

NO. NX2010597/ NO. 72983_C 06/04/2021 1 (35)



LYNX 4400

Installation and operation manual for current fault detectors and directional fault detectors for MV underground grids



Ensto Novexia SAS 210 rue Léon Jouhaux BP 10446 69656 Villefranche-sur-Saône Cedex, France

Tel. +33 (0)4 74 65 61 61 Fax +33 (0)4 74 62 96 57





NO. NX2010597/ NO. 72983_C 06/04/2021 2 (35)



General

- Before unpacking
 - > Verify that the product in its packaging has not been damaged during transport.
 - > Verify that the product is suitable for the intended installation.

- Before installation

- > Carefully read the operation guide before installing or using this product.
- > Perform the installation carefully, ensuring that the equipment remains clean throughout the operation.

- After installation

- > If you are installing this product for someone else, leave the guide for the end user.
- > Clean the work area after installation.

Legal notices

- The product may only be installed by a competent person with adequate training in the installation practices and with adequate knowledge of proper safety and installation practices for electrical equipment. If local regulations have requirements relating to this training or adequate knowledge in terms of the installation of electrical equipment, the aforementioned requirements must be complied with by this person.
- Ensto Novexia declines all liability for any property damage or personal injury caused by poor installation, mishandling, or failure to comply with safety recommendations.

WARNING

For the operation of this system in complete safety, it is essential that the installers, users and technicians follow the procedures and precautions described in this guide. Non-compliance with these instructions may cause damage to the products and/or serious or even fatal injury.

This document is the property of Ensto Novexia. It may not be copied or disclosed to third parties without written permission. Non-contractual documents, drawings and photos. The information and instructions provided may change without prior notice.





NO. NX2010597/ NO. 72983_C 06/04/2021 3 (35)



Table of contents

1	Pres	sentation	
	1.1.	Product purpose	4
	1.2.	General characteristics	4
	1.3.	List of equipment required for installation (not supplied by Ensto Novexia)	4
2	Inst	allation	
	2.1.	Unpacking and handling instructions	
	2.2.	Installation operations	
	2.3.	External connections	
3	Con	nmissioning	
	3.1.	Points to be checked before commissioning	
	3.2.	List of commissioning operations	
	3.3.	Operational tests	
4	Оре	eration	
	4.1.	Function by function description	
	4.2.	Commands, tests, configurations - upgrades with new functions	
5	Mai	ntenance	
	5.1.	Preventive	
	5.2.	Corrective	
6	Tec	hnical Assistance	
7	End	of Product Life	





NO. NX2010597/ NO. 72983_C 06/04/2021 4 (35)



1 Presentation

- 1.1. Product purpose
- 1.2. General characteristics
- 1.3. List of equipment required for installation (not supplied by Ensto Novexia)





NO. NX2010597/ NO. 72983_C 06/04/2021 5 (35)



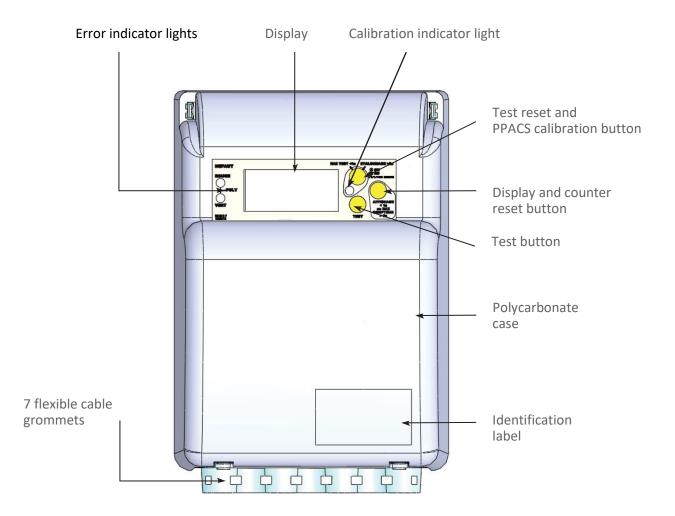
1.1. Product purpose

LYNX 4400 fault detectors are designed to be installed on the underground sections of MV grids earthed by means of a limiting resistor or impedance. The detector enables the following aims to be achieved:

- Improving detection performance
- Counting faults and changing the operation of auxiliary contacts
- Standardising cores, PPACS, indicator lights and their connections
- · Standardising and extending the usable lives of batteries and supercapacitors
- Using plug and coded type connectors for connecting current probes

1.2. General characteristics

Front panel detail









NO. NX2010597/ NO. 72983_C 06/04/2021 6 (35)



Better life.

With electricity.

Characteristics of LYNX44XX in amperometric configuration

MV grid (in accordance with specification EDF PR-HN-45-S-50 of February 2011)	
Voltage Frequency	15 to 20 kV
Single-phase current thresholds in A	20 - 40 - 80 - 160 - 240
Polyphase current thresholds in A	500, 750, 1200, 1600
Double current thresholds in A	250, 450, 700, 1200
Fault indication duration in Hours	2 hours
Fault response time in ms	100 ms
Fault indication reset after triggering - Indication locking - By the return of LV or MV > 5 A - On expiry of the long-term time delay - By manual operation	3 s 2 hours Reset button

Characteristics of LYNX44XX in directional configuration

MV grid (in accordance Voltage Frequency	15 to 20 kV 50 Hz / 60 Hz		
Single-phase phase-e Indication according t	Red or Green		
Thresholds at 20 kV	Preset 1	Preset 2	
Residual current	25 A < Ir < 35 A	50 A < Ir < 70 A	
Residual voltage	3 kV < Vr < 5 kV	7 kV < Vr < 11 kV	
Validation of detection over 50 ms	-		
In 15 kV position, the	_		
Double phase-earth f - Trigger threshold - Fault triggering time - Indication	250 A rms 80 ms Alternating red-green		
Detection of polypha : - Average trigger thres - Fault triggering time - Indication	500 A rms 80 ms Alternating red-green		



NO. NX2010597/ NO. 72983_C 06/04/2021 7 (35)



Validation time delay - From the disappearance of the MV, before triggering of the indicator lamps (configuration using microswitches)10-20-40-70- From MV presence after MV restoration5 s	
	S
Fault indication reset after triggering - By the return of LV or MV > 5 A3 s or 2 h- On expiry of the long-term time delayReset butte	on

Common characteristics

Accumulators/Batteries	350-F Lithium supercapacitor LSH20 batteries
Display	4-digit display H = 17.8 mm
External indicator light housing - Number of LEDs - Total luminous flux - Flashing frequency - Standard flashing capacity with lithium batteries	6 7 Ln 1 s 200 h
Environment - Operating temperature - Storage temperature - Humidity level - Vibration resistance (IEC 68-2-6 & 68-2-29) - Protection rating - Overall dimensions - Device mass (excluding cables)	-15 ° to + 55 ° -25 ° to + 70 ° Up to 100% 2 g (peak value) IP30 IK07 289 x 200 x 92 1.1 kg

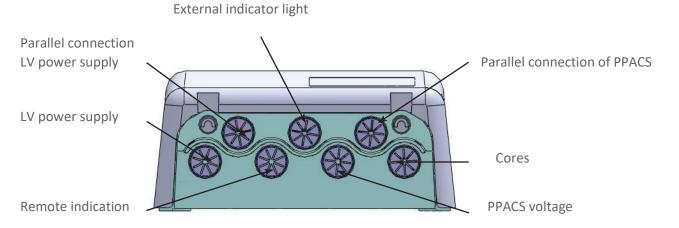




NO. NX2010597/ NO. 72983_C 06/04/2021 8 (35)

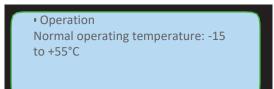


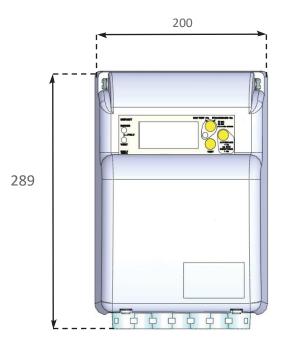
Cable routing



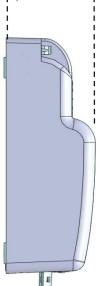
Climatic conditions

• Storage Storage temperature: -25 to +70°C Relative humidity: 10 to 100%









Better life. With electricity.



NO. NX2010597/ NO. 72983_C 06/04/2021 9 (35)



1.3. List of equipment required for installation

LADAC detectors:

	NAME	Ensto Novexia no.	DESCRIPTION AND CONTENTS
	Lynx 4425	NX2009362	Lynx 3425 low voltage supply+super capa. + cable 7m
	Lynx 4425	NX2010140	Lynx 3425 low voltage supply+super capa. 10kV + cable 7m

Composition of a complete unit:

- 1 Lynx case equipped depending on the version
 - o With LV power supply and supercapacitor
 - o Standalone with two LSH20 batteries

Accessories supplied alone (depending on the option)

- 1 red and green external indicator light housing connected to the Lynx using a 5, 10, or 15-m connection cable
- 1 Lynx connection cable with core connectors 2, 5, 10, or 15-m long
- 1 Lynx shielded connection cable with PPACS connectors 2, 5, 10, or 15-m long
- 3 resin-coated cores with 1-metre wired connectors
- LSH20 battery



Standard equipment enabling the device to be wall-mounted (screws and wall plugs) is not supplied by Ensto Novexia.





NO. NX2010597/ NO. 72983_C 06/04/2021 10 (35)



2 Installation

- 2.1. Unpacking and handling instructions
- 2.2. Installation operations
- 2.3. External connections





NO. NX2010597/ NO. 72983_C 06/04/2021 11 (35)



2.1. Unpacking and handling instructions

Open the box and check in relation to the order.

2.2. Installation operations

Installing the LYNX 4400 case

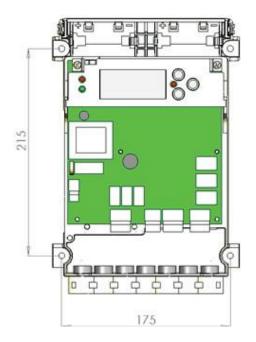
The LYNX 4400 case is mounted on a flat wall using the following accessories (not included in the supply):

- ✓ 4 slotted head screws Ø4.5 X L 35 mm
- ✓ 4 wall plugs Ø6 L 30 mm

To access the 4 case mounting holes, remove the cover.

After inserting the wall plugs in the wall (see mounting distances opposite), position each of the four Ø 4.5 screws in its hole.

Mounting distances: 215 mm x 175 mm



Installing the external indicator light housing

The indicator light housing is supplied with a 3X1.5² U1000RO2V type cable, 5, 10 or 15 metres long depending on the order.

Mounting distances for the housing 53 x 38 mm (2 x \emptyset 4.5 screws).

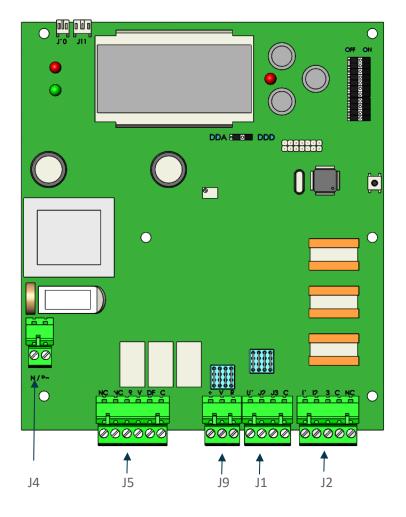
To connect the indicator light housing to the LYNX case see page 15.



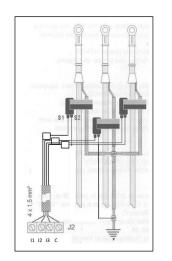


NO. NX2010597/ NO. 72983_C 06/04/2021 12 (35)

2.3. External connections



Connecting the CORES (power off)



The current probes used with the LYNX 4400 are split core current sensors with a lever clasp on a resincoated core. Ratio 1/500.

The assembly uses three identical cores detecting:

- single-phase faults on the earth
- polyphase faults
- double faults



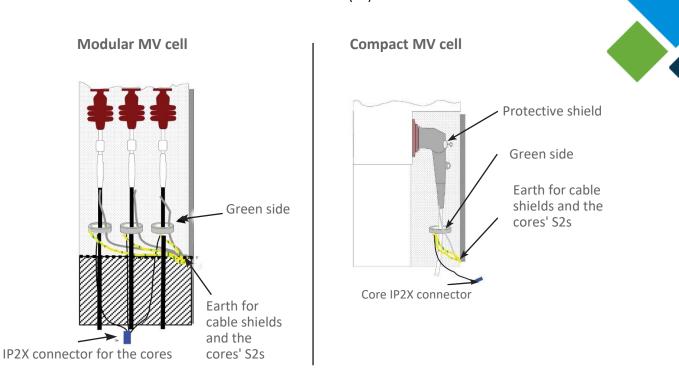
USE OF CORES VERSION 2012







NO. NX2010597/ NO. 72983_C 06/04/2021 13 (35)



Each core is mounted on a phase of the underground cable, with the green side facing towards the unit's busbar.

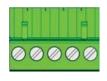
It is centred and attached to the cable using 3 self-centring rubber bosses.

THE SCREENED BRAID FOR EACH PHASE MUST BE CREATED BY AN INSULATED CONDUCTOR AND PASSED INSIDE THE CORRESPONDING CORE.

The wires for each core are connected using a coded 2-contact MATE-N-LOCK connector.

A 4x1.5mm² U1000RO2V type cable equipped with female MATE-N-LOCK connectors is supplied for connecting cores to the LYNX 4400's J2 terminal block. Insert the stripped end with end sleeves into the LYNX's cable grommet.

Connect the J2 terminal block as follows:



11 12 13 C NC

Terminal I1: Brown wire Terminal I2: Black wire Terminal I3: Grey wire Terminal C: Blue wire (common) NC terminal: Not connected





NO. NX2010597/ NO. 72983_C 06/04/2021 14 (35)



Connecting the PPACS VOLTAGE SENSORS (in case of directional detector)

The voltage sensors used with the LYNX 4400 are the capacitive dividers of the separable connectors (plug-in terminals) located:

- Either on the transformers of the MV/LV stations
- Or on the network cells of the disconnection stations.

These capacitive dividers were previously equipped with removable PPACS voltage connection. See the installation guide of the PPACS supplier.

An earth connection must also be created.

All of the wiring from the PPACS and from the earth connection must be grouped in a standardised female Harting socket.

To connect the capacitive dividers to the LYNX 4400, a shielded 4X0.5mm² cable is supplied. This cable is equipped with a standardised male Harting socket on the capacitive divider side.

Connect the J1 terminal block (removable and screwed in) as follows:

Using the Ensto cable



Terminal U1: wire No. 1 Terminal U2: wire No. 2 Terminal U3: wire No. 3 Terminal C: wire No. 4

With Cahors cable



Terminal U1: white wire Terminal U2: green wire Terminal U3: red wire Terminal C: three black wires together

Connection of the Lynx cases in parallel (max. 3 per PPACS):

- Route the end of the cable through the cable grommet provided (refer to page 8)
- Connect to terminal J1 by doubling the wires in the terminal block



Important note! The set-up requires cases of the same type (LYNX 4400). You must always restart the calibration procedure on all cases (refer to page 22).





NO. NX2010597/ NO. 72983_C 06/04/2021 15 (35)



Connecting the external indicator light housing

The LYNX 4400's indicator light housing has red and green lights. It is supplied with a 3X1.5mm² U1000RO2V type cable. Position the indicator light with the cable gland facing downwards.

Connect the J9 terminal block as follows:



Terminal +: Brown wire Terminal V: Black wire Terminal R: Grey (or blue) wire

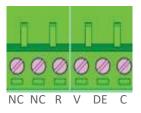
Connecting to remote indication

The connection is made using a 4X1.5mm² U1000RO2V type cable - not supplied

An equipment fault may be actuated by the detector in response to:

- A need to replace the battery or batteries when the battery becomes flat after 7.5 years of use
- An anomaly affecting the alternative auxiliary power supply
- An anomaly affecting the electronics

Connect the J5 terminal block (removable and screwed-in) as follows:



Terminals NC: Not connected Terminal R: Red fault Terminal V: Green fault Terminal DE: Equipment fault Terminal C: Common

Power supplies (depending on the option)

- ✓ LV power supply + supercapacitor option 350 Farad 2.7 V supercapacitor Usable life 15 years
- ✓ Standalone option: 2 x D20 LSH 20 type lithium batteries, not supplied Usable life: ≥ 7.5 years



Note: the two batteries face in the same direction (+ to the left).





NO. NX2010597/ NO. 72983_C 06/04/2021 16 (35)



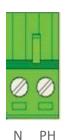
NB: During lengthy storage periods, the lithium battery may be passivated, and therefore unable to supply the current needed for the LYNX 3400 to operate. To depassivate it:

- Short-circuit its terminals with a 47-ohm 3-W resistor
- Wait for a noticeable rise in the resistor's temperature (10 to 30 seconds depending on the batteries)

-230-V AC external power supply (LV power supply option)

The LYNX 4400's normal power source is low voltage 230 V, which is available on site. The LV is supplied to the LYNX 4400 by a 2 x 1.5mm² U1000RO2V type cable – not supplied. LYNX 4400s do not need to be connected to the neutral earth.

Connecting the J4 connector



Insert the cable via the LYNX 4400's cable grommet.
Connect the cable's neutral and phase wires as follows:

Neutral, to the left-hand terminal.
Phase, to the right-hand terminal.

Check the condition of fuse F1. A 5X20 F type (250 mA) spare fuse is available on the lower left-hand side of the detector.





NO. NX2010597/ NO. 72983_C 06/04/2021 17 (35)



3 Commissioning

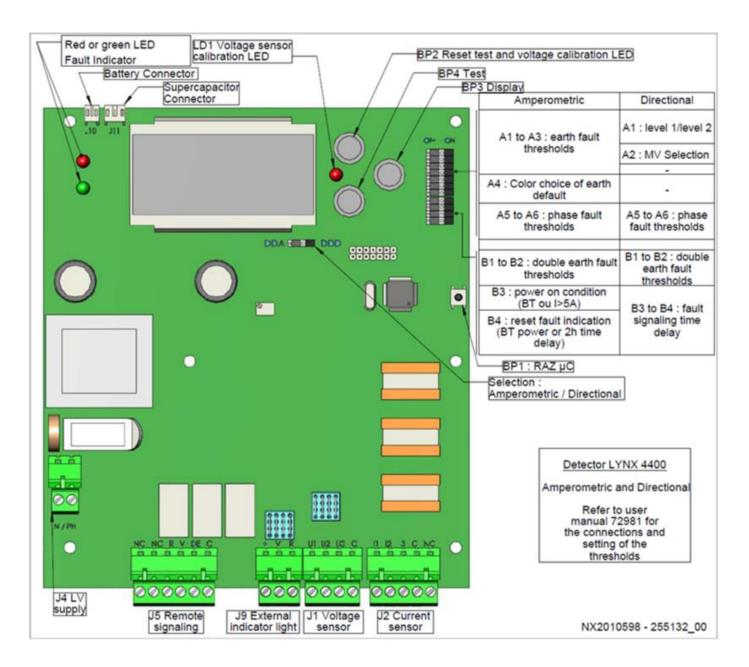
- 3.1. Points to be checked before commissioning
- 3.2. List of commissioning operations
- 3.3. Operational tests





NO. NX2010597/ NO. 72983_C 06/04/2021 18 (35)

3.1. Points to be checked before commissioning





NO. NX2010597/ NO. 72983_C 06/04/2021 19 (35)

3.2. List of commissioning operations

<u>Selection of the type of detector: Amperometric or directional (configured as directional on leaving the factory)</u>

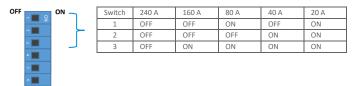
Position the selector

-

- On the DDA side for an overcurrent fault detection configuration
- On the DFD side for a directional fault detection configuration

LYNX44XX configured in amperometric fault detection mode

1. Configuration of the homopolar lo detection threshold (phase to earth)



Ex-factory setting: 80 A

2. Configuration of the indicator light colour for a homopolar fault

OFF	ON			
~ 💻 w 💻		Switch	Red homopolar fault	Green homopolar fault
•		4	OFF	ON
بر اللہ				
• 🔳				

Ex-factory setting: Red homopolar fault

3. Configuration of polyphase Imax detection thresholds (phase to phase)

OFF	ON					
•		Switch	1600 A	1200 A	750 A	500 A
۰۰ 📃		5	OFF	ON	OFF	ON
•		6	OFF	OFF	ON	ON

Ex-factory setting: 500 A

Rm: The polyphase threshold is always higher than the double threshold.







NO. NX2010597/ NO. 72983_C 06/04/2021 20 (35)



4. Configuration of detection thresholds I Double

OFF ON T	Switch	1200 A	700 A	450 A	250 A
- 🔳 🙎	1	OFF	ON	OFF	ON
~	2	OFF	OFF	ON	ON
- 🔳					

Ex-factory setting: 450 A

5. 'Power on' condition

OFF			
~	Switch	Power on via LV restoration	Power on via LV restoration or I = 5 A
- -	3	OFF	ON

Ex-factory setting: Power on via LV restoration or I > 5 A

6. Indication reset condition configuration



Ex-factory setting: Indication reset by LV restoration

LYNX44XX configured in directional fault detection mode

1. Selection Preset 1 / Preset 2

LYNX 4400 units have two detection levels, called Preset 1 and Preset 2.

- ✓ Preset 1 corresponds to the greatest earth fault detection sensitivity. This position is used preferentially.
- ✓ The Preset 2 position is intended for special cases, such as when most of the detectors used for the outputs are older-generation detectors (pre-2009).





NO. NX2010597/ NO. 72983_C 06/04/2021 21 (35)



		Switch	Preset 1 selection	Preset 2 selection		
- 2	‴ ┣–	1	OFF	ON		
~	_	Ţ	OFF	ON		
•• 🔳						
en 🛄						
~ 🔳						
a 🔳	E. J	C	a atting a Dua a at 1			
-	Ex-factory setting: Preset 1					

2. MV voltage selection



Switch 15 kV selection 20 kV selection OFF ON

Ex-factory setting: 20 kV

3. Configuration of polyphase Imax (phase to phase) detection thresholds

OFF	- 📕 💡	ON
	N 📕	
	•• 🔳	
	•	
	• 📕	
	•	
	-	

-	Switch	1600 A	1200 A	750 A	500 A
L	5	OFF	ON	OFF	ON
	6	OFF	OFF	ON	ON
_		_	-	-	

Ex-factory setting: 500 A

Rm: The polyphase threshold is always higher than the double threshold.

4. Configuration of detection thresholds I Double

OFF ON		Switch	1200 A	700 A	450 A	250 A
OFF	٦	1	OFF	ON	OFF	ON
× 🔳		2	OFF	OFF	ON	ON
- -	_					
•	Ev	factor	vcottin	a. 150	٨	

Ex-factory setting: 450 A

5. Fault signalling time delay.

A fault appearing on the system is indicated by the LYNX 4400 only if it causes the disappearance of the MV after a configurable time. In particular, this prevents the activation of the indicators during the resetting cycle.

The LYNX 4400 can be adjusted for a time delay of: 10 s, 20 s, 40 s, or 70 s.

DFF - 🔳	2 ON					
~		Switch	10 s	20 s	40 s	70 s
- 🔳		3	OFF	ON	OFF	ON
•		4	OFF	OFF	ON	ON

Factory setting: time delay set to 10 s

On completion of configuration, to ensure that the new parameters are incorporated, press PB1 (µC reset button) and LED LD1 comes on for 200 ms

ο



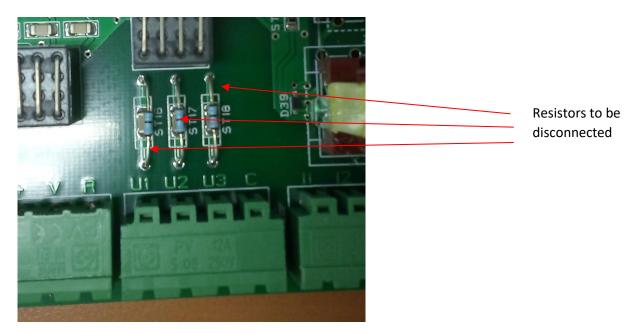


NO. NX2010597/ NO. 72983_C 06/04/2021 22 (35)



Configuration of the LYNX 4400 detector in directional mode and MV/ 100V/ $\sqrt{3}$ voltage transformers

To be able to connect the voltage inputs of the LYNX 4400 detector to the secondaries of the MV/ 100V/ V 3 voltage transformers, you must disconnect three standard resistors ST16, ST17, and ST18 on the board (see below)



This operation must be performed with power off and before installing the case.

3.3. Operational tests

The LYNX 4400 is designed for MV grids operated at 15 kV or 20 kV 50 Hz. After any adjustment of the grid voltage selection and configuration of the time delays and earth fault detection sensitivity:

If the LYNX 4400 is in directional configuration, LED LD1 lights up red the first time the case is powered up. The system is not calibrated. Run a PPACS calibration.

PPACS calibration (caution! The MV voltage to the grid must be present):

- Press the "calibration" push-button (PB2) for 3 s. LED LD1 flashes, indicating that calibration is in progress.
 During calibration, the display indicates "ETAL".
- ✓ On completion of calibration (around 10 s)
 - o LED LD1 is extinguished and the display goes off, indicating successful calibration.
 - o LED LD1 continues to flash and the display indicates "DEFO", meaning that the







case was not successfully calibrated.

To repeat the calibration procedure, open the cover of the LYNX 4400 and press the reset button (PB1). This will reinitialise the case.

Finally, press the calibration button (PB2), holding it for 3 s, to start another calibration run. If a system fault persists, there must be a problem in the voltage measurement chain:

- ✓ On the PPACS
- ✓ On the Harting connectors
- ✓ On the LYNX DFD



IMPORTANT! A calibration run can be started at any time (without red LED LD1 being lit)

If calibration is unsuccessful, the directional detector is inoperative.

Launching a test of the LYNX 4400

Pressing the "Test" button (PB4) triggers a test procedure to check operation of the detector.

During the test, the display indicates "TEST".

The two remote indication contacts close and the Red and Green indicator lights flash on the Lynx board and on the external indicator light for 1 minute. The "POLY" polyphase counter is incremented. You can stop an ongoing test by pressing the "Test reset" button (PB2).





NO. NX2010597/ NO. 72983_C 06/04/2021 24 (35)



4 Operation

4.1. Function by function description

4.2. Commands, tests, configurations - upgrades with new functions





NO. NX2010597/ NO. 72983_C 06/04/2021 25 (35)



4.1. Function by function description

The LYNX 4400 is a fault detector for 15-kV or 20-kV MV underground grids, based on one of the following detection principles:

- Amperometric, meaning that it monitors the current,
- Directional, meaning it simultaneously monitors the current and the residual voltage.

The current signals come from three ITI-type core sensors with a 500/1 ratio. The voltage signals come from PPACS sensors to be installed on the separable connectors.

The detector lets you locate the defective section of an output with a permanent fault, with the help of light signals.

It also records all fault events (self-extinguishing, transient, semi-permanent and permanent) in a counter (viewable on a display), and actuates the corresponding external contact(s) to help locate the devices to be repaired.

According to the installation location, there are two types of detector with different power sources:

- Standalone detectors powered by replaceable batteries

- Detectors with a low-voltage power supply (230 V phase + neutral) backed up by a supercapacitor, without replacement elements

The interface with external equipment consists of three contacts that output to disconnectable coded screw terminals.

LYNX44XX DETECTOR IN AMPEROMETRIC CONFIGURATION

Functional description in accordance with specification PR-HN-45-S-50 of February 2011

A single-phase, double or polyphase fault is deemed to exist where a phase to earth (Io) or phase to phase (Imax) fault current exceeds the chosen threshold for longer than 100 ms.

- ✓ Within a period of less than 200 ms, the detector increments a counter and the corresponding external indication contact (R or V on connector J5) is closed for a period of 100 ms.
- ✓ The local light indicator as well as the external indicator light are triggered.

After 3 s:

- ✓ Either the LV voltage or the MV current > 5A are present and the detector clears the fault.
- ✓ Or the LV voltage or the MV current > 5A are absent and the detector permanently actuates the external indication contact.





NO. NX2010597/ NO. 72983_C 06/04/2021 26 (35)



The fault detector is reset on restoration of LV or if MV current > 5A or after 2 hours.

A fault can be cleared at any time by pressing the PB1 button

LYNX44XX DETECTOR IN DIRECTIONAL CONFIGURATION

Functional description in accordance with specification PR-HN-45-S-51 of February 2011

Phase/earth single-phase fault

Detection of this fault is possible only if MV has been present for longer than 5 seconds. Each directional detector on the faulty output flashes with a constant colour: Either red or green.

In addition, according to the equipment on the LYNX 4400:

- The red counter or the green counter is incremented (by one unit).
- The red or green remote control contact closes.

Polyphase faults

These faults are identified by a green/red flashing every second.

Only directional detectors located upstream from the fault will flash, and the two red and green output contacts close at the same time.

Identification of the section with a fault

This takes place differently depending on the type of fault.

✓ Phase/earth single-phase fault

Indication of this fault is directional. All LYNX 4400 units located on the single-phase fault cable start flashing with a single colour.

The direction of the fault is indicated by the colour of the flashing:

- Green flashing: The fault is on the part of the system towards the MV sub-station busbar.
- Red flashing: The fault is on the part of the cable outside the MV sub-station.
- ✓ Polyphase fault

Indication of polyphase faults is not directional. The LYNX 4400 units see a polyphase fault passing, and only they start flashing alternately green and red. The faulty line section is traditionally identified as the one between the last flashing detector and the first one that is not flashing.





NO. NX2010597/ NO. 72983_C 06/04/2021 27 (35)



Stopping the indication

The illuminated indication is stopped:

- ✓ Automatically after two hours
- ✓ On restoration of MV for a time longer than 5 s
- ✓ By deliberately pressing PB2: Reset button

Actuating reset: Stops the indicators and opens the remote control output contacts

FAULT COUNTER

The counter is used to store validated transient type faults (elimination of the fault by resetting sequences on the source unit).

It has a 4-digit LCD display.

The three counters (green, red, and polyphase) are displayed alternatively for 1 s (total duration). The value "xxxx" displayed by a counter runs from 0000 to 9999.

To launch the display procedure, press the "counter display" button (PB3).

The display sequence is as follows:

1 s "POLY"

- 1 s "xxx": polyphase counter
- 1 s "RED"

1 s "xxx": red counter

1 s "GREEN"

1 s "xxx": green counter

The three counters can be simultaneously reset by pressing the counter display button (PB3) for 3 s (you should see "0" on the display).

4.2. Controls, tests, configurations - upgrades with new functions

Controls

The user interface (UI) has: Pushbutton controls:

- ✓ A TEST button: press this button to run a test
- ✓ A TEST RESET button: this button has two functions:
 - o Pressing for less than 3 seconds stops the test or resets the fault in progress
 - o Pressing for longer than 3 seconds starts a detector calibration procedure
- ✓ A DISPLAY button: this button has two functions:
 - o Pressing for less than 3 seconds displays the counters on the screen
 - o Pressing for longer than 3 seconds resets the value of all the counters
- A μC RESET button: press this button to validate the inverter position reading (you must validate all inverter position changes by pressing this button)





NO. NX2010597/ NO. 72983_C 06/04/2021 28 (35)



Indicator lights:

- ✓ 1 red LED: when lit, it indicates a homopolar single-phase fault on the Grid side
- ✓ 1 green LED: when lit, it indicates a homopolar single-phase fault on the Busbar side

Both LEDs lit: this indicates a polyphase fault

- 1 Red LED in the middle of the buttons indicates the following:
 - ✓ Steady ON: the detector is inoperative. Launch a calibration procedure.
 - ✓ Flashing: calibration in progress
 - ✓ Off: detector is operational.

Tests

To check operation of the detector, press the "Test" button (PB4) to launch the test procedure. If the LYNX 4400 is equipped with a display, it indicates "TEST".

The two remote indication contacts close and the Red and Green indicator lights flash on the Lynx board and on the external indicator light for 1 minute. The "POLY" polyphase counter is incremented. You can stop an ongoing test by pressing the "Test reset" button (PB2).

Configurations

See Para. 3.2. List of commissioning operations.





NO. NX2010597/ NO. 72983_C 06/04/2021 29 (35)





5.1. Preventive

5.2. Corrective



NO. NX2010597/ NO. 72983_C 06/04/2021 30 (35)



5.1. Preventive

Deactivating the LYNX 4400

- Open the cover by unclipping it.
- Disconnect the integrated power supply: Either the battery via J10

Or the supercapacitor via J11

- If it has not been switched off externally before opening the cover, switch off the 230-V power supply by opening the fuse holder.

Maintenance

Lynx range with an LV power supply equipped with a supercapacitor:LYNX 4425Stand-alone Lynx range equipped with lithium batteries:LYNX 4455

Function test

We recommend carrying out this test after 3 years and subsequently every 2 years, it checks the condition of:

- The battery or batteries and the supercapacitor
- The external indicator light and the external indication contacts

- The LV power supply and the fuse (depending on the option, a 5X20 type F spare fuse (250mA) is available on the left-hand side of the detector)

To check the battery or the supercapacitor, open the LV power supply fuse holder (if the case has an LV power supply). Run the detector test (see page 22). If the test runs normally, the battery or the supercapacitor and external indication are compliant.



Caution! On completion of tests restore the LV power supply and reinsert the battery.





NO. NX2010597/ NO. 72983_C 06/04/2021 31 (35)



Replacing batteries

The usable life of lithium batteries is 7.5 years with 200 hours indication operation, to replace the lithium battery or batteries see page 15.

When replacing batteries, only use the same type of batteries with the same product code.

The 15-year usable life of supercapacitors means that they do not need to be replaced.

5.2. Corrective

Should the equipment stop working, return the electronic board to Ensto Novexia.

To do this, you need to:

- ✓ Deactivate the case (see page 30)
- ✓ Remove the connectors at the bottom of the case
- ✓ Short circuit the cores
- ✓ Remove the electronic board's metal front panel
- ✓ Remove the electronic board





NO. NX2010597/ NO. 72983_C 06/04/2021 32 (35)



6 Technical Assistance

If you encounter any problems or have any questions, please contact our Technical Assistance team:

SERVICE APRES-VENTE / AFTER-SALES SERVICE 210, rue Léon Jouhaux - BP 10446

FR - 69656 Villefranche-sur-Saône Cedex Tel.: +33 (0)4 74 65 61 60

Mobile: +33 (0)6 08 93 26 31

You can also contact us by e-mail at infos.novexia@ensto.com

Ensto Novexia is also able to provide customised training.

Our Technical Assistance team and our sales team will be able to advise you.





NO. NX2010597/ NO. 72983_C 06/04/2021 33 (35)



7 End of Product Life

For any questions relating to the end of the product's life, contact the after-sales service with the technical details of the sub-assemblies and/or products to be recycled.







NO. NX2010597/ NO. 72983_C 06/04/2021 34 (35)



Note





NO. NX2010597/ NO. 72983_C 06/04/2021 35 (35)

Equipment return tracking form

Service Après-Vente / After-Sales Service

Parc d'Activités de la Haute-Bigorre

Boulevard de l'Adour

65200 Bagnères de Bigorre

Cedex

Landline: +33(0)5 62 91 45 36 Mobile: +33 (0)6 16 66 46 43

Service Après-Ventes / After-Sales Service

210, rue Léon Jouhaux — BP 10446 FR — 69656 Villefranche-sur-Saône Cedex Landline: +33 (0)4 74 65 61 60

Mobile: +33 (0)6 08 93 26 31

Ce document est la propriété de la société Ensto Novexia, il ne peut être ni reproduit, ni communiqué à des tiers sans autorisation écrite

This document is the property of Ensto Novexia, it may not be reproduced, disclosed without written authorization

Better life. With electricity.