

# Model 3419/3499

# Heavy Duty Single-ended Shear-beam Load Cells



## Features

- single-ended shear-beam
- heavy duty
- capacity from 0.5 t to 50 t
- accuracy up to 0.02 %fs
- mild steel construction with nickel plated treatment (3419)  
17-4PH construction (3499)
- environment protection up to IP 68 (3499)



## Applications

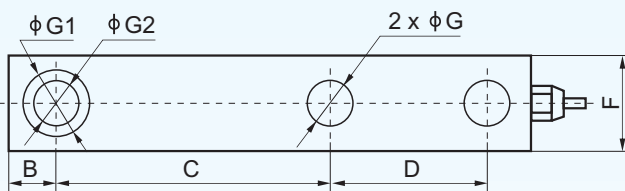
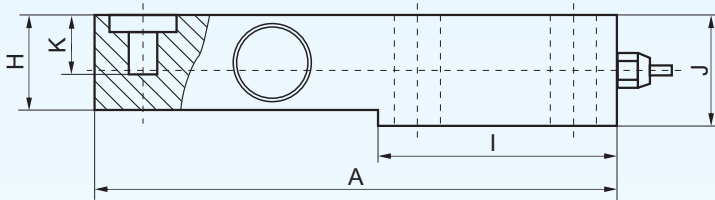
- tank and hopper scales
- platform scales

## Description

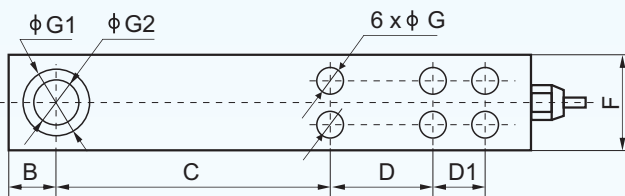
Based on BCM advanced metal foil strain gauge technology, model 3419/3499 load cells are made of shear-beam working principle. Featuring simple construction and excellent performance, these load cells are widely used in applications of platform-scales, hopper-scales weighing systems, or applications need to measure beam bending loads.

The capacities of 3419/3499 load cells ranges from 0.5 t to 50 t with an accuracy up to 0.02%fs (fs = full scale). Thanks to BCM leading technology in sealing, 3419/3499 load cells can be made to a higher protection grade of IP68, and fit to harsh industrial conditions.

## Dimensions

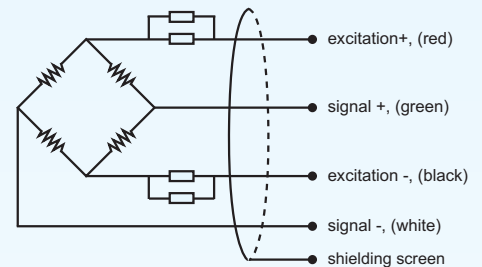


(capacities: ≤20 t)



(capacities: ≥30 t)

## Electrical Connection



Capacity	A	B	C	D	D1	F	G	G1	G2	H	I	J	K
0.5,...,3 t	203	22	98	64	N.A.	37	13	32	16	37	95	43	30
5, 7 t	235	22	124	66	N.A.	48	21	38	22	48	110	52	30
10 t	279	32	140	82	N.A.	60	28	48	32	60	133	67	20
20 t	318	38	158	89	N.A.	70	34	54	38	70	153	82.5	24
30 t	374	44.5	181	76	51	96	26	70	54	96	189	115	32
50 t	416	48	196	92	56	105	29	86	60	106	210	143	32

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### Technical Data

parameters	units	specifications	
capacity	t	0.5, 0.7, 1, 2, 3, 5, 7, 10, 20, 30, 50	
safe load limit	%fs	150	
ultimate overload	%fs	200	
output sensitivity at fs	mV/V	2.0 ± 0.02	
zero unbalance	%fso	± 1	
non-linearity	%fs	± 0.02	± 0.03
hysteresis	%fs	± 0.02	± 0.03
repeatability	%fs	± 0.01	± 0.01
creep error (30 min.)	%fs	± 0.02	± 0.03
excitation (supply voltage)	Vdc	10	
max. excitation voltage	Vdc	15	
input resistance	Ω	360 ± 10	
output resistance	Ω	350 ± 10	
insulation resistance	MΩ	≥ 5000@50 Vdc	
storage temp. range	°C	-35 ~ +80	
operating temp. range	°C	-35 ~ +80	
compensated temp. range	°C	-10 ~ +40	
temp. coefficient of sensitivity	%fs/°C	± 0.002	
temp. coefficient of zero	%fs/°C	± 0.003	
load cell body material		mild steel (3419), 17-4PH stainless steel (3499)	
sealing		potted	
mechanical interface		refer to the dimensions on the datasheets	
electrical interface		Φ5.7mm, 4-conductor shielded, PVC, 3.5m (cap.<5t), 8m (=5t), 13m (>5t)	
environment protection		IP 66 (standard), IP 67, IP 68 (only for 3499)	
unit weight	kg	2.5, ..., 9 (capacity dependent, to be confirmed in case of order)	

The listed specifications are subject to change without prior notice.

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### Ordering Information

<b>position (pos.) 1: model</b>									
3419: made from mild steel 3499: made from 17-4PH stainless steel									
<b>pos. 2: capacities</b>									
0.5 t    1 t    10 t 0.7 t    2 t    20 t 3 t    30 t 5 t    50 t 7 t									
<b>pos. 3: output sensitivity</b>									
2 mV/V									
<b>pos. 4: non-linearity or accuracy class</b>									
0.02 %fs                      0.03%fs									
<b>pos. 5: bridge resistance</b>									
350 Ω (R <sub>in</sub> = 360±10 Ω, R <sub>out</sub> = 350±10 Ω)									
<b>pos. 6: threads (live end/fixed end)</b>									
2xΦG71x ΦG2*(cap.<30 t)                      6x ΦG/1xΦG2 (cap.=30 & 50 t)									
<b>pos. 7: electrical interface</b>									
cable, code=diameter(Φ)/number of conductors/cable jacket/cable length* 5.7/4/PVC/L=Φ5.7mm,4-conductors shielded,PVC,3.5m(<5t),8m(=5t),13m(>5t)									
<b>pos. 8: environment protection</b>									
IP 66 IP 67 IP 68 (only for 3499)									
<b>pos. 9: accessories for installation</b>									
N = NA**. In case of "NA", pos.9 can be omitted. cNut1: compression nut with curve surface cNut2: compression nut with hemisphere									
<b>pos. 10: customized spec's</b>									
When any customized spec's are required, the customer needs to add "C" as the last parameter in the ordering code, and specifies the wished spec's on his order clearly. The customized spec's needs to be confirmed in advance by BCM's sales representative. Code "C" can be omitted if no customized spec's are required.									
pos.1	pos. 2	pos. 3	pos. 4	pos. 5	pos. 6	pos. 7	pos. 8	pos. 9	pos. 10

\*: Refer to the dimensions on the datasheet for values of M and D.

\*\* : This value can also be a customized value.

\*\*\*: NA = not available or not applicable

**example:** 3499-2t-3mV/V-0.02%fs-350Ω-1xM12xΦ13.5-5/4/PVC/4-IP68-cNut2-C



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