

## Uniaxial resistive Accelerometer

**Model  
148M/GP  
148C/GP**

- Measurement range types 50g, 250g, 750g
- Miniature design
- High shock resistance
- Long durability
- Damped version
- Splash-proof according to IP54
- Repairable model

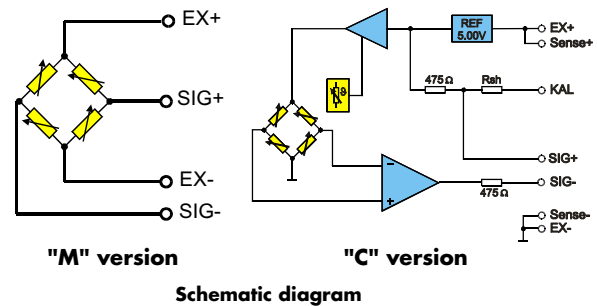


## Application

This model was developed to measure dynamic actions in the vehicle development, to measure vibrations at components during road trials and for the universal use at test stands.

Due to its different measuring range types, to its high sensitivity, its great frequency response and rugged design and to its very good standard specifications according to temperature impacts, it is suitable for further industrial applications such as aviation and aerospace.

The damped sensor element is highly shock-resistant. Therefore it shows an easy handling during its assembly and disassembly. The device is mounted with four screws at the measuring location.



## Functional Concept

The transducer model series is based on a specific silicon sensor element with gas attenuation and integrated overload stop units. As described in the schematic diagram the standard ("M" version) is a passive full bridge. The model 148C/GP has an additional external electronic feature to amplify high signal levels and to compensate the temperature electronically. The supply voltage of this type may vary in the range of 9 to 12 V without influencing the sensitivity of the bridge.

Both types are available with identification modules. A conversion to a digital sensor with an SPI interface combined with the MSC AIM (AnalogInputModule) is possible as well.

### Options

Customized cable lengths and connectors with customer-specific pin assignment; temperature-proof cable up to 120°C; MSC Identification Module (UPS or Dallas version) oder AnalogInputModule; selected transducers with a transverse sensitivity < 1 %, a small offset or with specific technical characteristics.

### Accessories

Fixing screws *)	Article №.: 320283 (4 Stück)
Drilling pattern	on request
Mounting plate	- " -
Pendulum calibration adapter	- " -
Sine calibration adapter	- " -

For further details please see accessories catalog

\*) included in scope of delivery

Typical Data	Unit	Measurement Range (Range Type) in g			Remarks
		50	250	750	
Sensitivity <sup>(1)</sup>	mV/g	1 40	0,3 8	0,15 2,7	148M/GP 148C/GP
Frequency response DC up to	HZ	850	1500	2000	±5% tolerance
Resonance frequency	kHz	> 2	> 4	> 5	mounted
Shock load	g	1000	2000	2000	Pulse > 2ms

<sup>(1)</sup> Sensitivity at 80 Hz, at 50 m/s<sup>2</sup> of sine amplitude

## Technical Specifications

All specifications are typical at 25° C and rated at 10 V sensor supply voltage, unless otherwise specified.

General Data	Unit	Value	Remark
Supply voltage	V DC	5...12 9...12	specific for 148M/GP specific for 148C/GP
Sensor current consumption	mA/channel	2,5	10 bei Modulbetrieb
Attenuation		0,7	
Non-linearity	±% (typ.)	0,3	max. 1
Transverse sensitivity <sup>(1)</sup>	% (typ.)	2	max. 3
Zero Measurand Output	±mV (typ.)	10 20	148M/GP: max. 50 148C/GP: max. 100
Temperature drift - sensitivity in the range of -10...80° C	±% (max.)	10 3	specific for 148M/GP specific for 148C/GP
Bridge resistance	kOhm (typ.)	4	
Source resistance (SIG+ to SIG-)	kOhm	4 1,2	specific for 148M/GP specific for 148C/GP
Insulation resistance <sup>(2)</sup>	MOhm (min.)	90	
Warm up period	s (max.)	120	
Working temperature	°C	-40...+80	short-term 100° (2 min.) <sup>(3)</sup>
Storage temperature		-50 ...+90	
Transducer fixing screws	metric	M2 x 8	DIN912, 4 units
Torque moment	Nm	0,45	
UPS Module	1	optionally	
Housing material		Al alloy	
Dimensions	mm	20,8 x 20,8 x 8,8	
Transducer weight	Grams	8	without cable and additional housing

<sup>(1)</sup> Accelerometers with selected transverse sensitivity < 1 % are available with extra charge

<sup>(2)</sup> All wires to screen (GND), measured with 10 V (DC)

<sup>(3)</sup> Cable type CM16A30-T1, temperature-proof cable up to 120°C is optionally available

### Model/Option Code: Model 148M/GP-RT-KT-ST-ZT

148M/GP and 148C/GP:

Model declaration with version and application hint

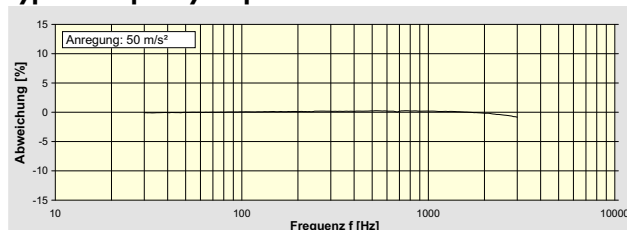
-RT: Range Type (Measurement range)

-KT: Cable type resp. cable length in cm

-ST: Connector type (Interface to channel collector or acquisition panel)

-ZT: Certification Type (customized calibration, shock/sine calibration, etc.)

### Typical frequency response



Z Axis

### Dimensions and directions of action

