



Line Troll[®] LT110E μ (r)

Fault Passage Indicator for overhead lines (6-69kv)

LineTroll[®]110E μ Fault Indicator indicates earth- and short circuit-faults. The indicator detects and independently indicate both permanent and transient faults. Permanent faults are indicated by a super intensive LED visible from long distance both day and night. Transient faults are indicated by a single green LED.

LT-110E μ r is a special version equipped with a Low Power radio for remote monitoring. The radio communicates then with a pole-mounted Collectors that has a set of relay-contacts for connection to a SCADA-RTU.

Features LineTroll[®]110E μ :

- Programmable operating parameters
- High visibility day and night 360°.
- Dual indications; permanent and transient faults
- Usable on multi circuit systems

Additional for LT-110E μ r:

- Low-power radio for remote monitoring
- Programmable from ground
- Resistant to tough weather conditions.
- Battery capacity monitoring



Functional Description

LineTroll[®]110E μ continuously monitors the line voltage and phase current, the sources of information it needs to operate. The unit is fully self-contained, no external transformers or connections is required.

During normal line conditions, LineTroll[®]110E μ remains extinguished.

The indicator is looking for a specific sequence of line conditions to happen before it indicates. The general sequence is as follows:

- A. The line should be energised (voltage or current present) for a minimum of 5 seconds.
- B. Di/Dt: The line current should increase rapidly by the amount of a user set trip level OR Threshold: The line current exceeding a preset current level
- C. The line should be de-energised.
(voltage or current not present)

The user may program the criteria for operation to suit his local requirement by manipulating a bank of micro-switches inside the indicator.

Note: Voltage or current as start and stop criteria are user programmable.

Technical Specifications



Application:	Short circuit and Earth fault indication for overhead lines.	
	System Voltage:	MV– voltage network (6-69kV)
	Grounding system:	Isolated, resistor and solidly grounded
	Frequency:	50Hz / 60 Hz
Fault-detection:	Sensitivity Di/Dt (50Hz):	6, 12, 25, and 60A
	Sensitivity thresh.(50Hz)	250, 500, 750 or 1000A *
	Duration:	> 60ms (20ms on request)
	Inrush-blocking:	5 sec
	CB-tripping:	Within 5 sec
Reset:	Automatic:	Re- energized line (Voltage or current, programmable)
	Timer:	2, 6, 12, or 24 hours*
	Manual:	By magnet/Mounting-reset tool
Indication:	Locally:	
	Permanent faults:	1 Super Intensive red LED f= 0.3Hz (Power save after 12h; f=0.1Hz)
	Visibility day/night/direction:	250m/2km / 360°
	Transient faults:	1 green LED (f = 0.2 Hz or 0.1Hz after 12h)
	Low battery:	1 yellow LED (f = 0.17Hz) counter-timeout; (IF < 20% of tot cap. left OR >9years in service)
	Remote (radio)	In combination with ComTroll 11XC Collector
	Telegram:	Status every 1 minute (10sec during fault analysis) Permanent / Transient faults, Low battery / heartbeat.
	Frequency:	2,46 GHz, ISM-band, address protected.
	Output Power:	1mW (0dBm) / Sensitivity: -94dBm @250kbps
	Data rate:	250kbits
	Range:	20m LOS, (margin =20dB/ Rec.sens: -90dBm)
Power supply:	1 Lithium Cell	D size tot capacity: 16,5 Ah
	Power cons.	Idle w/RF: 120uA (90uA if RF off)
	Battery change:	Indication (Permanent/Transient): 4,0 /0,3mA
Mounting:	Live line	After 1500 flash hours or 7-10 years
	Conductor size:	Grip-All Clamp Hot-stick or KBN-4; mounting/test/reset tool
Temperature range:		5-36mm
Housing:	Material:	-40° to +85°C
Protection:	Ingress:	Polycarbonate, UV stabilized
	Mechanical impact:	EN 60529: IP 54 (IP 68 on request)
	Dimension/Weight:	EN 62262 IK 09 (10J) 202 x 54mm (with box 235 x 65 x 85) / 460g

Ordering Information

Product nr:	KBN-4Reset/mounting tool with bolt hot-stick adaptor
Product nr: 1056	KBB-11 replacement battery
Product nr:	ComTroll 11XC QuickLink Collector

About Nortroll AS

Since the foundation in 1976, Nortroll AS has devoted its activities to the development of equipment aiming to reduce electric utilities outage times. We offers a wide range of products for fault detection and remote operation in the MV Distribution

Your Representative



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LineTroll®

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