Vert-X 05E - 5V / 10...90% Ub

Application
- Access control systems
- Forklift

Features
- High protection class IP68
- Flat design (5mm)
- Measuring system only 6mm from the edge. This enables the use with rotation centers close to a wall
- Select CW or CCW by Flip-assembly
- Non-contacting measuring method
- Very long life
- High accuracy of measurement
- Applications under adverse ambient conditions possible (humidity, dampness, dust, vibrations etc.)
- Full resolution and accuracy at programmed electrical angle
- Detection of magnetic loss (with safety flag)

Sensor principle   MH-C

Electrical data
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0 ° ... 360 °</td>
</tr>
<tr>
<td>Indep. linearity (typ.)</td>
<td>±0.3 % of meas. range</td>
</tr>
<tr>
<td>Max. hysteresis</td>
<td>±0.1 °</td>
</tr>
<tr>
<td>Resolution</td>
<td>12 bit</td>
</tr>
<tr>
<td>Max. repeatability</td>
<td>±0.1 °</td>
</tr>
<tr>
<td>Sample rate fast mode</td>
<td>5 kHz</td>
</tr>
<tr>
<td>Sample rate slow mode</td>
<td>1.66 kHz</td>
</tr>
<tr>
<td>System propagation delay fast mode</td>
<td>μs (800)</td>
</tr>
<tr>
<td>System propagation delay slow mode</td>
<td>μs 4600 μs</td>
</tr>
<tr>
<td>Max. temperature coefficient of the output signal</td>
<td>ppm/K 50 ppm/K</td>
</tr>
<tr>
<td>MTTFd / MTBF</td>
<td>years 668 / 668 years</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>VDC 5 (±10%)</td>
</tr>
<tr>
<td>Current consumption without load (typ.) fast mode</td>
<td>mA (14)</td>
</tr>
<tr>
<td>Current consumption without load (typ.) slow mode</td>
<td>mA 9</td>
</tr>
<tr>
<td>Min. ohmic load at output</td>
<td>kOhm 10</td>
</tr>
<tr>
<td>Max. capacitive load at output</td>
<td>nF 100</td>
</tr>
<tr>
<td>Reverse polarity protection of power supply</td>
<td>yes/yes</td>
</tr>
</tbody>
</table>

Electrical connection
- Wires (3x)
- Cross section of single wires mm² | 0.5 (AWG20)
- Redundancy feasible | yes
- Cross section of single wires redundant mm² | 0.5 (AWG20)

Mechanical data
- Minimum mechanical range ° | 360 (continuous)
- Protection class | IP68
- Min. life movements | no limitation
- Operating & storage temperature °C | -40 ... +125
- EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000Hz) g | 20
- EN 60068-2-27 Shock g | 50

Standards
- EN 55022 class B, Emission radiated (30...230MHz) dB(μV/m) | max. 30
- EN 55022 class B, Emission radiated (230...1000MHz) dB(μV/m) | max. 37
- EN 55022 class B, Emission conducted (0.15...0.5MHz) dB(μV) | max. 56 ... 46
- EN 55022 class B, Emission conducted (0.5...5MHz) dB(μV) | max. 46
- EN 55022 class B, Emission conducted (5...30MHz) dB(μV) | max. 50
- EN 61000-4-2, ESD (contact discharge / air discharge) kV | ±4 / ±8
- EN 61000-4-3, Immision HF radiated (80...1000MHz/1.4...2.7GHz) V/m | 30
- EN 61000-4-4, Burst (on all lines) kV | ±1
- EN 61000-4-5, Surge (lines to ground) kV | ±1
- EN 61000-4-6, Immision HF conducted (0.15...80MHz) Vemk | 10
- EN 61000-4-8, Immision magnetic field (50Hz) A/m | 300
- EN 60339-1 Insulation resistance (500VDC, 1bar, 2s) GOhm | 20
- EN 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar) kV | 1

Errors and omissions excepted. Subject to change without notice. State: 11.07.16
## Vert-X 05E - 5V / 10...90% Ub

### Ordering code

<table>
<thead>
<tr>
<th>Vert-X</th>
<th>0</th>
<th>5</th>
<th>E</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

### Output characteristics

<table>
<thead>
<tr>
<th>Positive gradient CW</th>
<th>Standard</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive gradient CCW</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>Redundant, positive gradient CW</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>Redundant, positive gradient CCW</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>Redundant, crossed signal curves</td>
<td>Optional</td>
<td>5</td>
</tr>
</tbody>
</table>

**Output signal**

- 10% ... 90% Ub: Standard 2
- x% ... y% Ub (within 5% ... 95%): Optional 3

### Electrical connection

| 1 | Optional | Wires 6pole |
| 2 | Standard  | Wires 3pole |
| 3 | Optional  | Wires 4pole |
| 9 | Optional  | Special wires |

### Power supply voltage

| 5VDC | Standard | 2 |

### Electrical angle

- Electrical angle 360°: Standard
- 03 to 35°; Declaration in 10° steps: Optional
- Special angle: Optional

### Sensor principle

- MH-C

### Mechanical version

- OSE6: Standard, Magnetic actuator type 6
- OSE9: Optional, Special magnetic actuator

### Options (on request)

- Custom magnetic actuator X
- Custom modification of the housing X
- Custom wires X
- Interface x% ... y% Ub (within 5% ... 95% Ub) X
- Sample rate in fast mode X
- Special electrical angle within 30° to 360° (ex factory) X
- Extended operating range, axial (without safety flag) X

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A company of the Siedle-Group
Vert-X 05E6 xxx xxx 1xx  
Vert-X 05E6 xxx xxx 2xx  
Vert-X 05E6 xxx xxx 3xx

Accessories (incl.)
- None

Operating range/Air gap (A)
- Standard with safety flag
  - Single: 0 ... 5.5mm
  - Redundant: 0 ... 5.0mm

- Extended without safety flag (Optional)
  - Single: 0 ... 8.9mm
  - Redundant: 0 ... 8.4mm

Features Safety Flag
- Detection of magnetic loss
- System shut-down in case of magnetic actuator out of valid operating range
- Recommended for safety relevant applications

Vert-X 05E

Indep. linearity with radial misalignment (@360°)

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