ASC DiSens® MD
Digital Accelerometer

**SPECIFICATIONS**
- Triaxial Accelerometer
- Digital Output: EtherCAT
- Daisy Chaining
- Protection Class IP20
- Software Package included

**FEATURES**
- Measurement Ranges: ±2g, ±4, ±8g
- DC Response
- High Resolution
- EtherCAT
- Noise Density: 25 μg/sqrt(Hz)
- High Shock Limit

**APPLICATIONS**
- Structural Health Monitoring
- Bridge Monitoring
- Seismic Measurements
- Mobile Network Antenna Structural Monitoring
- Vibration Monitoring on Construction Machines
- Condition Monitoring on Machines and Equipment

**ASC DiSens® MD**
The ASC DiSens® series is a novel ASC sensor solution with digital interfaces. It combines high-quality sensors with an integrated data acquisition system, so that separate data acquisition is no longer necessary.

Due to the transmission of digital data, many interferences no longer play a role, which is particularly important for long cable lengths. The series begins with the new MD model, a triaxial digital accelerometer. The sensor has 2g, 4g and 8g measurement ranges, which are set via the integrated software.

The acceleration values are transmitted as raw data via the EtherCAT protocol to a host system. There they are processed by a separate analysis software. With an active power supply, up to 12 devices can be connected via daisy chaining.

The included DEWESoft X3 software package provides many advantages for the daily test and measurement work such as time savings and easy recording, analysis and reporting.

**OPTIONS**
- Customised Cable Length

**MECHANICAL DRAWING**
## TYPICAL SPECIFICATIONS

### ASC DiSens® MD

**Measurement Range** \( \pm 2g, \pm 4g, \pm 8g \) (to be set via the integrated software)

### SPECIFICATIONS OF THE MEMS ACCELEROMETER

<table>
<thead>
<tr>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3 dB bandwidth</td>
<td>1000</td>
<td></td>
<td>Hz</td>
</tr>
<tr>
<td>Noise density ( \pm 2g )</td>
<td>25</td>
<td></td>
<td>( \mu g/\text{VHz} )</td>
</tr>
<tr>
<td>Residual noise ( \pm 2g @ 50\text{Hz bandwidth} )</td>
<td>100</td>
<td></td>
<td>( \mu g \text{ RMS} )</td>
</tr>
<tr>
<td>Residual noise ( \pm 2g @ 125\text{Hz bandwidth} )</td>
<td>150</td>
<td></td>
<td>( \mu g \text{ RMS} )</td>
</tr>
<tr>
<td>Offset error</td>
<td>-75</td>
<td>+75</td>
<td>mg</td>
</tr>
<tr>
<td>Offset temp. drift (-40^\circ\text{C} \text{ to } +125^\circ\text{C})</td>
<td>-0.15</td>
<td>0.15</td>
<td>mg/\text{degC}</td>
</tr>
<tr>
<td>Sensitivity temp. drift (-40^\circ\text{C} \text{ to } +125^\circ\text{C})</td>
<td>0.01</td>
<td></td>
<td>( %/\text{degC} )</td>
</tr>
<tr>
<td>Linearity error (-1g \text{ to } +1g)</td>
<td>0.1</td>
<td></td>
<td>( %\text{FS} )</td>
</tr>
<tr>
<td>Crossaxis sensitivity</td>
<td>-1</td>
<td>+1</td>
<td></td>
</tr>
<tr>
<td>Sample rate</td>
<td>4</td>
<td></td>
<td>kHz</td>
</tr>
</tbody>
</table>

### GENERAL SPECIFICATIONS OF THE ASC DISENS MD

- **Digital Interface**: EtherCAT
- **Interface Connectors**: RJ45
- **Power Consumption**: 1300 mW
- **Supply Voltage**: 12-48 V
- **Operating Temperature**: -20 to +60 °C
- **IP Rating**: IP20

### PHYSICAL

- **Case material**: Aluminium
- **Mounting**: 4 x M4 screws
- **Weight (without cable)**: 105 gram
- **Cable**: SFTP, CAT5e, CAT6
ASC DiSens® MD

INSTALLATION: DAISY CHAINING

Devices are daisy chained with a standard network cable. It is recommended that the cable is shielded (SFTP, CAT5e) and has a minimum 24 AWG wire thickness. The cable must have 4 wire pairs. The maximum distance node-to-node is 50m. Passive PoE power injector is necessary for merging the EtherCAT signal and power into a single cable.

<table>
<thead>
<tr>
<th>Power Supply Voltage</th>
<th>Cable Length (Device-To-Device)</th>
<th>Cable Size</th>
<th>Max. Number of Devices from a Single Power Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>1 m</td>
<td>AWG 24</td>
<td>8</td>
</tr>
<tr>
<td>24V</td>
<td>50 m</td>
<td>AWG 24</td>
<td>4</td>
</tr>
<tr>
<td>48V</td>
<td>1 m</td>
<td>AWG 24</td>
<td>12</td>
</tr>
<tr>
<td>48V</td>
<td>50 m</td>
<td>AWG 24</td>
<td>10</td>
</tr>
</tbody>
</table>

ORDERING INFORMATION

Model number
ASC DiSens® MD-03