

The Semi-Automatic Surgeflex Series Portable, modular fault location systems for low and medium-voltage cables



- High performance fault location systems
- 0.1% accuracy
- Detachable, battery-operated TDR
- Sophisticated ARM[®]-Multishot technology
- HV and LV prelocation in one modular unit
- High surge energy
- Multi-stage surge capacitors

DESCRIPTION

The semi-automatic Surgeflex (SFX) series consists of portable fault location systems designed for various applications: cable testing, prelocation, fault conditioning, pinpointing, and sheath fault location.

The systems include **two modules**:

- an HV surge unit with DC testing/burning capabilities, plus selectable voltage levels up to 32 kV
- a high-performance time domain reflectometer (TDR Teleflex SX) with up to 400 MHz sampling rate

Using innovative time domain reflectometry techniques, the SFX systems reduce troubleshooting time, improve work efficiency, and guarantee quick and reliable fault location even on more challenging faults.

Operation

The HV surge unit is operated directly from its front panel. The Teleflex SX is operated by either the touchscreen or the JogDial, and has two operation modes: easyGO and Expert. The **easyGO** mode is the perfect choice for inexperienced users. It suggests the next logical operating step and sets all important system parameters.

The **Expert** mode is for experienced operators. It provides free access to all parameters and enables comprehensive fault location even under difficult conditions.

The SFX systems feature various **prelocation methods** such as ARM (Arc Reflection Method), ICE (Impulse Current Equipment), Decay, IFL (Intermittent Fault Location), Voltage Gradient Method and burning.

In connection with an magnetic-acoustic fault pinpointer or an earth fault locator (digiPHONE+ or ESG NT recommended), **pinpointing** becomes quick and easy.

The SFX systems come on a trolley with big wheels. This provides comfortable transportation and makes them suitable for field use. All HV and LV connection **leads are included in the scope of delivery.**

TECHNICAL DATA

- **DC Testing up to 32 kV**
- **Prelocation:**
 - TDR
 - ARM[®] Multishot with 15 measurements per ARM shot
 - Decay (Voltage Decoupling)
 - ICE (Current decoupling)
 - IFL (Intermittent Fault Location)
- **Fault conditioning (burning) up to 32 kV**
- **Pinpointing:**
 - Magnetic-acoustic
 - Sheath fault location
 - Audio frequency methods (optional)
- **Tracing (optional)**

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Megger[®]

TECHNICAL DATA

SURGE WAVE GENERATOR / THUMPER

All units have continuously adjustable voltage.

Product*	8 kV	12 kV	16 kV	32 kV	
	SPG 8-1000	SPG 12-1100	SPG 16-2000	SPG 32-1750	SPG 32-1750 C4
Surge steps / surge energy in every step	3 / 1000J	3 / 1100J	3 / 2000J	3 / 1750J	1 / 1200J (4 kV step) 3 / 1750J
Surge voltage (kV)	0 ... 2 0 ... 4 0 ... 8	0 ... 3 0 ... 6 0 ... 12	0 ... 4 0 ... 8 0 ... 16	0 ... 8 0 ... 16 0 ... 32	0 ... 4 0 ... 8 0 ... 16 0 ... 32
Surge rate (sec)	single pulse, 2 ... 6	single pulse, 3 ... 10			
DC-test (kV) / I _{max} (mA)	0 ... 2 / 1400 0 ... 4 / 700 0 ... 8 / 350	0 ... 17 / 1.0	0 ... 24 / 1.4	0 ... 32 / 1.8	
Burning voltage (kV) / I _{max} (mA)	0 ... 2 / 1400 0 ... 4 / 700 0 ... 8 / 350	0 ... 3 / 200 0 ... 6 / 100 0 ... 12 / 50	0 ... 4 / 200 0 ... 8 / 100 0 ... 16 / 50	0 ... 8 / 200 0 ... 16 / 100 0 ... 32 / 50	
Sheath fault location (kV) / I _{max} (mA)	no	0 ... 5 / 120		0 ... 5 / 160	
Pulse ratio (sec)	no	1:3 – 1:10			
Prelocation (kV)	ARM & ICE: 0 ... 2 / 4 / 8	ARM & ICE: 0 ... 3 / 6 / 12 Decay: 0 ... 17	ARM & ICE: 0 ... 4 / 8 / 16 Decay: 0 ... 24	ARM & ICE: 0 ... 8 / 16 / 32 Decay: 0 ... 32	ARM & ICE: 0 ... 4 / 8 / 16 / 32 Decay: 0 ... 32
Leakage current display (mA) in DC-test	no	0 ... 2 0 ... 0,2			
Display	analogue				
Power input (max.)	2,3 kVA	2 kVA			
Dimensions W x D x H (mm)	790 x 770 x 1185	790 x 715 x 1160			602 x 690 x 1180
Weight (kg)	164	203			212
HV test lead	7 m				
Ground lead	5 m				
Mains lead	2.5 m				
Operating temperature	-10 °C ... +50 °C				
Storage temperature	-20 °C ... +60 °C				
IP class	IP20				
Mains supply	230 V; 50 / 60 Hz (110 V optional – StepUp Trafo)				

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Megger[®]

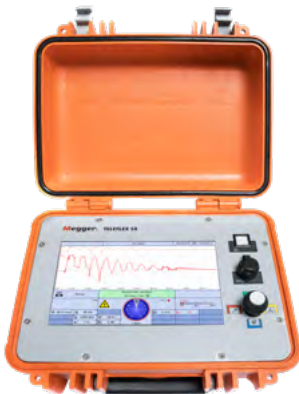
TECHNICAL DATA*

Teleflex SX-1

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/m ² direct bonded
	Anti-glare capacitive touchscreen
Measuring range	20 m ... 160 km at VOP = 80 m/μs
Pulse width	20 ns ... 10 μs
Pulse amplitude	10 ... 50 V
Resolution	0.1 m at VOP = 80 m/μs
Accuracy	0.1 %
Timebase Accuracy	100 ppm
Sampling rate	true 400 MHz
Dynamic range	96 dB, with adjustable ProRange (Distance-dependent De-attenuation)
Velocity of propagation	10 ... 149.9 m/μs (or ft/μs or nvp)
Output impedance	50 Ω
	10 Ω ... 500 Ω, adjustable
ARM [®] trigger	ΔU trigger technology with automatic adjustment
Proof voltage	< 400 V, only with separation filter
Memory	4 GB for program and data
Connections	USB, BNC, CAN
Protection class	IP 65 enclosed, IP 54 open
Battery	12 V Li-Ion rechargeable battery
	Overload protection
	Deep Discharge protection
	Smart charger 110 ... 240 V, 50/60 Hz
	6 hrs of operating time on full charge
	4 hrs recharge time
Dimensions (W x H x D)	362 x 195 x 195 mm (14.2 in. x 7.6 in. x 12 in.)
Weight	10 kg (17.1 lbs)
Operating temperature	-10 °C ... +50 °C (14 °F ... +122 °F)
Storage temperature	-20 °C ... +60 °C (-4 °F ... +140 °F)



SFX 8-1000



Teleflex SX-1



SFX 32

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ORDERING INFORMATION

Product	Order no.
Surgeflex 8-1000 Surge Unit SPG 8, 2/4/8 kV 1000 J incl. set of cables, trolley, ARM Unit 8 kV, TFX SX-1, separation transformer 2 kVA	SFX8-1000-P-SX-N
Surgeflex 12-1100 Surge Unit SPG 12, 3/6/12 kV, 1100 J with ARM & ICE 12 kV, set of cables, trolley, separation transformer 2000 VA, TFX SX-1	SFX12-1100-P-SX-N
Surgeflex 16-2000 Surge Unit SPG 16, 4/8/16 kV, 2000 J with ARM & ICE 16 kV, set of cables, trolley, separation transformer 2000 VA, TFX SX-1	SFX16-2000-P-SX-N
Surgeflex 32-1750 Surge Unit SPG 32, 8/16/32 kV, 1750 J with ARM & ICE 32 kV, set of cables, trolley, separation transformer 2000 VA, TFX SX	SFX32-1750-P-SX-N
Surgeflex 32-1750 C4 Surge Unit SPG 32, 4/8/16/32 kV, 1750 J with ARM & ICE 32 kV, set of cables, trolley, separation transformer 2000 VA, TFX SX	SFX32-4-1750-P-SX-N
digiPHONE+2 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 ennheiser 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
Ferrolux® FLG12, audio frequency generator 12 W	1012522
Ferrolux® FLG50, audio frequency generator 50 W	1012965
External safety equipment (Req. acc. to BGI 891 and DIN EN 50191/VDE0104)	128309600
Emergency off button with 4 m cable	810399



digiPHONE+2

surge wave receiver for magnetic-acoustic fault pinpointing (coincidence method / "thunder and lightning" method)



digiPHONE+2 NT Set

Digital earth fault detector for precise pinpointing of ground faults, sheath faults and secondary faults by voltage gradient method.



digiPHONE+2 NTRX Set

Line locator



External safety device

with emergency stop and signal lamps, lock-out key switch as well as a 5 m connection line.

* We reserve the right to make technical changes.

SALES OFFICE

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