KINAX HW730-Modbus/TCP with PoE hollow-shaft transmitter for angular position

For heavy-duty applications

KINAX HW730 is a robust, absolute hollow-shaft transmitter for angular position, 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, the particularly large continuous hollow shaft up to 30mm, the variety of connection options and free parameterisation 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
- With maritime execution (formely GL, Germanischer Lloyd)
- Interface Modbus/TCP with Power over Ethernet (PoE)

SAFE, FREE OF MAINTENANCE
- High absolute accuracy (±0.15°)
- Resistant to high mechanical stress due to its robust design and high-quality materials
- Safe electronic connection via M12x1 sensor plug

EASY AND FAST COMMISSIONING
- Continuous hollow shaft up to ∅ 30mm
- Reliable clamping flange
- Ethernet connection cable CAT5
- Free parameterising via CB-Manager

Technical data

General

Measured quantity:	Angle of rotation
Measuring principle:	Capacitive method

Measuring input

Angle measuring range:	Programmable 0 … 360°
Hollow-shaft diameter:	Ø 30 mm [1.181"], reducing the diameter of the hollow shaft by casing adapter
Starting torque:	max. 0.5 Nm [70.806 in-oz]
Sense of rotation:	Adjustable

Measuring output

Power supply:	Power over Ethernet (PoE)
Interface:	Modbus TCP/IP (IEC 61158) 100BASE-TX
Function:	Configuration and measured value enquiry
Transmission rate:	10 / 100 MBit

Accuracy data

Absolute precision:	± 0.15° (0.04% at 360°)
Resolution:	14 Bit
Reproducibility:	< 0,1°
Influence of temperature output current (-40…+85°C) [-40...+185°F]:	± 0.04 % / 10K

Installation data

Material:	aluminium EN AW-6060 T6 anodized
Mounting position:	Any
Connections:	8-pole spring-type terminal block via cable gland or sensor plug metal (M12x1 / 4-pole d-coded)
Weight:	Approx. 820g [28.925 oz]

Regulations

Spurious radiation:	EN 61 000-6-3
Immunity:	EN 61 000-6-2
Test voltage:	750 V DC, 1 Min. All connections against housing

KINAX HW730-Modbus/TCP with PoE hollow-shaft transmitter for angular position

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]

Modbus/TCP protocol with Power over Ethernet (PoE)

The Modbus TCP/IP protocol is a widespread standard protocol based on a master/slave or client/server architecture. It is directly supported by all common operating systems and visualising tools thus permitting the fast implementation of the devices.

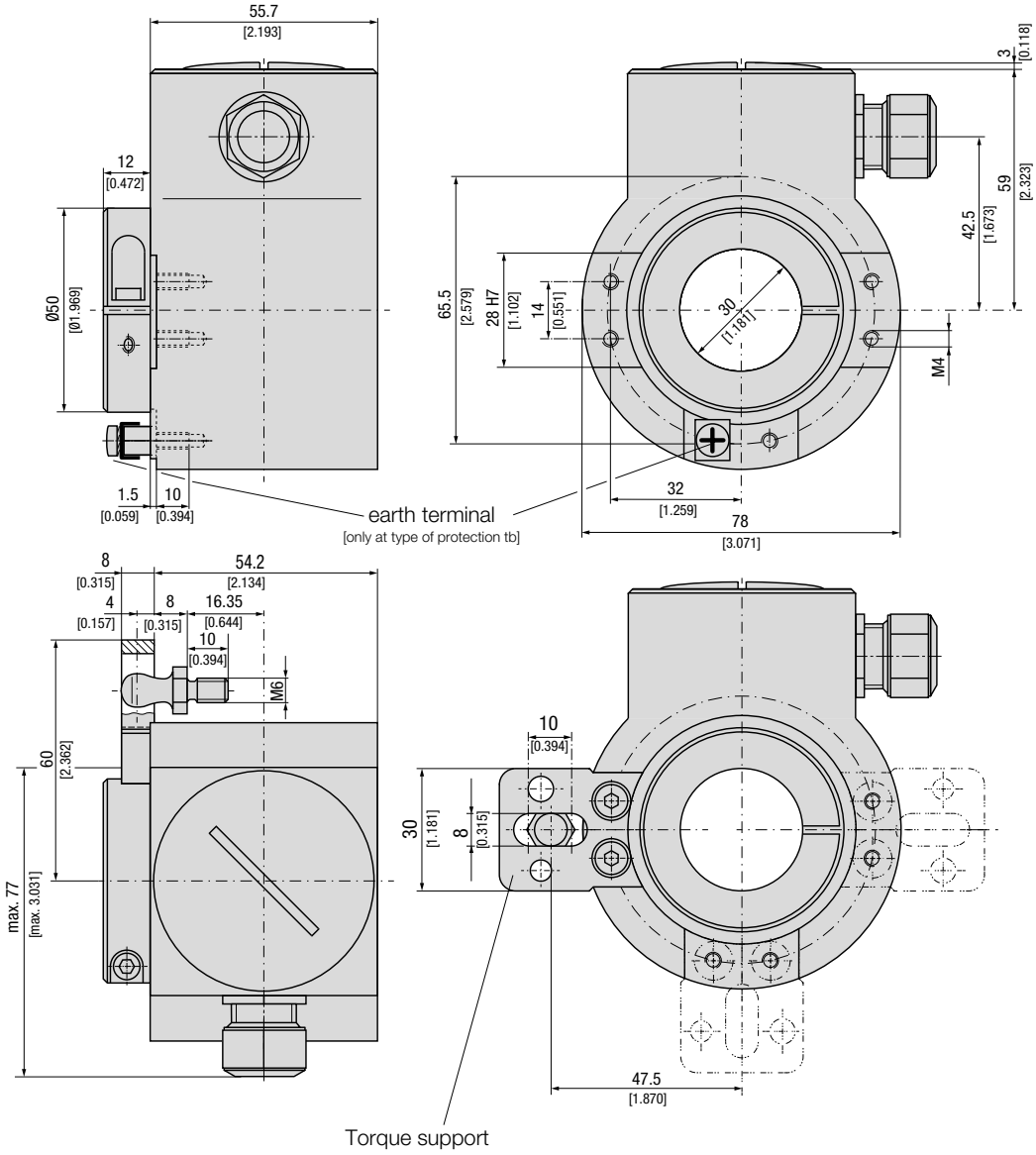
Power over Ethernet (PoE) provides a transfer medium with a high bandwidth which supplies network-compatible devices directly via the Ethernet cable.

Parameterisation and measured value acquisition

The CB Manager PC software supplied with every device serves the parameterisation of KINAX HW730-Modbus/TCP with PoE. The Ethernet interface not only permits the parameterisation of the device but also the acquisition of all of the measured values.

CB-Manager Software is included with each device.

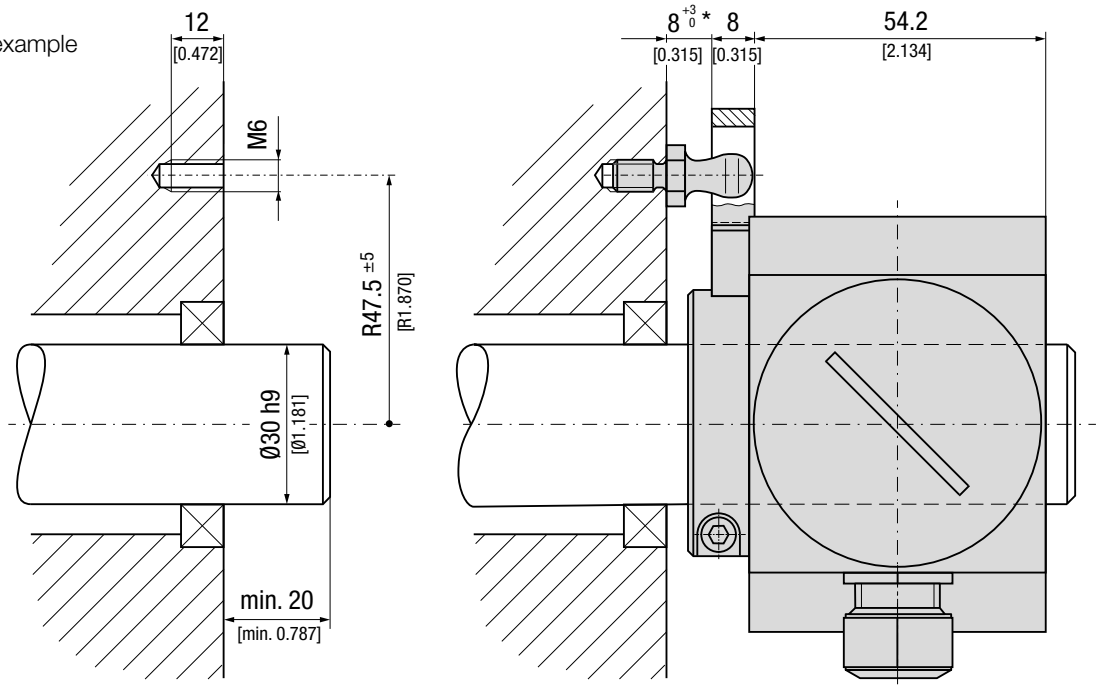
Dimensional drawing



KINAX HW730-Modbus/TCP with PoE
hollow-shaft transmitter for angular position

Mounting

Installation example



* With spacers, this measure will be increased

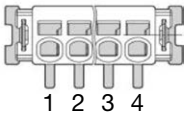
Electrical connections

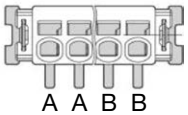
For connecting the external wires, the transmitter has a plug connector M12x1 / 4 poles d-coded or a cable glands M16x1.5. During the version with a cable glands the connection via a spring-type terminal block made in accordance with diagram of connections.

Permissible cable: Ethernet Cat 5

Cable length: 100m

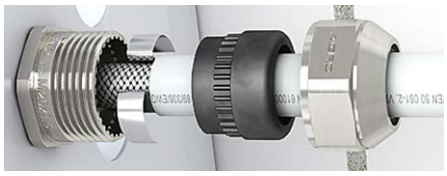
Pin assignment spring-type terminal block





Pin	Signal	EIA-568-A	EIA-568-B
1	Rx-	green/white	orange/white
2	Rx+	green	orange
3	Tx-	orange/white	green/white
4	Tx+	orange	green
A		blue/white	blue/white
A		blue	blue
B		brown/white	brown/white
B		brown	brown

Assembly instruction cable gland easyCONNECT EMC



Push contact spring with sealing set into the lower part and tighten nut using a tool. Please make sure that the contact spring contacts the screen.

Connection allocation plug M12x1 / 4-poles d-coded

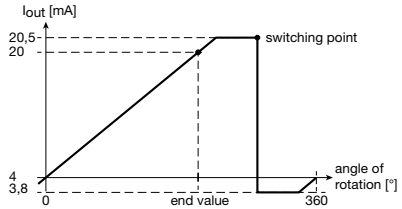
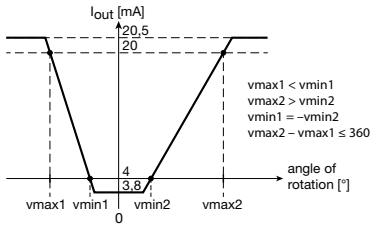
Pin	Signal
1	Rx+
2	Tx+
3	Rx-
4	Tx-

KINAX HW730-Modbus/TCP with PoE hollow-shaft transmitter for angular position

Specification and ordering information

Description		Locking code	Impossible with locking code	Article No / Feature
KINAX HW730	**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 [0.629“], electrically insulating				3
Hollow-shaft 20 mm [0.787“], electrically insulating				4
Hollow-shaft 30 mm [1.181“], non-insulating, standard				5
Hollow-shaft 18 mm, electrically insulating				6
Hollow-shaft 1/2'' (12.7mm), electrically insulating				A
Hollow-shaft 5/8'' (15.875mm), electrically insulating				B
Hollow-shaft 3/4''(19.05mm), electrically insulating				C
Hollow-shaft 7/8'' (22.225mm), electrically insulating				D
Hollow-shaft 1'' (25.4mm), electrically insulating				E
4. Torque support				
Standard				1
5. Output variable				
Current, 4…20 mA, two-wire		B		1
Modbus TCP/IP with PoE		C	A	2
6. Electrical connections				
Gland standard				1
Gland with increased strain relief			A	2
Sensor plug M12x1/ 4-poles			AC	
Sensor plug M12x1 / 4-poles d-coded			AB	3
7. Test protocole				
Without protocole				0
Protocole German				D
Protocole English				E
8. Direction of rotation				
Direction of rotation clockwise		J		0
Direction of rotation counter-clockwise		G, J	C	1
V-characteristic		G, K	C	2

KINAX HW730-Modbus/TCP with PoE hollow-shaft transmitter for angular position

Description					Locking code	Impossible with locking code	Article No / Feature
KINAX HW730		**Order code 730 - xxxx xxxx xx**					730 –
9. Measuring range							
Basic configuration (linear, 0 … 360°)						K, G	0
[°angle], 0…end value:			Switching point:			C, K	9
V-characteristic [± ° angle]	vmax1:		vmin1:			C, J	Z
	vmax2:		vmin2:				
 							
10. Climatic rating / Marine version							
Standard							0
Maritime Ausführung (vorm. Germ. Lloyd)							G

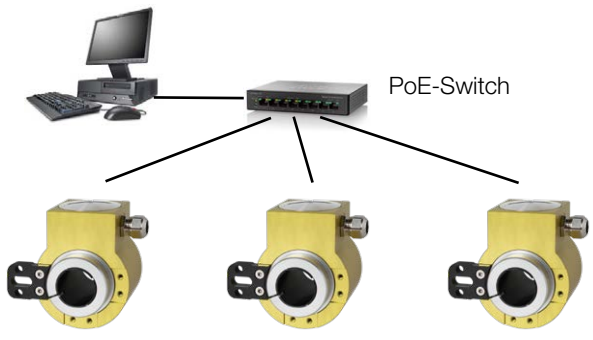
Accessories

Article	Article-Nr.
Kit of torque support HW730	169 749
Adapter sleeve ∅ 10 mm, electrically insulating	168 874
Adapter sleeve ∅ 12 mm, electrically insulating	168 882
Adapter sleeve ∅ 16 mm, electrically insulating	168 907
Adapter sleeve ∅ 18 mm, electrically insulating	171 976
Adapter sleeve ∅ 20 mm, electrically insulating	168 915
Adapter sleeve ∅ 1/2", electrically insulating	171 984
Adapter sleeve ∅ 5/8", electrically insulating	171 992
Adapter sleeve ∅ 3/4", electrically insulating	172 007
Adapter sleeve ∅ 7/8", electrically insulating	172 015
Adapter sleeve ∅ 1", electrically insulating	172 023

Scope of delivery

1 KINAX HW730-Modbus/TCP with PoE programmable hollow-shaft transmitter for angular position
1 HW730 torque support set 169 749
1 Safety instructions 172 734 (german, english, french)
1 Software and documentation CD 156 027

KINAX HW730-Modbus/TCP with PoE can be connected and supplied via a commercially available PoE switch.



CAMILLE BAUER

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