



# LEVTECH

## User Manual



### Isolated Splitter for analog signal LSP-IAS



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## PREFACE

Thank you for selecting our product!

This User Manual contains information needed for proper installation, operation, and maintenance of your product. A thorough understanding of these simple instructions will help you get the most of your product.

This document should be read thoroughly, and the safety instructions described in this manual should be followed carefully. If you have questions or concerns about the operation and maintenance of this product, please contact our customer support.

If a problem arise with the product, check if you followed the installation steps correctly. If the problem persists, contact an authorized Levtech dealer or our customer support.

All information in this User Manual is based on the latest product information available at the time of printing approval. Levtech reserves the right to make changes at any time without notice and without incurring any obligation.

Please always keep this manual together with the isolator as a reference to everyone who uses this product.

## Document Revisions

Date	Version Number	Document Changes
11-03-2021	1.0	Initial draft
13-04-2021	2.0	Overall improvements
15-04-2021	3.0	Application examples added
13-05-2021	4.0	Wiring diagram added
06-11-2023	5.0	Input resistance modified

## Approvals

This document requires following approvals:

Name	Title
Levi Mihaly	General Manager

# 1. INTRODUCTION

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## 1.1. General Information

This manual is the designated User Manual for the installation, safe operation, and maintenance of your product. It is divided into nine chapters covering general information, safety instructions, how to safely install and operate the product, maintenance, warranty, and contact information.


All personnel involved in the installation, operation, and maintenance of this equipment should read and understand this manual, particularly its safety instructions. Substandard performance and longevity, property damage, and personal injury may result from not knowing and following these instructions.


In order to ensure long product life, Levtech recommends that you utilize the product and perform maintenance by correctly following the instructions described in this guide. The manufacturer's warranty does not cover any damage resulting from the neglect of these instructions.

Levtech assumes no liability for damage caused by operation contrary to what is specified in this operating manual.

## 1.2. Support and Services

For information about further questions that are not answer in this manual, additional materials, and support, please contact:

 Lueta Nr. 319, Romania

 +40761318594

 office@levtech.ro

 www.levtech.ro

## 1.3. Disposal Remarks

**DO NOT** dispose of the product with domestic waste!



Electronic devices have to be disposed of according to the regional directives on electronic and electric waste disposal. In case of further questions, please consult your supplier. The supplier may take care of proper disposal.



## 2. SAFETY INSTRUCTIONS

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### 2.1. Symbols

 <b>WARNING</b>	This symbol indicates information that, if ignored, could result possibly in personal injury or even death due to incorrect handling.
 <b>CAUTION</b>	This symbol indicates information that, if ignored, could possibly result in personal injury or physical damage due to incorrect handling.
<b>NOTICE</b>	Indicates information considered important, but not hazard-related.

### 2.2. Receipt and unpacking

Unpack the device without damaging it and check whether the device type corresponds to the one ordered. The packing should always follow the device until this has been permanently mounted.

### 2.3. Environment

Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock, and rain and heavy moisture.

### 2.4. Mounting

- Only technicians who are familiar with the technical terms, warnings, and instructions in the manual and who are able to follow these should connect the device.
- Mounting and connection of the device should comply with national legislation for mounting of electric materials, i.e. wire cross section, protective fuse, and location. Descriptions of input / output and supply connections are shown in this installation guide and on the side label.
- Use this device only in accordance with this instruction manual, as well as all applicable local and national laws and regulations. Only allow this device to be installed, operated, maintained, repaired, etc. by others who have also read and understood the user manual.
- Do not allow minors, untrained personnel, or personnel suffering from physical or mental impairment that would affect their ability to follow this manual to install, operate, maintain, or repair this device.
- Any untrained personnel who might be near the device while it is in operation **MUST** be informed that it is dangerous and fully instructed on how to avoid injury during its use.

** WARNING**

To avoid the risk of electric shock and fire, the safety instructions of this guide must be observed and the guidelines followed.

## 2.5. Cleaning

When disconnected, the device may be cleaned with a cloth moistened with distilled water.

** WARNING**

- The specifications must not be exceeded, and the device must only be applied as described in the following.
- Do not use the device near water or moisture.
- Do not install near any heat sources such as radiators, stoves or other heaters that produce heat.
- To prevent ignition of the explosive atmospheres, disconnect power before servicing and do not separate connectors when energized and an explosive gas mixture is present.
- Do not mount or remove devices from the power rail when an explosive gas mixture is present.
- Before the commissioning of the device, this installation guide must be examined carefully, and only qualified personnel (technicians) should install this device.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

** CAUTION**

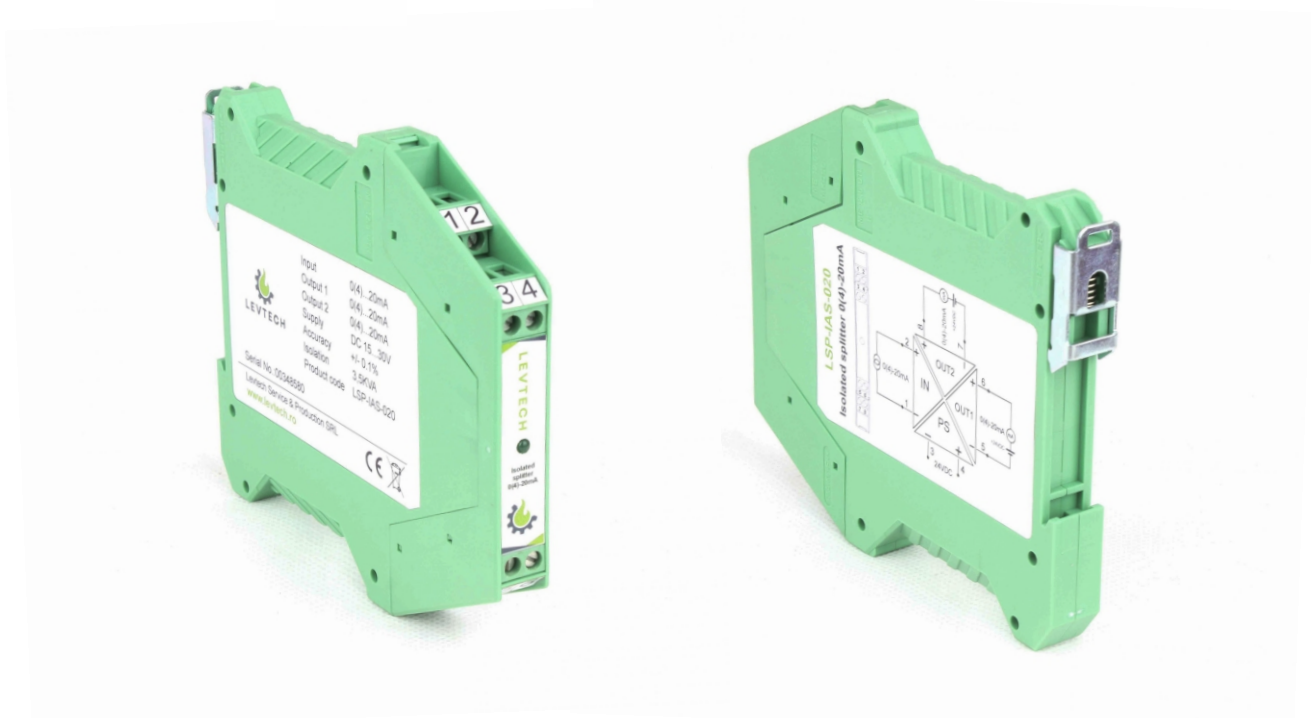
To avoid the risk of explosion due to electrostatic charging of the enclosure, do not handle the units unless the area is known to be safe, or appropriate safety measures are taken to avoid electrostatic discharge.

### 3. DESCRIPTION

The Isolated splitter is usually used in automation systems, where the analog signal of a measurement device has to be connected into two processing unit. For example a temperature transmitter 4-20mA output is connected to the input of this device and the output1 is connected to the PLC, output2 is connected to a display which will show the temperature value. It can be ordered for 0(4)-20mA, 0-10V or 0-5V standard analog signals. It ensures also a 4 way galvanic isolation, which mean that the Input, Output1, Output2 and the power supply is isolated from each other. The galvanic isolation reduces the impact of interference and ground potential differences.

### 4. FEATURES

- Four way isolated
- Two output
- 3500VDC isolation
- TS-35 DIN rail mounting
- +/-0.1% accuracy
- Ip40 case
- Screw terminals
- Power LED
- Reverse polarity protection
- Supply voltage 24VDC
- Made in EU





## 5. INSTALLATION AND WIRING

The module is designed to be installed, in a vertical position, on TS-35 DIN rail. For the best module performance and duration, avoid placing objects that could obstruct the ventilation. Never install the modules near heat sources.

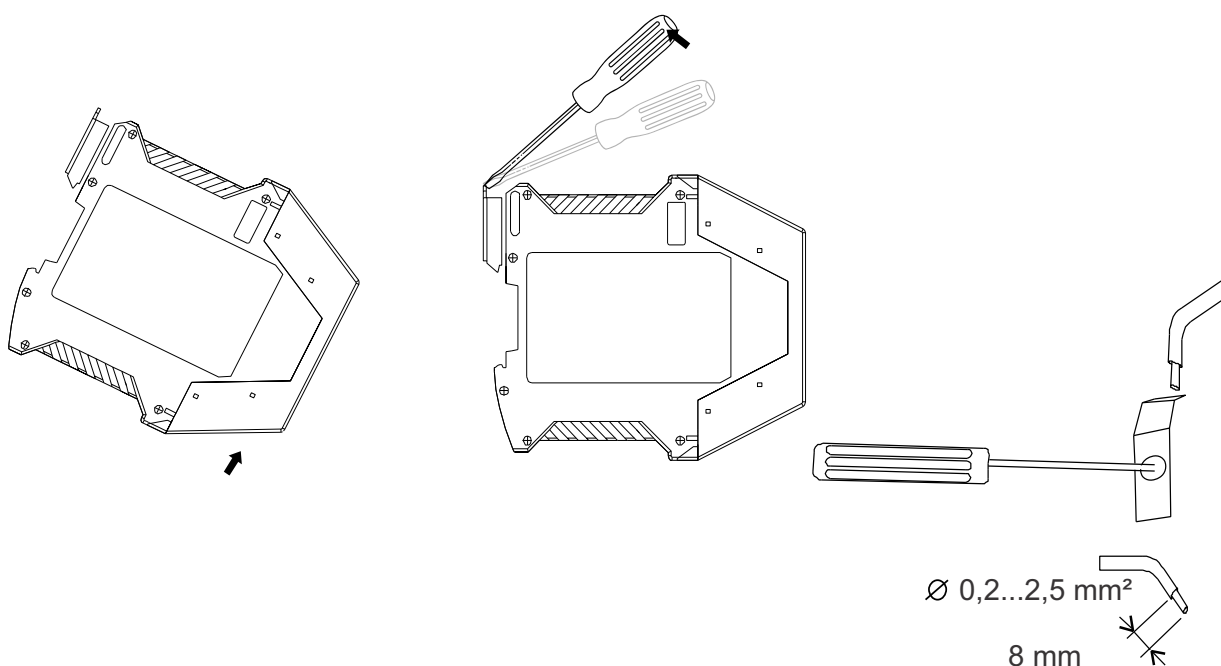
### 5.1. Installation on TS-35 DIN Rail

#### Inserting the Module in the Rail:

- 1) Attach the module in the lower part of the rail, as shown in the left figure below.
- 2) Press the module upwards.

#### Removing the Module in the Rail:

- 1) Apply leverage using a screwdriver, as shown in the right figure below.
- 2) Press the module downwards.



### 5.2. Connections with Screw Terminals

The module has been designed for screw-type terminal electrical connections. Proceed as follows to make the connections:

- 1) Strip the cables by 8mm.
- 2) Insert a screwdriver in hole, unscrewing the screw.
- 3) Insert the cable in the round hole.
- 4) Again, use the screwdriver to tight the screw.
- 5) Remove the screwdriver and make sure that the cable is tightly fastened in the terminal.

## 6. SPECIFICATIONS

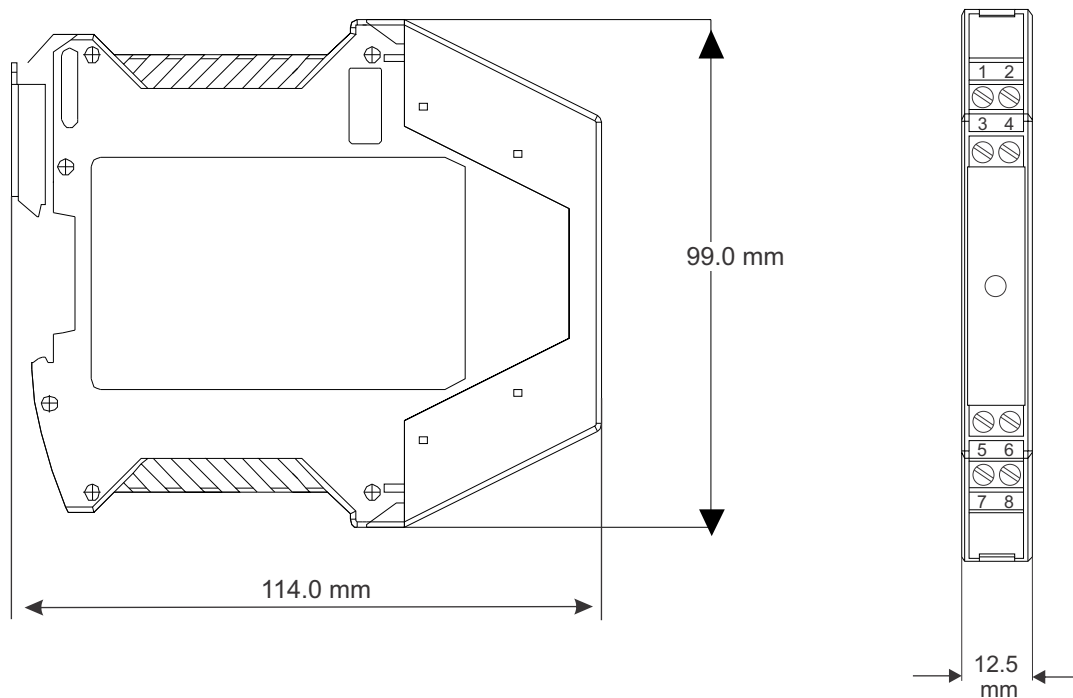
<b>Current Input LSP-IAS-020</b>	
Number of inputs	1
Input Signal	Direct Current
Input Range	0-20mA
Input Resistance	100Ω
<b>Current Output LSP-IAS-020</b>	
Number of outputs	2
Output Signal	Direct Current
Output Range	0-20mA on current loop
Output Resistance	<500 Ω
<b>General</b>	
Linearity error	0.10%
Output accuracy	0.10%
Limit frequency Voltage type	100Hz
Limit frequency Current type	1kHz
Response time	0.8ms
Isolation Voltage	3500V <sub>PEAK</sub>
Working isolation voltage	400 V <sub>RMS</sub>
<b>Power Supply</b>	
Supply Voltage	12 ~ 30VDC
Power Consumption	<56mA
Reverse-Polarity Protection	Yes
<b>Enclosure</b>	
IP Rating	IP40
Dimensions (L x D x H)	144 x 99 x 12.5 mm
Weight	83g
Mounting	TS-35 DIN
Maximum Cable Cross-Section	2.5mm <sup>2</sup> (max.)
<b>Environmental Conditions</b>	
Ambient Temperature Range	- 10 ~ +60°C
Storage Temperature Range	- 30 ~ +80°C
Humidity Level	0 ~ 95% RH at 40°C, no condensation

## 7. CONFIGURATION TYPE AND ORDER CODE

Among the models available for this product, Levtech offers options that include voltage and current input. Voltage input models can be 0-5 or 0-10 volts, while models with current input can be 0 (4) -20 mA. In both cases, the same value can be measured at two outputs as at the input. The following table shows order codes for each model.

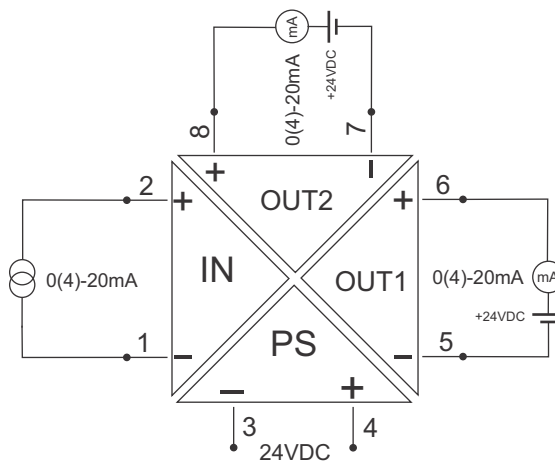
Order Code	Input	Output1	Output2
LSP-IAS-020	0(4)-20mA	0(4)-20mA	0(4)-20mA
LSP-IVS-010	0-10V	0-10V	0-10V
LSP-IVS-005	0-5V	0-5V	0-5V

## 8. DIMENSIONS



## 9. TERMINAL DESIGNATION

### LSP-IAS-020

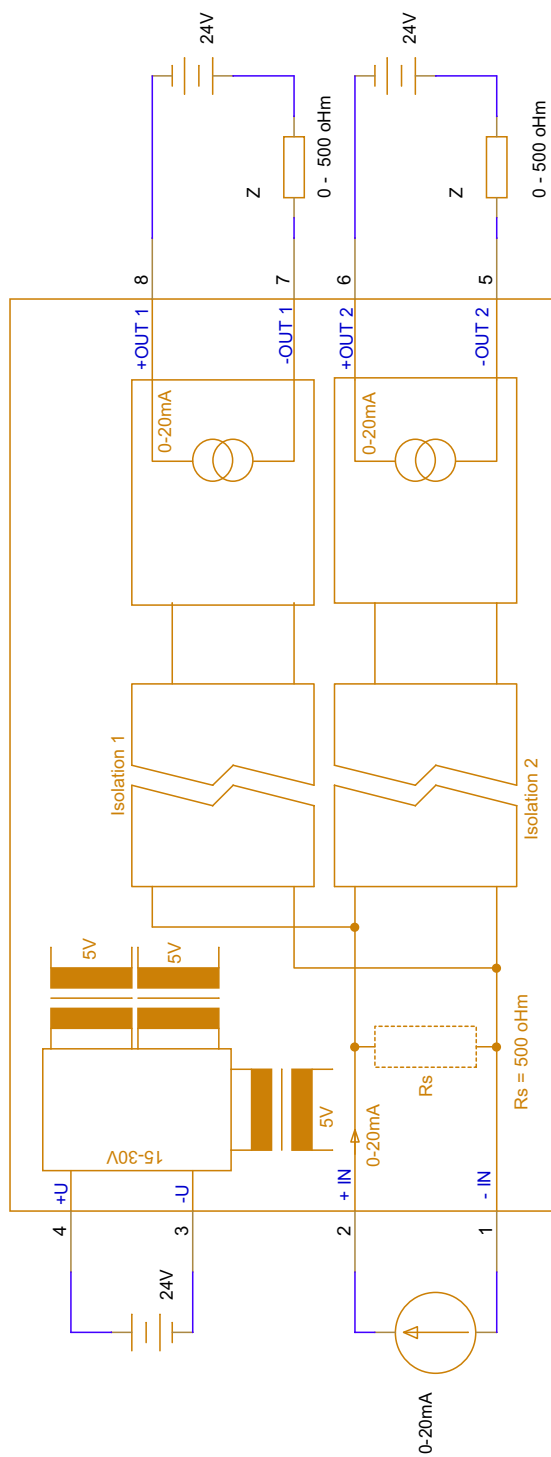


1. Negative Signal Input;
2. Positive Signal Input;
3. Negative Input of the Power Supply;
4. Positive Input of the Power Supply;
5. Negative Signal Output1;
6. Positive Signal Output1;
7. Negative Signal Output2;
8. Positive Signal Output2.

## 10. ELECTRICAL DIAGRAMS

### LSP-IAS-020

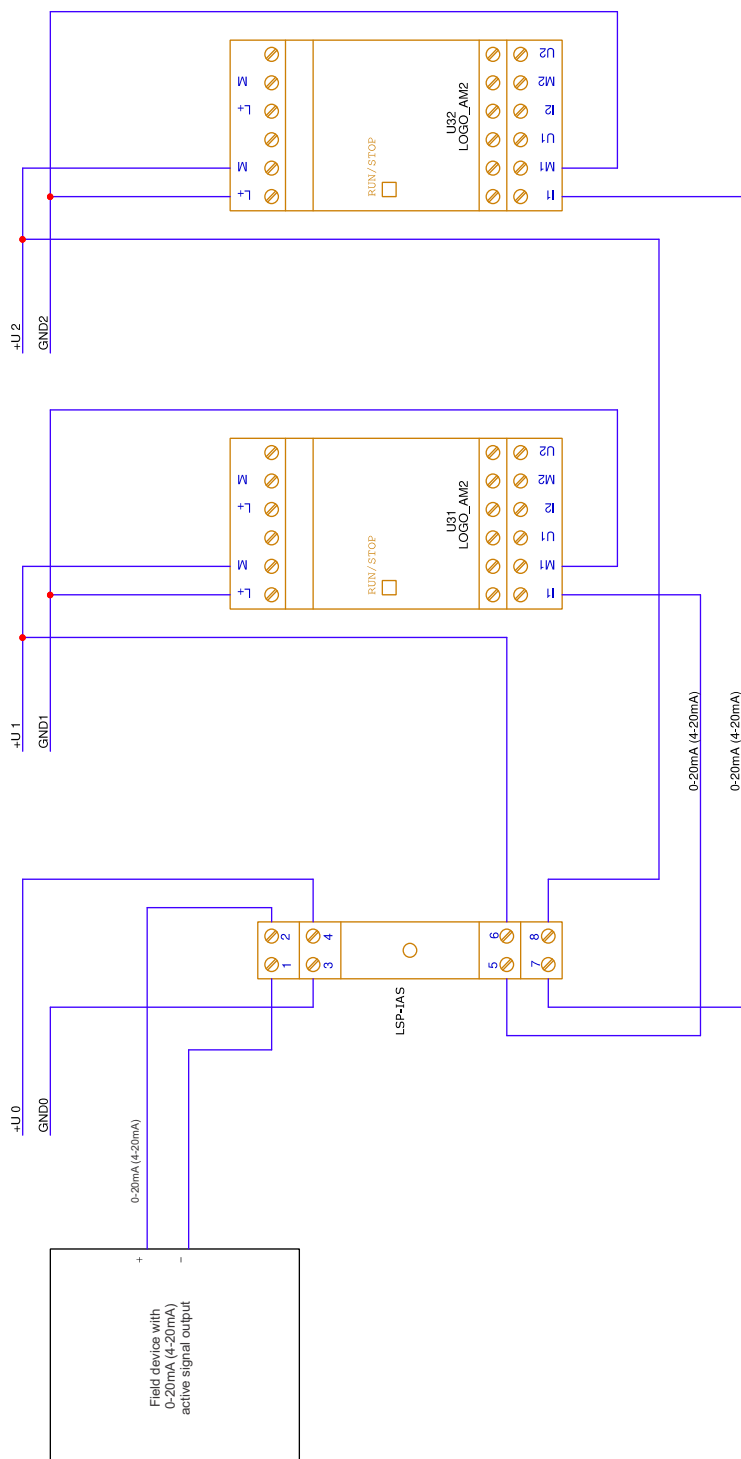
This model features a current input and two identical current output. The input signal will be distributed to both output identically to the input and isolated from each other.



## 10. ELECTRICAL DIAGRAMS

### LSP-IAS-020 Wiring Example

The figure below shows an example of a connection of our isolated splitter with a 0-20mA input and two 0-20mA outputs both connected to PLCs.

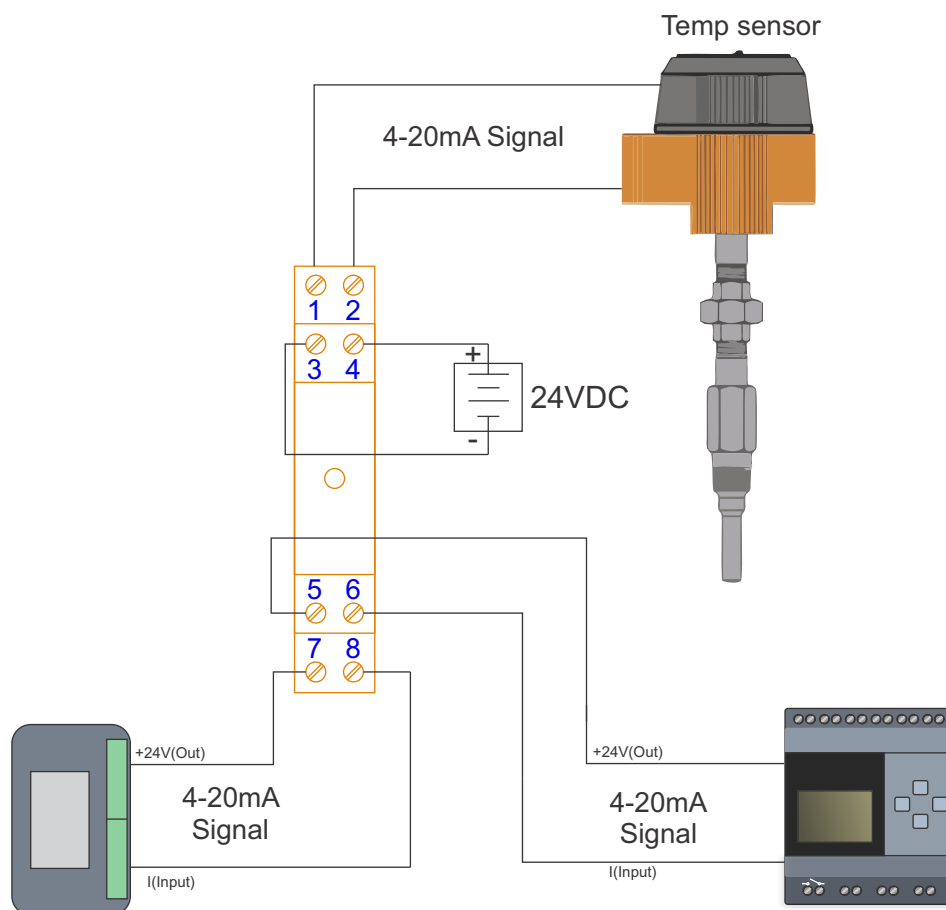


## 11. APPLICATIONS

This device can be used for several applications on industrial automation. It is ideal for removing errors caused by noise and signal interference, protecting sensitive equipment such as a PLC from potential hazards, and converting analog signals. In addition to that, it sends the same signal for its two isolated outputs.

### Example 1:

Suppose that you have a temperature sensor that operate in a 4-20mA current loop and you need to record the temperature in a data acquisition hardware but, at the same time, use it to control a part of your manufacturing process with a PLC. Therefore, you could use one of this isolated splitter to isolate the input signal and provide two isolated output signals. You could connect the sensor to the input, the data acquisition hardware to Output 1 and the PLC to Output 2. The outputs should be loop-powered.



## **12. OPERATION AND MAINTENANCE**

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### **12.1. Operation**

This isolator requires no user adjustments during commissioning. It comes with factory calibration ready for use.

If the isolator fails to operate, check for bad connections. In the unlikely event of the isolator not working, it should be returned to the supplier for repair or replacement.

### **12.2. Maintenance**

Levtech suggests a quick check for terminal tightness and general unit condition. Always adhere to any site requirements for programmed maintenance.

## **13. WARRANTY DISCLAIMER**

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Levtech warrants this product to be free from significant deviations in material and workmanship for a period of 3 year from date of purchase. If repair or adjustment is necessary and has not been the result of abuse or misuse, within the 3 year period, please return-freight-prepaid and the correction of the defect will be made free of charge. If you purchased the item from our distributors and it is under warranty, please contact them to notify us of the situation. Levtech Service Department will determine if the product problem is due to deviations or customer misuse. Out-of-warranty products will be repaired on a charge basis.

### **13.1. Return of items**

Authorization must be obtained from one of our representatives before returning items for any reason. When applying for authorization, have the model and serial number handy, including data regarding the reason for return. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss.

Levtech will not be responsible for damage resulting from careless or insufficient packing. A fee will be charged on all authorized returns.

Levtech reserves the right to make improvements in design, construction and appearance of our products without notice on which the buyer could reasonably have discovered the alleged defect or breach.



## 14. CONTACT INFORMATION

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### OPENING HOURS

Mon-Fri 8:00 AM – 18:00 PM  
Sat 9:00 AM – 14:00 PM



### ADDRESS

319 Lueta 537140 Harghita Romania



### EMAIL

office@levtech.ro

## ADDRESS

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## WEBSITE

<https://www.levtech.ro/>

## SOCIAL MEDIA



Levtech



@levtechsp



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## COMPANY DATA

LEVTECH SERVICE & PRODUCTION SRL  
Fiscal code (CIF): RO35733217  
Trade Register: RC J19/134/2016  
IBAN: RO39RNCB0152150349440001  
BCR BANK