



**Load Monitoring Systems**

## Product Guide



Load Links

Load Shackles

Load Pins

Running Line Tensiometer

Compressive Load Cells

Load Cell Displays

Data Logging

Calibration & Repair

Rayco Wylie Systems

[www.loadsystems.co.uk](http://www.loadsystems.co.uk)

# Strength to get the job done.

## CALIBRATION & TESTING

- Water weights & bags
- Beam proof load
- Crane/hoist loads
- Bollard pull for vessels
- Force calibration
- Hydraulic presses
- Laboratory weighing & calibration

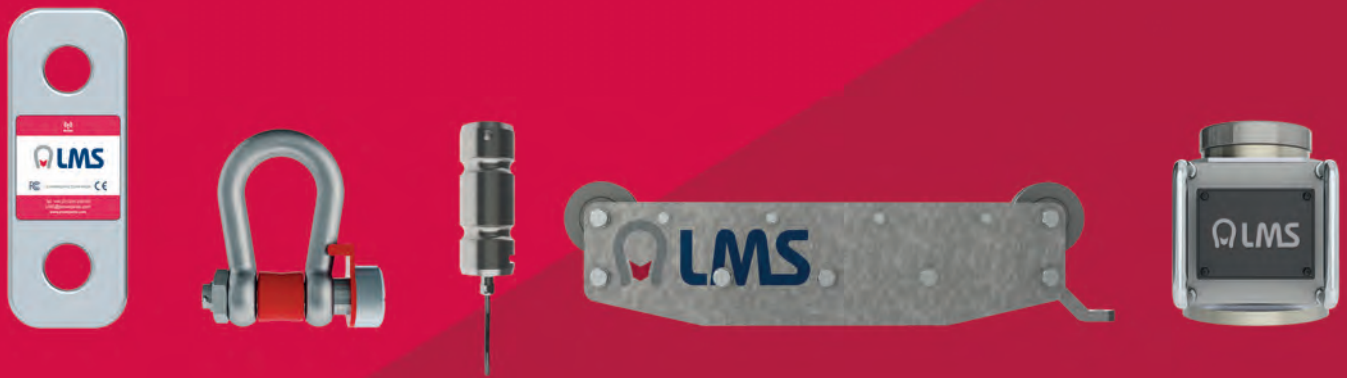
## INDUSTRY APPLICATIONS

- Wind turbine installations
- Warehouse despatch
- Subsea vehicle lifting
- Subsea cable laying, recovery & repair
- Subsea ploughs
- Anchor systems
- Mooring systems
- Under hook crane weighing
- Pipe laying ships
- Structural joints
- Hydraulic presses
- Lifting systems
- Aerospace development

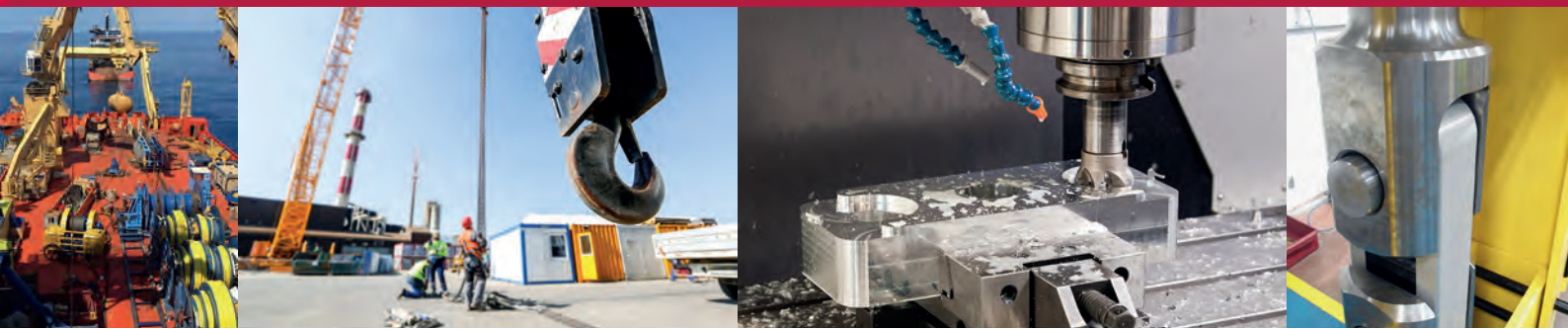
## MONITORING & MEASUREMENT

- Cable tension
- Towing
- Mooring
- Crane safe
- Anchor line tension
- Static wire tension
- Winch load
- Elevator cable
- Speed
- Payout distance
- Jacking force
- Pile force
- Sheave/pulley system line tension
- Container weighing
- Centre of gravity weighing
- Overload protection





We specialise in the design and manufacture of load monitoring equipment for use in industrial applications.



## Why choose LMS?

Used in the marine, energy, subsea, construction, manufacturing and civil engineering industries our products are suited for industrial systems and applications for monitoring and measurement, calibration and testing.

With over 18 years' experience in specialist load monitoring LMS has a proven track record developing a range of products and services tailored around customers needs. From 2014 LMS became part of the Power Jacks family, forming the Power Jacks Load Monitoring Systems (LMS) division.

Today LMS continues to build the business and extend its offering with an increased hire capability as well as providing a new 'FAST-TRACK' repair and calibration service specifically created to support customers who need a rapid turn-around when conditions are critical.

For sales, hire, repair and calibration contact us today

[www.loadsystems.co.uk](http://www.loadsystems.co.uk)

[sales@loadsystems.co.uk](mailto:sales@loadsystems.co.uk)

Call: +44 (0) 1358 285100



# Load Link

## Accurate and reliable tensile load monitoring for lifting applications.

Suitable for all industry sectors including marine, offshore and subsea. Due to the robust, lightweight high tensile aluminium design these load links are ideal for mobile applications and available as either cabled or wireless with a range of options.

Retro-fit load monitoring to existing applications where shackles are already available and fits all major shackle manufacturers including Van Beest, Crosby and GN Rope.



Specifications		
Overload Tested (Proof Load)		150% rated load
Minimum Breaking Load (MBL)	5Te to 400Te	500% rated load
	500Te	450% rated load
Dead Load Offset		+/- 0.1mV
Accuracy		< 0.5% of applied load
Repeatability		< +/- 0.1% of applied load
Hysteresis up to FS		Minimal
Operating temperature		-20°C to +70°C
Environmental Rating		IP67
Range		600m+
Transmit rate		900ms (standard)
Antenna (Wireless Version)		Internal
Radio (Wireless Version)		2.4 Ghz; worldwide licence free
Cabled Version Output Signals		<b>Analogue signals</b> 4-20mA in 2 or 3 wire output with 10-30VDC supply 0-5VDC or 0-10VDC 3-wire output with 10-30VDC supply <b>Digital signals</b> RS232 with a protocol of your choice with 5-20VDC supply RS485 with a protocol of your choice with 5-20VDC supply
Cable Version Connection Type		Load link with plug-in socket and 15m, 4-core screened PUR cable with matched plug-in connector fitted. Other types available on request.
Battery Type / Lifespan	Load Cells	Batteries: 2 x AAA 1.5V for 5Te Load Link @ 500+ hours (continuous) Batteries: 2 x C 1.5V for 12.5Te-500Te Load Link @ 2000+ hours (continuous) Provides 1 year of use based on 8 hour per day. Reducing the requirement to change batteries between calibrations.
	Display	2 x AA1.5V batteries @ 40 hours (continuous)
Calibration		12 months (calibration service available)
Material		Lightweight, high tensile grade aluminium
Finish		Hard anodised for marine environments
Traceability and Safety Compliance		BS EN ISO 7500-1:2004 BS 8422:2003 Loler statutory instrument 1998, No. 2307 Machinery directive 2006/42/EC (SI 2008/1597)
Shackle Compatibility (include):		
Van Beest		G-4163, P6036 safety bow
GN Rope		H9 & H10 safety Bow
Crosby		G2130, G2140
ATEX Options		
Zone 2		Standard options (wireless and cabled)
Zone 1		Standard options (wireless and cabled)
Zone 0		Stainless steel construction, cabled options - contact LMS for more details

## Options



Wireless & Internal Antenna



Rent or Buy



Cabled



ATEX Version



Matched Telemetry Displays



Data Logging Software Available

## Features

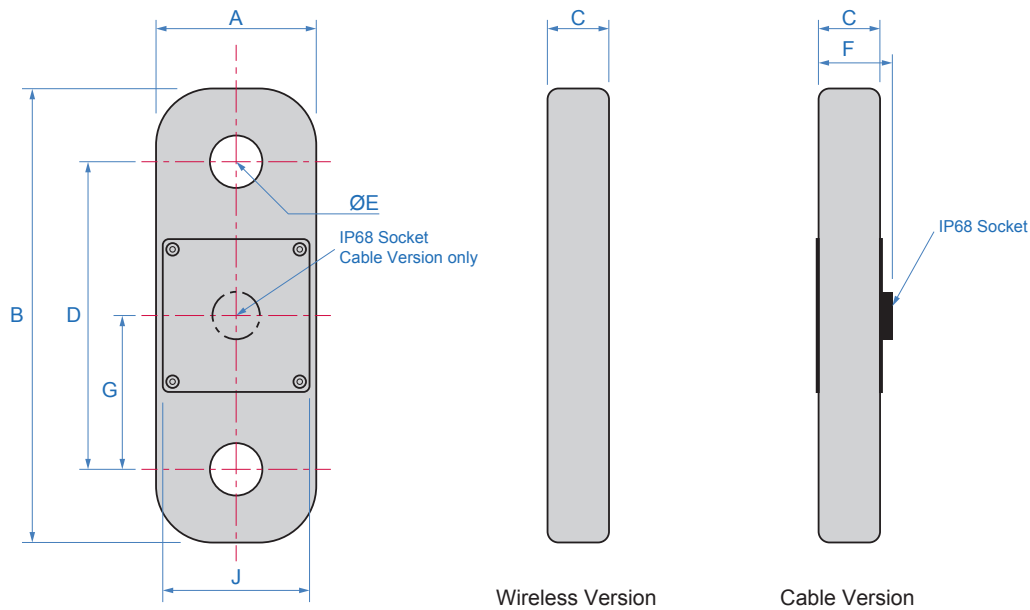
- Load link designs from 6.5Te to 500Te as standard other capabilities on request
- Designed to be rigged & operational with a Working Load Link (WLL) of the same capacity
- Safety factor of 5:1
- Accuracy <0.5% of applied load
- ATEX versions available for zones 0, 1, & 2
- Subsea variants available on request
- Every unit load tested and certified



Cabled Version plug & socket connector on back of load link

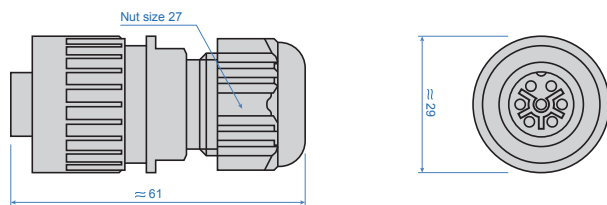


Removable battery access panel on rear of wireless load link



Capacity (Tonne)	6.5	13.5	25	35	55	85	100	150	200	250	300	400	500
Dimensions (mm)													
A	84	143	143	157	183	198	220	272	331	395	432	490	540
B	238	292	382	436	470	518	590	695	769	879	977	1037	1137
C	32	45	62	70	85	104	124	136	150	177	182	198	198
D	162	182	236	256	286	310	350	395	419	469	517	547	607
ØE	27	40	55	61	75	86	100	118	135	145	158	180	190
F	50	63	80	88	93	122	142	168	173	195	200	200	243
G	81	91	119	128	143	155	175	197.5	209.5	234.5	258.5	273.5	303.5
Fits Shackle (Tonne)	6.5	13.5	25	35	55	85	120	150	200	250	300	400	500
Weight (kg)	1.5	6	8	12	15	23	37	63	93	135	186	228	322
Suggested Safety Bow Shackles													
Van Beest	G4163						P6036						
GN Rope	H9						H10						
Crosby	G2130 to G2140												

## Cable Version Plug Details



### IP68 Plug Connector

Pin 1 = Power +ve  
Pin 2 = Power -ve  
Pin 3 = Signal +ve  
Pin 4 = Signal -ve

## Displays & Portable Case

Rugged case design with foam compartments to firmly hold the load link, telemetry display, spare set of batteries. Can also accommodate connecting cable for wired units and matched set of shackles.

- Lockable case
- Available for 5Te to 100Te load link sizes

LMS handheld displays

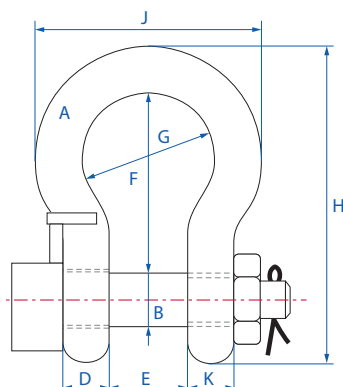


# Load Pin Shackle

Robust, compact high tensile steel design from 2Te to 2000Te.

Ideal for precise tensile load monitoring for your lifting, static, pulling or weighing applications. Suitable for all industry sectors including marine, onshore, offshore and subsea.

You can be confident each shackle and load pin is up to the task with the certified load test before delivery.



## Standard Designs (Van Beest Shackles)

Capacity (Tonne)	Dimensions (mm)								Weight (kg)
	a	b	d	e	f	g	h	j	
12	32	35	32	51	115	83	201	147	4.91
25	45	50	45	74	178	126	300	216	14.22
35	50	57	50	83	197	138	331	238	19.85
55	65	70	65	105	260	180	433	310	39.59
85	75	83	73	127	329	190	527	340	62
120	95	95	91	147	400	238	647	428	110
150	105	108	102	169	410	275	688	485	160
200	120	130	113	179	513	290	838	530	235
250	130	140	118	205	554	305	904	565	285
300	140	150	123	205	618	305	996	585	340
400	170	175	164	231	668	325	1114	665	560
500	180	185	164	256	718	350	1190	710	685
600	200	205	189	282	718	375	1243	775	880
700	210	215	204	308	718	400	1263	820	980
800	210	220	204	308	718	400	1270	820	1100
900	220	230	215	328	718	420	1296	860	1280
1000	240	240	215	349	718	420	1336	900	1460

## Special Designs (Crosby Shackles)

Capacity (Tonne)	Dimensions (mm)								Weight (kg)
	a	b	d	e	f	g	h	j	
6.5	24.6	25.4	22.4	36.6	84	58	148	102	3.2
25	44.5	51	49	73	178	127	313	225	18

## Options



Wireless & Internal Antenna



Rent this item



Cabled with 15m flying cable



ATEX Version



Matched Telemetry Displays



Data Logging Software Available

## Features

- Design uses VanBeest™ Greenpin® shackles as standard others on request
- Load pins from high-strength stainless steel
- Safety factor of 5:1
- Up to 12 shackles can be linked to the handheld display for individual or summed load values
- Integral signal conditioning
- Subsea variants available on request
- Special design available on request



Centralising bobbin for improved load cell accuracy



Integrated aerial for added protection



# Load Pin



Accurate real-time load monitoring of any load bearing pin connection or joint.

Load pins are integrated in mechanical structures and mechanisms to provide precise load monitoring accurate to 1%, safety factor of 5:1 and all proof loaded to 150%.

Used in construction, automation, marine, offshore and subsea, these pins can be designed to suit your application with capacities from 2Te to 2000Te.

## Options



Wireless & Internal Antenna



Rent this item



Cabled with 5m glanded axial or radial exit



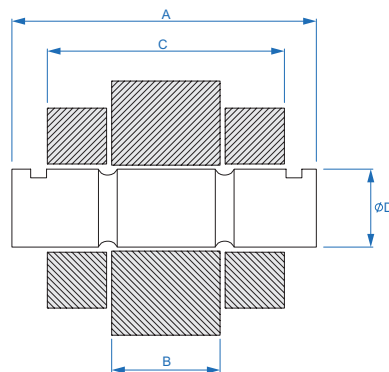
ATEX zones O,1 and 2



Matched Telemetry Displays



Data Logging Software Available



Indicate preferred side for load pin head and anti-rotation plate with enquiry.

## Features

- Output options include mV, mA, V, RS232 with others available (on request)
- Single, dual and redundant bridge designs
- Standard operating temperature -20°C to +80°C
- Plug-in connector versions available
- Integral signal conditioning available
- Enclosure IP67 as standard
- Subsea variants (on request)
- Every unit load tested and certified

Each load pin will be designed and manufactured to suit your application, ensuring maximum performance and ease of installation.

Detailed above are the most critical dimensions. When making an enquiry, please provide these values (A, B, C and D) along with any additional requirements/restrictions due to the application such as pin length, head size etc.

## Load Pin Locking

The load pin needs to be securely locked into position. This can be achieved by the following common methods:

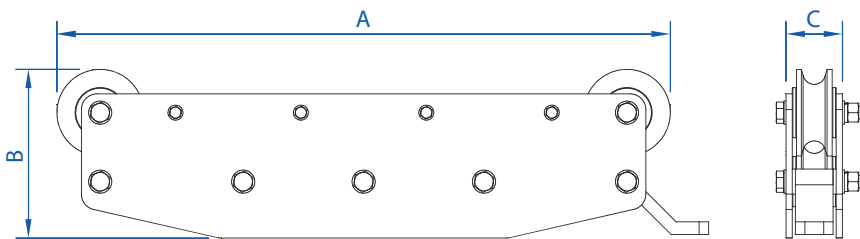
- Single anti-rotation plate
- Double anti-rotation plate (both on one end or one on each end of pin)
- Anti-rotation plate, split pin & washer
- Anti-rotation plate and lock nut on threaded end of load pin
- Anti-rotation yoke (similar to shackles), split pin & washer

# Running Line Tensiometer

For winch, crane, towing, laying and tensioning applications.

Monitor speed, payout for wire rope, synthetic rope, dynema, fibre optic and cable systems in marine, offshore, onshore and subsea applications.

Incorporate data logging and the matched line monitor display for capacities up to 120Te.



Model	Rope Diameter (mm)	Working Tension (Te)	A (mm)	B (mm)	C (mm)	Weight (kg)
RLT-1-10	10	9	722	250	162	21.5
RLT-1-13	13	9	722	250	162	21.5
RLT-1-16	16	9	722	250	162	21.5
RLT-1-19	19	9	722	250	162	21.5
RLT-1-22	22	9	722	250	162	21.5
RLT-1-25	25	9	722	250	162	21.5
RLT-2-22	22	22.5	810	270	186	37
RLT-2-25	25	22.5	810	270	186	37
RLT-2-28	28	22.5	810	270	186	37
RLT-3-32	32	45	963	297	188	56
RLT-3-35	35	45	963	297	188	56
RLT-3-38	38	45	963	297	188	56
RLT-3-40	40	45	963	297	188	56
RLT-4-42	42	64	1029	296	198	77
RLT-4-44	44	64	1029	296	198	77
RLT-4-48	48	64	1029	296	198	77
RLT-8-52	52	90	1250	426	185	125
RLT-8-66	66	90	1250	426	185	125
RLT-8-68	68	120	1703	488	278	187
RLT-8-100	100	120	1703	488	278	187

## Options



Wireless



Rent this item



Cabled Version



ATEX Version



Matched Line Monitor Display



Data Logging Software Available

## Features

- 20 Running line tensiometer designs
- Line capacities up to 120Te
- Rugged design for operation in the most extreme environments
- Simple and quick access for line/rope fitting
- Marinised design ensures corrosion prevention in offshore environments
- Line mounted supplied with tether/ swivel mount as standard with the options for bolt on feet or trunnion mount (pivot on 2 feet)
- Custom mounts available on request

## Line Monitor Displays



Matched with our running line tensiometer featuring simple to use keyboard and clear multi-digit 9mm LCD display.

- Calibrated in tonne with weight resolution accuracy available in kg, lb or kN
- Wireless range of 600m+
- Tactile keypad
- Low power consumption for long battery life



Line Diameters from Ø10mm to Ø104mm



# Compressive Load Cell



## Compressive load monitoring indoors, outdoors or subsea.

Perfectly at home in the laboratory or hostile marine environment, the compact and robust stainless steel design can be used for weighing, force measurement and calibration.

Standard capacities from 2Te to 1000Te, accuracy better than 1% and each unit proof loaded to 200% (LOLER compliant) and certified.

### Options



Wireless & Internal Antenna



Rent this item



Cabled with 5m glanded axial or radial exit



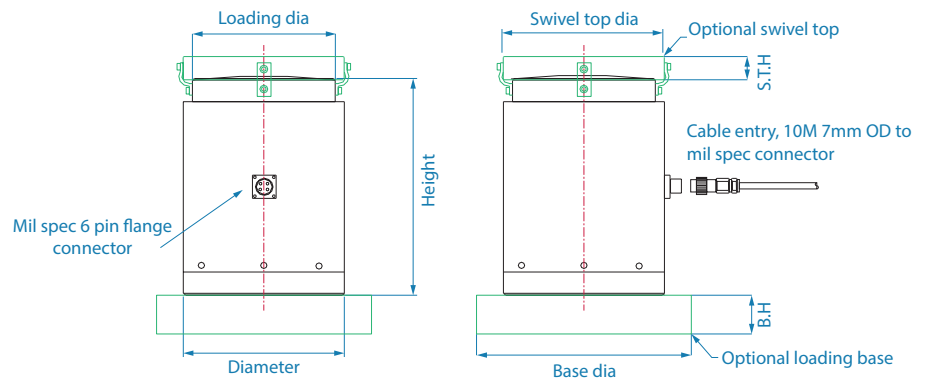
ATEX zones 0, 1 and 2



Matched Telemetry Displays



Data Logging Software Available



### Features

- Cells designed to your application
- Safety factor of 5:1
- Operating temperature -20°C to +80°C as standard
- Enclosure IP67 rated
- Output options include mV, mA, V, RS232 with others on request
- Single, dual and redundant bridge designs
- Extra support base flanges available on request
- Plug-in connector versions available
- Integral signal conditioning available
- Subsea variants available on request



Supplied with domed top and spherical loading cap



Cabled versions with 10m glanded exit flying cable as standard. Other lengths available on request.

### Typical Load Cell Sizes

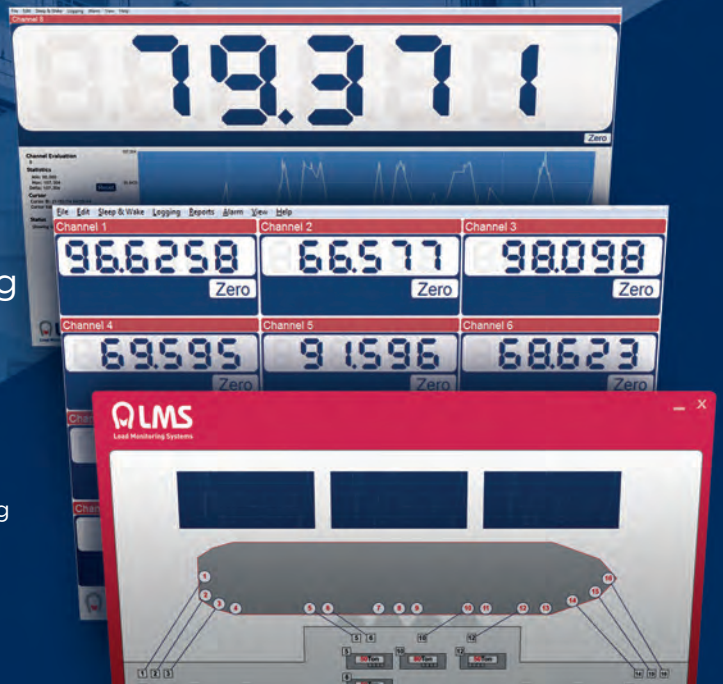
Capacity (Tonne)		50	100	200	300	500	1000
Diameter (mm)	øA	75	120	125	150	200	290
Height (mm)	B	110	142	180	180	300	425
Loading Diameter (mm)	øC	60	90	110	130	170	250
Spherical Cap Diameter (mm)	øF	65	93	125	150	200	290
Spherical Cap Height (mm)	G	10	18	30	30	50	50

These sizes are a guide, larger or smaller sizes are available. We can design and manufacture a load cell to suit your exact application so that you achieve the maximum performance.

# Load Cell Data Logging

**LMS-LOG100** Advanced data logging software provides real time monitoring of up to 100 load cell devices simultaneously.

Quick and easy to access remotely your data on computer, tablet & smart phone via web browser. Export data in standard JSON or CSV formats with customisable reporting to suit your needs.



## LMS-LOG100 Product Support



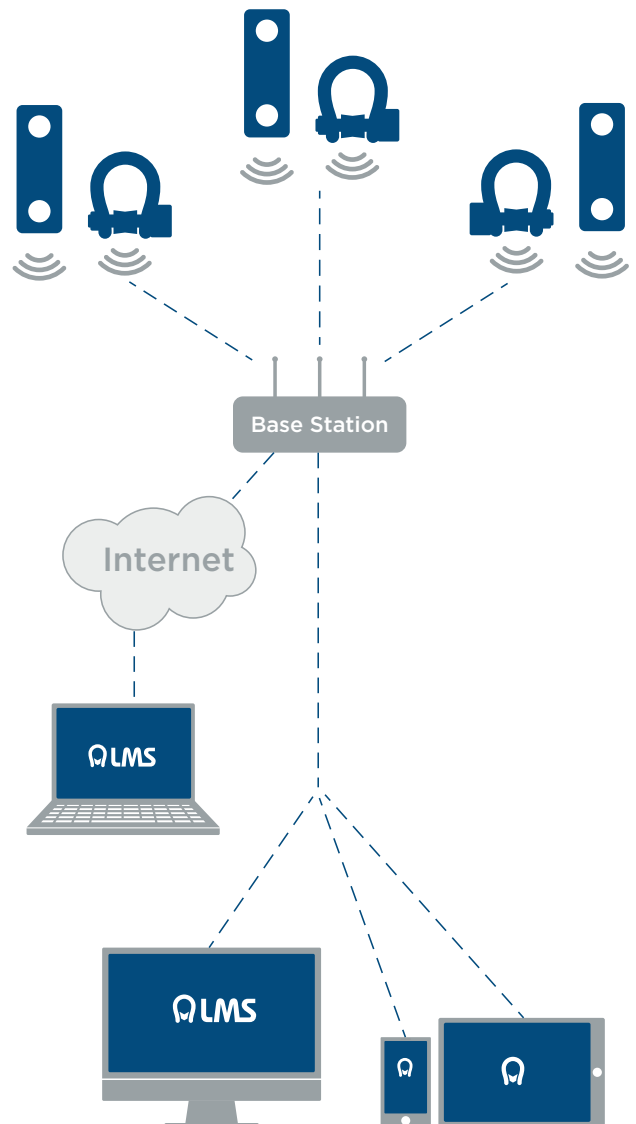
### Features

- Log data at timed intervals, manually (on demand), on entering & exiting a pre-set overload/underload, during an overload/underload.
- Visual display and audible alarm indicators for overload/underload conditions as well as loss of communication
- Display live data readings on a visual graphic of your application (picture/drawing/schematic)
- Display numeric and graph data
- Units of measure selectable to match load cell
- Built in web server
- Defined algorithms and maths functions
- Works with USB base station
- Windows 8, 7, Vista & XP compatible
- Supplied pre-installed on computer with or without display screen
- System can be installed on existing computers



Use in conjunction with LMS handheld displays

### How it Works



# LMS-QV

## Quick View for Load Cells

This software allows you to quickly detect, pair, view and log data from a LMS load cell device.

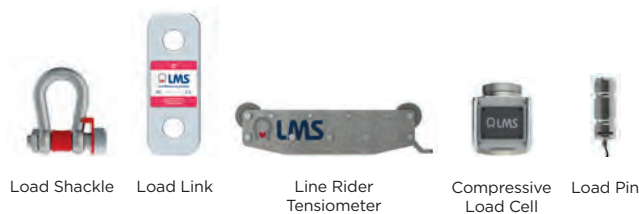
System requirements: Windows 8, 7, Vista or XP & USB base station



## Features

- Detect or pair to a load cell device
- View the acquired data on a large simulated LED display
- Export the data to a CSV file
- Supplied pre-installed on computer with or without display screen
- System can be installed on existing computers
- Quick & easy to operate

## Product Support



# LMS-Toolkit

## Toolkit for Load Cells

This software allows you to quickly and easily configure, test communication and calibrate LMS wireless load cell devices.

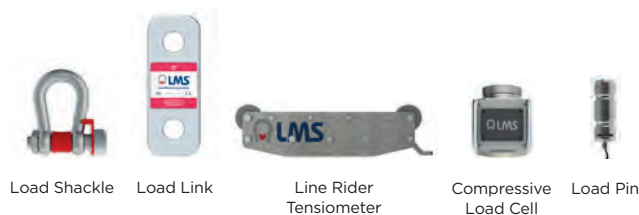
System requirements: Windows 8, 7, Vista or XP & USB base station



## Features

- View and alter load cell device parameters
- Execute commands
- Save and restore configuration data to files
- Check radio link quality
- Calibrate load cell modules
- Perform simple data logging
- Supplied pre-installed on computer with or without display screen
- System can be installed on existing computers

## Product Support





## Design, Testing, Repair & Calibration

Benefit from our years of experience and modern, state-of-the-art facilities, where we can design, manufacture, service and test load monitoring equipment.

### Load Cell Calibration & Testing

LMS have multiple test beds in-house, that enable us to provide a quick and effective repair and calibration service.

Our technical experts can carry out inspections and repairs, upgrades and conversions, scheduled or project calibration and certification and bespoke reporting.

We can also provide stress analysis and measurement for client products whether in-service or in the laboratory.

Key facilities include:

- Vertical & horizontal
- 50 Te and 100Te test rigs
- Comprehensive data logging
- A dedicated strain gauge area
- Mechanical technicians
- Electrical technicians
- In-house electronics & machining

100Te Tensile Test Rig	
Description	100te vertical digital test rig
Safe Working Load (SWL)	100 metric tonne (TE)
Mode of Operation	tensile
Category	Class 1 test bed
Certification Standard	ISO 7500-1:2004 (E)
Accuracy	+/- 1%
Repeatability	+/- 0.2%
Resolution	User display: 1 kg res. Large display: 100kg res.
Logging Rate:	Up to 200 readings per second
Method of Measurement	Wheatstone bridge on double strain gauged column



We understand that sometimes calibrations or essential repairs become a priority issue and equipment needs to be back in service as quickly as possible.

**FAST-TRACK** repair and calibration provides a 24hr priority service designed to support customers when they need it most. Call or visit the website to find out more.







## Services

- Calibration
- Repair
- Inspection
- Non-destructive testing (including overload and proof-load)
- Certification
- New electronics for existing/OEM products
- Analogue and digital output module upgrades
- Bespoke test reports
- Call-out service for testing at site
- Load cell design development service
- Machining service for bespoke designs

## Servicing

We can service all types of load cell products not just our own.

- Load links
- Load shackles
- Load pins
- Compressive load cells
- Running line tensiometers
- Load washers
- Shear beam load cells
- Displays

## Certification & Compliance

Compliance with all major standards including those for LOLER, BSI, DNV, ASME, CE, EMC, FCC and Machinery Directive.



**CALIBRATION CERTIFICATE**

Bathassee Commercial Park  
Bloor  
A941 8BX  
Scotland (UK)

**LMS**  
Load Monitoring Systems

Equipment Details: Load Link  
Description: LMS-018  
Serial Number: 018  
Capacity / Range: 10T  
Units of measurement: Tn  
Force Applied: Tension

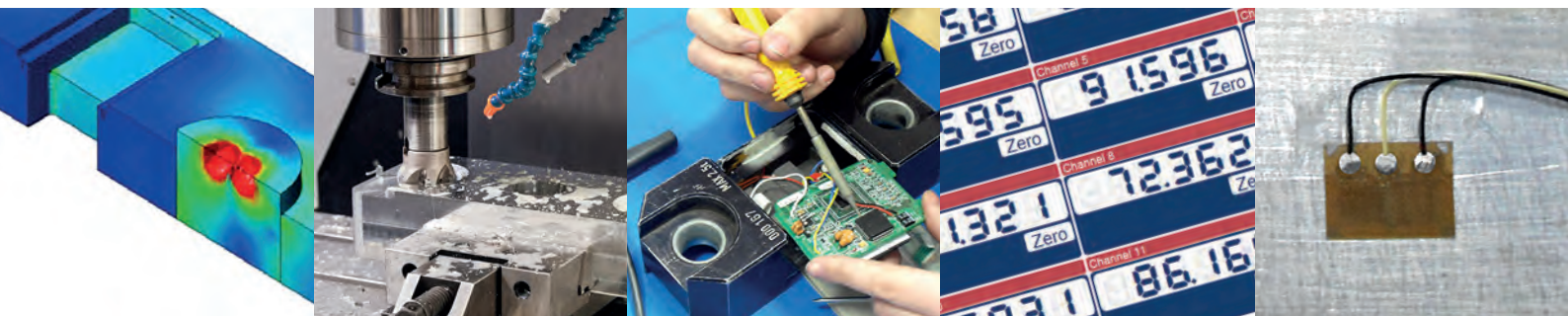
Certificate No: LMS-018/A  
ID: 18023  
Temperature: 18°C  
Customer: Unknown  
Job Ref: 77987

Calibration: The Accuracy of the device used for the Applied value is traceable to National Standards with BS EN ISO 17025-1:2004 via UKAS LAB 0176.  
Calibration and testing performed to BS 8822:2003, (Standard and Supplementary A Applied)  
Calibration Reference: 2026 Vertical Digital test Rig, UN (MTR-CLL, Cert A C838)

Calibration Performance:  $\pm 0.1\%$  of any given Applied reading

Applied	Reading 01		Reading 02		Reading 03		Max		Min	Avg	Reading	Max Error	Min Error
	Tn	%	Tn	%	Tn	%	Tn	%					
0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0
1.001	0.999	1.000	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	0.1	0.1
2.001	1.998	2.000	2.001	2.001	2.001	2.001	2.001	2.001	2.001	2.001	2.001	0.1	0.1
3.001	2.995	2.998	2.996	2.996	2.998	2.998	2.998	2.998	2.998	2.998	2.998	0.2	0.2
4.001	3.999	4.001	4.001	4.001	4.001	4.001	4.001	4.001	4.001	4.001	4.001	0.1	0.1
5.001	5.002	5.005	5.005	5.004	5.005	5.005	5.005	5.005	5.005	5.005	5.005	0.1	0.1

Name of Tester: S. Hinchick Signed: *S. Hinchick* Date: 10 Dec 2015





# Load Cell Display

Our advanced handheld display allows you to connect and monitor up to 12 wireless load monitoring devices.

These displays are matched to the LMS devices and feature a simple to use tactile keypad and easy to read multi-digit 9mm LCD display and a maximum wireless range of 600m+.



## Product Support



Load Shackle   Load Link   Compressive Load Cell   Load Pin

## Features

- Display for individual or summed load values
- Calibrated in tonne with kg resolution accuracy (alternative weighing units on request eg kg, kN, lb, Ton).
- Tare function
- Fully configured and calibrated for your application
- Sleep/wake acquisition modules
- Very low power consumption for long battery life
- Auto shut down feature available on request
- Power by 2 x AA internal batteries
- Worldwide licence exempt 2.4 GHz radio
- RS232 output available on request. Requires base station for wireless displays and dual cable on cabled displays.
- Operating Temperature -10°C to +50°C
- Relative humidity 95% non-condensing
- Environmentally sealed to IP65
- Carry case available

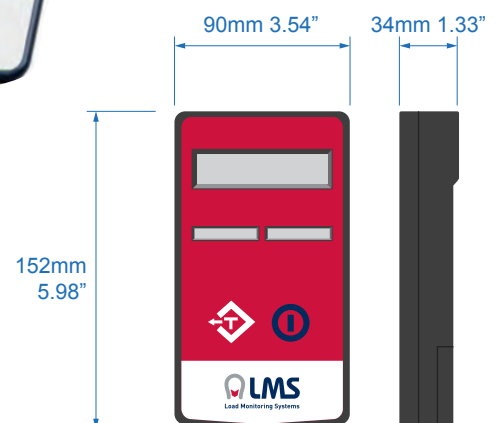


Cabled



Wireless

## Dimensions





## Additional Products

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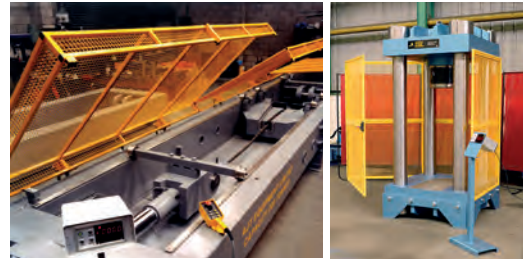
### Power Jacks

- Screw Jacks
- Bevel Gearboxes
- Linear Electric Actuators
- Lead Screws
- Jacking Systems



### AJT Equipment

- Vertical Testing Machines
- Horizontal Testing Machines
- Impact Testing Machines
- Stretch Testing Machines
- Grip Attachment
- Round Sling Machinery



### Britlift

- Weldless Modular Spreader
- Easy Hook Spreader
- Other Lifting and Spreading Beams



### Pride Equipment

- Pad Eye Testers



### Rayco Wylie Systems

- Wireless speed indicator
- Crane safety instrumentation.
- Safe load indicators.
- Anti-two block systems



### Quick-Check

- Tension meter





## Strength to get the job done.

For onshore, offshore, marine & harsh subsea environments.

**Sales**  
**Hire**  
**Repair & Calibration Service**  
**Custom Design Service**

**[www.loadsystems.co.uk](http://www.loadsystems.co.uk)**

Load Monitoring Systems  
c/o Power Jacks,  
Balmacassie Commercial Park,  
Ellon, Aberdeenshire AB41 8BX

[sales@loadsystems.co.uk](mailto:sales@loadsystems.co.uk)  
Office: +44 (0) 1358 285100

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Norway  
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Unanderra  
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Australia  
[www.statewidebearings.com.au](http://www.statewidebearings.com.au)  
Tel: +61 (02) 4272 2377



Development Member