



Vert-X 13 - 5V / PWM

Applications

- Servodrives
- Insetting machines
- Sewer inspection robots
- Medical applications

Features

- Compact dimensions
- Contactless measuring method
- Long life
- High accuracy of measurement
- Use in cramped installation conditions
- Full resolution and accuracy at programmed electrical angle
- Full redundancy possible

Sensor principle		MH-C	MH-C2
Electrical data			
Measuring range	°	0 ... 360	-
Indep. linearity	% of meas. range	±0.3	-
Max. hysteresis	°	0.1	-
Resolution	bit	12	-
Max. repeatability	°	0.1	-
Sample rate fast mode	kHz	(5)	-
Sample rate slow mode	kHz	1.66	-
System propagation delay fast mode	µs	(800)	-
System propagation delay slow mode	µs	4600	-
Max. temperature coefficient of the output signal	ppm/K	50	-
MTTFd / MTBF	years	668 / 668	-
Power supply voltage	VDC	5 (±10%)	-
Current consump. without load (typ.) fast mode	mA	(14)	-
Current consump. without load (typ.) slow mode	mA	9	-
Min. ohmic load at output	kOhm	10	-
Max. capacitive load at output	nF	1	-
PWM frequency	Hz	855 (±20%)	-
Reverse polarity protection of power supply		yes	-
Electrical connection		Wires (3x)	-
Cross section of single wires	mm ²	0.25 (AWG24)	-
Redundancy feasible		yes	-
Electrical connection redundant		Ribbon cable 6pole	-
Cross section of single wires		0.09 (AWG28)	-
Mechanical data			
Mechanical range	°	360 (continuous)	-
Protection class		IP54 / IP65	-
Max. starting torque at spec. protection class	Ncm	0.5 / 3	-
Max. rotating speed	rpm	6000	-
Min. life	movements	360 Mio.	-
Max. permitted axial shaft load	N	5	-
Max. permitted radial shaft load	N	5	-
Operating & Storage temperature (with wires)	°C	-40 ... +125	-
Operating & Storage temperature (with ribbon cable)	°C	-40 ... +105	-
EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000Hz)	g	20	-
EN 60068-2-27 Shock	g	50	-
Standards			
EN 55022 class B, Emission radiated (30...230MHz)	dB(µV/m)	max. 30	-
EN 55022 class B, Emission radiated (230...1000MHz)	dB(µV/m)	max. 37	-
EN 55022 class B, Emission conducted (0.15...0.5MHz)	dB(µV)	max. 56 ... 46	-
EN 55022 class B, Emission conducted (0.5...5MHz)	dB(µV)	max. 46	-
EN 55022 class B, Emission conducted (5...30MHz)	dB(µV)	max. 50	-
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	±4 / ±8	-
EN 61000-4-3, Immision HF radiated (80...1000MHz/1.4...2.7GHz)	V/m	100	-
EN 61000-4-4, Burst (on all lines)	kV	±1	-
EN 61000-4-5, Surge (lines to ground)	kV	±1	-
EN 61000-4-6, Immision HF conducted (0.15...80MHz)	Vemk	10	-
EN 61000-4-8, Immision magnetic field (50Hz)	A/m	300	-
EN 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20	-
EN 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1	-

Errors and omissions excepted. Subject to change without notice. State: 10.02.16

Contelec AG
 Portstrasse 38
 CH-2503 Biel/Bienne
 Phone +41 (0)32 3665600
 Telefax +41 (0)32 3665604
 sales@contelec.ch

CONTELEC
 A company of the Siedle-Group



Vert-X 13 - 5V / PWM Ordering code

Output characteristics		Electrical connection	
Positive gradient CW	Standard 1	1	Optional Ribbon cable 6pole
Positive gradient CCW	Optional 2	2	Standard Wires 3pole
Redundant, positive gradient CW	Optional 3	9	Optional Special cable ; special wires
Redundant, positive gradient CCW	Optional 4		
Redundant, crossed signal curves	Optional 5		
Output signal		Length of wires / ribbon cable	
PWM	Standard 5	01	Optional 10cm
		02	Standard 20cm
		03	Optional 30cm
		04	Optional 40cm
		05	Optional 50cm
		99	Optional Special length
Power supply voltage			
5VDC	Standard 2		
Vert-X 1 3 0 2 7 3 6 2 5 1 2 0 2			
		Electrical angle	
		36	Standard Electrical angle 360°
		xx	Optional 10 to 35 ; Declaration in 10° steps
		99	Optional Special angle
		Sensor principle	
		7	MH-C
		Mechanical version	
1302	Standard	Bushing M10x0,75 ; 3,175mm shaft slotted ; ball bearing ; IP54	
1312	Optional	Servo mount ; 3,175mm shaft slotted ; ball bearing ; IP54	
1332	Optional	Bushing M10x0,75 ; 3,175mm shaft slotted ; ball bearing ; IP65	
1342	Optional	Servo mount ; 3,175mm shaft slotted ; ball bearing ; IP65	
1303	Optional	Bushing M10x0,75 ; 3,175mm shaft slotted ; slide bearing ; IP54	
1313	Optional	Servo mount ; 3,175mm shaft slotted ; slide bearing ; IP54	
1333	Optional	Bushing M10x0,75 ; 3,175mm shaft slotted ; slide bearing ; IP65	
1343	Optional	Servo mount ; 3,175mm shaft slotted ; slide bearing ; IP65	
1399	Optional	Special housing ; Special shaft	

	MH-C	MH-C2
Custom shaft design	X	-
Custom modification of the housing	X	-
Custom cable / wires	X	-
Sample rate in fast mode	X	-
Switch functions TTL (max. 2)	-	-
Special characteristic curve	-	-
Special electrical angle within 30 to 360° (ex factory)	X	-
Electrical angle programmable (Software)	-	-
Start & end point settable / programmable (Additional wires or Software)	-	-
Sense of rotation CW/CCW settable / programmable (Additional wires or Software)	-	-
Index point settable / programmable (Additional wires or Software)	-	-
Immision magnetic field up to 1'500 A/m (Additional shielded)	X	-

Options (on request)

Errors and omissions excepted. Subject to change without notice. State: 10.02.16

Contelec AG
Portstrasse 38
CH-2503 Biel/Bienne
Phone +41 (0)32 3665600
Telefax +41 (0)32 3665604
sales@contelec.ch

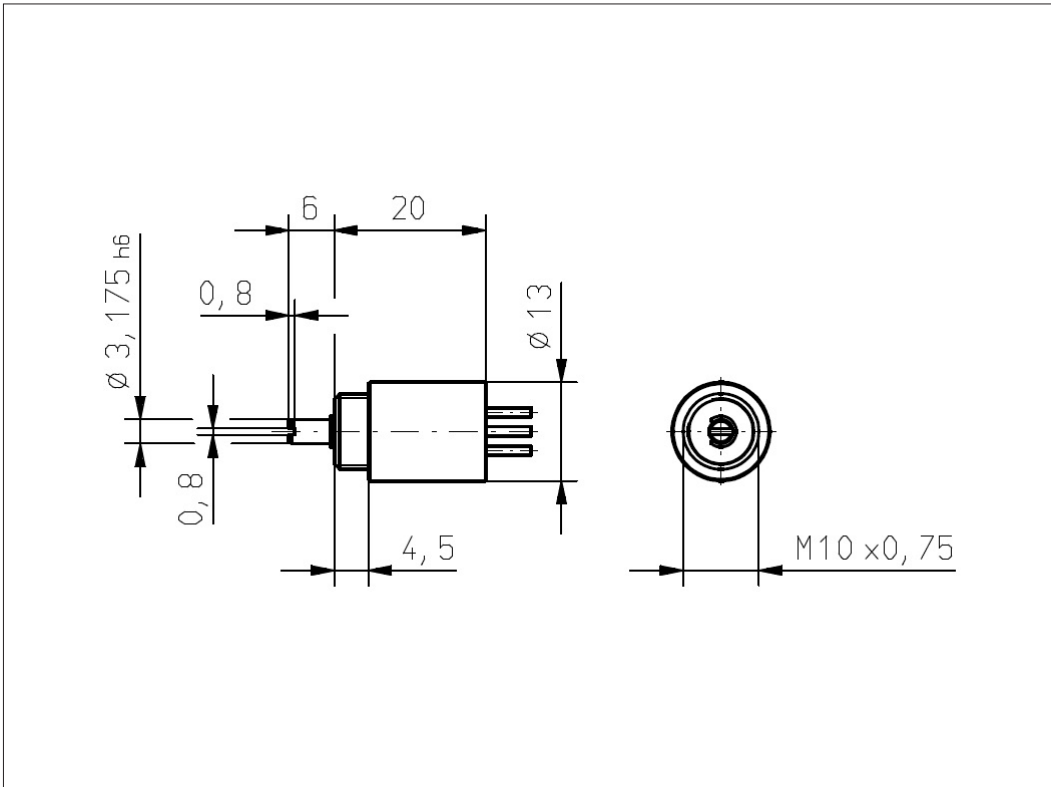
CONTELEC
A company of the Siedle-Group



Vert-X 1302
Vert-X 1332
Vert-X 1303
Vert-X 1333

Accessories (incl.)

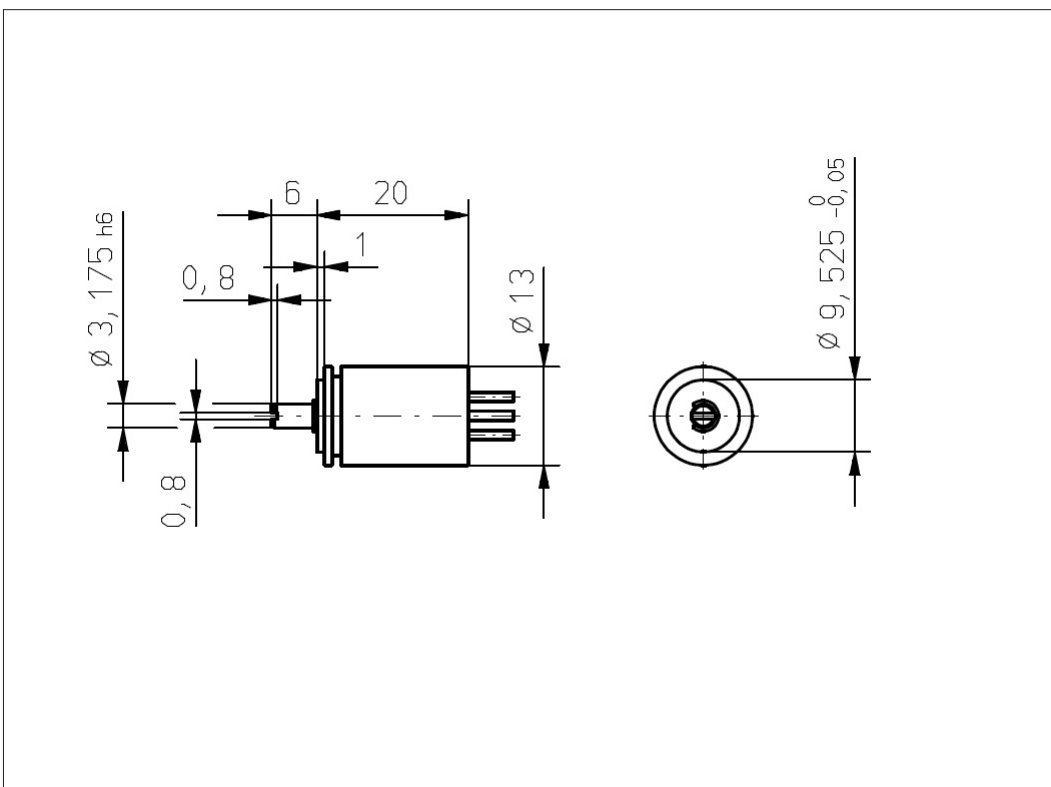
- 1x Nut M10x0.75 / SW13
- 1x Serrated lock washer



Vert-X 1312
Vert-X 1342
Vert-X 1313
Vert-X 1343

Accessories (incl.)

- 1x Fixation clip
- 2x Slotted cylinder head screw M3x8



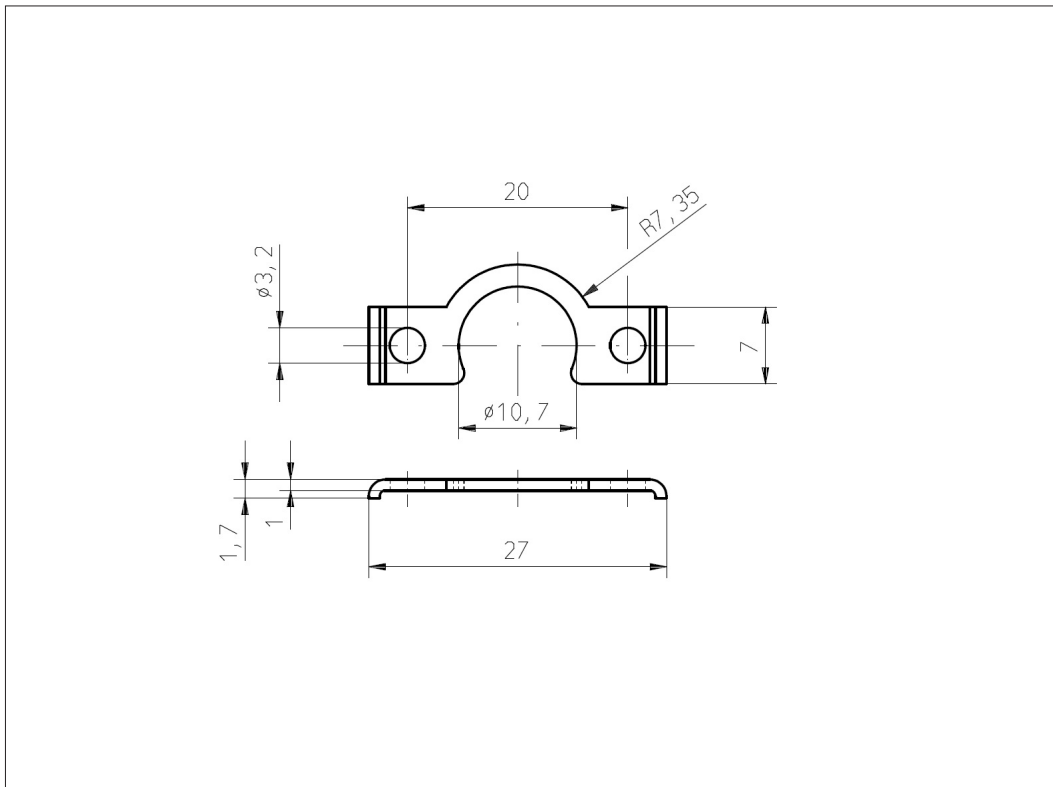
Errors and omissions excepted. Subject to change without notice. State: 10.02.16

Contelec AG
 Portstrasse 38
 CH-2503 Biel/Bienne
 Phone +41 (0)32 3665600
 Telefax +41 (0)32 3665604
 sales@contelec.ch



Vert-X 1312
Vert-X 1342
Vert-X 1313
Vert-X 1343

Accessories
Fixation clip



Errors and omissions excepted. Subject to change without notice. State: 10.02.16

Contelec AG
Portstrasse 38
CH-2503 Biel/Bienne
Phone +41 (0)32 3665600
Telefax +41 (0)32 3665604
sales@contelec.ch

CONTELEC
A company of the Siedle-Group