

Model 151K/156K/159K Single-Bending-Beam Force Transducers

Description

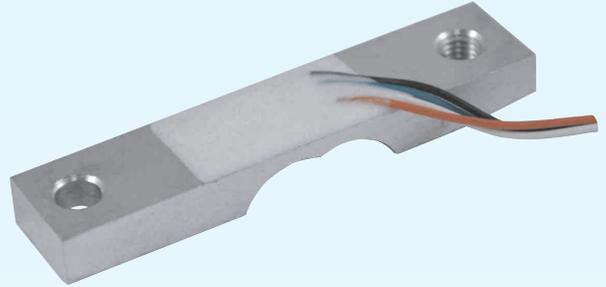
The 151K/156K/159K force transducer is developed for force measurements which require a compact design. It has been widely used in food industry for food machines or cooking devices, and also used to build postage scales, kitchen scales, or portable scales.

This force transducer series employs single-bending-beam working principle, so it needs to be installed as reverse beam in order to function properly.

To broaden the capacity of this force transducer series, different materials have been used to make the transducer body - model 156K made from aluminum alloy has capacity from 30N to 150N, while model 151K/159K made from steel has capacity from 150N to 500N.

Moreover, the 159K which is made from stainless steel is more suitable for a harsh environment than the 151K which is made from mild steel.

Based on the advanced strain gauge technology from BCM SENSOR, all three models (151K, 156K, and 159K) provide excellent stability and reliability.



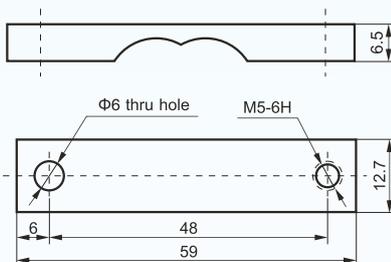
Features

- single bending beam working principle
- reverse beam installation
- compact design
- capacity from 30N to 500N
- accuracy of 0.08%fs ($= \sqrt{NL^2 + HY^2 + RP^2}$)

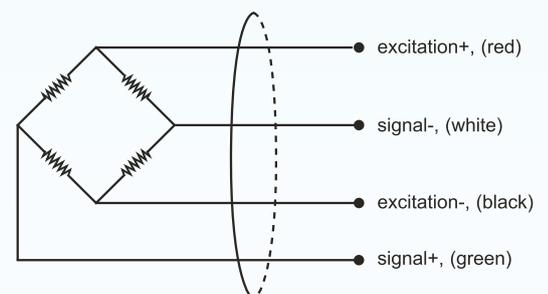
Applications

- food machines
- cooking devices
- postage scales
- kitchen scales
- small sized portable scales

Dimensions



Electrical Connection



BCM SENSOR TECHNOLOGIES BVBA

Model 151K/156K/159K

Single-Bending-Beam Force Transducers



Technical Data

Parameters		Units	Specifications
capacity	156K	Newton (N)	30, 50, 70, 100, 150
	151K, 159K	N	150, 200, 300, 500
safe load limit		%fs	120
ultimate overload		%fs	150
output sensitivity at fs		mV/V	1.2±0.1
zero unbalance		mV/V	≤±1
non-linearity (NL)		%fs	±0.05
hysteresis (HY)		%fs	±0.05
repeatability (RP)		%fs	±0.03
creep error (5min.)		%fs	±0.05
excitation (supply voltage)		Vdc	5
max. excitation voltage		Vdc	9
input resistance		Ω	1100 ±100
output resistance		Ω	1100 ±100
insulation resistance		MΩ	≥2000 @50Vdc
storage temp. range		°C	-35 ~ +80
operating temp. range		°C	-20 ~ +65
compensated temp. range		°C	-10 ~ +40
temp. coefficient of sensitivity		%fso/°C	±0.03
temp. coefficient of zero		%fso/°C	±0.03
transducer body material			aluminum alloy (156K), mild steel (151K), 17-4PH SS (159K)
sealing			potted with silicone rubber
mechanical interface			Refer to Dimensions.
electrical interface			Φ0.8mm, 4-color PVC isolated flying wires, 0.3m
environment protection			IP65
unit weight (without wires)		g	~10 (156K), ~30 (151K/159K)

BCM SENSOR TECHNOLOGIES BVBA

Model 151K/156K/159K Single-Bending-Beam Force Transducers



Ordering Information

position (pos.) 1: model								
151K: made from mild steel 156K: made from aluminum alloy 159K: made from 17-4PH stainless steel								
pos. 2: capacities								
156K: 30N 100N			151K/159K: 150N 500N					
50N 150N			200N					
70N			300N					
pos. 3: output sensitivity								
1.2mV/V								
pos. 4: non-linearity or accuracy class								
0.05%fs								
pos. 5: bridge resistance								
1100 Ω (R _{in} = 1100±100 Ω, R _{out} = 1100±100 Ω)								
pos. 6: mechanical interface								
1xΦ6/1xM5: one Φ6mm through hole at the live end, one M5 thread hole at the fixed end.								
pos. 7: electrical interface								
4F/PVC/0.3 = 4-color flying wires, PVC isolated, length = 0.3m(#) #: Wire length can be customized on request.								
pos. 8: environment protection								
IP65								
pos. 9: customized specifications								
"(*)" is necessary only if any customized parameter is required, otherwise it is neglectable.								
pos.1	pos. 2	pos. 3	pos. 4	pos. 5	pos. 6	pos. 7	pos. 8	pos. 9

Examples of Ordering Code

- standard transducer:
156K-50N-1.2mV/V-0.05%fs-1100Ω-1xΦ6/1xM5-4F/PVC/0.3-IP65
- customized transducer:
156K-60N-1.2mV/V-0.05%fs-1100Ω-1xΦ6/1xM5-4F/PVC/0.3-IP65-(*)
(*): Customized capacity = 60N.

The listed dimensions, specifications, and ordering information are subject to change without prior notice.

BCM SENSOR TECHNOLOGIES BVBA

