

DM650HM USER GUIDE

BATTERY POWERED %RH. °C/°F METER WITH RELAY TRIP AND DATA LOGGING FUNCTION

Important - Please read this document before installing.

Every effort has been taken to ensure the accuracy of this document; however, we do not accept responsibility for damage, injury, loss or expense resulting from errors and omissions, and we reserve the right of amendment without notice.

IMPORTANT – CE, UKCA & SAFETY REQUIREMENTS



The instrument is designed to be directly attached to the sensor probe assembly. Remote Probes may be used but the user must ensure all sensor and cable entries maintain environmental protection to at least IP65 rating.

To maintain CE EMC requirements, input wires must be less than 3 metres.

The product contains no serviceable parts, or internal adjustments. No attempt must be made to repair this product. Faulty units must be returned to supplier for repair. This product must be installed by a qualified person. All electrical wiring must be carried out in accordance with the appropriate regulations for the place of installation. Before attempting any electrical connection work, please ensure the battery is removed

ABSOLUTE MAXIMUM CON	SSOLUTE MAXIMUM CONDITIONS (To exceed may cause damage to the unit).		
Battery Voltage	± 3.7 VDC (Protected for over-voltage and reverse connection)		
Ambient	Temperature (-30 to 70) °C, Humidity (10 to 95) % RH (Non-		
	condensing)		
Relays	50 VDC 40 VAC RMS		







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1~DESCRIPTION.

The DM650HM is a battery powered indicator with built-in sensors designed to display % relative humidity, temperature, dew point and delta temperature. The instrument offers an advanced display-mode, allowing the user to display not only process variables but one or two (1-32) character messages. Additional to the messages, the user may select an alert event to occur when the process is within a band. The change-over relay can be used together with the messaging and alert to provide switching at user-set points. In addition to this, on board datalogging is also available to record process details at up to 5000 points.

2~RECEIVING AND UNPACKING.

Please inspect the packaging and instrument thoroughly for any signs of transit damage. If the instrument has been damaged, please notify your supplier immediately.

3~SPECIFICATION.

Refer to data sheet for full specification

recipi to data shock for fall openination.		
Factory default	Displays %RH, °C, relay not set	

4~INSTALLATION AND WIRING 4.1~MECHANICAL.

The instrument is a high accuracy digital thermometer. In order to ensure correct operation, the following must be observed:

The product must be stored in a dry clean environment and remain in original packaging prior to installation.

The instrument must not be installed adjacent to electro-mechanical starters, controllers, thyristor power units or electrical switch gear.

Any cleaning of the instrument must be done using a mild detergent and soft cloth. No solvents or abrasive cleaners should be used.

Stated ambient operating conditions must not be exceeded. Battery life will reduce with higher ambient temperature operating conditions.

4.2~ELECTRICAL.

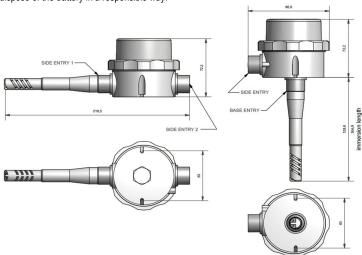
For a wiring diagram please refer to the rear panel of the DM650HM inside the case housing.

Connections: NO (Normally Open), NC (Normally Closed), and C (Common). Two-part connectors are used for input and relay connections, allowing the unit to be easily removed from the housing for reprograming or data download if this is not possible in situ. On insertion of battery the unit will run through a power up check; during this time the relay may change state.

IMPORTANT: Always remove battery before any wiring takes place. Gain access to the connectors and battery holder by unscrewing the cap ring to release front panel assembly from case.

RELAY CONNECTION: A relay with changeover contacts is available. Screw terminals are provided for connection for wire size 16 to 20 AWG. The relay contacts are rated at 48 VDC 28 VAC RMS @ 1 A (5 mA minimum current) see DM650HM

BATTERY: To remove battery, use screwdriver to ease the positive end of the battery out of holder. Insert new battery negative end first then press into place. (Observe polarity). Battery type 3.6 V Lithium (2.4 A/Hr) CR14505 (IEC) AA case style. Please dispose of the battery in a responsible way.



5~USER CONFIGURATION.

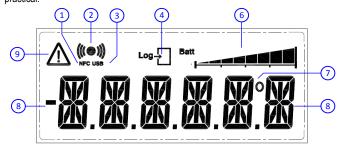


IMPORTANT

READ COMPLETE SECTION BEFORE ATTEMPTING CONFIGURATION.

The instrument is provided with a USB interface for direct connection to a PC. Free software USBSpeedLink is available. Please refer to the USBSpeedLink software for further information on configuration. The software can be downloaded from www.status.co.uk.

DISPLAY: The display provides six 14 segment characters for display of temperature and alpha-numeric messages, together with an 8 segment bar graph and six icons. The display can operate in an ambient temperature range of (-30 to 70) °C, but at temperatures lower than -5 °C (due to the slow LCD speed) scrolled messaging is not practical.



- 1. NFC The Symbol is on when a NFC field is detected. When a detected field is lost the symbol will turn off after a few seconds
- 2. TRANSMIT/RECEIVE: Symbol on when either NFC or USB communication is active.
- 3. USB: Symbol on when USB port is connected to a PC. Please note battery is not required during configuration.
- 4. LOG: Not used
- 5. Not used
- 6. BAR GRAPH: Indicates the state of the logger. The condition is dependent on the selected logger mode, either Single or Rolling mode.

Single Mode (Log to the maximum number of logs then stop) End of Log (alternating)

Rolling Mode (Log to the maximum number of logs then as each new log is taken the oldest log is discarded) Start of Log Mid Loa Rolled over Log (max bar toggles)



- 7. DEG: Degree symbol "o" used to indicate either °C or °F on the last digit.
- 8. DIGITS: Six-digit 14 segment display with sign, range 9999.9 to -9999.9. Advanced mode offers two temperature-dependent 32-character message options.
- 9. WARNING ICON: This symbol will toggle on and off to indicate a warning. The warning symbol will be active either when the sensor signal is out of range, not connected or when the battery is low

5.1~USB CONFIGURATION

Using the USBSpeedLink software to program a new configuration into the device work from left to right through the option tabs.

The USB port is located inside the housing on the rear panel.		
Configuration steps		
Install and run the USBSpeedLink software		
Select the correct programming page in the software (follow any on screen		
safety precautions)		
Connect the USB lead to the PC, connect the USB lead to the device		
Read the unit configuration into the software		
Re-configure or adjust configuration options as required		
Send the new configuration to the unit		
Connect the USB lead to the PC, connect the USB lead to the device Read the unit configuration into the software Re-configure or adjust configuration options as required		

5.1.1~Sensor option tab

Use this tab to pre-set RH and temperature values; this can be used for system testing and diagnostics.

5.1.2~Relay tab (showing live readings in the "Data" section)

Use this tab to set the relay controls. Relay Title : te : 18/12/19

Relay options for %RH, temperature	e, dew point and delta t. source
Set point	Dead band
Low alarm	Low control (inverted low alarm)
High alarm	High control (inverted high alarm)
Alarm inside band	Alarm outside band
Low battery alarm	Alarm off
A diagram will display to show alarm	n type function

5.1.3~Basic display options tab

Use this tab to select the display value options, °C or °F and LED function





MULTIFUNCTION ALERT LED

The alert LED normal state is off, on alert the LED will emit an intense white light pulse every 5 seconds. The LED can be programmed to pulse on any of the following combined events: Mode Description

The LED never operates, extending battery life. No events

(Factory default setting)

Battery Alert on low battery detect. Alert when relay trip is on.

Temperature In advanced mode only the alert LED can be made to alert in any one of eight user-set temperature bands. Example, to alert operator when temperature is outside a safe operating range. The function of the alert LED can be further enhanced with the option of displaying an alert message in advanced display mode.

5.1.4~Advanced display options tab

Use this tab to set up the advance messaging options.

Enable Advanced Messaging Mode 🗹 Select Signer .

Display Menu (Msg A Msg B Displayed Alternatively) :

Alert (LED) Msg A Msg B -, Msg A Msg B -0.1 (a) to 0.0 0.0 🕏 to 25.0 25.0 🕏 to 50.0 50.0 🖟 to 75.0 75.0 to 100.0 to 101.0 8 - 8 -Reset

5.1.4~Advanced display options tab (continued)

6 user set ranges/bands can be set for either %RH, temperature, dew point or delta t. Each range can have 1 or 2 messages assigned that will display on the screen when the input source signal is within the set band. Also, the LED can be set to flash, within the selected range.

Up to 7 user messages can be entered or pre-set messages can be used. Relay in or out of alarm trip can also be used to prompt specific messages to be displayed.

5.1.5~Other display options tab

Use this tab to set the "Tag" and "Contact" free type fields stored to the device. A passcode to protect the device log from being overwritten by an Android device can be

Longitude and latitude data can be entered, this will show in the log files and can help identifying data logs recorded from multiple devices.

6~DATA LOGGING

USB and Android NFC software allows the user to read existing logs, change the log manifest, start a new log, synchronise the instrument clock and reset the maximum/minimum readings.

Logs can run to a fixed number and stop or continually roll over, up to 5000 log points can be recorded. The start of the log can be delayed up to one month.

Data from can be viewed on screen as a graph or table and can also be saved to a csv file

6~1 USB LOGGING



Clr Log Data

USB LOGGER INTERFACE (connector inside housing)

The USB interface allows the instrument to communicate with a PC running the USBLogLink software

The prime function of the interface is to read logged data from the device using free software available to download.

The software allows the user to read existing logs, change the log manifest, start a new log, synchronise the instrument clock and reset the maximum/minimum readings.

USBLogLink is available from the manufacturer or supplier.

USB LogLink software



6~2 NFC LOGGING



NFC LOGGER INTERFACE

The NFC interface allows the instrument to communicate with an Android device using NFC connectivity.

The prime function of the interface is to read logged data from the device using a free app, which is available for downloading to Android devices. The app allows the user to read existing logs, change the log manifest, start a new log, synchronise the instrument clock and reset the maximum/minimum/average readings. Logs can run to a fixed number and stop or continually roll over, up to 5000 log points can be recorded. The start of the log can be delayed up to one month.

Note: For larger logs the data may take over a minute to fully download via the NFC interface.

Note: Not all Android devices fully implement the near field communication (NFC) standard and may not hold the full 5000 log points.

Download Status Instruments apps from the Google Play Store

Status Instruments Ltd, Status Business Park, Gannaway Lane, Tewkesbury, Gloucestershire, UK, GL20 8FD,

Web Page: www.status.co.uk, Email: sales@status.co.uk

Technical Support: support@status.co.uk

Tel: +44 (0) 1684 296818, Fax: +44 (0) 1684 293746