

## INSTALLATION GUIDE ACX200 DRAW WIRE SENSOR

# INSTALLATION GUIDE

## ACX200 Draw Wire Sensor

### FIRST STEPS

Encoder Products Company 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!

Carefully lift the device out of the box by the housing. Do not pull the wire. After unpacking the device, check it for any visible damage as a result of rough handling during shipment. Check the package to insure that all parts have been included. If necessary, contact Encoder Products Company directly for further assistance.

### WARNING NOTICES

- Do not try to open the device. The stored energy of the spring drive may lead to serious 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.

### 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.

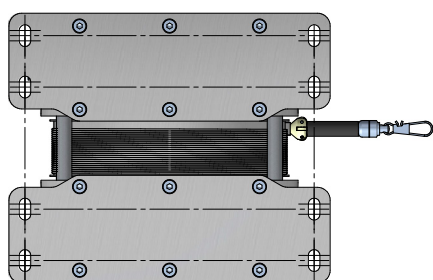
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### ACX200 DRAW WIRE SENSOR

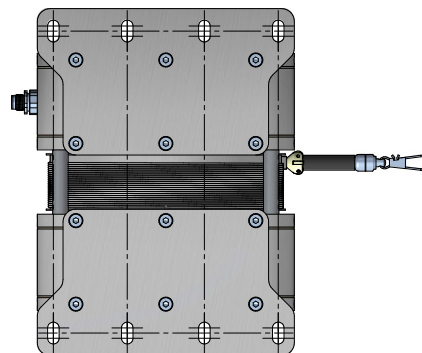
#### MOUNTING OF THE SENSOR

- 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 ACX200 can be fixed by using the 12 x M6 threaded holes (max. depth 12 mm). These holes are located on all 4 sides of the sensor housing.
- Alternatively, the ACX200 can be mounted using the ACX200-BP1 or ACX200-BP2 base plates available as accessories. The base plates must be fitted to the threaded holes using the 12 x M6 cylinder head screws supplied (torque approx. 9 Nm). The sensor is then attached via the base plates using 8 x M8 cylinder head screws and 8 x washers (torque approx. 20 Nm).

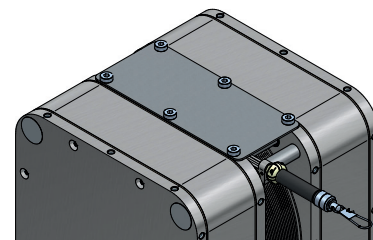
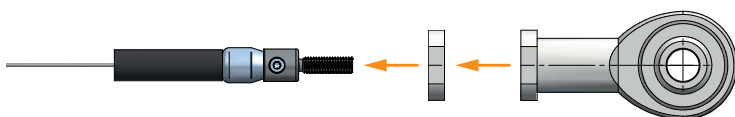
**ACX200-BP1**



**ACX200-BP2**



- After mounting the sensor, carefully extract the measuring rope 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.
- To mount the ACX200-PC1 protection plate, use the inner mounting holes and the 6 included M6 cylinder screws (torque approx. 9 Nm). Please note that the protection plate and base plates cannot be mounted on the same side.
- When using the ball joint ACX200-GK6, first fit the supplied lock nut. Then fit the ball joint and use the nut to lock it.



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### ACX200 DRAW WIRE SENSOR

#### ELECTRICAL CONNECTION ANALOG OUTPUTS

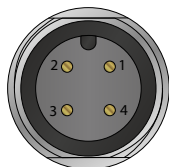
##### Single output signal

| Cable output | Connector output | Potentiometer output | Voltage output        | Current output | Connection cable K4P... |
|--------------|------------------|----------------------|-----------------------|----------------|-------------------------|
| BN           | Pin 1            | +V                   | +V                    | +V             | BN                      |
| WH           | Pin 2            | Cursor               | Signal                | n. c.          | WH                      |
| BU           | Pin 3            | GND                  | GND                   | Signal         | BU                      |
| SW           | Pin 4            | n. c.                | GND <sub>Signal</sub> | n. c.          | SW                      |

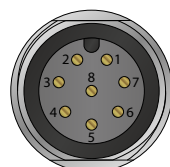
##### Redundant output signal

| Cable output | Connector output | Potentiometer output | Voltage output          | Current output      | Connection cable K8P... |
|--------------|------------------|----------------------|-------------------------|---------------------|-------------------------|
| WH           | Pin 1            | +V <sub>1</sub>      | +V <sub>1</sub>         | +V <sub>1</sub>     | WH                      |
| BN           | Pin 2            | Cursor <sub>1</sub>  | Signal <sub>1</sub>     | n. c.               | BN                      |
| GN           | Pin 3            | GND <sub>1</sub>     | GND <sub>1</sub>        | Signal <sub>1</sub> | GN                      |
| YE           | Pin 4            | n. c.                | GND <sub>Signal,1</sub> | n. c.               | YE                      |
| GY           | Pin 5            | +V <sub>2</sub>      | +V <sub>2</sub>         | +V <sub>2</sub>     | GY                      |
| PK           | Pin 6            | Cursor <sub>2</sub>  | Signal <sub>2</sub>     | n. c.               | PK                      |
| BU           | Pin 7            | GND <sub>2</sub>     | GND <sub>2</sub>        | Signal <sub>2</sub> | BU                      |
| RD           | Pin 8            | n. c.                | GND <sub>Signal,2</sub> | n. c.               | RD                      |

Connector output,  
M12, male



Connector output,  
M12, male



##### 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 mm <sup>2</sup>                                                  | 0.25 mm <sup>2</sup> |
| Temperature    | fixed installation: -30...+85 °C, flexible installation: -20...+85 °C |                      |

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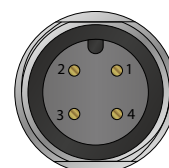
### ACX200 DRAW WIRE SENSOR

#### ELECTRICAL CONNECTION VELOCITY AND INCLINATION

##### Velocity or inclination output

| Cable output | Connector output | Velocity              | Inclination | Connection cable K4P... |
|--------------|------------------|-----------------------|-------------|-------------------------|
| BN           | Pin 1            | n. c.                 | +V          | BN                      |
| WH           | Pin 2            | Signal                | Signal CW   | WH                      |
| BU           | Pin 3            | n. c.                 | GND         | BU                      |
| SW           | Pin 4            | GND <sub>Signal</sub> | Signal CCW  | SW                      |

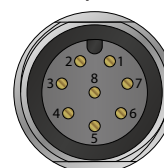
Connector output, M12, male



##### Velocity and inclination output

| Cable output | Connector output | Function                          | Connection cable K8P... |
|--------------|------------------|-----------------------------------|-------------------------|
| WH           | Pin 1            | +V <sub>Inclination</sub>         | WH                      |
| BN           | Pin 2            | Signal CW <sub>Inclination</sub>  | BN                      |
| GN           | Pin 3            | GND <sub>Inclination</sub>        | GN                      |
| YE           | Pin 4            | Signal CCW <sub>Inclination</sub> | YE                      |
| GY           | Pin 5            | n. c.                             | GY                      |
| PK           | Pin 6            | Signal <sub>Velocity</sub>        | PK                      |
| BU           | Pin 7            | n. c.                             | BU                      |
| RD           | Pin 8            | GND <sub>Velocity</sub>           | RD                      |

Connector output, M12, male



#### 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.

#### DISPOSAL

Please always dispose of defective or irreparable appliances in an environmentally friendly manner and in accordance with the applicable legal provisions and disposal regulations. **Please observe the warnings regarding the spring!** If required, we will be happy to assist you with environmentally friendly disposal.

##### Caution: Incorrect disposal can cause environmental damage!

Certain components such as electrical waste, electronic components, lubricants and other auxiliary materials must be disposed of as hazardous waste.

Please note that hazardous materials may only be disposed of by authorized specialist companies.

Dismantled components should be disposed of as follows:

Metal components with scrap metal

- Electronic components with electronic waste
- Plastic parts at the recycling centre
- Other components must be sorted and disposed of according to their material properties