

Charge and IEPE Signal Conditioner



Application

- Signal conditioning for dynamic measurement with piezoelectric sensors for acceleration, force and pressure or sound
- Front-end with anti-aliasing filter for PC data acquisition systems
- Mobile measuring systems
- Test benches in laboratory and production facilities
- Multichannel measuring systems

Properties

- Component of instrument family M72
- Module for 19 inch rack mounting
- 5 charge and 4 IEPE/AC voltage ranges with low noise provide a total dynamic range of 140 and 120 dB, respectively
- Output without integration or with single or double integration for the measurement of acceleration, velocity or displacement
- Low-pass filter with 0.1 / 1 / 10 / 50 kHz, high-pass with 0.1 and 3 Hz
- Digital interface for use in the 8 channel case M72R8
- Operation via front panel push buttons

Technical Data

Measurement functions

Measurands	Vibration acceleration Vibration velocity/severity Vibration displacement	
Measuring range acceleration	0.0001 to 1000 (sensitivity 100 pC/ms-2) 0.1 to 1000000 (sensitivity 0.1 pC/ms-2) 0.00001 to 5 (sensitivity 1000 mV/ms-2) 0.1 to 50000 (sensitivity 0.1 mV/ms-2)	m/s ² m/s ² m/s ² m/s ²
Voltage gain	1; 10; 100; 1000	
Charge gain	0.1; 1; 10; 100; 1000	mV/pC
Gain selection	Push button; Interface	
Accuracy	±0.5 (Gain = 0.1/1/10/100; > 10 % full scale; mid-band) ±1 (Gain = 1000; > 10 % of full scale; mid-band)	% %
Output noise	<6 (charge input; 1 to 50000 Hz; G = 1000) <3 (charge input; 1 to 30000 Hz; G = 1000) <7 (IEPE input; 1 to 50000 Hz; G = 1000) <3 (IEPE input; 1 to 50000 Hz; G = 1000)	mVRMS mVRMS mVRMS mVRMS
Lower frequency limit acceleration	0.1; 3	Hz
Lower frequency limit velocity	3	Hz
Lower frequency limit displacement	3	Hz
Upper frequency limit acceleration	100; 1000; 10000; 50000	Hz
Upper frequency limit velocity	100; 1000	Hz
Upper frequency limit displacement	200	Hz
Indication	LED for input type LEDs for filters and integration LED for overload	

Connectors

Input channels	1	
Input signals	IEPE Charge AC voltage	
Input connector	BNC rear	
IEPE constant current	3.5 to 4.5	mA
Output connector	BNC rear	
Digital interfaces	RS-232 rear	

Power Supply

External supply voltage	8 to 28	VDC
External supply current	60 to 250	mA
Supply connection	Socket D-Sub 9, rear	

Case Data

Dimensions without connectors	6 WU x 3 HU x 170	mm
Case material	Aluminum, hard anodized	
Operating temperature range	-10 to 55 (95 % rel. humidity without condensation)	°C

Optional accessories	MQ20 Charge attenuator 1:10 MQ40 Charge attenuator 1:100
----------------------	---

Manfred Weber

Metra Mess- und Frequenztechnik in Radebeul e.K.

