



## 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

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	-

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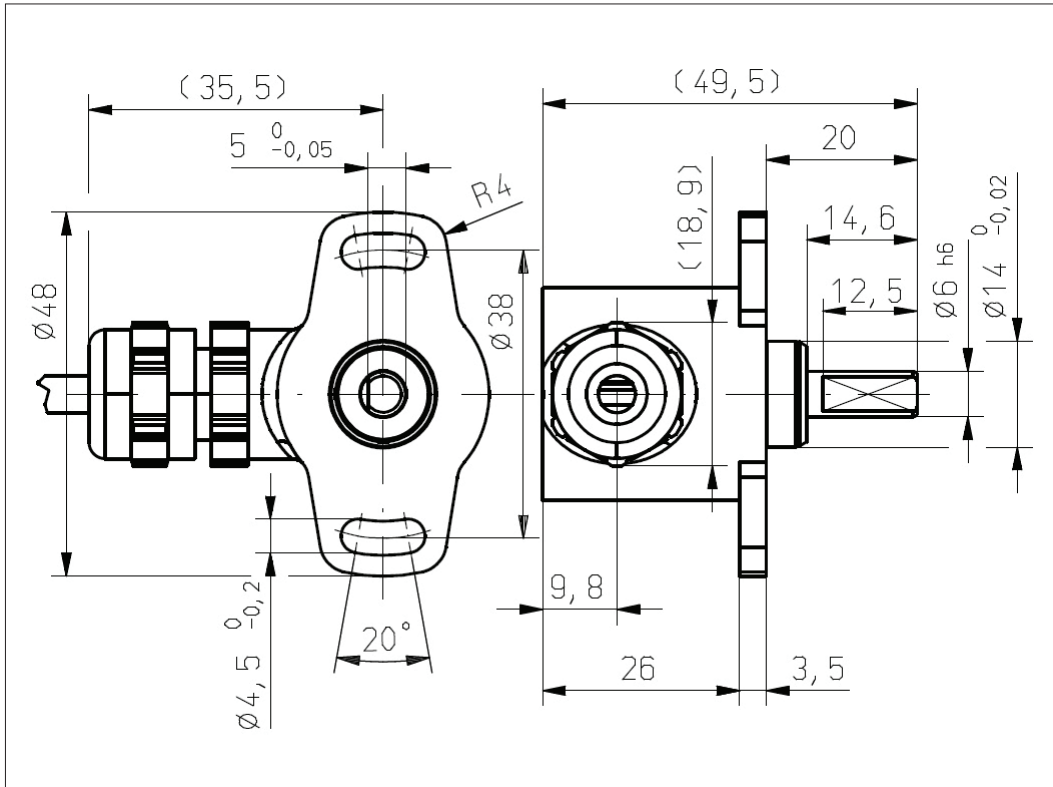
Vert-X 28HD - 24V / 4 - 20mA  
Ordering code

											<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)

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#### Accessories (incl.)

- None

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