

Rope Length Transmitter

Tilt Angle Sensor

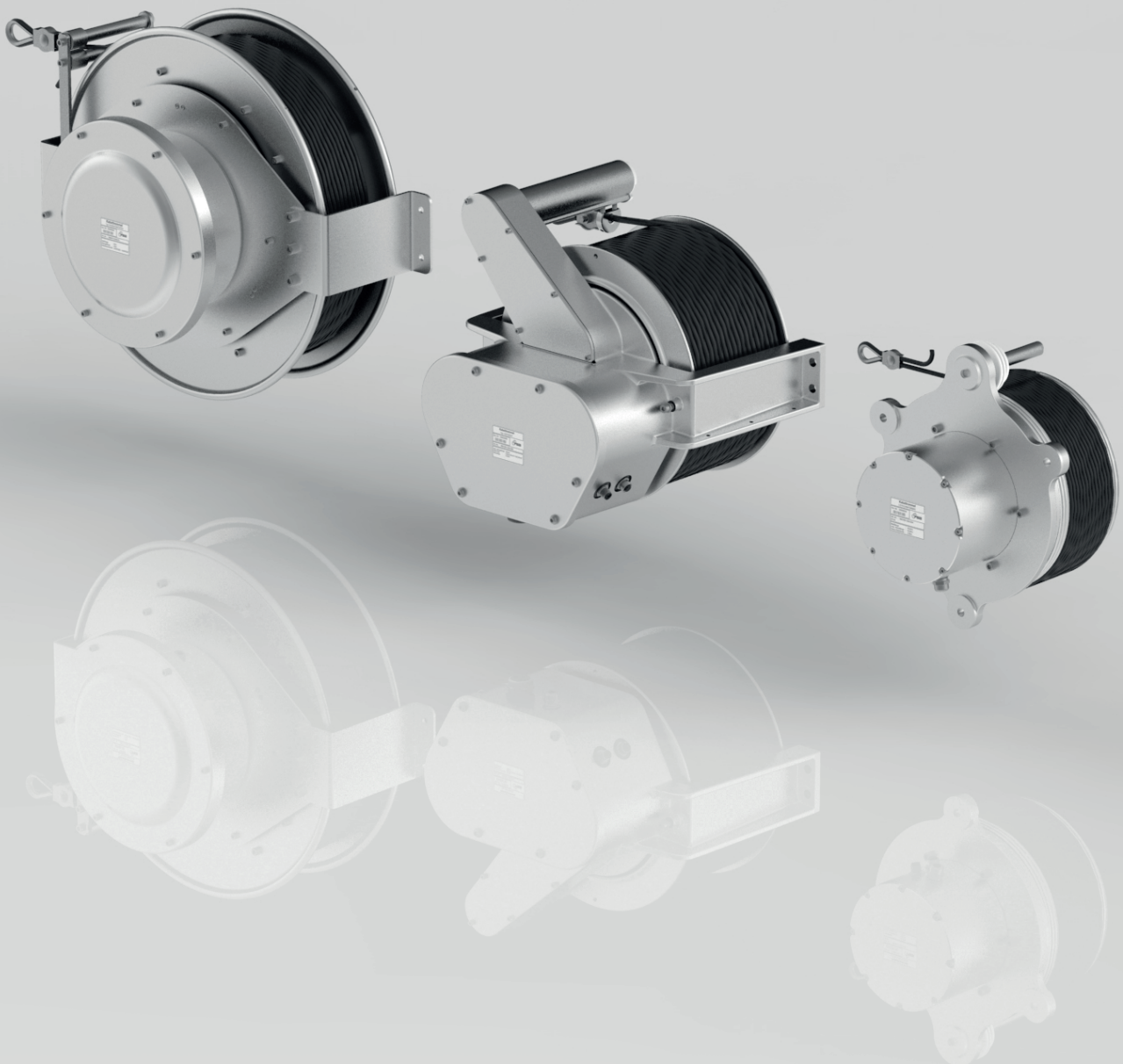
Cable Drum

Joystick

Pedal Actuated Transmitter

Angular Position Transducer

Wind sensor





# THE CABLE DRUM

They can be used to measure the length, inclination and speed depending on the version. A further application is the possibility of transfer the supply voltage and measuring data via the measuring cable. They are mainly used for the measurement of telescopic arms and telescopic booms in cranes and lifting platforms as well as for the control of stage constructions in the event technology.

The angle measurement is carried out e. g. via a high-resolution micro-electromechanical inclination system. A current or voltage signal is available at output (standard version).

## THE LENGTH MEASUREMENT

Is carried out according to the wire measuring principle. A multicore measuring cable is used, being wound single or multilayer onto a cable drum, equipped with return spring. For large measuring lengths a spindle

roll guide ensures the multilayer winding exactly layer-to-layer. The number of drum rotations, being proportional to the length, is measured e. g. via a magnetic angular encoder, optional with voltage or current output. In identical construction length and inclination value can also be measured by means of digital transmitter systems and read out in data format CANopen, also in redundant version for safety-relevant applications, e. g. SIL2 according to IEC 61508.

## THE TRANSMISSION

Of measuring data and control signals, taken from a multipole slip ring body and connected to terminal blocks, is carried out via cable cores of measuring cable. All electric components are incorporated in a completely closed alu cast casing of IP code IP65.



### HIGH IP PROTECTION

Depending on their type, all cable drums have a casing protection between IP 65 and IP 67. In special version, e. g. cable drum without own driving shaft and bearing position, protection easily reaches protection IP68 or IP69K. These features are required in construction machinery or commercial vehicle sector, energy and water management facilities.



### ROBUST CASING FOR ALL SECTORS

Salt-water proof alu casings of our cable drums usually provide a sufficient protection against mechanical damage and for outdoor applications. For special applications and requirements, however, e. g. on oil platforms, at supply ships or in chemical industry, cable drums in version with V4A stainless steel casings are available.

**SIL** **PL**  
IEC 61508 EN 13849

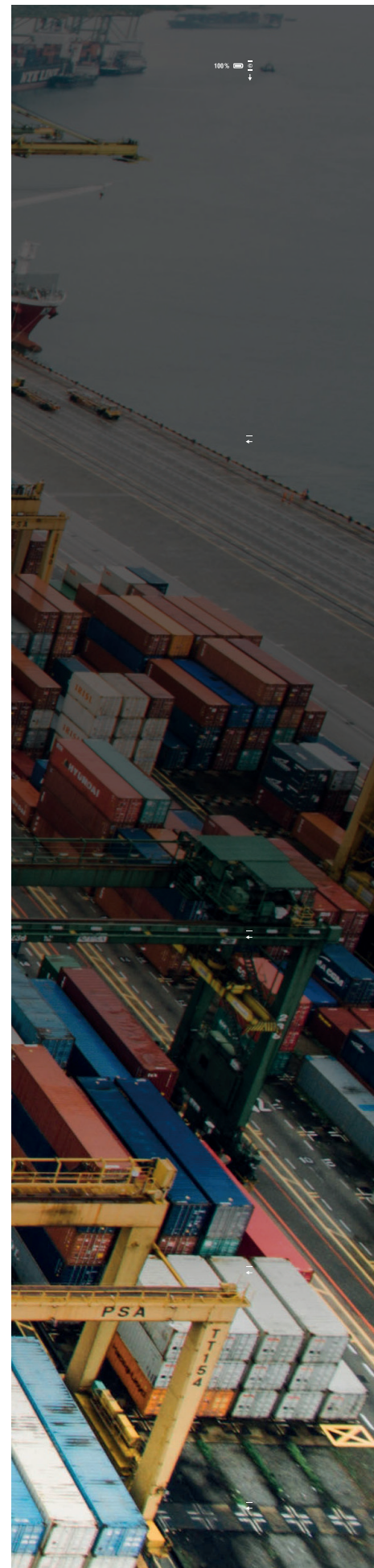
### SAFETY

Almost every magnetic FSG cable drums are equipped with redundant sensors. Depending on their electrical circuit these sensors fulfil hence the requirements of functional safety according to guidelines EN ISO 13849 and EN 61508.

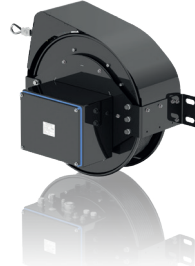


### CUSTOMER-SPECIFIC SOLUTIONS

With regard to their electrical and mechanical characteristics all standard cable drums can – independent of quantities – be adapted to customer-specific requirements and applications. This often leads to new casing models or electrical interfaces.



## System versions



## Mechanical Data

Series	WL 56	WL 020	WL 0025	WL 0042
Connection and drum casing	Alu-cast, coated	Alu-cast, coated	Alu-cast, coated	Alu-cast, coated
IP protection	IP 65	IP 65	IP 65	IP 65
Electrical connection	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug
Weight	34 kg	20 kg	28 kg	32 kg
<b>Spring motor</b>				
Initial / final force	36 N / 70 N	30 N / 65 N	30 N / 90 N	30 N / 90 N
Speed	1 m/s	1 m/s	1 m/s	1 m/s
<b>Measuring length</b>				
up to max.	56 m	20 m	25 m	42 m
Measuring cable	12 x 0.5 mm <sup>2</sup> , Type LiYCY	8 x 0.5 mm <sup>2</sup> , Type LiYCY	9 x 0.5 mm <sup>2</sup> + 5 x 0.25 mm <sup>2</sup>	2 x 0.5 mm <sup>2</sup> + 4 x 0.35 mm <sup>2</sup>
Cable diameter	8 mm	7 mm	8 mm	6,5 mm
Circumference of drum	756 mm	753 mm	1187 mm	1182 mm
Cable winding	Multilayer (with layer winder)	Multilayer (optional: with layer winder)	Multilayer (optional: with layer winder)	Multilayer (optional: with layer winder)
Length accuracy	0.5 %	2 % (0.5 %)	3 % (0.5%)	3 % (0.5%)

## Electrical Data

Slip ring body, MS-hard gold plated	max. 12-poles	max. 8-poles	12-poles	6-poles
Circuit data	40 V / 2 A	40 V / 2 A	40 V / 2 A	40 V / 2 A
<b>Length transmitter</b>				
Resistance output	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$
Output analogue	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC
Output digital	CANopen	CANopen	CANopen	CANopen
<b>Tilt transmitter</b>				
Tilt angle	0 - 360°	0 - 360°	0 - 360°	0 - 360°
Angular accuracy	$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$	$\pm 0.1^\circ$
Resistance output	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$
Output analogue	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC
Output digital	CANopen	CANopen	CANopen	CANopen

## General data

Supply	18 - 33 V DC	18 - 33 V DC	18 - 33 V DC	18 - 33 V DC
Temperature range	-30°C up to +70°C	-30°C up to +70°C	-30°C up to +70°C	-30°C up to +70°C
Test voltage	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min
EMC according to DIN	EN 61 000-6-2 / 3	EN 61 000-6-2 / 3	EN 61 000-6-2 / 3	EN 61 000-6-2 / 3
Number of cycles	up to 200,000	up to 200,000	up to 200,000	up to 200,000
Article number	5937Z01	5908Z02	5964F01	5964F01

## System versions



## Mechanical Data

Series	L015	L010	L015	L003
Connection and drum casing	Alu-cast, coated	Alu-cast, coated	Alu-cast, coated	Alu-cast, coated
IP protection	IP 65	IP 65	IP 65	IP 65
Electrical connection	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug	Series terminal strip (max. 2.5 mm <sup>2</sup> ) or plug
Weight	32 kg	13 kg	15 kg	5 kg
<b>Spring motor</b>				
Initial / final force	80 N / 160 N	30 N / 55 N	30 N / 50 N	40 N / 65 N
Speed	1 m/s	1 m/s	1 m/s	0,2 m/s (Bremse)
<b>Measuring length</b>				
up to max.	15 m	10 m	15 m	3 m
Measuring cable	26 x 0.24 mm <sup>2</sup> , Type LiYCY	5 x 0.34 mm <sup>2</sup> , Type LiYCY	5 x 0.34 mm <sup>2</sup> , Type LiYCY	2 x 0.1 mm <sup>2</sup> + 2 x 0.15 mm <sup>2</sup> , Type LiYCY
Cable diameter	9,5 mm	5,2 mm	5,2 mm	7 mm
Circumference of drum	800 mm	733 mm	733 mm	480 mm
Cable winding	Single layer	Single layer	Single layer	Single layer
Length accuracy	0.35 %	0.35 %	0.35 %	0.35 %

## Electrical Data

Slip ring body, MS-hard gold plated	26-poles	max. 5-poles	max. 5-poles	4-poles
Circuit data	40 V / 2 A	40 V / 2 A	40 V / 2 A	40 V / 10 A
<b>Length transmitter</b>				
Resistance output	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$	1, 2 or 5 k $\Omega$
Output analogue	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC	4 - 20 mA or 0 - 10 V DC	(4 - 20 mA or 0 - 10 V DC)
Output digital	CANopen	CANopen	CANopen	CANopen

## General data

Supply	18 - 33 V DC	18 - 33 V DC	18 - 33 V DC	18 - 33 V DC
Temperature range	-30°C up to +70°C	-30°C up to +70°C	-30°C up to +70°C	-30°C up to +70°C
Test voltage	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min	500 V, 50 Hz, 1 min
EMC according to DIN	EN 61 000-6-2 / 3	EN 61 000-6-2 / 3	EN 61 000-6-2 / 3	EN 61 000-6-2 / 3
Number of cycles	up to 200,000	up to 200,000	up to 200,000	up to 200,000
Article number	5941Z02	5907Z01	5907Z01	5965Z01

WORLD

WIDE

INTERNATIONAL



### BERLIN (HEADQUARTERS)

- founded in 1946
- total production area: 3500 m<sup>2</sup>
- number of employees: 170
- company management and sales
- design and development
- production and assembly



### HEPPENHEIM

- founded in 1961
- total production area: 2700 m<sup>2</sup>
- number of employees: 40
- production and assembly





**4**

locations in germany

**12**

representations worldwide

**70**

years in the market

**90**

percent vertical range of manufacture

**450**

employees

### KÖNIGS WUSTERHAUSEN/OT KABLOW

- founded in 1992
- total production area: 5000 m<sup>2</sup>
- number of employees: 180
- production and assembly



### KÖNIGS WUSTERHAUSEN/OT ZERNSDORF

- founded in 2017
- number of employees: 60
- total production area: 4300 m<sup>2</sup>





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