

# SCM10

## Single Channel Temperature Indicator



SCIENTIFIC  
INSTRUMENTS

### Temperature Display

6-digit LED readout in K, °C, °F, V or  $\Omega$

### Status Indicators

A1 / A2 alarm state and active display units

### Front Panel Keys

Set sensor curve, units, alarms and relays



### 1/8 DIN Package

Panel mounts into a 91 x 44 mm cutout

The Scientific Instruments Model SCM10 Temperature Monitor is a compact, easy to use, precision instrument. With appropriate sensors the SCM10 is capable of measuring temperature from 1.4 K to 1200 K and in difficult sensing conditions including high vacuum and magnetic fields.

The SCM10 can be configured for the appropriate sensor type using the front panel or the utility software. The SCM-10 is available in two convenient sensor excitation current options, and measurements are available in K, °C or °F temperature units, or sensor units V or  $\Omega$ .

With serial, Ethernet, and a convenient graphical user interface, as well as an ASCII command set and LabVIEW™ drivers, the SCM10 can be used as a stand-alone temperature monitor or can be easily integrated into other systems.

## Key Features

- Measures from 1.4 K to 1200 K with the appropriate sensor
- Supports silicon and GaAlAs diodes plus RuO<sub>4</sub>, Pt, Cernox™ and Carbon-Glass RTDs
- Reliable in difficult sensing conditions including high vacuum and magnetic fields
- Embedded web server for monitoring from anywhere on the LAN
- Select from two excitation currents for lower self-heating
- Two alarms with two form-C relays and dual analog outputs
- ASCII command set and LabVIEW™ drivers for easy system integration

### Serial Port

RS-232C, DB9; 9600 to 115200 baud

### Ethernet

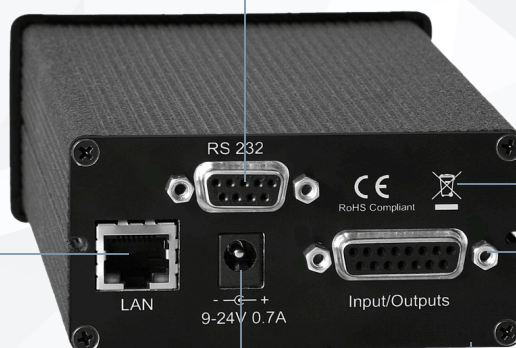
10-BaseT LAN with embedded web server

### Compliance

CE mark; RoHS compliant

### Sensor Input / Outputs

DB15; 4-lead sensor input, relays and analog output



### Power Input

9 - 24 VDC, 0.7 A

### Size

96(W) \* 48(H) \* 166(L) mm — 1/8 DIN

# SCM10 Single Channel Temperature Indicator

## THERMOMETRY

|                                           |                                                   |
|-------------------------------------------|---------------------------------------------------|
| Number of Inputs                          | 1                                                 |
| Measurement Type                          | 4-lead, single polarity                           |
| Excitation                                | Constant current, 10 $\mu$ A or 1 $\mu$ A (0.01%) |
| A/D Resolution                            | 24 bit                                            |
| Input Accuracy and Measurement Resolution | Sensor dependent                                  |
| Measurement Rate                          | 5 rdg/s                                           |
| Input Connector                           | DB15                                              |

## SENSORS

|                 |                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------|
| Diodes          | Silicon, Gallium Arsenide (25 K & above)                                                                         |
| RTDs            | RuO 1 k $\Omega$ , RuO 100 k $\Omega$ , Pt 100 $\Omega$ , Pt 1000 $\Omega$ , Cernox™, Carbon-Glass (4 K & above) |
| Standard Curves | Si410, Si430, DT470, DT670, CTI, PT100, PT1000, R0600, R0105                                                     |
| User Curve      | One 200-point user curve in non-volatile memory                                                                  |
| Settings        | Sensor Curve                                                                                                     |

## FRONT PANEL

|                                 |                                                                           |
|---------------------------------|---------------------------------------------------------------------------|
| Display Type                    | 6 digit LED                                                               |
| Display Units                   | K, °C, °F, V, $\Omega$                                                    |
| Display Update Rate             | 2 rdg/s                                                                   |
| Temperature Display Resolution  | 0.001° between 0 - 99.999°, 0.01° between 100 - 999.99°, 0.1° above 1000° |
| Sensor Units Display Resolution | 100 $\mu$ V (for diode type), sensor dependent (for RTD type)             |
| Keypad                          | MENU, UP, DOWN and ENTER                                                  |

## INTERFACE

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| Serial Format   | RS-232C; connector DB9                                                      |
| Baud Rates      | 9600, 19600, 57600, 115200                                                  |
| Ethernet Format | 10-BaseT; web based monitoring utility                                      |
| Functionality   | Graphical user interface, ASCII command set, LabVIEW™ drivers (Version 8.0) |
| Supported OS    | Windows 7.0, XP & Vista (32 bit)                                            |

## ALARMS & RELAYS

|                |                                                                                |
|----------------|--------------------------------------------------------------------------------|
| Alarms         | 2, High and Low                                                                |
| Alarm Settings | High setpoint, low setpoint, dead band, latching or non-latching, alarm on/off |
| Relays         | 2                                                                              |
| Relay Contacts | Normally Open (NO), Normally Closed (NC) and Common (C)                        |
| Contact Rating | 24 VDC at 1 A                                                                  |

## ANALOG OUTPUT

|                      | VOLTAGE                                    | CURRENT      |
|----------------------|--------------------------------------------|--------------|
| Range                | 0 - 10 V                                   | 4 - 20 mA    |
| Resolution           | 0.16 mV                                    | 0.3 mA       |
| Accuracy             | $\pm 1.25$ mV                              | $\pm 2.5$ mA |
| Min. Load Resistance | 500 $\Omega$ (short-circuit protected)     | N/A          |
| Isolation            | Output is not isolated from chassis ground |              |
| Update Rate          | 2 rdg/s                                    |              |

## GENERAL

|             |                                                          |
|-------------|----------------------------------------------------------|
| Mounting    | Panel mount into 91 mm W x 44 mm H (3.6 x 1.7 in) cutout |
| Size        | 96(W) * 48(H) * 166(L) (unit: mm) — 1/8 DIN              |
| Weight      | 0.45 kg (1 lb)                                           |
| Power Input | 9 - 24 VDC, 0.7 A                                        |
| Approval    | CE mark, RoHS compliant                                  |