Sensor principle		MH-C	MH-C2
Electrical data			
Measuring range	°	0 ... 360	-
Indep. linearitiy (without misalignment)	% of meas. range	±0.3	-
Indep. linearitiy (with allowed misalignment @ 360°)	% of meas. range	±0.5	-
Max. hysteresis	°	0.1	-
Resolution	bit	12	-
Max. repeatability	°	0.1	-
System propagation delay fast mode	kHz	(5)	-
System propagation delay 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	50	-
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	10	-
Reverse polarity protection of power supply		yes	-
Electrical connection axial		Wires (3x)	-
Cross section of single wires	mm²	0.25 (AWG24)	-
Electrical connection radial		Cable 3pole	-
Cross section of single wires	mm²	0.25 (AWG24)	-
Redundancy feasible		yes	-
Electrical connection redundant axial		Ribbon cable 6pole	-
Cross section of single wires redundant	mm²	0.09 (AWG28)	-
Electrical connection redundant radial		Cable 6pole	-
Cross section of single wires redundant	mm²	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	-
IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5 … 2000 Hz)	g	50	-
IEC 68-2-27 Shock	g	200	-
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	100	-
EN 61000-4-4, Burst (on all lines)	kV	±1	-
EN 61000-4-5, Surge (lines to ground)	kV	±1	-
EN 61000-4-6, Immission HF conducted (0.15...80MHz)	Vemk	10	-
EN 61000-4-8, Immission magnetic field (50Hz)	A/m	300	-
IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s)	GOhm	20	-
IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar)	kV	1	-

Vert-X 13E - 5V / 10...90% Ub

Applications

- Servodrives
- Insetting machines
- Sewer inspection robots
- Medical applications

Features

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

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Vert-X 13E - 5V / 10...90% Ub
Ordering code

Electrical connection / axial

1	Optional	Ribbon cable 6pole
2	Standard	Wires 3pole
9	Optional	Special cable ; special wires

Electrical connection / radial

4	Standard	Round cable 3pole
6	Optional	Round cable 6pole
9	Optional	Special cable

Length of wires / ribbon cable

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

Length of cable

02	Standard	1.0m
06	Optional	3.0m
10	Optional	5.0m
99	Optional	Special length

Output characteristics

Positive gradient CW	Standard	1
Positive gradient CCW	Optional	2
Redundant, positive gradient CW	Optional	3
Redundant, positive gradient CCW	Optional	4
Redundant, crossed signal curves	Optional	5

Output signal

10%...90% Ub	Standard	2
x% ... y% Ub (within 5 ... 95%)	Optional	4

Power supply voltage

5VDC	Standard	2

Vert-X	1	3	E	3		7	3	6		2	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

7	MH-C

Mechanical version

13E3	Standard	Servo mount ; magnetic actuator type 3
13E9	Optional	Special housing ; special magnetic actuator

	MH-C	MH-C2
Custom magnetic actuator	X	-
Custom modification of the housing	X	-
Custom cable / wires	X	-
Interface x% ... y% Ub (within 5% ... 95% Ub)	X	-
Sample rate in fast mode	X	-
Switch functions TTL (max. 2)	-	-
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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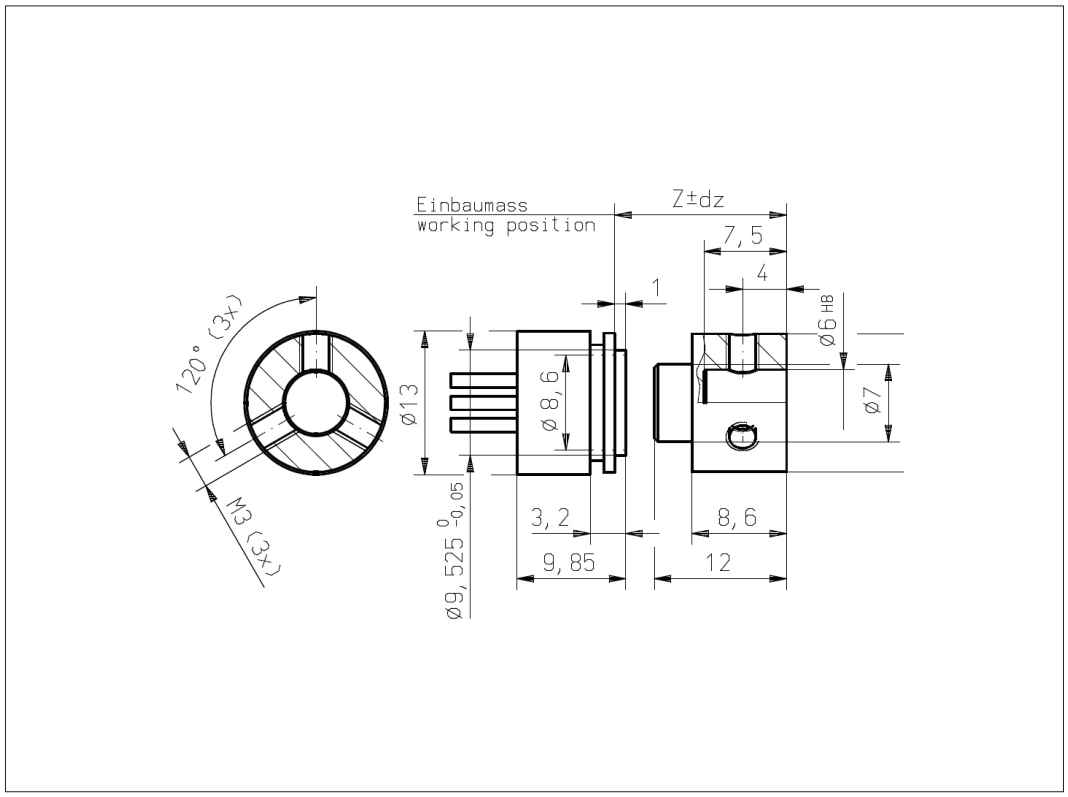
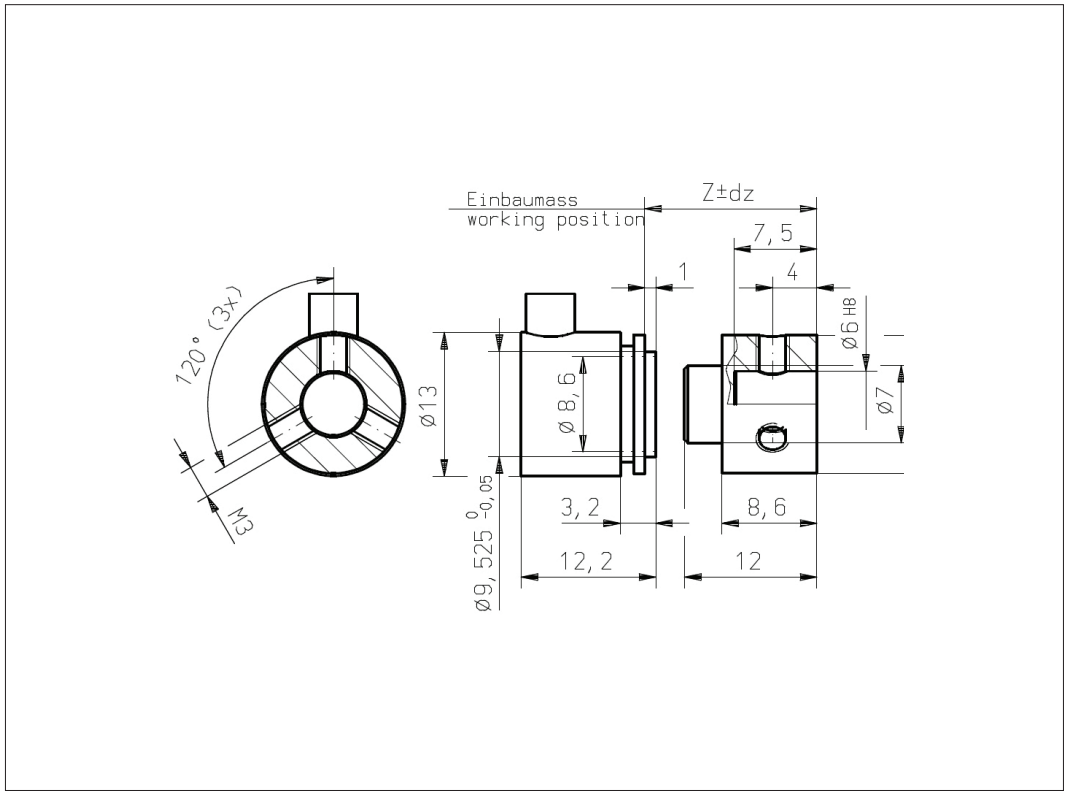


Vert-X 13E3 xxx xxx 1xx
Vert-X 13E3 xxx xxx 2xx

Accessoires (incl.)
- 1x Fixation clip
- 2x Slotted cylinder head screw M3x8

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



Vert-X 13E3 xxx xxx 4xx
Vert-X 13E3 xxx xxx 6xx

Accessoires (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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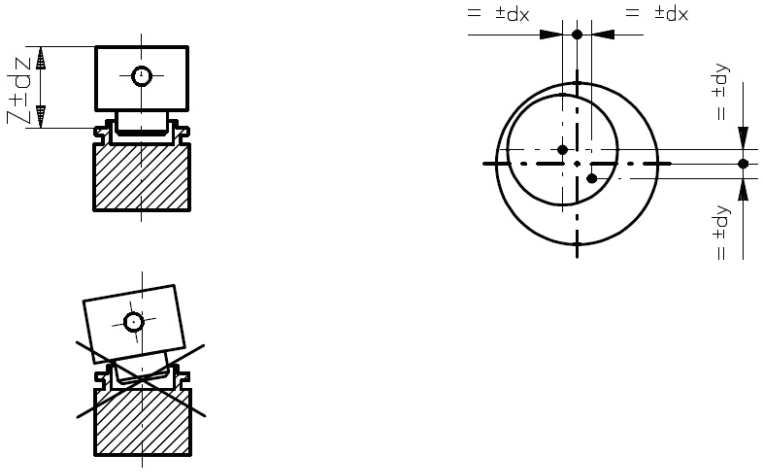


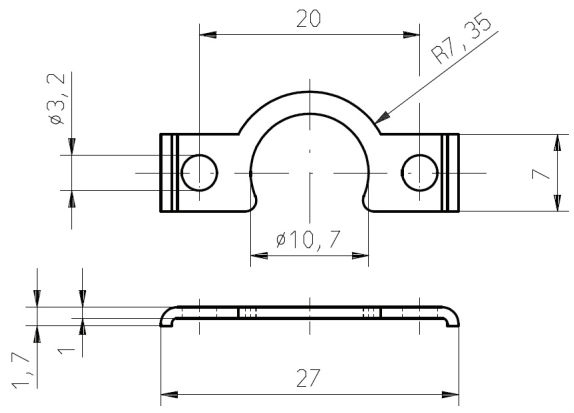
Vert-X 13E
Mounting information

Working position (Z)

MH-C	11.05mm
MH-C redundant	10.55mm

Max. permitted misalignment of the magnetic actuator

dx	±0.25mm
dy	±0.25mm
dz	±0.50mm



Vert-X 13E
Accessoires
Fixation clip

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