PROFILE P3
Circuit Breaker Analyser

PROFILE P3 provides a unique insight into the true condition of circuit breakers at all voltages. Capturing the vital 'first trip' shows how the breaker would perform in a real-life fault situation.

Problem

A slow tripping circuit breaker can cause major disruptions on power networks resulting in:

- Widespread loss of supply
- Damage to plant
- Potential safety issues
- CI / CML financial penalties

Conventional testing requires a circuit breaker to be isolated. However, this first trip operation can often temporarily clear any slow tripping problem. Therefore capturing the 'first trip' operation is essential to effective circuit breaker condition monitoring.

Solution

The **PROFILE P3** offers a cost effective solution by enabling:

- Fast and simple online test
- Capture vital first trip operation
- Combined relay and circuit breaker test
- Onsite analysis of breaker defects
- Efficiently target critical resources

PROFILE P3 is a powerful diagnostic tool for analysing:

- Main contact operating time
- Auxiliary contact operating time
- 'Health' of Close & Trip coils
- Condition of DC battery circuit
- Auxiliary contact condition
- The Total Trip Time
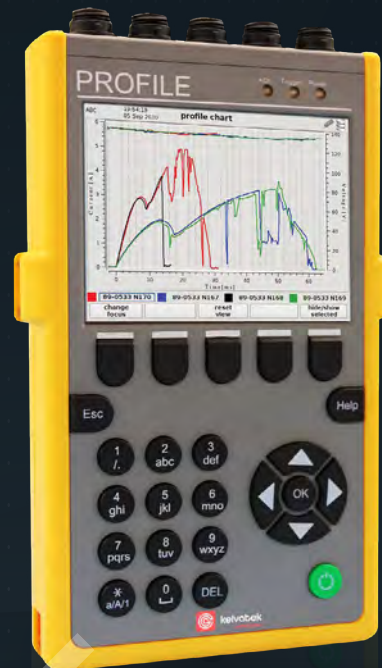
Key features

Powerful onsite analysis

The **PROFILE P3** can display and overlay up to 4 records in graphical form. This enables quick onsite analysis of potential defects by comparing a first trip or close profile to subsequent circuit breaker operations.

Combined protection relay and circuit breaker online test

An enhanced version of the software enables both the protection relay and circuit breaker trip times to be captured.

Multi-shot mode

With this function the **PROFILE P3** is able to re-arm and capture multiple circuit breaker operations. This can be used for monitoring a circuit breaker during faults or SCADA initiated operations. Also, it can be used to capture a sequence of trip/close operations during one test setup.

Automated comparison function

This provides a clear pass/fail (green/red) indication by determining if the key parameters – Buffer, Acon, Mcon are outside user-set tolerances between the first, second and third trip operations.

kelvatek
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SPECIFICATION	RANGE	ACCURACY	RESOLUTION
DC Current Measurement:	0.2-100 A	±5%	±100mA
DC Voltage Measurement:	±330 V	±5%	±50mV
AC Current Pickup Threshold (MCon timing): AC Current Max (MCon timing)	10 mA 5A	1mA	
Timing parameters:		±0.2 ms	±0.1 ms
Handset Power Supply:	10-15 V DC, 24W		
Inline Power Supply:	85-265 V AC		
	50 / 60 Hz		
Profile Battery Supply:	8x AA (Rechargeable (NiMH) or standard alkaline)		
	6 hours under normal usage		
Screen:	5.7" Color Display, 640 x 480 (VGA))		
Operating temperature:	-20°C à +50°C (-4°F à +122°F)		
Handset record storage:	≥ 1000 records		

PROFILE P3 with accessories

- DC Probe (Hall Effect CT)
- 3 Peg CTs
- DC Voltage probes
- DC power supply
- USB memory stick & lead
- Peli™ case

REPLAY PRO

The REPLAY PRO software is an integral part of the **PROFILE P3** system which enables efficient profile record storage, retrieval and analysis.

It provides the critical link between the **PROFILE P3** and those within the organisation who need to access the Profile data in order to effectively manage their assets.

The REPLAY PRO software can be downloaded from the **Kelvatek** website to any PC where the data can be accessed locally or made available to multiple users on a central server.

Offline interface unit

- Interface unit (provides 24V DC signal across circuit breakers)
- AC power lead
- Four 5 metre colour coded leads
- **PROFILE P3** handset connection cables
- Breakout box
- Carry case with strap

Key features include:

- Efficient storage of PROFILE P3 records
- Multiple search criteria for record retrieval
- Display and overlay (up to 9) Profile records for analysis
- Automated analysis function to determine if key parameters are outside preset tolerances
- Export records in CSV format for trending in graph format
- Export of data to create graphs in other spreadsheet programmes
- View AC data during trip and close operations

Standard Trip Coil Profile

A - B. Plunger strikes latch
C. Plunger strikes buffer
D. Main contacts open
E. Auxiliary contacts open
F. Trip coil de-energised

SQL DATABASE

PROFILE P3

PC

AC WAVEFORM

OVERLAY OF 1ST & 2ND TRIP

AC WAVEFORM

LOCAL EMBEDDED DATABASE