



# PML 311-RO

High impedance passive probe

## Features:

- 2.5 mm Diameter Tip
- CeramCore™ Hybrid Probe
- Coaxial Design
- Interchangeable Spring Contact Tip
- IC Contacting System 0.5 to 1.27 mm pitch



PMK introduces a new universal 10:1 miniature probe for oscilloscopes with up to 350 MHz bandwidth. As all PMK probes the PML 311 features CeramCore™ technology. The entire probe core is made of a high quality ceramic hybrid. Pure coaxial design and laser trimmed resistors ensure highest signal fidelity along the signal path offering high bandwidth and fast risetimes for accurate impulse measurements. With a maximum input voltage of 300 V CAT II this divider is equally suitable in service and development environments. The new probe comes with read-out BNC connector to be automatically recognised as 10:1 divider by scopes that feature a sense ring to detect probe attenuation such as Agilent, LeCroy or Tektronix.

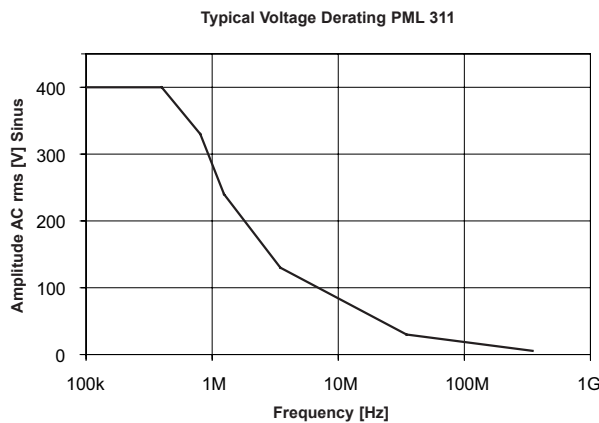
The compact design of this new probe with its 2.5 mm housing diameter at the tip provides better visibility to the DUT (device under test) in dense SMT circuits than conventional 5 mm housings. Due to the remarkably low input capacitance the signal source is only loaded by 10 pF. Less load to the measurement circuit can only be achieved with active probes. Especially when measuring signals with fast rise times often the probe's adaption to the source signal plays an important role. Long ground leads found on most conventional adaptations bring additional inductance and resonances into the setup which will result in false or inaccurate readings. The new IC contacting system consisting of five different IC adapters ranging from 1.27 to 0.5 mm pitch and the PCB adapter kit offer an ideal solution for short circuit-proof, reproducible measurements. As you would expect the probe is shipped with PMK's signature spring-loaded tips. In total there are 16 different accessories included in the scope of delivery with the new PML 311 offering adaptive solutions for almost every probing demand.

This datasheet supersedes all previously published material. Specifications that are not marked as guaranteed are published as general information to the user. The instrument should have warmed up for at least 20 minutes and the environmental conditions must not exceed the specified limits of the probe. Note that specifications are subject to change without notice.

### Electrical Specifications

<i>Attenuation Ratio</i> <sup>(1)</sup>	10:1	± 2 % at DC
<i>Voltage Coefficient</i>	0.0025 %/V	
<i>System Bandwidth</i>	350 MHz	(-3 dB)
<i>System Risetime</i>	1 ns	(10 % - 90 %)
<i>Maximum Rated Input Voltage</i> <sup>(2)</sup>	400V rms	
<i>Measurement Category I:</i>	1250 V transient overvoltage	
<i>Measurement Category II:</i>	300V rms CAT II	
<i>Pollution Degree</i>	2	

### Voltage Derating



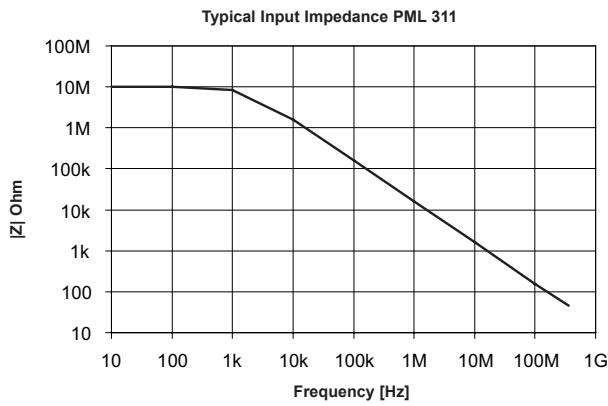
Note that the max. input voltage rating of the probe decreases as the frequency of the applied signal increases.

(1) Connected to oscilloscope with an input impedance of 1 MΩ ± 1 %.  
 (2) at 15 pF input capacitance of the measuring instrument.

### Electrical Characteristics

<i>Input Resistance (System)</i>	10 MΩ	± 1 %
<i>Input Capacitance (System)</i>	10 pF	
<i>Compensation Range</i>	10 pF - 25 pF	
<i>Input coupling of the measuring instrument</i>	1 MΩ AC / DC	

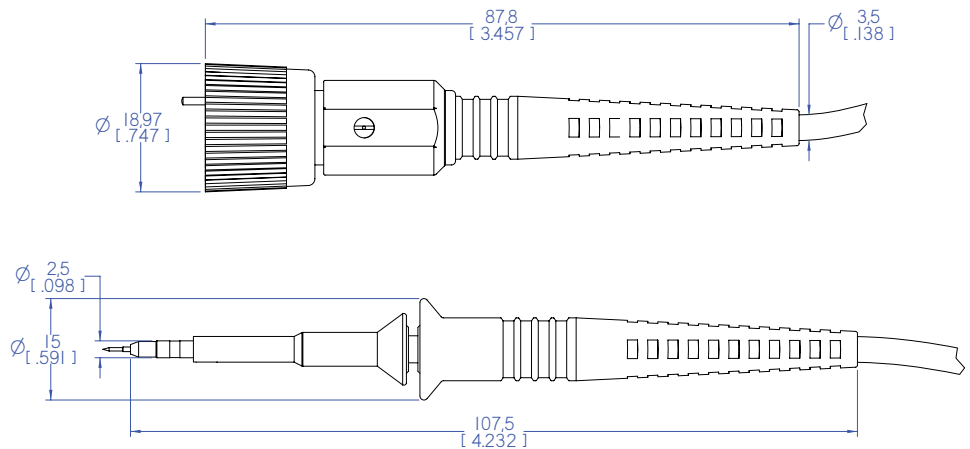
### Input Impedance



Note that the max. input voltage rating of the probe decreases as the frequency of the applied signal increases.

### Mechanical Characteristics

Weight (probe only)	48 g
Cable Length	1.3 m
Probe tip diameter	2.5 mm



\*) Units in millimeters [inch].



### Environmental Specifications

<i>Altitude</i>	operating	up to 2000 m
	non-operating	up to 15000 m
<i>Temperature Range</i>	operating	0 °C to +50 °C
	non-operating	-40 °C to +71 °C
<i>Maximum Relative Humidity</i>	operating	80% relative humidity for temperatures up to +31 °C, decreasing linearly to 40 % at +50 °C

### Declaration of Conformity

The manufacturer declares the conformity of his products with the actual required safety standards in accordance with the Low Voltage Directive (LVD) 2006/95/EC:

CEI/IEC 61010-031:2002

Safety requirements for electrical equipment for measurement, control and laboratory use.

Part 031:

Safety requirements for hand-held probe assemblies for electrical measurement and test.

### WEEE/ RoHS Directives

PMK electronic products are classified within the WEEE/ RoHS\* category list as monitoring and control equipment (category 9). Category 9 products are exempt from the restrictions under the scope of the RoHS directive.

Your help and efforts are required to protect and keep clean our environment. Therefore return any electronic product at the end of its life either to Service Department of PMK Mess- und Kommunikationstechnik GmbH or take care of separate WEEE collection and professional WEEE treatment yourself. Do not dispose as unsorted municipal waste.

\* EC Directives:

- WEEE Directive 2002/96/EC – Waste Electrical and Electronic Equipment
- RoHS Directive 2002/95/EC – Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment



### Scope of Delivery PML 311-RO Order No. 855-311-001

- Probe
- Ground Blade 2.5
- Ground Lead 11 cm
- Ground Spring 2.5
- IC-Caps 0.5 to 1.27 mm pitch
- Instruction Manual
- Insulating Cap 2.5
- Protection Cap 2.5
- Solid Tip CuBe 0.5 mm
- Spring Tip 0.5 mm
- Sprung Hook 2.5
- Adjustment Tool T
- 2 Footer Positioner
- Coding Rings (Set) 3 x 4 colours
- PCB Adapter Kit 2.5
- 2 self adhesive Cu pads

### Safety Information

To avoid personal injury and to prevent fire or damage to this product or products connected to it, review and comply with the safety informations stated in the manual before using this product. Be aware that if you use this probe assembly in a manner not specified the protection this product provides may be impaired.

**Only qualified personnel should use this probe assembly.**

### Manufacturer

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