

KINAX WT717

Programmable transmitter for angular position

For industrial applications in rough environments

KINAX WT717 is a robust, programmable 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.



Your customer benefit

LOW LIFE-CYCLE COSTS DUE TO:

TESTED TOP QUALITY

- Capacitive Measuring principle

SAFE, FREE OF MAINTENANCE

- 4...20mA analog output signal with 2-wire connection
- Resistant to high mechanical stress due to its robust design and high-quality materials
- High immunity against magnetic fields

EASY AND FAST COMMISSIONING

- No wear, low annual maintenance
- Measuring range, sense of rotation, characteristic and switch point can be parameterised via programming software
- Measured value simulation already during installation is possible

Technical data

General

Measured quantity:	Angle of rotation
Measuring principle:	Capacitive method

Measuring input

Angle measuring range:	0...≥ 5 to 0... ≤ 350°
Drive shaft diameter:	Ø 19 mm [0.748"]
Starting torque in unloaded condition:	max. 0.25 Nm [35.402 in-oz]
Sense of rotation:	clockwise or counter-clockwise

Measuring output

Output variable I_A :	Load-independent DC current, proportional to the input angle
Zero point variation:	approx. ± 5 %
Final value variation:	approx. + 5 %
Current limitation:	I_A max. 40 mA
Standard range:	4...20 mA, wire connection

Power supply:	
Residual ripple in output current:	
Response time:	
External resistance (load):	

Input voltage U_i : 12...33 V

0.3 % p.p.

< 5 ms

$$R_{\text{ext max.}} [\text{k}\Omega] = \frac{H [\text{V}] - 12 \text{ V}}{I_A [\text{mA}]}$$

H = Power supply
 I_A = Output signal end value

Accuracy data

Basic accuracy:	0.5 % with characteristic linear
Adjustments	350° version measuring range > 50...350° characteristic linear 50° version measuring range ≥ 10...50° characteristic linear

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Additional errors (cumulative):

Characteristic	Definition	Additional error
Linear	Programmed Angle max. = MW Angle min. = 0° $[f_{Add}] = \%$	Device version 350°: $f_{Add} = \left(\frac{0.18^\circ}{MW} \times 100 - 0.05 \right)$ Device version 50°: $f_{Add} = \left(\frac{0.05^\circ}{MW} \times 100 - 0.05 \right)$
	ex. with MW=180°: $f = f_{Add} + f_{Abs} = 0.05 \% + 0.5 \% = 0.55 \%$	
simple "V" characteristic	Programmed Angle max. = MW Angle min. = 0° $[f_{Add}] = \%$	Device version 350°: $f_{Add} = \left(\frac{0.18^\circ}{MW} \times 100 \right)$ Device version 50°: $f_{Add} = \left(\frac{0.05^\circ}{MW} \times 100 \right)$
"V" characteristic with offset	MS = (angle max.) - (angle min.) Angle max. = ± final angle Angle min. = > 0° $[f_{Add}] = \%$	Device version 350°: $f_{Add} = \left(\frac{0.25^\circ}{MS} \times 100 \right)$ Device version 50°: $f_{Add} = \left(\frac{0.09^\circ}{MS} \times 100 \right)$
any characteristic	MS = (angle max.) - (angle min.) $[f_{Add}] = \%$	Device version 350°: $f_{Add} = \left(\frac{0.25^\circ}{MS} \times 100 \right)$ Device version 50°: $f_{Add} = \left(\frac{0.09^\circ}{MS} \times 100 \right)$

Reproducibility: < 0.2 %

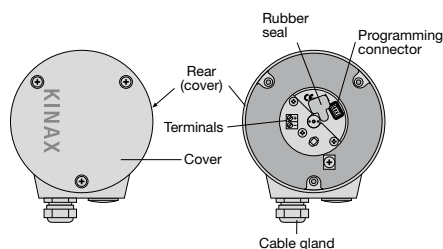
Influence of temperature
output current
(-25...+70 °C):
[-13 ... +158 °F]

± 0.2 % / 10 K

Installation data

Housing: Steel (finish QPQ)
Rear (cover): Aluminium (Silafont)
Mounting position: Any
Connections: Screwed cable gland metal

There are 2 screw terminals and the programming connection in the rear cover. The screw terminals accept gauges up to 1,5 mm² and are accessible after removing the cover.



Permissible static
load on the shaft:

Max. 1000 N (radial)
Max. 500 N (axial)

The torque of the driving element should be selected so that it is sufficient for the resulting starting torque caused by the given axle loads and vibrations. We recommend decoupling the WT717 with the couplings available in our accessories range in order to increase the service life of the bearings. You will find our range of couplings in the "Position sensors/accessories" section of our website.

Bearing play influence
Weight:

± 0.1 %
Approx. 2.9 kg
every 0.5 kg for foot or flange

Regulations

Spurious radiation: EN 61000-6-3
Immunity: EN 61000-6-2
Test voltage: 750 V DC, 50 Hz, 1 min.
All connections against housing

Admissible
common-mode voltage: 100 V AC, 50 Hz
Impulse voltage withstand: 1 kV, 1.2/50 µs, 0.5 Ws, CAT II
Housing protection: IP 66 acc. to EN 60 529

Environmental conditions

Climatic rating: Temperature -25 ... +70 °C
[-13 ... +158 °F]
Rel. humidity ≤ 90 % non-condensing

Permissible vibration: 0...200 Hz,
10 g continuous, 15 g for 2 h
200...500 Hz,
5 g continuous, 10 g for 2 h

Shock: 3 × 50 g every 10 impulses
in all axes

Transportation and
storage temperature: -40 ... +80 °C [-40° ... +176 °F]

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Dimensional drawing

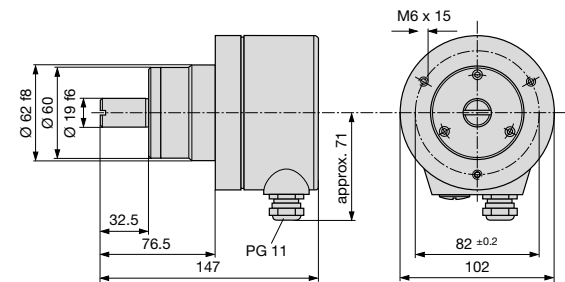


Fig 1. KINAX WT717.

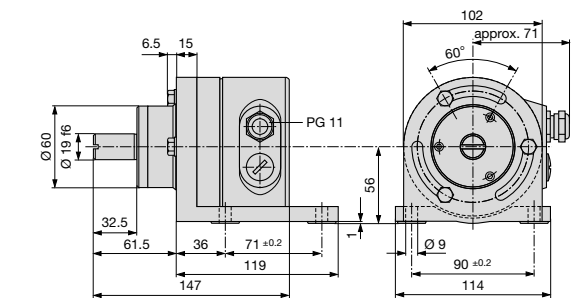


Fig 2. KINAX WT717 with foot.

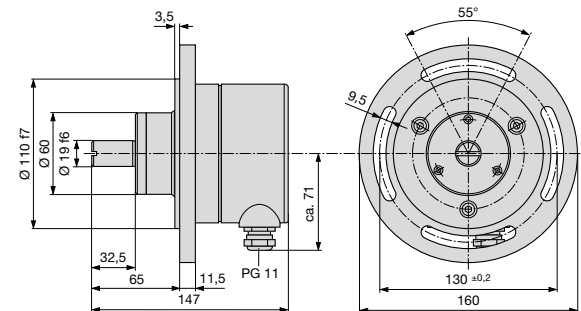
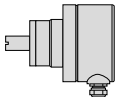
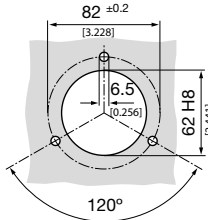
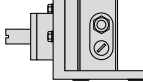
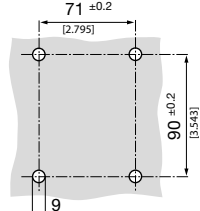
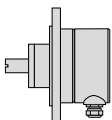
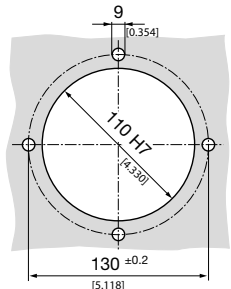


Fig 3. KINAX WT717 with flange.

Montage

The three versions of the transmitter differ in their mechanical design. One of them is intended for mounting directly on the device being measured. The others are equipped with a mounting bracket or a flange. Three M6 screws are needed for the "directly" mounted versions and four M8 nuts and bolts for these "with a bracket" or "with a flange". The screws, respectively nuts and bolts are not supplied, because the required length varies according to the thickness of the mounting surface.

The relationship between the three types of mounting, or more precisely the corresponding cut-out diagrams and the different versions of the transmitter can be seen from table on page 4.

Transmitter versions	Drilling and cut-out diagrams for mounting transmitters ...	
	... directly	
	... with a bracket	
	... with a flange	

Electrical connections

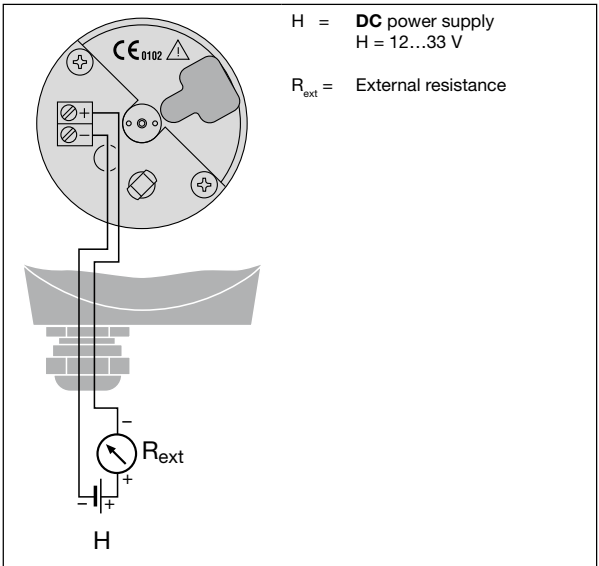


Fig. 4. Connection diagram

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Programming

A PC, the programming cable PK 610 plus ancillary cable and the configuration software 2W2 are required to program the transmitter. (Details of the programming cable and the software are to be found in the separate data sheet: PK 610 Le).

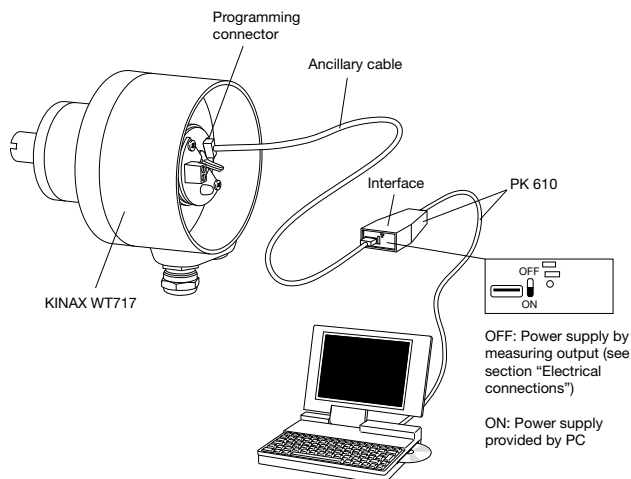


Fig. 5. Example of the set-up for programming a KINAX WT 717 without the power supply. For the case the switch on the interface must be set to "ON".

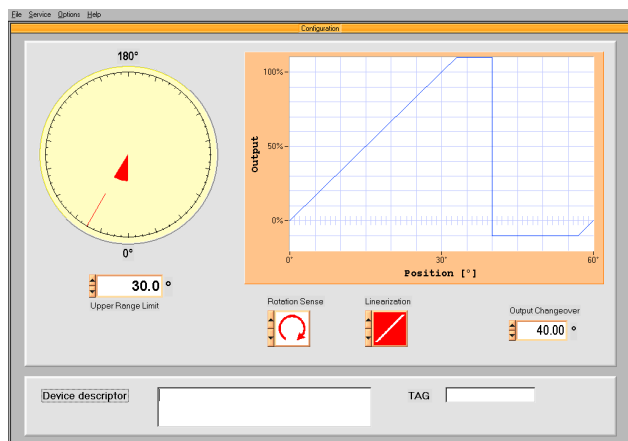
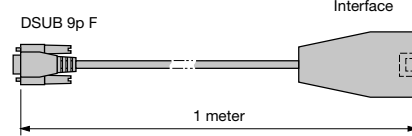
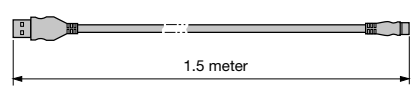


Fig. 6. Print screen example of the menu-controlled programming software.

Accessories

Description	Order No.
Programming cable PK 610 	137 887
Ancillary cable 	141 440
Configuration software 2W2 Windows 95 or higher on CD in German and English (download free of charge under http://www.camillebauer.com) In addition, the CD contains all configuration programmes presently available for Camille Bauer products	146 557
Mounting foot	997 182
Mounting 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 Sensor Accessories" section of our website.

Scope of delivery

- 1 Transmitter for angular position KINAX WT717
- 1 Safety instructions

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Order Code

Version	Angle range mechanical		Sense of rotation	Measuring range	Output characteristic	Test certificate	System zero marking	Climatic rating	Mounting	Marine version	Vibration resistance	Article Number
Standard version	Angle range up to 50°	Angle range up to 350°	Clockwise	Basic configuration programmed	Linear	Test certificate English	0 system not marked	Standard	Mounting without foot / flange	Without maritime exec. (formerly Germ.Lloyd)	Standard	
•	•	-	•	•	•	•	•	•	•	•	•	
•	-	•	•	•	•	•	•	•	•	•	•	
												195921
												195929

• Variant active / - Variant inactive



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