



# **Portable reflectometer** for **fault location systems**

#### **Special features**

- ARMslide technology with 15 traces in one ARM shot
- ProRange for optimised display of distant details
- Support of all existing prelocation technologies
- Automatic adjustment and display of cable end and fault
- Compatible with all fault location systems

#### **Description**

With the new **Teleflex SX** the excellent properties of the successful Teleflex VX were transferred into a smaller, handy and portable design. The **Teleflex SX** is operated by the new touchscreen and the well-proven control knob functionality. The interface is shown on a sharp and very bright 10.4" display.

The **Teleflex SX** is specially adapted to the fast events during fault location in power cables. The easyGO operation is reduced to the important and essential steps and runs mostly fully automatically.

The new hardware with improved parameters as sampling frequency, pulse width and impulse amplitude guarantees lager ranges and highest resolution.

The touchscreen operation allows an even easier and faster handling, especially in the case of detail data entry as it is required for the reporting menue.

The  $\Delta U$  Trigger technology provides always perfect trigger in the correct moment.



**ARMslide** records 15 traces in one shot allowing a selection of the best trace, very helpful for wet and long, difficult cables.

The **ProRange** function allows a distance adapted gain, displaying far distant events with the same amplitude as from short distances.

Via CAN interface or ethernet, the **Teleflex SX** can be integrated into a system, which allows the remote control in offshore applications and ROV's.

By the CAN interface, the **Teleflex SX** becomes the combined control unit of the SPG 40 fault location system, which allows an easy and more intuitive operation of the complete fault location process.

The Linux®-based operating system stands out by highest reliability.



#### **Technical data**

Pulse width20 ns 10 μsPulse amplitude5 50 VResolution0,1 m @ v/2 80 m/μs, 1,0 cm @ v/2 < 40 m/μsSample rateUp to 400 MHzGain- 37 +37 dbDe-attenuation0 +22dB for ProRange (adjustable 0 100 %)Propagation velocity V/210 149,9 m/μs, ft/μs or nvpDynamic range> 80 dBOutput impedance50 ΩCompensation8 Ω 500 Ω, adjustableARM triggerAutomatic adaptation by ΔU Trigger.ARMslide15 measurements in one ARM shotDead zoneNoneVoltage proof input> 400 VDisplay10.4" color TFT XGA 1024x768, touchscreen, 600 cd/m2, CCFL-BacklightData storage4 GB mSATA for program and dataConnectorsEthernet, USB, BNC, CAN (LON optional)Protection classIP 65 closed, IP 54 open lidSupply110 240 V, 50/60 Hz, 30 VA, 12 V extDimensions (wxhxd)362 x 195 x 306 mm (option 19", 6 HU)Weight10 kgOperation temperature-10 °C +50 °C	Range	20 m 160 km @ v/2 = 80 m/μs
Resolution  O,1 m @ v/2 80 m/μs, 1,0 cm @ v/2 < 40 m/μs  Sample rate  Up to 400 MHz  Gain  -37 +37 db  De-attenuation  O +22dB for ProRange (adjustable 0 100 %)  Propagation velocity V/2  Dynamic range  > 80 dB  Output impedance  Compensation  8 Ω 500 Ω, adjustable  ARM trigger  Automatic adaptation by ΔU Trigger.  ARMslide  15 measurements in one ARM shot  Dead zone  None  Voltage proof input  > 400 V  Display  10.4" color TFT XGA 1024x768, touchscreen, 600 cd/m2, CCFL-Backlight  Data storage  4 GB mSATA for program and data  Ethernet, USB, BNC, CAN (LON optional)  Protection class  IP 65 closed, IP 54 open lid  Supply  110 240 V, 50/60 Hz, 30 VA, 12 V ext  Dimensions (wxhxd)  Weight  10 kg	Pulse width	20 ns 10 μs
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$\begin{array}{llllllllllllllllllllllllllllllllllll$	De-attenuation	
Output impedance $50 \Omega$ Compensation $8 \Omega \dots 500 \Omega$ , adjustable         ARM trigger       Automatic adaptation by $\Delta U$ Trigger.         ARMslide $15$ measurements in one ARM shot         Dead zone       None         Voltage proof input       > $400 \text{ V}$ Display $10.4$ " color TFT XGA $1024x768$ , touchscreen, $600 \text{ cd/m2}$ , CCFL-Backlight         Data storage $4 \text{ GB mSATA for program and data}$ Connectors       Ethernet, USB, BNC, CAN (LON optional)         Protection class       IP 65 closed, IP 54 open lid         Supply $110 \dots 240 \text{ V}$ , $50/60 \text{ Hz}$ , $30 \text{ VA}$ , $12 \text{ V ext}$ Dimensions (wxhxd) $362 \times 195 \times 306 \text{ mm}$ (option $19$ ", $6 \text{ HU}$ )         Weight $10 \text{ kg}$	Propagation velocity V/2	10 149,9 m/μs, ft/μs or nvp
Compensation       8 Ω 500 Ω, adjustable         ARM trigger       Automatic adaptation by ΔU Trigger.         ARMslide       15 measurements in one ARM shot         Dead zone       None         Voltage proof input       > 400 V         Display       10.4" color TFT XGA 1024x768, touchscreen, 600 cd/m2, CCFL-Backlight         Data storage       4 GB mSATA for program and data         Connectors       Ethernet, USB, BNC, CAN (LON optional)         Protection class       IP 65 closed, IP 54 open lid         Supply       110 240 V, 50/60 Hz, 30 VA, 12 V ext         Dimensions (wxhxd)       362 x 195 x 306 mm (option 19", 6 HU)         Weight       10 kg	Dynamic range	> 80 dB
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ARMslide 15 measurements in one ARM shot  Dead zone None  Voltage proof input > 400 V  Display 10.4" color TFT XGA 1024x768, touchscreen, 600 cd/m2, CCFL-Backlight  Data storage 4 GB mSATA for program and data  Ethernet, USB, BNC, CAN (LON optional)  Protection class IP 65 closed, IP 54 open lid  Supply 110 240 V, 50/60 Hz, 30 VA, 12 V ext  Dimensions (wxhxd) 362 x 195 x 306 mm (option 19", 6 HU)  Weight 10 kg	Compensation	8 $\Omega$ 500 $\Omega$ , adjustable
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3	Dimensions (wxhxd)	
Operation temperature -10 °C +50 °C	Weight	10 kg
	Operation temperature	-10 °C +50 °C
Storage temperature -20 °C +60 °C	Storage temperature	-20 °C +60 °C

#### All advantages at a glance

- » Large 10.4" sunlight-readable colour display
- Easiest operation by touchscreen and control knob
- » Support of all existing prelocation technologies
- » Automatic trace analysis (cable end and fault position indication)
- » Integrated battery
- » Top performance
- » Compatible with all fault location systems

#### **Functions**

- » ARMslide with 15 traces per ARM shot
- » ProRange technology
- » Dual phased reflectometer (TDR) with simultaneous colour display of up to 6 traces
- » Automatic adjustment and display of cable end and fault
- » High resolution by real sample rate of 400 MHz
- » Internal compensation for better details at short range
- » Large 2 GB memory for automatic storage of all data
- » USB interface for data transfer via memory stick and printer
- » Control of the SPG 40
- » Report generation in \*.pdf format

#### **Options**

The **Teleflex SX** is available as portable, battery operated stand-alone version but can also be integrated in any measuring system with 19" rack mounting.

#### Order information

### **Available May 2013**

## The Teleflex SX supports the following technologies:

- » Symmetrical / unsymmetrical reflection measurement
- » Difference measurement / comparison
- » Two-phase reflection measurement (TDR)
- » Optimised support of all Arc reflection methods by  $\Delta U$  Trigger
- » ICE (impulse current methods)
- » IFL (intermittent fault locating)
- » DECAY travelling wave method
- » ARM burning
- » Partial discharge pinpointing

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