

# Smart temperature transmitter LI-24ALW



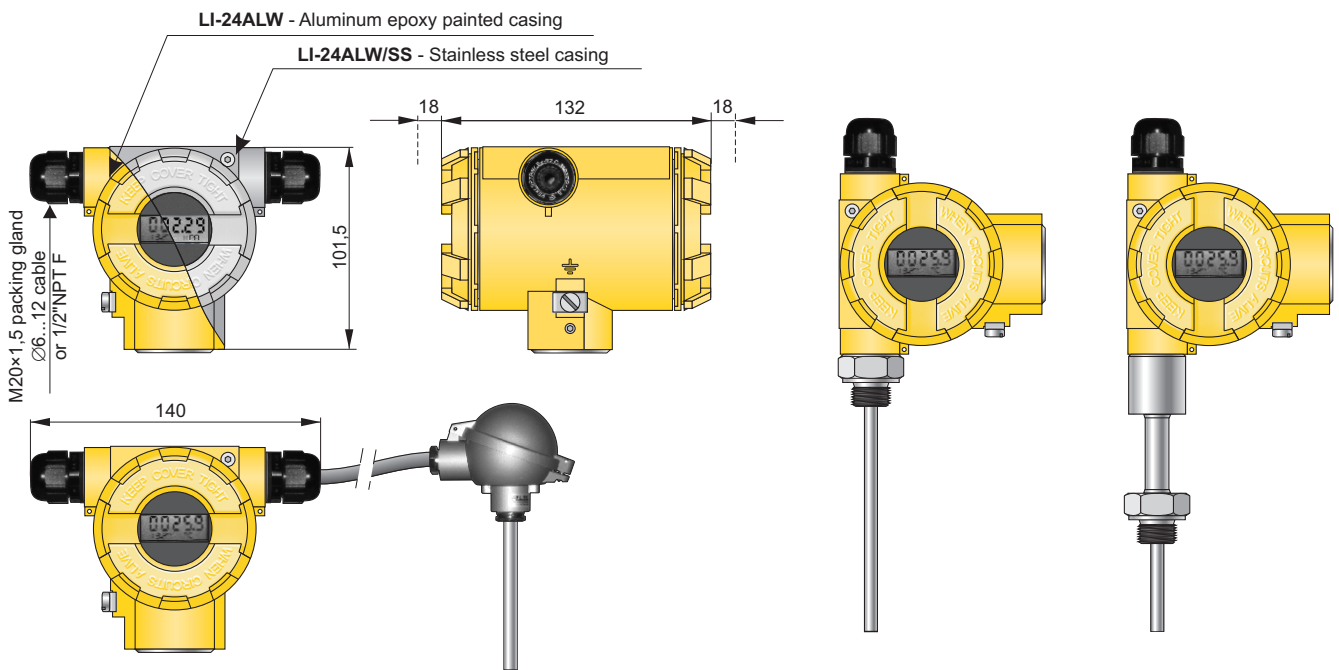
- ✓ Output signal 4...20mA with Hart protocol
- ✓ Galvanic insulation (In, Out)
- ✓ Programmable sensor type
- ✓ Programmable measuring range
- ✓ Thermoresistance line compensation
- ✓ Compensation of thermocouple cold junction
- ✓ Autodiagnostic system
- ✓ Intrinsic safety certificate (ATEX, IECEx)

<p>⊕ Ex II 1/2G Ex ia IIC T4-T6 Ga/Gb I M1 Ex ia I Ma (with SS316 enclosure only) II 1D Ex ia IIIC T105°C Da</p>	<p>Ex ia IIC T4-T6 Ga/Gb <b>IECEx</b> Ex ia I Ma (version with enclosure ss316) Ex ia IIIC T105°C Da</p>
--	--

- ✓ Explosion proof certificate (ATEX)

<p>⊕ Ex II 2G Ex d IIC T* Gb II 2D Ex t IIIC T* Db 1) I M2 Ex d ia IMb</p>	<p>⊕ Ex II 2(1)G Ex d[ia Ga] IIC T4/T5/T6 Gb 2) II 2(1)D Ex t[ia Da] IIIC T105C Db 2) I M2 Ex d ia IMb</p>
--	--

1) - transmitter with sensor mounted in casing 2) - transmitter without sensor or with cable sensor



LI-24ALW with remote mounted temperature sensor

LI-24ALW with direct mounted temperature sensor

## Application and function

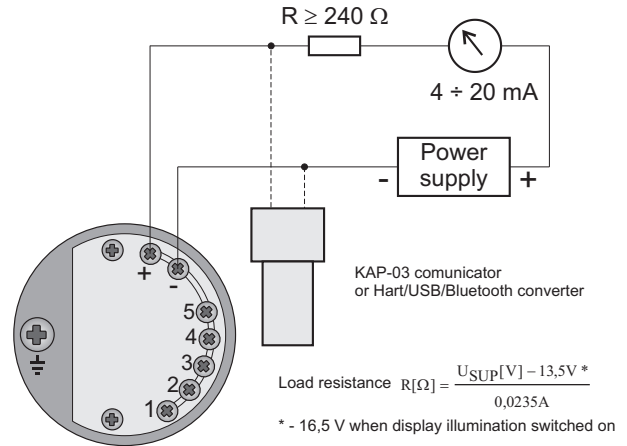
The temperature transmitter LI-24ALW is applicable to converting resistance of temperature or voltage of thermocouple sensor to standard current signal 4-20mA. The transmitter has two separate channels enabling measurement of temperature difference, average, average with redundancy, max. or min. temperature. Transmitter has compensation of ambient temperature influence and compensation of thermocouple cold junction using internal/external (Pt100) sensor or constant temperature. Most of parameters such as: sensor type, measuring range, current alarm signal when electric circuit is broken, output characteristic correction, user characteristic (60 points) are programmed using PC with Hart/USB/Bluetooth converter and Aplisens RAPORT 2 configuration software or KAP-03 communicator. For request Aplisens can set temperature transmitter parameters like measuring range, type of sensor. Their values are printed on label. Transmitter LI-24/ALW is designed for field use. LI-24ALW can be used with temperature sensors mounted directly in transmitter's casing or with external sensors connected with cable.

## Technical data

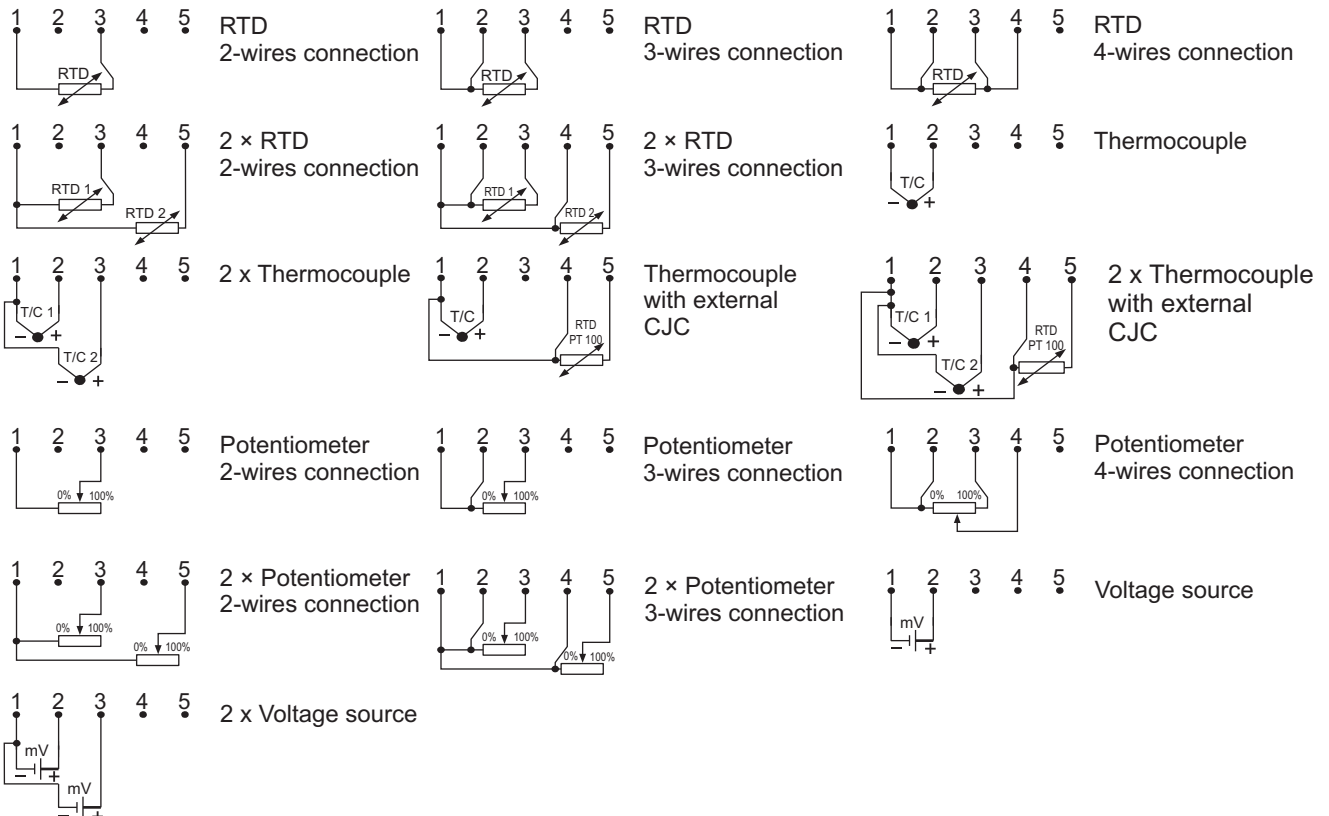
Input signal	K, J,S,B,N,T, R, E, voltage Pt100, Ni100 resistance
Limit process	-10mV < E < 100mV or -100mV < E < 1000mV 0Ω < R < 400Ω or 0Ω < R < 2000Ω
Min. measuring range	10mV or 10Ω or 10K
Output signal	4 - 20 mA + Hart
Power supply	13,5...55 VDC (Ex 13,5..30 VDC) when display illumination switched on 16,5...55 VDC (Ex 16,5..30 VDC)
Max. wires resistance	500Ω
Alarm signal	3,75mA / 21,5mA (NORMAL) or 3,6 mA / 21 mA (NAMUR NE89) or setting by user
Sensor current	0,42mA
Galvanic insulation	Optoelectrical
Accuracy	± 0,1%
Time constant	0,3s
Additional electronic damping	0..30s
Ambient temperature	-40...+80°C (Ex -40...+75°C)

Input type	Range	Input type	Range
Pt10	-200÷850°C	B	250 ÷ 1820°C
Pt50	-200÷850°C	E	-200 ÷ 1000°C
Pt100	-200÷850°C	J	-210 ÷ 1200°C
Pt200	-200÷850°C	K	-200 ÷ 1372°C
Pt500	-200÷850°C	N	-200 ÷ 1300°C
Pt1000	-200÷266°C	R	-20 ÷ 1768,1°C
Pt 98	-200÷650°C	S	-30 ÷ 1768,1°C
Ni100	-60 ÷ 180°C	T	-200 ÷ 400°C
Cu100	-50 ÷ 180°C	L	-200 ÷ 800°C
Resistance 1	0...400 Ω	Voltage 1	-10...100mV
Resistance 2	0...2000 Ω	Voltage 2	-100...1000mV

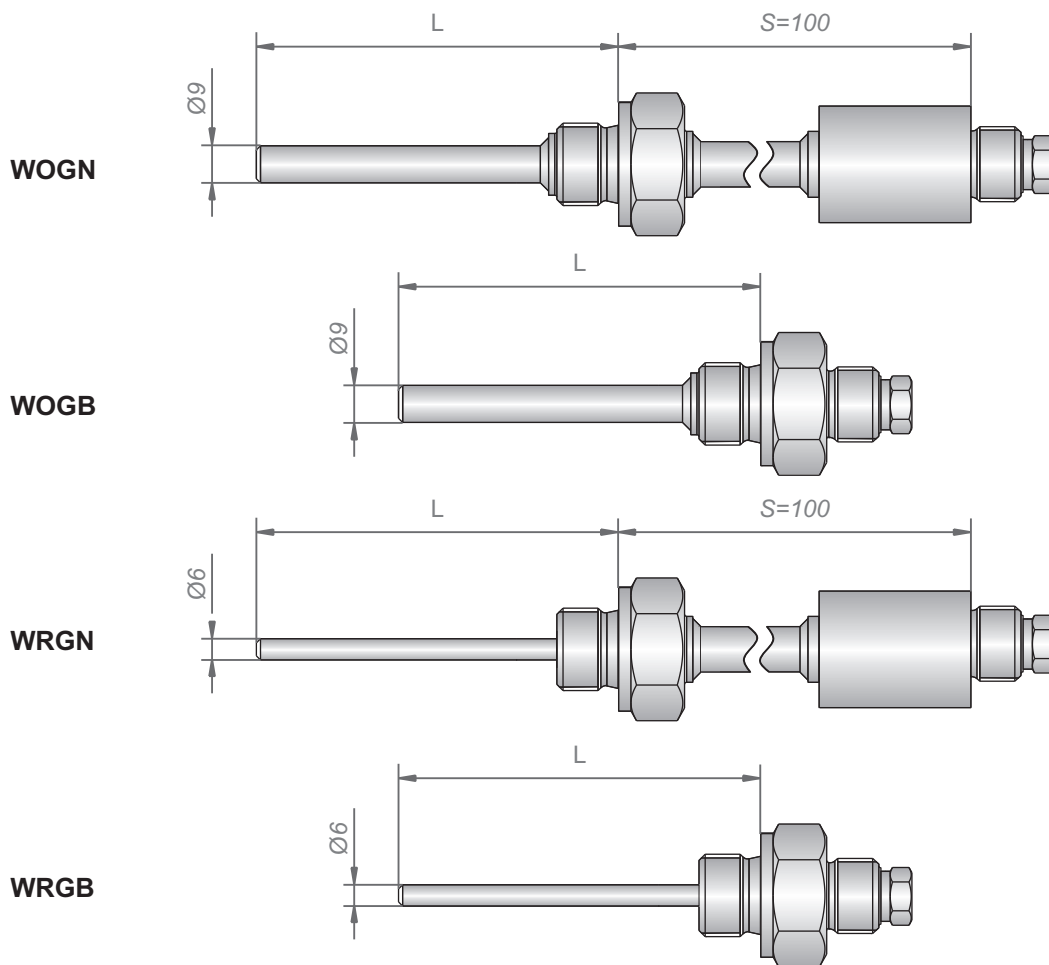
### Electrical diagrams



### Electrical diagrams



## Direct mounted sensors



Sensor type	Standard dimensions of sensor			Sensor material	Available process connection
	Ø[mm]	L[mm]	S[mm]		
WOGN	9	100, 160, 250, 400	100	304ss, 316Lss	M20x1,5, G1/2", G3/4", 1/2"NPT
WOGB	9	100, 160, 250, 400	-	304ss, 316Lss	M20x1,5, G1/2", G3/4", 1/2"NPT
WRGN	6	100, 160, 250, 400	100	304ss, 316Lss	M20x1,5, G1/2", G3/4", 1/2"NPT
WRGB	6	100, 160, 250, 400	-	304ss, 316Lss	M20x1,5, G1/2", G3/4", 1/2"NPT

WOGN, WOGB - welded sensors; WRGN, WRGB - spring-loaded sensors (to use with additional thermowell)

### Ordering code

LI-24ALW /      /      /      ÷      °C /      /     

Version:

**Exia** – Intrinsic safety certificate (ATEX, IECEx)  
**Exd** – Explosion proof certificate (ATEX)  
**IP67** – protection class IP67  
**SS** – housing material SS316  
**US** – electrical and sensor connection 1/2"NPT F

Sensor type (optionally):  
 Direct: **WOGN, WOGB, WRGN, WRGB**  
 (According to below ordering code)  
 Remote: According to **Chapter X**

Settings (optionally):  
 Type of measuring element  
 Measuring range  
 Alarm signal

### Ordering code - direct temperature sensors for LI-24ALW (with example)

**WOGN/Exia/L=400mm/S=120mm/G1/2"/Pt100-A-2/316Lss/1/2"NPT**

Type of sensor

Version: Standard, Exia, Exd

Dimensions L and S [mm]

Process connection

Connection thread between sensor and transmitter

Sensor material

Type of measuring element