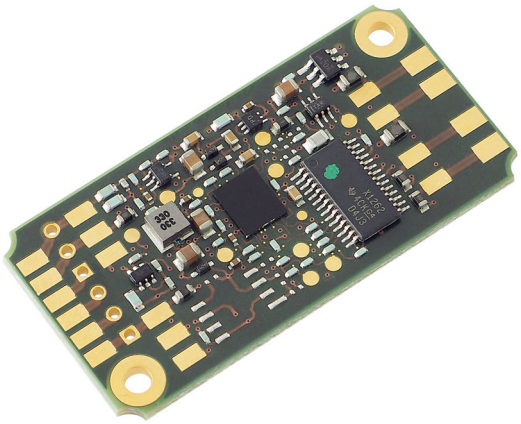
DATA SHEET

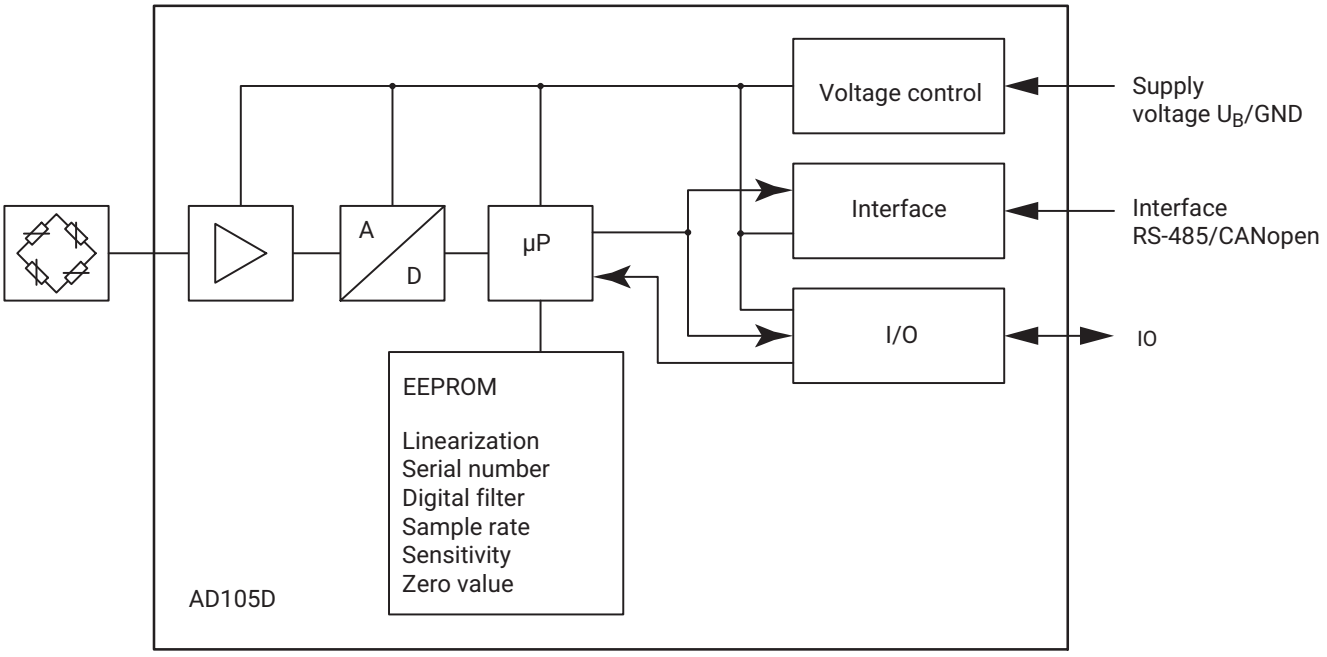
AD105D
Digital transducer electronics

SPECIAL FEATURES

- Electronics for strain gage full bridge sensors to measure weight, force, pressure, strain
- Digital filtering and scaling of the measurement signal
- Limit value output with hysteresis
- Power fail safe parameter storage
- Freely configurable I/O and LEDs
- Variant with 2-wire RS485 or CAN interface (UART)
- Intuitive and user-friendly PanelX software for parameter setup, configuration, measurement and analysis, including extensive online documentation



BLOCK DIAGRAM



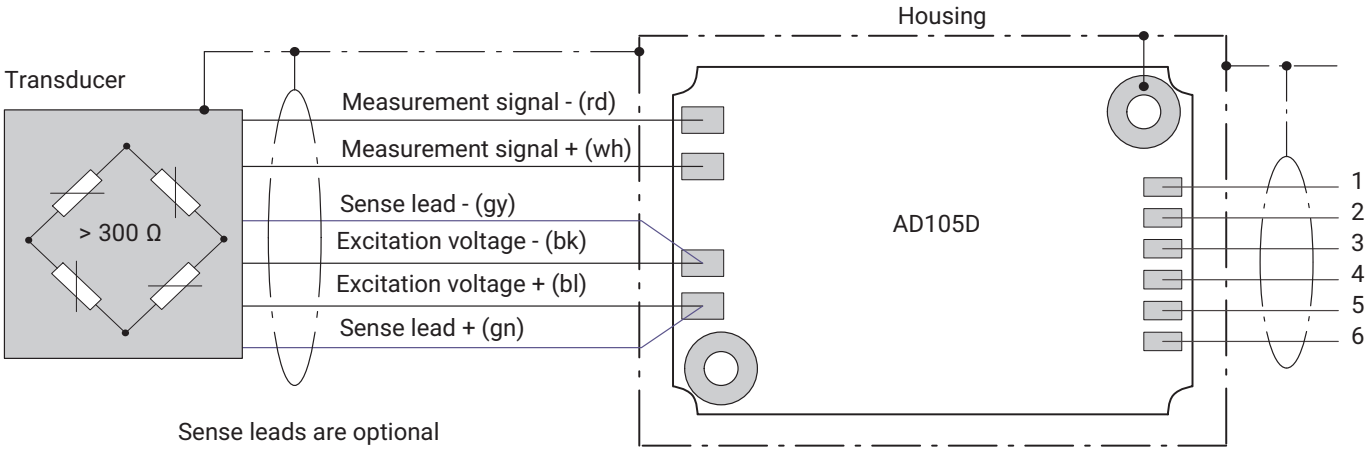
SPECIFICATIONS

Type		AD105D
Suitable for transducer types		DMS-Vollbrücken
Maximum number of load cell verification intervals with an accuracy of ≥ 0.5 µV/d	d	6000
Rated electrical output		
Bridge resistance, transducer	ohm	300 ... 1200
Bridge excitation voltage (carrier frequency 1.2 kHz)	V_{AC}	5 (square-wave)
Load cell connection		4-wire circuit
Maximum cable length to transducer	m	3
Max. measuring range	mV/V	±3.0
Nominal sensitivity (when delivered from factory)	mV/V	2.0
Measurement signal resolution	bit	24
Sample rate (adjustable)	Hz	200 ; 100 ; 50 ; 25 ; 12 ; 6 ; 3 ; 2 ; 1
Cut-off frequency of digital filter, adjustable ; at -3dB	Hz	20 ... 0.01
Linearity deviation, related to sensitivity	%	±0.0025
Zero drift at 0 mV/V **related to the full-scale value**	%/10 K	±0.002
Full-scale drift at 2 mV/V **related to the measured value**	%/10 K	±0.005
Supply voltage	V	+7 ... +30, nominal 24 V
Supply current (350 Ω transducer resistance)	mA	≤70
Interfaces		
Max. number of bus nodes		90
CAN interface (CANopen) Baud rate Maximum cable length	 baud m	Standard CiA DS301 10000 ... 1000000 ≤5000 (10 kBaud) ... ≤100 (500 kBaud) ... ≤25 (1 MBaud)
Asynchronous interface, 2-wire RS485 Baud rate Maximum cable length	 baud m	 1200 ... 115200 50
Digital input		
Number		1 signal
Functions		Zero balance, tare balance, limit value reset, digital output, (adjustable) trigger
Input signal range (PLC level) [1)]	V	0 ... 30
Maximum permitted input signal range	V	30
Low input status	V	0 ... 6
High input status	V	10 ... 30
Input signal range (HCMOS level)	V	0 ... +12
Low level	V	<1
High level	V	>4
Input resistance (nominal)	kΩ	8.4
Cable length, max.	m	100
Cable type (required in the event of interference)		shielded
Digital output		
Number		1
Type		Open collector output (OC)
Functions		Limit value switch (adjustable)

Switching time	ms	6
Input voltage (24 V nominal) U_{IN}	V	6 ... 30
Output switching current, max.	mA	60
Voltage level, minimum	V	3
Cable length, max.	m	100
General information		
Nominal (rated) temperature range	°C	-10...+40
Operating temperature range	°C	-10...+50
Storage temperature range	°C	-25...+75
Rel. humidity	%	5 … 95 (non-condensing)
Degree of protection acc. to DIN EN 60529 (IEC 529)		IP 00
Dimensions (L x W x H)	mm	45 x 22.5 x 7
Weight, PCB, approx.	g	50

1) Factory setting

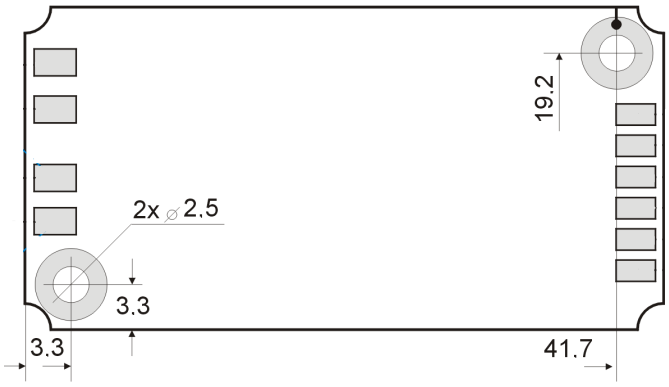
PIN ASSIGNMENT AD105D



Pin	Digital interface	
	RS485-2-wire	CAN
1	GND	GND
2	Ub 7 ... 30 V	Ub 7...30 V
3	T/RB	CAN Low
4	T/RA	CAN High
5	Digital Out (OC)	Digital Out (OC)
6	Digital In	Digital In

DIMENSIONS AND CONNECTIONS

Printed circuit board: L x W x H: 45 x 22.5 x 7 mm



SOFTWARE FOR AD105D

- PC software: PanelX
- Download: https://www.hbm.com/en/4825/panelx-weighing-and-operating-software/

Notice: The software package for parameterizing and adjusting the AD105D can be downloaded free of charge from the HBM website. It contains extensive online help and a description of the commands.

Attention: The AD105D motherboard is not protected against electrostatic electricity. Relevant precautions must be taken when installing it in the transducer.

Important information for EMC protection:
The AD105D must be housed in a shielding enclosure. The cables must be shielded. The cable shields are connected to the load cell and the housing of the AD105D.

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