

# DIS471B-R DC INPUT FIELD RANGEABLE PROCESS INDICATOR



## DESCRIPTION

The DIS471B-R provides a 3½ digit display proportional to a DC input signal. Span of the input is selected by a moveable jumper on the rear of the housing. The display controls are wide-ranging so that it can be calibrated to display engineering units. A complete set of engineering labels is sent with each DIS.

All controls for calibration of the display are accessible by removing a gasketed front access panel. DIS instruments are gasketed and, when properly installed, are NEMA-4 rated for being waterproof.

Terminations are made to a screw terminal connector on the rear of the case.

## MOUNTING

The DIS471B-R is designed to be mounted from the front panel through a standard horizontal 3.62" X 1.77" (1/8 DIN) cutout. Two mounting cam-screws allow the securing of the DIS471B-R to the panel from the front. To install the DIS471B-R 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

To gain access, simply loosen the two screws and remove the gasketed **CALIBRATION CONTROLS** panel.

## GROUNDING

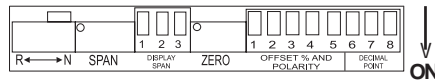
All DIS models should be properly grounded for safety and for minimum noise pickup. Connect the **GROUND** lug on the instrument's rear panel to earth ground.

## CALIBRATION

The DIS471B-R 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. (Refer to instrument's label to determine the supply voltage and input range.) Refer to the illustration below for the next steps.



FRONT VIEW

Set switch 6, 7, or 8 to light the desired decimal point. Set the **DISPLAY SPAN** switch for the desired display span as shown below:

FOR A DISPLAY SPAN (IN COUNTS) OF:	SET THE FOLLOWING SWITCH 'ON'
90 to 250	1
250 to 650	2
650 to 2000	3

Set the **OFFSET %** and **POLARITY** switch as per the following chart.

FOR AN OFFSET % (OF 2000 COUNTS) OF:	SET THE FOLLOWING SWITCH 'ON'
0 to 12.5%	NONE
12.5% to 25%	3
25% to 50%	2
50% to 75%	1

For a negative offset, turn switch 4 **ON**; for positive offset, turn switch 5 **ON**.

**EXAMPLE:** For a display of 0/100.0, the following switches should be **ON**:

DISPLAY SPAN: SWITCH 3  
DECIMAL POINT: SWITCH 8  
OFFSET % AND POLARITY: NONE

**EXAMPLE:** For a display of 25.0 to 50.0, the following switches should be **ON**:

DISPLAY SPAN: SWITCH 2  
DECIMAL POINT: SWITCH 8  
OFFSET %: (250 IS 12.5% OF 2000) SWITCH 3  
OFFSET POLARITY: SWITCH 5

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

The normal/reverse switch at the front of the instrument allows 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, simply slide the switch (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 jumpers to the desired input span. For current spans, place the jumper in the proper position (see label, Figure 1), and place the **SPAN/VOLTS** jumper, as per Figure 2.

Figure 1

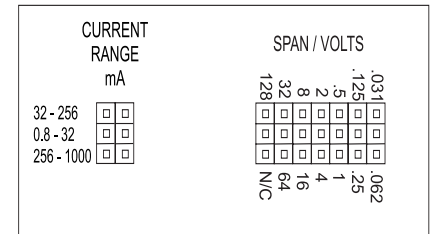


Figure 2

FOR CURRENT SPANS OF:	PLACE JUMPER IN THIS POSITION:
.5mA to 1mA	.062 V
1mA to 2mA	.125 V
2mA to 4mA	.25 V
4mA to 8mA	.50 V
8mA to 16mA	1 V
16mA to 32mA	2 V
32mA to 64mA	.25 V
64mA to 128mA	.50 V
128mA to 256mA	1 V
256mA to 500mA	.125 V
512mA to 1 A	.25 V

Recalibrate display as described above.

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.

## 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 5 year warranty, the unit will be repaired, if possible, for a cost of 10% of the original purchase price.

## SPECIFICATIONS

### INPUT RANGE

Voltage  
 $\pm 32$  mV to  $\pm 128$  VDC  
 Current  
 $\pm 0.8$  mA to  $\pm 1$  ADC

### INPUT IMPEDANCE

Voltage  
 1 megohm  
 Current  

Current	Shunt Resistance
0.8 mA to 32 mA	61.9 ohm
32 mA to 256 mA	4 ohm
256 mA TO 1 A	0.25 ohm

### ACCURACY

$\pm 0.05\%$  of span plus 1 digit

### LINEARITY

$\pm 1$  digit

### COMMON MODE REJECTION

100 dB, DC to 60 Hz

### OPERATING TEMPERATURE

14°F to 140°F (-10°C to 60°C)

### TEMPERATURE STABILITY

$\pm 0.02\%$  of span/°C max

### INPUT-TO-LINE BREAKDOWN VOLTAGE

1500 VAC rms

### DISPLAY

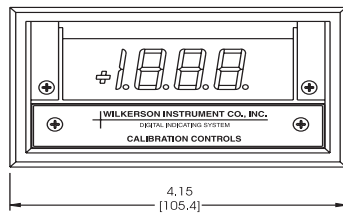
Digit Size  
 .56" LED, 3½" digits,  $\pm 1999$  indication  
 Decimal Point  
 1.9.9.9  
 Control Range  
 Zero -1999 to +1999  
 Span min span 100/max 1999  
 Update Rate  
 3/sec  
 Reverse Display  
 Switch selectable  
 Reads downscale with increasing input

### POWER

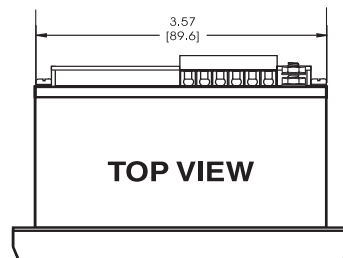
24 VDC  $\pm 10\%$  (2 W max)

## CASE DIMENSIONS INCHES [mm]

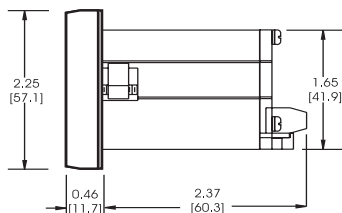
### FRONT VIEW



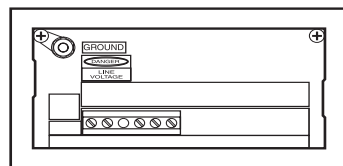
### TOP VIEW



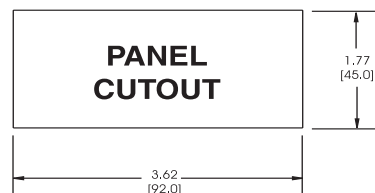
### RIGHT SIDE VIEW



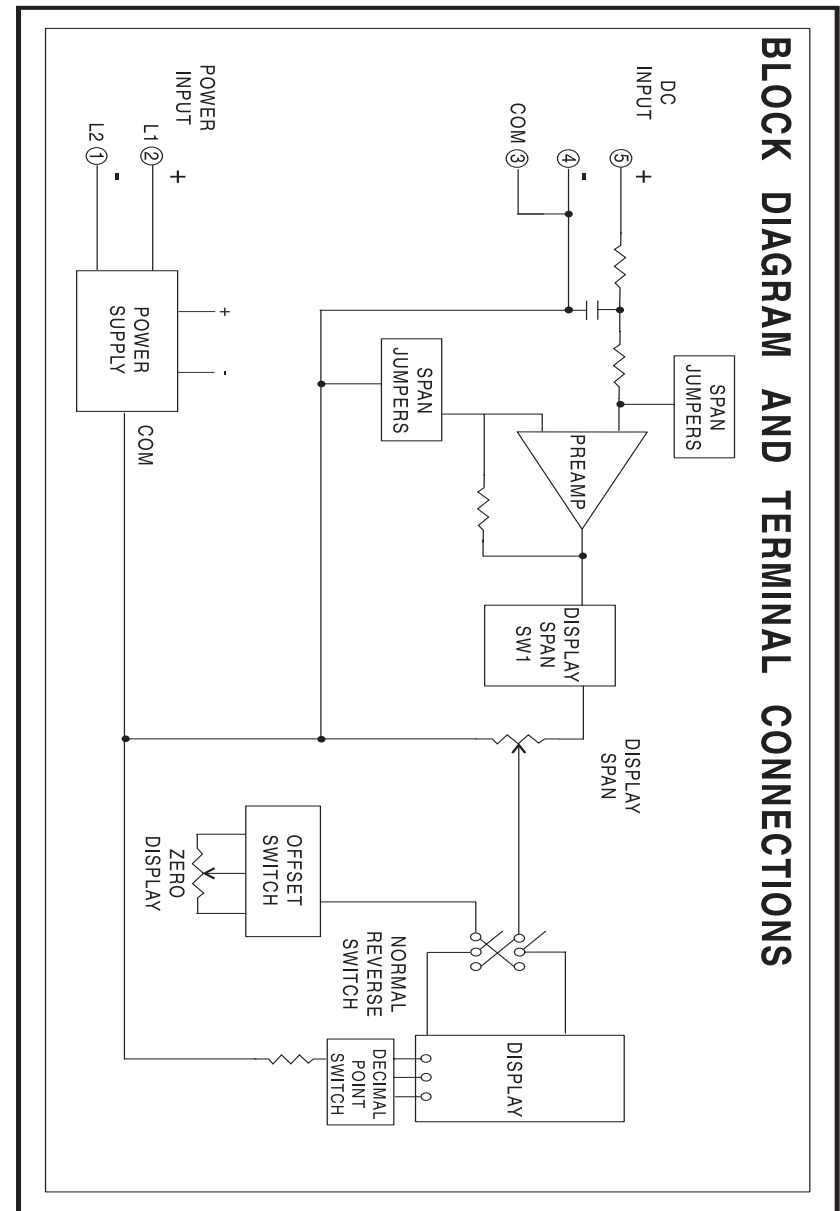
### BACK VIEW



### PANEL CUTOUT



## BLOCK DIAGRAM AND TERMINAL CONNECTIONS



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