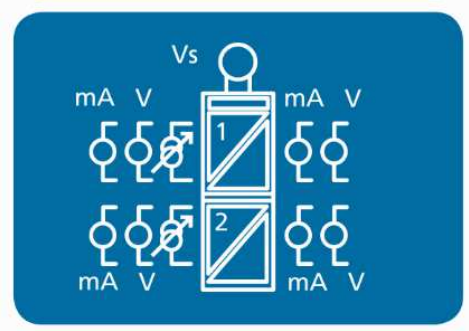
KOS1750 DUAL CHANNEL CONDITIONER FOR PROCESS INPUTS

- **TWO mA OR VOLTAGE PROCESS SIGNAL INPUTS**
- **TWO ISOLATED mA OR VOLTAGE OUTPUTS**
- **ISOLATED UNIVERSAL AC/DC POWER SUPPLY**
- **MATHS AND PROFILING TOOLS IN SOFTWARE**
- **DIRECT USB CONFIGURATION**
- **LOOP POWER SUPPLY FOR I/Ps AND O/Ps**

INTRODUCTION

KOS1750 is a dual channel signal conditioner designed to accept mA or voltage inputs and provide isolated, industrial process output signals in mA or Volts. Each output channel may be linked to either an input signal or to a maths function of both input signals. This powerful feature allows the device to operate in several different modes.



The output signal can also be adjusted over the full working ranges (0 to 20) mA or (0 to 10) V, to provide common or custom process signals, examples (4 to 20) mA, (0 to 1) mA, (1 to 5) V.

The KOS1750 is configured using the free software that allows the user to configure the device without requiring calibration equipment. Maths functions on each channel can be set up using the software as well as a 22-segment profile tool. Input/output simulation tools for diagnostic purposes are also available.

FEATURE HIGHLIGHTS

FLEXIBLE
The KOS1750 has a wide range of process input options (-50 to 50) mA, (-50 to 50) V.
With comparison functions between channels, paired with the configuration functionality it has to offer, it is a flexible and versatile tool for many varied process applications. Live readings can be displayed to a PC via the configuration software.

UNIVERSAL SUPPLY
Supply: From 20 VDC to 240 VAC and everything in-between, the auto-detecting power supply is simple but effective, giving the KOS1750 the capability to be powered from a variety of supplies.

DIRECT USB CONFIGURATIONS
The KOS1750 has a USB port on the front panel for direct programming of its configuration using the free Windows software. The configuration functionality it has to offer makes it a hugely flexible and versatile tool for many varied applications. Live readings can be displayed to a PC via the configuration software.

V INPUT (Channels 1 & 2)			**SPECIFICATIONS @20°C**
Type	**Range**	**Stability**	**Accuracy/Notes**
± 50 V DC	(-50 to 50) V	0.02 % FSR*[1]/°C	± 10 mV*[2]
	(-22 to 22) V		± 5 mV*[2]
Impedance			1 MΩ
User selectable range			Any within FSR
*[1] FSR = Full Scale Range			
*[2] At 420 ms update rate			

mA INPUT (Channels 1 & 2)			**SPECIFICATIONS @20°C**
Type	**Range**	**Stability**	**Accuracy/Notes**
± 50 mA DC	(-50 to 50) mA	0.02 % FSR*[1]/°C	± 10 mV*[2]
	(-22 to 22) mA		± 5 mV*[2]
Impedance			10 Ω
Transmitter supply	Source (internal supply)		22 VDC @ 25 mA
Transmitter supply	Sink (external supply)		SELV
User selectable range			Any within FSR
*[1] FSR = Full Scale Range			
*[2] At 420 ms update rate			

OUTPUT ANALOGUE mA CURRENT (Channels 1 & 2)		**SPECIFICATIONS @20°C**
Type/Function	**Range/Description**	**Accuracy/Notes**
Two wire current Sink or source	(0 to 20) mA (4 to 20) mA User mA, any within full range	(mA output /2000) or 5 uA (Whichever is the greater)
Calibration Accuracy		± 5 uA
Supply in sink mode	(11 to 30) V DC, 24 V nominal	SELV
Maximum load current source	(0 to 20) mA	Maximum load 550 Ω
Maximum load current sink	Supply voltage @24 Vdc	Maximum load 650 Ω
Response time	< 500 ms to reach 95 % of final value; Start-up time < 3 s	
Loop voltage effect		Loop ripple 0.03 % of FSR;
Supply sensitivity	Supply ripple rejection < ± 5 uA error @ 1 V rms 50 Hz ripple	
Protection	Reverse connection and over-voltage protection. Maximum over-voltage current 100 mA	
Galvanic Isolation	500 V to input: 3750 V to Supply and Relays	
Current Output Damping	Programmable rise and fall (0 to 250) seconds, for a (0 to 20) mA swing.	
Thermal stability	Zero at 20 °C	± 2 uA/°C typically
The mA output range can be set to anywhere within the maximum capability		

OUTPUT ANALOGUE VOLTAGE (Channels 1 & 2)		**SPECIFICATIONS @20°C**
Type/Function	**Range/Description**	**Accuracy/Stability/Notes**
Two wire voltage	(0 to 10) VDC User V, any within full range	± 5 mV
Calibration Accuracy		± 5 mV
Maximum output		10.1 VDC
Min Load	10 KΩ User Configurable correction for Load	
Response time	< 500 ms to reach 95 % of final value; Start-up time < 3 s	
Current drive		± 2 mA, minimum load 5 KΩ @ 10 VDC
Thermal stability	Zero at 20 °C	± 1 mV/°C
Voltage generated across 500 Ω resistor		
The voltage output range can be set to anywhere within the maximum capability		

USB CONFIGURATION USER INTERFACE		
Type/Options/Function	**Description**	**Notes**
Configuration hardware	USB mini B	Cable not included
Configuration software	USBSpeedLink	Download www.status.co.uk
Operating system	Microsoft Windows	Windows 7 or later

USB CONFIGURATION USER INTERFACE (Channels 1 & 2)		
Type/Options/Function	**Description**	**Notes**
Configuration: basic or advanced	Select mode on connection to instrument	Some options only available in advanced mode
Input Type Scale	 High, low	Voltage or milli Amps Any within range
Output configuration Type Scale Fixed output Error signal Load correction Output damping mA, V	 Output signal High, low For diagnostics Up, down, user For voltage output Rise/fall for full range	 mA, V mA, V any value within output range mA, V any value within output range User = any value within output range In ohms (0 to 250) s
Maths functions Profile tool (interpolation) Output source selection	Derived from CH1, CH2 CH1, CH2 CH1, CH2	A+B, A-B (signed or unsigned), average, multiply, divide, highest, lowest, square. Up to 22 segments X, Y data Comparison options
Live data	Input Signal Output signal Record live data Store configuration to PC	Value mA, V value Save data to CSV file Save data to file
Other device options	Tag number	20 Characters

GENERAL	
Function	**Description**
Power supply	(20 to 240) V DC SELV, (20 to 240) V AC 50/60 Hz
Power	3 W max
Protection	Internal fuse, over-voltage, external protection recommended
Galvanic Isolation Supply to I/P and O/P ports	4000 VDC test, 253 VAC working
Galvanic Isolation I/P to O/P ports	3750 VDC test, 250 VAC working
Sample rate	420 ms (18 Bits full range) 140 ms (16 Bits full range) 70 ms (14 Bits full range)
Start-up time	4 s
Indication (State LED)	Green = OK Red = input/output/configuration error indication
Note	USB terminal shares the same GND as CH1 output

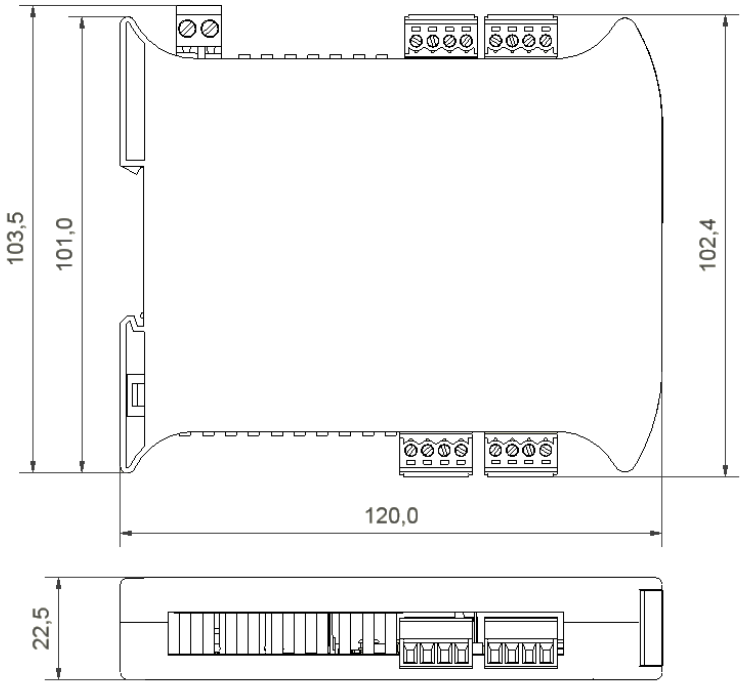
MECHANICAL	
Function	**Description**
Dimensions	120 mm (from back of rail) x 22.5 mm wide x 106 mm high
Enclosure colour	Grey
Material	Blend PC/ABS self-extinguishing
Connections	Two-part screw connectors for power, inputs, outputs
Weight	145 g approximate

Rail mount	DIN 60715

ENVIRONMENTAL	
Function	**Description**
Ambient temperature	Operating/Storage (-30 to 70) °C
Ambient humidity	Operating/Storage (10 to 90) %RH non-condensing
Protection requirement	Device must be installed in an enclosure offering >IP65 Protection
USB configuration ambient	(10 to 30) °C

APPROVALS	
EMC	BS EN 61326: Note - Sensor input wires to be less than 30 m to comply
Electrical Safety	BS EN 61010-1
Ingress Protection	BS EN 60529
RoHS	Directive 2011/65/EU

MECHANICAL



ORDER CODE	**KOS1720**

ACCESSORIES	
USB configuration software	USBSpeedLink free of charge from www.ditel.es
Loop powered display	Refer to www.ditel.es
48-200-0001-01	Standard USB A to USB mini B cable for configuration

To maintain full accuracy, annual calibration is required. Contact support@ditel.es for details
The data in this document is subject to change. DISEÑOS Y TECNOLOGIA assumes no responsibility for errors

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