

DM650TM SENSOR/WALL MOUNTED TEMPERATURE DISPLAY

DM650TM

- > UNIVERSAL RTD OR THERMOCOUPLE INPUT
- > BATTERY POWERED
- > USB AND NFC INTERFACE
- > ALARM RELAY / USER SET-DISPLAY MESSAGES
- > 5000 POINT DATA LOGGER (USB or COMPATIBLE ANDROID DEVICE)

- > INTRODUCTION

The DM650TM battery powered indicator accepts RTD or thermocouple temperature sensors and displays the sensor temperature in °C or °F on a 6-digit LCD display. The instrument offers an advanced display mode allowing the user to also display one or two (1 to 32) character messages. Additional to the messages, the user may select an alert-event to occur when the temperature is within a band. The change-over relay can be used together with the messaging and alert to provide switching at user-set switch points. In addition to this, on board datalogging is also available to record process details at up to 5000 points.

- > FEATURE HIGHLIGHTS

RELAY TRIP

The instrument is equipped with a volt-free changeover type relay. The user may select one of seven actions, including deviation operation, with fully adjustable set-point and hysteresis. The Relay may be turned off if not required to extend battery life. An option is provided to trigger a display alert-event when the relay contact is on. The relay can optionally be used to indicate a low battery condition.

DATA LOGGING FUNCTION

DM650TM also provides a powerful data logging function. The log points can be set up to 5000 points, each point is time and date stamped together with temperature and relay state information. The log rate is selectable in steps. The start of log can be delayed if required. Either fixed or rolling logs may be performed.

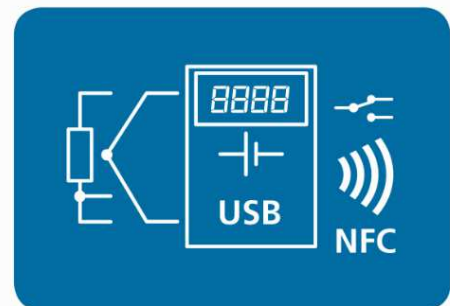
Two methods of reading the log are available. USB interfaced software reads the log and allows the user to save to a text file for export to other programmes. The NFC android interface allows data transfer to compatible android phones or tablets by using the downloadable App. The data can be graphed and forwarded by email, Bluetooth etc. The NFC interface is also capable of starting a new log with different log period and modes.

BATTERY POWERED

The instrument is powered by a single AA 3.6 V lithium battery. The battery life is dependent on the number of active features such as the relay contact and alert LED. Battery life 1-year minimum (longer depending on options selected)

REAL-TIME CLOCK (RTC)

Date and time can also be displayed with the input temperature. The RTC is also used to time stamp the data logged points which will also give relay state.



DM650TM SENSOR/WALL MOUNTED TEMPERATURE DISPLAY

| INPUT RTD (3 Wire) | | SPECIFICATIONS @20°C |
|--|------------------|--|
| Type | Range | Accuracy/stability |
| Pt100 (IEC) | (-200 to 850) °C | ±0.2°C ±0.05% of reading (plus, sensor error) |
| Ni100 | (-60 to 180) °C | |
| Ni120 | (-70 to 180) °C | |
| Cu53 | (-40 to 180) °C | |
| Cu100 | (-80 to 260) °C | |
| Thermal drift | 0°C at 20°C | Typically, 0.01 Ω/°C Example Pt100 0.03°C/°C |
| To maintain full accuracy annual calibration is required: contact support@status.co.uk for details | | |

| INPUT Thermocouple | | SPECIFICATIONS @20°C |
|--|-------------------|--|
| Type | Range | Accuracy/stability |
| K | (-150 to 1370) °C | ±0.1% of full scale ±0.5°C ± CJ error (plus, sensor error) |
| J | (-200 to 1200) °C | |
| N | (-270 to 1300) °C | |
| E | (-260 to 1000) °C | |
| T | (-270 to 400) °C | ±0.2% of full scale ±0.5°C ± CJ error (plus, sensor error) |
| R | (0 to 1760) °C | ±0.1% of full scale ±0.5°C ± CJ error (plus, sensor error) over range (800 to 1760) °C |
| S | (0 to 1760) °C | |
| L | (-200 to 900) °C | ±0.1% of full scale ±0.5°C ± CJ error (plus, sensor error) |
| U | (0 to 600) °C | |
| B | (0 to 1820) °C | |
| C | (0 to 2300) °C | |
| D | (0 to 2300) °C | |
| G | (0 to 2300) °C | |
| Thermal drift | 0°C at 20°C | Typically, ±5 uV/°C |
| To maintain full accuracy annual calibration is required: contact support@status.co.uk for details | | |

| CASE SENSOR / COLD JUNCTION (CJ) | | SPECIFICATIONS @20°C |
|----------------------------------|----------------|----------------------|
| Type | Range | Accuracy/stability |
| Thermistor 10K Beta 3380 | (-30 to 70) °C | ±0.2°C |
| Thermal drift | 0°C at 20°C | ±0.05°C/°C |

| DISPLAY | |
|--|--|
| Type/options/function | Description |
| Display height | 7.9 mm non-backlit |
| Display information options some information is displayed scrolling. | 6 digits 14 segment input value plus "Warning", "Transmit", "NFC", "USB", "Log", icons, 8 segment log volume indicators. Maximum, minimum, average *1. Date and time, case temperature. Custom messages for visual alarms/information. Relay condition. |
| High intensity LED | Alarm and warning options |
| *1 Rolling average log is independent of data logging | |

| RELAY | |
|-----------------------|---|
| Type/options/function | Description |
| Type | Single pole change-over (common, N/o, N/c) |
| Rating | 48 VDC maximum @ 1 A (5 mA minimum) 28 VAC RMS maximum @ 1 A |

DM650TM SENSOR/WALL MOUNTED TEMPERATURE DISPLAY

| USB CONFIGURATION USER INTERFACE | | |
|--|---|---|
| Type/options/function | Description | Notes |
| Configuration hardware | USB mini B port | Cable not included |
| Configuration software | USBSpeedLink | Download www.status.co.uk |
| Operating system | Microsoft Windows | Win 7 or later |
| Sensor configuration | Select sensor type Trim sensor offset Sensor fail | TC options/RTD options ± 10 °C, ± 18 °F High/low |
| Display configuration | Display mode Set display units Display offset for zero (-270 to 5000) °C range | Basic or advanced °C or °F Differential from set point is displayed |
| Pre-set sensor to setpoint | Locks display value | For diagnostics |
| Advanced display mode *1 | Temperature and/or message A, B (32 character) and/or alert LED flash. Update every 5 seconds/alternates between message A and B | |
| Basic display mode | Temperature | |
| Display Pre-set display messages | Seven custom messages Eight user-adjustable temperature bands | Message A and message B options |
| LED alert | Eight user-adjustable temperature bands | Alert LED flash |
| Warning symbol | Out of range Open circuit Low battery level | Warning symbol will flash on LCD display |
| Battery monitor | Alert LED plus message | Relay option |
| Logger | Set device passkey number Clear, start new log | Device passkey is used to protect the NFC interface. |
| Other device options | Synchronise clock Write tag, contact address Read, reset maximum and minimum values Set device location | To PC system date and time Latitude and Longitude |
| Relay control | Name Action Set-point Dead band | 10 characters High/low/band/low battery °C °F °C °F |
| Live data | Read sensor temperature Read cold junction Relay 1 state | °C °F Internal case temperature Off, on |
| *1 Advanced display reverts to basic display below -5 °C case temperature. | | |

| USB LOGGER USER INTERFACE | | |
|---------------------------|---|---|
| Type/options/function | Description | Notes |
| Logger hardware | USB mini B | |
| Logger software | USBLogLink | Download www.status.co.uk |
| Operating system | Microsoft Windows | Win 7 or later |
| Logger | Start, set log parameters | Interval, rate, (delay) start, number of points, rolling or fixed log |
| | Read log parameters | |
| | Stop, start new log Reset maximum and minimum Synchronise, read clock | |
| | View log data, graph log data | Save data to CSV file |

DM650TM SENSOR/WALL MOUNTED TEMPERATURE DISPLAY

| NFC ENABLED ANDROID DEVICE REQUIREMENTS | |
|--|---|
| Tag Type | NFC Forum Tag Type 4 (max capacity 65536 Bytes) |
| RF Interface | ISO/IEC 14443 Type B Compliant (13.56 MHz) |
| Android device | Compatibility to read NFC Tag type 4 to full capacity 65536 bytes |
| Note: If the android device cannot read full bytes the maximum number of log points will be reduced. | |

| NFC LOGGER USER INTERFACE ANDROID | | |
|--------------------------------------|---|---|
| Type/options/function | Description | Notes |
| Logger software | NFCLogLink | @ Google Play Store |
| Operating system | Android V4.4 Kitkat or later | NFC enabled |
| Logger | Start, set log parameters | Interval, rate, (delay) start, number of points, rolling or fixed log |
| | Read log parameters | |
| | Stop and start new log, Synchronise, read clock | |
| | Reset maximum and minimum | |
| | View log data, graph log data | Save data to text file |
| | Transfer data via email etc. | Standard Android functions |

| GENERAL | |
|---------------------|---|
| Function | Description |
| Update rate | 5 seconds |
| Relay response time | < 10 seconds |
| Battery | 1 x (AA 3.6 V lithium) |
| Battery life | 1-year minimum (longer depending on options selected) |
| Clock accuracy | ±2 seconds per month typically |

| ENVIRONMENTAL | |
|---------------------------|--|
| Function | Description |
| Ambient temperature | Operating/storage (-30 to 70) °C |
| Ambient humidity | Operating/storage (10 to 90) %RH non-condensing |
| Protection | IP67, cable/probe entries must be sealed to IP67 to maintain |
| USB configuration ambient | (10 to 30) °C |

| CONNECTIONS | |
|----------------|-------------------------------|
| Function | Description |
| Input sensor | Two-part screw connector |
| Output relays | 2 x Two-part screw connectors |
| USB connection | USB mini B socket |

| MECHANICAL | |
|---------------------------|---|
| Function | Description |
| Enclosure | ABS, grey base, grey clamp ring |
| Display cover | Polycarbonate, clear |
| Case entries | Base and side entry options see ORDER CODES below |
| Front of display diameter | 65 mm |
| Weight (approximate) | 170 g |

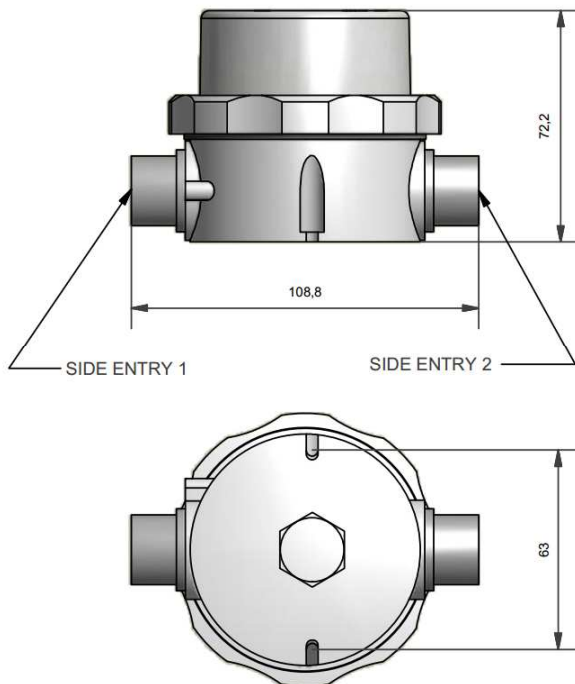
| APPROVALS | |
|--------------------|--|
| EMC | BS EN 61326: Note - Sensor input wires to be less than 3 m to comply |
| Ingress protection | BS EN 60529 |
| RoHS | Directive 2011/65/EU |

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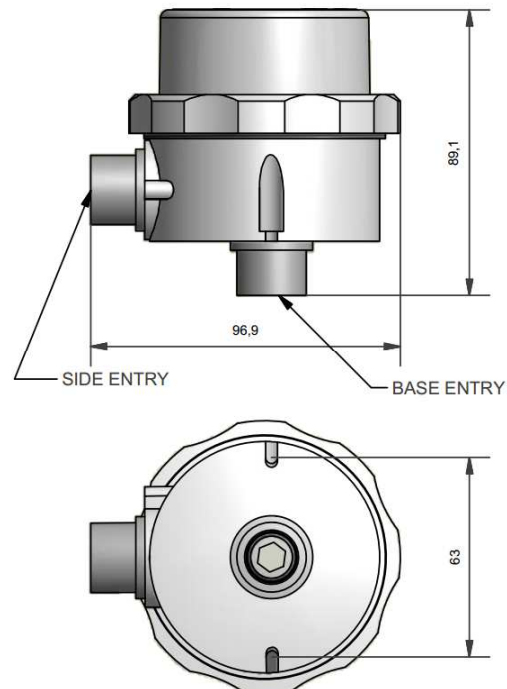
| | |
|-------------------|--|
| ORDER CODE | DM650TM (See below for housing code) |
|-------------------|--|

| | | | | | |
|--|---------------------|----------|-----------------------|----------------------|----------------------|
| ORDER CODE | SCH4 HOUSING | | | | |
| | Body type | | Base entry | Side entry A | Side entry B |
| SCH4 | B or C | 0 | Thread option | Thread option | Thread option |
| B: Double side entry C: Single side with base entry | | 0 | <u>Thread options</u> | | |
| | | | 00 = None fitted | 16 = M16 | 20 = M20 |
| | | | 24 = M24 | .5BSP = ½" BSP | .5NPT = ½" NPT |
| Example: 1 base entry (M24) with side entry A (M16) | | | | | |
| SCH4 | C | 0 | 24 | 16 | 00 |
| For further options please contact sales@status.co.uk | | | | | |

Body type B: 2 x side entry



Body type C: 1 x side entry with 1 x base entry



Dimensions in mm

| ACCESSORIES | |
|----------------------------|---|
| USB configuration software | USBSpeedLink free of charge from www.status.co.uk |
| USB logging software | USBLogLink free of charge from www.status.co.uk |
| NFC logging software | NFCLogLink free of charge refer to Google Play Store |
| USB programming lead | USB programming lead, part number 42-200-0001-01 |
| Battery AA 3.6 V lithium | Refer to sales@status.co.uk |
| Calibration certificates | Refer to sales@status.co.uk |
| Temperature probe options | Refer to www.status.co.uk |

To maintain full accuracy annual calibration is required contact support@status.co.uk for details
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