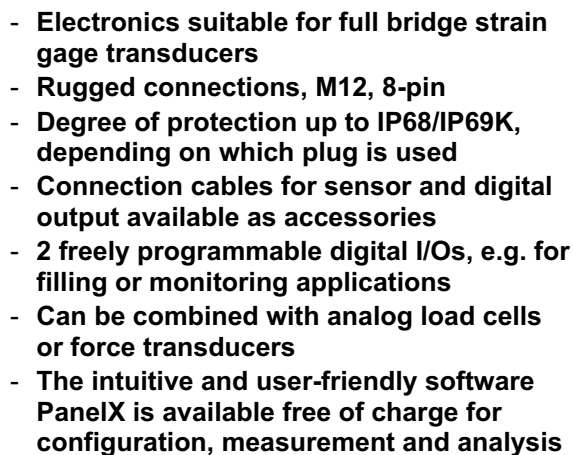
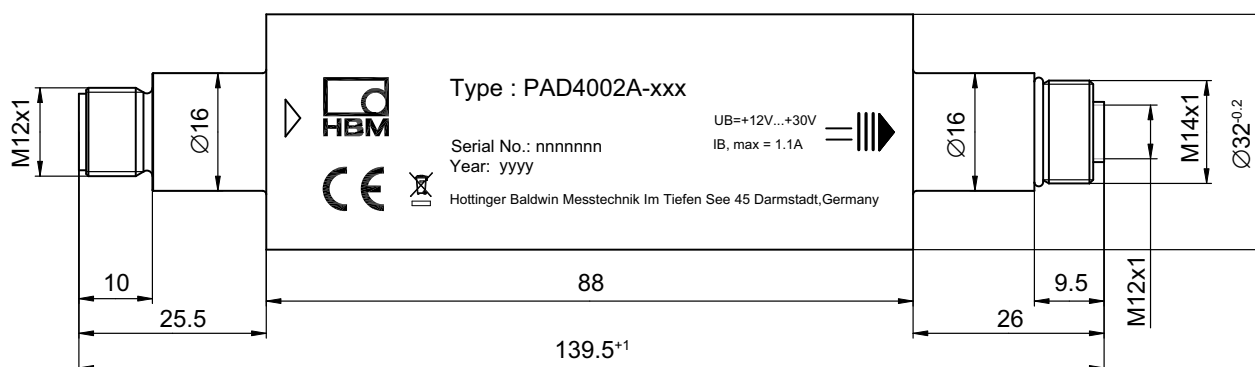


Data sheet

Special features



Plug connection: M12 design



Specifications

Type		PAD4002A-RS4, PAD4002A-CAN
Suitable for transducer types		Full bridge strain gages
Maximum number of calibration values as per OIML R76, Class III, IIII	d = e	6000 ¹⁾
Multi-range applications	d = e	2 x 3000 ¹⁾
Rated electrical output		
Input sensitivity		
legal-for-trade mode	μV/e	≥ 0.5
industrial mode	μV/d	≥ 0.1
Measurement range	mV/V	nominal ± 2, max. ± 3,2
Minimum transducer resistance	Ω	300
Maximum transducer resistance		1200
Transducer excitation voltage (carrier frequency 1.2 kHz)	V _{AC}	5
Load cell connection		4-wire circuit
Maximum cable length to transducer ¹⁾	m	6
Temperature coefficient of the zero signal per 10 K	%	± 0.0055
Temperature coefficient of the sensitivity per 10 K ²⁾		± 0.0083
Non-linearity ²⁾	% of meas. range	± 0.0025
Power supply		
Supply voltage U _B (DC)	V	+12 ... +30, nominal 24 V
Power consumption (350 Ω transducer resistance)	W	≤3
Max. current	A	1.1
Digital signal conditioning		
Measurement signal resolution	bit	24
Resolution of nominal measuring range	digits	5,120,000
Sample rate	1/s	4 ... 1200
Digital filter bandwidth	Hz	0.1 ... 120
Tare range (subtractive)		
legal-for-trade mode	% of meas. range	+100
industrial mode		± 100
Range of zero setting		
legal-for-trade mode	% of meas. range	±2
industrial mode		±2
Interfaces		
Max. number of bus nodes		90
CANopen interface		
Bit rate	bit/s	Standard CiA DS301
Maximum cable length	m	10,000 ... 1,000,000
		≤5000 (10 kbit/s) ... ≤100 (500 kbit/s) ... ≤25 (1 Mbit/s)
RS-485 interface		
Bit rate	bit/s	9600/19,200/38,400/57,600/115,200
Maximum cable length	m	50
Digital HCMOS input ³⁾		
Allowed input voltage	V	0 ... +12
Low level	V	< 1
High level	V	> 4
Input resistance	kΩ	70

Type		PAD4002A-RS4, PAD4002A-CAN
Digital PLC input ³⁾		
Allowed input voltage	V	0 ... +30
Low level	V	< 6
High level	V	> 10
Input resistance	kΩ	9
Control outputs ³⁾		
External supply voltage	V	11 ... +30
Max. current per output	A	< 0.5
Max. total current of all outputs	A	< 1
General information		
Nominal (rated) range of the ambient temperature	°C	-10 ... +40
Operating temperature range		-10 ... +50
Storage temperature range		-25 ... +75
Allowed relative humidity	%	10 ... 90
Degree of protection per EN 60529 (IEC 529)		IP68/69K ⁴⁾
Weight, approx.	kg	0.4
Material		
Housing		Stainless steel
Male connector		PVC

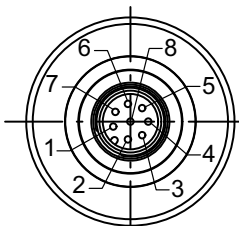
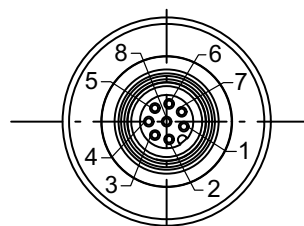
1) Depends on the sensor-sided cable length: 6000 e or 2 x 3000 e up to 3 m.

2) The values for non-linearity and temperature coefficient of sensitivity are recommended values. The sum of these values is within the accumulated error limit specified by OIML R76.

3) The electronics have 2 digital I/Os that can each be connected as a control input or an output, as required. Additional information can be found in the mounting instructions and in the command documentation.

4) When connectors and connection cables are fitted with the appropriate type of protection.

Electrical connection, PAD4002A

<p>Transducer connection</p>  <p>M12 connector, 8-pin</p>		<p>Digital output</p> 	
		<p>Connector socket, 8-pin; this side has an M12 internal thread (for HBM cable 1-KAB165) and an M14 external thread (for HBM cable 1-KAB173); commercially available M12 plugs can be connected via the M12 internal thread.</p>	

Pin	Transducer connection
1	Measurement signal (+)
2	Not in use
3	Additional excitation voltage line (+)
4	Not in use
5	Additional excitation voltage line (-)
6	Bridge excitation voltage (-)
7	Bridge excitation voltage (+)
8	Measurement signal (-)

Pin	Digital output	
	RS-485	CANopen
1	GND	GND
2	IN2/OUT2	IN2/OUT2
3	RA	CAN High IN
4	IN1/OUT1	IN1/OUT1
5	RB	CAN Low IN
6	TB	CAN Low OUT
7	TA	CAN High OUT
8	U _B	U _B

A 4-wire cable is sufficient for connecting the transducer. If you use a 6-wire cable, you must directly connect the bridge excitation voltage and the additional line at the transducer, always plus to plus (7 and 3) and minus to minus (6 and 5), to avoid interference effects. This is already the case in the specified HBM cables.

Product numbers

Type	Explanation	Ordering number
PAD4002A-RS4	1 plug for transducer connection, 1 RS-485 socket for output, with digital inputs/outputs	1-PAD4002A-RS4
PAD4002A-CAN	1 plug for transducer connection, 1 CAN socket for output, with digital inputs/outputs	1-PAD4002A-CAN

Installation advice

The diameter of the housing fits into commercially available mounting clamps for electrical installation (size M32).

Accessories

The (free) setup and evaluation software PanelX is available to download from the HBM website: www.hbm.com → Services & Support → Downloads → Firmware & Software → PanelX.

Suitable connection cables (digital output connector socket)

Type	Ordering number
Connection cable with M12 M plug, 8-pin, stainless steel IP68/IP69K, TPE cable sheath, 3 m long ¹⁾	1-KAB173-3-1
Connection cable with M12 M plug, 8-pin, stainless steel IP68/IP69K, TPE cable sheath, 6 m long ¹⁾	1-KAB173-6-1
Connection cable with M12 M plug, 8-pin, IP67, PUR cable sheath (halogen-free), 3 m long ²⁾	1-KAB165-3
Connection cable with M12 M plug, 8-pin, IP67, PUR cable sheath (halogen-free), 6 m long ²⁾	1-KAB165-6
Connection cable with M12 M plug, 8-pin, IP67, PUR cable sheath (halogen-free), 12 m long ²⁾	1-KAB165-12

¹⁾ For connecting to the M14 external thread of the PAD4002A.

²⁾ For connecting to the M12 internal thread of the PAD4002A.

Suitable connection cables (connector plugs for transducer connection)

Type	Ordering number
Connection cable with M12 M plug, 8-pin, hygienic version (aseptic), 3 m long	1-KAB175-3-1
Connection cable with M12 M plug, 8-pin, hygienic version (aseptic), 6 m long ¹⁾	1-KAB175-6-1
Connection cable with M12 M plug, 8-pin, hygienic version (aseptic), 12 m long ¹⁾	1-KAB175-12-1
Connection cable with M12 M plug, 8-pin, TPU IP67, PUR cable sheath (halogen-free), 5 m long	1-KAB168-5
Connection cable with M12 M plug, 8-pin, TPU IP67, PUR cable sheath (halogen-free), 20 m long	1-KAB168-20

¹⁾ Connection cables more than 6 m long are not suitable for legal-for-trade use.

Additional connection cable data can be found in the HBM Cables and Plugs data sheet (B3643).

Suitable cable couplings for 1-KAB175-3-1, 1-KAB175-6-1 and KAB168-5

Type	Ordering number
Connection plug for HBM transducer cable KAB175/KAB168 incl. shrink hose	1-CON-S3003
Connection plug for HBM transducer cable KAB175/KAB168 incl. shrink hose, 90° angled	1-CON-S3004

Subject to modifications.

All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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