



Mechanical specifications

Housing material	Stainless steel, AISI 304 (1.4301)
Sensor material	Stainless steel, AISI 316L (1.4404)
Sensor process connection	G ¼ B, G ½ B, ¼" NPT, ½" NPT
Sensor length	50 ... 400 mm as standard
Sensor diameter	Ø6 mm (cable sensor L60 - Ø5,8 mm)
Minimum immersion length	20 mm
Media temperature	-200 ... 400°C
Ambient temperature	-25 ... 85°C
Storage temperature	-40 ... 85°C

Electrical specifications - input

Sensor element	Pt1000, 4-wire
Accuracy (sensor element)	Class B ± (0.3 + 0.005×t)°C DIN/EN/IEC 60751

Environment

Pressure	≤ 40 bar
Humidity	< 98% RH, condensing
Protection class	IP67
Shock IEC60028-2-32	25 drops from 1 m to concrete floor
Weight	530...600 g depending on version

Compliant to / approvals

EU directive	EMC directive 2004/108/CE PED pressure directive 97/23/CE
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Main Features

- Two thresholds (alarms/control)
- Analogue output or Modbus
- High accuracy
- All stainless steel

Benefits

- Fast control of the process
- Easy to program
- Good overview of the process via the built in display and LED alarms

Electrical specifications - general

Electrical connection	M12 plug 5-pin M12 plug 8-pin for ETTN5 / ETTNM
Thermal drift	± 0,01°C/K (25...85°C)
Response time	T ₉₀ <10 s (stem in water) T ₉₀ <30 s (surface probe)
Threshold	2×PNP or 2×static relays
Can be set	NO, normally open or NC, normally closed
Accuracy	± 0.5°C
Repeatability	± 0.2°C
Temperature drift	± 0.005°C/ULR
Adjustable range	-200 ... 400°C
Minimum range	30°C
Adjustable set point	2 ... 98% of the adjusted range
Analogue output	4 ... 20 mA, 0 ... 10 V, Modbus
Display	4-digit (-1999 ... 9999, 8 mm)
Adjustability	3 push buttons
Protection	Against polarity reversals

Specification - ETTN7, 2 thresholds 0 ... 10 V

Power supply	12 ... 32 VDC, regulated
Consumption	< 22 mA
Output	
Analogue	0 ... 10 V, 3-wire
Load	$R_c > 5k\Omega$
Thresholds	PNP, 400 mA @ 24 VDC

Specification - ETTN6, 2 thresholds 4 ... 20 mA

Power supply	10 ... 32 VDC, regulated
Consumption	< 22 mA
Output	
Analogue	4 ... 20 V, 2-wire
Load	$R_\Omega \leq (U_{supply} - 10)/0.02$
Thresholds	PNP, 400 mA @ 24 VDC

Specification - YTTN6, ATEX

Power supply	10 ... 28 VDC, regulated
Consumption	< 22 mA
Output	
Analogue	4 ... 20 V, 2-wire
Load	$R_\Omega \leq (U_{supply} - 10)/0.02$
Thresholds	PNP, 40 mA @ 24 VDC

ATEX Zone 0, 1 and 2
ATEX II 1 G, Ex ia IIC T6 to T5

Ambient temperature T5 -25...70°C
T6 -25...40°C

ATEX specifications U_{max} 28 VDC
 I_{max} 120 mA
 C_i 13.2 nF
 L_i 0
P 0.8 W

Recommended barrier PROFSI3-B25091-ALG-YT
See page 5

Specification - ETTN5, 2 thresholds 4 ... 20 mA

Power supply	18 ... 32 VDC, regulated
Consumption	50 mA max
Output	
Analogue	4 ... 20 mA, 3-wire
Load	$RL \leq 400\Omega$
Thresholds	Static relay, galvanically insulated 400 mA @ 60 VDC / 40 VDC

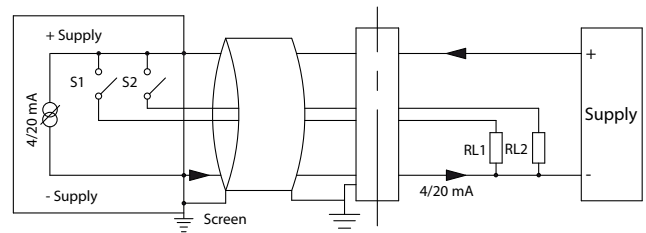
Specification - ETTNM, Modbus

Power supply	10 ... 32 VDC, regulated
Consumption	Typ. 20 mA, communicating 100 mA
Output	
Digital	Modbus
Thresholds	Static relay, galvanically insulated 400 mA @ 60 VDC / 40 VDC

ATEX YTTN6

Hazardous area
(0, 1, 2)

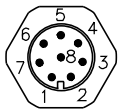
Non hazardous area



Electrical connection

ETTN5

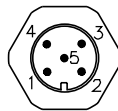
M12 - 8 pin



- 1 + Supply
- 2 + 4...20 mA
- 3 Threshold 1
- 4 Threshold 1
- 5 Threshold 2
- 6 Threshold 2
- 7 - Supply / - 4...20 mA
- 8 Ground

ETTN6 / YTTN6

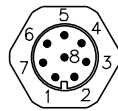
M12 - 5 pin



- 1 + Supply / + 4...20 mA
- 2 Threshold 2
- 3 Threshold 1
- 4 - Supply / - 4...20 mA
- 5 Ground

ETTNM

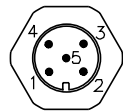
M12 - 8 pin



- 1 Data A
- 2 Data B
- 3 Threshold 1
- 4 Threshold 1
- 5 Threshold 2
- 6 Threshold 2
- 7 + Supply
- 8 - Supply

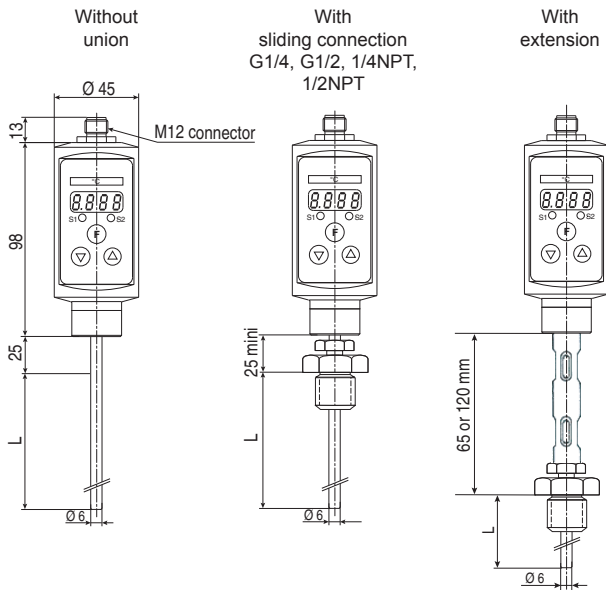
ETTN7

M12 - 5 pin

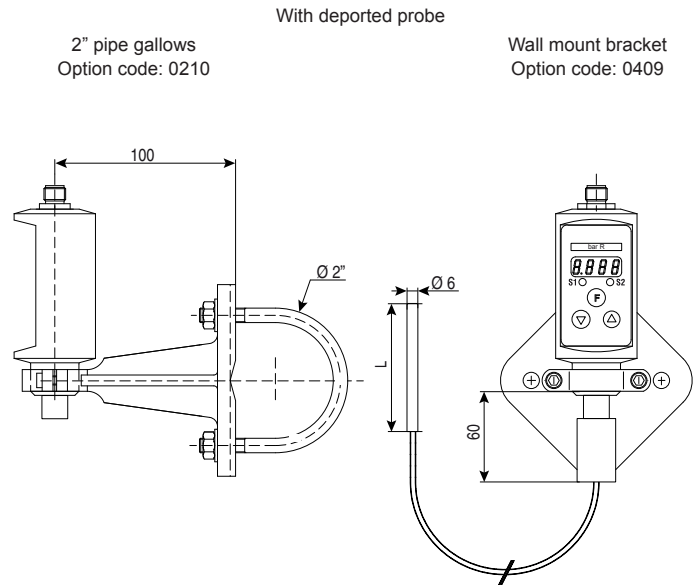


- 1 + Supply
- 2 Threshold 2
- 3 Threshold U
- 4 Threshold 1
- 5 - Supply

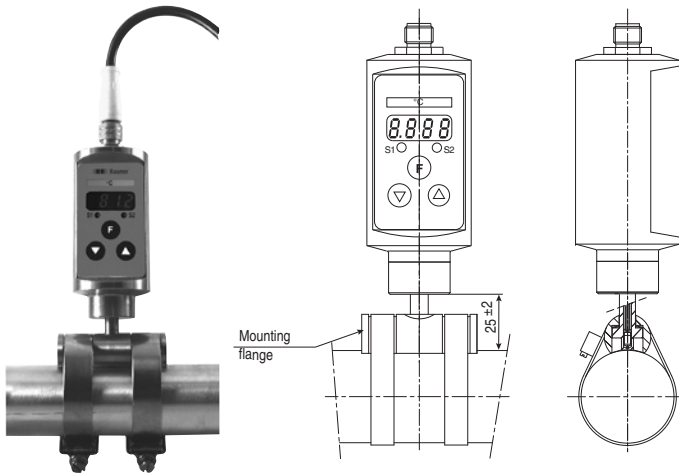
Dimensions with immersion tube



Dimensions with departed probe



Dimensions with immersion tube



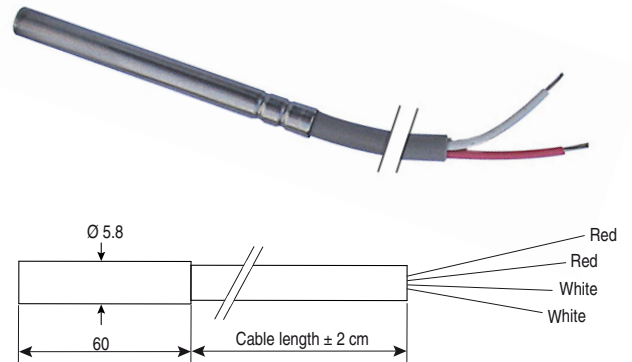
ETTN / YTTN temperature measurement by pipe surface contact.

Mounting flange for two different pipe diameters are available Ø25...55 mm pipe or Ø56...100 mm pipe.

The system is compensated for the influence of the ambient temperature.

(The two pipe clips are not part of the supply)

Cable sensor for departed probe



Sensor element Pt1000, Class B, 4 wire (DIN/EN/IEC 60751 - $\pm(0,3+(0,005 \times t)^{\circ}\text{C}$)

Measuring range -50...205°C

Protection class IP 65

Cable material Silicone

Sensor tube Stainless steel AISI 316Ti (1.4571)

Electrical connection of Pt1000 sensor input cable M12-4 plug



1. White
2. White
3. Red
4. Red

The cable sensor is included in the ordering code for the ETTN/YTTN

For spare part cable sensor

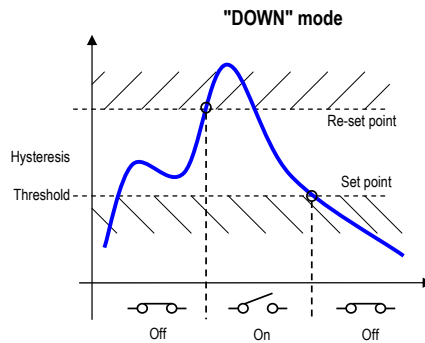
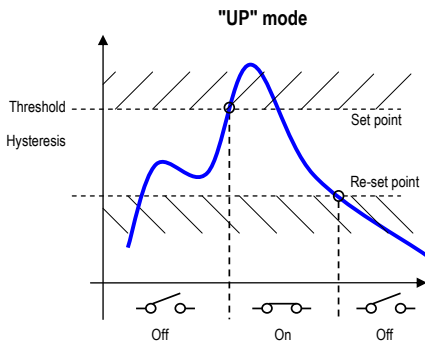
Ordering code:

Cable length L in cm, max 9999 cm

8141-33B.xxxx

xxxx

Ordering of factory setting (adjustment)



For factory setting please specify :

Unit	°C or °F
Output range	4 mA = xx °C 20 mA = yyy °C (min range 30°C)
Threshold 1	Set point NO or NC function Re-set point
Threshold 2	Set point NO or NC function Re-set point

Electrical connector and cables

Option code



2260 M12-5 pin mobile plug, screw terminal connection



- 0604** Shielded moulded M12-5 pin cable, length 2 m 0604
- 0605** Shielded moulded M12-5 pin cable, length 5 m 0605
- 0606** Shielded moulded M12-5 pin cable, length 10 m 0606

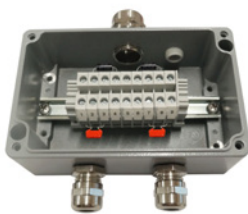


- 0607** Shielded moulded M12-8 pin cable, length 2 m 0607
- 0608** Shielded moulded M12-8 pin cable, length 5 m 0608
- 0609** Shielded moulded M12-8 pin cable, length 10 m 0609

Important:

YTTN-ETTN series temperature switches have as standard immunity against high frequency interference. In environments with a high radiation (e.g. GSM), we recommend to use shielded cable.

Junction box



Approved junction box as to EN 60079-1 and EN 60079-11

Dimensions 127 x 81 x 57 mm
Material Aluminium

Option code **0603**

Thermo well for cable sensor (deported probe)

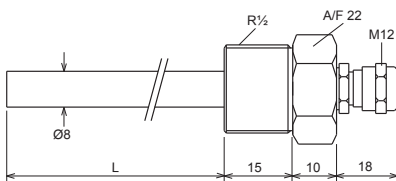


Material Stainless steel, AISI 316L (1.4404)
Process connection R $\frac{1}{2}$ (½" BSPT)
Instrument connection M12 cable gland
Material of cable gland Nickel plated brass

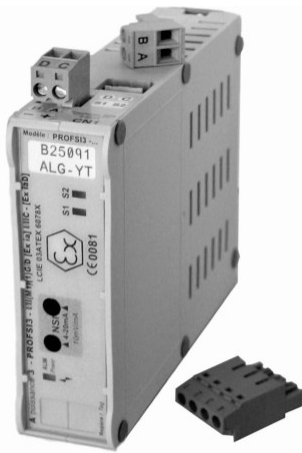
Ordering code: **2909-0001.xxx**

Insertion length L in mm
Min 60 / max 999 mm

xxx



Ordering of factory setting (adjustment)



**ATEX Gas or Dust
Transmitter supply**
4...20 mA input
4...20 mA and 2 relay outputs



The intrinsically safe analogue interface PROFIS3-B25091-ALG-YT allows to connect an YTTN6 temperature switch insuring safety between hazardous area and safe area by means of galvanic isolation.

The Barrier allows the PFORSI3... to supply the YTTN6 temperature switch active or passive as to the wiring.

The output from the YTTN6 temperature switch 4...20 mA and the two thresholds are available and the switches as relay outputs.

The connection terminals are all removable for easy connection of the cables.

Mechanical specifications

Housing dimension	29×120×90 (W×D×H)
Connection cables	Max. 2,5 mm ²
Mounting	35 mm DIN rail, NFC 63015 / EN 50022

Electrical specifications

Power supply	22...120 VDC / 90...253 VAC
Transmitter supply	Active: 15 VDC @ 20 mA Passive: 6...28 VDC
Consumption	3 VA
Input	4...20 mA + 2 thresholds
Output	4...20 mA + 2 thresholds
Load	600 Ω
Load effect	1.10 ⁻⁴ /100Ω
Voltage drop	6 V @ 22 mA
Status LED	For power on and for relay on
Relays	SPST (common "supply") 4A@250 VAC / 4A@30VDC cosφ 1 1,5A@250 VAC / 1,5A@30VDC cosφ 4 rating 500 VAC max.

ATEX data

Approval	I (M1) or II (1)G or II (1)D [Ex ia] I/IIC - [Ex ia D]	
Supply max.	U ₀	25.2 V
Current max.	I ₀	91 mA
Consumption max.	P ₀	573 mW
Capacity max.	C ₀ IIC	97 nF
Inductivity max.	L ₀ IIC	4 mH
Capacity max.	C ₀ IIB	810 nF
Inductivity max.	L ₀ IIB	13 mH

Ordering details

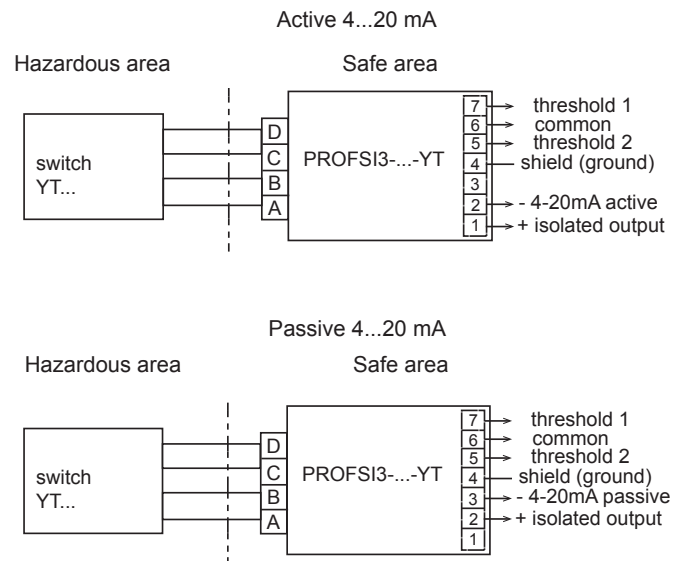
Ordering details for ATEX barrier type PROFIS3-B25091-ALG-YT

Option code	0602 (when ordered together with a YTTN6... temperature switch)
Ordering code	11044646 (when ordered as separate item)

Environment

Ambient temperature	-20...60°C (<50°C recommended)
Humidity	<98% RH, condensing
Protection class	IP20
Weight	200 g

Wiring diagram



Confirm to / approvals

EU directive	EMC directive	2004/108/CE
	ATEX directive	EN 60079-0 (2006) EN 60079-11 (2007) EN 61241-0 (2006) EN 61241-11 (2006)

Codification ETTN - YTTN

	xxx	x	.	x	x	x	x	x	.	xxxx
Safety										
Standard	E									
ATEX	Y									
Type										
Digital temperature switch	TTN									
Output										
4 ... 20 mA	2 x galvanically insulated thresholds									5
4 ... 20 mA	2 x PNP thresholds									6
0 ... 10 V	2 x PNP thresholds									7
Modbus	2 x galvanically insulated thresholds									M
Measuring unit										
°C										1
°F										2
Stem length										
0 mm	Surface flange for Ø25 ... 55 mm tube									A
0 mm	Surface flange for Ø56 ... 100 mm tube									B
60 mm	Deported probe only (cable sensor)									0
50 mm										C
100 mm										1
160 mm										2
250 mm										4
400 mm										5
Sliding connection										
None	(without union)									0
G1/4"										2
G1/2"										3
1/4NPT										5
1/2NPT										6
Extention										
Without	(-100 ... +150°C) (Mandatory for surface flange)									A
65 mm	(-200 ... +200°C) (≤ 250 mm immersion length)									C
120 mm	(-200 ... +400°C) (≤ 250 mm immersion length)									D
Cable sensor	(-50 ... +205°C)									E
Adjustment										
Without										0
With factory setting										1
Cable length										
No cable										0000
Length in cm	Only with cable sensor (1 meter = 100 cm = 0100)									xxxx