



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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 A company of the Siedle-Group

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	$\pm 4 / \pm 8$	$\pm 4 / \pm 8$
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



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Ordering code

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

Output characteristics		Output signal		Power supply voltage		Electrical connection		Length of cable	
Positive gradient CW	Standard	10% ... 90% Ub	Standard	5VDC	Standard	4	Standard	02	Standard
Positive gradient CCW	Optional	x% ... y% Ub (within 5 ... 95%)	Optional			6	Optional	06	Optional
Redundant, positive gradient CW	Optional					9	Optional	10	Optional
Redundant, positive gradient CCW	Optional							99	Optional
Redundant, crossed signal curves	Optional								Special cable
Positive gradient CW with 1 switch output*	Optional								
Positive gradient CCW with 1 switch output*	Optional								
Positive gradient CW with 2 switch outputs*	Optional								
Positive gradient CCW with 2 switch outputs*	Optional								
Sense of rotation settable	Optional								
Zero point & sense of rotation settable	Optional								
Middle point & sense of rotation settable	Optional								
Start + end point & sense of rotation settable	Optional								
Programmable with Vert-X EasyAdapt	Optional								

Electrical angle		Sensor principle	
36	Standard	7	MH-C
xx	Optional	8	MH-C2
99	Optional		

Mechanical version	
5111	Standard
5151	Standard
5199	Optional

Vert-X	5	1	1	1	7	3	6	2	2	1	4	0	2

	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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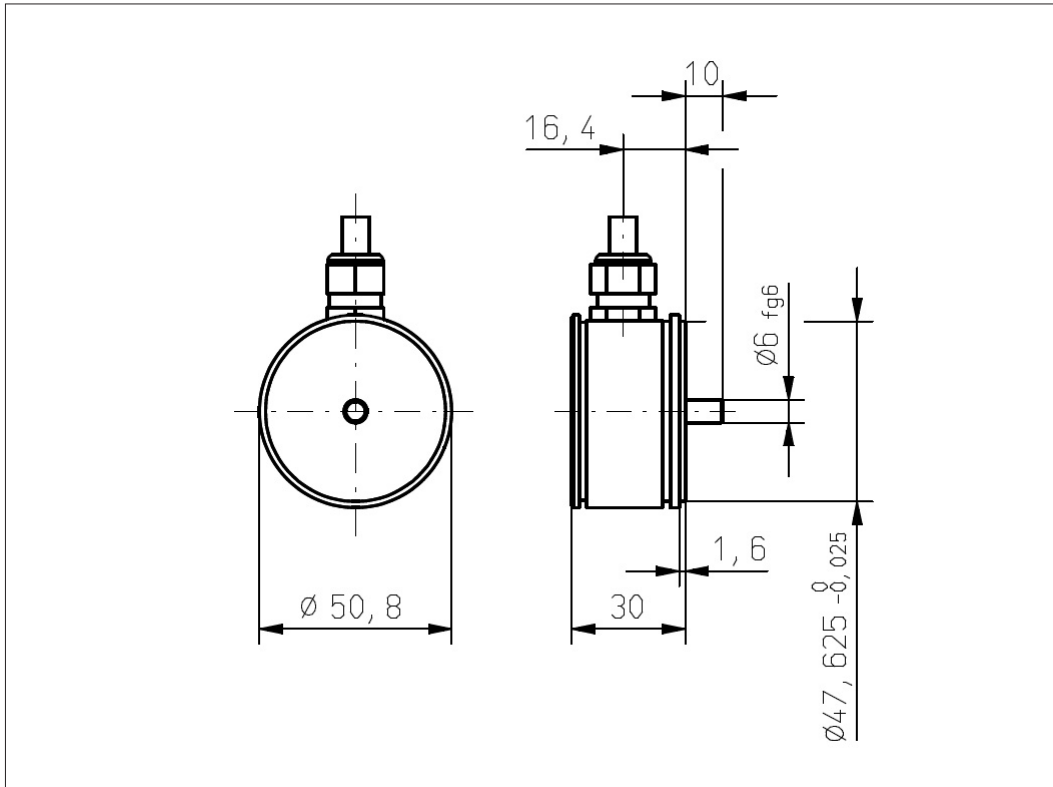
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Accessoires (incl.)

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



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