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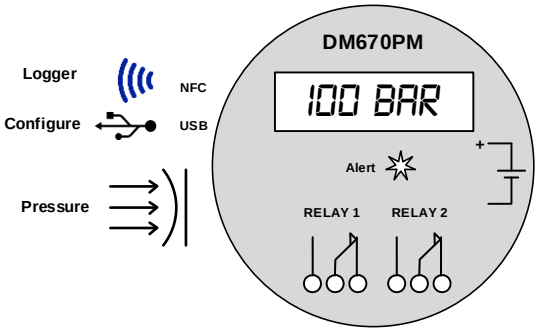
DM670PM BATTERY POWERED DIGITAL PRESSURE DISPLAY WITH DUAL TRIP AND NFC INTERFACE LOGGING FUNCTION. USER GUIDE



Important - Please read this document before commencing installation.

IMPORTANT - CE, UKCA & SAFETY REQUIREMENTS

- Product must be installed correctly providing environmental protection to IP65 or greater(Cable Entries).
- Apart from the battery the product contains no serviceable parts. 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.
- Battery - Fire Explosion and Severe Burn Hazard . Do not attempt to re-charge, Crush, Incinerate, Disassemble, Heat above 100 °C (212 °F) or expose to water.
- Disposal of the battery must conform with the regulations applicable for the area use.

ABSOLUTE MAXIMUM CONDITIONS (To exceed may cause damage to the unit):-

Battery Voltage	+ 3.7 V dc (Protected for reverse connection)
Ambient	Temperature (-30 to 70) °C Humidity (10 to 95) % RH (Non condensing)
Relays	50 V dc 40 V ac rms

PRODUCT SPECIFICATION

Please refer to the product data sheet for full specification, available to download at www.status.co.uk.

RECEIVE 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.

CONFIGURATION

The instrument is provided with a USB interface for direct connection to a PC. Free software USBSpeedLink is available, is simple to use and provides the user with either basic or advanced display modes. Please refer to the USBSpeedLink software for further information on configuration. The software can be downloaded from www.status.co.uk.

INSTALLATION AND BATTERY REPLACEMENT

IMPORTANT Always remove battery before any wiring takes place. Gain access for connection and battery holder by twisting cap to release front panel assembly from case. For connection information please refer to the internal markings found on the protection panel.

SENSOR CONNECTION

The pressure sensor is pre wired to the DM670PM assembly and is not user serviceable, the instrument should be returned to the supplier for replacement of a damaged or faulty sensor.
Observe safety precautions when mechanically mounting the DM670PM, material and mechanical specifications are available in the DM670PM data sheet.

RELAY CONNECTION

Two independent change over contacts are provided. Screw terminals are provided for connection for wire size 16 to 20 AWG. All cable entries must be sealed to at least IP65 rating. The relay contacts are rated at 48 V dc 28 V ac rms @ 1 A (5 mA minimum current) see DM670PM data sheet.

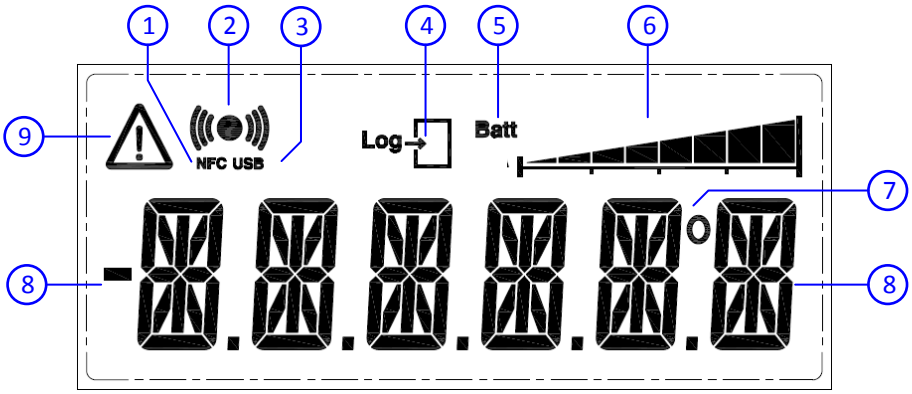
BATTERY

Please observe the above battery warnings. To remove battery use screw driver 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.

OPERATION AND USER CONTROLS

DISPLAY

The display provides six 14 segment characters for display of pressure and temperature and alpha numeric messages, together with an 8 segment bar graph and six icons. The display is capable of operating in an ambient temperature range of (-30 to 70) °C, but at temperatures lower than -5 °C (due to the slower LCD speed) scrolled messaging is not practical, so the display will automatically revert to basic mode showing pressure. The display's high contrast coupled with a digit height of 15.8 mm offers clear readouts at low as well as high ambient light and direct sunlight.
The display layout is as follows :-



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.
2. OFFSET MODE – The centre circle with the outside bars will show when an input offset has been applied if the DM670PM is in offset mode.
3. USB - Symbol on when USB port is connected to a PC. Please note battery is not required during configuration.
4. LOG and 6. BAR GRAPH – These two symbols indicate 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)
LOG - symbol off when not logging. On when logging. Flashing when full
BAR GRAPH - Indicates the log volume

Rolling Mode (Log to the maximum number of logs then as each new log is taken the oldest log is discarded)
LOG - symbol off when not logging. On when logging. Flashing when full
BAR GRAPH - Indicates the log volume Toggling on/off when log has rolled over.

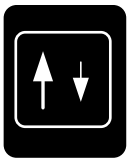
5. BATT - Symbol on when low battery is detected.
6. BAR GRAPH
7. DEG – When the temperature display option is selected, degree Symbol used to indicate either °C or °F on the last digit.
8. DIGITS - Six digit 14 segment display with – sign, range 9999.9 to -9999.9. Advanced mode offers two temperature 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.

MULTIFUNCTION ALERT LED

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

Mode	Description
No events	The LED never operates, extending battery life. (Factory default setting)
Battery	Alert on low battery detect.
Trip	Alert when relay 1 or relay 2 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.

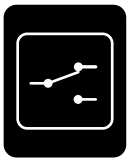
The function of the alert LED can be further enhanced with the option of displaying an alert message in advanced display mode.



MAX/MIN, OFFSET BUTTON

This button allows the user to display recorded pressures with or without time stamp dependent on the option selected by the configuration software:-

Active	The maximum, minimum pressures. (Factory default setting)
Timestamped	The maximum, minimum, average and current (now) pressures with time stamps , format "day"+ "date" +"month" +"Year" + "time" (see note *1). To clear maximum/minimum/average data press and hold the max/min button, the alert LED will pulse, after 3 short pulses the LED will give a longer pulse. Keep the button held on until the last pulse goes out. The data and time stamps will now be cleared.
Offset	Will set the instantaneous value of the input to zero or a pre-set value (defined in the configuration software), the offset icon will be displayed. To clear the offset press and hold the offset button, the alert LED will pulse, after 3 short pulses the LED will give a longer pulse. Keep the button held on until the last pulse goes out. The offset will now be cleared and the offset icon will go out. Note: caution is required if using the offset function when a user custom(x, y) profile has been entered



RELAY BUTTON

This button allows the user to display the relay state with or without a time stamp dependent on the option selected by the configuration software:-

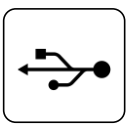
Timestamp off Relay 1(2) Title, State, Action, Set point. (Factory default setting)
Timestamp on Relay 1(2) Title, State, Action, Set point, last trip on time date, last trip off time date , format "day" + "date" + "month" + "year" + "time" (see note *1).

To clear latched relay(s) press and hold the relay button, the alert LED will give 4 short pulses. Keep the button held on until the last pulse goes out. The latched relays will now be deared (as long as the alarm condition has also cleared).
In the case of latched relays the time stamp will apply to the latch set and clear.

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.

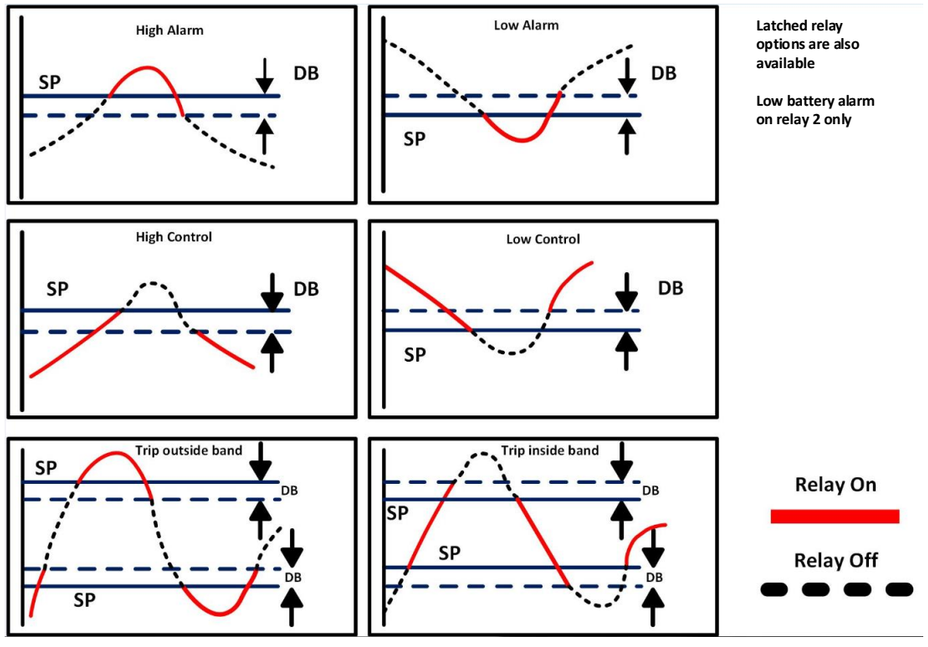
Note:- For larger logs the data may take over a minute to fully download via the NFC interface.



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/average readings.
USBLogLink is available from the manufacturer or supplier.
Note *1 The time stamp requires the instrument real time dock time date to be maintained when the battery is replaced (no summertime daylight saving function is enabled) , this can be done via the NFC interface app or the USB configuration software.

RELAY FUNCTIONS



Latched relay options are also available

Low battery alarm on relay 2 only

GENERAL RECOMMENDATIONS

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

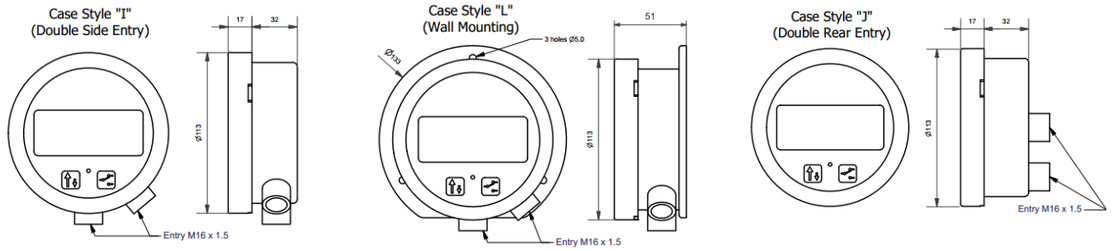
- The product must be stored in a dry clean environment and remain in original packaging prior to installation.
- The instrument must not be installed adjacent to electro mechanical starters, controllers, thyristor power units or electrical switch gear.
- Any cleaning of the instrument must be done using a mild detergent and soft cloth. No solvents or abrasive cleaners should be used.
- Any external cable entries must be sealed to at least IP65 rating.
- Stated ambient operating conditions must not be exceeded. Battery life will reduce with higher ambient temperature operating conditions.

ELECTRICAL CONNECTIONS

For a wiring diagram please refer to the rear panel of the DM670PM inside the case housing.
2 part connectors are used for both relay connections, allowing the unit to be easily removed from the housing for reprograming or data download if this is not possible in situ.

MECHANICAL INSTALLATION

Case notes: one M16 blanking plug is provided with each housing.
Case style L wall mounted versions are secured using three equally spaced 5.0 mm Dia holes, on a 114.5 mm dia circle.



The enclosure must be sealed to at least IP65 rating to ensure correct operation of the electronics. Care must be taken when installing assembly to ensure the stated ambient operating conditions are not exceeded. Material Enclosure Stainless steel. Front panel membrane polycarbonate.

The data in this document is subject to change. Status Instruments assumes no responsibility for errors.