

VC3500 Series: Double Shear Beam Load Cell



Standard Features

- Stainless steel load cell, fully welded and hermetically sealed to IP68 and IP69K
- High integral resistance to lift-off as standard
- Resistant to off-axis loading
- Low profile design
- Durable Polyurethane cable with high resistance to chemicals, UV radiation and cuts
- Allows for vessel expansion and contraction
- Options of ATEX or IECEx approval, Parylene coating and high temperature version on request
- Optional load cell output of 4-20mA on request

CAPACITIES (t): 2, 5, 7.5, 10, 15, 20, 30

Stainless steel. IP68/IP69K protection.

FOR SILO, TANK AND PROCESS VESSEL WEIGHING

Vessel weighing problems solved simply and cost effectively. The VC3500 double shear beam load cell is designed particularly for large silos and tanks and it incorporates a high resistance to lift-off. The VC3500 load cell is also available with optional ATEX or IECEx certification and can be supplied as a special version with high temperature capability (for operation up to 150°C continuously).

- End use industries include cement, food, beverage, minerals, chemicals, plastics, pharmaceutical, paint, biomass, offshore and others.

Specifications

Load Cell Capacities:

2, 5, 7.5, 10, 15, 20, 30, (50, 75, 100, 150, 200 t on request)

Full Load Output:

2.0 mV/V \pm 0.25%

Excitation - Recommended:

5 - 15 V

Excitation - Maximum:

18 V

Safe Service Load:

150 %*

Ultimate Overload:

300 %*

Combined Error:

$< \pm 0.03$ %*

Repeatability:

$< \pm 0.015$ %*

Output at Zero Load:

$< \pm 2.0$ %*

Input Resistance:

785 $\Omega \pm 20$

Output Resistance:

705 $\Omega \pm 5$

Operational Temperature

Range:

-50 to +80 °C

Compensated Temperature

Range:

-10 to +40 °C

Temperature Coefficient on Zero:

$< \pm 0.002$ %* / °C

Temperature Coefficient on Span:

$< \pm 0.0012$ %* / °C

Environmental Protection:

IP68 and IP69K

Cable:

20 m length, 6 mm diameter, polyurethane material

Insulation:

>5000 M Ω

*All percentages are related to Full Rated Load

Wiring Code

<u>Wiring Code</u>	
<u>Color</u>	<u>Function</u>
RED	INPUT +
BLUE	INPUT -
GREEN	OUTPUT +
YELLOW	OUTPUT -

ATEX and IECEx version upon request

The VC3500 load cell has several ATEX and IECEx certification options.

The Concept

The VC3500 family of load cells is available in capacities from 2.000 kg to 200.000 kg. They are especially suitable for high capacity vessel weighing and feature a combined error specification of $< \pm 0.03\%$.

The critical sensor element is a fully welded double ended shear beam, manufactured from high tensile 17-4 PH stainless steel that is heat treated to give a high ultimate tensile strength. This heat treatment provides an extremely stable platform for the strain gauges, resulting in excellent accuracy and repeatability. In common with all Thames Side load cells, the strain gauged element is temperature compensated to ensure accuracy is maintained over a wide temperature range.

Stainless steel diaphragms are welded in position to provide total environmental sealing.

Due to the unique design of the VC3500, transverse and non-axial misalignment errors are minimised.

Dimensions



Parts

Part #	Description
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Available Versions

VC3500-2T	Double shear beam load cell VC3500, Max= 2.000kg, internal use only.
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VC3500-5T	Double shear beam load cell VC3500, Max= 5.000kg, internal use only.
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VC3500-7.5T	Double shear beam load cell VC3500, Max= 7.500kg, internal use only.
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VC3500-10T	Double shear beam load cell VC3500, Max= 10.000kg, internal use only.
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VC3500-15T	Double shear beam load cell VC3500, Max= 15.000kg, internal use only.
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VC3500-20T	Double shear beam load cell VC3500, Max= 20.000kg, internal use only.
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VC3500-30T	Double shear beam load cell VC3500, Max= 30.000kg, internal use only.
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