



Vert-X 79 - 24V / 4 - 20mA

Applications

- Heavy load transporter
- Construction machines
- Forest machines
- Special purpose vehicles

Features general

- Very robust design
- Contactless measuring method
- Long life
- High accuracy of measurement
- Applications under adverse ambient conditions possible (humidity, dampness, dust, vibrations etc.)
- Developed according to the principles of functional safety

Features MH-C

- Linearity of $\pm 0.3\%$
- Resolution of 12bit
- 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: 29.04.16

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CONTELEC
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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	μs	(800)	(800)
System propagation delay slow mode	μs	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
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		Connector M12-m	Connector M12-m
Redundancy feasible		yes	yes
Electrical connection redundant		Connector M12-m	Connector M12-m
Mechanical data			
Mechanical range	°	360 (continuous)	360 (continuous)
Protection class		IP68 / IP69K	IP68 / IP69K
Max. starting torque at specified protection class	Ncm	5	5
Max. rotating speed	rpm	3000	3000
Min. life	movements	360 Mio.	360 Mio.
Max. permitted axial shaft load	N	300	300
Max. permitted radial shaft load	N	300	300
Operating & storage temperature	°C	-40 ... +85	-40 ... +85
EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000Hz)	g	20	20
EN 60068-2-27 Shock	g	50	50
Standards			
EN 55022 class B, Emission radiated (30...230MHz)	dB($\mu\text{V}/\text{m}$)	max. 30	max. 30
EN 55022 class B, Emission radiated (230...1000MHz)	dB($\mu\text{V}/\text{m}$)	max. 37	max. 37
EN 55022 class B, Emission conducted (0.15...0.5MHz)	dB(μV)	max. 56 ... 46	max. 56 ... 46
EN 55022 class B, Emission conducted (0.5...5MHz)	dB(μV)	max. 46	max. 46
EN 55022 class B, Emission conducted (5...30MHz)	dB(μV)	max. 50	max. 50
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...1000MHz/1.4...2.7GHz)	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	300	300
EN 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20	20
EN 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											
		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									
						Electrical connection							
					S	Standard	Connector						
		Output signal											
		4mA ... 20mA	Standard	5									
		Power supply voltage											
		24VDC	Standard	1									
						Definition of the connector							
					14	Standard	1x Connector 4pole						
					15	Optional	1x Connector 5pole						
					18	Optional	1x Connector 8pole						
Vert-X	7	9	7	2	7	3	6	1	5	1	S	1	4
						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							
		7972	Standard	Housing ø79mm with flange ; 10mm shaft ; IP68 & IP69K									
		7978	Optional	Housing ø79mm with flange ; Driving disc mounted ; IP68 & IP69K									
		7999	Optional	Special housing ; Special shaft									

	MH-C	MH-C2
Custom shaft design	X	X
Custom modification of the housing	X	X
Custom electrical connection	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 connector pins)	-	X
Sense of rotation CW/CCW settable / programmable (Addit. connector pins or Software)	-	X
Index point settable / programmable (Additional connector pins or Software)	-	X
Immision magnetic field up to 10'000 A/m (additional shielded)	X	X

Options (on request)

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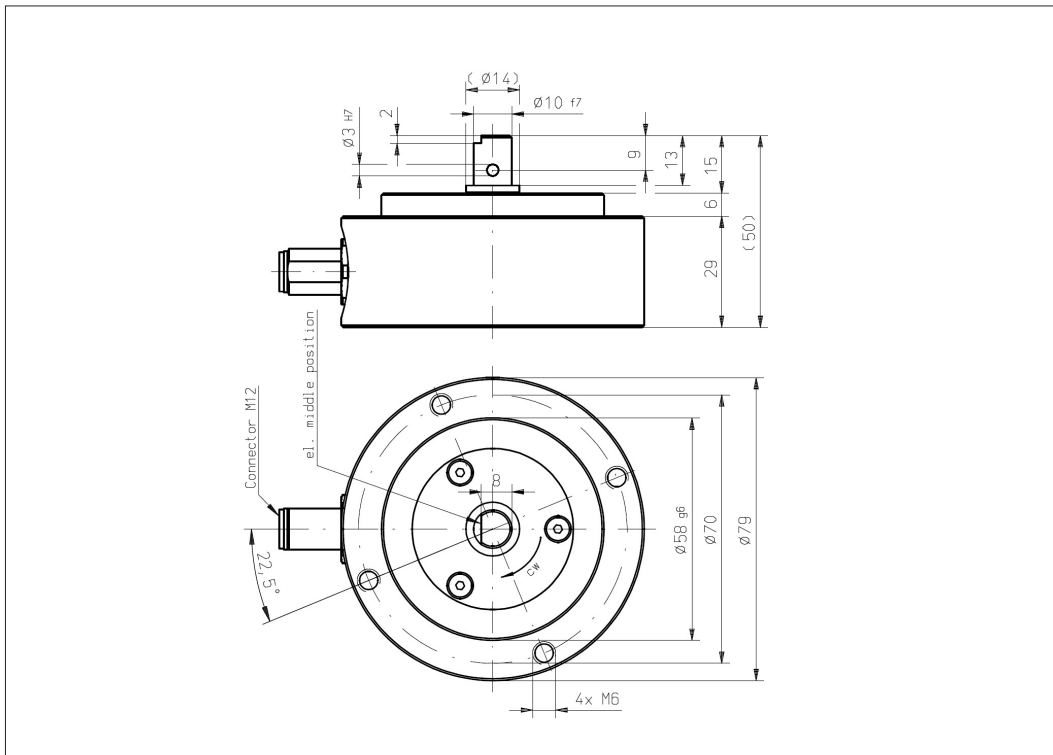
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Vert-X 7972

Accessories (incl.)

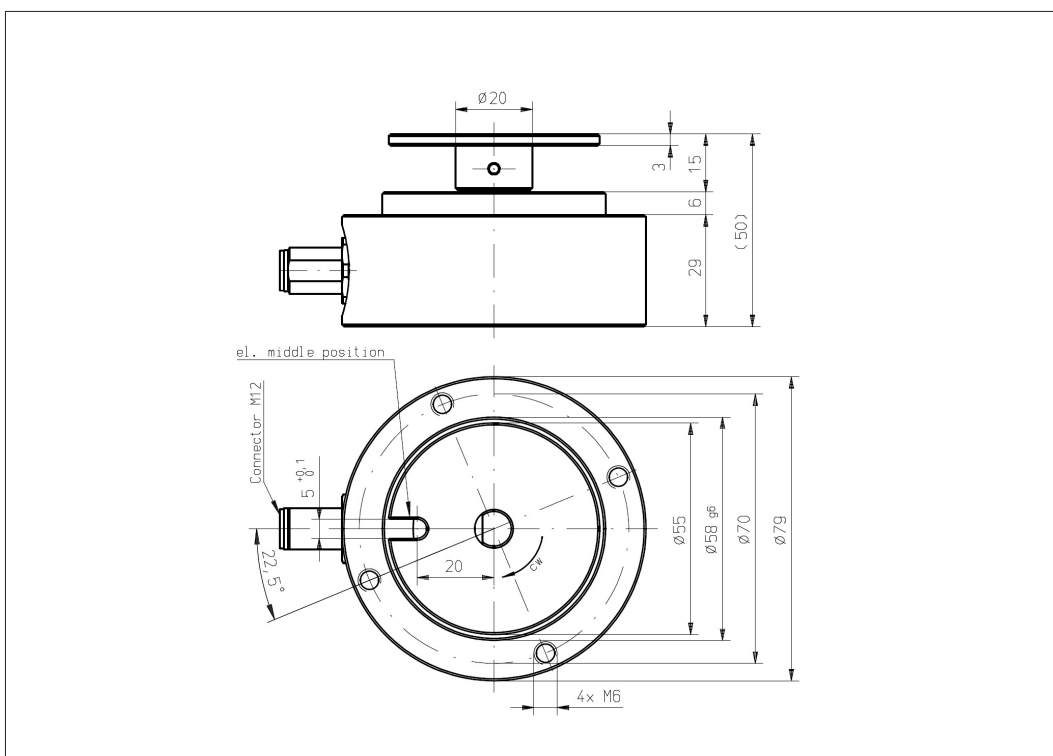
- None



Vert-X 7978

Accessories (incl.)

- Driving disc (mounted)



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