EMSYST®

THROUGH-HOLE LOAD CELL EMS70

- High accuracy
- Dual (1 ... 50 kN) or triple (100 ... 500 kN) bridge
- Tension / Compression
- Made of high-grade stainless steel
- Low profile
- Application:
  - Industry
  - Testing machines
  - Laboratory

Specifications

Rated capacity (F_n)	1, 2, 5	10, 20, 50	100, 200, 500	kN
Overload - *Safe* - *Ultimate* - *Permanent static load* [1] - *Dynamic load* [1]		130 150 75 50		 % F_n % F_n % F_n % F_n
Nominal sensitivity		1.5 ± 2 %		mV/V
Zero balance		2		% F.S.
Non-linearity	0.2	0.4	0.6	% F.S.
Hysteresis	0.2	0.4	0.6	% F.S.
Creep (30 min)		0.1		% F. S.
Temperature effect - *On zero* - *On output*		0.05 0.05		 % F.S./10 °C % F.S./10 °C
Bridge resistance - *Input* - *Output*		725 ± 20 700 ± 10	1075 ± 20 1050 ± 10	 Ω Ω
Insulation Impedance		> 5000		MΩ
Excitation [2] - *Recommended* - *Maximal*		7 ... 10 15		 V V
Temperature range - *Compensated* - *Operating*		0 ... + 50 – 10 ... + 70		 °C °C
Protection		IP64		
Cable - *Type* - *Length*	LifYDY 4 x 0.05 2	LiYCY 4 x 0.14 2		 m

Notes:
1 Recommended value
2 DC or AC Voltage

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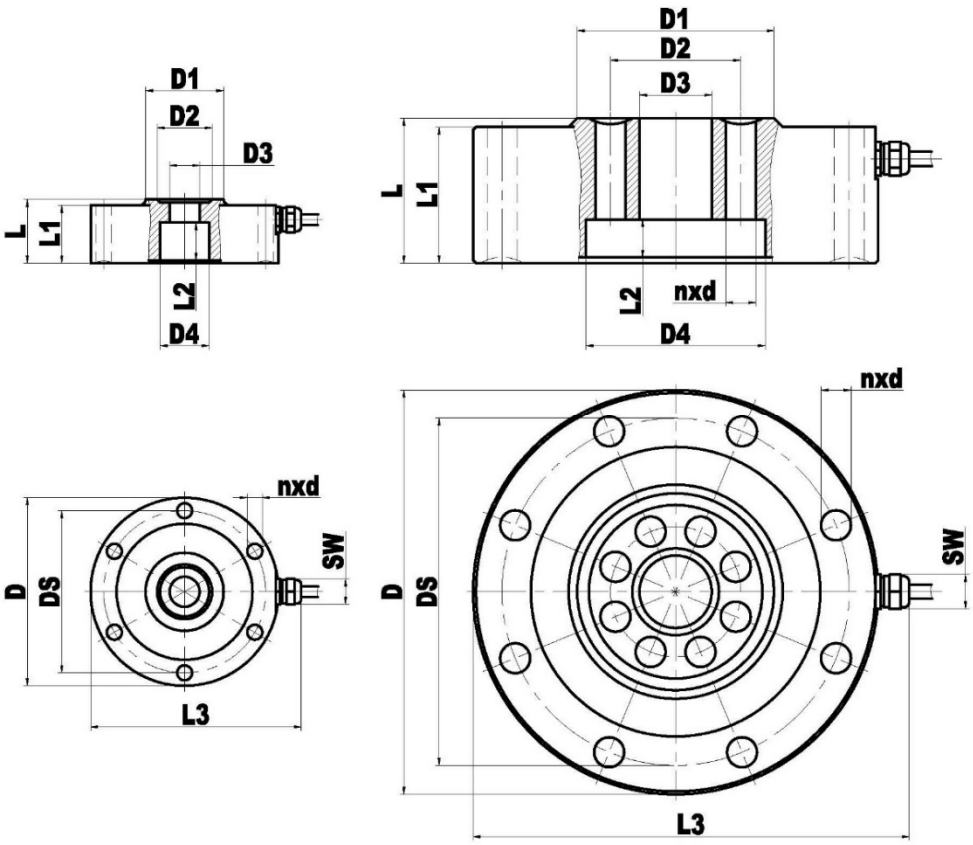
EMSYST, spol. s r. o., Súvoz 111, SK-911 01 Trenčín, Slovak Republic
tel. +421 32 7432400, e-mail: mail@emsyst.sk, www.emsyst.sk

Outline dimensions

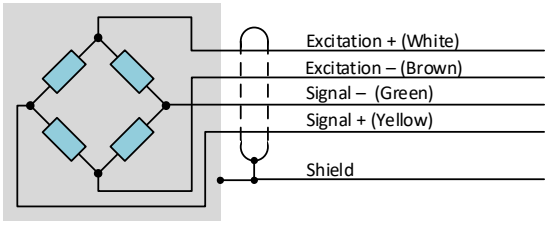


1, 2, 5, 10, 20, 50 kN **100, 200, 500 kN**

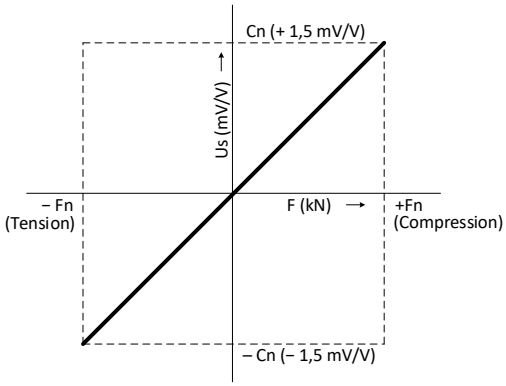
F_n [1] (kN)	Dimensions in mm													
	D	DS	D1	D2	D3 / Mx [2]	D4	L	L1	L2	L3	SW	d / Mx [2]	Mass kg	Deflection @ F_n (µm)
1	50	42	22	16	8.4 / M8	14	18	17	11	56	Φ4	4.2 / M4	0.2	40
2	50	42	22	16	8.4 / M8	14	18	17	11	56	Φ4	4.2 / M4	0.2	40
5	50	42	22	16	8.4 / M8	14	18	17	11	56	Φ4	4.2 / M4	0.2	40
10	65	56	27	19	10.4 / M10	17	22	20	13	73	11	5.2 / M5	0.4	60
20	80	68	37	24	14.4 / M14	22	30	28	18	88	11	6.3 / M6	0.8	60
50	100	85	50	33	20.4 / M20	31	40	38	25	108	11	8.4 / M8	1.7	60
100	140	120	68	45	25 / M30	62	50	47	13	152	16	10.4 / M10	4.0	120
200	200	170	108	70	35 / M42	92	60	57	18	212	16	14.4 / M14	10.0	120
500	260	220	148	95	52 / M60	126	80	77	25	272	16	20.4 / M20	22.0	120

Notes:
1. Rated capacity
2. Threaded version made-to-order

Sensor wiring color code



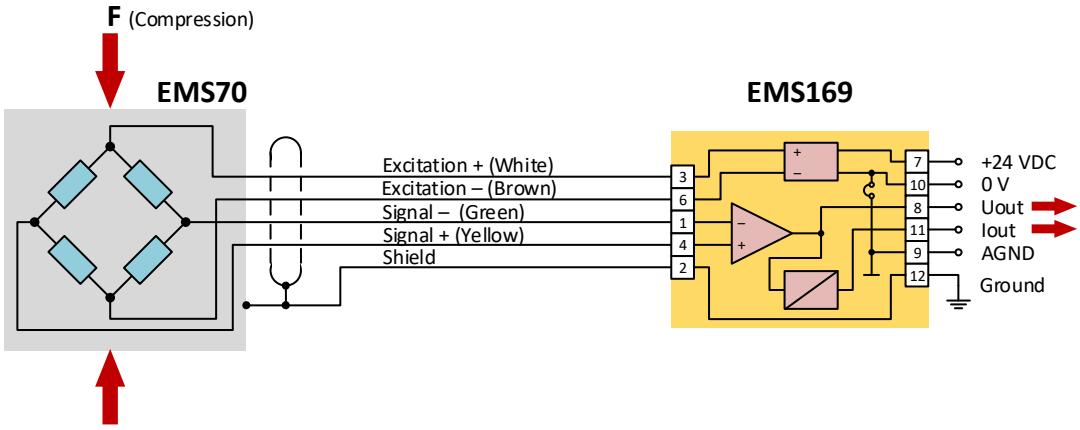
Sensor output characteristic

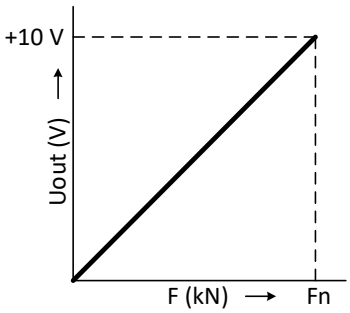


Wiring diagram, example of connection with signal conditioner EMS169

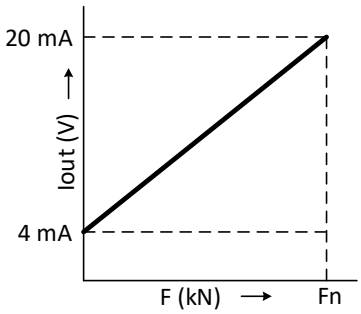
Note: The signal conditioner setting is described in the signal conditioner documentation

1. Load compression, signal conditioner output positive (0...+10 V, 4...20 mA)



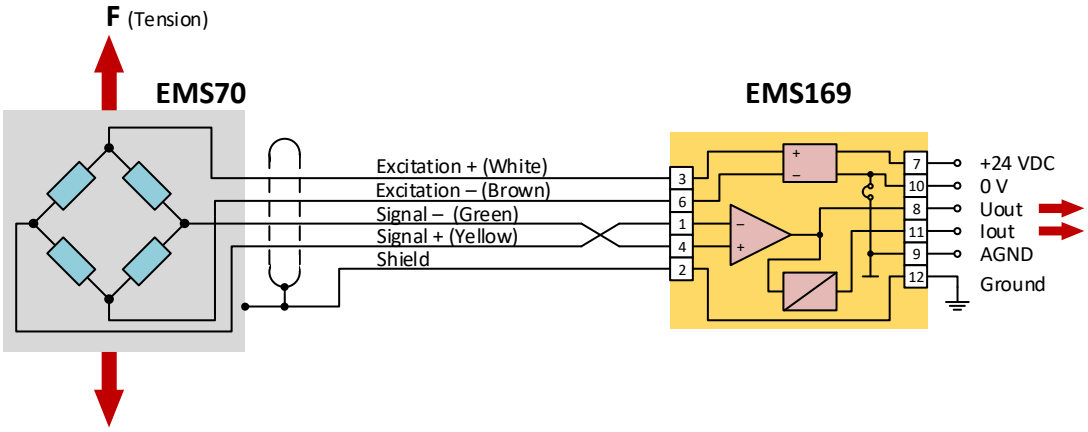


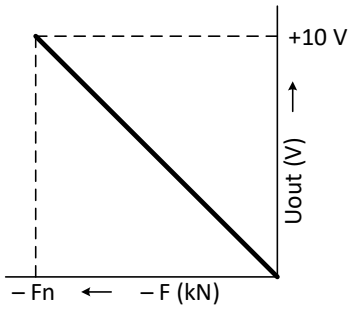
U_{out} vs. F



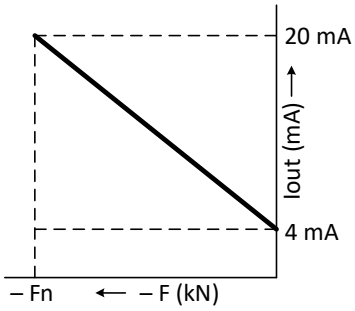
I_{out} vs. F

2. Load tension, signal conditioner output positive (0...+10 V, 4...20 mA)





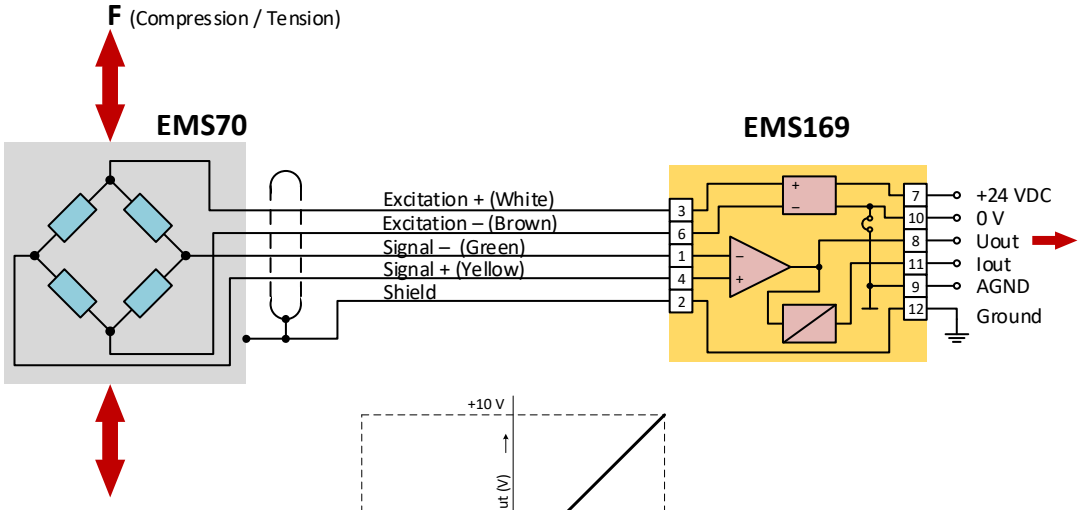
U_{out} vs. F

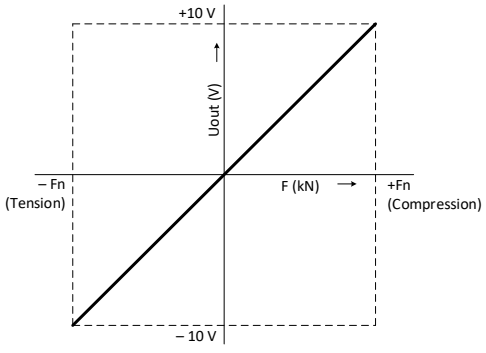


I_{out} vs. F

3. Load compression / tension, signal conditioner output bipolar (–10 V ... 0...+10 V)

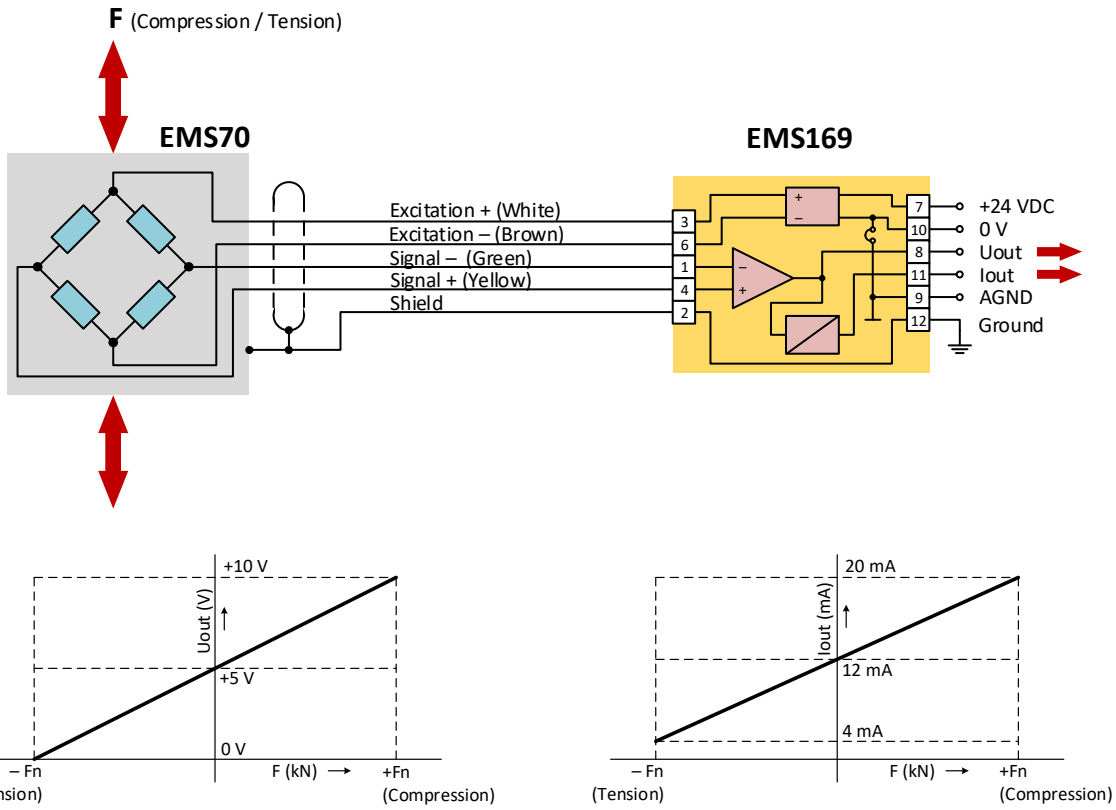
Notice: current output does not work in the negative range.





U_{out} vs. F

4. Load compression / tension, signal conditioner output positive (0...+10 V, 4...20 mA)



U_{out} vs. F

I_{out} vs. F

Parallel wiring diagram