

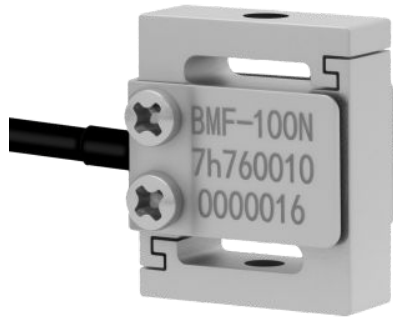
PRODUCT DATA SHEET

BMF Series · Micro S-Beam Load Cell

Tension & Compression · 5 lbf to 25 lbf (20 N to 100 N) · IP65

OVERVIEW

PRODUCT · FEATURES · APPLICATIONS



FEATURES

- **Ultra-compact 3/4 in height** — engineered for tight enclosures and OEM integrations where every millimeter counts
- Miniature S-beam geometry for true tension & compression measurement in a single sensor
- Aluminum or stainless-steel construction; rated capacities from 5 lbf to 25 lbf and 20 N to 100 N
- 250% safe overload protects against handling and assembly mishaps
- Environmentally sealed to IP65; 1.5 m integrated shielded cable

TYPICAL APPLICATIONS

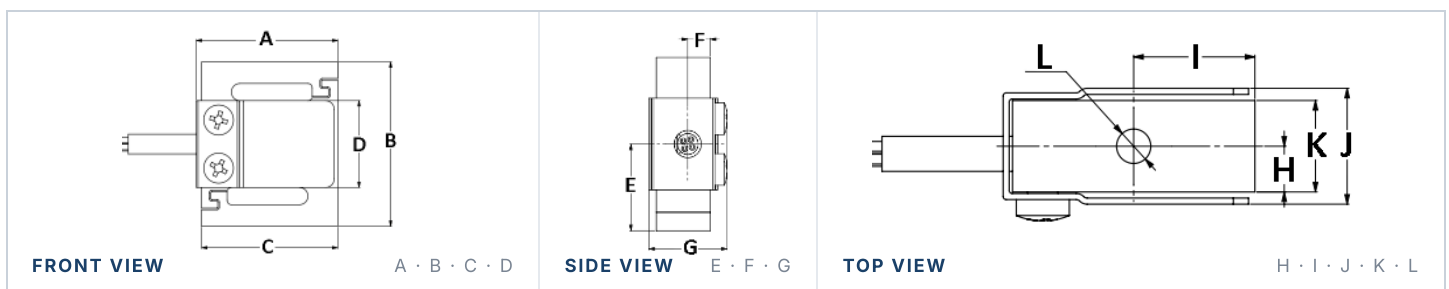
Robotics & end-effector force feedback · Medical devices & prosthetics · Lab automation · Miniature test fixtures · Material & spring testing · OEM force-sensing modules

CAPACITIES & MODEL NUMBERS

IMPERIAL RANGE				METRIC RANGE			
MODEL	CAPACITY	MATERIAL	R.O.	MODEL	CAPACITY	MATERIAL	R.O.
BMF-5lbf	5 lbf	Aluminum	1.2 mV/V	BMF-20N	20 N	Aluminum	1.1 mV/V
BMF-10lbf	10 lbf	Aluminum	1.0 mV/V	BMF-50N	50 N	Aluminum	1.1 mV/V
BMF-25lbf	25 lbf	Stainless Steel	1.2 mV/V	BMF-100N	100 N	Stainless Steel	1.3 mV/V

DIMENSIONS

COMMON TO ALL CAPACITIES



DIMENSIONS	A	B	C	D	E	F	G	H	I	J	K	L — MOUNTING THREAD
All Capacities · in	0.654	0.752	0.630	0.398	0.376	0.098	0.343	0.118	0.315	0.299	0.236	4-40 UNC – 6H
All Capacities · mm	16.6	19.1	16.0	10.1	9.55	2.5	8.7	3.0	8.0	7.6	6.0	M3 × 0.5 – 6H

SPECIFICATIONS

PERFORMANCE

Rated Output (R.O.)	1.0 – 1.3 mV/V (model dependent)
Rated Output Tolerance	±0.2 mV/V
Zero Balance	-0.06 to +0.06 mV/V
Nonlinearity	±0.05% of R.O.
Hysteresis	±0.05% of R.O.
Repeatability	±0.05% of R.O.
Creep (after 30 min)	±0.1% of load

TEMPERATURE

Compensated Range	-10 to +40 °C
Safe Range	-20 to +60 °C
Effect on Span	0.036% of applied / °C
Effect on Zero	0.018% of R.O. / °C

ELECTRICAL





Input Impedance	350 ± 10 Ω
Output Impedance	350 ± 3 Ω
Insulation Resistance	≥ 5,000 MΩ @ 50 V DC
Cable Length	5 ft (1.5 m)
Cable Specification	4 × 28 AWG
Cable Structure	Braid Shield
Cable Material	Silicone Rubber

MECHANICAL

Sensor Material	Aluminum / Stainless Steel
Max. Safe Overload	250% of R.C.
Environmental Protection	IP65
Element Type	Bonded Foil Strain Gauge
Direction of Loading	Tension & Compression

WIRING

4-CONDUCTOR SHIELDED CABLE · 4 × 28 AWG

CABLE COLOR CODE		
	Red	+ Excitation
	Black	- Excitation
	Green	+ Signal
	White	- Signal

ORDERING & NOTES

HOW TO SPECIFY

How to order. Specify the model number from the Capacities section (e.g. *BMF-25lbf* or *BMF-100N*). OEM customers are welcome to request customizations.

Form factor. All six BMF variants share the identical 19.1 × 16.6 × 8.7 mm body and mounting pattern, allowing free interchange between capacities and materials within the same fixture.

Mounting. Imperial-rated cells use 4-40 UNC threads; Newton rated cells use M3. Apply load through the threaded mounting holes only, never through the housing, and observe the 250% maximum safe overload.

Installation. Mount the sensor to a clean, flat, rigid surface using the threaded holes specified above; do not exceed the listed thread depth. Apply torque only to the mounting screws, never to the housing or cable, and route the cable with strain relief to prevent loading at the entry point.