

KINAX WT720

absolute, programmable angular position transmitter

For industrial applications in rough environments

KINAX WT720 is a robust, absolute angular position transmitter, which is particularly suited to applications in rough environments due to its unique capacitive measuring principle. It acquires the angular position of a shaft in a non-contact manner and converts it into an impressed direct current proportional to the measured value.

The high mechanical capacity, the robust design, easy assembly via synchronous flange or flange adapter, the variety of connection options and free parameterising offer the highest degree of quality and flexibility in application and installation.



Your customer benefit

LOW LIFE-CYCLE COSTS DUE TO:

TESTED TOP QUALITY

- Waterproof and dustproof IP67/IP69K

SAFE, FREE OF MAINTENANCE

- Compact industrial housing
- Resistant to high mechanical stress due to its robust design and high-quality materials
- High immunity against magnetic fields
- Safe electrical connection and reliability due to spring-type push terminal and reverse voltage protection

EASY AND FAST COMMISSIONING

- Any installation position
- Standard synchronous flange and flange-adapter
- 2-wire connection with cable gland or M12 sensor plug
- Free on-site parameterising

Technical data

General

Measured quantity: Angle of rotation
 Measuring principle: Capacitive method

Measuring input

Angle measuring range: Programmable between 0 ... 360°
 Drive shaft diameter: Ø 10 mm [0.394"]
 Ø 19 mm [0.748"] with flange adapter
 Starting torque: max. 0.03 Nm [4.248 in-oz]
 max. 0.04 Nm [5.664 in-oz] with flange adapter
 Sense of rotation: Adjustable

Measuring output

Output variable I_A : Load-independent DC current, proportional to the input angle

Standard range: 4 ... 20 mA, 2-wire protected against wrong polarity
 Power supply: Nominal voltage 24 VDC $\begin{matrix} +30\% \\ -50\% \end{matrix}$
 Response time: < 3.5 ms
 External resistance: $R_{ext} \max. [k\Omega] = \frac{H [V] - 12V}{I_A [mA]}$
 H = Power supply
 I_A = Output signal end value

Accuracy data

Absolute precision: ± 0,5% at 360°

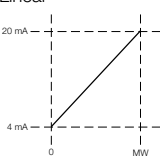
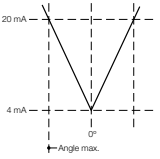
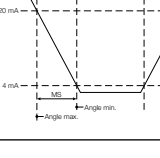
Precision with errors:

90°	60°	30°
± 0,67%	± 0,78%	± 1,12%

KINAX WT720

absolute, programmable angular position transmitter

Additional errors (cumulative):

Output characteristic	Definition	Additional error
Linear 	Programmed Angle max. = MW Angle min. = 0°	$f_{Add} = \left(\frac{0,2^\circ}{MW} \times 100 - 0,05 \right)$ $[f_{Add}] = \%$
	e.g. at MW=90°: $f = f_{Add} + f_{Abs} = 0,15\% + 0,5\% = 0,65\%$	
simple "V" characteristic 	Programmed Angle max. = MW Angle min. = 0°	$f_{Add} = \left(\frac{0,3^\circ}{MW} \times 100 \right)$ $[f_{Add}] = \%$
"V" characteristic with offset 	$MS = (\text{angle max.}) - (\text{angle min.})$ angle max. = ± final angle angle min. = > 0°	$f_{Add} = \left(\frac{0,3^\circ}{MS} \times 100 \right)$ $[f_{Add}] = \%$

Regulations

Spurious radiation:	EN 61000-6-3
Immunity:	EN 61000-6-2
Degree of pollution:	2
Admissible common-mode voltage:	100 V AC, CATII
Test voltage:	750 V DC, 1 min. All connections against housing
Housing protection:	IP 67 acc. to EN 60529 IP 69k acc. to EN 40050-9

Environmental conditions

Climatic rating:	Temperature -40 ... +85 °C [-40 ... +185°F] Rel. humidity ≤ 95 % non-condensing
Vibration resistance:	≤ 100 m/s ² / 10 ... 500 Hz according to EN 60068-2-6
Shock resistance:	1000 m/s ² / 11 ms according to EN 60068-2-27
Transportation and storage temperature:	-40 ... +85 °C [-40° ... +185°F] I

Resolution:	± 0,1°
Reproducibility:	< 0,1°
Influence of temperature output current (-40...+85°C): [-40 ... +185°F]	± 0.04% / 10K

Installation data

Material:	Front: aluminium (AW-6023) Back: aluminium (AW-6023) anodized Shaft: rust-proof, (1.4035 hardened steel)
Mounting position:	Any
Connections:	3-pin spring-type terminal block
Weight:	Approx. 360 g
Admissible static loading of shaft:	

WT720 Standard	WT720 with adapter flange
80 N (radial)	120 N (radial)
40 N (axial)	40 N (axial)

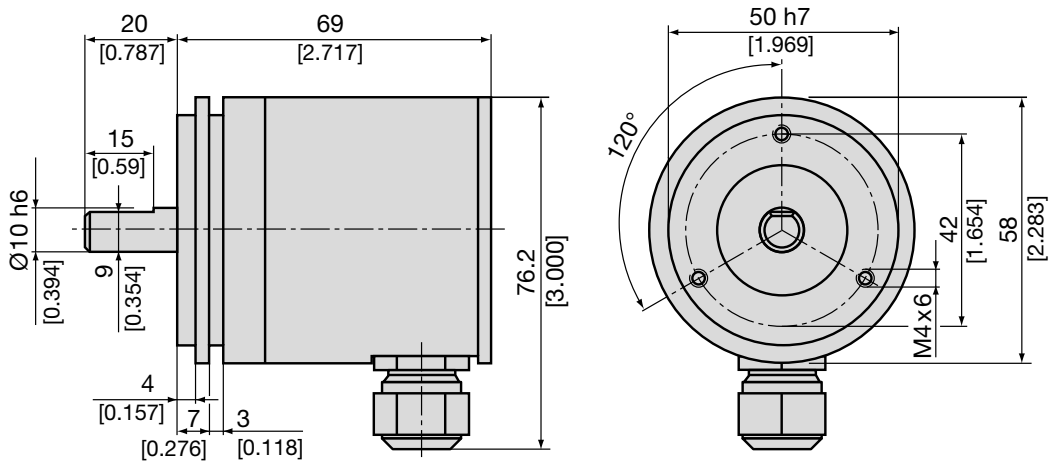
Clearance influence:	± 0.1%
----------------------	--------

KINAX WT720

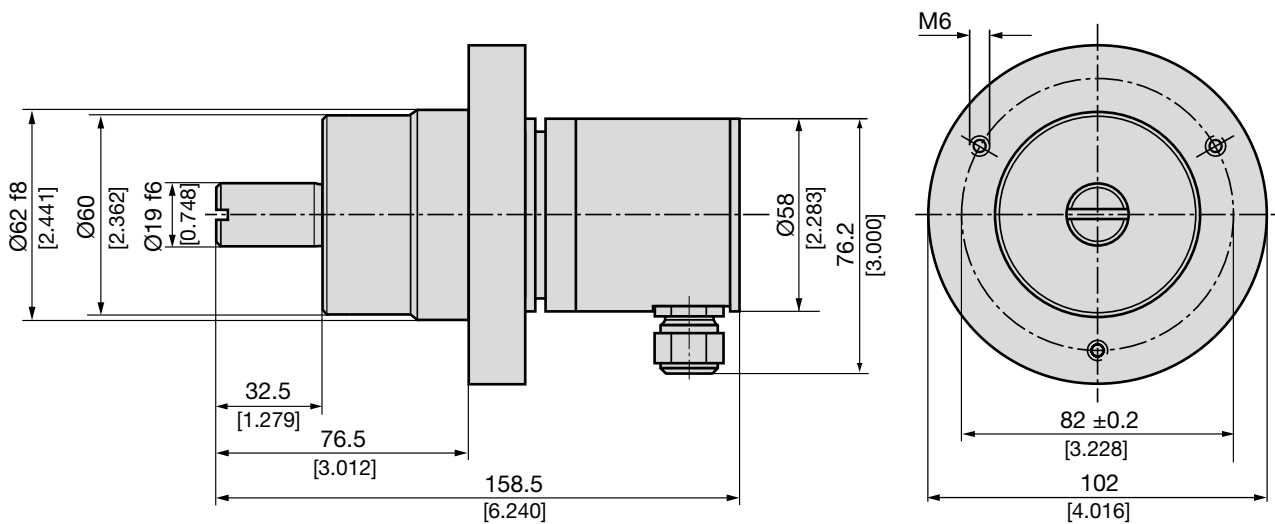
absolute, programmable angular position transmitter

Dimensional drawing

WT720 Standard



WT720 with Flange



KINAX WT720

absolute, programmable angular position transmitter

Mounting

All of the transmitters of this series may be mounted on the object to be measured as shown in the drawings. Screws, clamps, mounting brackets and mounting plates are not part of the scope of delivery but are available as accessories.

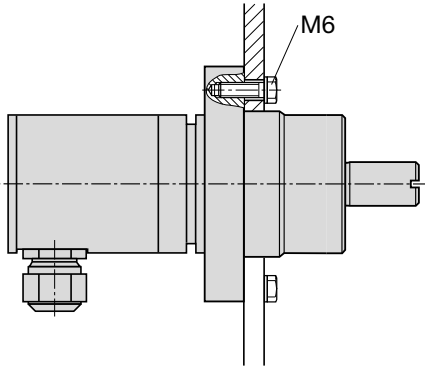
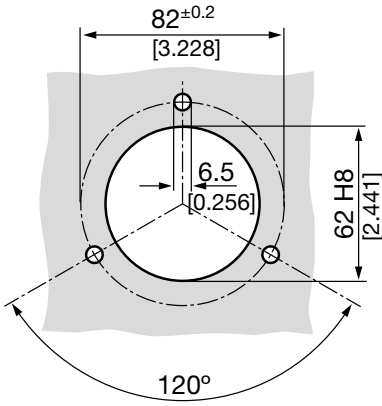
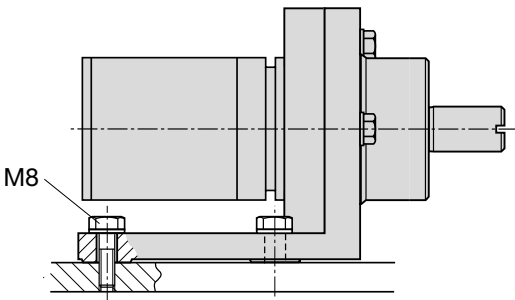
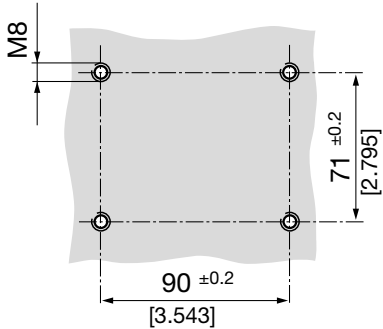
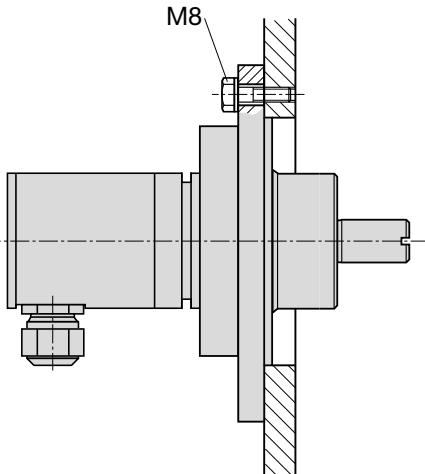
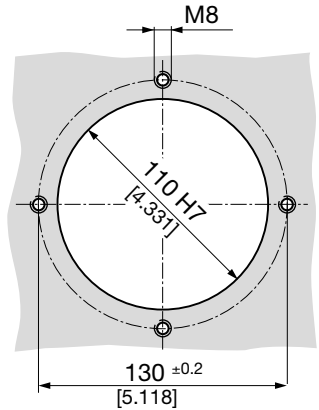
WT720 Standard

	Mounting	Cut-out diagram for mounting
direct	<p>M4 x 6 [0.236]</p>	<p>120° 42 ± 0.1 [1.654] 4.2 [0.165] 30 [1.181]</p>
with 3 clamps		<p>120° 50 F8 [1.969] 68 ± 0.1 [2.677] M4</p>
with mounting plate		<p>60.1 [2.366] 60.1 [2.366] M6</p>
with mounting angle		<p>60 [2.362] M6</p>

KINAX WT720

absolute, programmable angular position transmitter

WT720 with Flange

Mounting		Cut-out diagram for mounting
direct		
with mounting foot		
with mounting flange		

KINAX WT720

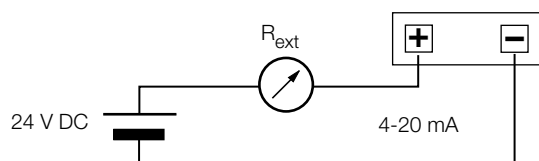
absolute, programmable angular position transmitter

Electrical connections

The cable gland (M16 x 1.5) version is connected according to the connection diagram via a spring-type push terminal.

Permissible cable-Ø: 6-10 mm
 max. conductor cross-section: 2,5 mm²

Connection allocation spring-type terminal block



Programming

Parameters may be set by keys and DIP switches right at the device. Zero point, span and direction of rotation are set independently of each other. This facilitates the adjustment in commissioning considerably.

The factory setting can always be restored in case of maloperation.



Order code

Version	Anlge range mechanical	Drive shaft	Output signal	Electrical connection	Test certificate	Interface	Sense of rotation	Measuring range	Climatic rating	
Standard version	Angle range up to 360°	Standard, Ø 10 mm Flange adapter, Ø 19mm	Output 4...20 mA, 2-wire	Cable gland standard	Test certificate English	Without programming interface	Clockwise	Basic configuration	Improved climatic rating	Article Number
•	•	-	•	•	•	•	•	•	•	196177
•	•	•	-	•	•	•	•	•	•	196185

• Variant active / - variant inactive

KINAX WT720

absolute, programmable angular position transmitter

Accessories

Article	Article-Nr.
Plug connector for M12 sensor plug, 5 poles	168 105
Kit mounting clamp	157 364
Mounting angle for WT720 Standard	168 204
Mounting plate WT720 Standard	168 212
Mounting foot for WT720 with Flange	997 182
Mounting flange for WT720 with Flange	997 190
Different bellow couplings	**
Different helical and cross-slotted coupling	**
Different spring washer coupling	**

** You can find our range of couplings in the "Position Sensors/ Accessories" section of our website.

Scope of delivery

- 1 Absolute, programmable transmitter KINAX WT720 (according to Order)
- 1 Safety instructions



Camille Bauer Metrawatt AG
Aargauerstrasse 7
CH-5610 Wohlen / Switzerland
Telefon: +41 56 618 21 11
Telefax: +41 56 618 21 21
info@cbmag.com
www.camillebauer.com