



## Vert-X 21 - 3.3V / 10...90% Ub

### Applications

- Joystick / Master switch
- Valve control

### Features

- Compatible with Potentiometers of the PL300-family
- Ball bearing
- Minimized power consumption
- Contactless measuring method
- Long life
- High accuracy of measurement
- Use in cramped installation conditions

Sensor principle		LowPower
<b>Electrical data</b>		
Measuring range	°	0 ... 360
Indep. linearity (@360°)	%	±0.3
Max. hysteresis	°	0.2
Resolution (@360°)	bit	12
Max. repeatability	°	0.1
Power supply voltage	VDC	1.8 ... 5.5
Sample rate	Hz	20
Max. slew-rate	V/s	300
Current consumption at start without load (typ.)	mA	3
Averaged current consumption without load (typ.)	µA	300
Min. ohmic load at output	kOhm	100
Max. capacitive load at output	nF	1
Max. temperature coefficient of the output signal	ppm/°K	100

Mechanical data		
Mechanical range	°	360 (continuous)
Protection class		IP54 / IP65
Max. starting torque at specified 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	°C	-40 ... +85

Standards		
EN 55022 classe B, Emission radiated (30... 230 MHz)	dB(µV/m)	max. 30
EN 55022 classe 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, Immission HF radiated (80... 1000 MHz)	V/m	30
EN 61000-4-3, Immission HF radiated (1.4...2 GHz)	V/m	3
EN 61000-4-3, Immission HF radiated (2...2.7GHz)	V/m	1
EN 61000-4-4, Burst (on all lines)	kV	±1
IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20
IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1

Errors and omissions excepted. Subject to change without notice. State: 30.03.15

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 A company of the Siedle-Group



**Vert-X 21 - 3.3V / 10...90% Ub**  
**Ordering code**

**\* Switch outputs**  
 Please define number, position and width of the pulses.

Output characteristics	
Positive gradient CW	Standard 1
Positive gradient CCW	Optional 2
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	
10% ... 90% Ub	Standard 2
x% ... y% Ub (within 5 ... 95%)	Optional 3

Power supply voltage	
3.3VDC (1.8 ... 5.5VDC)	Standard 3

Electrical connection	
2	Standard Wires 3pol
3	Optional Wires 5pole / 6pole
9	Optional Special cable; special wires

Length of wires	
01	Optional 10cm
02	Standard 20cm
03	Optional 30cm
04	Optional 40cm
05	Optional 50cm
99	Optional Special length

Vert-X **2 1 1 2 a 1 3 6 3 2 1 2 0 2**

Electrical angle	
36	Standard Electrical angle 360°
xx	Optional 03 to 35; Declaration in 10° steps
99	Optional Special angle

Sensor principle	
1	LowPower

Protection class	
a	Standard IP54
b	Optional IP65

Shaft	
1	Standard 6mm shaft D-shape
2	Standard 3.175mm shaft slotted
9	Optional Special shaft

Housing	
211	Standard Synchro flange size 9
212	Standard Bushing M9x0.75 with pilot diameter
219	Optional Special housing

	LowPower
Custom shaft design	X
Custom housing modification	X
Custom wires	X
Interface x% ... y% Ub (within 5% ... 95% Ub)	X
Switch functions TTL (max. 2)	X
Special characteristic curve	X
Special electrical angle within 30° to 360° (ex factory)	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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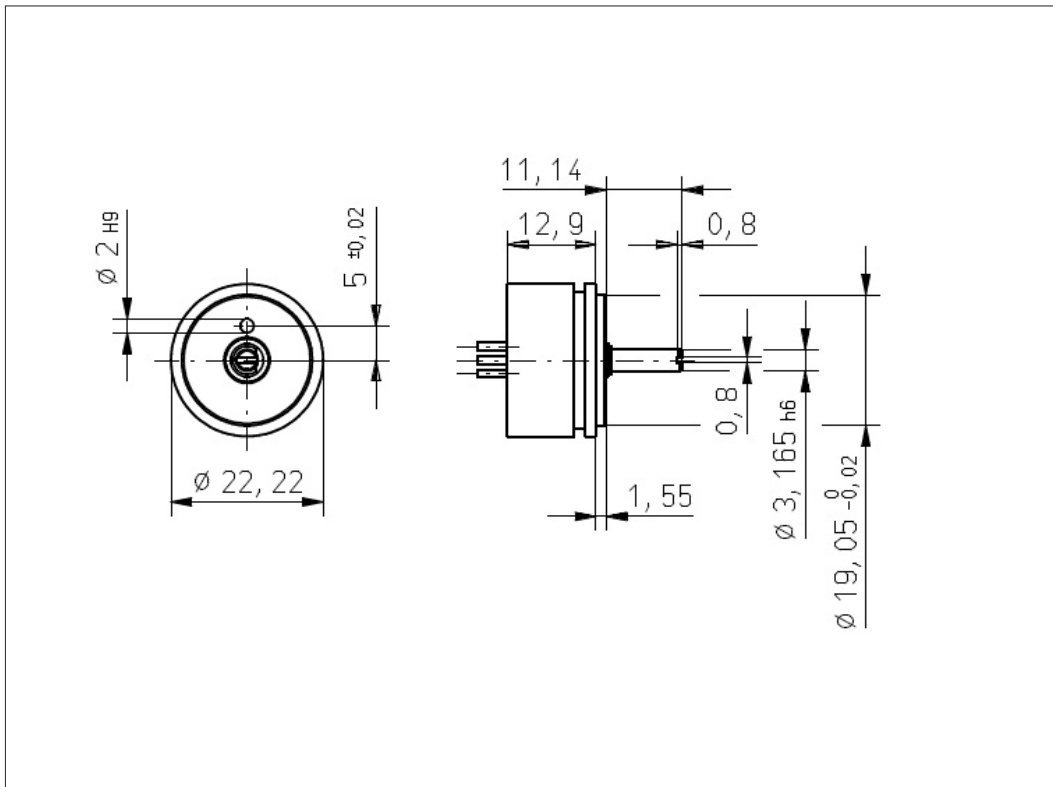
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### Vert-X 2121

#### Accessories (incl.)

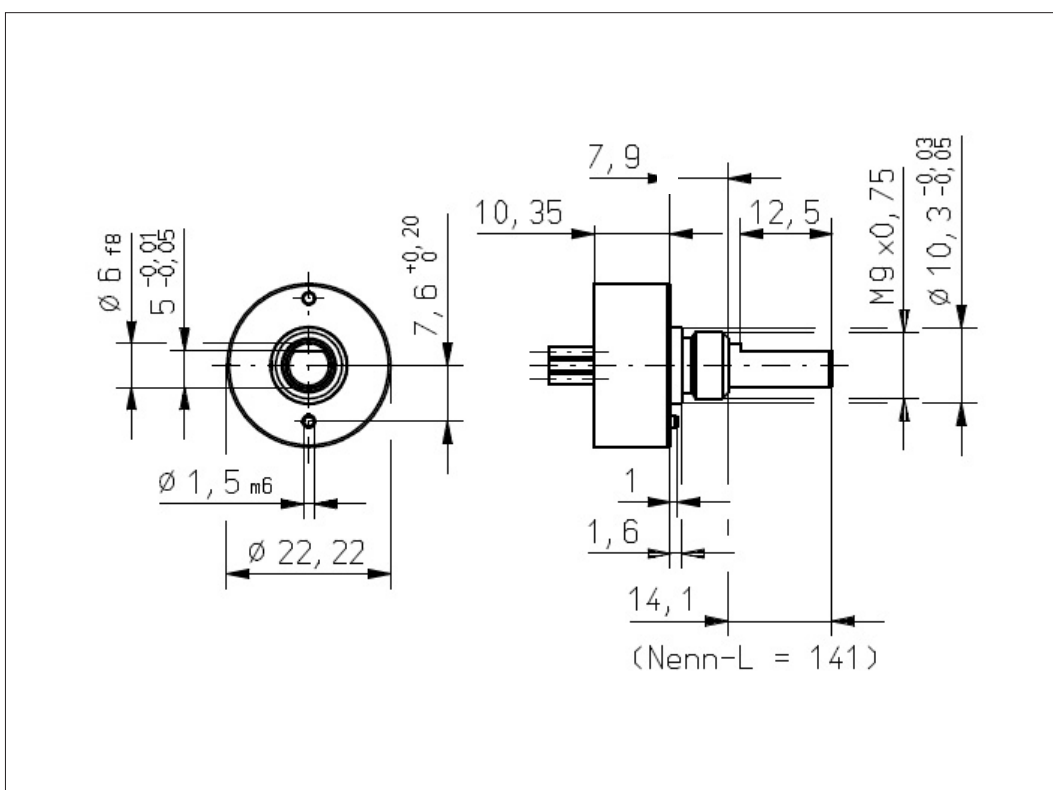
- 1x Fixation clip
- 2x Slotted cylinder head screw M3x8



### Vert-X 2112

#### Accessories (incl.)

- 1x Nut M9x0.75 / SW13
- 1x Serrated lock washer



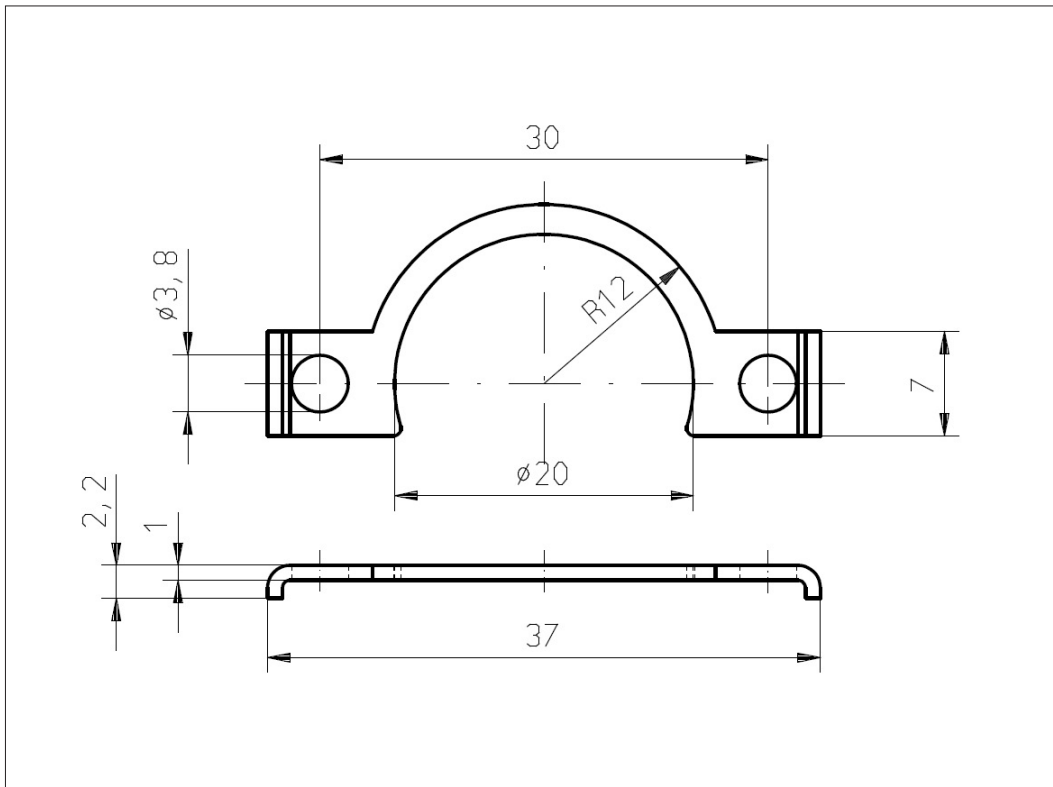
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**Vert-X 2112**  
**Accessories**  
Fixation clip



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