



# LOAD CELL & TORQUE

A Measurement Can Change the World



*Customize & High Technology*



**DACELL**

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## Company Information

We realize the best corporation in the field of new generation of weighing and measuring products.



DACELL is providing ultra-precision load cells and various weighing and measuring products, which can be used in various fields of industries, based on 20 years of experiences in manufacturing of weighing and measuring products and with own superior technologies.

We will exert every efforts to provide customers with total solutions for a field of load cells and as well as advanced weighing and measuring field by developing of high quality products with the international competitiveness.



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★Specifications are subject to change without notice.



# BENDING BEAM LOAD CELLS

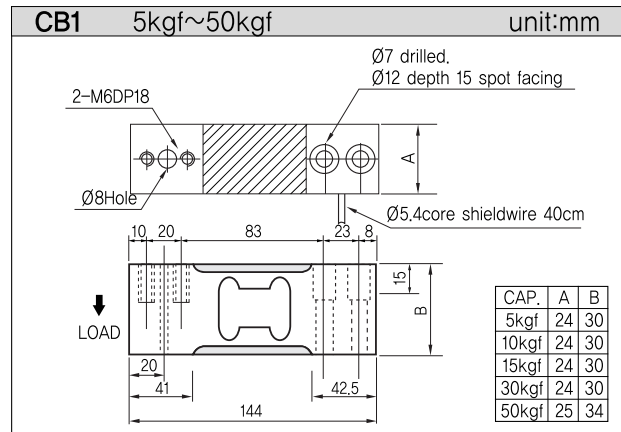
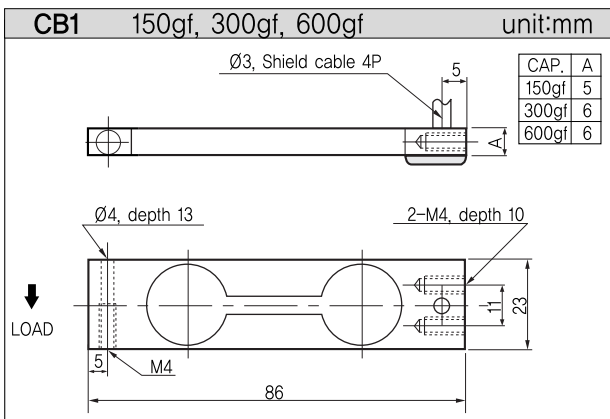
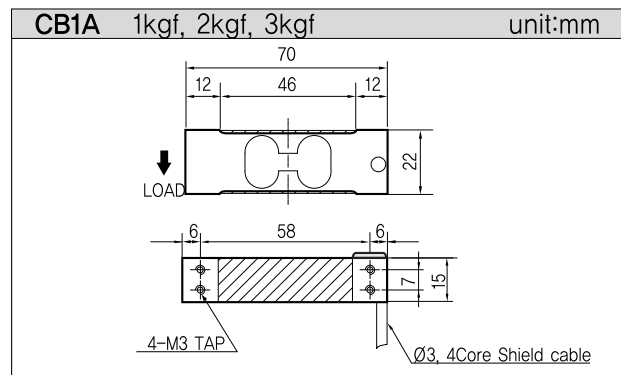
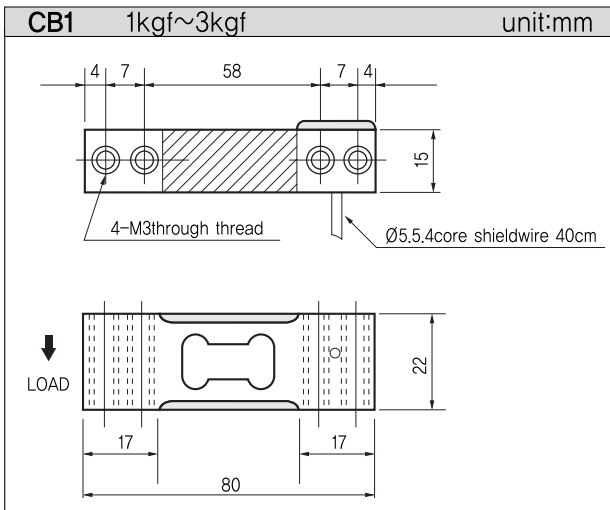
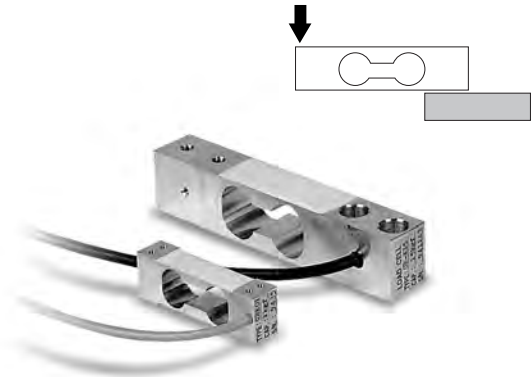
## > Model CB1, CB1A

This strain gage load cell has developed newly as a electronic "Scale" for commercial purpose, with the charatistics of high accuracy and low price.

Compared with another mechanical means, this load cell provides small displacement.

Due to electronic output, it is easy to treat various treatment.

Protection Class IP65



## > SPECIFICATIONS

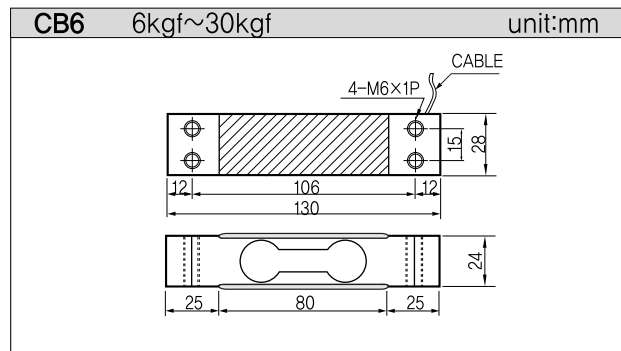
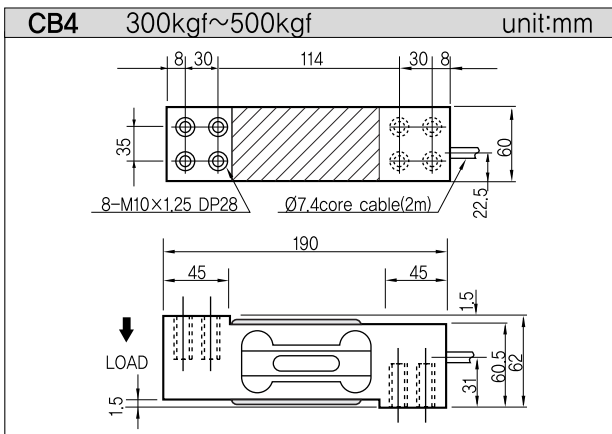
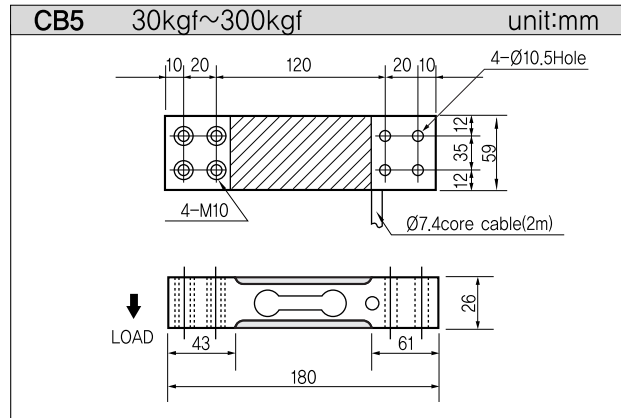
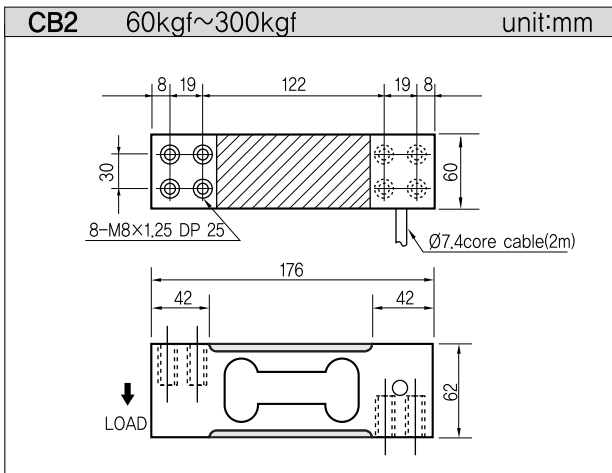
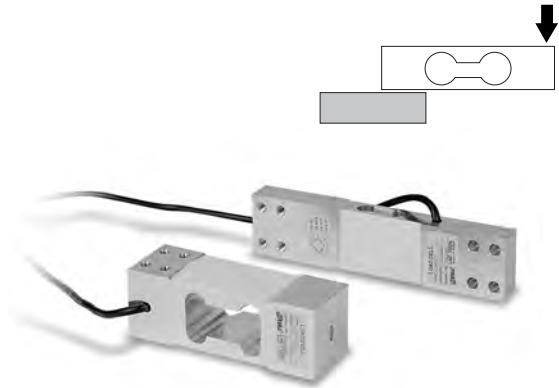
Specifications	150gf, 300gf, 600gf (1.470N, 2.942N, 5.884N)	Accuracy	1, 2, 3kgf (9.807N, 19.61N, 29.42N)	5, 10, 15, 30, 50kgf (49.03N, 98.07N, 147.1N, 294.2N, 490.3N)
Rated capacity(R.C)	150gf, 300gf, 600gf (1.470N, 2.942N, 5.884N)		1, 2, 3kgf (9.807N, 19.61N, 29.42N)	5, 10, 15, 30, 50kgf (49.03N, 98.07N, 147.1N, 294.2N, 490.3N)
Rated output(R.O)	1.2mV/V±1%		1mV/V±1%	1.5mV/V±1%
Nonlinearity	0.02% R.O.		0.02% R.O.	0.02% R.O.
Hysteresis	0.02% R.O.		0.02% R.O.	0.02% R.O.
Repeatability	0.02% R.O.		0.02% R.O.	0.02% R.O.
Creep	0.03% R.O./20MIN		0.03% R.O./20MIN	0.02% R.O./20MIN
Zero balance	±5% R.O.		±5% R.O.	±5% R.O.
Terminal resistance, input	420±30Ω		420±30Ω	420±30Ω
Terminal resistance, output	350±2Ω		350±2Ω	350±2Ω
Insulation resistance	2000MΩ		2000MΩ	2000MΩ
Temperature range, compensated	0~+40°C		-10~+50°C	-10~+50°C
Temperature range, safe	-10~+50°C		-10~+50°C	-10~+50°C
Temperature effect, on zero balance	0.03% R.O./10°C		0.03% R.O./10°C	0.03% R.O./10°C
Temperature effect, on rated output	0.02% LOAD/10°C		0.02% LOAD/10°C	0.02% LOAD/10°C
Excitation recommended	10V DC		10V DC	10V DC
Safe overload	150% R.C.		150% R.C.	150% R.C.
Cable length	Ø3, CORE SHIELD CABLE, 40cm		Ø3, CORE SHIELD CABLE, 40cm	Ø3, CORE SHIELD CABLE 40cm
Allowable maximum Platform size	Ø80		200 X 200mm	300 X 300mm
Weight	200g		300g	400g
Wiring Information			EXC+ : RED, EXC- : White, SIG+ : Black, SIG- : Green	

★Specifications are subject to change without notice.

# BENDING BEAM LOAD CELLS

## > Model CB2, CB4, CB5, CB6

This strain gage load cell has developed newly as a electronic "Scale" for commercial purpose, with the characteristics of high accuracy and low price. Compared with another mechanical means, this load cell provides small displacement. Due to electronic output, it is easy to treat various treatments. Protection Class IP65



## > SPECIFICATIONS

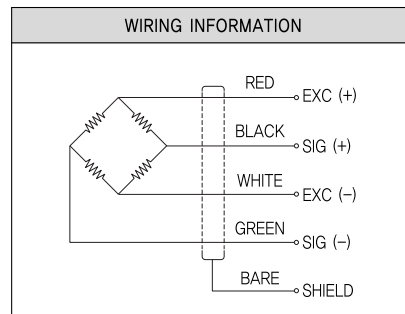
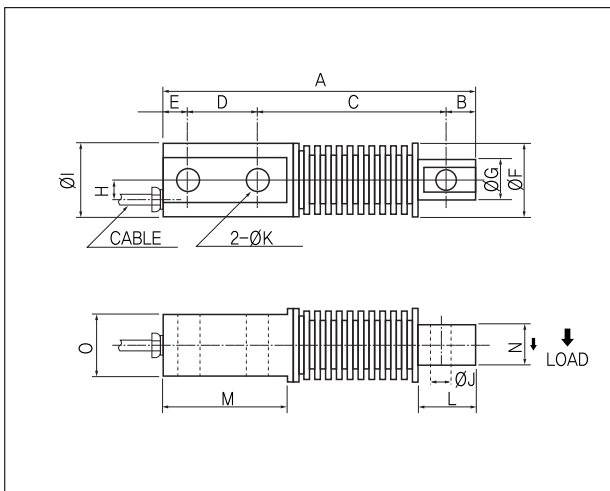
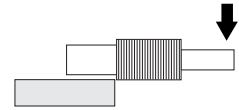
Specifications	Accuracy			
	CB2	CB4	CB5	CB6
Rated capacity(R,C)	60, 100, 250, 300kgf (588.4N, 980.7N, 2,452kN, 2,942kN)	300, 500kgf (2,942kN, 4,903kN)	30, 50, 100, 150, 300kgf (294.2N, 490.3N, 980.7N, 1,471kN, 2,942kN)	6, 10, 25, 30kgf (5.884N, 98.07N, 245.2N, 294.2N)
Rated output(R,O)	2mV/V±10%	2mV/V±10%	1.5mV/V±10%	2mV/V±10%
Nonlinearity	0.02% of R.O.	0.02% of R.O.	0.02% of R.O.	0.02% of R.O.
Hysteresis	0.02% of R.O.	0.02% of R.O.	0.02% of R.O.	0.02% of R.O.
Repeatability	0.02% of R.O.	0.02% of R.O.	0.02% of R.O.	0.02% of R.O.
Creep(20min)	0.03% of R.O.	0.03% of R.O.	0.03% of R.O.	0.03% of R.O.
Zero balance	±5% of R.O.	±5% of R.O.	±5% of R.O.	±5% of R.O.
Terminal resistance input	420±20Ω	420±20Ω	420±20Ω	420±20Ω
Terminal resistance output	350±2Ω	350±2Ω	350±2Ω	350±2Ω
Insulation resistance bridge	2000MΩ	2000MΩ	2000MΩ	2000MΩ
Temperature effect on rated output	0.02% of LOAD/10°C	0.02% of LOAD/10°C	0.02% of LOAD/10°C	0.02% of LOAD/10°C
Temperature effect on zero balance	0.05% of R.O./10°C	0.05% of R.O./10°C	0.05% of R.O./10°C	0.05% of R.O./10°C
Temperature range, compensated	-10~50°C	-10~50°C	-10~50°C	-10~50°C
Temperature range, safe	-10~50°C	-10~50°C	-10~50°C	-10~50°C
Excitation recommended	10V	10V	10V	10V
Safe overload	150% R.C.	150% R.C.	150% R.C.	150% R.C.
Cable length	Ø7 4CORE, 2m	Ø7 4CORE, 2m	Ø7 4CORE, 2m	Ø5 4CORE, 40Cm
Allowable Maximum Platform Size	400 X 600mm	450 X 650mm	400 X 500mm	300 X 300mm
Weight(kg)	1.5	1.6	0.9	0.4
Wiring Information	EXC+ : RED, EXC- : White, SIG+ : Black, SIG- : Green			

★Specifications are subject to change without notice.

# BEAM LOAD CELL

## > Model CBC

Stainless steel bellows seal  
 Can be used for both compression and tension measuring. Compact, lightweight and easy-to-mount  
 Protection Class IP67



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	10, 20, 50, 100, 200kgf, 500kg (98.07N, 196.1N, 490.3N, 980.7N, 4.903kN)
Rated output(R.O)	2mV/V±0.5%
Nonlinearity	0.03% of R.O.
Hysteresis	0.02% of R.O.
Repeatability	0.02% of R.O.
Zero balance	±1% of R.O.
Temperature effect, on rated output	0.02% of LOAD/10°C
Temperature effect, on zero balance	0.02% of R.O./10°C
Temperature range, compensated	-10~70°C
Temperature range, safe	-20~80°C
Terminal resistance input	350±50Ω
Terminal resistance output	350±5Ω
Insulation resistance bridge	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø5 4core cable, 3m

## > DIMENSIONS TABLE

unit:mm

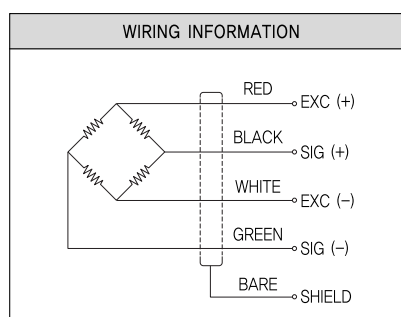
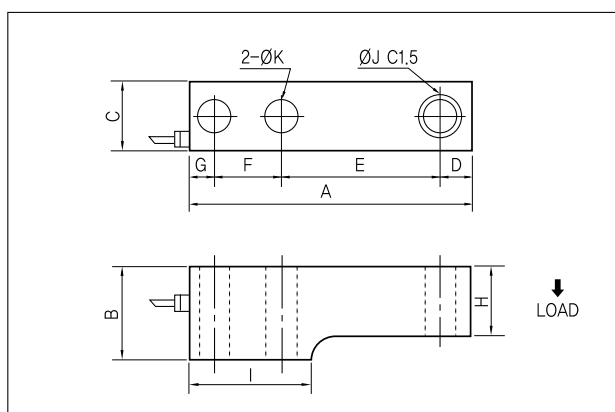
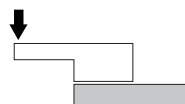
Capacity	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Weight(kg)
10~100kg (98.1N~980.7N)	130	10	72	35	13	39	20	9	42	8.5	8.5	20	58	17	35	1.0
200~500kg (1.9kN~4.90kN)	200	20	120	45	15	50	29	14	52	12	14	40	80	25	40	1.8

★Specifications are subject to change without notice.

# PLATFORM SCALE LOAD CELLS

## > Model CP, CP57

A compact and low cost, shear type compression load cell. It is a comparatively low cost shear type transducers with a high accuracy of 0.02% R.O. Platform and Tank scale weighing.  
Protection Class IP67



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	50kgf, 100kgf, 150kgf, 300kgf, 500kgf, 1tf, 2tf, 3tf, 5tf, 6tf, 10tf, 12tf (490.3N, 980.7N, 1,471kN, 2,942kN, 4,903kN, 9,807kN, 19,61kN, 29,42kN, 49,03kN, 58,84kN, 98,07kN, 117,7kN)
Rated output(R.O)	2mV/V±0.1%
Nonlinearity	0.03% of R.O.
Hysteresis	0.02% of R.O.
Repeatability	0.02% of R.O.
Creep(20min)	0.03% of R.O.
Zero balance	±5% of R.O.
Temperature effect, on rated output	0.02% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O./10°C
Temperature range, compensated	-10~50°C
Temperature range, safe	-20~80°C
Terminal resistance input	350±30Ω
Terminal resistance output	350±3Ω
Insulation resistance bridge	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø5±0.3mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

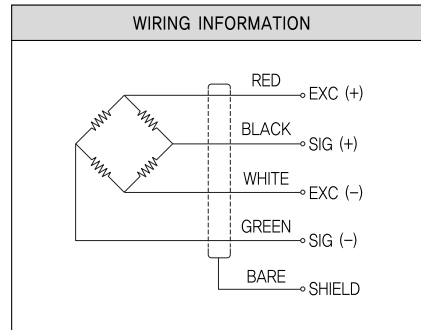
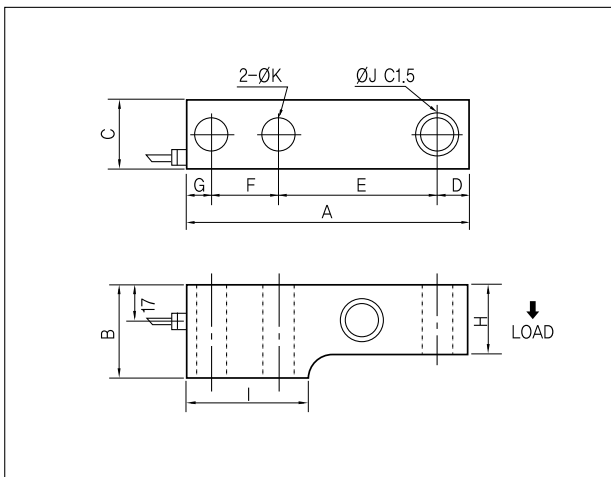
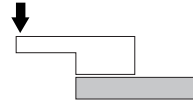
Model	Capacity	A	B	C	D	E	F	G	H	I	ØJ	ØK	Weight(kg)
CP	50kgf~300kgf (490.3N~2,942kN)	135	36	26	17	75	25	18	32	58	11.5	11.5	0.5
	500kgf~2tf (4,90kN~19,61kN)	135	38	30	17	75	25	18	34	58	13.5	13.5	1.1
	3tf~5tf (29,42kN~49,03kN)	170	48	38	20	85	50	15	39	79	18.5	18.5	2.3
	6tf (58,84kN)	203	48	50	23	95	62	23	39	110	24.5	24.5	3.5
	10tf~12tf (98,07kN)	263	60	60	30	118	90	25	52	143	26	26	9
CP57	500kgf~2tf (4,90kN~19,61kN)	131	38	30	12.7	76.2	25.4	16.7	34	57	13.5	13.5	1.1
	3tf~5tf (29,42kN~49,03kN)	171	44.5	38	19	95	38	19	38	76.2	20.5	20	2.3
	10tf (98,07kN)	222.3	57.2	50.8	25.4	120.7	50.8	25.4	50.8	108	26.2	26.2	9

★Specifications are subject to change without notice.

# PLATFORM SCALE LOAD CELL

## > Model CPS

- It is a comparatively low cost beam loadcell with a high accuracy of 0.03% R.O.
- Platform and Tank scale weighing.
- Protection Class IP67
- 17-4PH stainless steel construction for high accuracy.
- Fully welded seal with stainless steel cover for hostile environment applications.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	500kgf, 1tf, 2tf, 3tf, 5tf, 9tf, 10tf, 12tf (4.903kN, 9.807kN, 19.61kN, 29.42kN, 49.0kN, 88.26kN, 98.07kN, 117.7kN)
Rated output(R.O)	2mV/V±0.1%
Nonlinearity	0.03% of R.O.
Hysteresis	0.03% of R.O.
Repeatability	0.25% of R.O.
Creep(20min)	0.03% of R.O.
Zero balance	±5% of R.O.
Temperature effect, on rated output	0.02% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O./10°C
Temperature range, compensated	-10~50°C
Temperature range, safe	-20~80°C
Terminal resistance input	350±30Ω
Terminal resistance output	350±3Ω
Insulation resistance bridge	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø5±0.3mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

Capacity	A	B	C	D	E	F	G	H	I	ØJ	ØK	Weight(kg)
500kgf~2tf (4.903kN~19.61kN)	135	38	30	17	75	25	18	34	58	13.5	13.5	1.1
3tf~5tf (29.42kN~49.03kN)	170	48	38	20	85	50	15	39	79	18	18.5	2.3
9tf (88.26kN)	200	52	56	20	95	62	23	44	110	21	24.5	5
10tf~12tf (98.07kN~117.1kN)	263	60	60	30	118	90	25	52	143	26	26	9

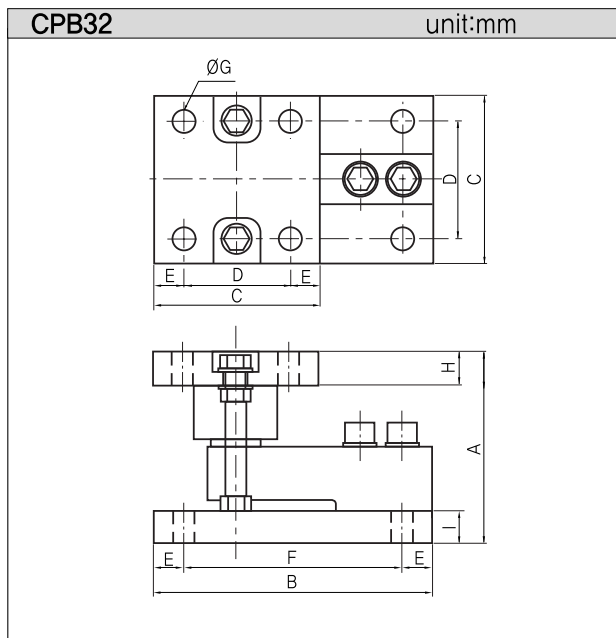
★Specifications are subject to change without notice.



# PLATFORM SCALE LOAD CELLS

## > Model CPB32, CPB42, CPB52

Hopper, Bin, Tank weigh module Stainless Steel or Zinc Plated Steel Mounting Kit.



### ORDERING INFORMATION

CPB32 - 2T  
Model CAPACITY(200K, 500K, 1T, 2T, 3T, 5T)

CPB32 : CP loadcell + Zinc Plateel Steel Mtg Kit

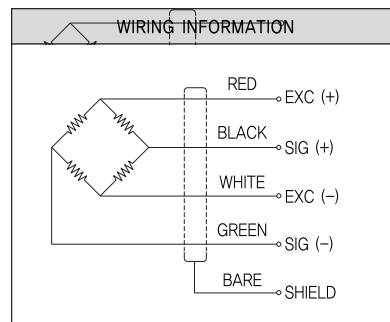
CPB42 : CPS loadcells + Zinc Plateel Steel Mtg Kit

CPB52 : CPS loadcells + Stainless Steel Mtg Kit

## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	300kg, 500kg, 1t, 2t, 3t, 5t
Rated output(R.O)	2mV/V±0.1%
Nonlinearity	0.02% of R.O.
Hysteresis	0.02% of R.O.
Repeatability	0.01% of R.O.
Creep	0.02% of R.O.
Zero balance	±1% of R.O.
Excitation recommended	10V
Terminal resistance input, output	350Ω ±1%
Insulation resistance bridge	2000MΩ
Temperature range, compensated	-10~70°C
Temperature range, safe	-20~80°C
Temperature effect, on rated output	0.02% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O./10°C
Safe overload	150% R.C.
Cable length	Ø5, 4core, 3m

### WIRING INFORMATION



## > DIMENSIONS TABLE

unit:mm

Capacity	A	B	C	D	E	F	G	H	I	Weight(kg)
50kg~300kg (490kN~2.942kN)	108	168	106	70	18	132	11.5	15	20	8
500kg~2t (4.903kN~19.61kN)	116	168	106	70	18	132	13.5	21	20	9
3t~5t (29.42kN~49.03kN)	145	225	150	110	20	185	18	25	30	16

★Specifications are subject to change without notice.

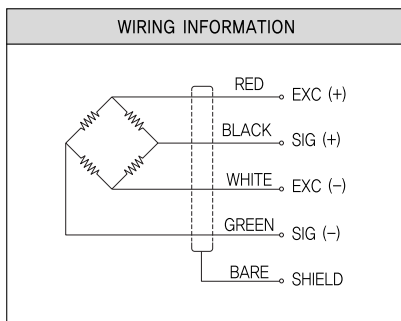
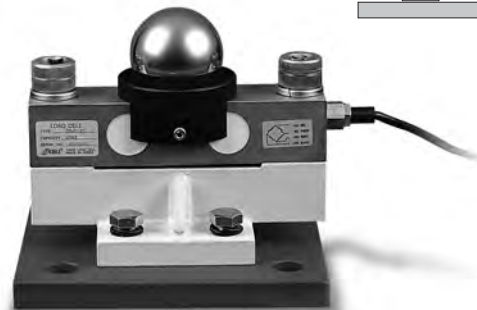
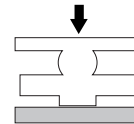
# TRUCK SCALE LOAD CELL

## > Model CT

Capacity: 20tf, 25tf, 30tf.

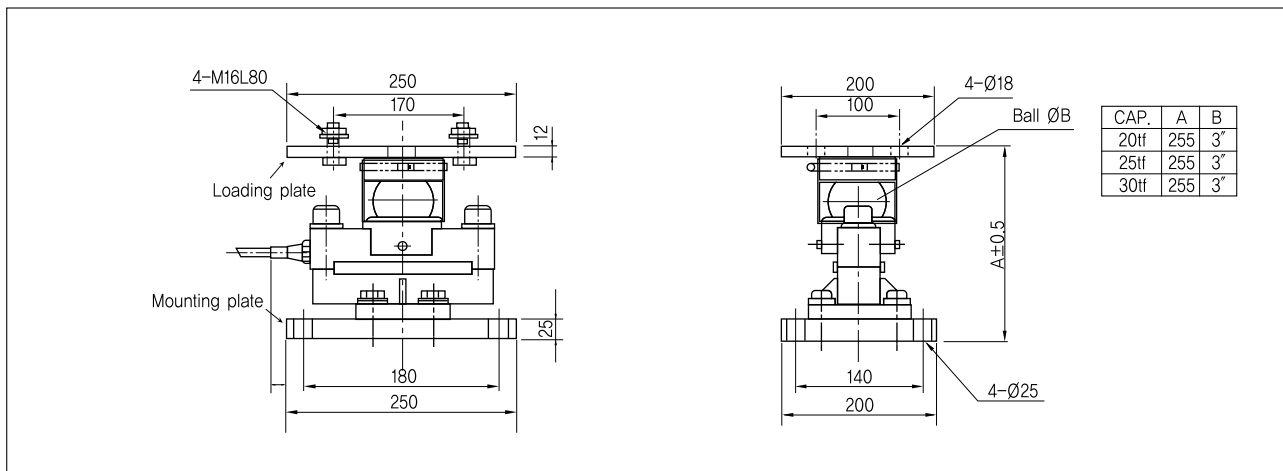
The Model CT, Double-Ended Shear Beam Load Cell is ideally suited for use in Truck Scales for heavy-duty, high-capacity weighing.

Protection Class IP67



**ORDERING INFORMATION**

CT-T25-FS : Full sets - 34kg  
 CT-T25-BC : Loadcell, Ball, Cup and Cap - 16kg  
 CT-T25-LC : Only loadcell - 14kg  
 T20, T25, T30



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	20tf, 25tf, 30tf (196.1kN, 245.2kN, 294kN)
Rated output(R.O)	2mV/V±0.2%
Nonlinearity	0.03% of R.O.
Hysteresis	0.02% of R.O.
Repeatability	0.02% of R.O.
Creep(20min)	0.025% of R.O.
Zero balance	±2% of R.O.
Temperature effect, on rated output	0.02% of LOAD/10°C
Temperature effect, on zero balance	0.03% of R.O./10°C
Temperature range, compensated	-10~+70°C
Temperature range, safe	-20~+80°C
Terminal resistance input	800±30Ω
Terminal resistance output	700±2Ω
Insulation resistance bridge/case	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø7±0.3mm 4core, 10m

★Specifications are subject to change without notice.

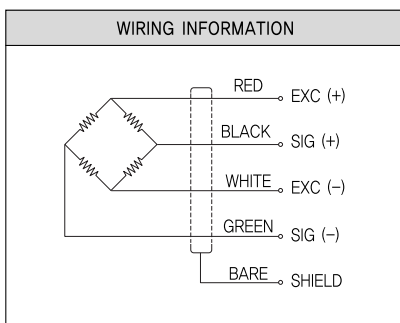
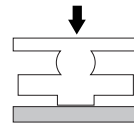
# TRUCK SCALE LOAD CELL

## > Model CTM

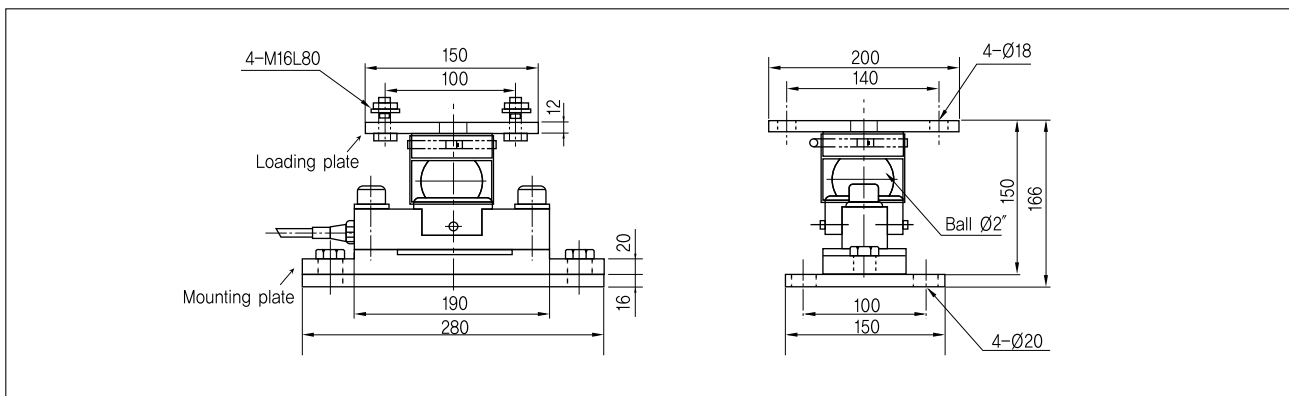
Capacity: 5tf, 10tf

The Model CTM Double-Ended Shear Beam Load Cell is ideally suited for use in Truck Scales for heavy-duty, high-capacity weighing.

Protection Class IP67



ORDERING INFORMATION
CTM-T10-FS : Full sets - 18kg
CTM-T10-BC : Loadcell, Ball, Cup and Cap - 9kg
CTM-T10-LC : Only Loadcell - 7kg



## > SPECIFICATIONS

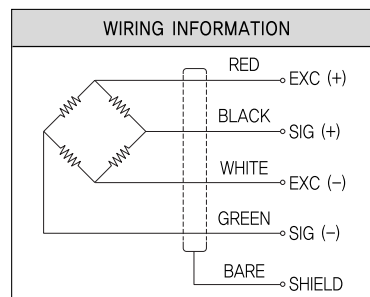
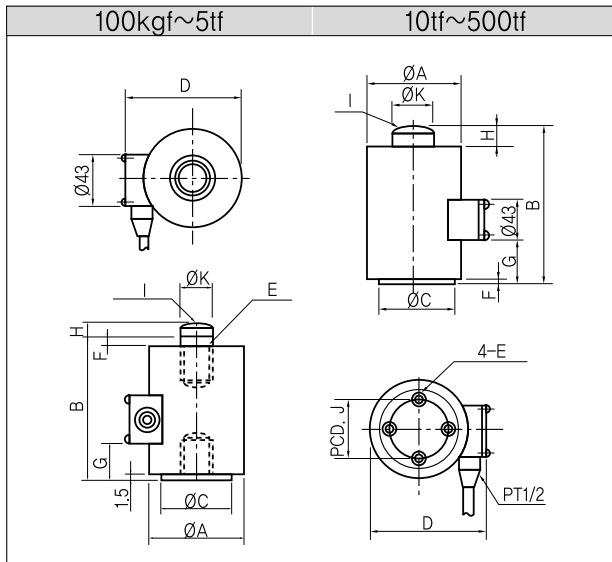
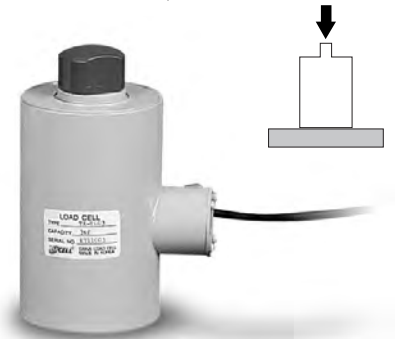
Specifications	Accuracy
Rated capacity(R.C)	5tf, 10tf (49.03kN, 98.07kN)
Rated output(R.O)	2mV/V±0.2%
Nonlinearity	0.03% of R.O.
Hysteresis	0.02% of R.O.
Repeatability	0.02% of R.O.
Creep(20min)	0.025% of R.O.
Zero balance	±2% of R.O.
Temperature effect, on rated output	0.02% of LOAD/10°C
Temperature effect, on zero balance	0.03% of R.O./10°C
Temperature range, compensated	-10~+70°C
Temperature range, safe	-20~+80°C
Terminal resistance input	800±30Ω
Terminal resistance output	700±2Ω
Insulation resistance bridge/case	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø7±0.3mm 4core, 10m

★Specifications are subject to change without notice.

# COMPRESSION LOAD CELLS

## > Model CX, CX77

High Precision Accuracy Compression Service.  
Hopper, Tank Weighing.  
Protection Class IP67



## > SPECIFICATIONS

Specifications	Accuracy		
	CXH	CXM	CXG
Rated capacity(R.C)	1tf, 2tf, 3tf, 5tf, 10tf, 20tf	100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf, 5tf, 10tf, 20tf, 30tf, 50tf, 100tf, 200tf, 300tf, 500tf	
Rated output(R.O)	2.0mV/V±0.1%	2.0mV/V±0.1%(50tf~500tf : 1.5mV/V±0.1%)	
Nonlinearity	0.02% of R.O.	0.05% of R.O.	0.1% of R.O. (200, 300, 500tf : 0.5% of R.O.)
Hysteresis	0.02% of R.O.	0.05% of R.O.	0.1% of R.O. (200, 300, 500tf : 0.5% of R.O.)
Repeatability	0.02% of R.O.	0.05% of R.O.	0.1% of R.O.
Zero balance	±1% of R.O.	±1% of R.O.	±1% of R.O.
Temperature effect, on rated output	0.03% of LOAD/10°C	0.03% of LOAD/10°C	0.1% of LOAD/10°C
Temperature effect, on zero balance	0.03% of R.O./10°C	0.03% of R.O./10°C	0.1% of R.O./10°C
Temperature range, compensated	-10~60°C	-10~60°C	-10~60°C
Temperature range, safe	-20~80°C	-20~80°C	-20~80°C
Terminal resistance input	350±5Ω	350±5Ω	350±5Ω
Terminal resistance output	350±5Ω	350±5Ω	350±5Ω
Insulation resistance bridge/case	5000MΩ	5000MΩ	5000MΩ
Excitation recommended	10V	10V	10V
Safe overload	150% R.C.	150% R.C.	150% R.C.
Cable length	Ø7mm 4core, 3m	Ø7mm 4core, 3m	Ø7mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

Model	Capacity	ØA	B	ØC	D	E	F	G	H	RI	J	ØK	Weight
CX	100kgf~1tf (490.3N~9.807kN)	88	107	50	118	M12×1.25 DP15	4	25	9	25	-	24	3kg
	2tf (19.61kN)	88	150	66	118	M24×2 DP30	5	42	20	60	-	42	4.5kg
	3tf (29.42kN)	88	150	66	118	M24×2 DP30	5	42	20	60	-	42	4.5kg
	5tf (49.03kN)	88	150	66	118	M24×2 DP30	5	42	20	60	-	42	4.5kg
	10tf (98.07kN)	93	127	80	129	M12×1.75 DP20	2	42	15	140	60	38	5kg
	20tf (196.1kN)	93	147	80	129	M12×1.75 DP20	2	50	15	140	60	38	5.5kg
	30tf (294.2kN)	93	147	80	129	M12×1.75 DP20	2	50	15	140	60	38	5.5kg
	50tf (490.3kN)	137	165	110	170	M12×1.75 DP20	2	75	20	180	80	50	10kg
	100tf (980.7kN)	166	210	140	198	M16×2 DP20	2	100	20	200	100	70	28kg
	200tf (1.961MN)	216	250	180	246	M16×2 DP25	2	120	30	300	130	95	45kg
300tf (2.942MN)	216	320	180	246	M24×3 DP35	2	160	30	600	130	120	50kg	
500tf (4.903MN)	256	400	238	283	M30×3.5 DP50	7	200	20	800	200	170	65kg	
1000tf (9.807MN)	295	385	270	247	M24×3 DP35	5	170	25	800	200	220	70kg	
CX77	200tf (1.961MN)	164	220	140	194	M20×2.5 DP30	5	80	20	600	100	95	29kg
	300tf (2.942MN)	164	250	140	194	M24×3 DP35	5	94	20	600	100	95	30kg
	500tf (4.903MN)	217	270	170	247	M24×3 DP35	7	125	25	600	130	120	55kg

\*Specifications are subject to change without notice.

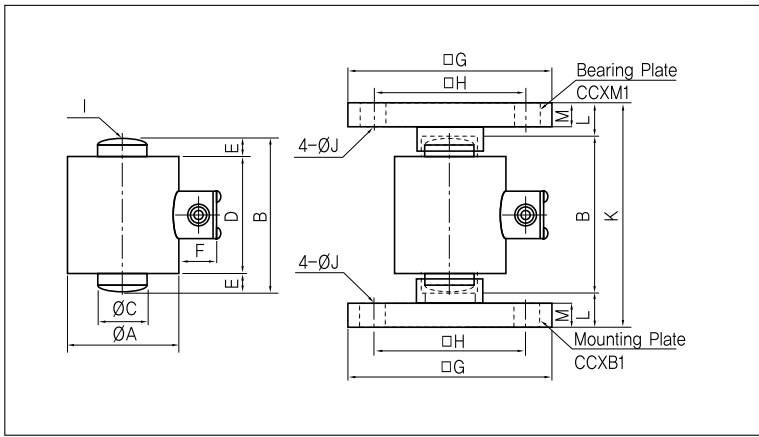
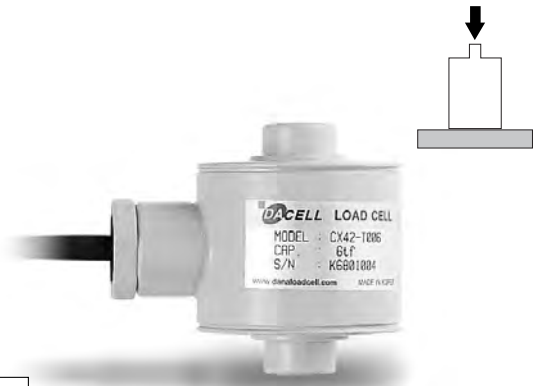


# COMPRESSION LOAD CELL

## > Model CCX

The model CCX Loadcell is heavy duty weighing applications, including hoppers, tanks, silos and high capacity scales.

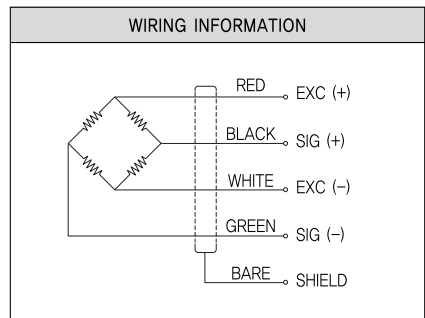
- Insensitive to side load
- Double convex type
- Robust high capacity design



ORDERING INFORMATION	
CCX - T10 - FS	: Full sets (CCXM1 and CCXB1) └─ CAPACITY
CCX - T10 - LC	: Only Loadcell └─ CAPACITY

## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	5tf, 10tf, 20tf, 30tf, 50tf, 100tf, 200tf, 300tf, 500tf
Rated output(R.O)	1.5 mV/V±0.5%
Nonlinearity	0.1% of R.O.
Hysteresis	0.1% of R.O.
Repeatability	0.05% of R.O.
Creep(20min)	0.05% of R.O. / 20min
Zero balance	1% R.O.
Temperature effect, on rated output	0.03% of LOAD/10°C
Temperature effect, on zero balance	0.03% of R.O./10°C
Temperature range, compensated	-10~60°C
Temperature range, safe	-20~80°C
Terminal resistance input	350±5Ω
Terminal resistance output	350±5Ω
Insulation resistance	2000MΩ
Excitation recommended	10V DC
Safe overload	150% R.C.
Cable length	Ø7±, 4coreshield, 5m



## > DIMENSIONS TABLE

unit:mm

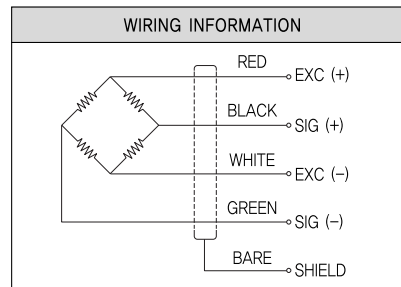
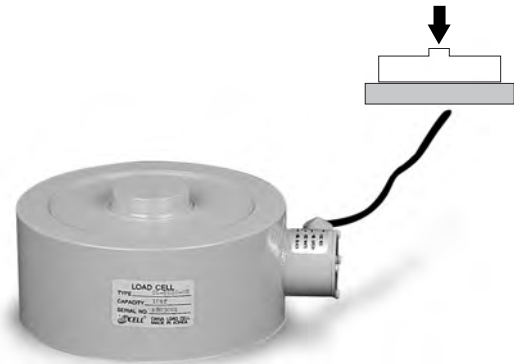
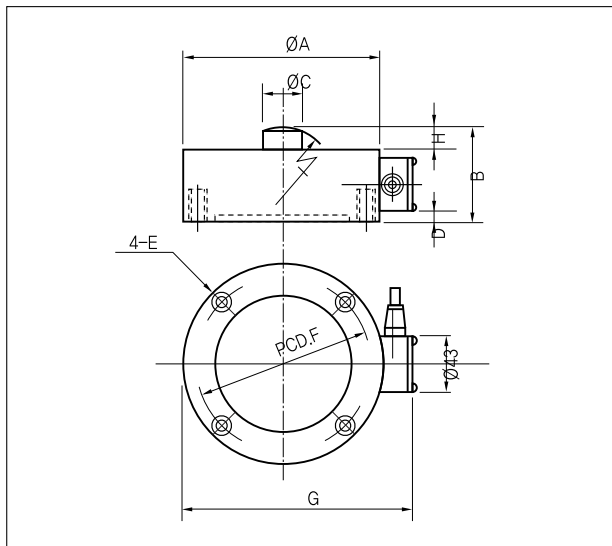
Capacity	A	B	C	D	E	F	G	H	J	K	L	M	RI	Weight(kg)
5tf (49.03kN)	45	56	16.5	40	8	30	100	80	10.5	116	30	19	60	3
10tf (98.07kN)	88	120	24	90	15	30	140	100	18	180	30	19	140	7.8
20tf (196.1kN)	88	120	38	90	15	30	140	100	18	190	35	22	140	9.6
30tf (294.2kN)	93	140	38	110	15	30	200	150	23	220	40	25	140	20.2
50tf (490.7kN)	137	180	50	140	20	30	200	150	23	280	50	25	180	24.5
100tf (980.7kN)	166	240	70	200	20	30	220	160	27	356	58	32	200	42.7
200tf (1.961MN)	216	260	95	210	25	30	280	220	39	396	68	40	300	86.4
300tf (2.942MN)	216	340	120	290	25	30	300	220	45	492	76	50	600	150.0
500tf (4.903MN)	265	390	155	330	30	30	380	280	50	568	89	65	800	253.1

★Specifications are subject to change without notice.

# LOW PROFILE COMPRESSION LOAD CELL

## > Model CL

Low Profile Compression Service Load Cell,  
Hopper, Tank Weighing  
Protection Class IP67



## > SPECIFICATIONS

Specifications	Accuracy	
	CLM	CLH
Rated capacity(R.C.)	500kgf, 1tf, 2tf, 5tf, 10tf, 20tf, 50tf, 100tf, 200tf, 300tf, 500tf	500kgf, 1tf, 2tf, 5tf, 10tf, 20tf, 50tf
Rated output(R.O.)	2mV/V±0.1%	2mV/V±0.1%
Nonlinearity	0.05% of R.O.(100tf, 200tf : 0.1%)	0.02% of R.O.
Hysteresis	0.05% of R.O.(100tf, 200tf : 0.1%)	0.02% of R.O.
Repeatability	0.03% of R.O.(100tf, 200tf : 0.05%)	0.02% of R.O.
Zero balance	±2% of R.O.	±2% of R.O.
Temperature effect, on rated output	0.05% of LOAD/10°C	0.03% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O./10°C	0.03% of R.O./10°C
Temperature range, compensated	-10~60°C	-10~60°C
Temperature range, safe	-20~80°C	-20~80°C
Terminal resistance input	700±30Ω	700Ω
Terminal resistance output	700±3Ω	700Ω
Insulation resistance bridge/case	2000MΩ	2000MΩ
Excitation recommended	10V	10V
Safe overload	150% R.C.	150% R.C.
Cable length	Ø7mm 4core, 3m	Ø7mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

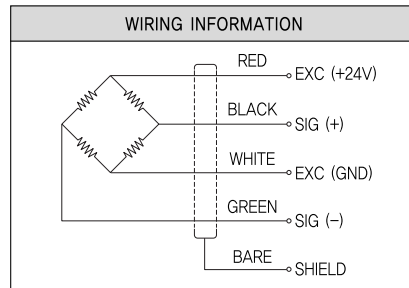
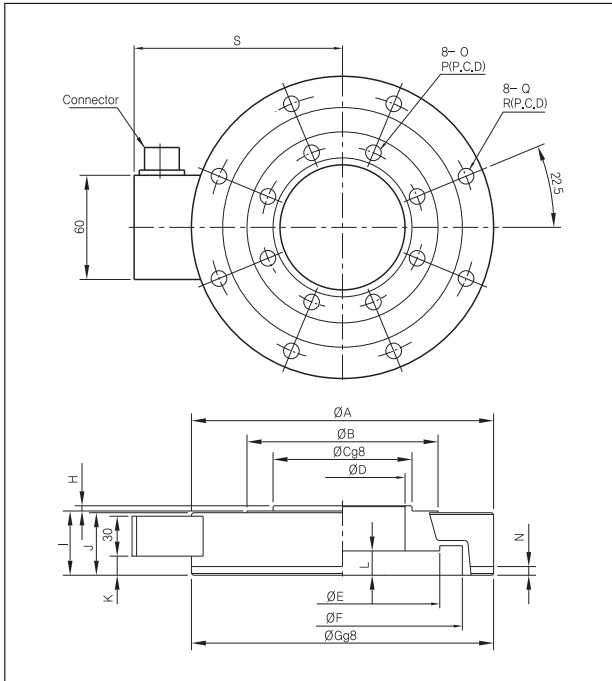
Capacity	ØA	B	ØC	D	E	ØF	G	H	RI	Weight(kg)
500kgf (4.903kN)	88	30	16	1.5	M6×1 DP10	70	119	5	60	1.8
1tf (9.807kN)	98	46	22	1.5	M8×1.25 DP12	80	129	7	60	26
2tf (19.61kN)	98	46	22	1.5	M8×1.25 DP12	80	129	7	60	
5tf (49.03kN)	98	46	22	1.5	M8×1.25 DP12	80	129	7	60	3.8
10tf (98.07kN)	118	65	24	11	M8×1.25 DP12	98	149	7	80	
20tf (196.1kN)	157	65	34	11	M8×1.25 DP12	120	188	10	100	8
30tf (294.2kN)	187	75	50	16	M12×1.75 DP20	150	218	10	140	14
50tf (490.3kN)	187	75	50	16	M12×1.75 DP20	150	218	10	140	14
100tf (980.7kN)	278	120	74	37	M12×1.75 DP20	240	309	15	160	45
200tf (1.961MN)	320	170	100	63.5	M16×2 DP20	270	351	15	250	85
300tf (2.942MN)	396	195	140	68.5	M16×2 DP20	330	427	15	320	180
500tf (4.903MN)	430	200	150	68.5	M20×2.5 DP25	360	485	20	320	220

★Specifications are subject to change without notice.

# COMPRESSION LOAD CELL

## > Model UL12

Canister, through-hole type.  
Suitable for application in injection molding machines.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity	6tf~50tf (58.84kN~490.3kN)
Safe overload	150% R.C.
Non-linearity	0.6% R.O.
Hysteresis	0.6% R.O.
Repeatability	0.2% R.O.
Current output	4mA to 20mA (3 wires method, Load resistance 500 or less, at 24)
Power supply voltage	DC 24V
Temperature range, compensated	0°C to 60°C
Temperature range, safe	-10°C to 70°C
Temperature effect on zero balance	0.15% R.O./10°C
Temperature effect on output	0.15% LOAD/10°C
Cable	4 cores shielded 5m
Class of protection	Equivalent to IP64. (main body only)
Materials of the element	Alloy steel
Durability	10 <sup>8</sup> times with rated capacity.

## > DIMENSIONS TABLE

unit:mm

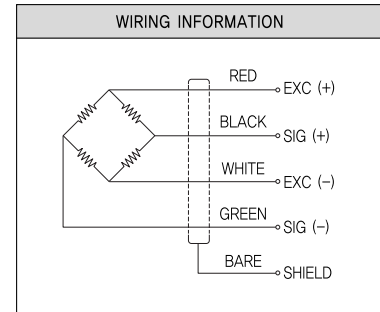
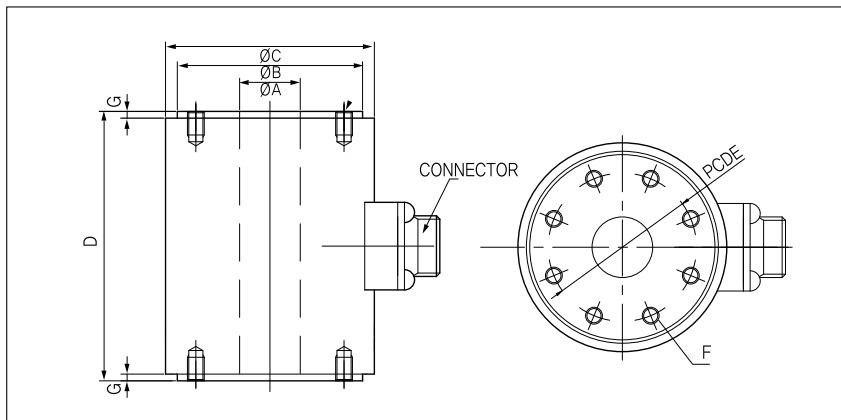
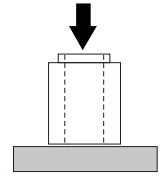
Model	Capacity	A	B	C	D	E	F	G	H	I	J	K	L	N	O	P	Q	R	S	Weight (Approx. kg)
UL12-T6	58.84kN	174	110	80	72	112	138	181	3	37	36	6	14	5	9	93	9	154	120	8
UL12-T8	78.45kN																			
UL12-T12	118kN	180	110	80	70	112	138	181	5	60	59.5	26	17	10	9	93	9	160	123	10
UL12-T15	147.1kN																			
UL12-T20	196.1kN																			
UL12-T27	265kN	275	180	135	110	182	208	276	7	60	59	26	17	10	13	160	13	247	171	20
UL12-T34	333.4kN																			
UL12-T50	490.3kN																			

\*Specifications are subject to change without notice.

# HOLLOW TYPE LOAD CELL

## > Model CWH

Easy installation with hole in center.  
 Designed for use in civil engineering measurement, these loads on tunnel supports and soil pressure on protective Walls to aid control in construction projects.  
 Protection Class IP66



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	500kgf, 1tf, 2tf, 3tf, 5tf, 10tf, 20tf, 50tf, 100tf, 200tf, 300tf
Rated output(R.O.)	1mV/V±0.4%
Nonlinearity	1% of R.O.
Hysteresis	1% of R.O.
Repeatability	0.2% of R.O.
Zero balance	±2% of R.O.
Temperature effect, on rated output	0.05% of LOAD/10°C
Temperature effect, on zero balance	0.1% of R.O./10°C
Temperature range, compensated	-10~60°C
Temperature range, safe	-20~80°C
Terminal resistance input	700±50Ω (500kg : 350Ω)
Terminal resistance output	700±2Ω (500kg : 350Ω)
Insulation resistance bridge/case	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø7mm 4core, 3m

## > DIMENSIONS TABLE

Capacity	ØA	ØB	ØC	D	E	F	G	Weight(kg)
500kgf (4,903KN)	10	24	40	50	18	2×4-M4 DP10	1	0.5
1tf (9,807KN)	18	55	62	70	44	2×8-M5 DP10	2	1
2tf (19,61KN)	18	55	62	70	44	2×8-M5 DP10	2	1
3tf (29,42KN)	18	55	62	70	44	2×8-M5 DP10	2	1
5tf (49,03KN)	18	55	62	70	44	2×8-M5 DP10	2	1
10tf (98,07KN)	18	55	62	80	44	2×8-M5 DP10	2	1.3
20tf (196,1KN)	43	68	96	80	56	2×8-M6 DP10	3	3
50tf (490,3KN)	80	112	130	110	96	2×6-M8 DP10	3	11
100tf (980,7KN)	85	118	158	110	102	2×6-M12 DP10	3	13
200tf (1,961MN)	120	162	240	120	140	2×6-M12 DP12	3	25
300tf (2,942MN)	120	179	240	120	150	2×6-M12 DP15	3	26
500tf (4,903MN)	150	227	265	200	190	2×12-M16 DP15	8	30

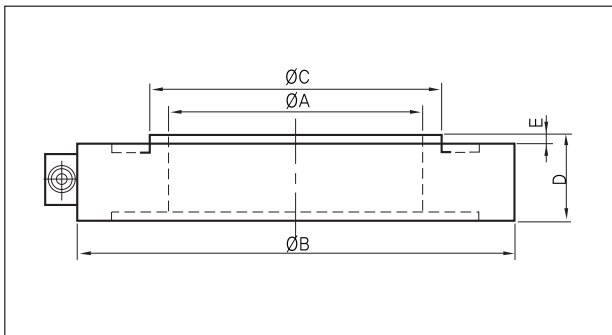
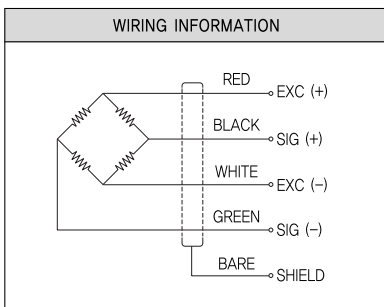
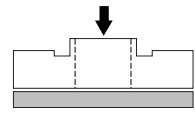
★Specifications are subject to change without notice.



# SLIM HOLLOW TYPE LOAD CELL

## > Model CWW

These load cells are extremely Slim and lightweight.  
 Easy installation with hole in center.  
 Designed for use in civil engineering measurement, these loads on tunnel supports and soil pressure on protective Walls to aid control in construction projects.  
 Protection Class IP67



## > DIMENSIONS TABLE

unit:mm

Capacity	ØA	ØB	ØC	D	E	Weight(kg)
50kgf	10	55	22	15	2	2
100kgf	10	55	22	15	2	
200kgf	10	55	22	15	2	
500kgf	10	55	22	15	2	
1tf	12	68	28	20	1.5	2.5
2tf	12	68	28	20	1.5	
3tf	12	68	28	20	1.5	
5tf	12	68	28	20	1.5	
10tf	50	148	80	37	5	3
20tf	70	155	99	43	5	6
30tf	70	155	99	43	5	6
50tf	70	155	99	43	5	6
100tf	110	198	129	43	5	8
150tf	165	278	200	50	8	20
200tf	170	308	212	65	10	27

## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	50kgf, 100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf, 5tf,10tf, 20tf, 30tf, 50tf, 100tf, 150tf, 200tf (490.3N, 980.7N, 1.961kN, 4.903kN, 9.807kN, 19.61kN, 29.42kN, 49.03kN, 98.07kN, 196.1kN, 490.3kN, 980.7kN, 1.961MN)
Rated output(R.O.)	1.5mV/V±0.4%
Nonlinearity	1% of R.O.
Repeatability	0.5% of R.O.
Zero balance	0.5% of R.O.
Terminal resistance input	700±10Ω
Terminal resistance output	700±5Ω
Insulation resistance	2000MΩ
Temperature range, compensated	-10~60°C
Temperature range, Safe	-20~80°C
Temperature effect, on zero balance	0.1% R.O./10°C
Temperature effect, on rated output	0.05% LOAD/10°C
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø7mm 4core, 5m

★Specifications are subject to change without notice.

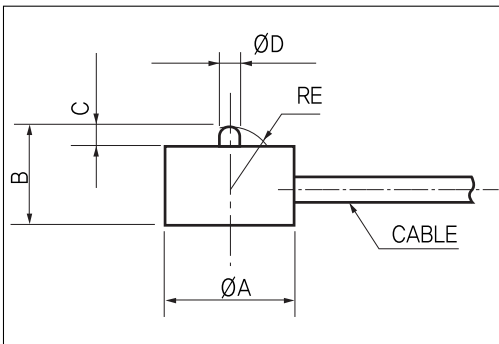
# MINIATURE COMPRESSION LOAD CELLS

## > Model CMM, CMM2

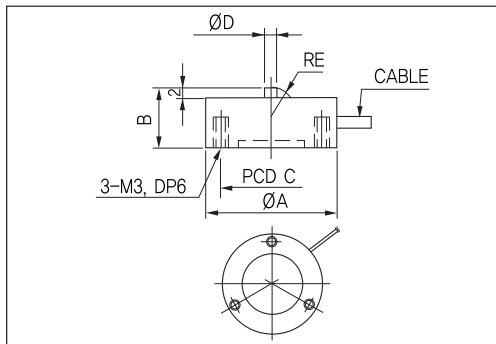
Optimum suitability for weight distribution analysis.  
 Super compact and lightweight.  
 Competitive price. Stainless steel construction.



CMM

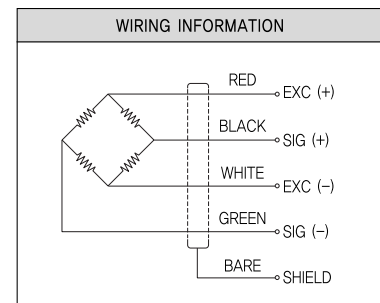


CMM2



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	1kgf, 2kgf, 5kgf, 10kgf, 20kgf, 50kgf, 100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf
Rated output(R.O.)	0.7mV/V to 1.2mV/V
Nonlinearity	1.0% R.O.
Hysteresis	1.0% R.O.
Repeatability	1.0% R.O.
Zero Balance	±5% of R.O.
Terminal resistance, input	350Ω ±10%
Terminal resistance, output	350Ω ±5%
Temperature range, allowable	-20 to +70°C
Excitation recommended	5V DC
Overload allowable	150% R.C.
Cable length	Ø3 4core cable, 3m



## > DIMENSIONS TABLE (CMM)

unit:mm

Capacity	A	B	C	ØD	RE	Weight(kg)	
1kgf (9.807N)	16	12	2	2.5	5	0.2	
2kgf (19.61N)	16	12	2	2.5	5		
5kgf (49.03N)	16	12	2	2.5	5		
10kgf (98.07N)	20	11.5	2	2.5	5		
20kgf (196.1N)	20	11.5	2	2.5	5		
50kgf (490.3N)	20	11.5	2	2.5	5		
100kgf (980.7N)	20	11.5	2	2.5	5		
200kgf (1.961kN)	20	11.5	2	2.5	5		
300kgf (2.942kN)	20	14	0.7	4	30		0.3
500kgf (4.903kN)	20	14	0.7	4	30		
1tf (9.807kN)	20	14	0.7	4	30		
2tf (19.61kN)	20	14	0.7	4	30		
3tf (29.42kN)	20	14	0.7	4	30		

## > DIMENSIONS TABLE (CMM2)

unit:mm

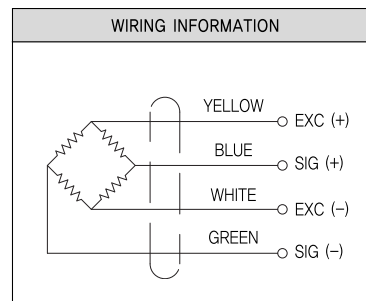
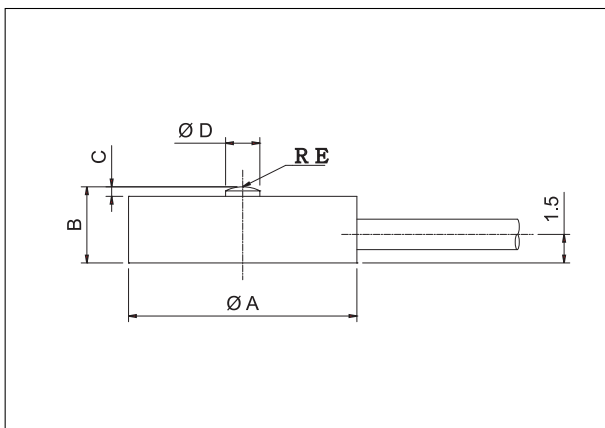
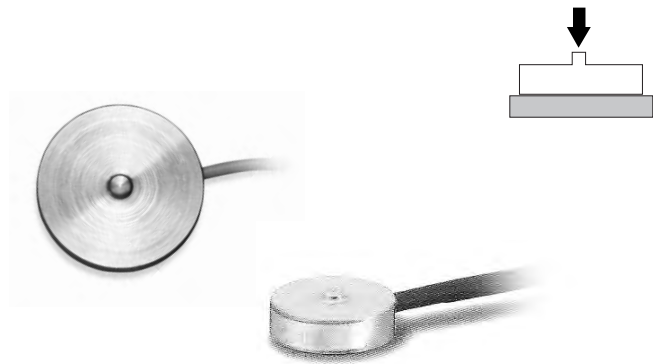
Capacity	ØA	B	PCD C	ØD	RE	Weight(kg)	
11kgf (9.807N)	21	12	17	2.5	5	0.3	
2kgf (19.61N)	21	12	17	2.5	5		
5kgf (49.03N)	21	12	17	2.5	5		
10kgf (98.07N)	26	12	21	2.5	5		
20kgf (196.1N)	26	12	21	2.5	5		
50kgf (490.3N)	26	12	21	2.5	5		
100kgf (980.7N)	26	12	21	2.5	5		
200kgf (1.961kN)	26	12	21	2.5	5		
300kgf (2.942kN)	26	14	21	4	30		0.3
500kgf (4.903kN)	26	14	21	4	30		
1tf (9.807kN)	26	14	21	4	30		
2tf (19.61kN)	26	14	21	4	30		
3tf (29.42kN)	26	14	21	8	40		

★Specifications are subject to change without notice.

# MINIATURE COMPRESSION LOAD CELL

## > Model CMM92

Small-Sized Compression Load Cell.  
Super compact and lightweight.  
Competitive price.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	1kgf, 2kgf, 5kgf, 10kgf, 20kgf
Rated output(R.O.)	0.7~2mV/V
Nonlinearity	±1% of R.O.
Hysteresis	±1% of R.O.
Repeatability	1% of R.O.
Zero balance	±2% of R.O.
Temperature range, compensated	0~40°C
Temperature range, safe	-10~60°C
Terminal resistance output	±2%LOAD/10°C
Temperature effect, on zero balance	±2%R.O./10°C
Terminal resistance	350Ω ±2.5%
Insulation resistance bridge/case	2000MΩ
Electrical connenction	Ø1.6 × 4C × 3m
Excitation recommended	5V
Safe overload	120% R.C.
Material	Aluminum(1kgf, 2kgf)/Stainless steel(5kgf, 10kgf, 20kgf)

## > DIMENSIONS TABLE

unit:mm

Model	ØA	B	C	ØD	E
1kgf ~ 5kgf	12	4	0.5	1.8	2
10kgf ~ 20kgf	15	4	0.5	2.5	4

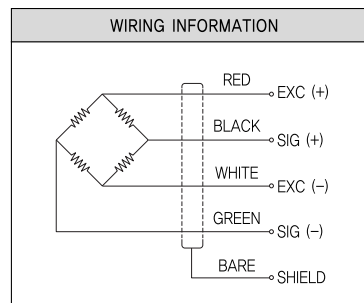
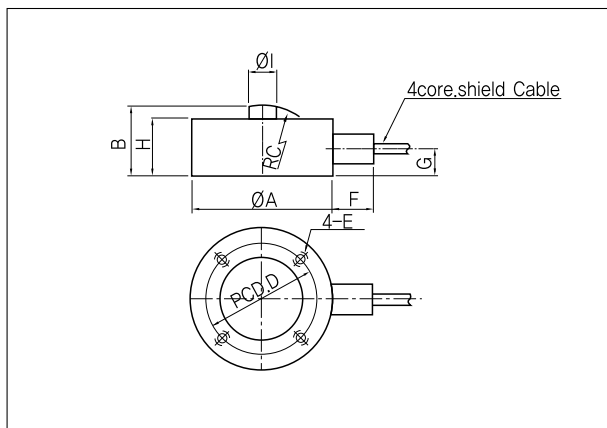
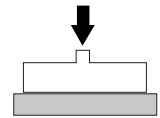
★Specifications are subject to change without notice.

# MINIATURE COMPRESSION LOAD CELL

## > Model CM

Compression Load Cell.

These load cells are extremely small and lightweight.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	50kgf, 100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf, 5tf, 10tf (490.3N, 980.7N, 1,961kN, 4,903kN, 9,807kN, 19,61kN, 49.03kN, 98.07kN)
Rated output(R.O.)	2mV/V±0.4%
Nonlinearity	0.15% of R.O.
Hysteresis	0.1% of R.O.
Repeatability	0.1% of R.O.
Zero balance	±2% of R.O.
Temperature effect, on rated output	0.1% of R.O./10°C
Temperature effect, on zero balance	0.05% of R.O./10°C
Temperature range, compensated	-10~70°C
Temperature range, safe	-20~80°C
Terminal resistance input	350±50Ω
Terminal resistance output	350±2Ω
Insulation resistance bridge/case	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø5mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

Capacity	ØA	B	C	D	E	F	G	H	ØI	Weight(kg)
50kgf-2tf (490kN~19,61kN)	51	26	R50	42	M5×0.8DP6	15	10.5	22	10	0.4
3tf, 5tf (49,03kN)	88	42	R150	72	M6×1DP10	23	17	37	18	2
10tf (98,07kN)	88	47	R150	72	M6×1DP10	23	17	42	18	2

★Specifications are subject to change without notice.

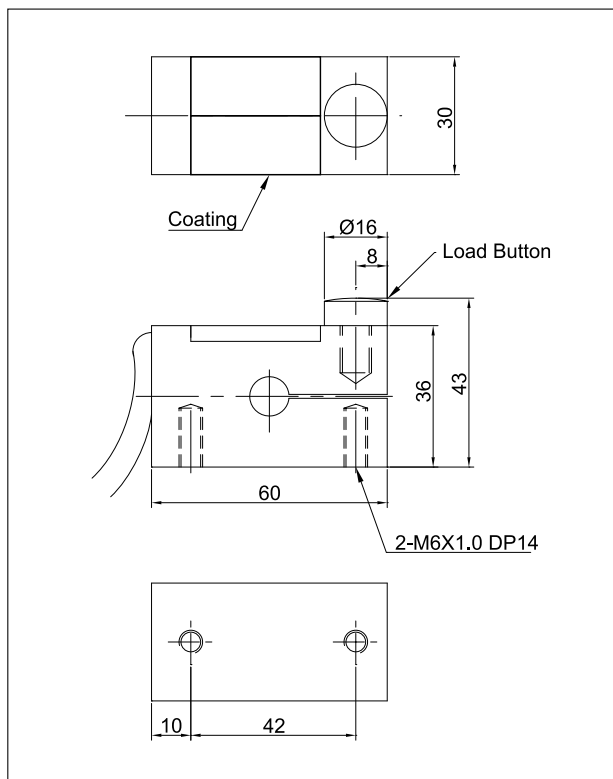


# COMPRESSION LOAD CELLS

# PEDAL EFFORT LOAD CELL

## >Model CS213

Small size.  
Force control application.  
Elevator weighing.

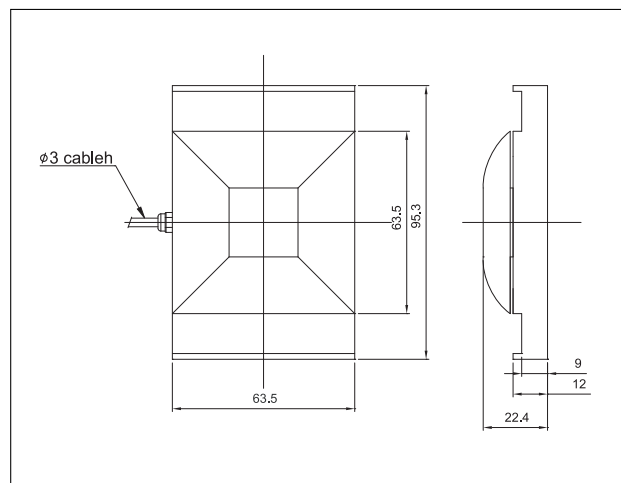
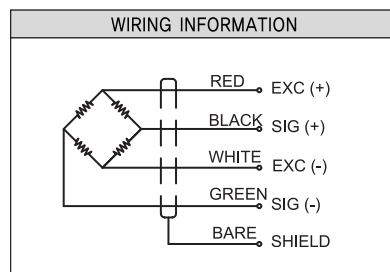


## >SPECIFICATIONS

Specifications	Accuracy
RATED CAPACITY (R.C.)	1.5ton
RATED OUTPUT (R.O.)	1.5mV/V±1%
NON-LINEARITY	2% R.O.
HYSTERESIS	2% R.O.
REPEATABILITY	0.5% R.O.
ZERO BALANCE	±1% R.O.
RESISTANCE, INPUT	420 Ohm±5
RESISTANCE, OUTPUT	350 Ohm±5
TEMP. EFFECT ON RATED OUTPUT	±0.05%LOAD/10°C
TEMP. EFFECT ON ZERO BALANCE	±0.05%R.O./10°C
TEMP. RANGE COMPENSATED	-10°C ~ 40°C
SAFE TEMPERATURE RANGE	-20°C ~ 70°C
INSULATION RESISTANCE BRIDGE TO GROUND	2000MΩ
CABLE LENGTH	Ø5mm x 4C x 3m
EXC. RECOMMENDED	10V
SAFE OVERLOAD	150% R.C.

## >Model CS187

Pedal effort load cell  
Small and light weight



## >SPECIFICATIONS

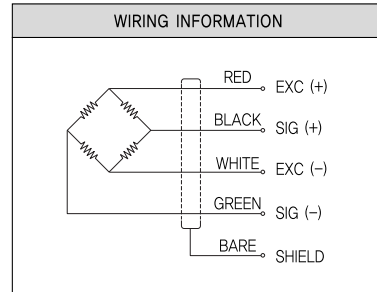
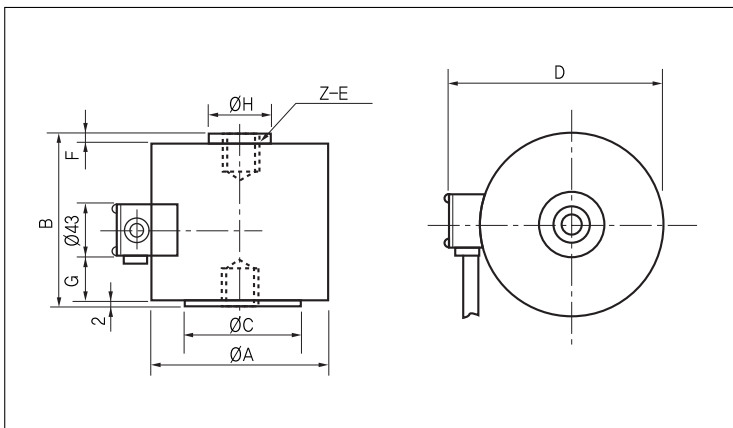
Specifications	Accuracy
RATED CAPACITY (R.C.)	120kgf
RATED OUTPUT (R.O.)	1.2mV/V±1%
NON-LINEARITY	0.15% R.O.
HYSTERESIS	0.15% R.O.
REPEATABILITY	0.15% R.O.
ZERO BALANCE	±1% R.O.
TEMP. RANGE COMPENSATED	-10°C ~ 50°C
TEMP. EFFECT ON RATED OUTPUT	±0.02%LOAD/10°C
TEMP. EFFECT ON ZERO BALANCE	±0.02%R.O./10°C
RESISTANCE, INPUT	700 Ohm±10
RESISTANCE, OUTPUT	700 Ohm±5
INSULATION RESISTANCE BRIDGE TO GROUND	2000MΩ
ELECTRICAL CONNECTION	Ø3mm x 4C x 40m
EXC. RECOMMENDED	10V
SAFE OVERLOAD	150% R.C.

★Specifications are subject to change without notice.

# TENSION LOAD CELL

## > Model TX

High Accuracy Tension Service.  
Hopper, Tank Weighing.  
Protection Class IP67



## > SPECIFICATIONS

Specifications	TXH	TXM	TXG
Rated capacity(R.C.)	1tf, 2tf, 3tf, 5tf, 10tf, 20tf	100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf, 5tf, 10tf, 20tf	100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf, 5tf, 10tf, 20tf, 50tf, 100tf
Rated output(R.O.)	2.0mV/V±0.1%	2.0mV/V±0.1% (50tf~500tf 1.5mV/V)	2.0mV/V±0.1% (50tf~500tf 1.5mV/V)
Nonlinearity	0.02% of R.O.	0.05% of R.O.	0.1% of R.O.
Hysteresis	0.02% of R.O.	0.05% of R.O.	0.1% of R.O.
Repeatability	0.02% of R.O.	0.05% of R.O.	0.1% of R.O.
Zero balance	±1% of R.O.	±1% of R.O.	±1% of R.O.
Temperature effect, on rated output	0.03% of LOAD/10°C	0.03% of LOAD/10°C	0.1% of LOAD/10°C
Temperature effect, on zero balance	0.03% of R.O./10°C	0.03% of R.O./10°C	0.1% of R.O./10°C
Temperature range, compensated	-10~60°C	-10~60°C	-10~60°C
Temperature range, safe	-20~80°C	-20~80°C	-20~80°C
Terminal resistance input	350±5Ω	350±5Ω	350±5Ω
Terminal resistance output	350±5Ω	350±5Ω	350±5Ω
Insulation resistance bridge/case	5000MΩ	5000MΩ	5000MΩ
Excitation recommended	10V	10V	10V
Safe overload	150%	150%	150%
Cable length	Ø7.5mm 4core, 3m	Ø7.5mm 4core, 3m	Ø7.5mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

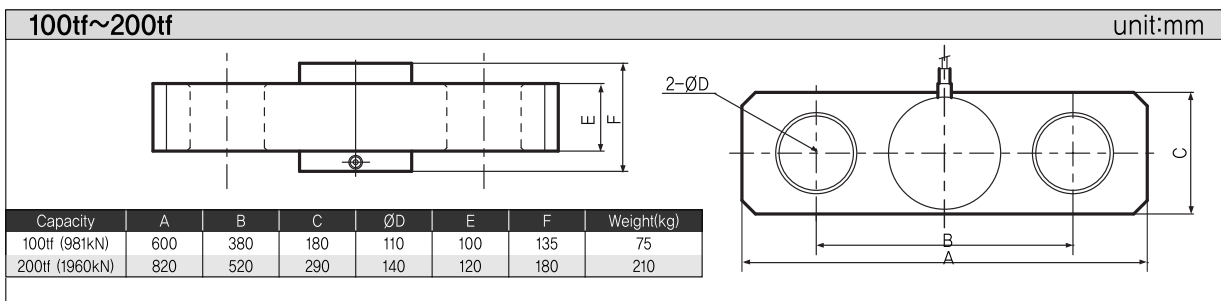
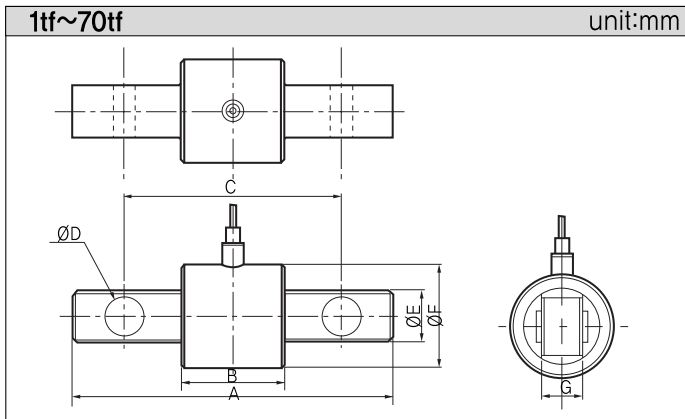
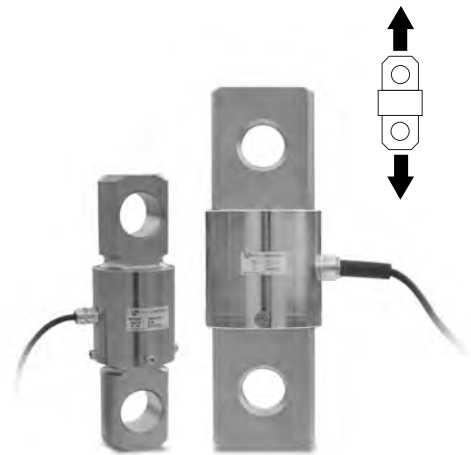
Capacity	ØA	B	ØC	D	E	F	G	ØH	Weight(kg)
100kgf (980.7N)	88	107	50	118	M12×1.25 DP15	4	25	24	3
200kgf (1.961kN)	88	107	50	118	M12×1.25 DP15	4	25	24	
500kgf (4.903kN)	88	107	50	118	M12×1.25 DP15	4	25	24	
1tf (9.807kN)	88	107	50	118	M12×1.25 DP15	4	25	24	5
2tf (19.61kN)	88	150	66	118	M24×2 DP30	5	42	30	
3tf (29.42kN)	88	150	66	118	M24×2 DP30	5	42	30	
5tf (49.03kN)	88	150	66	118	M24×2 DP30	5	42	30	11
10tf (98.07kN)	137	220	66	167	M39×2 DP50	8	65	62	
20tf (196.1kN)	137	240	66	167	M50×2 DP65	8	75	62	
50tf (490.3kN)	213	410	130	245	M76×3 DP115	25	140	116	11
100tf (980.7kN)	267	500	192	315	M100×3 DP150	25	250	196	

\*Specifications are subject to change without notice.

# TENSION LOAD CELL

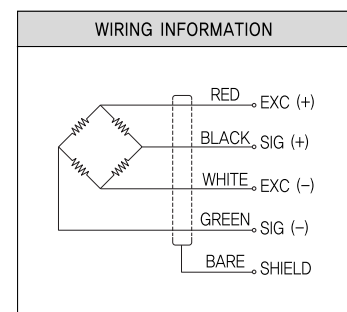
## > Model TS21

Crane Weighing, Tower Testing,  
Tension Load cell.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	1tf, 2tf, 3tf, 5tf, 10tf, 20tf, 30tf, 50tf, 70tf, 100tf, 200tf
Rated output(R.O.)	1mV/V±0.5%
Nonlinearity	0.5% of R.O.
Repeatability	0.1% of R.O.
Hysteresis	0.1% of R.O.
Zero balance	±1% of R.O.
Terminal resistance input	350±10Ω
Terminal resistance output	350±5Ω
Insulation resistance bridge/case	2000MΩ
Temperature range, compensated	-10~60°C
Temperature range, safe	-20~80°C
Temperature effect, on rated output	0.1% of R.O./10°C
Temperature effect, on zero balance	0.05% of LOAD/10°C
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø7, 4core, 10m



## > DIMENSIONS TABLE

unit:mm

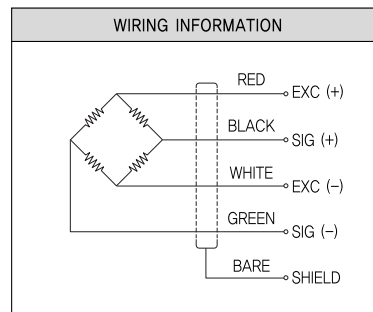
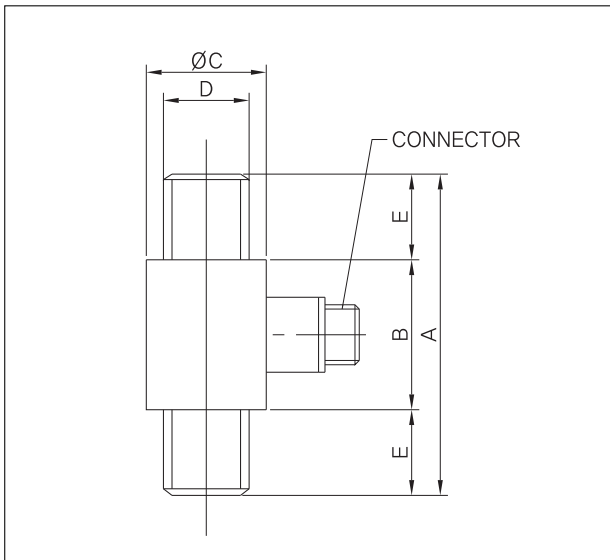
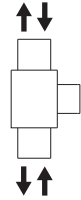
Capacity	A	B	C	ØD	ØE	ØF	G	Weight(kg)
1tf (9.81kN)	140	70	110	18	32	50	20	
2tf (19.6kN)	163	70	120	22	39	50	25	2
3tf (29.4kN)	180	63	128	27	49	60	30	
5tf (49.0kN)	234	80	168	37	59	70	40	3.5
10tf (98.1kN)	310	100	210	37	89	100	40	9
20tf (196kN)	400	120	285	62	120	135	70	23
30tf (294kN)	428	128	288	64	120	135	75	26
50tf (490kN)	508	148	342	75	145	160	98	43
70tf (686kN)	620	150	410	100	170	210	100	68

★Specifications are subject to change without notice.

# COMPRESSION & TENSION LOAD CELL

## > Model TX25

Model TX25 load cells measure both tension & compression load force. Applications include performance testers for automotive industry.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	k100, k200, k500, 1tf, 2tf, 3tf, 5tf, 10tf, 20tf, 50tf, 100tf, 200tf, 300tf
Rated output(R.O.)	1mV/V
Nonlinearity	0.15% of R.O.
Hysteresis	0.15% of R.O.
Reperatability	0.1% of R.O.
Creep	0.05% of R.O.
Zero balance	±1% of R.O.
Excitation recommended	10V
Terminal resistance input, output	350Ω ±1%
Insulation resistance bridge	2000MΩ
Temperature range, compensated	-10~60°C
Temperature range, safe	-20~80°C
Temp. effect on rated output	±0.01% of LOAD/10°C
Temperature effect, on zero balance	±0.02% of R.O./10°C
Safe overload	120% R.C.
Cable length	Ø5, 4core, 3m

## > DIMENSIONS TABLE

unit:mm

Model	Capacity	A	B	ØC	D	E	Weight(kg)
TX25-K100	100kgf (980.7N)	75	35	28	M16×1.5	20	0.5
TX25-K200	200kgf (1.961kN)	75	35	28	M16×1.5	20	
TX25-K500	500kgf (4.903kN)	75	35	28	M16×1.5	20	
TX25-T1	1tf (9.807kN)	75	35	28	M20×1.5	20	
TX25-T2	2tf (19.61kN)	75	35	28	M20×1.5	20	
TX25-T3	3tf (29.42kN)	75	35	33	M20×1.5	20	0.7
TX25-T5	5tf (49.03kN)	75	35	33	M24×2	20	
TX25-T10	10tf (98.07kN)	170	100	62.5	M39×2	35	2.5
TX25-T20	20tf (196.1kN)	190	100	63	M39×2	50	2.8
TX25-T50	50tf (490.3kN)	245	105	85	M64×2	70	7.5
TX25-T100	100tf (980.7kN)	340	140	115	M80×2	100	18
TX25-T200	200tf (1961kN)	390	160	150	M110×2	115	36
TX25-T300	300tf (2942kN)	450	194	169	M125×4	128	46

★Specifications are subject to change without notice.



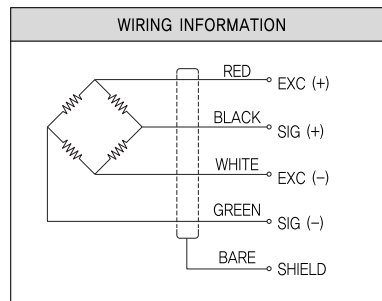
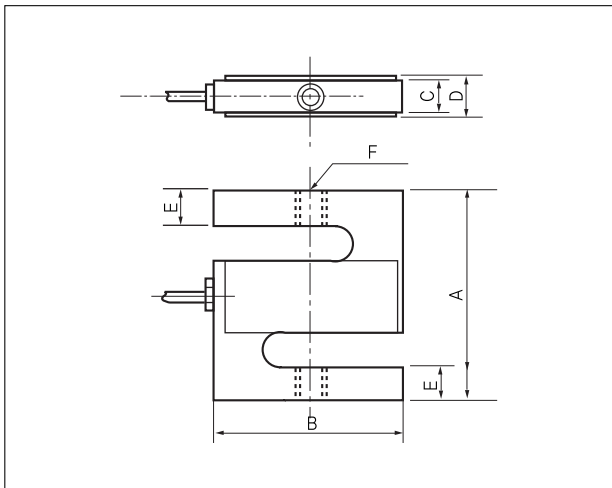
# UNIVERSAL LOAD CELL

## > Model UU

Compact size.

These are extremely accurate and compact Tension/Compression load cell.

Protection Class IP65



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	2kg, 5kg, 10kgf, 20kgf, 50kgf, 100kgf, 200kgf, 500kgf, 1tf, 2tf, 3tf, 5tf, 10tf
Rated output(R.O.)	2.0mV/V±1%(2kgf, 5kgf:1.5mV/V±1%)
Nonlinearity	0.03% of R.O.
Hysteresis	0.03% of R.O.
Repeatability	0.03% of R.O.
Zero balance	±2% of R.O.
Temperature effect, on rated output	0.05% of LOAD/10°C
Temperature effect, on zero balance	0.1% of R.O./10°C
Temperature range, compensated	-10~60°C
Temperature range, safe	-20~80°C
Terminal resistance input	350±50Ω
Terminal resistance output	350±2Ω
Insulation resistance bridge/case	2000MΩ
Excitation recommended	10V
Safe overload	150% R.C.
Cable length	Ø5mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

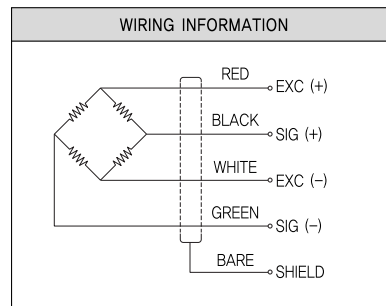
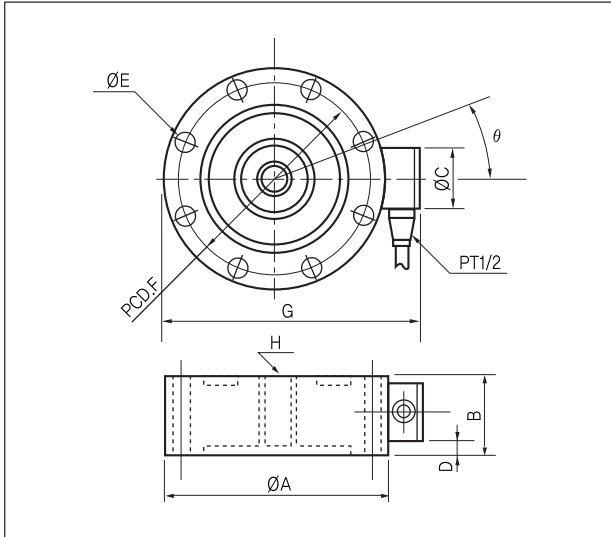
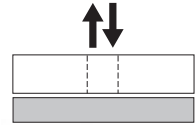
Capacity	A	B	C	D	E	F	Weight(kg)
2kgf (19.61N)	60	50	13	16	10	M6×1	0.4
5kgf (49.03N)	60	50	13	16	10	M6×1	
10kgf (98.07N)	70	52	13	18	13	M6×1	
20kgf (196.1N)	70	52	13	18	13	M6×1	
50kgf (490.3N)	70	52	18	24	13	M12×1.75	
100kgf (980.7N)	70	52	18	24	13	M12×1.75	0.8
200kgf (1.961kN)	70	52	18	24	13	M12×1.75	
500kgf (4.903kN)	70	62	22	25	15	M12×1.75	2
1tf (9.807kN)	70	62	22	25	15	M12×1.75	
2tf (19.61kN)	96	84	30	35	21	M20×1.5	3
3tf (29.42kN)	120	96	35	41	30	M24×2	
5tf (49.03kN)	120	96	40	44	30	M24×2	8.5
10tf (98.07kN)	165	140	60	66	46	M39×2	

★Specifications are subject to change without notice.

# LOW PROFILE TENSION OR COMPRESSION LOAD CELL

## > Model UL

Applicable for both compression and tension methods.  
Being tough against twisting momentum, most suitable for load fatigue testing repeat test of load etc.  
Protection Class IP67



## > SPECIFICATIONS

Specifications	Accuracy	
	ULM	ULH
Rated capacity(R.C.)	500kgf, 1tf, 2tf, 5tf, 10tf, 20tf, 30tf, 50tf, 100tf, 200tf, 300tf, 500tf	500kgf, 1tf, 2tf, 5tf, 10tf, 20tf, 50tf
Rated output(R.O.)	2mV/V±0.1%	2mV/V±0.1%
Nonlinearity	0.05% of R.O.(300tf~500tf : 0.1%)	0.02% of R.O.
Hysteresis	0.05% of R.O.(300tf~500tf : 0.1%)	0.02% of R.O.
Repeatability	0.03% of R.O.(300tf~500tf : 0.05%)	0.02% of R.O.
Zero balance	±2% of R.O.	±2% of R.O.
Temperature effect, on rated output	0.05% of LOAD/10°C	0.03% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O./10°C	0.03% of R.O./10°C
Temperature range, compensated	-10~60°C	-10~60°C
Temperature range, safe	-20~80°C	-20~80°C
Terminal resistance input	700±5Ω	700±50Ω
Terminal resistance output	700±3Ω	700±3Ω
Insulation resistance bridge/case	2000MΩ	2000MΩ
Excitation recommended	10V	10V
Safe overload	150% R.C.	150% R.C.
Cable length	Ø7mm 4core, 3m	Ø7mm 4core, 3m

## > DIMENSIONS TABLE

unit:mm

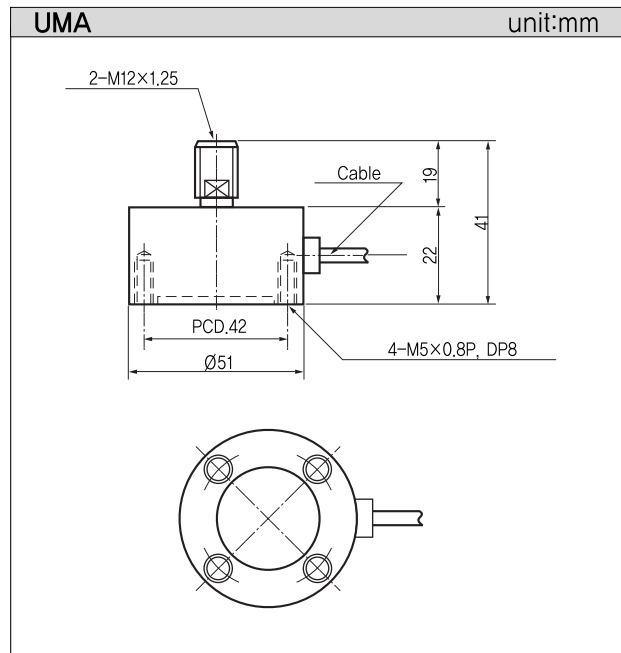
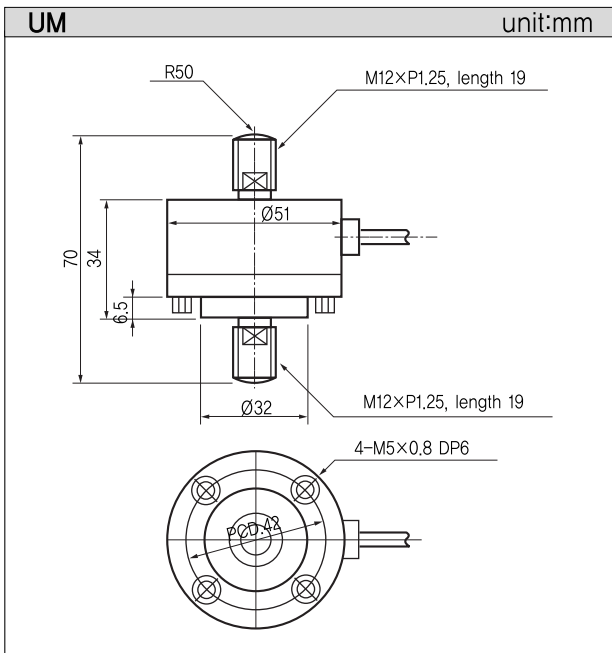
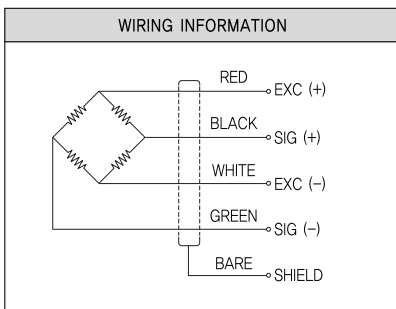
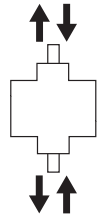
Capacity	ØA	B	ØC	D	E	F	G	H	Weight(kg)
500kgf (4.903kN)	88	25	22	1.5	6-Ø6.5	75	108	M12×1.25	1
1tf (9.807kN)	118	46	43	1.5	8-Ø9	100	153	M18×1.5	3
2tf (19.61kN)	118	46	43	1.5	8-Ø9	100	153	M18×1.5	3
5tf (49.03kN)	118	46	43	1.5	8-Ø9	100	153	M18×1.5	3
10tf (98.07kN)	180	65	43	11	8-Ø13	155	215	M24×2	9
20tf (196.1kN)	180	65	43	11	8-Ø13	155	215	M39×2	9
30tf (294.2kN)	180	65	43	11	8-Ø13	155	215	M39×2	10
50tf (490.3kN)	226	100	43	28.5	12-Ø18	190	266	M50×2	23
100tf (980.7kN)	310	130	43	43.5	16-Ø22	260	350	M76×3	60
200tf (1961kN)	380	170	43	63	16-Ø38	315	420	M100×3	90
300tf (2942kN)	450	200	50	75	16-Ø45	365	490	M140×3	180
500tf (4903kN)	496	300	70	115	16-Ø52	420	536	M180×3	245

\*Specifications are subject to change without notice.

# MINIATURE TENSION LOAD CELLS

## > Model UM, UMA

Compression or Tension load cell.  
 These load cells are extremely small and lightweight.  
 Protection Class IP67



## > SPECIFICATIONS

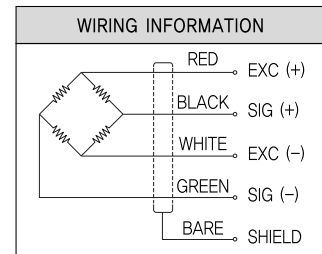
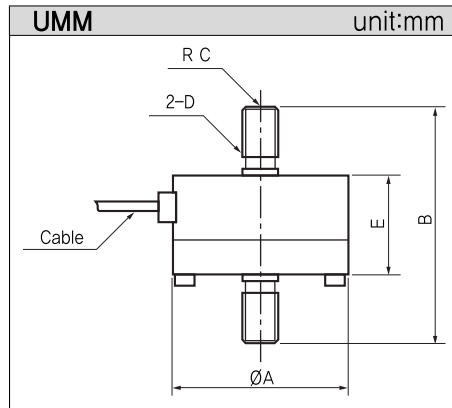
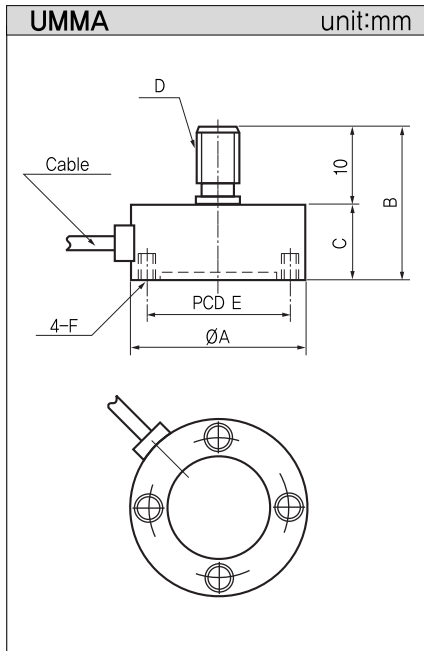
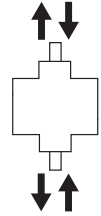
Specifications	Accuracy	
	UM	UMA
Rated capacity(R.C.)	50kgf, 100kgf, 200kgf, 500kgf, 1tf, 2tf (490.3N, 980.7N, 1.961kN, 4.903kN, 9.807kN, 19.61kN)	50, 100, 200, 500kgf, 1tf, 2tf (490.3N, 980.7N, 1.961kN, 4.903kN, 9.807kN, 19.61kN)
Rated output(R.O.)	2mV/V±0.4%	2mV/V±0.4%
Nonlinearity	0.15% of R.O.	0.15% of R.C.
Hysteresis	0.1% of R.O.	0.1% of R.C.
Repeatability	0.05% of R.O.	0.05% of R.C.
Zero balance	±2% of R.O.	±2% of R.O.
Temperature effect, on rated output	0.1% of LOAD/10°C	0.1% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O./10°C	0.05% of R.O./10°C
Temperature range, compensated	-10~70°C	-10~70°C
Temperature range, safe	-10~80°C	-10~80°C
Terminal resistance input	350±50Ω	350±30Ω
Terminal resistance output	350±2Ω	350±2Ω
Insulation resistance bridge/case	2000MΩ	2000MΩ
Excitation recommended	10V	10V
Safe overload	150% R.C.	120% R.C.
Cable length	Ø5mm 4core, 3m	Ø5mm 4core, 3m

★Specifications are subject to change without notice.

# MINIATURE TENSION LOAD CELLS

## > Model UMM, UMMA

Compression or Tension load cell.  
 These load cells are extremely small and lightweight.  
 Protection Class IP67



## > SPECIFICATIONS

Specifications	Accuracy	
	UMMA	UMM
Rated capacity(R.C.)	1kgf, 2kgf, 5kgf, 10kgf, 20kgf, 50kgf, 100kgf, 200kgf	1kgf, 2kgf, 5kgf, 10kgf, 20kgf, 50kgf, 100kgf, 200kgf
Rated output(R.O.)	0.7~1.2mV/V	0.7~1.2mV/V
Nonlinearity	0.1% of R.O.	0.1% of R.O.
Hysteresis	0.1% of R.O.	0.1% of R.O.
Repeatability	0.1% of R.O.	0.1% of R.O.
Zero balance	±2% of R.O.	±2% of R.O.
Temperature effect, on rated output	0.1% of LOAD / 10°C	0.1% of LOAD / 10°C
Temperature effect, on zero balance	0.05% of R.O. / 10°C	0.05% of R.O. / 10°C
Temperature range, compensated	-10~60°C	-10~60°C
Temperature range, safe	-10~80°C	-10~80°C
Terminal resistance input	350±30Ω	350±30Ω
Terminal resistance output	350±2Ω	350±2Ω
Insulation resistance bridge/case	2000MΩ	2000MΩ
Excitation recommended	5V	5V
Safe overload	120% R.C.	120% R.C.
Cable length	Ø3.4core shield cable, 3m	Ø3.4core shield cable, 3m

## > DIMENSIONS TABLE(UMMA/UMM)

unit:mm

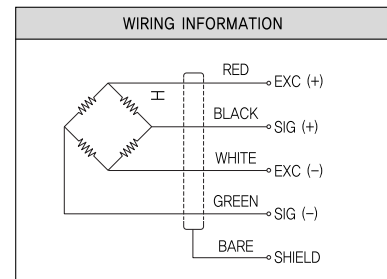
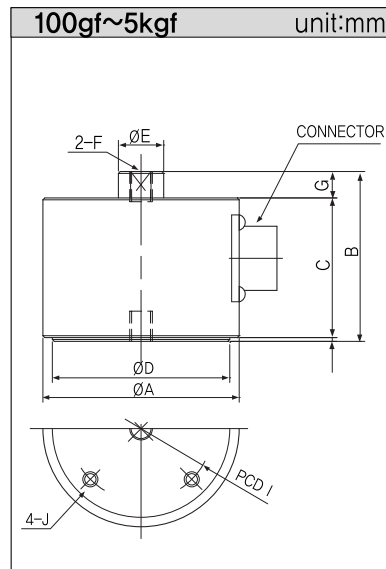
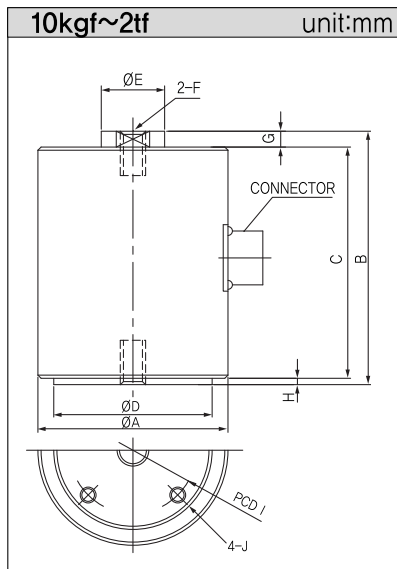
Capacity	UMMA						UMM					
	A	B	C	D	E	F	A	B	C	D	E	F
1kgf (9.807N)	23	20	10	M3×0.5	18	M3DP5	23	34	20	M3×0.5	14	-
2kgf (19.61N)	23	20	10	M3×0.5	18	M3DP5	23	34	20	M3×0.5	14	-
5kgf (49.03N)	23	20	10	M3×0.5	18	M3DP5	23	34	20	M3×0.5	14	-
10kgf (98.07N)	27	21	11	M6×1	22	M3DP5	27	37	30	M6×1	17	-
20kgf (196.1N)	27	21	11	M6×1	22	M3DP5	27	37	30	M6×1	17	-
50kgf (490.3N)	27	21	11	M6×1	22	M3DP5	27	37	30	M6×1	17	-
100kgf (980.7N)	27	21	11	M6×1	22	M3DP5	27	37	30	M6×1	17	-
200kgf (1,961kN)	27	21	11	M6×1	22	M3DP5	27	37	30	M6×1	17	-

★Specifications are subject to change without notice.

# MINIATURE COMPRESSION & TENSION LOAD CELL

## > Model UMI

Model UMI load cells measure both tension & compression load force of 100gf to 2tf. High accuracy, high output Voltage and tight tolerance provides excellent reliability. Applications include performance testers for automotive industry.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	100gf, 200gf, 500gf, 1kgf, 2kgf, 5kgf, 10kgf, 50kgf, 100kgf, 200kgf, 500kgf, 1tf, 2tf
Rated output(R.O.)	2mV/V±1% (100gf~5kgf=1mV/V)
Nonlinearity	0.03% of R.O.
Hysteresis	0.03% of R.O.
Repeatability	0.03% of R.O.
ZERO Balance	±2% of R.O.
Excitation recommended	10V (100gf~5kgf=5V)
Terminal resistance	350Ω ±1%
Insulation resistance bridge	2000MΩ
Temperature range, compensated	-10 ~ 50°C
Temperature range, safe	-20 ~ 80°C
Temperature effect, on rated output	0.1% of LOAD/10°C
Temperature effect, on zero balance	0.05% of R.O/10°C
Excitation recommended	10V
Safe overload	120% R.C.
Cable length	Ø5±0.5, 4core, 3m

## > DIMENSIONS TABLE

Capacity	ØA	B	C	ØD	ØE	F	G	H	I	J	Weight(kg)
100gf (0.980N)	52	45	37	47	10.5	M4X0.7DP8	7	1	38	4-M4 DP6	0.5
200gf (1.961N)	52	45	37	47	10.5	M4X0.7DP8	7	1	38	4-M4 DP6	
500gf (4.903N)	52	45	37	47	10.5	M4X0.7DP8	7	1	38	4-M4 DP6	
1kgf (9.807N)	52	45	37	47	10.5	M6X1.0DP8	7	1	38	4-M4 DP6	
2kgf (19.61N)	52	45	37	47	12	M6X1.0DP8	7	1	38	4-M4 DP6	
5kgf (49.03N)	52	45	37	47	12	M6X1.0DP8	7	1	38	4-M4 DP6	1
10kgf (98.07N)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	
20kgf (196.1N)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	
50kgf (490.3N)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	
100kgf (980.7N)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	
200kgf (1.961kN)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	2
500kgf (4.903kN)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	
1tf (9.807kN)	60	80	73	50	20	M12X1.75DP15	5	2	40	4-M5 DP10	
2tf (19.61kN)	88	110	102	80	36	M18X1.5DP22	5	3	55	4-M6 DP12	3

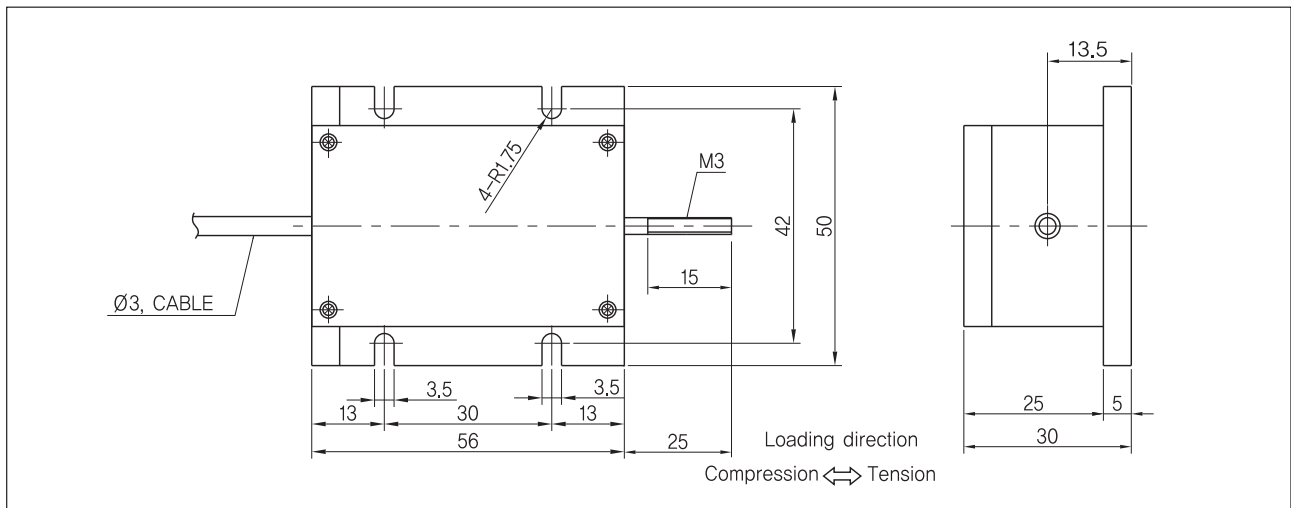
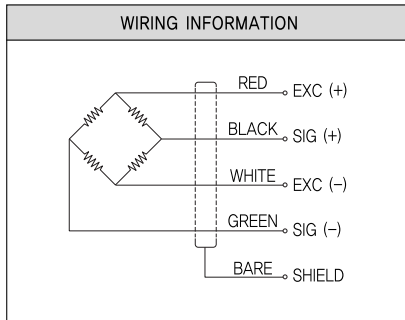
★Specifications are subject to change without notice.

# UNIVERSAL BENDING BEAM LOAD CELL

## > Model US

A low capacity, universal, bending beam load cell. The US is excellent when small force measurements are required.

A push-pull type.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity	5N(500 gf) to 19.61 N(2 kgf)
Safe overload	150% R.C.
Ultimate overload	150% R.C.
Rated output	1.2 ~ 1.5mV/V
Non-linearity	0.2% R.O.
Hysteresis	0.2% R.O.
Repeatability	0.2% R.O.
Excitation, recommended	5V
Zero balance	±0.2mV/V
Input resistance	350 ohm ± 40 ohm
Output resistance	350 ohm ± 40 ohm
Insulation resistance	1000M-ohm or more (DC 50V)
Temperature range, compensated	0°C to 50°C
Temperature range, safe	-10°C to 60°C
Temperature effect, on zero balance	0.5% R.O./10°C
Temperature effect, on output	0.5% LOAD/10°C
Cable	Ø3.4core shield cable, 3m

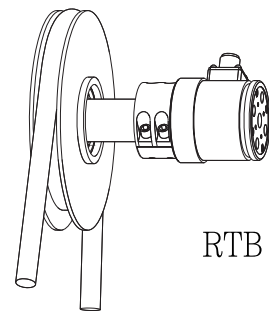
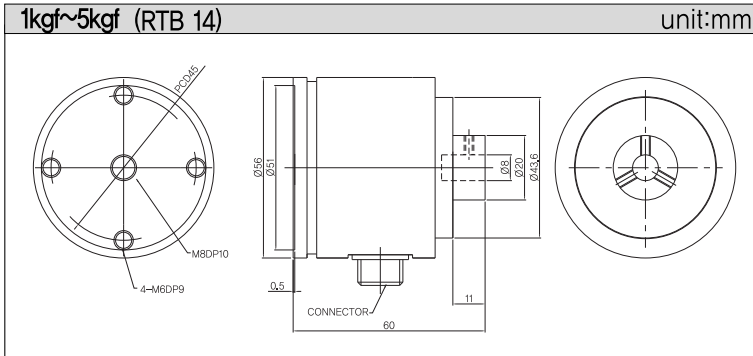
★Specifications are subject to change without notice.



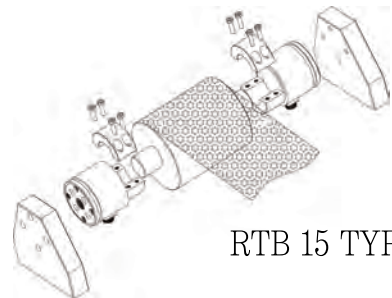
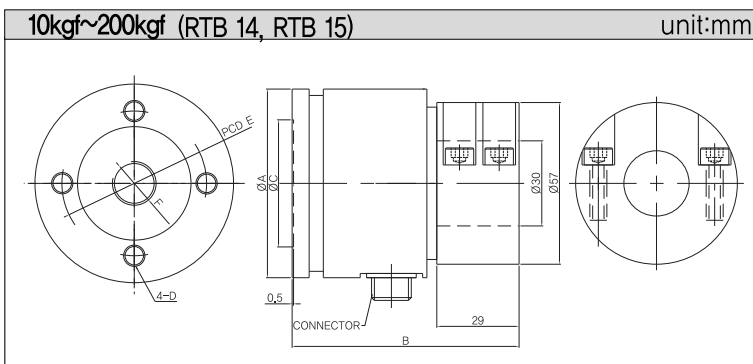
# WEB TENSION LOAD CELLS

## > Model RTB14, RTB15

Model RTB14, RTB15 loadcell measure the wire and roll tension.



RTB 14 TYPE



RTB 15 TYPE

### > DIMENSIONS TABLE (RTB14) unit:mm

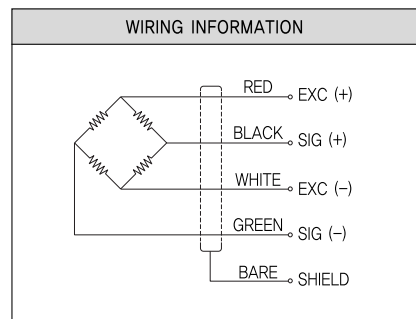
Capacity	A	B	ØC	D	E	F
10kgf (98.07N)	Ø60	80	50	M5DP15	45	M12
20kgf (196.N)	Ø60	80	50	M5DP15	45	M12
50kgf (490.3N)	Ø60	80	50	M5DP15	45	M12
100kgf (980.7N)	Ø66.5	85	60	M8DP15	51	M16
200kgf (1.961KN)	Ø66.5	85	60	M8DP15	51	M16

### > DIMENSIONS TABLE (RTB15) unit:mm

Capacity	A	B	ØC	D	E	F
10kgf (98.07N)	Ø60	93.5	50	M5DP15	45	M12
20kgf (196.N)	Ø60	93.5	50	M5DP15	45	M12
50kgf (490.3N)	Ø60	93.5	50	M5DP15	45	M12
100kgf (980.7N)	Ø66.5	102	60	M8DP15	51	M16
200kgf (1.961KN)	Ø66.5	102	60	M8DP15	51	M16

### > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C)	10kgf, 20kgf, 50kgf, 100kgf, 200kgf
Rated output(R.O)	1 mV/V
Nonlinearity	0.05% of R.O.
Repeatability	0.05% of R.O.
Excitation recommended	10V
Terminal resistance input	350Ω ±30Ω
Terminal resistance output	350Ω ±2Ω
Insulation resistance bridge	2000MΩ
Temperature range, compensated	-10~70°C
Temperature range, safe	-10~80°C
Safe overload	120% R.C
Cable length	Ø5±0.3mm, 4core, 3m

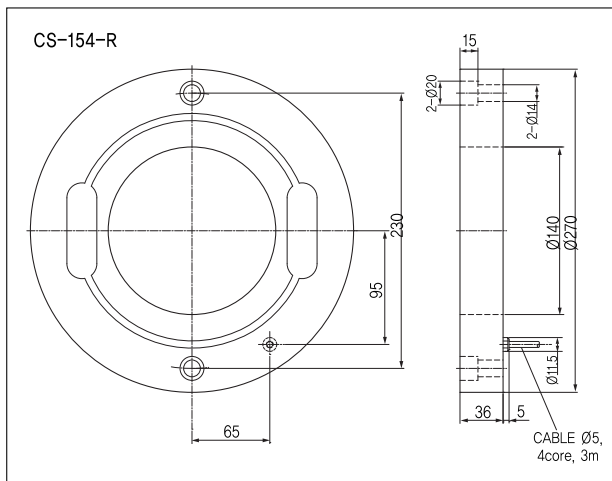
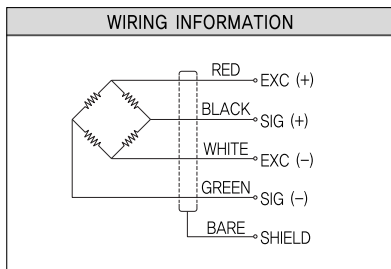


★Specifications are subject to change without notice.

# WINCH TENSION

## > Model CS154, CS154-R, CS154-L

- Suitabel to control winches Tension



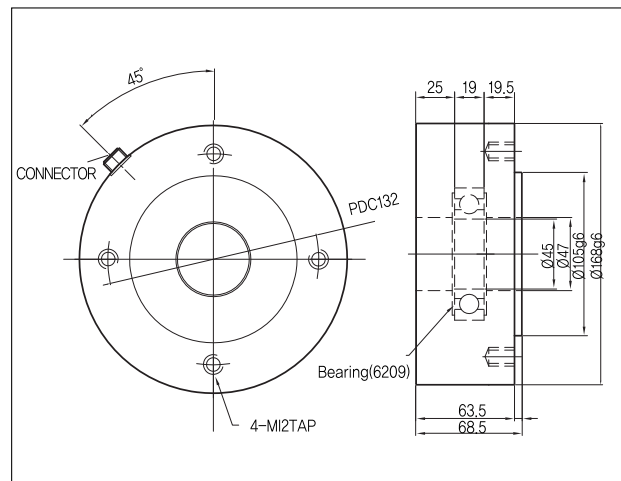
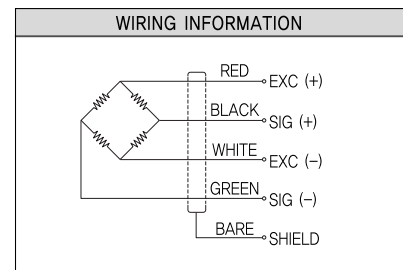
### > DIMENSIONS TABLE

Specifications	Accuracy
RATED CAPACITY (R.C.)	2.5tf
RATED OUTPUT (R.O.)	1mV/V±1%
NON-LINEARITY	0.15% R.O.
HYSTERESIS	0.15% R.O.
REPEATABILITY	0.1% R.O.
ZERO BALANCE	±2% R.O.
TEMP. RANGE COMPENSATED	-10°C ~ 60°C
SAFE TEMPERATURE RANGE	-20°C ~ 70°C
TEMP. EFFECT ON RATED OUTPUT	±0.1%LOAD/10°C
TEMP. EFFECT ON ZERO BALANCE	±0.1%R.O./10°C
RESISTANCE, INPUT	700 Ohm±10
RESISTANCE, OUTPUT	700 Ohm±5
INSULATION RESISTANCE BRIDGE TO GROUND	2000MΩ
ELECTRICAL CONNECTION	Ø5mm x 4C x 3m
EXC. RECOMMENDED	10V
SAFE OVERLOAD	120% R.C.
Surface Finish	Zinc galvanizing

# ROLLER TENSION

## > Model RTB9

- Suitabel to control Roller Tension



### > DIMENSIONS TABLE

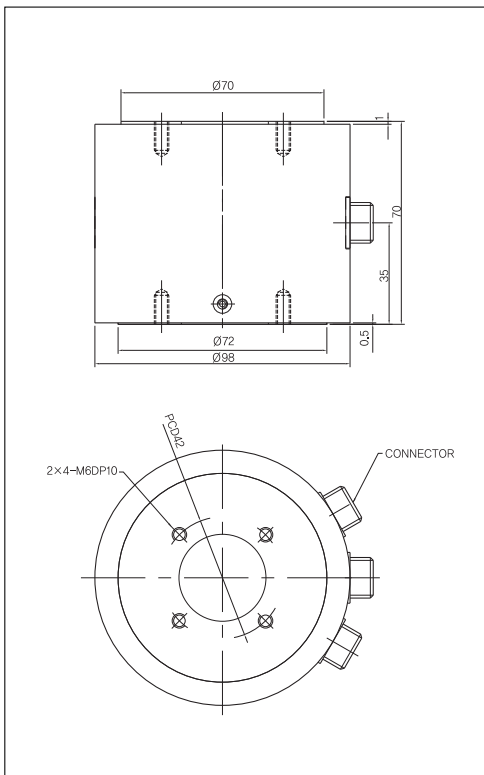
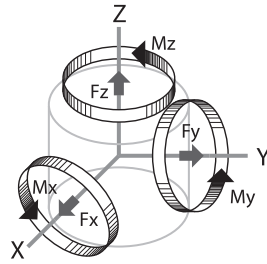
Specifications	Accuracy
RATED CAPACITY (R.C.)	3tf
RATED OUTPUT (R.O.)	1mV/V ±1%
NON-LINEARITY	0.1% R.O.
HYSTERESIS	0.1% R.O.
REPEATABILITY	0.05% R.O.
EXC. RECOMMENDED	10V
SAFE TEMPERATURE RANGE	-20°C ~ 70°C
TEMP. RANGE COMPENSATED	-10°C ~ 60°C
TEMP. EFFECT ON RATED OUTPUT	±0.1%LOAD/10°C
TEMP. EFFECT ON ZERO BALANCE	±0.1%R.O./10°C
TERMINAL RESISTANCE	350 Ohm±1%
INSULATION RESISTANCE BRIDGE TO GROUND	2000MΩ
ELECTRICAL CONNECTION	Ø5mm x 4C x 3m
SAFE OVERLOAD	200% R.C.

★Specifications are subject to change without notice.

# MULTI COMPONENT LOAD CELL

## > Model MC15

Various capacity of detecting up to components  
Minimize interaction between components.



- Dimensions can be modified by consumer's request.
- Dimensions are subject to change without notice.

### 2-Component loadcells (Force : N, Moment : N-m)

MODEL	Rated Capacity						
	Fx	Fy	Fz	Mx	My	Mz	
MC15-2A	10	10	10	(30)	(2)	(2)	(2)
	20	20	20	(50)	(5)	(5)	(5)
	50	50	50	(100)	(10)	(10)	(10)
	100	100	100	(200)	(20)	(20)	(20)
	200	200	200	(500)	(50)	(50)	(50)
500	500	500	(750)	(100)	(100)	(100)	
MC15-2B	10	10	(30)	10	(2)	(2)	(2)
	20	20	(50)	20	(5)	(5)	(5)
	50	50	(100)	50	(10)	(10)	(10)
	100	100	(200)	100	(20)	(20)	(20)
	200	200	(500)	200	(50)	(50)	(50)
500	500	(750)	500	(100)	(100)	(100)	

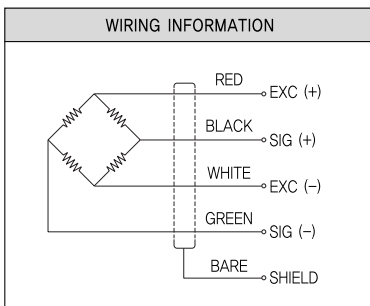
\* ( ) Allowable force & Moment

### 3-Component loadcells (Force : N, Moment : N-m)

MODEL	Rated Capacity						
	Fx	Fy	Fz	Mx	My	Mz	
MC15-3A	10	10	10	10	(2)	(2)	(2)
	20	20	20	20	(5)	(5)	(5)
	50	50	50	50	(10)	(10)	(10)
	100	100	100	100	(20)	(20)	(20)
	200	200	200	200	(50)	(50)	(50)
500	500	500	500	(100)	(100)	(100)	
MC15-3B	10	10	10	(2)	(2)	(2)	1
	20	20	20	(5)	(5)	(5)	2
	50	50	50	(10)	(10)	(10)	5
	100	100	100	(20)	(20)	(20)	10
	200	200	200	(50)	(50)	(50)	20
500	500	500	(100)	(100)	(100)	50	
MC15-3C	10	10	(30)	10	(2)	1	(2)
	20	20	(50)	20	(5)	2	(5)
	50	50	(100)	50	(10)	5	(10)
	100	100	(200)	100	(20)	10	(20)
	200	200	(500)	200	(50)	20	(50)
500	500	(750)	500	(100)	50	(100)	

\* ( ) Allowable force & Moment

## > SPECIFICATIONS



★ Specifications are subject to change without notice.

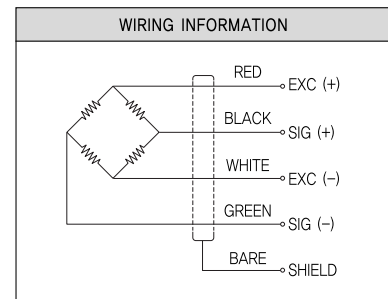
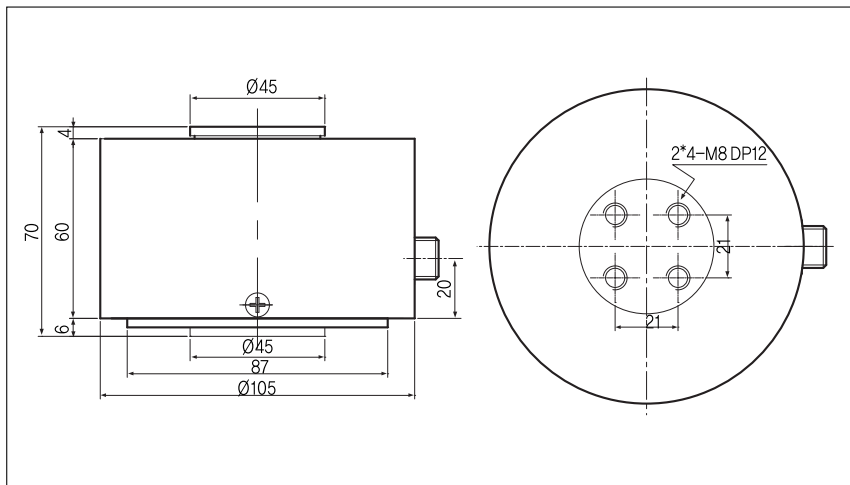
Specifications	Accuracy
Rated output(R.O)	0.5mV/V±1%
Nonlinearity	0.5% of R.O.
Hysteresis	0.5% of R.O.
Repeatability	0.3% of R.O.
Excitation recommended	10V
Terminal resistance	350Ω ±3.5Ω
Insulation resistance bridge	2000MΩ
Temperature effect, on rated output	±0.03% R.O./°C
Temperature effect, on zero balance	±0.03%/°C
Safe overload	120% R.C.
Cable length	Ø3, 4core shield cable, 3m
Degree of interference	3% R.O.

# MULTI COMPONENT LOADCELL(6 axis)

## > Model MC15

This is loadcell of simple construction for torque and axial force detection. Provided with a flange for easy installation. Most suitable for use in materials testing machines.

- Oder made – size, capacity



## > SPECIFICATIONS

Specifications	Accuracy
Rated output(R.O.)	0.5mV/V±1%
Non-Linearity	0.5% R.O.
Hysteresis	0.5% R.O.
Repeatability	0.3% R.O.
Excitation recommended	10V
Terminal resistance	350 Ohm±3.5
Insulation resistance bridge	2000M
Temperature, effect on rated output	±0.03% R.O./°C
Temperature, effect on zero balance	±0.03%/°C
Safe overload	120% R.C.
Cable length	Ø3mmx4Cx3m
Degree of interference	±3% R.O.

## > DIMENSIONS TABLE

Model	Rated Capacity					
	Fx	Fy	Fz	Mx	My	Mz
MC15-6A-	20	20	20	2	2	2
	50	50	50	5	5	5
	100	100	100	10	10	10
	200	200	200	20	20	20
	500	500	500	50	50	50

Force : N, Moment : Nm

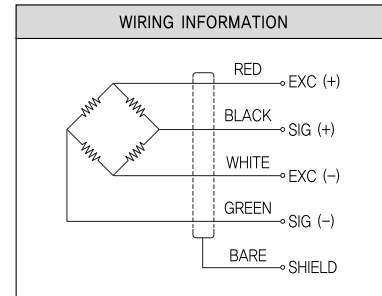
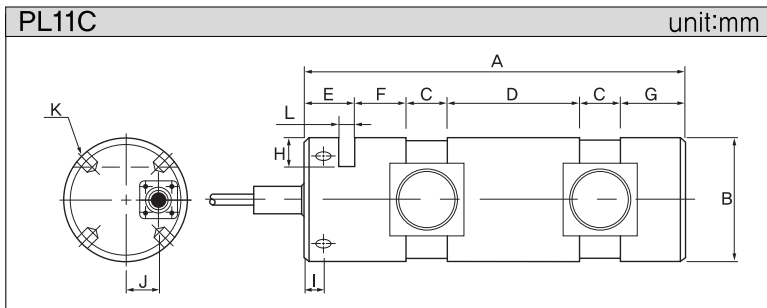
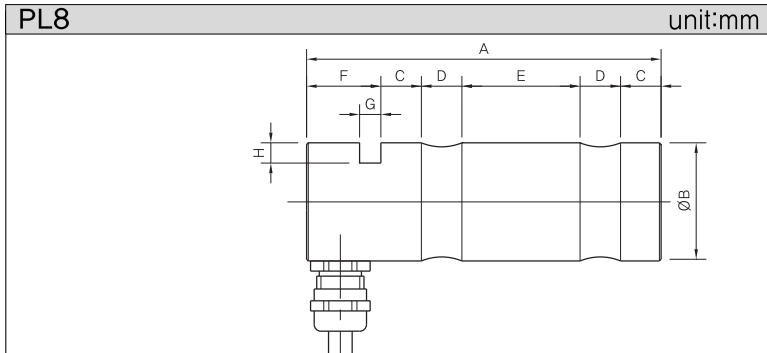
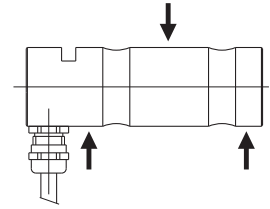
★Specifications are subject to change without notice.

# DOUBLE ENDED SHEAR BEAM LOAD CELLS

## > Model PL8, PL11C

Pin Type, Load cells made from stainless steel, Small size, easy to install.  
Load cells for crane scale system and Load limiter system.

- Protection class IP67



## > SPECIFICATIONS

Specifications	Accuracy	
	PL8	PL11C
Rated capacity(R.C.)	2tf, 5tf, 10tf, 20tf, 40tf	50tf, 100tf, 125tf, 150tf, 200tf
Rated output(R.O.)	1mV/V±0.5%	1mV/V±0.5%
Nonlinearity	0.15% of R.O.	0.15% of R.O.
Hysteresis	0.15% of R.O.	0.1% of R.O.
Reperatability	0.1% of R.O.	0.1% of R.O.
Creep	0.05% of R.O.	0.05% of R.O.
Zero balance	±1% of R.O.	±1% of R.O.
Excitation recommended	10V	10V
Terminal resistance input, output	700Ω±1%	700Ω±5%
Insulation resistance bridge	2000MΩ	2000MΩ
Temperature range, compensated	-10~70°C	-10~70°C
Temperature range, safe	-20~80°C	-20~80°C
Temp. effect on rated output	±0.01% of LOAD/10°C	±0.01% of LOAD/10°C
Temperature effect, on zero balance	±0.02% of R.O./10°C	±0.02% of R.O./10°C
Safe overload	120% R.C.	150% R.O.
Cable length	Ø5, 4core, 3m	Ø7, 4core shield, 2m

## > DIMENSIONS TABLE (PL8)

Model	Capacity	A	B	C	D	E	F	G	H
PL8-T2	2tf (19.61kN)	105	35	12	12	35	22	6.3	6
PL8-T5	5tf (49.03kN)	105	35	12	12	35	22	6.3	6
PL8-T10	10tf (98.07kN)	152	50	18	18	48	32	10.5	5
PL8-T20	20tf (196.1kN)	190	65	20	25	65	35	10.5	10
PL8-T40	40tf (392.3kN)	256	85	28	35	89	41	12.5	14.5

Model	Capacity	A	øB	C	D	E	F	G	H	I	J	K	M
PL11C-T50	50tf (490.35kN)	258	85	28	89	23	35	44	20	13	22	4-ø10 DP10	10.5
PL11C-T100	100tf (980.7kN)	347	100	35	120	36	55	66	14	13	28	4-ø10 DP10	10.5
PL11C-T125	125tf (1225.87kN)	347	120	35	120	36	55	66	40	13	34.5	4-ø10 DP10	12.5
PL11C-T150	150tf (1471.05kN)	450	140	50	140	70	70	70	40	20	35	6-ø12 DP10	30
PL11C-T200	200tf (1961.4kN)	356	160	50	80	50	38	88	40	15	35	6-ø12 DP20	20

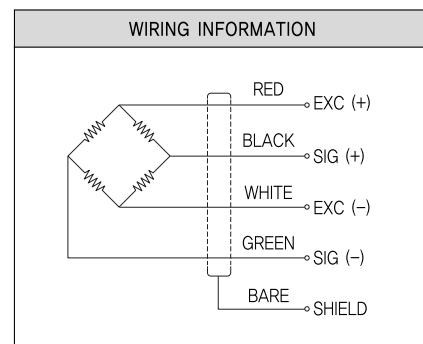
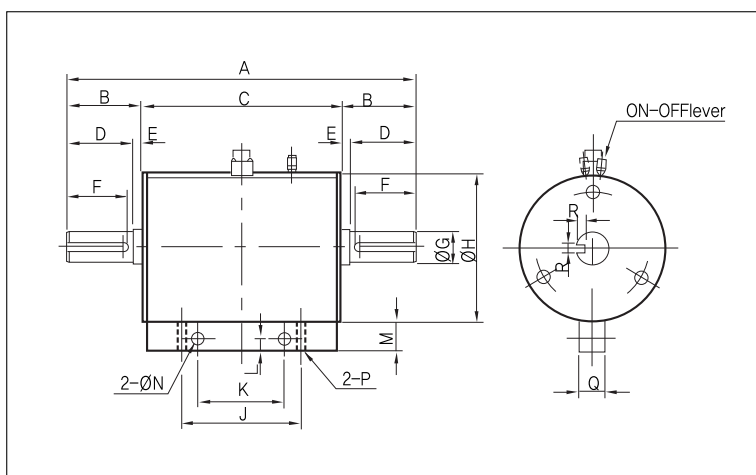
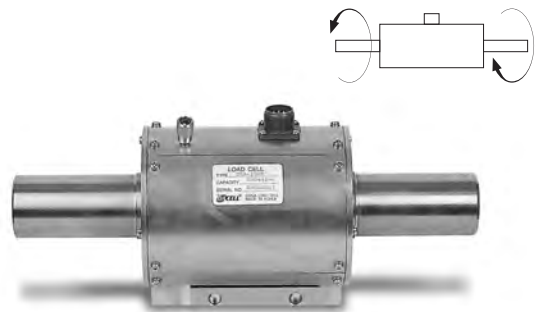
★Specifications are subject to change without notice.

# SHAFT TYPE TORQUE SENSORS

## > Model TRA

Model TRA load cell measure the torque of continuous rotating object. Platinum coated connector provides long term signal stability and high accuracy. These models are most appropriate for industrial measurement. Applications include the performance testers for automotive components such as clutches, transmissions, motors and pumps.

※Option : r.p.m. sensor, Foot mount.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	1~300kgf-m (9.807N-m~2,942kNm)
Rated output(R.O.)	1.5mV/V±1%(1~5kgf-m:1mV/V)
Nonlinearity	0.3%R.O.
Hysteresis	0.2%R.O.
Repeatability	0.3%R.O.
Excitation recommended	10V
Terminal resistance	350Ω ±1%
Insulation resistance bridge	200MΩ
Temperature effect, on rated output	0.3% R.O/10°C
Temperature effect, on zero balance	0.2% Load/10°C
Safe overload	120% R.C.
Cable length	Ø7.4core cable 3m

## > DIMENSIONS TABLE

unit:mm

Model	Capacity	A	B	C	D	E	F	ØG	ØH	J	K	L	M	N	P	Q	R	R.P.M	Weight(kg)
TRA-1K	1kgf-m (9.807N-m)	203	43	117	38	5	35	18	85	90	50	7	17	7	M6	15	5×5	5000	3
TRA-2K	2kgf-m (19.61N-m)	203	43	117	38	5	35	18	85	90	50	7	17	7	M6	15	5×5	5000	
TRA-5K	5kgf-m (49.03N-m)	203	43	117	38	5	35	18	85	90	50	7	17	7	M6	15	5×5	5000	
TRA-10K	10kgf-m (98.07N-m)	240	55	130	50	5	45	32	100	90	50	7	17	7	M6	15	10×8	5000	7
TRA-20K	20kgf-m (196.1N-m)	240	55	130	50	5	45	32	100	90	50	7	17	7	M6	15	10×8	4000	
TRA-50K	50kgf-m (490.3N-m)	340	95	150	90	5	85	47	118	100	60	8	20	9	M8	17	12×8	4000	12
TRA-100K	100kgf-m (980.7N-m)	340	95	150	90	5	85	47	118	100	60	8	20	9	M8	17	12×8	4000	
TRA-200K	200kgf-m (1,961kN-m)	360	103	154	100	3	95	63	135	100	60	8	20	9	M8	17	18×11	4000	23
TRA-300K	300kgf-m (2,942kN-m)	360	103	154	100	3	95	63	135	100	60	8	20	9	M8	17	18×11	3000	

★Specifications are subject to change without notice.

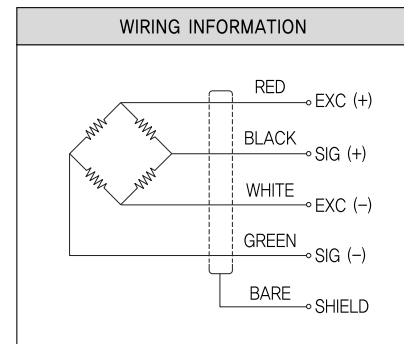
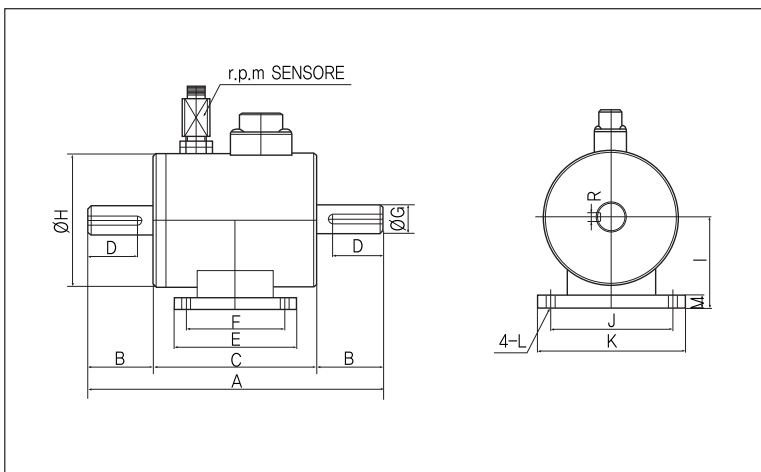
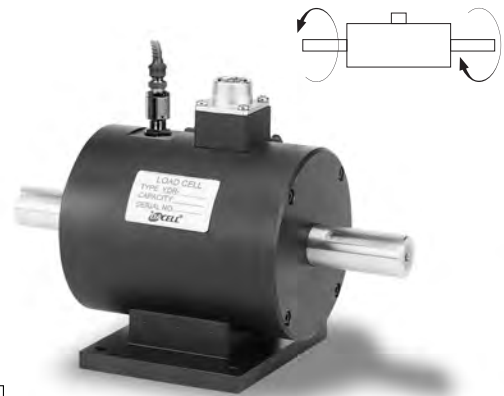


# SHAFT TYPE TORQUE SENSORS

## > Model TRB

Model TRB load cell measure the torque of continuous rotating object. Platinum coated connector provides long term signal stability and high accuracy. These models are most appropriate for industrial measurement. Applications include the performance testers for automotive components such as clutches, transmissions, motors and pumps.

※Option : r.p.m. sensor, Foot mount.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	1~2000kgf-m (9.807N-m~19.61kN-m)
Rated output(R.O.)	1.5mV/V±1%(1~5kgf-m:1mV/V)
Nonlinearity	0.3%R.O.
Hysteresis	0.2%R.O.
Repeatability	0.3%R.O.
Excitation recommended	10V
Terminal resistance	350Ω ±5%
Insulation resistance bridge	200MΩ
Temperature effect, on rated output	0.3% R.O/10°C
Temperature effect, on zero balance	0.2% Load/10°C
Safe overload	120% R.C.
Cable length	Ø7.4core cable 3m

## > DIMENSIONS TABLE

unit:mm

Model	Capacity	A	B	C	D	E	F	ØG	ØH	I	J	K	ØL	M	R	R.P.M	Weight(kg)
TRB-1K	1kgf-m (9.807N-m)	191	43	105	38	68	50	18	72	41	72	86	7	8.5	5×5	5000	3
TRB-2K	2kgf-m (19.61N-m)	191	43	105	38	68	50	18	72	41	72	86	7	8.5	5×5	5000	
TRB-5K	5kgf-m (49.03N-m)	191	43	105	38	68	50	18	72	41	72	86	7	8.5	5×5	5000	
TRB-10K	10kgf-m (98.07N-m)	260	55	150	40	100	84	32	100	63	98	115	7	12	10×8	5000	7
TRB-20K	20kgf-m (196.1N-m)	260	55	150	40	100	84	32	100	63	98	115	7	12	10×8	4000	
TRB-50K	50kgf-m (490.3N-m)	310	80	150	70	120	98	47	118	75	124	148	9	15	12×8	4000	12
TRB-100K	100kgf-m (980.7N-m)	310	80	150	75	120	98	47	118	75	124	148	9	15	12×8	4000	
TRB-200K	200kgf-m (1.961kN-m)	375	100	175	85	120	98	63	135	90	150	180	10.5	20	18×11	4000	25
TRB-300K	300kgf-m (2.942kN-m)	375	100	175	85	120	98	63	135	90	150	180	10.5	20	18×11	3000	
TRB-500k	500kgf-m (4.903kN-m)	500	140	220	115	148	118	90	170	114	162	192	11	26	25×14	3000	55
TRB-1000k	1000kgf-m (9.807kN-m)	500	140	220	115	148	118	90	170	114	162	192	11	26	25×14	3000	
TRB-2000k	2000kgf-m (19.61kN-m)	680	208	264	160	210	172	115	210	138	190	230	13	26	32×18	3000	100

★Specifications are subject to change without notice.

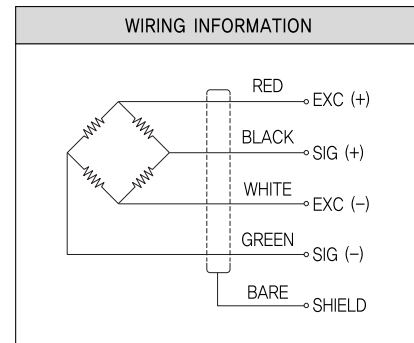
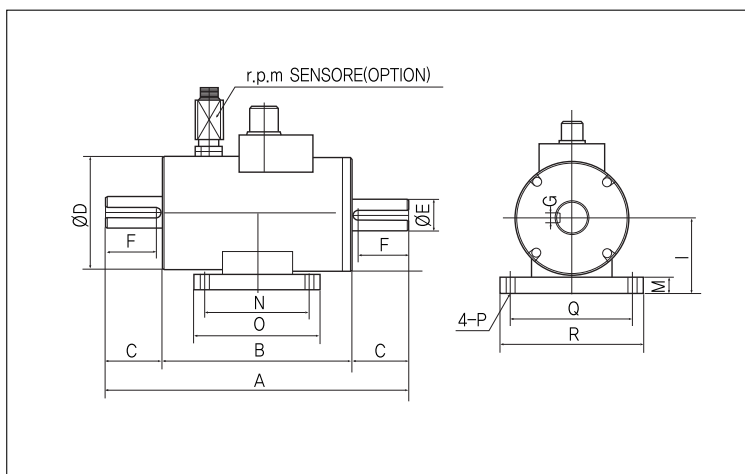
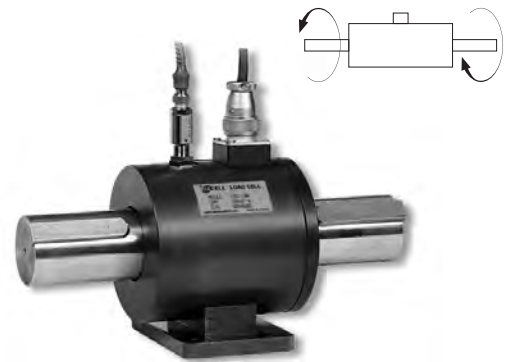
# SHAFT TYPE BRUSHLESS TORQUE SENSORS

## > Model TRC

Model TRC brushless type torque transducers are designed for high RPM application. The brushless type allows a maintenance free and a maximum durability.

This model can be used for various tests including aircraft engine test which requires high RPM and high accuracy.

※Option : r.p.m. sensor, Foot mount.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000(kgf-m), 9.807, 19.61, 49.03, 98.07, 196.1, 490.3, 980.7(N-m) 1.961, 4.903, 9.807, 19.61(kN-m)
Rated output(R.O.)	1.3mV/V±1%
Nonlinearity	±0.5%R.O.
Hysteresis	±0.5%R.O.
Repeatability	±0.5%R.O.
Excitation recommended	2 VAC
Temperature operating	0°C~60°C
Temperature effect, on rated output	0.3% R.O/10°C
Temperature effect, on zero balance	0.2% Load/10°C
Safe overload	120% R.C.
Cable length	cable Ø10 , 4 core shield 5m

## > DIMENSIONS TABLE

unit:mm

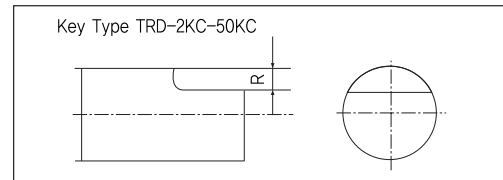
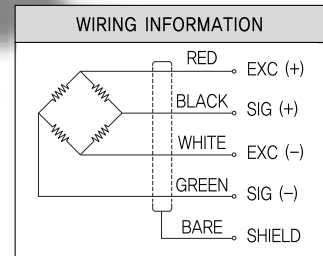
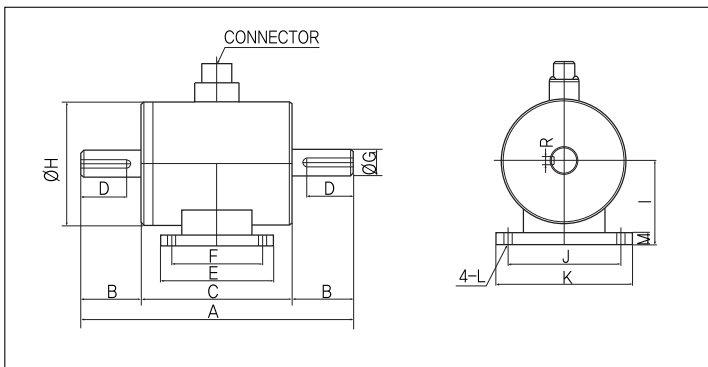
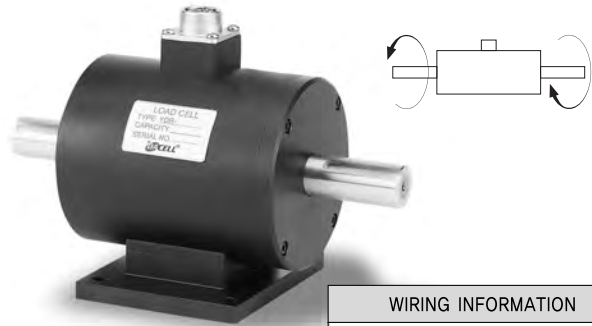
Model	Capacity	A	B	C	ØD	ØE	F	G	I	M	N	O	ØP	Q	R	R.P.M	Weight(kg)
TRC-1K	1kgf-m (9.807N-m)	236	146	45	84	17	40	5×5	55	12	83	101	7	91	109	10,000	3
TRC-2K	2kgf-m (19.61N-m)	236	146	45	84	17	40	5×5	55	12	83	101	7	91	109	10,000	
TRC-5K	5kgf-m (49.03N-m)	236	146	45	84	17	40	5×5	55	12	83	101	7	91	109	10,000	
TRC-10K	10kgf-m (98.07N-m)	240	150	45	90	25	40	8×7	60	12	83	101	7	97	115	10,000	8
TRC-20K	20kgf-m (196.1N-m)	240	150	45	90	25	40	8×7	60	12	83	101	7	97	115	10,000	
TRC-50K	50kgf-m (490.3N-m)	302	162	70	114	45	60	10×8	75	15	97	121	9	123	147	8,000	15
TRC-100K	100kgf-m (980.7N-m)	302	162	70	114	45	60	10×8	75	15	97	121	9	123	147	8,000	
TRC-200K	200kgf-m (1.961kN-m)	336	176	80	148	70	70	18×11	95	20	97	121	9	157	181	5,000	25
TRC-500K	500kgf-m (4.903kN-m)	336	176	80	148	70	70	18×11	95	20	97	121	9	157	181	5,000	
TRC-1000K	1000kgf-m (9.807kN-m)	445	185	130	173	90	110	25×14	110	20	108	134	11	184	210	3,800	55
TRC-2000K	2000kgf-m (19.61kN-m)	513	193	160	203	110	140	28×16	128	23	121	159	13	216	254	3,000	

★Specifications are subject to change without notice.

# SHAFT TYPE TORQUE SENSORS

## > Model TRD

Model TRD loadcell measure the torque of continuous rotating object. Platinum coated connector provides long term signal stability and high accuracy. These models are most appropriate for industrial measurement. Applications include the performance testers for automotive components such as clutches, transmissions, motors and pumps.  
 ※Option : Foot mount.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	2, 5, 10, 20, 30, 50(kgf-cm), 1, 2, 3, 5, 10, 20, 50, 100, 200, 500, 1000, 2000(kgf-m) 0.196, 0.490, 0.981, 1.961, 2.942, 4.903, 9.807, 19.61, 29.42, 49.03, 98.07, 196.1, 490.3, 980.7(N-m) 1.961, 4.903, 9.807, 19.61(kN-m)
Rated output(R.O.)	1.5mV/V±1%(2kgf-cm~5kgf-m:1mV/V)
Nonlinearity	0.3%R.O.
Hysteresis	0.3%R.O.
Repeatability	0.2%R.O.
Excitation recommended	10V
Terminal resistance	350Ω ±5%
Insulation resistance bridge	200MΩ
Temperature effect, on rated output	0.3% R.O./10°C
Temperature effect, on zero balance	0.2% Load/10°C
Safe overload	120% R.C.
Cable length	Ø7.4core cable 3m

## > DIMENSIONS TABLE

unit:mm

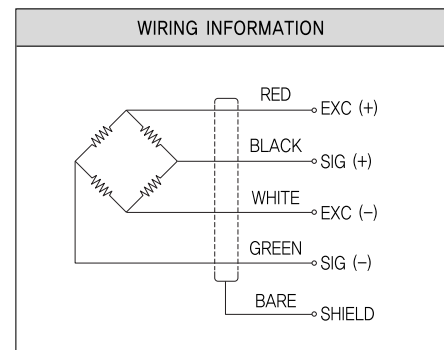
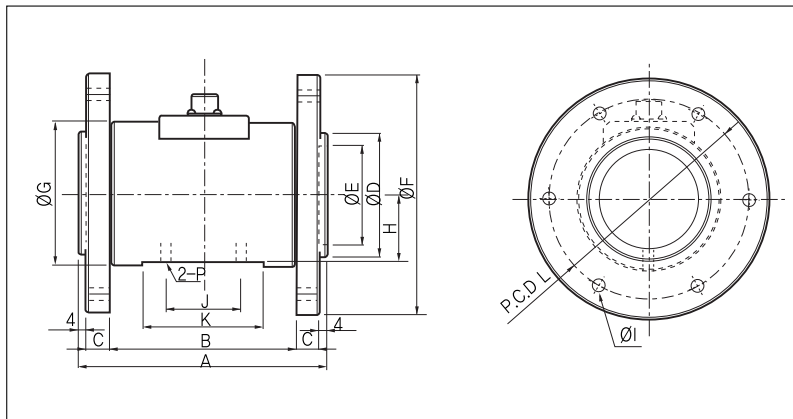
Model	Capacity	A	B	C	D	E	F	ØG	ØH	I	J	K	ØL	M	R	R.P.M
TRD-2KC	2kgf-cm (0.196N-m)	84	16	52	12	42	32	8	60	34	65	76	5.5	8	1	5000
TRD-5KC	5kgf-cm (0.490N-m)	84	16	52	12	42	32	8	60	34	65	76	5.5	8	1	5000
TRD-10KC	10kgf-cm (0.981N-m)	84	16	52	12	42	32	8	60	34	65	76	5.5	8	1	5000
TRD-20KC	20kgf-cm (1.961N-m)	84	16	52	12	42	32	8	60	34	65	76	5.5	8	1	5000
TRD-30KC	30kgf-cm (2.942N-m)	84	16	52	12	42	32	12	60	34	65	76	5.5	8	1.5	5000
TRD-50KC	50kgf-cm (4.903N-m)	84	16	52	12	42	32	12	60	34	65	76	5.5	8	1.5	5000
TRD-1K	1kgf-m (9.807N-m)	90	16	58	12	46	32	18	72	41	80	94	6.5	8.5	5×5	5000
TRD-2K	2kgf-m (19.61N-m)	90	16	58	12	46	32	18	72	41	80	94	6.5	8.5	5×5	5000
TRD-3K	3kgf-m (29.42N-m)	90	16	58	12	46	32	18	72	41	80	94	6.5	8.5	5×5	5000
TRD-5K	5kgf-m (49.03N-m)	180	42.5	95	35	64	50	18	80	46	80	100	7	12	5×5	5000
TRD-10K	10kgf-m (98.07N-m)	180	42.5	95	35	64	50	18	80	46	80	100	7	12	5×5	5000
TRD-20K	20kgf-m (196.1N-m)	220	55	110	45	100	84	32	100	63	98	115	7	12	10×8	4000
TRD-50K	50kgf-m (490.3N-m)	220	55	110	45	100	84	32	100	63	98	115	7	12	10×8	4000
TRD-100K	100kgf-m (980N-m)	280	80	120	69	120	98	47	100	66	124	148	8.5	15	12×8	4000
TRD-200K	200kgf-m (1.961kN-m)	280	80	120	69	120	98	47	100	66	124	148	8.5	15	12×8	4000
TRD-500K	500kgf-m (4.903kN-m)	390	130	130	100	126	100	90	172	101	154	180	11	20	25×14	2000
TRD-1000K	1000kgf-m (9.807kN-m)	390	130	130	100	126	100	90	172	101	154	180	11	20	25×14	2000
TRD-2000K	2000kgf-m (19.61kN-m)	440	150	140	120	148	110	115	210	130	190	228	13	23	32×18	2000

★Specifications are subject to change without notice.

# FLANGE TYPE ROTARY TORQUE SENSORS

## > Model TRE

Model TRE slipping rotating torque transducers have flange drives at both ends. This model is designed for the application with minimal space and high capacity requirement.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity	20kgf~500kgf-m (196.1N~4.903kN-m)
Rated output	1.5mV/V
Nonlinearity	0.3%
Hysteresis	0.3%
Repeatability	0.3%
Terminal resistance, input	350Ω ±5Ω
Terminal resistance, output	350Ω ±3Ω
Insulation resistance	300MΩ
Temperature range compensated	-10°C~60°C
Temperature range safe	-20°C~70°C
Temperature effect, on zero balance	0.08%R.O/10°C
Temperature effect, on rated output	0.08% Load/10°C
Excitation recommended	10V DC
Safe overload	150% R.C
Cable	Ø7 Shield 3m

## > DIMENSIONS TABLE

unit:mm

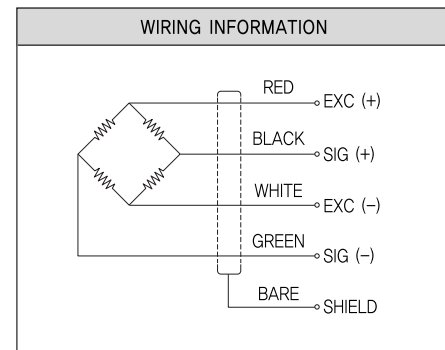
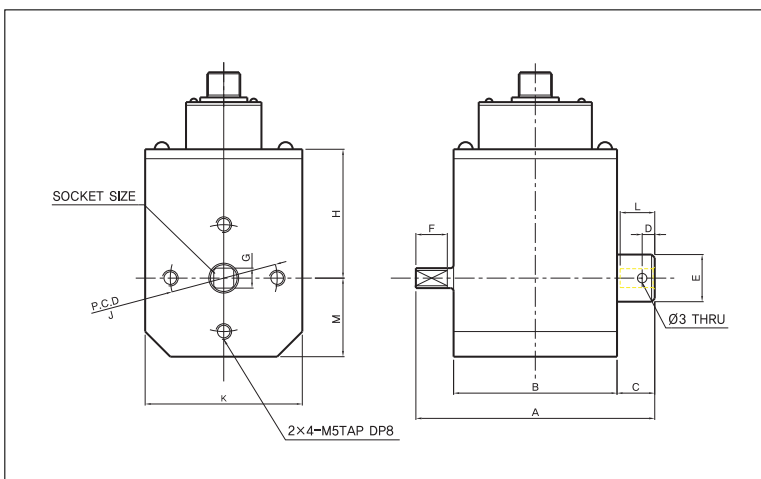
Model	Capacity	A	B	C	ØD	ØE	ØF	ØG	H	I	J	K	L	P	R.P.M
TRE-20K	20kgf-m (196.1N-m)	130	98	12	65	52	127	81	38	6-Ø6.5	50	64	105	M6 DP.8	5,000
TRE-50K	50kgf-m (490.3N-m)	134	102	12	76	62	136	88	41.5	6-Ø8.5	40	64	114	M6 DP.8	4,000
TRE-100K	100kgf-m (980.7N-m)	134	102	12	86	68	156	100	48	8-Ø10.5	48	64	130	M8 DP.8	4,000
TRE-200K	200kgf-m (196.1kN-m)	148	108	16	102	75	172	116	56	8-Ø10.5	50	68	146	M8 DP.8	3,000
TRE-300K	300kgf-m (2,942kN-m)	148	108	16	102	75	172	116	56	8-Ø10.5	50	68	146	M8 DP.8	3,000
TRE-500K	500kgf-m (4,903kN-m)	150	102	16	107	81	184	128	62	8-Ø10.5	56	74	158	M8 DP.8	3,000

\*Specifications are subject to change without notice.

# SOCKET WRENCH ROTARY TORQUE SENSORS

## > Model TRS

TRS socket wrench torque sensors are used for fast, accurate measurement of bolt or nut wrenching torque. This model operates in both directions so tightening and break-away torques can be measured. It can also be used to check the calibration of mechanical torque wrenches.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity (R.C.)	2kgf-cm~3000kgf-cm (0.196N-m~294.2N-m)
Rated output (R.O.)	1.3mV/V
Nonlinearity	0.3%R.O
Hysteresis	0.3%R.O
Repeatability	0.3%R.O
Terminal resistance, input	350±3.5Ω
Terminal resistance, output	350±3.5Ω
Insulation resistance	300MΩ
Temperature range, compensated	-10℃~60℃
Temperature range, safe	-20℃~70℃
Safe overload	150%R.C
Temperature effect, on zero balance	0.05%R.O/10℃
Temperature effect, on rated output	0.1% Load/10℃
Excitation recommended	10V DC
Safe overload	150% R.C.
Cable	Ø4 Shield 3m

## > DIMENSIONS TABLE

unit:mm

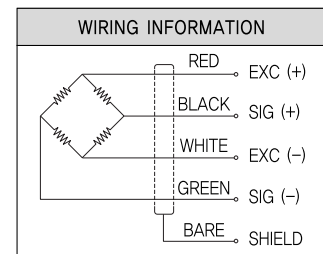
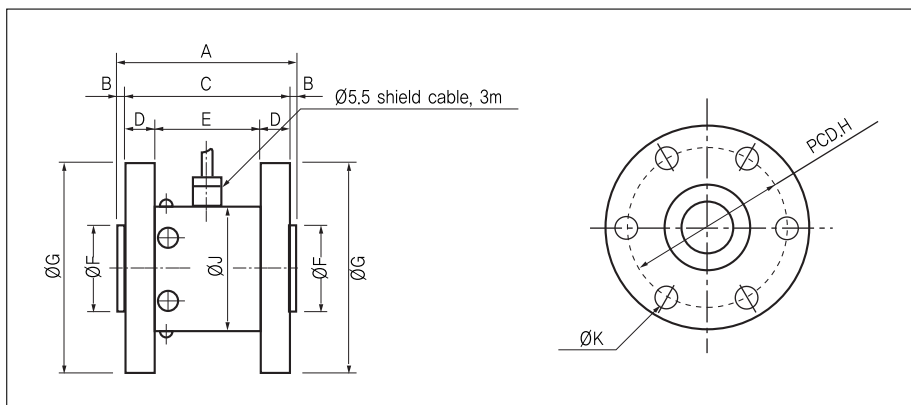
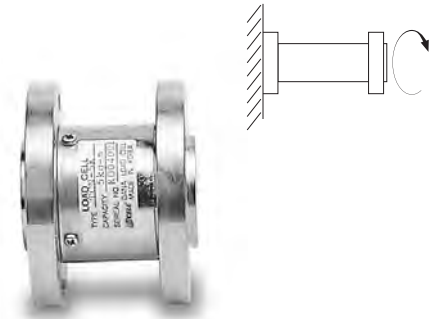
Capacity	Socket Size	A	B	C	D	ØE	F	G	M	K	L	J	H
2, 5, 10kgf-cm (0.196N-m, 0.490N-m, 0.980N-m)	1/4"	76	52	12	4	15	10	6.35	25	50	11	34	41
20, 50kgf-cm (1.961N-m, 4.903N-m)	3/8"	82	56	12	4	15	12.5	9.53	25	50	13	34	41
100, 300kgf-cm (9.807N-m, 29.42N-m)	1/2"	96	58.5	19.5	7	20	16	12.7	31	62	17	44	42
500, 1000kgf-cm (49.03N-m, 98.07N-m)	3/4"	106	58	24	10	30	22	19.1	34	68	22	52	53
2000, 3000kgf-cm (196.12N-m, 294.20N-m)	1"	123	58	33	14	40	29.2	25.4	39	78	28	62	54

★Specifications are subject to change without notice.

# NON-ROTARY TORQUE SENSORS

## > Model TCN

A static torque sensor for measurement of torque of stationary objects or within a certain angle rotation. Suitable for torque measurement of various automobile parts, pneumatic and electric screwdriver etc.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	2kgf-cm~2000kgf-m (0.196N-m~19.61kN-m)
Rated output(R.O.)	1mV/V±1%
Nonlinearity	0.3% (0.1kgf-m under 0.5% R.O.)
Hysteresis	0.3% (0.1kgf-m under 0.5% R.O.)
Repeatability	0.02% of R.O.
Terminal resistance, input	350Ω ±1%
Terminal resistance, output	350Ω ±1%
Insulation resistance	2000MΩ
Temperature effect, on zero balance	±0.1% R.O./10℃
Temperature effect, on rated output	±0.1% Load/10℃
Excitation recommended	10V DC
Safe overload	120% R.C.
Cable length	Ø5.5 4core cable, 3m

## > DIMENSIONS TABLE

unit:mm

Model	Capacity	A	B	C	D	E	ØF	ØG	H	J	ØK
TCN-2KC	2kgf-cm (0.196N-m)	61	3	55	5	45	20	58	46	33	2×4-Ø4.5
TCN-3KC	3kgf-cm (0.294N-m)	61	3	55	5	45	20	58	46	33	2×4-Ø4.5
TCN-5KC	5kgf-cm (0.490N-m)	61	3	55	5	45	20	58	46	33	2×4-Ø4.5
TCN-10KC	10kgf-cm (0.981N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-20KC	20kgf-cm (1.961N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-30KC	30kgf-cm (2.942N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-50KC	50kgf-cm (4.903N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-1K	1kgf-m (9.807N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-2K	2kgf-m (19.61N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-3K	3kgf-m (29.42N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-5K	5kgf-m (49.03N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-10K	10kgf-m (98.07N-m)	61	3	55	10	35	40	80	66	48	2×4-Ø6.5
TCN-20K	20kgf-m (196.1N-m)	86	3	80	15	50	40	98	78	58	2×6-Ø10.5
TCN-50K	50kgf-m (490.3N-m)	130	3	124	20	84	60	118	95	68	2×6-Ø10.5
TCN-100K	100kgf-m (980N-m)	136	3	130	20	90	60	146	115	75	2×6-Ø13
TCN-200K	200kgf-m (1.961kN-m)	146	3	140	25	90	60	166	130	99	2×8-Ø17
TCN-500K	500kgf-m (4.903kN-m)	176	3	170	35	100	60	197	155	98	2×12-Ø17
TCN-1000K	1000kgf-m (9.807kN-m)	180	3	174	37	100	90	248	180	110	2×12-Ø21
TCN-2000K	2000kgf-m (19.61kN-m)	180	3	174	37	100	90	248	180	128	2×12-Ø21

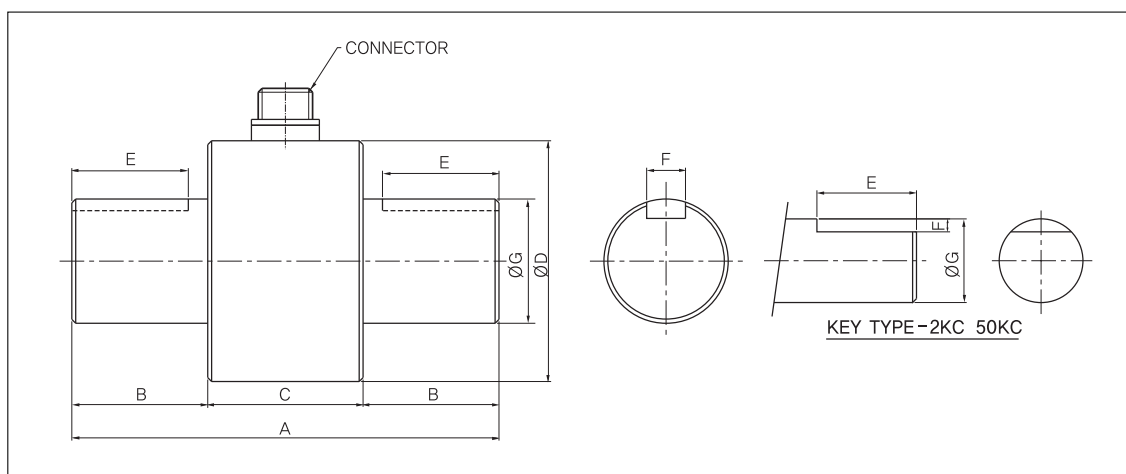
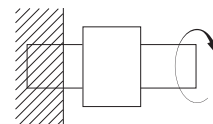
★Specifications are subject to change without notice.



# NON-ROTARY TORQUE SENSORS

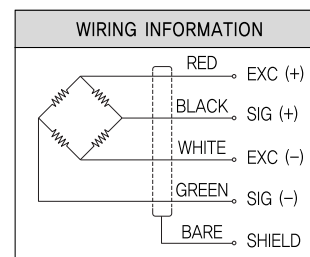
## > Model TCN15

A static torque sensor for measurement of torque of stationary objects or within a certain angle rotation. Suitable for torque measurement of various automobile parts, pneumatic and electric screwdriver etc.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	2kgf-cm~100kgf-cm (0.196N-m~490.3N-m)
Rated output(R.O.)	1mV/V±1%
Nonlinearity	0.3% of R.O.
Hysteresis	0.2% of R.O.
Repeatability	0.1% of R.O.
Excitation recommended	10V DC
Temperature range, compensated	0.3% R.O./10°C
Temperature range, safe	0.2% LOAD/10°C
Safe overload	120% R.C.



## > DIMENSIONS TABLE

unit:mm

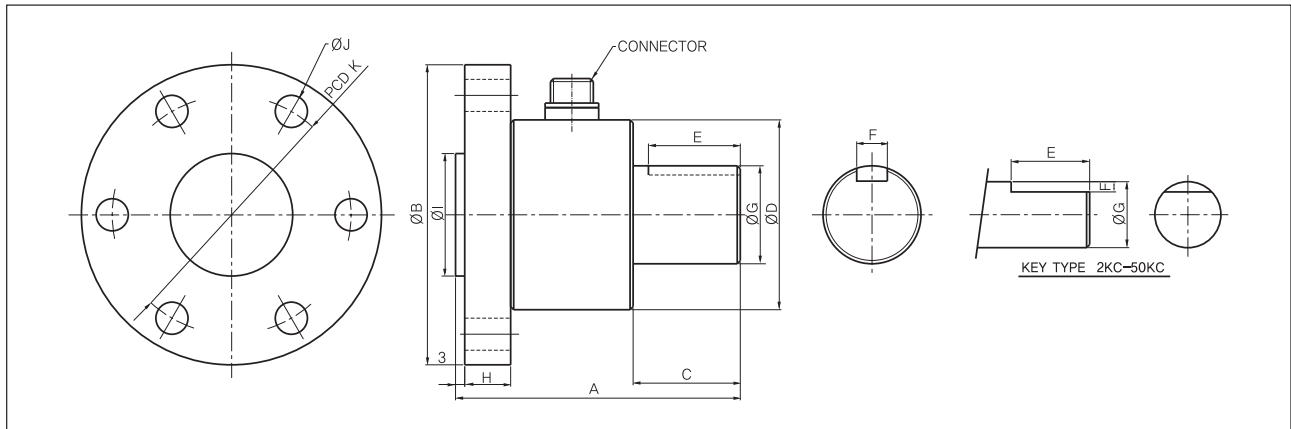
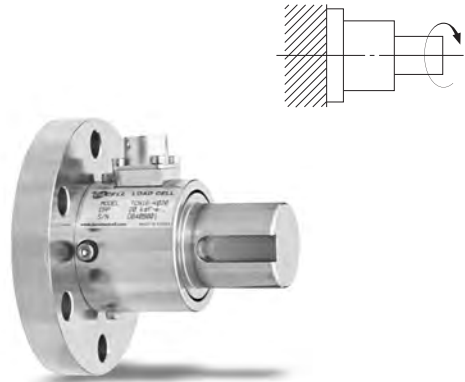
Capacity	A	B	C	ØD	E	F	G
2kgf-cm (0.196N-m)	75	20	35	34	15	1	8
5kgf-cm (0.490N-m)	75	20	35	34	15	1	8
10kgf-cm (0.981N-m)	75	20	35	34	15	1	8
20kgf-cm (1.961N-m)	75	20	35	34	15	1	8
30kgf-cm (2.942N-m)	75	20	35	34	15	1	12
50kgf-cm (4.903N-m)	75	20	35	34	15	1	12
1kgf-m (9.807N-m)	82	21	40	40	16	5×5	18
2kgf-m (19.61N-m)	82	21	40	40	16	5×5	18
3kgf-m (29.42N-m)	82	21	40	43	16	5×5	18
5kgf-m (49.03N-m)	82	21	40	43	16	5×5	18
10kgf-m (98.07N-m)	110	35	40	62	30	10×8	32
20kgf-m (196.1N-m)	110	35	40	62	30	10×8	32
50kgf-m (490.3N-m)	155	55	45	84	50	12×8	47
100kgf-m (980N-m)	155	55	45	84	50	12×8	47

★Specifications are subject to change without notice.

# NON-ROTARY TORQUE SENSORS

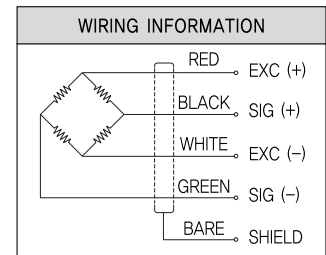
## > Model TCN16

A static torque sensor for measurement of torque of stationary objects or within a certain angle rotation. Suitable for torque measurement of various automobile parts, pneumatic and electric screwdriver etc.



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	2kgf-cm~100kgf-cm(0.196N-m~490.3N-m)
Rated output(R.O.)	1mV/V±1%
Nonlinearity	0.3% of R.O.
Hysteresis	0.2% of R.O.
Repeatability	0.1% of R.O.
Excitation recommended	10V DC
Temperature range, compensated	0.3% R.O./10°C
Temperature range, safe	0.2% LOAD/10°C
Safe overload	120% R.C.



## > DIMENSIONS TABLE

unit:mm

Capacity	A	B	C	D	E	F	G	H	I	J	K
2kgf-cm (0.196N-m)	63	58	20	34	15	1	8	5	20	4-Ø4.5	46
5kgf-cm (0.490N-m)	63	58	20	34	15	1	8	5	20	4-Ø4.5	46
10kgf-cm (0.981N-m)	63	58	20	34	15	1	8	5	20	4-Ø4.5	46
20kgf-cm (1.961N-m)	63	58	20	34	15	1	8	5	20	4-Ø4.5	46
30kgf-cm (2.942N-m)	68	80	20	34	15	1	12	10	40	4-Ø6.5	66
50kgf-cm (4.903N-m)	68	80	20	34	15	1	12	10	40	4-Ø6.5	66
1kgf-m (9.807N-m)	74	80	21	43	16	5×5	18	10	40	4-Ø6.5	66
2kgf-m (19.61N-m)	74	80	21	43	16	5×5	18	10	40	4-Ø6.5	66
3kgf-m (29.42N-m)	74	80	21	43	16	5×5	18	10	40	4-Ø6.5	66
5kgf-m (49.03N-m)	74	80	21	43	16	5×5	18	10	40	4-Ø6.5	66
10kgf-m (98.07N-m)	93	98	35	50	30	10×8	32	15	40	6-Ø10.5	78
20kgf-m (196.1N-m)	93	98	35	50	30	10×8	32	15	40	6-Ø10.5	78
50kgf-m (490.3N-m)	123	146	55	84	50	12×8	47	20	60	6-Ø13	115
100kgf-m (980.6N-m)	123	146	55	84	50	12×8	47	20	60	6-Ø13	115

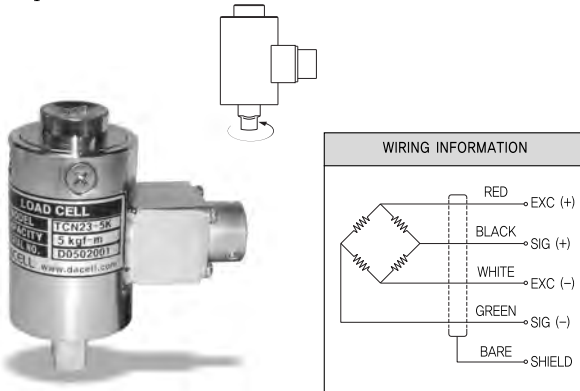
★Specifications are subject to change without notice.

# SOCKET WRENCH TORQUE SENSORS

# GEAR SHIFTING LEVER LOAD CELL

## > Model TCN23

- Adaptable for portable usage
- No special adapter tools required
- Precision repeatable torque measurements
- Calibration reference for 'hard usage' mechanical torque wrenches



## > SPECIFICATIONS

Specifications	Accuracy
Rated capacity(R.C.)	2kgf-cm, 5kgf-cm, 10kgf-cm, 20kgf-cm, 50kgf-cm 100kgf-cm, 200kgf-cm, 500kgf-cm, 1000kgf-cm
Rated output(R.O.)	1mV/V±1%
Nonlinearity	0.3% R.O.
Hysteresis	0.3% R.O.
Repeatability	0.2% R.O.
Excitation recommended	10V
Terminal resistance, input	350Ω ±30Ω
Terminal resistance, output	350Ω ±2Ω
Insulation resistance bridge	2000MΩ
Temperature range, compensated	-10~60°C
Temperature range, safe	-10~80°C
Safe overload	120% R.C.
Cable length	Ø5, 4core, 5m

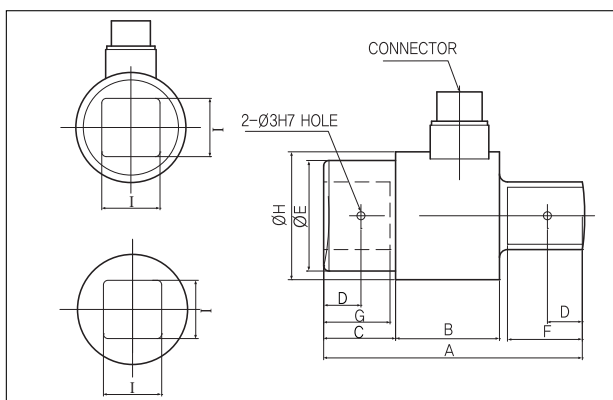
## > DIMENSIONS TABLE

Unit:mm

Capacity	A	B	C	D	ØE	F	G	ØH	I
2 kgf-cm	58	33	12	4	14	11	11	28	6.35
5,10 kgf-cm	60	33	13	5.5	16.5	12.5	12	28	9.53
20,50 kgf-cm	60	33	13	5.5	16.5	12.5	13	28	9.53
100,200kgf-cm	71	37	16	7	22	16	17	28	16
500,1000kgf-cm	98	39	27	14	41.5	29	27	48	25.4

## > DIMENSIONS

Unit:mm



★Specifications are subject to change without notice.

## > Model CS142

This can measure X and Y force of Gear shifting lever.



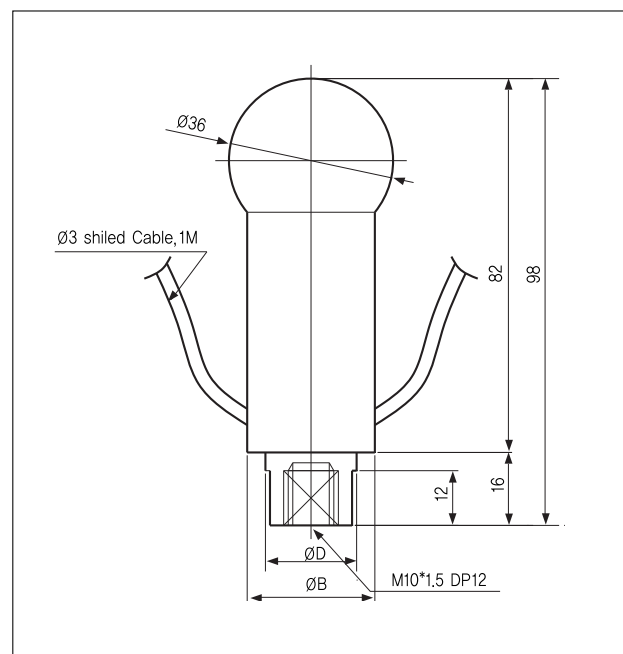
## > SPECIFICATIONS

Specifications	Accuracy
Model	CS142-500N
Rated Capacity (R.C.)	500N
Rated Output (R.O.)	1mV/V±1%
Non-Linearity	1% R.O.
Hysteresis	1% R.O.
Resistance, Input Output	350 Ohm±1%
Safe Overload	120% R.C.

★Specifications are subject to change without notice.

## > DIMENSIONS

Unit:mm



# DIGITAL PRESSURIZATION GAUGE

## > Model CMT & PDN20

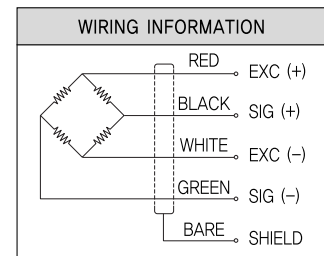
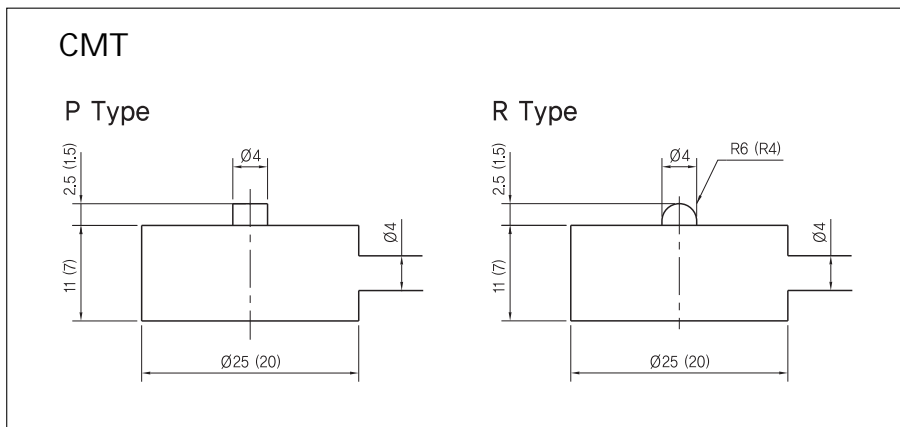
Portable calibrator

To measure electrode force precisely with ease

This compact unit measures electrode force, one of three major factors on welding, accurately and easily.

### Function

- PEAK HOLD FUNCTION
- AUTO ZERO
- Relay output (hi,low)
- AUTOMATIC POWER OFF



## > SENSOR (CMT)

Model	CMT-500P/R	CMT-100P/R	CMT-20P/R
Measuring Range	0-4900N (0-500kgf)	0-980N (0-100kgf)	0-196N (0-20kgf)
Critical Load	7350N (750kgf)	1470N (150kgf)	294N (30kgf)
Sensing Error	±2% (of full scale)	±2% (of full scale)	±2% (of full scale)

## > MAIN BODY (Indicator)

Model	PDN20
Power Source	Rechargeable battery
Display (LCD)	5 digit, UNIT CONVERSION(kgf, N, lbf)
Zeroing Adjustment	Automatic regulation by auto-zero-switching
Hold Function	Peak-holding
Output	USB output

## > APPLICATION



PDN20

★ Specifications are subject to change without notice.

# FORCE GAUGE

## >Model DN-FGA

The DN-FGA has its own characters, with facility, high resolution, which can be used for simple measurement of tension/compression force, switch test, connector insertion/withdraw test, fracture test and push pull testing equipment in a new generation.

### EASY OPERATION

Buttons are well arranged for easy operation to perform multipurpose measurement.

### PEAK HOLD FUNCTION

±NG,OK judgments with LED display(with open collector output)

connectable to computer through USB output cable (standard accessory)

Display reverse function.

### UNIT CONVERSION

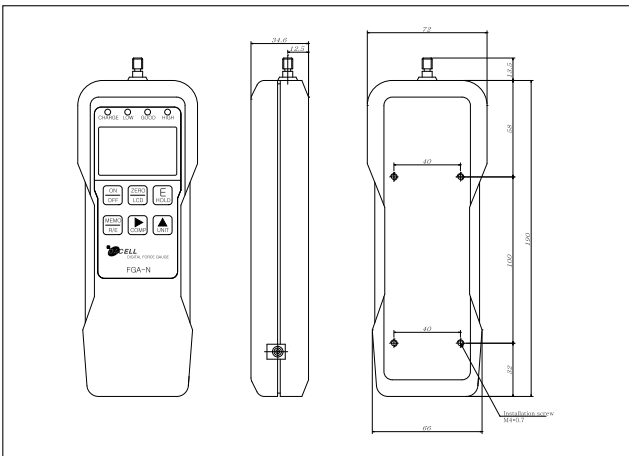
N, kgf, lbf, ozf

Ergonomic, heavy-duty metal construction

Full set of accessories, AC charger/adaptor and carrying case



## >DIMENSIONS



## >FGA-K500 ~ T1



## >MANUAL TEST STAND



## >SPECIFICATIONS(UNIT : kg)

Model	FGA-K2	FGA-K5	FGA-K20	FGA-K50	FGA-K100	FGA-K500	FGA-T1
Capacity	2.000kg	5.000kg	2.000kg	50.00kg	100.0kg	500.0kg	1000kg
Min load	0.001kg	0.001kg	1kg	0.01kg	0.1kg	0.1kg	0.5kg
Sensor conformation	Sensor Inside				Sensor Outside		
Measuring accuracy	±0.2% FS						

★Specifications are subject to change without notice.

# DIGITAL INDICATOR

## > Model DN-10W, DN-15W

The product have designed specifically to operate with strain gauge sensors such as Fast-measurement of Load cell, Pressure Transducer, LVDT, etc. The setup sequence is simple and quick using four push buttons only.

- High resolving power (16bit A/D)
- High precision (more than 0.012% F.S) and stability
- Quick sampling speed (100 times/sec)
- Built-in Shunt calibration switch
- Watch dog
- Calibration of actual load and sensor output value
- Peak hold and Sample hold
- Auto zero
- Small size (96×48×128mm),
- Weight : about 700g

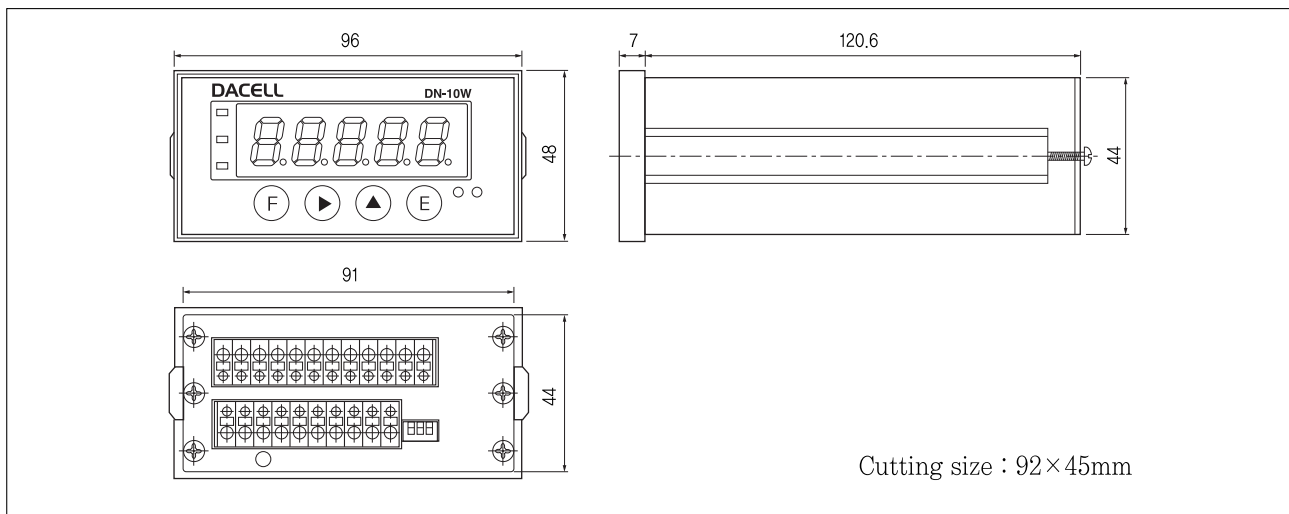


## > SPECIFICATIONS

Specification	Accuracy	
	DN15W	DN10W
Application sensor	Strain gauge sensor (350Ω or 120Ω)	Strain gauge sensor (350Ω or 120Ω)
Sensor authorized voltage(the number of Loadcell connection)	DC 5V, Loadcell(350Ω) available 4 DC 10V, Loadcell(120Ω) available 2	DC 5V, Loadcell(350Ω) available 4
Zero adjustment range	100% F · S (Auto Zero)	100% F · S (Auto Zero)
Input signal	1.0, 1.5, 2, 3mV/V (Dip switch)	0.5 ~ 3mV/V
Display	-19999 ~ 32767	-19999 ~ 99999
Display speed	Approx 30times/sec(Adjustment available by buff setting)	
Character height	7Segment 5 digit LED 14mm	
Decimal point	Random setting available	
A/D converter	16bit, Max. 100 times/sec	
D/A converter	12bit	
Zero variation	within 0.5mV/°C	
Sensitivity variation	within 0.01%/°C	
Usage temperature range	-10°C ~ 60°C	
Humidity	less than 80% RH (no dew condensation)	
Voltage output	DC 0~10V (4~20mA : in accordance with customer request)	
Power source used	220V 50/60Hz (110V available by internal operation)	
Relay output	- Upper and lower limit comparison output • 4 relay output • Contact capacity : AC 250V 5A • Relay life time : more than 5,000,000 times	
Network	RS-232C	
Option	• BCD Paralle out (OP-01) • RS485 (OP-02) • Input signal 5mV/V (DLH-A) (OP-05) • Power 24VDC (OP-06)	

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.



# HIGH SPEED DIGITAL INDICATOR

## > Model DN-50W, DN-40W

The DN-50W, DN-40W have designed specifically to operate with strain gauge sensors such as Fast - measurement of Load cell, Pressure Transducer, LVDT, etc. The setup sequence is simple and quick using four push buttons only. And comparison output are available.

※ Sampling speed : Appir. 1000Times Per Second

- DN-40W : Analog output : Dynamic Output
- DN-50W : Analog output : DAC Output



## > SPECIFICATIONS

Specifications	Accuracy
Application sensor	Strain gauge sensor (350Ω or 120Ω)
Sensor authorized voltage (the number of Loadcell connection)	DC 5V, Loadcell(350Ω) available 4
Zero adjustment range	100%F · S (Auto Zero)
Input signal	0.5 ~ 3.0mV/V
AD converter	24bit 1000times/sec
DA converter	16bit 1000 times/sec
Display	-19999 ~ +99999
Display speed	Approx. 32times/sec
Character height	7Segment 14mm
Decimal point	Random setting available
Sampling speed	Max 1000 times/sec
Zero variation	within 0.5μV/°C
Sensitivity variation	50ppm/°C
Voltage output	0 ~ 10V (O. 4~20mA in accordance with customer request)
Usage temperature range	-10°C ~ 60°C
Humidity	less than 80% RH (no dew condensation)
Power source used	AC 85 ~ 265V 50/60Hz
Relay output	Contact capacity : AC250/5A Relay life time : more than 5,000,000 times

## Feature

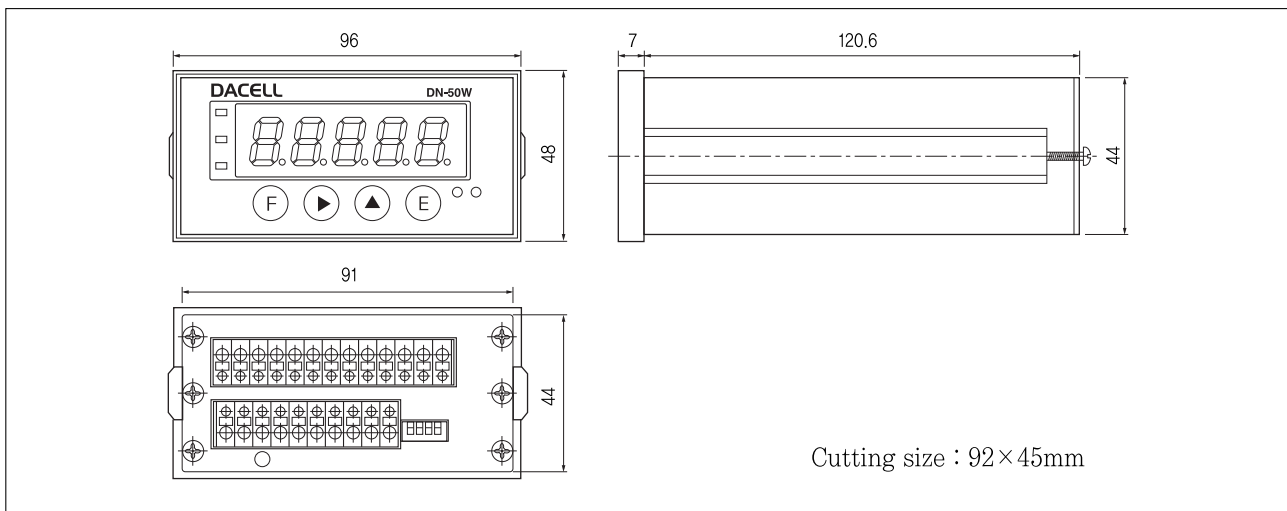
- High resolution (24bit ADC, 16bit DAC)
- High precision (more than 0.01% F.S) and stability
- Quick sampling speed (1000times/sec)
- Relay output : Hi, Low, NG, OK.
- UNIT CONVERSION : kg, N, lb, kg/cm<sup>2</sup>, bar, MPa
- Display part and analogue zero by auto zero
- Analog Peak Hold
- Small Size (96 × 48 × 128mm)
- Peak & sample hold
- Watch dog

## ■ OPTION

- OP-01 : BCD paralle out
- OP-02 : RS232C serial interface
- OP-03 : RS485 Multi drop interface
- OP-05 : Input signal 5mV/V (DLH-A)
- OP-06 : Power 24VDC

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# HIGH SPEED DIGITAL INDICATOR

## > Model DN100, DN200

The DN-100 and DN200 have designed specifically to operate with strain gauge sensors such as Fast - measurement of Loadcell, Torquemeters, Pressure Transducer, LVDT, etc.,

- High resolution
- High precision and stability
- Quick sampling speed
- UNIT CONVERSION : kg, N, lb, kg/cm<sup>2</sup>, bar, MPa
- Display part and analogue zero by auto zero(DAC)
- Relay output : Hi, Low, NG, OK,
- Watch dog
- Calibration of actual load and sensor output value
- Peak & sample hold, Average hold
- Analog Peak Hold
- DN100 : sampling speed : Appr. 5000Times Per Second
- DN200 : sampling speed : Appr. 1000Times Per Second

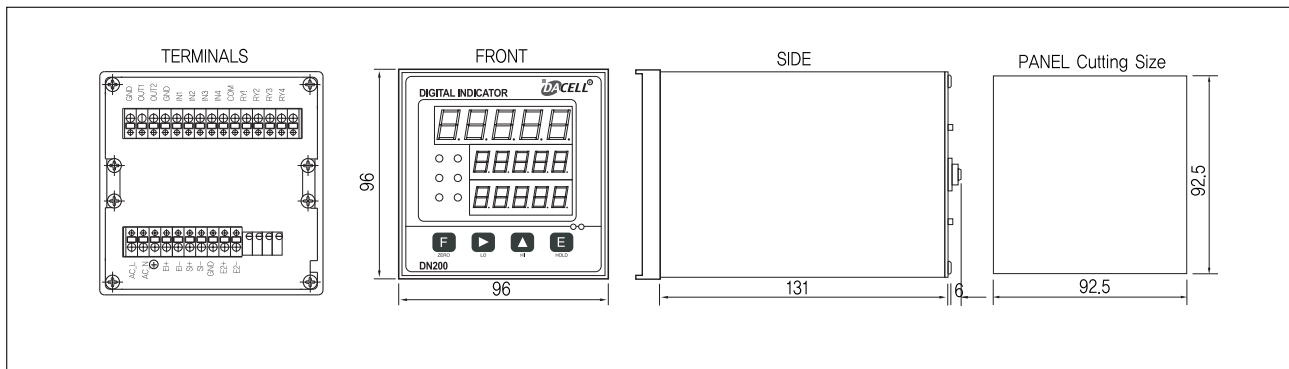


## > SPECIFICATIONS

Specifications	Accuracy	
	DN100	DN200
Application sensor	Strain gauge sensors	
Sensor authorized voltage (the number of Loadcell connection)	DC 5V, Loadcell(350Ω) available 4	
Zero adjustment range	100%F · S (Auto Zero)	
Input signal	0.5~3mV/V	
Display	-19999~+99999	
Character height	7Segment 14mm & 10mm	
Decimal point	Random setting available	
A/D converter	16bit 5000 times/sec	24bit 1000 times/sec
D/A converter	16bit 1000 times/sec	16bit 1000 times/sec
Relay output	Contact capacity : AC250V 5A, Relay life time : more than 5,000,000 times	
Zero variation	Within 0.5μV/°C	
Sensitivity variation	Within 0.01%/°C	
Voltage output	DC 0 ~ 10V (4 ~ 20mA : in accordance with customer request)	
Usage temperature range	-10°C ~ 60°C	
Humidity	Less than 80% RH (no dew condensation)	
Power source used	AC 85 ~ 265V 50/60Hz	
Weight	1000g	
Option	OP-01 : BCD output OP-02 : RS232C serial interface OP-03 : RS485 Multi drop interface OP-04 : RS422A serial interface OP-06 : Power 24VDC	

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# HIGH SPEED DIGITAL INDICATOR

## > Model DN150, DN250

The DN-150 and DN250 have designed specifically to operate with strain gauge sensors such as Fast - measurement of Loadcell, Torquemeters, Pressure Transducer, LVDT, etc.,

- High resolution
- High precision and stability
- Quick sampling speed
- UNIT CONVERSION : kg, N, l b, kg/cm<sup>2</sup>, bar, MPa
- Display part and analogue zero by auto zero(DAC)
- Relay output : Hi, Low, NG, OK.
- Watch dog
- Calibration of actual load and sensor output value
- Peak & sample hold, Average hold
- Analog Peak Hold
- DN150 : sampling speed : Appr. 5000Times Per Second
- DN250 : sampling speed : Appr. 1000Times Per Second

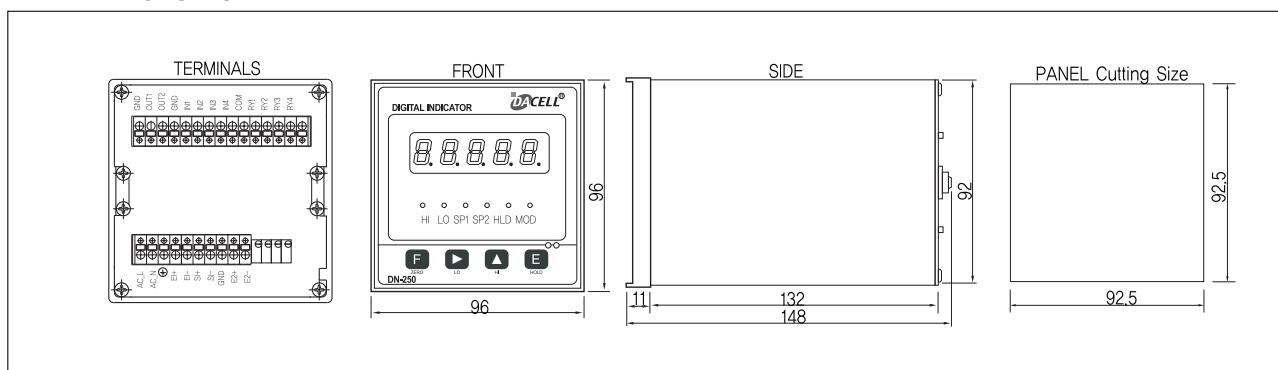


## > SPECIFICATIONS

Specifications	Accuracy	
	DN150	DN250
Application sensor	Strain gauge sensors	
Sensor authorized voltage (the number of Loadcell connection)	DC 5V, Loadcell(350Ω) available 4	
Zero adjustment range	100%F · S (Auto Zero)	
Input signal	0.5~3mV/V	
Display	-19999~+99999	
Character height	7Segment 14mm	
Decimal point	Random setting available	
A/D converter	16bit 5000 times/sec	24bit 1000 times/sec
D/A converter	16bit 1000 times/sec	16bit 1000 times/sec
Relay output	Contact capacity : AC250V 5A, Relay life time : more than 5,000,000 times	
Zero variation	Within 0.5μV/°C	
Sensitivity variation	Within 0.01%/°C	
Voltage output	DC 0 ~ 10V (4~20mA : in accordance with customer request)	
Usage temperature range	-10°C ~ 60°C	
Humidity	Less than 80% RH (no dew condensation)	
Power source used	AC 85 ~ 265V 50/60Hz	
Weight	1000g	
Option	OP-01 : BCD output OP-02 : RS232C serial interface OP-03 : RS485 Multi drop interface OP-04 : RS422A serial interface OP-06 : Power 24VDC	

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# AC DIGITAL INDICATOR

## > Model DN1000A

The product, an indicator displaying micro-voltage signal in digital amplified from differential trans sensors, is used for fast-measurement of LVDT, brushless type torque meter (Model TRC).

- High resolution (24bit ADC, 16bit DAC)
- High precision (more than 0.01% F.S) and stability
- Quick sampling speed (1000times/sec)
- UNIT CONVERSION : kg, N, lb, kg/cm<sup>2</sup>, bar, MPa
- Display part and analogue zero by auto zero
- Watch dog
- Calibration of actual load and sensor output value
- Peak hold and Sample hold
- Relay output : Hi, Low, NG, OK.
- Analog out (DAC)



### ■ Option :

- OP-01 : BCD parallel out
- OP-02 : RS232C serial interface
- OP-03 : RS485 Multi drop interface

## > SPECIFICATIONS

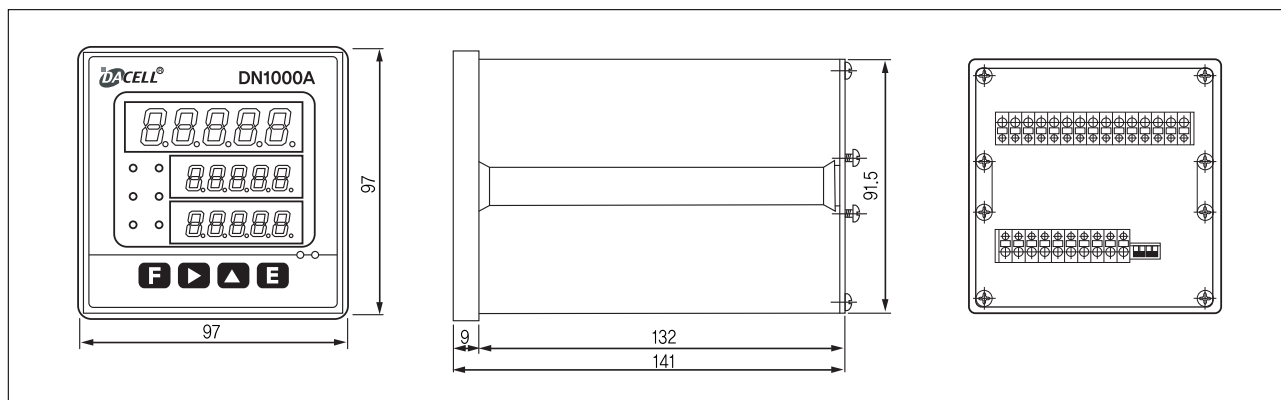
Specifications	Accuracy
Application converter	differential trans sensors (TRC)
Sensor authorized voltage	2Vrms/5kHz
Zero adjustment range	100% F.S (Auto Zero)
Signal input range	0 ~ 2mV/V
Display range	-19999 ~ +99999
Character height	7 segment LED 14mm & 10mm
AD converter	24bit 1000times/sec
D/A converter	16bit 1000times/sec
Zero variation	Within 0.5μV/°C
Sensitivity variation	Within 0.01%/°C
Analog output	0 ~ 10V (4 ~ 20mA : in accordance with customer request)
Contact capacity	AC 250V 5A
Relay life time	more than 5,000,000 thmes
Usage temperature range	-10°C ~ 60°C
Humidity	less than 80% RH (no dew condensation)
Power resource	AC 85 ~ 265V 50/60Hz
Dimension	97 × 97 × 141mm
Cutting size	92.5 × 92.5mm
Weight	1000g

### Various functions

- ① Peak hold and Sample hold
- ② Relay output : Hi, Low, NG, OK.
- ③ Analog out (DAC)

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# 2CH DIGITAL INDICATOR

## > Model DN-130L

DN-130L is 2channels indicator to operate with strain gauge sensors such as Fast – measurement of Load cell, Pressure Transducer, LVDT, etc. Digital display and analog output, comparison output are available.

- High resolution : 24bit ADC, 16bit DAC
- 2 channel indicator
- High precision (more than 0.01% F · S )and stability
- Quick sampling speed (200times/sec)
- UNIT CONVERSION : kg, N, lb, kg/cm<sup>2</sup>, bar, MPa
- Display part and analogue zero by auto zero (DAC)
- Watch dog
- Calibration of actual load and sensor output value
- Peak & sample hold
- Analog Peak Hold
- Relay output : Hi, Low

### ■ OPTION

- OP-02 : RS232C serial interface
- OP-03 : RS485 Multi drop interface
- OP-06 : Channel 1 – sensor input 0~3mV/V(Loadcell)  
Channel 2 – sensor input 0~10V (LVDT)

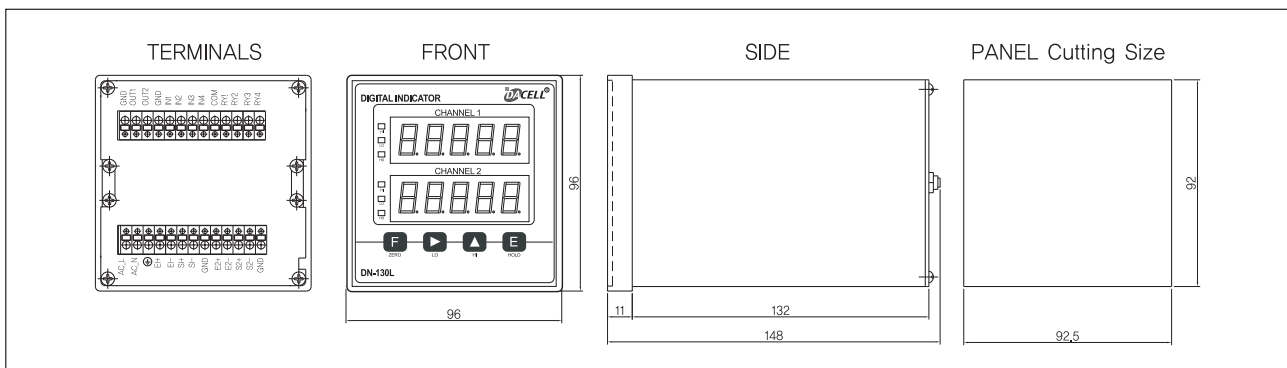


## > SPECIFICATIONS

Specifications	Accuracy
Application sensor	Strain gauge sensor
Sensor authorized voltage	DC 5V
Zero adjustment range	100%F · S (Auto Zero)
Input signal	0.5 ~ 3mV/V
Display	-19999 ~ +99999
Character height	7 Segment LED 14mm
A/D converter	24 bit 200 times/sec
D/A converter	16 bit
Zero variation	within 0.5mV/°C
Sensitivity variation	within 0.01%/°C
Voltage output	DC 0~10V (4 ~ 20mA : in accordance with customer request)
Cintact capacity	AC250V 5A
Relay life time	More than 5,000,000 times
Isage temperature range	-10°C ~ 60°C
Humidity	Less than 80% RH (No dew condensation)
Power source used	AC 85 ~ 265V 50/60Hz
Dimensions	97 X 97 X 141mm
Cutting size	92.5 X 92.5mm
Weight	About 1000g

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# 2CH DIGITAL INDICATOR

## > Model DN-130T, DN-230A

These indicators can use Torque and RPM measurement at the same time. Digital display and analog output, comparison output are available.

- Torque, RPM simultaneous measurement
- High resolution (24bit ADC, 16bit DAC)
- High precision (more than 0.012% F.S) and stability
- Upper and lower limit comparison output (Torque, RPM)
- analog output (Torque, RPM)
- UNIT CONVERSION : kg, N, lb, kg/cm<sup>2</sup>, bar, MPa
- Quick sampling speed (1000times/sec)
- Watch dog
- Calibration of actual load and sensor output value
- Display part and analogue zero by auto zero (DAC)
- Analog out (DAC)

### ■ OPTION

- OP-02 : RS232C serial interface
- OP-03 : RS485 Multi drop interface

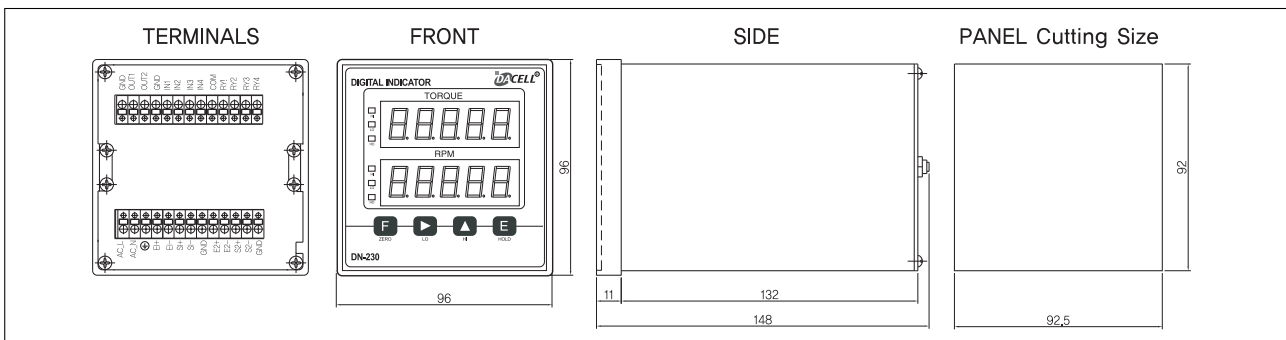


## > SPECIFICATIONS

Specifications	Accuracy	
	DN130T	DN230A
Application sensor	Torque : Brush type torquemeter RPM : Proximity sensor (MP981)	Torque : Brushless type torquemeter (TRC) RPM : Proximity sensor (MP981)
Sensor authorized voltage	Torque : DC 5V RPM : DC 12V	Torque : DC 2Vrms, 5kHz RPM : DC 12V
Input signal	Torque : 0.5 ~ 3mV/V RPM : DC 12V	Torque : 0.5 ~ 2mV/V RPM : 1 ~ 350 pulse/circle
Zero adjustment range	Torque : 100% F.S (Auto Zero)	
Display	Torque : -19999 ~ +99999 RPM : 0 ~ 60000	
Character height	7 segment LED 14mm	
A/D converter	Torque 24bit 1000 times/sec	
D/A converter	Torque 16bit	
Zero variation	Torque Within 0.5mV/°C	
Sensitivity	Torque Within 0.01%/°C	
Voltage output	DC 0 ~ 10V (4 ~ 20mA : in accordance with customer request)	
Contact capacity	AC250V 5A	
Relay life time	More than 5,000,000 times	
Usage temperature range	-10°C ~ 60°C	
Humidit	Less than 80% RH (No dew condensation)	
Power source used	AC85 ~ 265V 50/60Hz	
Dimensions	97 X 97 X 141mm	
Cutting size	92.5 X 92.5mm	
Weight	About 1000g	

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.



# GRAPHIC INDICATOR

## > Model DN-GP-L1D1

2 ch Graphic indicator : 1ch : Load cell 2 ch: LVDT (DP series)  
 High speed  
 high resolution/ high reliability  
 User convenience enlargement by touch pad application  
 Various Measurement mode  
 RS232C , I/O interface  
 Load cell 1ch indicator :DN-GP-L1

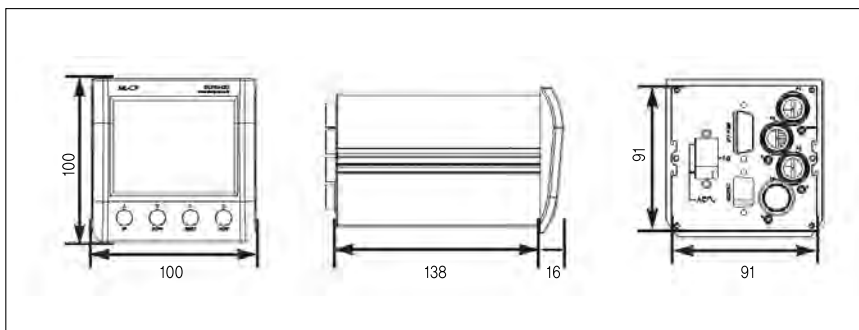


## > SPECIFICATIONS

Specifications	Accuracy
Display	3.5" TFT color LCD with touch panel
Resolution	TFT color LCD with touch panel
Sampling rate	1000/sec or 2000/sec
Direction	Load cell 1ch, probe 1ch
Input Channels	Load cell 1ch, probe 1ch
Display mode	Force vs position / force by time
Dimension	W100 X H100 X D160mm / 3.94" X 3.94" X 6.3"
Data Communication	RS232C / RS485
Input / Output	15 pin I/O interface (6 inputs, 5 outputs of relay contact)
Power Input	AC100~200V 50Hz/60Hz
Power Consumption	4.6W
Operating temperature	0°C to 40°C / 32°F to 104°F
Storage temperature	-10°C to 50°C / 14°F to 122°F
Probe	DP-S4 series / DP-10 series / DP-25, ACT series / LVDT / Analog sensors

## > DIMENSIONS

unit:mm



# DIGITAL INDICATOR



## > Model DN10

The DN-10 has been designed specifically to operate with strain gauge sensors such as Load cell, Pressure Transducer, LVDT, etc.

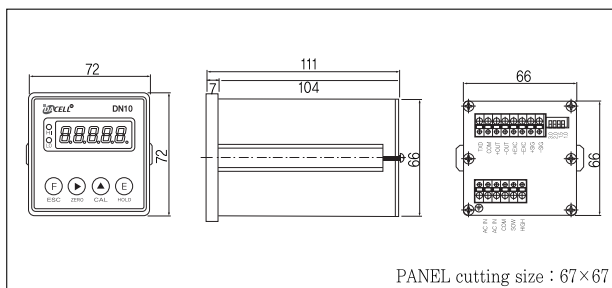
- The setup sequence is simple and quick using four push buttons only.
- Calibration mode : real-weight(stand weight) or rated output(mv/v)from the sensor.
- Sampling speed : Appr. 100 times per second.
- Comparison function(Hi, Lo)
- Watch dog
- DIN size, 72×72×111mm
- One touch Auto zero(Display & Analog Auto zero)

## > SPECIFICATIONS

Specifications	Accuracy
Application sensor	Strain gauge sensor (350Ω or 120Ω)
Sensor authorized voltage	DC 5V (350Ω X 4 loadcells)
Zero adjustment range	100%F · S (Auto Zero)
Gain adjustment	0.5 ~ 3mV/V
Display	-19999 ~ -99999
Display Speed	Approx. 30 times/sec
Character height	7 segment LED 10mm
Decimal point	Random setting available
A/D converter	16bit, 100 times/sec
D/A converter	12bit
Zero variation	within 0.5mV/°C
Sensitivity variation	within 0.01%/°C
voltage output	DC 0~10V (4~20mA : in accordance with customer request)
Usage temperature range	-10°C~60°C
Humidity	Less than 80% RH (no dew condensation)
Power source used	220V 50/60Hz (110V available by internal operation)
Option	OP-02 : RS232C, OP-03 : RS485

## > DIMENSIONS

unit:mm



## > Model DN-20W

Pressure Transducer, LVDT, etc. The setup sequence is simple and quick using four push buttons only.

- High resolving power (16bit A/D)
- High precision (more than 0.012% F,S) and stability
- Quick sampling speed (100 times/sec)
- Built-in Shunt calibration switch
- Watch dog
- Calibration of actual load and sensor output value
- Peak hold and Sample hold
- Auto zero
- Small size (96×48×128mm),
- Weight : about 700g

### ■Option

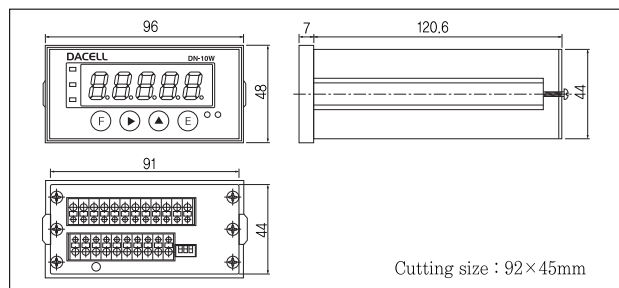
- OP-06 : Power 24VDC

## > SPECIFICATIONS

Specifications	Accuracy
Application sensor	Pressure sensor, Linear Potentiometer(LPS, CTP)
Sensor authorized voltage	DC 10V, 24V (Dip switch)
Zero adjustment range	100%F · S (Auto Zero)
Input signal	DC 0~5V, 0~10V, 4~20mA
Display	-19999 ~ 99999
Display Speed	Approx 30times/sec(Adjustment available by buff setting)
Character height	7Segment 5 digit LED 14mm
Decimal point	Random setting available
A/D converter	16bit, 100 times/sec
D/A converter	12bit
Zero variation	within 0.5mV/°C
Sensitivity variation	within 0.01%/°C
voltage output	DC 0~10V (4~20mA : in accordance with customer request)
Usage temperature range	-10°C~60°C
Humidity	Less than 80% RH (no dew condensation)
Power source used	220V 50/60Hz (110V available by internal operation)
Relay output	- Upper and lower limit comparison output • 4 relay output • Contact capacity : AC 250V 5A • Relay life time : more than 5,000,000 times
Network	RS-232C
Option	• BCD Paralle out (OP-01) • RS485 (OP-02)

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# DIGITAL TACHOMETER

# RPM SENSOR MAGNET TYPE



## > Model DN30W

RPM processor/tachometer (frequency input).  
The setup sequence is simple and quick using four push buttons only.

- Relay output(Hi, Low)
- 4 Relay output
- Peak & sample hold
- Analog out (DAC)
- Watch dog
- Calibration by Pulse/circle input

### ■ Option

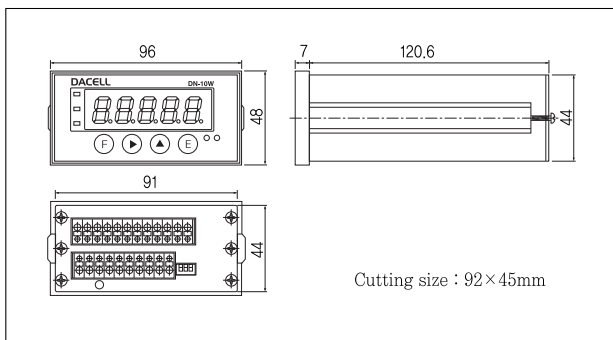
- OP-02 : RS232C serial interface
- OP-03 : RS485 Multi drop interface
- OP-06 : Power 24VDC

## > SPECIFICATIONS

Specifications	Accuracy
Application sensor	Proximity sensor (MP981) , Rotary Encoder
Sensor authorized voltage	DC 12V
Measuring range	Input frequency 5kHz max, 1 ~ 350 pulse/circle
Measuring Accuracy	0.05%
Display	0 ~ 99999
Character height	7 segment LED 14mm
Voltage output	DC 0 ~ 10V (4~20mA : in accordance with customer request)
Contact capacity	AC 125V 0.5A, DC 24V 1A
Relay life time	more than 5,000,000 times
Usage temperature range	-10°C ~ 60°C
Humidity	less than 80% RH (no dew condensation)
Power source used	AC 220V 50/60Hz
Dimensions	96 × 48 × 128mm
Cutting size	91.5 × 44.5mm
Weight	About 800 g

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.



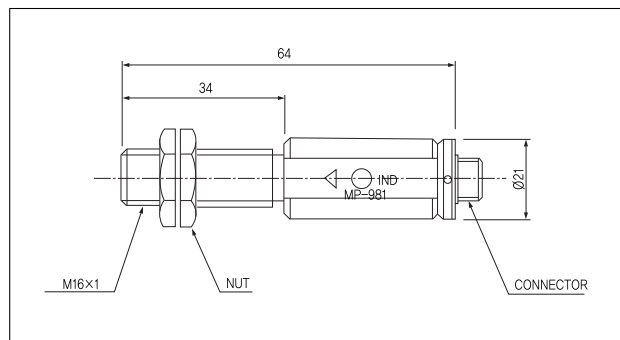
## > Model MP-981

## > SPECIFICATIONS

Specifications	Accuracy
Detection method	Hall element
Measurement range	1Hz~20kHz(using a 60P/R gear, 1~20,000r/min, with an output waveform duty cycle 50%±20%)
Detection gear	Strong magnetic materials
Gap between detector and gear	(modulus 0.5~3, tooth width 3 mm or greater)
Power supply used	DC 12V±2V(0.5Vp-p or less ripple)
Current consumption	40mA or less(12V, at 25°C)
Output waveform	Low level:±0.5V rectangular waveform(With no load)
Output impedance	Approx. 330Ω
Output type	Floating ground
Protective circuit	Power supply polarity and output short protection
Operating temperature range	-10°C~+70°C
Storage temperature range	-20°C~+80°C
Matching connector	6-pin connector(type R04-PB6F plug)
Allowable vibration (during-operation)	double-ended 1.2mm at 30Hz in X, Y and Z direction for one hour each.
Allowable shock(non-operating)	490m/s <sup>2</sup> in X and Y direction each 3 times.
Withstand voltage	1.DC250V, 1min.(between shield and signal cable) 2.DC250V, 1min.(between shield and sensor head)
Interface indicator	DN-30
Weight	Approx. 80g(including two mounting nuts)
Accessories	Mounting nuts(2)

## > DIMENSIONS

unit:mm



# DIGITAL WEIGHING INDICATOR



## > Model DN500N

- Platform scale, Truck scale, Tension/compression tester, Horse weigher, etc.
- 50 kind of parts number can be memorized
- Watch-dog function installed for diagnostics
- Data back up against power stoppage.
- Front display window covered by lexan film for the protecting of dust
- Weighing judgment by over & under setting when printer is connected
- Three kinds of hold function (peak-hold and average-hold, auto-hold)
- Can drive up to 8pcs of load cell (350.)
- RS-232C and CURRENT LOOP standard installed

## > SPECIFICATIONS

Specifications	Accuracy
Load cell excitation	10VDC±5%, 320mA
A/D converting speed	200times/sec
A/D converter resolution	: 1/520,000 counts(19bits), $\Delta\Sigma$
Non-linearity	0.01% of full scale
Zero adjustment range	-0.6mV~42mV
Display Unit	7 segment, 20.0mm(H)×13.0(W)mm
Annunciator	steady, zero, tare, gross, auto, print, hold, Interface
Decimal point position	0, 0.0, 0.00, 0.000
Keyboard	Number key and function key 16 PCS.
Temperature-drift	zero ±20PPM/°C, span ±20PPM/°C
Non-linearity	0.01% of full scale
Rear panel	Loadcell input : 5pin connector External control : 12pin input terminal (zero, tare, tare reset/hold/print, gross/hold reset/subprint, Current loop, RS232C)
Power	SMPS Free Voltage (85V~265V)

### Option

- ① Analog Out-put (V-out) : 0~10V      ② Analog Out-put (I-out) : 4~20mA  
 ③ Serial I / F : RS-422, RS-485      ④ BCD In-put  
 ⑤ BCD In-out  
 ※ RS232C and Current loop : Standard Installed

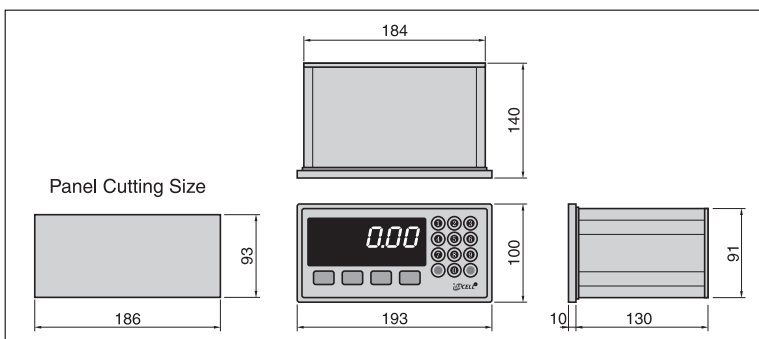
## > Model DN510N

- Control for PACKER, FILLER, HOPPER, CHECKER, LIMIT SCALE etc.
- Totaling function by Parts, (50 parts)
- 4 Step control (SP1, SP2, SP3, SP4)
- 6 control relay built-in (SP1, SP2, SP3, SP4, FINISH, NEAR ZERO)
- Various Relay output mode (LIMIT, PACKER, CHECKER1, CHECKER2)
- Improved A/D Conversion speed and resolution(Max. 200times, 1/520,000)

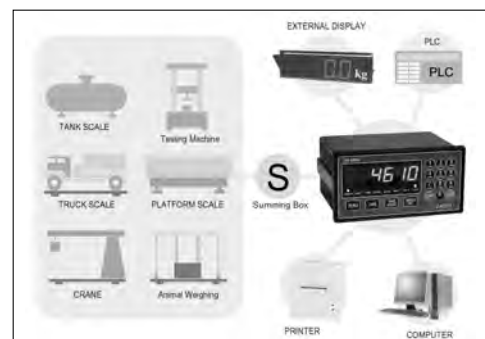
## > SPECIFICATIONS

Specifications	Accuracy
Load cell excitation	10VDC±5%, 320mA
A/D converting speed	200times/sec
A/D converter resolution	: 1/520,000 counts(19bits), $\Delta\Sigma$
Non-linearity	0.01% of full scale
Zero adjustment range	-0.6mV~42mV
Display Unit	7 segment, 20.0mm(H)×13.0(W)mm
Annunciator	steady, zero, tare, gross, auto, print, hold, Interface
Decimal point position	0, 0.0, 0.00, 0.000
Keyboard	Number key and function key 12 PCS.
Temperature-drift	zero ±20PPM/°C, span ±20PPM/°C
Non-linearity	0.01% of full scale
Rear panel	Loadcell input : 5pin connector External control : 12pin input terminal (zero, tare, tare reset/hold/print, gross/hold reset/subprint, Current loop, RS232C)
Power	SMPS Free Voltage (85V~265V)

## > DIMENSIONS



## > APPLICATION



# DIGITAL WEIGHING INDICATOR



## > Model DN520N

- Application of Packer, Filler, Hopper, Checker, Limit Scale, etc.
- Totaling function by Parts, (50 parts)
- 2 Step Control (SP1, SP2)
- 6 Control RELAY according to MODE
  - LIMIT, PACKER MODE: (SP1, SP2, FINISH, UNDER NG, OVER NG, ZERO)
  - CHECKER MODE 1, 2, 3: (SP1[LOW], SP2[HIGH], OK, NG, ZERO)
- RELAY OUTPUT MODE: LIMIT, PACKER, CHECKER
- Improved A/D Conversion speed and resolution(Max. 200times, 1/520,000)

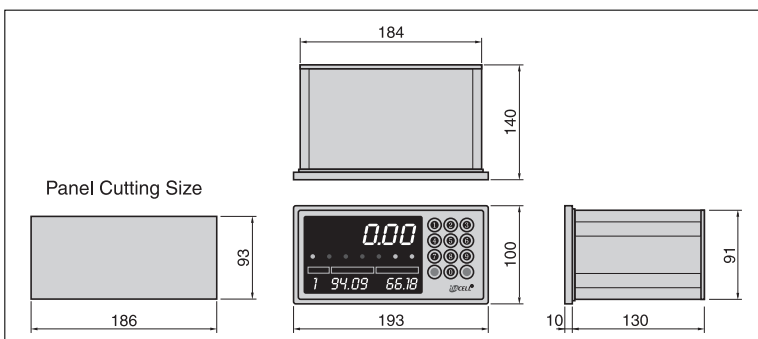
## > SPECIFICATIONS

Specifications	Accuracy
Load cell excitation	10VDC±5%, 320mA
A/D converting speed	200times/sec
A/D converter resolution	: 1/520,000 counts(19bits), $\Delta\Sigma$
Non-linearity	0.01% of full scale
Zero adjustment range	-0.6mV~42mV
Display Unit	7 segment, 20.0mm(H)×13.0(W)mm
Annunciator	steady, zero, tare, Run, SP1, SP2, hold, Interface
Decimal point position	0, 0.0, 0.00, 0.000
Keyboard	Number key and function key 12 PCS.
Temperature-drift	zero ±20PPM/°C, span ±20PPM/°C
Non-linearity	0.01% of full scale
Rear panel	Loadcell input : 5pin connector External control : 12pin input terminal (zero, tare, tare reset/hold/print, gross/hold reset/subprint, Current loop, RS232C) control relay output : 7pin terminal
Power	SMPS Free Voltage (85V~265V)

### Option

- ① Analog Out-put (V-out) : 0~10V, 0~5V
  - ② Analog Out-put (I-out) : 4~20mA
  - ③ Serial I / F : RS-422, RS-485
  - ④ BCD In-put
  - ⑤ BCD In-out
- ※ RS232C and Current loop : Standard Installed

## > DIMENSIONS



★Specifications are subject to change without notice.



## > Model DN540N

- Control by quantity
- Application of Counting Packer, Hopper, Counting grader, Counting Scale, etc.
- Totaling function by Parts.
- Various Relay output mode
- Improved A/D Conversion speed and resolution(Max. 200times, 1/520,000)

## > SPECIFICATIONS

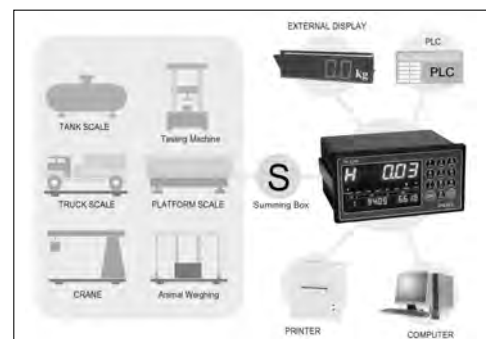
Specifications	Accuracy
Load cell excitation	10VDC±5%, 320mA
A/D converting speed	200times/sec
A/D converter resolution	: 1/520,000 counts(19bits), $\Delta\Sigma$
Non-linearity	0.01% of full scale
Zero adjustment range	-0.6mV~42mV
Display Unit	7 segment, 20.0mm(H)×13.0(W)mm
Annunciator	steady, zero, tare, Run, SP1, SP2, hold, Interface
Decimal point position	0, 0.0, 0.00, 0.000
Keyboard	Number key and function key 12 PCS.
Temperature-drift	zero ±20PPM/°C, span ±20PPM/°C
Non-linearity	0.01% of full scale
Rear panel	Loadcell input : 5pin connector External control : 12pin input terminal (zero, tare, tare reset/hold/print, gross/hold reset/subprint, Current loop, RS232C) control relay output : 7pin terminal
Power	SMPS Free Voltage (85V~265V)

### Option

- ① Analog Out-put (V-out) : 0~10V, 0~5V
  - ② Analog Out-put (I-out) : 4~20mA
  - ③ Serial I / F : RS-422, RS-485
  - ④ BCD In-put
  - ⑤ BCD In-out
- ※ RS232C and Current loop : Standard Installed

unit:mm

## > APPLICATION





# DIGITAL WEIGHING INDICATOR

# PRINTER INDICATOR



## > Model DN530N

- Application of Packer, Filler, Hopper, Limit, Loss-In weighing
- 3 Step Control (PRESET1, PRESET2, PRESET3)
- 6 Control RELAY MODE :SP1, SP2, SP3, FINISH, ERROR, NEAR, ZERO
- RELAY OUTPUT MODE :(LIMIT, PACKER, DISCHARGE LIMIT, LOSS IN MODE1, LOSS IN MODE2)
- Improved A/D Conversion speed and resolution(Max, 200times, 1/520,000)

## > SPECIFICATIONS

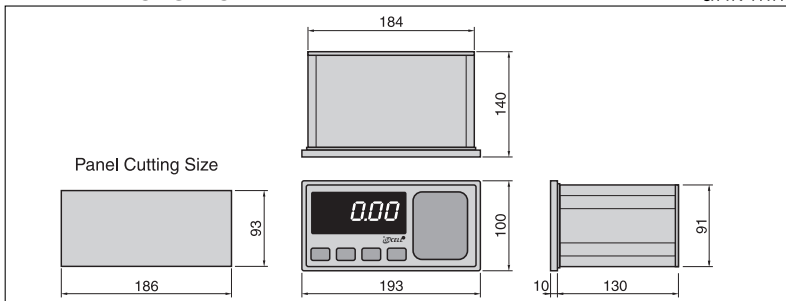
Specifications	Accuracy
Load cell excitation	10VDC±5%, 320mA
A/D converting speed	200times/sec
A/D converter resolution	1/520,000 counts(19bits), ΔΣ
Non-linearity	0.01% of full scale
Zero adjustment range	-0.6mV~42mV
Display Unit	7 segment, 20.0mm(H)×13.0(W)mm
Annunciator	steady, zero, tare, Run, SP1, SP2, hold, interface
Decimal point position	0, 0.0, 0.00, 0.000
Keyboard	Number key and function key 12 PCS.
Temperature-drift	zero ±20PPM/°C, span ±20PPM/°C
Non-linearity	0.01% of full scale
Rear panel	Loadcell input : 5pin connector External control : 12pin input terminal (zero, tare, tare reset/hold/print, gross/hold reset/subprint, Current loop, RS232C) control relay output : 7pin terminal
Power	SMPS Free Voltage (85V~265V)

**Option** ① Analog Out-put (V-out) : 0~10V, 0~5V    ② Analog Out-put (I-out) : 4~20mA  
 ③ Serial I / F : RS-422, RS-485    ④ BCD In-put  
 ⑤ BCD In-out    \* RS3232C and Current loop : Standard Installed

## > RELAY MODE

	OUT1	OUT2	OUT3	OUT4	OUT5	OUT6
Limit ("A" Dry)	SP1	SP2	SP3	Low N.G	High N.G	Zero
Packer ("B" Dry)	SP1	SP2	SP3	Finish	N.G	Zero
Discharge Limit	SP1	SP2	SP3	Low N.G	High N.G	Zero
Feed Discharge	SP1(Feed)	SP2(Dis1)	SP3(Dis2)	Low N.G	High N.G	Zero
1 Feed / 2 Discharge	SP1(Feed)	SP2(Dis1)	SP3(Dis2)	Finish	N.G	Zero
2 Feed / 1 Discharge	SP1(Feed)	SP2(Dis1)	SP3(Dis2)	Finish	N.G	Zero

## > DIMENSIONS



## > Model DN-5200N

- Industrial Control Application with Printing
  - Limit / Packer / Checker / Hopper / Testing
- 6pcs Control Relay built in
- A/D Sampling : 200times/sec
- Printer built in / Compact size
- Thermal type High Speed printing
- Peak / Sample / Average Hold Function
- Display Resolution : 1/30,000
- Various Options

## > SPECIFICATIONS

Specifications	Accuracy
Input Sensitivity	0.2mV / Digit
Load Cell Excitation	DC 10V ( - 5V ~ + 5V )
Max. Signal Input Voltage	Max.32mV
Temperature Coefficient	[Zero] ±20PPM/°C [Span] ±20PPM/°C
Input Noise	±0.6mV P.P
Input Impedance	Over 10MΩ
A/D Conversion Method	Sigma-Delta
A/D Resolution(Internal)	520,000 Count(19bit)
A/D Sampling Rate	Max. 200times / Sec
Non-Linearity	0.01% FS
Display Resolution(External)	1/30,000

### Option

① Analog Out-put (V-out) : 0~10V, 0~5V    ② Analog Out-put (I-out) : 4~20mA  
 ③ Serial I / F : RS-422, RS-485    ④ BCD In-put  
 ⑤ BCD In-out  
 \* RS3232C and Current loop : Standard Installed

## > RELAY MODE

	OUT1	OUT2	OUT3	OUT4	OUT5	OUT6
Limit	SP1	SP2	SP3	SP4	Finish	Zero
Packer	SP1	SP2	SP3	SP4	Finish	Zero
Checker 1 (Stable mode)	Low	High	OK	Low N.G	High N.G	Zero
Checker 2 (Range mode)	SP1	SP1<SP2	SP2<SP3	SP3<SP4	SP4<	Zero

unit:mm

## > APPLICATION



★Specifications are subject to change without notice.



# DIGITAL WEIGHING INDICATOR

# DIGITAL INDICATOR



## > Model DN-550N

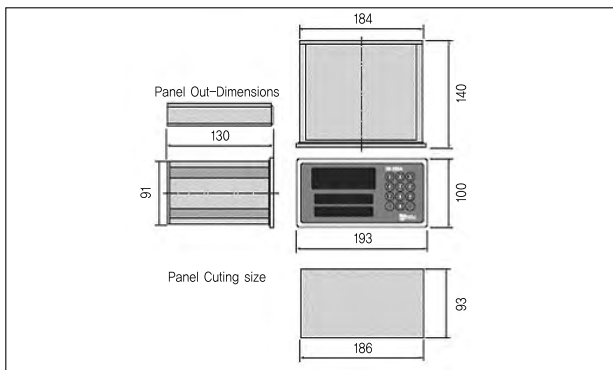
Multiple Accumulating Mixture Control Indicator  
 Mas 16kinds Materials Mixed with 50 Formulas  
 2 Step Control (DRIB, FINAL)  
 6 Control RELAY (FINAL, DRIB, FINISH, BATCH FINISH, ZERO)

### > SPECIFICATIONS

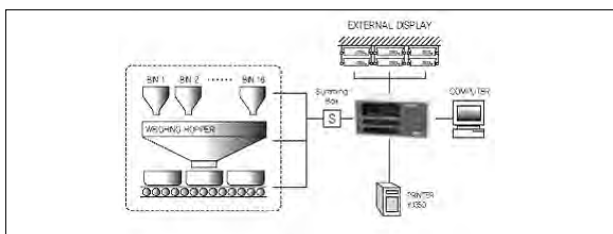
Specifications	Accuracy
Load cell excitation	10VDC±5%, 320mA
Input signal	0.5 ~ 3mV/V
A/D converting speed	200times/sec
A/D converter resolution	1/520,000 counts(19bits), $\Delta \Sigma$
Non-linearity	0.01% of full scale
Zero adjustment range	-0.6mV~42mV
Display Unit	7 segment, 20.0mm(H)×13.0(W)mm
Annunciator	steady, zero, tare, gross, sp1, sp2, run
Decimal point position	0, 0.0, 0.00, 0.000
Keyboard	Number key and function key 12 PCS.
Temperature-drift	zero ±20PPM/°C, span ±20PPM/°C
Non-linearity	0.01% of full scale
Rear panel	loadcell input : 5pin connector remote control : 5pin input terminal (start, stop, tare, tare reset, zero) BCD input : 25pin connector control relay : 7pin terminal (final, drib, finish, batch finish, zero) SMPS Free Voltage (85V~265V)
Power	

### > DIMENSIONS

unit:mm



### > APPLICATION



★Specifications are subject to change without notice.



## > Model DN-830

- Simulating Calibration
- Multi-Functional Control purpose Indicator
  - Limit / Packer / Checker / Testing Application
- 3pcs Control Relay built in
- 1/8 Din Size (96(W) × 48mm(H))
- A/D Sampling : 200times/sec
- Peak / Sample / Average Hold Function
- Display Resolution : 1/30,000
- Power : DC 12V~24V
- Rs-232C Serial Interface built in(Standard)

### > SPECIFICATIONS

General Specification	
Input Sensitivity	0.2μV / Digit
Load Cell Excitation	DC 10V ( - 5V ~ + 5V )
Max. Signal Input Voltage	Max.32mV
Temperature Coefficient	[Zero] ±10PPM/°C / [Span] ±10PPM/°C
Input Noise	±0.6μV P.P
Input Impedance	Over 10MΩ
A/D Conversion Method	Sigma-Delta
A/D Resolution(Internal)	520,000 Count(19bit)
A/D Sampling Rate	Max. 200times / Sec
Non-Linearity	0.01% FS
Display Resolution(External)	1/30,000

### ■ OPTION

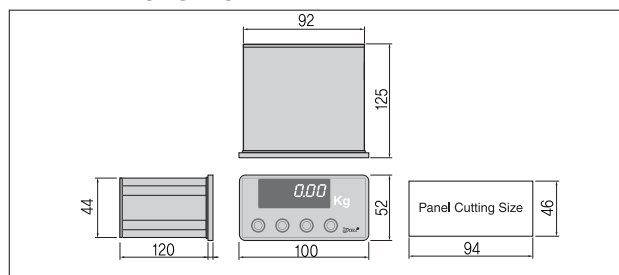
- OP-01 : RS-422
- OP-02 : RS-232 (Standard Installation)
- OP-05 : 4~20mA (Analogue Output)
- OP-06 : 0~10V (Analogue Output)

### > RELAY MODE

	OUT1	OUT2	OUT3
Limit ("A" Dry)	Zero	SP2	SP1
Packer ("B" Dry)	Zero	SP2	SP1
Checker (Stable mode)	OK	High	Low
Checker (Range mode)	OK	High	Low

### > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

### > APPLICATION



# EXPLOSION PROOF INDICATOR / SUMMING BOX

## > Model DN-EXP520

- Explosion Proof Indicator
- RELAY OUTPUT MODE: LIMIT, PACKER, CHECKER
- WATCH-DOG circuitry
- Improved A/D Conversion speed :Max. 200times
- Fueling stations, liquid or gaseous
- Applications: Chemical plants (Packer/ Checker) Fertilizer plants
- Classification code : Ex d II B T6 Degree



## > SPECIFICATIONS

Specifications	Accuracy
Input Sensitivity	0.2μV / Digit
Load Cell Excitation	DC 10V ( - 5V ~ + 5V )
Max. Signal Input Voltage	Max.32mV
Temperature Coefficient	[Zero] ±20PPM/°C [Span] ±20PPM/°C
Input Noise	±0.6μV P.P
Input Impedance	Over 10MΩ
A/D Conversion Method	Sigma-Delta
A/D Resolution(Internal)	520,000 Count(19bit)
A/D Sampling Rate	Max. 200times / Sec
Non-Linearity	0.01% FS
Display Resolution(External)	1/20,000

### Option

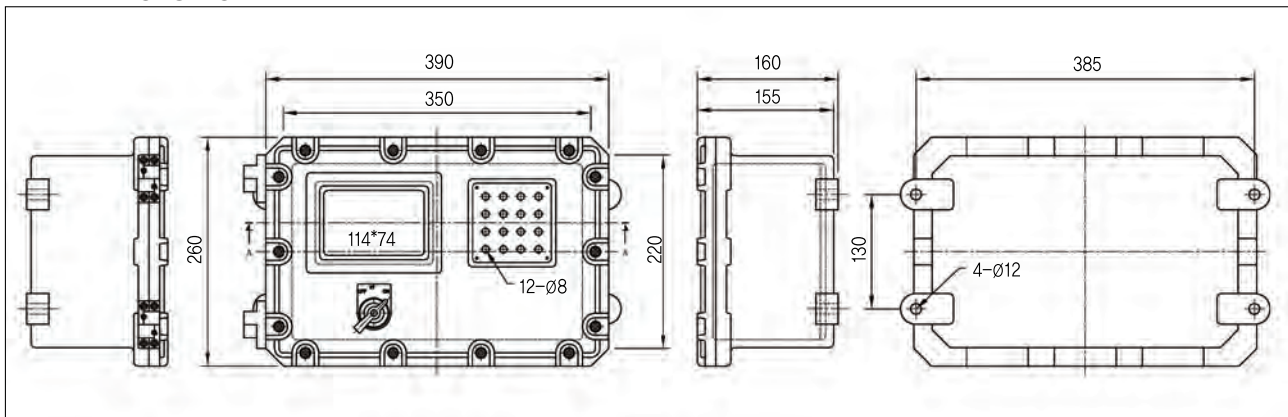
- ① Analog Out-put (V-out) : 0~10V, 0~5V
- ② Analog Out-put (I-out) : 4~20mA
- ③ Serial I / F : RS-422, RS-485
- ④ BCD In-put
- ⑤ BCD In-out
- \* RS232C and Current loop : Standard Installed

## > RELAY MODE

Model	Out1	Out2	Out3	Out4	Out5	Out6
Limit ("A" Dry)	SP1	SP2	SP3	SP4	Finish	Zero
Packer ("B" Dry)	SP1	SP2	SP3	SP4	Finish	Zero
Checker 1 (Stable mode)	Low	High	OK	Low N.G	High N.G	Zero
Checker 2 (Range mode)	SP1	SP1<SP2	SP2<SP3	SP3<SP4	SP4<	Zero

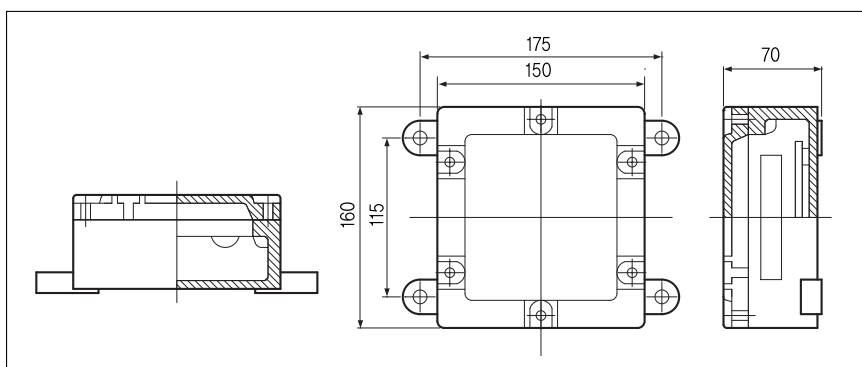
## > DIMENSIONS

unit:mm



## > Model EXP-SB4P

## > DIMENSIONS



\*Specifications are subject to change without notice.

# POCKET INDICATOR



## > Model PDN-10

HAND-HELD TYPE.

The PDN-10 has been designed specifically to operate with strain gauge sensors such as Load cell, Pressure Transducer, LVDT, etc.

Pocket indicator with battery.

### Feature

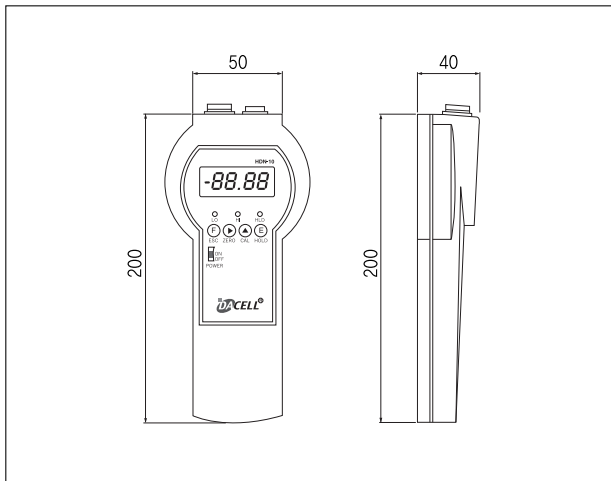
- Peak hold
- Auto Zero
- Measuring Data Saving (Max 500pcs.)
- Hi, Low Display LED

### > SPECIFICATIONS

Specifications	Accuracy
Power Source	DC 1.5V *4EA (AAA size) battery
Electric current Consumption	15mA
LOAD CELL input range	1.0mV/V ~ 3.0mV/V, Potentiometer : 100~10KΩ
Display	4 1/2 Digit LCD
Characters displayed	-1999 ~ +1999
Display Speed	Approx. 10 times/sec
Decunak point Position	0, 0.0, 0.00, 0.000
A/D Sampling speed	100 times/sec
A/D Resolution	16 bit
Zero Adjust Range	100% F.S(AUTO ZERO)
Data storage	500 data can be memorised
Data output	RS232C Serial Interface

### > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# POCKET INDICATOR



## > Model PDN-20

The PDN-20 has been designed specifically to operate with strain gauge sensors such as Load cell, Pressure Transducer, LVDT, etc.

Pocket indicator with rechargeable battery.

### PEAK HOLD FUNCTION

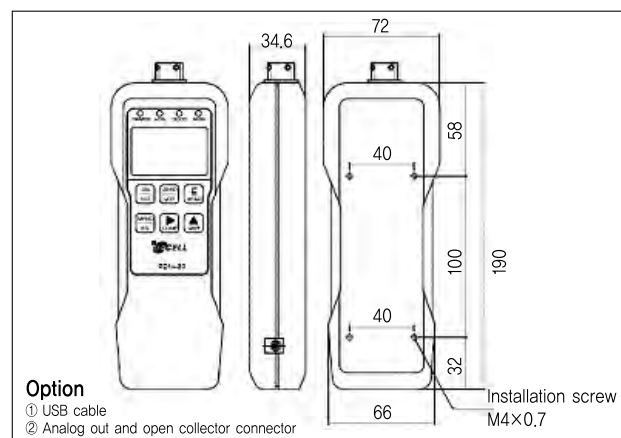
- ±NG, OK judgments with LED display(with open collector output)
- Connectable to computer through USB output cable (standard accessory)
- Display reverse function.
- Ergonomic, heavy-duty metal construction
- UNIT CONVERSION : N, kgf, lbf, ozf

### > SPECIFICATIONS

Specifications	Accuracy
Usable Sensor	Strain gauge type sensor (Bridge 120Ω, 350Ω, 700Ω)
Range of Indication	-99999 to +99999
A/D Transducer	16-bit, 100 times/sec
D/A Transducer	12-bit
Indication of Measuring Value	5 digits LCD, Right/reverse display available
Measuring Unit	Kgf, N, lbf, ozf
Condition indicating LED	Indication of charge and compare output condition
Compare Output	High, Low, Good
Analog Output	DC +/-1V
Communication Output	USB
Range of using temperature	-10°C to 40°C
Weight	Approximately 800g
Power	Nickel hydrogen (NimH), Chargeable Adapter (DC 9V)
Continuous Use Life	Approximately 40 hours
Charging Time	Approximately 8 hours

### > DIMENSIONS

unit:mm



#### Option

- ① USB cable
- ② Analog out and open collector connector

★Specifications are subject to change without notice.

# POCKET INDICATOR

# REMOTE DISPLAY



## > Model DN120

The DN-120 has designed specifically to operate with strain gauge sensors such as Fast - measurement of Load cell, Pressure Transducer, LVDT, etc. The setup sequence is simple and quick using four push buttons only. Quick sampling speed (100 times/sec).

- Simple outdoor using in use of battery.
- Using rechargeable battery.
- High resolving power(16bit A/D)
- High precision(more than 0.012% F,S) and stability.
- Quick sampling speed (100 times/sec)
- Peak hold function
- Comparison function(hi, low) ; open collector output
- Calibration of actual load and sensor output value
- Auto zero function
- Cutting size:92×92mm - Weight:about 500g

### ■Others

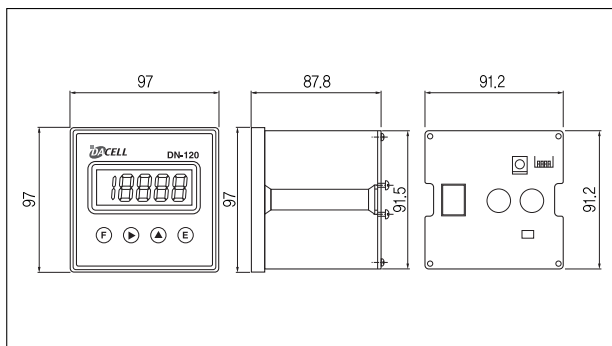
- Option : RS232C(OP-02), RS485(OP-03).

## > SPECIFICATIONS

Specifications	Accuracy
Applicatin sensor	Strain gauge sensor (350Ω or 120Ω)
Sensor adjustment range	DC 5V
Zero adjustment range	100% F - S(Auto Zero)
Input signal	0 ~ 3mV/V
Display	±19999
Display speed	Approx 30times/sec(Adjustment available by buff setting)
Character height	7Segment 15mm
Decimal point	Random setting available
Sampling speed	Max 100 times/sec
Zero variation	within 0.01%/°C(1mV/V)
Sensitivity variation	within 0.01%/°C
Usage temperature range	-10°C ~ 60°C
Humidity	less than 80% RH(no dew condensation)
Power source used	DC 7.2V Recharging battery DC 12V Adapter

## > DIMENSIONS

unit:mm



## > Large Display Series



- High brightness FND
- Easy to check the weight from far distance
- Wall mounting type
- Uniform brightness and Wide angle viewing

## > SPECIFICATIONS

Model	MR900	MR930	MR940	MR960
Digits	5 DIGIT (99999)			
Size of digit(mm)	33(W) X 75(H)	43(W) X 76(H)	60(W) X 100(H)	87(W) X 150(H)
Size(inch)	2.3	3	4	6
Display	7 Segment high brightness FND			
Interface	RS-232C & CURRENT LOOP			
Dimensions	360(W) X 150(D) X 120(H)	500(W) X 155(D) X 155(H)	700(W) X 210(D) X 180(H)	850(W) X 205(D) X 205(H)
Weight(kg)	About 3.6	About 5.3	About 11.6	About 15.2
Power	AC 85 ~ 264V	AC 85 ~ 264C	AC 85 ~ 264V	AC 110 ~ 220V

★Specifications are subject to change without notice.

# OVER LOAD LIMITER

## > Model DN9000

Load limiter

High resolution : 24bit ADC.

Quick sampling speed (1000times/sec)

5 digit LED display

The setup sequence is simple.

### ■ Feature

- A/D converter : 24bit, 1000times/sec.
- High precision (more than 0.01% F,S) and stability
- 5 digit LED display
- Three set points : RELAY1, RELAY2, RELAY3
- Watch dog

### ■ Option

- OP1 : RS232C
- OP2 : RS485
- OP3 : Analog 0 ~ 10V
- OP4 : Analog 4 ~ 20mA



■ DN9000-L : Outside warning light

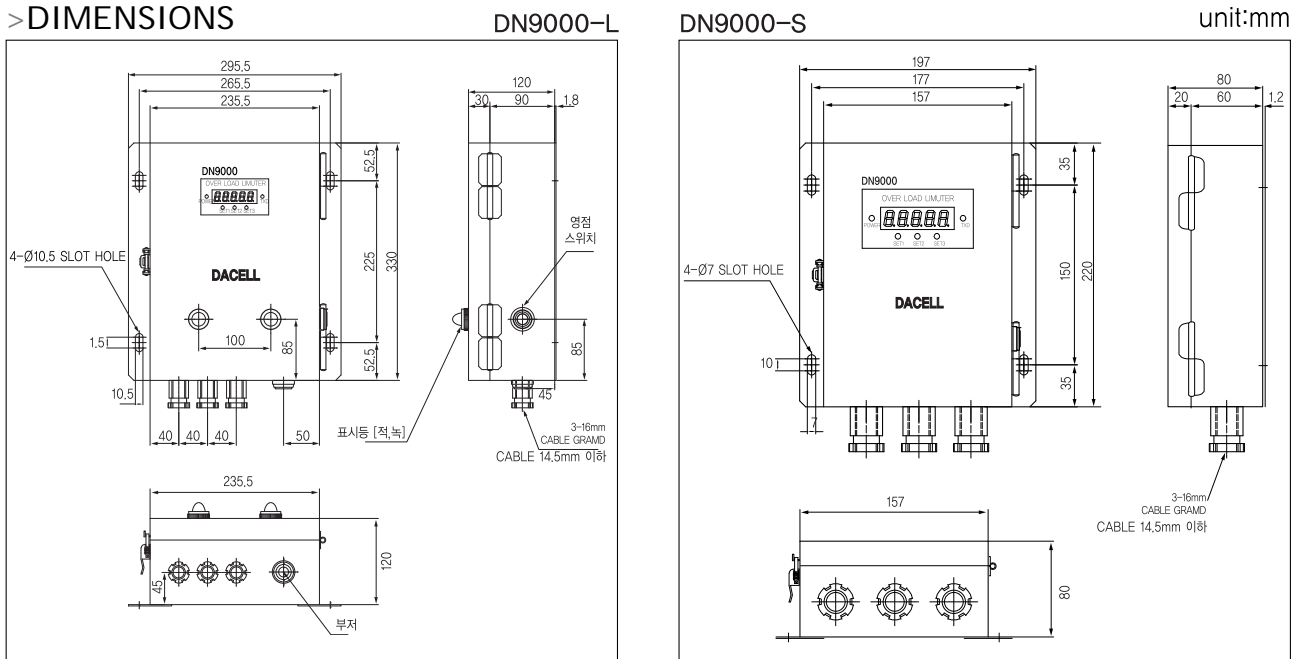
■ DN9000-S : Inside alarm

■ DN9200 : 2 channel load limiter

## > SPECIFICATIONS

Specifications	Accuracy
Relay Output	RELAY1, RELAY2, RELAY3 Contact capacity : AC250/5A
Sensor authorized voltage	DC 5V
Zero adjustment range	100%F · S (Auto Zero)
Input signal	0.5 ~ 3mV/V
Display	-19999 ~ +99999
Character height	7 Segment 14mm
AD converter	24bit 1000times/sec
Sensitivity variation	within 0.01%/°C
Zero variation	within 0.5%/°C
Usage temperature range Humidity	-10°C ~ 60°C less than 80°C RH (no dew condensation)
Power source used	85 ~ 265V 50/60Hz
Size	197 x 220 x 80mm (W x H x D)

## > DIMENSIONS



★Specifications are subject to change without notice.



# DYNAMIC STRAIN AMPLIFIER

## > Model DN-AM100, ACM100, ACM200

As dynamic strain amplifier, it is designed and manufactured to be suitable for instrumentation control panel.

- Built-in single step filtering function
- Built-in automatic temperature compensating circuit
- Easy to adjust zero and span by volume

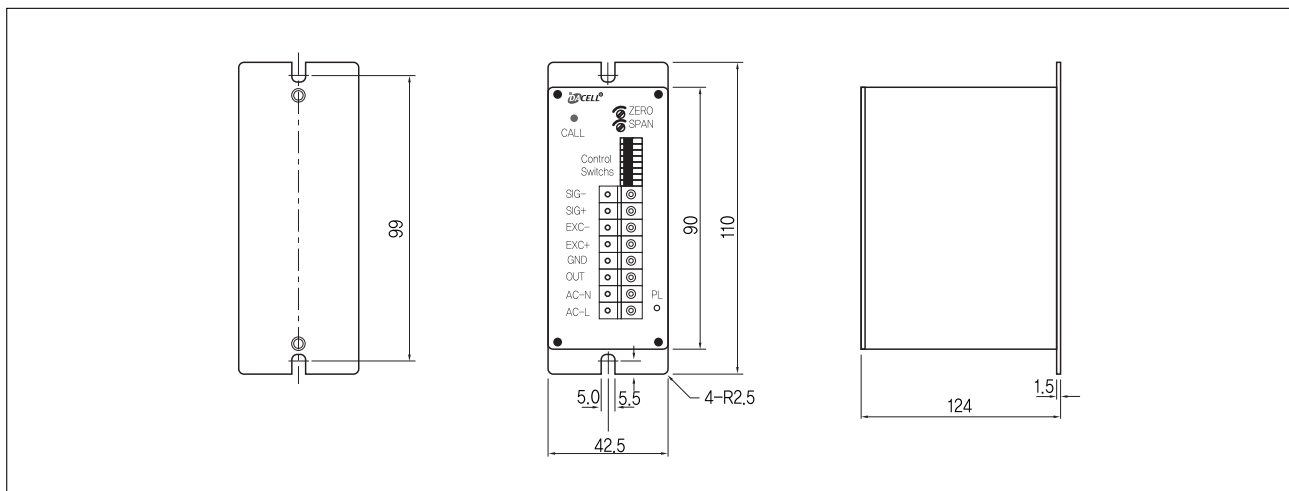


## > SPECIFICATIONS

Specifications	DN-AM100	DN-ACM100	DN-ACM200
Bridge voltage	Constant voltage DC 5V, 10V	AC 2Vrms 5kHz/10kHz	AC 2Vrms 5kHz/10kHz
Application sensor	<b>Strain gauge sensor (350Ω or 120Ω)</b>	<b>Differential trans LVDT (FULL/HALF TYPE)</b>	<b>Differential trans TORQUEMETER (AC TYPE, TRC)</b>
Rated output	Voltage $\pm 10V$ , Load resistance more than 200Ω	Voltage $\pm 10V$ , Load resistance more than 200Ω	Voltage $\pm 10V$ , Load resistance more than 200Ω
	Current 4~20mA, Load resistance less than 300Ω	Current 4~20mA, Load resistance less than 300Ω	Current 4~20mA, Load resistance less than 300Ω
Zero adjustment range	10%, 10 rotations	10%, 10 rotations	10%, 10 rotations
Sensitivity adjustment range	1500 Multiplier	1500 Multiplier	1500 Multiplier
S/N rate	51dB	51dB	51dB
Answering frequency	DC~20kHz (-3dB)	500Hz	500Hz
Low pass filter	10Hz, 100Hz, 1kHz pass	10Hz, 100Hz, pass	10Hz, 100Hz, pass
Non-linearity	0.02% F.S	0.1% F.S	0.1% F.S
Usage temperature range	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C
Allowed voltage variation rate	Supply power $\pm 5\%$	Supply power $\pm 5\%$	Supply power $\pm 5\%$
Voltage	AC 220V	AC 220V	AC 220V

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.



# DYNAMIC STRAIN AMPLIFIER

## > Model DN-AM110

As dynamic strain amplifier, it is designed and manufactured to be suitable for sub rack case.  
Application sensor : Torque transducer, Load cell, strain gauge type sensors, mV output type sensors etc.

- Built-in single step filtering function
- Built-in automatic temperature compensating circuit
- Easy to adjust zero and span by volume



### ORDERING INFORMATION

DN-AM110  -

↓

1. Voltage : 0~10V  
2. Current : 4~2mA

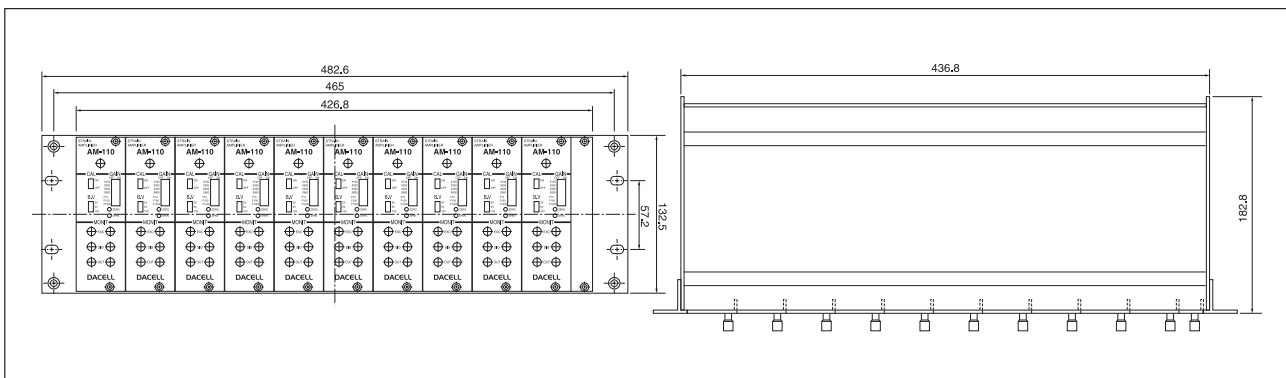
- A : Strain gauge type
- B : Potentiometer voltage input
- C : AC input type

## > SPECIFICATIONS

Specifications	DN-AM110
Bridge Voltage	Constant voltage DC2V, 5V, 10V
Application Bridge resistance	100Ω ~ 1kΩ
Rated output	Voltage ±10V, Load resistance more than 200Ω Current 4~ 20mA, Load resistance less than 300Ω
Zero adjustment ranger	10%, 10 rotations
Sensitivity adjustment range	1500 Multiplier
S/N rate	51dB
Answering frequency	DC~20kHz(-3dB)
Low Pass Filter	10Hz, 100Hz, 1kHz Pass
Non-linearity	0.02% F.S
Operating temperature	-10 ~ +60°C
Power	AC85~265V, 50/60Hz

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# SIGNAL CONDITIONER

# DYNAMIC STRAIN AMPLIFIER



## > Model DN-CN100

As signal conditioner, it was designed and manufactured to be suitable for instrumentation control panel. It is used for potentiometer, and signal converter DC voltage output transducer.

### ■ Feature

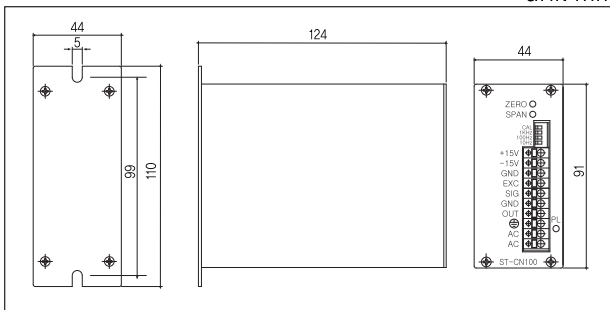
- Built-in single step filtering function
- Easy to adjust zero and span by volume
- Frequency response DC~10kHz

## > SPECIFICATIONS

Specifications	Accuracy(DN-CN100)
Bridge Voltage	DC 10V, ±15V
Potentiometer resistance	1kΩ ~ 100kΩ
Rated output	Voltage 10V (Load resistance more than 200Ω) Current 4~ 20mA (Load resistance less than 300Ω)
Zero adjustment ranger	20%, 10 rotations
Sensitivity adjustment range	20%, 10 rotations
Frequency response	DC ~ 10kHz (-3dB)
Low Pass Filter	10Hz, 100Hz, 1kHz, Pass
Non-linearity	0.02% F.S
Usage temperature range	-10 ~ 60°C
Humidity	Less than 80% RH (No dew condensation)
Voltage	AC 220V 50/60Hz (AC 110V available by internal operation)

## > DIMENSIONS

unit:mm



## > Model DN-AM210

As dynamic strain amplifier, it uses single or SUB Rack case, and can be used as multi-channel. It is used for strain gauge applied sensors, and strain measurement of potentiometer and mV output sensor and half and full bridge as high-level model.

### ■ Feature

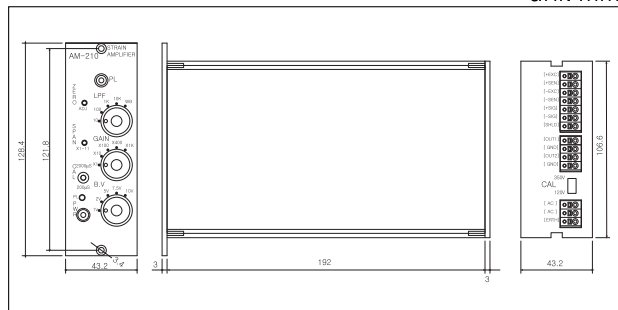
- Built-in automatic temperature compensating circuit
- Easy to adjust zero and span by volume
- Built-in single step adjustment function of Gain and LPF by rotary switch
- Bridge power supply built-out optional switch
- One touch auto zero function
- Built-in self calibration function

## > SPECIFICATIONS

Specifications	Accuracy (DN-AM210)
Bridge voltage	Constant voltage DC 1V, 2V, 5V, 7.5V, 10V
Application bridge resistance	100Ω ~ 1kΩ
Rated output	Voltage ±10V (Load resistance more than 200Ω) Current 4 ~ 20mA (Load resistance less than 300Ω)
Zero adjustment ranger	10%, 10rotations
Gain (Max 1000)	Switch : 1, 10, 100, 400, 1000 times / Span : 1 ~ 11 times
S/N rate	54dB
Frequency response	DC ~ 20 kHz (-3dB)
Low Pass Filter	10Hz, 100Hz, 1kHz, 10kHz, WB
Non-linearity	±0.01% F.S
Usage temperature range	0 ~ 60°C
Stability (temp. characteristic)	Sensitivity ±0.03%/°C
Humidity	Less than 80% RH (No dew condensation)
Supply power	AC 220V 50/60Hz (AC 110V available by internal operation)
Correction value	200μs, 2000μs (1000μs/Strain = 0.5mV/V)

## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# DYNAMIC STRAIN AMPLIFIER



## > Model DN-AM310

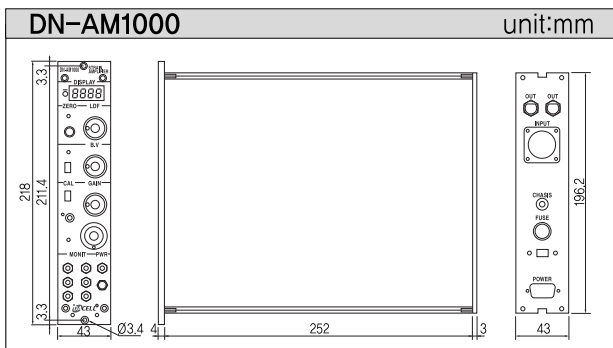
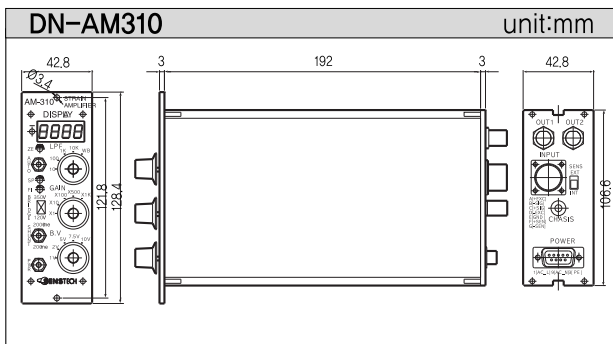
This amplifier, which microprocessor is integrated in, converts resistance differences to DC voltage and is widely used for the various sensors like a strain gage type load cell.

- Amplifier to convert strain gage signal from load cell to DC voltage
- Multi stage filter construction,
- The circuit compensated temperature automatically
- Zero adjustment by volume,
- Function control by rotary s/w
- Voltage display : 3½ digit

## > SPECIFICATIONS

Specifications	Accuracy (DN-AM310)
Number of measuring point	1Point per each unit
Application gage resistance	100Ω ~ 1KΩ
Measuring range	10V~1mV~20mV/V, 5V~2mV~40mV/V, 2.5V~4mV~80mV/V
Bridge voltage(BV/V)	Constant voltage DC5V, 10V
Zero set range	Adjustment by 10 turns VR(10%)
Output	0~±10VDC(load resistance ≥ 200Ω), 4mA~20mA(load resistance ≤ 300Ω)
Nonlinearity	±0.01% F.S.
Sensitivity adjustment	1000 multiplier (Max 1000)
S/N ratio	51dB
Frequency Response	DC20kHz(-3dB), Option:DC100kHz
Low pass Filter	10Hz, 100Hz, 1kHz, 10kHz, pass
Operating temperature	-10°C~+60°C
Temperature sensitivity	±0.03% F.S./°C
Calibration	0.5, 1.0, 1.5, 2.0, 2.5 mv/v (0.5mv/v=1000u strain)
Display	Digit
Size	44.5(W)×128.4(H)×166(D)mm
Power	220V, 50/60Hz

## > DIMENSIONS



★Specifications are subject to change without notice.



## > Model DN-AM1000

The DN-AM1000 Series high precision, as the sensitivity dynamic signal amplifier independence or majority (Multi-channel) it will put in to the 19" rack case and it will be able to use and it is planned.

The voltage signal which is output comes to become rate (GAIN) until 1 ~ 11000 boats, answer back frequency the maximum 100kHz, the Low Pass Filter is becoming at 10Hz~10kHz.

### ■Feature

- Fully adjustable calibrated gain from 1 to 11000
- Accepts all strain gage inputs (foil or piezoresistive), potentiometer, LVDT, etc.
- Bridge excitation from 1 to 10Vdc (5 steps)
- Input impedance above 1GΩ
- Four-frequency low-pass active filter (10 to 10kHz)
- Automatic bridge balance (±4000μs)
- Double shunt calibration (120Ω, 350Ω, 2000μs, 200μs)
- Outputs voltage display (7-Segment 4-digits LED)
- SIZE & WEIGHT
  - Size : 218(H)×43(W)×258(D)mm
  - Weight : Approx. 1,2kg

### ■Connector

- Signal input : MS3112E 14-19S, MS3116F 14-19P
- Signal output : BNC connector

Specifications	Accuracy (DN-AM1000)
EXCITATION	5 steps : 1V, 2V, 5V, 7.5V, 10V Current : 170mA, max. Remote sense error : 0.0005%/Ω at lead resistance (350Ω load) Noise and ripple : 0.05% p-p, max (dc 10kHz) Stability : ±0.02%/°C
INPUT	STRAIN GAUGE : quarter, half or full bridge (50 to 10000Ω), Built-in 120Ω and 350Ω dummy resistor
AMPLIFIER	TRANSDUCER : Piezoresistive strain gauge types, potentiometer, DCCT transducers displacement 1st Gain : ×1, ×10, ×100, ×400, ×1000 5steps (accuracy ±1%) 2nd Gain : ×1 to ×11 continuously variable Vernier multiplier : 10-turn counting knob with direct readout (×1 to ×11) Frequency response : 100kHz (-3dB), max. Input resistance : 1GΩ, differential or common mode Input capacitance : 4pF, differential or common mode Input voltage range : ±10V, differential mode 12V-(G/2×Vd), common mode (Vd=actual differential input voltage) Bias current : ±30nA, typical, each input Common-mode rejection (G=100) : 100dB, min, dc to 60Hz with 1KΩ source imbalance Stability (G<1000) : 5ppm/°C, max. Noise (G=100) : 0.01 to 10Hz, 0.3μVp-p R.T.I
FILTER	Characteristic : low-pass active 2-pole butterworth standard Frequencies (-3dB) : 10Hz, 100Hz, 1kHz, 10kHz, wide-band
AMPLIFIER OUTPUT (BNC CONNECTOR)	Outputs : ±10V @100mA max. (out1); ±10V @10mA max. (out2) Linearity : ±0.01%
VOLTAGE DISPLAY	Display character : 7-Segment 4-digits LED Display range : 0.000V~±10.00V
GAIN	5 steps Amplifier (×1, ×10, ×100, ×400, ×1000)
FREQUENCY RESPONSE	100kHz(-3dB), max.
BRIDGE BALANCE	Auto ranging : ±4000μs (2mV/V) Auto balance time : 1 second, typical Manual balance range : ±1V Storage : non-voltage data memory (EEPROM)
LOW PASS FILTER	4 steps 10Hz, 100Hz, 1kHz, 10kHz (-3dB)
LINEARITY	±0.01%
STABILITY	±0.01%/°C
SHUNT CALIBRATION	Bridge resistance 120Ω : 200μs and 2000μs calibrations Bridge resistance 350Ω : 200μs and 2000μs calibrations
INPUT INPEDANCE	more than 1GΩ
POWER	AC 110V or 220V (switch selected) 50/60Hz, 7.5watts
3-wirecode ( 2-wire : power / 1-wire : Ground)	

# WATERPROOF AMPLIFIER

## > Model DN-AM120



- Waterproof amplifier: Strain gauge sensor
- Built-in single step filtering function
- Easy to adjust zero and span by volume
- Response frequency characteristic: DC ~ 20kHz
- Protection class: IP66, EN60529

### > SPECIFICATIONS

Specifications	Accuracy
Bridge Voltage	Constant voltage DC 5V, 10V
Application sensor	Strain gauge sensor (100Ω ~ 1kΩ)
Output	Current 4~20mA (OP: Voltage 0 ~ +10V)
Zero adjustment range	10%, 10 turning
Sensitivity adjustment range	1500 Multiplier
S/N rate	51dB
Response frequency characteristic	DC ~ 20kHz (-3dB)
Service temperature	-10°C ~ 60°C
Non-linearity	0.02% F.S
supply voltage	DC24V

## > Model DN-AM 130

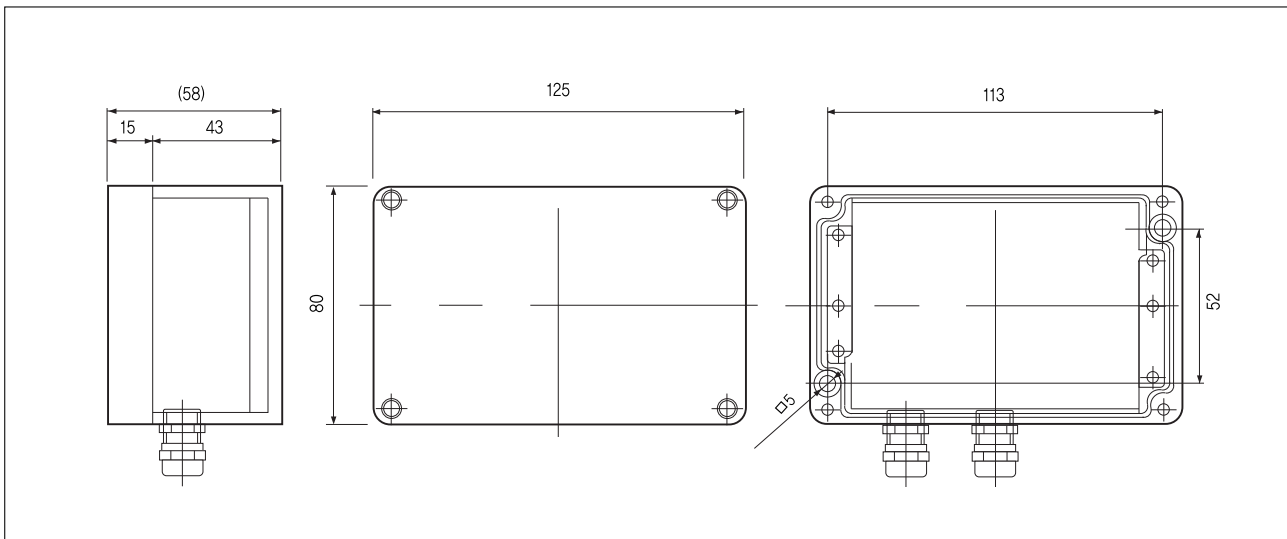


- This product is Dynamic Strain Amplifier of DC voltage control.
- Low price and waterproof type.
- One touch auto zero
- Real weight calibration

### > SPECIFICATIONS

Specifications	Accuracy
Bridge Voltage	DC 5V
Available Bridge RESISTER	350Ω, 750Ω
Zero adjustment range	100% F.S (Auto zero)
Input signal	1m V/V (2mV/V, 3mV/V : according to customer request)
D/A Converter	12bit
Analog out	4 ~ 20mA (0 ~ 10V : according to customer request)
Response frequency characteristic	10Hz
Service temperature	-10°C ~ 60°C
dimension (mm)	80 x 125 x 58 (W x L x H)
supply voltage	DC24V

### > DIMENSIONS



★Specifications are subject to change without notice.

# DISPLACEMENT TRANSDUCERS

## > Model DLH- A

The DLH provides minimal functional error high accuracy measurement.

Operating ranges are 5mm to 50mm

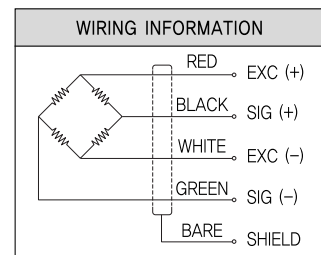
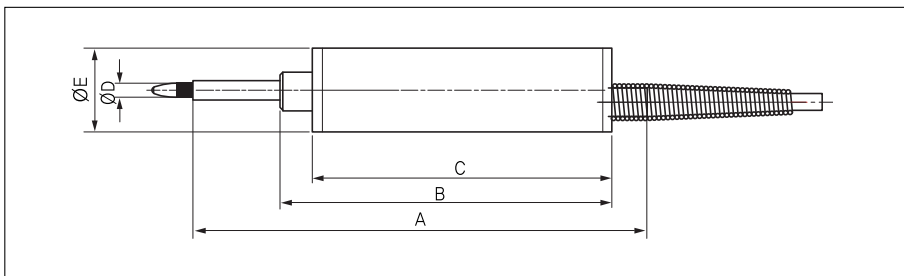
Highly accurate, small and light weight

Rated capacity : 5 to 50mm

Rated output : 5mV/V

Non-linearity : 0.1% R.O

Reaction force : Approx. 1.5 to 4N



## > SPECIFICATIONS

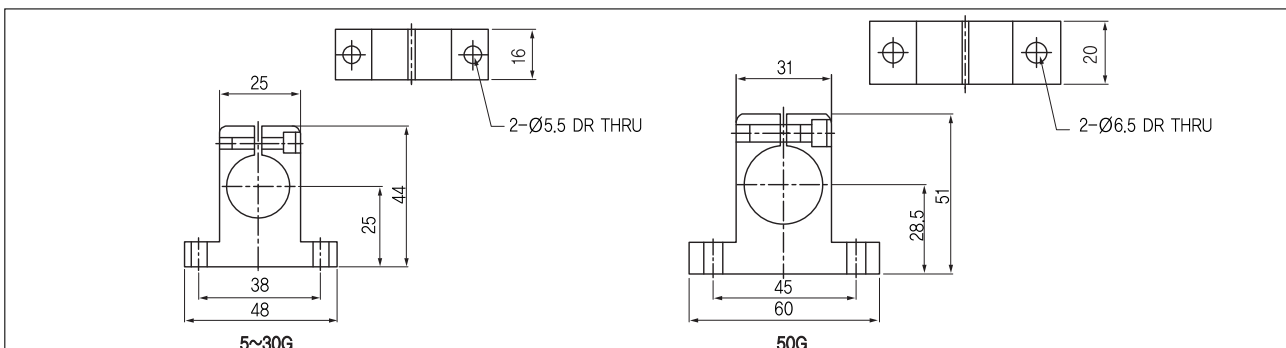
Specifications	Accuracy
Rated capacity(R.C.)	5mm ~ 50mm
Rated output(R.O.)	5mV/V±0.5%
Nonlinearity	0.1% R.O.
Hysteresys	0.1% R.O.
Repeatability	0.1% R.O.
Terminal resistance input	350±3.5Ω
Terminal resistance output	350±3.5Ω
Temperature range compensated	-10°C~70°C
Temperature range safe	0°C~60°C
Excitation recommended	5V
Cable	Ø3mm X 4C X 2m

## > DIMENSIONS TABLE

unit:mm

Model	Capacity	A	B	C	ØD	ØE	Weight (g)
DLH-A-5	5mm	Max. 84.4 / Min. 78.4	68	60	4	20	30
DLH-A-10	10mm	Max. 96.4 / Min. 85.4	75	67	4	20	35
DLH-A-20	20mm	Max. 122.4 / Min. 101.4	91	83	4	20	35
DLH-A-30	30mm	Max. 149.4 / Min. 118.4	108	100	4	20	40
DLH-A-50	50mm	Max. 209.5 / Min. 158.5	148	140	4	25	75

## > FOOT MOUNT



★Specifications are subject to change without notice.

# LINEAR POTENTIOMETER

# CABLE EXTENSION POSITION SENSOR



## > Model LPS

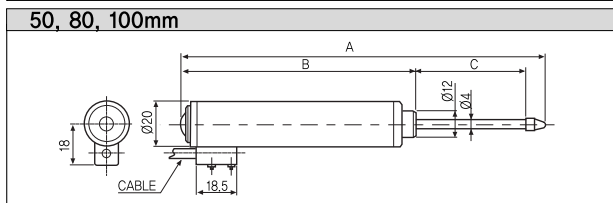
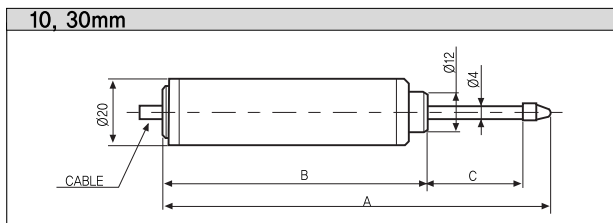
Model LPS is a compact style, easily handled strain meter. It is a DC output type and it outputs the ratio of input resistance and output voltage through changes of the interior volume resistance. It could be used for dynamic measurement as well as static measurement.

- As static measurement
- Superior repeatability
- High output
- Easy handling

## > SPECIFICATIONS

Specifications	Accuracy	
Rated capacity	10, 30, 50 mm	80, 100 mm
Non-linearity	± 0.2% R.O.	± 0.4% R.O.
Hysteresis	± 0.05% R.O.	± 0.1% R.O.
Non-repeatability	± 0.05% R.O.	± 0.1% R.O.
Total resistance (±20%)	2kΩ (stroke 5~10mm), 5kΩ (stroke 30~100mm)	
Temperature range compensated	-10°C ~ 70°C	
Temperature range safe	0°C ~ 60°C	
Excitation Voltage	10V DC	
Cable	Ø4 shield 2m	

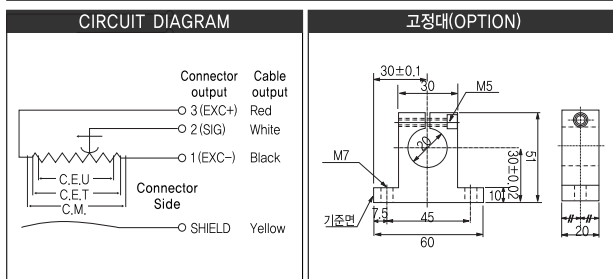
## > DIMENSIONS



## > DIMENSIONS TABLE

unit:mm

Stroke	A	B	C
10mm	77	57.5	Useful Stroke +1 / -0
30mm	117	77.5	
50mm	170	110.5	
80mm	251.5	162	
100mm	271.5	162	



## > Model CTP

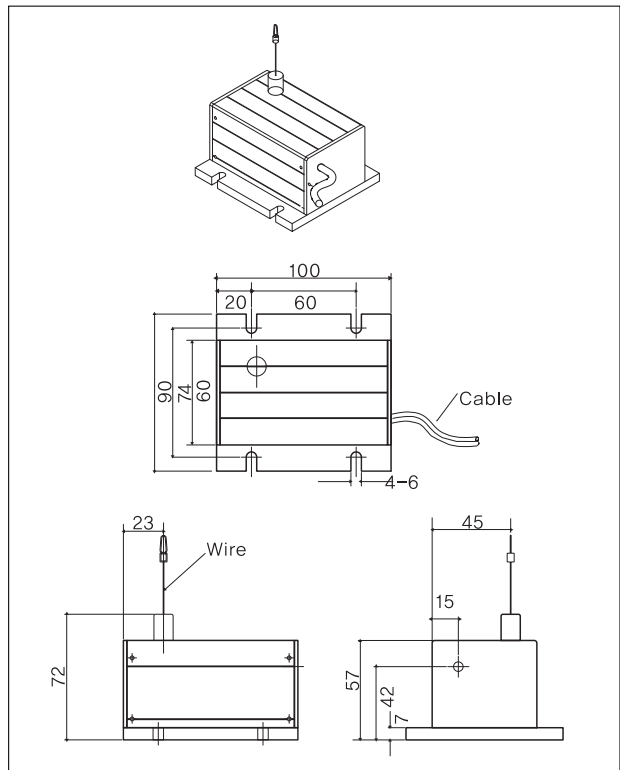
- Flight and crash test applications
- 360° 2-Axis mounting · potentiometer output

## > SPECIFICATIONS

Specifications	Accuracy
Full stroke Range	0.5, 1M
Output signal	voltage divider (Potentiometer)
Accuracy	±0.25% full stroke
Repeatability	±0.02% full stroke
Measuring cable	Ø0.45 stainless steel
Power supply	5V, 12V, 24V, DC +5 ~ +24V
Resistance range	100Ω ~ 100kΩ
Min.practical independent linearity	±0.15%, (300Ω, ±0.075%, ≥300Ω)
Dielectric strength	1,000V rms
Min.insulation resistance	1000MΩ
Maximun noise	100Ω
Max.end voltage	0.25% of input voltage

## > DIMENSIONS

unit:mm

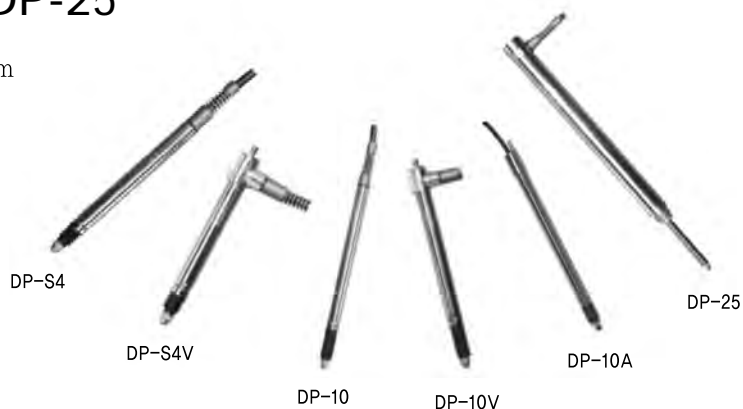


★Specifications are subject to change without notice.



## > Model DP-S4, DP-10, DP-25

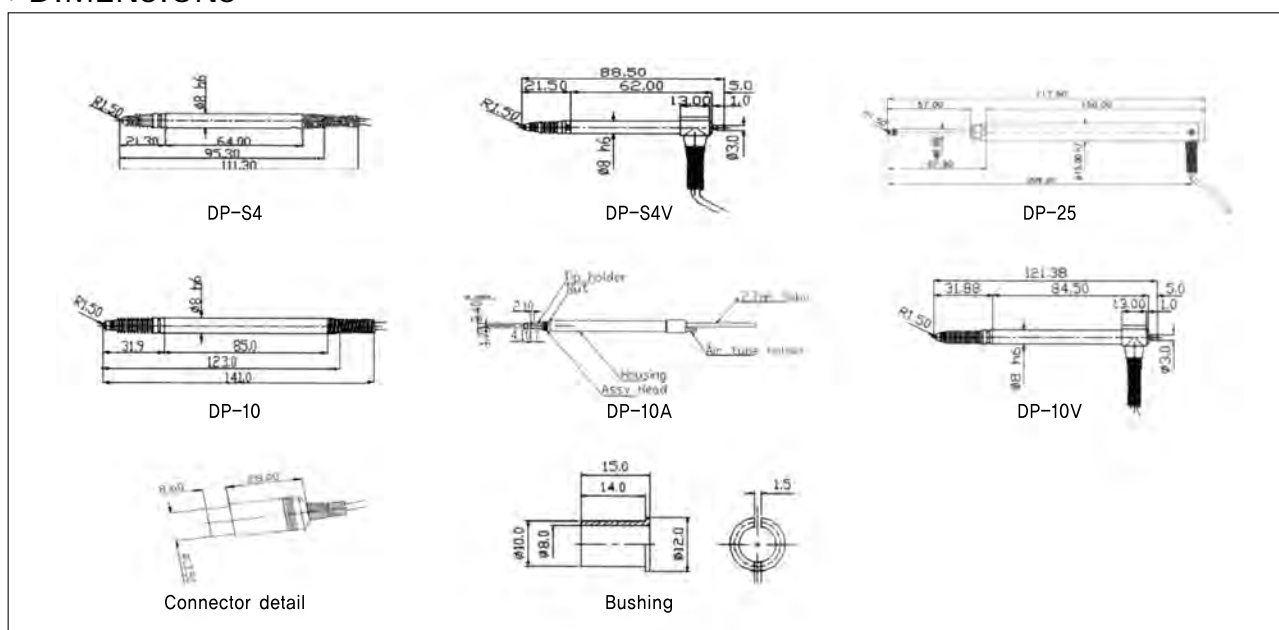
Various measuring range :  $\pm 2\text{mm}$  to  $\pm 12.5\text{mm}$   
 Excellent resistance to workshop conditions  
 High resolution & linearity



## > SPECIFICATIONS

Model	DP-S4	DP-S4V	DP-10	DP-10V	DP-10A	DP-25
Plunger retraction	Standard	Vacuum	Standard	Vacuum	Pneumatic	Standard
Stroke range	4.95mm		10.45mm		26mm	
Measuring range	$\pm 2\text{mm}$		$\pm 4\text{mm}$		$\pm 12.5\text{mm}$	
Repeatability	$2\mu\text{m}$		$2\mu\text{m}$		$3\mu\text{m}$	
Non-linearity	0.2%(at the $\pm 1.0\text{mm}$ )		0.2%(at the $\pm 3.0\text{mm}$ )		0.5%(at the $\pm 18.0\text{mm}$ )	
Measuring Force	4~90g		30~80g		Dependent on the air pressure	180g
Cable length	2.2m		3m			
External diameter	$\varnothing 8\text{mm}$					$\varnothing 15\text{mm}$
Mass(except cable unit)	Approx. 17g	Approx. 22g	Approx. 20g	Approx. 26g	Approx. 31g	Approx. 145g
Operating temp	0~40°C					

## > DIMENSIONS



# LVDT

> Model DP-S4, DP-10, DP-25

> PROBE TIPS

DT - F [ Steel  $\phi 4$  ]

DT - F [ Steel  $\phi 5$  ]

DT - F [ Steel  $\phi 8$  ]

DT - L [steel]

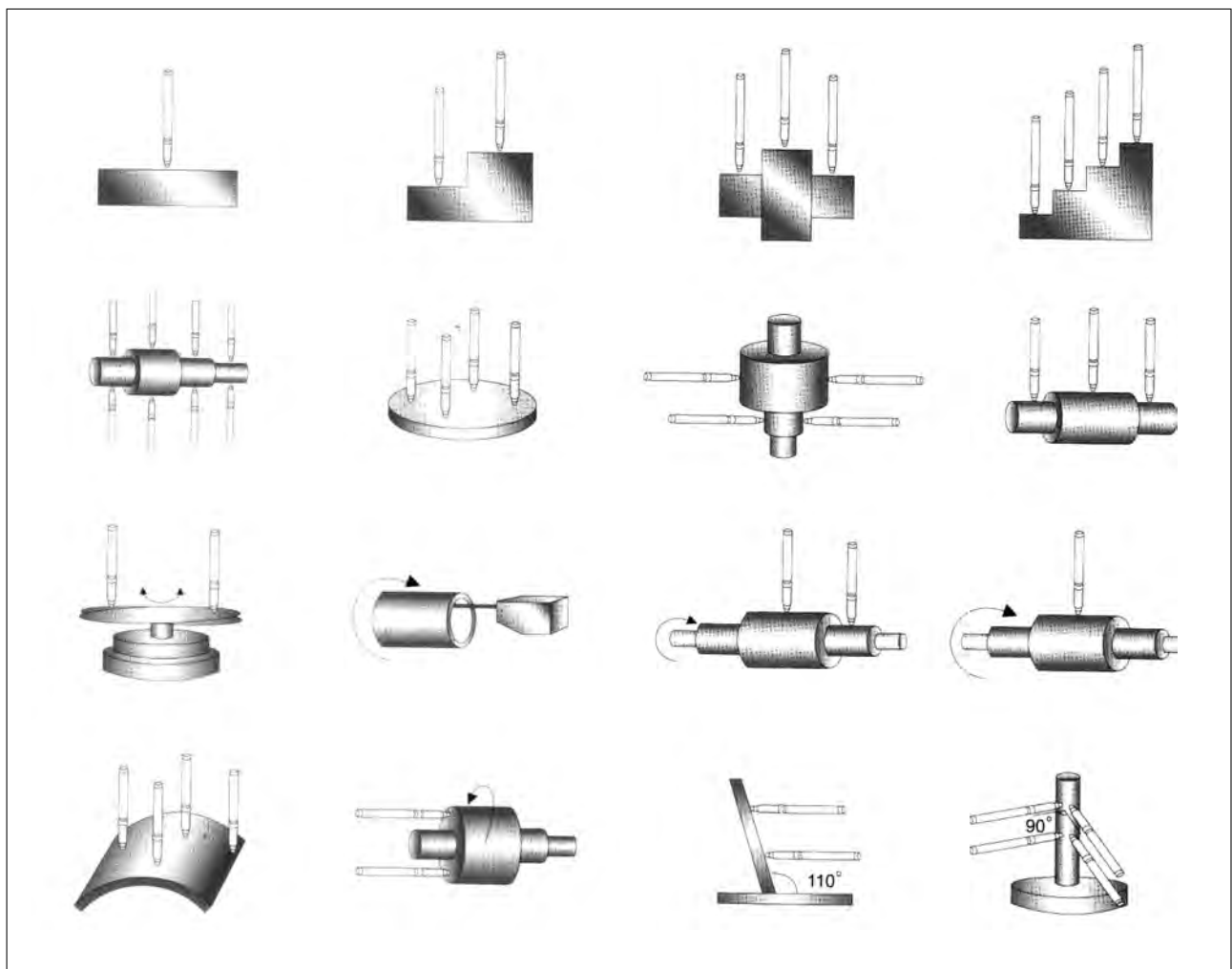
DT - G [carbide]

Bushing

DT - B DT - B Steel  
 DT - BR Ruby  
 DT - BC Carbide  
 DT - BP Plastic

DT - P L = 7mm  
 = 16mm  
 = 26mm  
 = 36mm

> APPLICATIONS



# LVDT INDICATOR



## > Model DN25W

The product shows signal of differential trans displacement sensor (LVDT) into digital display and analogue output as indicator, and intermediate or high sampling (100 times/sec) and comparison output are available.

### ■Feature

- Best for measuring transformer type displacement sensor (LVDT)
- Rapid sampling speed (100 times/sec.)
- High resolving power (16bit A/D)
- High accuracy (over 0.02% F S) and stability
- One touch Auto zero (Display & Analog out zero)
- Calibration of measurement Standard
- Watch dog

### ■Feature

- Peak & sample hold
- Upper and lower limit comparison output
- NG, OK decision function
- 4 Relay (HH, HI, LO, LL) out
- Analog out (DAC)

### ■Option

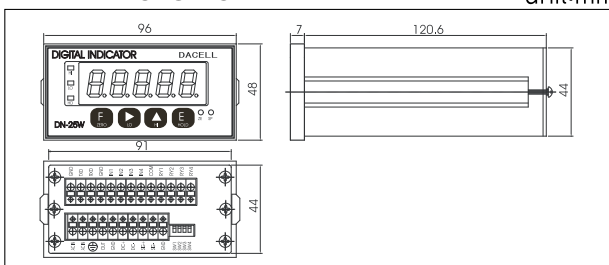
- OP-02 : RS-232C serial interface
- OP-03 : RS485 Multi drop interface

## > SPECIFICATIONS

Specifications	Accuracy
Application sensor	Differential trans displacement sensor (LVDT)
Sensor authorized voltage	2Vrms, 4Vrms/5kHz, 10kHz
Zero adjustment range	100%F S (Auto Zero)
Display	-19999 ~ +99999
Display speed	Approx 30 times/sec
Zero variation	within 0.5 V
Sensitivity variation	within 0.01%
Voltage output	DC 0~10V (4~20mA available by internal operation)
Contact capacity	AC 85 ~ 265V 50/60Hz
Weight	about 800g

## > DIMENSIONS

unit:mm



# LVDT INDICATOR



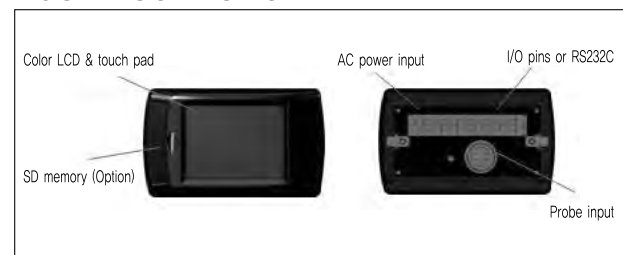
## > Model DN-SP

1ch color TFT LCD type LVDT indicator.  
User convenience enlargement by touch pad application  
Various histogram offer,  
high resolution/ high reliability  
RS232C , I/O interface  
Option : SD memory

## > SPECIFICATIONS

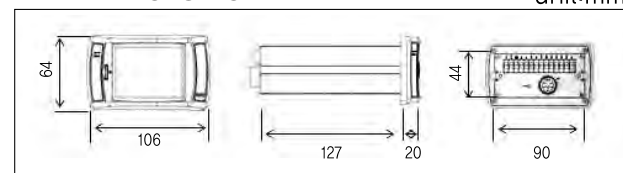
Specifications	Accuracy
Display	2.8" TFT color LCD with touch panel
Resolution	1/1000mm or 1/100mm
Direction	Selectable
Input channels	1ch
Dimension	W106 × H64 × D147mm / 4.17" × 2.52" × 5.79"
Data Communication	RS232C / RS485
Input / Output	11 pins I/O interface (2 inputs, 4 outputs of relay contact)
Power Input	AC100~220V 50Hz/60Hz
Power Consumption	4W
Operating temperature	0°C to 40°C / 32°F to 104°F
Storage temperature	-10°C to 50°C / 14°F to 122°F
Probe	DP-S4 series / DP-10 series / DP-25, ACT series / LVDT / Analog sensors

## > COMPOSITIONS



## > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# LVDT INDICATOR



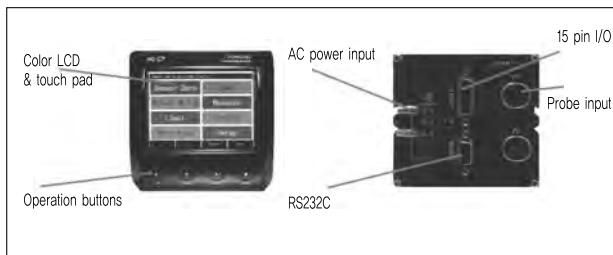
## > Model DN-CP-S1~S4

4ch color TFT LCD type LVDT indicator.  
 User convenience enlargement by touch pad application  
 Various Measurement mode and histogram offer (+, -, average, max-min etc)  
 high resolution/ high reliability  
 RS232C , I/O interface

### > SPECIFICATIONS

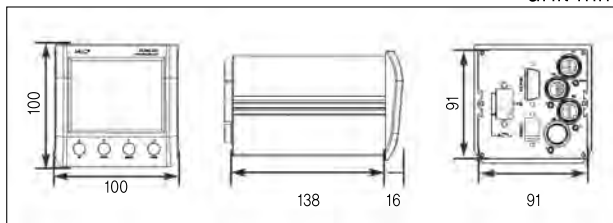
Model	DN-CP-S1	DN-CP-S2	DN-CP-S3	DN-CP-S4
Display	3.5" TFT color LCD with touch panel			
Resolution	1/1000mm or 1/100mm (Option 1/10000mm)			
Direction	Selectable			
Input Channels	1ch	2ch	3ch	4ch
Calculation Functions	none	+, -, average, max-min		
Dimensions	W100 × H100 × D160mm / 3.94" × 3.94" × 6.3"			
Data Communication	RS232C / RS485			
Input / Output	15 pin I/O interface (6 inputs, 5 outputs of relay contact)			
Power Input	AC100~220V 50Hz/60Hz			
Power Consumption	4.6W			
Operating temperature	0°C to 40°C / 32°F to 104°F			
Storage temperature	-10°C to 50°C / 14°F to 122°F			
Probe	DP-S4 series / DP-10 series / DP-25, ACT series / LVDT / Analog sensors			

### > COMPOSITIONS



### > DIMENSIONS

unit:mm



★Specifications are subject to change without notice.

# LVDT INDICATOR



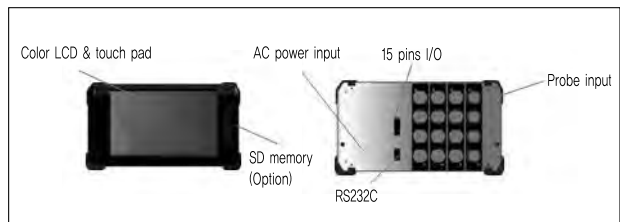
## > Model DN-LP-S1~S16

16ch color TFT LCD type LVDT indicator.  
 User convenience enlargement by touch pad application  
 Various Measurement mode and histogram offer (+, -, average, max-min etc)  
 high resolution/ high reliability  
 RS232C , I/O interface  
 Option : SD memory

### > SPECIFICATIONS

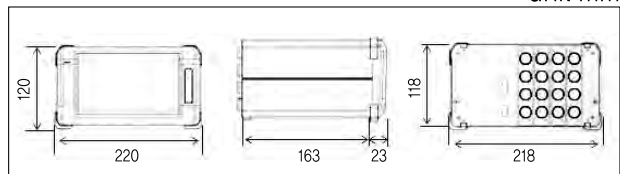
Specifications	Accuracy
Display	7" TFT color LCD with touch panel
Resolution	1/1000mm or 1/100mm (Option 1/10000mm)
Direction	Selectable
Input channels	1ch ~ 16ch (It could be changed the number of channels before ordering)
Calculation Functions	+, -, average, max-min
Dimension	W220 × H120 × D223mm / 8.66" × 4.72" × 8.78"
Data Communication	RS232C / RS485
Input / Output	15 pins I/O interface (6 inputs, 6 outputs of relay contact)
Power Input	AC100~220V 50Hz/60Hz
Power Consumption	15W
Operating temperature	0°C to 40°C / 32°F to 104°F
Storage temperature	-10°C to 50°C / 14°F to 122°F
Probe	DP-S4 series / DP-10 series / DP-25, ACT series / LVDT / Analog sensors

### > COMPOSITIONS



### > DIMENSIONS

unit:mm



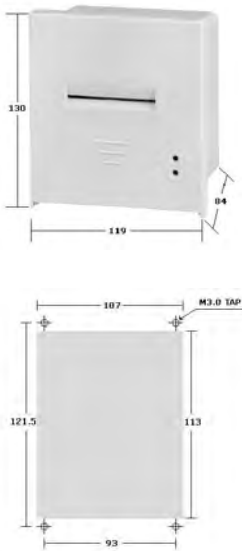
★Specifications are subject to change without notice.

# MINI PRINTER

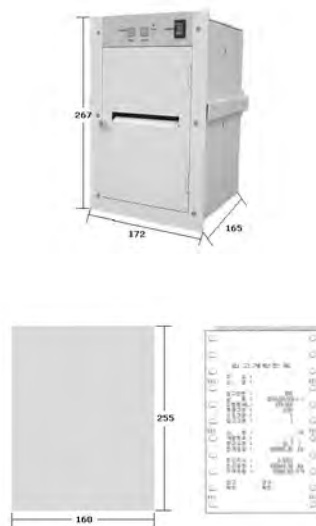
## >Mini printer

Industrial weighing Applications,  
Panel mount Type , compact/simple design, High and Clear printing.

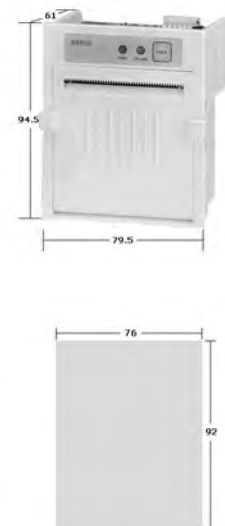
### >Model YJ350T(Thermal printer) YJ350D(Dot printer)



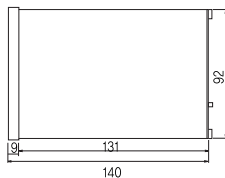
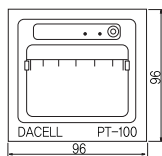
### >Model YJ700 Tree sheets of paper are available - Sprocket Fanfold Type



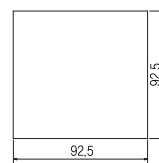
### >Model YJ320T Thermal printer - Time, date printout (Option)



### >Model PT100



Cutting size unit:mm



### >Print Sample



## >SPECIFICATIONS

(Model : TRC)

Model	YJ350T	YJ350D	YJ700	YJ320T	PT100
Print System	Thermal type	Impact Dot Matrix	9-Pin serial impact dot matrix	Thermal type	Thermal type
Print Speed	60mm/sec	1.6 LPS	3 line/sec	60mm/sec	50mm/sec
Character	24 / 32 / 36 / 42 Columns	24 / 30 / 40 Columns	33 / 40 Columns	24 / 32 / 36 / 42 Columns	40 Columns
Ribbon Color		ERC-09	ERC-23(Black)		
Paper	Thermal Roll Paper 57(W) X 50(dia)	Roll Paper 57(W) X 50(dia)	88.9mm (3.5 inch)	Thermal Roll Paper 57(W) X 50(dia)	Thermal Roll Paper 57mm
Interface	RS-232C Serial / Parallel				RS232C (300bps ~ 12kbps)
Conditions	① Temperature : ±5°C ~ 35°C      ② 10% ~ 60% RH				
Dimension(H×D×W)mm	119 X 84 X130		172 X 165 X 267	79.5 X 61 X 94.5	97 X 97 X 141
Power	+12/24 VDC1.5A (External Adapter Option)		AC Free Voltage (85~265V)50/60Hz	+12/24 VDC 1.5A or 5 VDC 2.5A(Option)	AC 85 ~ 265V 50/60Hz

★Specifications are subject to change without notice.

# SUMMING BOX

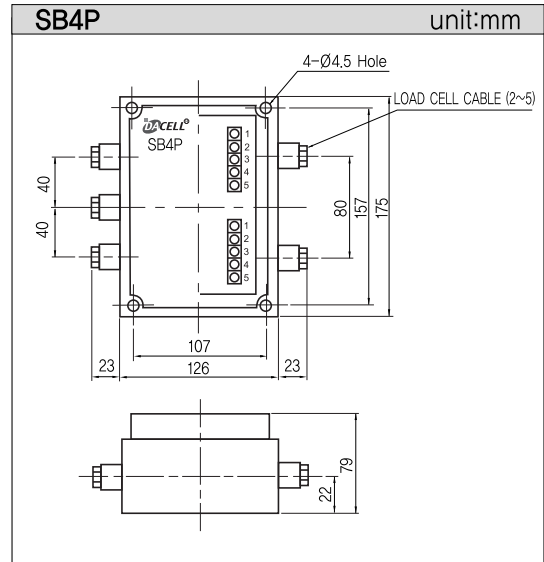
## SUMMING BOX

### >Model SB4P

Load cell 2 to 4 single cell  
 Trimming - Individual cell,  
                   excitation trim 0~20 ohms  
 Potentiometers - 20 ohms,  
                   20-turn cerment 100ppm  
 Cable Fitting - input  $\varnothing 5 \sim \varnothing 8$   
                   output  $\varnothing 5 \sim \varnothing 10$   
 Enclosure - ABS(Acrylnitrile Butadiene Styrene) cast, IP67



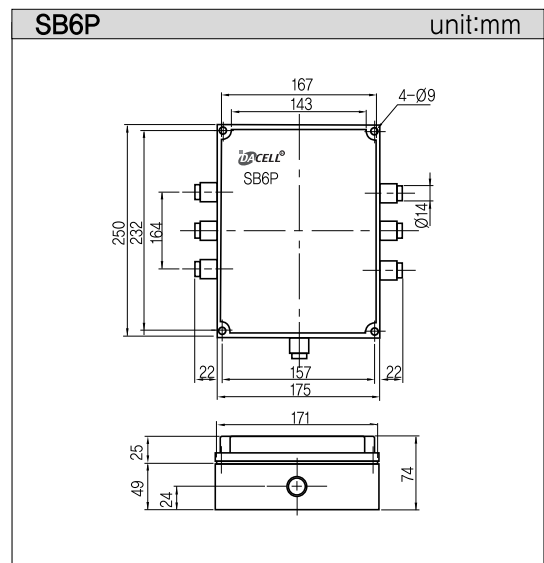
## > DIMENSIONS



## SUMMING BOX

### >Model SB6P

Load cell 2 to 6 single cell  
 Trimming - Individual cell,  
                   excitation trim 0~20 ohms  
 Potentiometers - 20 ohms,  
                   20-turn cerment 100ppm  
 Cable Fitting - input  $\varnothing 5 \sim \varnothing 10$   
                   output  $\varnothing 5, \varnothing 9 \sim \varnothing 12$   
 Enclosure - ABS(Acrylnitrile Butadiene Styrene) cast, IP67

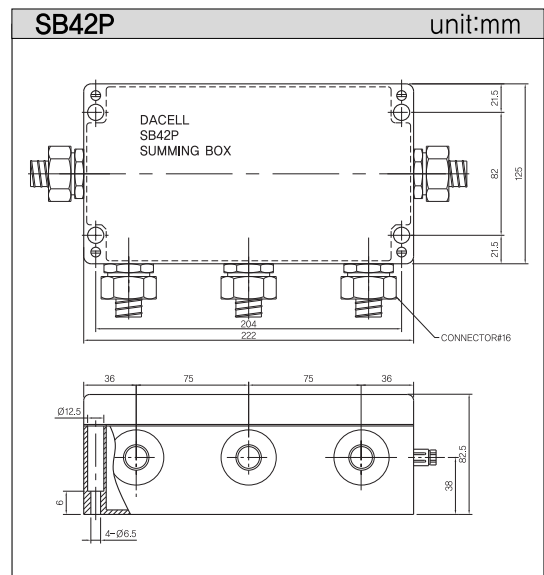


## SUMMING BOX

### >Model SB42P

- 4L : 4 loadcells
- 6L : 6 loadcells

Loadcell 2 to 4 single cells  
 Trimming - Individual cell,  
                   excitation trim 0~20 ohms  
 Potentiometers - 20 ohms,  
                   20-turn cerment 100ppm  
 Cable Fittings -  $\varnothing 5 \sim \varnothing 10$   
 Enclosure - Aluminium die-cast, IP67



★Specifications are subject to change without notice.



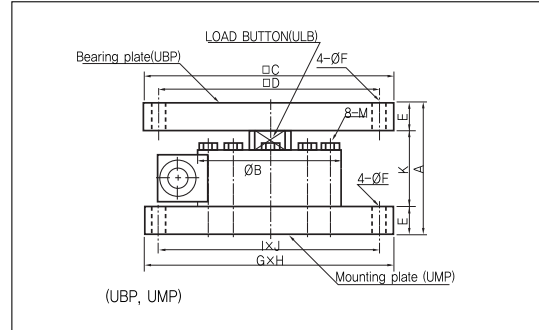
# LOAD CELL ACCESSORY

## BEARING & MOUNTING PLATE

### > LOW PROFILE TYPE (UL)

Unit:mm

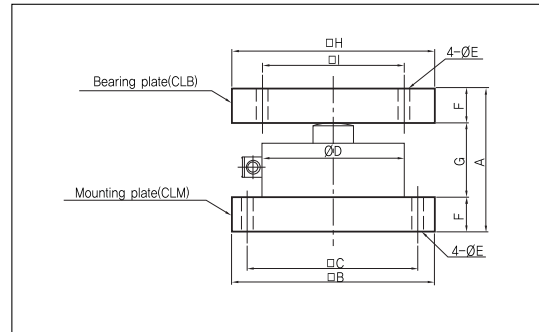
Model	Load Cell Cap	A	B	C	D	E	F	G	H	I	J	M	K
UBP-5 UMP-5	UL-500K	67	88	100	80	15	9	100	100	80	80	6-M6	37
UBP-1 UMP-1	UL-1T~5T	112	118	130	105	23	12	210	130	185	105	8-M8	66
UBP-2 UMP-2	UL-10T	155	180	200	150	30	14	210	200	160	160	8-M12	95
	UL-20T	165	180	200	150	30	14	210	200	160	160	8-M12	105
UBP-3 UMP-3	UL-50T	265	226	260	200	60	23	260	260	200	200	12-M16	145
UBP-4 UMP-4	UL-100T	315	306	360	280	60	27	360	360	280	280	16-M20	195



### > LOW PROFILE TYPE (CL)

Unit:mm

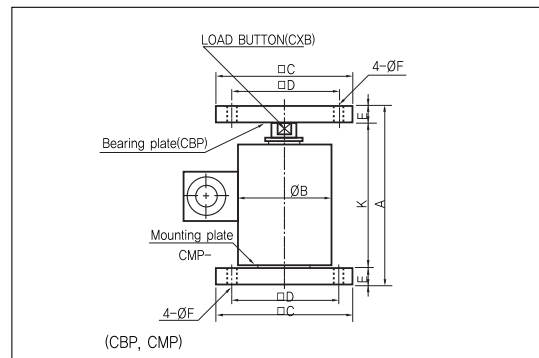
Model	Load Cell Cap	A	B	C	D	E	F	G	H	I
CLB-1 CLM-1	CL-1T~5T	96	150	120	98	9	25	46	150	120
CLB-2 CLM-2	CL-10T	125	160	130	118	12	30	65	160	130
CLB-3 CLM-3	CL-20T	125	190	150	157	14	30	65	180	150
CLB-4 CLM-4	CL-50T	165	230	170	187	23	45	75	220	190
CLB-5 CLM-5	CL-100T	240	320	250	278	27	60	120	310	270



### > CANISTER TYPE (CX)

Unit:mm

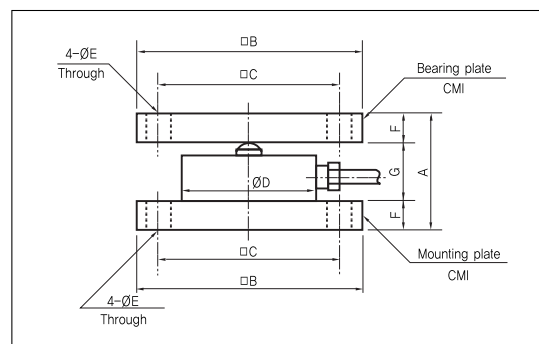
Model	Load Cell Cap	A	B	C	D	E	F	K
CPB-1 CMP-1	CX-50K~CX-1T	162	88	145	110	23	12	434
CPB-2 CMP-2	CX-2T~CX-5T	222	88	145	110	26	12	170
CPB-3 CMP-3	CX-10T	187	93	160	125	30	14	127
	CX-20T~30T	207	93	160	125	30	14	147
CPB-4 CMP-4	CX-50T	245	137	160	125	40	19	165
CPB-5 CMP-5	CX-100T	330	166	260	200	60	23	210



### > CM TYPE

Unit:mm

Model	Load Cell Cap	A	B	C	D	E	F	G
CMI-1	CM-50K~2T	56	100	78	51	8	15	26
CMI-2	CM-5T	102	160	126	88	14	30	42
	CM-10T	107	160	126	88	14	30	47
CMI-3	CM-20T	110	160	126	114	14	30	50



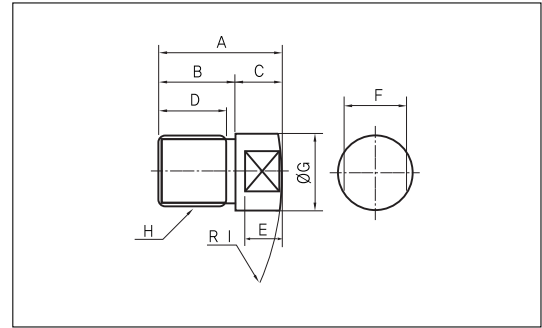
★Specifications are subject to change without notice.

# LOAD CELL ACCESSORY

## LOAD BUTTON

Unit:mm

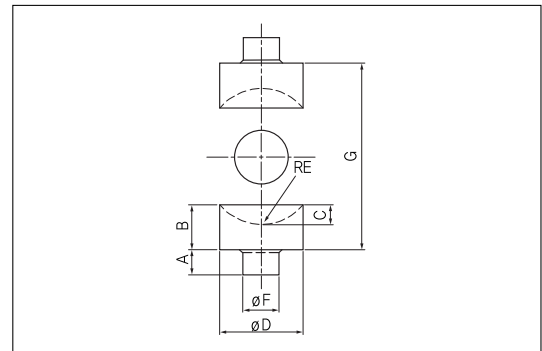
Model	Load Cell Cap	A	B	C	D	E	F	G	H	I
CXB-1	CX-50K~1T	19	10	9	7	6.7	16	24	M12×1.25	65
CXB-2	CX-2T~5T	43	23	20	19	18	32	42	M24×2	60
ULB-1	UL-1T~5T	60	40	20	36	20	27	34	M18×1.5	100
ULB-2	UL-10T	70	40	30	36	30	36	39	M24×2.0	100
ULB-3	UL-20T	100	60	40	56	40	50	59	M39×2.0	200
ULB-4	UL-50T	105	60	45	56	45	65	80	M50×2	200
ULB-5	UL-100T	145	80	65	75	65	105	116	M76×3	240
ULB-6	UL-500K	27	15	12	13	9	14	20	M12×1.25	65



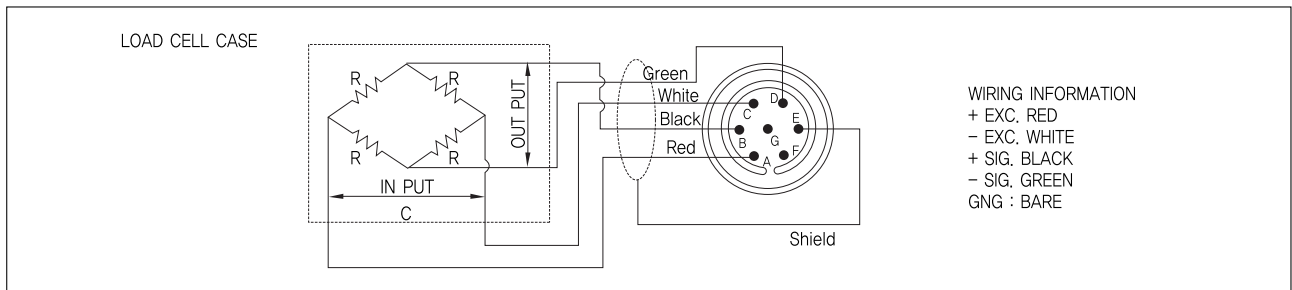
## MOVEMENT ABSORBER UNIT FOR CP

Unit:mm

Model	Load Cell Cap	A	B	C	∅D	RE	∅F	Ball
CPB11	5kgf~300kgf	11	16	7	30	19.5	11.4	∅19
CPB13	500kgf~2tf	11	16	7	30	19.5	13.4	∅19
CPB18	3tf~5tf	11	20	10	40	24.0	18.0	∅25.4
CPB26	10tf	15	27	12	60	40.0	26.0	∅38.1



## CONNECTION OF CONNECTOR WITH BRIDGE



## CONVERSION TABLE

Unit:mm

- LOAD 1kgf=9.80665N
- Pressure 1kgf/cm<sup>2</sup>=98066.55Pa≈98.07KPa
- Torque 1kgf · m=9.80665N · m

Model	Allowable Maximum Platform Size
CB1A, CB1-1, 2, 3k	200×200
CB6, CB1-5k~50k	300×300
CB1-150g~600g	∅80
CB5, CB2-50k~300k	400×600
CB4-300k, 500k	450×650

## SI UNIT

• I<sub>cN</sub> = 1,02g = 0,01N • I<sub>dan</sub> = 1,02kg = 10N

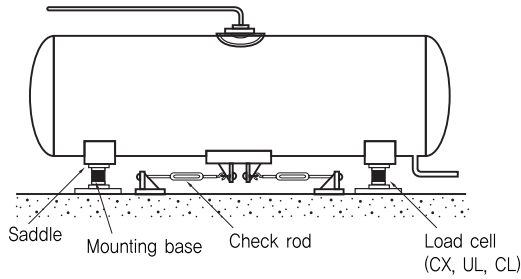
Unit:mm

kgf	N	kgf	kN	tf	kN	tf	kN	tf	MN
1	9.81	100	0.981	1	9.81	30	294	150	1.47
2	19.6	200	1.96	2	19.6	50	490	200	1.96
5	49.0	500	4.90	3	29.4	100	981	300	2.94
10	98.1			5	49.0			500	4.90
20	196			10	98.1			1000	9.81
50	490			20	196				

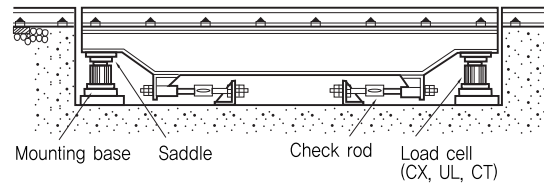
★Specifications are subject to change without notice.

# LOAD CELL SERVE EXTENSIVELY

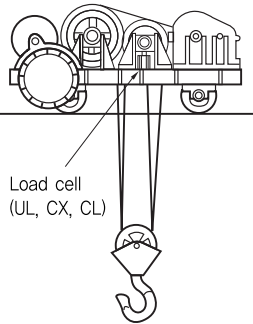
Measurement of tank's storage capacity



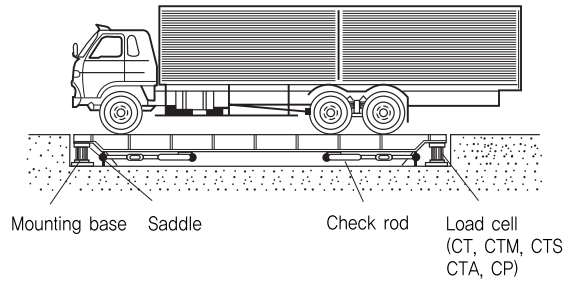
Measurement of freight-car weight



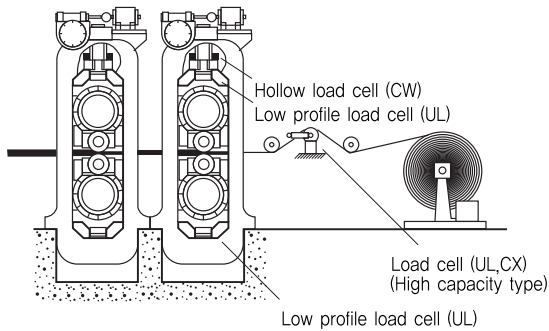
Measurement of swing weight



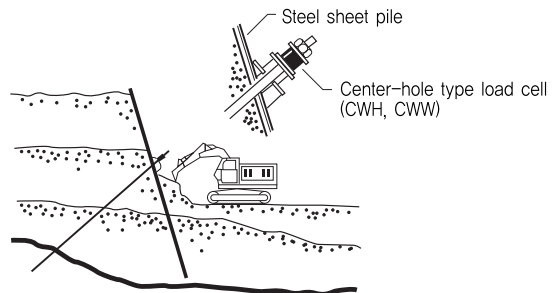
Measurement of truck weight



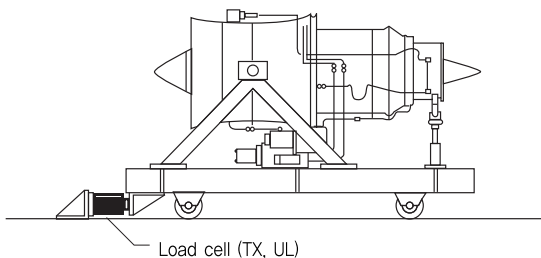
Measurement of rolling mill roll pressure



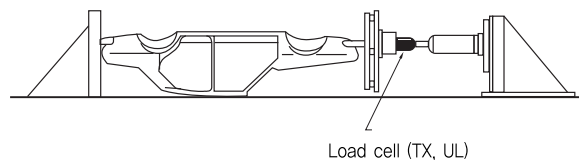
Measurement of load to bank with steel sheet pile



Measurement of jet engine's thrust



Measurement of vehicle body

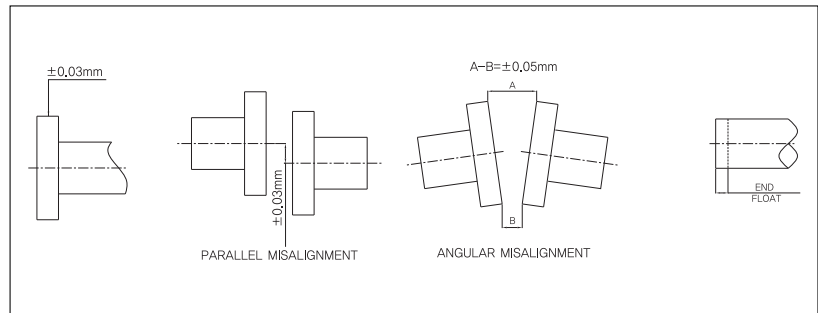


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# THE INSTALLATION OF TORQUE SENSORS

## 1. Shaft Misalignments.

Parallel misalignment is the offset of two mating shaft centerlines although the centerlines remain parallel to each other. Angular misalignment is two shaft centerlines intersecting at some angle other than zero degrees. End float is the relative displacement of one shaft end with respect to the other.



## 2. Coupling Types (single-flex, double-flex and rigid Coupling)

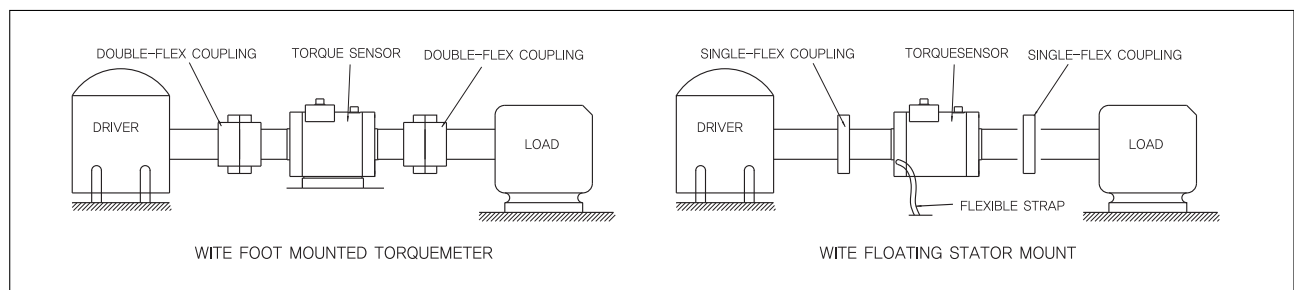
A single-flex coupling accepts angular misalignment only. That means it acts as a hinge or a pivot and cannot accept parallel misalignment. A double-flex coupling accept both angular and parallel misalignment. It may be visualized as two single-flex couplings with a short spacer or distance between the pivots. Depending on their design, both single-flex and double-flex types may or may not accept end float. A rigid coupling, as its name implies, is merely a set of rigid flanges mounted on a shaft. It cannot compensate for or permit any misalignment.

## 3. Torquemeter Mountings

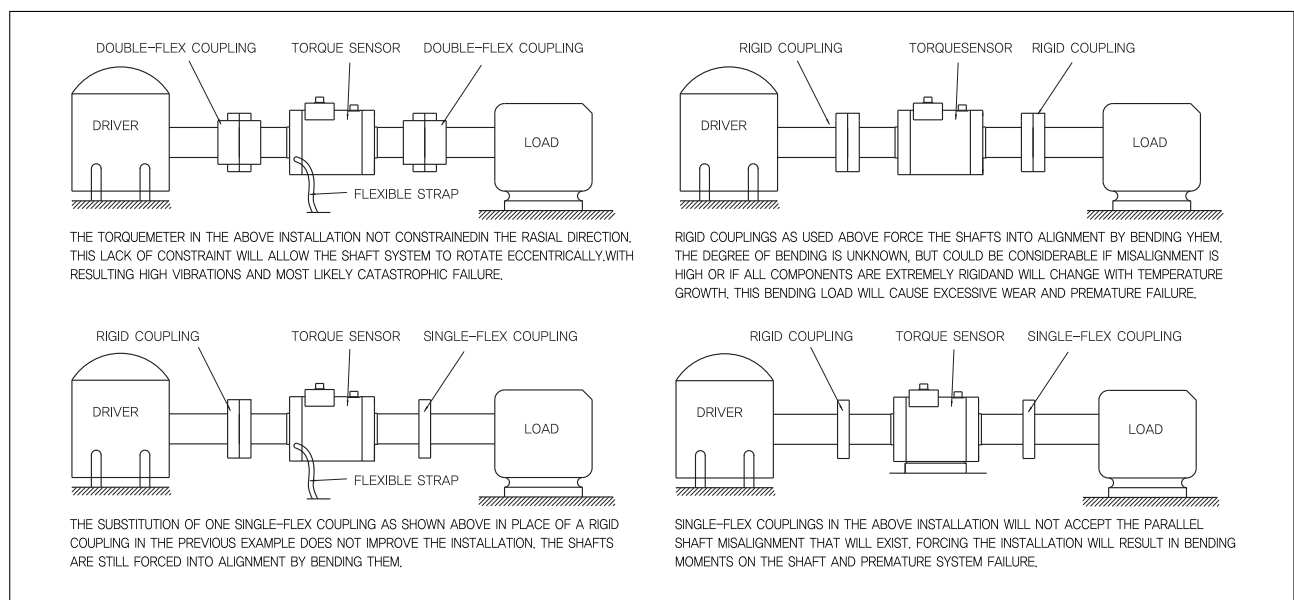
Floating Shaft – applicable to both shaft and flange type torquemeters. Use a single flex coupling at each shaft end to accommodate angular misalignment

Foot Mounted – for shaft style torquemeters only. Use a double flex coupling at each shaft end to handle both parallel and angular misalignments.

## BEST INSTALLATIONS



## INCORRECT INSTALLATIONS



★Specifications are subject to change without notice.

# TECHNICAL DEFINITIONS OF TERMINOLOGY

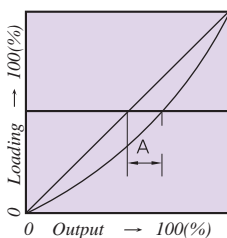
## 1 RATED CAPACITY (R.C.)

The maximum axial load that a load cell is designed to measure within its specification.

## 2 RATED OUTPUT (R.O.)

The algebraic difference between the outputs at no-load and at rated load. Usually load cell output is specified in milli-volts per volt at rated capacity.

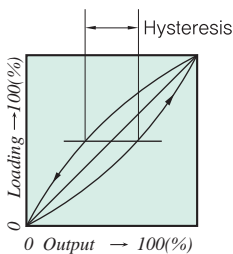
## 3 NON-LINEARITY



The maximum deviation of the calibration curve from a straight line between zero and rated load outputs, expressed as a percent of the rated output and measured on increasing load only.

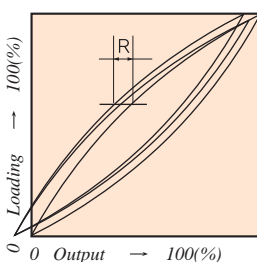
*A: Linear line drawn to obtain terminal linearity*

## 4 HYSTERESIS



The maximum difference between output readings for the same applied load one point obtained while increasing from zero and the other while decreasing from rated output. The points are taken on the same continuous cycle. The deviation is expressed as a percent of rated output.

## 5 REPEATABILITY



The ability of a load cell to reproduce output readings when the same load is applied to it consecutively, under the same conditions, and in the same direction. Repeatability is expressed as the maximum difference between output readings as a percent of rated output.

## 6 ZERO BALANCE

The output signal of the load cell with rated excitation and with no load applied, usually expressed in percent of rated output.

## 7 TEMPERATURE RANGE, COMPENSATED

The range of temperature over which the load cell is compensated to maintain rated output and zero balance within specific limits.

## 8 TEMPERATURE RANGE, SAFE

The range of temperature over which the load cell may be safely operated up to full scale without causing failure but specifications may not be met.

## 9 TEMPERATURE EFFECT ON RATED OUTPUT

The change in rated output due to a change in ambient temperature. Usually expressed as +/- a percentage

change in rated output per degree C change in ambient temperature, over the compensated temperature range.

## 10 TEMPERATURE EFFECT ON ZERO BALANCE

The change in zero balance due to a change in ambient temperature. Usually expressed as +/- a percentage change in rated output per degree C change in ambient temperature, over the compensated temperature range.

## 11 TERMINAL RESISTANCE, INPUT;

The resistance of the load cell circuit measured at the excitation terminal, at standard temperature, with no-load applied, and with the output terminals open-circuited.

## 12 TERMINAL RESISTANCE, OUTPUT

The resistance of the load cell circuit measured at the output signal terminals, at standard temperature, with no-load applied, and with the excitation terminals open-circuited.

## 13 INSULATION RESISTANCE

The DC resistance expressed in ohms measured between any electrical connector pin or lead wire and the load cell body or case. Normally measured at 50 V DC.

## 14 EXCITATION

The voltage or current applied to the input terminals of the load cell.

## 15 SAFE OVERLOAD

The maximum load in percent of rated capacity which can be applied without causing a permanent change in the performance specifications.

## 16 ULTIMATE OVERLOAD

The maximum load in percent of rated capacity which can be applied without producing a structural failure.

## 17 CREEP

The change in load cell output occurring with time, while under load, and with all environmental conditions and other variables remaining constant. Usually measured with rated load applied and expressed as a percent of rated output over a specific period of time.

## 18 ACCURACY

Stated as a limit tolerance which defines the average deviation between the actual output versus theoretical output.

In practical load cell applications, the potential errors of nonlinearity, hysteresis, repeatability and temperature effects do not normally occur simultaneously, nor are they necessarily additive.

Therefore, accuracy is calculated based upon the RMS value of potential errors, assuming a temperature band of  $\pm 10^{\circ}\text{C}$ , full rated load applied, and proper set up and calibration. Potential errors of the readout, cross talk, or creep effects are not included.

LOAD CELL TORQUE

REMOTE DISPLAY & MINI PRINT

<http://www.dacell.com>

INDICATOR  
AMPLIFIER

DIGITAL GAUGE  
ACCESSORIES



**다셀**

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