V432-0000 (no options)
V432-1000 (2 relay outputs)
V432-2000 (4-20mA outputs)
V432-3000 (4-20mA and 2 relay outputs)

VISIPAK™ V432

Temperature Input, Digital Indicator

Provides a Digital Display of Temperature from RTD and Thermocouple Inputs

- Field Configurable Input Accepts Pt100 Ohm RTDs and J, K, T, E, R & S Type Thermocouples
- RTD Display to 1° or 0.1°
- 4 Visual Alarm Points with Front Panel LED Status
- NEMA 4 Front Panel
- Optional 2 Relay Output & 4-20mA Transmitter Output
- 115VAC Power Supply std; 24VDC optional

Description

The V432 is a versatile, field configurable, 1/8 DIN, RTD and thermocouple input LED indicator. 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 point) 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 100 Ohm Pt RTD (0.00385 and 0.00392 alpha curves) and displays temperature with 1 degree resolution (°F or °C). In addition, type T thermocouple and the 100 Ohm Pt RTD can 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 front panel button is used for acknowledgment of alarms. Wiring terminals are also 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.

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 reading of the measured temperature. Constructed to withstand corrosion and moisture, the NEMA 4X rated V432 can be used in most industrial control panels under harsh environmental conditions.

The 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: V432 Input Ranges

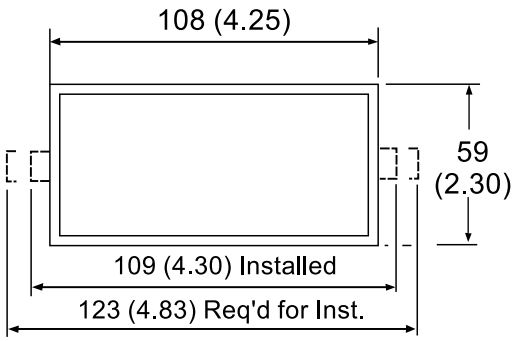
Sensor Type	Range	Accuracy
Type J Thermocouple	-328 to 1382¡ F -200 to 750¡ C	+/-1.4¡ F +/-0.8¡ C
Type K Thermocouple	-328 to 2498¡ F -200 to 1330¡ C	+/-1.7¡ F +/-0.9¡ C
Type T Thermocouple	-330 to 760¡ F -200 to 404¡ C	+/-1.5¡ F* +/-0.8¡ C**
Type E Thermocouple	-328 to 1832¡ F -200 to 1000¡ C	+/-1.4¡ F +/-0.8¡ C
Type R Thermocouple	32 to 3213¡ F 0 to 1767¡ C	+/-4.8¡ F +/-2.7¡ C
Type S Thermocouple	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¡ F to -331¡ F is +/-4.6¡ F
**The accuracy from -263¡ C to -201¡ C is +/-2.6¡ C

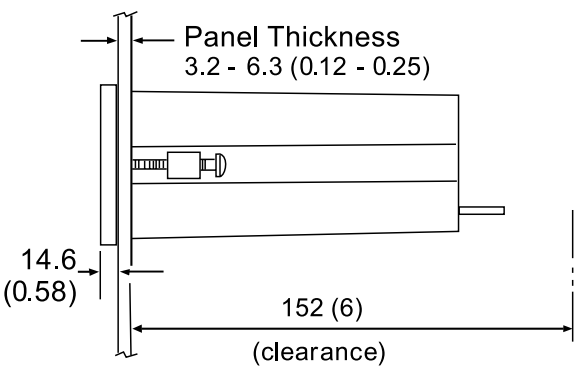
Dimensions

Dimensions in millimeters (inches)

Front View



Side View



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 16oz. (454g)

Model V432 Wiring Diagrams

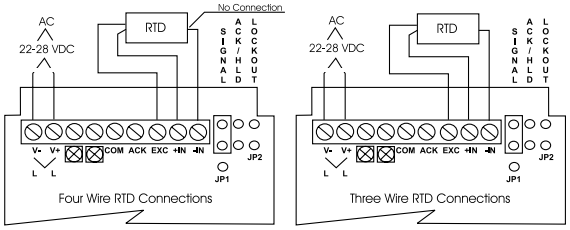
Temperature Input Digital Indicator

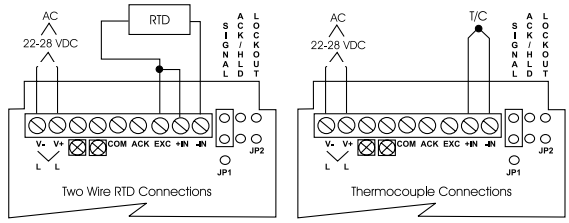
Wiring Instructions

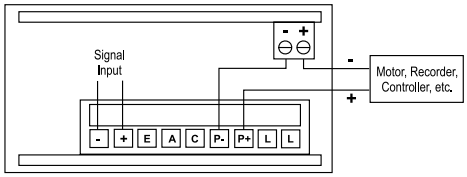
1. All field connections to be made with insulated copper wire, either solid or stranded. Tighten all screw terminals to 7 in/lb. (0.8Nm). Strip length = 1/4 in (7mm). **DO NOT** pre-treat wire with solder.

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

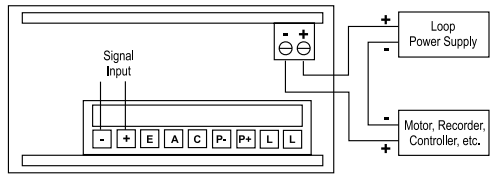
3. **Terminals +, -, EXC, ACK/HLD & COM:** Use AWG #12-22 wire, 150 volt, 60°C. If using AWG #20 or smaller wire, up to 2 wires can be connected to each terminal. If using AWG #18 or larger wire, only 1 wire can be connected to each terminal.







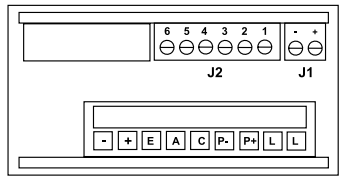
4-20mA output signal powered by the V432's internal 24V power supply.



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

Terminal Assignments

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 #2 Common	J2
5	Relay #2 NC	J2
6	Relay #2 NO	J2



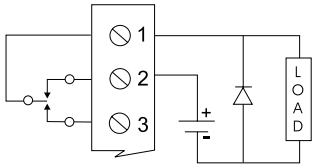
Notes:

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

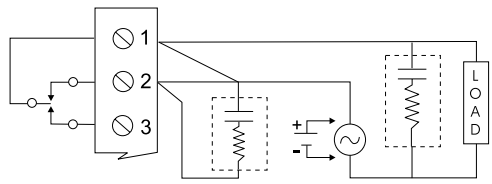
To minimize the effect of electrical noise and also prolong the life of the relay contacts, the use of a suppression network is recommended. RC networks can be purchased as an assembly. Refer to the following circuits for RC network assembly and installation:

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.

AC & DC Loads



Choose R and C as follows

R: 0.5 to 1 Ohm for each volt across the contacts

C: 0.5 to 1 microfarad for each 1A through closed contacts

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 at the V430's relay screw terminals. An RC network can also be installed across the load. Experiment for best results.

Specifications

BASIC METER

Inputs:

Field selectable, type J, K, T, E, R, or S thermocouples with 1° resolution; type T to 0.1°; 100 Ohm platinum RTD (0.00385 or 0.00392 curve) to 1° or 0.1° resolution.

Display:

14.2mm (0.56") high efficiency red LEDs, 4-1/2 digits. "F" or "C" can 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:

>100k Ohms

Power:

115 VAC ±10%, 50/60Hz, 10VA (std)

18-36VDC (optional)

Common/Normal Mode 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 Hp @ 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 can correspond to any other (larger or smaller) number displayed on the meter. However, best results are obtained with a 501 (minimum) count difference between the 4 & 20mA output displays.

Loop Power:

Isolated, up to 20mA at 24VDC regulated ± 5%, noise less than 10mV p-p max. To power the 4-20mA output signal.

Output Loop Resistance:

Between 10 and 600 Ohms when using the built in 24 Volt power supply. Between 600 and 1000 Ohms when using an external 35 Volt 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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Factory Assistance

For additional information on calibration, operation and installation contact our Technical Services Group:

703-669-1318

actionsupport@eurotherm.com