DIS471-24
DC INPUT PROCESS INDICATOR

DESCRIPTION

The DIS471-24 DC Input Process Indicator provides a 3½ digit red or green LED display proportional to a DC input signal. It also provides an isolated 24VDC output to power two-wire transmitters on other equipment. The unit includes filtering and conditioning to reduce susceptibility to transients and noisy operations. The digital display utilizes an auto-zero dual slope integrating A/D converter for accuracy and stability.

Display and input ranges are easily changed. Display ZERO and SPAN controls are accessible by removing a gasketed front access panel. The controls are wide ranging so that the instrument may be calibrated to display engineering units. Decimal point selection is made with a switch, accessible from the rear. Jumpers, also located on the rear, permit the display to read downscale with increasing input. A complete set of engineering unit labels is included with each DIS.

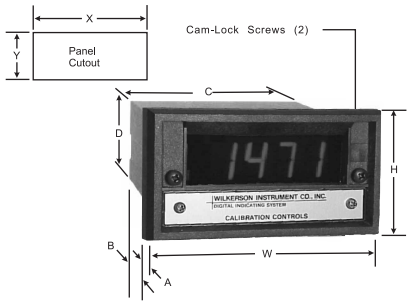
The input range is changed by replacing a plug-in card at the rear of the instrument. Contact your distributor for replacement cards.

The DIS471-24 is gasketed and, when properly installed, is NEMA-4X waterproof and corrosion resistant. Terminations are made to a screw terminal connector on the rear of the case.

INSTALLATION

The DIS471-24 is designed to be mounted from the front of a panel through a standard horizontal 1/8 DIN cutout. Two mounting cams secure the DIS471-24 to the front panel. Maximum panel thickness is 0.25". Figure 1 shows the case and panel cutout dimensions.

Figure 1. DIS Case and Panel Cutout Dimensions



Dimension	in	mm
H	2.25	57.1
W	4.15	105.4
A	0.46	11.7
B	4.02	102.1
C	3.57	89.6
D	1.65	41.9
X	3.62	92
Y	1.77	45

To install the DIS471 in the cutout, turn the two cam-lock screws on the front panel counterclockwise until the cams move far enough toward the rear to clear the panel thickness. Insert the case through the panel cutout and turn the cam-lock screws clockwise until both are tight.

Using the 24 Volt Output

The isolated and regulated 24VDC output may be used to power 4-20mA two wire transmitters as well as other transmitters or transducers designed for 24VDC power *(30mA max. Current drain).* The "Block Diagram and Terminal Connections" on the last page shows typical hookups. Others are possible - refer to the wiring instructions for your transmitter or transducer.

CONTROLS

ZERO and SPAN adjustments are located behind the front panel. To gain access, simply loosen the two screws and remove the gasketed **CALIBRATION CONTROLS** panel. The DECIMAL POINT location is changed using DIP switches at the rear of the instrument. The rear panel also contains a plug-in input range card and a pair of reverse/normal display jumpers.

CALIBRATION

The DIS471-24 is supplied precisely calibrated to the range printed on the label. To recalibrate, proceed as follows.

Changing the Display Range. Connect a precision DC voltage or current source to the INPUT+ and - terminals. Connect AC power to the LI and L2 terminals. *(Refer to instrument's label to determine the supply voltage and input range.)*

Set the rear-panel DIP switches to light the desired decimal point. Set the input for the low end value and adjust the display ZERO control for the desired reading on the display. Advance the input to the full scale value and adjust the display SPAN control for the desired reading. For maximum accuracy, repeat the procedure once or twice as the controls may interact slightly.

Upscale/downscale display action

R/N *(Reverse/Normal)* jumpers at the rear of the instrument allow either normal display action *(reads upscale with increasing input)* or reverse *(reads downscale with increasing input).* For example, if a display with 4/20 mA input is calibrated to read 00.0 to 100.0, reverse action will produce readings of 00.0 at 4mA, -100.0 at 20 mA. Recalibration by offsetting the zero adjustment allows a reading of +100.0 at 4 mA, 00.0 at 20 mA.

To Change the display action, unplug and relocate the jumpers *(to the left for reverse, to the right for normal).* Recalibrate per "Changing the Display Range," above. For reverse action set the input for the low-end value and adjust the display ZERO control for the desired high-end reading on the display. Advance the input to the full scale value and adjust the display SPAN control for the desired low-end reading. Repeat until both are correct.

Changing the input range

To change the input range replace the rear panel input range card with one set for the new range. Recalibrate as described above. Contact your distributor for replacement range cards.

Sometimes the effective range can be changed by recalibrating the display; for example, a display range of 00.0 to 150.0 at 0 to 10 volts input is equivalent to 00.0 to 75.0 at 0 to 5 volts.

The display will track inputs above and below the stated range. For example, a display calibrated to 00.0 to 100.0 display with 0 to 10 VDC input will read -100.0 at -10 volts, ±199.0 at ±19.90 volts. etc.

SPECIFICATIONS

INPUT IMPEDANCE

Voltage

200 kilohms for spans 1 V and above
125 kilohms for 500 mV span,
50 kilohms for 200 mV span.

Current

R= 1 V/span.
See input shunt values under *"Ordering Information".*

ACCURACY

±0.05% of span plus 1 digit

LINEARITY

± 1 digit

COMMON MODE REJECTION

120 dB, DC to 60 Hz

INPUT-TO-LINE BREAKDOWN VOLTAGE

1500 VAC rms

DIS471-24 (power supply)

24V output
±5%, 30mA max.

DISPLAY

Digit Size

.56" LED, 3½" digits, ±1999
Update 3/sec.

Decimal Point

±1.9.9.9, switch selectable

Control Range Zero

±1999

Span

min span 10/max span 1999

Reverse Display

Rear-panel jumper selectable.
Reads downscale with increasing input.

OPERATING TEMPERATURE

14°F to 140°F (-10°C to 60°C)

TEMPERATURE STABILITY

±0.02% of span/°C max

POWER

115 VAC ±10%, 50 or 60 Hz (4 W max)
230 VAC ±10%, 50 or 60 Hz (4 W max)

GROUNDING

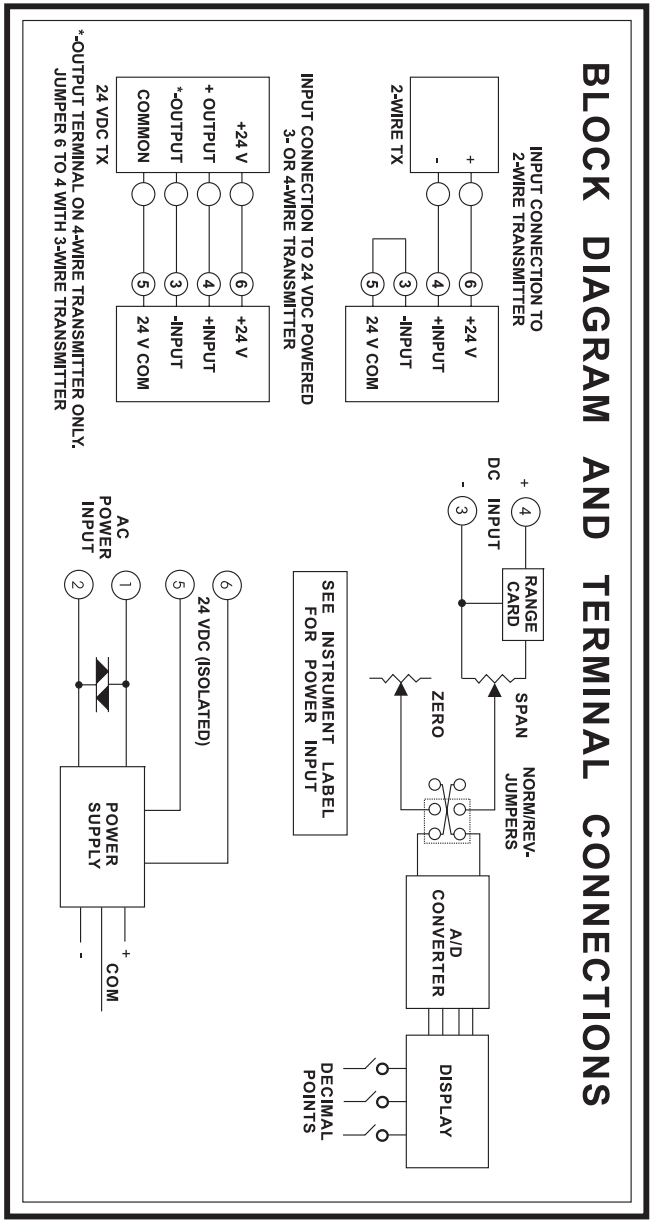
All DIS models should be properly grounded for safety and for minimum noise pickup.

Connect the ground lug on the instruments's rear panel to earth ground.

WARRANTY

The DIS Series of products carry a limited warranty of 5 + 5 years. In the event of a failure due to defective material or workmanship, during the 5 year period, the unit will be repaired or replaced at no charge. For a period of 5 years after the initial 10 year warranty, the unit will be repaired, if possible, for a cost of 10% of the original purchase price.

Relays are not covered by the warranty.



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