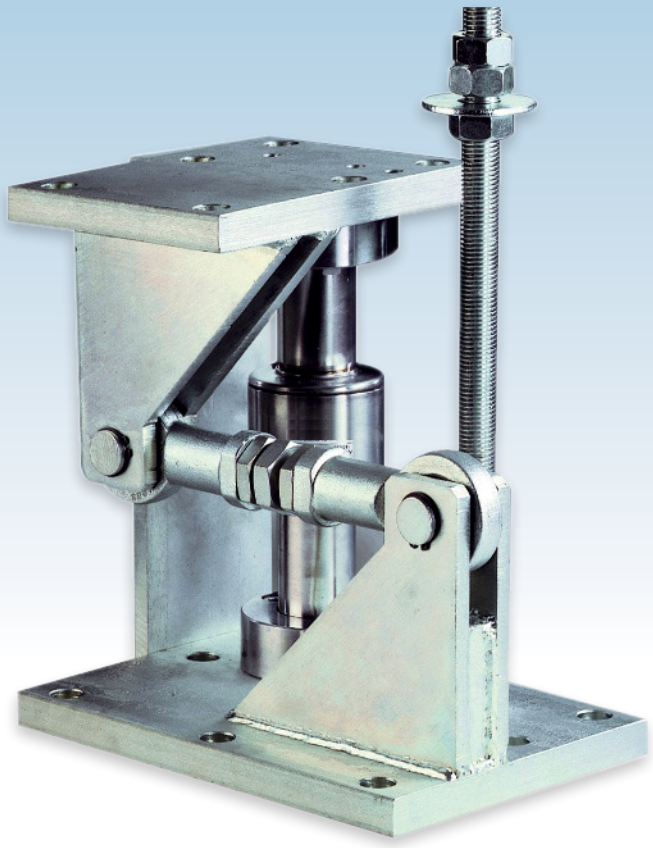
T34 SILO

Thames Side

COMPRESSION COLUMN LOAD CELL ASSEMBLY FOR SILO WEIGHING

capacities 10t - 1000t



High capacity weighing problems solved simply and cost-effectively.

The high capacity model T34 stainless steel column load cell and mounting accessory are designed specifically for silo weighing applications. The accessory utilises a horizontal retention arm and incorporates lift-off prevention via integral check rods, for increased safety and high resistance to unwanted lateral and upward forces.

The T34 Silo assembly is a cost-effective and ideal solution for approved weighing systems, because the load cell has OIML C4 (4000 divisions) legal-for-trade approval up to 60t capacity. As optional extras, ATEX approval or a high temperature variant are available. Common end use industries include cement, minerals, coal, chemicals, plastics, pharmaceuticals, paint and grain storage.

- Stainless steel load cell
- Fully welded and hermetically sealed to I P68 and IP69K
- In-built surge arrestors for lightning protection
- High durability Polyurethane cable
- Simple installation
- 5 year warranty
- Self-centring rocker column design with anti-rotation pin for high accuracy weighing
- Approval to OIML R60 C4 (4000 divisions) up to 60t
- Wide operating temperature range (-50 to +80 °C)
- ATEX and High Temperature options available

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installation & dimension details...

THE CONCEPT

The high capacity T34 family of load cells is available in capacities from 10t to 1000t. They are especially suitable for silo weighing and feature a combined error specification of < ± 0.013 % up to 60t and < ± 0.05 % from 100t to 1000t.

The critical sensor element is a fully welded and hermetically sealed column load cell, manufactured from high tensile stainless steel which is heat treated. This 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 through a wide temperature range.

The stainless steel cover is welded in position to provide total environmental sealing. This method of construction, together with the fitting of a high quality cable gland, allows Thames Side to offer a 5 year warranty on the complete unit.

Because many silos are metallic, tall and located in areas where lighting strikes are a distinct possibility, all T34 load cells incorporate lightning protection in the form of surge arrestors to minimise potential damage.

The LA34-SILO mounting accessory, which is supplied pre-assembled for convenience, is zinc plated to provide a high level of corrosion protection and includes an earth cable as standard to reduce the chances of damage to the load cell as a result of welding activity after installation. The accessory is also delivered with a factory-fitted transport plate to protect the load cell during installation; this must be removed after the load cell has been fitted and aligned.

Additionally, the mounting accessory is fitted with integral threaded check rods for lift-off protection, as well as a retention arm to absorb horizontal forces that are typically generated by wind loads on large silos. Expansion and contraction of the silo structure is accommodated by the rocker pin design of the T34, which allows for movement in the transverse direction to the retention arm.

ATEX CERTIFICATION

The T34 range has a number of ATEX certification options; this allows for use in some ATEX zones without safety barriers and results in significant cost savings for the customer.

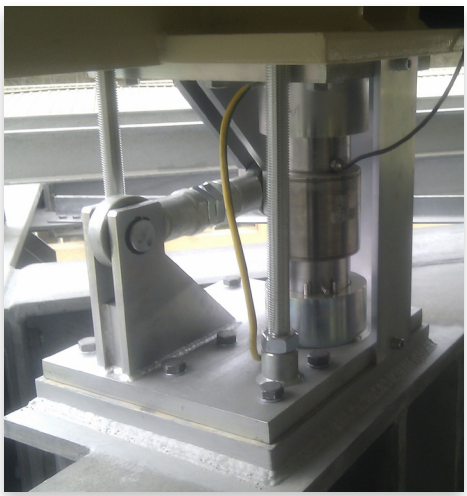
Code	Specific parameters of protection types		Application
II 1 G D Ex ia IIC T4...T6 Ga Ex ia IIIC T85°C Da Ex ta IIIC T85°C Da	Protection type "Ex i" Ex ia IIC T4 / Ex ia IIIC	Pi = 1.3W	Gas Zones 0, 1, 2 with safety barriers
	Protection type "Ex i" Ex ia IIC T5	Pi = 0.6W	
	Protection type "Ex i" Ex ia IIC T6	Pi = 0.2W	
	Protection type "Ex ta"	Umax = 25V	Dust Zones 20, 21, 22 **without** safety barriers. Maximum supply voltage 25V.

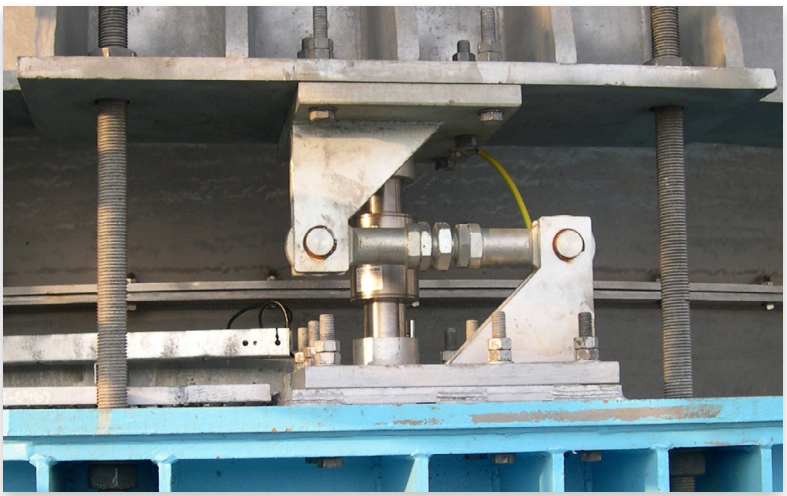
HIGH TEMPERATURE

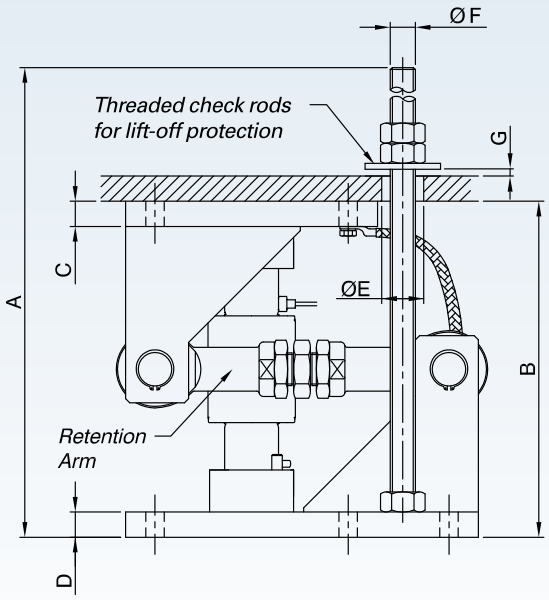
The T34 range is available in an optional high temperature variant that utilises special load cell components and a PTFE 'Teflon' cable for continuous operation in environments up to 150°C.

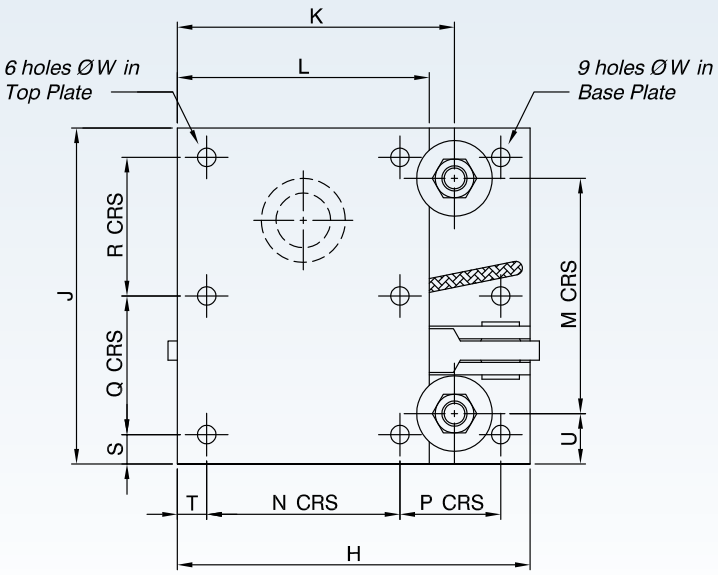
ENVIRONMENTAL PROTECTION

A special Parylene coating can be specified, as an option, to provide additional protection in aggressive environments where stress corrosion could occur – for example where chlorine or acids are present.









LA34 Mounting Accessory

Mounting Accessory	LA34-50T-SILO						LA34-60T-SILO	LA34-200T-SILO		LA34-400T-SILO	LA34-600T-SILO	LA34-1000T-SILO	
Load Cell Capacity	**10**	**15**	**20**	**30**	**40**	**50**	**60**	**100**	**200**	**400**	**600**	**800**	**1000**
A	500						500	1000		1030	1035	1040	
B	230						300	400		460	510	620	
C	15						20	30		30	35	40	
D	15						20	30		35	35	40	
E	28						28	50		50	55	60	
F	M20						M20	M30		M30	M33	M36	
G	3						3	3		3	3	5	
H	280						280	420		460	530	600	
J	200						200	400		400	450	600	
K	197.5						197.5	330		346	400	460	
L	160						160	300		316	345	410	
M	-						-	280		280	320	435	
N	115						115	230		230	270	320	
P	115						115	120		120	180	200	
Q	102.5						102.5	165		165	185	250	
R	65						65	165		165	185	250	
S	15						15	35		35	40	50	
T	25						25	35		51	40	40	
U	-						-	60		60	65	82.5	
W	18						18	22		22	24	27	

All dimensions in mm

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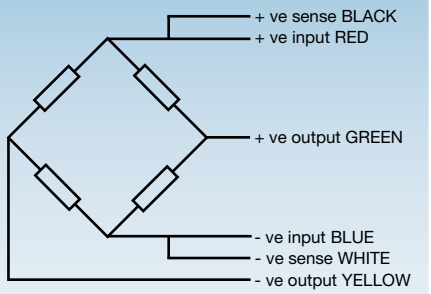
technical specification...

T34 Load Cell

	Load cell specification		Units
Capacity	10,15, 20, 30, 40, 50, 60	100, 200, 400, 600, 800, 1000	t
Rated Output	2 **	2.0 ± 0.5%	mV/V
Accuracy Class	4000	-	n. OIML
Recommended Supply Voltage	5-15		V
Maximum Supply Voltage	15		V
Safe Overload	150		% *
Combined Error	<± 0.013	<± 0.05	% *
Non-Repeatability	<± 0.015		% *
Output at Zero Load	±2.0		% *
Input Resistance	800		Ω ± 5
Output Resistance	705		Ω ± 5
Operational Temperature Range	-50 to +80		°C
Compensated Temperature Range	-10 to +40		°C
Temperature Coefficient on Zero	<± 0.002		% */°C
Temperature Coefficient on Span	<± 0.0012	<± 0.0036	% */°C
Creep Error (30 minutes)	<± 0.012	<± 0.048	% *
Environmental Protection	IP68 and IP69K		-
Cable Length 10t - 30t	Options of 15m or 20m		-
Cable Length 40t - 1000t	20m		-
Cable Material	Polyurethane		-
Insulation Resistance	>5000		MΩ @100v DC

* All percentages are related to Rated output
** Pre-corner adjustment optimised at +/- 0.05% by output current calibration



Electrical Connections

Via 6 wire, 6mm diameter, screened Polyurethane cable with high toughness.
Screen not connected electrically to load cell.

Construction

T34 Load Cell
High strength stainless steel

LA34-****T-SILO Mounting Accessory
Plates and retention arm: zinc plated alloy steel
Mounting cup set with anti-rotation pin: stainless steel

LA34-SILO Mounting Accessory

Mounting Accessory	Load Cell Capacity (t)	Maximum Lift-off resistance (kN)	Maximum Allowable Horizontal Force in direction of retention arm (kN)	Maximum Allowable Side Offset transverse to retention arm (mm)
LA35-50T-SILO	10	76	47	+/- 4
	15			
	20			
	30			
	40			
	50			
LA34-60T-SILO	60	114	95	+/- 4
LA34-200T-SILO	100	228	180	+/- 5
	200			
LA34-400T-SILO	400	330	240	+/- 5
LA34-600T-SILO	600	395	290	+/- 5
LA34-1000T-SILO	800	480	450	+/- 6
	1000			

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