



IEPE signal conditioner

User's manual

v1.0



Please read the following notes

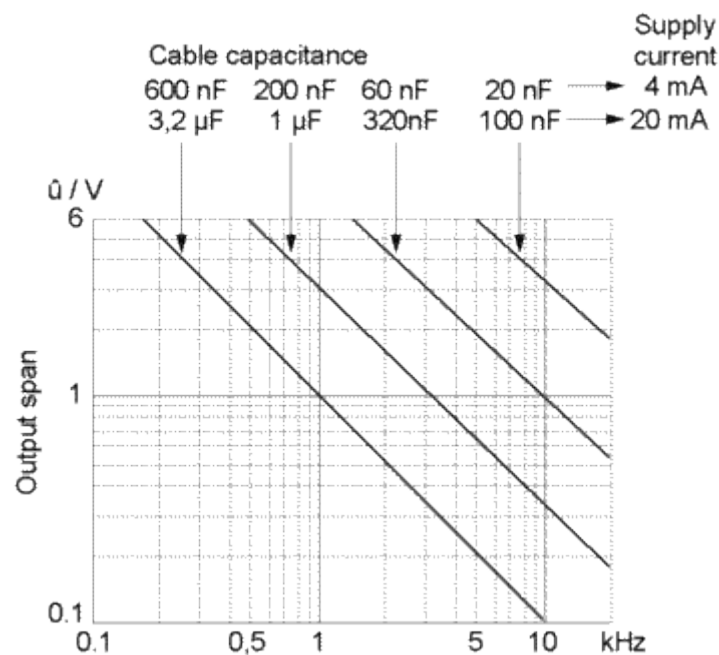
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1 Introduction to IEPE

IEPE is a technical and industry standard for sensor interface. The main characteristic of IEPE sensors is that they only require two wires. They are powered with the same wires that the return signal with information uses. Such sensors usually have integrated electronics and for interfacing them you need signal conditioner. That is the device that can supply power to the sensor as well as route the signal to the oscilloscope. The information (signal) from the sensor is then returned as voltage on the power line. Our IEPE signal conditioner can detect the presence of the sensor and signals the state with the LED. Yellow LED means that the IEPE conditioner is ready and sensor can be plugged in. When sensor is properly connected, green LED is on. In case of a short circuit or other malfunction the red LED is on. The sensor is connected with BNC connector on one side, and the other side is connected to the oscilloscope. For powering the conditioner USB-C is used with appropriate adapter. Note that the power supply for conditioner is 5V and not higher. The switch on the case is used for switching between 4mA and 8mA supply current for the IEPE sensor. That is used because higher current can provide better immunity to EMC radiation. Another benefit is the ability to use longer cables since capacity increases with the cable length.



2 Connectors and pinout



In our case, we have two BNC connectors for plugging the sensor on one side and connecting the oscilloscope with the cable on the other side. There is standard USB-C plug for power supply for the conditioner.

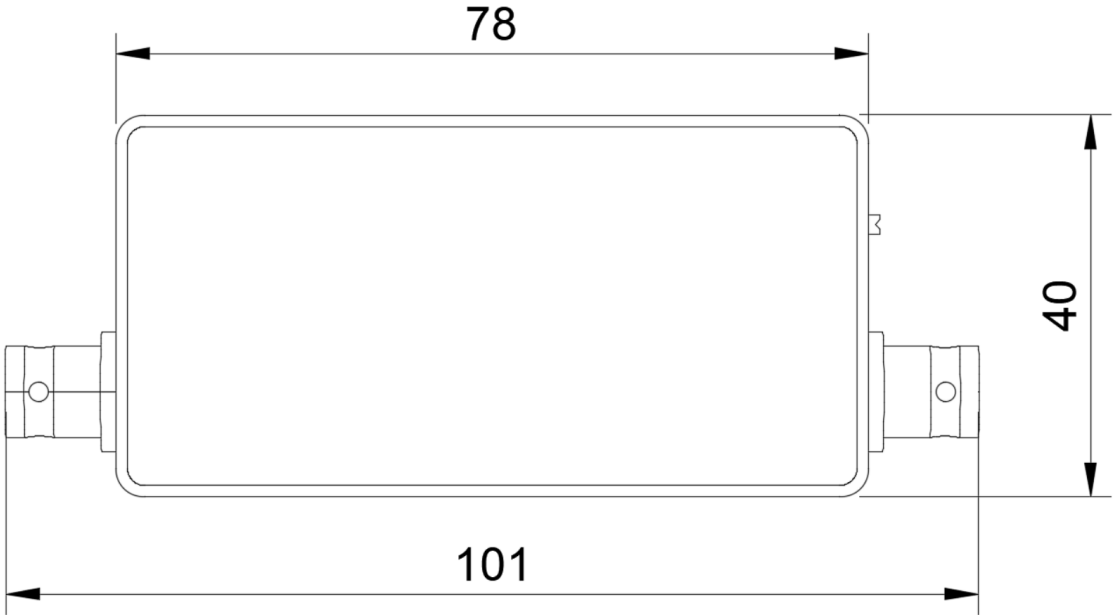


3 Usage examples

The IEPE signal conditioner is used with piezoelectric or other kind of sensors to connect them with data acquisition systems or oscilloscopes. It supplies the sensor with power and adapts the output signal.

4 Technical specification

- 1Hz to 50kHz
- Gain 1:1
- LEDs that indicate the state of the sensor
- Standard BNC connectors
- Selectable current range
- 4mA or 8mA current to the sensor
- Powered by standard USB-C
- Mechanical dimensions [mm]:



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