### Sensor principle

- **MH-C**
  - Measuring range: 0...360°
  - Indep. linearity: ±0.3%
  - Max. hysteresis: 0.1°
  - Resolution: 12 bit
  - Sample rate fast mode: kHz (5)
  - System propagation delay fast mode: µs (800)
  - Max. temperature coefficient of the output signal: ppm/K 100
  - Power supply voltage: VDC 10.8...35
  - Current consumption without load (typ.): mA (19)
  - Min. ohmic load at output: kOhm 10
  - Max. capacitive load at output: nF 100
  - Reverse polarity protection of power supply: yes
  - Electrical connection: Cable 3pole
  - Cross section of single wires: mm² 0.56 (AWG20)
  - Redundancy feasible: no
  - Mechanical range: 360° (continuous)
  - Protection class: IP54 / IP65
  - Max. starting torque at specified protection class: Ncm 0.5 / 3
  - Max. rotating speed: rpm 120
  - Min. life: movements 50 Mio.
  - Max. permitted axial shaft load: N 20
  - Max. permitted radial shaft load: N 20
  - Operating & storage temperature: °C -40...+85
  - EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000 Hz): g 20
  - EN 60068-2-27 Shock: g 50

- **MH-C2**
  - Measuring range: 0...360°
  - Indep. linearity: ±0.1%
  - Resolution: 14 bit
  - Max. temperature coefficient of the output signal: ppm/K 100
  - Power supply voltage: VDC 10.8...35
  - Current consumption without load (typ.): mA 14
  - Min. ohmic load at output: kOhm 10
  - Max. capacitive load at output: nF 100
  - Reverse polarity protection of power supply: yes
  - Electrical connection: Cable 3pole
  - Cross section of single wires: mm² 0.56 (AWG20)
  - Mechanical range: 360° (continuous)
  - Protection class: IP54 / IP65
  - Max. starting torque at specified protection class: Ncm 0.5 / 3
  - Max. rotating speed: rpm 120
  - Min. life: movements 50 Mio.
  - Max. permitted axial shaft load: N 20
  - Max. permitted radial shaft load: N 20
  - Operating & storage temperature: °C -40...+85
  - EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000 Hz): g 20
  - EN 60068-2-27 Shock: g 50

### Electrical data

- **MH-C**
  - Measuring range: 0...360°
  - Indep. linearity: ±0.3%
  - Resolution: 12 bit
  - Sample rate fast mode: kHz (5)
  - System propagation delay fast mode: µs (800)
  - Max. temperature coefficient of the output signal: ppm/K 100
  - Power supply voltage: VDC 10.8...35
  - Current consumption without load (typ.): mA (19)
  - Min. ohmic load at output: kOhm 10
  - Max. capacitive load at output: nF 100
  - Reverse polarity protection of power supply: yes
  - Electrical connection: Cable 3pole
  - Cross section of single wires: mm² 0.56 (AWG20)
  - Redundancy feasible: no
  - Cross section of single wires redundant: mm² -

- **MH-C2**
  - Measuring range: 0...360°
  - Indep. linearity: ±0.1%
  - Resolution: 14 bit
  - Sample rate fast mode: kHz (5)
  - System propagation delay fast mode: µs (800)
  - Max. temperature coefficient of the output signal: ppm/K 100
  - Power supply voltage: VDC 10.8...35
  - Current consumption without load (typ.): mA 14
  - Min. ohmic load at output: kOhm 10
  - Max. capacitive load at output: nF 100
  - Reverse polarity protection of power supply: yes
  - Electrical connection: Cable 3pole
  - Cross section of single wires: mm² 0.56 (AWG20)
  - Cross section of single wires redundant: mm² -

### Mechanical data

- **MH-C**
  - Measuring range: 0...360°
  - Protection class: IP54 / IP65
  - Max. starting torque at specified protection class: Ncm 0.5 / 3
  - Max. rotating speed: rpm 120
  - Min. life: movements 50 Mio.
  - Max. permitted axial shaft load: N 20
  - Max. permitted radial shaft load: N 20
  - Operating & storage temperature: °C -40...+85
  - EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000 Hz): g 20
  - EN 60068-2-27 Shock: g 50

- **MH-C2**
  - Measuring range: 0...360°
  - Protection class: IP54 / IP65
  - Max. starting torque at specified protection class: Ncm 0.5 / 3
  - Max. rotating speed: rpm 120
  - Min. life: movements 50 Mio.
  - Max. permitted axial shaft load: N 20
  - Max. permitted radial shaft load: N 20
  - Operating & storage temperature: °C -40...+85
  - EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000 Hz): g 20
  - EN 60068-2-27 Shock: g 50

### Standards

- **EN 55022 class B, Emission radiated (30...230 MHz)**: dB(µV/m) max. 30
- **EN 55022 class B, Emission radiated (230...1000MHz)**: dB(µV/m) max. 37
- **EN 61000-4-2, ESD (contact discharge / air discharge)**: kV ±4 / ±8
- **EN 61000-4-3, Emission HF (230...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, Emission HF (80...1000MHz/1.4...2.7GHz)**: V/m 30
- **EN 61000-4-8, Emission magnetic field (50Hz)**: A/m 300
- **EN 60393-1 Insulation resistance (500VDC, 1bar, 2s)**: GOhm 20
- **EN 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)**: kV 1

### Applications
- Harvester
- Fork-lift
- Operating table
- Hydraulic pump

### Features general
- Compact dimensions
- Contactless measuring method
- Long life
- High accuracy of measurement
- Simple adjustment with elongated holes
- Full resolution and accuracy at programmed electrical angle

### Features MH-C
- Linearity of ±0.3%
- Resolution of 12bit
- Lower price than MH-C2

### Features MH-C2
- Linearity of ±0.1%
- Resolution of 14bit
- Index point(s), sense of rotation and angle settable resp. programmable by customer (optional)
Vert-X 28 - 24V / 0.1 - 10V
Ordering code

* Switch outputs

Please define number (max. 127), position and width of the pulses.

<table>
<thead>
<tr>
<th>Output characteristics</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive gradient CW</td>
<td>Standard</td>
<td>1</td>
</tr>
<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>Positive gradient CCW with 1 switch output*</td>
<td>Optional</td>
<td>A</td>
</tr>
<tr>
<td>Positive gradient CCW with 1 switch output*</td>
<td>Optional</td>
<td>B</td>
</tr>
<tr>
<td>Positive gradient CCW with 2 switch outputs*</td>
<td>Optional</td>
<td>C</td>
</tr>
<tr>
<td>Positive gradient CCW with 2 switch outputs*</td>
<td>Optional</td>
<td>D</td>
</tr>
<tr>
<td>Sense of rotation settable</td>
<td>Optional</td>
<td>E</td>
</tr>
<tr>
<td>Zero point &amp; sense of rotation settable</td>
<td>Optional</td>
<td>F</td>
</tr>
<tr>
<td>Middle point &amp; sense of rotation settable</td>
<td>Optional</td>
<td>G</td>
</tr>
<tr>
<td>Start + end point &amp; sense of rotation settable</td>
<td>Optional</td>
<td>H</td>
</tr>
<tr>
<td>Programmable with Vert-X EasyAdapt</td>
<td>Optional</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical connection</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Round cable 3pole</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Wires 4pole</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Wires 5pole</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Wires 6pole</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Special cable / wires</td>
<td>Optional</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of wires</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>10cm</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>30cm</td>
<td>03</td>
<td></td>
</tr>
<tr>
<td>50cm</td>
<td>05</td>
<td></td>
</tr>
<tr>
<td>Special length</td>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of cable</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0m</td>
<td>02</td>
<td></td>
</tr>
<tr>
<td>3.0m</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td>5.0m</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Special length</td>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output signal</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,1VDC ... 10VDC</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power supply voltage</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC Standard</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

| Vert-X | 2 | 8 | 0 | 1 | 7 | 3 | 6 | 6 | 1 | 1 | 1 | 0 | 2 |

<table>
<thead>
<tr>
<th>Mechanical version</th>
<th>MH-C</th>
<th>MH-C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 6mm shaft D-shape; IP54</td>
<td>2801</td>
<td></td>
</tr>
<tr>
<td>Optional Push on coupling; IP54</td>
<td>2821</td>
<td></td>
</tr>
<tr>
<td>Standard 6mm shaft D-shape; IP65</td>
<td>2841</td>
<td></td>
</tr>
<tr>
<td>Optional Push on coupling; IP65</td>
<td>2899</td>
<td></td>
</tr>
</tbody>
</table>

Options (on request)

Errors and omissions excepted. Subject to change without notice. State: 28.02.19

Contelec AG
Portstrasse 38
CH-2503 Biel/Bienne
Phone +41 (0)32 3665600
Telefax +41 (0)32 3665604
sales@contelec.ch

A company of the Siedle-Group
Vert-X 2801
Vert-X 2831

Accessories (incl.)
• None

Vert-X 2821
Vert-X 2841

Accessories (incl.)
• None