

## SPECIFICATIONS

Compact and High Precision  
Universal Type Load Cell

Load Cell  
U3B1-20K ~ 1T-B

SPEC.No.EN213041-D 1/3

### Performance

Rated capacity	: 196.1 N{20 kgf} ~ 9.807 kN{1 tf}
Safe overload	: 150 %R.C.
Ultimate overload	: 200 %R.C.
Rated output	: 3 mV/V $\pm$ 0.015 mV/V
Non-linearity	: 0.05 %R.O.
Hysteresis	: 0.05 %R.O.
Repeatability	: 0.03 %R.O.

### Electrical

Excitation, recommended	: 10 V or less
Excitation, at maximum	: 15 V
Zero balance	: $\pm$ 0.03 mV/V
Input resistance	: 350 $\pm$ 3.5
Output resistance	: 350 $\pm$ 5
Insulation resistance (between bridge and main body)	: 2 000 M or more (DC 50 V)

### Temperature

Temperature range, compensated	: - 10 to 70
Temperature range, safe	: - 20 to 80
Temperature effect on zero balance	: 0.05 %R.O./10
Temperature effect on output	: 0.1 %LOAD/10

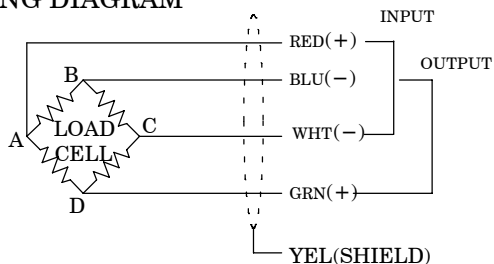
Cable : • 6.3 mm, 4-cores shielded 3 m cable directly attached.  
Y-type solderless terminal is attached at the cable end.

Class of protection	: Equivalent to IP67 (Main body only)
Material of element	: U3B1-20K ~ 200K-B : Aluminium Alloy : U3B1-500K ~ 1T-B : Alloy steel
Paint	: Main body : Painted with epoxy resin (Black) Cover : Painted with polyurethane (Yellow)
Durability	: 10 <sup>6</sup> times with rated load.

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

Polarity of output will become plus(+) when the direction of compression load is applied.  
If polarity change is required, change wiring of blue and green.

### WIRING DIAGRAM



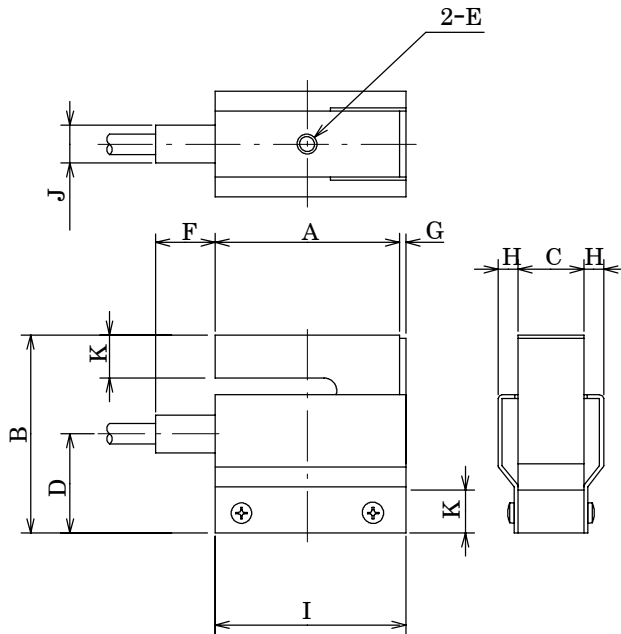
### Composition

Main body	1
Inspection data sheet	1

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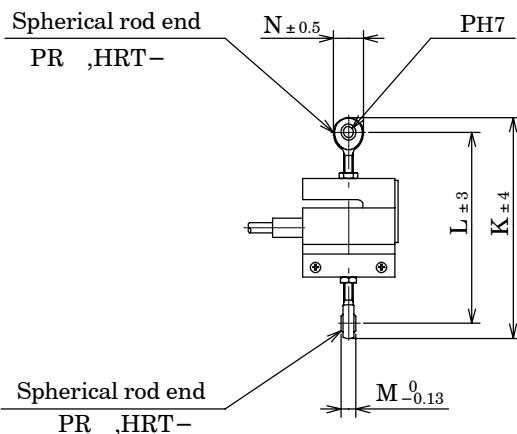
Unit : mm

Outline dimensions

(Unit : mm)

P/No.	Rated capacity	A	B	C	D	E	F	G	H	I	J	K	Rated displacement	Natural frequency (Hz)	Weight (Approx. g)
U3B1-20K-B	196.1 N{20 kgf}	56	60	20	30	M6 × 1 depth 13	18	2	6	58	11.5	13	0.18	600	330
U3B1-50K-B	490.3 N{50 kgf}	56	60	20	30	M6 × 1 depth 12	18	2	6	58	11.5	12	0.16	1 100	330
U3B1-100K-B	980.7 N{100 kgf}	56	70	20	35	M6 × 1 depth 18	18	2	6	58	11.5	18	0.14	1 600	330
U3B1-200K-B	1.961 kN{200 kgf}	56	70	20	35	M12 × 1.75 depth 17	18	2	6	58	11.5	17	0.12	2 100	330
U3B1-500K-B	4.903 kN{500 kgf}	56	70	20	35	M12 × 1.75 depth 17	18	2	6	58	11.5	17	0.14	2 600	630
U3B1-1T-B	9.807 kN{1 tf}	56	70	20	35	M12 × 1.75 depth 16	18	2	6	58	11.5	16	0.12	3 000	630

## With spherical rod end installed



### Composition

Main body	1
Spherical rod end(PR ,HRT- )	2
Hexagon nut (Accessory of PR and HRT)	2

### Outline dimensions (Unit : mm)

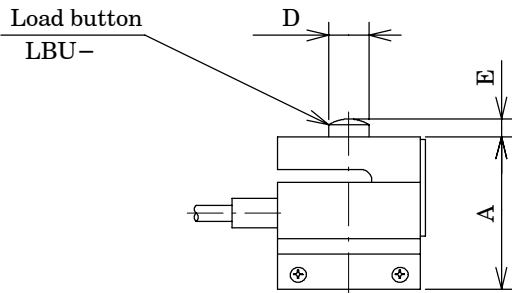
P/No.	P/No. of Accessory (Option)	K	L	M	N	P	Weight (Approx. g)
U3B1-20K-B	PR6E	134	116	9	18	6	370
U3B1-50K-B	PR6E	134	116	9	18	6	370
U3B1-100K-B	PR6E	144	126	9	18	6	370
U3B1-200K-B	PR12E	176	146	16	30	12	530
	HRT-12E	194	160	16	34	12	580
U3B1-500K-B	PR12E	176	146	16	30	12	830
	HRT-12E	194	160	16	34	12	880
U3B1-1T-B	PR12E	176	146	16	30	12	830
	HRT-12E	194	160	16	34	12	880

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With load button installed



### Composition

Main body	1
Load button(LBU- )	1

### Outline dimensions (Unit : mm)

P/No.	P/No. of accessory (Option)	A	D	E	Weight (Approx. g)
U3B1-20K-B	LBU-16	60	16	7	340
U3B1-50K-B	LBU-16	60	16	7	340
U3B1-100K-B	LBU-16	70	16	7	340
U3B1-200K-B	LBU-17	70	22	10	360
U3B1-500K-B	LBU-17	70	22	10	660
U3B1-1T-B	LBU-17	70	22	10	660

Specifications and outline dimensions and so on which have printed may subject to change for the purpose of improvement.