

WAS Stainless Steel Force Washer/Through Hole Load Cell

Description

The WAS range of load cells from LCM Systems have been specifically designed for applications where there is a requirement for the force application component to pass through the centre of the load cell. This style of product is often referred to by different names, including annular load cells, force washers, donut load cells and through hole load cells.

The main application for the WAS series is measuring the tension in bolts for safety monitoring and control, or general quality control. LCM Systems specialise in the design of custom load cells so have also been heavily involved in designing similar products for rock anchor force measurement, fork lift truck weighing and tie rod tension monitoring.

If you have a requirement for a through hole load cell that is not satisfied with the standard WAS series, then please contact our technical department with your requirement and we will probably be able to solve your application problem for you.

The WAS series can be supplied as a stand alone product or be incorporated into an instrumentation package to meet your specific application requirements.

Specification

Range (kN)	12.5, 25, 35, 50, 100, 160, 200, 250, 300, 360, 540	
Maximum overload range	150% of rated load	
Output sensitivity	1.5mV/V nominal	
Zero offset	<±5% of rated load	
Linearity	<±1.5% of rated load (between 50% and 100% of rated load)	
Repeatability	<±1% (if mounting position remains unchanged) <±10% (if mounting position is changed)	
Excitation voltage	10vdc recommended, 15vdc maximum	
Bridge resistance	700Ω	
Insulation resistance	>500MΩ @ 100vdc	
Operating temperature range	-20 to +70°C (-20 to +55°C for Ex d)	
Compensated temperature range	-10 to +50°C	
Zero temperature coefficient	<±0.03% of rated load/°C (<±0.01% of rated load/°C optional)	
Span temperature coefficient	<±0.03% of rated load/°C (<±0.01% of rated load/°C optional)	
ATEX certification details	Ex i	II 2G Ex ib IIC T4 Gb / II 2D Ex ib IIIC T135°C Db
	Ex d	II 2G Ex d IIC T6 Gb / II 2D Ex tb IIIC T85°C Db
Environmental protection level	IP66 (IP67 optional)	
Connection type	2 metre long 4-core PVC cable, exiting via cable gland	
Wiring connections	+ve supply: Red	-ve supply: excitation: Blue
	+ve signal: Green	-ve signal: excitation: Yellow

Available Options

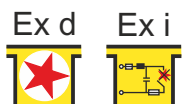
- Hazardous Area certified - Explosion Proof (Ex d) and Intrinsically Safe (Ex i)
- Special sizes and ranges available
- Higher accuracy versions available
- Many other variants available

Features

- Ranges: 12.5 to 540kN
- Stainless steel construction (17-4PH)
- Environmentally sealed to IP66
- Special sizes and ranges

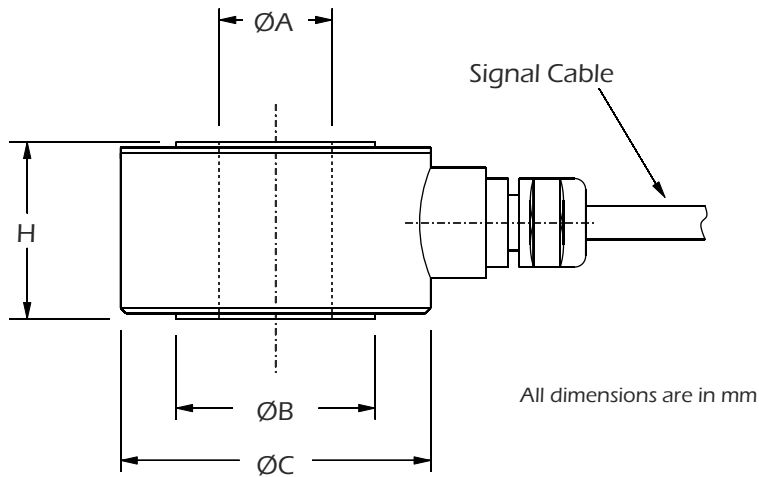
Typical Applications

- Bolt tension monitoring
- Fork lift truck overload protection
- Failsafe cable tension monitoring
- Press tool force measurement
- Anchor point tension measurement



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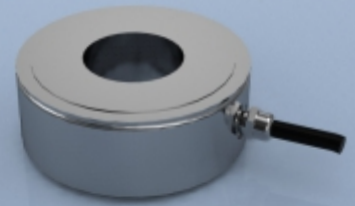
Dimensions



Rating (kN)	ØA	ØB	ØC	H	Weight (kg)	Resolution (kN)
12.5	6.1	10.4	25	12	0.05	0.05
25	8.2	14	32	12	0.05	0.1
35	10.2	17.7	32	12	0.09	0.2
50	12.2	21.3	38	15	0.13	0.2
100	16.3	29	48	20	0.25	0.5
160	20.3	33	50	20	0.28	0.5
200	22.3	37.2	55	25	0.38	1
250	24.3	43.5	60	25	0.51	1
300	27.3	45.5	63	25	0.51	1
360	30.5	50	75	30	0.9	2
540	36.5	60.1	88	30	1.2	2

Note 1: Part numbers for ATEX versions will be suffixed with either -ATEX-D (explosion proof) or -ATEX-I (intrinsically safe) e.g. WAS-12.5KN-ATEX-D.

Note 2: Dimensions may change for hazardous area versions.



www.lcmsystems.com

LCM Systems Ltd

Unit 15, Newport Business Park, Barry Way
Newport, Isle of Wight PO30 5GY UK

Tel: +44 (0)1983 249264

sales@lcmsystems.com

www.lcmsystems.com

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APPROVED

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