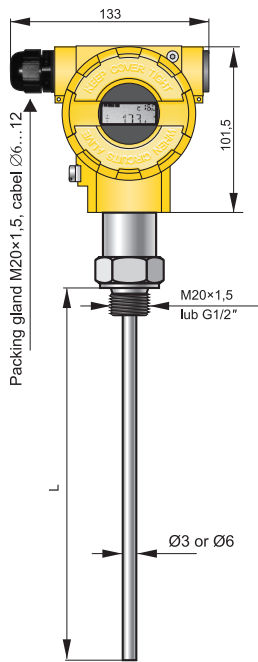


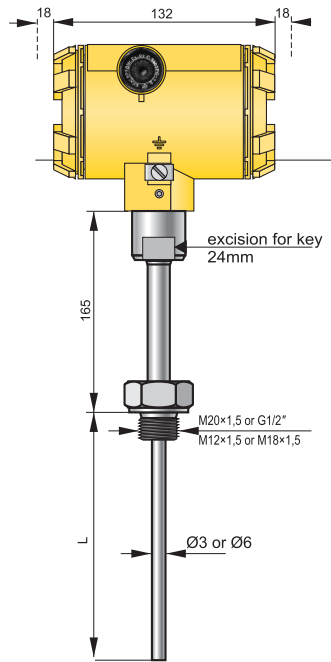
Smart temperature transmitter type APT-2000ALW



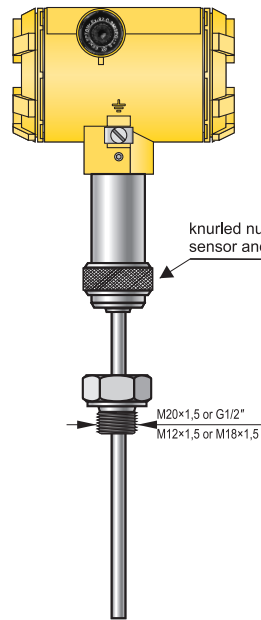
- ✓ 4...20 mA output signal + HART protocol
- ✓ Programmable range, zero shift, characteristic and damping ratio with local panel keys
- ✓ ATEX Intrinsic safety , ATEX Explosion proof
- ✓ Resistant or thermocouple measuring element
- ✓ Accuracy 0.075%
- ✓ MID (Measuring Instruments Directive) – certificate acc. to 2004/22/WE directive and OIML R140:2007 recommendations.



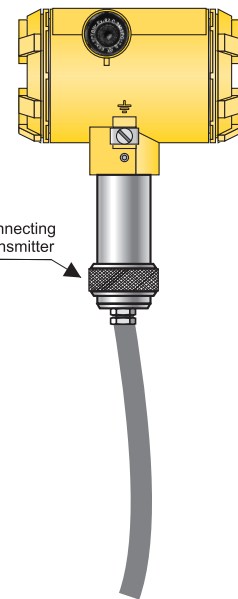
APT-2000ALW/GB



APT-2000ALW/GN



APT-2000ALW/WW



APT-2000ALW/NC

Version

APT-2000ALW/GB

version with spring loaded sensor to screwing in thermowell.

- standard version
- Exia version
- Exd version
- MID version

APT-2000ALW/GN

version with spring loaded sensor to screwing in thermowell.

- standard version
- Exia version
- Exd version

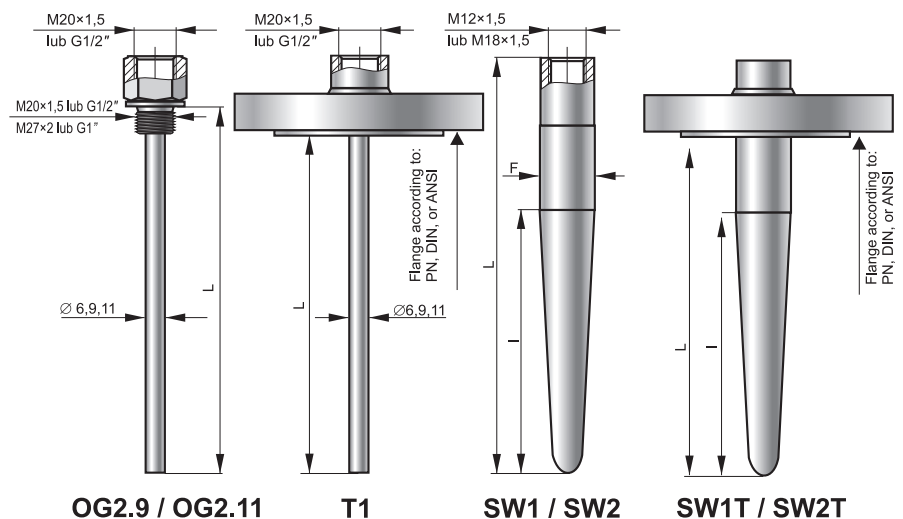
APT-2000ALW/WW

- version with replaceable measuring sensor.

APT-2000ALW/NC

- version suitable for mounting cable sensor.

Thermowell



OG2.9 / OG2.11

T1

SW1 / SW2

SW1T / SW2T

Technical data

Metrological parameters

Error (digital value)

$\pm (0,05 + 0,05\% \cdot z + 0,001 \cdot |t|)$ °C for sensor Pt100

$\pm (0,5 + 0,05\% \cdot z)$ °C for sensor K i $t \leq 375$ °C

$\pm (0,5 + 0,05\% \cdot z + 0,002 \cdot (t - 375))$ °C for sensor K i
 $t > 375$ °C

Additional error for analog output $\pm 0,04\% \cdot z$

where:

|t| – absolute value of the measured temperature °C

t – value of the measured temperature °C

z – transmitter setting range °C

Measuring range

Sensor type	Min set range	Nominal
Pt100	10°C	-200...550°C
K	10°C	-40...550°C

Electrical parameters


Power supply 12...55 V DC (Ex 13,5...28 V)

Additional voltage drop

when display illumination switched on 3 V

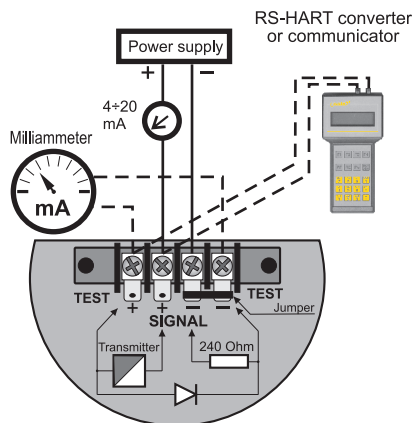
Output signal 4...20 mA + Hart protocol

ATEX certificate

Ex ia  II 1/2G Ex ia IIC T4-T6 Ga/Gb
I M1 Ex ia I (version with 316ss housing)
II D Ex ia D 20 T105C

Ex d  II 1/2G Ex d/ia IIC T*
II 1/2D Ex iaD 20/tD A21 T*
-40°C ≤ Ta ≤ +45°C / +75°C

Electrical diagram



Resistance required for communication (HART) min. 240Ω.

$$R[\Omega] = \frac{U_{ZAS}[V] - 12V^*}{0,0225A}$$

Load resistance

* – 15 V when display illumination switched on

Operating conditions

Ambient temperature
for version with Ex ia -40...85°C
for version with Ex d -40...80°C
for version with Ex d -40...75°C

Min. immersion length L=100 mm

Materials

Casing Aluminium,
316Lss- special version

Sensor material 321ss

Thermowell according to table page.

Communication and configuration

The communication standard for data interchange with the transmitter is the Hart protocol.

Communication with the transmitter is carried out with:

- a KAP-03, KAP-03Ex communicator,
- some other Hart type communicators,
- a PC using an Hart/RS/Bluetooth converter and Raport 2 configuration software.

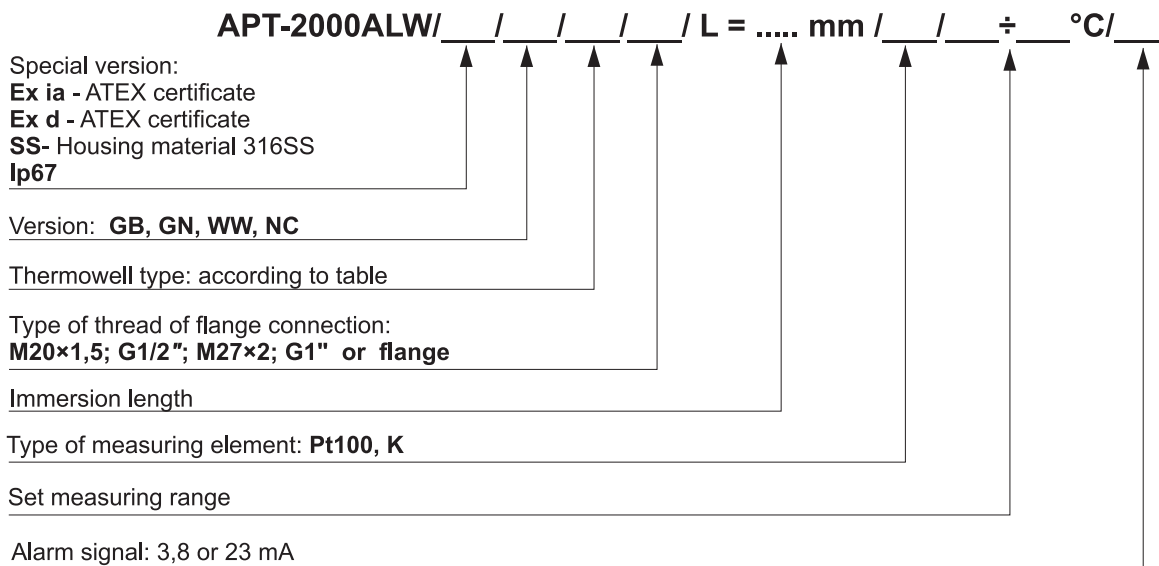
The data interchange with the transmitter enables the users to:

- ◆ identify the transmitter;
- ◆ configure the output parameters:
- ◆ read the currently measured temperature value of the output current and the percentage output control level;
- ◆ force an output current with a set value;
- ◆ calibrate the transmitter in relation to a model temperature.

Standard thermowell data

Thermowell type	Standard dimensions of thermowell			Thermowell material	Available process connection
	Ø[mm]	L[mm]	l[mm]		
OG2.9	9x1	100, 160, 250, 400	-	316Lss	M20x1,5, M27x1 G1/2", G3/4", 1/2"NPT
OG2.11	11x2	100, 160, 250, 400	-	316Lss	M20x1,5, M27x1 G1/2", G3/4", 1/2"NPT
T1	11x2	100, 160, 250, 400	-	316Lss	Flange according to DIN and ANSI
SW1/SW2	18h7/24h7	140, 200	65, 65	15HM, 10H2M 316Lss	-
SW1T/SW2T	18h7/24h7	100, 140, 200	35, 65, 65	15HM, 10H2M 316Lss	Flange according to DIN and ANSI

Ordering procedure



Example: Temperature transmitter APT-2000ALW thermowell type T1, ATEX version Ex ia, immersion length 250mm, flange DN50 PN40, K type sensor, set range 0 - 300°C, alarm signal 23 mA

APT-2000ALW/ Ex ia/GN/T1/DN50/L=250 mm / DN50 PN40 / K / 0 ÷ 300°C / 23 mA

SMART TEMPERATURE TRANSMITTER APT-2000ALW MID

Application

Smart temperature transmitters APT-2000ALW MID is applicable to the measurement of the temperature in application designed according to directive 2004/22/WE (MID), harmonized norm PN-EN12405-1:2005/pr A2:2009 and recommendation OIML R140:2007. Device subcomponent suitable for custody transfer measurement of gas with MID approval.

Application

Mechanical construction and installation of the transmitter enclosure shall comply with the transmitter APT-2000ALW are described on page 1113,114 of catalogue. Temperature transmitters APT-2000ALW MID. Transmitter due to factory blockade of transmitter configuration can not be configurable by user.
 Electrical connection of the transmitter is according to a drawing on page 114. Available are only terminals SIGNAL + and SIGNAL -. Temperature transmitter APT-2000ALW MID are produce with GB type of sensor and with resistant sensor Pt100.
 Note! For custody transfer applications, the cover clamp screws have to be locked with seal wire.

Metrological parameters

Max. permissible error according to EN12no5-1 (calculated in relation to the measured value)

- in reference conditions	-
20±3°C(±1 during the measurement)	≤ 0,1%
- nominal operating conditions	≤ 0,2%
special version	≤ 0,1%
Long-term stability	< 0,2% / 5 years
Operating temperature range	-25...55°C

Measuring range

Measuring range: -20...60°C

Ordering procedure

