

Vert-X 31E - 5V / SPI / Single**31E5a736281999****Technical datas**

Mechanical version	Magnetic actuator type 5
Mounting hole	Through-hole ø4.4 mm
Sensor principle	MH-C
Electrical angle	Electrical angle 360°
Power supply voltage	5 VDC
Output signal	SPI
Output characteristics	Single, positive gradient CW
Electrical connection	Special cable
Length of cable	Special length

Electrical Datas

Measuring range	°	0...360
Indep. linearity (typ.)	% of measuring range	±0.3
Max. hysteresis	°	0.1
Resolution	bit	14
Max. repeatability	°	0.1
Sample rate fast mode	kHz	2.2
Sample rate slow mode	kHz	(0.55)
System propagation delay fast mode	µs	400
System propagation delay slow mode	µs	(600)
Max. temperature coefficient of output signal	ppm/K	25
MTTFd / MTBF		upon request
Power supply voltage	VDC	5 (±10%)
Current consumption without load (typ.) fast mode, per channel	mA	14
Current consumption without load (typ.) slow mode, per channel	mA	(9)
Min. ohmic load at output	kOhm	-
Max. capacitive load at output	nF	-
Reverse polarity protection of power supply		yes
Electrical connection		Round cable, 6-pole
Cross section of single wires	mm ²	0.25 (AWG24)

Mechanical Datas

Mechanical range	°	360 (continuous)
Protection rating		IP68
Min. life	movements	no limitation
Operating & storage temperature	°C	-40...+85
EN 60068-2-6, vibration (Amax = 0.75 mm, f = 5–2,000 Hz)	g	50
EN 60068-2-27, shock	g	200

Standards

EN 55011, Emission (Cl. B)		
EN 61000-4-2, ESD (contact discharge / air discharge)	kV	±4 / ±8
EN 61000-4-3, Immision HF radiated (80–1000 MHz/1.4–2.7 GHz)	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 (0.15–80 MHz)	Vemf	10

Features

- High protection rating IP68
- Compact dimensions
- Non-contacting measuring method
- Very long life
- High measurement accuracy
- Can be used in harsh environments (humidity, dampness, dust, vibrations, etc.)
- Full resolution and accuracy at programmed electrical angle
- Magnetic loss detection (with safety flag)

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EN 61000-4-8, Immision magnetic field (50 Hz)	A/m	300
Insulation resistance (500 VDC, 1 bar, 2s)	GOhm	20
Dielectric strength (VAC, 50 Hz, 1 min, 1 bar)	kV	1

Options

Custom modification of housing

Custom cable

Custom magnetic actuator

Sample rate in slow mode

Switch functions TTL (max. 2)

Special characteristic curve

Special electrical angle between 30 and 360° (ex factory)

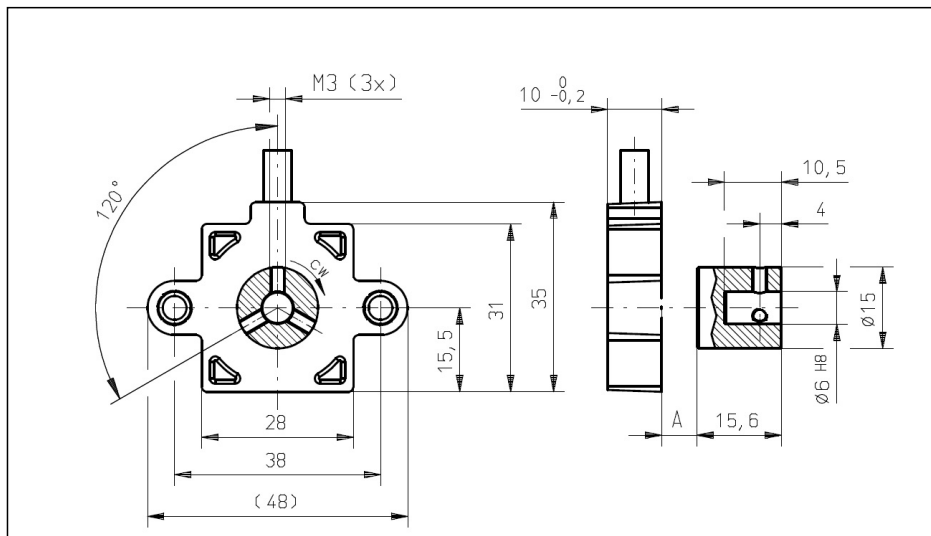
Electrical angle programmable (software)

Start and end point settable (additional wires)

Direction of rotation CW/CCW settable/programmable (additional wires or software)

Index point settable/programmable (additional wires or software)

Extended operating range, axial (without safety flag)



Operating range/Air gap (A)
Standard with Safety Flag

- 0.8 ... 6.2mm

Extended without Safety Flag (Optional)

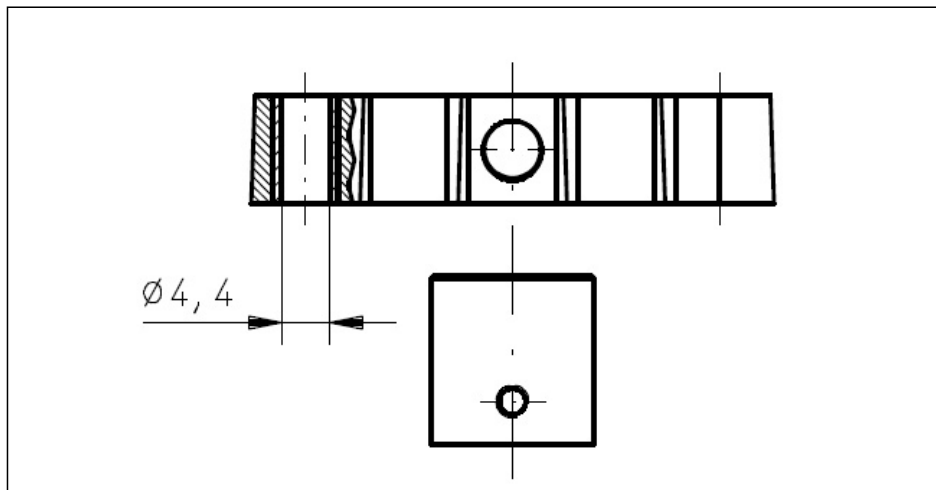
- 0 ... 10.0mm

Features Safety Flag

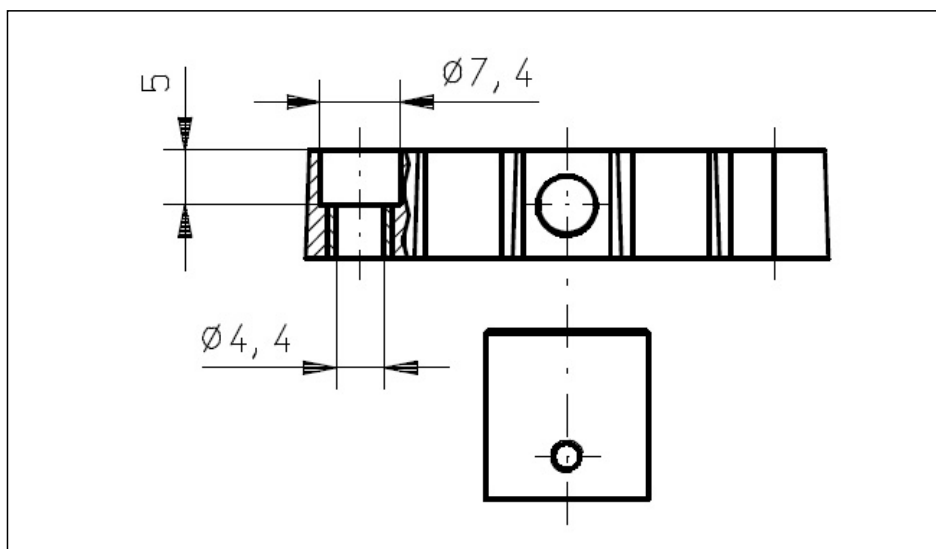
- Detection of magnetic loss
- System shut-down in case of magnetic actuator out of valid operating range
- Recommended for safety relevant applications

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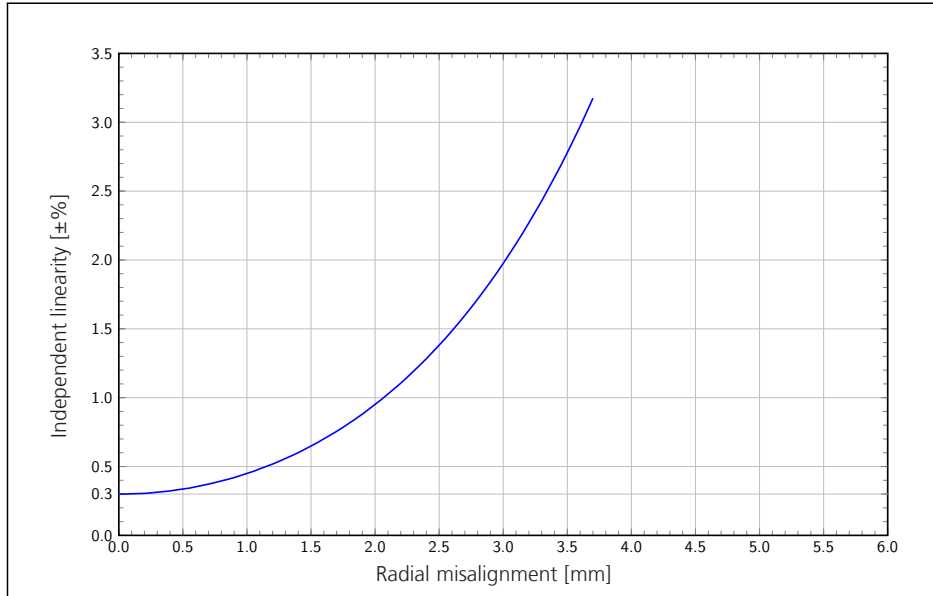
Vert-X 31E5a



Vert-X 31E5b

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Indep. linearity with radial misalignment (@360°)