Data sheet

FS66HDL

Heavy Duty Load Cell

Key Features

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

Description

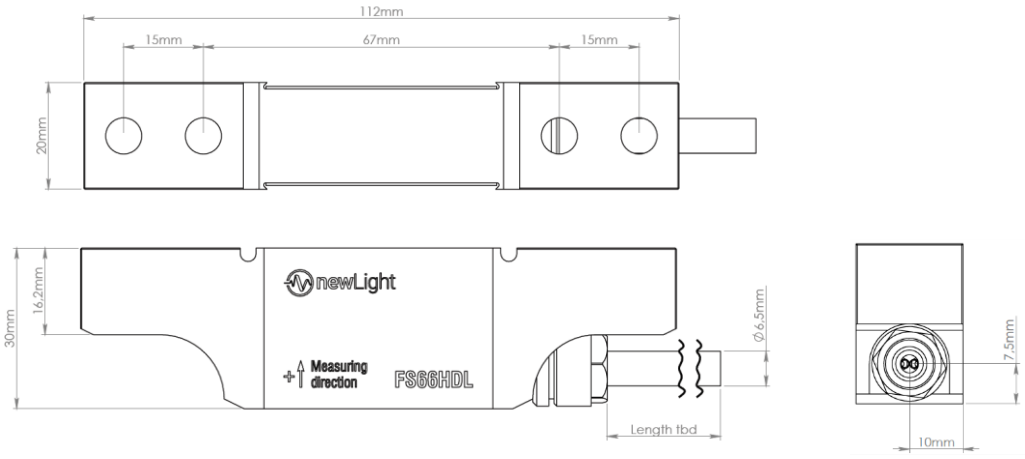
The **FS66HDL Heavy Duty Load Cell** is a Fiber Bragg Grating (FBG) based single axis force sensor, designed to be **directly fixed with screws**. It is suited for **high voltage** and **harsh environments** commonly found in **railway applications**, namely in **vehicles' pantograph**. It operates with two FBG for effective **temperature compensation** and can be inserted **in series** with other sensors as it is provided with two lead fibers.
The FS66HDA 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/N	2.1
Measurement range	N	500
Maximum load	N	1000
Critical load	N	1250
Dependence of zero point on temperature	% / 10ºC	0.3
Dependence of sensitivity coefficient on temperature	% /10ºC	0.5
Linearity deviation[2]	%	0.5
Acceptable interfering moment: around y axis/ around x axis	N.m	40 / 25
Operation temperature range	ºC	-20 .. 80
Storage temperature range	ºC	-40 .. 85
Degree of protection[3]	n.a.	IP67
Dimensions	mm	112 x 20 x 30
Weight[4]	g	99
Inputs / Outputs		
Cable type	n.a.	Huber+Suhner Radox
Cable length	m	8.0±0.1
Connectors[5]	n.a.	Huber+Suhner Q-ODC-2

Ordering Information
1-FSOEM-1701-01-01

[1] Typical value. Sensitivity defined as wavelength difference (λ_2 - λ_1) / force.
[2] Referred to nominal load.
[3] DIN EN 60529.
[4] Without cables.
[5] Other connector types available.

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