

DATA SHEET

FSOEM-1701

Pantograph Monitoring Solution

SPECIAL FEATURES

- Intrinsically immune to EMI
- Electrically passive
- Compact design and low weight
- Designed for application on pantographs
- EN45545 certified
- Complete solution from a single supplier



DESCRIPTION

The HBK pantograph monitoring solution for predictive maintenance of pantographs and overhead powerlines is a fully optical measurement solution to be installed on regular operating trains, directly on the pantograph. It is based on load and acceleration optical sensors that are passive and safe for accurate measurements on high-voltage conditions.

The system can be combined with additional HBK equipment creating a hybrid system that can integrate information from vehicle bus signals and GPS to build a georeferenced status of the infrastructure and its maintenance plan. By using this system, instead of periodic track interruption for maintenance, the owner can continuously assess the overhead power line condition and plan for maintenance on demand.

BENEFITS AND APPLICATION

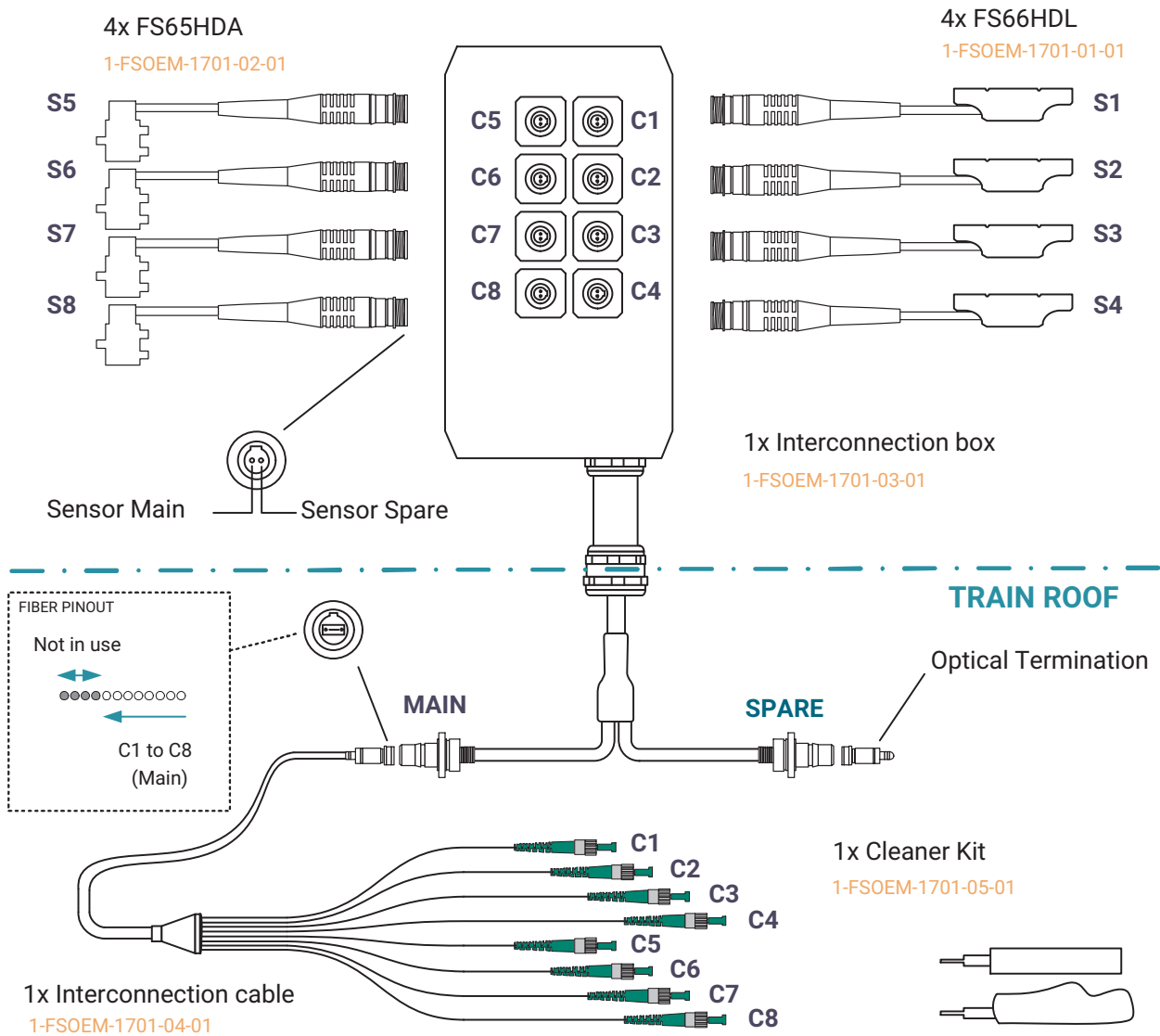
Solution

- Complete solution from a single source supplier
- Safe usage in high voltage environments
- Reduce costs by preventing unnecessary maintenance and track interruption for inspection
- Integrate with vehicle information for a mapped identification of the extension, location and frequency of damage in the infrastructure

Fiber Bragg grating technology

- No drift, absolute referenced measurements
- Immune to electro-magnetic and radio frequency interferences
- Passive technology fitting applications in explosive areas
- Reduced cable requirements with intrinsic multiplexing capability

SYSTEM ARCHITECTURE



SYSTEM COMPONENTS

1-FSOEM-1701				
Article	Description	Data sheet	Order No.	Quantity
FS66HDL	FS66HDL Heavy Duty Force Sensors	B05908	1-FSOEM-1701-01-01	4
FS65HDA	FS65HDA Heavy Duty Accelerometer	B05904	1-FSOEM-1701-02-01	4
Box	Interconnection box for connecting FS65HDA and FS66HDL sensors	B05907	1-FSOEM-1701-03-01	1
Cable	Cable for connecting Interconnection box terminations to the interrogator	B05906	1-FSOEM-1701-04-01	1
Cleaner	Tool for cleaning Pantograph System Connectors	B05905	1-FSOEM-1701-05-01	1

INTERROGATOR (TO BE ORDERED SEPARATELY)

Article	Description	Order No.
MXFS DI	<p>MXFS BraggMETER Interrogator Module</p> <p>8-connector FiberSensing module of the QuantumX family;</p> <p>For Fiber Bragg Grating (FBG) sensors and transducers including strain, force, temperature, acceleration, tilt or displacement.</p> <p>The following applies for each optical connector:</p> <ul style="list-style-type: none">- Max. number of channels per connector: 16;- Selectable scanning rates at 2kS/s or 100S/s (all channels simultaneously);- Connector type: FC/APC; <p>General connections:</p> <ul style="list-style-type: none">- 2 x Ethernet supporting PTPv2 (RJ45);- 2 x FireWire and backplane connector;- Voltage supply: 10...30 V DC, max. 24 W (ODU). <p>Includes catman Easy software license and maintenance for 12 months.</p>	1-MXFS8DI1/FC

ORDERING INFORMATION

Article	Description
1-FSOEM-1701	<p>Pantograph Monitoring System passive components package.</p> <p>Composed by:</p> <ul style="list-style-type: none">- 4 FS66HDL Heavy Duty Force Sensors- 4 FS65HDA Heavy Duty Accelerometers- 1 Interconnection Box- 1 Connection Cable- 1 Connector Cleaner Set <p>For additional items or quantities, please contact HBK FiberSensing.</p>

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They are not to be understood as a guarantee of quality or durability.