



Vert-X 22E - 5V / PWM

Applications

- Wind vanes
- Valve control
- Level sensor
- Special purpose vehicles

Features

- High protection class IP68
- Flat design
- Non-contacting measuring method
- Very long life
- High accuracy of measurement
- Use in cramped installation conditions
- Full resolution and accuracy at programmed electrical angle

Sensor principle		MH-C	MH-C2
Electrical data			
Measuring range	°	0 ... 360	-
Indep. linearity (without misalignment)	% of meas. range	±0.3	-
Indep. linearity (with allowed misalignment @ 360°)	% of meas. range	±0.5	-
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	25	-
MTTFd / MTBF	years	668 / 668	-
Power supply voltage	VDC	5 (±10%)	-
Current consumption without load (typ.) fast mode	mA	(14)	-
Current consumption 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 axial		Wires (3x)	-
Cross section of single wires	mm ²	0.25 (AWG24)	-
Electrical connection radial		Cable 3pole	-
Cross section of single wires	mm ²	0.25 (AWG24)	-
Redundancy feasible		yes	-
Electrical connection redundant axial		Ribbon cable 6pole	-
Cross section of single wires redundant	mm ²	0.09 (AWG28)	-
Electrical connection redundant radial		Cable 6pole	-
Cross section of single wires redundant	mm ²	0.25 (AWG24)	-
Mechanical data			
Mechanical range	°	360 (continuous)	-
Protection class		IP68	-
Min. life	movements	no limitation	-
Operating & storage temperature (with wires)	°C	-40 ... +125	-
Operating & storage temperature (with ribbon cable)	°C	-40 ... +105	-
Operating & storage temperature (with round cable)	°C	-40 ... +85	-
EN 60068-2-6 Vibration (Amax = 0.75mm, f = 5...2000 Hz)	g	50	-
EN 60068-2-27 Shock	g	200	-
Standards			
EN 55022 class B, Emission radiated (30...230 MHz)	dB(µV/m)	max. 30	-
EN 55022 class B, Emission radiated (230...1000MHz)	dB(µV/m)	max. 37	-
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	±4 / ±8	-
EN 61000-4-3, Immision HF radiated (80... 1000 MHz/4...2.7GHz)	V/m	30	-
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: 21.02.19

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CONTELEC
 A company of the Siedle-Group



Vert-X 22E - 5V / PWM
Ordering code

		Output characteristics				Electrical connection / axial	
	Positive gradient CW	Standard	1	5	Standard	Wires 3pole	
	Positive gradient CCW	Optional	2	7	Optional	Ribbon cable 6pole	
	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				Electrical connection / radial	
	PWM	Standard	4	4	Standard	Round cable 3pole	
		Power supply voltage				Length of wires / ribbon cable	
	5VDC	Standard	2	6	Optional	Round cable 6pole	
				9	Optional	Special cable ; special wires	
Vert-X	2	2	E	2	7	3	6
					2	4	1
					5	0	5
		Electrical angle				Length of cable	
	36	Standard	Electrical angle 360°	02	Standard	1.0m	
	xx	Optional	03 to 35; Declaration in 10° steps	06	Optional	3.0m	
	99	Optional	Special angle	10	Optional	5.0m	
		Sensor principle				Special length	
	7	MH-C		99	Optional	Special length	
		Mechanical version					
22E1	Optional	Servo mount size 9 ; magnetic actuator type 1					
22E2	Standard	Servo mount size 9 ; magnetic actuator type 2					
22E9	Optional	Special housing ; special magnetic actuator					

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

Options (on request)

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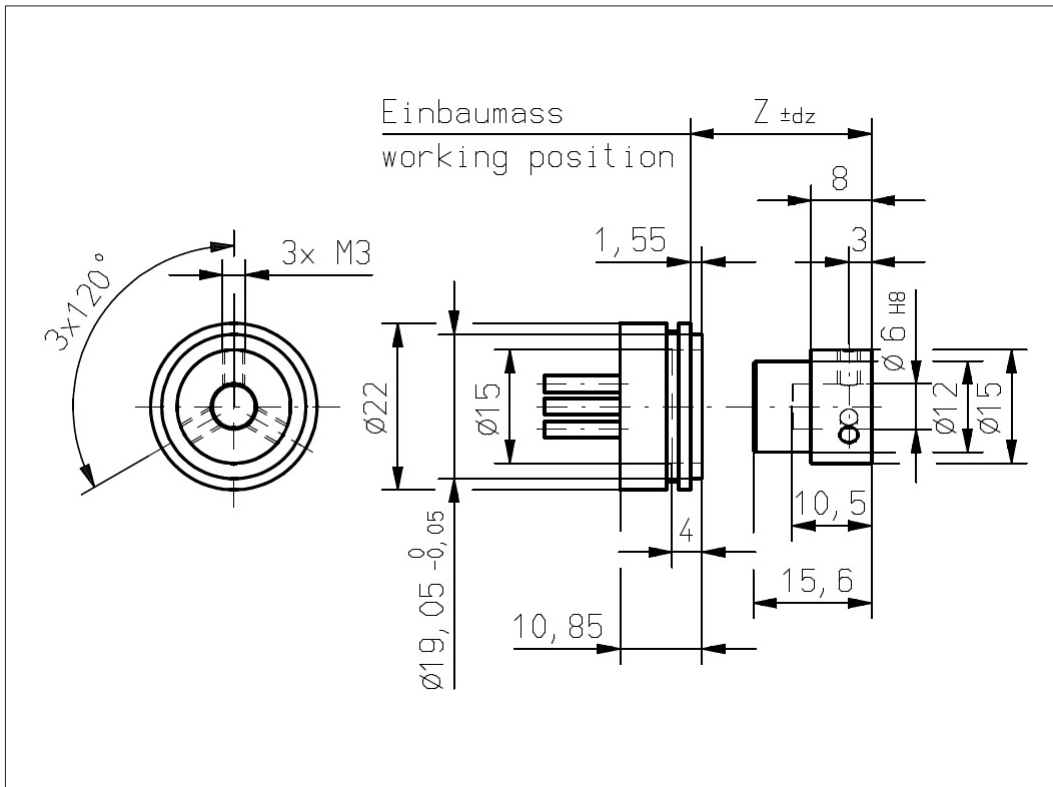
Vert-X 22E2 xxx xxx 5xx
Vert-X 22E2 xxx xxx 7xx

Accessories (incl.)

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

Working position (Z) and max. permitted misalignment of the magnetic actuator

see mounting information



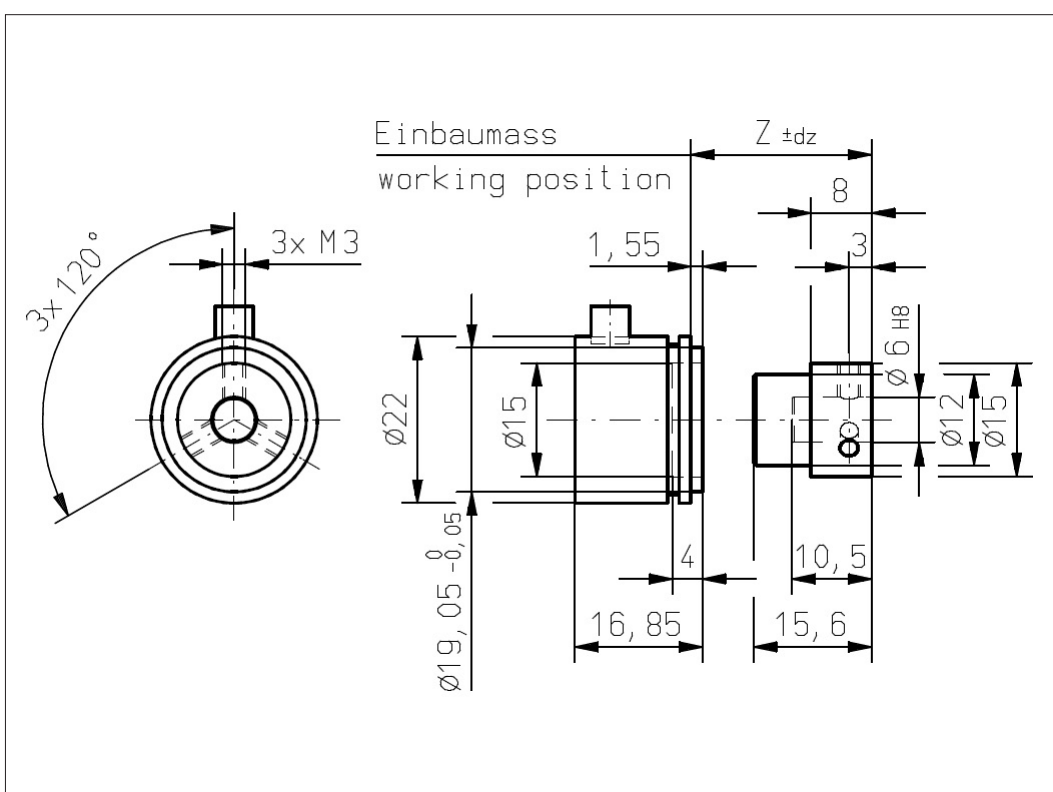
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Vert-X 22E2 xxx xxx 6xx

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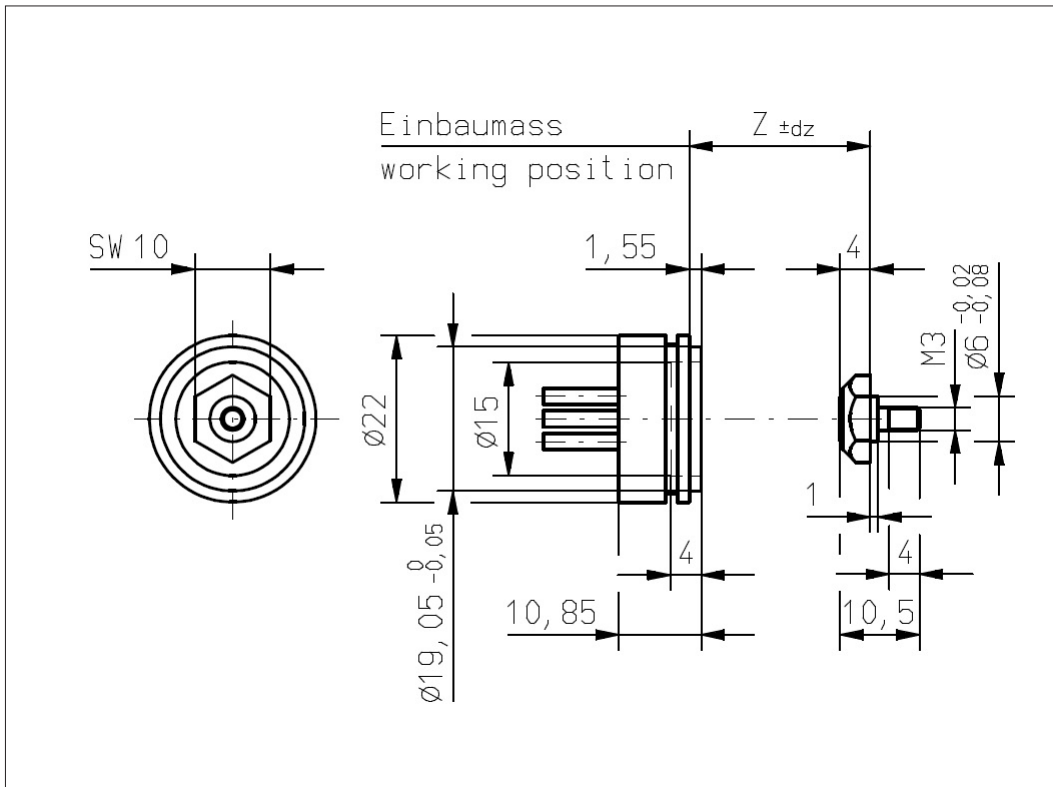
Vert-X 22E1 xxx xxx 5xx
Vert-X 22E1 xxx xxx 7xx

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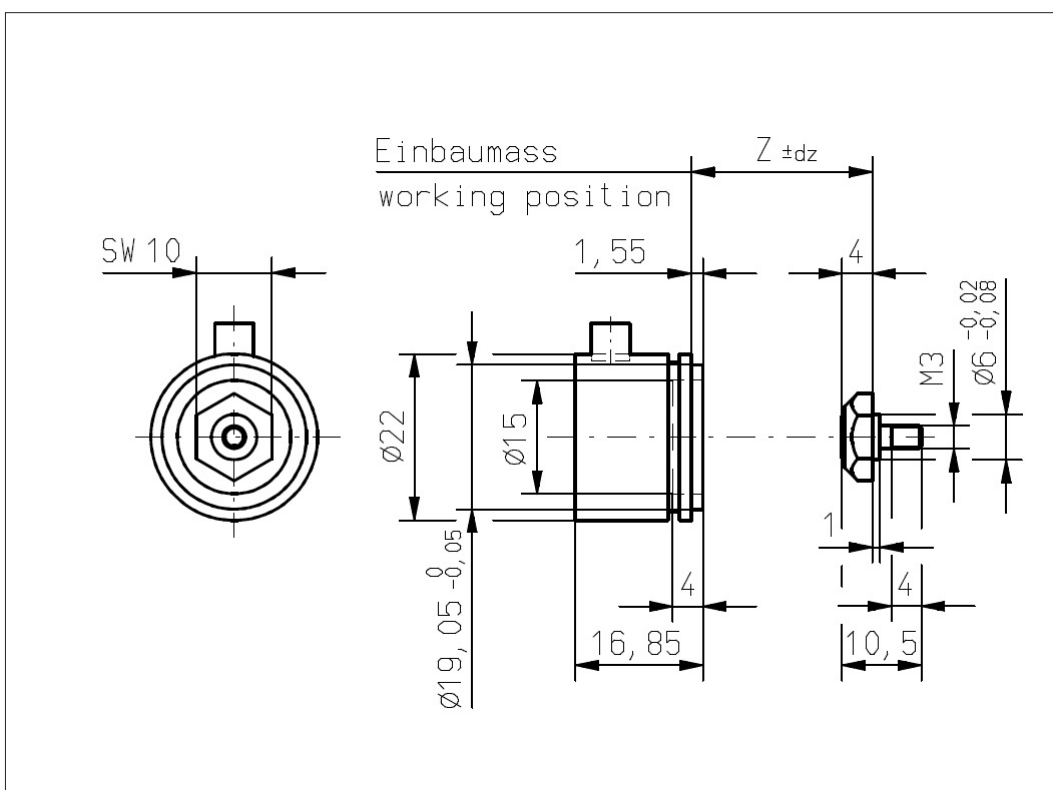
Vert-X 22E1 xxx xxx 4xx
Vert-X 22E1 xxx xxx 6xx

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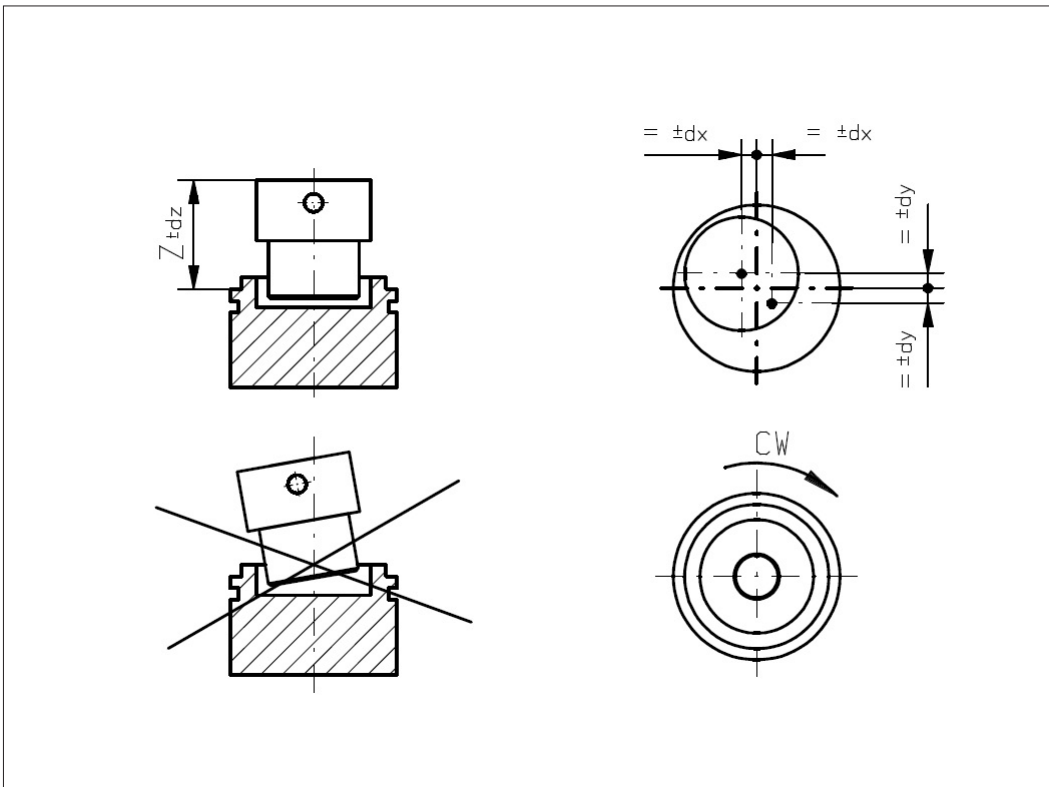
Vert-X 22E2
Mounting information

Working position (Z)

MH-C	14.40mm
MH-C redundant	13.90mm

Max. permitted misalignment of the magnetic actuator

dx	±0.25mm
dy	±0.25mm
dz	±0.5mm



Vert-X 22E1
Mounting information

Working position (Z)

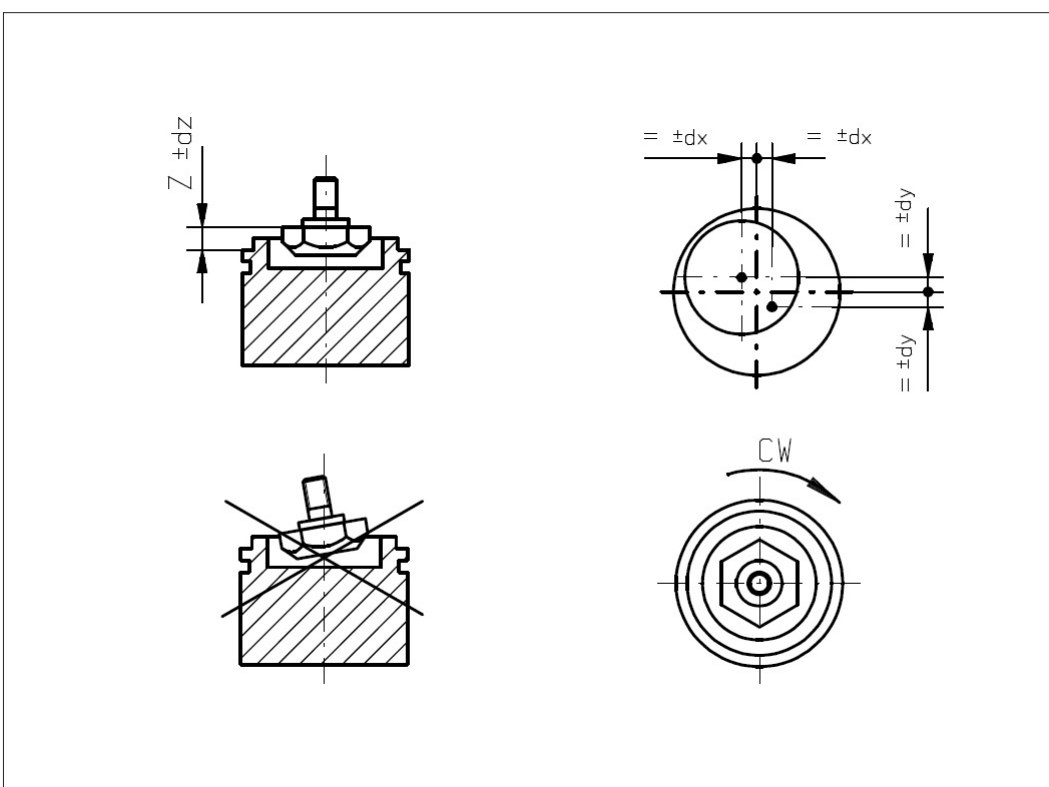
MH-C	3.00mm
MH-C redundant	2.50mm

Max. permitted misalignment of the magnetic actuator

dx	±0.25mm
dy	±0.25mm
dz	±0.5mm

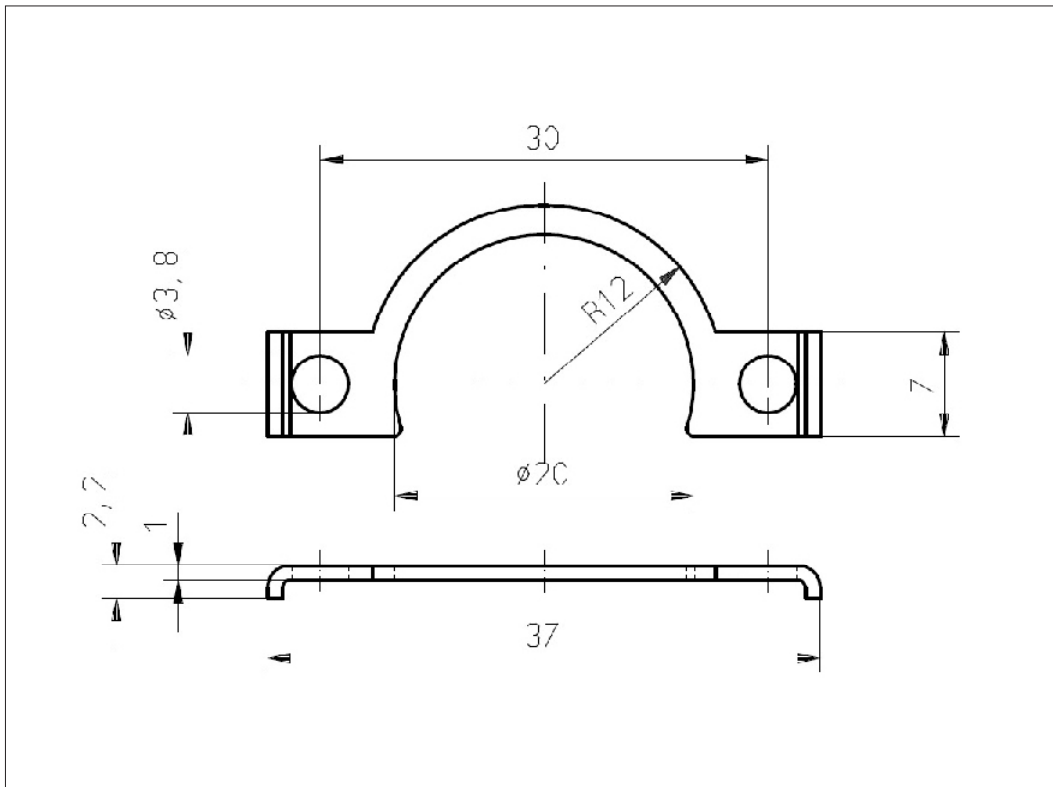
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Vert-X 22E
Accessories
Fixation clip



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