Surgeflex 40
Portable, multifunctional cable test and fault location system

- **Easy to operate using the selector knob on the Teleflex SX or the touchscreen**
- **High surge energy up to 2,000 joules**
- **Voltage source with 40 kV**
- **All HV location methods integrated: ARM, ICE, DECAY, ICE Plus**
- **Sheath fault location up to 10 kV**
- **Maximum safety thanks to external safety equipment and integrated isolating transformer**
- **Reflectometer can be used separately**

康高特-MEGGER SFX40电缆故障定位系统DESCRIPTION

Thanks to its 40 kV voltage source, the portable SFX 40 is ideally suited for prelocating and pinpointing faults, cable testing in low and medium voltage networks and burning.

The system is easy to control using the selector knob on the Teleflex SX, the colour display's touchscreen or by using the integrated control panel on the SPG-40.

The key features at a glance

- Reflectometer with a 10.4" sunlight compatible colour display
- Complete control of the system using intuitive menus and touchscreen
- Supports all existing prelocating methods
- Insulation test up to 5 kV
- DC testing up to 40 kV, with ramp function, automatic switch-off in case of breakdown and display of breakdown voltage
- Sheath fault location up to 10 kV with step voltage

Prelocating methods

The Surgeflex 40 makes use of four different prelocating methods:

- **ARM:** The Arc Reflection Method compares the reference and fault images with the high voltage discharge from the fault. The results are evaluated, and 15 comparative measurements for each surge (ARMSlide) are displayed on the reflectometer.
- **ICE:** Impulse Current Equipment picks up current from the travelling wave of a high-voltage discharge in the fault
- **ICE Plus:** This addition to ICE evaluates the fundamental frequency of a discharge, making prelocation more reliable (even in branched networks).
- **DECAY:** Makes use of voltage decoupling from the travelling wave of a high-voltage discharge in the fault. This method is suitable for long cables and faults that ignite only at very high voltages.
- **IFL:** Intermittent Fault Localisation for easily localising intermittent faults, such as those that often occur in street lighting networks.

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SPG-40 TECHNICAL DATA

SPG-40

Display	1/4 VGA
Insulation test	Voltages of 1,000 V and 5,000 V Ranges 1 kΩ, 1 MΩ, 100 MΩ
DC testing	0 – 40 kV DC
Leakage current	0 – 1/10/100 mA automatic measuring area setting
Breakdown detection	0 – 40 kV
Burning	0 – 8 kV, 750 mA, 0 – 20 kV, 0.1 A
Upper surge voltages	0 – 12.5 / 25 kV or 0 – 16 / 32 kV
Lower surge voltages	0 – 4 kV; 0 – 8 kV
(optional)	0 – 3 kV; 0 – 6 kV
Surge energy	1,000 J in each range (optional 2,000 J)
Surge sequence	3 – 10 secs and single impulse
Sheath fault location	0 – 5 kV and 0 – 10 kV
Cycle intervals	DC; 1:3 ; 1:4 ; 1:6 (sec.)
HV prelocating methods	ARM, ICE Plus, Decay
(with optional Teleflex)	
Operating temperature	- 10 °C – + 50 °C
Power supply	230 V; 50 / 60 Hz
Power consumption	1.7 kVA max.
Dimensions (L x W x H)	545 x 430 x 1,050 mm
Weight	116 kg + 20 kg per 2,000 J upgrade (for high or low voltage range) + 40 kg (high and low voltage range)

Transport frame with wheels

Dimensions (L x W x H)	approx. 670 x 820 x 1,360 mm
Weight	approx. 25 kg
Order number	2006522

FEATURES

- Insulation test up to 5,000 V
- DC testing up to 40 kV, with ramp function, automatic switch-off in case of breakdown and display of breakdown voltage
- Burning with adjustable burning current up to 750 mA
- Sheath fault location with step voltage
- Flexible adjustable surge voltage levels for the middle and low voltage levels
- Comprehensive safety circuit for the monitoring of earthing (FOHM), step voltage (FU), emergency stop, excess temperature, etc.

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TELEFLEX SX TECHNICAL DATA

Teleflex SX

Distance range	20 m – 160 km at v/2 = 80 m/µs
Pulse width	20 ns – 10 µs
Pulse amplitude	10 – 50 V
Resolution	0.1 m at v/2 80 m/µs, 1.0 cm at v/2 < 40 m/µs
Sampling rate	Up to 400 MHz (real sampling rate)
Amplification	- 37 – + 37 db
De-attenuation	0 – + 22 dB for ProRange (adjustable from 0 to 100%)
Transit time setting v/2	10 – 149.9 m/µs, ft/µs or nvp
Dynamic response range	> 80 dB
Output impedance	50 Ω
Adjustment	8 Ω – 500 Ω, adjustable
ARM trigger	Automatic adjustment with ΔU trigger
Blind spot	No
Withstand voltage	< 400 V, operation only with separation filter
Display	10.4" colour TFT XGA 1,024 x 768, capacitive touchscreen, 600 cd/m²,
	LED backlight, dimmable
Memory	4 GB mSATA for program and data
Connections	Ethernet, USB, BNC, CAN (LON optional)
Protection class	IP 65 enclosed, IP 54 open
Supply	Battery operation, 110 – 240 V, 50/60 Hz, 30 VA, 10 V – 17 V DC, 3,8 A
Dimensions (W x H x D)	362 x 195 x 195 mm (option 19" plug-in, 6 HE)
Weight	10 kg
Operating temperature	- 10 °C to + 50 °C
Storage temperature	- 20 °C to + 60 °C

ALL THE BENEFITS AT A GLANCE

- Large 10.4" sunlight compatible colour display
- Very easy to operate using intuitive menus and touchscreen
- Supports all existing prelocating methods
- Fully-automatic display of cable ends and the fault position
- Battery-operated
- Top performance
- Compatible with all fault location systems

FUNCTIONS

- ARMslide technology with 15 measurements per ARM surge
- ProRange for optimised display of distant details
- Two-phase reflectometer with a display of up to 6 measurement curves
- Automatic cable end and fault detection
- High resolution with fast real sampling rate of 400 MHz
- Internal compensation for excellent display at close range
- 2 GB memory for automatically storing all measurements
- Can save over 1,000 measurements and can be extended using the export/import function
- USB port for transferring data and printing
- SPG 40 operation
- Automatic storage of all measurement data
- Test reports in PDF format
- Many languages available

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SPECIAL ACCESSORIES

digiPhone+ NT set

digiPHONE+ impulse wave receiver for acoustic and electromagnetic fault location

ESG NT: Digital earth leakage detector for the precise location of sheath faults

HSK 27B (for standard version): 25 m HV cable reel, crank handle, connection: 10 mm MC sockets incl. HV terminals and SE adaptors, approx. 17 kg

KTH H-SPG40-25 (for US version): 25 m HV cable reel, crank handle, connection: 10 mm MC sockets, optional: HV terminals and SE hook terminal, approx. 16 kg

External safety equipment with emergency stop and signal lamps, key switch as well as a 5 m connection line

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ORDERING INFORMATION

Parameter		SFX40...	-W	-X	-Y	-Z
Portable system with trolley 32 kV		SFX40-32P				
Portable system with trolley 25 kV		SFX40-25P				
HV surge level selection	12.5 / 25 kV or 16 / 32 kV; 1,000 J		-1			
	12.5 / 25 kV or 16 / 32 kV; 2,000 J (only with G)		-2			
LV surge level selection	4 kV; 1,000 J			-A		
	8 kV; 1,000 J			-B		
	4 / 8 kV; 2,000 J			-C		
	3 kV; 1,000 J			-D		
	6 kV; 1,000 J			-E		
	3 / 6 kV; 2,000 J			-F		
	No LV			-G		
	3 kV; 2,000 J			-H		
	6 kV; 2,000 J			-I		
	4 kV; 2,000 J			-J		
	8 kV; 2,000 J			-K		
	4 / 8 kV; 1,000 J			-L		
	3 / 6 kV; 1,000 J			-M		
TDR and control selection	Complete control using Teleflex SX				-S	
	Teleflex T 3060				-6	
	No reflectometer				-N	
	No reflectometer – T 3090 set-up				-9	
Versions	Standard: with MC 10 and 230 V					-N
	US version: MC 14 and US terminals, 120 V					-U
Special accessories						
digiPHONE+						1003319-S
ESG NT						1004629-S
digiPHONE+ NT Set						1003317-S
Safety equipment						1006953
HSK 27B						820012706
KTH H-SPG40-25 (for US version)						820010147

IMPORTANT INFORMATION:

We define a portable system to be on a trolley with all options within the equipment housing. Selecting all the red highlighted options requires an additional external housing and adds considerable weight to the overall system, which is then no longer portable. For these cases, we recommend choosing an SFX 40-M vehicle installation.

Portable systems with N version included:

- 25 m HV test lead on cable drum with MC 10-socket at the ends
- 5 m earth line
- 2.5 m mains supply line
- Isolating transformer
- Large connection clamps

Portable systems with U version included:

- 25 m HV test lead on cable reel with MC 14-socket on HV wire and hook terminal on shield wire
- 25 m earth cable in cable reel
- 2.5 m mains supply line
- HV shield and earth conductor are fitted with terminals for insulating rods