

# Convir VL Configurable Two-Piece Non-Contact Temperature Sensor

- ◆ -40°C to 700°C Measurement Range
- ◆ Adjustable Emissivity From 0.1 to 1.00
- ◆ Choice of 0/4 to 20 mA, 0 to 5 V and Type J or K Thermocouple Outputs
- ◆ Backlit LCD Display
- ◆ Miniature Sensing Head
- ◆ RS-485 Interface
- ◆ Configurable Relay Output

The new VL miniature infrared temperature sensor from Calex Electronics is designed to offer maximum flexibility in the smallest possible package.

The VL can measure temperatures from -40°C to 700°C with a response time of just 180ms. It has a narrow 10:1 field of view, and adjustable emissivity so can be configured to measure most materials. Each unit offers a choice of either 0/4 to 20mA, 0 to 5V or type J or K thermocouple outputs so can be used with virtually all process control instrumentation.

Under the lid of the electronics enclosure are buttons which are used to adjust the configuration parameters of the sensor and set the temperature range, response time and output. From here the analogue outputs can also be configured and maximum/minimum readings switched on or off.

To compliment the analogue outputs the VL also provides a digital relay output, the alarm level and hysteresis of which can be adjusted with the electronics module. The VL also has an RS-485 interface for connection to a PC, and can be interrogated using the UPP® (Universal Pyrometer Protocol).

The compact sensing head of the VL is made of stainless steel and is sealed to IP65. It can operate in ambient temperatures up to 85°C without cooling, or 200°C with air-cooling and purging accessories.

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## GENERAL SPECIFICATIONS

<b>Temperature Range</b>	-40°C to 700°C
<b>Spectral Range</b>	8 to 14 µm
<b>Accuracy</b>	±1°C or ±1%, whichever is the greater
<b>Repeatability</b>	±0.5°C or ±0.5%, whichever is the greater
<b>Response Time <math>t_{90}</math></b>	180 ms, switchable to 0.5 s, 1 s, 2 s, 5 s, 10 s or 30 s
<b>Emissivity</b>	Adjustable 0.10 to 1.0
<b>Field Of View</b>	10:1
<b>Output</b>	0/4 to 20 mA, 0 to 5 V or thermocouple type J or K
<b>Additional Output</b>	10 mV/°C for sensing head temperature
<b>Relay Contact</b>	Isolated relay contact, 50 V DC, 0.2 A, temperature and hysteresis adjustable
<b>Digital Interface</b>	RS-485 using UPP® (Universal Pyrometer Protocol)
<b>MAX/MIN Value Hold</b>	Maximum/minimum value hold, set to either OFF, every 0.1 s, 0.25 s, 0.5 s, 1 s, 5 s, or 25 s
<b>Temperature Display</b>	Backlit LCD, 4-digit, 3 values per second
<b>Resolution</b>	0.1°C
<b>Power Supply</b>	0.1°F from -40 to 999.9°F, 1°F above 1000°F
<b>Load</b>	10 to 30 V DC, maximum ripple 500 mV, power consumption 60 mA maximum
<b>Output Impedance</b>	Maximum 700 Ohm at 24 V with current output 100 Ohm for thermocouple and voltage outputs

## MECHANICAL

**Construction**  
**Dimensions**  
**Mounting Thread**  
**Cable Length**  
**Weight**

## SENSING HEAD

Stainless Steel  
14 mm diameter x 28 mm  
M12 x 1 mm pitch  
3 m  
320 g

## ELECTRONICS MODULE

Aluminium  
98 mm x 64 mm x 34 mm

## ENVIRONMENTAL

<b>Environmental Rating</b>	IP65
<b>Ambient Temperature</b>	Sensing head 0 to 85°C (200°C with air-cooling and purging accessories), Electronics Module 0 to 65°C
<b>Relative Humidity</b>	10 to 95%

## DIAMETER OF TARGET SPOT MEASURED VERSUS DISTANCE FROM SENSING HEAD

