CAMILLE BAUER

KINAX WT720
absolute, programmable angular postion 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 $^{+30\%}_{-50\%}$
Response time:	< 3.5 ms
External resistance: (load)	R_{ext} max. [kΩ] = $\frac{H\ [V]-12V}{I_A\ [mA]}$ H = Power supply I_A = Output signal end value

Accuracy data

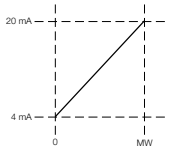
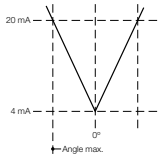
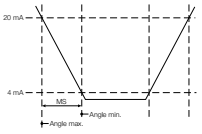
Absolute precision:	± 0,5% at 360°

Precision with errors:

90°	60°	30°
± 0,67%	± 0,78%	± 1,12%

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Additional errors (cumulative):

Output characteristic	Definition	Additional error
Linear 	Programmed Angle max. = MW Angle min. = 0°	$f_{Add}=(\frac{0,2°}{MW}$ x100-0,05) $[f_{Add}]=\%$
	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°	$f_{Add}=(\frac{0,3°}{MW}$ x100) $[f_{Add}]=\%$
"V" characteristic with offset 	MS = (angle max.) - (angle min.) angle max. = ± final angle angle min. = > 0°	$f_{Add}=(\frac{0,3°}{MS}$ x100) $[f_{Add}]=\%$

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%

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/s² / 10 ... 500 Hz
according to EN 60068-2-6

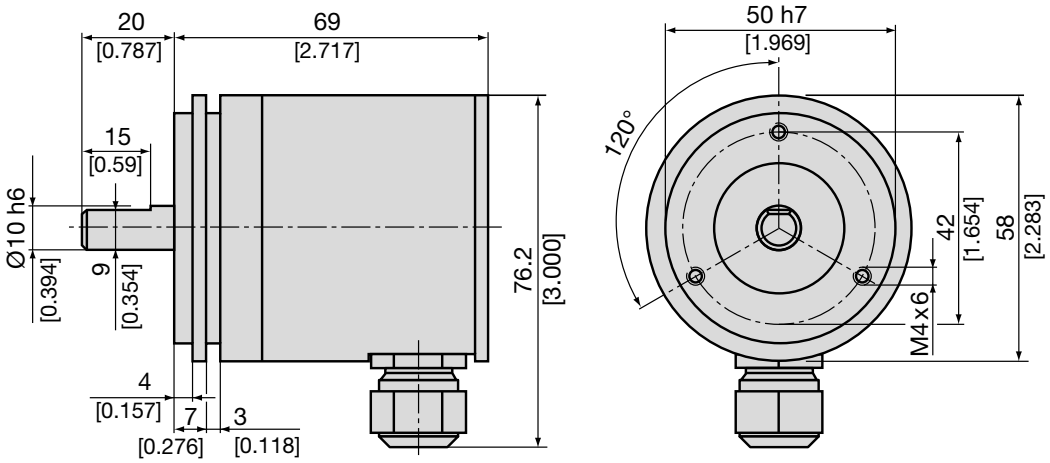
Shock resistance: 1000 m/s² / 11 ms
according to EN 60068-2-27

Transportation and storage temperature: –40 ... +85 °C [–40° ... +185°F]

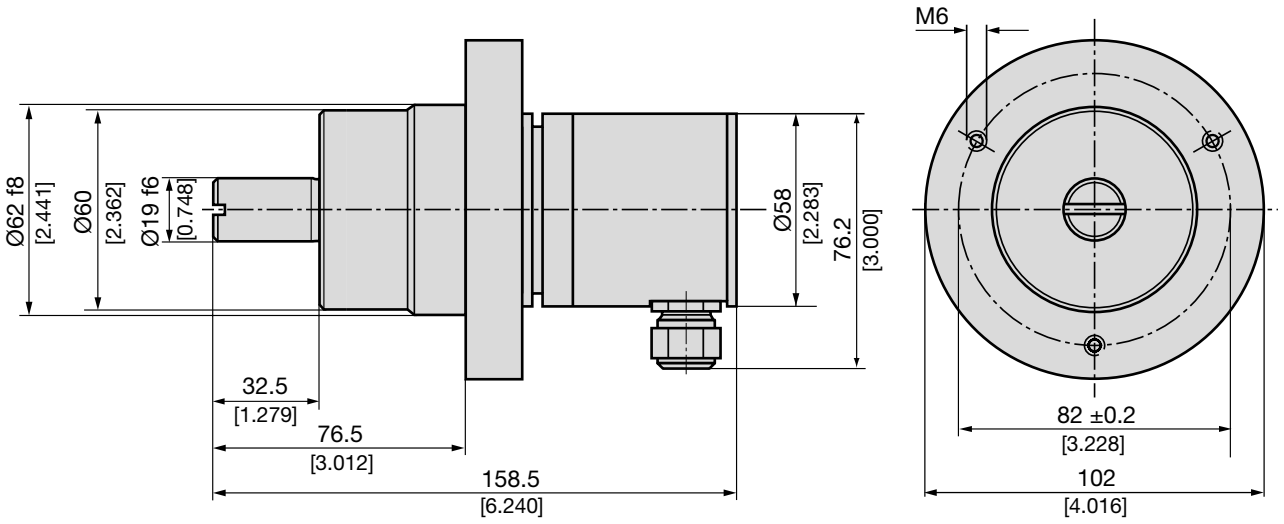
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Dimensional drawing

WT720 Standard



WT720 with Flange

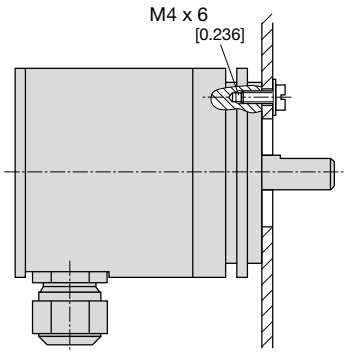
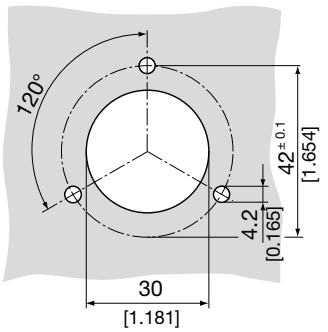
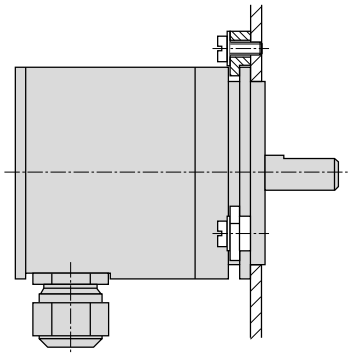
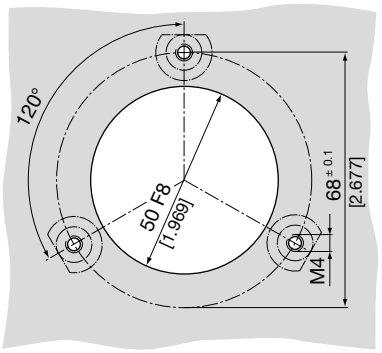
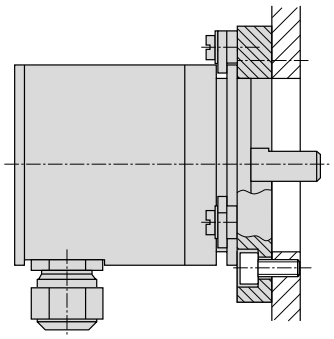
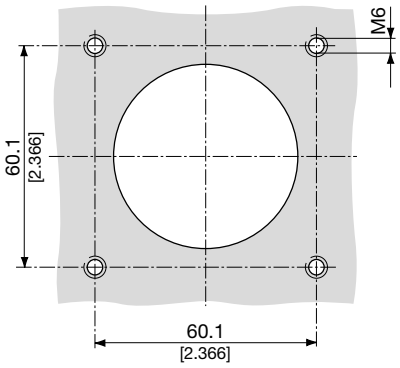
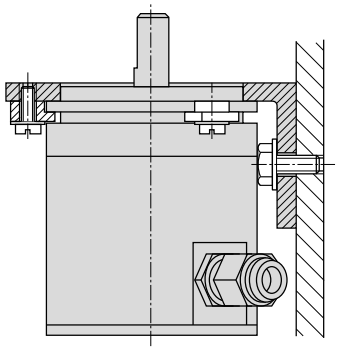
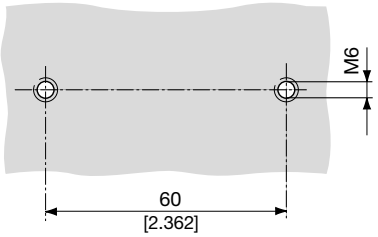


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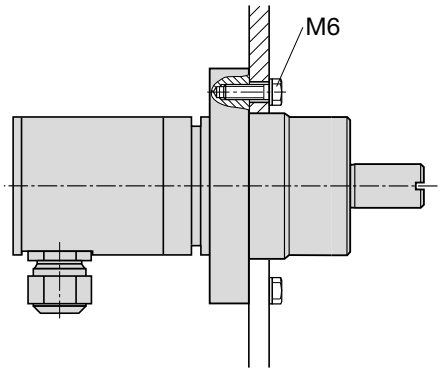
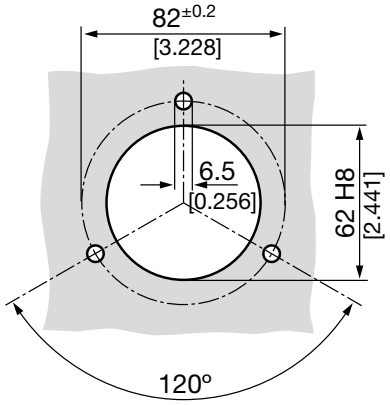
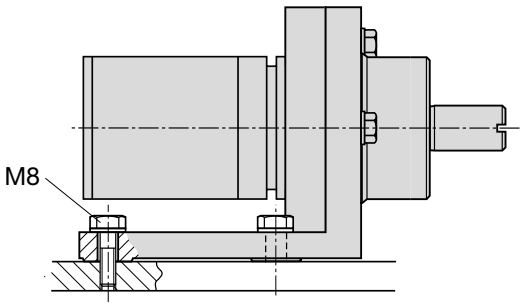
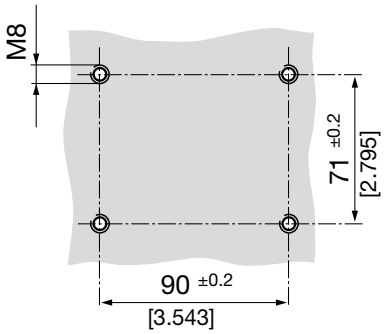
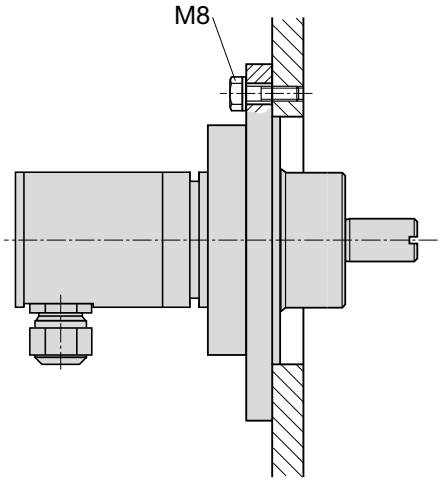
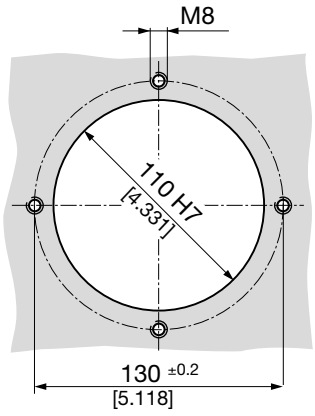
Mounting

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		
with 3 clamps		
with mounting plate		
with mounting angle		

WT720 with Flange

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

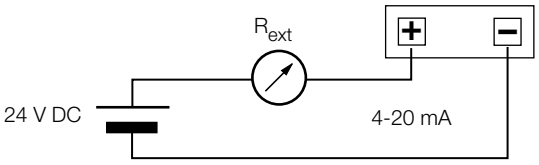
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Electrical connections

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 malopera-tion.



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

Accessories

Article	Article-Nr.
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

1 Safety instructions

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