

Electronic Pressure Sensor with Radio Transmission

Receiver unit with analogue and digital interface

Measuring range 0...16 / 0...250 / 0...600 bar



Advantages

- Wireless pressure measurement
- Stationary and mobile use
- Measurement at moving or in hard-to-reach points
- Insensitive to swarf
- Code class IP 67
- Temporary pressure measurement during start up and maintenance
- Reduction of installation costs
- Up to 16 pressure sensors per receiver
- Up to 300 m free-field range
- Interference-free data transfer
- Long-lasting high capacity lithium battery
- Monitoring of battery condition
- Receiver unit with keyboard and LCD display
- Setup program for laptop and PC available as accessory

Application

Electronic pressure sensors with radio transmission will be used to monitor hydraulic clamping fixtures, if

- hard wired connections are not possible or too expensive.
- the pressure has to be measured in hard-to-reach points or has to be adjusted frequently.
- the pressure has to be measured continuously in several places at the same time.
- the pressure has to be checked during start up and maintenance with minimum installation costs.

In general, these are moving or rotating systems.

Typical applications are:

- Automatic manufacturing systems
- Transfer lines
- Assembly lines
- Rotary indexing fixtures
- Rotary indexing tables

Up to 16 pressure sensors can be individually configured and monitored at a stationary receiver unit with antenna.

Important notes

The electronic pressure sensor is intended for industrial use, but is not suitable for safety-critical applications.

Metallic objects in the immediate vicinity of the transmitter or concrete ceilings and walls reduce the range.

The minimum distance between two transmitters shall be 200 mm.

During installation and operation of the electronic pressure sensor, electrostatic charging must not arise. Electrical or magnetic fields, e.g. by transformers and two-way radios are to be avoided.

Description

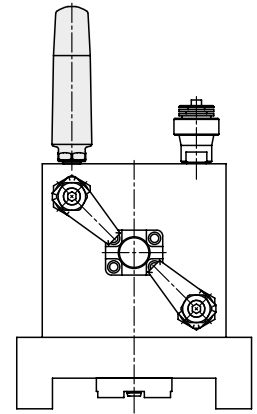
The electronic pressure sensor operates according to the DMS principle. The measured values are sent in the ISM band to the stationary receiver unit. The range is max. 300 m in the free field.

The replaceable lithium battery has a service life up to one year. The state of charge is constantly monitored.

The receiver unit can be configured with the keyboard and the two-line LCD-display. With the optionally available setup program on a PC or laptop that can be connected with a USB cable it is even more flexible.

A laptop with the loaded setup program can be directly connected to the pressure sensor by means of a mini-USB cable. Thus, a temporary pressure measurement is also possible without receiver unit, e.g. during start up and maintenance.

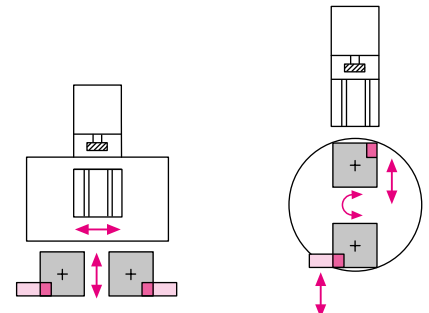
The receiver unit has four freely configurable analog outputs (optionally two relay outputs) and an RS485 interface with Modbus protocol. Available as an accessory is a Profibus gateway that translates the Modbus protocol into a PROFIBUS protocol with GSD.



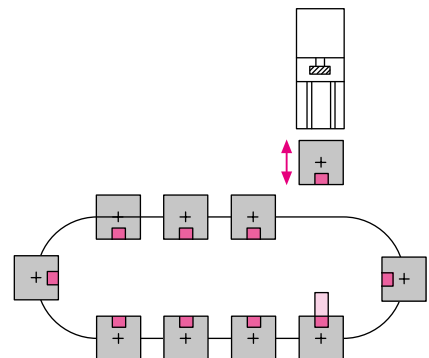
Workpiece pallet with hydraulic clamping fixture

Application examples

Flexible production with workpiece pallets



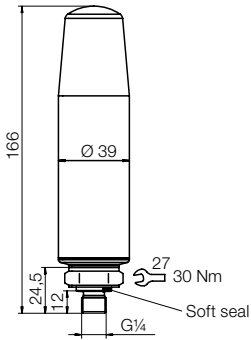
2 pressure sensors with radio transmission



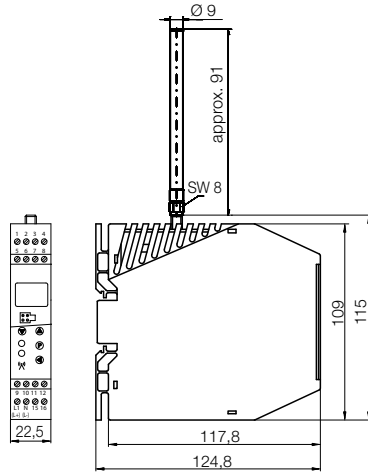
10 pressure sensors with radio transmission



Pressure sensor

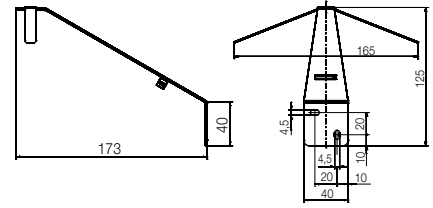


Receiver unit with antenna



Accessories

Antenna wall holder



Part no. 3828007

Antenna cable

Length 3 m
Part no. 3828005
Length 5 m
Part no. 3828006

Transmitter identification *	5-digit ID
Transmission interval*	0.5...3600 s (preadjusted 2 s)
Radio frequency	868.4 MHz ISM band**
Free-field range***	max. 300 m (with antenna wall holder)
Lithium battery	3.6 V; 8.5 Ah (not included in the delivery, see accessories)
Battery life	approx. 1 year (transmission interval 2 s)
Operating temperature	-30 up to 85 °C
Body	Polyamide
Pressure sensor	Stainless steel
Pressure medium	Hydraulics Pneumatics

Code class	IP67
Mounting position	any
Weight	approx. 0.25 kg

Sensor measuring range	Recommended range of application	Part no.
0... 16 bar****	0... 12 bar	3828010
0...250 bar*****	0...200 bar	3828003
0...600 bar*****	0...500 bar	3828002

Accessories

Lithium battery	3828004
3,6 V, 8,5 Ah, Type Baby C	

- * via USB interface (Type Mini B) configurable with setup program
- ** Industrial, Scientific and Medical band
- *** Visual contact between transmitter and receiver
- **** Accuracy ±0.5 % of the final value
- ***** Accuracy ±0.7 % of the final value

Voltage	20 – 30 V DC
Performance	12 VA
Inputs	max. 16 pressure sensors (transmitter identification can be configured)
Lambda/4-antenna	included in the delivery
Free-field range	approx. 180 m * approx. 300 m **
Analog outputs***	4 x 0...20 mA, 0...10 V or 2 x 0...20 mA, 0...10 V 2 x relay 3 A, 230 VAC

Digital interface	RS485 Modbus
PC interface	with TTL/RS232 or USB/TTL
Material	Polyamide
Assembly	Top hat rail M 35 x 7.5
Mounting position	upright
Operating temperature	-20...+50 °C
Weight	approx. 0.2 kg

Part no.	
4x analog	3828000
2x analog, 2x relay	3828001

- * Antenna mounted on receiver
- ** Antenna wall holder with 3 m cable
- *** Accuracy ±0.1 % of the final value

Profibus gateway

Translates the Modbus protocol of the RS-485 interface into a PROFIBUS protocol with GSD. The following parameters are transmitted for the transmitters 1 to 16:

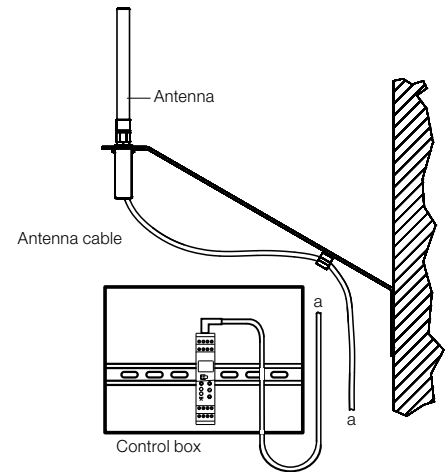
- Pressure
- Transmitter ID
- Battery voltage
- Radio timeout
- Battery alarm
- Alarm limit value
- Part no.

3828011

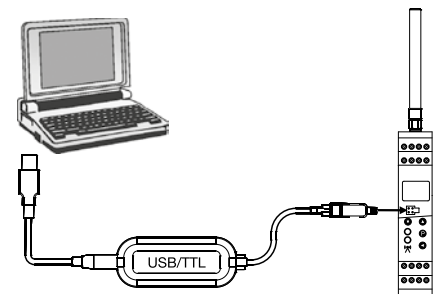
Important notes

When mounting the receiver unit in a control box or behind concrete walls an antenna wall holder with an antenna cable of 3 m (5 m) has to be used that is aligned to the transmitter. The rod antenna must be positioned vertically up or down.

Application example



USB/TTL converter



Part no. 3828009

Setup program on USB flash drive

multilingual, for the configuration of pressure sensor and receiver unit
Part no. 3828008