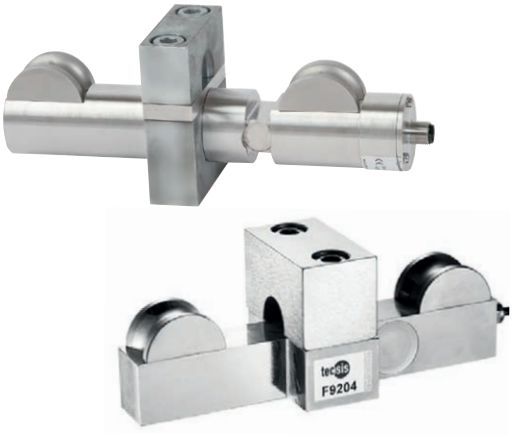
Clamp-On-Sensor up to 15 t
Model F9204

Applications

- Overload protection for example of cranes or storage and retrieval devices
- Overload protection and measuring tension of wire ropes

Features

- Integrated amplifier, output 4 … 20 mA, 2-wire
- Simple mounting (without opening rope)
- Suitable for retrofits
- Material: alloyed steel with nickel-containing anti-rust treatment
- Protection class IP66



Top: Clamp-On-Sensor with inline amplifier
Bottom: Clamp-On-Sensor with electrical output

Description

The clamp-on-sensor have been specially designed to measure the load on existing steel cables. The force transducer is made of alloyed steel with a rust resistant finish.

The mission of this force sensor is simple, robust and cost-effectively monitors cable forces. This requires a cable anchor point, because the measurement is taken at the stationary rope. For this purpose, the transducer is clamped in a few steps to the assembled cable.

Measuring ranges

- **With inline amplifier**
  0 … 1 t up to 0 … 15 t (cable diameter 7 … 32 mm)

- **With electrical output**
  0 … 1 t up to 0 … 40 t

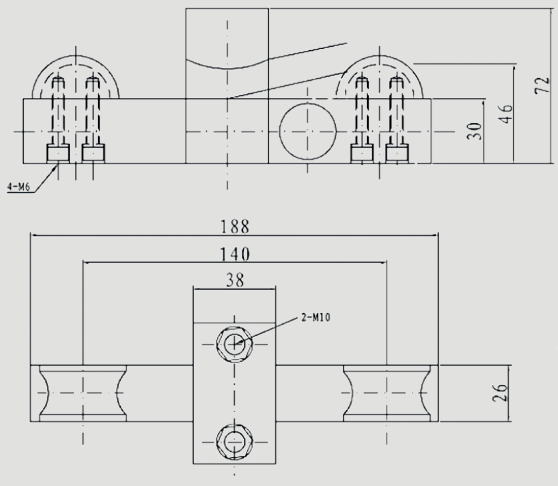
Technical data in accordance with VDI/VDE/DKD 2638

Model F9204	With inline amplifier	With electrical output
Rated force F_{nom} in t	1 ... 15	1 ... 40
Relative linearity error d_{lin}	±3 % of F.S.	0.5 % of F.S.
Rope diameter d	7 ... 32 mm	
Force limit F_L	200 %	150 % F_{nom}
Breaking force F_B	500 %	200 % F_{nom}
Relative reversibility v		0.5 % of F.S.
Relative deviation of zero signal $d_{S, 0}$		±2 % of F.S.
Relative repeatability error in unchanged mounting position b_{rg}		0.5 % of F.S.
Relative creep, 30 at min. F_{nom}		≤ 0.05 % of F.S.
Insulation resistance R_{is}	> 5,000 MΩ to 50 V	≥ 5,000 MΩ/DC 50 V
Input resistance R_e		780 ± 10 Ω
Output resistance R_a		700 ± 10 Ω
Rated temperature $B_{T, nom}$	-30 ... +80 °C	-10 ... +60 °C
Operating temperature $B_{T, G}$	-30 ... +80 °C	-20 ... +80 °C
Temperature effect on ■ characteristic value TK_c ■ zero signal TK_0	< 0.03 %/5 °C of F.S.	0.025 % of F.S./10 °C
Analogue output ■ Output signal (characteristic value) C ■ Supply voltage	 4 … 20 mA, 2-wire DC 12 … 24 V	 4 … 20 mA, (optional 0 … 10 V) DC 12 ... 36 V
Recommended excitation voltage		10 V
Maximum excitation voltage		15 V
Protection type	IP66 in accordance with EN/IEC 60529	
Material of measuring device	Alloyed steel with nickel-containing anti-rust treatment	Alloyed steel
Cable length	Approx. 2 m	Ø 4 × 3,000 mm
Cable color code	**Ub+ / S+:** red wire (EGS 80 terminal 1) **Ub-/S-:** black wire (EGS 80 terminal 3)	**Input:** red (+) black (-) **Output:** green (+) white (-)

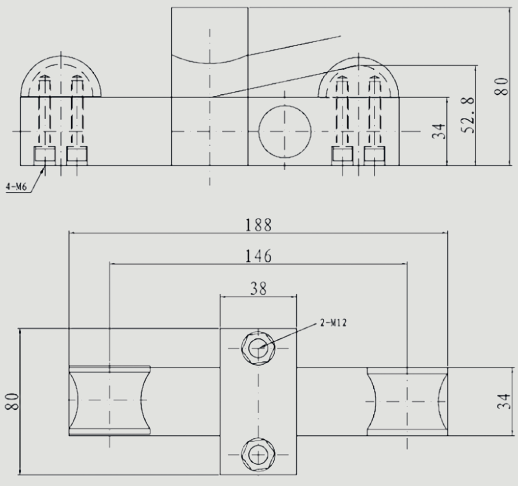
FS = of full scale

Dimensions in mm1 t

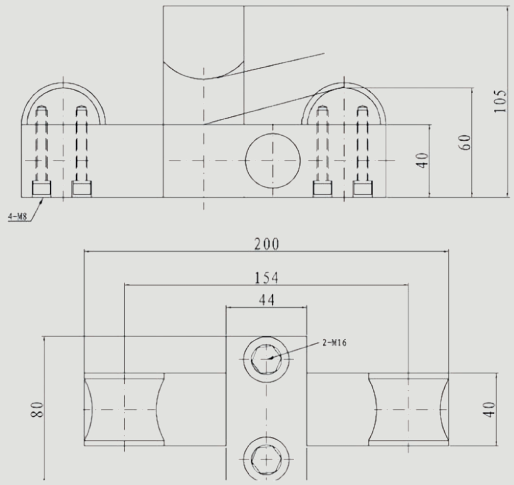
Inline amplifier 1 t and 3.5 t clamp-on-sensor



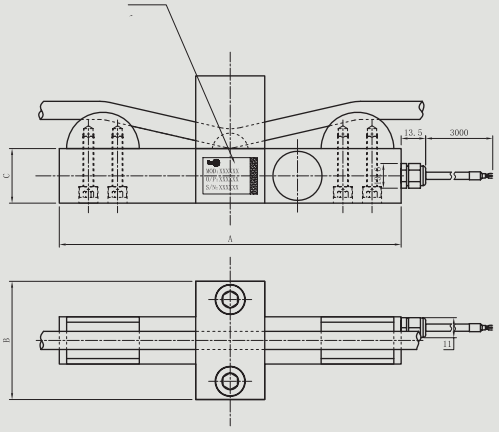
Inline amplifier 7 t clamp-on-sensor



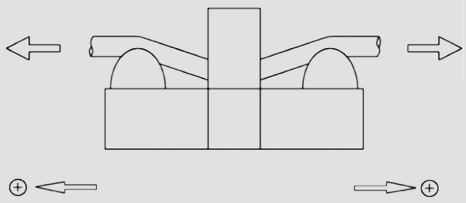
Inline amplifier 15 t clamp-on-sensor



Electrical output up to 40 t clamp-on-sensor



Wire rope (tension) in t	Dimensions in mm				Weight in kg
	Wire rope Ø	A	B	C	
1	6 ... 14	164	60	28	1.5
2	10 ... 18	164	60	28	1.8
3.5	10 ... 18	188	65	30	2.2
5	16 ... 24	182	68	34	2.4
10	24 ... 36	200	80	40	3.7
20	24 ... 36	240	90	45	5.9
30 ... 40	34 ... 48	310	130	52	11.2



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