Charge and IEPE Signal Conditioner



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M72R1	M72R1	M72R1	M72R1	M72R1	M72R1	M72R1	M72R1	
• • • Overt.	• • • Overt.	• • • Overl. • • • 1000	• • • Overt.	• • Overl.	O Overl.	© Overt.	© Overt.	
Gala 0 100	100	100	- 1000	@ 1000 100	9 1000	• • 1000	• • 1000	
Caln © 10 © 1	Gain 🕤 10	Gain 🕥 10	Geln @ 10	Gain @ 10	Gain 0 10	Gain (0 100	Gain O 100	
	01 • • 06,1	01			01	01	Gain O 10	
			• • • • 0,1	• • • • 0,1	• • • • •,1	• • • • 0,1	0.1	
SHz	SHz.	🔵 SHz	3Hz	C 3Hz	SHz			
Highpean/ @ Dis.	Highpass/ @ Dis.	Hindunand Vel.	• Vel.	O Vel.	• Vul.	• SHz	SHz	
	Infegrator	Highpess/ @ Dis.	Integrator @ Dis.	Highpass/ @ Dis.	Highpass/ O Die.	Highpass/ @ Dis.	Highpess/ @ Dis.	
0 to		@ 50				9 10		
Lowpass	Lowpass			0 0 10 kHz	9 10 MHz	- G 10	0 50	
0 0,1	@ 0,1	Lowpass 0 0,1	Lowpess 0 1	Lowpass 0 1	Lowpess 1	Lowpass	Lowpass 1 MHz	
Chg.	生	3	3	-	• 0,1	• 0,1	@ 0,1	
Input O EPE	Chg.	Chg.	• Chg.	O Chg.	Chg.	Chg.		
CHARGE / IEPE	CHARGE / IEPE		Input 🙁 IEPE	Input 🔍 IEPE	Input 🥥 IEPE		e Chg. Input e IEPE	
AMPLIFIER	AMPLIFIER	CHARGE / IEPE AMPLIFIER	CHARGE / IEPE AMPLIFIER		CHARGE / IEPE	CHARGE / IEPE	CHARGE / IEPE	
0	0		G	AMPLIFIER	AMPLIFIER	AMPLIFIER	AMPLIFIER	

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
- \bullet 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)	m/s²
	0.1 to 1000000 (sensitivity 0.1 pC/ms-2)	m/s ²
	0.00001 to 5 (sensitivity 1000 mV/ms-2)	m/s ²
	0.1 to 50000 (sensitivity 0.1 mV/ms-2)	m/s ²
/oltage gain	1; 10; 100; 1000	11/3
Charge gain	0.1; 1; 10; 100; 1000	mV/pC
Gain selection	Push button; Interface	niv/pC
Accuracy	± 0.5 (Gain = 0.1/1/10/100; > 10 % full scale; mid-band)	%
Accuracy	± 0.3 (Gain = 0.17710700, > 10 % full scale; mid-band) ± 1 (Gain = 1000; > 10 % of full scale; mid-band)	%
		mVRMS
Dutput noise	<6 (charge input; 1 to 50000 Hz; G = 1000)	mVRMS
	<3 (charge input; 1 to 30000 Hz; G = 1000)	
	<7 (IEPE input; 1 to 50000 Hz; G = 1000)	mVRMS
	<3 (IEPE input; 1 to 50000 Hz; G = 1000)	mVRMS
_ower frequency limit acceleration	0.1; 3	Hz
_ower frequency limit velocity	3	Hz
_ower frequency limit displacement	3	Hz
Upper frequency limit acceleration	100; 1000; 10000; 50000	Hz
Jpper frequency limit velocity	100; 1000	Hz
Jpper frequency limit displacement	200	Hz
ndication	LED for input type	
	LEDs for filters and integration	
	LED for overload	
Connectors		
nput channels	1	
nput signals	IEPE	
nput signals	IEPE Charge	
nput signals		
	Charge	
nput connector	Charge AC voltage	mA
nput connector EPEconstant current	Charge AC voltage BNC rear	mA
Input connector IEPEconstant current Output connector	Charge AC voltage BNC rear 3.5 to 4.5	mA
nput connector EPEconstant current Output connector Digital interfaces	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear	mA
Input connector IEPEconstant current Output connector Digital interfaces Power Supply	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear	
Input connector IEPEconstant current Output connector Digital interfaces Power Supply External supply voltage	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear 8 to 28	VDC
Input connector IEPEconstant current Output connector Digital interfaces Power Supply External supply voltage External supply current	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear 8 to 28 60 to 250	
nput connector EPEconstant current Output connector Digital interfaces Power Supply External supply voltage External supply current	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear 8 to 28	VDC
Input connector IEPEconstant current Output connector Digital interfaces Power Supply External supply voltage External supply current Supply connection	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear 8 to 28 60 to 250	VDC
nput connector EPEconstant current Output connector Digital interfaces Power Supply External supply voltage External supply current Supply connection Case Data	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear 8 to 28 60 to 250	VDC
Input signals Input connector IEPEconstant current Output connector Digital interfaces Power Supply External supply voltage External supply current Supply connection Case Data Dimensions without connectors Case material	Charge AC voltage BNC rear 3.5 to 4.5 BNC rear RS-232 rear 8 to 28 60 to 250 Socket D-Sub 9, rear	VDC mA

MQ40 Charge attenuator 1:100

Manfred Weber

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