

# KOS1200 LOOP ISOLATOR/SPLITTER

- **1 x (4 to 20) mA INPUT AND 2 x (4 to 20) mA OUTPUTS**
- **ISOLATE and SPLIT LOOP SIGNALS**
- **GALVANIC ISOLATION 500 VDC, 1 KV FLASH TESTED**
- **HIGH ACCURACY, BETTER THAN 0.1% OF RANGE**
- **12.5 mm WIDE**
  
- **INTRODUCTION**

The KOS1200 isolator is designed to take one primary (4 to 20) mA control loop and provide two isolated secondary loops. Power is required externally on each loop. This isolator requires no user-adjustment during commissioning, apart from an initial test, to ensure it operates correctly over its full working range. Minor adjustments can be made to the calibration of the device by means of the two front-panel accessible calibration potentiometers. Incorrect connection in the loop will not damage the device as long as the specified maximum currents /voltages are not exceeded.

## ➤ FEATURE HIGHLIGHTS

### **SIGNAL SPLITTER**

The KOS1200 outputs two galvanically isolated (4 to 20) mA loop outputs, derived from a single input loop. Basic and reliable in operation, the device can be used for applications where the same (4 to 20) mA loop signal is needed to be connected to multiple instruments that require isolation from each other to avoid ground loops.

### **HIGH ACCURACY**

Only  $\pm 10$  uA error between the input and output signals ensures confidence in the KOS1200 product's performance.

### **GALVANIC ISOLATION**

With 500 Vdc isolation between input and output circuits the KOS1200 is an ideal solution for removing ground loops between (4 to 20) mA loop equipment.

### **JOINS POWERED INPUT AND OUTPUT (4 to 20) mA LOOPS**

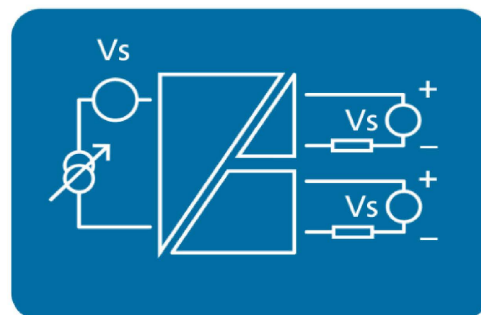
The KOS1200 requires powered loop supplies on both input and output connections, enabling it to safely join two active supplies where there is a conflict with more than one piece of equipment powering a control loop.

### **BOOST A (4 to 20) mA LOOP**

The KOS1200 can be used to extend the range of a weak (4 to 20) mA control loop by allowing an additional loop power supply to be added, isolated from the primary loop supply.

### **LOOP TRIM FUNCTION**

The KOS1200 can be used to add a (4 and 20) mA fine trim function to a sensor with no trim options.



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| ELECTRICAL INPUT (per channel)<br>mA   |   | SPECIFICATIONS @20°C     |
|--|---|--------------------------|
| Type                                   | Range/value                                       | Accuracy/stability/notes |
| Current loop 2 wire externally powered | (4 to 20) mA<br>> 2 mA minimum<br>< 30 mA maximum | Included in output error |
| Protection                             |   | Reverse protected        |
| Loop voltage                           | 35 Vdc maximum                                    | SELV                     |
| Loop volt drop                         | 5.0 Vdc maximum                                   | SELV                     |
| Thermal drift                          |   | Included in output error |

| ELECTRICAL OUTPUT (per channel)<br>mA   |   | SPECIFICATIONS @20°C  |
|---|---|---|
| Type/function   | Range/value                                       | Accuracy/stability/notes                                      |
| Current loop 2 wire externally powered  | (4 to 20) mA<br>> 2 mA minimum<br>< 30 mA maximum | ± 10 uA<br>Combined input output error                        |
| Protection  |   | Reverse protected   |
| Loop voltage  | (5 to 32) Vdc                                     | SELV  |
| Loop volt drop  | 2.7 Vdc   | Load = 900 ohm @ Vs = 24 Vdc<br>Load = 1200 ohm @ Vs = 30 Vdc |
| Thermal drift<br>Combined input output error  |   | Less than ± 2 uA /°C  |
| Output loads must be > 250 Ohms when KOS1200 is used in ambient temperature > 50 °C |   |   |

| USER INTERFACE (per channel)<br>Adjustment              |                            |                   |
|---|----------------------------|-------------------|
| Function  | Description                | Notes             |
| Zero  | Trim pot via front of unit | Calibrate @ 4 mA  |
| Span  | Trim pot via front of unit | Calibrate @ 20 mA |
| Suitable input source and meter required for adjustment |                            |                   |

| GENERAL            |   |
|--------------------|---|
| Function           | Description   |
| Galvanic isolation | 500 Vdc (flash tested @ 1 kV)                           |
| Isolation method   | Opto-coupler  |
| Response time      | Typically, less than 10 ms to reach 70 % of final value |

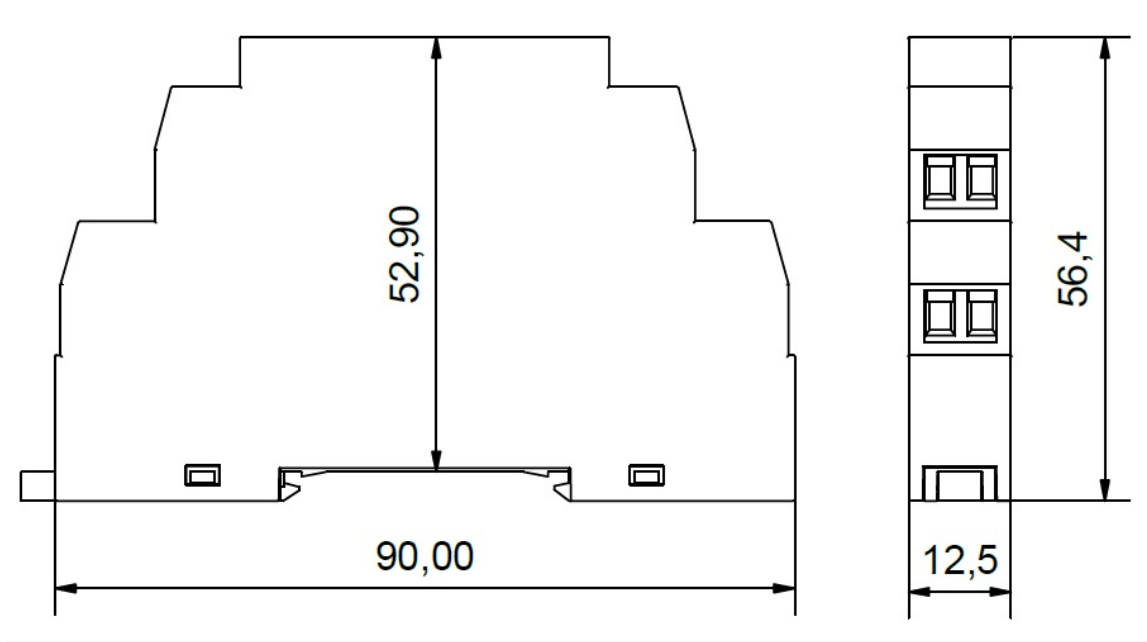
| MECHANICAL             |  |
|------------------------|--|
| Function               | Description                                      |
| Connection             | Captive clamp screws                             |
| Cable size             | Maximum recommended 2.5 mm <sup>2</sup> stranded |
| Case material          | Grey Polyoxymethylene, ABS back clip             |
| Flammability           | UL94-HB  |
| Mounting               | DIN EN 50022-35                                  |
| Dimensions (H x D x W) | (90 x 56.4 x 12.5) mm                            |

| ENVIRONMENTAL          |  |
|------------------------|--|
| Function               | Description  |
| Ambient temperature    | Operating / storage (0 to 70) °C                                   |
| Ambient humidity       | Operating / storage (10 to 95) %RH non-condensing                  |
| Protection requirement | Device must be installed in an enclosure offering >IP65 Protection |

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| APPROVALS          |  |
|--------------------|--|
| EMC                | BS EN 61326: Note - Sensor input wires less than 30 m to comply    |
| Class              | BS EN 61010-1 Pollution degree II class I                          |
| Ingress protection | BS EN 60529  |
| RoHS               | Directive 2011/65/EU, incorporating Amendment Directive EU2015/863 |

Mechanical. Dimensions in mm



|                   |                |
|-------------------|----------------|
| <b>ORDER CODE</b> | <b>KOS1200</b> |
|-------------------|----------------|

| ACCESSORIES          |   |
|----------------------|---|
| Loop powered display | Refer to <a href="mailto:comercial@ditel.es">comercial@ditel.es</a> |
| Loop power supply    | Refer to <a href="mailto:comercial@ditel.es">comercial@ditel.es</a> |

| ADDITIONAL INFORMATION           |   |
|----------------------------------|---|
| For KOS1200 Application Notes    | Refer to <a href="http://www.ditel.es">www.ditel.es</a>             |
| For KOS1200 User Guide           | Refer to <a href="http://www.ditel.es">www.ditel.es</a>             |
| For full range of loop isolators | Refer to <a href="mailto:comercial@ditel.es">comercial@ditel.es</a> |

To maintain full accuracy, annual calibration is required: contact [support@ditel.es](mailto:support@ditel.es) for details  
The data in this document is subject to change. DITEL assumes no responsibility for errors

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