

# Model 1915/1995 Static Torque Transducers

## Features

- strain gauge technology
- range from 100 lbin to 1000 kNm
- accuracy up to 0.2 %fs
- mild steel with nickel plated treatment (1915)  
17-4PH construction (1995)
- protection grade IP 66

## Applications

- torque wrench and torsion measurement of shaft



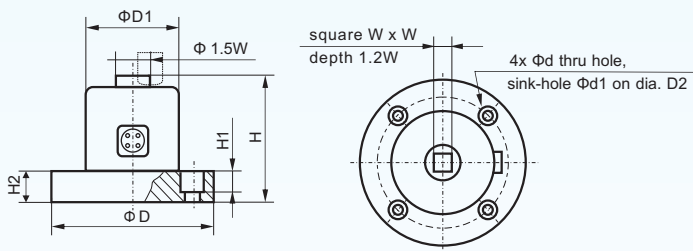
## Description

Based on BCM's advanced strain gauge technology, 1915/1995 static torque transducers are made from either alloy steel (1915) or stainless steel (1995) and sealed to IP 66 protection grade. 1915/1995 static torque transducers are operated in the following way: one side of the transducer is fixed as the stationary part, while the other side is as motion part which intends to have torsion shift corresponding to the stationary part. These transducers are designed for symmetric use, i.e., use in measuring torques in both directions: clockwise (positive torque) and anti-clockwise (negative torque).

1915/1995 torque transducers can measure torque ranges from 100 lbin to 100 kNm with an accuracy up to 0.2%fs. On request, these transducers can be supplied as transmitters with conditioned signals such as 0~5 V can be obtained by integrating a signal conditioner PCB in the torque body.

1915/1995 torque transducers are widely used in torque wrench and torsion measurement of shaft.

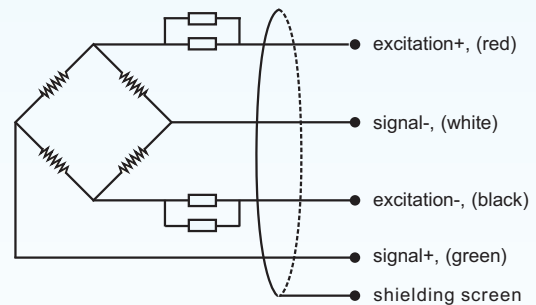
## Dimensions\*



capacity	D1	D	H	H1	H2	D2	$\Phi d$	$\Phi d1$	W
100I, 250I	43.2	69.9	52.6	6.4	12.7	55.2	6.8	11.1	6.5
500I, 750I, 50F	43.2	69.9	50.3	6.4	10.2	55.3	6.5	10.7	9.6
100F, 250F	57.2	101.6	64.8	10.5	15.2	76.2	10.5	16.7	12.8
500F	57.2	101.6	71.1	10.5	15.2	76.2	10.5	16.7	19.2
1000F	60.5	101.6	95.3	10.5	15.2	76.2	10.5	15.9	25.5
2500F, 5000F	98.3	152.4	118.1	12.7	19.1	120.7	13.5	20.7	38.3

\*: For capacity > 5000F, contact sales for dimensions.

## Electrical Connection



# Model 1915/1995

## Static Torque Transducers



### Technical Data

parameters	units	specifications	
measuring range	lbin	100, 250, 500, 750	
	lbft	50, 100, 250, 500, 1000, 2500, 5000	
	kNm	1, 2, 3, 5, 10, 20, 30, 50, 100	
safe load limit	%fs	120	
ultimate overload	%fs	150	
output sensitivity at fs	mV/V	2.0 ± 0.2	
zero unbalance	%fso	± 1	
non-linearity	%fs	± 0.2	± 0.3
hysteresis	%fs	± 0.2	± 0.3
repeatability	%fs	± 0.1	± 0.2
error of asymmetry	%fs	± 0.1	± 0.2
excitation (supply voltage)	Vdc	10	
max. excitation voltage	Vdc	15	
input resistance	Ω	400 ± 30	
output resistance	Ω	350 ± 10	
insulation resistance	MΩ	≥1000@50 Vdc	
storage temp. range	°C	-35 ~ +80	
operating temp. range	°C	-20 ~ +65	
compensated temp. range	°C	-10 ~ +40	
temp. coefficient of sensitivity	%fs/°C	± 0.02	± 0.03
temp. coefficient of zero	%fs/°C	± 0.02	± 0.03
load cell body material		mild steel (1915), 17-4PH stainless steel (1995)	
sealing		potted	
mechanical interface		refer to the dimensions on the datasheets	
electrical interface		Φ5 mm, 4-conductor shielded cable, PVC jacket, 1 m	
environment protection		IP 66	
unit weight	g	to be confirmed when order	

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

\*: On request, model 1915/1995 can be supplied as transmitter with conditioned output of 0~5 Vdc.

Since torques in both clockwise and anti-clockwise can be measured, the zero-torque state of the torque transmitters can be set at 0 Vdc or 2.5 Vdc. In case the "zero output" is set to 2.5 Vdc, a asymmetric O/P can be obtained from the transmitter: the full scale O/P of the maximum positive torque will be 5 Vdc while the full scale O/P of the maximum negative torque is 0 Vdc. If the "zero output" is set to 0V, a symmetric O/P will be obtained for positive and negative torques, e.g., the set full scale O/P will be set to ±5 Vdc.

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## Ordering Information

<b>position (pos.) 1: model</b>									
1915: made from mild steel 1995: made from 17-4PH stainless steel									
<b>pos. 2: capacities</b>									
100 lbin	50 lbft	2500 lbft	1 kNm	10 kNm	100 kNm				
250 lbin	100 lbft	5000 lbft	2 kNm	20 kNm					
500 lbin	250 lbft			3 kNm	30 kNm				
750 lbin	500 lbft			5 kNm	50 kNm				
	1000 lbft			7 kNm	70 kNm				
<b>pos. 3: output sensitivity</b>									
2 mV/V*									
<b>pos. 4: non-linearity or accuracy class</b>									
0.2 %fs 0.3 %fs									
<b>pos. 5: bridge resistance</b>									
350 Ω (R <sub>in</sub> = 400±30 Ω, R <sub>out</sub> = 350±10 Ω)									
<b>pos. 6: mechanical interface</b>									
Refer to the dimensions on the datasheets. Pos. 6 can be omitted from the ordering code.									
<b>pos. 7: electrical interface</b>									
cable, code = diameter(Φ)/number of conductors/cable jacket/cable length 5/4/PVC/1 = Φ5 mm, 4-conductors shielded, PVC, length = 1**m									
<b>pos. 8: environment protection</b>									
IP 66									
<b>pos. 9: accessories for installation</b>									
N = NA***. In case of "NA", pos.9 can be omitted.									
<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

\*: On request, model 1915/1995 can be supplied as transmitter with conditioned output of 0-5 Vdc:

In case the "zero output" is set to 2.5 Vdc, code = 0/5Vasym

In case the "zero output" is set to 0V, code = ±5Vsym

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

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

**example:** 1915-10kNm-2mV/V-0.2%fs-350Ω-5/4/PVC/1-IP66-C

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