



Vert-X 51 - 5V / 10...90% Ub

Applications

- Sensor for 360° marine propulsions
- Direction indicator device
- Agricultural machines
- Special purpose vehicles

Features general

- Compact dimensions
- Contactless measuring method
- 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

Features MH-C

- Linearity of $\pm 0.3\%$
- Resolution of 12bit
- Lower price than MH-C2

Features MH-C2

- Linearity of $\pm 0.1\%$
- Resolution of 14bit
- Index point(s), sense of rotation and angle settable resp. programmable by customer (optional)

Errors and omissions excepted. Subject to change without notice. / State: 28.09.10

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Sensor principle		MH-C	MH-C2
Electrical data			
Measuring range	°	0 ... 360	0 ... 360
Indep. linearity	% of meas. range	± 0.3	± 0.1
Max. hysteresis	°	0.1	0.1
Resolution	bit	12	14
Max. repeatability	°	0.1	0.1
Sample rate fast mode	kHz	(5)	(2)
Sample rate slow mode	kHz	1.66	0.5
System propagation delay fast mode	μ s	(800)	(800)
System propagation delay slow mode	μ s	4600	2500
Max. temperature coefficient of the output signal	ppm/°K	50	50
MTTFd / MTBF	years	668 / 668	308 / 308
Power supply voltage	VDC	5 ($\pm 10\%$)	5 ($\pm 10\%$)
Current consumption without load (typ.) fast mode	mA	(14)	(15)
Current consumption without load (typ.) slow mode	mA	9	10
Min. ohmic load at output	kOhm	10	10
Max. capacitive load at output	nF	100	100
Reverse polarity protection of power supply		yes	no
Electrical connection (s = shielded)		Cable 3pole, s	Cable 3pole, s
Cross section of single wires	mm ²	0.56 (AWG20)	0.56 (AWG20)
Redundancy feasible		yes	yes
Electrical connection redundant (s = shielded)		Cable 6pole, s	Cable 6pole, s
Cross section of single wires redundant	mm ²	0.56 (AWG20)	0.56 (AWG20)
Mechanical data			
Mechanical range	°	360 (continuous)	360 (continuous)
Protection class		IP54 / IP67	IP54 / IP67
Max. starting torque at specified protection class	Ncm	0.5 / 6	0.5 / 6
Max. rotating speed	rpm	6000	6000
Min. life	movements	200 Mio.	200 Mio.
Max. permitted axial shaft load	N	45	45
Max. permitted radial shaft load	N	45	45
Operating & storage temperature	°C	-40 ... +125	-40 ... +85
IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5 ... 2000 Hz)	g	20	20
IEC 68-2-27 Shock	g	50	50
Standards			
EN 55022 class B, Emission radiated (30... 230 MHz)	dB(μ V/m)	max. 30	max. 30
EN 55022 class B, Emission radiated (230...1000MHz)	dB(μ V/m)	max. 37	max. 37
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	± 4 / ± 8	± 4 / ± 8
EN 61000-4-3, Immision HF radiated (80... 1000 MHz)	V/m	30	30
EN 61000-4-4, Burst (on all lines)	kV	± 1	± 1
EN 61000-4-5, Surge (lines to ground)	kV	± 1	± 1
EN 61000-4-6, Immision HF conducted (0.15...80MHz)	Vemk	10	10
EN 61000-4-8, Immision magnetic field (50Hz)	A/m	30	30
IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20	20
IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1	1



Vert-X 51 - 5V / 10...90% Ub Ordering code

* Switch outputs

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

Output characteristics											
Positive gradient CW											
Positive gradient CCW											
Redundant, positive gradient CW											
Redundant, positive gradient CCW											
Redundant, crossed signal curves											
Positive gradient CW with 1 switch output*											
Positive gradient CCW with 1 switch output*											
Positive gradient CW with 2 switch outputs*											
Positive gradient CCW with 2 switch outputs*											
Sense of rotation settable											
Zero point & sense of rotation settable											
Middle point & sense of rotation settable											
Start + end point & sense of rotation settable											
Programmable with Vert-X EasyAdapt											
Output signal											
10% ... 90% Ub											
x% ... y% Ub (within 5 ... 95%)											
Power supply voltage											
5VDC											
Electrical connection											
4 Standard Round cable 3pole											
6 Optional Round cable 6pole											
9 Optional Special cable											
Length of cable											
02 Standard 1.0m											
06 Optional 3.0m											
10 Optional 5.0m											
99 Optional Special cable											
Vert-X	5	1	1	1	7	3	6	2	2	1	4 0 2
Electrical angle											
36 Standard Electrical angle 360°											
xx Optional 03 to 35; Declaration in 10° steps											
99 Optional Special angle											
Sensor principle											
7 MH-C											
8 MH-C2											
Mechanical version											
5111 Standard Servo mount size 20 ; 6 mm shaft ; IP54											
5151 Standard Servo mount size 20 ; 6 mm shaft ; IP67											
5199 Optional Special housing ; Special shaft											

	MH-C	MH-C2
Custom shaft design	X	X
Custom modification of the housing	X	X
Custom cable	X	X
Interface x% ... y% Ub (within 5% ... 95% Ub)	X	X
Sample rate in fast mode	X	X
Switch functions TTL (max. 2)	X	X
Special characteristic curve	-	X
Special electrical angle within 30° to 360° (ex factory)	X	X
Electrical angle programmable (Software)	-	X
Start & end point settable (Additional wires)	-	X
Sense of rotation CW/CCW settable / programmable (Additional wires or Software)	-	X
Index point settable / programmable (Additional wires or Software)	-	X

Options (on request)

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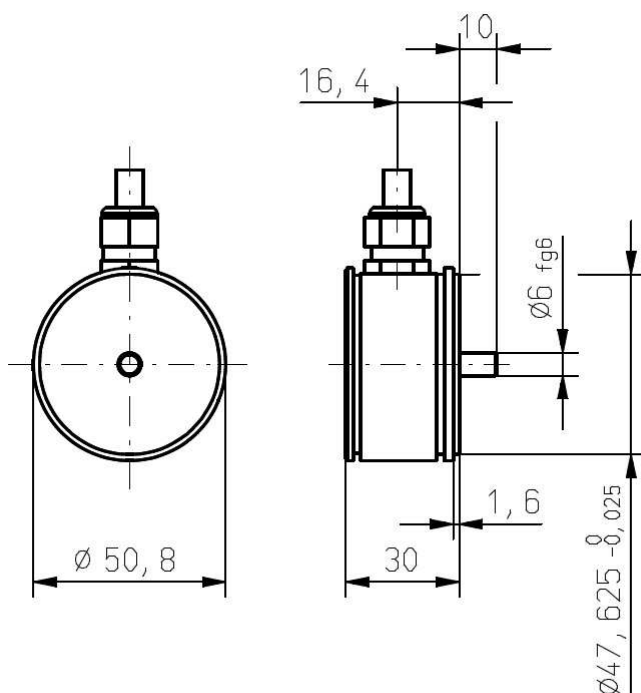
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Vert-X 51

Accessoires (incl.)

- 3x Fixation clamp
- 3x Slotted cylinder head screw M3x8



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