

# 提夫自控技术（上海）有限公司



| Sensor principle  |                  | MH-C             | MH-C2 |
|---|------------------|------------------|-------|
| <b>Electrical data</b>                                  |                  |                  |       |
| Measuring range   | °                | 0...360          | -     |
| Indep. linearity  | % of meas. range | ±0.3             | -     |
| Max. hysteresis   | °                | 0.1              | -     |
| Resolution  | bit              | 12               | -     |
| Max. repeatability                                      | °                | 0.1              | -     |
| Sample rate fast mode                                   | kHz              | (5)              | -     |
| Sample rate slow mode                                   | kHz              | 1.66             | -     |
| System propagation delay fast mode                      | µs               | (800)            | -     |
| System propagation delay slow mode                      | µs               | 4600             | -     |
| Max. temperature coefficient of the output signal       | ppm/°K           | 100              | -     |
| MTTFd / MTBF  | years            | 185/185          | -     |
| Power supply voltage                                    | VDC              | 16...35          | -     |
| Current consumption without load (typ.) fast mode       | mA               | (19)             | -     |
| Current consumption without load (typ.) slow mode       | mA               | 14               | -     |
| Min. ohmic load at output                               | kOhm             | 0...0.5          | -     |
| Max. capacitive load at output                          | nF               | 100              | -     |
| Reverse polarity protection of power supply             |                  | yes              | -     |
| Electrical connection                                   |                  | Cable 3pole      | -     |
| Cross section of single wires                           | mm <sup>2</sup>  | 0.56 (AWG20)     | -     |
| Redundancy feasible                                     |                  | no               | -     |
| Electrical connection redundant                         |                  | -                | -     |
| Cross section of single wires redundant                 | mm <sup>2</sup>  | -                | -     |
| <b>Mechanical data</b>                                  |                  |                  |       |
| Mechanical range  | °                | 360 (continuous) | -     |
| Protection class  |                  | IP68 & IP69K     | -     |
| Max. starting torque at specified protection class      | Ncm              | 6                | -     |
| Max. rotating speed                                     | rpm              | 3000             | -     |
| Min. life   | movements        | 360 Mio.         | -     |
| Max. permitted axial shaft load                         | N                | 100              | -     |
| Max. permitted radial shaft load                        | N                | 100              | -     |
| Operating & storage temperature                         | °C               | -40...+85        | -     |
| IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5...2000 Hz)   | g                | 20               | -     |
| IEC 68-2-27 Shock                                       | g                | 50               | -     |
| <b>Standards</b>  |                  |                  |       |
| 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, Immision HF radiated (80...1000 MHz)      | V/m              | 100              | -     |
| EN 61000-4-3, Immision HF radiated (1.4...2GHz)         | V/m              | 3                | -     |
| EN 61000-4-3, Immision HF radiated (2...2.7GHz)         | V/m              | 1                | -     |
| 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              | -     |
| IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)    | GOhm             | 20               | -     |
| IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar) | kV               | 1                | -     |

Vert-X 28HD - 24V / 4 - 20mA

## Applications

- Harvester
- Public transport
- Construction machines

## Features

- Very high protection class IP68 & IP69K
- Very robust design
- Compact dimensions
- Contactless measuring method
- Long life
- High accuracy of measurement
- Simple adjustment with elongated holes
- Applications under harsh ambient conditions possible (humidity, dampness, dust, dirt, vibrations, etc.)
- Full resolution and accuracy at programmed electrical angle

Errors and omissions excepted. Subject to change without notice. State: 02.11.12

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Vert-X 28HD - 24V / 4 - 20mA  
Ordering code

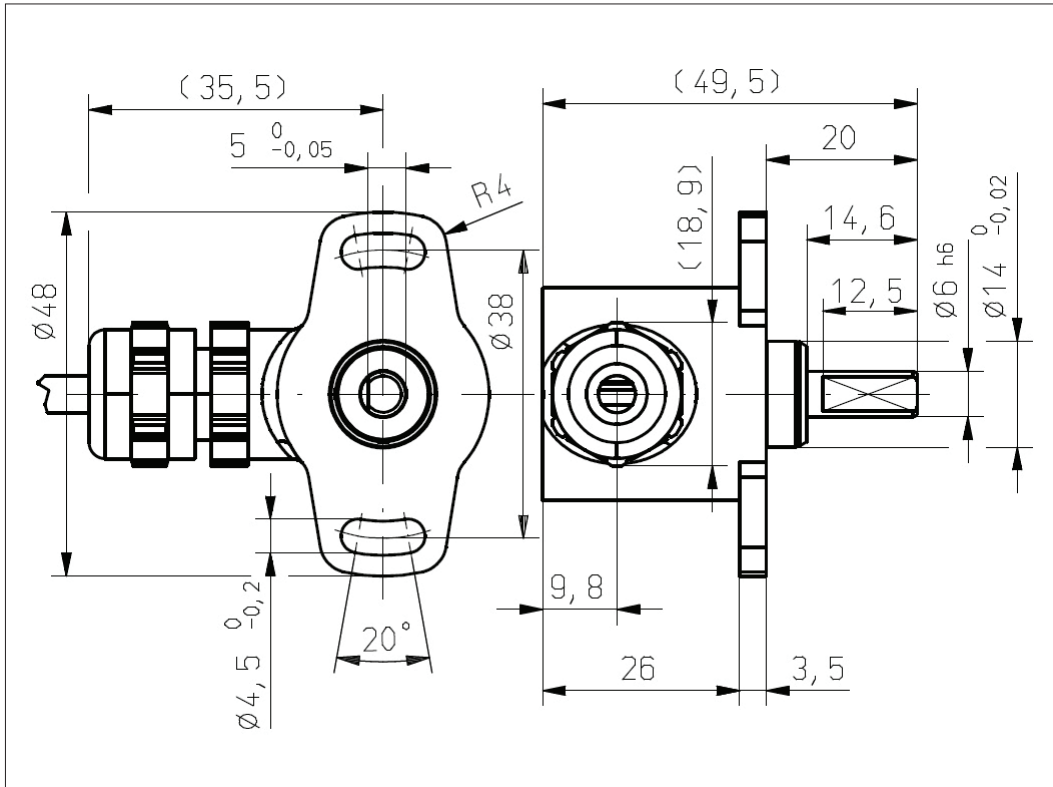
|        |   |                               |          |  |   |                              |                              |
|--------|---|-------------------------------|----------|--|---|------------------------------|------------------------------|
|        |   | <b>Output characteristics</b> |          |  |   | <b>Electrical connection</b> |                              |
|        |   | Positive gradient CW          | Standard | 1  |   |                              | 1 Standard Round cable 3pole |
|        |   | Positive gradient CCW         | Optional | 2  |   |                              | 9 Optional Special cable     |
|        |   | <b>Output signal</b>          |          |  |   | <b>Length of cable</b>       |                              |
|        |   | 4mA...20mA                    | Standard | 2  |   |                              | 02 Standard 1.0m             |
|        |   | <b>Power supply voltage</b>   |          |  |   | 06 Optional 3.0m             |                              |
|        |   | 24VDC                         | Standard | 6  |   |                              | 10 Optional 5.0m             |
|        |   |                               |          |  |   | 99 Optional Special length   |                              |
| Vert-X | 2 | 8                             | H        | D  | 7 | 3                            | 6                            |
|        |   |                               |          |  | 6 | 2                            | 1                            |
|        |   |                               |          |  |   |                              | 1                            |
|        |   |                               |          |  |   |                              | 0                            |
|        |   |                               |          |  |   |                              | 2                            |
|        |   | <b>Electrical angle</b>       |          |  |   |                              |                              |
|        |   | 36                            | Standard | Electrical angle 360°                        |   |                              |                              |
|        |   | xx                            | Optional | 03 to 35; Declaration in 10° steps           |   |                              |                              |
|        |   | 99                            | Optional | Special angle                                |   |                              |                              |
|        |   | <b>Sensor principle</b>       |          |  |   |                              |                              |
|        |   | 7                             | MH-C     |  |   |                              |                              |
|        |   | <b>Mechanical version</b>     |          |  |   |                              |                              |
|        |   | 28HD                          | Standard | 6mm shaft D-shape; IP68 & IP69K - Heavy-duty |   |                              |                              |
|        |   | 28H9                          | Optional | Special shaft                                |   |                              |                              |

|  | MH-C | MH-C2 |
|--|------|-------|
| Custom shaft design                                      | X    | -     |
| Custom cable   | X    | -     |
| Sample rate in fast mode                                 | X    | -     |
| Special characteristic curve                             | -    | -     |
| Special electrical angle within 30° to 360° (ex factory) | X    | -     |
|  |      |       |
|  |      |       |
|  |      |       |
|  |      |       |
|  |      |       |

**Options** (on request)

Errors and omissions excepted. Subject to change without notice. State: 02.11.12





**Vert-X 28HD**

**Accessories (incl.)**

- None

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