

IO.ATL (ENG)

Edition 1.A/08.15

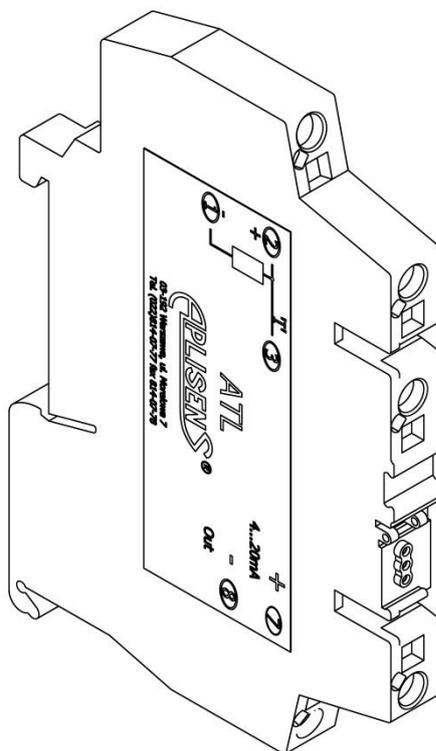
APLISENS®

Produkcja Przemysłowej Aparatury
Pomiarowej i Elementów Automatyki

USER'S MANUAL

Rail-mounted temperature transmitter

ATL



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Symbols used

Symbol	Description
	Warning to proceed strictly in accordance with the information contained in the documentation in order to ensure the safety and full functionality of the device.
	Information particularly useful during installation and operation of the device.
	Information on disposal of used equipment.

BASIC REQUIREMENTS AND SAFE USE



- The manufacturer will not be liable for damage resulting from incorrect installation, failure to maintain the device in a suitably functional condition, or use of the device other than for its intended purpose.
- Installation should be carried out by qualified personnel having the necessary authorisation to install electrical and pressure measuring devices. The installer is responsible for performing the installation in accordance with these instructions and with the electromagnetic compatibility and safety regulations and standards applicable to the type of installation.
- In the installation with control and measurement instruments exists, in case of leakage, a risk to personnel on the side where the medium is under pressure. All safety and protection requirements must be observed during installation, operation and inspections.
- If a device is not functioning correctly, disconnect it and send it for repair to the manufacturer or to a firm authorised by the manufacturer.



In order to minimise the risk of malfunction and associated risks to personnel, the device is not to be installed or used in particularly hostile conditions, where the following risks occur:

- Possibility of mechanical impacts, excessive shocks and vibration;
- Excessive temperature fluctuation;
- Condensation of water vapour, dust, icing.

Changes in the manufacture of transmitters can overtake the update's paper documentation. Current manuals can be found on the manufacturer's website at www.aplisens.pl.

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1. INTRODUCTION

The subject of this manual is rail-mounted temperature transmitter type **ATL**.

This manual contains data, information and recommendations concerning installation and use of the transmitter, as well as troubleshooting procedures.

2. SAFETY PROCEDURES



- The installation and commissioning of the transmitter and any activities related to the operation should be performed only after careful examination of the contents of this manual.
- Installation and maintenance should be carried out by qualified personnel having necessary authorisation to install electrical equipment and measuring instruments.
- The transmitter should be used according to its intended purpose (section 6.1) with permissible parameters.
- Before assembly or disassembly of the transmitter, one must absolutely disconnect the power source.
- Under no circumstances may the electrical system of the transmitter be repaired or otherwise handled by the user. Damage assessments and repairs may only be carried out by the manufacturer or its authorised dealer.
- Do not use damaged device. If a device is not functioning correctly, disconnect it.

3. USER MATERIALS

The user receives together with the transmitter:

- a) Product Certificate, which is also a warranty card;
- b) User Manual ref. No. IO.ATL(ENG) (available on the website www.aplisens.pl).

4. TRANSPORT AND STORAGE

4.1. Transport

Transmitters should be transported in multi- or/and single-unit packaging. The packaging should be protected against displacement and direct weathering effect.

4.2. Storage

The transmitter should be stored in the original packaging, indoor rooms, free of vapours and corrosive substances, the temperature and relative humidity should not exceed the permitted conditions (see p.10.2).

5. WARRANTY

Manufacturer warrants to the conditions specified in the Product Certificate which is also a guarantee card.

Warranty is in full force under the condition of using the devices properly along with the purpose determined in the manual.

Warranty does not apply to devices which are damaged mechanically or electrically through occurrences not attributable to Aplisens, especially:

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- Damage in connection with installation or activating;
- Damage in connection with improper usage or usage against manual or safety regulations.

6. CONSTRUCTION

6.1. Intended use and functions

Temperature transmitters' type **ATL** are designed for temperature measuring in various industrial applications related to measurements, control and regulation.

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Temperature transmitter converts the measurement signal from RTD temperature sensors to signal 4 ... 20 [mA].

The ATL transmitter features:

- Two-wire power supply (4...20mA current loop signal);
- Digital signal processing (filtration, linearization);
- Ability to remote selection of the range and type of sensor;
- Sensor signal interrupt information (sensor break, alarm),
- Ability to cooperate with resistive Pt100, Ni100 sensors;
- Resistance compensation in the line connecting the resistive sensor to the transmitter in three-wire cable;

6.2. Construction and dimensions

Temperature transmitter type **ATL** consist of a sealed housing of plastic material and the electronic unit placed inside that converts signal from the sensor to a unified output signal.

The transmitters have two output terminals and three input terminals. Additionally ATL transmitter is equipped with a input for programming.

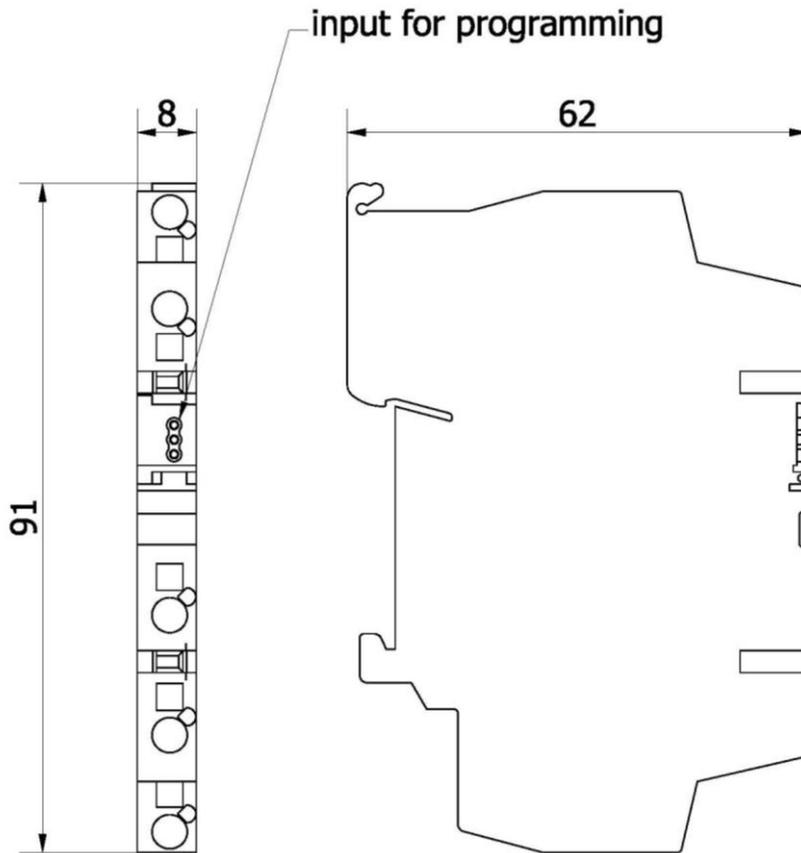


Figure 1. ATL transmitter. Dimensions

7. INSTALLATION

7.1. General recommendation



It is recommended to install transmitters in closed enclosures to protect them against influence of the environment.

Rail-mounted enclosure allowsfor installation on the following rail types:

- TS-32 (EN 50 035);
- TS-35 (EN 50 022);

8. CONNECTION



All connecting and assembly operations must be done with a disconnected power supply and disconnected input signal.

Connect the transmitter according to Figure 2. Cable diameter: $\leq 2,5\text{mm}^2$.

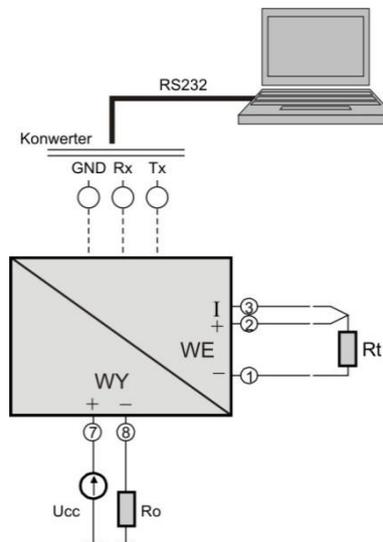


Figure 2. Connection of ATL transmitter

9. CONFIGURATION

Transmitter can be configured by RS/USB converter connected to PC with transmitters configuration software (attached to converter). During configuration transmitter should be supplied by 9-36V DC.

ATL transmitter is equipped with a programming slot located on the front of enclosure. ([Fig.1](#))

10. TECHNICAL DATA

10.1. Electrical parameters

Input signal	Pt100, Ni100
Limit process	$20\Omega \leq R \leq 380\Omega$
Min. measuring range	10 Ω
Output signal	4...20mA
Power supply (Uz)	6...29V
Load resistance (Ro)	$0 \dots (U_z - 7V) / 25mA$
Output updates time (time constant)	$\leq 1s$
Alarm signal	$23 \pm 1mA$
	$\leq 3,8mA$
Processing error	
Accuracy for $\Delta R > 20 \Omega$	$\leq \pm 0,2\%$ (min 0,25°C/0,1 Ω)
Thermal error	$\leq \pm 0,1\% / 10^\circ C$
Additional for the resistive output	$\leq \pm (0,25^\circ C / 0,1\Omega) / 10^\circ C$
Error due to supply voltage changes	$\leq \pm 0,1\%$
Influence of serial interferences 50Hz	$\leq \pm 0,16\%$
Influence of parallel interferences 220V	$\leq \pm 0,16\%$
Influence of supply voltage changes	$\leq \pm 0,1\%$
Additional error due to sinusoidal vibration	$\leq \pm 0,1\%$
Additional error due to magnetic field	$\leq \pm 0,1\%$

10.2. Conditions use, transportat and storage

Normal conditions of use

Ambient temperature	-25 ... +80°C
Relative humidity	30 ... 80%
Atmospheric pressure	80 ... 120kPa
Fixed and variable magnetic field	0...400A/m
Ripple voltage	2V (inter-peak value)
Sinusoidal vibration (5...80Hz)	Up to 2g
Dustiness	Any
Working position	Any
Concentration of active components in the atmosphere	No aggressive components
Heating time	15min

Limit conditions for transport and storage

Ambient temperature	-25 ... +85°C
Relative humidity	Up to 95% for 40°C
Shock	Up to 10g, 10ms

10.3. Housing, weight

Housing type	859 (WAGO)
Dimensions	See point 6.2
Housing ingress protection	IP 20
Weight	0,1kg

11. INSPECTIONS. SPARE PARTS

11.1. Periodic inspections

Periodic inspections should be carried out in accordance with regulations binding the user. During the inspection, check all electrical connections at the terminals (reliability of connections) and the stability of the transmitter mounting.

11.2. Unscheduled inspections

If the transmitter is installed in a location where it could be subjected to mechanical damage, electrical surges or malfunction is found - inspect it as needed.

In case of lack of signal in the transmission line or its incorrect value, check the state of the cable, of the connection on terminals, etc. Determine whether the values of the supply voltage and load resistance are correct.

12. SCRAPPING, DISPOSAL



Waste or damaged transmitters should be dismantled and disposed of in accordance with Directive (2002/96/EC) on waste electrical and electronic equipment (WEEE) or returned to the manufacturer.