

Load Cell Selection Guide

Sixteen load cell families with full specification data, from 2.5 kg single point cells to 50 t column cells

- Capacity, accuracy class and protection rating for every family
- OIML R60 classes with published n_{max} and v_{min}
- Single point, shear beam, S type and column structures
- Aluminium, alloy steel and stainless steel construction

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How To Read This Guide

A load cell decides what a finished scale can legally do. The accuracy class fixes how many verification intervals the scale can claim, the protection rating decides whether it survives the washdown hose, and the structure decides how it mounts. These sixteen families are the ones we keep moving, with published n max and v min figures so you can check a design before you cut steel.

H8C Single Shear Beam Load Cell

The H8C is the general purpose shear beam cell in this catalogue: alloy steel, adhesive sealed inside, low profile and available from 0.5 t to 10 t in metric or 1 Klb to 20 Klb in imperial. It carries both OIML R60 and NTEP approval, which is why it appears under platform scales, hopper scales and other electronic weighing devices in almost every market we ship to.

Capacity	0.5 / 1 / 1.5 / 2 / 2.5 / 3 / 5 / 10 t; 1 to 20 Klb
Accuracy classes	C2, C3, C4, A5M, B10M
Approval	OIML R60 C3; NTEP III 5000 and III L 10000 multi interval
Output sensitivity	2.0 ±0.002 mV/V or 3.0 ±0.003 mV/V
Input / output resistance	350 ±3.5 ohm
Excitation	5 to 12 V DC recommended, 18 V DC maximum
Compensated temperature	-10 to +40 degrees C
Safe / ultimate overload	150 % / 300 % of full scale

B8D Stainless Steel Shear Beam Load Cell

The B8D is the stainless steel answer to the same mounting problem the H8C solves. Potted with adhesive inside a stainless body, it resists oil, water and corrosive gas and media, which makes it the cell to specify for truck scales, automobile testing facilities, hopper scales and any plant where the cleaning chemicals are harder on equipment than the load is.

Capacity	0.1 to 10 t; 250 lb to 20 Klb
Accuracy classes	C2, C3, A5M, B10M
Approval	OIML R60 C3
Output sensitivity	3.0 ±0.008 mV/V
Input / output resistance	350 ±3.5 ohm
Excitation	5 to 12 V DC recommended, 18 V DC maximum
Insulation resistance	Not less than 5000 Mohm at 50 V DC
Safe / ultimate overload	150 % / 300 % of full scale

SQB Shear Beam Load Cell

The SQB is specified for floor scales, blending scales and low platform scales, where the deck sits close to the ground and the cell has to live in whatever runs across the floor. It is offered in alloy steel or stainless steel across 0.25 t to 10 t, with IP67 protection up to 0.75 t and IP68 from 1 t upward, and it carries OIML approval in accuracy classes from C2 to C5.

Capacity	0.25 t to 10 t
Accuracy class	C2 to C5, OIML approved
Protection	IP67 (0.25 to 0.75 t), IP68 (1 to 10 t)
Input resistance	400 ±20 ohm
Output resistance	352 ±3 ohm

Excitation	10 to 12 V DC recommended, 15 V DC maximum
Operating temperature	-30 to +70 degrees C
Safe / ultimate overload	150 % / 180 % of full scale

UDA Aluminium Compression Load Cell

The UDA is a compact aluminium compression cell covering 50 kg to 800 kg in accuracy class C3. It is specified for platform scales and for all kinds of compression testing devices, where a light, rigid cell with a defined installation torque matters more than heavy capacity.

Capacity	50 to 800 kg
Accuracy class	C3
Protection	IP65
Input resistance	404 ±15 ohm
Output resistance	350 ±3 ohm
Excitation	10 V DC recommended, 15 V DC maximum
Operating temperature	-20 to +50 degrees C
Installation torque	25 Nm recommended

DEE And DEF S Type Load Cell

The DEE and DEF are S type cells built for the jobs where the load hangs rather than sits: crane scales, belt scales and blending systems. The two variants differ in output, 2.0 mV/V on the DEE and 3.0 mV/V on the DEF, and protection steps from IP65 below 1 t to IP68 from 1.2 t upward.

Capacity	100 kg to 5 t
Accuracy class	C2 to C5
Protection	IP65 (100 to 1000 kg), IP68 (1.2 to 5 t)
Input resistance	400 ±20 ohm
Output resistance	352 ±3 ohm
Excitation	10 to 12 V DC recommended, 15 V DC maximum
Operating temperature	-30 to +70 degrees C
Safe / ultimate overload	120 % / 150 % of full scale

H3 S Type Load Cell

The H3 is the widest S type family in this catalogue, covering 25 kg to 30 t in metric and 100 lb to 20 Klb in imperial. Its S beam design accepts tension, compression or both, which is why it appears in crane scales, mechanical scale conversions, hopper scales and a long list of one off weighing devices. Dimensional tables are published per capacity band so the mounting can be designed before the cell arrives.

Capacity	0.025 t to 30 t; 100 lb to 20 Klb
Accuracy classes	C2, C3, C4, A5S, A5M, B10S, B10M
Approval	OIML R60 C3 and C4
Output sensitivity	2.0 ±0.004 mV/V metric, 3.0 ±0.008 mV/V imperial
Input / output resistance	350 ±3.5 ohm / 351 ±2.0 ohm
Excitation	5 to 12 V DC recommended, 18 V DC maximum
Operating temperature	-35 to +65 degrees C
Safe / ultimate overload	150 % / 300 % of full scale

HM9B Double Shear Beam Load Cell

The HM9B is the heavy beam cell used under truck scales and railway scales. Alloy steel, nickel plated and hermetically welded, it is built to sit outdoors for years under a deck that sees vehicles every day, and it is one of the two OIML R60 approved cell types we supply with weighbridge decks.

Capacity	10 t to 50 t
Accuracy classes	C1, C2, C3, A5M, B10M
Approval	OIML R60 C3
Output sensitivity	1.8 to 2.4 ± 0.002 mV/V depending on class
Input resistance	700 ± 7 ohm to 775 ± 5 ohm
Output resistance	700 ± 7 ohm
Excitation	5 to 12 V DC recommended, 18 V DC maximum
Safe / ultimate overload	150 % / 300 % of full scale

ZSF And ZSFY Column Load Cell

The ZSF and ZSFY are IP68 column cells for heavy capacity weighing from 10 t to 50 t. The two variants differ in bridge resistance, 350 ohm class on the ZSF and 700 ohm class on the ZSFY, which decides how many cells one indicator can drive. Both are offered in alloy steel as the A version and stainless steel as the SS version, with cable lengths scaled to capacity from 8 m up to 16 m.

Capacity	10 t to 50 t
Protection	IP68
Input resistance	400 ± 10 ohm (ZSF), 700 ± 20 ohm (ZSFY)
Output resistance	352 ± 10 ohm (ZSF), 706 ± 20 ohm (ZSFY)
Excitation	10 to 12 V DC recommended, 15 V DC maximum
Operating temperature	-30 to +70 degrees C
Creep error	± 0.02 percent of full scale over 30 minutes
Safe / ultimate overload	150 % / 250 % of full scale

HM14C Column Load Cell

The HM14C is the alloy steel column cell for heavy platform scales, vehicle testing facilities and hopper scales. Its column structure with anti reversal design and good self aligning ability is what keeps a heavy deck stable as load moves across it, and the hermetically welded body handles oil, water and corrosive media.

Capacity	10 t to 50 t
Accuracy classes	C2, C3, A5S, A5M
Output sensitivity	1.5 ± 0.004 mV/V
Input resistance	700 ± 7 ohm
Output resistance	703 ± 4 ohm
Excitation	5 to 12 V DC recommended, 18 V DC maximum
Compensated temperature	-10 to +40 degrees C
Safe / ultimate overload	150 % / 300 % of full scale

BM14C Stainless Steel Column Load Cell

The BM14C takes the column cell concept into stainless steel and stretches the range down to 0.5 t. Hermetically welded, anti reversal and self aligning, it is the cell to specify where a heavy weighing point also has to survive corrosive gas, washdown or salt, and it carries OIML R60 approval in both C3 and C4.

Capacity	0.5 t to 50 t
Accuracy classes	C2, C3, C4, A5S, A5M
Approval	OIML R60 C3 and C4
Output sensitivity	2.0 $\pm$ 0.002 mV/V
Input resistance	700 $\pm$ 7 ohm
Output resistance	703 $\pm$ 4 ohm
Excitation	5 to 12 V DC recommended, 18 V DC maximum
Safe / ultimate overload	150 % / 300 % of full scale

L6D Single Point Load Cell

The L6D is the low capacity end of the single point family, covering 2.5 kg to 50 kg on platforms up to 250 x 350 mm. It is the cell behind counter pricing scales and small bench scales, where the deck is compact and the division has to be fine enough for retail selling.

Capacity	2.5 kg to 50 kg
Accuracy classes	C3D, C3, C3G
Approval	OIML R60 C3
Maximum platform	250 x 350 mm
Output sensitivity	2.0 $\pm$ 0.2 mV/V
Input resistance	409 $\pm$ 6 ohm or 1065 $\pm$ 15 ohm
Output resistance	350 $\pm$ 3 ohm or 1000 $\pm$ 10 ohm
Corner correction	0.02 percent of load value per 100 mm

L6N Single Point Load Cell

The L6N is the balance oriented member of the single point family. It covers 3 kg to 100 kg on platforms up to 400 x 400 mm and is offered in a single accuracy class, C3, with n max 3000 and v min Emax divided by 7000, which keeps specification simple for an instrument build.

Capacity	3 kg to 100 kg
Accuracy class	C3
Approval	OIML R60 C3, n max 3000
Minimum verification interval	Emax / 7000
Maximum platform	400 x 400 mm
Output sensitivity	2.0 $\pm$ 0.2 mV/V
Input / output resistance	394 $\pm$ 6 ohm / 350 $\pm$ 3 ohm
Combined error	Within $\pm$ 0.020 percent of full scale

L6E Single Point Load Cell

The L6E is the standard mid range single point cell: 50 kg to 300 kg, a 400 x 400 mm platform limit and OIML approval, offered in three accuracy grades so one family covers a basic scale and a higher division model. It is the usual choice for pricing scales and general purpose bench platform scales.

Capacity	50 kg to 300 kg
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Accuracy classes	C3D, C3, C3G
Approval	OIML R60 C3
Maximum platform	400 x 400 mm
Output sensitivity	2.0 ±0.2 mV/V
Input / output resistance	406 ±6 ohm / 350 ±3 ohm
n max by class	2500 (C3D), 3000 (C3), 4000 (C3G)
Corner correction	0.02 percent of load value per 100 mm

L6E3 Single Point Load Cell

The L6E3 sits between the 400 mm and 600 mm single point families. It covers 50 kg to 300 kg on decks up to 450 x 450 mm, which solves the common design problem of a platform that is slightly too large for a 400 mm rated cell but does not justify stepping up to a 600 mm family.

Capacity	50 kg to 300 kg
Accuracy classes	C3D, C3, C3G
Approval	OIML R60 C3
Maximum platform	450 x 450 mm
Output sensitivity	2.0 ±0.2 mV/V
Input / output resistance	409 ±6 ohm / 350 ±3 ohm
n max by class	2500 (C3D), 3000 (C3), 4000 (C3G)
Safe / ultimate overload	150 % / 300 % of full scale

L6G Single Point Load Cell

The L6G carries a full 600 x 600 mm platform on one cell at capacities up to 600 kg, which is the practical ceiling for single point construction. It is offered with 350 ohm or 1000 ohm bridge resistance and in three accuracy grades, and carries OIML approval for trade builds.

Capacity	50 kg to 600 kg
Accuracy classes	C3D, C3, C3G
Approval	OIML R60 C3
Maximum platform	600 x 600 mm
Output sensitivity	2.0 ±0.2 mV/V
Input resistance	406 ±6 ohm or 1065 ±15 ohm
Output resistance	350 ±3 ohm or 1000 ±10 ohm
Corner correction	0.02 percent of load value per 100 mm

L6T Single Point Load Cell

The L6T takes single point construction as far as it goes in this catalogue: 1000 kg on a 600 x 600 mm platform. For a manufacturer it removes a whole assembly step, because a one tonne bench can be built without four cells, a summing box and corner trimming.

Capacity	50 kg to 1000 kg
Accuracy classes	C3D, C3, C3G
Approval	OIML R60 C3
Maximum platform	600 x 600 mm
Output sensitivity	2.0 ±0.2 mV/V

Input / output resistance	406 $\pm$ 6 ohm / 350 $\pm$ 3 ohm
n max by class	2500 (C3D), 3000 (C3), 4000 (C3G)
Safe / ultimate overload	150 % / 300 % of full scale

Questions Buyers Ask

Which accuracy class do I need for a 3000 division scale?

For a scale claiming 3000e a C3 cell is the normal choice, because C3 families in this catalogue publish n max 3000 and v min Emax/10000. If you plan a higher division count, check the C4 column of the same table, which publishes n max 4000 and v min Emax/14000.

What is the difference between safe overload and ultimate overload?

Safe overload, quoted here as 150 percent of full scale on most families, is the load the cell can take and still return to its published accuracy. Ultimate overload, usually 300 percent, is the point at which the cell is expected to fail mechanically. Design the mechanical stops to the safe overload figure, not the ultimate one.

Can I mix load cells from different families in one scale?

No. Cells in one scale must share capacity, output sensitivity in mV/V and input and output resistance, otherwise the summing box cannot be corner trimmed. Order all cells for one scale from the same family and the same capacity.

Do the cells come with cable fitted?

Yes. Cable length is part of the specification for each family, for example 3 m to 5 m on the SQB range depending on capacity and 8 m to 16 m on the ZSF column range. Tell us the run length you need at quotation stage.