



Vert-X 37 - 24V / 4 - 20mA

Applications

- Agricultural machines
- Construction machines
- Forest machines
- Special purpose vehicles

Features general

- Robust design, sealed stainless steel housing
- 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
- Full redundancy possible
- 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	100	100
MTTFd / MTBF	years	185 / 185	147 / 147
Power supply voltage	VDC	16 ... 35	16 ... 35
Current consumption without load (typ.) fast mode	mA	(19)	(20)
Current consumption without load (typ.) slow mode	mA	14	15
Min. ohmic load at output	kOhm	0 ... 0.5	0 ... 0.5
Max. capacitive load at output	nF	100	100
Reverse polarity protection of power supply		yes	yes
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	no
Electrical connection redundant (s = shielded)		Cable 6pole, s	-
Cross section of single wires redundant	mm ²	0.56 (AWG20)	-
Mechanical data			
Mechanical range	°	360 (continuous)	360 (continuous)
Protection class		IP54 / IP68	IP54 / IP68
Max. starting torque at specified protection class	Ncm	0.5 / 6	0.5 / 6
Max. rotating speed	rpm	3000	3000
Min. life	movements	360 Mio.	360 Mio.
Max. permitted axial shaft load	N	250	250
Max. permitted radial shaft load	N	100	100
Operating & storage temperature	°C	-40 ... +85	-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, Immission 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, Immission HF conducted (0.15...80MHz)	Vemk	10	10
EN 61000-4-8, Immission 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 37 - 24V / 4 - 20mA Ordering code

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

Output characteristics									
Positive gradient CW	Standard	1							
Positive gradient CCW	Optional	2							
Redundant, positive gradient CW	Optional	3							
Redundant, positive gradient CCW	Optional	4							
Redundant, crossed signal curves	Optional	5							
Positive gradient CW with 1 switch output*	Optional	A							
Positive gradient CCW with 1 switch output*	Optional	B							
Positive gradient CW with 2 switch outputs*	Optional	C							
Positive gradient CCW with 2 switch outputs*	Optional	D							
Sense of rotation settable	Optional	E							
Zero point & sense of rotation settable	Optional	F							
Middle point & sense of rotation settable	Optional	G							
Start + end point & sense of rotation settable	Optional	H							
Programmable with Vert-X EasyAdapt	Optional	P							

Output signal		Electrical connection	
4mA ... 20mA	Standard	4	Standard Round cable 3pole
	5	6	Optional Round cable 6pole
		9	Optional Special cable

Power supply voltage		Length of cable	
24VDC	Standard	02	Standard 1.0m
	1	06	Optional 3.0m
		10	Optional 5.0m
		99	Optional Special length

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

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

Mechanical version		
3722	Standard	Servo mount size 13 ; 10 mm shaft slotted with D-shape ; IP54
3762	Standard	Servo mount size 13 ; 10 mm shaft slotted with D-shape ; IP68
3799	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
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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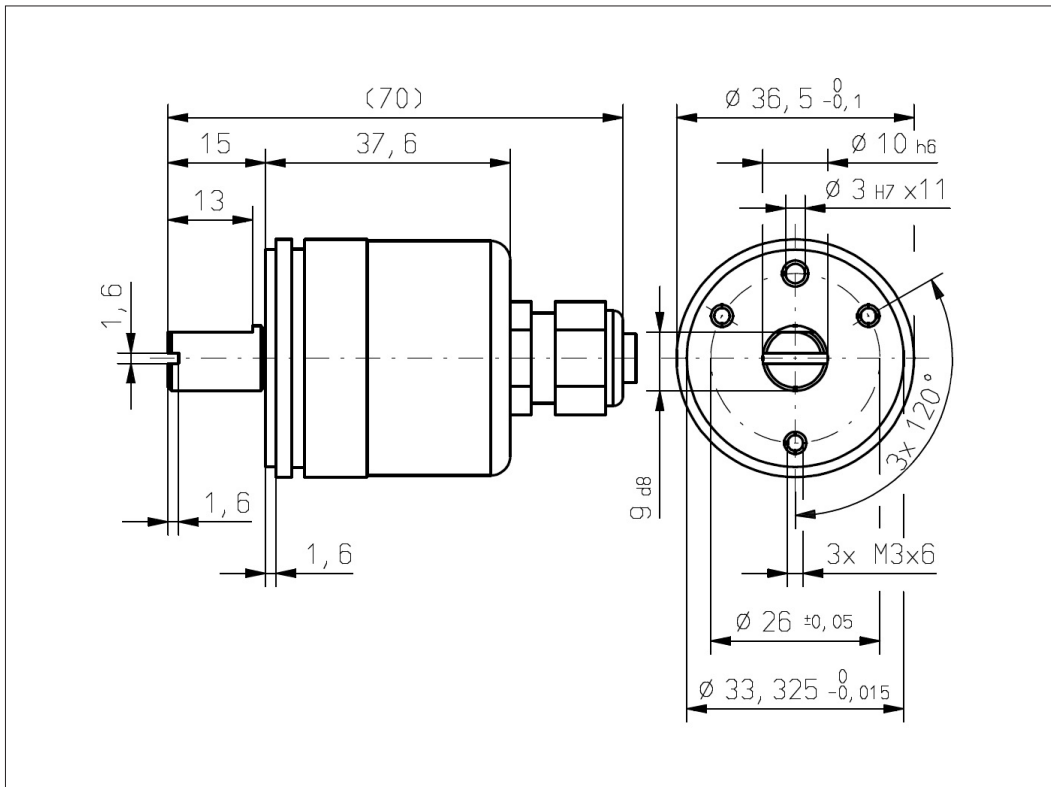
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Accessoires (incl.)

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



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