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COMPRESSED AIR CONSUMPTION MEASUREMENT

Measure compressed air consumption – save energy!

IPF ELECTRONIC

DID YOU KNOW THAT COMPRESSED AIR IS ONE OF THE MOST EXPENSIVE FORMS OF ENERGY IN THE INDUSTRY?

This is mainly due to the energy costs for compressed air generation. After all, electricity costs account for about 70-80% of the total expenditure of a compressed air system. Even with smaller plants, loads of 10,000 - 20,000€ per year can quickly accumulate. In the future, this value is likely to increase even more, considering the constantly rising electricity prices.

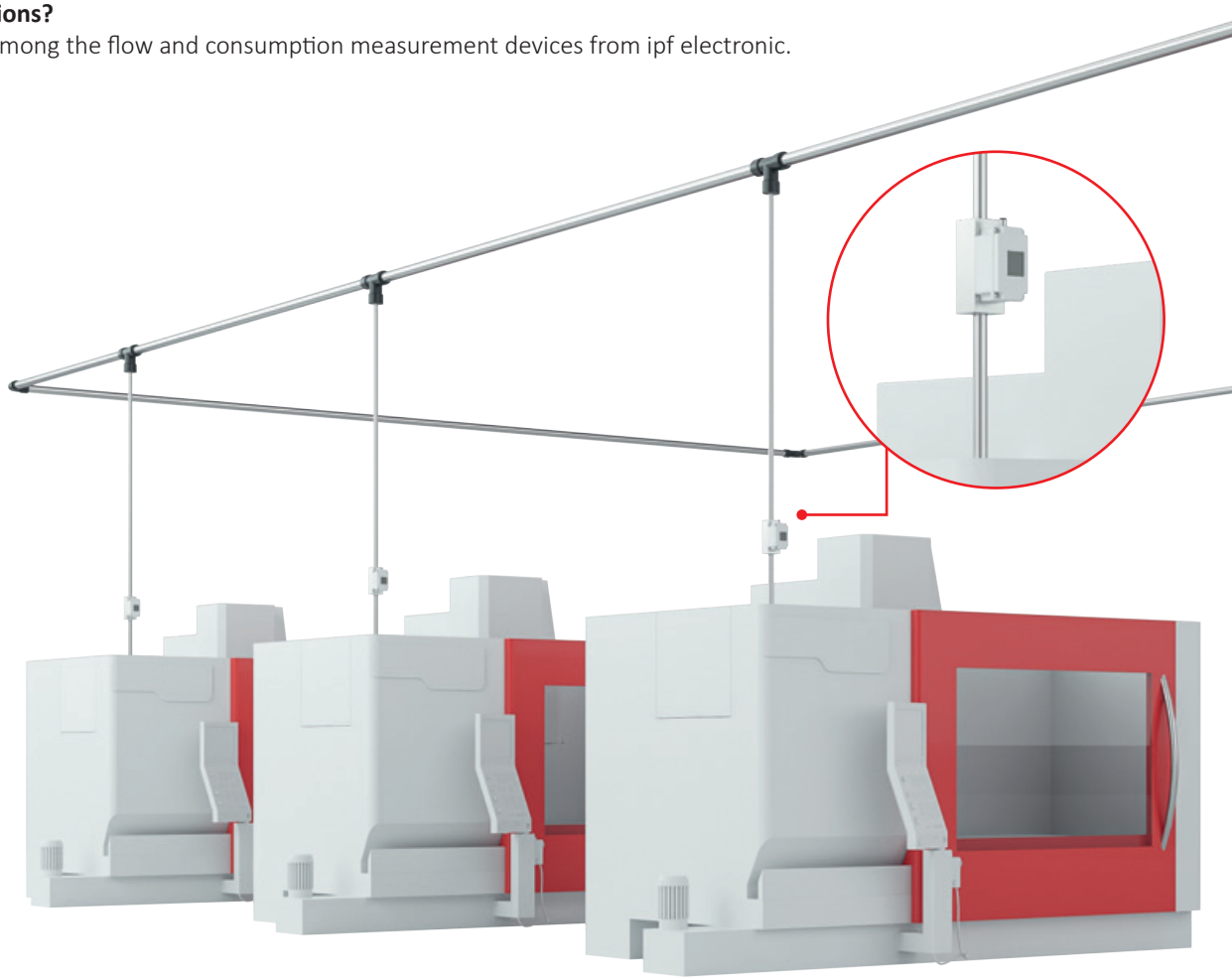
In addition to this are the costs for the generation of clean and dry compressed air, which are caused by the operation of refrigeration dryers and adsorption dryers. All in all, these costs are immensely high, but can usually be reduced considerably - even in apparently well operated plants.

How? Through continuous consumption measurements, which measure and record the current compressed air consumption. This allows deviating consumption and even the smallest leaks to be detected early on.

There is usually complete transparency about the consumption of most other media such as electricity, water or gas in every plant. Unlike compressed air, leaks in water, for example, are usually directly visible to everyone and are eliminated immediately. In contrast, compressed air usually goes up in smoke unnoticed due to leaks in the consumption network, even at weekends or when production is not in progress.

The optimal design of a compressed air line and the elimination of any leaks, on the other hand, minimizes pressure losses sustainably and noticeably. The results: high savings potentials, both in compressed air consumption and energy costs.

And the right solutions?
You will find them among the flow and consumption measurement devices from ipf electronic.

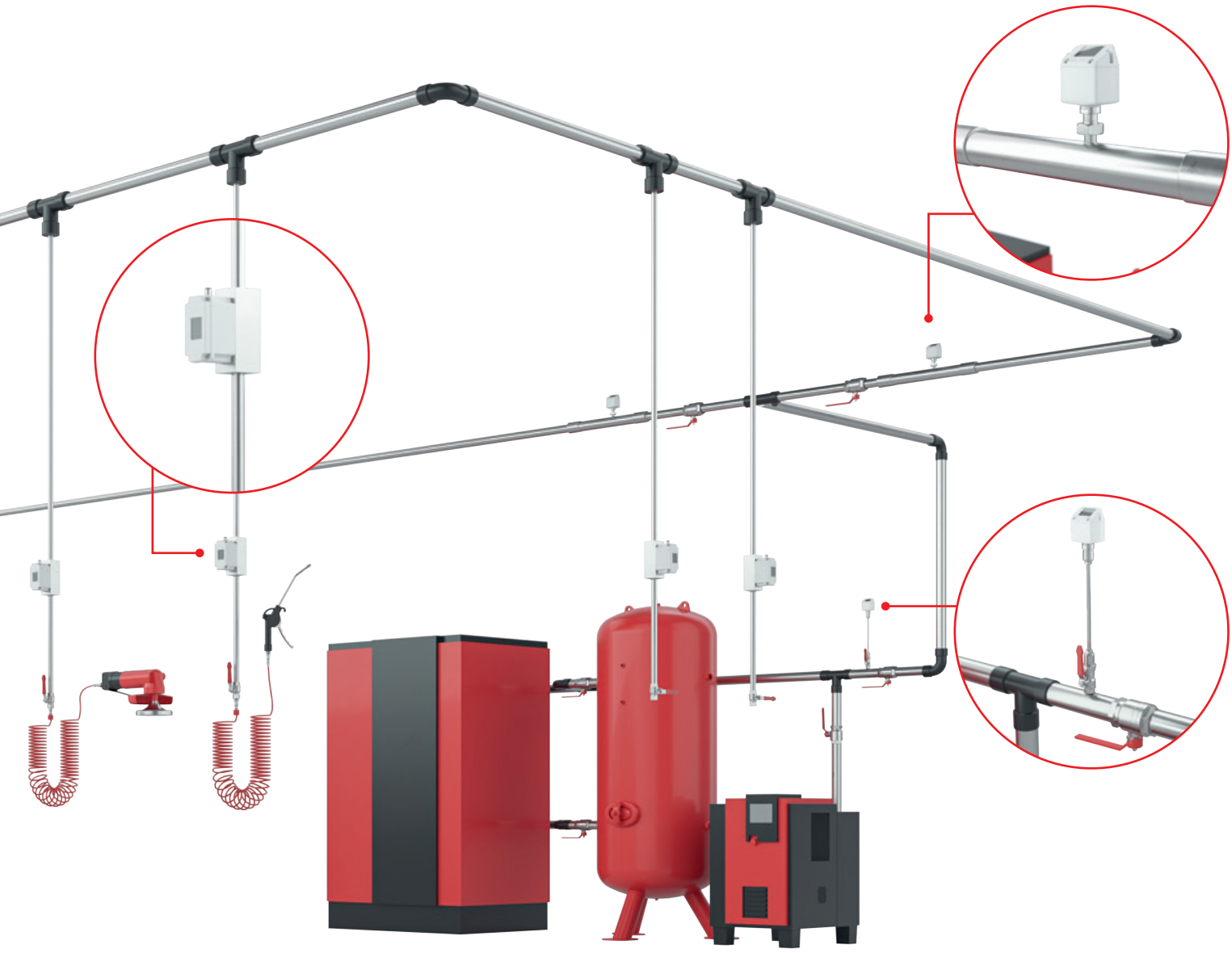


OPERATING PRINCIPLE

The flowmeters from ipf electronic can measure the current flow in m³/h, l/min, etc. as well as the consumption in m³ or l. All sensors work according to the proven calorimetric measuring principle. The core is the flow sensor, which has been tried and tested many times in practice.

Two sensor elements are located in the mass flow. Sensor element 1 measures the temperature of the medium flowing past and thus forms a reference. Sensor element 2 is heated from the inside to a constant excess temperature and cooled by the medium flowing past. The greater the heating power required to keep element 2 at the constant excess temperature, the greater the mass flow. Additional pressure and temperature compensation is not necessary.

The advantge: The consumption meters can be used at different pressures and temperatures without further compensation.



PROGRAMMABLE AIRFLOW SENSORS
(INSERTION SENSOR AND DEVICES WITH INTEGRATED MEASURING SECTION)

- Fast, easy installation under pressure via ½“ ball valve (insertion sensor)
- Integrated measuring section for cable cross sections from R ¼“ to R 2“
- Clear TFT display
- Continuous measurement of the mass flow (in kg/h)
- Optional display in Nm³/h (0°C, 1013mbar) or m³/h according to ISO 1217 (20°C, 1bar)
- Freely selectable units via TFT display (m3/h, m3/min, l/min, l/s, kg/h, kg/min, kg/s, cfm)
- Integrated Modbus interface for connection to e.g. energy management systems, building management system, SPS, SCADA, etc.
- Extensive diagnostic function readable on the display or via remote inquiry via Modbus RTU such as exceeding max/min values °C, calibration cycle, error codes, serial number
- Simple, clear parameterisation. All parameters can be read and changed via Modbus.
- Analog output 4...20mA, pulse output (galvanically isolated)
- High accuracy also in the lower range (e.g. for leakage measurement)
- Pressure resistance up to 16bar or 50bar (insertion sensor)
- High reliability as it is wear-free (no mechanical moving parts)
- Trouble-free use (independent of pressure and temperature)
- **Optional**: Flow direction independent variants available
- **Optional**: Ethernet, Power-Over-Ethernet (Modbus-TCP) or M-Bus possible

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COMPACT AIRFLOW SENSORS WITH FLOW STRAIGHTENER

The integration of an airflow sensor in machines or in the immediate vicinity of a system is often difficult, if not impossible, because the installation space for the inlet and outlet sections in front of and behind the devices to generate the necessary laminar flow is not available.

These compressed air consumption measuring devices from ipf electronic integrate a flow straightener which, despite the extremely compact dimensions of the device, ensures that the installed sensor elements are optimally exposed to the flow, regardless of the installation situation.

ADVANTAGES

- From connection size 1/2“ no inlet section necessary – thanks to flow straightener
- Compact design for problem-free use in front of or in machines / systems
- Aluminum measuring block with internal thread
- Display simultaneously shows current consumption and total consumption
- Versatile, as available in different sizes (¼“, ½“, ¾“, 1“, 1¼“, 1½“, 2“)
- **Optional**: With integrated pressure measuring function 0...16bar
- **Optional**: Ethernet / Power-Over-Ethernet (Modbus-TCP), RS485 (Modbus-TCP) or M-Bus possible

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ipf electronic gmbh • info@ipf-electronic.com • **www.ipf-electronic.com**

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