

**Vert-X 31E - 8 ... 35V / Inkremental Differenziell RS-422****31E5aD36174199****Technical datas**

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Mechanical version                | Magnetic actuator type 5        |
| Mounting hole                     | Through-hole ø4.4 mm            |
| Sensor principle                  | MH-S                            |
| Electrical angle                  | Electrical angle 360°           |
| Power supply voltage              | 24 VDC                          |
| Output signal                     | Incremental                     |
| Output characteristics / output d | Differential RS-422 (A,A',B,B') |
| Electrical connection             | Round cable, 10-pole            |
| Length of cable                   | Special length                  |

**Electrical Datas**

|                                                       |                 |                      |
|-------------------------------------------------------|-----------------|----------------------|
| Measuring range                                       | °               | 0...360              |
| Indep. linearity (without misalignment)               | %               | ±0.5                 |
| Indep. linearity (with permitted misalignment @ 360°) | %               | ±1                   |
| Max. hysteresis                                       | °               | 0.5                  |
| Resolution                                            | bit             | 256 (1-1024)         |
| Max. repeatability                                    | °               | 0.1                  |
| Max. temperature coefficient of output signal         | ppm/K           | 50                   |
| MTTFd / MTBF                                          |                 | upon request         |
| Power supply voltage                                  | VDC             | 8 ... 35             |
| Current consumption without load (typ.)               | mA              | 20                   |
| Max. latency                                          | µs              | 10                   |
| Reverse polarity protection of power supply           |                 | yes                  |
| Electrical connection (A;A';B;B')                     |                 | Round cable, 6-pole  |
| Electrical connection (A;A';B;B';Z;Z')                |                 | Round cable, 10-pole |
| Cross section of single wires (A;A';B;B')             | mm <sup>2</sup> | 0.25 (AWG24)         |
| Cross section of single wires (A;A';B;B';Z;Z')        | mm <sup>2</sup> | 0.09 (AWG28)         |
| Redundancy possible                                   |                 | no                   |

**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      |
| 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       |

**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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## Options

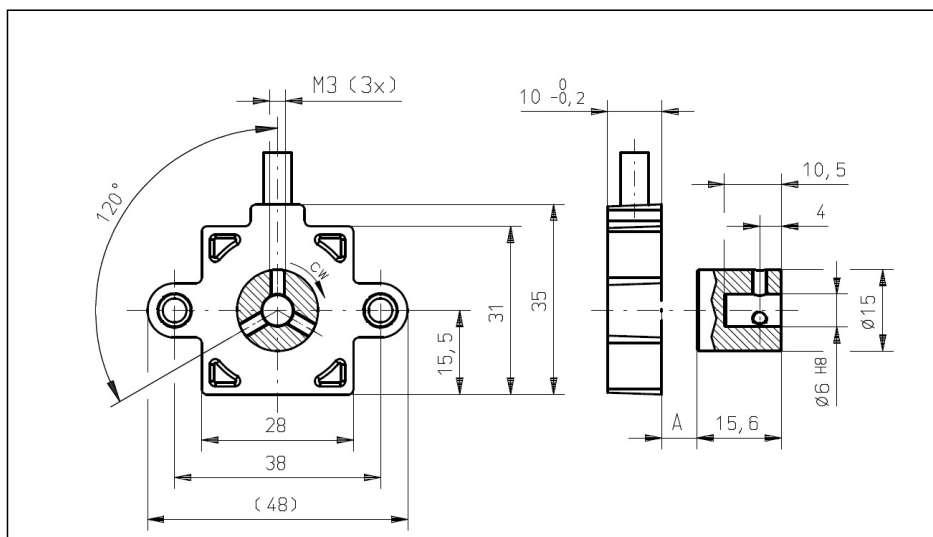
Custom cable

Custom magnetic actuator

Custom output driver

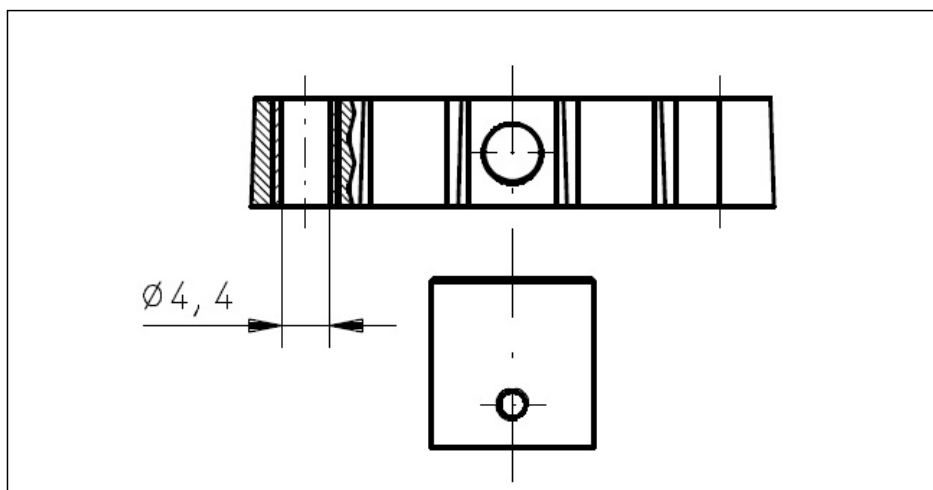
Custom resolution (1-1024 ppr)

Higher speed on request



## Operating range/Air gap (A) Standard

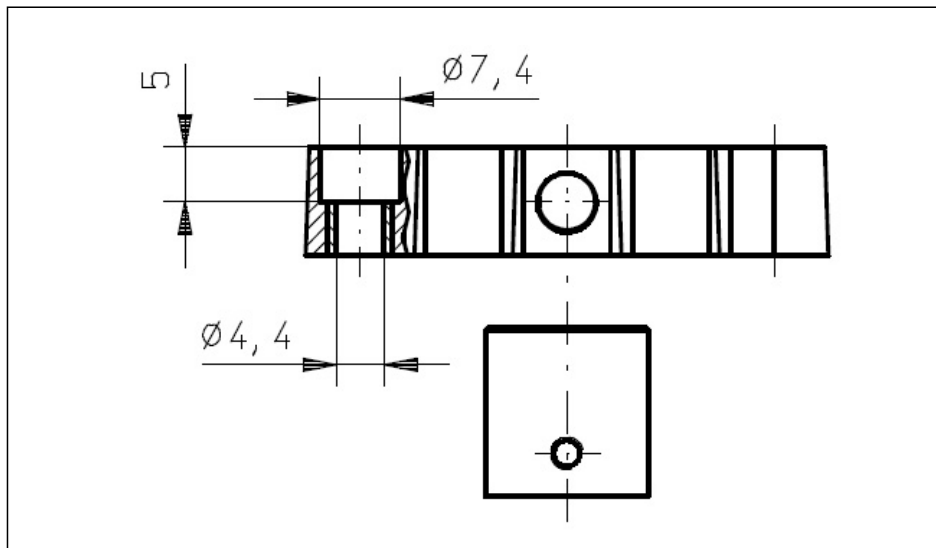
- 0.8 ... 6.2mm



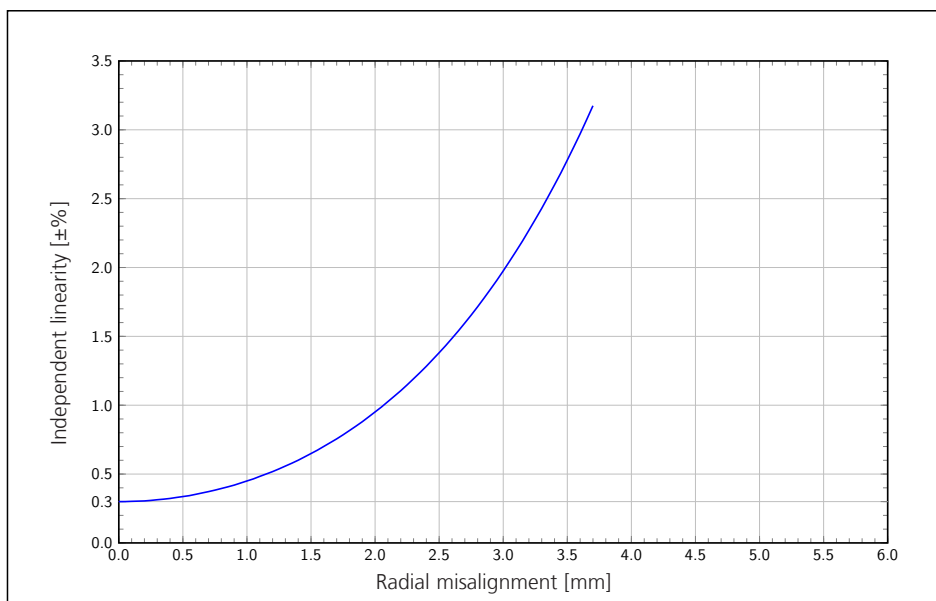
## Vert-X 31E5a

# Vert-X 31E - 8 ... 35V / Inkremental Differenziell RS-422

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Vert-X 31E5b



Indep. linearity with radial misalignment (@360°)