

# BODAS

## Pressure Sensor PR2

**RE 95 138/01.07** 1/8  
replaces: 01.05

### Technical data sheet

Thin film technology sensor to measurement pressure  
Series 10



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### Features

- Measurement range to 160, 250, 400, 600 bar
- Shock and vibration resistant
- Type of protection IP67 to IP69K
- Electric connection versions: male connector or cable
- Ratiometric output signal 0.5..4.5V @ 5V
- Additional versions upon request

# Ordering Code

<b>BODAS –</b>	<b>PR2</b>					<b>/</b>	<b>10</b>
	01	02	03	04	05		06

## Type

01	BODAS Pressure sensor	PR2
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## Pressure range

02	0 .. 160 bar	-160
	0 .. 250 bar	-250
	0 .. 400 bar	-400
	0 .. 600 bar	-600

## Mechanic connection (pressure side)

		160, 250, 400, 600	600	
03	G 1/4 in acc. to DIN 3852-E	●	–	G
	M 14x1,5 acc. to ISO6149-2	–	■	M

## Electric connection

04	AMP Superseal	●	–	S
	Cable output	○	–	K
	DEUTSCH DT04-3P	–	■	D

## Supply

## output signal

05	5 VDC ± 0,5 VDC	0,5 .. 4,5 VDC ratiometric	●	–	05
	8 .. 36 VDC	0,5 .. 4,5 VDC fixed (only PR2-xxxMD)	–	■	24

## Series

06	Series 1, Index 0	10
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● = available

○ = on request

– = not available

■ = only in the combination PR2-600MD24/10 available

## Material numbers

PR2-160GS05/10 \_\_\_\_\_ R902603031

PR2-250GS05/10 \_\_\_\_\_ R902603032

PR2-400GS05/10 \_\_\_\_\_ R902603033

PR2-600GS05/10 \_\_\_\_\_ R902603034

PR2-600MD24/10 \_\_\_\_\_ R902603210

Additional versions upon request.

## Description

This sensor serves for the measurement of pressure in hydraulic circuits. It is especially suited for use in mobile hydraulics due to its excellent features. Shock and vibration resistance, type of protection, resistance to pressure peaks, resistance to temperature shock, EMC characteristics (up to 100 V/m). The measuring principle uses a hermetically welded thin film measuring cell which provides long-term density. The sensor signal can be directly analyzed by a BODAS controller RC.

## Technical Data

**Table of values**

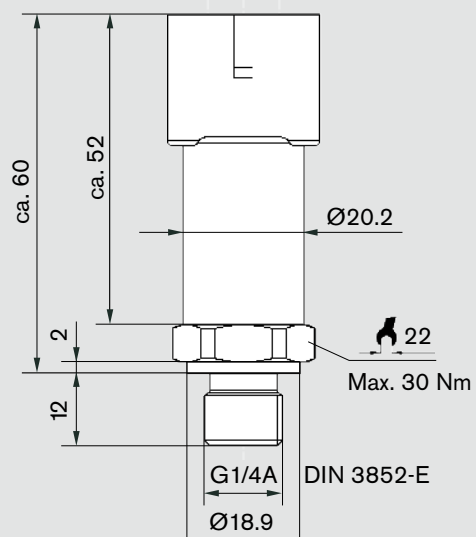
Measurement range 0..	bar	160	250	400	600
Overload limit	bar	320	500	800	1200
Bursting pressure	bar	1000	1200	1700	2400
Parts contacting measuring materials		Cr-Ni steel 316L and 1.4542 (17-4PH)			
Housing		Highly resistant fiberglass-reinforced plastic (PBT)			
Output signal, auxiliary power and load:		Output signal	Auxiliary power	Authorized max. burden	
		0,5 .. 4,5 V, ratiometric	5 V +/- 0.5 V DC	> 4,5 kΩ	
At M14x1,5/DEUTSCH-connector		0,5 .. 4,5 V, fixed	8 .. 36 VDC	> 4,5 kΩ	
Response time (10..90%)	ms	2			
Deviation in characteristic	% of tensioning	≤ 1,0 (cut-off point setting)			
	% of tensioning	≤ 0,5 (tolerance band setting BFSL)			
Reproducibility	% of tensioning	≤ 0,2			
Stability per year	% of tensioning	≤ 0,3 (for reference conditions)			
Medium temperature	°C	−40 .. + 125			
Ambient temperature	°C	−40 .. +100			
Storage temperature	°C	−40 .. +120			
Compensated range	°C	.. 0 .. +80			
Middle TK neutral point	% of tensioning	≤ 0,15 / 10K			
Middle TK of tensioning	% of tensioning	≤ 0,15 / 10K			
CE-identification		89/336/EWG emission and interference immunity according to EN 61 326			
Schock load capacity	<i>g</i>	500 according to IEC 60068-2-27 (mechanical shock)			
Vibration load capacity	<i>g</i>	20 according to IEC 60068-2-6 (vibration upon resonance)			
Electromagnetic compatibility (EMV)		100 V/m Irradiation: ISO 11452-2 intensity IV; emissions: ISO 14982			
Electrical protection		Protection from polarity reversal, overvoltage and short circuits			
Type of protection		IP67 (AMP Superseal) or IP69K (DEUTSCH DT04-3P, cable output) with mating connector set – see mating connector.			
Weight	g	approx. 70			

# Dimensions

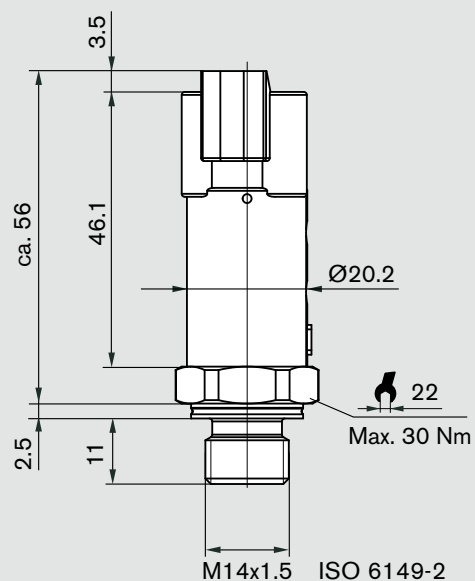
Dimensions in millimeters

## Electric connection

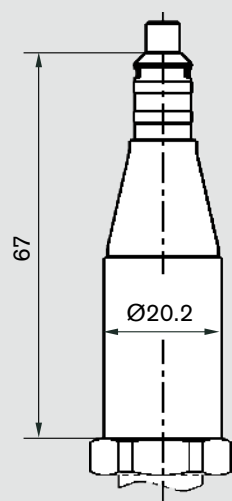
### AMP Superseal



### DEUTSCH DT04-3P

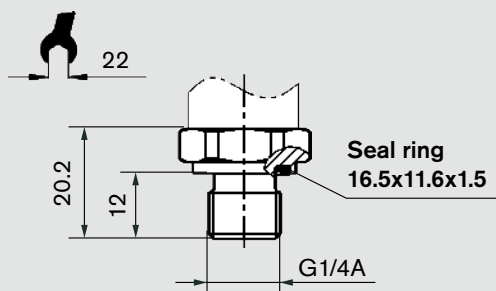


### Cable output

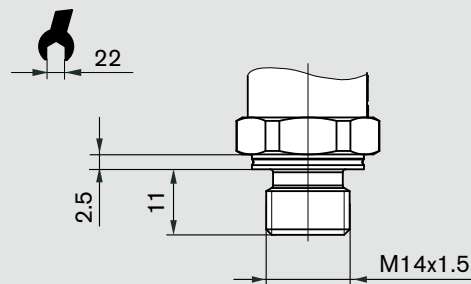


## Mechanic connection

### G1/4 to DIN 3852-E

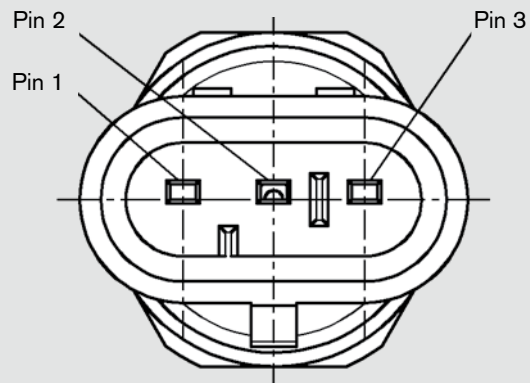


### M14x1,5 to ISO6149-2



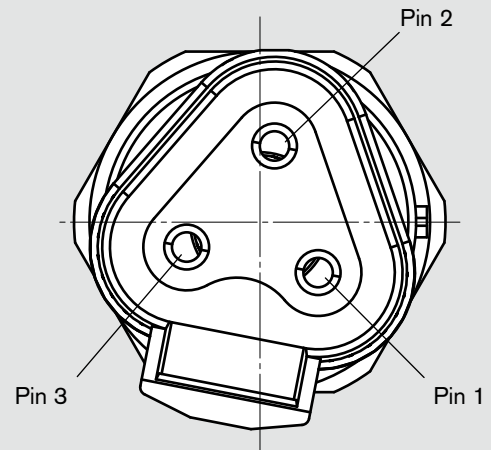
# Pin Assignment

## AMP Superseal



Pin 1: 0V/Signal –  
Pin 2: Signal +  
Pin 3: Supply voltage UB+

## DEUTSCH DT04-3P



Pin 1: 0V/Signal –  
Pin 2: Signal +  
Pin 3: Supply voltage UB+

## Cable output

green: 0V / Signal –  
white: Signal +  
brown: Supply voltage UB+

# Mating Connector

## Order designations for mating connector

### Type AMP Superseal

Designation	Material numbers
<b>Mating connector set</b>	<b>R902602132</b>
1x female connector housing 3-pin	AMP 282087-1
3x single-wire seals, yellow	AMP 281934-2
3x female connector contacts 1,8-3,3 mm	AMP 183025-1

### Type DEUTSCH DT04-3P

Designation	Material numbers
<b>Mating connector set</b>	<b>R902603524</b>
1x housing 3-pin	DT06-3S-EP04
1x chock	W3S
3x female connector	0462-201-16141

The mating connectors are not included in supply.

These are available under the appropriate material numbers with Rexroth.

# Commissioning / Service

## General:

The described pressure sensors are designed and produced according to the latest technology. All components are subject to the strictest quality criteria during production.

**Note:** Please inspect the device for any damages which may have occurred during transport. If there are obvious signs of damage, please immediately inform the transport company and Rexroth.

In spite of taking great care in preparing this document, all conceivable application cases could not be taken into account.

If information is lacking for your specific application, please contact Rexroth.

The technical specifications regarding accuracy provided in the data sheet are reached after a warming up period of approx. 10 minutes.

## Safety instructions:

Prior to installation, commissioning and operation, make certain that the correct pressure measurement device was selected with respect to measurement range, design and – based on the specific measurement conditions – parts which are in contact with measuring materials (corrosion). Furthermore, the respective national safety regulations (eg. EN50178) are to be observed.

Failure to observe the respective regulations may result in serious bodily injury and/or property damage.

Only allow pressure measurement devices to be installed by trained and specialist personnel who are authorized by the system owner.

Please observe the operating parameters as specified in the 'Technical data'. Operation other than that described in the this manual is considered unintended use and must, therefore, be precluded. If faults cannot be rectified, the device is to be taken out of operation and protected against accidentally being commissioned. Repairs must only be performed by the manufacturer. Changes and modifications to the device are not permitted.

Do not exceed the overload limit of the respective measurement range!

Connections must only be opened while in a depressurized state!

Residual measurement materials in unmounted pressure measurement devices could endanger people, the environment and equipment. Take appropriate precautionary measures.

The suggested circuits do not imply any technical liability for the system on the part of Rexroth.

Cables to sensors must be shielded. The shield must be connected to the electronics on one side or to the machine or vehicle ground via a low-resistance connection.

Cables to the electronics must not be routed close to other power-conducting cables in the machine or vehicle.

A sufficiently large distance to radio systems must be maintained.

All connectors must be unplugged from the electronics during electric welding operations.

## Service:

PR2 pressure sensors are maintenance-free!

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Subject to change.