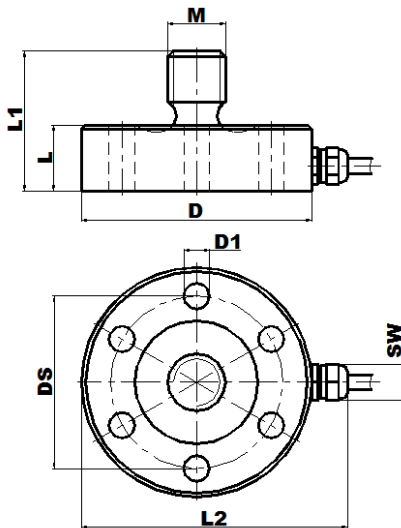


#### Specifications



The force sensor EMS40e is identical to the EMS40 in terms of mechanical design. Difference is that EMS40e has built in EMS165 signal conditioner. It provides a voltage output in the range of 0.5 ... 4.5 V at the output. Measurement is possible in the direction of compression or tension. It is possible to measure in both directions simultaneously, but then the zero offset is 2.5 V and the output swing voltage is +- 2V. The power supply is 5V. It can be powered by USB interface. The EMS40e is a shear - web type sensor and the body is made from stainless steel. It has a robust design and therefore it is suitable for industrial applications.

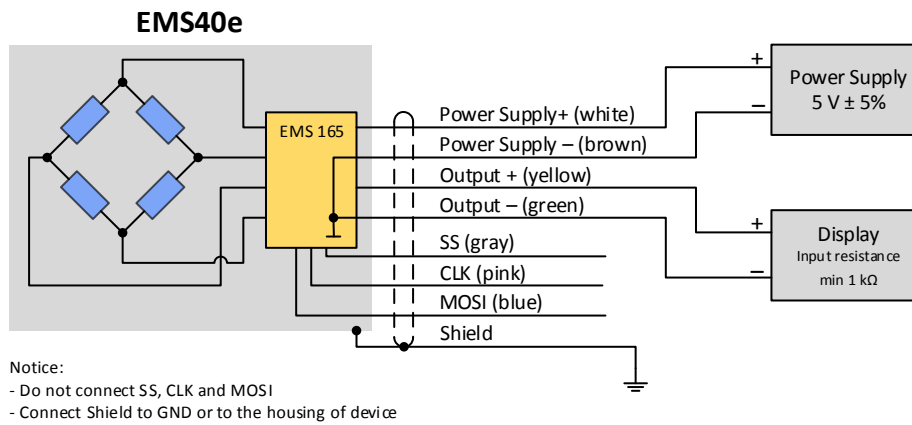
#### Mechanical values



<b>Measurement ranges</b> <ul style="list-style-type: none"> <li>Rated capacity (<math>F_n</math>)</li> <li>Safe overload</li> <li>Ultimate overload</li> <li>Recommended values                             <ul style="list-style-type: none"> <li>Permanent static load</li> <li>Dynamic load</li> </ul> </li> </ul>	1, 2, 5, 10, 20, 50 kN 150 % $F_n$ 200 % $F_n$ 75 % $F_n$ 50 % $F_n$
<b>Electrical values</b> <ul style="list-style-type: none"> <li>Output range                             <ul style="list-style-type: none"> <li>Nominal</li> <li>Tension and compression load</li> </ul> </li> <li>Load impedance, min</li> <li>Power Supply</li> <li>Current Consumption, max</li> </ul>	0.5 ... 4.5 V 0.5 ... 2.5 ... 4.5 V 2 k $\Omega$ 5 V $\pm$ 5% 30 mA
<b>Max errors</b> <ul style="list-style-type: none"> <li>Accuracy class</li> <li>Zero Balance</li> <li>Non-linearity                             <ul style="list-style-type: none"> <li><math>F_n = 1, 2, 5</math> kN</li> <li><math>F_n = 10, 20, 50</math> kN</li> </ul> </li> <li>Hysteresis                             <ul style="list-style-type: none"> <li><math>F_n = 1, 2, 5</math> kN</li> <li><math>F_n = 10, 20, 50</math> kN</li> </ul> </li> <li>Creep (30 min)</li> <li>Temperature Effect                             <ul style="list-style-type: none"> <li>On Zero</li> <li>On Output</li> </ul> </li> </ul>	0.5 2 % F.S. 0.25 % F.S. 0.5 % F.S. 0.25 % F.S. 0.5 % F.S. 0.1 % F.S. 0.15 % F.S./10 °C 0.15 % F.S./10 °C
<b>Environmental conditions</b> <ul style="list-style-type: none"> <li>Temperature range</li> <li>Protection class</li> </ul>	0 ... + 50 °C IP54
<b>Others</b> <ul style="list-style-type: none"> <li>Material of Body</li> <li>Cable (2 m)                             <ul style="list-style-type: none"> <li><math>F_n = 1, 2, 5</math> kN</li> <li><math>F_n = 10, 20, 50</math> kN</li> </ul> </li> </ul>	Stainless steel LiFYDY 4 x 0.05 LiYCY 4 x 0.14

Rated Capacities ( $F_n$ ), kN	D mm	D1 mm	L mm	L1 mm	L2 mm	M mm	SW mm	DS mm	Mass kg	Deflection @ $F_n$ , $\mu$ m
1	38	6x4,2	11	22	46	M8	$\phi$ 4	30	0,07	30
2	38	6x4,2	11	22	46	M8	$\phi$ 4	30	0,07	30
5	38	6x4,2	11	22	46	M8	$\phi$ 4	30	0,08	35
10	50	6x5,2	14	29	58	M10	8	38	0,18	45
20	56	6x6,3	16	34	64	M14	8	42	0,27	50
50	68	6x8,4	19	42	76	M20	8	50	0,50	65

### Wiring diagram



### Output characteristic (Output voltage $U_o$ vs. Load $F$ )

