

Actuators & Positioners P/I Converters - TEPI for Standard Signals

0.2 ...1 bar/3....15psi
to 4....20mA

- Strain gauge sensor for overpressure
- For input signal 0.2...1 bar or 3...15 psi
- Linear characteristics, max. deviation 0.5%
- Output signal 4...20 mA, two-wire
- Supply voltage 12...30 V DC
- Intrinsically safe, ATEX EEx ib IIC T6
- Complies with the directives for EMC and CE conformity
- Compact design, low weight
- Any mounting orientation
- Robust construction, immunity to shock and vibration
- Different designs
 - for rail mounting
 - for field mounting IP 65 (NEMA 4X)



Series P/I Signal Converters
for Standard Signals

Construction & Working Principle

The signal converter transforms the 0.2...1 bar or 3...15 psi input signal into the 4...20 mA output signal.

The input pressure measured by the strain gauge sensor is fed into the subsequent electronic circuit which then converts it into the output signal in proportion to the measured value.

The electronic circuit is designed as a two-wire circuitry, i.e. the same pair of wires is used for the power supply current and the output signal. Secondary units such as display units, recorders or controllers have to be looped into the circuit.

A direct voltage between 12...30 V is required for power supply.

The TEPI 11 signal converter is also available as an intrinsically safe unit. In this case a power supply or supply isolator approved for intrinsically safe operation is required.

Technical Data

Input

Meter mechanism	Strain gauge sensor with silicon diaphragm (on rail mounting unit) or ceramics diaphragm (on field housing unit)
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Input	0.2...1 bar or 3...15 psi (other ranges on request)
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Overload limit	2 bar or 30 psi
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Output

Signal range	4...20mA, two-wire
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Load voltage	$U_L = U_S - 12\text{ V}$ ($U_S =$ supply voltage V)
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Capacitance/ Inductance	15 nF and 90 μ H
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Power Supply

Supply voltage	12...30 V DC, ripple $U_{pp} \leq 0.2\text{ V}$
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Current Consumption	20 mA (at 100% input signal)
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Transmission Data and Influences

Characteristic curve	Linear, rising or falling
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Characteristic deviation	$\leq 0.5\%$
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Hysteresis	$\leq 0.15\%$
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Sensitivity	$\leq 0.1\%$
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Ambient temperature (zero and span)	$\leq 1.4\% / 10\text{ K}$ for rail-mounting unit $\leq 0.4\% / 10\text{ K}$ for field housing unit
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Power supply	$\leq 0.015\% / \text{V}$ supply voltage change
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Influence of mechanical vibrations	$\leq 0.5\%$ up to 1 g and 80 Hz
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Mounting orientation	$\leq 0.1\%$ at change of 90°
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EMC	Meets EMC directive 89/336/EEC as of May 1989
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CE conformity mark	Meets requirements of the EC standard for the CE conformity certification
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Environmental capabilities

Climate class	ZUF acc. to DIN 4004 Temperature -20...+60°C for operation -20...+80°C for transport and storage Relative humidity $\leq 75\%$, 95% for a short time non-condensing
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Explosion protection	ATEX Intrinsically safe, EEx ib IIC T6
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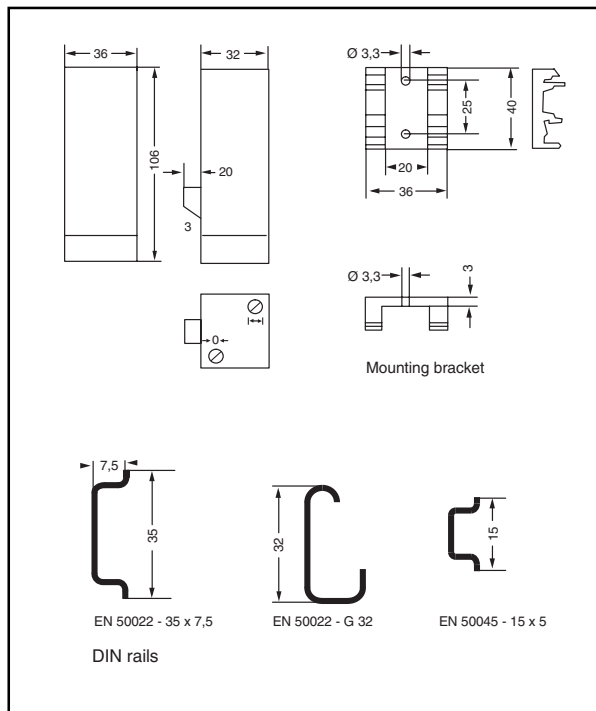
Control Room Housing Unit

Material	Aluminum housing with plastic cap
Degree of Protection	IP 20
Mounting	Mounting rail EN 50022 - 35 x 7.5 or EN 50035 - G32 or EN 50045 - 15 x 5
Electrical Connection	Screw terminal for 2.5 mm ²
Pneumatic Connection	1/8 NPT thread
Mounting Orientation	As required
Weight	0.2 kg
Dimensions	See dimensional drawings

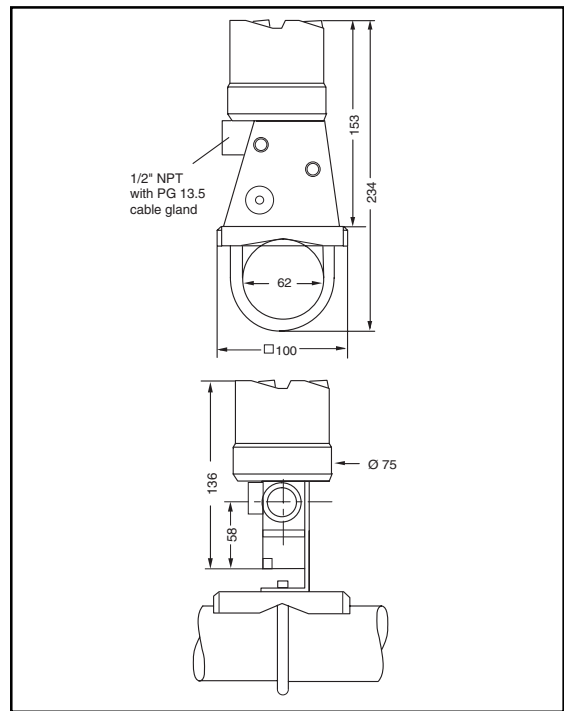
Field Housing Unit

Material	Aluminum housing Bottom part of housing varnished black, RAL 9005 Cover varnished light gray, RAL 9002 Stainless steel mounting bracket
Degree of Protection	IP 65 (NEMA 4X)
Mounting	Mounting bracket for wall mounting or 2" pipe mounting
Electrical Connection	PG 13.5 cable gland and 2-pole screw terminal for 2.5 mm ²
Pneumatic Connection	1/4 NPT thread
Mounting Orientation	As required
Weight:	Signal converter: 0.6 kg Mounting bracket: 0.5 kg
Dimensions:	See dimensional drawing

Dimensional Drawings



Control room unit



Field unit

Ordering Information

Model Code	V18321-	—	—	—	—	—
	01 - 07	08	09	10	11	12
Design/Explosion Protection						
With control room housing for railing mounting						
Standard		1	0	0		
ATEX Intrinsically safe EEx ib IIC		5	0	0		
With aluminum field housing, IP 65						
Standard		0	0	1		
ATEX Intrinsically safe EEx ib IIC		0	0	5		
Characteristic Curve						
Rising					1	
Falling					2	
Input Signal Range						
0.2 - 1 bar					1	
3-15 psi					2	
Accessories						
Mounting bracket for field housing						
Stainless steel mounting bracket for wall or 2" pipe mounting						18381-0319345
Instruction Manual: <i>(One copy is supplied with order)</i>						

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