



## Vert-X 27E - 5V

### Applications

- Harvesting machine
- Fork lift
- Hydraulic pump

### Features

- High protection class IP69
- Compact dimensions
- Non-contacting measuring method
- Very long life
- High accuracy of measurement
- Applications under adverse ambient conditions possible (humidity, dampness, oil, dust, vibrations etc.)

### Options

- Special electrical angle
- Output signal X ... Y% UB
- Custom housing design
- Custom magnetic actuator design
- Custom wires / cable

Version		B	C
<b>Electrical Data</b>			
Measuring range	°	0 ... 360	360
Linearity		see table B	see table C
Max. hysteresis		see table B	see table C
Resolution		see table B	see table C
Max. repeatability		see table B	see table C
Sample rate		see table B	see table C
System propagation delay		see table B	see table C
Max. temperature coefficient of the output signal ppm/°K		50	50
Min. life (electrical)	years	10	10
Power supply voltage	VDC	5 (±10%)	5 (±10%)
Current consumption without load (typical)		see table B	see table C
Min. ohmic load at output		see table B	see table C
Max. capacitive load at output		see table B	see table C
PWM frequency		see table B	-
Reverse polarity protection of power supply		see table B	see table C
Electrical connection		see table B	see table C

### Mechanical Data

Mechanical range	°	360 (continuous)	360 (continuous)
Min. life (mechanical)	movements	infinite	infinite
Operating temperature	°C	see table B	see table C
Storage temperature	°C	see table B	see table C
Protection class		IP69	IP69

### Standards

EN 55022 classe B, emission radiated (30 ... 230 MHz)	max. 30 dB(µV/m)	max. 30 dB(µV/m)
EN 55022 classe B, emission radiated (230 ... 1000MHz)	max. 37 dB(µV/m)	max. 37 dB(µV/m)
EN 61000-4-2, ESD on housing and connections (contact / air)	4 / 8 kV	4 / 8 kV
EN 61000-4-3, immission HF radiated (80 ... 1000 MHz)	100 V/m	100 V/m
EN 61000-4-4, burst (on supply lines / signal lines)	1 / 0.5 kV	1 / 0.5 kV
EN 61000-4-5, surge (on supply lines / signal lines)	1 kV	1 kV
EN 61000-4-6, immission HF conducted (0.15...80MHz)	10 Vemk	10 Vemk
EN 61000-4-8, immission magnetic field (50Hz)	30 A/m	30 A/m
IEC 60393-1 insulation resistance (500VDC, 1bar, 2s)	20 GOhm	20 GOhm
IEC 60393-1 dielectric strength (VAC, 50Hz, 1min, 1bar)	1 kV	1 kV
IEC 68-2-6 vibration (Amax = 0.75mm, f = 5 ... 2000 Hz)	50 g	50 g
IEC 68-2-27 shock	200 g	200 g

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### Vert-X 27E - 5V Table Version B

#### Additional features

- Full resolution and accuracy at programmed electrical angle

#### Additional options

- Electrical angle within 0 ... 360° programmable
- Redundancy
- Operating temperature -40 ... +125°C

Interface	10 ... 90% UB		PWM	SPI
		5 ... 95% UB		
Indep. linearity (without misalignment)	% meas. range	±0.3	±0.3	±0.3
Indep. linearity (with allowed misalignm. @ 360°)	% meas. range	±0.5	±0.5	±0.5
Max. hysteresis	°	0.1	0.1	0.1
Resolution	bit	12	12	14
Max. repeatability	°	0.1	0.1	0.1
Sample rate fast mode	kHz	5	5	2.2
Sample rate slow mode	kHz	1.66	1.66	0.55
System propagation delay fast mode	µs	800	800	400
System propagation delay slow mode	µs	4600	4600	600
Current consump. without load (typ.) fast mode	mA	16	16	16
Current consump. without load (typ.) slow mode	mA	10	10	10
Min. ohmic load at output	kOhm	10	10	-
Max. capacitive load at output	nF	10	1	-
PWM frequency	kHz	-	0.1 (... 1)	-
Reverse polarity protection of power supply		yes	yes	yes
Electrical connection axial		wires	wires	ribbon cable
Cross section of single wires	mm <sup>2</sup>	0.5 (AWG20)	0.5 (AWG20)	0.5 (AWG20)
Operating temperature	°C	-40 ... +125	-40 ... +125	-40 ... +105
Storage temperature	°C	-40 ... +125	-40 ... +125	-40 ... +105
Electrical connection radial		round cable 3pol	round cable 3pol	round cable 6pol
Cross section of single wires	mm <sup>2</sup>	0.5 (AWG20)	0.5 (AWG20)	0.5 (AWG20)
Operating temperature	°C	-40 ... +125	-40 ... +125	-40 ... +125
Storage temperature	°C	-40 ... +125	-40 ... +125	-40 ... +125
Redundancy feasible		yes	yes	yes

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Interface		SSI	Incremental (A,B,Z)
Independent linearity	°	1.8	1.8
Max. hysteresis	°	0.1	0.7
Resolution	bit	10	10 (quadrature)
Resolution per channel	ppr	-	256 / 128 / 64 / 32
Max. repeatability	°	0.12	0.12
Sample rate	kHz	10	10
System propagation delay	µs	65	200
Current consumption without load (typical)	mA	16	16
Min. ohmic load at output	kOhm	5	5
Max. capacitive load at output	nF	1	1
Reverse polarity protection of power supply		no	no
Electrical connection axial		ribbon cable	ribbon cable
Cross section of single wires	mm <sup>2</sup>	0.5 (AWG20)	0.5 (AWG20)
Operating temperature	°C	-40 ... +105	-40 ... +105
Storage temperature	°C	-40 ... +105	-40 ... +105
Electrical connection radial		round cable 6pol	round cable 6pol
Cross section of single wires	mm <sup>2</sup>	0.5 (AWG20)	0.5 (AWG20)
Operating temperature	°C	-40 ... +125	-40 ... +125
Storage temperature	°C	-40 ... +125	-40 ... +125
Redundancy feasible		no	no

### Vert-X 27E - 5V Table Version C

#### Additional features

- High operating speed

#### Additional options

- Operating temperature  
-40 ... + 125°C

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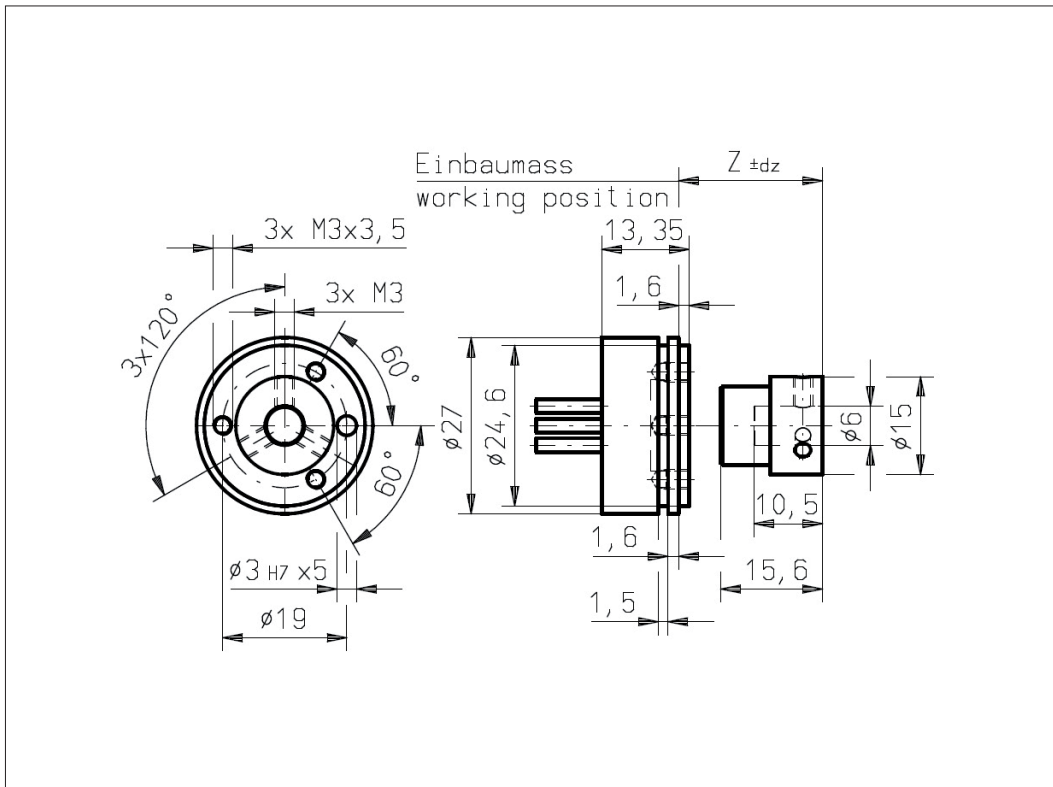


**Vert-X 27E2 xxx xxx 2xx**  
**Vert-X 27E2 xxx xxx 5xx**  
**Vert-X 27E2 xxx xxx 7xx**

**Working position (Z)**

Version B	12.55mm
Version B redundant	12.05mm
Version C	12.05mm

**Max. permitted axial misalignment of the magnetic actuator**  
 dz ±0.5mm

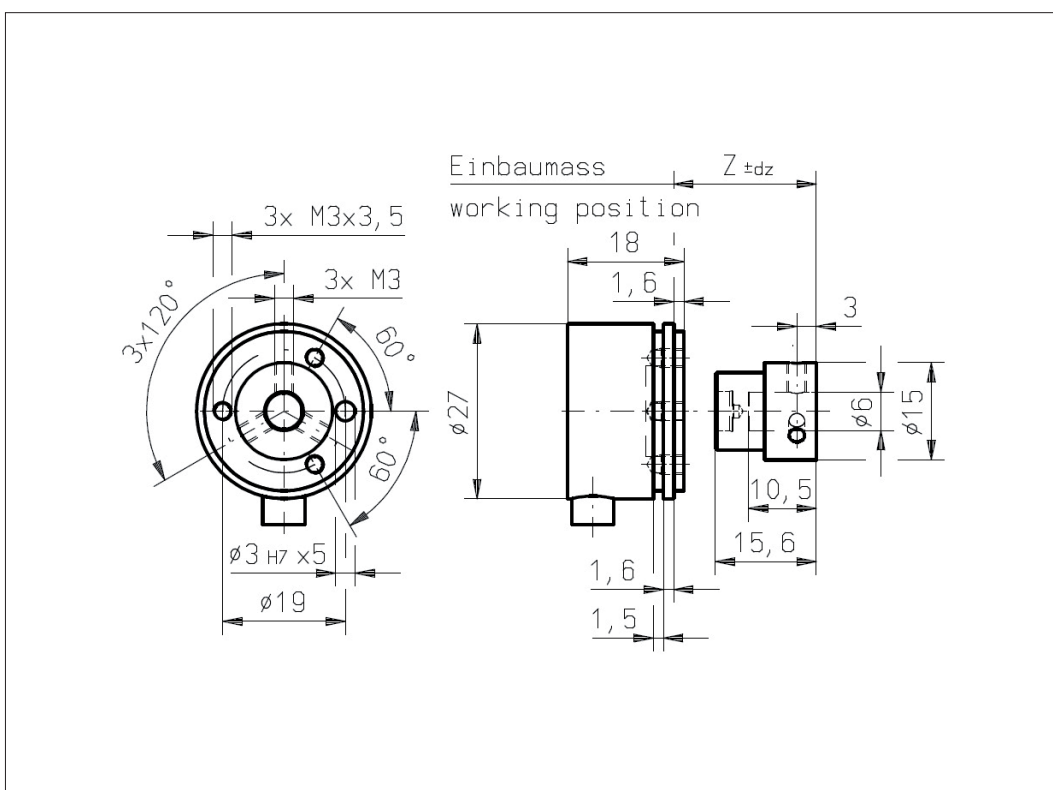


**Vert-X 27E2 xxx xxx 1xx**  
**Vert-X 27E2 xxx xxx 4xx**  
**Vert-X 27E2 xxx xxx 6xx**

**Working position (Z)**

Version B	12.55mm
Version B redundant	12.05mm
Version C	12.05mm

**Max. permitted axial misalignment of the magnetic actuator**  
 dz ±0.5mm



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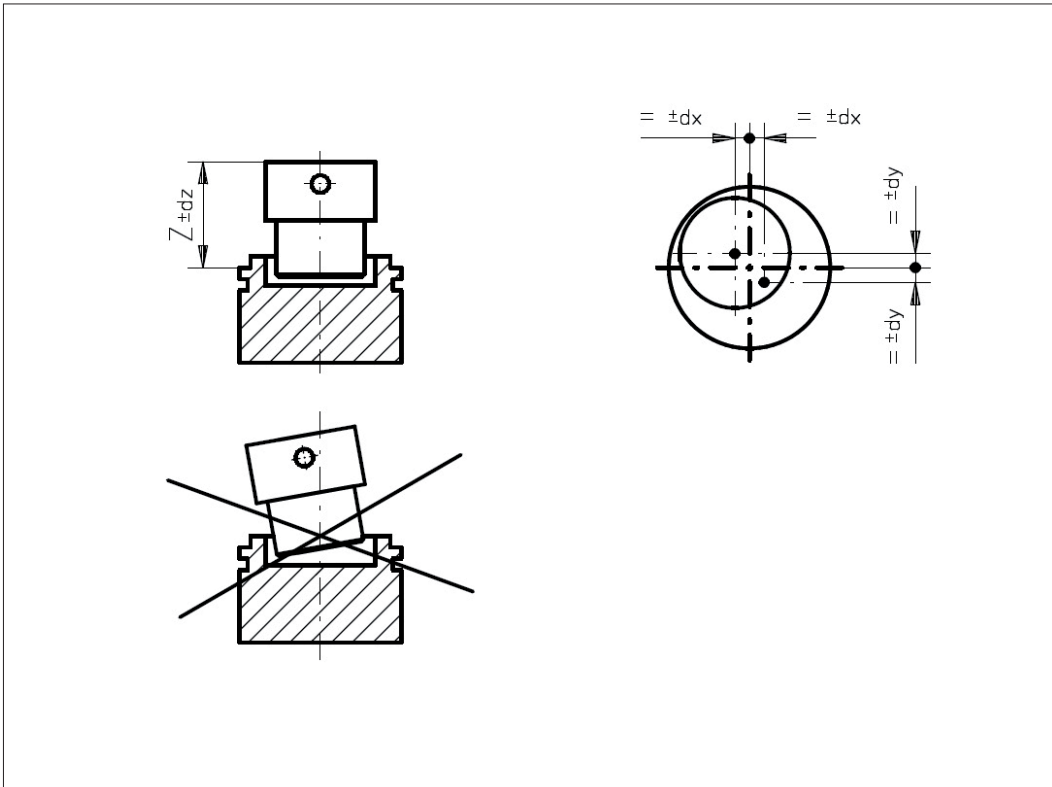
**Vert-X 27E**  
**Mounting information**

**Working position (Z)**

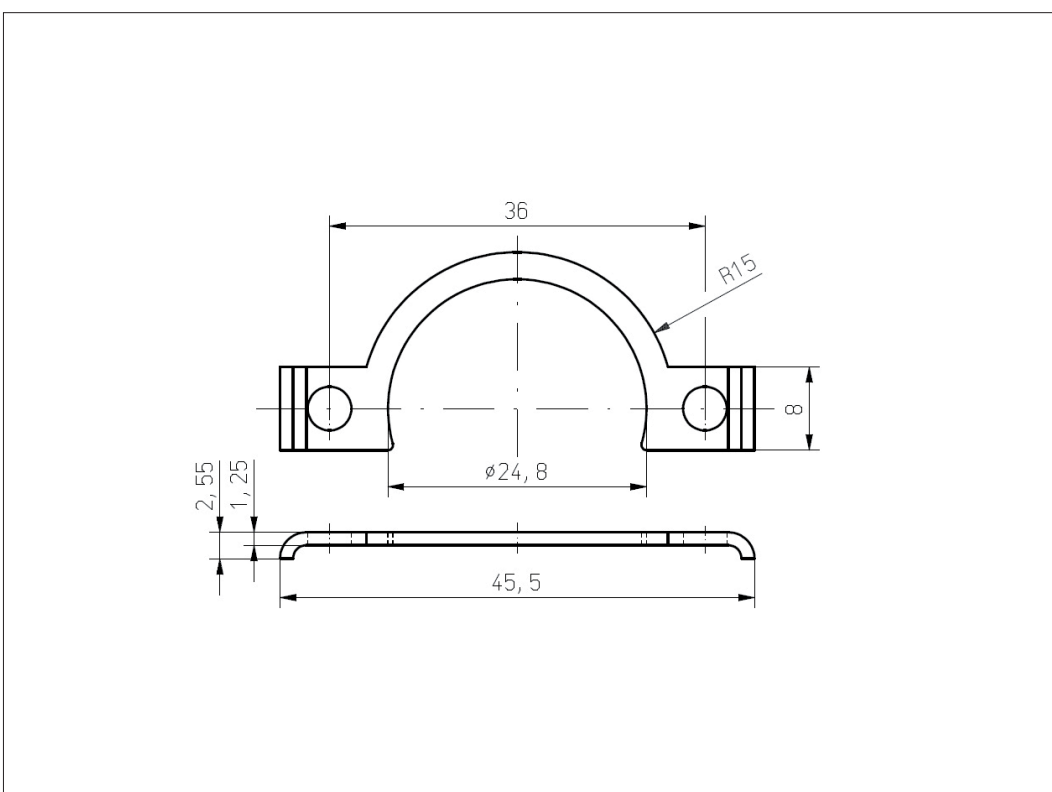
Version B	12.55mm
Version B redundant	12.05mm
Version C	12.05mm

**Max. permitted misalignment of the magnetic actuator**

dx	±0.25mm
dy	±0.25mm
dz	±0.5mm



**Vert-X 27E**  
**Accessories**  
**Fixation clip**



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