

FS65HDA

Heavy Duty Accelerometer



Key Features

- High resolution
- Low weight
- Compact design
- Railway rated cables and connectors

Description

The **FS65HDA Heavy Duty Accelerometer** is a Fiber Bragg Grating (FBG) based single-axis acceleration sensor, designed to be **directly fixed with screws**. It is suited for **high voltage** and **harsh environments** commonly found in **railway applications**, namely in **vehicles' pantograph**. It operates with two FBG for effective **temperature compensation** and can be inserted **in series** with other sensors as it is provided with two lead fibers.

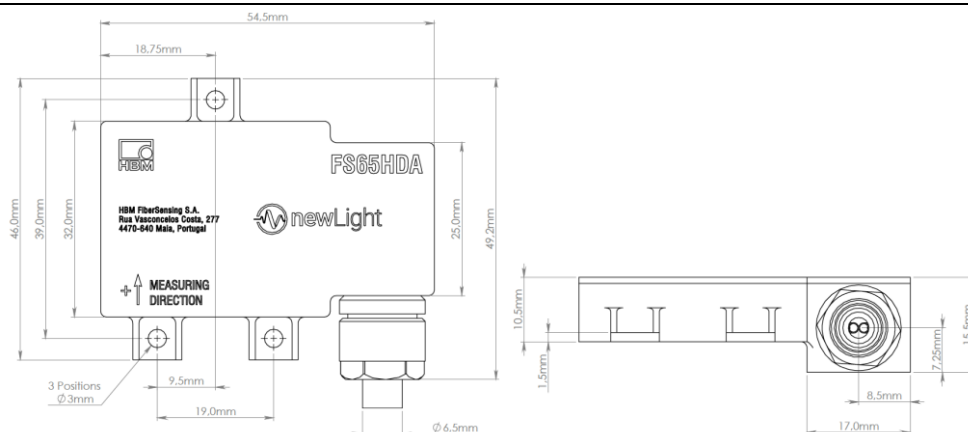
The FS65HDA is based on the **newLight®** technology. It was developed by HBM FiberSensing to exploit all advantages of the FBG sensing technology by employing **high strength fiber coatings** and **innovative FBG fabrication techniques** to ensure increased strain measurement ranges, enhanced fatigue resistance and superior reliability. **The low bend loss, telecom compatible fiber** opens the possibility for compact sensor designs as well as the straightforward multiplexing of sensors on the same fiber over many kilometers. newLight® sensors are completely **passive, self-referenced** and **compatible with most interrogators**.

Benefits and applications

- High robustness and reliability ensured by innovative sensor design, careful selection of materials and compact packaging
- No need for temperature compensation with external elements
- Possibility to connect in series with other FBG sensors on a single optical fiber
- Specifications compatible with railway applications

Fiber Bragg grating technology

- Absolute reference measurement
- Insensitive to EM/RF interferences
- Passive (can be used in risk explosion areas)
- Intrinsic multiplexing capability reducing cabling requirements
- Long distances between sensors and the interrogators
- Combinable with other sensor measurands



Sensor		
Sensitivity ¹	pm/g	70
Nominal acceleration	g	±20
Cross axis sensitivity	%	<1
Frequency range ²	Hz	0 to 200
Resonance frequency	Hz	700
Operation temperature range	°C	-20 .. 80
Storage temperature range	°C	-40 .. 85
Maximum acceleration	g	±100
Degree of protection ³	n.a.	IP67
Dimensions	mm	54.5 x 49.2 x 15.5
Weight ⁴	g	34
Inputs / Outputs		
Cable	n.a.	Huber+Suhner Radox
Cable length	m	8.0±0.1
Connector ⁵	n.a.	Huber+Suhner Q-ODC-2
Ordering Information		
1-FSOEM-1701-02-01		

¹ Typical value. Sensitivity defined as wavelength difference ($\lambda_2 - \lambda_1$) / acceleration.

² Relative sensitivity variation <10% from 0..200Hz and <30% from 0..350Hz.

³ DIN EN 60529.

⁴ Not considering cables.

⁵ Other connector types available.

Subject to modifications.
All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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