

Data Sheet
Vert X 8800 Series
5V

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Bristol Instruments
65 Sprague Street
Boston, MA 02136

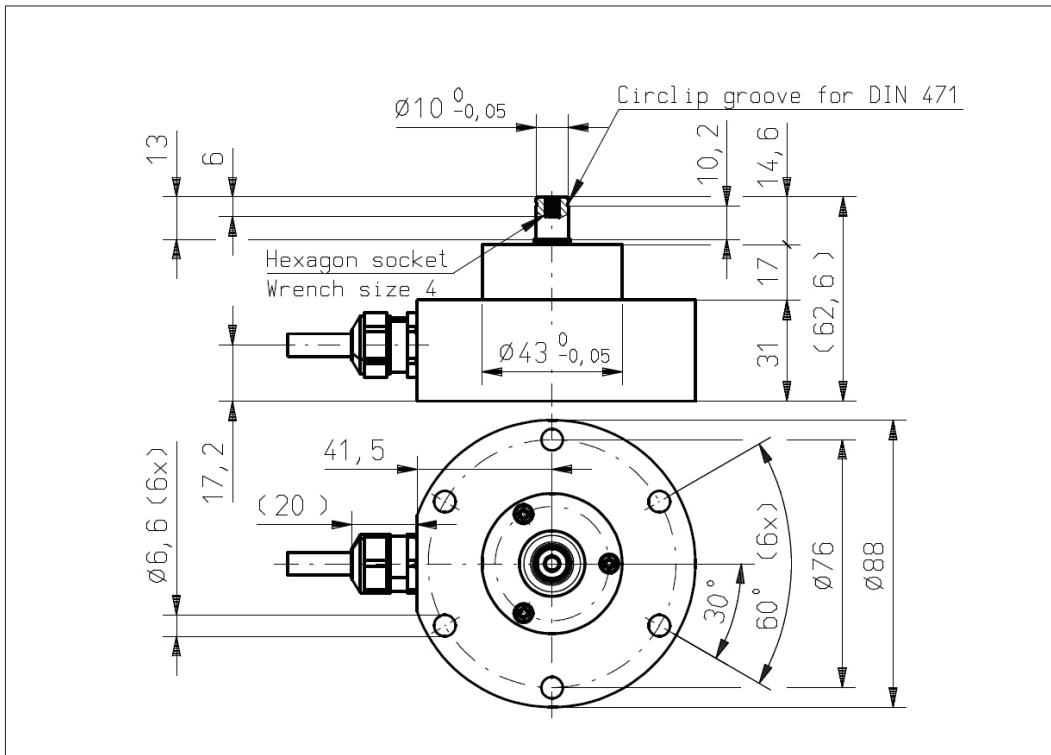
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Vert-X 8872

Accessories (incl.)

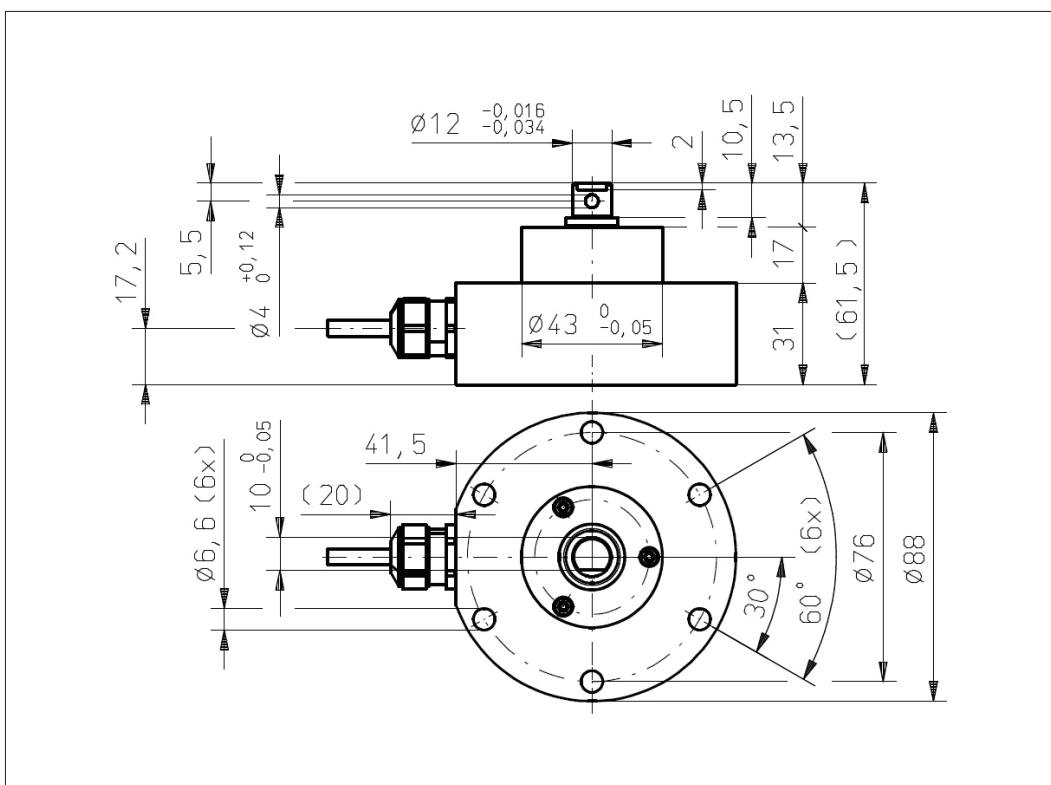
- 3x Hexagon screw M6x45
- 3x Washer
- 1x Circlip



Vert-X 8873

Accessories (incl.)

- 3x Hexagon screw M6x45
- 3x Washer



Errors and omissions excepted. Subject to change without notice. / State: 04.09.14



Vert-X 88 - 5V / 10...90% Ub
Ordering code

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

Output characteristics				Electrical connection									
Positive gradient CW	Standard	1	4	Standard	Round cable 3pole								
Positive gradient CCW	Optional	2	6	Optional	Round cable 6pole								
Redundant, positive gradient CW	Optional	3	9	Optional	Special cable								
Redundant, positive gradient CCW	Optional	4	Length of cable										
Redundant, crossed signal curves	Optional	5	02	Standard	1.0m								
Positive gradient CW with 1 switch output*	Optional	A	06	Optional	3.0m								
Positive gradient CCW with 1 switch output*	Optional	B	10	Optional	5.0m								
Positive gradient CW with 2 switch outputs*	Optional	C	99	Optional	Special length								
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													
10% ... 90% Ub	Standard	2											
x% ... y% Ub (within 5 ... 95%)	Optional	3											
Power supply voltage													
5VDC	Standard	2											
Vert-X	8	8	7	2	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							
						8872	Standard	Housing ø88mm with flange ; 10mm shaft with hexagon socket ; IP68 & IP69K					
						8873	Standard	Housing ø88mm with flange ; 12mm shaft D-shape & cross-hole ; IP68 & IP69K					
						8899	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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Vert-X 8800 Series - 5V

Applications

- Agricultural machines
- 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
- 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)

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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	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	yes
Electrical connection (s = shielded)		Cable 3pole, s	Cable 3pole, s
Cross section of single wires	mm ²	0.56 (AWG2 0)	0.56 (AWG2 0)
Redundancy feasible		yes	no
Electrical connection redundant (s = shielded)		Cable 6 pole, s	-
Cross section of single wires redundant	mm ²	0.56 (AWG2 0)	-
Mechanical data			
Mechanical range	°	360 (continuous)	360 (continuous)
Protection class		IP68 & IP69K	IP68 & IP69K
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	300	300
Max. permitted radial shaft load	N	400	400
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 classe B, Emission radiated (30... 230 MHz)	dB($\mu\text{V}/\text{m}$)	max. 30	max. 30
EN 55022 classe B, Emission radiated (230...1000MHz)	dB($\mu\text{V}/\text{m}$)	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 61000-4-3, Immission HF radiated (1.4... 2 G Hz)	V/m	3	3
EN 61000-4-3, Immission HF radiated (2... 2.7 G Hz)	V/m	1	1
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
IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20	20
IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1	1