

SHEAR-WEB FORCE SENSOR

MEG20



Special features

- For general purpose
- Strain gauge measuring system
- Tension / Compression
- Made of high-grade stainless steel or aluminium (0.05 – 5 kN)
- Small dimensions
- It can be delivered with a built-in signal conditioner – see MEG21

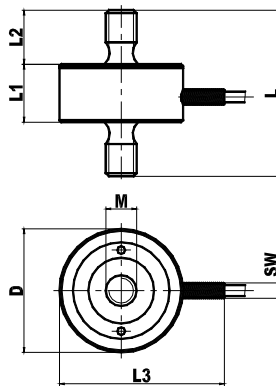
Specifications

Parameter	Value			Unit
Rated capacity (F_n)	0.05	0.1, 0.2, 0.5	1, 2, 5	kN
Overload				
- Safe	130			% F_n
- Ultimate	150			% F_n
- Permanent static load ¹	75			% F_n
- Dynamic load ¹	50			% F_n
Nominal sensitivity (C_n)	1.0 ± 2 %		1.5 ± 2 %	mV/V
Zero balance	2			% F.S.
Max error				
- Non-linearity	0.5	0.25		% F.S.
- Hysteresis	0.5	0.25		% F.S.
- Creep (30 min)	0.2	0.1		% F.S.
Temperature effect				
- On zero	0.1			% F.S./10 °C
- On output	0.1			% F.S./10 °C
Bridge resistance				
- Input	395 ± 20		375 ± 20	Ω
- Output	350 ± 10		350 ± 10	Ω
Insulation Impedance	> 500			MΩ
Excitation ²				
- Recommended	5 ... 7		7 ... 10	V
- Maximal	10		15	V
Temperature range				
- Compensated	0 ... + 50			°C
- Operating	- 10 ... + 70			°C
Protection	IP54			
Cable				
- Type	LifYDY 4 x 0.05			
- Length	2			m
Construction	Aluminium		Stainless steel	

Notes:

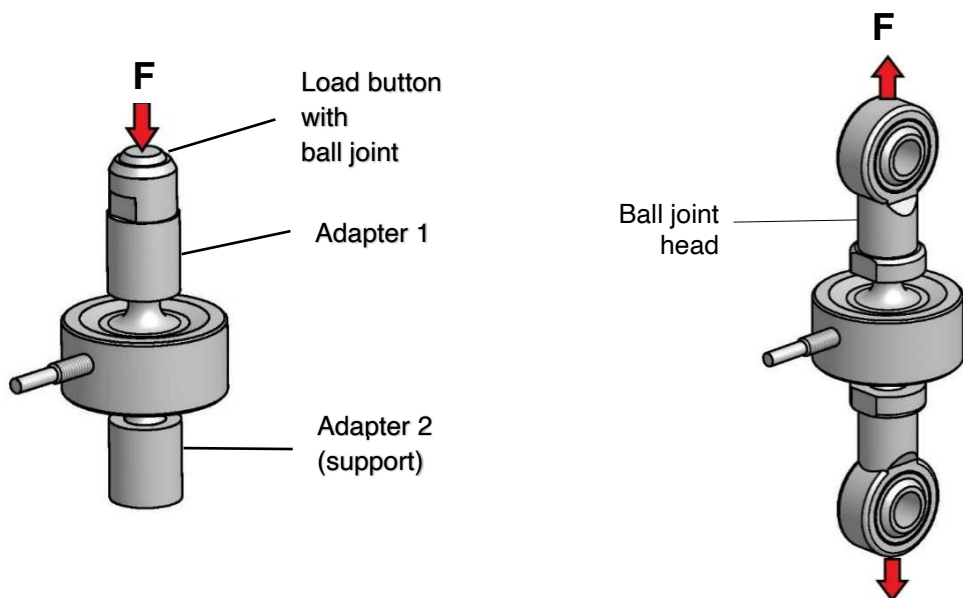
- 1 Recommended value
 2 DC or AC Voltage

Outline dimensions



Rated capacity F_n (kN)	D mm	M mm	L mm	L1 mm	L2 mm	L3 mm	SW mm	Mass kg	Deflectio n, @ F_n (μ m)
0.05	18	M4	24	10	7	24	Φ 3	0.04	35
0.1, 0.2, 0.5	28	M6	34	14	10	38	Φ 4	0.05	35
1, 2, 5	32	M8	43	15	14	42	Φ 4	0.1	45

Recommended installation



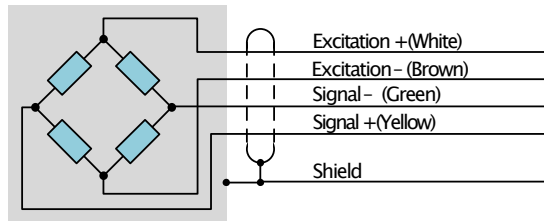
Direction of load COPRESSION

Direction of load TENSION

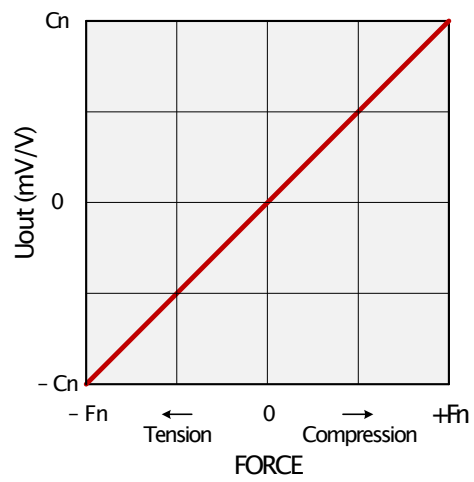
Installatiomotes:

- The force must only act in the axis of the sensor.
- The sensor must be built in such a way that the force acts only through the threads. Adapter or the ball joint head must not touch the sensor body itself.

Sensor wiring colour code



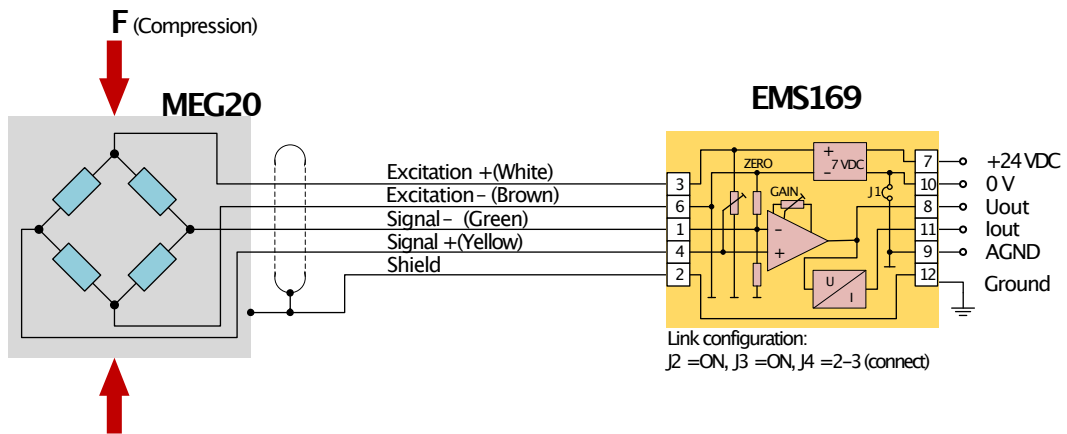
Sensor output characteristic



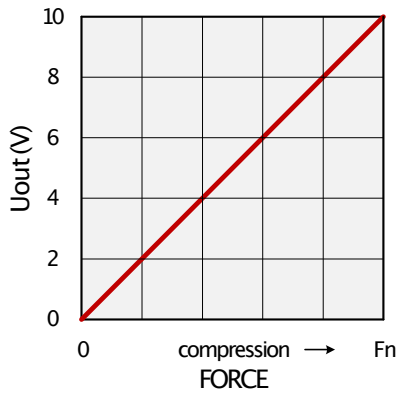
Wiring diagram, connection example to EMS169 signal conditioner

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

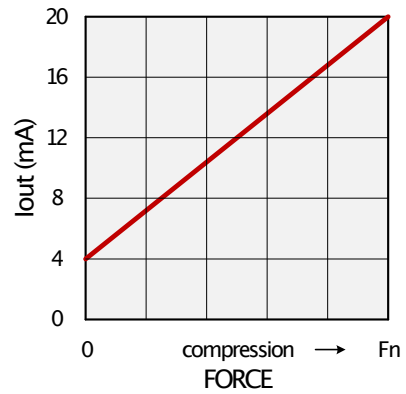
Wiring diagram



Output characteristics



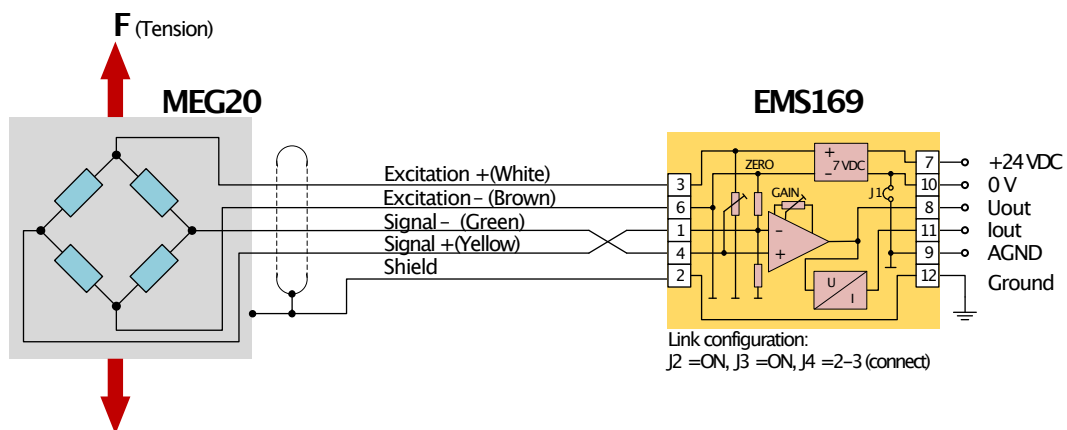
Uout vs. F



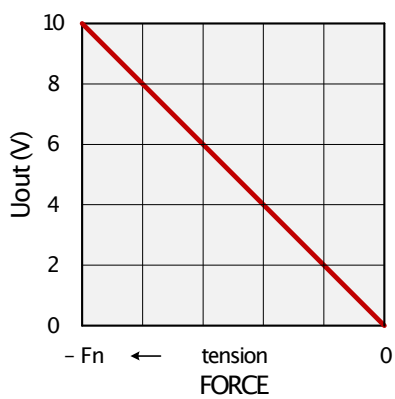
Iout vs. F

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

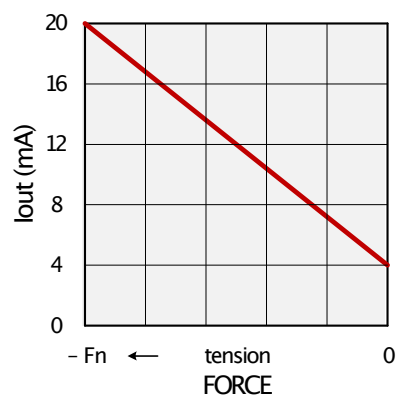
Wiring diagram



Output characteristics



Uout vs. F

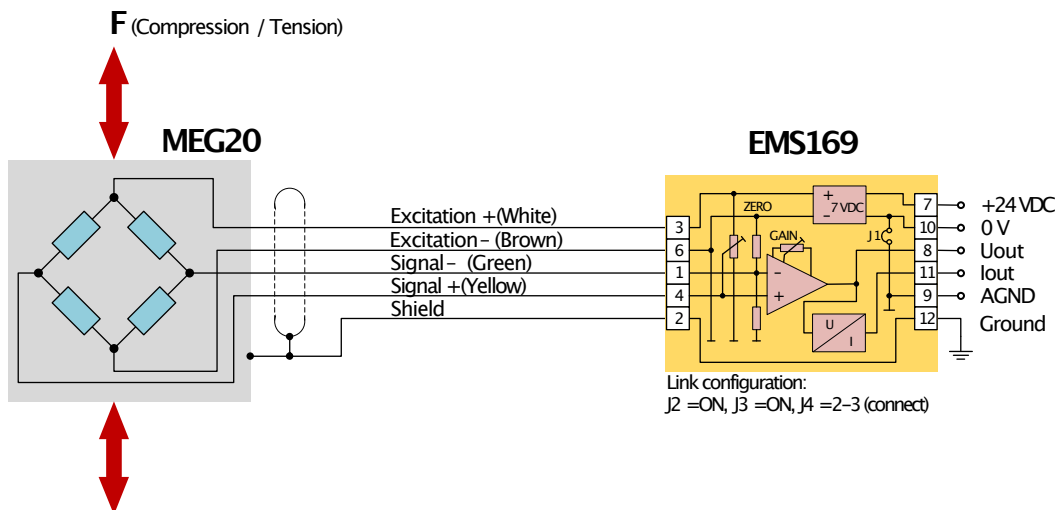


Iout vs. F

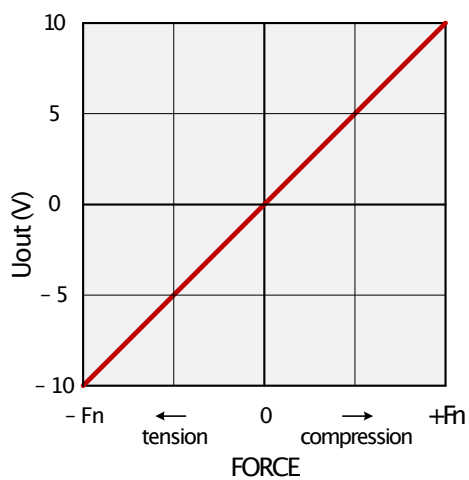
3. Load direction COMPRESSION and TENSION, signal conditioner output bipolar (± 10 V)

Note: The current output does not work in the negative range.

Wiring diagram



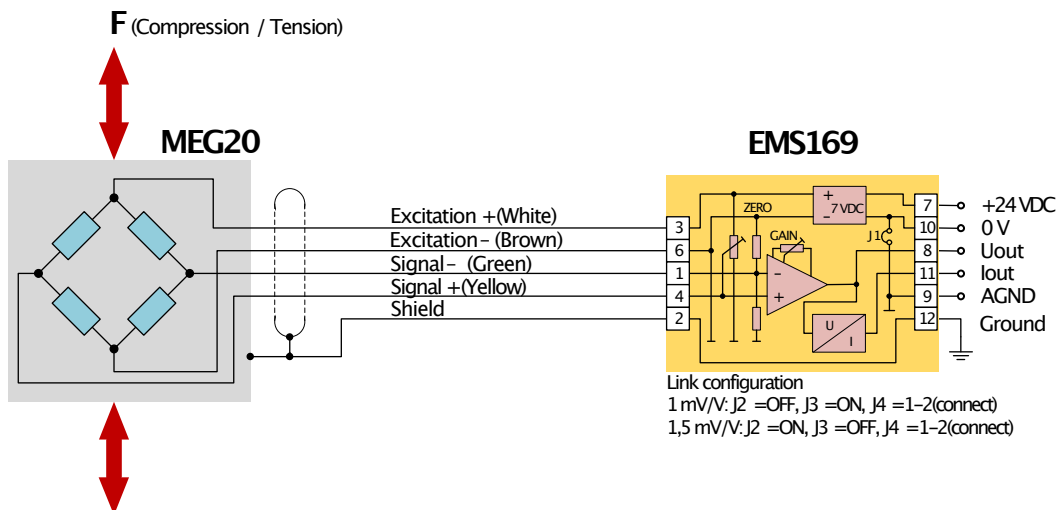
Output characteristic



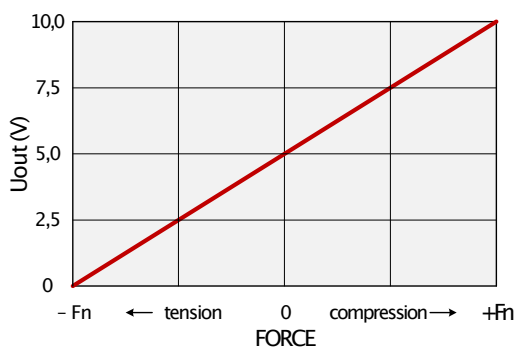
Uout vs. F

4. Load direction **COMPRESSION** and **TENSION**, signal conditioner output positive
 (5 ± 5 V, 12 ± 8 mA)

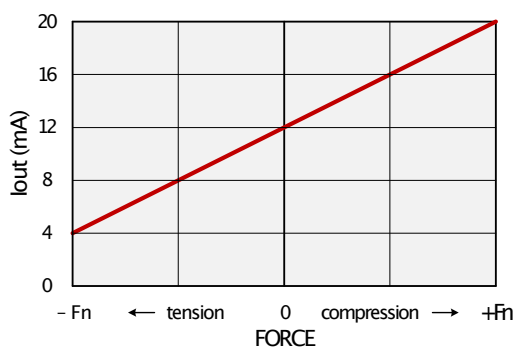
Wiring diagram



Output characteristics



Uout vs. F



Iout vs. F

Parallel wiring diagram

