

MODEL 1700 SERIES

Torque transducers



FEATURES :

- Built-in instrumentation amplifier (± 10 V output)
- Contactless
- Single supply voltage
- Compact size
- Wide application range

OPTIONS :

- Speed sensing (S) option
- Angle encoder (E) option

These transducers are suitable for laboratory applications as well as industrial environments because of their compact size and multiple mounting options. The contactless transmission of supply voltage and measuring signal enables continuous operation with low maintenance.

PERFORMANCE SPECS :

1700 SERIES

SPECIFICATIONS	1700	1701	1702	1703	1706
Capacity range:	0.02; 0.05 Nm	0.1; 0.2; 0.5; 1; 2 Nm	5; 10; 20 Nm	50; 100; 200; 300 Nm	500; 1,000; 1,500 Nm
Supply voltage:	12 VDC $\pm 10\%$	12 VDC $\pm 10\%$	12 VDC $\pm 10\%$	12 VDC $\pm 10\%$	12 VDC $\pm 10\%$
Current consumption:	less than 200 mA	less than 200 mA	less than 200 mA	less than 200 mA	less than 200 mA
Rise time:	2 ms	2 ms	2 ms	2 ms	1 ms (1 Hz)
Limit frequency—3dB:	200 Hz	200 Hz	200 Hz	200 Hz	—
Voltage output:	0 to ± 10 V	0 to ± 10 V	0 to ± 10 V	0 to ± 10 V	0 to ± 10 V
Internal resistance:	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω
Ripple:	<100mVpp	<100mVpp	<100mVpp	<100mVpp	<100mVpp
Overall accuracy:	<0.25%	<0.25%	<0.25%	<0.25%	<0.25%
Operating temperature:	0-60°C	0-60°C	0-60°C	0-60°C	0-60°C
Compensated temperature range:	5-45°C	5-45°C	5-45°C	5-45°C	5-45°C
Temperature error:					
Zero point:	0.02%/K	0.02%/K	0.02%/K	0.02%/K	0.02%/K
Sensitivity:	0.01%/K	0.01%/K	0.01%/K	0.01%/K	0.01%/K
Mechanical overload:	200%	200%	200%	200%	200%
<i>of rated output</i>					
Weight:	approx. 200g	approx. 200g	approx. 600g	approx. 1300g	approx. 4500g
Max. sensor speed (RPM):	15,000	37,000	19,000	13,500	7,900

OPTIONS

Speed sensing (RPM):

	(S)
Speed max:	10,000 RPM
Output:	open collector
Internal pull up:	100k Ω (5V level)
External pull up:	24V max.
I max:	20mA
Pulses/rev.:	60

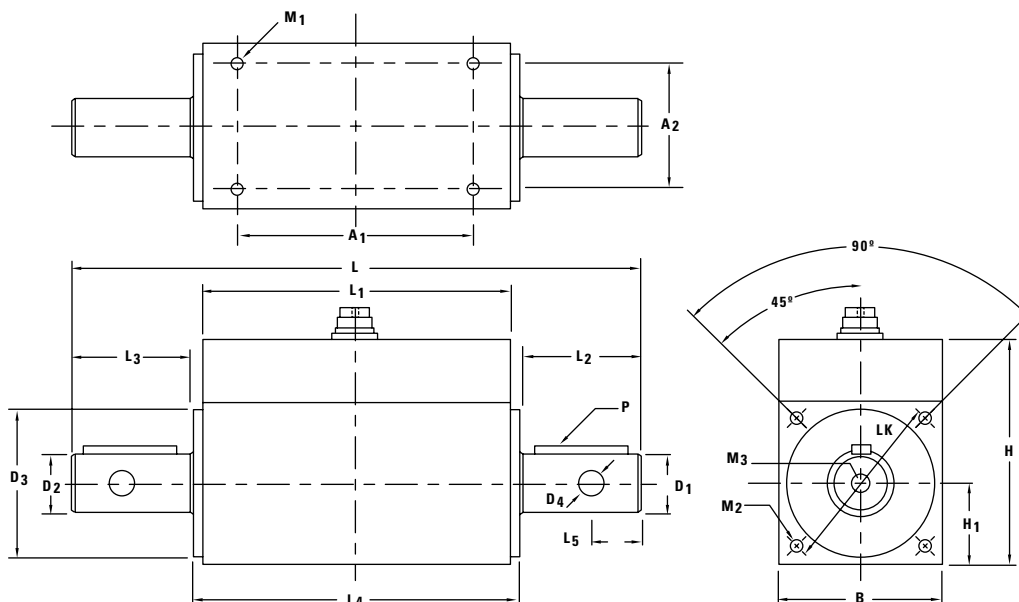
Angle:

	(E)
Speed max:	3,000 RPM
Pulses/rev.:	360
Resolution:	1°

Phase shift:

Quadrature

RANGE	SPRING CONSTANT C (N • m/rad.)	MOMENT OF INERTIA I (kgm ²)	ALLOWABLE AXIAL LOAD (N)	ALLOWABLE LOAD (N)
0...0.1 Nm	20	1 x 10 ⁻⁶	2	2
0...0.2 Nm	20	1 x 10 ⁻⁶	3	3
0...0.5 Nm	20	1 x 10 ⁻⁶	3	3
0... 1 Nm	43	1 x 10 ⁻⁶	4	4
0... 2 Nm	103	1 x 10 ⁻⁶	5	5
0... 5 Nm	355	1 x 10 ⁻⁶	5	5



SENSOR CHARACTERISTICS : 1700 SERIES

MODEL DIMENSIONS	1700 0.02/0.05 (N · m)	1701 0.1/0.2 0.5/1 (N · m)	1702 5/10/20 (N · m)	1703 50/100 200/300 (N · m)	1706 500/1000 1500 (N · m)	
L (mm)	70	89	95	145	170	270
B (mm)	32	28		42	56	88
H (mm)	46	48,5		58	73	104
H ₁ (mm)	14	14		21	28	44
D ₁ g6 (mm)	Ø3	Ø5	Ø6	Ø15	Ø26	Ø45
D ₂ g6 (mm)	Ø3	Ø8	Ø8	Ø15	Ø26	Ø45
D ₃ -0,1 (mm)	Ø15	Ø27		Ø38	Ø54	Ø80
D ₄ H7 (mm)	-	Ø2	Ø2.5	-	-	-
LK ±0,1 (mm)	*	Ø32		Ø46	Ø65	Ø98
L ₁ (mm)	51	62		79	72	84
L ₂ (mm)	7.5	10	14	30	45	85
L ₃ (mm)	7.5	11	14	30	45	85
L ₄ (mm)	55	66		83	78	90
L ₅ -0,1 (mm)	-	4	5	-	-	-
A ₁ (mm)	38	40		60	42	46
A ₂ (mm)	24	22		32	40	70
M ₁	M2.5 x 5 Deep	M3 x 5 Deep		M3 x 6 Deep	M4 x 8 Deep	M6 x 12 Deep
M ₂	M2.5 x 5 Deep	M3 x 6 Deep		M3 x 6 Deep	M4 x 8 Deep	M6 x 12 Deep
M ₃	-	-		-	M8 x 15 Deep	M10 x 20 Deep
P (DIN6885)	-	-		2 x A5 x 5 x 25	2 x A8 x 7 x 40	4 x A14 x 9 x 80

Dimensions are in mm.
*Consult factory.



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