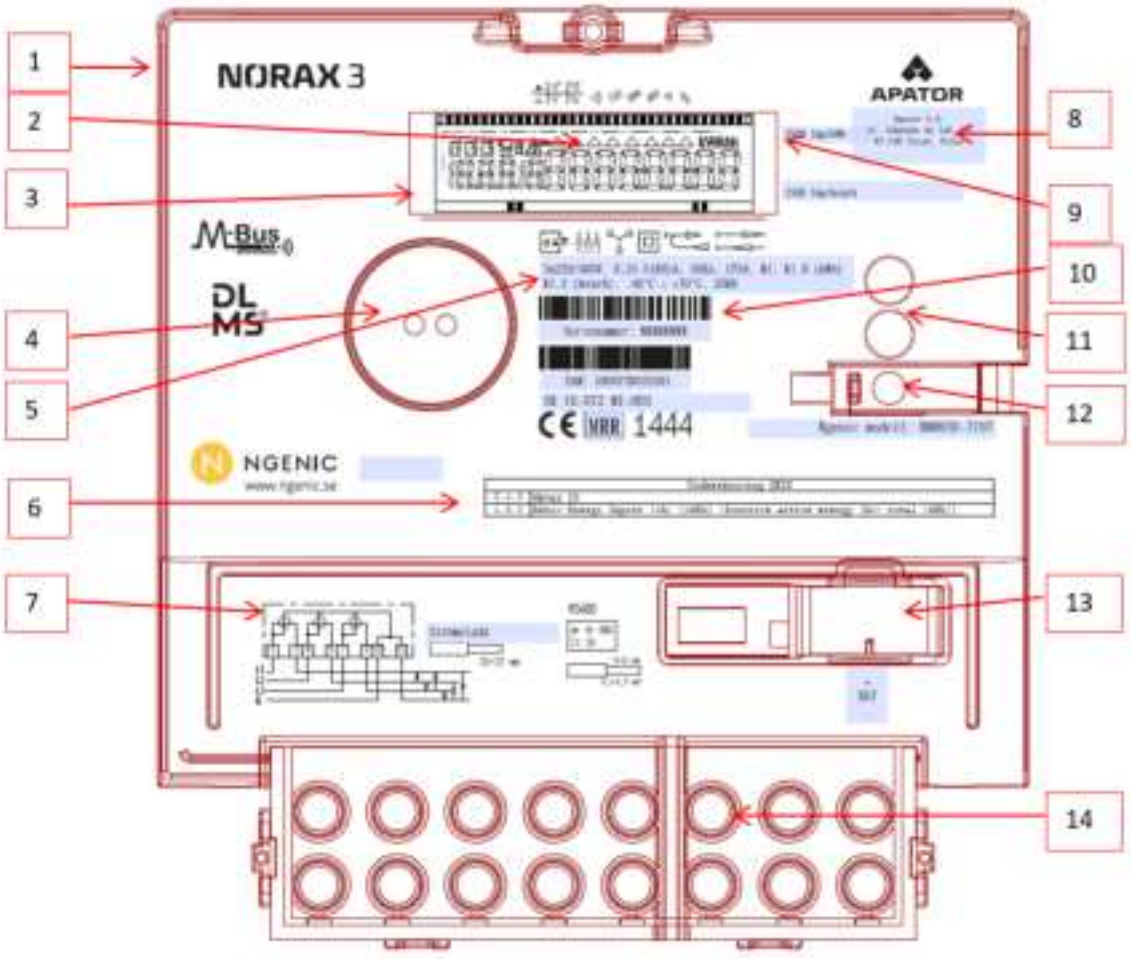
APATOR	HM8930-7197,-7198, HC9930-7196 INSTALLATION GUIDE FOR NORAX 3 METERS REV.1.2	NGENIC www.ngenic.se

HM8930-7197 Norax 3 electricity meter is a direct-connected three phase meter, dedicated for household users. The meter has been designed to measure active and reactive (not available in the standard configuration) energy in four quadrant measurements (import and export directions) on three-phase four-wire electrical networks. The three-phase meter can be used to measure energy consumption (and production) of singe phase users as well.

1. FRONT VIEW OF METER:



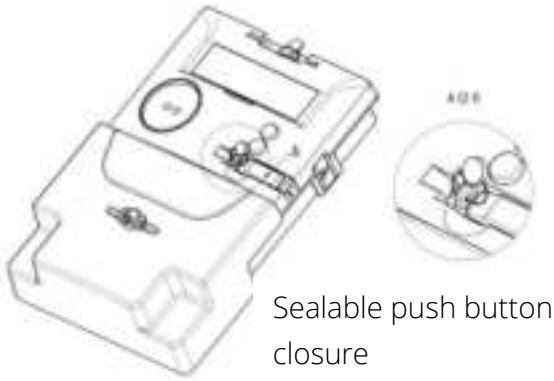
1. Fiber glass reinforced polycarbonate housing.
2. Marker triangles, for wM-Bus push signal, Terminal cover opening (CZO) and magnetic influence indicator (RPM), etc.
3. Multifunction LCD display (all measurement data displayed on the display and an explanation thereof according to the tables below).
4. Optical interface for reading measurement data, EN 62056-21 (IEC-1107 readout only/ DLMS-COSEM readout and parameterization).
5. Nameplate: nominal parameters of the meter, accuracy class, markings defining the mechanical and electrical environment for the meter to be installed at.
6. Display content samples (display test and measurement data sample explanation to the end user).
7. Wiring diagrams for main and RS485 communication terminals.
8. Name and address of manufacturer.
9. Pulse transmitter red LEDs for validation and accuracy verification.
10. Serial number and barcode.
11. Push buttons (for faster scrolling of display content back and forth with arrows).
12. Push button with sealable lid (for service menu).
13. Replaceable battery cover.
14. Cage clamp terminal block.

2. PUSHBUTTONS

Two freely accessible buttons on the front panel of the meter are dedicated for manual scrolling of measurement data on the LCD which has been programmed during the factory parameterization. The push button with sealable lid can be used to clear the indicators of terminal cover opening and magnetic influence tamper markers, as well as to enter the service menu. It is highly recommended to protect this third pushbutton by closing and sealing its lid during the installation of the meter.

Sealable push button:

After opening the lid and pressing the button once, the meter enters the so-called service menu. Within this, we can move from right to left with the two buttons above.



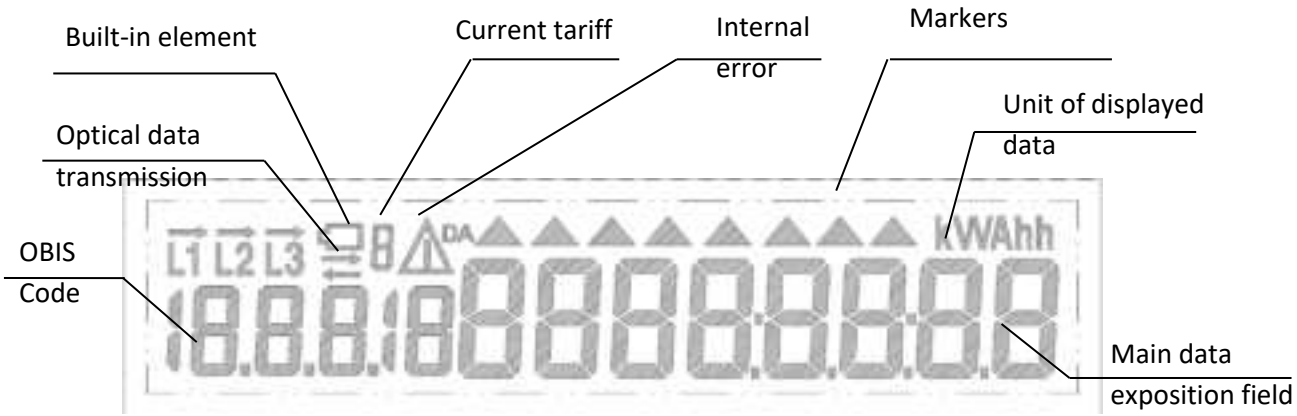
Sealable push button closure

"tAnPErSt": select "tAnPErSt" using the right/left buttons in the service menu, then press and hold the sealable button for at least three seconds until "SUCCESS" appears.
Note: The tamper reset operation, deleting of influence signals may be carried out only if the meter is properly installed and no tamper is in progress. There are three basic criteria for proper commissioning: connection of the meter according to the wiring diagram, installation and fixing of the terminal cover on its place and the presence of mains. If any of these conditions are missing, the reset cannot be performed an "Error" message is displayed on the LCD.

3. DISPLAY:

According to the display sequence parameterized during the production, the Active energy consumption value with its OBIS code (1.8.0.) is presented on the LCD in 8 digits, (7 whole and 1 decimal place).

In addition to the measurement data and its OBIS identification code, several other symbols can be displayed in the upper part of the LCD according to the drawing below. The L1, L2, L3 symbols indicate the correct / incorrect connection of the mains voltage as described in Terminal block housing and connection.



Displayed measurement data in case of default automatic display sequence:

1.8.0.	Active imported energy, sum over all phases

Displayed measurement data in case of manual display sequence:

8.8.8.8	Display test
96.1.0.	Serial number
1.8.0.	Active imported energy, sum over all phases
2.8.0.	Active exported energy, sum over all phases
15.8.0.	Sum of absolute value of active energy per phase A = |AL1|+|AL2|+|AL3|
31.7.0.	Instantaneous current, phase L1
32.7.0.	Instantaneous voltage, phase L1
51.7.0.	Instantaneous current, phase L2
52.7.0.	Instantaneous voltage, phase L2
71.7.0.	Instantaneous current, phase L1
72.7.0.	Instantaneous voltage, phase L3
F.F.9.	LR Error Codes - Basic Error Registry
F.F.0.	NLR Error Codes - Extended Error Registry

F.F.9. – Errors reported by the LR firmware

00000001 – removal of the terminal box cover was recorded
00000002 – meter housing opening event was recorded
00000004 – a magnetic field influencing was recorded
00000010 – low battery
00000020 – measurement system error
00000040 – incorrect phase sequence
00000100 – critical data error in internal non-volatile memory
00000200 – external memory error
00001000 – NLR application validation error
00002000 – NLR application error

F.F.0. – Errors reported by the NLR firmware

00000001 – clock setting is uncertain
00000002 – low battery voltage (battery needs to be replaced)
00000400 – counter memory error
00000800 – measurement system error
00002000 – communication module error (wM-Bus)

Errors are coded on the last 4 digits.

4. OPERATION, ACTIVATION, DELETION OF TERMINAL COVER OPENING SENSOR:

The meter is equipped with an automatic terminal cover opening sensor. It is activated two minutes after the meter is correctly connected and switched to mains voltage and the terminal cover is properly installed. The removal of the terminal cover by activated protection is indicated by a marker triangle at the top of the display below the inscription "CZO".

- Before the meter is first put into service, the triangle under the inscription 'CZO' indicates whether the terminal cover is open (triangle visible) or closed (triangle not visible).
- If the terminal cover is properly fitted, the triangle 'CZO' shall not be visible.
- After the first commissioning (installed terminal cover + mains voltage is ON for at least 2 minutes) the protection will be activated automatically and all terminal cover removals, even without mains voltage ON are registered going to be registered in the event log.
- If the terminal cover is removed by active protection, beside the marker below 'CZO' an 'exclamation mark in a triangle' symbol indicating an error will be displayed.
- To eliminate the error triangle indicating an opening of terminal cover, press the sealable button first. The display will show 'tAnPErSt'. Then, press and hold the sealable button for at least three seconds until 'success' appears.

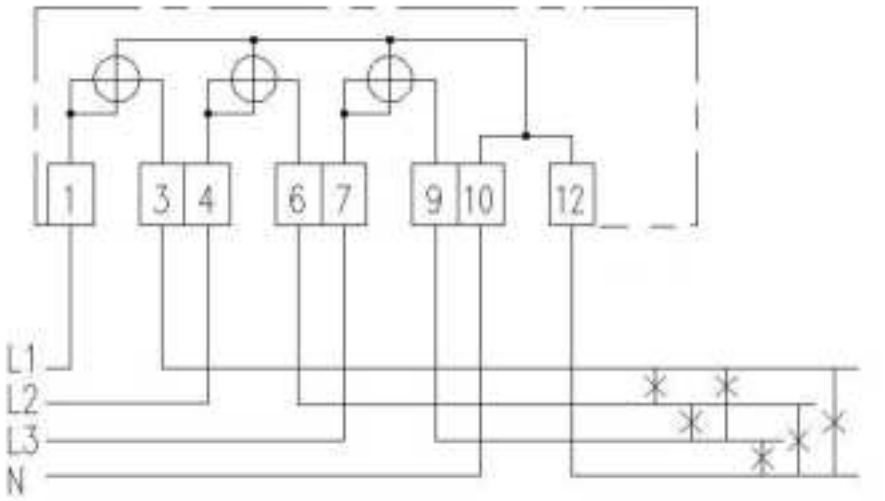
  Attention! Clearing the terminal cover opening simultaneously deletes the marker triangles of all other markers like "RPM" indicating any registered magnetic influence attempts.

5. TERMINAL BLOCK HOUSING, CONNECTION:

The connection of the measuring equipment must be carried out asymmetrically according to DIN standard (according to the wiring diagram below). The meter has cage clamp terminals thanks to which, if permitted by the installation regulations of the service provider, there is no need to use cable sleeves even in the case of multi-core copper wires. Minimum 2,5 mm^2 and maximum wire cross-section: 35mm^2, maximum tightening torque of the main terminal screws is 3 Nm.

If the meter is connected correctly, all the symbols L1, L2, L3 shown in the upper part of the display will be displayed. If a phase is missing, the symbol for that phase (L1, L2, or L3) is not displayed. The flashing of the letter(s) "L" in front of the numbers indicates the reverse current direction measured on the terminal blocks of the given phase of the meter and the flashing number(s) indicate an incorrect phase sequence.

Meter wiring diagram:



6. BATTERY REPLACEMENT

Norax meter family has a built-in battery that ensures the operation of the internal real time clock and occasional display operation in case of no power supply on the meter. If the "built-in battery" symbol shown in its price under Display Description is activated on the display, the voltage of the built-in battery has been reduced to a critical level. In this case, the removable battery cover marked with number 13 on the falling side must be removed and the cover replaced with 1 universal CR2032 or CR2450 type battery. During battery insertion, the meter does not need to be disconnected from the mains.

7. ENVIRONMENTAL PROTECTION

Ensure that unusable devices are disposed of as electronic waste in accordance with the local regulations.