DIS471 DC INPUT PROCESS INDICATOR

DESCRIPTION
The DIS471 DC Input Process Indicator provides a 3½ digit red or green LED display proportional to a DC input signal. 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. Jumper settings, 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 is gasketed and, when properly installed, is NEMA-4X waterproof anticorrosion resistant. Terminations are made to a screw terminal connector on the rear of the case.

INSTALLATION
The DIS471 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 to the front panel. Maximum panel thickness is 0.25". 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.

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.

GROUNDING
All DIS models should be properly grounded for safety and for minimum noise pickup. Connect the GROUND lug on the instrument's rear panel to earth ground.

CALIBRATION
The DIS471 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 L1 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. Set the input to full scale value and adjust the display SPAN control for the desired reading. 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 maximum accuracy, repeat the procedure once or twice as the controls may interact slightly.

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.

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.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Inches</th>
<th>Millimeters</th>
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</thead>
<tbody>
<tr>
<td>H</td>
<td>2.25</td>
<td>57.1</td>
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<tr>
<td>W</td>
<td>4.15</td>
<td>105.4</td>
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<td>A</td>
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<td>11.7</td>
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<tr>
<td>B</td>
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<td>102.1</td>
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<tr>
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<td>92.0</td>
</tr>
<tr>
<td>Y</td>
<td>1.77</td>
<td>45.0</td>
</tr>
</tbody>
</table>

Figure 1
DIS Case and Panel Cutout Dimensions

![DIS Case and Panel Cutout Dimensions Diagram]
**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:
- $R = 1 \text{ V/span}$

**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

**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)

**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.