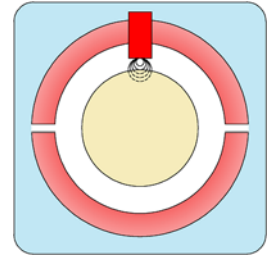


CON 011 ../021 ../031 ../041

Eddy current signal converters



- Contactless measurement of static and dynamic shaft displacements by using epro sensors of type PR 6422/.. - PR 6426/.., e.g.
 - axial and radial shaft displacements
 - shaft eccentricity and shaft vibration
 - abrasion of thrust bearings
 - measurement of oil films
 - crack detection
- Contactless measuring of speed and direction of rotation
- Developed in consideration of the international standards, e.g. API 670, DIN 45670, ISO 10817-1
- Suitable for the operation in explosive hazardous areas
- Part of the MMS 6000 machine monitoring system

Applications:

The signal converters **CON 011**, **CON 021**, **CON 031** and **CON 041** in connection with eddy current sensors of type PR 6422/.. to PR 6426/ serve the measurement of static and dynamic displacements.

Applications with such systems can be found in different industrial areas and laboratories.

Due to the contactless measuring principle, the rugged construction and the resistance against aggressive media, the sensors can be operated with these converters which are optimally suitable for the use at all kinds of turbo machinery.

Epro offers a wide range of products for measuring and monitoring.

Measuring quantities are e.g.:

- Air-gaps between rotating and static parts
- Vibrations of machine shafts and housing parts
- Shaft-dynamic and eccentricity
- Deformation and deflection of machine parts
- Axial and radial shaft displacement
- Abrasion wear and position measurements at thrust bearings
- Thickness of oil films in bearings
- Differential expansion
- Housing expansion, valve position

Construction and dimensions of measuring amplifier and relevant sensors apply to international standards, e.g. API 670, DIN 45670, ISO 10817 part 1.

At connection via safety barriers, sensors and converters may also be operated in hazardous areas. The certificate of conformity according to the European standard EN 50014/50020 has been submitted.

Signal converters CON 011, CON 021, CON 031, CON 041:

The converters are available in different constructions to meet various requirements.

Since all converters contain the same electronic circuits, each converter may be operated with each transducer. For the use with standard measuring ranges,

converters and / or transducers may be interchanged without new adjustment. Connection of supply voltage and signal output is made via cage clamp- respectively screw terminals. The transducer connection is made either by means of a self locking Lemo plug or via cage clamp- respectively screw terminals for transducers with open cable ends.

All transducers are provided for combination with the converters for use in explosive ranges (with the former barriers specified for this).

The certificate of conformity according to the European standards EN 50014 and EN 50020 is available at epro.

Technical data:

	CON 011	CON 21	CON 31	CON 41
Input:	Connection of eddy current sensors of types: PR 6422/..; PR 6423/.. PR 6424/.. PR 6425/.. PR 6426/..			
Supply voltage range:	-23V ... -32V (for output voltage range -4V ... -20V) -21V ... -32V (for output voltage range -2V ... -18V) (supply voltage min. 3V greater than the output voltage)			
Output:	D.C. voltage, proportional to the static transducer distance, with a superimposed dynamic signal proportional to the dynamic distance. Connections protected against open-circuit, short-circuit and wrong polarity			
Output voltage range:	selectable ranges (-2V ... -18V or -4V ... -20V)			
Maximum output voltage:	-1V ... 22V			
Reference point of the output voltage for symmetrical measuring ranges:	-10V (-2V ... -18V) -12V (-4V ... -20V)			
Internal resistance	100 Ohm			
Rise time:	< 15 µs			
Measuring error: All specifications refer to the f.s.d. Linearity error: Material: 42 Cr Mo4	with PR 6422/..	≤ ± 1,5%	MR: 1,0 mm	
	with PR 6423/..	≤ ± 1,0%	MR: 2,0 mm	
	with PR 6424/..	≤ ± 1,5%	MR: 4,0 mm	
	with PR 6425/..	≤ -6,0%	MR: 4,0 mm	
	with PR 6426/..	≤ ± 1,5%	MR: 8,0 mm	
Temperature error: Zero point: Sensitivity:	200 mV / 100			
Long-term drift:	< 2% / 100 K			
Influence of supply voltage:	0,3 % max. < 20 mV / V			
Suitable for standard and /or Ex - applications according to:	⊕ I1G EEx ib IIC T6 Ta < 57°C (Zone 0)	⊕ I2G EEx ib IIC T4 Ta < 72°C (Zone 1)	⊕ I2G EEx ib IIC T4 Ta < 72°C (Zone 1)	⊕ I2G EEx ib IIC T4 Ta < 72°C (Zone 1)
Frequency range:	0...20 kHz -3 dB (C = 20 nF)			
Interference level (C<1 µF):	< 5 mV _{eff}			
Load resistance:	≥ 10 kOhm (for error <1%)			
Environmental conditions: Temperature: Reference value: Operating range: Limit range for operation: Limit range for storage and transport:	+23°C -30°C...+100°C -40°C...+105°C -40°C...+105°C rel. humidity 5...95% non-condensing			
Protection class:	IP67	IP20	IP20	IP20
Vibration and shock: Vibration: Shock:	10...60 Hz, max. amplitude = 0,35 mm; 60...150 Hz, max. 5 g 40 g für 6 ms			
Dimensions:	see fig. 1	see fig. 2	see fig. 4	see fig. 3
Housing material:	GD-ALSi9Cu3	ALMgSi 0.5 F22		PA 6.6
Mounting:	with 4 screws M5 x 20 (included in delivery)			Hat rail
Weight net/gross (kg)	0,6/0,7	0,12/0,2		0,06/0,12
Connections: Transducer: Supply / signal output:	self locking Lemo- plug		wire-end sleeve, screw terminal	
	spring type terminal max. 1,5 mm ²	3 (4 CON 041/..) screw terminals max. 1,5 mm ²		

Dimensions:

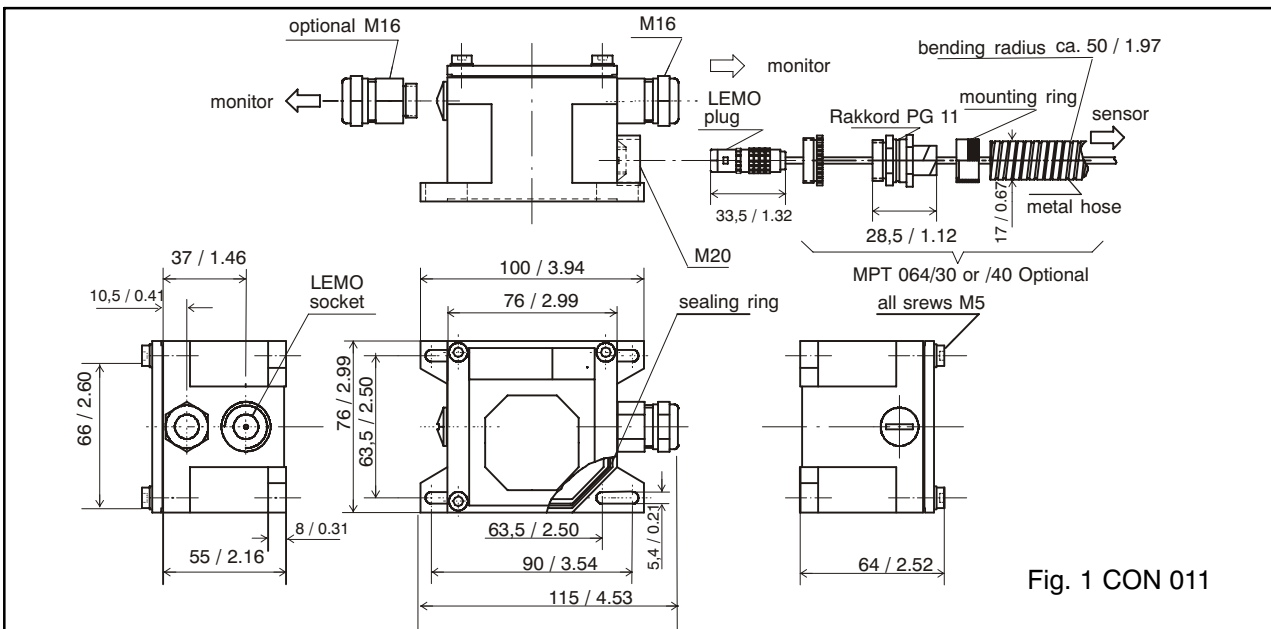


Fig. 1 CON 011

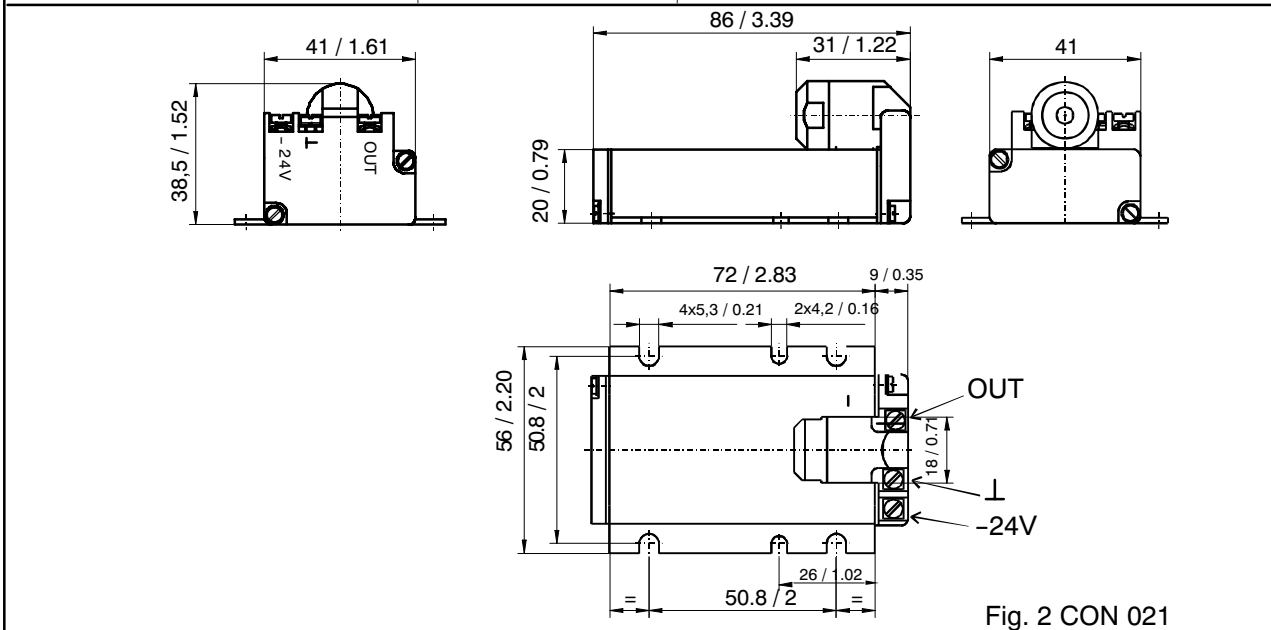


Fig. 2 CON 021

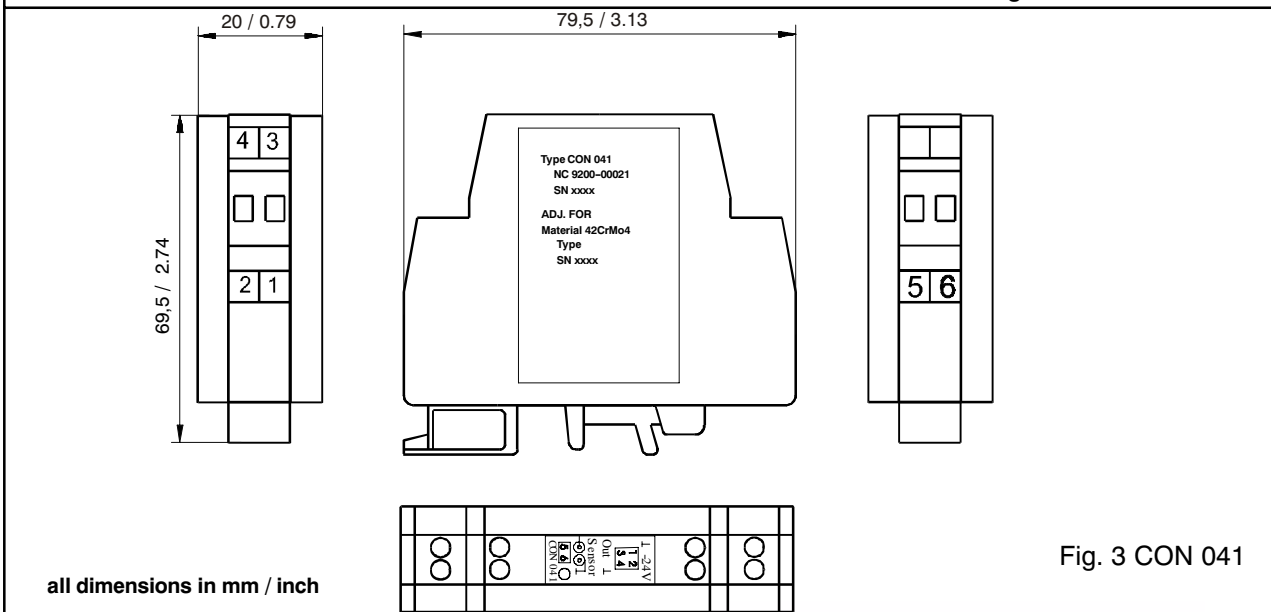
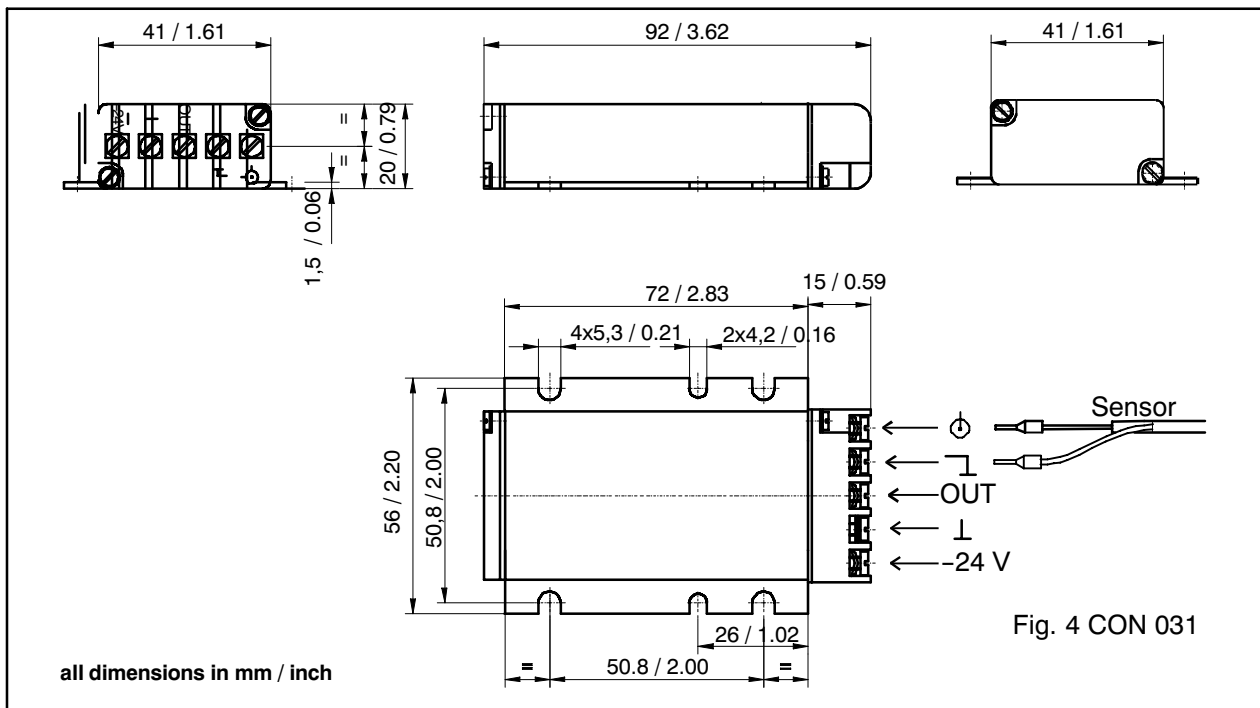


Fig. 3 CON 041

all dimensions in mm / inch

Dimensions:



Further informations:

Additional information on the function of transducer and converter are shown in the data sheet "Eddy current displacement sensor".

Further information on the converters for extended measuring ranges are shown in data sheet of the "Eddy current signal converters for extended measuring ranges".

For the wiring between converter and electronic we recommend using a cable of type LiYCY-CY 2x2x0,25.

Order numbers:

CON 011	Eddy current signal converter	9200-00001
CON 021	Eddy current signal converter	9200-00006
CON 031	Eddy current signal converter	9200-00007
CON 041	Eddy current signal converter	9200-00021

Order numbers of the safety barriers

Supply line	steel, type 9001/00-280/085/101	9500-00044
Measuring line	steel, type 9001/00-280/020/101	9500-00045



Installation and commissioning of the device may only be made by trained staff. The manufacturer is not liable for damages, caused by improper use or by operation errors of not authorized persons.