



### Special features

- For general purpose
- Strain gauge measuring system
- Tension
- Made of high-grade stainless steel
- Small dimensions
- It can be delivered with a built-in signal conditioner – see EMS141

### Specifications

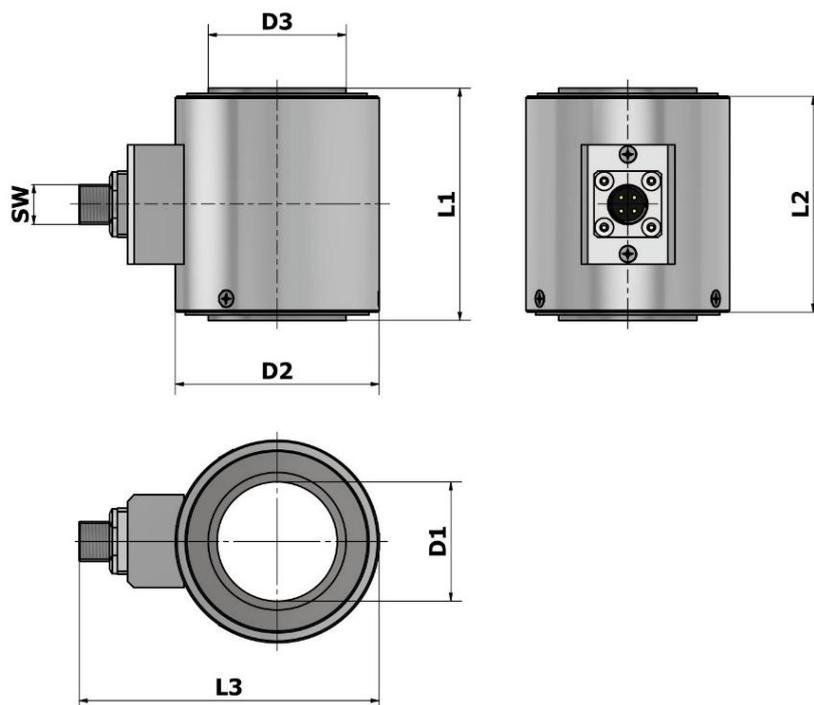
Parameter	Value	Unit
<b>Rated capacity (Fn)</b>	20, 50, 100, 200	kN
Overload		
- Safe	130	% Fn
- Ultimate	150	% Fn
- Permanent static load <sup>1</sup>	75	% Fn
- Dynamic load <sup>1</sup>	50	% Fn
<b>Nominal sensitivity (Cn)</b>	1.5 ± 2 %	mV/V
<b>Zero balance</b>	2	% F.S.
<b>Max error</b>		
- Non-linearity	0.25	% F.S.
- Hysteresis	0.25	% F.S.
<b>Temperature effect</b>		
- On zero	0.1	% F.S./10 °C
- On output	0.1	% F.S./10 °C
<b>Bridge resistance</b>		
- Input	375 ± 20	Ω
- Output	350 ± 10	Ω
<b>Insulation Impedance</b>	> 500	MΩ
<b>Excitation <sup>2</sup></b>		
- Recommended	5 ... 10	V
- Maximal	15	V
<b>Temperature range</b>		
- Compensated	0 ... + 50	°C
- Operating	- 10 ... + 70	°C
<b>Protection</b>	IP54	
<b>Connection</b>		
- Connector type	M12, 4 pin	
<b>Construction</b>	Stainless steel	

Notes:

1 Recommended value

2 DC or AC Voltage

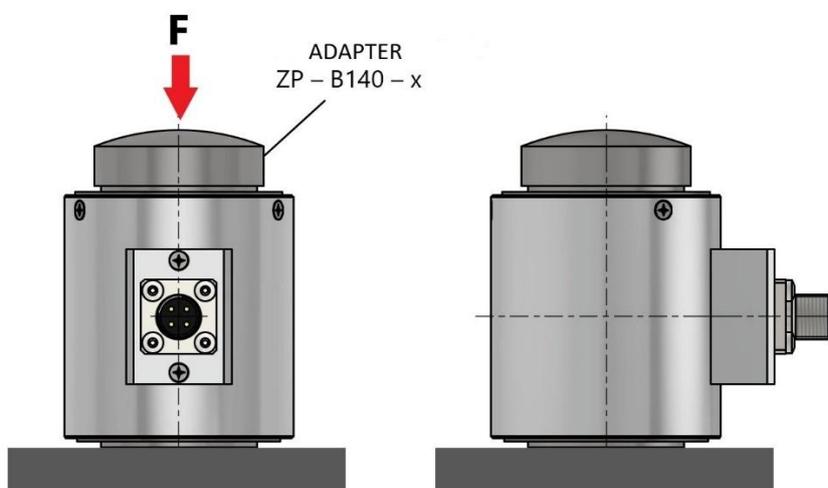
## Outline dimensions



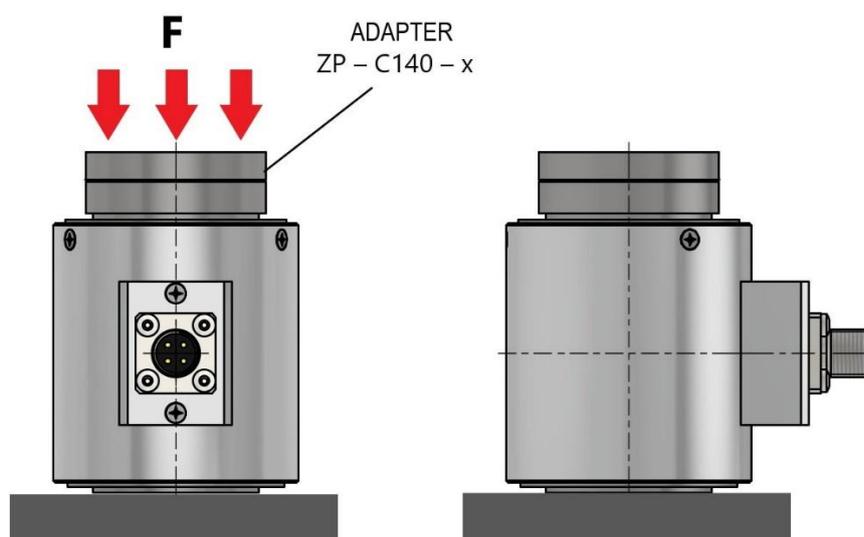
Rated capacity $F_n$ kN	Dimensions in mm							Mass kg	Deflection, @ $F_n$ ( $\mu\text{m}$ )
	D1	D2	D3	L1	L2	L3	SW		
20	16	36	18.6	50	45	63	M12x1	0.16	60
50	24	46	28.0	60	55	74	M12x1	0.26	80
100	36	61	41.4	70	65	90	M12x1	0.48	100
200	48	76	55.8	80	75	106	M12x1	0.86	120

## Recommended installation

### Loading using ball adapter



### Loading using spherical washers

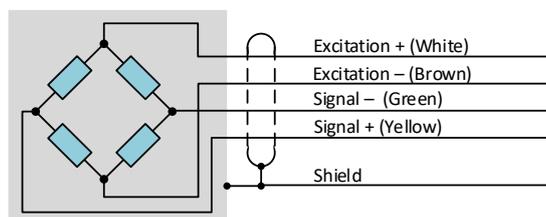


Type of sensor	Adapter type B <sup>1</sup>	Adapter type C <sup>2</sup>
EMS140 – 20 kN	ZP – B140 – 20	ZP – C140 – 20
EMS140 – 50 kN	ZP – B140 – 50	ZP – C140 – 50
EMS140 – 100 kN	ZP – B140 – 100	ZP – C140 – 100
EMS140 – 200 kN	ZP – B140 – 200	ZP – C140 – 200

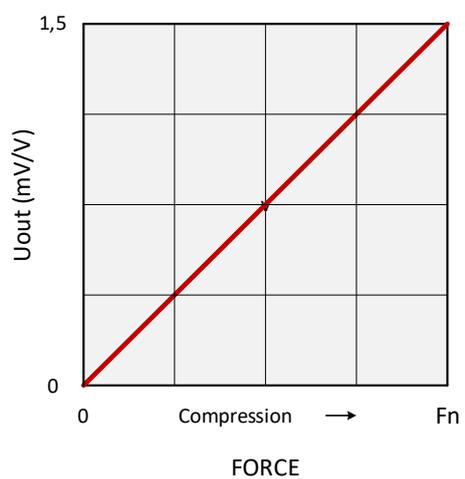
#### Notes:

1. The adapter is pressed with a flat surface (the contact is point – like).
2. The force must be applied evenly over the entire surface of the adapter.

## Sensor wiring diagram

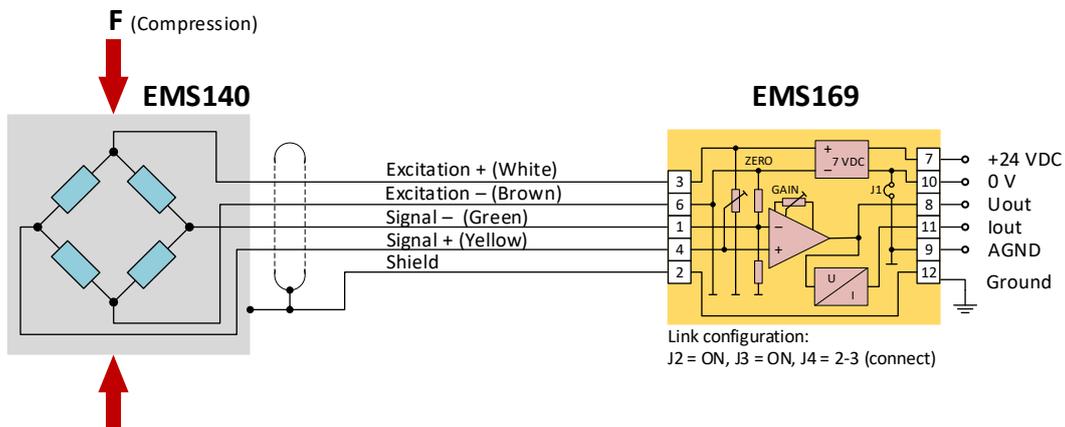


## Sensor output characteristic

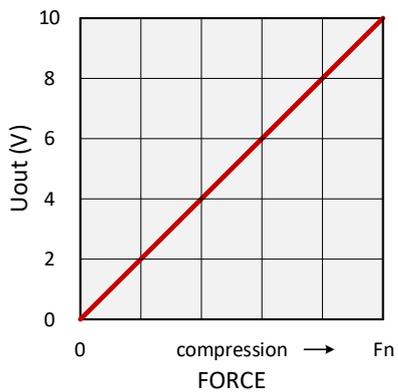


# Connection example to EMS169 signal conditioner

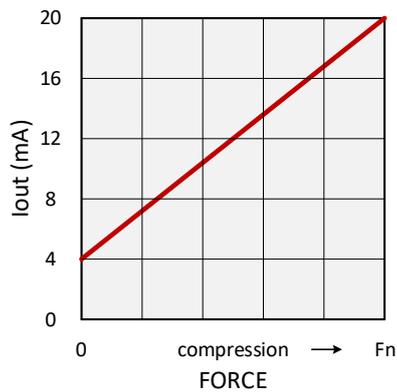
## Wiring diagram



## Output characteristics

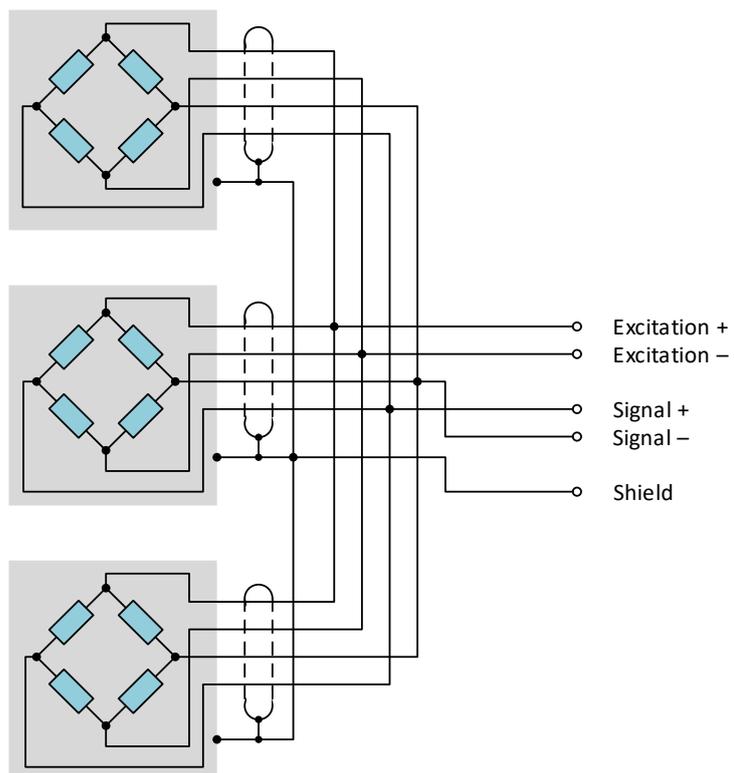


Uout vs. F



Iout vs. F

## Parallel wiring diagram



## Legal information

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