

**Instruments and decisions
for industrial automation**



**TEMPERATURE SENSORS
LEVEL SENSORS AND RELAYS,
LEVEL RELAYS WITH THERMOSENSOR
THERMOWELLS AND ADAPTERS**

SHORT FORM CATALOGUE





AUREGIS UAB was established 1997 after reorganizations from the former Kaunas Radio Measurements Scientific Research Institute. Quality, flexibility and orientation to customers are the key factors of the company that increase number of the loyal customers each year.

AUREGIS – industrial automation, measurement and regulation equipment manufacturing and supplying company with many years experience. Our produced and supplied devices are reliable, high quality and popular not only in Lithuania but in other countries too. Long-term customers approve reliability and flexibility of our company.

AUREGIS main activities are in the following areas:

- supply of industrial automation devices for measurement and control of temperature, pressure, level, humidity and other parameters;
- design and production of sensors, equipment and units for technological processes automation for various industries;
- warranty and after warranty service of supplied devices.

The supply program and services are briefly listed on the last page.

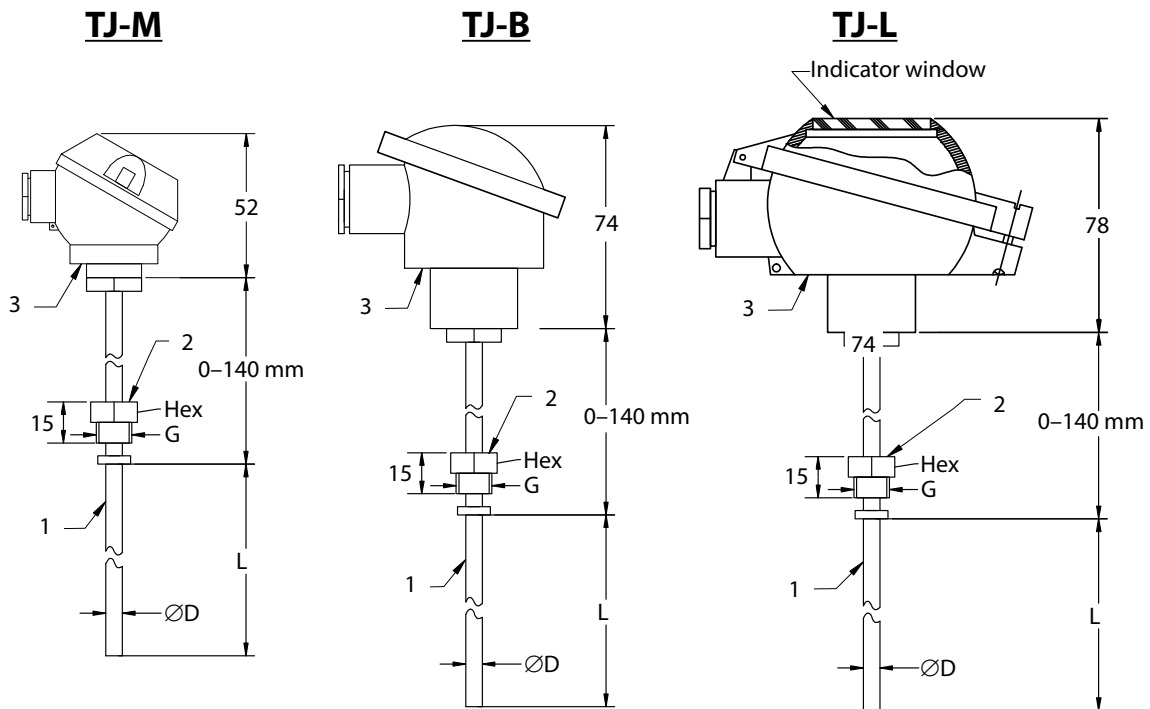
AUREGIS produces and design a new models of:

- temperature sensors Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC, PTC and thermocouples;
- level electrodes, level float relays with or without thermosensor;
- automation units of special functions.



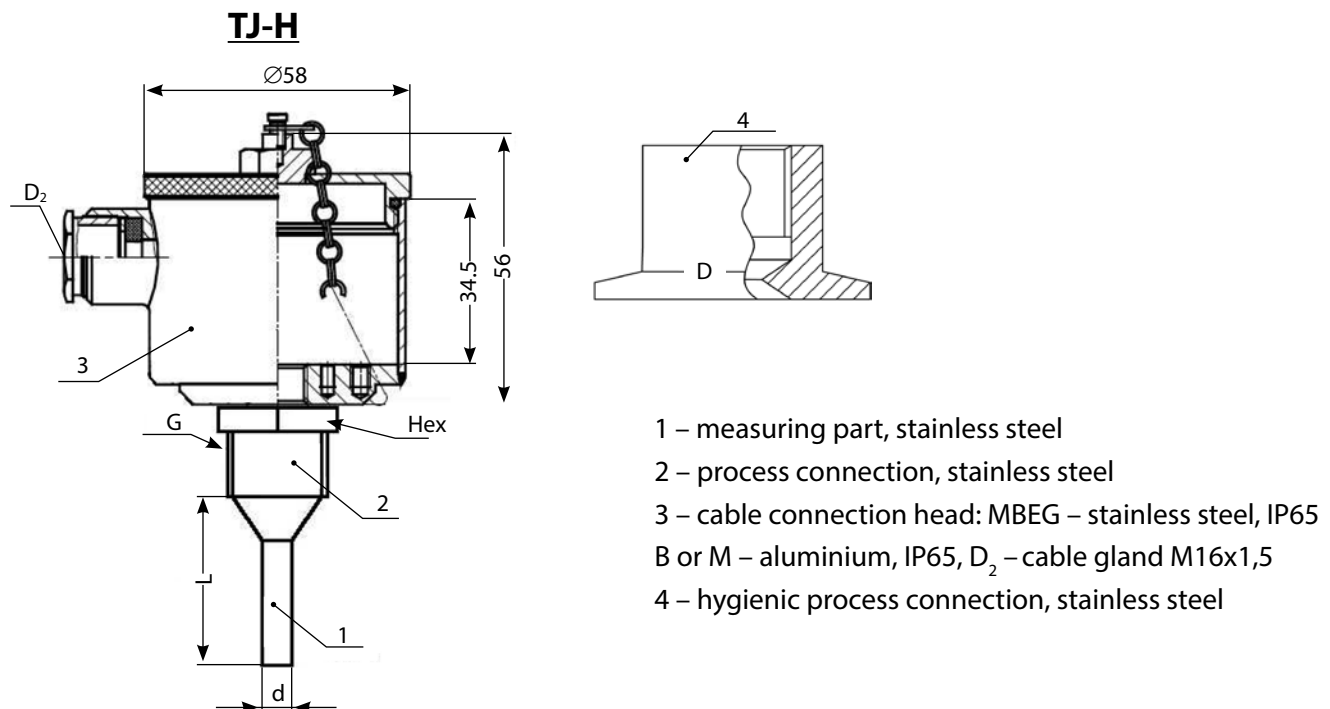
Temperature sensors

Temperature sensors TJ-M, TJ-B, TJ-L, TJ-H



- 1 – Measuring part – stainless steel DIN 1.4301 (AISI 304);
- 2 – Process connection – stainless steel DIN 1.4301 (AISI 304);
- 3 – Cable connection head – aluminium.

Sensors – Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC, PTC and thermocouples K, J
 Signal transducer (temperature / 4...20mA or 0...10V) built-in TJ-B, TJ-L and TJ-H

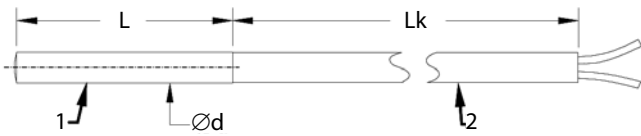


- 1 – measuring part, stainless steel
- 2 – process connection, stainless steel
- 3 – cable connection head: MBEG – stainless steel, IP65
 B or M – aluminium, IP65, D₂ – cable gland M16x1,5
- 4 – hygienic process connection, stainless steel

Temperature sensors with connection cable

TJ-1...FL with flange

TJ-1



Operating temperature:

Thermoresistive **Pt100, Pt1000:**

-30÷70 °C PVC#

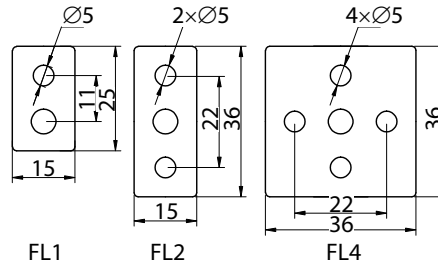
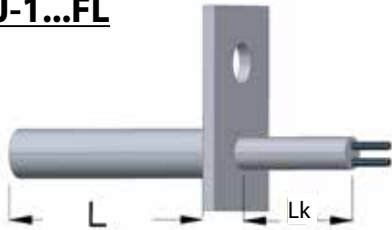
-50÷180 °C SIL#

Thermocouples **K, J:**

-50÷250 °C teflon#

-50÷400 °C fibreglass#

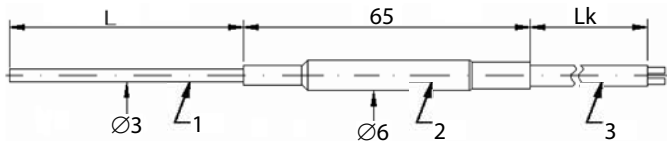
TJ-1...FL



Ød, mm		L, mm		Lk		Cable
4	S	25	S	900	S	2-wire
5	*	40	*		*	2,3-wire
6	*	40	*		*	2,3-wire
4,5,6	On request					

1 – tube – stainless steel – Ø4/5/6
2 – cable

TJ-2 with mineral isolation



Operating temperature:

thermoresistive Pt100, Pt1000:

-30÷600 °C; cable -30÷70 °C PVC#

-50÷600 °C; cable -50÷180 °C SIL#

thermocouples K, J:

-50÷800 °C; cable -50÷250 °C teflon#

-50÷800 °C; cable -50÷400 °C fibreglass#

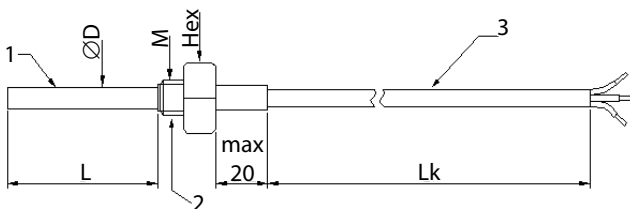
L, mm		Lk		Cable
270	S	1000	S	2,3-wire
	*		*	2,3-wire

1 – tube – stainless steel

2 – connection – stainless steel

3 – cable

TJ-4



Operating temperature:

thermoresistive **Pt100, Pt1000:**

-30÷250 °C; cable -30÷70 °C PVC#

-50÷250 °C; cable -50÷180 °C SIL#

thermocouples **K, J:**

-50÷400 °C; cable -50÷250 °C teflon#

-50÷400 °C; cable -50÷400 °C fibreglass#

Ød, mm		L, mm		Thread	Lk, mm		Cable
4	*	12, 20	*	M6, M10x1, G¼, M20x1.5, G½		*	2,3-wire
6	S	12, 20, 50	S	G¼, M20x1.5	900	S	2,3-wire
8	*	12, 20, 50	*	G¼, M20x1.5, G½		*	2,3-wire
10	*	12, 20, 50	*	M20x1.5, G½		*	2,3-wire

1 – measuring part – stainless steel

2 – process connection – stainless steel

3 – cable

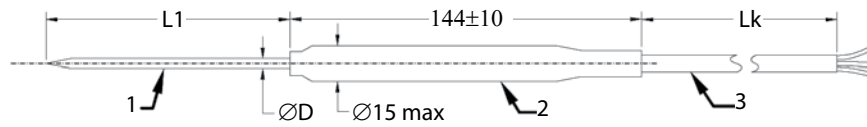
S – standard

* – on request

– isolation

TJ-S

Operating temperature: $-50 \div 180^{\circ}\text{C}$



ØD, mm		L1, mm		Lk, mm	
3	*	50	*		*
4	S	100	S	3000	S
6	*	150	*		

- 1 – tube – stainless steel DIN 1.4541 (AISI 321);
 2 – handle – stainless steel DIN1.4301+PVC or teflon#;
 3 – cable 3-wire silicone, rubber or PVC#

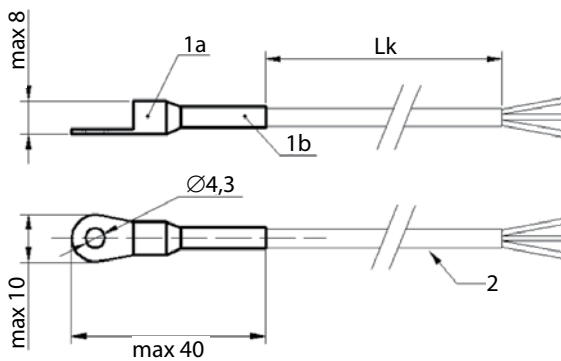
S – standard
 * – on request

– isolation
 SIL – silicone (temperature: $-50 \dots +180^{\circ}\text{C}$)

PVC – temperature: $-30 \dots +70^{\circ}\text{C}$

Sensors – Pt100, Pt1000, Ni100, Ni120, Ni1000, PTC, NTC, K, J

TJ-PL11



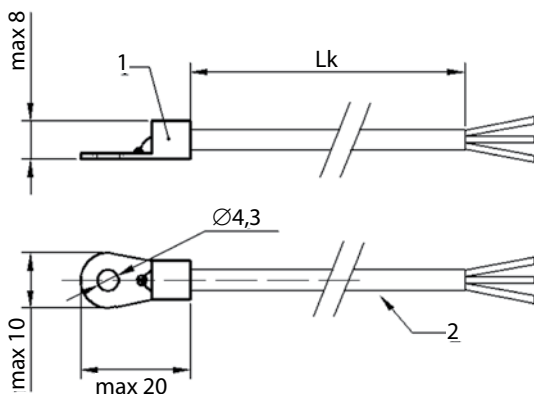
Sensor: **Pt100**, Pt1000

Operating temperature:

- 80...+200°C with FEP# cable 3x0,5 mm²,
- 50...+180°C with SIL# cable 2x0,5 mm².

- 1 – housing:
 a) copper (Cu)
 b) stainless steel – AISI 304
 2 – cable: length 1,5m or on request.

TJ-PL12



Sensor: thermocouple **K, J**

Operating temperature:

- 50...+250°C with FEP# cable 2x0,2 mm²,
- 50...+400°C with fibreglass + cable shield 2x0,22 mm².

- 1 – housing: material – copper (Cu);
 2 – cable: length 1,5 m or on request.

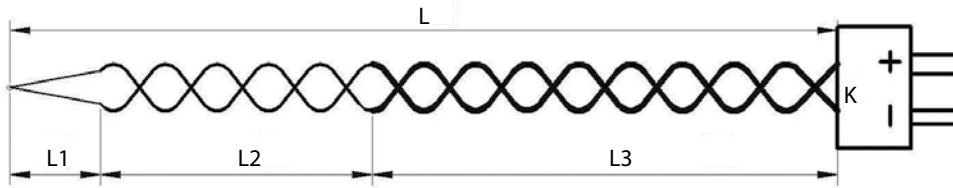
– isolation

FEP – teflon

SIL – silicone

Thermocouple TJ-K

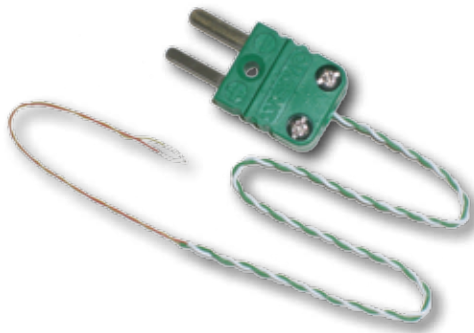
- *small measurement point (tip)*
- *fast response*



Technical data

Measuring range: -75...250 °C

Sensor's type: K (NiCr-NiAl)
accuracy cl. 2 (according to IEC 584)



Electrical connection: mini plug

Cable:

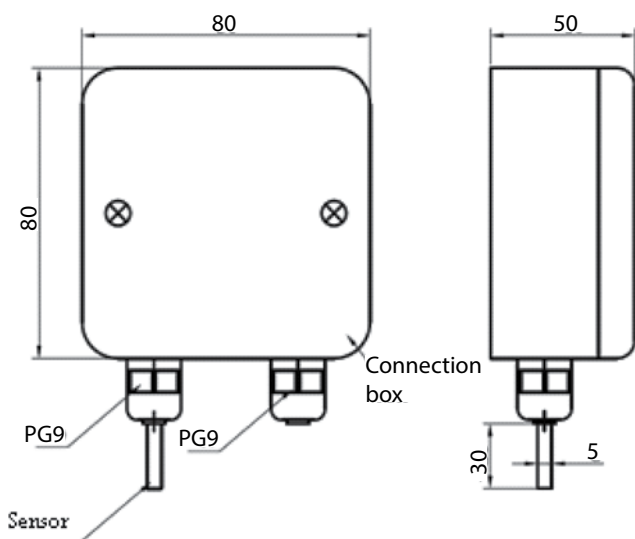
L1: – 2 wire without isolation;
diameter – 0,08 mm (80 microns);

L2: – 2 pair wire;
diameter without isolation – 0,08 mm (80 microns);
diameter with isolation – 0,2 mm (200 microns);
isolation – teflon.

L3: – 2 pair wire;
diameter without isolation – 0,2 mm (200 microns);
diameter with isolation – 0,8 mm (800 microns);
isolation – teflon.

Ordering example: **TJ-K/2 – L1/L2/L3x1.0-TEF**. Type K thermocouple, class 2, length of L1 cable, length of L2 cable, length of L3 cable, total length L – 1 m, isolation – teflon

Ambient temperature sensor TJ-O



– Sensor: Pt100, Pt1000, Ni100, Ni120, Ni1000
Operating temperature: -40...+70°C

– Sensor: material – stainless steel AISI 304.

– Sensor connection: 2-, 3-wire;

– TJ-O can be with built-in transmitter (output 4...20mA or 0...10V).

– Sensor can be complement with: TJ1, TJ2, TJ4, TJS.



Multipoint temperature sensor TJ-D

Multipoint temperature sensor TJ-D is made-up for measuring temperature in different process depths. Thermosensors can be produced in one tube or with independent cables. In case of independent cables version measuring points can be lay out in different vertical or horizontal places.



1 – Connection head

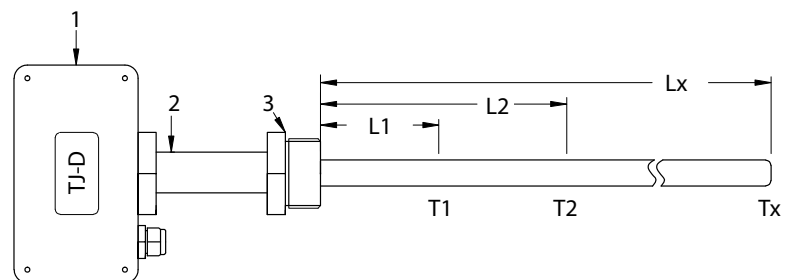
2 – Neck extension (neck tube)

3 – Process connection

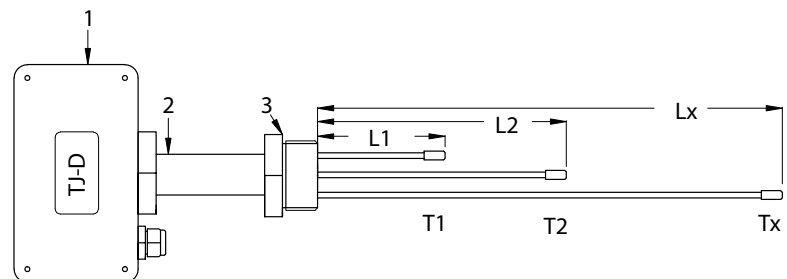


Connection head with standard signal transmitters

Thermosensors in one measuring tube



Thermosensors with independent cables



L1, L2, ..., Lx – lengths to the measuring points

T1, T2, ..., Tx – temperatures of measuring points

Protection class of connection head – IP 66.

Process connection and neck extension – stainless steel.

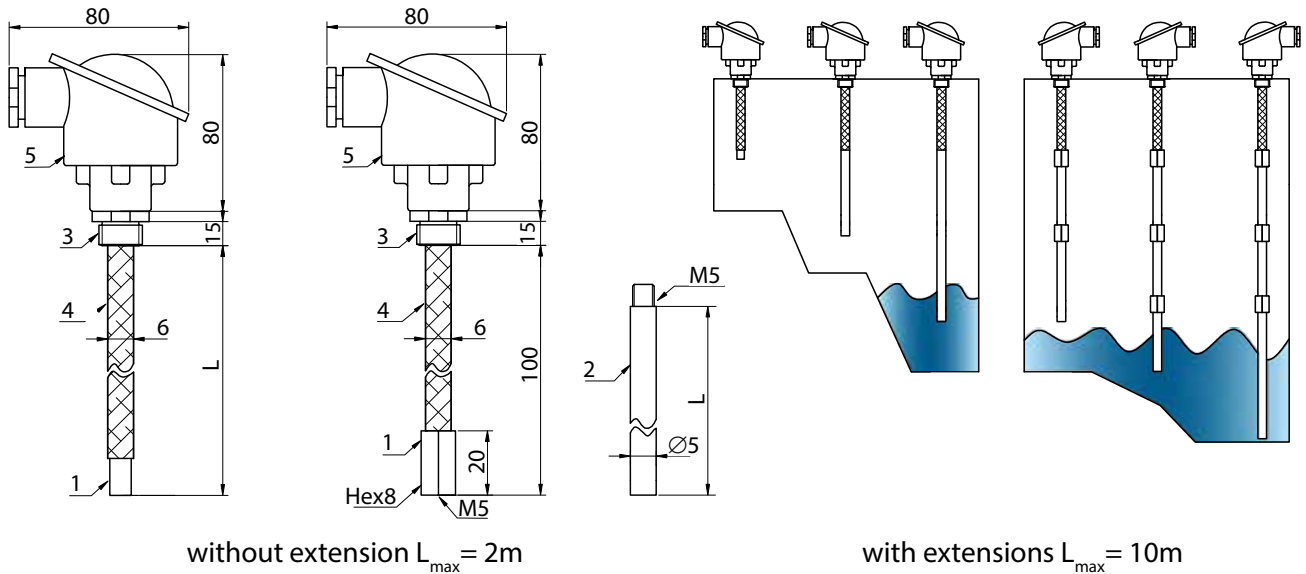
Multipoint temperature sensor TJ-D versions according to the type and number of thermocouple:

- TJ-D2-Pt100, TK-D3-Pt100, ..., TJ-Dx-Pt100, -2, 3, ..., x thermosensors Pt100;
- TJ-D2-Pt1000, TK-D3-Pt1000, ..., TJ-Dx-Pt1000, -2, 3, ..., x thermosensors Pt1000;
- TJ-D2-NTC, TK-D3-NTC, ..., TJ-Dx-NTC, -2, 3, ..., x thermosensors NTC;
- TJ-D2-K, TK-D3-K, ..., TJ-Dx-K, -2, 3, ..., x thermocouples K type ;
- TJ-D2-J, TK-D3-J, ..., TJ-Dx-J, -2, 3, ..., x thermocouples J type.

Other versions on request. Thermosensors can be selected from: Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC, PTC and thermocouples. Sensors can be with mineral isolation or simple cables according to temperature range and measuring ambient. Standard signal transmitters 4-20mA, or 0-10V can be mounted in to connection head.

Level sensors, electrodes and relays for liquids

Level electrode LJ-B for conductive liquids



without extension $L_{\max} = 2\text{m}$

with extensions $L_{\max} = 10\text{m}$

Process temperature: $-30\dots+180\text{ }^{\circ}\text{C}$

Protection class: IP65

1 – Electrode – stainless steel DIN 1.4301 (AISI 304)

2 – Electrode extension – stainless steel DIN 1.4301 (AISI 304)

3 – Process connection G1/2" – stainless steel DIN 1.4301 (AISI 304). Other connections possible too.

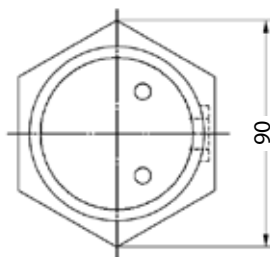
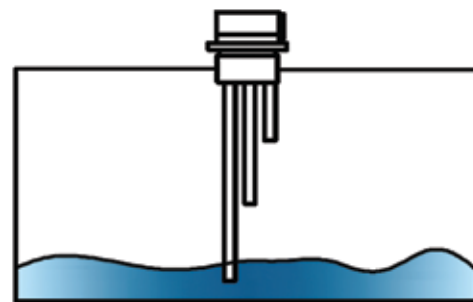
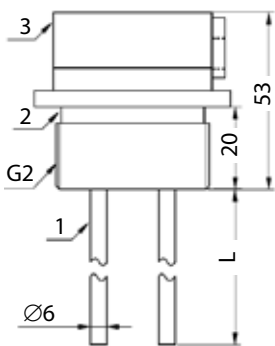
4 – Isolation – teflon or PVC

5 – Connection head type B – aluminium

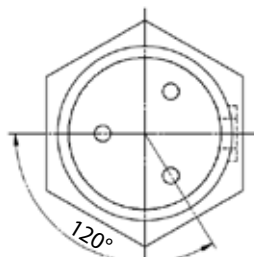
L – Length of electrode. Lengths L on request.

Level electrode LJ-DSH for conductive liquids

2 or 3 electrodes



LJ-DSH-2R
2 electrodes



LJ-DSH-3R
3 electrodes

Operating ambient temperature $-20\dots+80\text{ }^{\circ}\text{C}$

1 – Electrode – stainless steel DIN 1.4301 (AISI 304), coated PVC (polyvinylchloride) or teflon

2 – Process connection G2" – thermosetting pitch

3 – Cover PP (polypropylene)

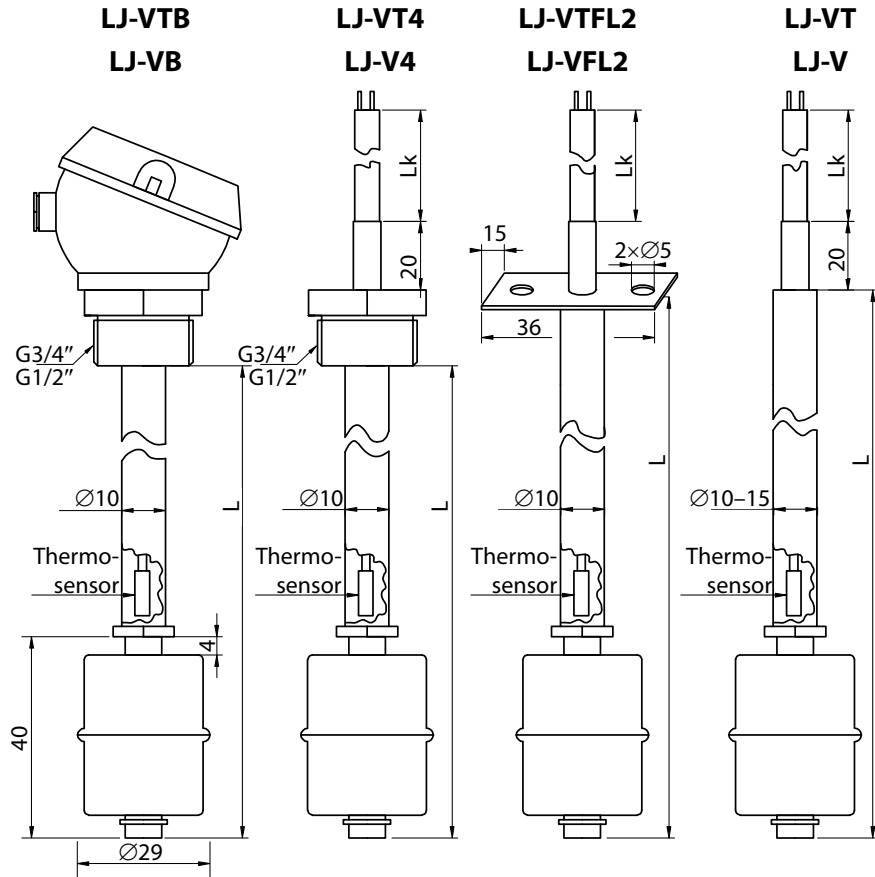
L – length of electrode, standard 1000mm or on request

Extended float level sensor LJ-VT with temperature sensor or LJ-V without temperature measurement

Level float sensor extended and with mounted thermosensor inside Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC or PTC is for liquid level and temperature regulation. With help of indicator or regulator this sensor can measure or control process temperature.

With temperature sensor

Without temperature sensor



Float can be reversed to change position where contacts are closed or opened, NC or NO

Distance L and process connection – on request. $L_{min} = 35 \text{ mm}$

Contacts parameters	Conditions	Max.	Units
Switching power	V&A combination, not to exceed max.	70	W
Switching voltage	AC peak	200	V
Switching current	AC peak	2,5	A
Data of process		Min...Max.	Units
Ambient and process temperature		-30...+130	°C
Process part	Stainless steel		
Protection class	IP65		
Temperature sensor	Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC or PTC		

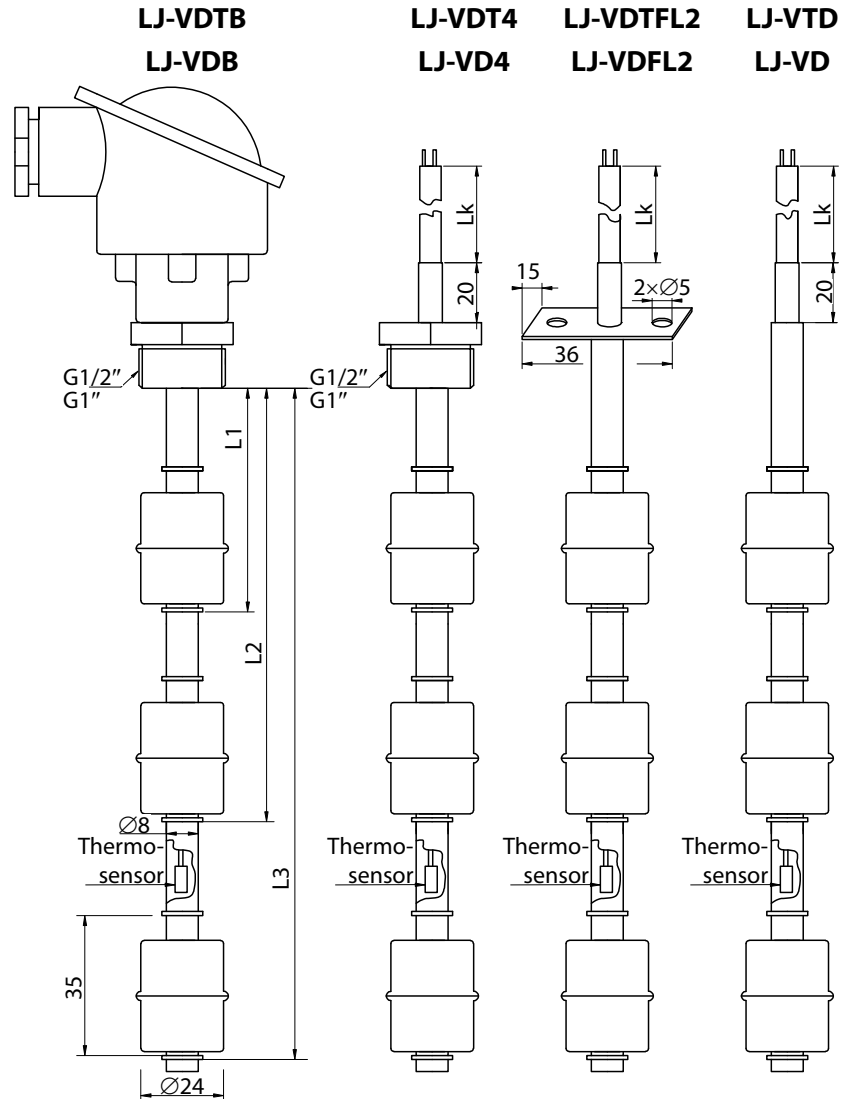
Multipoint, multilevel float level relay LJ-VDT with temperature sensor or LJ-VD without temperature measurement

The main difference LJ-VD from LJ-V is that for liquid level control are used two or three level floats instead of one. It allows measuring and regulation liquid in the several levels.

Level float relay with mounted thermosensor inside Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC or PTC is for liquid level and temperature regulation. With help of indicator or regulator this relay can measure or control process temperature.

With temperature sensor

Without temperature sensor



Floats can be reversed to change position where contacts are closed or opened, NC or NO
Distances L1, L2, L3 and process connection – on request. $L1_{min} = 35 \text{ mm}$.

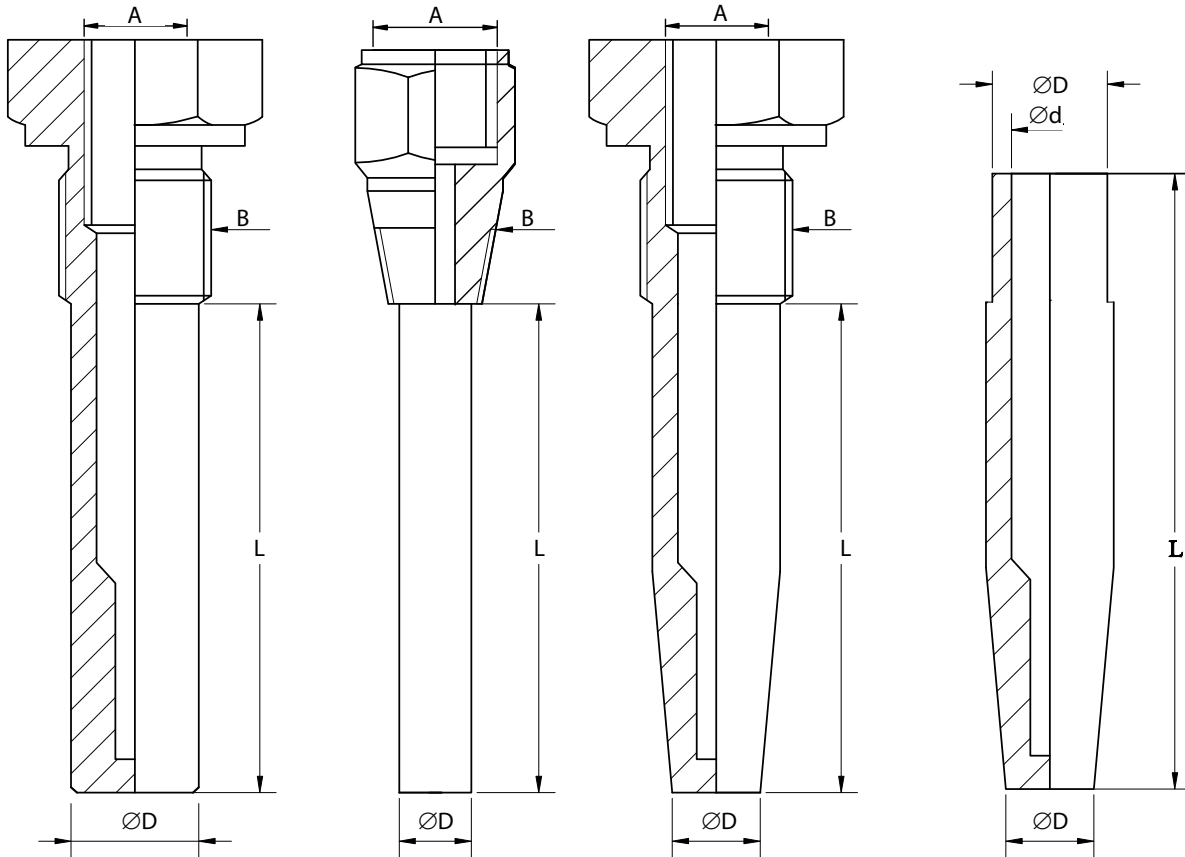
Contacts parameters	Conditions	Max.	Units
Switching power	V&A combination, not to exceed max.	70	W
Switching voltage	AC peak	200	V
Switching current	AC peak	2,5	A
Data of process		Min...Max.	Units
Ambient and process temperature		-30...+130	°C
Process part	Stainless steel		
Protection class	IP65		
Temperature sensor	Pt100, Pt1000, Ni100, Ni120, Ni1000, NTC or PTC		

Thermowells, protection tubes

suitable for temperature sensors

Thermowells are either build-up by welding tubes with connecting parts or machined out of barstock.

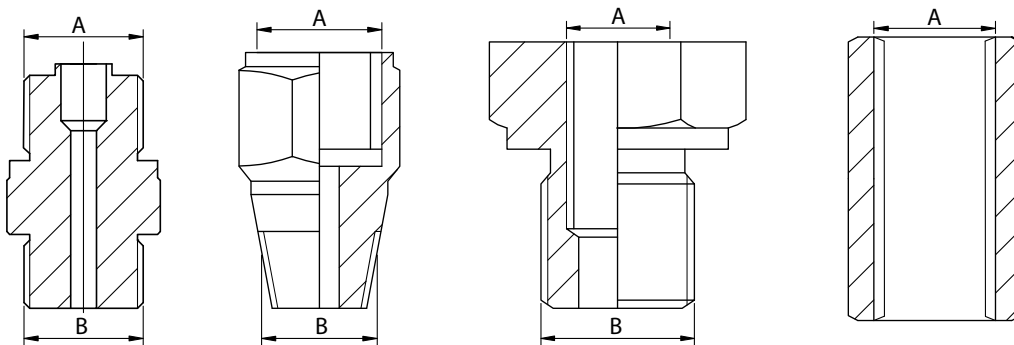
A full description of the thermowell would include the following information: – type of thermowell, well material, shape, outer diameter at tip and root, bore diameter(s), tip tickness, process and instrument connection, insertion and total length.



Thermowells and adapters material – stainless steel.

Tube diameter $\varnothing D$: 6*1, 8*1, 10*1.5, 12*2 or 14*1.5, ... (depends on connection thread)

Adapters



Adapters A and B connection threads:

G1/4, G1/2, G3/4, G1/2L, 1/4 NPT, 1/2 NPT, M10x1, M12x1,5, M16x1.5, M20x1.5, ...

Other ordering versions possible.

AUREGIS UAB not only produce but supply a wide assortment of the best quality industrial devices, sensors and automation components for measurement and regulation of temperature, pressure, level, humidity and other processes for customers in different areas – industry, food-processing, air conditioning, railways, fleet, power stations, for aggressive and explosive Ex environments.

Other our activities and services:

- consulting about automation of processes in various industries;
- design and production equipment for technological processes automation, control and automation systems;
- designing, production, adjustments and mounting of electrical schemes, control cabinets;
- programming of programmable controllers (PLC) and operator's panels (HMI);
- designing remote access via internet and GSM/GPRS to the supplied equipment;
- programming SCADA systems.

Main our partners:



TRAFAG www.trafag.com – pressure transmitters and relays, thermostats for explosive Ex and aggressive environments.
Pressure gauges and relays especially for gas SF6



RUEGER www.rueger.ch – industrial temperature sensors and converters, bimetallic and capillary thermometers



RAYTEK www.raytek.com – non-contact infrared thermometers, industrial temperature sensors, monitoring and scanning systems of temperature processes



IRCON www.ircon.com – non-contact infrared thermometers, industrial temperature sensors, monitoring and scanning systems of temperature processes. IRCON team up with RAYTEK in 2007



HENGSTLER www.hengstler.com – all types of rotary encoders, counters, tachometers, timers



LUMEL www.lumel.com.pl – measuring instruments, controllers, regulators, indicators, displays, converters, recorders and so on



COMET SYSTEM www.cometsystem.cz – measurement devices, converters, data loggers for temperature, air humidity, pressure, current, voltage with or without indicators. Monitoring and control systems



STIKO www.stiko.com – industrial manometers, thermometers, various separators (membranes) of processes and overpressure protection devices



TERMOAPARATURA WROCLAW www.termoaparatura.com.pl – industrial thermosensors and thermowells



DINEL www.dinel.cz – manufacturer of electronic systems for level measurement and sensing of liquid and bulk-solid materials



INMEL www.inmel.com.pl – power, energy and multifunctional calibrators



ATEK Sensors Technology AG www.ateksensor.com – magnetic measuring linear scales systems, optical linear systems, encoders, potentiometric linear scales and DRO systems for industrial machines and automation systems

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