



The analog input module AI43Ex is used for the connection of potentiometers in 3 or 4-wire technology. If 3-wire potentiometers are used, the terminals at the module rack have to be bridged. Resistance measurements, i.e. the evaluation of potentiometers with a 2-wire connection, is not possible.

The module has four field circuits to control 3 or 4-wire potentiometers. The field circuits are galvanically isolated from the power supply, from the internal bus and from each other. The module features protection class Ex ib IIC and can be mounted in zone 1 in combination with excom®. The explosion protection category of the inputs is Ex ia IIC.

Each potentiometer input is monitored for wire break. The interruption of a single connection line is securely detected, as well as any combination of interruptions occurring at the four input connection lines. Short-circuit monitoring is not carried out. In case of a line error, the programmed substitute value is immediately output and the output value is set to 'invalid-bit'. This state is maintained until valid measured values are provided again.

The resolution is 14 bit. For clear reading, 0... 100% is digitized and displayed in a range of 0 ... 10000 (independent of the parametrized measuring range) and transmitted to the host system.

- **Input module for the connection of potentiometers**
- **Complete galvanic isolation**

Potentiometer Module, 4-channel
AI43EX

Type designation	AI43EX
Ident-No.	6884137
Supply voltage	via the backplanes, central power supply
Power consumption	≤ 1.5 W
Galvanic isolation	Complete galvanic isolation acc. to EN 60079-11
Number of channels	4-channel
Input circuits	Intrinsically safe acc. to EN 60079-11
	Potentiometer
Nominal resistance	400 Ω ... 12 kΩ
Resolution	14 Bit
Linearity deviation	≤ 0.1 % full scale
Temperature drift	≤ 0.005 % of full scale/K
Rise time/fall time	≤ 50 ms (10...90 %)
Max. measurement tolerance under EMC influence	≤ 0.1 % with shielded signal cable ≤ 1 % with unshielded signal cable
Ex approval acc. to conformity certificate	PTB 06 ATEX 2026
Device designation	Ⓔ II 2 (1) G Ex ib [ia Ga] IIC T4 Gb
Indication	
Operational readiness	1 x green / red
State/ Fault	4 x red
Housing material	Plastic
Connection mode	module, plugged on rack
Protection class	IP20
Ambient temperature	-20...+70 °C
Relative humidity	≤ 93 % at 40 °C acc. to EN 60068-2-78: test cab
Vibration test	acc. to IEC 60068-2-6
Shock test	acc. to IEC 60068-2-27
EMC	acc. EN 61326-1 (2013) acc. to Namur NE21 (2012)
MTTF	71 years acc. to SN 29500 (Ed. 99) 40 °C
Dimensions	18 x 118 x 106 mm
Approvals	ATEX TR CU CMI GL DNV BV LR

Dimensions

