

# Accelerometer

## Uniaxial, Piezoresistive

Type M0064C...

Type M0064C... is based on an advanced piezoresistive MEMS sensing element which offers exceptional dynamic range and stability.

- Measuring ranges  $\pm 200 \dots 2\,000\text{ g}$
- Excitation  $2 \dots 10\text{ VDC}$
- Low transverse sensitivity
- Piezoresistive MEMS element
- Low noise jacketed cable
- Zero offset  $< \pm 25\text{ mV}$

### Description

The sensor features a full bridge output configuration with a temperature range from  $0 \dots 50\text{ }^\circ\text{C}$ . A slight amount of internal gas damping provides outstanding shock survivability and a flat amplitude and phase response up to  $7\text{ kHz}$ . Type M0064C... is compliant with SAE J211 standards for anthropomorphic dummy instrumentation.

### Application

The sensor is designed especially for safety crash testing (auto, truck, recreational vehicles, shock testing).

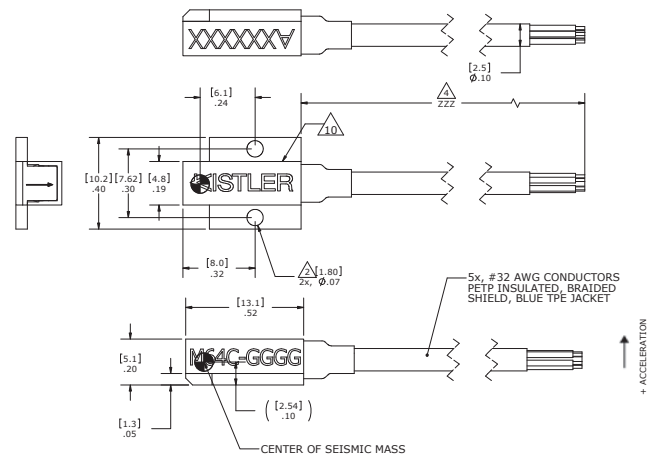


Fig. 1: Dimensions and center of seismic mass

### Technical Data

#### Dynamic

Measuring range	g	$\pm 200$	$\pm 500$	$\pm 2\,000$
Sensitivity <sup>1)</sup>	mV/g	0,80	0,40	0,15
Frequency response				
$\pm 2,0\%$	Hz	0 ... 600	0 ... 800	0 ... 3 000
$\pm 5,0\%$	Hz	0 ... 1 400	0 ... 2 000	0 ... 5 000
$\pm 10,0\%$	Hz	0 ... 1 900	0 ... 2 800	0 ... 7 000
Resonant frequency	Hz	8 000	15 000	26 000
Amplitude non-linearity	%FSO	$\pm 1$	$\pm 1$	$\pm 1$
Damping ratio, typ.		0,5	0,3	0,05
Transverse sensitivity <sup>2)</sup>	%	$< 3$	$< 3$	$< 3$
Shock limit	g	5 000	10 000	10 000

M0064C\_003-100e-09.22

**Technical Data (Continuation -T Option)**

**Electrical**

Zero acceleration output <sup>3)</sup>	mV	<±25
Excitation	VDC	2 ... 10
Input resistance	Ω	2 400 ... 6 000
Output resistance	Ω	2 400 ... 6 000
Insulation resistance, @ 100 VDC	MΩ	>100
Residual noise	µV RMS	<10
Ground isolation		isolated from mounting surface

**Environmental**

Thermal zero shift, from 0 ... 50 °C	%FSO/°C	±0,04
Thermal sens. shift, from 0 ... 50 °C	%/°C	-0,2 (±0,05)
Operating temperature range	°C	-40 ... 121
Storage temperature range	°C	-40 ... 121
Humidity, epoxy sealed		IP61

**Physical**

Case material/cover material	anodized aluminium	
Cable <sup>4)</sup>	4x#32 AWG conductors PFA insulated braided shield TPE jacket	
Mounting	2x#0-80x3/16 socket head cap screws torque 3 lb-in	
Weight (without cable)	grams	1

All values are typical at +24 °C, 100 Hz and 10 VDC excitation unless otherwise stated.

<sup>1)</sup> Output is ratiometric to excitation voltage

<sup>2)</sup> <1 % Option

<sup>3)</sup> <±10 mV Option

<sup>4)</sup> Integral up to a cable length of 360 inches available

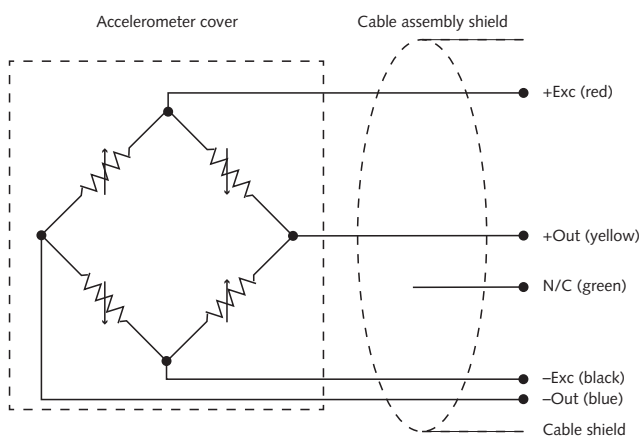


Fig. 2: Schematic diagram

**Included Accessories**

- Socket head cap screw, 2x#0-80 (3/16" length)
- Washer, 2x#0
- Allen key, 1 unit

**Type No.**

on request  
on request  
on request

**Optional Accessories**

- None

**Ordering Key**

Type M0064C00-□-□-□□□□

**Measuring Range**

±200 g	0200
±500 g	0500
±2 000 g	2000

**Cable Length**

8 ... 360 inches <sup>*)</sup>	###
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**Sensor Detail**

Nothing	A
UPS	B
Dallas	C
DiMod	D
Shunt	N
Shunt & Dallas	P

**Connector**

Conn. type, as per TP-600	#
Conn. assignment, as per TP-600	#

**Calibration Power Supply**

10 VDC	0
5 VDC	1
2,5 VDC	2
2 VDC	3

**Transverse Sensitivity**

Standard (<3 %)	S
High precision (<1 %)	T

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<sup>\*)</sup> 1 inch = 25,4 mm