KOS1100

POWERED ISOLATING CONVERTER

Y2K YEAR 2000 COMPLIANT

CE

kos1100manualB.doc 30727049 Oct.99

WARRANTY

The instruments are warranted against defective materials and workmanship for a period of three years from date of delivery.

If a product appears to have a defect or fails during the normal use within the warranty period, please contact the distributor from which you purchased the product.

This warranty does not apply to defects resulting from action of the buyer such as mishandling or improper interfacing.

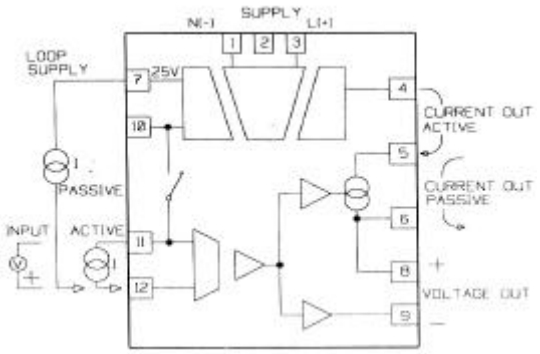
The liability under this warranty shall extend only to the repair of the instrument. No responsability is assumed by the manufacturer for any damage which may result from its use.

KOSMOS SERIES

1. INTRODUCTION

The isolator provides isolated re-transmission of the input signal, which can (by internal selection switches), be set to accept and re-transmit most common process signals. The isolator can either be DIN rail or surface mounted.

Connection Diagram



2. SPECIFICATION

WARNING! Operation outside the quoted maximum figures may result in the faillure of transmitter.

SUPPLY			
Range	Option S1	90-253V AC 50/60Hz	
	Option S2	20-35V DC	
		22-28 V AC 50/60Hz	
Power Consumption	4 Watts maximum		
	Protection	Internal Fuse Rating 500mA (T)	
INPUT			
	Current	0-20mA	4-20mA (40mA max)
	Voltage	0-100mV	20-100mV 20V Max
		0-1V	0.2-1V
		0-5V	1-5V
		0-10V	2-10V
Selection	Internal switches		
Input inpedance	Current	<50Ω	
	Voltage	>1MΩ	
Protection	Reverse connection, over voltage		
Loop Supply	25V DC @ 25mA maximum (27V maximum)		
OUTPUT			
Type	Current[1]	0-20mA	4-20mA
	Passive mode, V loop 30V max		
	Voltage[1]	0-1V [2]	1.2-1V [3]
		0-5V [2]	1-5V [3]
		0-10V [2]	2-10V [3]
Load	0 to 1kΩ Current output		
	5mA max current drive Voltage output		
Linearity	0.05%		
Stability	150ppm/ºC		
Response time	<100mS to reach 70% of final value		

1 Current and voltage outputs are not isolated from each other
2 Available simultaneously with 0-20mA output
3 Available simultaneously with 4-20mA output

GENERAL		
Isolation/Input/Output	500V DC (flash tested @ 1kV) input to output	
Isolation /Supply	3kV DC to input or output	
Mounting	DIN-EN50022-35 or surface mount	
Ambient	0-50ºC; 10-95%RH non condensing	
Connection	Captive terminal screws	
Cable size	1mm^2 diameter wire	
Flammability	UL94V0 VDE0304 Step lib	
Dimensions	82 x 22.5 x 99 mm	
EMC	Emissions	BS EN50081-1
	Susceptibility	BS EN50082-1
Electrical Safety	BS EN61010-1	
	Installation overvoltage category II	
	Pollution Degree II	

3.0 CONFIGURATION

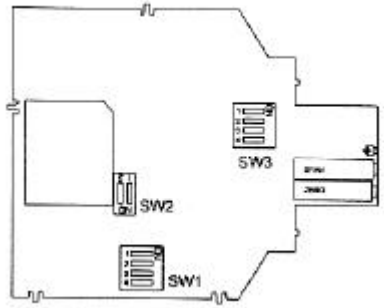
The isolator leaves the factory calibrated for the input output rates specified ot the time of the order, if no ranges have been specified then the isolator range will be 4-20mA in and out. If required the isolator ranges may be changed by the installer, provided access is available to suitable calibration equipment in order to simulate the required input/ output signals. Configuration and calibration are best carried out prior to installation. The isolator is configured by means of internal switches.

WARNING!
Extreme caution must be exercised when replacing the terminal housing. Aling holes in front panel with trim pots and LED within. Failure to do so may cause the installer to wire the unit incorrectly.

3.1 Configuration

WARNING! Mains power may be present. NEVER open the isolator case when powered. Follow steps 1-4 to gain access to the internal configuration switches.

1. Disconnect from all power sources.
2. Insert screwdriver to release clips either side of case.
3. Slide terminal housing assenbly forward to reveal circuit board and configuration switches.
4. To identify switches read PCB copper text for SW1,SW2 and SW3.
5. To reassemble push circuit card back into shell (using clips provided) and clip into place.



Switch selection (- = off; on = on; * = either)

INPUT	SW1				S W2	
	1	2	3	4	1	2
4-20mA Passive	on	-	-	on	on	on
4-20mA Active	on	-	-	on	on	-
0-20mA Passive	on	-	-	-	on	on
0-20mA Active	on	-	-	-	on	-
0-100mV	-	-	-	-	-	-
20-100mV	-	-	-	on	-	-
0-1V	on	-	-	-	-	-
0.2-1V	on	-	-	on	-	-
0-5V	-	on	-	-	-	-
1-5V	-	on	-	on	-	-
0-10V	-	-	on	-	-	-
2-10V	-	-	on	on	-	-

OUTPUT	SW3				
VOLTAGE	1	2	3	4	CURRENT
0-1V	*	-	-	-	0-20mA
0.2-1V	*	-	-	on	4-20mA
0-5V	*	on	-	-	0-20mA
1-5V	*	on	-	on	4-20mA
0-10V	*	on	on	-	0-20mA
2-10V	*	on	on	on	4-20mA

Using the tables listed above select the required switch positions for the desired input and output. Re-assemble case ready for calibration.

3.2 Calibration

WARNING! For safety reasons NEVER calibrate with the case open. Mains power may be present.

a. Refer to section 4.2 for connection details. Connect a suitable calibrator to the input to simulate the input signal. Monitor the output with either a digital vol or mA meter. Connect the isolator to a suitable supply. Turn power on and allow 2 minute warm-up period.

note. Due to the current output stage not being capable of drawing negative currents, 0-20mA output must be calibrated at 1mA and 20mA scale points. This will ensure the correct setting of VR1.

b. Set input to low scale, adjust ZERO potentiometer for correct low scale output ±0.02%.

c. Set input to high scale, adjust SPAN potentiometer for correct high scale output ±0.02%.

d. Repeat steps b. and c. until both points are in scale.

e. if transmitter will not calibrate correctly, turn off power, open case and check internal switches.

f. End of calibration, turn off power and remove calibration equipment.

4.0 INSTALLATION

THIS SECTION FOR USE BY COMPETENT PERSONNEL ONLY

WARNING - READ SAFETY INFORMATION BELOW BEFORE WIRING

WARNING Hazardous voltages may be present on the terminal - the equipment must be installed by suitably qualified personnel and mounted in an enclosure providing protection to at least IP20.

WARNING If not installed and used in accordance with these instructions, protection against hazards may be impaired.

The mains power supply to the equipment must be protected by a fuse and switch (or circuit breaker) which should be near the equipment. The equipment contains no user serviceable parts.

ISOLATION

The power supply terminals and associated internal circuitry are isolated from all other parts of the equipment in acordance with BS EN61010-1 for connection to a Category II supply.

Functional isolation (500V DC max) is provided between input and output circuits.

Any terminals or wiring connected to the input or output terminals which are **accesible in normal operation** must **ONLY** be connected to signals complying with the requirements for safety extra low voltage (SELV) circuits.

4.1 MECHANICAL

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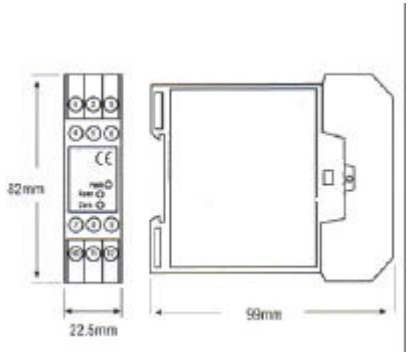
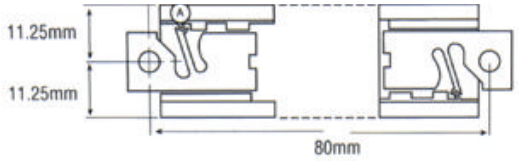




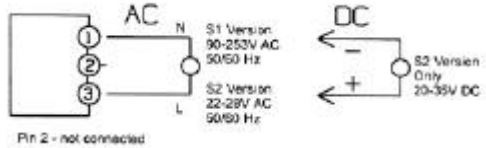
This transmitter must be housed within an enclosure that will provide suitable protection against the external environment, ensuring the stated operational ambient temperature, humidity and pollution levels are not exceeded. It is good practice to mount the transmitter away from sources of electrical noise, such as switch gear and large transformers. Although the transmitter has an excellent temperature stability, best performance will be maintained with a stable ambient temperature. The transmitter can be mounted in any orientation and stacked side by side. (Note. Each transmitter can dissipate up to 4 watts of power in form of heat, depent on external loading. If a number of transmitter are mounted inside an enclosure, adequate ventilation must be provided).

4.2 Electrical

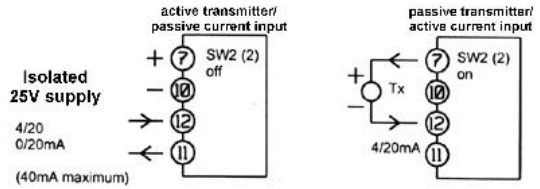
Connections to the transmitter are made via screw terminals, with wire protection plates provided on each terminal. To maintain CE compliance twisted pair (screened) cables are recommended for the signal conections. It is good practice to ensure all signal loops are grounded at one point. Care must be taken when designing a 4-20mA circuit to ensure taht the total burden of the loop (that is the total voltage requirement of all the equipment connected in the loop at 20mA) does not exceed the loop power supply voltage. The transmitter is protected against reverse connection and over voltage.

5.0 CONNECTIONS

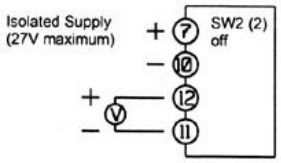
Supply



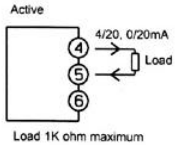
Current inputs



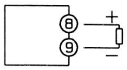
Voltage inputs (Isolated supply 25V @ 25mA)



Current outputs



Voltage output



Note Current/Voltage output share the same common, i.e. terminals 9&6 are joined. Do not ground active current output, when voltage output is grounded this will result in high current output. Voltage output follow current, i. e. 0/20mA - 0-1V output, 4/20mA- 0.2-1V output (Maximum current 5mA all ranges)

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