



**Probing Solutions.
Made in Germany.**

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SONIC[®] 4000

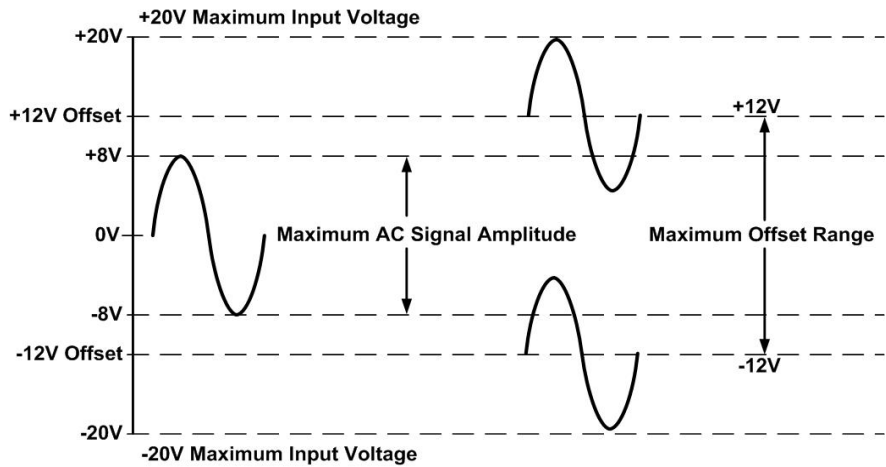
Robust Active Probe for Troubleshooting
> 4 GHz, $\pm 20\text{ V}$

Datasheet

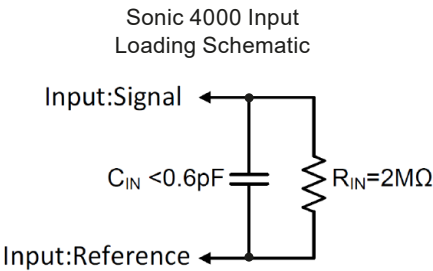


About Sonic 4000

The Sonic 4000 active probe offers best-in-class performance and is easy to use to make in-circuit measurements. With the Sonic 4000's DC to >4 GHz bandwidth, high input impedance, low noise and $\pm 8\text{ V}$ dynamic range makes it the ideal probe to use with any oscilloscope or other $50\ \Omega$ measurement system. Sonic 4000's $\pm 12\text{ V}$ input offset capability extends the input voltage range of the probe. The input capacitance of $<0.6\text{ pF}$ parallel $2\text{ M}\Omega$ between probe tip and probe reference ($1\text{ M}\Omega$ to the oscilloscope ground) provides the highest impedance in its class to allow the probing of sensitive circuits without adversely loading the circuit under test.



The high impedance probe tip reference connection is a key feature of the Sonic 4000. Unlike traditional single-ended probes, with their probe tip reference connected to earth ground that can damage the customer's circuit if it is accidentally connected to any non-ground test point, the probe tip reference impedance to earth ground is $1\text{ M}\Omega$. This feature allows for safe in-circuit browsing of an energized circuit without the possibility for shorting the probe tip reference connection directly to earth ground.



The Sonic 4000 active probe uses a PMK custom high speed FET input amplifier with active cladding wave compensation to provide a superior high frequency response as well as a low noise and low distortion to accurately measure the customer signals.

Specifications

	Sonic 4000
Order Number	884-000-000
Electrical Specifications	
Attenuation Ratio *	10:1 (±2% at DC)
Bandwidth (-3dB) *	> 4 GHz
Dynamic Range *	±8 V
DC Offset	±12 V
Input Voltage DC (max.) *	±20 V ¹
Input Impedance ²	2 MΩ 0.6 pF
Output Impedance	50 Ω

Mechanical Specifications	
Weight (probe only)	107 g
Cable Length	1.3 m
Probe Input Sockets	0.64 mm square / 0.8 mm round
Output Connector ³	BNC (male)

Environmental Specifications		
Altitude	operating	up to 2000 m
	non-operating	up to 15000 m
Temperature Range	operating	0 °C to +45 °C
	non-operating	-40 °C to +71 °C
Maximum Relative Humidity	operating	80 % relative humidity for temperatures up to +31 °C, decreasing linearly to 40 % at +45 °C
	non-operating	95 % relative humidity for temperatures up to +40 °C

This product comes with 2 years warranty.

Specifications that are not marked with (*) as guaranteed are typical.

¹ ESD protected, IEC 61000-4-2 Contact Discharge Level 2, IEC 61000-4-2 Air Discharge Level 3.

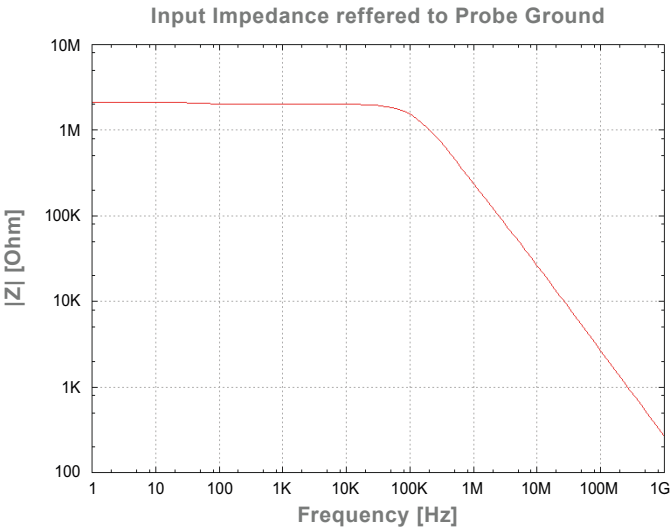
See frequency derating on page 4.

Input Impedance referred to Probe Ground



The input impedance of the probe decreases as the frequency of the applied signal increases.

The charts given here are valid for no measurement category, not in CAT II, III, IV (¹).

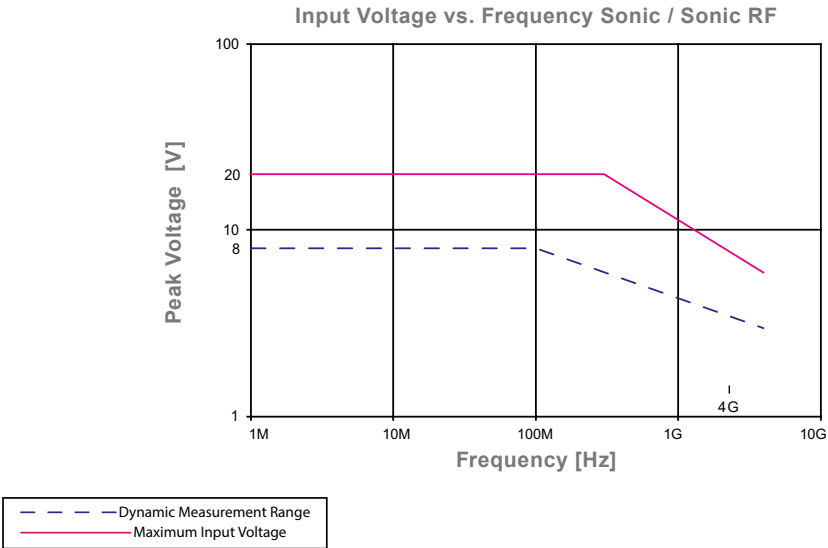


Maximum Input Voltage



The Sonic 4000 active probe is protected against electro-static-discharge voltage (ESD).

The charts given here are valid for no measurement category, not in CAT II, III, IV (¹).



Probe Accessories

The parts supplied are „highlighted“, see also "Scope of Delivery". A power supply with remote control capabilities or a battery pack for portable use are optional.

890-100-150
self-adhesive
Cu-pads x10
(2 cm x 2 cm)

891-010-810
2.54 mm adapter x10

891-025-810
2.54 mm adapter x25

891-010-814
PCB adapter x10

891-025-814
PCB adapter x25

890-400-812
Ground blade

890-400-811
Z-ground

890-400-813
Ground leaf

890-502-130
Pair QFP IC-clips 13 mm (long)
up to zu 0.5 mm
(1 pair: yellow, green)

890-502-000
Pair QFP IC-clips (short)
up to 0.5 mm
(1 pair: yellow, green)

P25-0 /-2
Pico Hook™
(black, red)

890-800-001
Spring tip x5

890-800-000
Solid tip x5

890-500-800
L-In adapter

890-400-812
Ground blade

890-400-811
Z-ground

890-400-813
Ground leaf

890-880-105
2-Footer
(black)

890-020-916
Marker bands 4 x 4 colors

890-400-808
Ground lead 7 cm

890-400-809
Ground lead 13 cm

890-400-803
Ground lead 90° 5 cm

890-400-804
Ground lead 90° 10 cm

890-720-840
Y-adapter to
0.8 mm sockets

Power Supplies

- PS-02 (2 channel with USB)
- 889-09V-PS2
- PS-02-L (2 channel with LAN and USB)
- 889-09V-PS2-L
- PS-03 (4 channel with USB)
- 889-09V-PS3
- PS-03-L (4 channel with LAN and USB)
- 889-09V-PS3-L
- AP-01 (battery pack, 1 channel)
- 889-09V-AP01

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Scope of Delivery

Accessories delivered with each probe are „highlighted“ in the graphical overview.

Item	Qty	Item	Qty
Probe Sonic 4000	1	L-In Adapter	1
Calibration Certificate	1	Pair Picohooks™ (black & red)	1
Instruction Manual	1	Pair QFP IC-Clips (short, yellow & green)	1
Case	1	Pair SMD Test Grabbers (black & red)	1
2-Footer (black)	1	PCB Adapter	5
2.54 mm Adapter Sonic	2	Self adhesive Cu Pad (2 cm x 2 cm)	2
Ground Blade	1	Set Marker bands (4 x 4 Colors)	1
Ground Lead 7 cm	1	Solid Tip	3
Ground Lead 13 cm	1	Spring Tip	3
Ground Lead 90° 5 cm	1	Y-Lead Adapter to 0.8 mm sockets	1
Ground Lead 90° 10 cm	1	Z-Ground	1

Ordering Information

Product		Order number	
Sonic 4000 Probe		884-000-000	
Power Supplies			
Order Number	Product	Order Number	Product
889-09V-PS2	2 ch power supply PS-02 with USB	889-09V-AP01	1 ch Battery pack AP-01
889-09V-PS2-L	2 ch power supply PS-02-L with LAN and USB	890-520-900	Power supply cable (0.5 m) ¹
889-09V-PS3	4 ch power supply PS-03 with USB	890-520-915	Power supply cable (1.5 m)
889-09V-PS3-L	4 ch power supply PS-03-L with LAN and USB	-	-

¹ The power supply cable (0.5 m), is included as standard with all power supplies.

Notes

[illegible]

Manufacturer

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