Transflekt

Efficient, precise TDR fault location

kelvatek
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OVERVIEW

Time domain reflectometry (TDR) is one of the most widely adopted methods of Low Voltage (LV) fault location. Often when a transient fault is suspected, operators will stress the cable with a high voltage to force the fault to occur – allowing use of a TDR to then locate the fault. Unfortunately, this approach often results in additional damage to the cables and the location of an inactive fault as opposed to the fault leading to customer complaints.

Transflekt uses advanced TDR technology to locate transient faults by monitoring the circuit until a fault occurs naturally using normal system level voltages. Complementing the impedance-based fault location used in many of Kelvatek's LV devices, this dual approach can be used to highlight and eliminate discrepancies in fault locations due to incorrect cable records.

Transflekt can be connected anywhere on the distribution network, enabling triangulation of fault locations from multiple Kelvatek LV devices, allowing identification of the faulty branch on multi-branched networks. This significantly reduces the time and cost of pinpointing faults.

Transflekt locates the position of transient faults quickly and accurately, with no network interruptions or unnecessary strain on cables being tested. Once it's set up, Transflekt continuously gathers voltage, current and TDR reflections from the cable. When a transient fault occurs, Transflekt communicates all the fault related information to a remote server, where fault location is performed by the analysis of TDR traces collected before and during a fault incident.

KEY BENEFITS

Reduced CI/CMLs

Unlike other devices, Transflekt can locate the fault during the first fault activity, reducing customer interruptions, minutes lost and potentially costly penalties.

Increased accuracy

Reduces uncertainty for pinpointing (using gas sniffing) and unnecessary excavations.

Less time required on site

As the device sends auto alerts, Transflekt can be left until fault activity occurs, reducing the amount of time staff are required on-site.

Simple and robust diagnostics

Device management and data analysis can be performed from any location via a standard web browser and internet connection.

KEY CAPABILITIES

- Quick and easy installation, with no need for any physical changes to existing wiring. The connection is carried out with crocodile clamps (supplied) and optional rogowski current probes.
- Compact design allows fitting on most common fuse pillars and other network connection points.
- Simple configuration via standard web browser and appropriate communication interface, with no need for any software installation.
- Inbuilt Wi-Fi access point and webserver allows local control.
- Controlled remotely via 4G wireless link to Kelvatek Gateway server.

TECHNICAL SPECIFICATION

Transflekt – TDR Monitor

Rated Voltage	440V RMS 50Hz	
Series Fuse	400mA FF rated	
Connections	LVDN Connection: 3-phase 440V Current Probe Set DC Supply: 12V DC Insulated BNC Antenna	
Measurement Ranges	at VF=0.67	250m (2560ns)
		500m (5120ns)
		1000m (10240ns)
		2000m (20480ns)
Measurement Resolution	at VF=0.67	1m (10ns)
		2m (20ns)
		4m (40ns)
		8m (80ns)
Velocity Factor	0.1 to 1.0	
Gain	-20 to +42dB in 6dB increments	
Pulse Characteristics	Amplitude: 5V in open circuit Width (Defaults): 120ns, 240ns, 480ns, 960ns	
Input Protection	440V RMS 50Hz	
Memory	1000 data sets	
Language	English	
Leads	4-core 1.5m test leads with croc clips (phase connectors fused at 500mA FF)	
Standards	Safety: EN 61010-1:2001 EMC: EN 61326-1:2006	
Communications	Wi-Fi, GSM/3G/4G	
Dimensions	380 x 117 x 68 mm	
Weight	2kg	
Operating Temperature range	-20 to +60 °C	
Storage Temperature Range	-40 to +60°C	
Humidity	95% at +40°C	
IP Protection	IP64	

CONTACT DETAILS

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