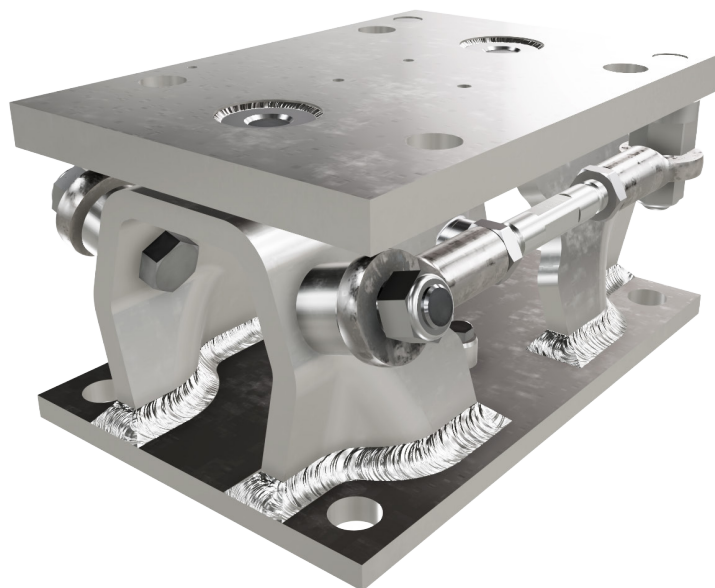


REPLACEMENT & AFTERMARKET

LOAD CELLS



Collaborate / Create / Convey

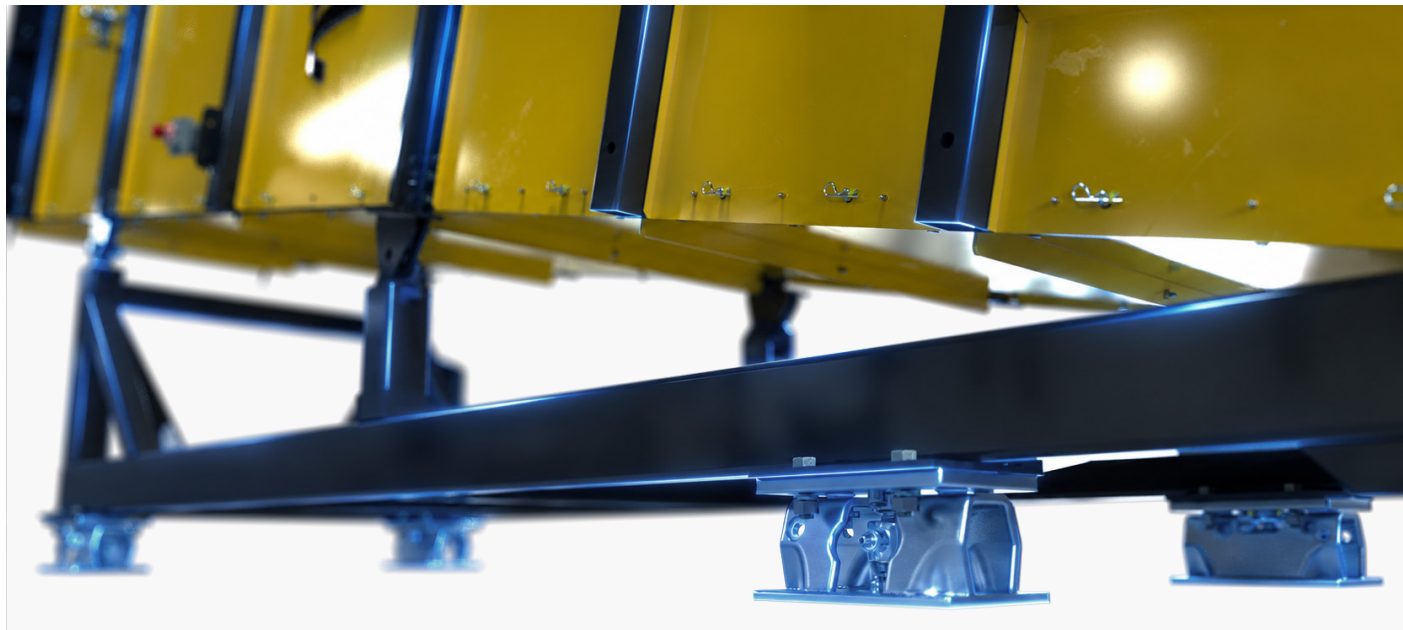
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LOAD CELLS



Load Cells

Belt scale systems convert vertical force at the weigh zone into throughput data, and every reading passes through the load cell first. Flat-bottom compression cells demand precision shimming at installation and lose accuracy when thermal expansion or structural settling shifts the weighbridge. Moisture ingress through degraded external seals compounds the problem in outdoor and washdown installations. The result is span drift, failed calibration checks, and disputed custody transfer totals that pull the conveyor out of production.

These rocker-pin load cells counter each of those failure modes at the construction level. A cylindrical rocker self-aligns load forces through the cell's axial axis, tolerating minor angular misalignment in the mounting structure without shimming, while the hermetically welded stainless steel body seals to IP68 and IP69K with no external gasket to degrade. Certified to OIML Class C3 and NTEP Class III M, the cells hold combined error at or below 0.018% of rated capacity across a 16.5 klb to 110 klb (7.5 t to 50 t) range. Each cell is matched to its weigh module assembly, precision junction box, and weighing indicator for full belt scale system compatibility.

APPLICATIONS



Recycling & Material Recovery

Recycling lines run mixed, abrasive streams across shredder infeed and sortation conveyors where impact loading spikes far above steady-state weight. Cells sized at 1.5x or more of the calculated maximum operating load absorb those dynamic peaks while holding certified C3 accuracy on throughput totals.



Waste Management

Transfer stations and municipal solid waste conveyors expose weighing hardware to moisture, corrosive fines, and daily washdown. Hermetically welded stainless steel construction seals the spring element against continuous immersion without external gaskets that deteriorate.



Aggregates & Bulk Materials

Quarry and terminal conveyors demand tons-per-hour totals accurate enough for production tracking and custody transfer. Combined error held to 0.018% of rated capacity ensures the cell is never the limiting term in the scale's accuracy budget.



Scrap Metal Processing

Shredder and baler feed conveyors deliver abrupt impact events that overload undersized cells. Rated, yield, and ultimate force classifications give the selection headroom to survive jams and drop loading.



Washdown Process Environments

Daily sanitation cycles subject scale components to high-pressure spray above 176°F (80°C). IP69K rated cells withstand repeated high-temperature washdown with no serviceable seal to replace.



Grain & Dust-Classified Facilities

Elevators and processing plants classify conveyor galleries as Zone 21/22 combustible dust areas. ATEX, IECEx, and FM approvals qualify the cells for gas and dust hazardous locations in the US, Canada, and Europe.

KEY FEATURES

01

Rocker-Pin Compression Geometry:

A cylindrical rocker channels load forces through the cell's axial axis and self-corrects minor angular misalignment, eliminating the precision shimming that flat-bottom compression cells require.

02

Hermetically Welded Stainless Steel Construction:

A welded stainless steel spring element housing achieves IP68 and IP69K protection with no external gasket or potting compound to degrade over time.

03

Wheatstone Bridge Analog Output:

Produces a standard $2 \pm 0.1\%$ mV/V signal at rated capacity under 5–15 V AC/DC excitation, compatible with all industrial weighing indicators and precision junction boxes.

04

OIML C3 & NTEP Class III M Certification:

Holds combined non-linearity and hysteresis error at or below 0.018% of rated capacity, in compliance with OIML R60 and NIST HB44 requirements for legal-for-trade service.

05

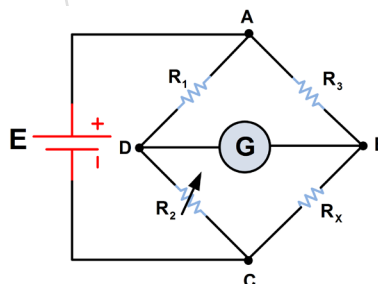
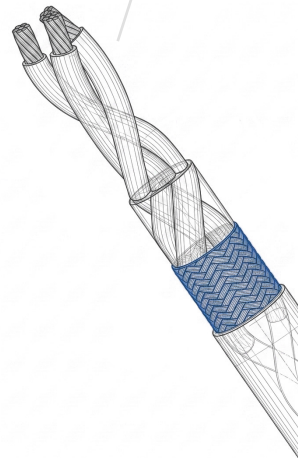
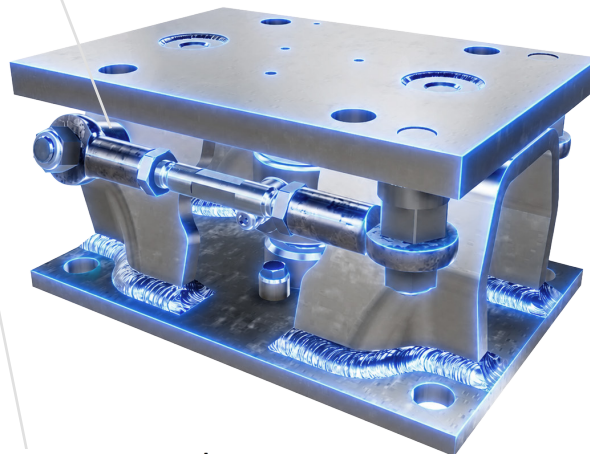
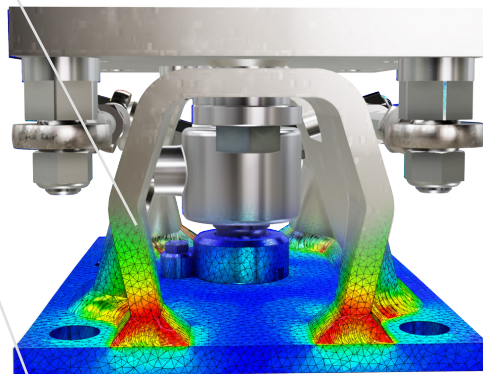
ATEX, IECEx & FM Approval Ratings:

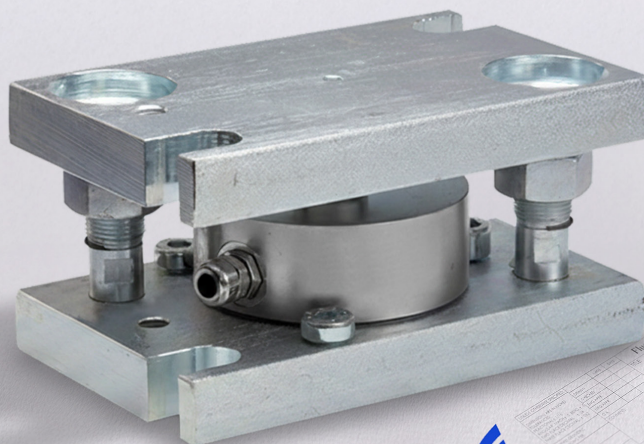
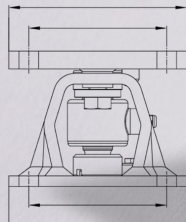
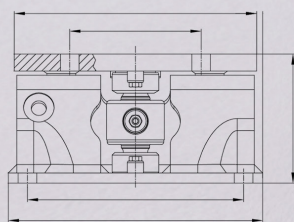
Qualified for Zone 1/2 gas and Zone 21/22 dust atmospheres as well as Class I/II/III Division 1 locations, with multiple temperature class and gas group ratings available.

06

Factory-Terminated Sealed Cable:

Ships with an integral 39.4 ft (12 m) or 42.5 ft (13 m) cable, color-coded across excitation, signal, and shield conductors for direct junction box termination.





LOAD CELLS SPECIFICATIONS

Parameter	Size 1	Size 2
Rated capacity (R.C.)	16.5 / 33 / 49.6 klb (7.5 / 15 / 22.5 t)	66 / 110 klb (30 / 50 t)
Rated output	2 ± 0.1% mV/V	2 ± 0.1% mV/V
Combined error (non-linearity + hysteresis)	≤0.018% R.C.	≤0.018% R.C.
Temp. effect on min. dead load output	≤0.0010% R.C./°F (0.0018/°C)	≤0.0011% R.C./°F (0.0021/°C)
Temp. effect on sensitivity	≤0.0006% A.L./°F (0.001/°C)	≤0.0006% A.L./°F (0.001/°C)
Compensated temp. range	14°F - 104°F (-10 - +40°C)	14°F - 104°F (-10 - +40°C)
Operating temp. range	-40°F - 149°F (-40 - +65°C)	-40°F - 149°F (-40 - +65°C)
Safe storage temp. range	-40°F - 176°F (-40 - +80°C)	-40°F - 176°F (-40 - +80°C)
OIML approval	Class C3, nmax 3,000	Class C3, nmax 6,666
NTEP approval	Class III M, nmax 5,000	Class III M, nmax 10,000
Hazardous area approvals	ATEX, IECEx, FM (US & Canada)	ATEX, IECEx, FM (US & Canada)
IP rating	IP68, IP69K	IP68
NEMA rating	NEMA 6/6P	NEMA 6/6P
Spring element material	Stainless steel	Stainless steel
Protection type	Hermetically welded	Hermetically welded
Excitation voltage (recommended / max)	5-15 V AC/DC / 20 V max	5-15 V AC/DC / 20 V max
Terminal resistance, excitation	1,150 ± 50 Ω	1,150 ± 25 Ω
Terminal resistance, output	1,000 ± 2 Ω	1,000 ± 3 Ω
Cable length	39.4 ft (12 m)	42.5 ft (13 m)
Cable diameter	0.20 in (5.2 mm)	0.23 in (5.8 mm)

LOAD CELLS SPECIFICATIONS

Note: Combined error and temperature effect on sensitivity comply with OIML R60 and NIST HB44 requirements. Hazardous area temperature class and gas group ratings vary by model; verify against the site area classification and certification documents before ordering.

Capacity Selection

Rated capacity	Cell size	NTEP Vmin	Nominal cell weight
16.5 klb (7.5 t)	1	2.12 lb (0.96 kg)	2.2 lb (1 kg)
33 klb (15 t)	1	4.24 lb (1.92 kg)	6.6 lb (3 kg)
49.6 klb (22.5 t)	1	6.36 lb (2.88 kg)	7.3 lb (3.3 kg)
66 klb (30 t)	2	4.5 lb (2.1 kg)	6.6 lb (3 kg)
110 klb (50 t)	2	7.5 lb (3.5 kg)	7.3 lb (3.3 kg)

Note: Standard practice specifies rated capacity at 1.5x the calculated maximum operating load, higher for impact-heavy applications such as shredder infeed conveyors. Verify that the minimum material increment to be resolved exceeds Vmin for the selected cell across all cells in the weighbridge.

Environmental Sealing Reference

Rating	Protection level	Typical conveyor application
IP67	Temporary immersion to 1 m	Insufficient for most industrial wash environments
IP68	Continuous immersion per manufacturer specification	Outdoor installations, rain exposure, periodic washdown
IP69K	High-pressure, high-temperature wash above 176°F (80°C)	Daily pressure-washdown cycles

THE ENGINEERING ADVANTAGE

This section outlines the selection and construction methodology behind conveyor load cells, covering capacity sizing, resolution verification, hermetic sealing, and speed signal integration to ensure certified accuracy holds across the service life of the belt scale.

1.5x Capacity Sizing Practice:

Rated capacity is specified at a minimum of 1.5 times the calculated maximum combined force on the cell, covering material weight, weighbridge structure, and dynamic amplification from belt speed and impact.

Vmin Resolution Constraint:

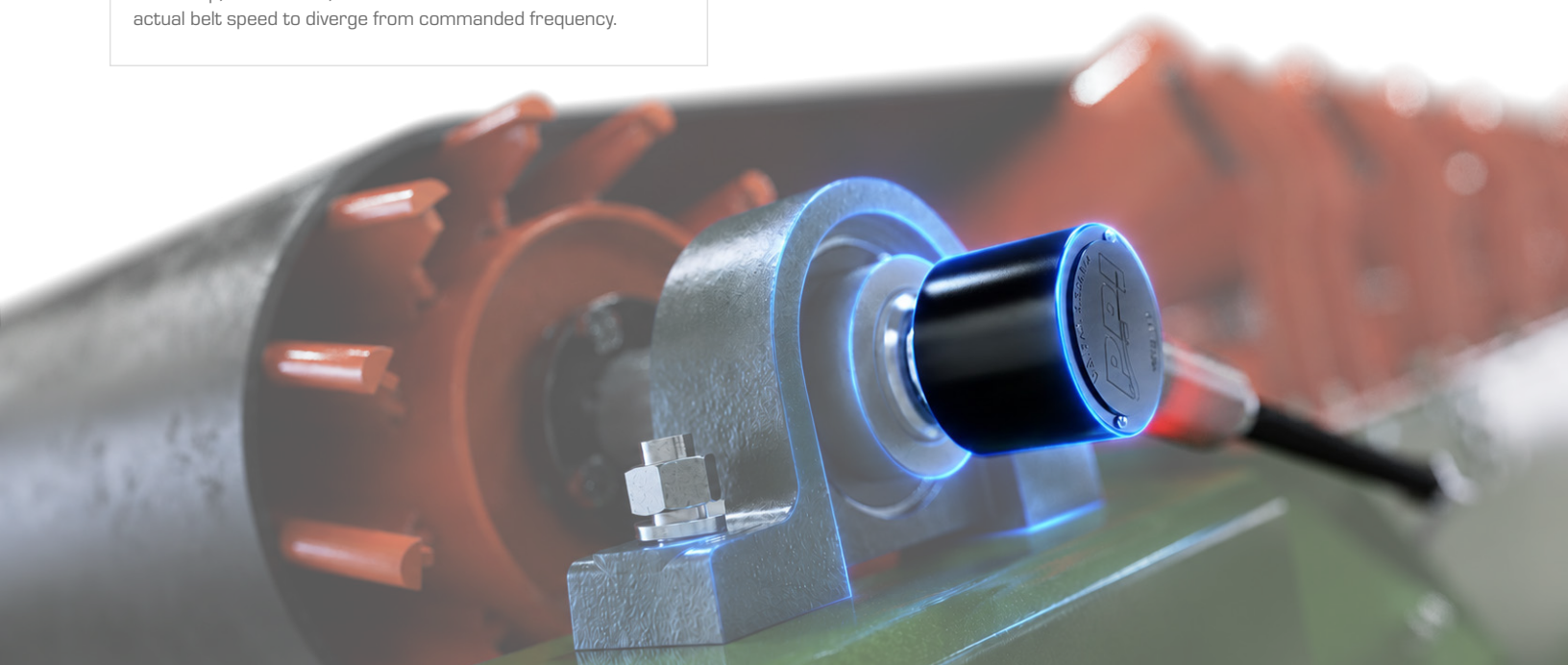
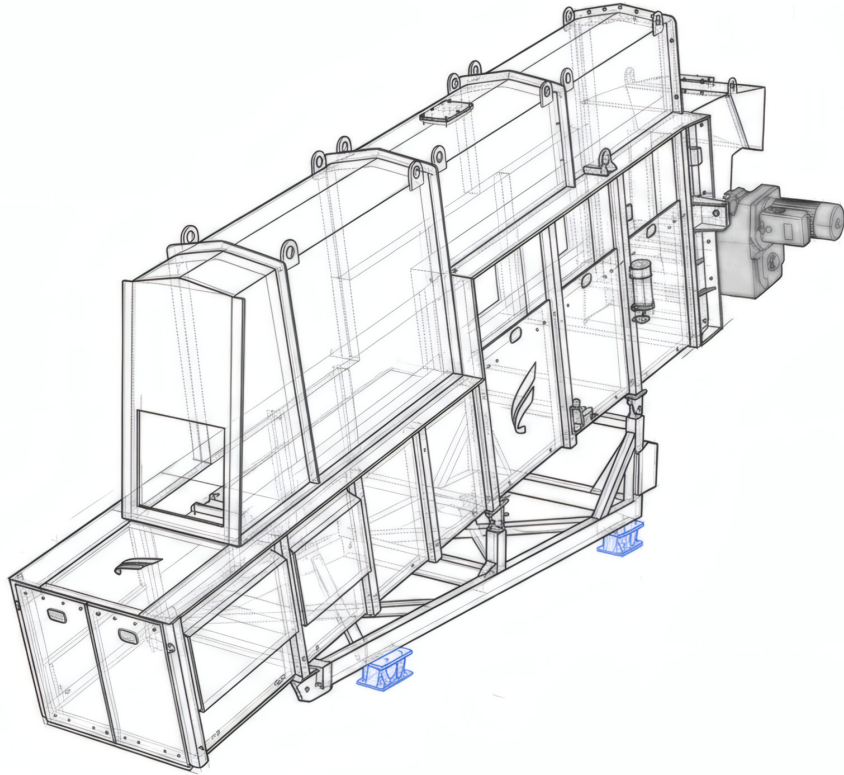
Each certification class assigns the cell a smallest reliably resolvable weight increment, and the minimum material change the scale must register has to exceed that value across every cell in the weighbridge.

Hermetic Weld Sealing Process:

Welded closure of the stainless steel spring element replaces gaskets and potting compounds, leaving no external sealing material to degrade under immersion or high-temperature washdown.

Physical Speed Sensor Integration:

Belt speed input to the indicator comes from a dedicated speed sensor rather than the VFD command signal, since motor slip, belt stretch, and acceleration transients cause actual belt speed to diverge from commanded frequency.



CONTACT INFORMATION

OUR ENGINEERS WILL SPEC THE EXACT PART FOR YOUR SYSTEM

For product specifications, engineering support, or order inquiries, please contact our team using the information provided below. Our specialists are available to ensure accurate recommendations and efficient service for your application requirements.

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