STX40-P
High-end portable standalone cable fault location unit

Megger

- **Field-ready design, IP 43**

- **Software-based user interface with single "turn & click" rotary knob control**

- **Fully automatic operation of all modes via motorised switching**

- **Physically and functionally integrated Radar/TDR (Teleflex® RDR)**

- **Prelocation methods: ARM, ICE and DECAY**

- **Best Picture Multishot technology: 32 HV fault traces per ARM shot and instant display of the best trace**

- **DC test and burning up to 40 kV, surging (thumping) up to 32 kV, delivers 2,000 J**

- **Safety interlocks for monitoring of station earth and touch potentials (F-U), as well as earth connections (F-Ohm)**

DESCRIPTION

With its single rotary knob or touch screen control, and fully automated motorised HV switches the STX 40 is the most convenient and most powerful portable fault location unit in the market. It is ideally suited for all essential fault locating tasks, namely analysing, prelocating and pinpointing of faults on low voltage and medium voltage XLPE or EPR insulated cables. With its 40 kV DC source and a potent high frequency burner it is also highly effective on PILC cables.

The key features at a glance

- Outdoor unit with exceptional all-terrain mobility: Lightweight, rainproof, optimised center of gravity, large pneumatic tires, adjustable handlebar, IP 43 rating, 119 kg (262 lbs)

- Bright, sunlight readable 10.1" color display

- Automatic operating mode selection and execution via software-controlled HV motor switches

- To identify different types of faults: Insulation test up to 20 kV and 650 MΩ

- DC test (DC hipot) up to 40 kV, with automatic voltage breakdown detection and ramp function

- Built-in and functionally integrated Radar/TDR as well as ARM, ICE and DECAY prelocation methods

- Surging (Thumping) at 8/16/32 kV with 2,000 J Optionally available: additional 4 kV stage with 1,100 J

- High frequency burn mode with up to 40 kV DC and up to 850 mA, for improved fault conversion performance over conventional burn-down units with burn transformer

Extensive selection of fault finding technologies:
In addition to Radar, STX 40 comes with a comprehensive set of HV prelocation methods to find the distance to the fault.

- **Inductive ARM Best Picture Multishot:** The Arc Reflection Method overlays and compares a low voltage reference trace with 32 high voltage fault traces [Multishot]. Those 32 consecutive measurements are analysed, and the best one is automatically displayed to the operator [Best Picture]. An inductive filter provides superior properties for arc ignition and arc stabilisation compared to less effective resistive filters.

- **ICE/Surge Pulse:** After the fault has been ignited, the Impulse Current Decoupling method measures the current component of the initiated travelling wave. ICE is an alternative to ARM and suitable for longcables, PILC cables, for wet faults and for faults which are not chargeable.

- **DECAY:** After the fault has been ignited, the Voltage Decoupling method measures the voltage component of the initiated travellingwave. Decay is an alternative to ARM and ICE, and suitable for long cables, HV transmission cables, faults which are chargeable as well as high resistance faults with a veryhigh breakdown voltage.

- **IFL:** Mode for Intermittent Fault Location. By repeatedly capturing radar traces and visualising the area between curves, IFL is able to find unsteady, erratic faults which may have quickly changing characteristics. This is beneficial when working on street lighting installations or similar LV cables.

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HIGH VOLTAGE PART
TECHNICAL DATA

Protection class	IP 43, weather-resistant and rainproof
Weight	119 kg (262 lbs) standard version
	124 kg (273 lbs) extended version
Insulation test	Voltage ranges of 5/10/15/20 kV
	Measuring range of up to 650 MΩ
HV DC source	0 … 40 kV DC test (DC hipot)
	50 mA nominal continuous current at 40 kV
Breakdown detection	0 … 40 kV
Burning	High frequency burner
	Voltage ranges of 40/20/10/5 kV
	Max burn currents of 100/200/400/850 mA
Standard surge levels	0 … 8 / 0 … 16 / 0 … 32 kV
	2,000 / 2,000 / 2,000 J
Additional surge levels	Optionally 4 kV with 1,100 J
Surge rate	Adjustable 3 … 10 sec, and single shot;
	3 seconds at full output of 32 kV
Sheath testing	Voltage ranges of 3/5/10/20 kV DC
Sheath fault pinpointing	Pulsed DC from HV DC source for
	voltage gradient method (step voltage method)
	Pulse sequences of 0.5:1, 1:3, 1:4, 1:6
Built-in prelocation	32 kV inductive ARM Best Picture Multishot
	32 kV ICE
	40 kV DECAY
	Mode for locating intermittent faults (IFL)
Operating temperature	-20°C ... +55°C (-4°F ... +131°F)
Storage temperature	-40°C ... +70°C (-40°F ... +158°F)
Mains input supply	2.5 kW wide range power supply
	110 ... 230 V AC, 50/60 Hz
	Limited to 1.6 kW at 120 V AC (as per ANSI NEMA 5)
Dimensions (L x W x H)	710 x 740 x 1,080 mm
	(27.9 x 29.1 x 42.5 in.)

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RADAR AND CONTROL UNIT

TECHNICAL DATA

TDR setup	Physically and functionally integrated
Display	Industrial grade colour TFT panel
LCD size	10.1"
Aspect ratio	16:10
Resolution	1,280 x 800 (WXGA)
Backlight	LED
Luminance	1000 cd/m² directly bonded Anti-glare touchscreen
Pulse generation	Bipolar
Pulse amplitude	±100 V adjustable
Pulse width	20 ns … 10 µs
Pulse power	Unrestricted continuous operation and unrestricted fast pulse repetition with full power pulse of 10 µs at ±100 V
Measuring range X_R	20 m … 320 km at VOP = 80 m/µs
Resolution	0.1 m at VOP = 80 m/µs,
Accuracy	0.1%
Timebase Accuracy	Better than 50 ppm
Dynamic range	115 dB
ProRange	Yes, +40 dB (distance-dependent de-attenuation)
Data rate	533 MHz
Velocity of propagation	10 … 149.9 m/µs VOP expressed in m/µs or ft/µs or nominal
Output impedance	50 Ω, no dedicated internal compensation necessary
ARM® trigger	ΔU or L-H trigger technology with automatic adjustment
Multishot support	Yes, **32** HV fault traces, Best Picture® algorithm

BENEFITS AND FEATURES AT A GLANCE

- Large 10.1" sunlight readable touchscreen colour display
- Very easy to operate because of its intuitive and straightforward piechart interface
- Automatic smart measurement mode with no user intervention needed, but full expert access to all settings whenever desired
- ARM® Multishot technology: 32 HV fault traces are captured with a single arc reflection shot
- ARM® Best Picture technology: Intelligent algorithm analyses all 32 Multishot traces and automatically displays the best trace
- Exponential distance-dependent de-attenuation of +40 dB for improved measurement of far-away reflections
- Displays up to 6 traces simultaneously, ideal for phase comparison
- Automatic cable end recognition and flagging of fault position
- High quality measurement with very fast data rate of 533 MHz
- Dedicated internal output impedance compensation not required anymore thanks to sophisticated and advanced signal path design
- Automatic storage of all measurement data and large memory for storing > 100,000 radar measurements
- USB port for export/import data transfer and protocol printing via Reporting Edition software package
- Many different language versions available

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ORDERING PROCESS

1. SPECIFICATION FOR PORTABLE UNIT – YOU MUST CHOOSE ONE!

STX40P-2000	Standard	8 / 16 / 32 kV with 2,000 / 2,000 / 2,000 J	1011497
STX40P-2000-4	Extended, with 4kV	4 / 8 / 16 / 32 kV with 1,100 / 2,000 / 2,000 / 2,000 J	1013011

2. MAINS INPUT – YOU MUST CHOOSE ONE!

EU	Europe	230 V AC, Schuko plug, 3 m	90028780
UK	United Kingdom	220 V AC, Type G plug, 3 m	90034588
US	North America	120 V AC, ANSI NEMA 5 plug, 2.5 m	90034589
O	Do it yourself	Open end, no plug attached, 3 m	90034997

3. CONNECTION LEADS – YOU MUST CHOOSE ONE!

Standard set (T4)		**1014285**
HV connection	FKT STX40 HV-T4-25-man, HV cable drum T4, 25 m	2014553
Earthing and F-Ohm safety interlock	FKT STX40 PE-25-16-man, Earthing cable drum, 25 m, 16 mm²	2013151
	EKM-5 extension lead between STX and PE cable drum	2013149
F-U safety interlock	F-U lead, 5 m	820003013
	Reference earth metal stake	892479915
	Nylon hammer	892517507
Trolley set (fully assembled, T4) ①		**1014286**
Cable drum trolley	TLY STX40 HV-T4-PE-25-man, rugged steel frame on pneumatic tyres; with 1x T4 HV cable drum, 1x Earthing cable drum and 1x Earth extension	2014554
F-U safety interlock	F-U lead, 5 m	820003013
	Reference earth metal stake	892479915
	Nylon hammer	892517507
Valley Forge (only for USMCA territory) This choice does not include cable drums from Germany. You must order T1 cable reels and T1 accessories directly from Valley Forge!		**1014310**
STX T1 adaption	HV adapter cable for T1 cable reels Valley Forge and HDW, 4 m	2013423
Earthing and safety	EKM-5 jumper between STX and vehicle chassis	2013149
F-U safety interlock	F-U lead, 5 m	820003013
	Reference earth metal stake	892479915
	Nylon hammer	892517507

4. EXTERNAL SAFETY DEVICE – YOU MUST CHOOSE YES OR NO

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External Safety Device for portable standalone unit STX40-P ②	relevant for CENELEC countries in accordance with **EN 50191:2010**, VDE 0104:2011 and DGUV 203-034 (BGI 891)	2012574

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5. CONNECTION ACCESSORIES – STANDARD ISSUE FROM MEGGER GERMANY		
DE / EN / INT (International standard)	For HV: Crocodile clamp HKZ-T4, T4, red, male, MC10	2013146
	For HV Return: OE Adapter, T4, male, black, MC10	2014552

6. OPTIONS		
Lifting traverse ①	Heavy-duty rig for lifting the STX 40-P by crane or hoist	90034843
Loading rails ②	Pair of basic rails for loading and unloading the STX 40-P	90034844
Vehicle transport fixture ③	Device to safely fixate the STX 40-P in place for transportation by vehicle, comes with floor-mounted frame, wooden spacers and ratchet straps	2013281
Protective tarpaulin ④	Resilient tarp to cover the STX 40-P from conditions which exceed IP43, e.g. exposed transport on the back of an open truck going through heavy rain at freeway speeds	2013420
Protective top ⑤	Additional protective top to prevent damage, e.g. from falling objects, when the STX 40-P is stored or transported in working vehicles, trailers, containers	2013393
Vehicle mount for cable drum trolley	Optional vehicle mount to fixate the Trolley (1014286) in place	2013364
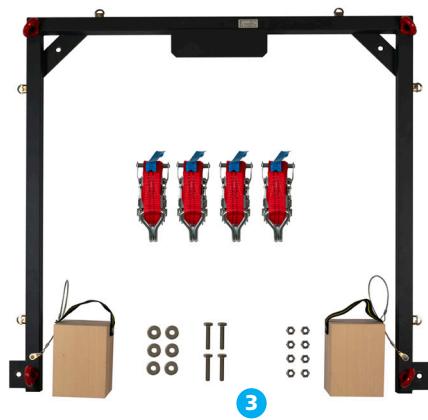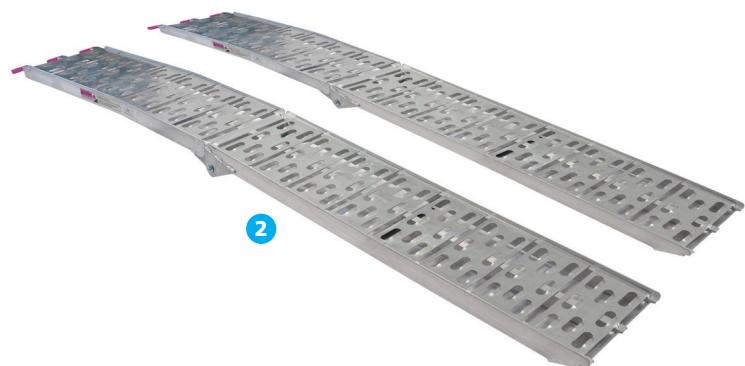
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PINPOINTING DEVICE DIGIPHONE+2

digiPHONE+2 set

surge wave receiver for magnetic-acousting pinpointing of main insulation cable faults

digiPHONE+2 NT set

for magnetic-acoustic pinpointing of main insulation cable faults, and location of cable sheath faults using the voltage gradient method (step voltage method)

digiPHONE+2 NTRX set

for magnetic-acoustic pinpointing of main insulation cable faults, and location of cable sheath faults using the voltage gradient method (step voltage method), as well as line location and cable route tracing via Ferrolux audio frequency system

Note: Audio frequency generator not included, needs to be ordered separately, e.g. FLG12 (1012522), or FLG50 (1012965)

ACCESSORIES		
Description		**Order No.**
digiPHONE+2 set	Includes: digiPHONE+2 display unit, digiPHONE+2 sensor unit, connection cable, telescopic handle, measuring tip 18 mm, measuring tip 75 mm, tripod, base plate, base plate with bitumen, sensor cable, stereo headphones, 6 pcs. battery 1.5 V, transport bag, insert for transport bag	1013124
digiPHONE+2 NT set	digiPHONE+2 plus additional: 2 pcs. earth rods, 2 pcs. contact sponges for earth rods, additional bag for earth rods, 2 m test lead (red with angled plug), 2 m test lead (black with angled plug), headphones Sennheiser HD 450BT Black (Bluetooth® & ANC)	1013126
digiPHONE+2 NTRX set	digiPHONE+2 NT set plus additional: sensor unit Ferrolux® IFS, Ferrolux® IFS connection cable for display unit	1013168

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