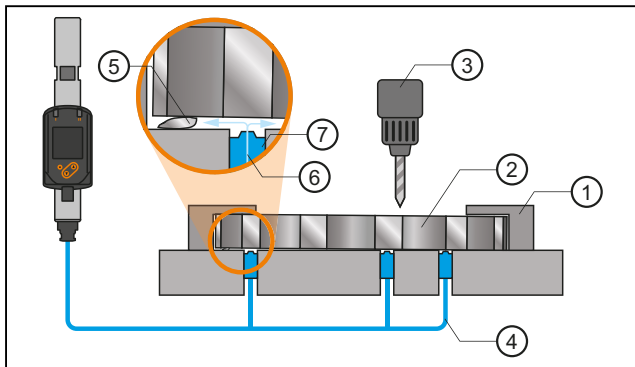
1) Clamping jaw
2) Toothed wheel
3) Drill
4) Compressed air line
5) Cutting chip
6) Air
7) Air nozzle

When smallest tolerances are required.

Air gap measurement can be used to ensure the exact positioning of a workpiece or a tool. Since the SDP is capable to reliably detect even the smallest deviations of the actual position from the target position, it is suitable for use wherever smallest tolerances must be guaranteed.

Quick set-up.

The air gap sensor can be taught to detect the target state both via the buttons and via the external input, or with just one click via IO-Link.

The set-up time of the system can therefore be greatly reduced during a production changeover.

Further technical data		
Distance measurement		
Measuring range	[µm]	0…400
Accuracy		± (5 % MW + 5 µm); (pressure 1…3 bars)
Repeatability		± (3 % MW + 2 µm); (pressure 1…6 bars)
Resolution	[µm]	1
Flow measurement		
Measuring range	[l/min]	0,8…100
Accuracy	[%]	± (2.0 MW + 1.0 MEW)
Repeatability	[%]	± (0.8 MW + 0.4 MEW)
Pressure		
Measuring range	[bar]	-1…16
Linearity error	[%]	< ± 0.5 (BFSL)
Repeatability	[%]	± 0.2
Response time	[s]	0.05
Response time		Switching output, analogue output, IO-Link (configurable)
Input signal		Distance teach input

MW = value of the measuring range
MEW = final value of the measuring range

ifm – close to you!

Precise & convenient: radar level sensor with IO-Link

Level sensors

80 GHz frequency enables level measurement with millimetre precision of up to 10 metres

Non-contact measuring principle: no malfunctions due to deposits or wear

Certified for use in hygienic areas

Simple installation and maintenance-free operation

Remote sensor parameter setting and level monitoring via connection to the IT system

Trouble-free monitoring of large tanks

With the LW2720 level sensor, levels of liquid media in tanks with a height of up to 10 metres can be monitored precisely and without blind areas. The non-contact radar measuring principle prevents malfunctions or failures of the sensor caused by the adhesion of viscous media or damage from agitators.

The 80 GHz frequency used ensures stable and precise measurement results even in the presence of steam or condensate in the tank. The sensor is designed for use in hygienic areas, so that even CIP and SIP processes or the use of spray balls do not impair its proper functioning.

Type	Process connection	Outputs	Order no.
	Aseptoflex Vario G 1	2 switching outputs or 1 switching and 1 analogue output 4...20 mA	**LW2720**

More convenience thanks to IO-Link

The powerful LW2720 package is completed by the following comfort factors: Sensor installation only takes a few minutes, and sensor parameters can be conveniently set and read out remotely via IO-Link.

Dimensions
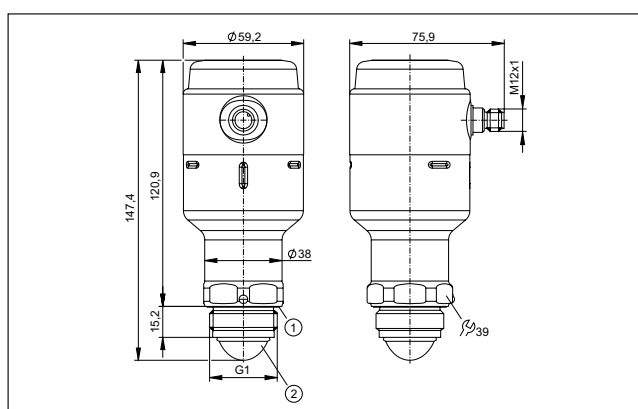
1) seal
2) antenna

Accessories

Description	Order no.
Mounting accessories IO-Link	
USB IO-Link master for parameter setting and analysis of units, supported communication protocols: IO-Link (4.8, 38.4 and 230 kbits/s)	**ZZ1060**
moneo|configure SA Stand-alone licence, software for online and offline parameter setting of IO-Link devices including maintenance and support until the end of the following year	**QMP010**
IO-Link Bluetooth adapter	**EIO330**
IO-Link Bluetooth adapter	**E30446**
IO-Link data splitter PNP	**E43406**
IO-Link data splitter NPN	**E43410**
Connection technology	
M12 socket, 4-pole, 5 m grey, MPPE cable	**EVF001**
M12 socket, 4-pole, 2 m grey, MPPE cable	**EVF064**
M12 socket, 4-pole, 5 m grey, MPPE cable	**EVF004**
M12 socket, 4-pole, 2 m grey, MPPE cable	**EVF067**

Further technical data

Operating voltage	[V DC]	18…30
Current consumption		< = 80 mA
Measuring range		0.01...10 m
Measurement accuracy		± 2 mm
Measuring principle		FMCW (80 GHz)

Accessories

Description	Order no.
Product-related documentation	
Inspection certificate: Material EN10204-3.1 and test report EN10204-2.2	**ZC0076**
Mounting adapters	
Ø 50 mm – G 1 Aseptoflex Vario, with leakage port	**E30130**
Clamp DN25...DN40 (1...1.5") – G 1 Aseptoflex Vario, with leakage port	**E33208**
Clamp DN50 (2") – G 1 Aseptoflex Vario, with leakage port	**E33209**
Pipe fitting DN32 (1.25") – G 1 Aseptoflex Vario	**E33211**
Pipe fitting DN40 (1.5") – G 1 Aseptoflex Vario	**E33212**
Pipe fitting DN50 (2") – G 1 Aseptoflex Vario	**E33213**
Varivent type F, DN25 (1"), Ø 50 mm – G 1 Aseptoflex Vario, with leakage port	**E33228**
Varivent type N, DN40...DN150, Ø 68 mm – G 1 Aseptoflex Vario, with leakage port	**E33229**
Universal process adapter Rd 52 – G 1 Aseptoflex Vario	**E33340**
O-ring FKM 24 x 2, 1 piece	**E30123**
O-ring FKM 24 x 2, 5 pieces	**E30053**
O-ring EPDM 24 x 2, 5 pieces	**E30054**

ifm – close to you!

For further technical details, please visit: ifm.com

Fast, reliable and hygienic temperature monitoring

Temperature sensors

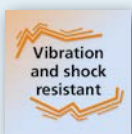**Cost savings due to fast response times
< 0.25 / < 1 s [T05/T09]**

Ideal for small nominal pipe diameters and confined installation spaces

**High measuring range:
-50...200° C**

Zero void adapters guarantee cleanability

3-point factory certificate included (online)

IP 67
IP 68
IP 69 K

IO-Link

Vibration and shock resistant

Temperature measurement in hygienic applications

The compact temperature transmitters are designed for demanding processes in the food and beverage industry. Their construction conforms to EHEDG, 3A, FDA and EC 1935/2004 standards. Thanks to their short measuring tip (15 or 25 mm insertion depth) and small 3 mm diameter, the sensors are ideal for pipe installations (DN20...DN100) in highly dynamic thermal processes, where they help minimise costs and reduce energy consumption.

A zero void adapter ensures dead-zone free installation and effective cleaning. Compatibility with adapters available on the market offers further potential cost savings.

The integrated IO-Link interface enables precise and loss-free digital transmission of measured values and provides additional diagnostic functions for simplified troubleshooting.

Products

Type	Measuring range [°C]	Process connection	Insertion depth [mm]	Order no.
	-50...200	G 1/8	15	**TA1602**
	-50...200	G 1/8	25	**TA1612**

Temperature measurement and control in dynamic processes

The new TA16 temperature sensor from ifm is distinguished by its fast response time for precise temperature control. This feature helps users save energy costs and increase plant uptime.

Zero void adapters simplify cleaning

The simple process connection via zero void adapters enables rapid and easy cleaning of the measuring point. The adapter is welded to the pipe wall to form an integral part of the pipe, eliminating dead spaces that are difficult to clean.

All in one – reliable and accurate

High thermal and mechanical load limits lead to a higher plant uptime and continuous accuracy. Supplied with a factory certificate as standard, the TA16 sensor can be used immediately.

Dimensions

Example TA1602
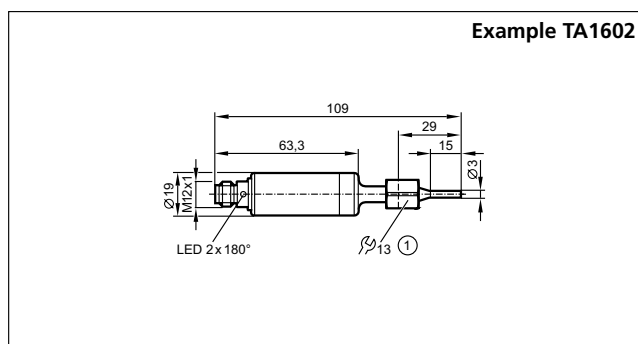
1) G 1/8 internal thread

Common technical data

Operating voltage	[V DC]	18...32
Ambient temperature	[°C]	-25...80
Maximum measuring range	[°C]	-50...200
Preset measuring range	[°C]	0...200
Resolution analogue	[K]	0.04
Accuracy via		
IO-Link	[K]	± 0.3
Analogue output	[K]	± 0.3 + (± 0.1 % of the scaled measuring span)
Temperature coefficient (in % of the span per 10 K)		< 0.1
Protection rating / protection class		IP 67, IP 69K / III

Accessories

Type	Description	Order no.
Adapter		
	D3/ZERO VOID/R=19/T=1.25	**E38827**
	D3/ZERO VOID/R=19/T=1.50	**E38828**
	D3/ZERO VOID/R=19/T=2.00	**E38829**
	D3/ZERO VOID/FLAT/T=1.25	**E38830**
Connection technology		
	Socket, M12, 4 poles 5 m, grey, MPPE cable	**EVF001**
	Socket, M12, 4 poles 5 m, grey, MPPE cable	**EVF004**

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For further technical details, please visit: ifm.com

33

For pure water: measure conductivity from 0.04 µS/cm

Analytical sensors

For effective, permanent control of water and process quality

Hygienic approval according to EHEDG and 3A*

Compact sensor requires no further hardware for operation

High resolution enables detection of the smallest deviations

Safe solution for permanent process quality

The LDL101 conductivity sensor is the right choice where the purity of water is crucial for product quality or process reliability. The sensor detects the conductivity of water from a value of 0.04 µs/cm. This makes it ideal for applications where purified water of all levels is used. This is the case in food and beverage production as well as in the semiconductor industry, the pharmaceutical industry and in energy production. In combination with the SU PureSonic ultrasonic flow sensor, reliable quality control can be established in filtration processes, for example.

*in preparation

Type	Process con-nection	Insertion depth [mm]	Order no.
	G 1/2	23	**LDL101**

Quality assurance and condition monitoring

The high resolution and the loss-free digital transmission of the measured values via IO-Link enable a permanently precise analysis of the water quality, ensuring flawless processes.

If the conductivity value rises, this can indicate, for example, that filters in the production process of highly purified water require maintenance.

Used in the monitoring of the cooling circuit, the LDL101 can detect increasing mineralisation of the water so that countermeasures can be taken before the piping system suffers major damage.

Accessories

Type	Description	Order no.
Welding adapters		
	G 1/2 – Ø 30 mm for tanks	**E43300**
	G 1/2 – Ø 29 mm for pipes	**E43301**
	G 1/2 – Ø 30 mm for tanks, with leakage port	**E43309**
	G 1/2 – Ø 29 mm with leakage port, for pipes; pressure rating up to 16 bar	**E43412**
	G 1/2 – Ø 29 mm with leakage port, for pipes; pressure rating up to 50 bar	**E43310**
	G 1/2 – Ø 45 mm collar	**E30056**
	G 1/2 – Ø 35 mm ball	**E30055**
	G 1/2 – welding mandrel	**E43314**
Mounting adapters and T-pieces		
	G 1/2 – Varivent type N 1.5, (DN40-150); Ø 68 mm	**E43307**
	G 1/2 – Varivent type F1, (DN25); Ø 50 mm	**E43306**
	G 1/2 – T-piece, DN50	**E43318**
	G 1/2 – T-piece, DN40	**E43317**
	G 1/2 – T-piece, DN25	**E43316**

Further technical data		
Operating voltage	[V DC]	18…30
Current consumption	[mA]	< 60
Measuring range conductivity	[µS/cm]	0.04…1,000
Measuring range medium temperature	[°C]	-25…100 (< 1h: 150)
Pressure rating	[bar]	16
Conductivity accuracy		3 % MW ± 0.03 µS/cm
Conductivity repeatability		1.5 % MW ± 0.015 µS/cm
Materials		stainless steel (316L/1.4435, 1.4404); PEEK; FKM

MW = value of the measuring range

Accessories

Type	Description	Order no.
IO-Link		
	USB IO-Link master for parameter setting and analysis of units; supported communication protocols: IO-Link (4.8, 38.4 and 230 kbits/s)	**ZZ1060**
	moneo|configure SA Stand-alone licence, software for online and offline parameter setting of IO-Link devices including maintenance and support until the end of the following year	**QMP010**
	IO-Link Bluetooth adapter	**EIO330**
	IO-Link Bluetooth adapter	**E30446**
Connection technology		
	M12 socket, 4-pole, 5 m grey, MPPE cable	**EVF001**
	M12 socket, 4-pole, 2 m grey, MPPE cable	**EVF064**
	M12 socket, 4-pole, 5 m grey, MPPE cable	**EVF004**
	M12 socket, 4-pole, 2 m grey, MPPE cable	**EVF067**

ifm – close to you!

For further technical details, please visit: ifm.com

The new versatility: conductivity measurement in any pipe size

Analytical sensors

Versions in the common connection sizes G 1/2 and G 1

Efficient CIP monitoring even in small pipes from DN25 upwards

Easy installation and commissioning

Loss-free digital transmission of measured values

For CIP monitoring on any scale

With different process connections in the common sizes G 1 and G 1/2, the conductivity sensors of the LDL2xx group offer the right solution for precise CIP monitoring for every pipe size from DN25 – without the need for costly pipe extensions or obstructions.

Easy installation thanks to their compact design

Thanks to the compact design and the integrated evaluation unit, the conductivity sensors can be flexibly positioned in the system pipework. Further hardware to be positioned downstream is not required. The low wiring complexity is further reduced by the standard M12 connection.

EHEDG

EC 1935 / 2004

FDA

A3

IO-Link

IP 67
IP 68
IP 69 K

Type	Process connection	Insertion depth [mm]	Order no.
	G 1 Aseptoflex Vario	37	**LDL200**
	G 1 Aseptoflex Vario	77	**LDL201**
	G 1/2 sealing cone	24	**LDL220**
	G 1 sealing cone	31	**LDL210**

Common technical data		
Operating voltage	[V DC]	18…30
Current consumption	[mA]	< 70
Measuring range conductivity	[µS/cm]	100…1,000,000
Measuring range medium temperature	[°C]	-25…100 (< 1h: 150)
Pressure rating	[bar]	16
Conductivity accuracy		2 % MW ± 25 µS/cm
Conductivity repeatability		1 % MW ± 25 µS/cm
Materials		stainless steel (316L/1.4404); PEEK; PEI; FKM

MW = value of the measuring range

Accessories

Description	Order no.
IO-Link	
USB IO-Link master for parameter setting and analysis of units; supported communication protocols: IO-Link (4.8, 38.4 and 230 kbits/s)	**ZZ1060**
moneo|configure SA Stand-alone licence, software for online and offline parameter setting of IO-Link devices including maintenance and support until the end of the following year	**QMP010**
LDL200 / LDL201 welding adapters	
G 1 – external thread Aseptoflex Vario, Ø 50 mm	**E30122**
G 1 – external thread Aseptoflex Vario with leakage port, Ø 50 mm	**E30130**
G 1 – welding mandrel	**E30435**

Accessories

Description	Order no.
LDL200 Varivent	
G 1 – external thread Aseptoflex Vario – Varivent type N, (DN40-150); Ø 68 mm	**E33222**
G 1 – external thread Aseptoflex Vario – Varivent type N, (DN40-150); Ø 68 mm, cert. acc. to 3A & EHEDG	**E33229**
G 1 – external thread Aseptoflex Vario – Varivent type F, (DN25); Ø 50 mm	**E33221**
G 1 – external thread Aseptoflex Vario – Varivent type F, (DN25); Ø 50 mm, cert. acc. to 3A & EHEDG	**E33228**
LDL201 clamp and pipe fittings	
Tri-Clamp – G 1 Aseptoflex Vario 2" with leakage port	**E33209**
Tri-Clamp – G 1 Aseptoflex Vario 2"	**E33202**
Tri-Clamp – G 1 Aseptoflex Vario 1.5" with leakage port	**E33208**
Tri-Clamp – G 1 Aseptoflex Vario 1 – 1.5" with leakage port	**E33201**
Pipe fitting – G 1 Aseptoflex Vario 1.5"	**E33212**
Pipe fitting – G 1 Aseptoflex Vario 2"	**E33213**
Pipe fitting – G 1 Aseptoflex Vario 1.25"	**E33211**
LDL210 welding adapters and Varivent	
G 1 – Ø 50 mm	**E30013**
G 1 – welding mandrel	**E30435**
G 1 – Varivent type N, (DN40-150); Ø 68 mm	**E33622**
LDL220 welding adapters	
G 1/2 – Ø 30 mm for tanks	**E43300**
G 1/2 – Ø 29 mm for pipes	**E43301**
G 1/2 – Ø 30 mm for tanks, with leakage port	**E43309**
G 1/2 – Ø 29 mm with leakage port, for pipes; pressure rating up to 16 bar	**E43412**
G 1/2 – Ø 29 mm with leakage port, for pipes; pressure rating up to 50 bar	**E43310**
G 1/2 – Ø 45 mm collar	**E30056**
G 1/2 – Ø 35 mm ball	**E30055**
G 1/2 – welding mandrel	**E43314**
LDL220 mounting adapters and T-pieces	
G 1/2 – Ø 29 mm with leakage port, for pipes; pressure rating up to 50 bar	**E43310**
G 1/2 – Varivent type N 1.5, (DN40-150); Ø 68 mm	**E43307**
G 1/2 – Varivent type F1, (DN25); Ø 50 mm	**E43306**
G 1/2 – T-piece, DN50	**E43318**
G 1/2 – T-piece, DN40	**E43317**
G 1/2 – T-piece, DN25	**E43316**

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For further technical details, please visit: ifm.com

Digital meets analogue: integrating modern IO-Link sensors the analogue way
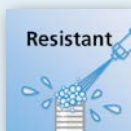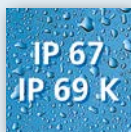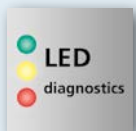
IO-Link converter

Converts IO-Link process values into two analogue signals 4...20 mA

Ideal for IO-Link sensors with multiple process values

Plug and play: no parameter setting required

Resistant to cleaning agents, ideal for use in hygienic areas

Easy installation directly on the sensor or in the connection line

Operating principle

IO-Link sensors often provide several measured values at the same time, e.g. conductivity sensors with integrated temperature measurement. To allow these sensors to be connected to existing control systems, this converter converts two digital measured values into two analogue signals (4...20 mA). Thus, the hardware of the system is already prepared for future digitisation. The converter can be used directly without parameterisation. However if required, it can also be parameterised via IO-Link, e.g. for scaling analogue values.

Hygienic

Special housing materials as well as the high protection class IP 67 / IP 69K allow, for example, the use in the food industry even with high-pressure cleaning and aggressive cleaning agents.

Type	Number of analogue outputs	Precision of analogue output	Protection rating	Order no.
	2	± 0.25 %	IP 67 / IP 69K	**EIO104**

Operating principle:
1 x IO-Link converts to 2 x analogue output

With this compact converter, modern IO-Link sensors that provide more than just one process value can be connected to existing control systems equipped with analogue inputs only.

Multiple measured values via IO-Link

The following is a small selection of ifm sensors that output more than just a process value via IO-Link.

A complete list of all specified sensors can be found at ifm.com.

This converter only works in combination with appropriately specified ifm sensors

Sensor type	Process values via IO-Link
Level sensor LT	level, temperature
Flow rate meter SD	flow rate, temperature, pressure
Pressure sensor PM15	pressure, temperature
Temperature sensor TCC	2 x temperature
Conductivity sensor LDL	conductivity, temperature
Laser sensor OGD	distance value, reflectivity

2x 4...20 mA

EIO104*

DP2200
1x 4...20 mA
DP1222
2x 0...10 V

DP1213
2x 4...20 mA
DP1223
2x 0...10 V
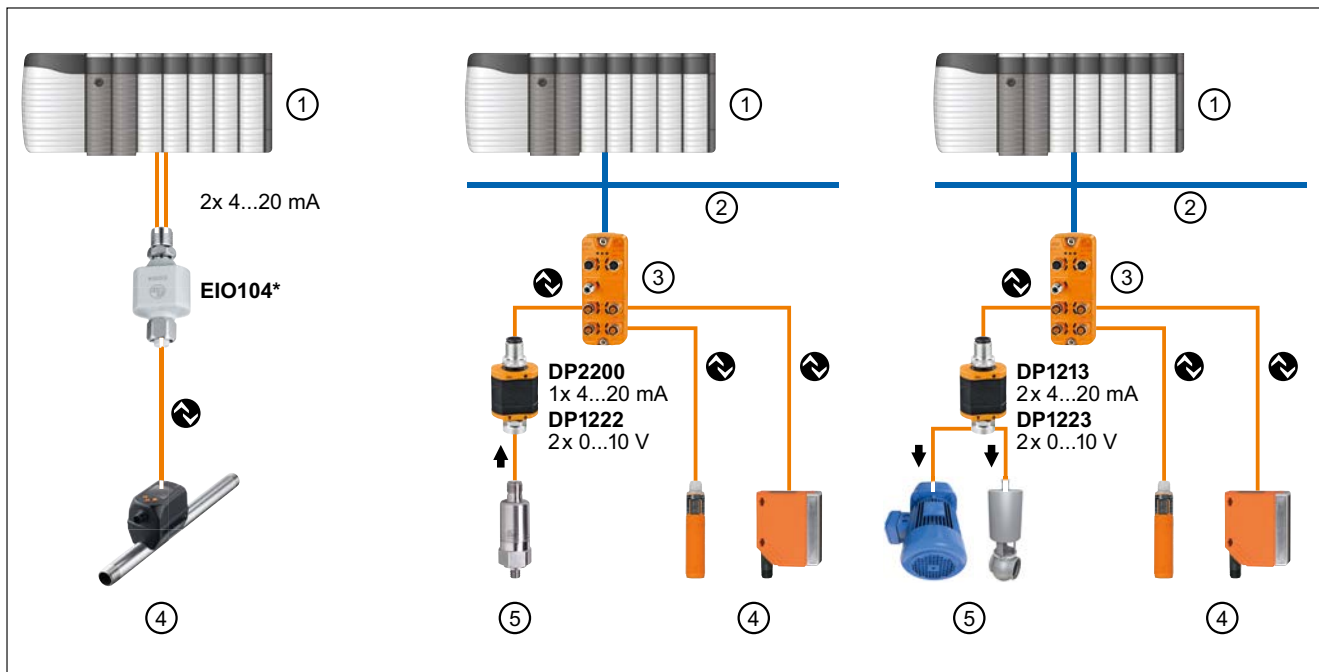
* This converter only works in combination with appropriately specified ifm sensors

1) PLC
2) Fieldbus
3) IO-Link Master IP 67
4) Sensor with IO-Link
5) Sensor without IO-Link

We reserve the right to make technical alterations without prior notice. · 02.2022

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