



## S5 S8 S12 | DRAW WIRE SENSOR

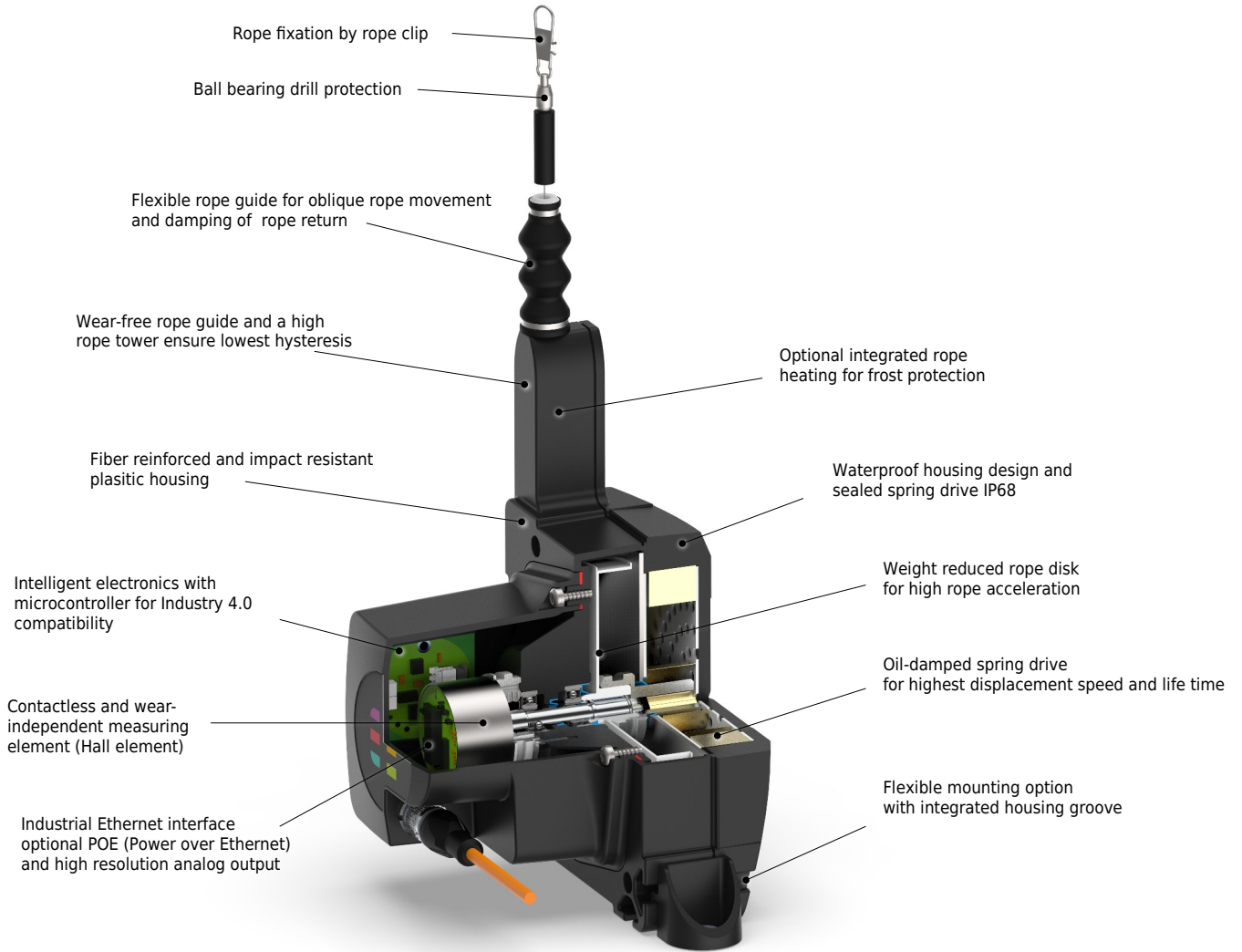
Draw wire sensors for industrial use with non-contact Hall sensor element and Industrial Ethernet interface

- Compatibility of Industry 4.0
- Wear-free Hall element
- Measurement length 50...6000 mm
- Industrial Ethernet
- Power over Ethernet POE
- High dynamics and noise immunity
- Customized designs

# OVERVIEW OF SENSOR INNOVATION

## MECHANICAL DESIGN

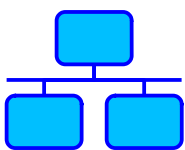
The new draw-wire sensors from eddyLab GmbH have been fundamentally revised and are designed to be particularly durable and robust. A significant innovation is achieved through the use of a contactless and wear-independent measuring element (Hall element) in conjunction with a microcontroller. The "Industrial Ethernet" output type can be quickly integrated into applications and offers Industry 4.0 compatibility. The housings are manufactured in fiber-reinforced plastic technology and offer high flexibility with regard to installation. The sensors have an oil-damped spring drive mechanism, which enables particularly low-friction rope pull-off with minimal hysteresis.



## INDUSTRIAL ETHERNET

For a fast and efficient exchange of data, such as the measurement data (rope extension length, rope speed and acceleration) or the configuration of the hardware, an Ethernet/IP interface is implemented.

The output signal is processed by a Hall sensor and a microcontroller and output via the interface. (Ethernet/IP IEEE 802.3 standard)

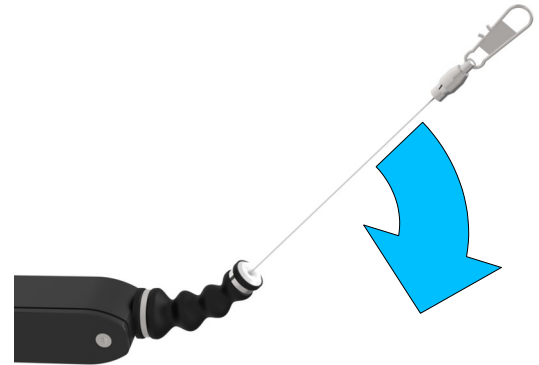


| ETHERNET               |  |
|------------------------|--|
| Storage (Input/Output) | 4K Byte Data (read and write up to 2048 variables) |
| Baudrate               | 10/100 Mbit/s                                      |
| Protocols              | TCP/IP, UDP or ICMP, DHCP                          |
| Extras                 | VLAN Tagging, AMBA 2.0 (Master/Slave)              |
| Potential Separation   | 500 V system/field                                 |

## OVERVIEW OF SENSOR INNOVATION

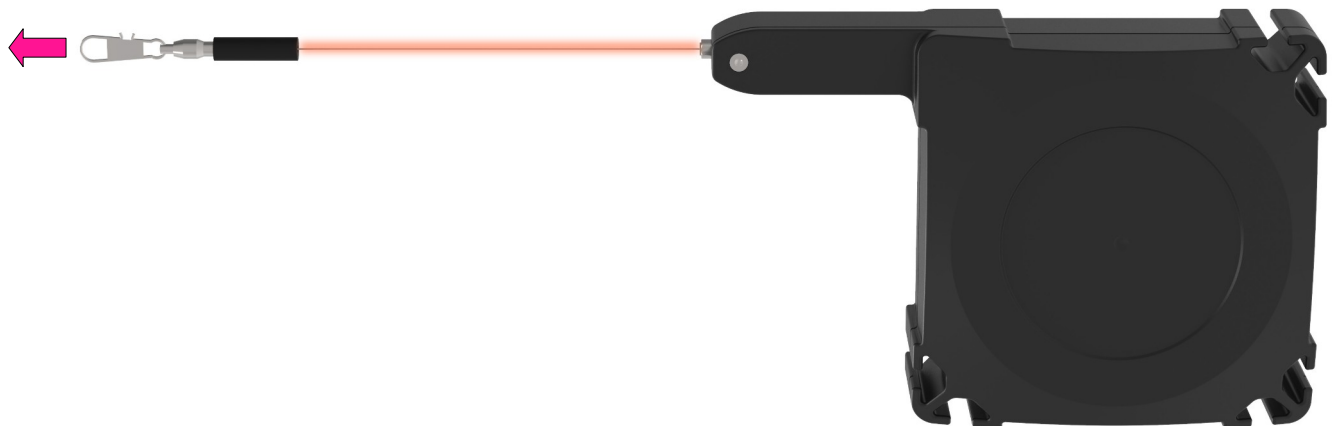
### ■ FLEXIBLE CABLE GUIDE

The use of the patented flexible cable guide allows an inclined pull of up to 50° in all directions. The rope is deflected softly and kink-free with a large bending radius in a special sliding guide. This results in maximum wear protection of the measuring rope.



### ■ FROST PROTECTION - HEATED MEASURING ROPE

For low operating temperatures and extreme outdoor operating conditions. Reliably prevents freezing water drops on the measuring cable and blocking of the cable run-off at minus temperatures and humidity. The rope heating leads a heating current over the measuring rope and regulates it depending on the outside temperature and the extension length. The sensor as well as the measuring rope is protected against frost by the patented solution independent of the rope pull-out length.



### ■ HOUSING DESIGN

The housings are constructed of impact-resistant fiber-reinforced plastic with continuous mounting grooves. This allows simple and flexible mounting via slot nuts or mounting brackets. Direct connection with construction profiles from various manufacturers is easily possible.

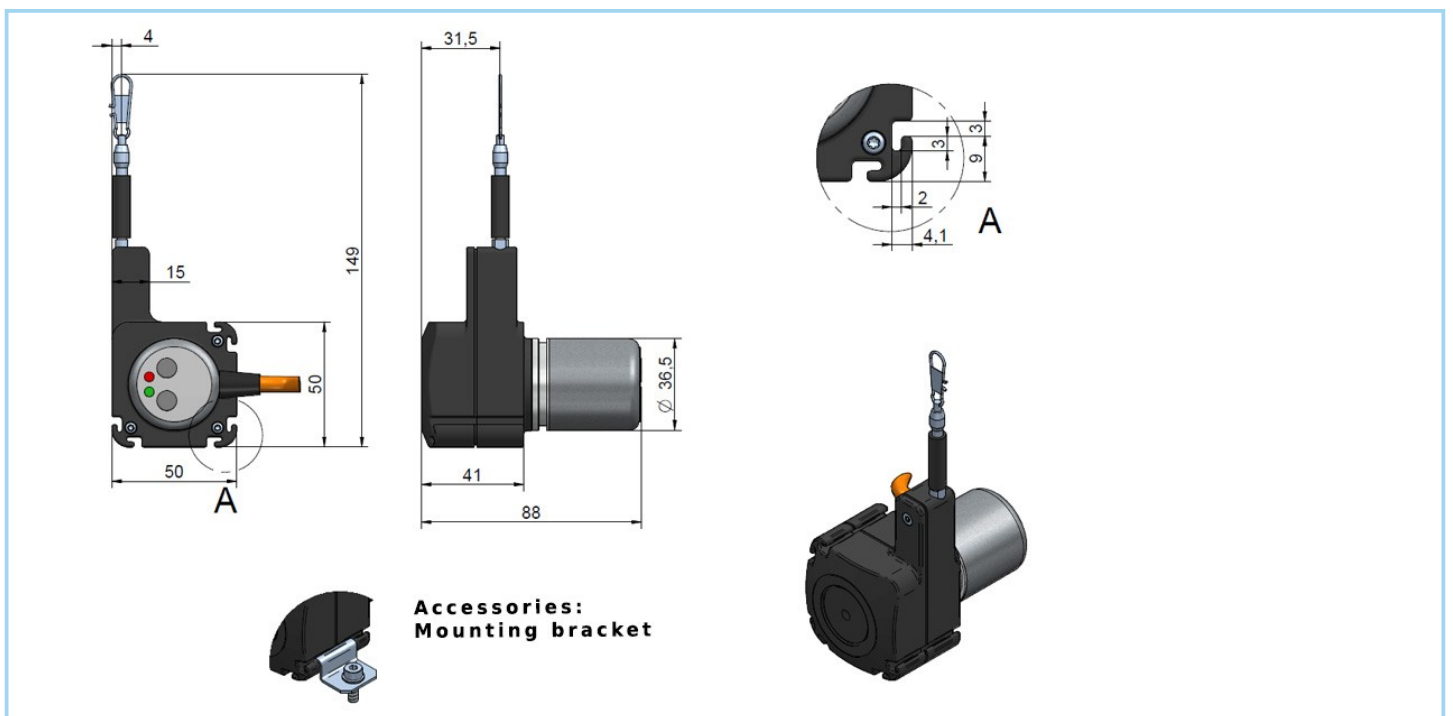


## TECHNICAL DATA – S5



| SENSOR                |      | S5  |
|-----------------------|------|---|
| Measurement range     | [mm] | 50 / 150 / 500 / 750 / 1000 / 1250              |
| Linearity             | [%]  | 0,01  |
| Resolution            | [%]  | 0,005   |
| Hysteresis            | [%]  | 0,05  |
| Draw wire diameter    | [mm] | 0,51  |
| Draw wire material    |      | 1.4401  |
| Rope extraction speed |      | 10 m/s  |
| Rope retraction force |      | 5...9 N   |
| Temperature range     |      | -30...+85°C                                     |
| Lifetime              |      | 1 Mio. Full cycles                              |
| Protection class      |      | IP67 (optional IP68)                            |
| Housing               |      | Fiber-reinforced plastic with fastening grooves |
| Weight                | [g]  | 180   |
| Vibration load        |      | 20 g, DIN EN 60068-2-6                          |
| Shock                 |      | 100 g / 6 ms, DIN EN 60068-2-27                 |
| Sensor element        |      | Hall-element                                    |
| Rope fixation         |      | Ball bearing clip with drillprotection          |

## ■ TECHNICAL DRAWING S5

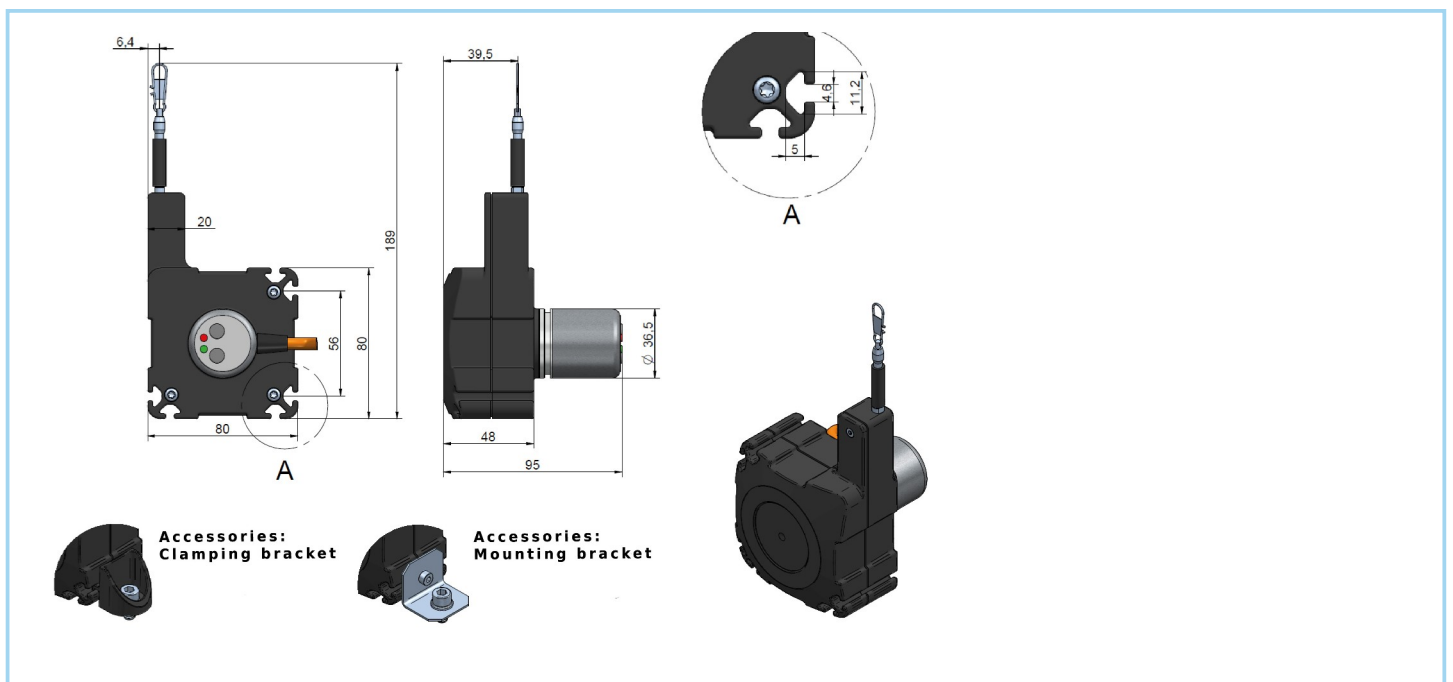


## TECHNICAL DATA – S8



| SENSOR                |      | S8  |
|-----------------------|------|---|
| Measurement range     | [mm] | 1500 / 2000 / 2500 / 3000                       |
| Linearity             | [%]  | 0,01  |
| Resolution            | [%]  | 0,005   |
| Hysteresis            | [%]  | 0,05  |
| Draw wire diameter    | [mm] | 0,51  |
| Draw wire material    |      | 1.4401  |
| Rope extraction speed |      | 10 m/s  |
| Rope retraction force |      | 9...14 N  |
| Temperature range     |      | -30...+85°C                                     |
| Lifetime              |      | 1 Mio. Full cycles                              |
| Protection class      |      | IP67 (optional IP68)                            |
| Housing               |      | Fiber-reinforced plastic with fastening grooves |
| Weight                | [g]  | 180   |
| Vibration load        |      | 20 g, DIN EN 60068-2-6                          |
| Shock                 |      | 100 g / 6 ms, DIN EN 60068-2-27                 |
| Sensor element        |      | Hall-element                                    |
| Rope fixation         |      | Ball bearing clip with drillprotection          |

## ■ TECHNICAL DATA S8

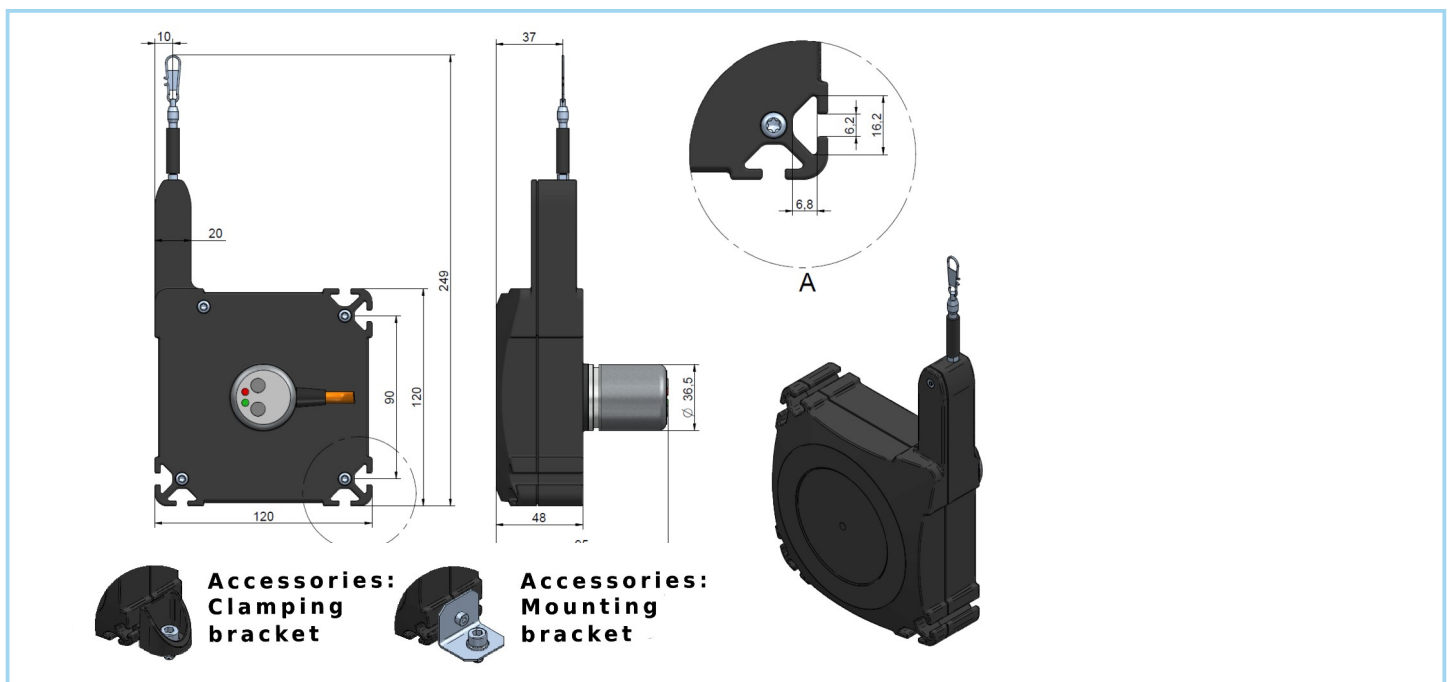


## TECHNICAL DATA – S12



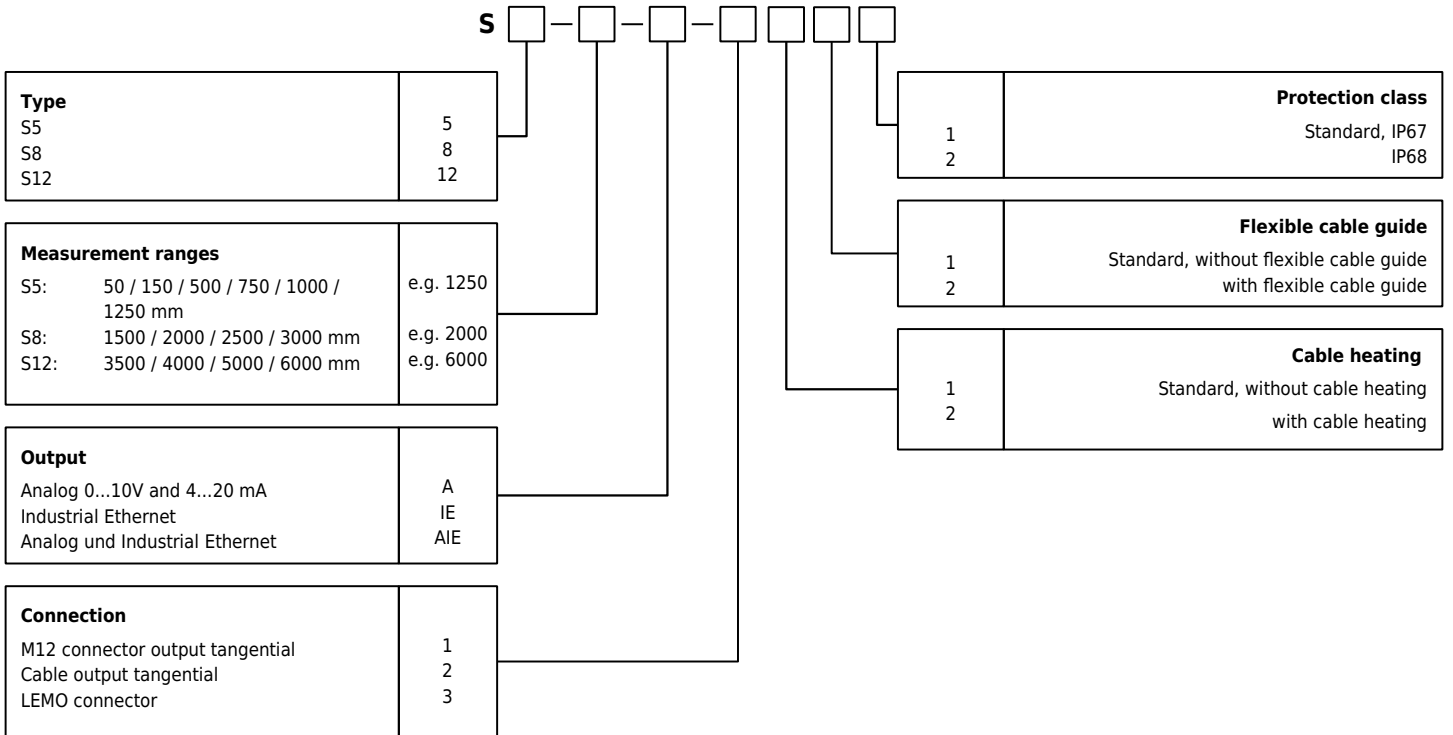
| SENSOR                |      | S12   |
|-----------------------|------|---|
| Measurement range     | [mm] | 3500 / 4000 / 5000 / 6000                       |
| Linearity             | [%]  | 0,01  |
| Resolution            | [%]  | 0,005   |
| Hysteresis            | [%]  | 0,05  |
| Draw wire diameter    | [mm] | 0,51  |
| Draw wire material    |      | 1.4401  |
| Rope extraction speed |      | 10 m/s  |
| Rope retraction force |      | 10...15 N                                       |
| Temperature range     |      | -30...+85°C                                     |
| Lifetime              |      | 1 Mio. Full cycles                              |
| Protection class      |      | IP67 (optional IP68)                            |
| Housing               |      | Fiber-reinforced plastic with fastening grooves |
| Weight                | [g]  | 180   |
| Vibration load        |      | 20 g, DIN EN 60068-2-6                          |
| Shock                 |      | 100 g / 6 ms, DIN EN 60068-2-27                 |
| Sensor element        |      | Hall-element                                    |
| Rope fixation         |      | Ball bearing clip with drillprotection          |

## ■ TECHNICAL DRAWING S12



# ORDER CODE

■ SENSOR



## PRECAUTIONS



- **Attach the sensor to the mounting holes at the designated location before pulling out the rope or before attaching the rope to the measurement object.**
- **Open the rope clip after the sensor has been firmly mounted and pull out the measuring rope. Hang the rope clip on the object and close the bracket of the rope clip. For safety, use a thin screwdriver and pass it through the rope clip to pull out the rope.**
- **Check the travel distance of the measurement object for collision with the sensor housing or exceeding the specified measurement range. Install the sensor in such a way that the stopper rubber does not hit the rope tower or the flexible rope guide of the sensor during rope return.**
- **Carry out the electrical connection according to the output type. When laying the cable, observe the minimum permissible cable bending radius (5 x cable diameter).**
- **The cable must be extended vertically from the sensor during operation. The maximum deviation from the vertical is 3° without using the flexible cable guide. It is essential to avoid pulling out the measuring cable at an angle. This would shorten the service life of the device. If the tolerance limit of 3° cannot be maintained, it is necessary to use the flexible rope guide.**
- **The measuring range or the zero point starts after approx. 2 mm rope extension. The mechanical reserve at the end of the measuring range is approx. 20 mm.**
- **Protect the sensor and the rope against ice formation when mounting outdoors at minus temperatures. For outdoor applications with danger of frost, the use of the rope heater is necessary.**
- **Preferably lay the rope in corners or protected under guides to avoid contamination or accidental contact.**
- **When handling the sensor, be careful not to let the rope snap accidentally or to extend the rope beyond the specified measuring range. The rope snapping back uncontrollably can cause personal injury.**
- **Maintenance: The devices are maintenance-free. However, if the rope becomes dirty due to adverse environmental conditions, clean this with a lightly oil-soaked cloth as required. Use resin-free machine oil for this purpose.**

