DM650HM BATTERY POWERED HUMIDITY/TEMPERATURE DISPLAY

> **%RH, TEMPERATURE, DEW POINT, DELTA T**

> **ALARM RELAY, USER-SET DISPLAY MESSAGING**

> **USB AND NFC INTERFACE**

> **BATTERY POWERED**

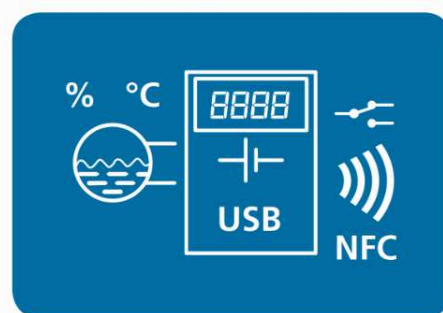> **5000 POINT DATA LOGGER (USB or COMPATIBLE ANDROID DEVICE)**

> ## INTRODUCTION

The DM650HM is a battery powered indicator with built-in sensors designed to display % relative humidity, temperature, dew point and delta temperature, on a 6-digit LCD display.

The instrument offers an advanced display-mode, allowing the user to display not only process variables but one or two (1 – 32) character messages. This feature is further enhanced by the ability to split a process range into eight user-set bands, each band having independent user-selected messages.

The DM650HM has a changeover-type relay with multiple programmable options.

Wall and duct-mounted versions are available.

> ## FEATURE HIGHLIGHTS

RELAY
The instrument is equipped with single volt-free change-over type relay. The user may select one of several actions, including deviation operation, with fully adjustable set-point and dead-band. An option is provided to trigger an alert-event when a relay contact is on.

The relay can be used to alarm on any of the values of relative humidity, temperature, dewpoint or delta temperature. A battery-monitoring function is also provided.

DATA LOGGING FUNCTION
DM650HM 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 %RH, 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. The USB configuration reads the log and allows the user to save to a text file. 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 periods and modes.

FLEXIBLE DISPLAY OPTIONS
The DM650HM can display any combination of the following process variables: % relative humidity, temperature, dew point and delta temperature.

REAL-TIME CLOCK
Date and time can also be displayed with the input values. The real-time clock is used to record the data logged points.

STATUS INSTRUMENTS

DM650HM BATTERY POWERED HUMIDITY/TEMPERATURE DISPLAY

SPECIFICATIONS

INPUT SENSOR		SPECIFICATIONS @20˚C
Range + Options	**Accuracy**	**Stability/notes**
% Relative humidity (%RH) nominal (0 to 100) %RH	Typically, ±3 %RH (max ±5 %RH) between (10 to 90) %RH	Thermal stability 0.01 % / ˚C
Temperature (**-30 to 100) ˚C**	±0.5 ˚C between (-20 to 80) ˚C	Thermal stability 0.1˚C/˚C
Dew point		Mathematically derived from %RH and temperature
Delta temperature		
To maintain full accuracy annual calibration is required: contact support@status.co.uk for details		

DISPLAY	
Type/options/function	**Description**
Display height	7.9 mm non-backlit
Display information options some information is displayed scrolling *1	6 digits 14 segment input value plus "Warning"," Transmit", "NFC", "USB", icons, 8 segment log volume/signal indicators. Date and time. Custom messages for visual alarms/information. Relay condition.
Display range	Full range for %RH and temperature (0 to 50)˚C for dew point and delta temperature
Decimal place	To 1 place for %RH, temperature, dew point and delta temperature
High intensity LED	Alarm and warning options
*1 Below –5˚C ambient temperatures, scrolling messages are not practical due to the update speed of the LCD display. Below this, use basic mode only.	

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

USB CONFIGURATION USER INTERFACE		
Type/ options/ function	**Description**	**Notes**
Configuration hardware	USB mini B port	A to mini B cable required
Configuration software	USBSpeedLink	Download www.status.co.uk
Operating system	Microsoft Windows	Win 7 or later
Configuration	Decimal point Temperature units	Adjustable ˚C, ˚F
Display configuration	Display mode	Basic and advanced
Pre-set sensor to setpoint mA	Locks display values	For diagnostics
Basic display mode	Display any value %RH, temperature, dew point, delta temperature Bar graph as % log fill and alert LED options	
Advanced display mode *1	Process value and or message A, B (32 character) and or alert LED flash. Update every 5 seconds/alternates between message A and B	
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	Warning symbol will flash on
Battery monitor	Alert LED plus message	Relay option

STATUS INSTRUMENTS

DM650HM BATTERY POWERED HUMIDITY/TEMPERATURE DISPLAY

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 input values Location settings	To PC time setting 24 characters Latitude and longitude
Relay control	Name Action	10 characters High, low, band, low battery
	Set point Dead band	%RH, temperature, dew point, delta temperature
Live data	Read values	%RH, temperature, dew point, delta temperature Time, date
	Relay state	Off, on
*1 Below –5°C ambient temperatures, scrolling messages are not practical due to the update speed of the LCD display. Below this, use basic mode only.		

USB LOGGER USER INTERFACE		
Type/options/function	Description	Notes
Logger hardware	USB mini B port	A to mini B cable required
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 Synchronise, read clock	
	Read live data	Input values
	View log data/graph log data	Save data to CSV file

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	NFC ENABLED ANDROID DEVICE REQUIRED	
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/start new log Synchronise/read clock	
	View log data/graph log data	Save data to text file
	Transfer data via email etc.	Standard Android functions

STATUS INSTRUMENTS

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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

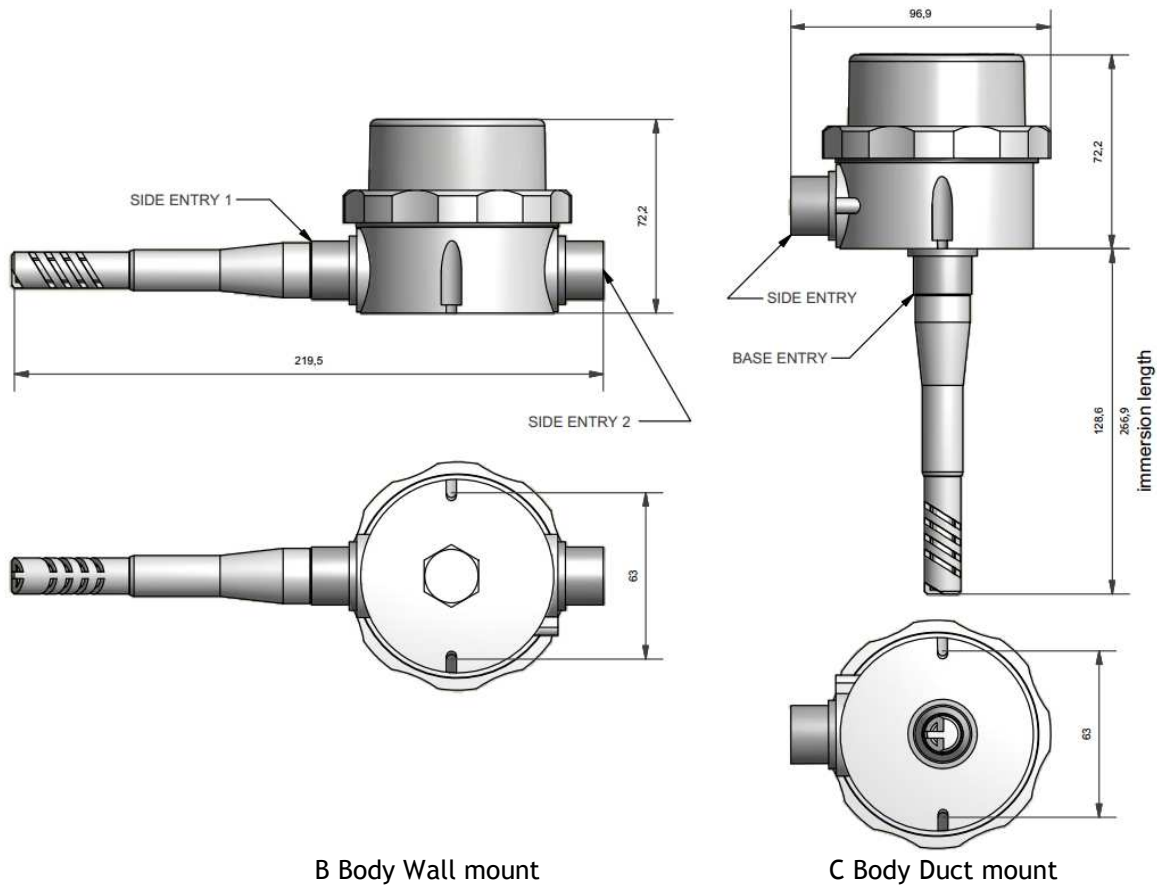| ENVIRONMENTAL	
Function	**Description**
Ambient temperature	Operating/storage (-30 to 70) ˚C
Ambient humidity	Operating/storage (10 to 90) %RH non-condensing
Protection Housing Stem	 IP65, cable entries must be sealed to IP65 to maintain Measurement tip not sealed, protect from splashes
USB configuration ambient	(10 to 30) ˚C

CONNECTIONS	
Function	**Description**
Output relay	Two-part screw connector
USB connection	USB mini B socket

MECHANICAL	
Function	**Description**
Enclosure	ABS: grey base, grey clamp ring. Polycarbonate: screen
Display cover	Polycarbonate, clear
Case entries	M20 see ORDER CODES below
Front of display diameter	65 mm
Weight (approximate)	200 g

APPROVALS	
Function	**Description**
EMC	BS EN 61326
Ingress protection	BS EN 60529
RoHS	Directive 2011/65/EU

DM650HM BATTERY POWERED HUMIDITY/TEMPERATURE DISPLAY

ORDER CODE DM650HM		
		Stem length
DM650HM	B / A	Wall mount with 128 mm stem
DM650HM	C / A	Duct mount with 128 mm stem
DM650HM	C / B	Duct mount with 266 mm stem
Example duct mount with 128 mm stem		
DM650HM	**C / A**	
For further options please contact sales@status.co.uk		

B Body Wall mount   C Body Duct mount

ACCESSORIES	
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
Mounting gland	For duct mounting, part number 41-800-0039-01
USB programming lead	USB A to mini B programming lead part number 42-200-0001-01
Battery 3.6 V lithium	Refer to sales@status.co.uk
Calibration certificates	Refer to sales@status.co.uk

STATUS
INSTRUMENTS