

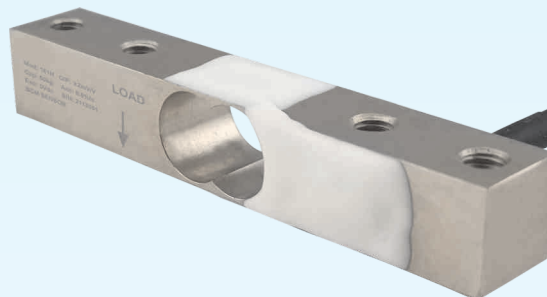
# Model 161H/166H Single Point Load Cells

## Description

16-series load cells from BCM SENSOR are so-called single point load cells. Single point refers to a scale which is built with only one load cell. Thanks to the unique double-bending-beam design, a single point load cell can guarantee its specifications for a certain size of weighing platform on which a load can be freely positioned.

Model 161H/166H load cell is one of the members of 16-series single point load cell family. This model features a compact design and a wide range of capacities from 0.5kg to 100kg. These features make the 161H/166H load cell an ideal candidate to build small-size scales, or to be integrated into an existing system for weighing or force measuring purpose.

To realize the capacities as mentioned above, model 161H is made from mild steel with nickel plated surface while model 166H is made from aluminum alloy with anodized surface. These two models are slightly different in their specifications. The details can be found in Technical Data below.



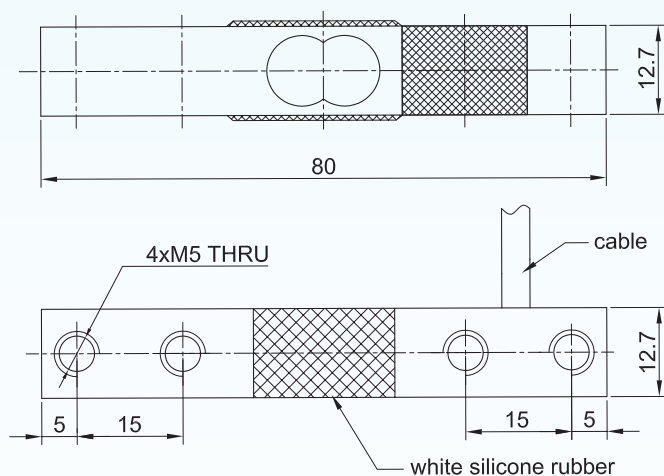
## Features

- maximum platform size: 120mm x 120mm
- compact design
- capacity: 0.5kg, ..., 100kg
- non-linearity down to 0.05%fs
- 161H: mild steel construction with nickel plated surface treatment
- 166H: aluminum construction with anodized surface treatment

## Applications

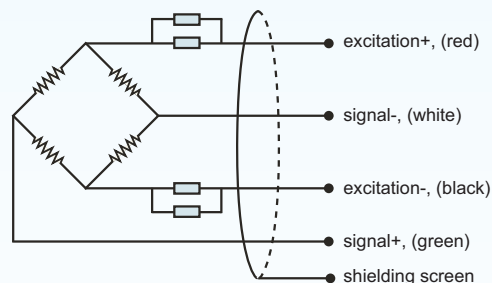
- kitchen scales
- postage scales
- portable scales
- force measurements

## Dimensions



Note: All dimensions are in mm.

## Electrical Connection



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# Model 161H/166H

## Single Point Load Cells



### Technical Data

Parameters	Units	Specifications	
model		166H	161H
capacity	kg	0.5, 0.7, 1, 2, 3, 5, 7, 10, 20, 30, 50	20, 30, 50, 70, 100
safe load limit	%fs	120	
ultimate overload	%fs	150	
output sensitivity at full scale	mV/V	≥ 0.8	≥ 2.5
zero unbalance	mV/V	±0.1	±0.1
non-linearity	%fs	better than ±0.05	
hysteresis	%fs	better than ±0.05	
repeatability	%fs	better than ±0.03	
creep error (30 min.)	%fs	±0.05	
excitation (supply voltage)	Vdc	5, ..., 10	
max. excitation voltage	Vdc	15	
input resistance	Ω	1060 ±50	
output resistance	Ω	1000 ±50	
insulation resistance	MΩ	≥ 2000@50 Vdc	
storage temp. range	°C	-35 ~ +80	
operating temp. range	°C	-20 ~ +60	
compensated temp. range	°C	-10 ~ +50	
temp. coefficient of sensitivity	%fs/°C	±0.01	
temp. coefficient of zero	%fs/°C	±0.01	
life time	cycles	10 <sup>5</sup>	10 <sup>6</sup>
load cell body material		aluminum alloy with anodized surface	mild steel with nickel plated surface
sealing		potted	
mechanical interface		refer to the dimensions on the datasheets	
electrial interface		Φ3.8mm, 4-core PVC shielded cable, length = 0.25m	
environment protection		IP65	
unit weight	g	~35	

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# Model 161H/166H Single Point Load Cells



## Ordering Information

position (pos.) 1: model								
166H: made from aluminum alloy			169H: made from 17-4PH stainless steel					
pos. 2: capacities								
166H:	0.5kg	1kg	10kg	169H:	20kg	100kg		
	0.7kg	2kg	20kg		30kg			
		3kg	30kg		50kg			
		5kg	50kg		70kg			
		7kg						
pos. 3: output sensitivity								
166H: 0.8mV/V								
169H: 2.5mV/V								
pos. 4: non-linearity or accuracy class								
0.05%fs								
pos. 5: bridge resistance								
1000Ω (Rin = 1060 Ω, Rout = 1000 Ω) (standard)								
pos. 6: threads (live end/fixed end)								
2xM5/2xM5 : two M5 threads at the live end, two M5 threads at the fixed end								
pos. 7: electrical interface								
3.8/4/PVC/0.25 = Φ3.8mm 4-core PVC shielded cable, cable length = 0.25m(#) (#): 0.25m is standard length, but users can define another length in the code, e.g, 3.8/4/PVC/1 refers to cable length of 1m.								
pos. 8: environment protection								
IP65								
pos. 9: customized spec's								
“(*)” 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 load cell:  
**166H-50kg-0.8mV/V-0.05%fs-1000Ω-2xM5/2xM5-3.8/4/PVC/0.25-IP65**  
**161H-70kg-2.5mV/V-0.05%fs-1000Ω-2xM5/2xM5-3.8/4/PVC/0.25-IP65**
- customized load cell:  
**166H-50kg-0.8mV/V-0.05%fs-350Ω-2xM5/2xM5-3.8/4/PVC/0.25-IP65-(\*)**  
 (\*): Customized bridge resistance = 350Ω.

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

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