

### Features

High precision  
Passive probe  
Standard BNC output connector

### Advantages

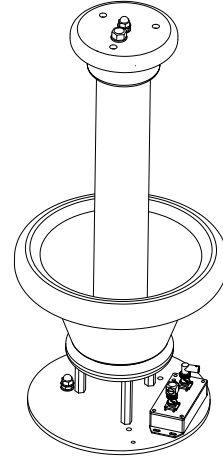
10000:1 divider ratio  
DC - 20MHz bandwidth  
70kV DC / 115kV peak  
DC, AC and Pulse compatible  
Accuracy up to  $\pm 0.1\%$

### Applications

Power supply design  
Power semiconductors  
Switch mode control  
Power converters  
Lightning surge  
Voltage monitoring

### Description

The HVD-70 is a type of wideband voltage divider



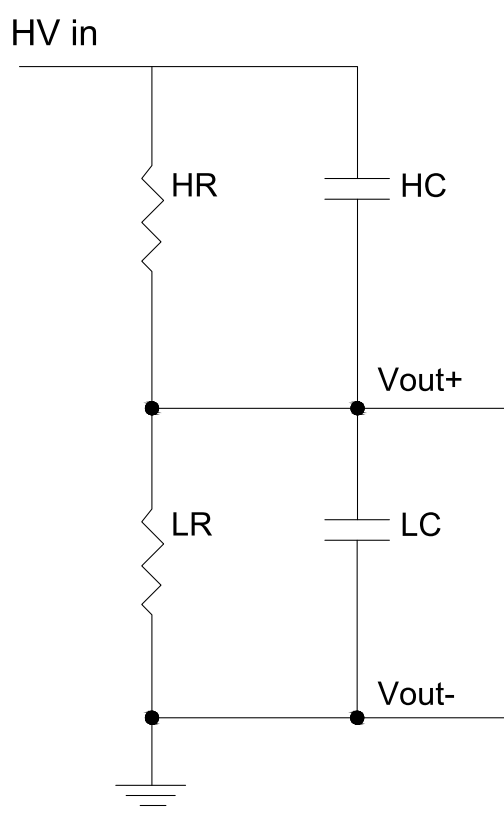
which is designed to measure single-ended high voltage. The HVD-70 can measure multiple single-ended signal such as DC, AC and pulse. The HVD-70 scaled down its input signal and outputs low voltage, which can easily be processed by universal instruments, such as oscilloscope, digital multimeters, etc. You can measure DC voltages up to 70 kV RMS and pulses up to 115 kV peak. The 25MHz bandwidth enables you to measure fast, high-voltage signals.

### Specifications

Electrical				
Parameter	Test conditions	Minimum	Typical values	Maximum
Standard Divider Ratio			10000 : 1	
Max Peak Voltage (DC,AC)			70kV	
Max Peak Voltage (Pulse)			115kV	
Accuracy (DC - 2 Hz)	@ 25°C			0.1% of range
Accuracy (2Hz - 1MHz)	@ 25°C			1% of range
Accuracy (> 1MHz)	@ 25°C			3% of range
Bandwidth (-3dB)			DC-25MHz	
Nonlinear error				0.02%
Rise time			14ns	
Input Impedance			1GΩ / 27pF	
Input Signal Type			single-ended	
Output Signal Type			single-ended	

Environmental and mechanical characteristics	
Operation temperature	-15°C ~ 70°C
Storage temperature	-25°C ~ 80°C
Input connector	Nut terminal
Output connector	BNC (jack)
BNC cable length	9m

## Block Diagram



HVD-70 block diagram

The HVD-70 consists of a high voltage network represented by a parallel capacitor and resistor, and a low voltage network which consists of a parallel RC network. The input high voltage will be attenuated by 10000 times, and output low voltage which can be processed by instruments.

## Testing Setup

1. Connect the output voltage to the instrument, e.g. oscilloscope or digital multimeter, the ground must be well grounded.
2. Connect the measurement voltage to the input, make sure the tested voltage is off before connecting.
3. Turn the tested voltage on.

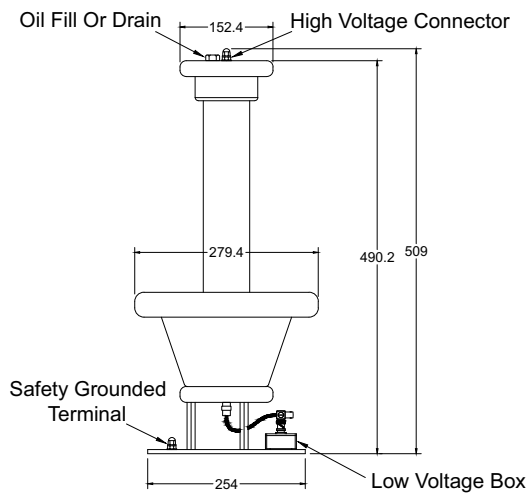
## Disassemble

Ensure that the tested voltage source is turned off, then remove the tested voltage wire. Finally, remove the output and grounding wires.

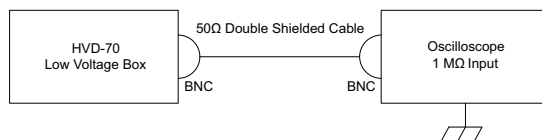
### Remark:

1. The oscilloscope should be grounded to safety ground. A  $1.111\text{ M}\Omega$  resistance can parallel with digital multimeter ( $10\text{ M}\Omega$  input) to produce a  $1\text{ M}\Omega$  input impedance.
2. In general, the HVD-70 has a derating characteristic when measuring high frequency AC signal, due to heating in AC dielectric loss and capacitive ESR.
3. The input pulse should not be too high in frequency and too long in duration, when the amplitude of pulse is up to max peak voltage.
4. When DC voltage applied, HVD-70 should not have a derating phenomenon.
5. HVD-70 is immersed in the oil. If you discover oil leakage, please make sure not to use HVD-70.

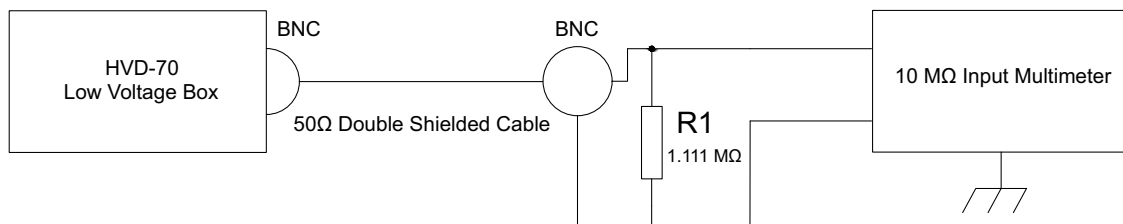
## Dimensions (in mm)



HVD-70 Driving Oscilloscope



HVD-70 Driving Meter



## Ordering Code

E.g. **HVD-70**

If you have queries regarding the HVD-70 or require specifications outside standard ranges, please do not hesitate to contact us.

### **CAUTION**

Do not connect or disconnect sensor or test leads in operation.

To avoid fire or shock hazard, observe all ratings and markings on the product carefully.

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Do not touch exposed connections and components in operation.

Do not operate in wet/damp conditions.

Do not operate in an explosive atmosphere.

Keep product surfaces clean and dry.

### **Warning**

The service instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety contents prior to performing service.