

KINAX WT720

Programmable Transmitter for Angular Position

Main features

- Measuring range and sense of rotation can be adjusted by a switch and two push-buttons
- Simplifies project planning and engineering, short delivery times, low stocking
- Zero position and measuring span are independently adjustable
- Linear and V characteristic of the output value
- The shaft can be turned through full
- Patented measuring method



Application

The KINAX WT720 converts the angular position of a shaft into a load independent direct current signal, proportional to the angular position. The unit is contact free. It technically extends the delivery program of angular transmitters with a programmable version and thus creates a number of new technical application possibilities. The robust housing makes this unit ideal for the mechanical engineering and vehicle manufacturing.

Measuring output

| | |
|-------------------------|--|
| Power supply: | 12 ... 30 V DC Protected against wrong polarity |
| Max. residual ripple: | < 0.3% p.p. |
| Output variable I_A : | Load-independent DC current, proportional to the input angle |
| Standard range: | 4 ... 20 mA, two-wire |

Accuracy data

| | |
|------------------|---|
| Reference value: | 360° |
| Basic accuracy: | Error limits $\leq \pm 0.5\%$ at reference conditions |

Installation data

| | |
|-------------------------------------|---|
| Material: | Front: aluminium Back: aluminium anodized Shaft: rust-proof, hardened steel |
| Mounting position: | Any |
| Connections: | Cable gland metal Plug metal (M12 / 2 pol) |
| Electrical connection: | Spring-type terminal block |
| Weight: | Approx. 360 g |
| Admissible static loading of shaft: | Max. 80 N (radial) Max. 40 N (axial) |
| Clearance influence: | $\pm 0.1\%$ |

Technical data

General

| | |
|----------------------|---|
| Measured quantity: | Angle of rotation |
| Measuring principle: | Capacitive method Differential screen capacitor with contact-free, non-wearing positional pick-up. Drive shaft fully rotatable without stops (patented measuring method) |

Measuring input

| | |
|-----------------------|--|
| Measuring range: | Programmable between 0 ... 360° |
| Drive shaft diameter: | 10 mm |
| Starting torque: | < 0.03 Nm |
| Sense of rotation: | Adjustable for sense of rotation clockwise or counterclockwise |

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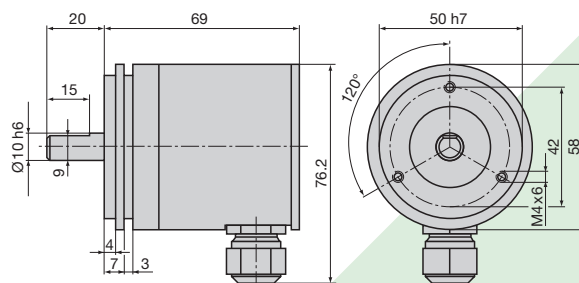
Environmental conditions

| | |
|---|---|
| Climatic rating: | Standard Temperature – 20 to + 85 °C Rel. humidity ≤ 90% non-condensing |
| | Improved climatic rating Temperature – 40 to + 85 °C Rel. humidity ≤ 95% non-condensing |
| Transportation and storage temperature: | – 40 to + 85 °C |
| Altitude: | Max. 2000 m |
| Vibration: | IEC 60068-2-6 ≤ 100 m/s ² / 10 – 500 Hz every 2 h in 3 directions |
| Shock: | IEC 60068-2-27 ≤ 1000 m/s ² / 11 ms 10 pulses per axis and direction |

Regulations

| | |
|---------------------------------|--|
| Electromagnetic compatibility: | The standards DIN EN 61 000-6-4 and DIN EN 61 000-6-2 are observed |
| Impulse voltage withstand: | EN 61 000-4-5, test severity level 2 (1 kV, 1.2/50 µs) |
| Test voltage: | 750 V DC, 1 min. All connections against housing |
| Admissible common-mode voltage: | 100 V, 50 Hz |
| Housing protection: | IP 67 acc. to EN 60 529 IP 69k acc. to EN 40 050-9 |

Dimensional drawing



Additional errors (cumulative)

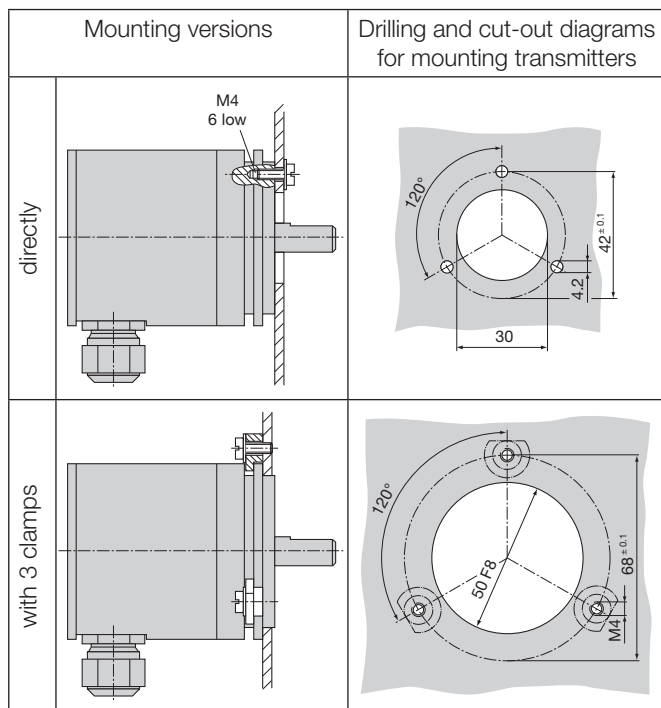
| Output characteristic | Definitions | Device version | Additional error |
|------------------------------------|--|----------------|---|
| Linear | Angle max. = MW Angle min. = 0° | 360° | $f = \left(\frac{0.18^\circ}{MW} \times 100 - 0.05 \right)$ $[f] = \%$ |
| simple "V" characteristic | Angle max. = MW Angle min. = 0° | 360° | $f = \left(\frac{0.18^\circ}{MW} \times 100 \right)$ $[f] = \%$ |
| "V" characteristic with offset | $MS = (\text{angle max.}) - (\text{angle min.})$ angle max. = ± final angle angle min. = > 0° | 360° | $f = \left(\frac{0.25^\circ}{MS} \times 100 \right)$ $[f] = \%$ |

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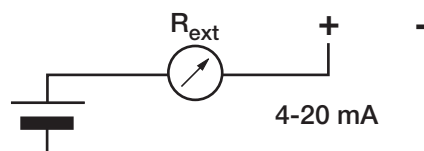
Mounting

All versions of the transmitter can be mounted either directly with 3 cheese head screws M4 or by means of 3 clamping brides to the item being measured. Screws and clamping brides are not supplied. Clamping brides are available as accessories (order no. 157 364).

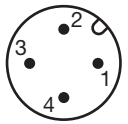


Electrical connections

For connecting the external wires, the transmitter has a plug connector M12 / 2 poles or a gland. During the version with a gland the connection via a spring-type terminal block made in accordance with diagram of connections. For installation, only one screwdriver with the size 0 is used to be.



Connection allocation plug

| | Pin | Plug |
|--|-----|------|
|  | 1 | + |
| | 2 | - |
| | 4 | ⊥ |
| | 3 | ⊥ |

Specification and ordering information

| Description | Blocking code | no-go with blocking code | Article No./ Feature |
|--|---------------|--------------------------|----------------------|
| KINAX WT720 | | | 720 - |
| 1. Version Standard | | | 1 |
| 2. Angle area mechanically Angle area up to 360° | | | 1 |
| 3. Drive shaft Standard, shaft diameter 10 mm | | | 1 |
| 4. Output variable Current, 4...20 mA, two-wire | | | 1 |
| 5. Electrical connections | | | |
| Gland standard | | | 1 |
| Gland with increased strain relief | | | 2 |
| Sensor plug M12 | | | 3 |
| 6. Test protocole | | | |
| Without protocole | | | 0 |
| Protocole German | | | 1 |
| Protocole English | | | 2 |

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| Description | Blocking code | no-go with blocking code | Article No./ Feature |
|--|----------------------------------|--------------------------|----------------------|
| KINAX WT720 | Order code 720 - xxxx xxx | | 720 - |
| 7. Interface Without programming interface | | | 0 |
| 8. Direction of rotation Direction of rotation clockwise | J | | 0 |
| Direction of rotation counter-clockwise | J, K | | 1 |
| V-characteristic | K, G | | 2 |
| 9. Measuring range Basic configuration | | K, G | 0 |
| [°angle], 0...end value: _____ Switching point: _____ | | K | 9 |
| V-characteristic [± ° angle], point 1: _____ point 2: _____ point 3: _____ point 4: _____ | | J | Z |
| 10. Climatic rating Standard climatic rating (rel. humidity annual mean ≤ 90%) | | | 0 |
| Increased climatic rating (rel. humidity annual mean ≤ 95%) | | | 1 |

Accessories

| Article | Article no. |
|--|-------------|
| Kit clamping bride | 157 364 |
| Cable box for sensor plug M12 / 4 pol. | 157 398 |



CAMILLE BAUER

Rely on us.

Camille Bauer Ltd
Aargauerstrasse 7
CH-5610 Wohlen / Switzerland

Phone: +41 56 618 21 11

Fax: +41 56 618 35 35

e-mail: info@camillebauer.com

www.camillebauer.com