

**Centrix 1- Phased**

Method	Basic Module	Options
<b>Insulation Testing</b>		
up to 500 / 1000 V	Connection sockets for external insulation tester (max. 1000 V)	Integrated automatic or manual insulation, resistance and capacitance measurement, trend measurement (DAR and PI) of resistance up to 10 min, automatic memory, comparison of measurements ph-ph and ph-N, measurement for cable capacitance R <sub>iso</sub> : 1 Ω ... 2 GΩ, R <sub>iso</sub> : 1 kΩ ... 2 GΩ C : 0.0 μF...19.9 μF
Resistance low voltage < 24 V		R: 0.1 Ω ... 1 kΩ
<b>HV Testing</b>		
DC Testing	0 ... 8 kV, I <sub>N</sub> 195 mA, I <sub>max</sub> 580 ±20 mA >8 ... 40 kV, I <sub>N</sub> 20 mA, I <sub>max</sub> 300 ±20 mA Automatic shut off at breakdown	>8 ... 80 kV, I <sub>N</sub> 13,5 mA, I <sub>max</sub> 180 ±20 mA
VLF Testing		VLF 0 ... 40 or 54 kV 0.1 Hz Cosine Rectangular Wave, max. cable capacity 5 μF@54 kV, 8 μF@36 kV, 21 μF@18 kV VLF sin 36 kV <sub>rms</sub> , max. cable capacity 5 μF @ 36 kV/0.01 Hz, 1 μF @ 36 kV/ 0.1 Hz
Diagnostic measurements		Diagnostic measurement of Partial Discharge with OWTS @ power frequency tan δ diagnostic measurement @ VLF sine
Sheath Testing	0 ... 5 kV / 0 ... 10 kV / 0 ... 15 kV 0 ... 20 kV, I <sub>max</sub> 580 ±20 mA	
<b>Prelocation</b>		
Impulse Reflection Measurement modes	Direct, Difference, Comparison, Average, Intermittent Fault location IFL, Simultaneous display of six phases or memory contents in selectable colours. Automatic adjustment of gain, range and pulse width. <b>ARM-Slide</b> technology	
Range:	20 m ... 1280 km @ v/2 = 80 m/μs	
Pulse width:	20 ns ... 10 μs	
Pulse amplitude:	30 ... 160 V	
Resolution:	0,1 m @ 80m/μs, 1,0 cm @ V/2 < 40 m/μs	
Sample Rate:	400 MHz	
Gain	-37 ... +37 db + 0 ... 22dB for <b>ProRange</b>	
Propagation Velocity V/2:	10 ... 149,9 m/μs, ft/μs oder nvp	
Dynamic range:	> 80 dB	
Output impedance:	50 Ω	
Display:	17" Colour SXGA, CCFL-Backlight, 300cd/m <sup>2</sup>	
Data Storage:	2 GB each for Program, Data and recovery	
Connections:	USB for Printer and Data, Ethernet, RS 232	
Storage and Protocolling	Automatic storage of all measurements. protocol printout, also as PDF file or for transfer to the incl. Winkis PC software.	
<b>HV prelocation Methods</b>		
ARM		0 ... 4 / 8 / 16 / 32 kV
ARM Plus		0 ... 4 / 8 / 16 / 32 kV
Decay		0 ... 40 / 80 kV (max. DC test voltage)
Decay Plus		0 ... 40 / 80 kV (max. DC test voltage)
ICE 1 ph		0 ... 4 / 8 / 16 / 32 kV
LV ARM Burning		0 ... 4 / 8 kV, I <sub>max</sub> 580 ±20 mA
ARM Burning		DC ignition up to 20 kV
Burning		
DC	0 ... 8 kV, I <sub>max</sub> 580 ±20 mA	>8 ... 40 kV, I <sub>N</sub> 20 mA, I <sub>max</sub> 300 ±20 mA >8 ... 80 kV, I <sub>N</sub> 13.5 mA, I <sub>max</sub> 180 ±20 mA 0 ... 20 kV, with automatic burn take-over to 600 V, 40A DC.
LV ARM-Burning		0 ... 4 / 8 kV, I <sub>max</sub> 580 ±20 mA
AC		AC Burning 0 ... 600V, max. 70 A <sub>rms</sub>



Method	Basic Module	Options
<b>Pinpointing</b>		
Acoustic Method with Surge Modules		0 ... 4 / 0 ... 8 kV, 1200 J 0 ... 4 / 0 ... 8 kV, 1750 J 0 ... 4 / 0 ... 8 kV, 2400 J
Surge rate	3 ... 30 s	0 ... 16 / 0 ... 32 kV, 1280 J 0 ... 16 / 0 ... 32 kV, 1750 J 0 ... 16 / 0 ... 32 kV, 2560 J 0 ... 2 kV, 1200 J
Surge pulse receiver		digiPHONE+
Sheath fault pinpointing with DC step voltage	0 ... 5 / 10 / 15 / 20 kV $I_{max}$ 580 mA $\pm$ 20 mA	ESG step voltage receiver for sheath fault pinpointing
Duty cycle	1:3 / 1:6 / 1:12	
<b>Audio Frequency</b>		
Output power		200 W
Frequencies		491 Hz, 982 Hz, 8.44 kHz also with SignalSelect, Supermaximum
Impedance		0.5 $\Omega$ ... 1 k $\Omega$ / automatic impedance matching
Sheath fault pinpointing with AC audio frequency		Step voltage probe, direct or capacitive
<b>HV Connections</b>		
Single phase		<b>ECONOMY:</b> 50 m (manual cable drum) <b>COMFORT:</b> 50 m (motorised cable drum) <b>PRO:</b> 50 m (motorised slip-ring cable drum)
<b>Connections Power Supply</b>		
	Earth potential monitoring, 10 m (manual cable drum)  Integrated safety system with FU/EP.  Separation transformer  Monitoring of: Voltage difference to protective earth Rise time of potential to protective earth Loop of protective earth to aux. earth Loop of cable shield to aux. earth	<b>ECONOMY:</b> Mains cable 50 m (manual slip-ring cable drum), Protective earth cable 50 m (manual cable drum) <b>COMFORT:</b> Mains cable 50 m (recoiling belt slip-ring cable drum), protective earth 50 m (recoiling belt cable drum) <b>PRO:</b> Mains cable 50 m (motorised slip-ring cable drum), Protective earth 50 m (motorised cable drum)
Teleflex Connection		3-phase coax cable, 50 m (manual, recoiling band or motorised drum)
Safety cable drum		Safety cable drum 50 m (manual, recoiling band or motorised) with emergency-OFF, key interlock and status indicating lights
<b>Operating conditions</b>		
Operating temperature	HV Unit: -25 °C ... +55 °C Control Unit: -5 °C ... +55 °C	
Storage temperature	-25 °C ... +70 °C	
<b>Weight</b>		
	depending on options 900 ... 1300 kg	
<b>Mains supply</b>		
Mains voltage	230 V, 50 Hz (16 A connection)	120 V, 60 Hz Generator operation from vehicle engine Battery operation up to 4 hours
Power consumption	Separation transformer max. 3.6 kVA	Separation transformer 5 kVA with CEE connector for extended requirements such as ARM Burning, air condition etc.

**Centrix 3 phased**

Method	Basic Module	Options
<b>Insulation Testing</b>		
500 and 1000 V	Integrated automatic or manual insulation, resistance and capacitance measurement, trend measurement (DAR and PI) of resistance up to 10 min., automatic memory, comparison of measurements ph-ph and ph-N, 6 measurements for resistance ph-ph, 3 measurements for cable capacitance $R_{iso}: 1 \Omega \dots 2 G\Omega$ , $R_{iso}: 1 k\Omega \dots 2 G\Omega$ $C : 0.0 \mu F \dots 19.9 \mu F$	
< 24 V	R: 0.1 $\Omega \dots 1 k\Omega$	
<b>HV Testing</b>		
DC Testing	0 ... 8 kV, $I_N$ 195 mA, $I_{max}$ 580 $\pm 20$ mA >8 ... 40 kV, $I_N$ 20 mA, $I_{max}$ 300 $\pm 20$ mA Automatic shut off at breakdown	>8 ... 80 kV, $I_N$ 13,5 mA, $I_{max}$ 180 $\pm 20$ mA
VLF Testing		VLF 0 ... 40 or 54 kV 0.1 Hz Cosine Rectangular Wave, max. cable capacity 5 $\mu F$ @54 kV, 8 $\mu F$ @36 kV, 21 $\mu F$ @18 kV VLF sin 36 kV <sub>rms</sub> , max. cable capacity 5 $\mu F$ @ 36 kV/0.01 Hz, 1 $\mu F$ @ 36 kV/ 0.1 Hz
Diagnostic measurements		Diagnostic measurement of Partial Discharge with OWTS oscillating wave @ power frequency Tan $\delta$ diagnostic measurement @ VLF sin
Sheath Testing	0 ... 5 kV / 0 ... 10 kV / 0 ... 15 kV 0 ... 20 kV, $I_{max}$ 580 $\pm 20$ mA	
<b>Prelocation</b>		
Impulse Reflection Measurement modes	Direct, Difference, Comparison, Average, Intermittent Fault location IFL, Simultaneous display of six phases or memory contents in selectable colours. Automatic adjustment of gain, range and pulse width. <b>ARMside technology</b>	
Range:	20 m ... 1280 km @ $v/2 = 80$ m/ $\mu s$	
Pulse width:	20 ns ... 10 $\mu s$	
Pulse amplitude:	30 ... 160 V	
Resolution:	0,1 m @ 80m/ $\mu s$ , 1,0 cm @ $V/2 < 40$ m/ $\mu s$	
Sample Rate:	400 MHz	
Gain	-37 ... +37 db + 0 ... 22dB for <b>ProRange</b>	
Propagation Velocity V/2:	10 ... 149,9 m/ $\mu s$ , ft/ $\mu s$ oder nvp	
Dynamic range:	> 80 dB	
Output impedance:	50 $\Omega$	
Display:	17" Colour SXGA, CCFL-Backlight, 300cd/m <sup>2</sup>	
Data Storage:	2 GB each for Program, Data and recovery	
Connections:	USB for Printer and Data, Ethernet, RS 232	
Storage and Protocolling	Automatic storage of all measurements. protocol printout, also as PDF file or for transfer to the incl. Winkis PC software.	
<b>HV Prelocation Methods</b>		
ARM		0 ... 4 / 8 / 16 / 32 kV
ARM Plus		0 ... 4 / 8 / 16 / 32 kV
Decay		0 ... 40 / 80 kV (max. DC test voltage)
Decay Plus		0 ... 40 / 80 kV (max. DC test voltage)
ICE 1 ph		0 ... 4 / 8 / 16 / 32 kV
ICE 3 ph		0 ... 4 / 8 / 16 / 32 kV
LV ARM Burning		0 ... 4 / 8 kV, $I_{max}$ 580 $\pm 20$ mA
ARM Burning		DC ignition and take over up to 20 kV
Burning		
DC	0 ... 8 kV, $I_{max}$ 580 $\pm 20$ mA	>8 ... 40 kV, $I_N$ 20 mA, $I_{max}$ 300 $\pm 20$ mA >8 ... 80 kV, $I_N$ 13,5 mA, $I_{max}$ 180 $\pm 20$ mA 0 ... 20 kV, with automatic take-over burning to 600 V, 40A DC.
LV ARM-Burning		0 ... 4 / 8 kV, $I_{max}$ 580 $\pm 20$ mA
AC		AC Burning 0 ... 600V, max. 70 A <sub>rms</sub>



Method	Basic Module	Options
<b>Pinpointing</b>		
Acoustic Method with Surge Modules		0 ... 4 / 0 ... 8 kV, 1200 J 0 ... 4 / 0 ... 8 kV, 1750 J 0 ... 4 / 0 ... 8 kV, 2400 J 0 ... 16 / 0 ... 32 kV, 1280 J 0 ... 16 / 0 ... 32 kV, 1750 J 0 ... 16 / 0 ... 32 kV, 2560 J 0 ... 2 kV, 1200 J
Surge rate	3 ... 30 s	
Surge pulse receiver		digiPHONE+
Sheath fault pinpointing with DC step voltage	0 ... 5 / 10 / 15 / 20 kV $I_{max}$ 580 mA $\pm$ 20 mA	ESG step voltage receiver for sheath fault pinpointing
Duty cycle	1:3 / 1:6 / 1:12	
<b>Audio Frequency</b>		
Output power		200 W
Frequencies		491 Hz, 982 Hz, 8.44 kHz also with SignalSelect, Supermaximum
Impedance		0.5 $\Omega$ ... 1 k $\Omega$ / automatic impedance matching
Sheath fault pinpointing with AC audio frequency		Step voltage probe, direct or capacitive
<b>HV Connections</b>		
3 x 1 Phase		<b>ECONOMY:</b> 50 m (manual cable drum) <b>COMFORT:</b> 50 m (motorised cable drum) <b>PRO:</b> 50 m (motorised slip-ring cable drum)
1 x 3 Phase		<b>Multi:</b> 50 m (motorised cable drum 3phase)
<b>Connections Power Supply</b>		
	Earth potential monitoring, 10 m (manual cable drum)  Integrated safety system with FU/EP.  Separation transformer  Monitoring of: Voltage difference to protective earth Rise time of potential to protective earth Loop of protective earth to aux. earth Loop of cable shield to aux. earth	<b>ECONOMY:</b> Mains cable 50 m (manual slip-ring cable drum), Protective earth cable 50 m (manual cable drum) <b>COMFORT:</b> Mains cable 50 m (recoiling belt slip-ring cable drum), protective earth 50 m (recoiling belt cable drum) <b>PRO:</b> Mains cable 50 m (motorised slip-ring cable drum), Protective earth 50 m (motorised cable drum)
Teleflex Connection		3-phase coax cable, 50 m (manual, recoiling band or motorised drum)
Safety cable drum		Safety cable drum 50 m (manual, recoiling band or motorised) with emergency-OFF, key interlock and status indicating lights
<b>Operating conditions</b>		
Operating temperature	HV Unit: -25 °C ... +55 °C Control Unit: -5 °C ... +55 °C	
Storage temperature	-25 °C ... +70 °C	
<b>Weight</b>		
	depending on options 900 ... 1300 kg	
<b>Mains supply</b>		
Mains voltage	230 V, 50 Hz (16 A connection)	120 V, 60 Hz Generator operation from vehicle engine Battery operation up to 4 hours
Power consumption	Separation transformer max. 3.6 kVA	Separation transformer 5 kVA with CEE-connector for extended requirements such as ARM Burning, air condition etc.