



Special features

- Mechanical design identical to **EMS40** type
- Direction of load COMPRESSION / TENSION
- Built-in signal conditioner with voltage or current output
- Model of sensors:
 - **EMS41-U** – with voltage output
 - **EMS41-I** – with current output
- Power supply: + 5 ... + 24 VDC

Specifications

Rated capacity (F _n)	1, 2, 5	10, 20, 50	kN
Overload			
- Safe		130	% F _n
- Ultimate		150	% F _n
- Permanent static load ¹		75	% F _n
- Dynamic load ¹		50	% F _n
Voltage output (model EMS41-U) ^{2,3,5}			
- Standard (V _{SUP} = 5 V)		0.5 ... 4.5	V
- With zero offset (V _{SUP} = 5 V)		2.5 ... ± 2	V
- Standard (V _{SUP} = 24 V)		2 ... 10	V
- With zero offset (V _{SUP} = 24 V)		6 ... ± 4	V
Min. load impedance		20	kΩ
Current output (model EMS41-I) ^{2,4,5}			
- Standard (V _{SUP} = 24 V)		4 ... 20	mA
- With zero offset (V _{SUP} = 24 V)		12 ... ± 8	mA
Max. load impedance		500	Ω
Power Supply			
- Range		4.9 ... 27	VDC
- Current consumption (Max)		40	mA
Cut – off frequency (– 3 dB)		0 ... 200	Hz
Max error			
- Non-linearity	0.25	0.5	% F.S.
- Hysteresis	0.25	0.5	% F.S.
Temperature effect			
- On zero		0.15	% F.S./10 °C
- On output		0.15	% F.S./10 °C

Notes:

- 1 Recommended value
- 2 The sensor has only voltage or current output.
- 3 At the voltage output, the supply voltage of the sensor must be at least 0.5 V higher than the maximum output voltage (V_{SUP} ≥ V_{OUT,MAX} + 0.5 V).
- 4 For current output, the sensor supply voltage must be in the range V_{SUP} = 12 ... 27 V
- 5 After agreement with the manufacturer, it is possible to set another output.

Operating conditions and design

Temperature range - <i>Nominal</i> - <i>Operating</i>	0 ... + 50 - 10 ... + 50	°C °C
Protection	IP54	
Body material	Stainless steel	
Cable ⁶ - <i>Type</i> - <i>Length</i>	LifYDY 7 x 0.05 2	m

Notes:

6 Only 3 wires are accessible, the others are for factory settings used

How to order

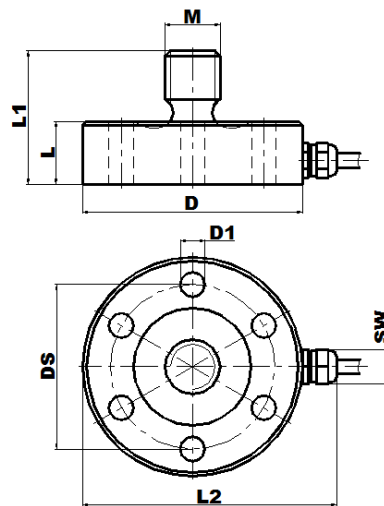
Common formula for ordering: ***EMS41-U/I(signal conditioner output range) – force range***

- Sensor type with type of output:
 - ***EMS41-U*** – voltage output
 - ***EMS41-I*** – current output
- Signal conditioner voltage output types:
 - 0.5 – 4.5 V
 - 0.5 – 2.5 – 4.5 V (zero shifted to 2.5 V)
 - 2 – 10 V
 - 2 – 6 – 10 V (zero shifted to 6 V)
- Signal conditioner current output types:
 - 4 – 20 mA
 - 4 – 12 – 20 mA (zero shifted to 12 mA)
- Measured force range (kN): 1, 2, 5, 10, 20, 50

2 kN sensor with voltage output 2 – 10V example:
EMS41-U (2 – 10V) – 2kN

5 kN sensor with current output with shifted zero example:
EMS41-I (4 – 12 – 20mA) – 5kN

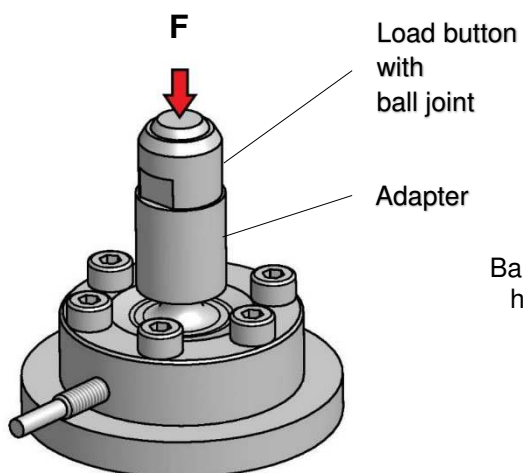
Outline dimensions



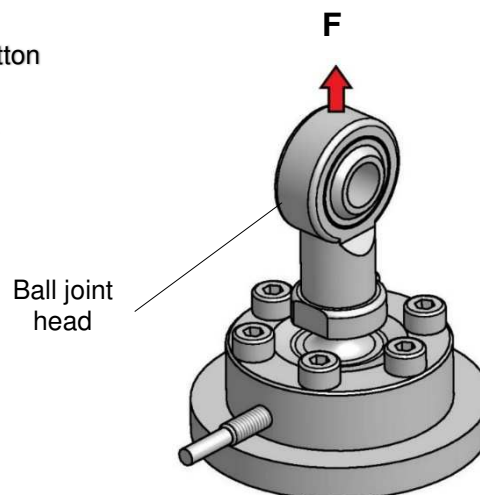
Rated capacity F_n (kN)	D mm	D1 mm	L mm	L1 mm	L2 mm	M mm	SW mm	DS mm	Mass kg	Deflection, @ F_n (μm)
1	38	6x4.2	11	22	46	M8	$\Phi 4$	30	0.07	30
2	38	6x4.2	11	22	46	M8	$\Phi 4$	30	0.07	30
5	38	6x4.2	11	22	46	M8	$\Phi 4$	30	0.08	35
10	50	6x5.2	14	29	58	M10	8	38	0.18	45
20	56	6x6.3	16	34	64	M14	8	42	0.27	50
50	68	6x8.4	19	42	76	M20	8	50	0.50	65

Recommended installation

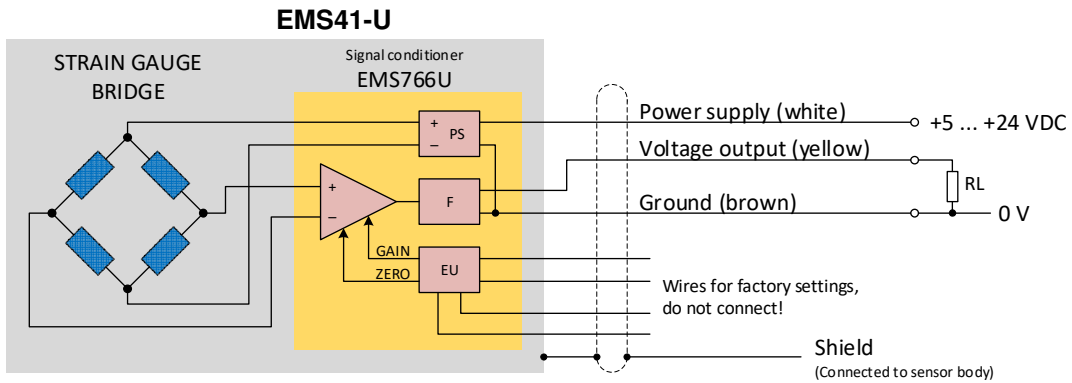
Direction of load COPRESSION



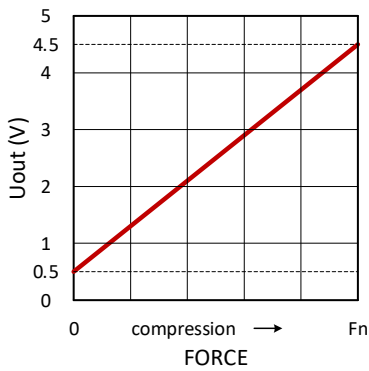
Direction of load TENSION



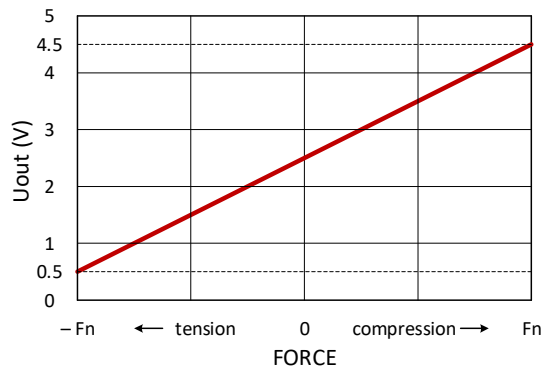
Wiring diagram, EMS41- U (voltage output)



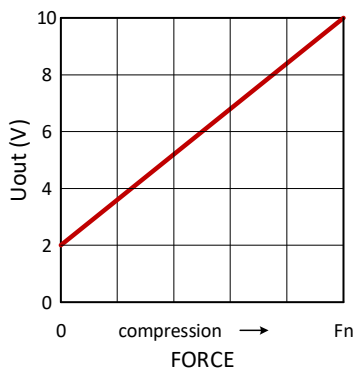
Output characteristics, voltage output



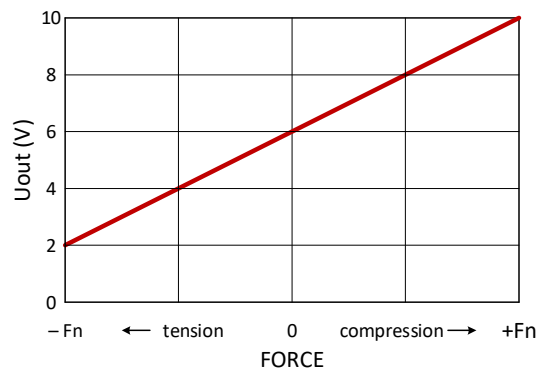
Unipolar load, unipolar output
0.5 ... 4.5 V



Bipolar load, unipolar output
 $2.5 \text{ V} \pm 2 \text{ V}$, with zero offset

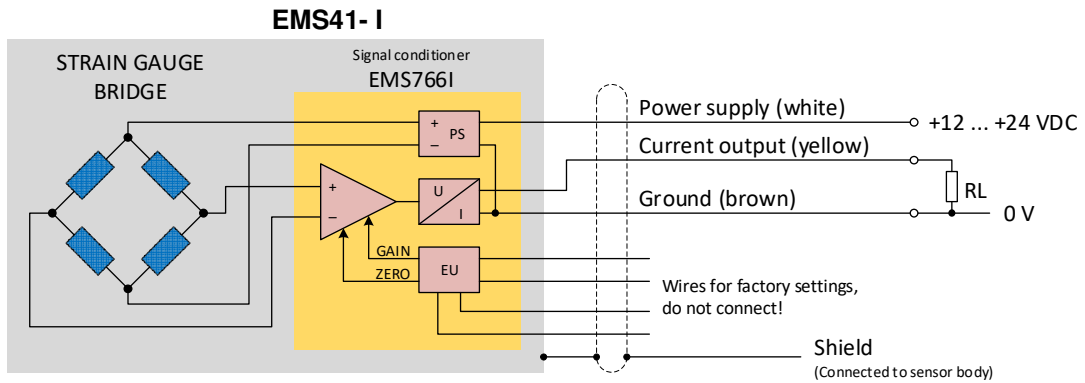


Unipolar load, unipolar output
2 ... 10 V

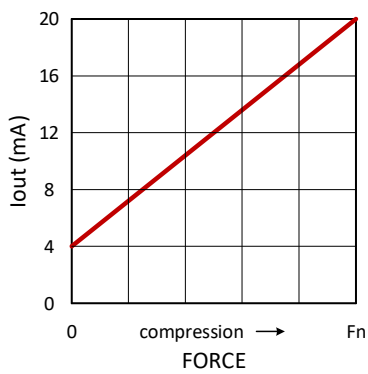


Bipolar load, unipolar output
 $6 \text{ V} \pm 4 \text{ V}$, with zero offset

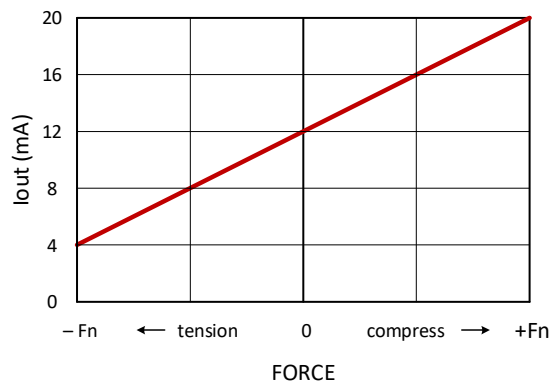
Wiring diagram, EMS41- I (current output)



Output characteristics, current output



Unipolar load, unipolar output
4 ... 20 mA



Bipolar load, unipolar output
12 mA ± 8 mA, with zero offset