

# FAULT INDICATOR LODESTAR CL4 BM

CONDUCTOR MOUNTED FAULT INDICATOR  
WHICH IS USED IN MEDIUM VOLTAGE  
POWER DISTRIBUTION NETWORKS

DETECTS A SHORT CIRCUIT AND GROUND FAULTS



No need of additional  
communication devices

## EFFECTS OF IMPLEMENTATION AT ENERGY FACILITIES



### ECONOMIC BENEFITS

Stable and reliable power supply attracts investments and supports economic growth



### REDUCTION OF UNDER-SUPPLY OF ELECTRICITY

More consistent and steady flow of electricity to consumers, minimizing potential disruptions in power supply



### REDUCTION OF COSTS FOR THE IMPLEMENTATION AND OPERATION OF EQUIPMENT



### IMPROVING THE RELIABILITY OF POWER SUPPLY TO CONSUMERS

Investments in smart grid technologies, monitoring, management and diagnostics of power grids improve their reliability



**Online monitoring is possible** —  
devices include SMS-gateway.  
Data transmission to SCADA system  
using **DNP3 protocol**.



Lodestar CL4 BM is mounted on  
the overhead phase conductor.  
The live-line installation is  
possible using a standard  
hotstick tool

## BENEFITS

- Minimum **fault sensing 4 A**
- Visual indication up to 100 m (day), up to 500 m night)
- **Does not require** a separate data transmission unit.
- Sending SMS and e-mail about network events to **up to 5 different subscribers**.
- Can be configured by **mobile APP or SCADA**
- **Easy** to install, set and use



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Types of registered events	PtP, PtG
Short circuit current sensitivity	20 A
Automatic fault current threshold adjustment	+
Zero sequence current sensitivity	4 A
Detection of direction of zero sequence current flow	-
Voltage monitoring	+
<b>General description of devices</b>	
Overhead line voltage range	6-35 kV
Grid's frequency	50/60 Hz
Visual indication	<ul style="list-style-type: none"> <li>· Blinking ultra-bright LEDs;</li> <li>· detection range up to 100 m (during the day), up to 500 m (at night);</li> <li>· a set of sequences, depending on the capability of the model.</li> </ul>
LED brightness	At least 20000 mcd per LED, 360° view
Number of alarms stored in the internal non-volatile memory	Up to 20 000
Remote control (for field config)	Bluetooth BLE (2,4 GHz)
Remote communication	Lodestar CLXX-Master is equipped with a GSM channel, for transmitting information from the indicators to the data collection server.
Types of actuation control	<ul style="list-style-type: none"> <li>· Visual;</li> <li>· by short-range radio channel (handheld remote control);</li> <li>· remote via Komorsan &amp; SCADA.</li> </ul>
Reset display	<ul style="list-style-type: none"> <li>· Voltage restoration;</li> <li>· by timer;</li> <li>· magnet;</li> <li>· from the portable control.</li> </ul>
Indicator health control	<ul style="list-style-type: none"> <li>· Magnet;</li> <li>· portable remote control;</li> <li>· remotely.</li> </ul>
Changing settings (setpoints)	<ul style="list-style-type: none"> <li>· On the short-range radio channel using a portable remote control;</li> <li>· remotely using the «KOMORSAN Web-client» software.</li> </ul>
SMS notification	<ul style="list-style-type: none"> <li>· Up to 5 phone numbers;</li> <li>· composition of the message: GPS coordinates, type of accident, serial number.</li> </ul>
Reading GPS coordinates	Yes
Time to prepare the kit for repeated triggering	No more than 3 sec.
Integration with SCADA systems	<ul style="list-style-type: none"> <li>· Connection to any existing SCADA easily via IEC 60870-5-104 by using KOMORSAN software;</li> <li>· built-in GSM modem (for Lodestar Master FPI);</li> <li>· data transmission to SCADA system using DNP3 protocol.</li> </ul>
Source of power	<ul style="list-style-type: none"> <li>· 3 removable lithium batteries (19 Ah) in Lodestar CLxx Master;</li> <li>· 1 removable lithium battery (19 Ah) in Lodestar CLxx S.</li> </ul>
Total indication time	> 2000 hours
Indicator life	130000 hours
Battery life (in standby mode)	8-10 years
<b>Thresholds</b>	
Absolute current threshold	20±1000 A
Differential current threshold in A	20±500 A
Differential current threshold in %	50±500%
Current withstand (IEEE495, 4.4.7)	25 kA/500 ms
Inrush current restraint	0-200 ms
Setting the reset timer	Arbitrarily from 1 hour to 8 days
The minimum duration of the emergency process	0,02 s
<b>Exploitation</b>	
Installation location	On the overhead line (conductor)
Conductor diameters	5-40 mm
Installation on live line	+
Temperature range	Operating at an ambient temperature from - 40 °C to + 85 °C
Protection class	IP 68 according IEC
Impact of climatic environmental factors	<ul style="list-style-type: none"> <li>· Resistant to UV radiation;</li> <li>· resistant to wind load of 40 m/s without ice and 23 m/s with ice with 35 mm wall thickness.</li> </ul>
Impact of mechanical factors	<ul style="list-style-type: none"> <li>· Corresponds to exploitation group M1;</li> <li>· resistant to galloping.</li> </ul>