



### Special features

- Mechanical design identical to EMS150 type
- Tension / Compression measurement
- Stainless steel construction
- Built-in signal conditioner with voltage or current output
- Power supply + 24 VDC

### Specifications

Parameter	Value	Unit
Rated capacity ( $F_n$ )	0.5, 1, 2, 5, 10, 20, 50, 100, 200	kN
Overload		
- Safe	130	% $F_n$
- Ultimate	150	% $F_n$
- Permanent static load (recommended value)	75	% $F_n$
- Dynamic load (recommended value)	50	% $F_n$
Sensor with voltage output (EMS151-U) <sup>1</sup>		
- Standard	$\pm 10$	V
- With zero offset	$5 \pm 5$	V
- Output tolerance setting	$\pm 100$	mV
- Output load impedance (min)	20	k $\Omega$
Sensor with current output (EMS151-I) <sup>1</sup>		
- Standard	4 ... 20	mA
- With zero offset	$12 \pm 8$	mA
- Output tolerance setting	$\pm 0.16$	mA
- Output load impedance (max)	500	$\Omega$
Cut-off frequency of built-in amplifier (- 3 dB)	40	Hz
Max error		
- Non-linearity	0.2	% F.S.
- Hysteresis	0.2	% F.S.
Temperature effect		
- On zero	0.15	% F.S./10 °C
- On output	0.15	% F.S./10 °C
Temperature range		
- Nominal	0 ... + 50	°C
- Operating	- 10 ... + 50	°C
Power Supply		
- Range	22 ... 27	VDC
- Current consumption (max)	40	mA
Protection	IP54	
Connection		
- Cable		
- Type	LiYCY 4 x 0.14	
- Length	2	m
- Connector type <sup>2</sup>	M12, 4 pin	

<sup>1</sup> Sensor has only voltage or only current output.

<sup>2</sup> Made-to-order

## How to order

Common formula for ordering:

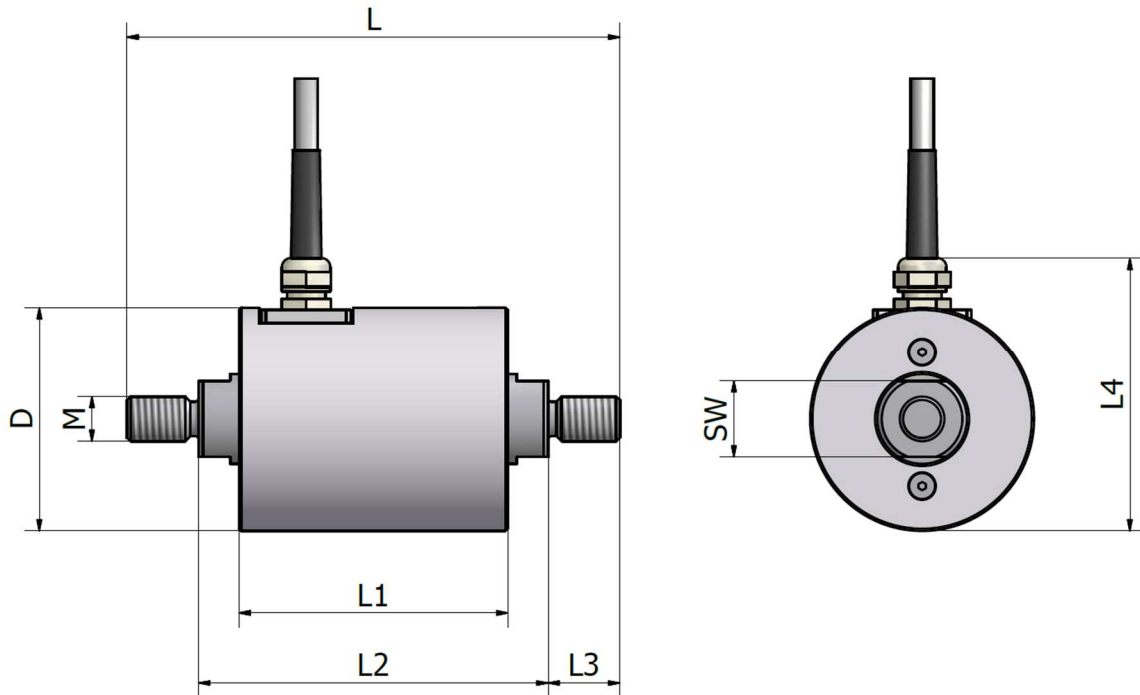
### ***EMS151-U/I(output range) – force range – load direction***

- Sensor type with type of output:
  - ***EMS151-U*** – voltage output
  - ***EMS151-I*** – current output
- Voltage output ranges:
  - ***± 10 V***
  - ***5 ± 5 V*** (zero shifted to 5 V)
- Current output ranges:
  - ***4 ... 20 mA***
  - ***12 ± 8 mA*** (zero shifted to 12 mA)
- Measured force range:
  - ***500N, 1 kN, 2 kN, 5 kN, 10 kN, 20 kN, 50 kN, 100 kN, 200 kN***
- Load direction:
  - ***Compression***
  - ***Tension***
  - ***Compression/Tension*** (both)

Examples:

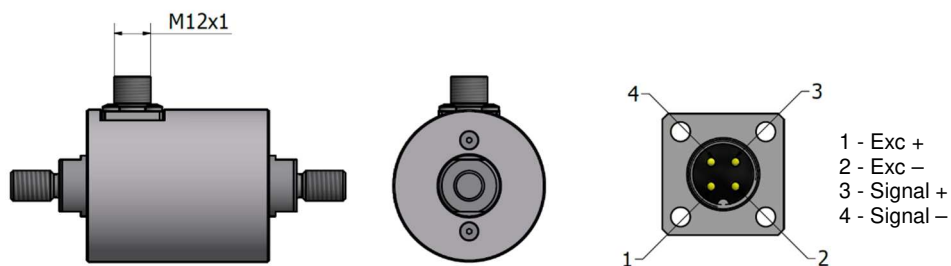
1. 2 kN sensor with voltage output 0 ... ± 10V, load direction compression, order:  
***EMS151-U (± 10V) – 2 kN – Compression***
2. 10 kN sensor with current output with shifted zero, load direction Compression and Tension, order:  
***EMS151-I (12 ± 8 mA) – 10 kN – Compression/Tension***

## Outline dimensions

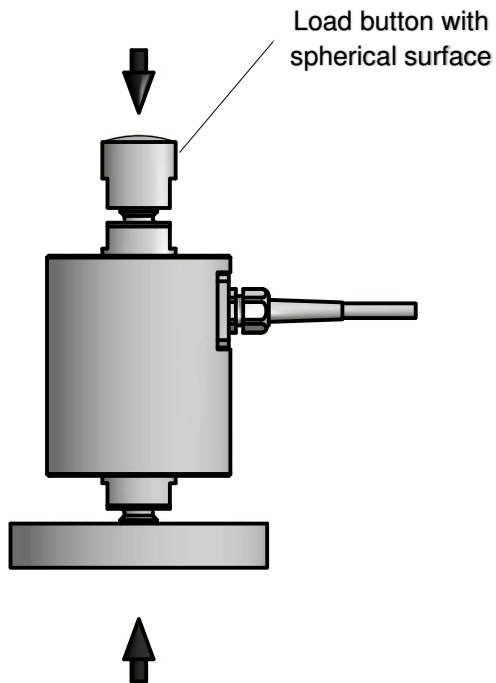


Rated capacity $F_n$ , kN	L mm	L1 mm	L2 mm	L3 mm	L4 mm	D mm	M mm	SW mm	Mass kg	Deflection @ $F_n$ , $\mu\text{m}$
0,5	95	55	71	12	55	45	M8	13	0,22	60
1	95	55	71	12	55	45	M8	13	0,23	60
2	110	60	78	16	60	50	M10	17	0,33	60
5	110	60	78	16	60	50	M10	17	0,37	60
10	140	80	100	20	70	60	M12	19	0,64	71
20	150	80	104	23	70	60	M16	24	0,86	84
50	170	80	108	31	70	60	M24	30	1,38	102
100	240	100	136	52	90	80	M36	46	3,63	123
200	300	120	166	67	110	100	M48	65	8,00	185

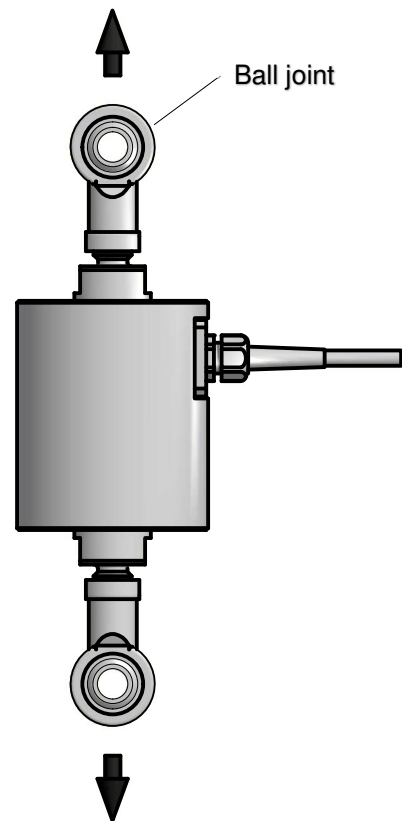
## Version with connector (optional)



## Recommended installation



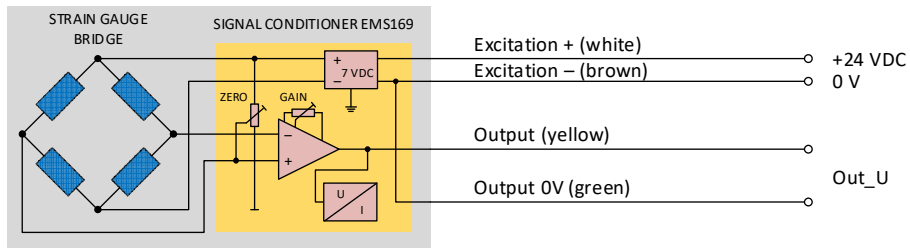
Direction of load COMPRESSION



Direction of load TENSION

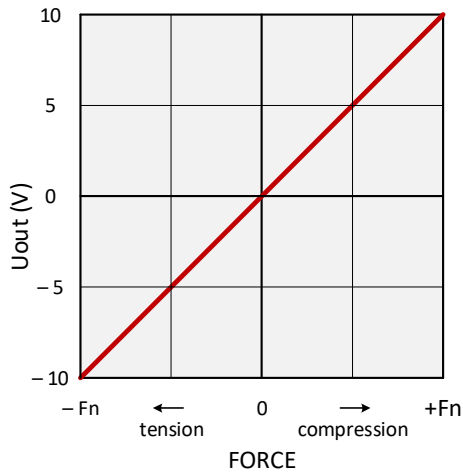
# Sensor wiring with bipolar voltage output

## Wiring diagram

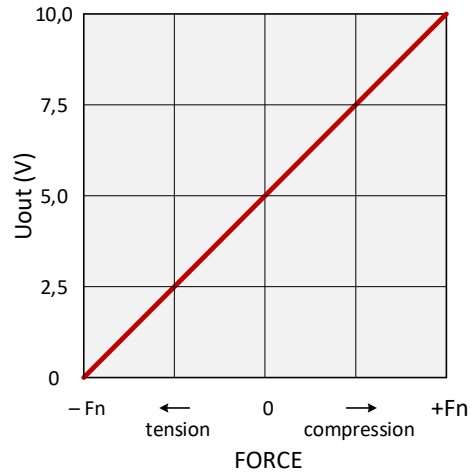


## Output characteristics

(Specify the required type of characteristic in the order - it is set by the manufacturer)



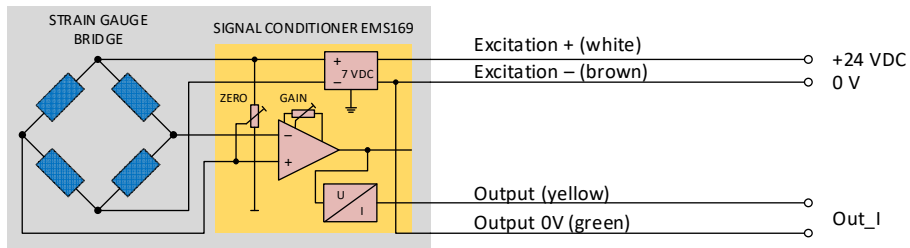
COMPRESSION and TENSION load  
Output:  $\pm 10$  V



COMPRESSION and TENSION load  
Output:  $5 \pm 5$  V

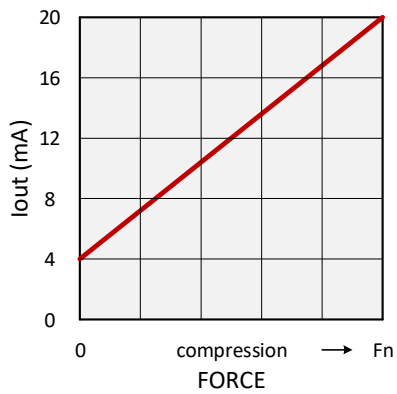
# Sensor wiring with current output

## Wiring diagram

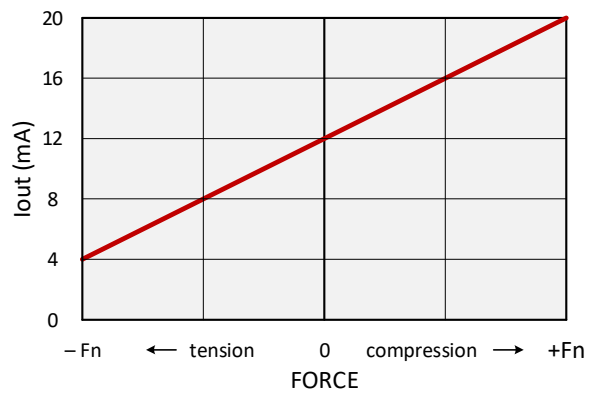


## Output characteristics

(Specify the required type of characteristic in the order - it is set by the manufacturer)



COMPRESSION load  
Output: 4 ... 20 mA



COMPRESSION and TENSION load  
Output:  $12 \pm 8$  mA

## Legal information

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