



# Line Troll<sup>®</sup> LT110E $\mu$

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

LineTroll<sup>®</sup>110E $\mu$  Fault Indicator indicates earth- and shortcircuit-faults by detection of changes in the magnetic field set up by the fault current. The indicator can detect and independently indicate both permanent and transient faults. A cluster of red/yellow LED's for permanent fault and one green LED for transient fault. A yellow LED will give indication on low battery status. High visibility.

Features LineTroll<sup>®</sup>110E $\mu$ :

- Programmable operating parameters
- High visibility ( > 12 lumens)
- Usable on all Medium Voltage distribution networks 6-69KV.
- Usable on multi circuit systems
- Voltage or current as start criteria (programmable)
- Dual indications (permanent and transient faults)
- Resistant to tough weather conditions
- Battery capacity monitoring
- Mounting with standard clamp-stick
- Line-diameter up to 36mm



## Functional Description

LineTroll<sup>®</sup>110E $\mu$  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<sup>®</sup>110E $\mu$  remains extinguished.

The indicator is looking for a specific sequence of line conditions to happen before it starts flashing. 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 value (the step level).  
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 is user programmable.**

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## Technical Specifications

Application:	Short circuit and Earth fault*) indicator for overhead lines. *) provided sufficient Earth Fault current as in solidly grounded/low resistance neutral		
	System Voltage:	MV– voltage network (6-69kV)	
	Grounding system:	Isolated, resistor and solidly grounded	
Fault-detection:	Sensitivity Di/Dt (50Hz):	6, 12, 25, 60 or 120A*	
	Sensitivity thresh.(50Hz)	250, 500, 750 or 1000A *	
	Duration:	> 60ms (20ms on request)	
	Innrush-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	
Note *: All treshold, timers etc. are selectable and programmable by microswitches.			
Indication:	Permanent faults:	3 red/amber + 1 yellow + 1 green LED's.	
	Transient faults:	1 green LED	
	Intensity:	> 12 lumens for permanent faults	
	Visibility:	Day:	up to 250m
		Nighth:	up to 2 km
		Direction:	360°
	Flashing frequency:	f = 0,2Hz, after 12h reduced to f = 0,1Hz	
Low battery indication:	1 yellow LED (f = 0,1Hz)		
Power supply:	1 Lithium Cell	D-size total capacity: 16,5 Ah	
	Battery change:	Every 1500 flash hours, normally every 7-8 years	
Mounting:	Hot-stick	Live-line mounting bu use of clampstick	
	Conductor size:	5-36 mm	
Temp:		-40 to +85°C	
Housing:		Polycarbonate, UV stablized	
	Dimension:	200 x 150mm	
	Weight:	370g (including battery)	
	Degree of protection:	IP54	
Packing information:	Number of units each kit:	3 units	
	Dimension box:	165x260x250mm	
	Weigth (3 units):	1300g	

## Ordering Information

Product no: 04-1200-00 LineTroll®110Eμ  
 Product no: 04-1200-01 LineTroll®110Eμr (with integrated radio for SCADA connection)  
 Product no: 17-1200-00 KBN-4 Mounting/Test/Reset tool  
 Product no: 1056 KBB-11 replacement battery

## About Nortroll AS

## Your Representative

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

DS LT 110Eμ\_n-clamp 2009

LineTroll®

