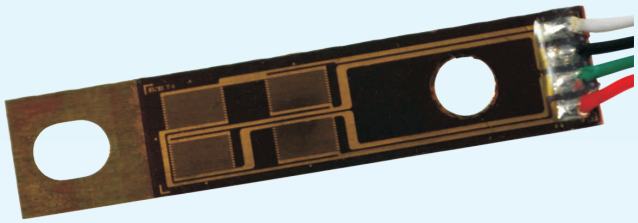
Model 158A
Force Transducers of Low Capacity

Description

Model 158A force transducer is developed for ultra-low force monitoring, control and measurements. The capacity of 158A series can go down to 0.7N (~71 gram force).

The 158A force transducer features a compact design, and employs the single-bending-beam working principle. Though the 158A force transducer can be installed in different ways in application, in order to monitor or measure the force more precisely, it is highly recommended to install the 158A as a reverse beam force transducer (see schematic diagram below).

Thanks to advanced strain gauge technology from BCM SENSOR, the model 158A force transducer provides not only excellent stability and reliability, but also offers a good accuracy for force monitoring and measurement.



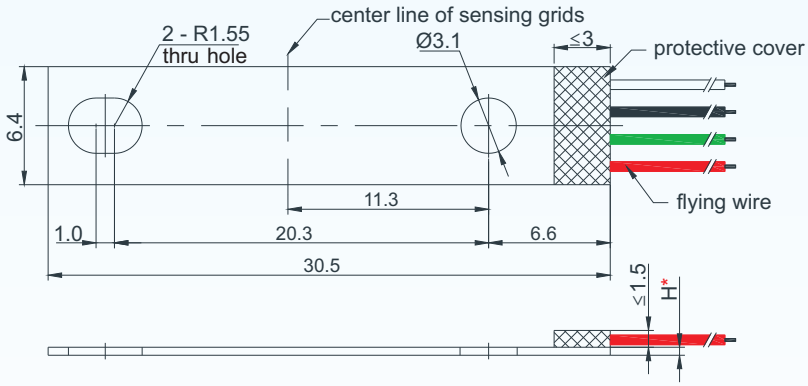
Features

- capacity from 0.7N to 20N
- accuracy up to 1%fs
- single bending beam working principle
- reverse beam installation
- compact design

Applications

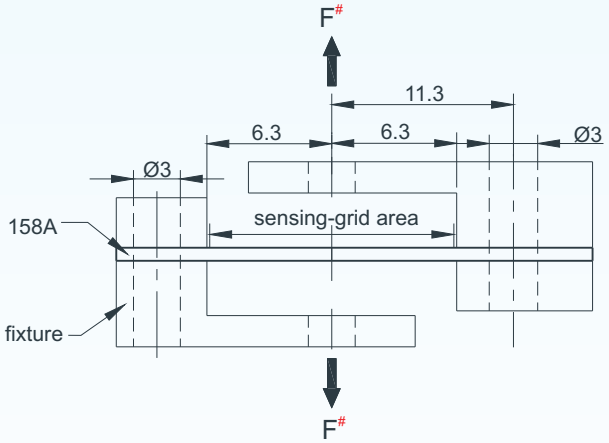
- force measurement
- force control or monitoring
- medical devices or instrumentation
- monitoring or measuring small displacement

Dimensions



*: H = 0.15 or 0.2 according to the capacity.

Schematic Diagram of Installation



#: F can be a pair of either tensile or compressive forces.

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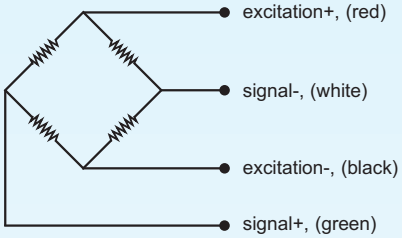
Electrical Connection



Technical Data

Parameters	Units	Specifications
capacity	Newton (N)	0.7, 1.2, 3, 7, 10, 15, 20
safe load limit	%fs	150
ultimate overload	%fs	200
output sensitivity at fs	mV/V	≥1
zero unbalance	mV/V	≤±1
accuracy	%fs	±1
excitation (supply voltage)	Vdc	5
max. excitation voltage	Vdc	12
input resistance	Ω	1200±300
output resistance	Ω	1200±300
insulation resistance	MΩ	≥ 1000 @50Vdc
storage temp. range	°C	-35 ~ +80
operating temp. range	°C	-10 ~ +80
compensated temp. range	°C	-10 ~ +40
temp. coefficient of sensitivity	%fso/°C	≤±0.03
temp. coefficient of zero	%fso/°C	≤±0.03
load cell body material		beryllium copper
sealing		potted
mechanical interface		refer to the dimensions on the datasheets
electrical interface		4-color PVC isolated flying wires, 150mm
environment protection		IP64
unit weight	g	~1

The listed specifications are subject to change without prior notice.

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Ordering Information

pos. 1	pos. 2	pos. 3	pos. 4	pos. 5	pos. 6	pos. 7	pos. 8	pos. 9
position (pos.) 1: model								
158A								
	pos. 2: capacities							
	0.7N 1.2N 3N 7N 10N 15N 20N							
		pos. 3: output sensitivity						
		1 mV/V						
			pos. 4: accuracy					
			1%fs					
				pos. 5: bridge resistance				
				1200Ω (Rin = 1200±300Ω, Rout = 1200±300Ω)				
					pos. 6: mechanical interface			
					NA*			
						pos. 7: electrical interface		
						4F/PVC/0.15 = 4-color PVC isolated flying wires, length = 150mm*		
							pos. 8: environment protection	
							IP64	
								pos. 9: customized specifications
								"(*)" is necessary only if any customized parameter is required, otherwise it is neglectable.

*: NA = not available or not applicable.
**: This value can also be a customized value.

Examples of Ordering Code

- standard 158A:

  158A-1.2N-1mV/V-1%fs-1200Ω-4F/PVC/150mm-IP64

- customized 158A:

  158A-1.2N-2mV/V-3%fs-1200Ω-4F/PVC/250mm-IP64-(*)

  (*) Customized specifications are:
  - output sensitivity at fs = 2mV/V;
  - accuracy = 3%fs;
  - wire length = 250mm.

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