

# ENSTO

## Ensto LYNX 4400

Universal  
fault detector  
(amperometric and  
directional faults)  
for underground  
MV network

The LYNX 4400 fault detector allows you to pinpoint a faulty distribution section on an MV underground network operating with an impedance-earthed or compensated neutral system.



### MV underground network management

Associated with three current sensors and three voltage sensors, the LYNX 4400 logs all features, whether they are single-phase or double, polyphase, temporary or continuous, in an internal counter, and processes the corresponding external contacts to maintain electricity distribution availability. It complies with Enedis specifications HN 45 S 50 and HN 45 S 51 of February 2011.

### Description

The LYNX 4400 is made up of a **detector unit** with an HMI interface, an external **lighting indicator**, **3 open-style toroid sensors** to be placed on the concerned cables of the line to be monitored and **3 PPACS type voltage sensors** (required for directional detection) to be placed on the separable connectors. It can be equipped with an LV power supply with supercapacitor backup, or it can be standalone and have lithium battery backup.

Depending on the case, the operating life is guaranteed with the following conditions:

- 2 batteries guaranteeing an operating life of at least 7.5 years
- a supercapacitor guaranteeing an operating life of at least 15 years

### Customer benefits

- Speedy location of faulty sections on the grid due to the presence of fault passage indicator lighting
- Universal solution capable of adapting to all neutral systems and all voltage levels
- User-friendly display, providing access to a wide range of operating data

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# Ensto LYNX 4400

## MV underground network monitoring

### Use

The LYNX 4400 is available with a LV power supply (Lynx 4425) and a standalone version (Lynx4455).

The U and I sensors help to detect and recognise the direction of the fault (Red or green fault, depending of the position of the fault).

The voltage sensor input is designed to be adapted to the network type (15 or 20 kVac) as well as variations in top capacitor capacitance (from 1 to 3 pF for a PPACS mounting or from 20 to 32 pF for in-cell sensors) by means of a simple calibration during the commissioning process.

The very low consumption optimises the service life of the associated supercapacitor or batteries.

Fault data is displayed on the LYNX unit and transferred externally by means of the two-coloured indicator light, it is also reported on a series of make contacts. An equipment fault contact is available.

Amperometric detection	Directional detection
<p><u>Single-phase fault</u></p> <p>Fault threshold: 20 - 40 - 80 - 160 - 240 A</p> <p>Fault trigger time: 100 ms</p> <p>Fault colour: red or green</p>	<p><u>Single-phase fault</u></p> <p>Preset 1: I peak: 30 A U peak: 4 kV U conf: 1.75 kV</p> <p>Preset 2: I peak: 60 A U peak: 9kV U conf: 3.5 kV</p> <p>MV voltage selection: 15 or 20 kV</p> <p>In 15 kV position, the thresholds are reduced to three quarters of these values</p>
<p><u>Polyphase fault</u></p> <p>Fault threshold: 500 - 750 - 1200 - 1600 A</p> <p>Fault trigger time: 100 ms</p>	<p><u>Polyphase fault</u></p> <p>Fault threshold: 500 - 750 - 1200 - 1600 A</p> <p>Fault trigger time: 100 ms</p>
<p><u>Double fault</u></p> <p>Fault threshold: 250 - 450 - 700 - 1200 A</p> <p>Fault trigger time: 100 ms</p>	<p><u>Double fault</u></p> <p>Fault threshold: 250 - 450 - 700 - 1200 A</p> <p>Fault trigger time: 100 ms</p>
<p><u>Fault signalling</u></p> <p>Immediate for minimum 3 s</p> <p><u>Fault signalling reset</u></p> <ul style="list-style-type: none"> <li>- On LV restoration</li> <li>- If IMV &gt;5 A</li> <li>- By reset pushbutton</li> <li>- 2-hour time delay</li> </ul>	<p><u>Fault signalling</u></p> <p>Configuration: 10 - 20 - 40 - 70 s</p> <p><u>Fault signalling reset</u></p> <ul style="list-style-type: none"> <li>- On MV presence for more than 5s</li> <li>- By reset pushbutton</li> <li>- 2-hour time delay</li> </ul>
	<p><u>Voltage sensor selection</u></p> <ul style="list-style-type: none"> <li>- PPACS 1 to 3 pF</li> <li>- In-cell sensors 20 to 32 pF</li> </ul>

References
LYNX 4425 with supercapacitor
LYNX 4455 with lithium batteries

Characteristics	
LV power supply	230 VAC 50/60 Hz
Supercapacitor	350 Farad 2.7v Operating life 15 years
Battery	Lithium 3.6V LSH20 Operating life 7.5 years
U sensor	Input 1 to 3 pF or 20 to 32 pF Grid 15 to 20 kV
I sensor	500/1 open-style toroid Cables 95 to 240 mm <sup>2</sup>
External indicator light	Red or green Flashing 1 Hz
Contact on fault	100 ms
Current overload	12.5 kA/1s
Environment	<ul style="list-style-type: none"> <li>• Operating temperature - 15°C to + 55°C</li> <li>• Storage temperature - 25 °C to + 70 °C</li> <li>• Humidity level 100%</li> <li>• Vibration resistance 2 g</li> <li>• Cabinet protection rating IP30 and IK07</li> <li>• Indicator light protection rating IP54 and IK09</li> </ul>
Counter	4-digit display 17.8 mm
Dimensions (LxHxD)	200x285x95 mm
Weight	1.77 kg



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