

ICA10 – In-Line Charge Amplifier



Signal Conditioning for Structure-Borne Noise Sensors



- ✓ high quality, wide bandwidth, low noise signal conditioning for charge accelerometers (like Discom's KS91D)
- ✓ high impedance charge signal converted to voltage output, supplied with IEPE (ICP® or CCLD®)

Signal Conditioning for Charge Accelerometers

The **ICA10** is an in-line charge amplifier for charge accelerometers, such as Discom's KS91D.

- Converts accelerometer's high-impedance charge signal to low impedance voltage signal
- Easy to use due to its IEPE-compatible (ICP® or CCLD®) output interface
- Signal and IEPE constant current supply are using the same coaxial cable
- All Discom's analog TAD input cards (TAD48, TAD48+) provide IEPE-supply
- For use with charge accelerometers, such as Discom's **KS91D** & **KS91D1**

ICA10 – Specifications		
Input Characteristics		
Sensitivity (Charge-to-Voltage Conversion)	10 mV/pC \pm 2 %	
Input Range	\pm 500 pC	\pm 5 V at output
Linear Frequency Range	\pm 3 dB \pm 5 %	0.7 Hz .. 80 kHz 1.6 Hz .. 30 kHz
Sensor Cable Length	max. 2 m recommended	low capacitance cable
IEPE Requirements		
Constant Current Supply	2 mA .. 4 mA	
Excitation Voltage	18 V .. 28 V	
Output Characteristics		
Output Bias Voltage	10 V .. 15 V	
Noise	$<$ 50 μ V _{RMS}	
Total Harmonic Distortion	\leq 1 %	
Output Impedance	$<$ 100 Ω	
Input / Output Phase	inversion	
Coaxial Cable Length	max. 15 m recommended max. 25 m allowed	
Mechanical & Environmental		
Dimensions with isolation and UNF- adapter	15.25 mm 85 mm	
Weight (without cable)	38 g	
Case Material	brass, nickel-plated	
Cable Connection	radial	
Socket / Connector	IEPE: BNC, female Sensor: UNF 10-32, female	
Mounting	bracket or provided plastic clips	
Isolation	by heat shrink tubing	
Temperature Range (Operation)	-20 °C to +85 °C	
IP Protection Grade	IP40	

Mounting



The ICA10 comes with two plastic holders, which can be mounted to a suitable surface. The holders will accommodate M5 screws (screws are not part of delivery).

Figure 1: ICA10 with holders

Important Installation Notes :

- Make sure that all parts of the ICA10 and the BNC connectors are **electrically isolated** from the test stand.
- Mind the maximum cable length (2m low noise on sensor side, 25m coaxial on IEPE side)

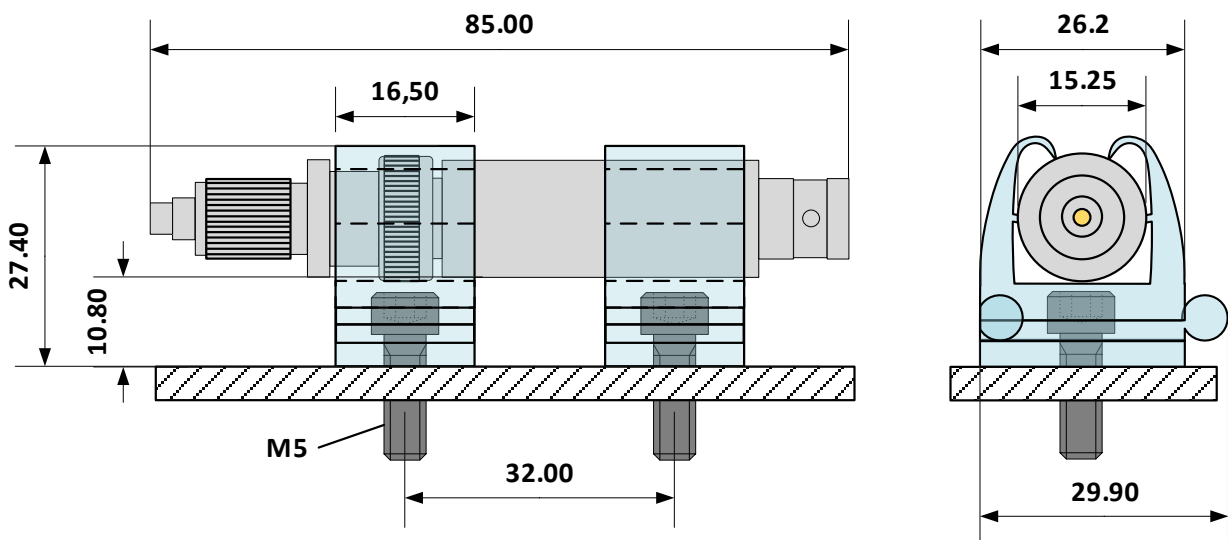


Figure 2: Dimensions of ICA10 with holders (in mm)