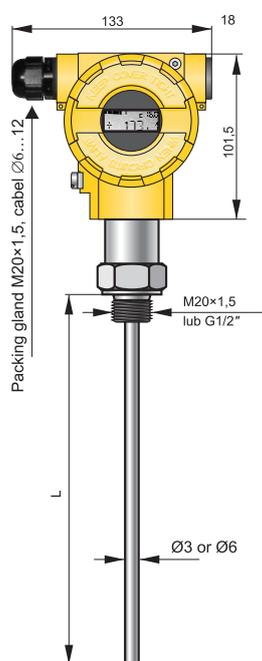




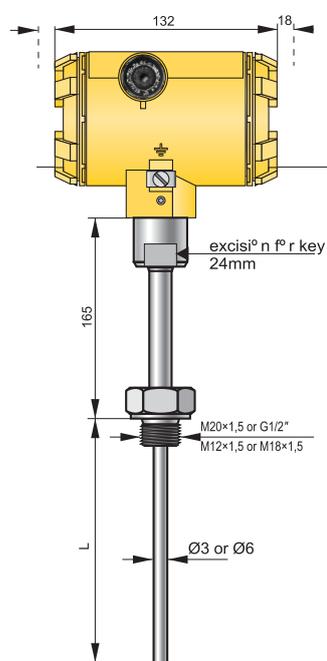
Smart temperature transmitter APT-2000ALW



- ✓ 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

Version

APT-2000ALW/GB

version with spring loaded sensor screwing in thermowell.

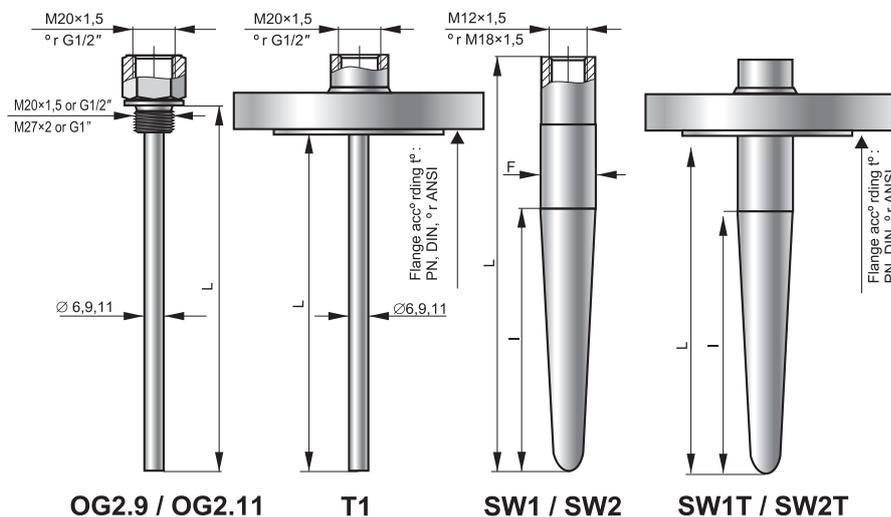
- standard version
- Exia version
- Exd version
- MID version

APT-2000ALW/GN

version with spring loaded sensor screwing in thermowell.

- standard version
- Exia version
- Exd version

Thermowell



OG2.9 / OG2.11

T1

SW1 / SW2

SW1T / SW2T

Technical data

Metrological parameters

Error (digital value)

$\pm (0,05 + 0,05\% \cdot z + 0,001 \cdot |t|) ^\circ\text{C}$ for sensor Pt100
 $\pm (0,5 + 0,05\% \cdot z) ^\circ\text{C}$ for sensor K it $\leq 375^\circ\text{C}$
 $\pm (0,5 + 0,05\% \cdot z + 0,002 \cdot (t-375)) ^\circ\text{C}$ for sensor K it
 $t > 375^\circ\text{C}$

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

where:

$|t|$ – absolute value of the measured temperature $^\circ\text{C}$

t - value of the measured temperature $^\circ\text{C}$

z – transmitter setting range $^\circ\text{C}$

Measuring range

Sensor type	Min set range	Nominal range
Pt100	10 $^\circ\text{C}$	-200...550 $^\circ\text{C}$
K	10 $^\circ\text{C}$	-40...550 $^\circ\text{C}$

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

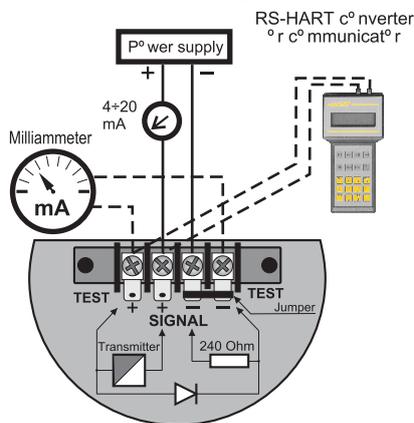
ATEX certificate

Ex ia II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb
 I M1 Ex ia I Ma dla (version with 316ss housing using)
 II 1D Ex ia IIC T105 $^\circ\text{C}$ Da

Exd I M2 Exd ia I Mb (version with 316ss housing using)
 II 1/2G Exd/ia IIC T* Ga/Gb
 II 1/2D Ex.ia/t IIC T* Da/Db

T* - temperature class transmitter (for gas)
 or maximum surface temperature (for dust)

Electrical diagram



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

Load resistance

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

* – 15 V when display illumination switched on

Operating conditions

Ambient temperature -40...85 $^\circ\text{C}$
 for version with Ex ia -40...80 $^\circ\text{C}$
 for version with Ex d -40...75 $^\circ\text{C}$

Min. immersion length

L=100mm

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 communication,
- some other Hart type communication,
- a PC using an Hart/RS/Bluetooth converter and Raport 2 configuration software.

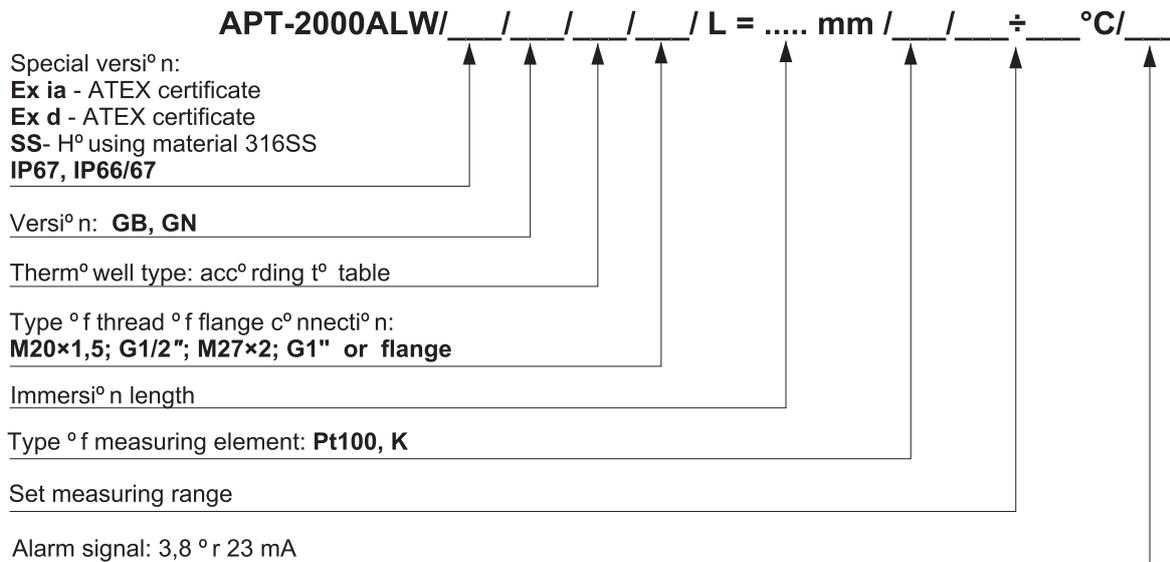
The data interchange with the transmitter enables the users to:

- ◆ identify the transmitter;
- ◆ configure the output parameters;
- ◆ read the currently measured temperature value of the output current and the percentage output current 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
	[mm]	L[mm]	l[mm]		
OG2.9	9x1	100, 160, 250, 400	-	316Lss	M20x1,5, M27x1 G", G', "NPT
OG2.11	11x2	100, 160, 250, 400	-	316Lss	M20x1,5, M27x1 G", G', "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 therm° well 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 with 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 standard PN-EN12405-1:2005 + A2:2010 and recommendation OIML R140:2007. Device subcomponent suitable for custody transfer measurement of gas with MID approval. Mechanical construction and installation of the transmitter enclosure shall comply with the transmitter APT-2000ALW are described on page IX/ 2, IX/ 3 of catalogue. Transmitter due to factory blade of transmitter's configuration cannot be configurable by user. Electrical connection of the transmitter is according to drawing on page IX/ 3. Available are only terminals SIGNAL + and SIGNAL -. Temperature transmitter APT-2000ALW MID are produced 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

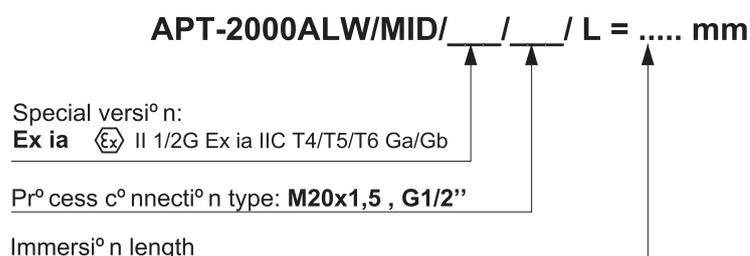
Max. permissible error according to EN12405-1 (calculated in relation to the measured value)

- in reference conditions	20±3°C(±1 during the measurement)	≤ 0,1%
- nominal operating conditions	special version	≤ 0,2%
		≤ 0,1%
Long-term stability		< 0,2% / 5 years
Operating temperature range		-25...55°C
Power supply		13,5...30VDC
MID Parts Certificate No. 28/12		

Measuring range

Measuring range: -20...60°C

Ordering procedure





PANAM ENGINEERS LTD.

An ISO 9001:2008 Company

203, Jaisingh Business Center, Parsiwada, Sahar Road, Andheri (East), Mumbai - 400 099. INDIA
Tel.: +91 22 2831 5555 / 57 / 58 • Fax: +91 22 2831 5574 • email: sales@panamengineers.com / sales@panam.in
website: www.panamengineers.com / www.panam.in



In technical collaboration with Aplisens S. A. - Poland