

INTELLIGENT PRESSURE SENSORS

Measure precisely, maintain control



IPF ELECTRONIC

High-End in High-Tech.



←
**SCAN QR CODE
AND READ FLYER DIGITALLY**

FROM THE "SPECIALIST" TO THE „ALL-ROUNDER“...

...this is how the extremely wide range of pressure sensors from ipf electronic for pressure ranges from -1bar to +600bar can be summarized in a few words.

Our "specialists" for pneumatic applications range from lightweight inline hose sensors for compressed air lines via compact and robust devices with switching or analog output to differential pressure sensors.

The "all-rounders" from ipf electronic are designed for both compressed air and liquids and thus offer all the prerequisites for versatile use in all conceivable pneumatic and hydraulic applications. Here too, the range of solutions is impressive: from low-cost pressure transmitters with analog output, via pressure sensors with two switching outputs and parameterizable analog output, to intelligent high-end sensors with colour display and IO-Link.

The extensive range of pressure sensors from ipf electronic is complemented by a wide selection of accessories for sensor connection and mounting.

Whatever the requirements of your application may be, at ipf electronic you will find the right solution and competent advice.

See for yourself!

MORE THAN JUST MEASURING PRESSURE

SENSOR SOLUTIONS FROM IPF ELECTRONIC

Pressure sensors are indispensable for the precise monitoring of pneumatic and hydraulic systems. They ensure reliable process control in numerous industrial sectors.

WHAT IS PRESSURE?

In physical terms, "pressure" is the ratio of a force to the size of the area on which this force acts.

In measurement technology, a distinction is made between:

- ✓ **Absolute pressure:** measured against a vacuum.
- ✓ **Relative pressure:** measured against the ambient pressure- usually in relation to the atmospheric air pressure.

MODERN MEASUREMENT TECHNOLOGIES

ipf electronic relies on two proven processes:

/ Piezoresistive sensors:

Resistors on a diaphragm react to pressure through mechanical voltage. In most cases, the measurement is carried out as relative pressure.

/ Digital pressure sensor modules:

Piezoresistive sensors with integrated processor that processes the pressure value digitally and outputs it as a standardized signal.

ADVANTAGES

- ✓ Energy-efficient operation
- ✓ Fast data transmission via I2C
- ✓ Low signal drift- even after many load changes
- ✓ The robust full stainless steel measuring cell without internal seals ensures durability and reliability.
- ✓ Possibility of condition monitoring
The sensors also record the temperature in the module. This data enables condition-based, predictive maintenance - for optimized maintenance cycles and longer system runtimes.

WIDE RANGE OF APPLICATIONS

The sensors are suitable for:

- ✓ Compressed air
- ✓ Neutral gases
- ✓ Gaseous media
- ✓ Fluid group 2 liquids (non-hazardous, non-flammable or non-toxic)





THE SPECIALISTS

INLINE PRESSURE SENSORS WITH QUICK CONNECTION

Plug & Play

The InLine pressure sensors of the **DW04**, **DW06** and **DW08** series as well as the **DT06** and **DT08** pressure transmitters (protection class IP68) for a pressure range of -1...10bar can be easily integrated into existing pneumatic systems using a push-in fluid connection: Simply connect the compressed air hose to the quick connector and you're done!

The sensors can be released just as quickly via a safety ring. Due to their low mass of 20 or 30g, these pressure sensors are therefore particularly suitable for applications in robotics and vacuum lifting technology.

HIGHLIGHTS

- ✓ for hose diameters 4mm, 6mm and 8mm
- ✓ pressure ranges: -1...0bar, 0...10bar, -1...1bar, -1...10bar
- ✓ setting with potentiometer (**DW0443xx**, **DW0643xx**, **DW0843xx**) or via IO-Link (**DW0446xx**, **DW0646xx**, **DW0846xx**)
- ✓ one/two* switching outputs (*IO-Link)
- ✓ analog output 4...20mA (**DT06**, **DT08**)
- ✓ application-specific parameterization for versions with IO-Link
- ✓ simple installation with quick connection
- ✓ particularly light (20g or 30g)



THE SPECIALISTS

PRESSURE TRANSMITTER IN COMPACT FORMAT

Particularly light and space-saving

The **DT16** series pressure transmitters (pressure range -1bar...+10bar) in stainless steel housing (protection class IP67) with G1/8" process connection are very lightweight, compact devices for a wide range of pressure and vacuum applications in handling and automation systems. The measuring cell is suitable for filtered, dry or lubricated compressed air, making the pressure transmitters ideal for pneumatic applications in robotics, for example.

A special feature

The materials used in production are free from so-called "paint wetting impairment substances" (LABS) such as silicones or fluorine-containing substances.

HIGHLIGHTS

- ✓ Particularly compact (L: 44.5mm, \varnothing 15.5mm) and lightweight (25g)
- ✓ four pressure ranges: -1...0bar (**DT164100**), 0...+10bar (**DT16410D**), -1...+1bar (**DT16410J**), -1...+10bar (**DT16410K**)
- ✓ analog output 4...20mA (overall accuracy $\pm 0.5\%$, repeat accuracy $\pm 0.2\%$)
- ✓ suitable for demanding operating conditions
- ✓ free from "paint wetting impairment substances" (LABS)



Compact pressure transmitter in a compressed air line



THE SPECIALISTS

PRESSURE SENSORS WITH IO-LINK

Flexible parameterization

The vacuum and pressure sensors in the DW16 series (pressure range -1...+10bar) with integrated display, pressure gauge, 2 switching outputs and G1/8" process connection can be parameterized for specific applications (e.g. normally open/ normally closed, switching point, turn-off delay, pressure window, hysteresis settings) thanks to IO-Link.

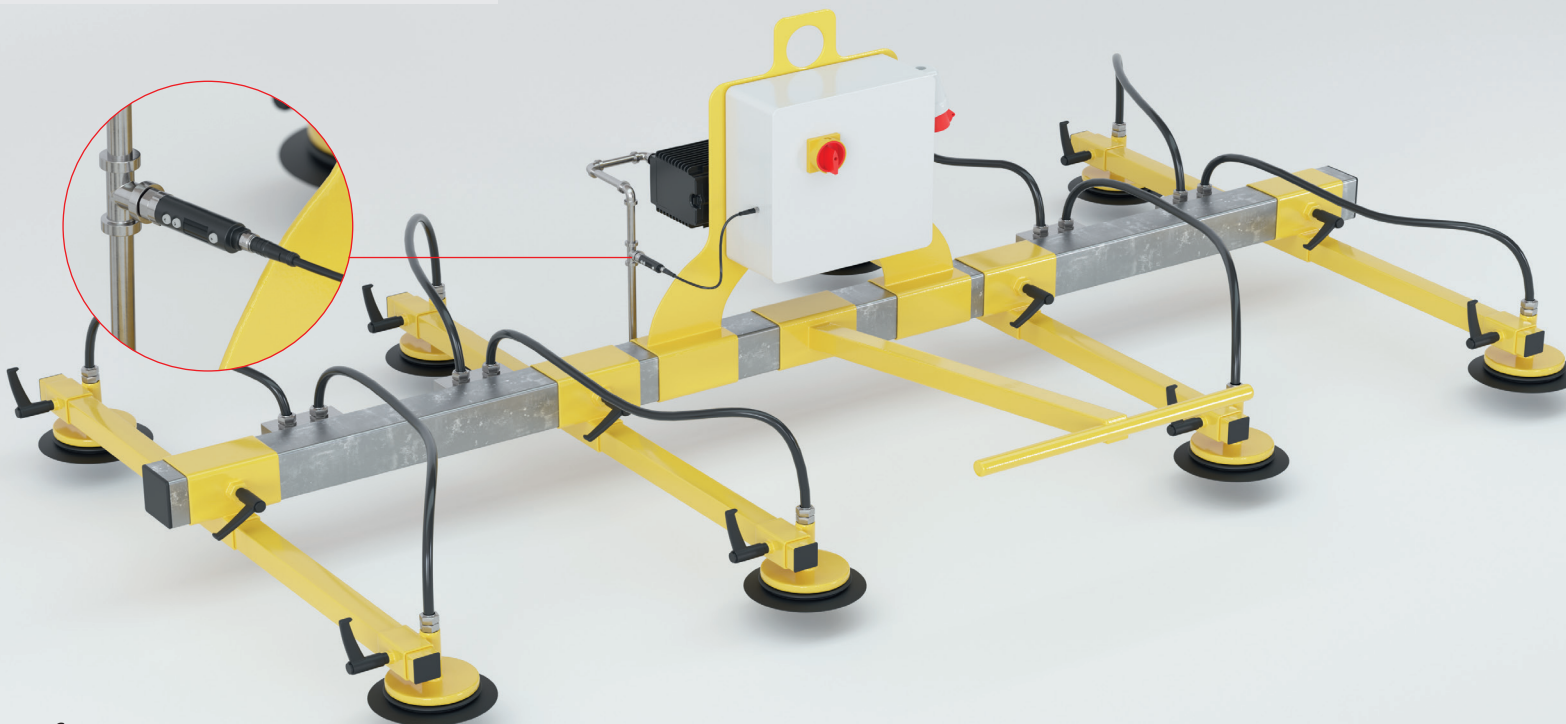
They also provide valuable data during use via IO-Link (e.g. damping, switching frequency, etc.). With a response time of <2.5 ms, the compact devices are suitable for use in all conceivable handling and automation systems in which filtered, dry or lubricated compressed air is used, e.g. for pressure monitoring, vacuum control in vacuum traverses, compressor control and much more.

HIGHLIGHTS

- ✓ flexible parameterization via IO-Link interface
- ✓ four pressure ranges: -1...0bar (**DW164600**), -1...+1bar (**DW16460J**), 0...+10bar (**DW16460D**), -1...+10bar (**DW16460K**)
- ✓ robust design (for pressure peaks up to max. 5 bar or max. 16 bar)
- ✓ two switching outputs
- ✓ integrated display with menu-guided configuration
- ✓ very narrow design (ø16mm)



Monitoring a vacuum lifting device





Differential pressure sensor for continuous monitoring of a compressed air filter system

THE SPECIALISTS

DIFFERENTIAL PRESSURE SENSOR ENSURES HIGH AVAILABILITY

Continuous monitoring

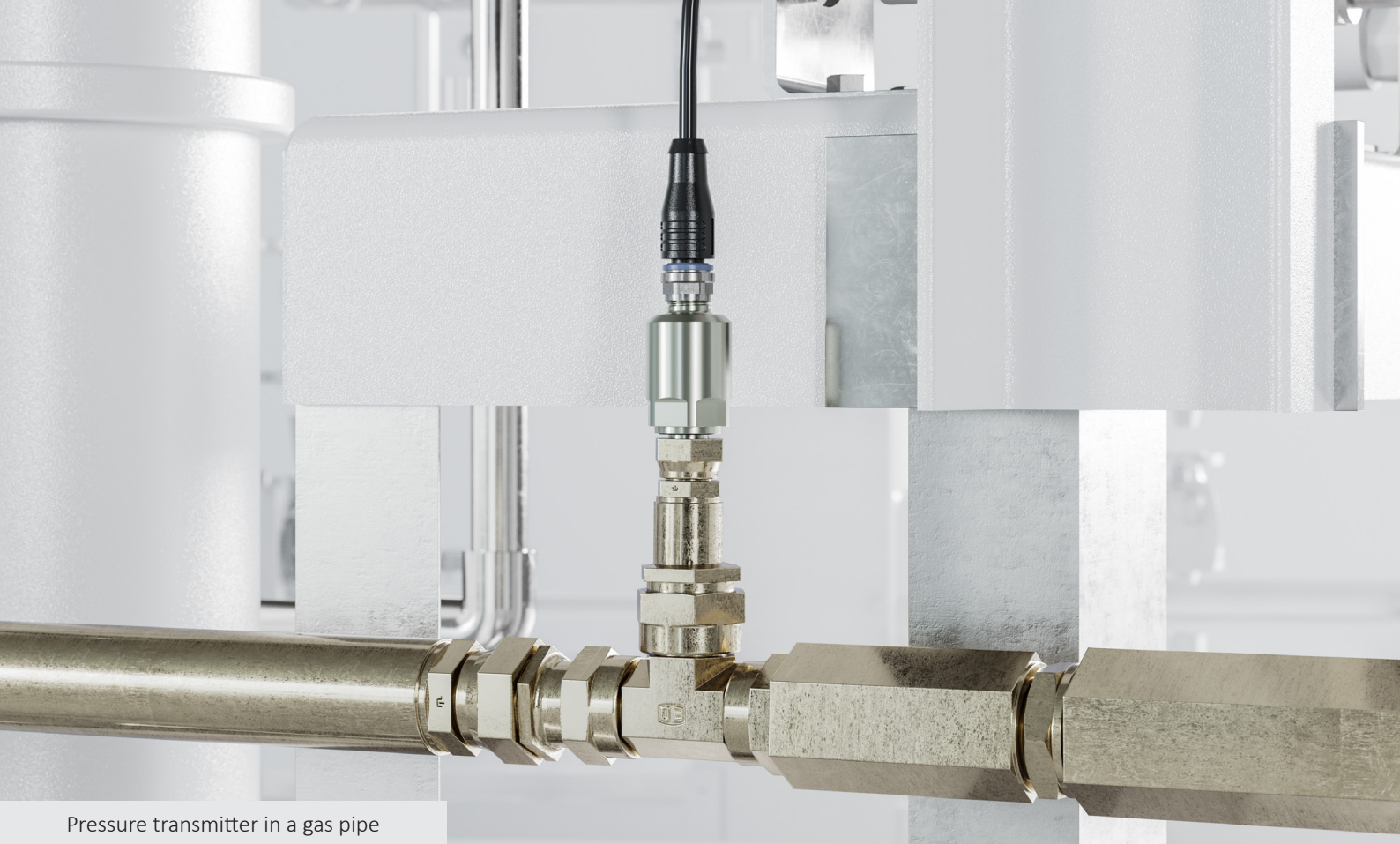
The **DW46310L** differential pressure sensor was developed for monitoring filters in compressed air systems. The sensor makes it possible to install one measuring line upstream and one immediately downstream of the filter system via two plug-in couplings for hose connections (6 mm).

The pressure difference between the two measuring points is scaled directly in the device in the range from 0 to 1.6 bar and output as an analog signal (4...20 mA). The **DW46310L** is easy to install and ensures consistently high compressed air quality and high availability of the compressed air system by continuously monitoring the filters.

HIGHLIGHTS

- ✓ continuous monitoring of the compressed air filter system
- ✓ maximum operating pressure up to 10 bar
- ✓ simple installation and start-up
- ✓ pressure difference is output as an analog signal
- ✓ only one device required for differential pressure measurements
- ✓ Already pre-assembled on mounting bracket





Pressure transmitter in a gas pipe

THE ALL-ROUNDERS

PRESSURE TRANSMITTER: ROBUST LOW-COST SOLUTION

Particularly economical

The indestructible and cost-effective **DT24 series** pressure transmitters have been designed for use with all gaseous and liquid media (fluid group 2) in an extremely wide pressure range of 0...400 bar.

The measured values can be easily output via the integrated analog output (4...20mA) on a PLC (programmable logic controller) or an external display device. One of the impressive features of the pressure transmitters is their very low long-term drift.

HIGHLIGHTS

- ✓ for all neutral gases and liquid media (fluid group 2)
- ✓ very robust solutions in stainless steel housing (protection class IP67)
- ✓ cost-effective and versatile
- ✓ extremely low long-term drift ($\leq 0.1\%$ per year)
- ✓ five pressure ranges: 0...10bar (**DT24310D**), 0...40bar (**DT243103**), 0...100bar (**DT243104**), 0...250bar (**DT243105**), 0...400bar (**DT243106**)



THE ALL-ROUNDERS

PRESSURE MONITORS FOR ALMOST ALL CASES

Flexible use

The pressure sensors of the **DW25 series** (G1/4" process connection) for pressure ranges from -0.1...+0.25bar have either 2 switching outputs or 1 switching output and 1 analog output (0...20mA, 4...20mA). The sensors, which can be flexibly parameterized via IO-Link, are therefore suitable for all conceivable applications with fluid group 2 media.

The special features include simple switchover from normally closed (nc) to normally open (NO), customizable output functions (window function, switching point, hysteresis settings), switchover of the switching output as an analogue or alarm output and the integrated peak value memory.

HIGHLIGHTS

- ✓ for all media of the Fluid Group 2
- ✓ pressure ranges from -0,1...0,1bar (**DW25310N**) and 0...0,25bar (**DW25310P**)
- ✓ highly flexible parameterization via IO-Link
- ✓ variable output functions:
2 switching outputs or 1 switching output and 1 analog output (0...20mA, 4...20mA)
- ✓ suitable e.g. as 2-point controller, limiter and monitor



Pressure sensor for level control on a container for liquid media





Versatile pressure sensors with color display on a hydraulic aggregate

THE ALL-ROUNDERS

MULTIFUNCTIONAL WITH VERSATILE COLOR DISPLAY

High-end solution

The pressure sensors in the **DW5x series** for pressure ranges from -1bar...+600bar are the "Swiss army knives" among the pressure sensors from ipf electronic. Highly flexible for use with liquid and gaseous media in all conceivable applications, these devices leave nothing to be desired in terms of convenient operation and technical features. The sensors with IO-Link interface have a switching output and a second variable output that can be defined as a switching, analog or alarm output as required. All settings of the **DW5x** can be checked before practical use in an application with an "offline test function" without having to apply pressure to the sensors.

Particularly striking

The focus is on the integrated, easy-to-read TFT color display with its extremely versatile options for different display modes. Just a few examples: Display of pressure in plain text with trend display and precise identification of switching points or color display options for reaching previously defined switching points. But the potential of the easily switchable color display is far from exhausted.

Another plus point

The display is perfectly readable in any installation position, as the display can be rotated in 90° increments and the housing can also be continuously rotated by 305°.

The sensors with full stainless steel measuring cell and integrated processor not only provide the pressure, but also determine a relative temperature value of the medium if required.

HIGHLIGHTS

- ✓ easy-to-read TFT color display with various display modes
- ✓ intuitive setting with 3 diffuse reflection sensors integrated in the housing plus plain text menu navigation in the display
- ✓ alternative parameterization via IO-Link interface
- ✓ one switching output and a second variable output (can be parameterized as switching, analogue or alarm output)
- ✓ all units are variably adjustable (e.g. bar, psi and MPa)
- ✓ analog output as current output (0...20mA, 4...20mA) or voltage output (0...10V, 0...5V)
- ✓ **3 measuring cell variants:**
 - ¼-inch outside thread (**DW50**)
 - ¼-inch inside thread (**DW51**)
 - ½-inch outside thread with front-flush diaphragm (**DW52**)
- ✓ Test function for "offline" function testing of the sensors without pressurization
- ✓ Rotatable display and rotatable housing for perfect position of the display in any mounting position



PRESSURE SENSOR DW5X / DISPLAY EXAMPLES

A SINGLE DISPLAY - MANY VARIABLE DISPLAY MODES

Everything important at a glance - standard display view

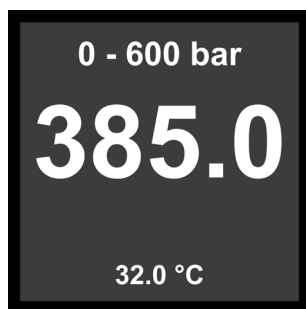


Current status of a switching output

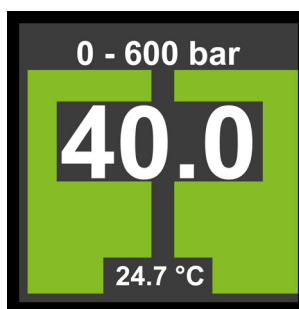
Current status of **two** switching outputs in one display



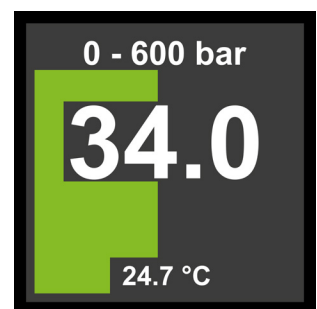
Switching output active



Switching output inactive

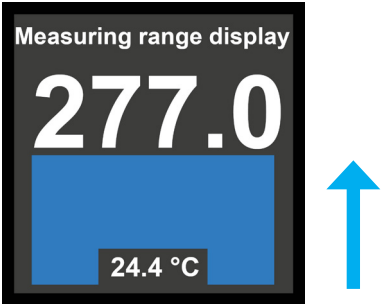


Switching output 1 and 2 active



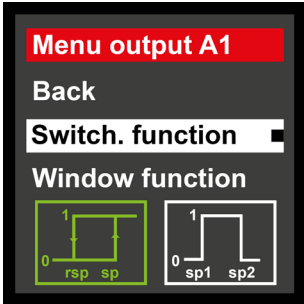
Switching output 1 active

Trend display of the measured values of the analog output



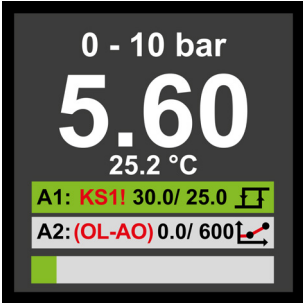
Trend display increases from bottom to top

Plain text menu navigation on the display



Simple parameterization via three diffuse reflection sensors

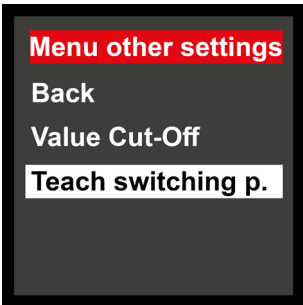
Clear display of error messages



Simple key lock with numerical code



Options for application-specific operating concepts



Example: Teach function for both switching outputs

FITS PERFECTLY – ACCESSORIES FOR OUR „SPECIALISTS“ AND ALL-ROUNDER

A wide range of accessories is available for the installation and connection of our specialized pressure sensors.

CONNECTION

Single or double-sided pre-wired connection cables in various lengths with straight or angular cable socket in M8 (4-pin) and M12 (4-pin) for all pressure sensors (e.g. **VK500375** or **VK500325**).



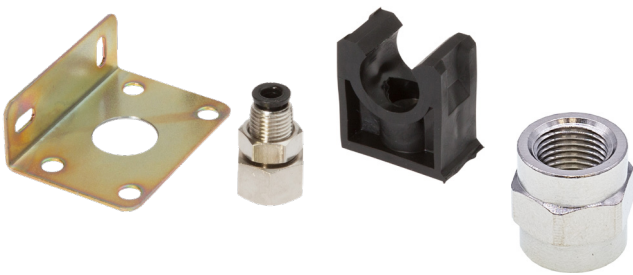
Self-assembly straight or angular cable sockets in M8 (4-pin) e.g. **VK003175** or **VK003171** and M12 (4-pin) e.g. **VK003024** or **VK003020** for all pressure sensors



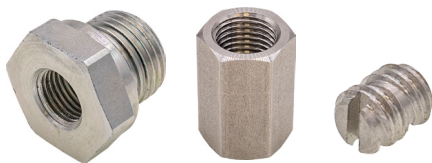


ASSEMBLY

Holder (addable) for inline pressure sensors of the **DW04**, **DW06** and **DW08** series (e.g. **AD000023** or **AD000024**)



Mounting bracket with adapter flange (**AD000015/AD000016**), quick clips (**AD000014**) and adapter G1/8" (15mm long) (**AD000022**) for **DT16** series pressure transmitters and **DW16** series pressure sensors



Adapter flanges for **DT24** series pressure transmitters, **DW25** series pressure sensors and the **DW5x** pressure sensor (e.g. **AD000017**, **AD000018**). Throttle screw **AD000026** for **DT24**.



PARAMETERIZATION

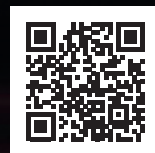
IO-Link master **VY000005** for the inline pressure sensors of the **DW04***, **DW06***, **DW08*** series as well as all pressure sensors of the **DW16**, **DW25*** and **DW5x** series.



*Versions with IO-Link interface

ipf electronic gmbh
Rosmarter Allee 14 • 58762 Altena
Germany
www.ipf-electronic.com

Headquarters
Tel +49 2351 9365-0
info@ipf-electronic.com



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