

SCOPE

SCOT MXP+ Circuit Breaker Time Interval Meter



Forget about the high tension...
SCOT measures CB timings in live EHV switchyards,
quickly & reliably

The Product

SCOPE's iconic SCOT series Circuit breaker time interval meter is in all new super light avatars, based on cutting edge micro-controller & embedded technology. SCOT incorporates some state of the art hardware & smart software features making it a must have tool for testing & maintenance engineers. It is compact, lightweight and reliable instrument used for measurement of operation times of all types of HV and EHV circuit breakers under live switchyard conditions.

SCOT MXP+ measures, displays and prints CLOSE, OPEN and CLOSE-OPEN time of 2 Main + 2 PIR contacts per pole, 3 poles simultaneously, ensuring measurement of 6 Main + 6 PIR contacts simultaneously. Ideally suitable for CBs having PIR contacts & multiple breaks per pole.

The Measurement

Proper functioning of CBs is of vital importance to ensure safety & availability of power system. Circuit breakers are expected to operate reliably & within specified time limits in order to isolate the faults & save expensive equipments from excess stress or damage. In order to be assured of such consistent performance of CBs, periodical timing measurements are carried out. SCOT is being used as the most trusted tool for these measurements.

SCOT is connected to give command to Circuit breaker for CLOSE, OPEN or CLOSE-OPEN operation and timings in milliseconds are directly obtained for Main as well as PIR contacts. The non-simultaneity of operation of poles as well as contacts can be verified.



SCOT MXP+

- ① Contact Timing Measurement Channels
- ② Fuse for Coil Supply
- ③ LCD Display
- ④ Breaker Control Section
- ⑤ Master Earthing Connection
- ⑥ Power ON-OFF Switch
- ⑦ Battery Charging Input
- ⑧ Fuse for Battery Protection
- ⑨ USB Port
- ⑩ Thermal Printer
- ⑪ Keypad

SCOT MXP+
SCOPE T&M Pvt. Ltd.
MUNE, INDIA-111 106

LOCATION : Pune
PRK. TYPE : SFN
PRK. LV. : Bay 3
SR. No. : 1234
NAME : COI
SAMP. EPD. : 10 kg.
PIR : 0156611
DATE : 04/5/14
TIME : 16:26:14

JFEWT: 04 JFEN

R-PH(mS)
M1= 22.8 M2= 22.9

Y-PH(mS)
M1= 24.4 M2= 24.4

B-PH(mS)
M1= 22.8 M2= 22.9



Special Features

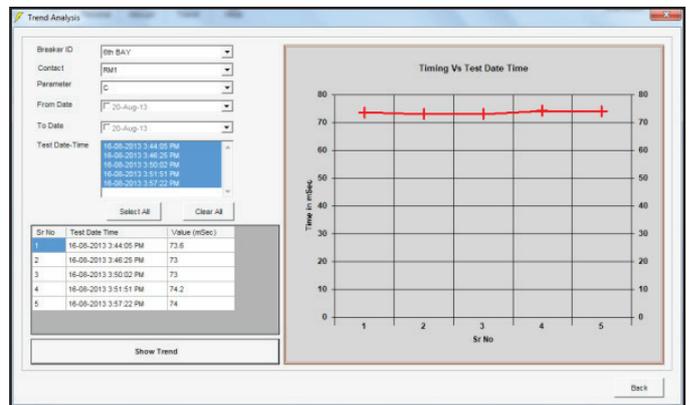
- A radically new design makes SCOT the lightest available CB Time Interval Meter
- High sampling frequency of up-to 10 KHz offers high timing resolution of 0.1ms
- Mains as well as rechargeable Li-ion battery operated. In built battery monitor and cut off circuit for protection against battery deep discharge
- In built real time clock, memory and printer, Test time stamping on each record enables time references for future use
- PC Downloading & Analysis including 'Trend Analysis' possible with "CData SCOT+" Software supplied with kit
- Create CB Identification data (CB Library) on PC and upload to instrument. Save the test results in respective CB folder in kit. Download the same to PC in similar folder structure
- Instrument debug options like contact status check, command check, memory check, printer check, PC downloading check are provided
- Simple operation. Tests can be conducted even by technicians
- Supplied with rugged test lead set, suitable for testing EHV CBs
- Enclosed in ultra-rugged IP67 class hard molded case

CData SCOT: PC Downloading & Analysis Software

This windows based software has facility of creating DUT(CB) ID details which can be uploaded to instrument & downloading of test results from instrument to PC. Instrument is having a plug-n-play facility using USB cable. So once the software is installed on PC, instrument can be directly connected without wasting any time.

Trend Analysis for trending of historical data of a specific DUT over specified period and report generation for the tests taken is also possible. Organizing records, printing of report on any external printer (not part of supply) is also possible. This report can be exported to PDF or Microsoft Excel. You can add operator name and any additional notes if you want to add. Overall, software facilitates effective data management makes condition monitoring of CBs quite easy.

Test Date Time	Operation	Sampling Frequency	RMI	SP1	RMI	SP2	SP1	SP1	SP2	SP1	SP2
16-08-2013 3:44:05 PM	C	5 KC	73.0 mSec	Disable	73.0 mSec						
16-08-2013 3:46:25 PM	C-O	5 KC	45.0 mSec	Disable	45.0 mSec						
16-08-2013 3:50:02 PM	C	2 KC	73.0 mSec	Disable	73.0 mSec						
16-08-2013 3:51:51 PM	O	10 KC	36.9 mSec	Disable	36.9 mSec						
16-08-2013 3:57:22 PM	O	10 KC	74.2 mSec	Disable	74.2 mSec						



Benefits

- Quick & simple tool to assess the operational healthiness of circuit breakers
- Understand the non-simultaneity of pole & break operation
- Battery operation enables measurement in absence of AC supply, especially useful on under-construction sites
- Proven reliability in EHV switchyard environment. Thousands of units in use worldwide
- Suits equally to Utilities, OEMs, Test Labs as well as Testing & Commissioning companies

Specifications

Parameter	SCOT MXP+
Contact Timing Channels	12 (Up-to 2 Main + 2 PIR contacts per pole, 3 poles simultaneously, i.e. 6 Main + 6 PIR contacts simultaneously)
Sampling Speed	10kHz, 5kHz, 2kHz, 1kHz & 100Hz, Selectable
Timing Range	1s, 2s, 5s, 10s & 100s respectively for above sampling speeds
Resolution	0.1ms, 0.2msec, 0.5msec, 1ms & 10 ms respectively for above sampling speeds
Accuracy	Value $\pm 0.05\% \pm 1$ Digit
Breaker Control	Two solid state contacts rated at 300V, 35A AC/DC for breaker operation
Trigger Options	Close (C), Open (O), Close-Open (CO), O - 0.3s - CO - 3min - CO (available only on request)
Display	4 Line X 20 character backlit LCD
Printer	In-built, 58mm thermal printer
Keypad	5 keys
Memory	1MB, 100 records, Internal
Inbuilt Battery	Li-Ion, 11.1V, 4Ah
Power	Input to Battery Charger - 90 to 275V AC, 50/60Hz $\pm 10\%$;100 to 300V DC Charger output - 13.5V DC, 1000mA Max.; Instrument consumption - 15VA
Communication Port	USB
Software	CData SCOT+ : For PC Downloading & Analysis, Windows based
Environment	0 to 50°C, Upto 95%RH (Non condensing)
Dimensions	300 x 250 x 200 mm
Instrument Weight	5kg
Standard Accessories	Timing test Cables, High flexibility, Wear resistant, 15m - 1Set, Breaker control cable, 7m - 1No, Master earthing cable, 7m - 1 No, Battery charger - 1No, USB communication cable - 1No, Spare fuses - 1Set, CData SCOT - 1No, Soft carrying case for instrument and test lead set - 1No, Instruction manual - 1No, Factory test & calibration report - 1No, Thermal printer paper roll - 1No.

Ordering Code

Example: SCOT MXP+

F 1 F F F N F F R F I N #
SCOT MXP+ F F F F F F F F F F

F	Reserved	Customised
N	None	None* Z
1	With Software*	Universal Plug N
F	Reserved	Indian Plug U
F	Reserved	Reserved I
F	Reserved	Customised Length F
N	None*	of Test Lead Set Z
Z	Customised	15m Test Lead Set* R
F	Reserved	7m Test Lead Set S
		Reserved F

Note : * Standard accessory / feature

SCOT MXP+ (Ordering Code : F1FFNFRRFIN) means Circuit breaker time interval meter, 15m Test Lead Set, Indian Plug

Corporate Office

402, Aarus Chamber Annex - A
S.S. Amrutwar Marg, Worli,
Mumbai 400 013, INDIA
Phone : +91 22 4344 4244
FAX : +91 22 4344 4242
e-mail : marketing@scopetnm.com

Works & After Sales

EL 31/11, 'J' BLOCK,
MIDC Bhosari,
Pune 411 026, INDIA
Phone : +91 20 6733 3999
FAX : +91 20 6733 3900
e-mail : works@scopetnm.com

Simple solutions for difficult measurements®

SCOPE
T&M Pvt Ltd