



Vert-X 27E - 24V / 0.1 - 10V

Applications

- Harvesting machine
- Fork lift
- Hydraulic pump

Features general

- High protection class IP68
- Compact dimensions
- Non-contacting measuring method
- Very long life
- High accuracy of measurement
- Applications under adverse ambient conditions possible (humidity, dampness, dust, vibrations etc.)
- Full resolution and accuracy at programmed electrical angle

Features MH-C

- Resolution of 12bit
- Lower price than MH-C2

Features MH-C2

- Resolution of 14bit
- Index point(s), sense of rotation and angle settable resp. programmable by customer (optional)

| Sensor principle | | MH-C | MH-C2 |
|---|------------------|------------------|------------------|
| Electrical data | | | |
| Measuring range | ° | 0 ... 360 | 0 ... 360 |
| Indep. linearity (without misalignment) | % of meas. range | ±0.3 | ±0.3 |
| Indep. linearity (with allowed misalignment @ 360°) | % of 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 | (5) | (2) |
| Sample rate slow mode | kHz | 1.66 | 0.5 |
| System propagation delay fast mode | µs | (800) | (800) |
| System propagation delay slow mode | µs | 4600 | 2500 |
| Max. temperature coefficient of the output signal | ppm/°K | 100 | 100 |
| MTTFd / MTBF | years | 185 / 185 | 147 / 147 |
| Power supply voltage | VDC | 10.8 ... 35 | 11 ... 35 |
| Current consumption without load (typ.) fast mode | mA | (19) | (20) |
| Current consumption without load (typ.) slow mode | mA | 14 | 15 |
| Min. ohmic load at output | kOhm | 10 | 10 |
| Max. capacitive load at output | nF | 100 | 100 |
| Reverse polarity protection of power supply | | yes | yes |
| Electrical connection axial | | Wires (3x) | Wires (3x) |
| Cross section of single wires | mm ² | 0.56 (AWG20) | 0.56 (AWG20) |
| Electrical connection radial | | Cable 3pole | Cable 3pole |
| Cross section of single wires | mm ² | 0.56 (AWG20) | 0.56 (AWG20) |
| Redundancy feasible | | no | no |
| Electrical connection redundant axial | | - | - |
| Cross section of single wires redundant | mm ² | - | - |
| Electrical connection redundant radial | | - | - |
| Cross section of single wires redundant | mm ² | - | - |
| Mechanical data | | | |
| Mechanical range | ° | 360 (continuous) | 360 (continuous) |
| Protection class | | IP68 | IP68 |
| Min. life | movements | no limitation | no limitation |
| Operating & storage temperature | °C | -40 ... +85 | -40 ... +85 |
| IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5 ... 2000 Hz) | g | 50 | 50 |
| IEC 68-2-27 Shock | g | 200 | 200 |
| Standards | | | |
| EN 55022 class B, Emission radiated (30... 230 MHz) | dB(µV/m) | max. 30 | max. 30 |
| EN 55022 class B, Emission radiated (230...1000MHz) | dB(µV/m) | max. 37 | max. 37 |
| EN 61000-4-2, ESD (contact discharge / air discharge) | kV | ±4 / ±8 | ±4 / ±8 |
| EN 61000-4-3, Immission HF radiated (80... 1000 MHz) | V/m | 30 | 30 |
| EN 61000-4-4, Burst (on all lines) | kV | ±1 | ±1 |
| EN 61000-4-5, Surge (lines to ground) | kV | ±1 | ±1 |
| EN 61000-4-6, Immission HF conducted (0.15...80MHz) | Vemk | 10 | 10 |
| EN 61000-4-8, Immission magnetic field (50Hz) | A/m | 30 | 30 |
| IEC 60393-1 Insulation resistance (500VDC, 1bar, 2s) | GOhm | 20 | 20 |
| IEC 60393-1 Dielectric strength (VAC, 50Hz, 1min, 1bar) | kV | 1 | 1 |

Errors and omissions excepted. Subject to change without notice. / State: 01.10.10

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CONTELEC
 A company of the Siedle-Group



Vert-X 27E - 24V / 0.1 - 10V
Ordering code

*** Switch outputs**
 Please define number
 (max. 127), position and width
 of the pulses.

| Output characteristics | | Electrical connection / axial | |
|--|------------|---------------------------------------|-------------------------------|
| Positive gradient CW | Standard 1 | 3 Optional | Wires 4pole |
| Positive gradient CCW | Optional 2 | 5 Standard | Wires 3pole |
| Redundant, positive gradient CW | Optional 3 | 7 Optional | Wires 5pole / 6pole |
| Redundant, positive gradient CCW | Optional 4 | 9 Optional | Special cable ; special wires |
| Redundant, crossed signal curves | Optional 5 | Electrical connection / radial | |
| Positive gradient CW with 1 switch output* | Optional A | 4 Standard | Round cable 3pole |
| Positive gradient CCW with 1 switch output* | Optional B | 6 Optional | Round cable 6pole |
| Positive gradient CW with 2 switch outputs* | Optional C | 9 Optional | Special cable ; special wires |
| Positive gradient CCW with 2 switch outputs* | Optional D | Length of wires | |
| Sense of rotation settable | Optional E | 01 Optional | 10cm |
| Zero point & sense of rotation settable | Optional F | 03 Optional | 30cm |
| Middle point & sense of rotation settable | Optional G | 05 Standard | 50cm |
| Start + end point & sense of rotation settable | Optional H | 99 Optional | Special length |
| Programmable with Vert-X EasyAdapt | Optional P | Length of cable | |
| | | 02 Standard | 1.0m |
| | | 06 Optional | 3.0m |
| | | 10 Optional | 5.0m |
| | | 99 Optional | Special length |

| Output signal | | Power supply voltage | |
|------------------|------------|----------------------|------------|
| 0,1VDC ... 10VDC | Standard 1 | 24VDC | Standard 1 |

Vert-X **2 7 E 2** **7 3 6** **1 1 1** **5 0 5**

| 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 | |
| 8 MH-C2 | |

| Mechanical version | |
|--------------------|--|
| 27E1 Optional | Servo mount size 11 ; magnetic actuator type 1 |
| 27E2 Standard | Servo mount size 11 ; magnetic actuator type 2 |
| 27E9 Optional | Special housing ; special magnetic actuator |

| | MH-C | MH-C2 |
|---|------|-------|
| Custom magnetic actuator | X | X |
| Custom modification of the housing | X | X |
| Custom cable / wires | X | X |
| Sample rate in fast mode | X | X |
| Switch functions TTL (max. 2) | X | X |
| Special characteristic curve | - | X |
| Special electrical angle within 30° to 360° (ex factory) | X | 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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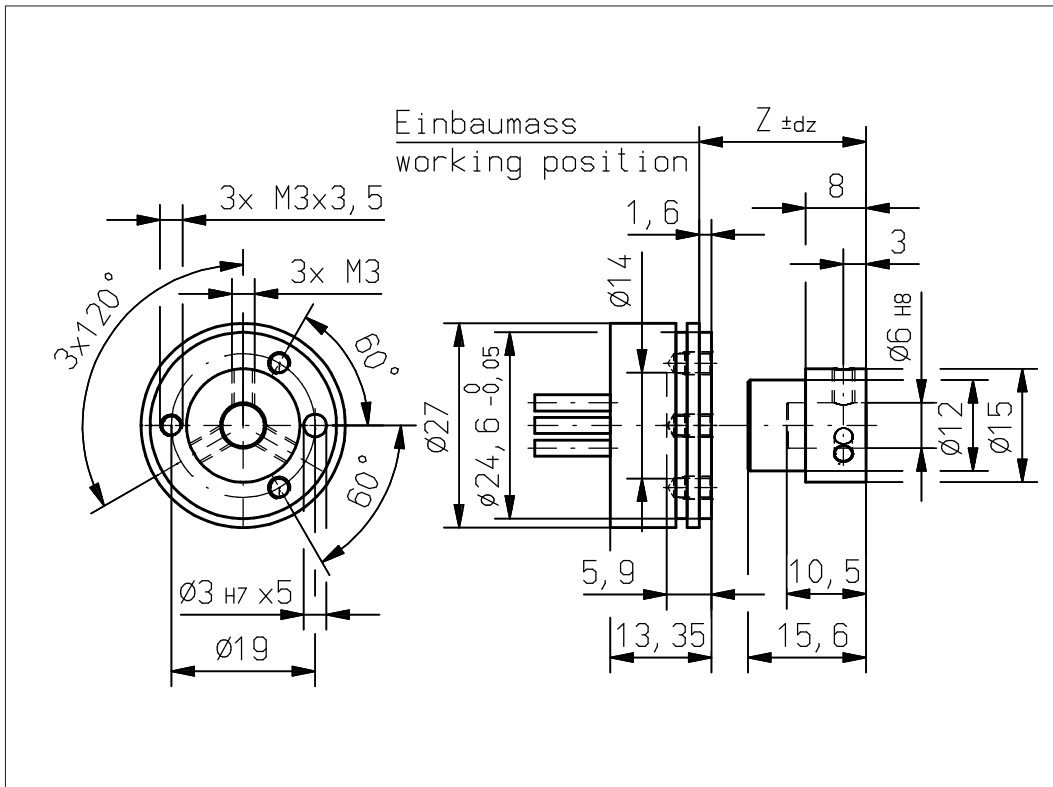
Vert-X 27E2 xxx xxx 5xx
Vert-X 27E2 xxx xxx 7xx

Accessoires (incl.)

- 1x Fixation clip
- 2x Slotted cylinder head screw M5x12

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

see mounting information



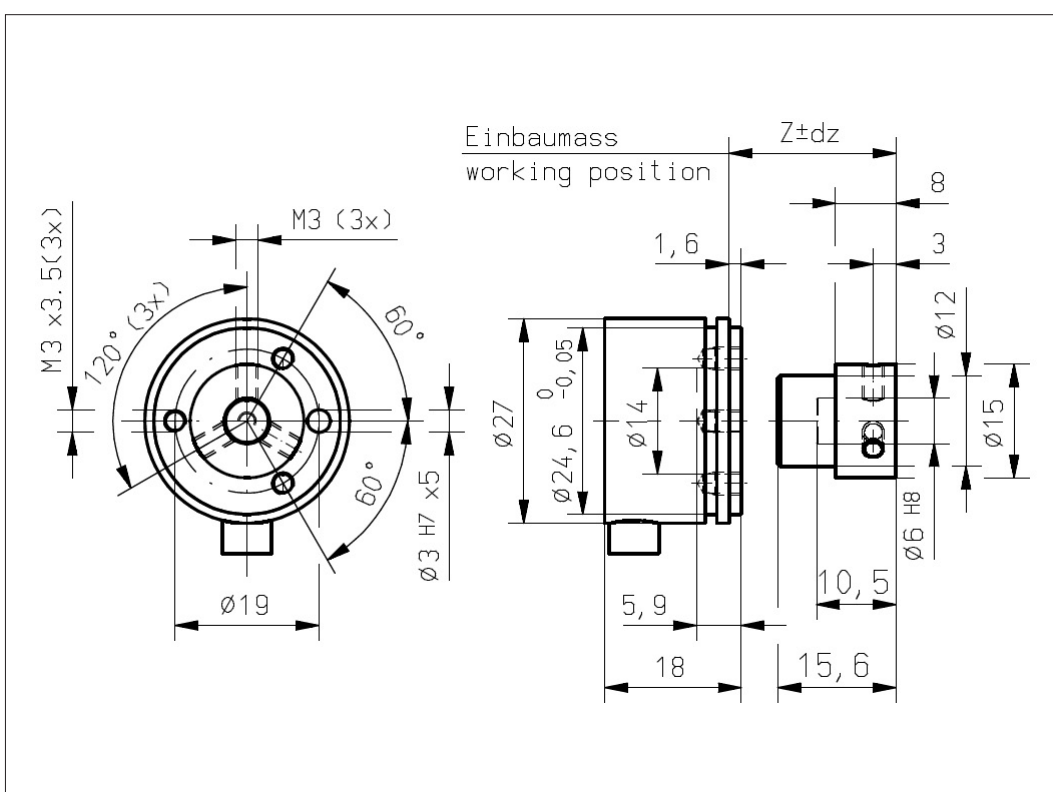
Vert-X 27E2 xxx xxx 4xx
Vert-X 27E2 xxx xxx 6xx

Accessoires (incl.)

- 1x Fixation clip
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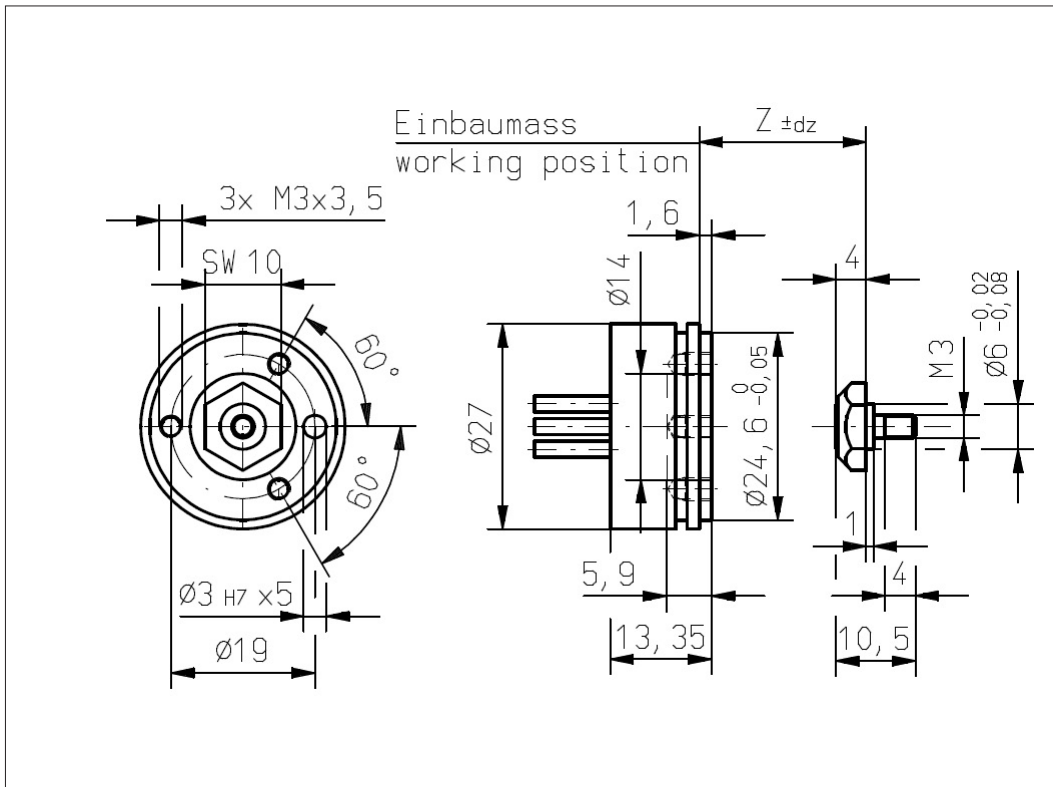
Vert-X 27E1 xxx xxx 5xx
Vert-X 27E1 xxx xxx 7xx

Accessoires (incl.)

- 1x Fixation clip
- 2x Slotted cylinder head screw M5x12

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see mounting information



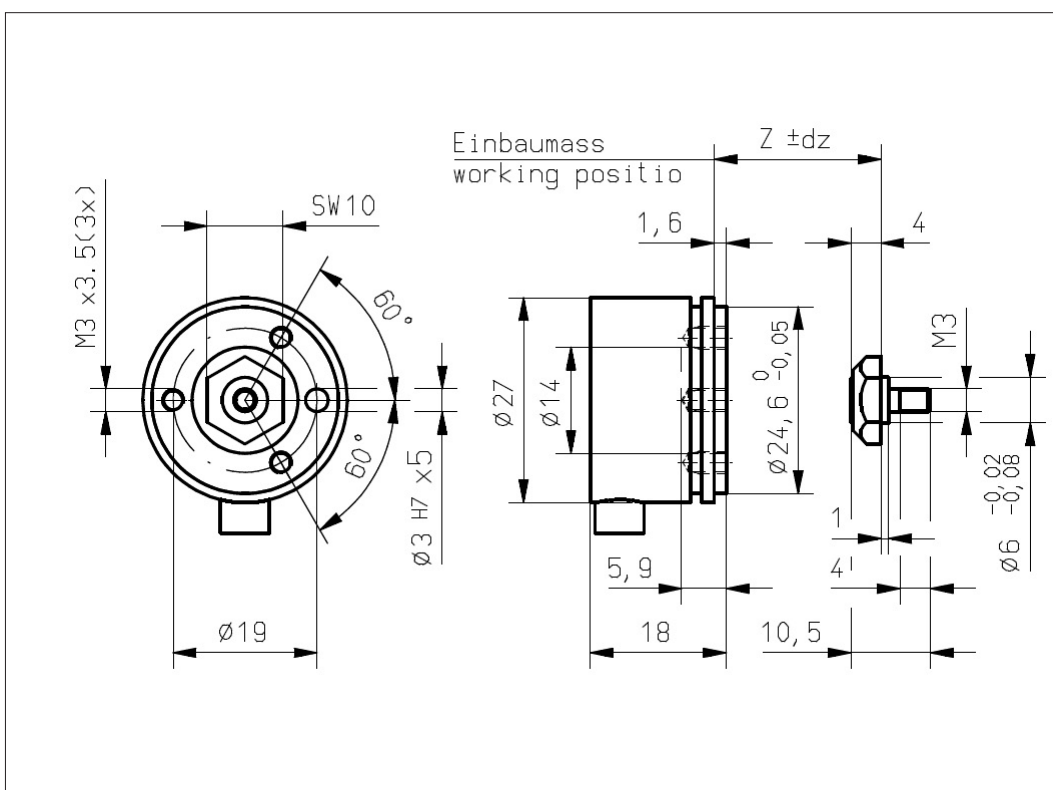
Vert-X 27E1 xxx xxx 4xx
Vert-X 27E1 xxx xxx 6xx

Accessoires (incl.)

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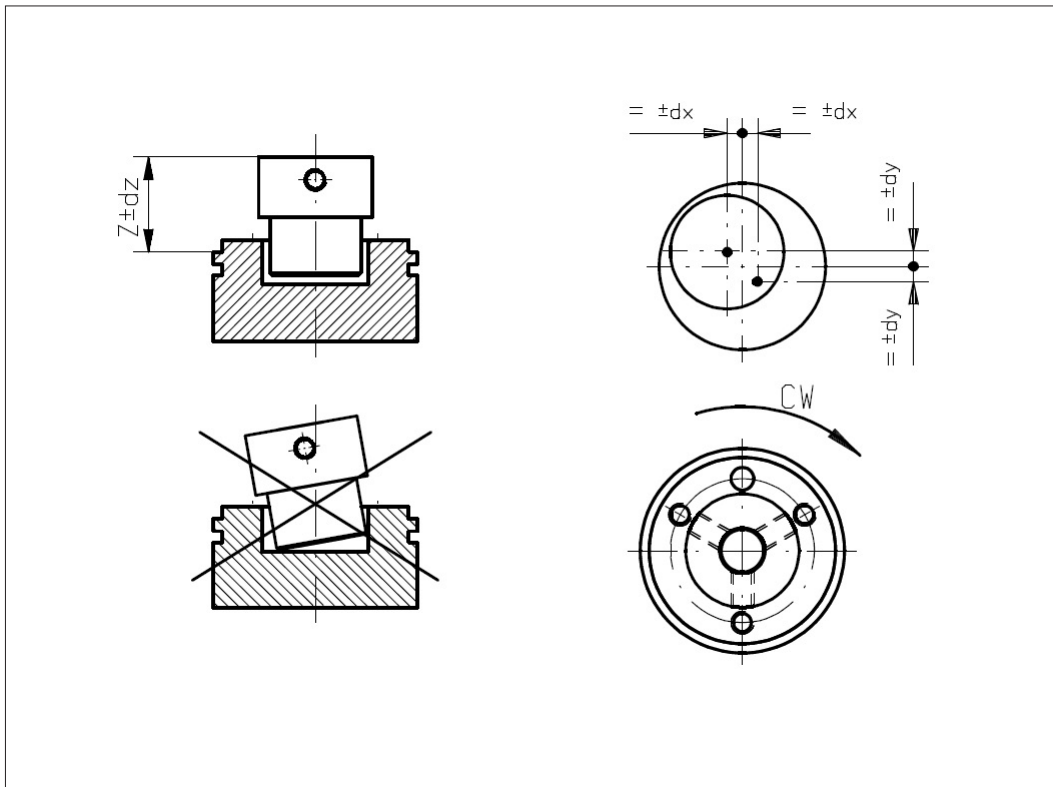
Vert-X 27E2
Mounting information

Working position (Z)

| | |
|-------|---------|
| MH-C | 12.80mm |
| MH-C2 | 12.80mm |

**Max. permitted misalign-
ment of the magnetic
actuator**

| | |
|----|---------|
| dx | ±0.25mm |
| dy | ±0.25mm |
| dz | ±0.5mm |



Vert-X 27E1
Mounting information

Working position (Z)

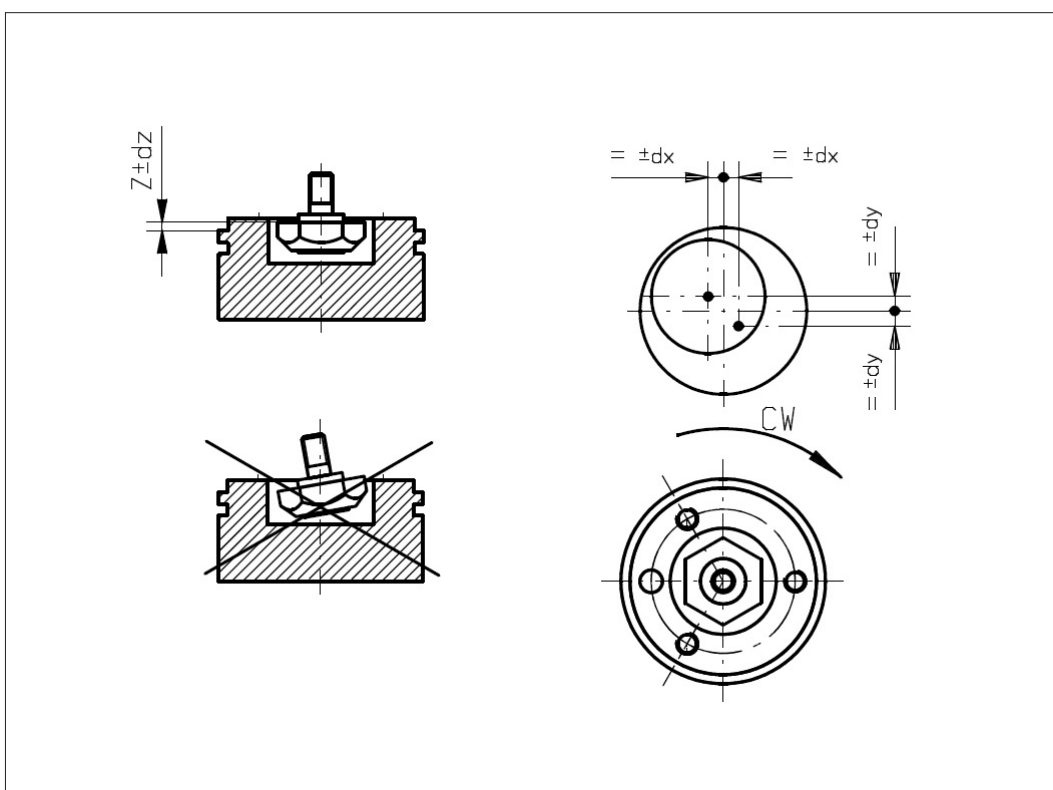
| | |
|-------|--------|
| MH-C | 1.40mm |
| MH-C2 | 1.40mm |

**Max. permitted misalign-
ment of the magnetic
actuator**

| | |
|----|---------|
| dx | ±0.25mm |
| dy | ±0.25mm |
| dz | ±0.5mm |

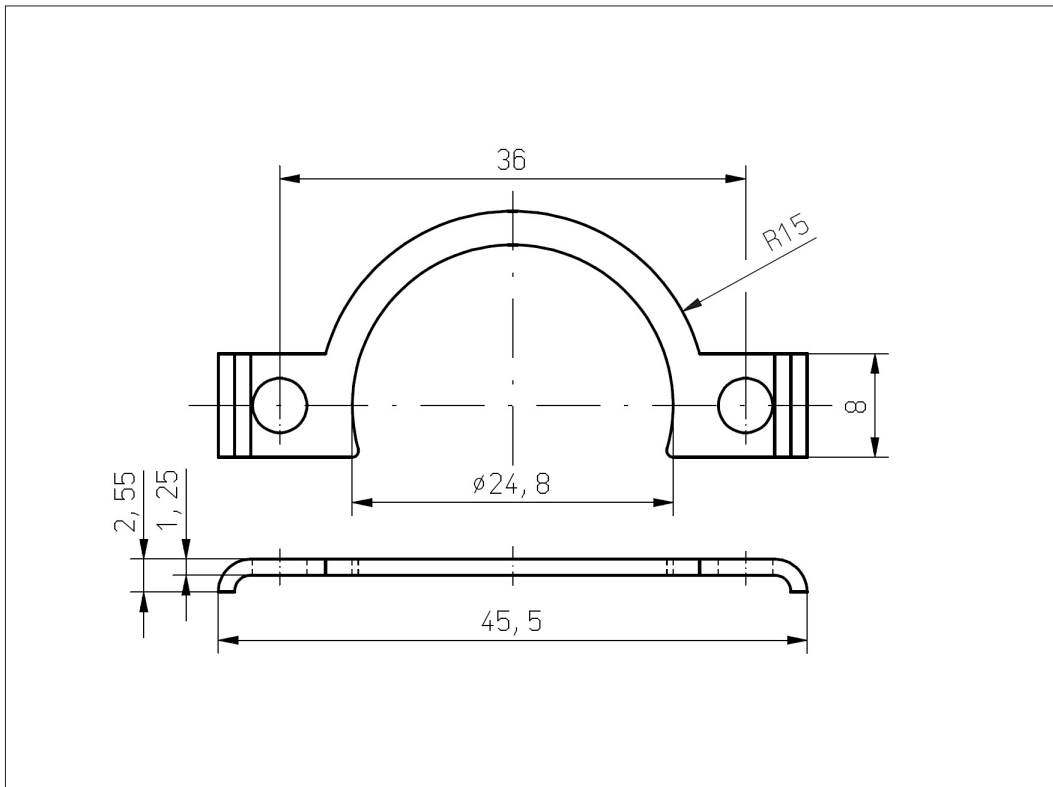
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Vert-X 27E
Accessoires
Fixation clip



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