VISIPAK™ V432

MODEL

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Temperature Input, Digital Indicator

Provides a Digital Display of Temperature from RTD and Thermocouple Inputs

Benefits

- Field Configurable Input Accepts Pt100Ω RTD and J, K, T, E, R & S Type t/c Sensors
- RTDs (0.00385 or 0.00392 curve) to 1° or 0.1°
- 4 Visual Alarm Points with Front Panel LED Status Indication
- Optional 2 Relay Output and 4-20mA Transmitter Output
- NEMA 4X Front Panel

DESCRIPTION

The VisiPak model V432 is a versatile, field configurable, RTD and thermocouple input LED indicator, that fits 1/8 DIN cutouts. Four visual setpoint alarms are annunciated via individual front panel LEDs and are a standard feature of the V432. The unit has a front panel NEMA 4X rating.

Two form C relays are available as optional outputs for the first two setpoints. They can be configured as high or low, failsafe or non-failsafe. Each setpoint has a 100% adjustable deadband (or reset points) which can be effectively used in on/off control applications or as a latching alarm. An isolated 4-20mA transmitter output is also available as an option.

The V432 accepts types J, K, T, E, R, and S thermocouples and 100Ω Pt RTD (.00385 and .00392 alpha curves) and displays temperature with 1 degree resolution (°F or °C). In addition, type T thermocouple and the 100Ω Pt RTD may be diplayed at 0.1 degree resolution.

Field configuration of the input type, alarm function, and analog transmitter output scaling is simple. The indicator is factory calibrated to rated accuracy and can be field adjusted as necessary.

A second front panel button is used for acknowledgment of alarms. Wiring terminals are provided for remote alarm acknowledgment

A lockout jumper is used to limit access to configuration functions. When in the lockout mode, only alarm setpoints and output scaling functions are displayed and cannot be altered.

ACTION INSTRUMENTS

Protecting the Integrity of Industrial Process Signals

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APPLICATION

The V432 is ideal for indication, control and alarming of process temperature variables. The unit can be used on heating and cooling systems to maintain the required temperature range, providing on/off control for refrigeration, oven or kiln applications. It can be used as a high or low temperature alarm and the current transmitter output can feed a multi-loop controller for zone furnace applications.

In all applications, the highly visible 0.56 inch, eight-segment LEDs provide a clear and accurate reading of the measured temperature. Easily installed, and constructed to withstand corrosion and moisture, the NEMA 4X rated V432 can be used in most industrial control panels under harsh environmental conditions.

The easy, field configurable design and wide selection of input and output types makes the V432 an excellent choice as a standard temperature display and alarm.

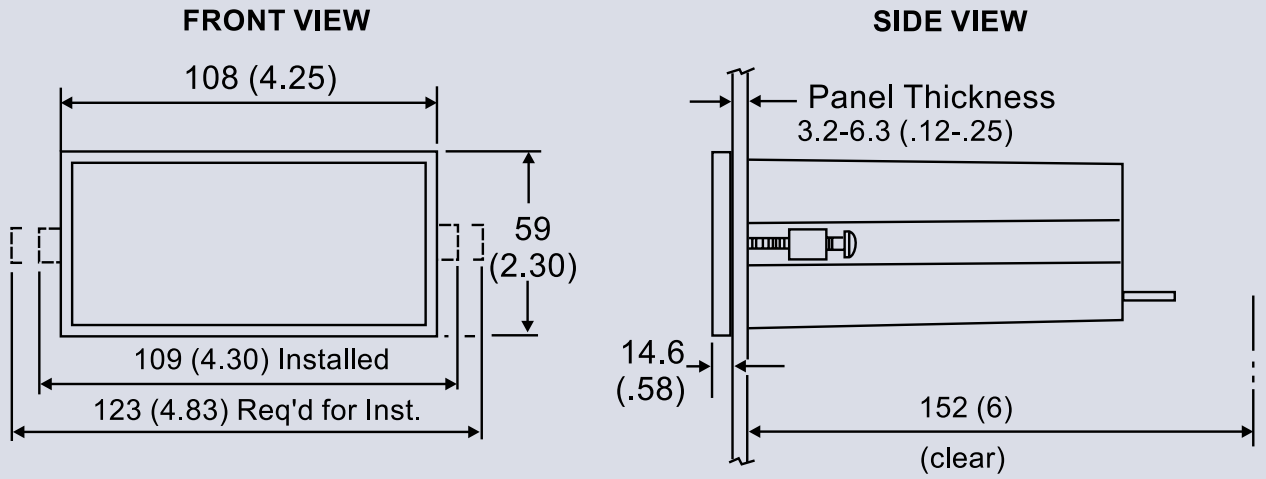
Table 1: Input Ranges

INPUT	RANGE	ACCURACY
TYPE J	-328 to 1382°F -200 to 750°C	±1.4°F ±0.8°C
TYPE K	-328 to 2498°F -200 to 1330°C	±1.7°F ±0.9°C
TYPE T	-330 to 760°F -200 to 404°C	±1.5°F* ±0.8°C**
TYPE E	-328 to 1832°F -200 to 1000°C	±1.4°F ±0.8°C
TYPE R	32 to 3213°F 0 to 1767°C	±4.8°F ±2.7°C
TYPE S	40 to 3214°F 4 to 1768°C	±5.7°F ±2.9°C
100 ohm RTD	-328 to 1382°F -200 to 750°C	±0.6°F ±0.3°C

*The accuracy from -450° to -331°F is ±4.6°F
**The accuracy from -263° to -201°C is ±2.6°C

DIMENSIONS

Dimensions are in millimeters (inches).



MOUNTING DIMENSIONS

Notes:

1. Panel cutout required: 45mm x 92mm (1.77" X 3.62")1/8 DIN
2. Panel thickness: 3.2mm - 6.3mm (0.12" - 0.25")
3. Allow 152mm (6 inches) behind the panel
4. Weight 16 oz, (454 g)

SPECIFICATIONS

Basic Meter

Inputs	Field selectable, type J,K,T,E,R, or S thermocouples with 1° resolution; type T to 0.1°; 100Ω platinum RTD (0.00385 or 0.00392 curve) to 1° or 0.1° resolution.
Display	Bright, large, 14.2mm (0.56") high efficiency red LED, 4 1/2 digits. F or C may be switched on to indicate Fahrenheit or Celsius.
Cold Junction Reference	Automatic, fixed, no user calibration needed.
t/c Open Indication	Open thermocouple circuit indicated by display flashing 'OPEN'. Relays will remain in same state prior to open t/c condition.
Hold Reading	Connect switch to ACK/HLD and COM terminals, also connect JP1 HLD pins.
Accuracy	See Input Ranges table
Lockout	Jumper JP2 at rear of instrument restricts modification of calibration values.
Input Impedance	>100KΩ
Power	115 VAC ±10%, 50/60Hz, 10VA or 18-36VDC optional.
Common/Normal Mode Rejection Rejection	110dB/64dB at 50-60Hz
Temperature/Humidity	Operating range: 0 to 65°C Storage range: -40 to 85°C RH: 0 to 90%, non-condensing
Front Panel/Enclosure	NEMA 4X, panel gasket provided/1/8 DIN, high impact plastic, UL 94V-0
Connections	Removable screw terminal block (provided), accepts 24 to 12 AWG.

Alarm Points	4, any combination of high or low alarms, front panel LED indicated
Alarm Deadband	0-100% of full scale, user selectable.

Relays (optional)

Rating	2 SPDT (form C); rated 2Amp @ 30VDC or 2Amp @ 250 VAC resistive load; 1/14 H @125/ 250 VAC for inductive loads.

Transmitter (optional)

Calibration Range	The transmitter output (4-20mA) can be calibrated so that a 4mA output is produced for any number displayed on the meter. The 20mA output may correspond to any other (larger or smaller) number displayed on the meter. However, best results are obtained with a 501 count difference between the 4 & 20mA output displays minimum.
Loop-Power	Isolated, up to 20mA at 24VDC regulated ± 5%, noise less than 10mV p-p. Max. loop resistance of 1200Ω. Use to power the 4-20 mA output signal.
Output Loop Resistance	1500Ω max. using an external loop-power supply. 500Ω max. using the built-in loop-power supply.
External Loop-Power Supply	35V max.
Accuracy	± 0.1% F.S., ± .004mA
Isolation	500VDC or peak AC, input-to-output or input/output-to-power line.

ORDERING INFORMATION

Specify:

1. Model number:
   V432-0000 (No Options),
   V432-1000 (2 relays),
   V432-2000(4-20mA output),
   V432-3000 (4-20mA and 2 relays)
2. Power: 115VAC (standard),
   18-36VDC (optional)
3. Optional Factory Configuration, specify
   C620 with the desired configuration information.

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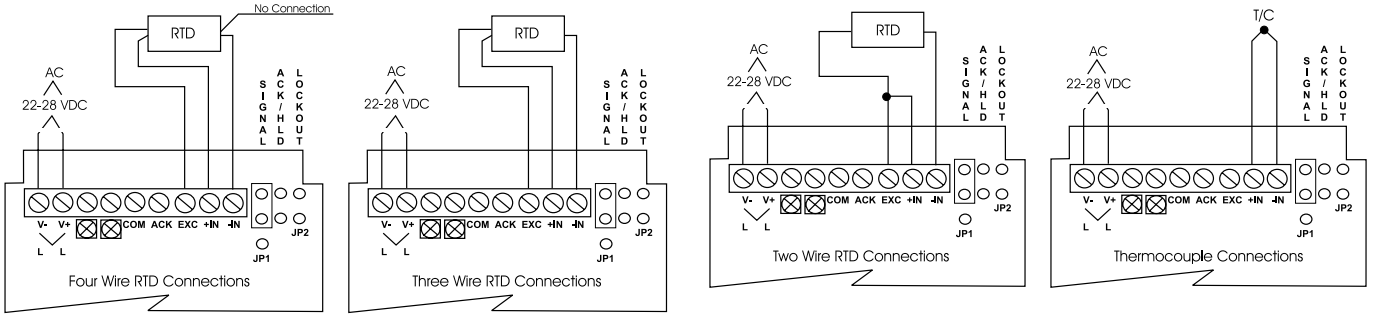
DALIAN ACTION INSTRUMENTS

Technical Bulletin

Wiring Diagrams, Model V432

Temperature Input Digital Indicator

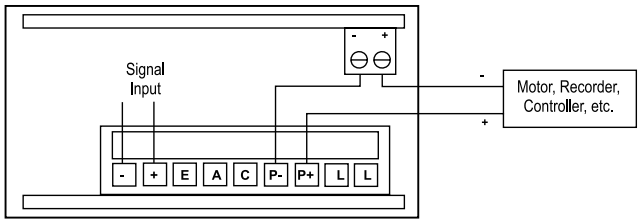


WIRING INSTRUCTIONS

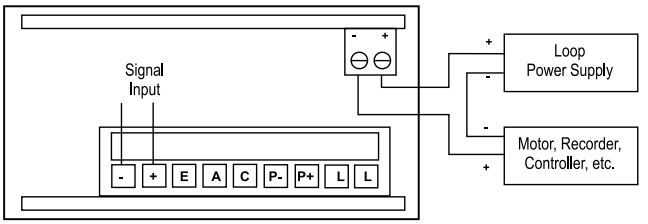
1. All field connections to be made with insulated copper wire, either solid or stranded. Tighten all screw terminals to 7 in/lb. (0.8Nm) .Strip length = 1/4 in (7mm). **DO NOT** pre-treat wire with solder.

2. **Terminals L & L:** Use AWG #12-18 wire, 600 volt, 60°C. Connect only one wire to each terminal.

3. **Terminals +, -, EXC, ACK/HLD & COM:** Use AWG #12-22 wire, 150 volt, 60°C. If using AWG #20 or smaller wire, up to 2 wires may be connected to each terminal. If using AWG #18 or larger wire, only 1 wire may be connected to each terminal.

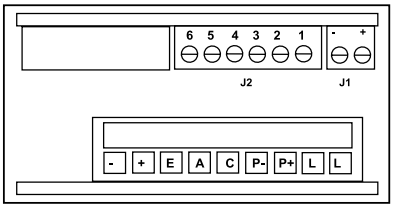


4-20mA output signal being powered by V430's internal 24V power supply. (AC powered units only)



4-20mA output signal being powered from an external 24V power supply.

PIN	Function	Screw Terminal Block
1	Transmitter	J1
2	Transmitter	J1
1	Relay #1 Common	J2
2	Relay #1 NC	J2
3	Relay #1 NO	J2
4	Relay #1 Common	J2
5	Relay #1 NC	J2
6	Relay #1 NO	J2

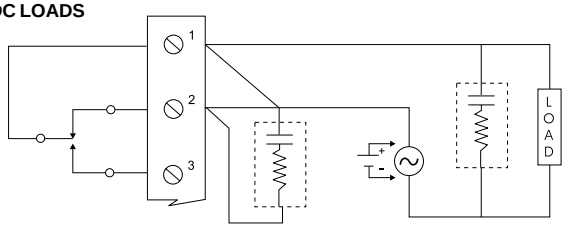


Notes:
1. Alarm acknowledgment terminals (ACK and COM) are located on the meter main board.
2. In the alarm condition, the NC contact is connected to common in the failsafe mode.

SWITCHING INDUCTIVE LOADS

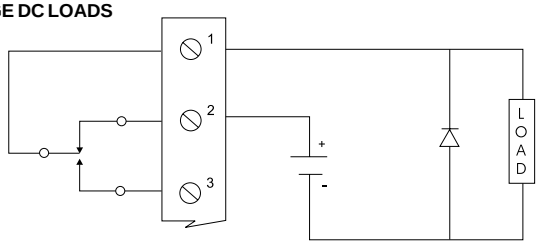
The V432 has the ability to suppress electrical noise generated by switching inductive loads. However, installing suppressors improves this performance even more and prolongs the life of the relay contacts. This suppression can be obtained with RC networks assembled by the user or purchased as a complete assembly. Refer to the following circuits for RC network assembly installation:

AC & DC LOADS



Choose R and C as follows
R: 0.5 to 1Ω for each volt across the contacts
C: 0.5 to 1 microfarad for each 1A through closed contacts

LOW VOLTAGE DC LOADS



Use a diode with a reverse breakdown voltage two to three times the circuit voltage and forward current at least as large as the load current.

Notes:
1. Use connectors rated for 240 VAC.
2. Snubbers may affect load release time of solenoid loads, check to confirm proper operational mode.
3. Install the RC network right at the relay screw terminals. A RC network may also be installed across the load.