



DIS874 AND DIS974

THERMOCOUPLE INPUT PROCESS INDICATOR 3½ AND 4½ DIGIT DISPLAYS

FEATURES

- Provides 3½ Digit or 4½ Digit Display
- Display Calibrated in Engineering Units (°C, °F, °K, etc.)
- Proportional to any Thermocouple
- Input Cold Junction Compensated
- Fully Isolated Output and/or 0, 1, or 2 Alarms (Optional)
- Alarm Setpoints Adjustable without Disturbing Transmitter Output
- Fail-Safe Alarm Operation
- LED Alarm Status Indicator
- Adjustable Deadband
- 5 mV Minimum Input Span
- Unlimited* Choice of Input / Output Ranges
- Upscale Burnout Protection (Downscale Available)
- Analog and Digital Linearization Options Available
- Fits Standard 1/8 DIN Cutout
- Rated NEMA-4, Splashproof when Properly Installed
- 5 Year Warranty

DESCRIPTION

The DIS874 and DIS974 provide a display, optional isolated DC output voltage or current proportional to any thermocouple input signal, and optional alarm setpoints. All Wilkerson products are designed with RFI filters and lightning protection to reduce susceptibility to electrical noise and damage by lightning. The digital display utilizes an auto-zero dual-slope integrating A/D converter for accuracy and stability.

All controls are accessible by removing the gasketed front access panel. The display controls are wide ranging so that they can be calibrated to display engineering units.

Decimal point selection is made with a switch, also accessible from the front. A complete set of engineering unit labels is sent with each DIS. Once the display has been adjusted to read the correct engineering units, the alarm setpoints can be adjusted without test equipment and without disturbing the output voltage or current.

Either setpoint may be displayed by use of the SP CAL switch. Each setpoint has an LED to indicate alarm status. The alarms have adjustable deadbands. Terminations are made to a screw terminal connector on the rear of the case.

Upscale burnout protection is provided as

standard. In the event the thermocouple opens, the unit behaves as though the input goes offscale high. Option B provides downscale burnout protection (unit behaves as though the input goes low).

Standard DIS874 and DIS974 provide thermocouple linearization using analog circuitry, which has certain limitations. Its specifications are summarized in Table 1. Option LL, digital linearization, provides superior performance as listed under the specifications.

TYPICAL APPLICATIONS

Temperature indication, monitoring, control, data acquisition, HI/LO control, etc.

SPECIFICATIONS

INPUT RANGE

select any type thermocouple (minimum span 5 mV)

OPTIONS SA, DA SETPOINT

each alarm 0 to 100% of span

DEADBAND

0.25% to 100% of span

RELAY CONTACTS (spdt)

Resistive Load
5 A max, 150 W max,
240 VAC max, 30 VDC max
Inductive Load
1/8 HP max at 120/240 VAC

OPTION TX OUTPUT RANGE

Voltage
select any range between
±10 V, 10 mA max load
(min span 0.2 V)

Current
select any range from 0 to 20 mA
max, >24 V compliance
(1200 ohms max at 20 mA)

OUTPUT RIPPLE (Peak-to-Peak)

<0.1% of span

ISOLATION

Output / Input
>500 megohms
Breakdown Voltage
>600 VAC rms

RESPONSE TIME (Range Dependent)

≤100 ms

OPEN SENSOR INDICATION

≥ full scale

ACCURACY

±0.1% of span at endpoints

LINEARITY

Standard

LINEARITY (Option LL)

±2°C (3.6°F) or better ±0.5°C (0.9°F)
for types J, K, T, E or N if range is
between -200 and +200°C (-328 and
+392°F)

COMMON MODE REJECTION

120 dB, DC to 60 Hz

DISPLAY (874)

Digit Size
.56" LED, 3½ digits, ±1999
Decimal Point ±1.9.9.9
Control Range
Zero ±1999
Span
min span 10/max span 2000

DISPLAY (974)

Digit Size
.56" LED, 4½ digits, ±19999
Decimal Point ±1.9.9.9.9
Control Range
Zero ±19999
Span
min span 100/max span 20000

DISPLAY

Update 3/sec

OPERATING TEMPERATURE

14°F to 140°F/-10°C to 60°C

TEMPERATURE STABILITY

±(0.02% of span + 1.3 µV)/°C max

POWER

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

* Within specified range limits.

DIS874/974 STANDARD LINEARIZATION ACCURACY, BASE-METAL THERMOCOUPLES

T/C TYPE	ZERO BASED RANGES		LOW TEMP RANGES (HIGH END = 0°C)	
	LIMIT FOR ±1% OF SPAN	LIMIT FOR ±2% OF SPAN	LIMIT FOR ±5% OF SPAN	
E	0/500°C 32/392°F	0/1000°C 32/1832°F	-100/0°C	-148/32°F
J	0/1000°C 32/1832°F	0/1200°C 32/2192°F	-100/0°C	-148/32°F
K	0/800°C 32/1472°F Cannot linearize Type K Above 800°C (1472°F)		-100/0°C	-148/32°F
N	0/500°C 32/932°F	0/1200°C 32/2192°F	-100/0°C	-148/32°F
T	0/400°C 0/752°F	0/400°C 0/752°F	-100/0°C	-148/32°F

DIS874 AND DIS974 LINEARIZATION ACCURACY, PLATINUM THERMOCOUPLES

T/C TYPE	ZERO BASED RANGES	ELEVATED-ZERO RANGES
B	- N.A. -	±3% of span for 500/1820°C (932/3308°F) ±1.5% of span for 800/1820°C (1472/3308°F)
R & S	±2.5% of span or better, any zero-based range	±1.5% of span or better, any range starting above 200°C (392°F)

ORDERING INFORMATION

POWER

- 115 VAC, 50/60 Hz Power
- 230 VAC, 50/60 Hz Power

INPUT

Select Units

- Deg C Deg F

Enter Input

Zero Scale

Full Scale

Select Sensor

- JTC
- KTC
- RTC
- STC
- TTC
- ETC
- NTC
- BTC
- Other - Specify Notes

Open Sensor Response

- Upscale Downscale

OUTPUT (Option TX)

Analog Output

- Yes No

Select Units

- VDC mADC

Enter Output

Zero Scale

Full Scale

Select Output Logic

- Normal Acting
- Reverse Acting

ALARMS (Option SA, DA)

Alarm Output

- Yes No

Alarm Selection Quantity

- Single (SA) Dual (DA)

Alarm Action

Alarm 1

- High Low

Alarm 2

- High Low

Alarm Logic

- Normal - De-energize On Alarm
- Reverse - Energize On Alarm

Enter Setpoint Input Level

Setpoint 1

Setpoint 2

DISPLAY

Enter Display

Zero Scale

Full Scale

Select Display Logic

- Normal Acting
- Reverse Acting

OPTIONS

- Conformal Coating

TAGS

Specify Tag Numbers

Tag number is typed on product label at no charge.

Enter Tag Number(s)

ACCESSORIES

DIS874 AND DIS974

No accessories available at this time.

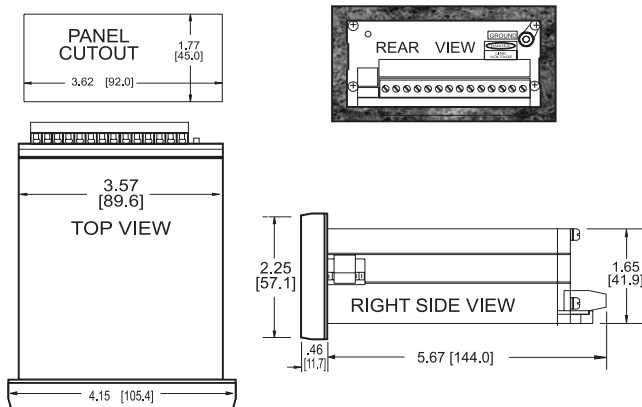
MOUNTING

The DIS is designed to be mounted from the front of the panel through a standard horizontal 3.62 x 1.77 inches (1/8 DIN) cutout. Two mounting cam-screws allow the securing of the DIS to the panel from the front.

DIMENSIONS

Inches [mm]

**DIS SERIES II
PROCESS INDICATORS**



CONNECTIONS

- TERM 1 Output -
- TERM 2 Output +
- TERM 4 T/C Input +
- TERM 5 T/C Input -
- TERM 6 Shield (Common)
- TERM 7 Alarm 1 NC
- TERM 8 Alarm 1 C
- TERM 9 Alarm 1 NO
- TERM 10 Alarm 2 NC
- TERM 11 Alarm 2 C
- TERM 12 Alarm 2 NO
- TERM 13 Power AC L1
- TERM 14 Power AC L2



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