KOS1015

DIN RAIL

ISOLATED TRANSMITTER

Y2K
YEAR 2000
COMPLIANT

CE

kos1015manualB.doc 30727040 Sep.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

1.0 DESCRIPTION

This 4-20mA isolator can be configured to accept most of the common voltage found in both commercial and industrial applications. The input is fully isolated from the output circuit. The isolator range can be specified at the time of order, but if required the user may re-range the transmitter to ta new range. The isolator is housed inside a plastic enclosure, suitable for DIN rail mounting. Screw terminals are providedfor wire connections. The enclosure provides side entry access to coarse offset and span adjusters and a range selector switch.

2.0 SPECIFICATIONS @ 20ºC

2.1 OUTPUT

TYPE	Passive 2 wire current output
RANGE	4 to 20mA (30mA MAX.)
PROTECTION	Reverse connection plus overvoltage
VOLTAGE	10-30V DC
STABILITY	Typical 100ppm/ºC
RIPPLE	Less than 40µA/V (Measured at 1V ripple 50Hz)
RESPONSE	200mS to reach 70% of final value

2.2 INPUT

TYPE Isolated DC voltage covered by six ranges;

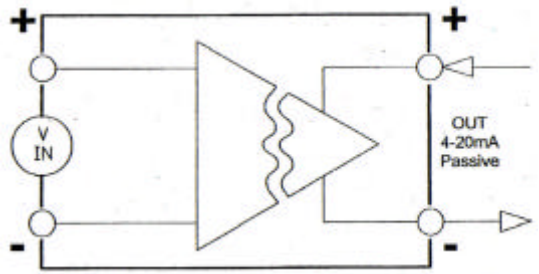
Range	Span	Offset
0	20 to 200mV	-20 to 80mV
1	0.2 to 1.0V	-0.1 to 0.4V
2	1.0 to 5.0V	-0.5 to 2.0V
4	5.0 to 25V	-2.5 to 10V
8	25 to 48V	-5 to 25V
F	20 to 100V	-10 to 40V

The above settings are capable of covering most standard industrial ranges. Range F is provided to allow for –10 to +10V inputs. Note VMAX IN is limited to 48V DC for BSEN 61010-1 compliance.

ISOLATION	500V AC (Flash tested to 1kV DC)
IMPEDANCE	>1MΩ
ACCURACY	Typical linearity ±0.01% (0.05% maximum)
RANGE SELECT	Coarse Settings, by side entry 16 setting position rotary screw adjustement switches. Fine by front access potentiometers. Range setting by side entry rotary switch.

2.3 GENERAL

AMBIENT	0-50ºC ; 10-95% RH non-condensing
CONNECTION	Captive clamp screws
CABLE SIZE	4mm^2 solid / 2.5mm^2 stranded



3.0 INSTALLATION

IMPORTANT NOTE ¡

This isolator is not suitable for providing isolation from hazardous voltages, such as mains supplies. It is intended for use in with low voltage signals only.

3.1 MECHANICAL

This unit must be housed within a suitable enclosure that will provide protection from the external environment, ensuring that the stated temperature and humidity operating ranges are not exceeded. It is good practice to mount the unit away from sources of electrical noise, such as swichgear and transformers. The unit enclosure is designed to snap fit onto a standard “TOP HAT” DIN rail. To remove from rail, apply pressure at the bottom face at the back upwards the rail to release the spring clip and tip away from the top. The unit may be mounted in any orientation and stacked side by side along the rail. Span and offset fine adjustements can be made from the front panel, whilst re-ranging the transmitter, access to adjusters in the case side is requiered.

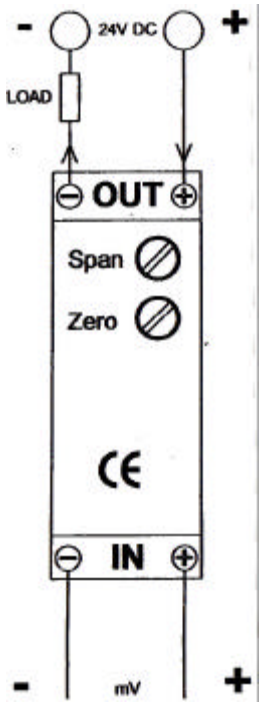
3.2 ELECTRICAL

Connections to the isolator are made via screw terminals. Wire protector plates are provided inside each terminal. To maintain CE compliance twisted pair (screened) cables are recommended. The correct type of wire must be used for thermocouple inputs, mV inputs must use screened copper wires, Incorrect sensor connection or sensor wire burnout will result in the output current saturating up scale on standard units(optionally downscale if requested at the time of the order).

It is good practice to ensure all 4-20mA signal loops are grounded at one point. Care must be taken when designing a 4-20mA circuit to ensure that the total burden of the loop, (that is the total voltage requirements of all the equipment connected in the loop at 20mA) does not exceed the loop power supply voltage.

To operate correctly the isolator requires a minimum of 10V across its output terminals.

The isolator is protected agains reverse connection and over voltage Figure shows a typical 4-20mA circuit, the load resistor represents equipment such as indicators, loggers, PLC etc.



4.0 RANGES

The isolator is normally suplied factory ranged but if required the range can be changed by means of the range selection switch plus a sixteen step coarse, and multi turn fine, offset and span adjusters, accessible from the side of the housing.
The following equipment is required;

- Precision mV/V calibrator to simulate input
- DC miliamp meter(digital); accuracy 0.05% on 0 to 20mA range
- Power Supply, 24V DC 30mA max.
- Trim tools

Decide on the range required and ensure the transmitter is capable of the range. If a range has not been specified at time of order, the transmitter will leave the factory set as 0-1V. Refer to the table below and set the range selection switch to the correct position.

Switch	Span	Offset
0	20 to 200mV	-20 to 80mV
1	0.2 to 1.0V	-0.1 to 0.4V
2	1.0 to 5.0V	-0.5 to 2.0V
4	5.0 to 25V	-2.5 to 10V
8	25 to 48V	-5 to 25V
F	20 to 100V	-10 to 40V

1. Connect the calibrator to input terminals, ensure polarity is correct.Connect as above with mA meter in place of, or in series with load Turn on and wait a few minutes before calibration, to allow the transmitter to stabilise.

   Let Va= input voltage for 4mA output
   Vb= input voltage for 20mA output

2. Set calibrator to simulate Va, first rotate coarse offset to obtain a output reading close to 4mA. Use fine adjuster to trim reading to 4mA±0.005mA. (if the trim hits end of travel re-adjust coarse adjuster one step , re-adjust fine offset).

3. Set calibrator to simulate Vb, first rotate coarse span to obtain a output reading close to 20mA. Use fine adjuster to trim reading to 20mA±0.005mA. (if the trim hits end of travel re-adjust coarse adjuster one step , re-adjust fine offset. Note clockwise rotation of the coarse adjuster reduces output current)

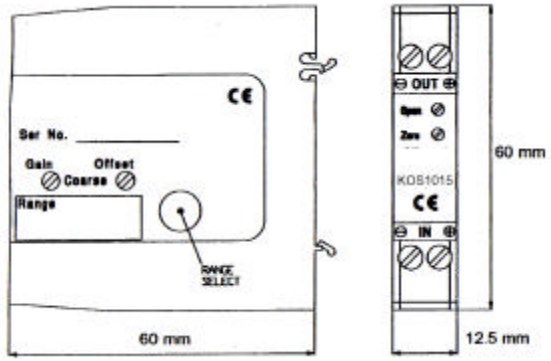
4. Set calibrator to Va, adjust fine offset for 4.00mA ±0.005mA

5. Set calibrator to Vb, adjust fine span for 20.00mA±0.005mA

6. Repeat steps 4 and 5 until both points are in calibration.

7. Turn off power and remove wires. Mark isolator with the new range

5.0 MECHANICALS DETAILS



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