Accelerometer Type BB-4W

Applications

Acceleration measurement for weighing objects in motion:

- Dynamic weight recording built into tipping units on refuse collection vehicles
- Weighing in robot arms etc.

Features

- Optimised accelerometer for weighing objects in motion (physically correct compensation of acceleration and tilt)
- Extremely robust housing
- Compact physical dimensions
- Overload capacity
- Integrated calibration memory
- High precision
- Frequency output signal

Measuring principle

The sensor is essentially a silicon differential capacitor, in which the deflection of the middle plate (seismic mass) is measured. The suspension of the capacitor plate ensures a pure vectorial measurement of the forces.

The signal is then converted electronically, so as to give an acceleration output in the form of a 5V TTL frequency signal.
The temperature is also measured in the sensor, allowing a computed temperature correction of both zero and gain. Calibration data are stored in an integrated EEPROM memory.

Description

The BB accelerometer was developed specifically for dynamic weighing, a DIGI SENS speciality. Thanks to its small size and robust stainless-steel housing, it can be mounted near the centre of gravity of the object to be weighed, so as to measure its acceleration exactly.

When connected to a DIGI SENS weighing computer, the weight of a load can be determined, even if this never comes to rest.

The specifications of the BB accelerometer are fully suited to this task. It has also been correspondingly officially tested, so that it can form part of a certified dynamic weighing system.

Signal processing

The data specific to the load cell are stored in a built-in memory. As a result, no calibration is required either at commissioning or when changing a load cell.

A 5V TTL signal is available at the output. The DIGI SENS computer is to be recommended for signal processing, it is designed for eight load cells and the data from the different cells can be combined in real-time.

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Technical Data

Acceleration range • **calibration** • **service**		g	±1.0 ±1.7
Frequency response		Hz	50±30
Resolution		g	0.001
Combined error		%	< ±0.030
Repeatability		g	0.001
Overload capability without permanent damage		g	20000
Temperature drift of zero		%/K	0.002
Temperature drift of sensitivity		%/K	0.002
Warming-up time for max error 0.03%		min	< 5
Power supply • **voltage** • **max current consumption**		V DC mA	5±0.2 < 20
Output signal • **sensitivity** • **amplitude**		kHz/g V DC	5 5V TTL
Temperature range • **calibration** • **service**		°C	-10...+40 -30...+70
Protection class			IP68
Weight		kg	0.49
EMC			according to IEC 61000
Environmental (shocks / vibrations)			according to IEC 60068

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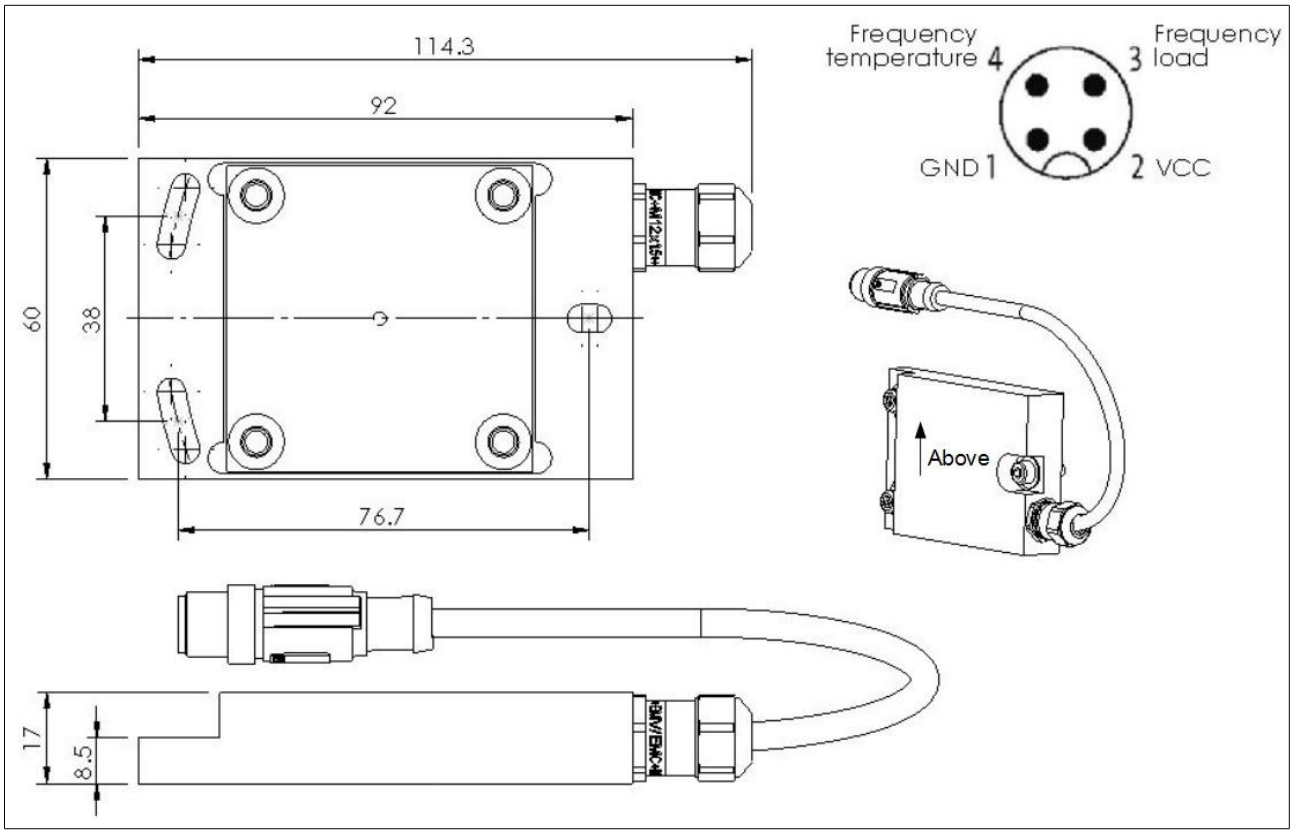
Dimensional drawing



Mounting instruction manual K184

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