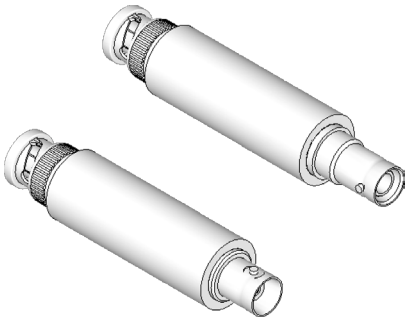
Entube-Z

High Bandwidth
Voltage Sensor



OVERVIEW

The Entube-Z is a high bandwidth voltage transducer designed for single ended measurements in a very compact form factor, and without need for power supplies. This series covers the ranges of ±100V, ±200V, ±300V, ±400V, ±500V, ±750V, ±1kV, ±2kV, ±3kV, ±4kV and ±5kV with up to 50MHz bandwidth and 0.5% of signal accuracy.
The Entube-Z generates a ±200mV or ±1V scaled down version of its input signal, which can then be processed by most computer based measurement platforms. Its compact form factor allows for very high channel densities, while delivering high performance for a low cost.

SPECIFICATION

Eletronical	100z	200z	300z	400z	500z	750z	1000z
Scaling Factor (5V output voltage)	20 : 1	40 : 1	60:1	80:1	100:1	150:1	200:1
Input dynamic range (Working Voltage)	100V	200V	300V	400V	500V	750V	1000V
Max Peak Surge Voltage (60Hz sinewave for 100ms)	2kV		5kV			10kV	
Input impedance at 60Hz	> 1 MΩ		> 2MΩ			> 3 MΩ	

Electronical	2000z	3000z	4000z	5000z
Scaling Factor (5V output voltage)	400:1	600:1	800:1	1000:1
Input dynamic range (Working Voltage)	2000V	3000V	4000V	5000V
Max Peak Surge Voltage (60Hz sinewave for 100ms)	15kV	15kV	20kV	30kV
Input impedance at 60Hz	> 10 MΩ	> 20 MΩ	> 30 MΩ	> 50 MΩ

Accuracy	±0.5%
Bandwidth (-3dB point)	1MHz, 5MHz, 10MHz, 20MHz, 30MHz, 40MHz
Input-Output non-linearity	< 250 ppm
Output voltage	±1V, ±5V and ±10V
Gain temperature drift	±100 ppm/°C
Max total phase shift at 60Hz	< 0.05°
Output type	Single-ended signal
Output Offset Voltage (Referenced to input)	< ±10µV
Output connector	BNC (Plug)

Integrated sensor noise (Referenced to input)	
1MHz models	< 3.1 mV
5MHz models	< 3.6 mV
10MHz models	< 4.4 mV
20MHz models	< 5.8 mV
30MHz models	< 6.7 mV
40MHz models	< 7.8 mV

Environmental	
Operating temperature	– 35 to 70 °C
Storage temperature	– 40 to 80 °C

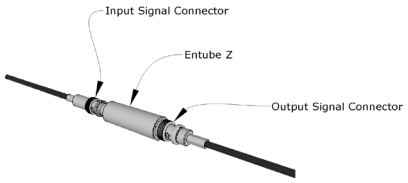
Merchanical	100z	200z	300z	400z	500z	750z	1000z	2000z
Input connector (1-Pin Coaxial)	BNC					SVH		
Outer Dimensions (Cylindrical shape)	0.68"Ø x 3.0"					0.68"Ø x 3.29"		
Weight	34 g (1.2 oz)					180g (6.3 oz)		

Merchanical	3000V	4000V	5000V
Input connector (1-Pin Coaxial)	SVH		
Outer Dimensions (Cylindrical shape)	0.68"Ø x 3.29"		
Weight	180g (6.3 oz)		

(1) Form factor can vary for customized solutions.
(2) High voltage connectors must always be cleaned prior to mating. The proper cleaning method is to wipe or spray the interface area with isopropyl alcohol and immediately blow an inert gas such as dry nitrogen over the interface area until dry. No other cleaning method should be attempted.

HARDWARE DESCRIPTION

The Entube Z sensor family operates as a single ended voltage divider that outputs a ±200mV or ±1V output signal, which can be processed by a computer based measurement platform.
The coaxial input line connect to the sensor via a SHV or BNC connector, while the conditioned signal from the sensor comes out on a standard BNC Plug.



Mounting Sample of Entube Z

Due to its compact size and shape, the Entube Z sensor family can be easily mounted anywhere between the signal source and the data acquisition system. The versions up to 5kV may even be used inline with the cable and not require any mounting at all. All can be secured to fixtures using cable ties.

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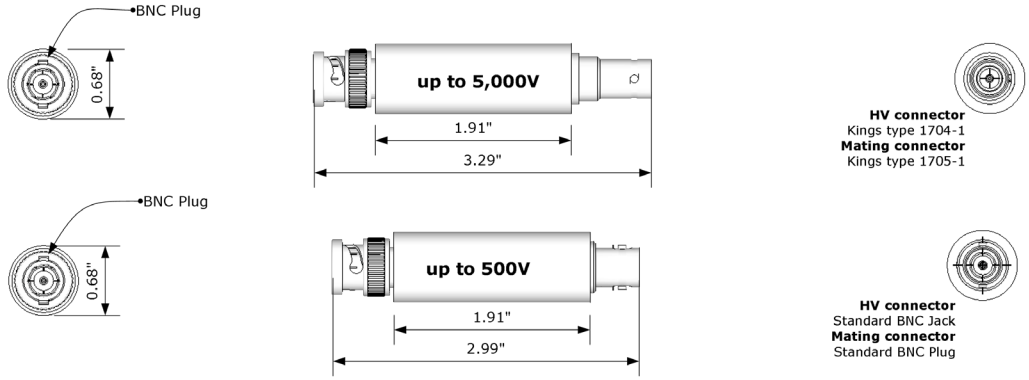
MERCHANICAL DIMENSIONS

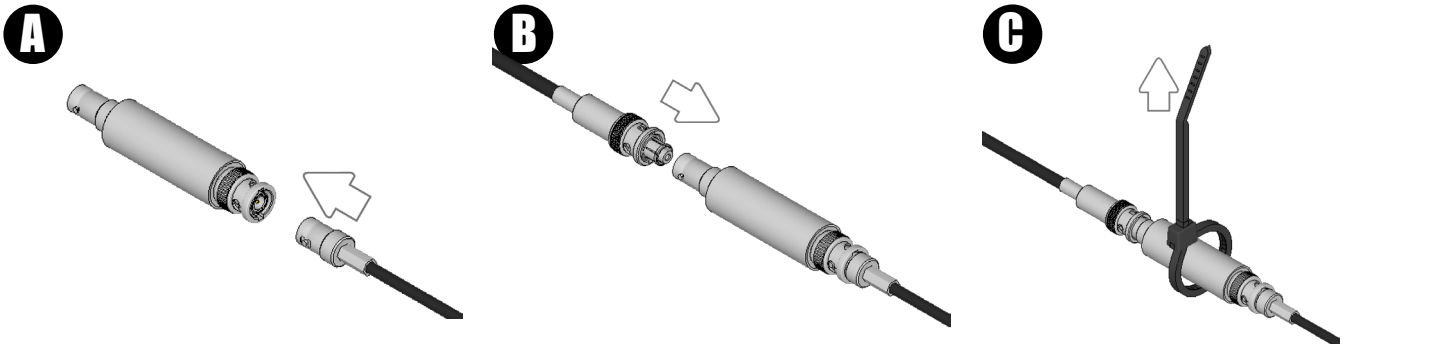


HARDWARE CONFIGURATION

A. Connect BNC cable to sensor output. Make sure the BNC jack is connected to DAQ or at least properly grounded.

B. Make sure Input Signal cable is de-energyzed to avoid arcing. Verify if input connectors are clean. Plug input signal into input connector of sensor.

C. Secure sensor to avoid accidental disconnection during operation



Standards and Certifications

- CE

CE

⚠ DANGER

THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safetyrelated use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.