

SPECIFICATION

Tension type Load Cell

Load Cell
TCP1(A)-20K~20T

SPEC.No.EN212012

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● Performance

Rated capacity	: 196.1 N{20 kgf}~196.1 kN{20 tf}
Safe overload	: 150 %R.C.(TCP1-20K~100K : 500 %R.C.)
Ultimate overload	: 200 %R.C.(TCP1-20K~100K : 500 %R.C.)
Rated output	: 3 mV/V±0.003 mV/V
Non-linearity	: 0.05 %R.O.
Hysteresis	: 0.02 %R.O.(TCP1-20K~100K : 0.05 %R.O.)
Repeatability	: 0.02 %R.O.(TCP1-20K~100K : 0.05 %R.O.)

● Electrical

Excitation, recommended	: 12 V or less
Excitation, at maximum	: 20 V
Zero balance	: ±0.03 mV/V
Input resistance	: 350 Ω ± 3.5 Ω
Output resistance	: 350 Ω ± 5 Ω
Insulation resistance	: 5 000 MΩ or more (DC 50 V)
(between bridge and main body)	

● Temperature

Temperature range, compensated	: -10 °C to 70 °C
Temperature range, safe	: -20 °C to 100 °C
Temperature effect on zero balance	: 0.03 %R.O./10 °C
Temperature effect on output	: 0.03 %LOAD/10 °C

- Cable : φ 10, 4-cores shielded 3 m cable directly attached,
Y-type solderless terminal is attached at the cable end.

- Class of protection : Equivalent to IP64 (Main body only)

- Material of element : Alloy steel

- Paint : Painted with epoxy resin

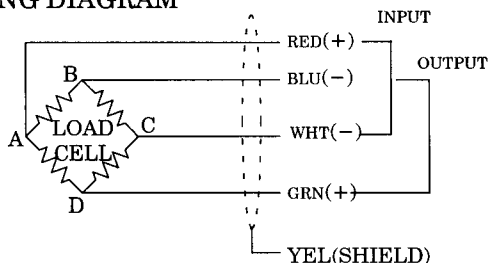
- Durability : 10⁶ times with rated load

Note) R.O. means Rated Output and also R.C. means Rated Capacity.

Polarity of output will become plus(+) when the direction of compression load is applied.

If polarity change is required, change wiring of blue and green.

WIRING DIAGRAM



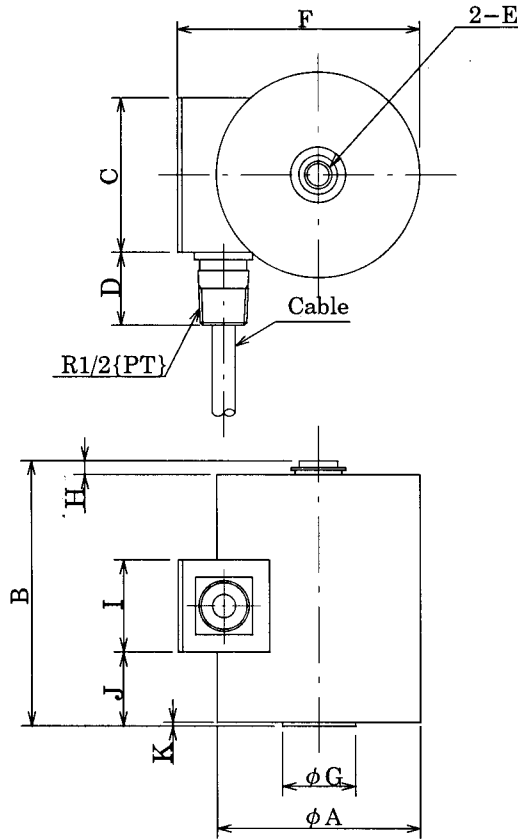
Composition	
Main body	1
Inspection data sheet	1
Instruction manual	1

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Outline dimensions

(Unit : mm)

P/No.	Rated capacity	ϕA	B	C	D	E	F	ϕG	H	I	J	K	Rated displacement	Natural frequency (Hz)	Weight (Approx.g)
TCP1-20K	196.1 N{20 kgf}	89	115	67	35	M10×1.25 depth 14	106	32	6	40	18	1.5	0.33	230	3.1
TCP1-50K	490.3 N{50 kgf}												0.28	360	
TCP1-100K	980.7 N{100 kgf}												0.23	580	
TCP1A-200K	1.961 kN{200 kgf}	89	115	67	35	M12×1.25 depth 14	106	32	6	40	18	1.5	0.18	1 200	3.1
TCP1-300K	2.942 kN{300 kgf}	89	115	67	35	M12×1.25 depth 14	106	32	6	40	32	1.6	0.17	1 400	2.7
TCP1-500K	4.903 kN{500 kgf}												0.15	1 800	
TCP1-1T	9.807 kN{1 tf}												0.13	2 800	
TCP1-2T	19.61 kN{2 tf}	89	150	67	35	M24×2 depth 30	106	64	9	40	46	1.6	0.17	2 100	4.3
TCP1-3T	29.42 kN{3 tf}												0.16	2 600	
TCP1-5T	49.03 kN{5 tf}												0.13	3 500	
TCP1-10T	98.07 kN{10 tf}	127	215	67	35	M39×2 depth 50	152	102	12	40	71	1.6	0.18	2 500	11.9
TCP1-20T	196.1 kN{20 tf}	165	290	67	35	M50×2 depth 65	193	145	15	40	80	1.6	0.24	1 800	27

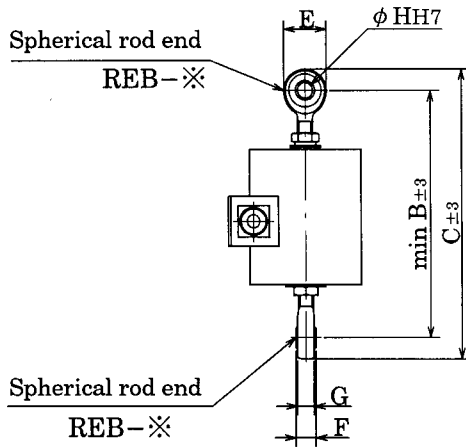
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With spherical rod end installed :



Composition

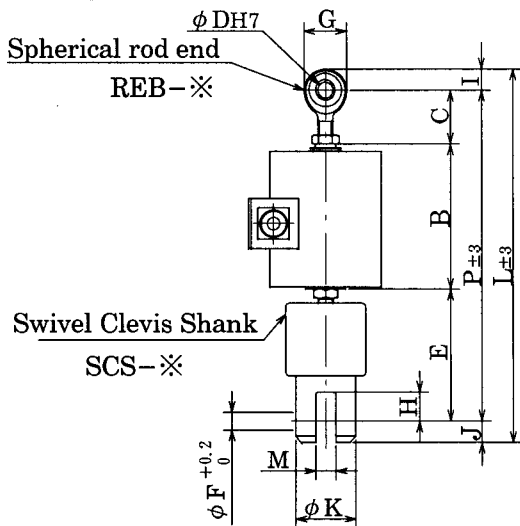
Main body	1
Spherical rod end (REB-※)	2
Hexagon nut(Attached with REB)	2

Outline dimensions

Unit : mm

Parts No.	P/No. of accessory (Options)	B	C	E	F	G	φH	Weight (Approx.kg)
TCP1-20K	REB-2	183	209	26	12.5	10.75	10	3.4
TCP1-50K								
TCP1-100K								
TCP1A-200K	REB-3	197	231	34	16	13.25	12	3.4
TCP1-300K								
TCP1-500K	REB-3	197	231	34	16	13.25	12	3
TCP1-1T								
TCP1-2T								
TCP1-3T	REB-4	262	324	62	28	19.3	22	6.6
TCP1-5T								
TCP1-10T	REB-5	463	563	100	43	39	40	19.1
TCP1-20T								
TCP1-20T	REB-6	624	744	120	53	49	50	41.3

Spherical rod end and swivel clevis shank installed :



Composition

Main body	1
Spherical rod end (REB-※)	1
Hexagon nut(Attached with REB)	1
Swivel Clevis Shank(SCS-※)	1
Hexagon nut(with SW)(Attached with SCS)	1

OUTLINE DIMENSIONS

Unit : mm

Parts No.	P/No. of accessory (Options)	B	C	φD	E	φF	G	H	I	J	φK	M	P	L	Weight (Approx.kg)
TCP1-20K	REB-2, SCS-2	115	36	10	90	10	26	18	13	15	30	12	241	269	3.95
TCP1-50K															
TCP1-100K															
TCP1A-200K	REB-3, SCS-3	115	43	12	105	14	34	23	17	17	48	16	263	297	3.95
TCP1-300K															
TCP1-500K	REB-3, SCS-3	115	43	12	105	14	34	23	17	17	48	16	263	297	4.62
TCP1-1T															
TCP1-2T															
TCP1-3T	REB-4, SCS-4	150	60	22	179	25	62	55	31	35	88	30	389	455	11.8
TCP1-5T															
TCP1-10T	REB-5, SCS-5	215	127	40	229	40	100	60	50	50	130	42	571	671	37.1
TCP1-20T															
TCP1-20T	REB-6, SCS-6	290	170	50	328	60	120	90	60	74	165	50	788	922	83.5

Specifications and outline dimensions and so on which have printed may subject to change for the purpose of improvement without notice.