

SCH4X & DM650XLP (SCH4X-X-X-X-X) Monitoring System

User Guide

ATEX/ UKEX/ IECEx APPROVED SYSTEM USER INSTRUCTIONS

Important - Please read this document before installing, in particular the ATEX information when applicable to the application.

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 user must ensure all sensor and cable entries maintain environmental protection to at least IP20 rating.

DESCRIPTION.

The SCH4X-X-X-X-X is an approved monitoring system comprised of up to four elements including the SCH4x main housing the DM650XLP display a signal transmitter and a sensor.

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

ABSOLUTE MAXIMUM CONDITIONS (To exceed may cause damage to the unit).	
Input current	± 50 mA
Ambient	Temperature (-20 to 60) °C Humidity (10 to 95) % RH (Noncondensing)



Important - Please read this document before installing.

INTRINSICALLY SAFE INSTRUCTIONS.



User instruction for SCH4X-X-X-X-X electrical apparatus when used in a hazardous area. Important: Read and understand this section before any installation.

For safe installation of the SCH4X-X-X-X-X in hazardous areas the following instructions must be observed. The device must be installed by competent personnel, who are familiar with national and international laws, directives and standards that apply to their region. For installation in European Economic Area (EEA) users in member countries must follow requirements for electrical equipment for use in potentially explosive atmospheres, e.g. EN60079-14 & EN60079-17. This instruction sheet describes installation, which conforms with BS EN60079-14 & BS EN60079-17. Important - Attention must be paid to the section titled "ATEX applications Special conditions for safe use.", failure to comply to this requirement will result in an unsafe system. The SCH4X-X-X-X-X has been issued with a certificate, confirming compliance with European ATEX directive 2014/34/EU ATEX UKEX / IECEx for the following specification:

SPECIAL CONDITIONS FOR SAFE USE



ATEX/ UKEX / IECEx

Special Conditions for Safe Use

- When the system is fully assembled (with enclosure and at least the DM650XLP or a signal transmitter) all entries of the SCH4X shall be closed or populated so that the SCH4X enclosure meets IP20 according to IEC 60529:1992+A2:2013.
- The signal transmitters shall only be configured using the separately certified USBTTX or USBX Config devices outside of a hazardous area. (USB TTX: EMT 16ATEX0050X, CML 21UKEX2527X, IECEx EMT 16.0030X, and USBX: EMT 16ATEX0024X, CML 21UKEX2526X, IECEx EMT 16.0013X respectively). The temperature sensor must be in the safe area when being used with the USBTTX or USBX Config device.
- The sensor connections of all signal transducers are only suitable for use with simple apparatus as defined by IEC 60079-11.
- Such devices shall also pass the dielectric strength test prescribed by IEC 60079-11.
- For simple apparatus: The installer shall confirm (by calculation or measuring) that the process temperature does not exceed temperature classification in which the Ex-Equipment is installed.
- When installed inside Group IIB, and IIC atmospheres: the SCH4X is made from materials that under certain conditions may accumulate ignition-capable electrostatic charges. It shall not be installed where the external conditions may lead to the build-up of electrostatic charges. Additionally, the equipment may only be cleaned with a damp cloth.

CLASSIFICATION LABEL

STATUS INSTRUMENTS
TEWKESBURY GL20 8FD UK
SCH4X X-X-X-X-X
II 1 G Exia IIC T4 Ga
EXVeritas25ATEX2059X
EXVeritas25UKEX2060X IECExEXV25,0015X
Ui = 30 V, li = 101 mA Ta = -20 to 60°C
Pi = 757.5 mW, Ci = 0 uF, Li = 4 uH
WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS
SERIAL No. 123456 26 - 0001

CE 2776
UK 2503
CA
!

Maintenance

The following maintenance is required.
If required, the device may be cleaned with a damp cloth. For Intrinsically Safe applications please refer to "ATEX/ UKEX / IECEx applications Special Conditions for Safe Use" for further information on cleaning.
The device contains no other user serviceable parts. Please return faulty units to your supplier for factory repair or replacement.

The equipment complies with the following standards

IECEx

IEC 60079-0:2017 Edition 7

IEC 60079-11:2023 Edition 7

ATEX

EN IEC 60079-0:2018

EN IEC 60079-11:2024

UKEX

BS EN IEC 60079-0:2018

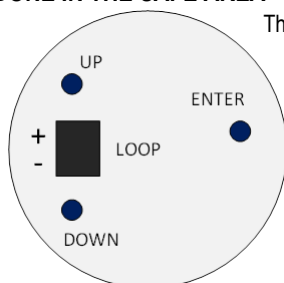
BS EN IEC 60079-11:2024

INSTALLATION.

Installation is normally performed in the following order:

1. Configure DM650XLP by means of push buttons or NFC app in the safe area.
2. Mount signal transmitter (3) into head (if fitted) with 2 x screws
3. Wire sensor (4) (if fitted) as per diagrams below. It is advised thread tape is used to help make a suitable seal to IP67
4. Install assembly. All entries should be sealed to IP67
5. Wire (4 to 20) mA loop according to the diagrams below

CONFIGURATION (DM650XLP) – ALL CONFIGURATION MUST BE DONE IN THE SAFE AREA



Three push buttons activate a simple configuration menu.

“Enter” button a single press on the enter button will show the current configuration settings on the display.

Press either the “UP” or “DOWN”, this will enter the top-level menu of the device.

Continue with “UP” or “DOWN” presses until the required top-level menu item is displayed on the screen. Press “ENTER” to go into the menu.

Use “UP” or “DOWN” to change/increment the required selection,

When the correct selection is on the display a long press on “ENTER” will store the selection and return to the main menu.

From the main menu press “UP” or “Down” repeatedly until the display returns to runtime

Leave the device with no button press for 15 seconds anywhere in the menus to return to runtime.

The DM650XLP can also be programmed using NFC Link (downloadable from the Google Play Store) and a suitable NFC enabled Android device.

For an extended version of this user guide with programming flowcharts refer to www.status.co.uk

Installation - electrical



The SCH4X-X-X-X-X is an approved system comprised of up to 4 elements as shown below (see Wiring Option Diagrams).

1. SCH4X Connection Head enclosure.
2. DM650XLP (4 to 20) mA signal display.
3. A Signal transmitter.
4. Sensor element such as RTD, thermocouple.

1). The SCH4X enclosure is made from non-metallic materials and therefore presents an electrostatic hazard. To reduce the risk of electrostatic accumulation, the end user shall consider the following:

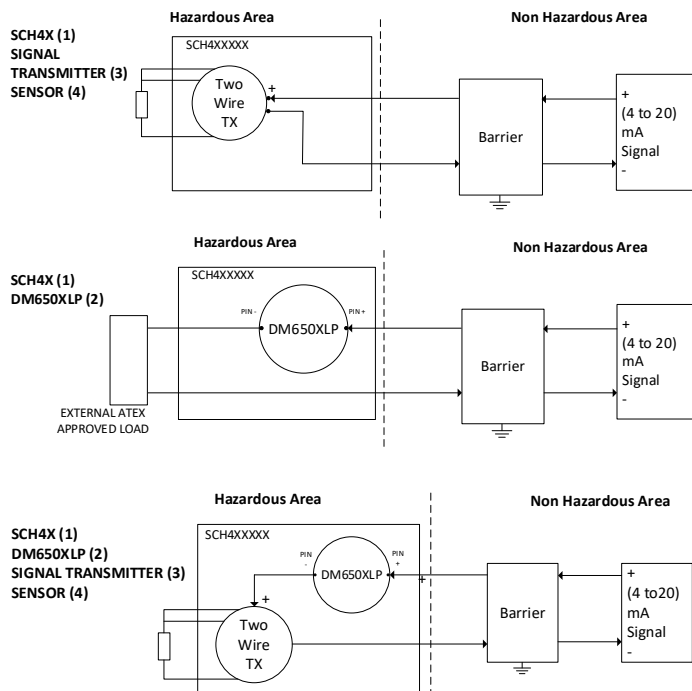
- Control of environmental humidity to minimize the generation of static electricity.
- Protection from direct airflow causing a charge transfer.
- Touch with an insulating object.
- Means to continuously drain off electrostatic charges.

2). The DM650XLP is a loop powered indicator that will come already mounted into the SCH4X plastic housing. Specification for the DM650XLP can be found on the product data sheet.

3). Signal Transmitter. This is a suitable IS approved transmitter that connects to an RTD, Thermocouple or Resistance sensor and converts the sensor reading to a (4 to 20) mA signal. This can be fitted on its own or together with the DM650XLP

4). Sensor element. This is a simple apparatus item with an RTD, Thermocouple, Resistance or Potentiometer sensor fitted. This is fitted when used with a signal transmitter (3) and optionally with the DM650XLP (2)

Wiring Options Depending on Application



SPECIFICATION DM650XLP

Refer to data sheet for full specification. Download at www.status.co.uk

Factory default Hi display = 100, Lo display = 0

DP = 00000.0, Units = Off, Filter = Off, Maths = Off

Sensor wiring

Important: Unplug the 2-way sensor connector from the device during wiring, re-connect when wiring is complete. Ensure the sensor wires are long enough (80 to 100 mm) to allow easy access for reconnecting the plug to the device and if required access to the configuration buttons.

Housing

To open the SCH4X & DM650XLP (SCH4X-X-X-X-X) housing for connection wiring and push button configuration	
1	Turn the cap retaining ring anticlockwise until the ring releases from the enclosure body.
2	Remove the cap assembly from the enclosure base, un-plug the 2-way connector, the cap assembly should be totally free from the base.
3	Wire the 2-way connector to the (4 to 20) mA signal, see Sensor wiring and if access to the configuration buttons is required.
4	The device must be configured in a safe area
5	Inspect the cap O ring seal for correct alignment, Reconnect the 2-way plug and site the cap assembly back on the case base
6	Tighten the retaining ring until it stops turning smoothly. At this point tighten an additional 1/12 of a turn. Use the indents on the retaining ring to gauge 1/12 of a turn as 12 indents are equally spaced around the retaining ring.

For an extended version of this user guide with programming flowcharts refer to www.status.co.uk

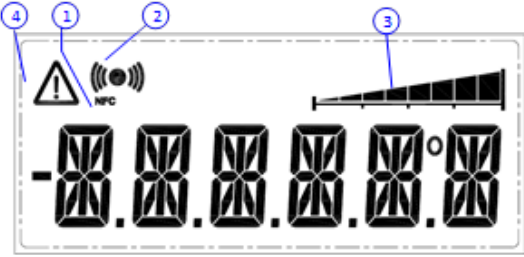
Status Instruments Ltd, Status Business Park, Gannaway Lane, Tewkesbury, Gloucestershire, UK, GL20 8FD

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

Display information



1 NFC icon active when NFC field is detected.

2 Comms icon active during communication.

3 mA bar. The bar will show the percentage of input signal.

4 Warning Symbol.

Below 3.6 mA and above 21.0 mA the device will continue to display the process value alternating with the word "SIGNAL" and the warning symbol; the LED will also flash.

Push button configuration



Three push buttons activate a simple configuration menu.
The following variables can be configured

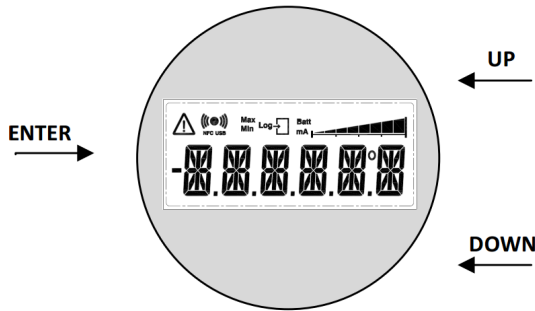
Display Value at 4.00 mA. Display Value at 20.00 mA.

Unit.

Decimal Place.

Filter.

Maths.



Location of push buttons viewed from the front of the device.

During configuration (see special conditions of safe use) the device must be connected to an active (4 to 20) mA signal. The display must be viewed during configuration; the push buttons are sited at the rear of the display cap.

The "ENTER" button has two action single press(enter) and press and hold for > 2 seconds (save selection and return to the top-level menu).

The "UP" button advances the menu step upwards or increments by a digit/character.

The "DOWN" button advances the menu step downwards, or decrement by a digit/character.

A single press on "ENTER" will show the current configuration settings on the display.

To configure the device.

Press either the "UP" or "DOWN", this will enter the top-level menu of the device.

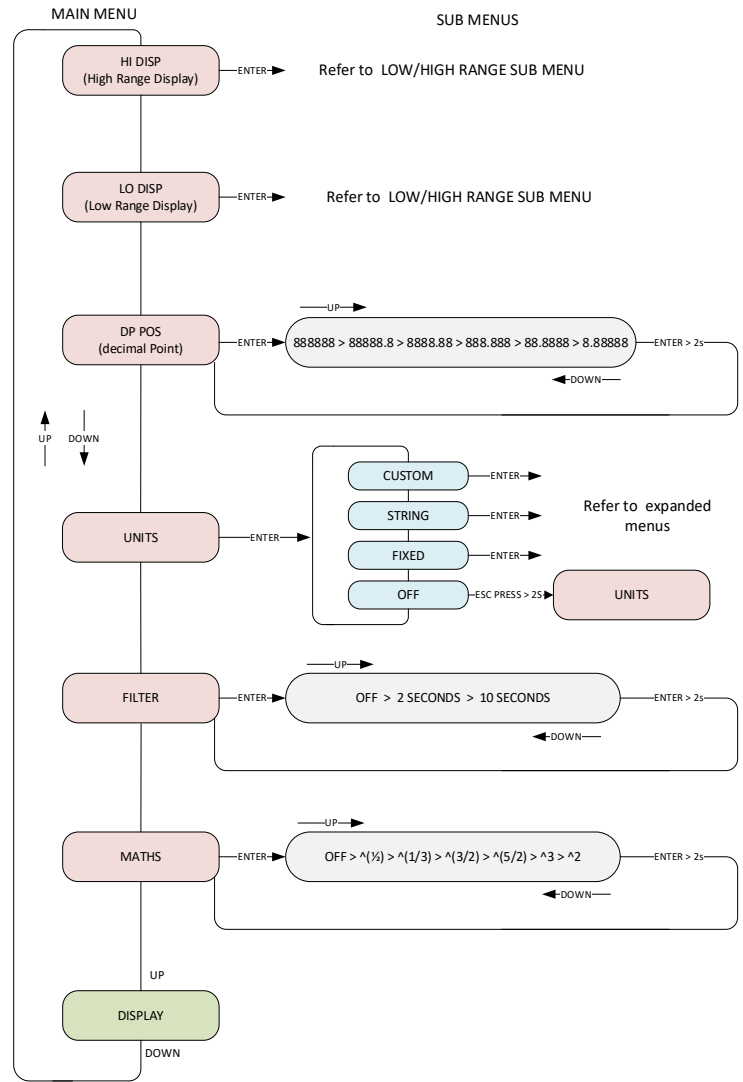
Continue with "UP" or "DOWN" presses until the required top-level menu item is displayed on the screen. Press "ENTER" to go into the menu.

Use "UP" or "DOWN" to change/increment the required selection,

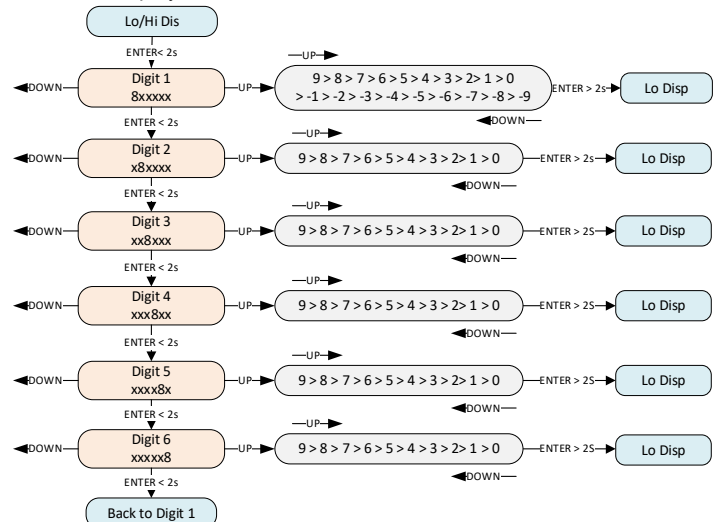
When the correct selection is on the display a long press on "ENTER" will store the selection and return to the menu.

From the main menu press "UP" or "Down" repeatedly until the display returns to runtime. Leave the device with no button press for 15 seconds anywhere in the menus to return to runtime.

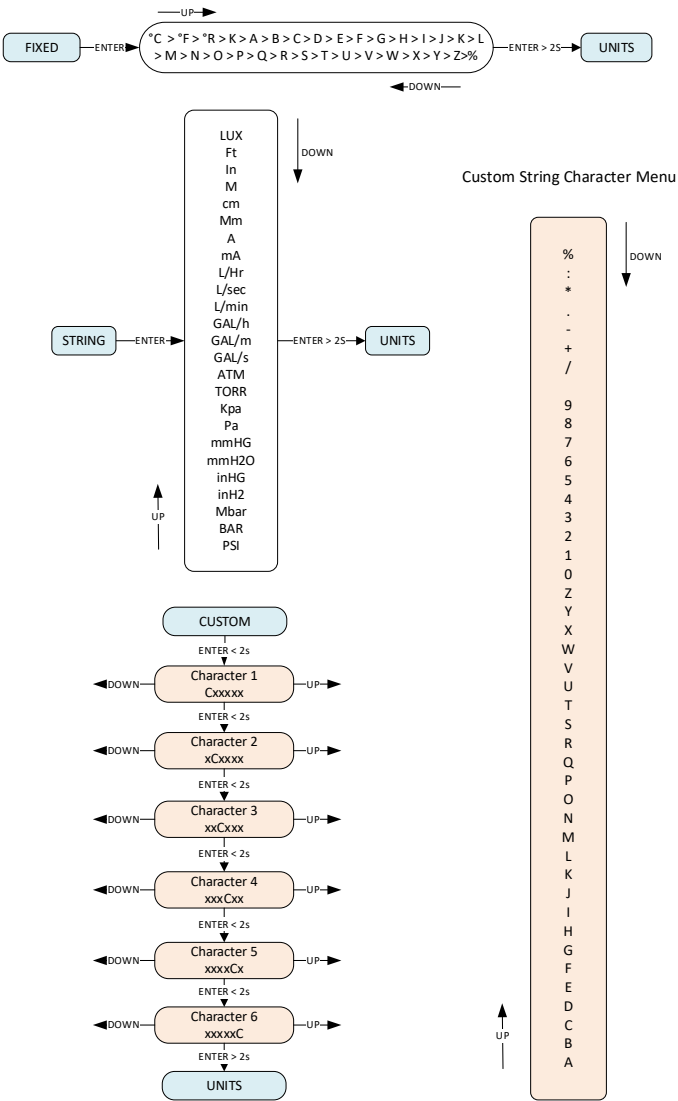
Display menus



LOW/HIGH display submenu



Units' submenu



NFC Link software configuration (Applicable to DM650XLP only)



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

The NFC Link app is available for downloading to Android devices from the Google Play Store. The app allows the user to set the same parameters as with push button configuration.

NFC Link software screen.