



Pt-100 Two-Wire Transmitter Ex

Applications

- 4...20mA transmitter for Pt100 temperature sensors in gasiform explosive atmosphere (zone 0, 1 und 2)
- for installation in temperature sensor (e. g. TFP-40...TFP-90)
- Ex-certificate Demko EEx ia IIC T5/T6, ATEX II 1G
- Sensor monitoring
- completely potted module
- temperature linear, EMC compatible 4...20mA signal

Options

- special measurement ranges
- Pt100 connection in 3- or 4-wire

Features

- Ex-transmitter power supply KFD2-STC4-Ex for mpu-4-ex



KFD2-STC4-Ex



mpu-4-ex



Specification

Housing	plastics style mpu-4-ex mounting	PA6GV30 Ø44x19mm 2x thread M4, distance 33,0mm
Protection class		IP 40
Temperature range	ambient storage temperature	-40...+85°C -55...+90°C
Humidity	without condensation	0...98%
Electr. connection	screw clamp	4x1,5mm ²
Input	Pt100 sensor	two-wire connection
Output	current loop	4...20mA
Ranges	standard smallest range max.	-10...+40°C; 0...50/ 100/150/200°C 25 K -200...+850°C
Reproducibility		<±0,1% of full scale
Temperature drift		<0,01%/K
Overflow		23mA / 3,5mA
Sensor error	short circuit wire break	<-225°C >875°C
Supply		8...28VDC
	ripple	≤±5%

Security relevant parameters

Certificate	Demko	EEx ia IIC T5/T6 ATEX II 1G
Supply		8...28VDC
Inductivity internal		L _i ≤ 10µH
Capacity internal		C _i ≤ 10nF
Temperature class	T1...T5: T6:	-40°C < T _{amb} < 85°C -40°C < T _{amb} < 50°C
Barrier specification	voltage current power	U ≤ 28VDC I ≤ 0,1A P ≤ 0,7W

EMC

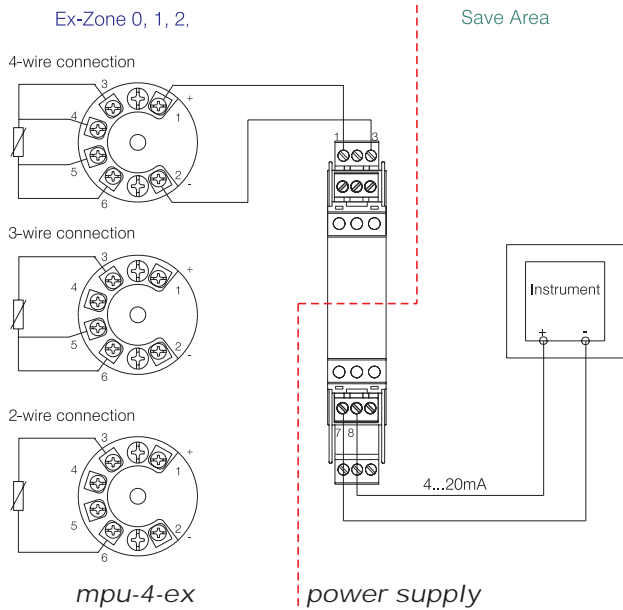
Normal standards		EN 61000-6-3, EN 61000-6-2
Product standard		EN 61326
NAMUR		NAMUR NE21

Order Code

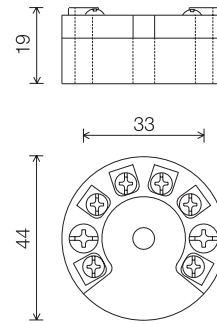
Device	Style
mpu-4-ex KFD2-STC4-Ex	transmitter 4...20mA Ex-transmitter power supply
Order example: with sensor:	mpu-4-ex / 0-150°C TFP - 41 / 100 / mpu-4-ex / 0-100°C



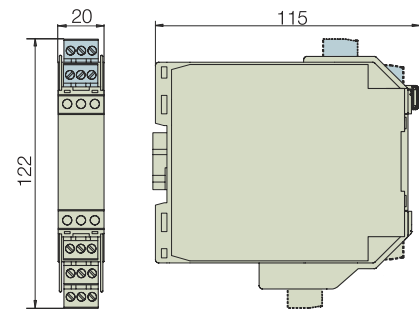
Electrical connection



Drawings mpu-4-ex



Power supply KFD2-STC4-Ex made by Pepperl+Fuchs



Installation possibilities of mpu-4-ex in temperature sensor TFP-...

Process connection	Temperature sensor
M12x1,5 hygienic	TFP-42
M12x1,5 hygienic	TFP-52
G1/2" hygienic	TFP-41
G1/2" hygienic	TFP-44
G1/2" hygienic	TFP-51
G1/2" standard	TFP-40
G1/2" standard	TFP-50
without thread	TFP-49
with fermenter coupling	TFP-90
with G3/8" cap nut	TFP-58

Instrument label

ATEX II 1G EEx ia IIC T5/T6

- II** Instrument group
For all applications in explosive atmosphere, but not for mine opening.
- 1G** Instrument category
For permanent gasiform explosive atmosphere.
- EEX ia** Electrical instrument for explosive atmosphere
Protection class "inherently safe"
Define requirement on the current loop acc. capacity, resistor and inductivity. While normal running or occur of two failures in every combination, no explosion is allowed.
- II** Explosion group
For all applications in explosive environment, but not for mine opening.
- C** Further classification of explosion group for inherently safe
Highest class. Instrument is tested by gas with low ignition energy e.g hydrogen.
- T5/T6** Temperature class
The max. possible surface temperature of the instrument is 85°C and it is certified for gases with a ignition energy of 85°C to 100°C (e.g. carbon disulfide).

Important:

for more technical information please use the separate product information of Pepperl+Fuchs!

General Advise

- The transmitter were produced and tested acc. to the guidelines EN 50081 and EN 50082 and were dispatched in good condition. To sustainable this condition and to ensure a faultless function, you have to note the following advises and cautions. Otherwise injuries and material damages are possible. A faultless and save function is guaranteed only by careful transport, storage, installation and operation.

Safety and Installation Advises

- Mind the installation guidelines for electrical instruments acc. EN 60079-14 (installation) and EN 60079-17 (maintenance)
- Installation guideline for appropriate inherently save instruments must be fulfilled
- In the certificate of conformity mentioned "special conditions for a save running" must be fulfilled
- The transmitter must be installed in a way that the ambient temperature is not higher than 85°C (note the intrinsic heating!)

- For the cables, take care that the max. inductivity and capacity of the respective voltage and group of gas are not overstep
- The connection cables must be screened

- Note that you don't get a correct output if the measurement range will be fall below or will be overstep (3,5mA / 23,0mA)

- The instrument must be installed by a specialist acc. to EMC guideline
- The maintenance is allowed by a educated person only

ATEX application

- The mpu-4-ex is approved by DEMKO for EEx ia T/5/T6 and ATEX II 1G in accordance to the current guideline for zone 0, 1 or 2
- The mpu-4-ex is allowed to run in a 4...20mA current loop only
- The mpu-4-ex can't be repaired and must be replaced completely in case of failure
- The transmitter is maintenance-free. Only the wire connection must be checked on being fixed correctly
- The transmitter must be mounted in a housing

Commendation

- The electrical connections must be in accordance to the country-specific guidelines
- To avoid EMC problems, we suggest to use screened and twisted cables
- The power supply cables must be passed separately from the input cables
- The connection must be in accordance to the connecting diagram

Attention

- The electrical connection and the start-up of the instrument in explosive atmosphere must be in accordance to the certificate of conformity and the country-specific laws for the installation of electrical instruments in explosive atmosphere
- The inherently save versions must be connected with a approved inherently save power supply with the respective electrical values

Certificate of acceptance

Aussteller / Manufacturer:

Negele Messtechnik GmbH
Raiffeisenweg 7
87743 Egg an der Günz
Germany

Ex-Schutz Konformitätserklärung
Ex Confirmation Certificate

Technische Beschreibung / Technical description

Typenbezeichnung / Type:	mpu-4-ex
Bauform / Design:	Ø 44mm x 19mm
Material / Material:	Kunststoff / Plastic PA6GV30
Anschluss / Connection:	4 Schraubklemmen 1,5mm ² 4 Clamp screws 1.5mm ²

Das oben benannte Gerät entspricht folgenden gültigen Ex-Schutzrichtlinien:
The above mentioned unit complies with the following valid Ex-guidelines:

94/9/EG
Explosionsschutz Richtlinien ATEX
EN 50014: 1997 E incl. A1+A2
EN 50284: 1999 E
EN 50020: 2002 E

Das Gerät erhält folgende Kennzeichnung:
The unit is marked as follows:  II 1G EEx ia IIC T5/T6

Diese Konformitätserklärung ist rückführbar auf das EC-Typ Prüfzertifikat mit der Nummer:
This confirmation certificate is according to the EC-Type Examination Certificate No:

DEMKO 04 ATEX 136929X vom 26.04.2004

Ort, Datum:

City, Date: Egg a. d. Günz, 26.04.2004

Unterschriften:
Signatures:



Negele Messtechnik



Qualitätssicherung