



Technical specifications SCOPE 1400

DSO channel	
Measuring Unit/Part	Specification
Measurement Resolution	14 Bit DSO Operation 16 Bit DMM Operation with oversampling
Bandwidth	10 MHz (-3dB)
Maximum sampling rate	40 Msps per channel, no multiplexing
DSO Samples Memory	1Gbit (64MSamples) buffer
Channels	4 independent channels
Galvanic Isolation	Yes, no common grounds
Measurement input	Full Differential
Maximum voltage	350V AC, 500V DC (+20% overvoltage)
DSO Scale factors Volt/Div (Software)	2–200V
DSO Scale factors Time/Div (Software)	50ns–5h
Programmable hardware Filter (one per channel)	0–450 KHz
Coupling modes	GND AC DC
Trigger	Internal or external (source channel 1 2 3 4) Positive, negative, auto, autolevel, norm
Counter function	0.1Hz to 100kHz Channel source 1 2 3 4

Ohmmeter and diode tester (Channel 1)

Ohmmeter and Diode Tester Specification	
Part	Specification
Resistor measurement range	0.1 Ω to 15 M Ω
Diode measurement	0V to 1.7V with constant current 1mA

Ohmmeter Accuracy		
Range	0–15 M Ω	0,4%–2.0% measurement depending range

SPI Channel Specification	
Part	Specification
Communication format	SPI, 4 wires bidirectional
SPI clock frequency	1MHz max.
Probe Power supply	5V, 200mA max.

Stimuli Generator	
Measuring Unit/Part	Specification
Output voltage	0 to +18V programmable with 10mV steps and +/-2% accuracy
Output current	0 to 600mA
Waveforms	DC to 10KHz

Main Power Supply Unit	
Part	Specification
Power supply input voltage	8VDC to 19VDC nominal
Input power	30W max.
Main power supply sources	External AC/DC adapter, 100V-240VAC to 19VDC

General specifications	
Part	Specification
Operating system	32-bit edition of Windows XP (SP3), 32- or 64-bit edition of Windows Vista or Windows 7
Communication port	High Speed USB 2.0 (480Mbit/s)

Physical Properties	Description
Dimensions	240mm x 200mm x 60mm (W x D x H)
Case	Magnesium housing without ventilator
Weight	600g
Operating temperature range	0°C to +50°C
Protection class	IP-54
Air humidity	30% bis 95%
Operating height	max. 3048m ü. NN.
Storage temperature	-20°C bis +60°C

Probes, cables and adapters

Probes and adapters list

Probes	Description	
Universal Voltage probe	Range: Cable length:	Up to 600VDC 2.9 m
Temperature Probe	Temperature range: Technology: Cable length:	-20°C...+200°C Thermocouple 2.9 m
Ignition kV clip	Range: Cable length:	Up to 50 KV AC 2.9m
Pressure probe	Maximum range: Cable length:	Up to 100 bar 2.9m
AC/DC 100A Current probe	Current range: Overload capability: Resolution:	100A DC or AC pk 500A DC (1 min) ±1mA
AC/DC 1800A Current probe	Current range: Overload capability: Resolution:	1800A DC or AC pk 3000A < 10 ms ±100mA
Trigger probe	Type:	Inductive

Temperature Probe Specification

Property	Specification
Temperature range	-20 to +200 °C
Technology	Thermocouple
Resolution and Accuracy	± 1 K for < 0 °C ± 0,5 K for 0 °C to +40 °C ± 1 K for +40 °C to +100 °C ± 2 K for > +100 °C
T 99%	2 Sec @ Air 1/Sec

Ignition kV clip Specification:

Property	Specification
Type	kV Clamp
Voltage Range	+ -50 kV
Accuracy	50kV: ±15 % ± 1000V 20kV: ±15 % ± 400V 10kV: ±15 % ± 200V

100 bar Pressure Probe Specification:

Property	Specification
Pressure range	Up to 100 bar
Proof pressure	200 bar
Burst pressure	1000 bar
Fatigue life	100 million cycles min
Accuracy	Up to 24bar = 0.25% Between 30bar and 100bar = 1% Max
Operable temperature	-40 to 120°C

AC/DC Current 100A Probe Specification:

Property	Specification
Current Range	100A DC or AC pk
Overload Capability without Damage	500A DC (for 1 min)
Output sensitivity	50mV/A (w.r.t. 0V)
Accuracy (@ +23 °C, I < 10A)	±1% of reading ± 2mA
Resolution	±1mA
Error due to Earth's Magnetic Field	±0.5mV (±10mA) max
Warm up zero Drift	3 minutes max from switch ON
Zero Drift (+10 °C to +28 °C) over 5 hour cycle	±2mA typ per °C / 18mA typ
Zero Drift with time (after 3 mins, over 1 hour cycle)	±10mA max, ±8mA typ
Zero Drift with time (over 12 hour cycle)	±12mA max, ±10mA typ
Zero Drift with time (over 24 hour cycle)	±20mA max, ±15mA typ
Frequency Range	DC to 20kHz (- 0.5dB)
Remanence (0A →100A → 0A)	12mA max
Operating Temperature Range	0 to +60°C

AC/DC Current 1800A Probe Specification:

Property	Specification
Current range	1800A AC peak or DC
Overload Capability	2000A
Overload Capability without damage	3000A < 10 ms
Output Sensitivity	2.778 mV/A (w.r.t. 0 V)
DC Accuracy (0–1000A)	± 0.8% of reading ± 0.5A
DC Accuracy (1000–1500A)	± 1.8% of reading ± 0.5A
Overall Accuracy (1500–1800A)	± 5.0% of reading
Conductor Position Sensitivity (0–1000A)	± 1.7% of reading
Resolution	± 100 mA
Zero Offset (at +25°C)	± 10 mV max
Zero Drift (0°C to +50°C)	± 100 mA/°C
Maximum Conductor Size	32 mm diameter
Eternal zero correction	