

KINAX HW730

Abszolút, üreges tengelyű szögelfordulás távadó

- Kiemelkedő minőség
- Kapacitív mérési mód
- Programozható szögelfordulás méréstartomány: 0... 360°
- Kimenet: 4... 20 mA (2-vezetékes bekötés)
- Nagy pontosság $\leq 0,1\%$
- Induló nyomaték $< 0.5 \text{ Ncm}$
- Forgásirány: a kimenő jel növekedhet, vagy csökkenhet az elfordulás függvényében
- A tengely körbeforgatható (nincs végállás ütköző)
- Víz és pormentes kivitel IP67/IP69K
- Robbanásvédett kivitel ATEX és IECEx gyújtószikramentes "ia" (gáz és por) és tokozás védelem "tb" (por)
- Biztonságos, karbantartást nem igényel
- Kompakt tokozás
- A robusztus kivitelnek és a kiválóan megválasztott anyagoknak köszönhetően ellenáll nagy mechanikai igénybevételeknek
- Nagy zajelnyomás mágneses terekre
- Biztonságos és megbízható rugós-szorítású dugaszos elektromos csatlakozás
- Védelem ellentétes polaritás ellen



Technical data

General

- Measured quantity: Angle of rotation

Measuring principle:

- Angle measuring range: Programmable between 0 ... 360°
- Hollow-shaft diameter: $\varnothing 30 \text{ mm}$ [1.181"]
- Reduction of the hollow-shaft by adapter sleeves
- Starting torque: max. 0.5 Nm [4.248 in-oz]
- Sense of rotation: Adjustable

Measuring output

- Output variable IA: Load-independent DC current, proportional to the input angle
- Standard range: 4 ... 20 mA, 2-wire protected against wrong polarity

- Power supply: Standard NEx: nominal voltage 24 VDC +30% -50%
- Explosion protection intrinsic ia: input voltage U_i : 12 ... 30VDC
max. input current I_i : 160mA
max. input power P_i : 1W
max. Internal capacitance C_i : 22nF
max. Internal inductance L_i : 7.3 μH
- Explosion prevention (Protection by enclosure) tb: nominal voltage 24 VDC +30% -50%
- Response time: $< 3.5 \text{ ms}$
- External resistance: $R_{ext \text{ max.}} [\text{K}\Omega] = (H [\text{V}-12\text{V}]/I_A [\text{mA}]) (\text{load})$
where: H = Power supply, I_A = Output signal end value

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Absolute hollow-shaft transmitter for angular position

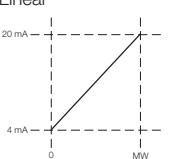
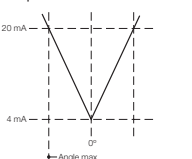
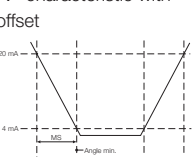
Accuracy data

Basic accuracy: $\pm 0.1\%$ at 360°

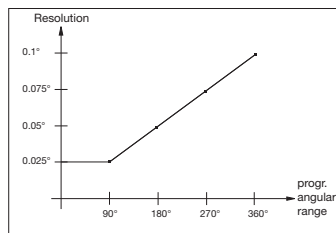
Accuracy cut lower angle ranges:

90°	60°	30°
$\pm 0.22\%$	$\pm 0.29\%$	$\pm 0.53\%$

Additional errors (cumulative):

Output characteristic	Definition	Additional error
 <p>Linear</p>	<p>Programmed Angle max. = MW Angle min. = 0°</p>	$f_{Add} = \left(\frac{0.14^\circ}{MW} \times 100 - 0.04 \right)$ $[f_{Add}] = \%$
	<p>ex. at 90°: $f = f_{Add} + f_{Abs} = 0.12\% + 0.1\% = 0.22\%$</p>	
 <p>simple "V" characteristic</p>	<p>Programmed Angle max. = MW Angle min. = 0°</p>	$f_{Add} = \left(\frac{0.14^\circ}{MW} \times 100 - 0.04 \right)$ $[f_{Add}] = \%$
 <p>"V" characteristic with offset</p>	<p>MS = (angle max.) - (angle min.) angle max. = \pm final angle angle min. = $> 0^\circ$</p>	$f_{Add} = \left(\frac{0.14^\circ}{MW} \times 100 - 0.04 \right)$ $[f_{Add}] = \%$

Resolution: $\pm 0.1^\circ$ at 360°



Reproducibility: $< 0.1^\circ$

Influence of temperature output current (-40...+85°C):
[-40 ... +185°F]

$\pm 0.04\%$ / 10K

Installation data

Material: Aluminium AW-6023 T6 anodized
Mounting position: Any
Connections: 2-pin spring-type terminal block or sensor plug connector metal (M12 x 1 / 4 poles / only for NEX version)

Weight: Approx. 820 g

Regulations

Spurious radiation: EN 61000-6-3
Immunity: EN 61000-6-2

Degree of pollution: 2

Admissible

common-mode voltage: 100 V AC, CAT II

Test voltage: 750 V DC, 1 min.

All connections against housing

Housing protection:

IP 67 acc. to EN 60 529

IP 69k acc. to EN 40 050-9

Environmental conditions

Climatic rating:

Standard (NEx):

Temperature -40 ... +85 °C

[-40 ... +185°F]

Rel. humidity $\leq 95\%$ non-condensing

Explosion protection:

Temperature -40 ... +75 °C

[-40 ... +158°F]

Rel. humidity $\leq 95\%$ 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]

Operation in potentially explosive environments:

Gas explosion

prevention: Labeling: Ex ia IIC T4 Gb

Conform to standard:

ATEX:

EN 60079-0:2009

EN 60079-11:2007

IECEX:

IEC 60079-0:2011

IEC 60079-11:2011-06

Type of

protection: ia

Temperature class: T4

Group according to

EN60079-01:2009: II

Dust explosion

prevention:

Labeling:

Ex ia IIIC T80°C Db

or

Ex tb IIIC T80°C Db

Conform to standard: ATEX:

EN 60079-0:2009

EN 60079-11:2007

EN 61241-31:2009

IECEX:

IEC 60079-0:2011

IEC 60079-11:2011-06

IEC 61241-31:2008

Type of protection: ia

or tb (Protection by enclosure)

max. surface

temperature: 80°C

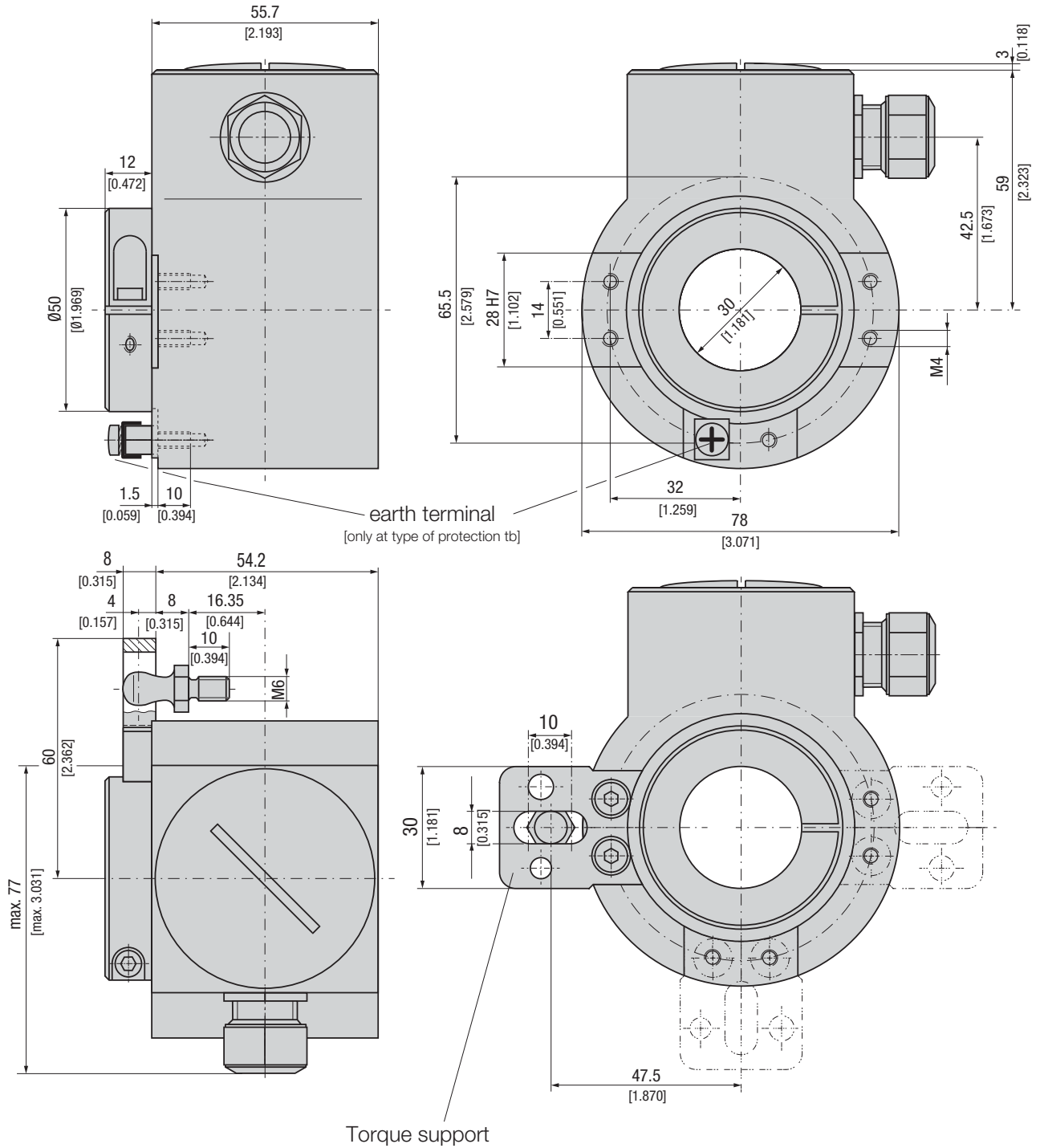
Group according to

EN60079-01:2009: III

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Dimensional drawing

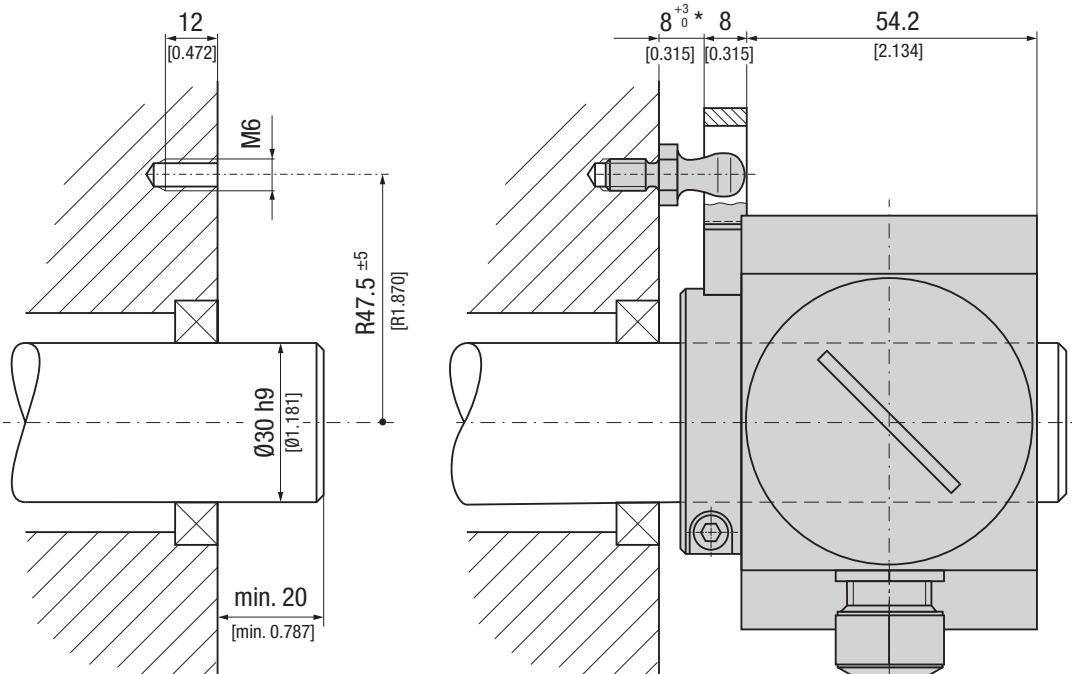


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Programming

Mounting example



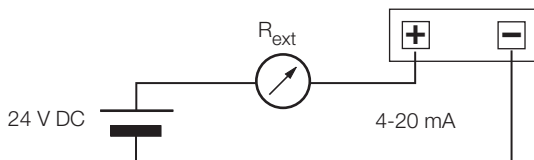
* Can be increased with spacer bolts.

Electrical connections

The electrical wires are connected to the transmitter via an M12 x 1 / 4-pole plug connector (only in the non-Ex variant) or an M16 x 1.5 cable gland. The cable gland version is connected according to the connection diagram via a spring-type push terminal. The Ex variant may only be used with the threaded cable connection supplied.

Permissible cable-Ø: NEx 6-10 mm
 Ex 4-8 mm
 max. conductor cross-section: 2.5 mm²

Connection allocation spring-type terminal block



Connection allocation plug (only for non Ex version)

Pin	Plug
1	+
2	-
3	not connected
4	⊥

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.

In case of an order with a measuring range parameterised at the factory, the zero point may be set by a key while the defined span is preserved.

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



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Absolute hollow-shaft transmitter for angular position

Specification and ordering information

Description	Blocking code	No-go with blocking code	Article No./ Feature
KINAX WT720	Order code 730 - xxxx xxxx xx		730 –
1. Version			
Standard			1
ATEX EX II 2G Ex ia IIC T4 Gb II 2D Ex ia IIIC T80°C Db	A		2
ATEX EX II 2D Ex tb IIIC T80°C Db	A		3
IECEX Ex ia IIC T4 Gb Ex ia IIIC T80°C Db	A		4
IECEX Ex tb IIIC T80°C Db	A		5
2. Angle area mechanically			
Single-Turn (360°)			1
3. Hollow-shaft diameter			
Hollow-shaft 10 mm [0.393"], electrically insulating			1
Hollow-shaft 12 mm [0.472"], electrically insulating			2
Hollow-shaft 16 mm [0.63"], electrically insulating			3
Hollow-shaft 20 mm [0.787"], electrically insulating			4
Hollow-shaft 30 mm [1.181"], electrically insulating			5
Hollow-shaft 18 mm [0.708"], electrically insulating			6
Hollow-shaft 1/2" (12.7 mm), electrically insulating			A
Hollow-shaft 5/8" (15.875 mm), electrically insulating			B
Hollow-shaft 3/4" (19.05 mm), electrically insulating			C
Hollow-shaft 7/8" (22.225 mm) electrically insulating			D
Hollow-shaft 1" (25.4 mm), electrically insulating			E
4. Torque support			
Standard			1
5. Output variable			
Current, 4...20 mA, two wire	B		1
Modbus/TCP with PoE -> in progress	C	A	2
6. Electrical connections			
Gland standard			1
Gland with increased strain relief			2
Sensor plug M12 / 4-pole		A, C	3
Sensor plug M12 / 4-pole d-coded		A, B	4
7. Test certificate			
Without test certificate			0
Test certificate in German			D
Test certificate in English			E
8. Direction of rotation			
Direction of rotation clockwise	J		0
Direction of rotation counter-clockwise	J, G		1
V-characteristic	K, G		2

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Abszolút, üreges tengelyű szögelfordulás távadó

Description		Blocking code	No-go with blocking code	Article No./ Feature
KINAX WT730		Order code 730 - xxxx xxxx xx		
9. Measuring range Basic configuration (linear, 0 ... 360°)			K, G	0
[°angle], 0...end value:		Switching point:	K, C	9
V-characteristic [\pm ° angle]	vmax1:	vmin1:	J, C	Z
	vmax2:	vmin2:		
10. Climatic rating / Marine version Standard				0
Version GL (Germanischer Lloyd)				G

Accessories

Article	Article-Nr.
Plug connector for M12 sensor plug, 5 poles	168 105
Torque support set HW730	169 749
Adapter sleeve HW730 Ø10mm	168 874
Adapter sleeve HW730 Ø12 mm	168 882
Adapter sleeve HW730 Ø16 mm	168 907
Adapter sleeve HW730 Ø18 mm	171 976
Adapter sleeve HW730 Ø20 mm	168915
Adapter sleeve HW730 Ø1/2" (12.7 mm)	171 984
Adapter sleeve HW730 Ø5/8" (15.875 mm)	171 992
Adapter sleeve HW730 Ø3/4" (19.05 mm)	172 007
Adapter sleeve HW730 Ø7/8" (22.225 mm)	172 015
Adapter sleeve HW730 Ø1" (25.4 mm)	172 023

Scope of delivery

- 1 Hollow-shaft transmitter for angular position (according to Order)
- 1 Torque support set HW730 (169 749)
- 1 Operating Instruction german, english, french (157 835)

Approvals	Identification
	Explosion protection according to IECEx Ex ia IIC T4 Gb Ex ia IIIC T80°C Db Ex tb IIIC T80°C Db
	Explosion protection according to ATEX Ex II 2G Ex ia IIC T4 Gb Ex II 2D Ex ia IIIC T80°C Db Ex II 2D Ex tb IIIC T80°C Db
	Germanischer Lloyd D, H, EMC1

You find power supply units for **KINAX WT720** in our process instrumentation product range.

SINEAX B840 4-channel power supply unit	SINEAX B812 1-channel power supply unit	SINEAX B811 1-channel power supply unit
to feed 2-wire transmitters		

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