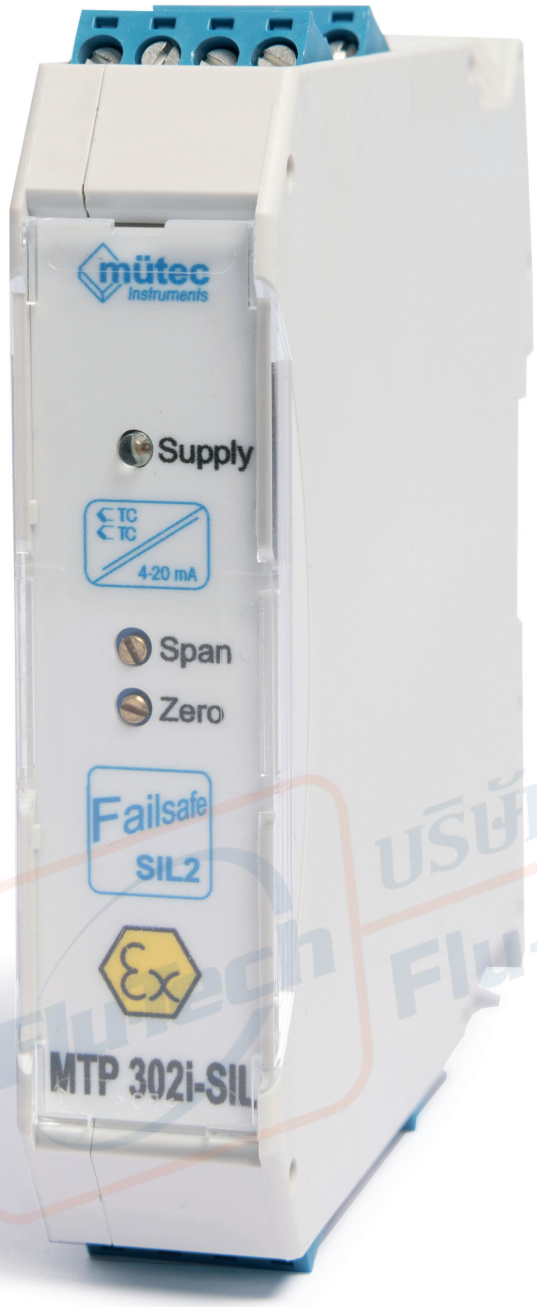


MTP 302i

Failsafe High Speed Thermocouple Transmitter

RISKNOWLOGY SIL Certified Product
Safety Integrity Level SIL2 IEC 61508 / IEC 61511
TÜV NORD Zertifizierung

Application

The MTP 302i has been specially developed for processes where safety and reaction speed are crucial. A typical example is high-pressure polymerization processes such as those used in the production of LDPE.
A high degree of integration allows transmitting temperature values in less than 4 ms. The MTP 302i features an additional 4-20 mA output displaying three times the measurement range of output one. This way, the second output can still measure the temperature values, even if the measurement range of the first output is exceeded.

Scope of use

LDPE Plants
EVA plants
Gas turbines
Combustion Control

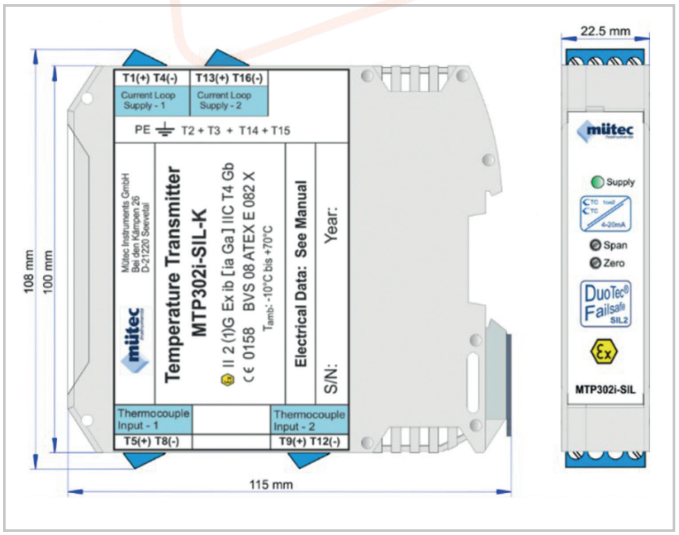
Safety Features

Featuring a safety-by-design approach, the MTP 302i provides a wide range of diagnostic functions. Apart from internal self-diagnosis, wire breaks or loose contacts can also be detected. The device is intrinsically safe and requires intrinsically safe barriers for supply.

Safety Properties	FMEDA
Category	SIL 2
Device type	Type B
HFT	0
SFF	93 %
PFD_{avg}	5,63E-5
Safe failure rate	78,5 FIT
Safe detected failure rate	0 FIT
Safe undetected failure rate	78,5 FIT
Dangerous failure rate	66 FIT
Dangerous detected failure rate	61,3 FIT
Dangerous undetected failure rate	4,7 FIT

Main Benefits

- Failsafe thermocouple measurement
- Fastest reaction time (4 ms)
- Additional output with higher range
- All thermocouple types are supported
- Robust design with high dielectric strength
- SIL2 according to IEC/EN 61508
- ATEX rating up to zone 0
- High safety (4,7 FIT)
- 10-year proof test interval



Technical Data

Certificate	SIL 2 according to IEC 61508 ATEX:II 2(1)G Ex ib [ia Ga] IIC T4 Gb
Thermocouple inputs Safety Data	U_o = 1 VDC I_o = 1.8 mA P_o = 0.5 mW C_o = 10 µF L_o = 100 mH
Analog Output Supply Safety Data	U_i = 28 VDC I_i = 95 mA P_i = 655 mW C_i = 26 nF L_i = negligible
Supply voltage range	12.5 V … 28 V
Current range	>3.5 … <24 mA
Load	70 … 800 Ω
Cold junction compensation	-10° … 70° C
Status LEDs	luminosity corresponds to 4 ... 20 mA
Behavior in case of failure	low
Power Consumption	Max. 560 mW, min. 50 mW
Temperature	-10° C…+70° C
Storage / Transport	-20° C…+80° C
Perm. Humidity	10 %...95 % r.H no cond.
Max. operating Altitude	<2000 m above mean sea level
Temperature Coefficient	<0,05 %/10K (max.)
Galvanic isolation	EN 60079-11
EMC	EN 61326-3-2
PCB Material	FR4
Housing Material	Polyamide
Protection Class	IP20
Flammability UL94	V0
Mounting type	35 mm DIN rail