INSTALLATION GUIDE

Draw wire sensors series ACH60 and ACH120

FIRST STEPS

WayCon Positionsmesstechnik GmbH would like to thank you for the trust you have placed in us and our products. This manual will make you familiar with the installation and operation of our draw wire sensors. Please read this manual carefully before initial operation!

Unpacking and checking:
Carefully lift the device out of the box by grabbing the housing. Do not pull the rope. After unpacking the device, check it for any visible damage as a result of rough handling during the shipment. Check the delivery for completeness.
If necessary consult the transportation company, or contact WayCon directly for further assistance.

MOUNTING OF THE SENSOR

- Mount the sensor at the designated place by using the fixing holes before extracting the rope and before attaching the rope to the measuring target.
- The sensor ACH120 can be fixed by using the 4 x M4 threaded holes. These holes are located on 2 sides of the sensor housing, so that 2 different mounting positions are available. The thread screwing depth should be between 4 and 6 mm. A good fit can be achieved with a torque of 4 Nm. We also recommend applying a "medium-strength" screw lock to the thread.
- The sensor ACH60 can be fixed by using the 2 x M4 threaded holes (max. depth 10 mm). Additionally, the ACH60 can be attached via a base plate with 2 holes (ø 4.5 mm)
- The perforated plate covering is not suitable for both sensors.
- Carefully extract the measuring rope now and attach it to the measuring target. Do not let the rope go while extracting it from the sensor and pay attention not to bend or buckle the rope during the procedure.

HANDLING THE WIRE ROPE

- When installing or operating the sensor, take care not to let the rope snap back by mistake or extract the rope over the specified measurement range, as this might destroy the sensor.
- The rope must be extracted from the sensor vertically. The maximum variation from the vertical is 3°. Avoid extracting the rope at an inclination, since the durability of the instrument would shorten considerably. If it is not possible to keep the limit of 3°, a deflection pulley has to be used.
- Guide the rope preferably in corners or guarded in channels to prevent pollution or accidental touch.
- Avoid guiding the rope over edges or corners. Use a deflection pulley instead.
- Do not operate the sensor if the rope is buckled or damaged. A ripping of the rope may lead to injuries or a damaging of the sensor.

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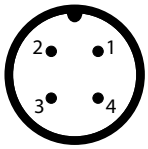
ELECTRICAL CONNECTION ANALOG OUTPUTS

Single output signal

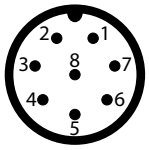
Cable output cable colour	Connector output M12, male	Potentiometer output	Voltage output	Current output	Voltage output (teachable)
BN	Pin 1	+V	+V	+V	+V
WH	Pin 2	Cursor	Signal	n. c.	Signal
BU	Pin 3	GND	GND	Signal	GND
BK	Pin 4	n. c.	GND_{Signal}	n. c.	MFL [1]

[1] Multi-functional line



Redundant output signal

Cable output cable colour	Connector output M12, male	Potentiometer output	Voltage output	Current output
WH	Pin 1	$+V_1$	$+V_1$	$+V_1$
BN	Pin 2	$Cursor_1$	$Signal_1$	n. c.
GN	Pin 3	GND_1	GND_1	$Signal_1$
YE	Pin 4	n. c.	$GND_{Signal,1}$	n. c.
GY	Pin 5	$+V_2$	$+V_2$	$+V_2$
PK	Pin 6	$Cursor_2$	$Signal_2$	n. c.
BU	Pin 7	GND_2	GND_2	$Signal_2$
RD	Pin 8	n. c.	$GND_{Signal,2}$	n. c.



Cable specifications

	cable, 4 poles	cable, 8 poles
Cable type	TPE, flexible	
Cable diameter	Ø 4.5 mm	Ø 6.6 mm
Wire	0.14 mm²	0.25 mm²
Temperature	fixed installation: -30...+85 °C, flexible installation: -20...+85 °C	

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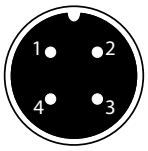
ACCESSORIES CABLE ANALOG OUTPUTS

Single output signal

Cable with mating connector M12 (female), 4 poles	
K4PXM-S-M12	X m, straight connector, shielded
K4PXM-SW-M12	X m, angular connector, shielded



Pin	Cable colour
1	BN
2	WH
3	BU
4	BK

Redundant output signal

Cable with mating connector M12 (female), 8 poles	
K8PXM-S-M12	X m, straight connector, shielded
K8PXM-SW-M12	X m, angular connector, shielded

Pin	Cable colour
1	WH
2	BN
3	GN
4	YE
5	GY
6	PK
7	BU
8	RD

DIGITAL OUTPUT CANopen

Information on the CANopen digital output and the corresponding pin assignment can be found in the manual at https://www.encoder.com/hubfs/products/Draw-Wire/CANopen-Manual.pdf

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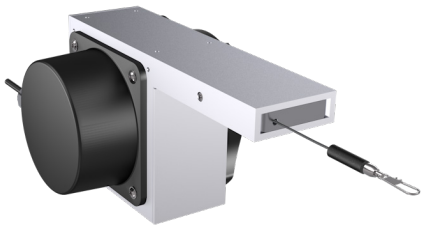

WARNING NOTICES

- Do not try to open the device. The stored energy of the spring drive may lead to injuries when being mishandled.
- Do not touch the rope when operating the sensor.
- When mounting outdoors protect the sensor and the rope from icing at temperatures below 0 °C. The usage of a deflection pulley may help defrosting the wire rope.
- When operating the sensor in a humid environment, install the sensor with the rope outlet downwards. Otherwise water will gather inside the housing, which leads to corrosion. Where applicable use option S3.

MAINTENANCE

The devices are maintenance-free. If however, the rope is soiled due to adverse environmental conditions, it can be cleaned with a cloth drenched in resin-free machine oil.

DECLARATION OF EU-CONFORMITY

Manufacturer	WayCon Positionsmesstechnik GmbH Mehlbeerenstrasse 4 82024 Taufkirchen / Germany
	This is to certify that the products
Classification	draw wire sensors
Product series	ACH60 and ACH120 fulfil the current request of the following EU-directives:
	EMC-directive 2014/30/EU applied harmonized standards: IEC 61326-1:2013

The declaration of conformity loses its validity if the product is misused or modified without proper authorisation.

Taufkirchen, 24.02.2016

Andreas Täger
CEO

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