



Vert-X 37E - 24V

Applications

- Agricultural machines
- Construction machines
- Forest machines
- Special purpose vehicles

Features

- High protection class IP69
- Very robust design
- 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

Errors and omissions excepted. Subject to change without notice. State: 20.11.06

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 A company of the Siedle-Group

Version		B	C
Electrical Data			
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		100	100
Min. life (electrical)	years	10	10
Power supply voltage		see table B	see table C
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	-40 ... +85	-40 ... +85
Storage temperature	°C	-40 ... +85	-40 ... +85
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



Vert-X 37E - 24V Table Version B

Additional features

- Full resolution and accuracy at programmed electrical angle

Additional options

- Electrical angle within 0 ... 360° programmable
- Redundancy

Interface		0.5 ... 4.5V	0.1 ... 10V	4 ... 20mA
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	12
Max. repeatability	°	0.1	0.1	0.1
Sample rate fast mode	kHz	5	5	5
Sample rate slow mode	kHz	1.66	1.66	1.66
System propagation delay fast mode	µs	800	850	850
System propagation delay slow mode	µs	4600	4650	4650
Power supply voltage	VDC	8 ... 35	10.8 ... 35	16 ... 35
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	5	10	0 ... 0.5
Max. capacitive load at output	nF	5	10	10
PWM frequency	kHz	-	-	-
Reverse polarity protection of power supply		yes	yes	yes
Electrical connection axial		wires	wires	wires
Cross section of single wires	mm ²	0.5 (AWG20)	0.5 (AWG20)	0.5 (AWG20)
Electrical connection radial		round cable 3pol	round cable 3pol	round cable 3pol
Cross section of single wires	mm ²	0.5 (AWG20)	0.5 (AWG20)	0.5 (AWG20)
Redundancy feasible		yes	no	no

Interface		PWM	SPI
Indep. linearity (without misalignment)	% meas. range	±0.3	±0.3
Indep. linearity (with allowed misalignm. @ 360°)	% meas. range	±0.5	±0.5
Max. hysteresis	°	0.1	0.1
Resolution	bit	12	14
Max. repeatability	°	0.1	0.1
Sample rate fast mode	kHz	1	2.2
Sample rate slow mode	kHz	1	0.55
System propagation delay fast mode	µs	800	400
System propagation delay slow mode	µs	4600	600
Power supply voltage	VDC	8 ... 35	8 ... 35
Current consump. without load (typ.) fast mode	mA	16	16
Current consump. without load (typ.) slow mode	mA	10	10
Min. ohmic load at output	kOhm	10	-
Max. capacitive load at output	nF	1	-
PWM frequency	kHz	0.1 (... 1)	-
Reverse polarity protection of power supply		yes	yes
Electrical connection axial		wires	ribbon cable
Cross section of single wires	mm ²	0.5 (AWG20)	0.5 (AWG20)
Electrical connection radial		round cable 3pol	round cable 6pol
Cross section of single wires	mm ²	0.5 (AWG20)	0.5 (AWG20)
Redundancy feasible		yes	yes

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Vert-X 37E - 24V
Ordering code
Version B

										Power supply voltage	
										1 Standard: 24VDC	
										Output signal	
										1 Standard: 0,1VDC ... 10VDC	
										2 Standard: 0,5VDC ... 4,5VDC	
										4 Standard: PWM	
										5 Standard: 4 mA ... 20 mA	
										8 Standard: SPI	
										Output characteristics	
										1 Standard: Positive gradient CW	
										2 Optional: Positive gradient CCW	
										3 Optional: Redundant, positive gradient CW	
										4 Optional: Redundant, positive gradient CCW	
										5 Optional: Redundant, crossed signal curves	
										Electrical connection / axial	
										2 Optional: Ribbon cable 10pol	
										5 Standard: Wires 3pol (not SPI)	
										7 Standard: Ribbon cable 6pol	
										9 Optional: Special cable ; special wires	
										Electrical connection / radial	
										1 Optional: Round cable 10pol	
										4 Standard: Round cable 3pol (not SPI)	
										6 Standard: Round cable 6pol	
										9 Optional: Special cable ; special wires	
										Length of wires / ribbon cable	
										01 Optional: 10cm	
										02 Optional: 20cm	
										03 Optional: 30cm	
										04 Optional: 40cm	
										05 Standard: 50cm	
										99 Optional: Special length	
										Length of cable	
										02 Standard: 1.0m	
										06 Optional: 3.0m	
										10 Optional: 5.0m	
										99 Optional: Special length	
Vert-X											
3 7 E 4										7 3 6	
										1 1 1	
										5 0 5	
										Electrical angle	
										36 Standard: Electrical angle 360°	
										xx Optional: 10 to 35; Declaration in 10° steps	
										99 Optional: Special angle	
										Sensor principle	
										7 B	
										Mechanical version	
										37E2 Optional: Servo mount size 13 ; magnetic actuator type 2	
										37E4 Standard: Servo mount size 13 ; magnetic actuator type 4	
										37E9 Optional: Special housing ; special magnetic actuator	

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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
Power supply voltage	VDC	8 ... 30	8 ... 30
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		yes	yes
Electrical connection axial		ribbon cable	ribbon cable
Cross section of single wires	mm ²	0.5 (AWG20)	0.5 (AWG20)
Electrical connection radial		round cable 6pol	round cable 6pol
Cross section of single wires	mm ²	0.5 (AWG20)	0.5 (AWG20)
Redundancy feasible		no	no

Vert-X 37E - 24V Table Version C

Additional features

- High operating speed

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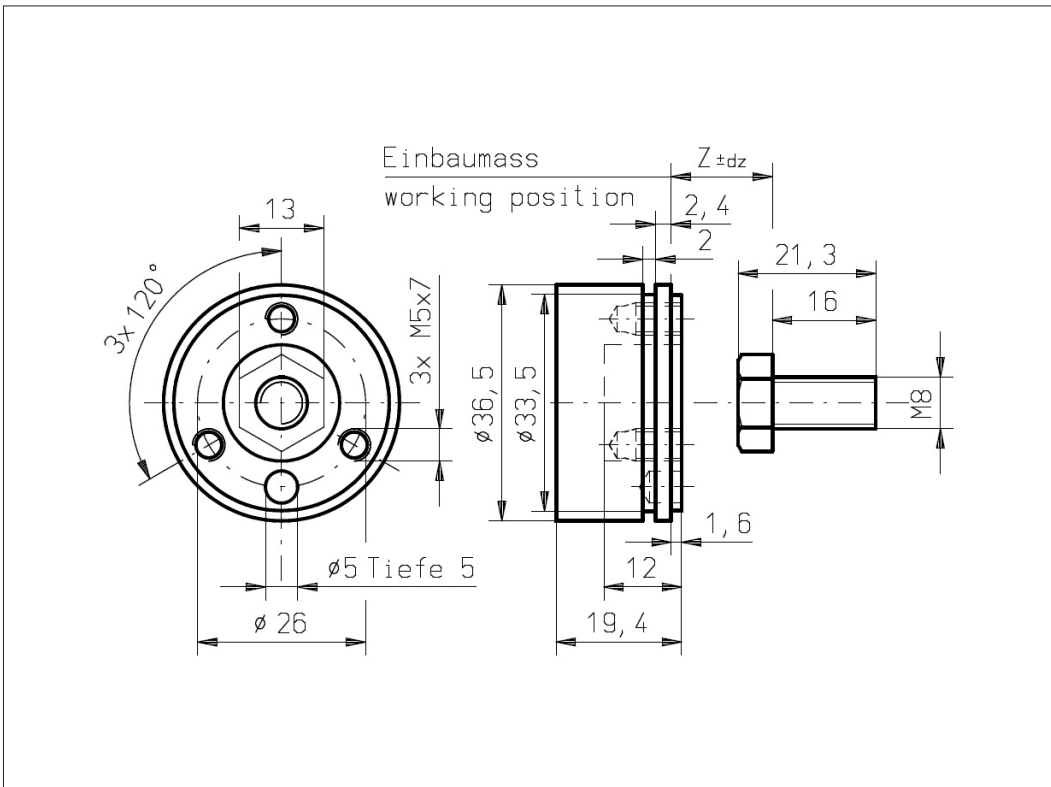
Vert-X 37E4 xxx xxx 2xx
Vert-X 37E4 xxx xxx 5xx
Vert-X 37E4 xxx xxx 7xx

Working position (Z)

Version B	-3.85mm
Version B redundant	-4.35mm
Version C	-4.35mm

Max. permitted axial misalignment of the magnetic actuator

dz ±0.5mm



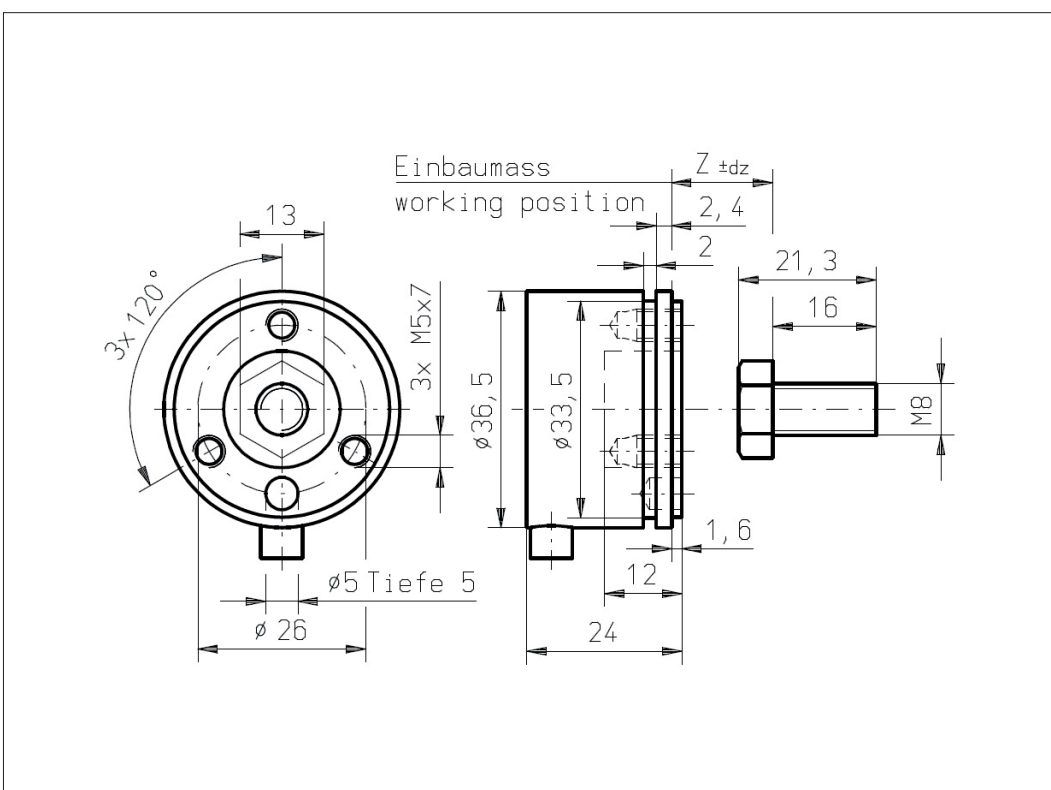
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Vert-X 37E4 xxx xxx 4xx
Vert-X 37E4 xxx xxx 6xx

Working position (Z)

Version B	-3.85mm
Version B redundant	-4.35mm
Version C	-4.35mm

Max. permitted axial misalignment of the magnetic actuator

dz ±0.5mm



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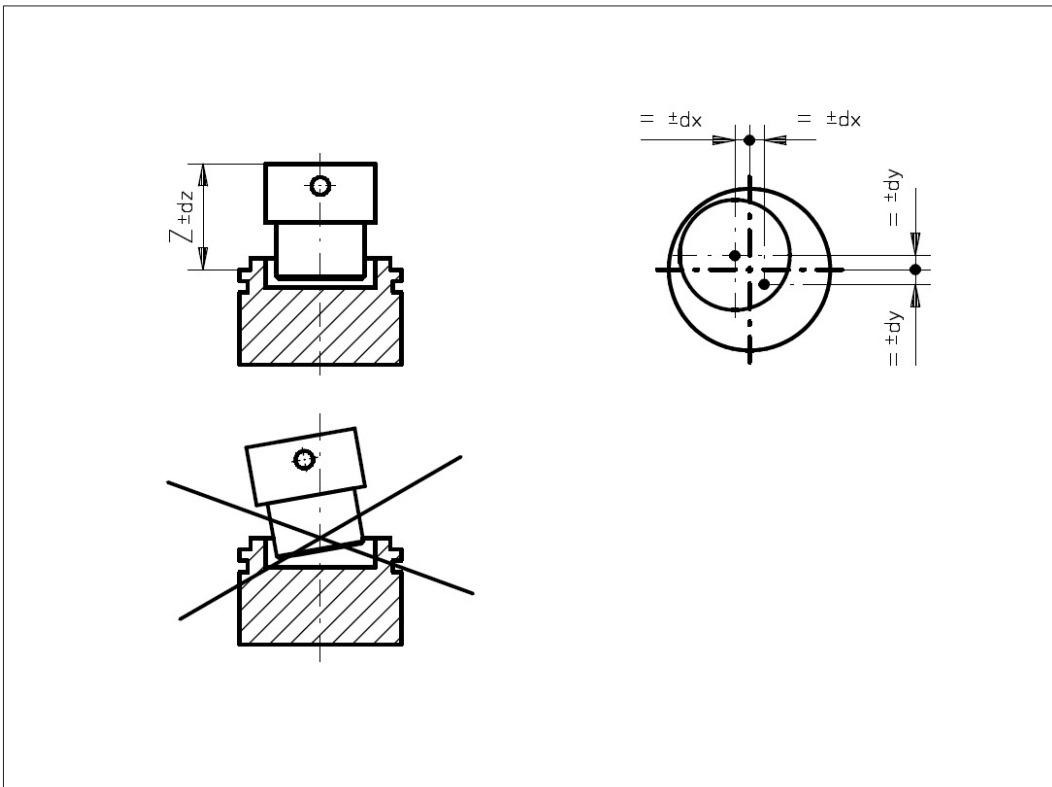
Vert-X 37E
Mounting information

Working position (Z)

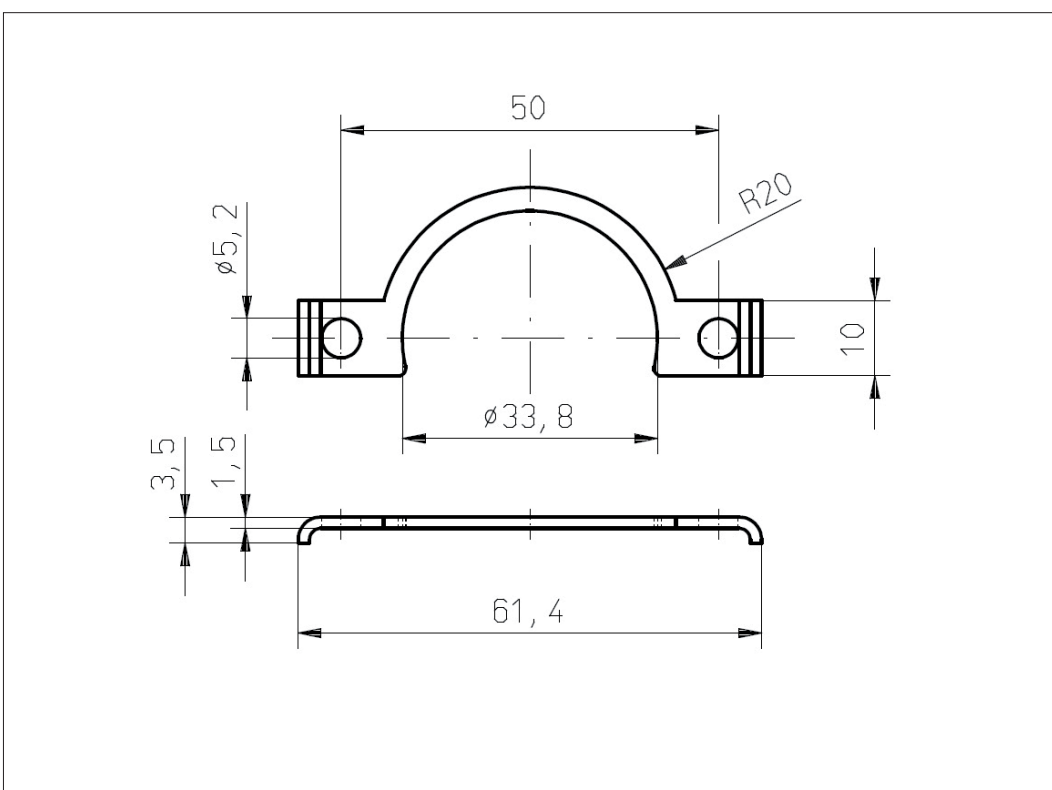
Version B	-3.85mm
Version B redundant	-4.35mm
Version C	-4.35mm

Max. permitted misalignment of the magnetic actuator

dx	±0.25mm
dy	±0.25mm
dz	±0.5mm



Vert-X 37E
Accessories
Fixation clip



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