

Force sensor for ropes and threaded rods in lift systems



Load measurement and monitoring of cable tensions
Inner diameter for M10 / M12 / M14 / M16 / M18 / M20 / M24

Features

- Time saving due to simple and universal installation
- Monitoring of cable tensions
- For modernisations and new installations
- Overload protection through mechanical stop

Applications

The XCS-131 range covers the whole load range of passenger elevators and hoists.

The sensors are mostly used in conjunction with a rope lock or at the pulley on the cross beam. The sensors hole is adapted to the threaded rods which are currently used in elevators. The installation is completely independent from the suspension element and can therefore be used in rope and belt installation without any restriction.

The sensor outputs a high signal which eases the usage and has an effective mechanical stop. This prevents the sensor from damage even in the case of high overloads.

Ordering code

Description	Part number	Nominal measuring range	Output signal	Inner diameter	Specifications
XCS-131-06	104191	6 kN	2.0 mV/V	Ø 11 mm	Seite 3
XCS-131-07	103919	7 kN	2.3 mV/V	Ø 13 mm	Seite 4
XCS-131-08	100673	8 kN	2.0 mV/V	Ø 15 mm	Seite 5
XCS-131-09	100674	9 kN	2.3 mV/V	Ø 17 mm	Seite 6
XCS-131-11	100675	11 kN	2.0 mV/V	Ø 19 mm	Seite 7
XCS-131-12	100676	12 kN	2.3 mV/V	Ø 21 mm	Seite 8
XCS-131-15	100677	15 kN	2.3 mV/V	Ø 25 mm	Seite 9

Load measuring ranges related to the individual sensor

Description	Thread	Minimum payload	Recommended payload	Maximum load
XCS-131-06	M10	120 kg	150 ... 400kg	610kg
XCS-131-07	M12	120 kg	150 ... 400kg	610kg
XCS-131-08	M14	150 kg	200 ... 500kg	830kg
XCS-131-09	M16	150 kg	200 ... 500kg	830kg
XCS-131-11	M18	200 kg	280 ... 650kg	1'050kg
XCS-131-12	M20	200 kg	280 ... 650kg	1'050kg
XCS-131-15	M24	240 kg	300 ... 750kg	1'275kg

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Single rope load sensor XCS-131-07

for M12 - threaded rods



Specifications

Performance

Measuring range	7 kN
Output signal related to the end value	2.3 mV
Tolerance output signal	± 15% (F.S.)
Zero signal unmounted	-0.4 ... -0.1 mV/V
Accuracy	± 2% (F.S.)
Repeatability	±0.5 (F.S.)

Electrical data

Power supply	2 ... 10 V
Ausga Output signal related to the end value	2.3 mV ± 15%
Resistance of strain gauge bridge, full bridge	1000 Ω

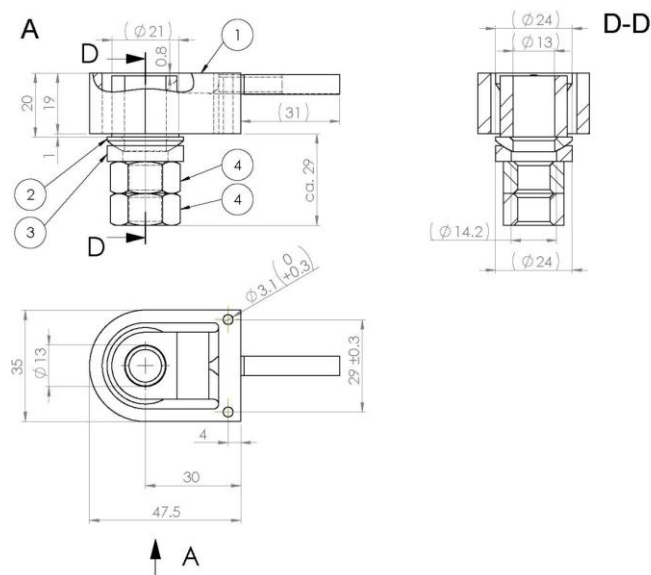
Mechanical data

Stay cable compensation	3°
Overload	300 % (F.S.)
Electrical connection	WAGO 733-105
Cable length	2.0 m

Environmental data

Ambient temperature	-10°C ... +65°C
Protection rate	IP54

Mechanical dimensions



Accessories enclosed:

Pos.	
1	Sensor
2	ball disc M12
3	tapered cup M12
4	nut M12

Pin assignment

Connector, male	
PIN 1	EXC+
PIN 2	EXC-
PIN 3	SIG+
PIN 4	SIG-
PIN 5	Shield

Ordering code

For detailed ordering information see page 2.

Single rope load sensor XCS-131-08

for M14 - threaded rods



Specifications

Performance

Measuring range	8 kN
Output signal related to the end value	2.0 mV
Tolerance output signal	± 15% (F.S.)
Zero signal unmounted	-0.4 ... -0.1 mV/V
Accuracy	± 2% (F.S.)
Repeatability	±0.5 (F.S.)

Electrical data

Power supply	2 ... 10 V
Ausga Output signal related to the end value	2.0 mV ± 15%
Resistance of strain gauge bridge, full bridge	1000 Ω

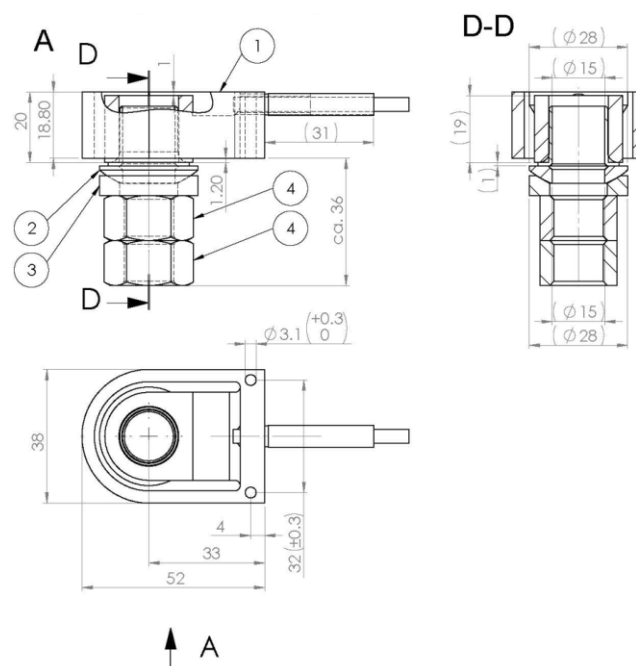
Mechanical data

Stay cable compensation	3°
Overload	300 % (F.S.)
Electrical connection	WAGO 733-105
Cable length	2.0 m

Environmental data

Ambient temperature	-10°C ... +65°C
Protection rate	IP54

Mechanical dimensions



Accessories enclosed:

Pos.	
1	Sensor
2	ball disc M14
3	tapered cup M14
4	nut M14
	collar bushing M16 to M14

Pin assignment

Connector, male	
PIN 1	EXC+
PIN 2	EXC-
PIN 3	SIG+
PIN 4	SIG-
PIN 5	Shield

Ordering code

For detailed ordering information see page 2.

Single rope load sensor XCS-131-09

for M16 - threaded rods



Specifications

Performance

Measuring range	9 kN
Output signal related to the end value	2.3 mV
Tolerance output signal	± 15% (F.S.)
Zero signal unmounted	-0.4 ... -0.1 mV/V
Accuracy	± 2% (F.S.)
Repeatability	±0.5 (F.S.)

Electrical data

Power supply	2 ... 10 V
Ausga Output signal related to the end value	2.3 mV ± 15%
Resistance of strain gauge bridge, full bridge	1000 Ω

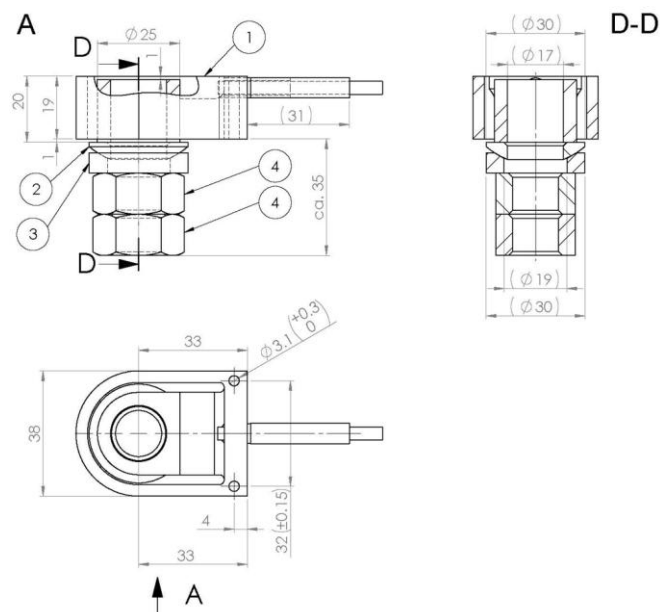
Mechanical data

Stay cable compensation	3°
Overload	300 % (F.S.)
Electrical connection	WAGO 733-105
Cable length	2.0 m

Environmental data

Ambient temperature	-10°C ... +65°C
Protection rate	IP54

Mechanical dimensions



Accessories enclosed:

Pos.	
1	Sensor
2	ball disc M16
3	tapered cup M16
4	nut M16

Pin assignment

Connector, male	
PIN 1	EXC+
PIN 2	EXC-
PIN 3	SIG+
PIN 4	SIG-
PIN 5	Shield

Ordering code

For detailed ordering information see page 2.

Single rope load sensor XCS-131-11

for M18 - threaded rods



Specifications

Performance

Measuring range	11 kN
Output signal related to the end value	2.0 mV
Tolerance output signal	± 15% (F.S.)
Zero signal unmounted	-0.4 ... -0.1 mV/V
Accuracy	± 2% (F.S.)
Repeatability	±0.5 (F.S.)

Electrical data

Power supply	2 ... 10 V
Ausga Output signal related to the end value	2.0 mV ± 15%
Resistance of strain gauge bridge, full bridge	1000 Ω

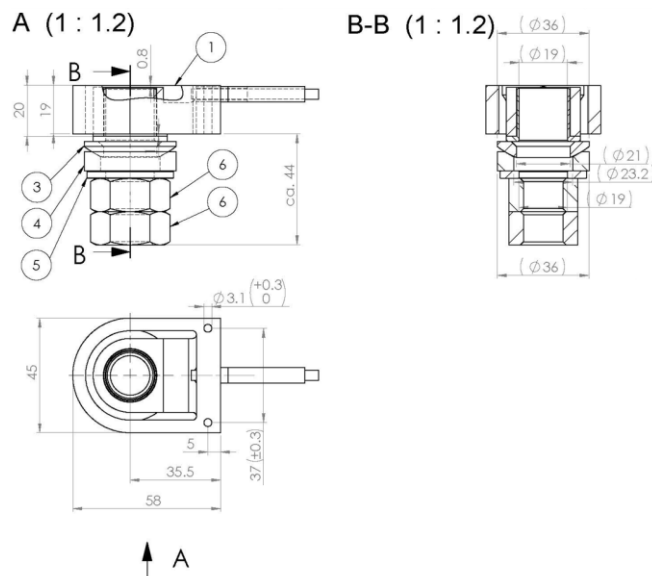
Mechanical data

Stay cable compensation	3°
Overload	300 % (F.S.)
Electrical connection	WAGO 733-105
Cable length	2.0 m

Environmental data

Ambient temperature	-10°C ... +65°C
Protection rate	IP54

Mechanical dimensions



Accessories enclosed:

Pos.	
1	Sensor
2	ball disc M18
3	tapered cup M18
4	nut M18
	collar bushing M20 to M18

Pin assignment

Connector, male	
PIN 1	EXC+
PIN 2	EXC-
PIN 3	SIG+
PIN 4	SIG-
PIN 5	Shield

Ordering code

For detailed ordering information see page 2.

for M20 - threaded rods



Specifications

Performance

Measuring range	12 kN
Output signal related to the end value	2.3 mV
Tolerance output signal	± 15% (F.S.)
Zero signal unmounted	-0.4 ... -0.1 mV/V
Accuracy	± 2% (F.S.)
Repeatability	±0.5 (F.S.)

Electrical data

Power supply	2 ... 10 V
Ausga Output signal related to the end value	2.3 mV $\pm$ 15%
Resistance of strain gauge bridge, full bridge	1000 Ω

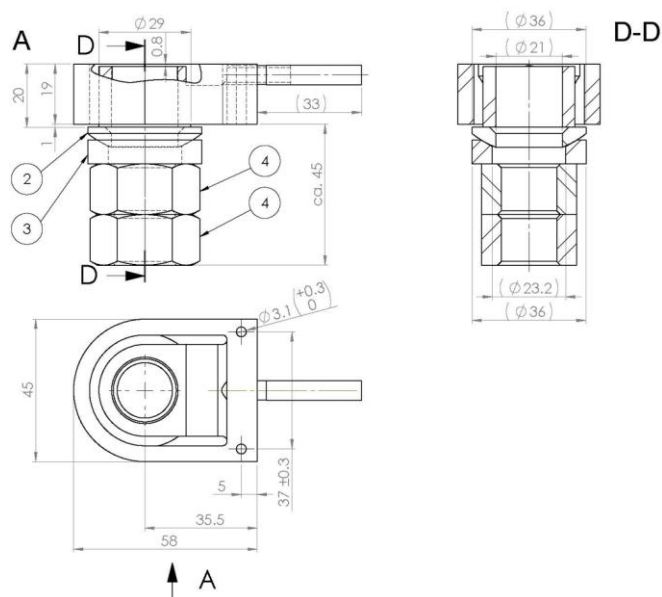
Mechanical data

Stay cable compensation	3°
Overload	300 % (F.S.)
Electrical connection	WAGO 733-105
Cable length	2.0 m

Environmental data

Ambient temperature	-10°C ... +65°C
Protection rate	IP54

Mechanical dimensions



Accessories enclosed:

Pos.	
1	Sensor
2	ball disc M20
3	tapered cup M20
4	nut M20

Pin assignment

Connector, male	
PIN 1	EXC+
PIN 2	EXC-
PIN 3	SIG+
PIN 4	SIG-
PIN 5	Shield

Ordering code

For detailed ordering information see page 2.

Single rope load sensor XCS-131-15

for M24 - threaded rods



Specifications

Performance

Measuring range	15 kN
Output signal related to the end value	2.3 mV
Tolerance output signal	± 15% (F.S.)
Zero signal unmounted	-0.4 ... -0.1 mV/V
Accuracy	± 2% (F.S.)
Repeatability	±0.5 (F.S.)

Electrical data

Power supply	2 ... 10 V
Ausga Output signal related to the end value	2.3 mV ± 15%
Resistance of strain gauge bridge, full bridge	1000 Ω

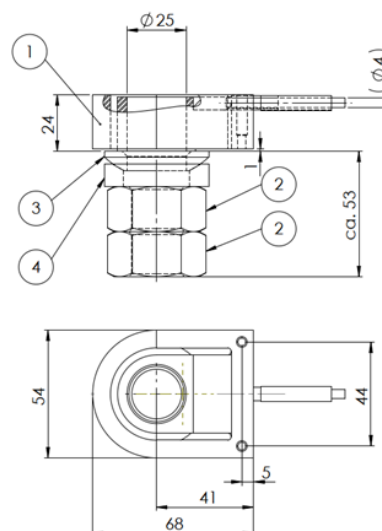
Mechanical data

Stay cable compensation	3°
Overload	300 % (F.S.)
Electrical connection	WAGO 733-105
Cable length	2.0 m

Environmental data

Ambient temperature	-10°C ... +65°C
Protection rate	IP54

Mechanical dimensions



Accessories enclosed:

Pos.	
1	Sensor
2	ball disc M24
3	tapered cup M24
4	nut M24

Pin assignment

Connector, male	
PIN 1	EXC+
PIN 2	EXC-
PIN 3	SIG+
PIN 4	SIG-
PIN 5	Shield

Ordering code

For detailed ordering information see page 2.

Assembly instructions

