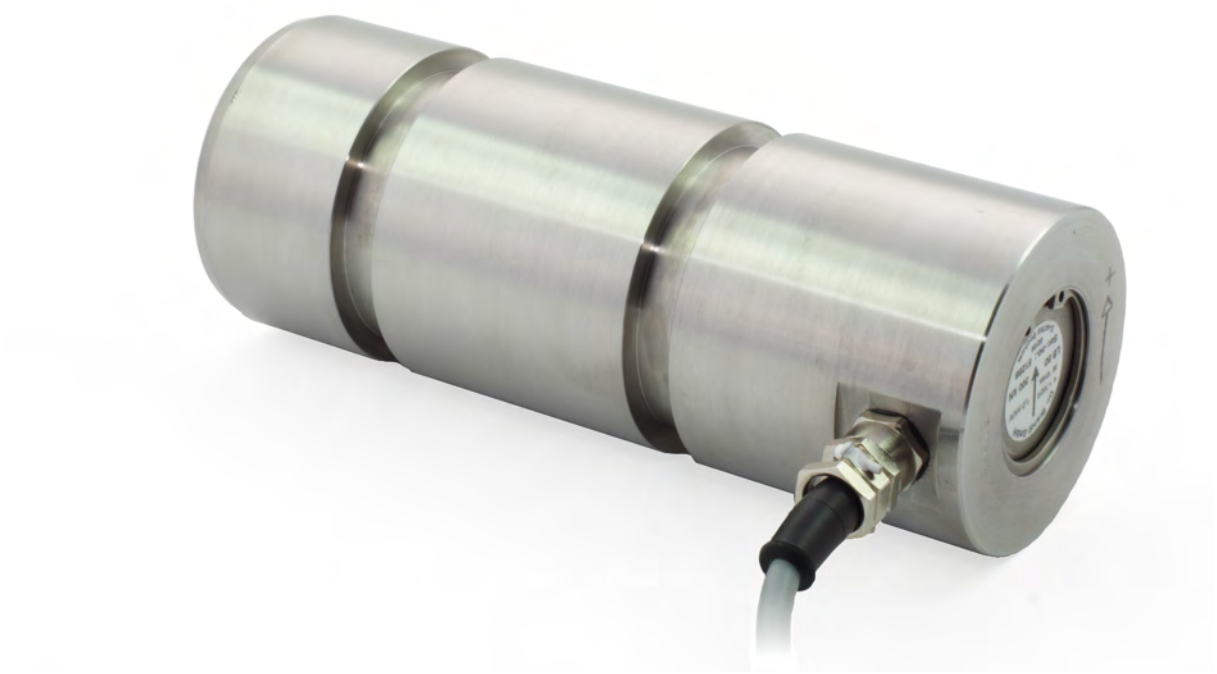
Load Bolts LB und LBB

0.5…100 t / 5…1000 kN



Purpose

Force measuring across the bolt axis in the direction marked by an arrow.
LBB measures in two axis.

Operating

Strain gauges measure bolt shearing.

Advantages

- Force measuring at machines without their moficated design
- Suitable for rough and wet environment
- Option: sea-waterproof material
- Each model can be delivered as "LBB"
- Bolts can be applied with external strain gauges instead of internal ones.

Application

Overload protection with our LMS-System (Data sheet E 38.0) for lifts, cranes, dredges, cars.

Weighing: Bunker-/Crane-scales, platforms.

LBB: Measuring load torque, band tension, rope tension combined with analogous or digital computers. Measuring resulting force and its direction.

Construction

One end of the load bolt is furnished with innner thread for traction screw; the other end contains the connecting area with a cover and a cable outlet.

Shearing areas between bearings are grooved. At least one outside end has a straight groove for an axis holder preventing turning and sliding.

At small and large diameters strain gauges are applied into centric holes. At medium diameters and long bearings we can prefer gauges in 2 or 4 radial pocket holes protected by covers.

Strain gauges are connected through a drilled axial channel to a full bridge, to adjusting elements and to measuring cable. Hollow areas are compounded.

Further load bolts:
This series of bolts is complemented by a prefered series LBE (data sheet E 06.6) and by bolts to be specified by customer, for nominal loads up to 5 MN or 500 t.

Dr. Brandt GmbH • Heinrich-Hertz-Straße 29 • 40699 Erkrath • T.+49-211-81 97 41-0
https://www.dr-brandt-gmbh.de info@dr.brandt-gmbh.de

Electrical data

Resistance,standard.....4 x 700 Ω nominal
" actual value.....see test certificate

Connection, standard.....2 m LiYCY 4 x 0.5
" with CAL-Resist.....2 m LiYCY 5 x 0.5
" at LBB with CAL.....2 m LiYCY 10 x 0,5
Exciting voltage.....20…30 V

Output (nom. load).....1 mV/V
Tolerance (+20°C).....1 %, Option 0.5%*
Combined error.....0.5 % typ.*)
ZERO signal (+20°C).....< 2 %
= Output signal at.....ZERO load
" Temp.-Drift/10K.....< 0.4 %, Opt. 0.1 %
Output " " .....< 0.3 %, Opt. 0.1 %

Nominal temp.-range.....- 10°C…+ 60°C
Tolerated range.....- 20°C…+ 80°C
" w. special cable.....- 50°C…+120°C

Mechanical data

Working Load.....2 x nom. load
Limit/Breaking load.....2.5 / >4x nom. load
For LBB:.....Resulting load
Standard-fit.....H 7 / g 6
Calibration.....t, Option N/kN

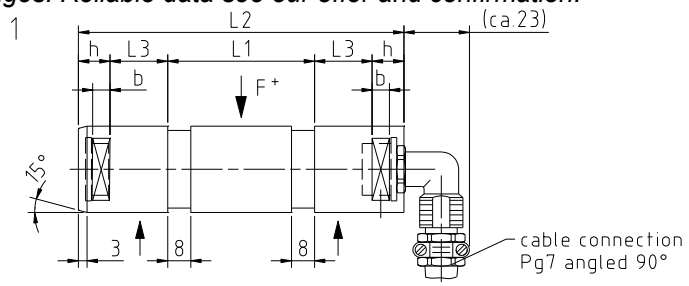
*) Data with * depend of grade of fit, section modulus and length of bearing. Good combinations can reach combined error < 0.2 %.

Table of dimensions (mm) and weights (kg)

LB [t]	Fig.	ø D	ø D1	$L1_{min}$	$L2_{min}$	L 3	L 4	b	g	h	h 1	G	Mat.	Weight
30/0,5	1	30	40	30	130	20	20	6	5,5	40		M12	Alu.	0,15
30/1	1	30	40	30	130	20	20	6	5,5	40		M12	Bronze	0,40
30/2	1	30	40	30	130	20	20	6	5,5	40		M12	Steel	0,40
40/5	2	40		40	152	30		6	6,5	12	40	M12	"	0,70
50/10	2	50		50	186	40		8	6,5	16	40	M12	"	3,30
60/15	2	60		60	196	40		8	9,0	16	40	M16	"	5,50
70/20	2	70		70	230	50		10	10,0	20	40	M16	"	8,50
80/30#	2	80		80	240	50		10	12,0	20	40	M24	"	12,50
100/60#	2	100		100	280	60		10	14,0	20	40	M24	"	19,00
120/100#	2	120		100	285	60		12	16,0	25	40	M24	"	26,00

Modifications preserved, especially at models with #. These and larger models may have internal strain gauges. Reliable data see our offer and confirmation.

figure 1



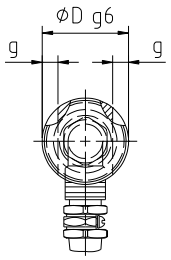
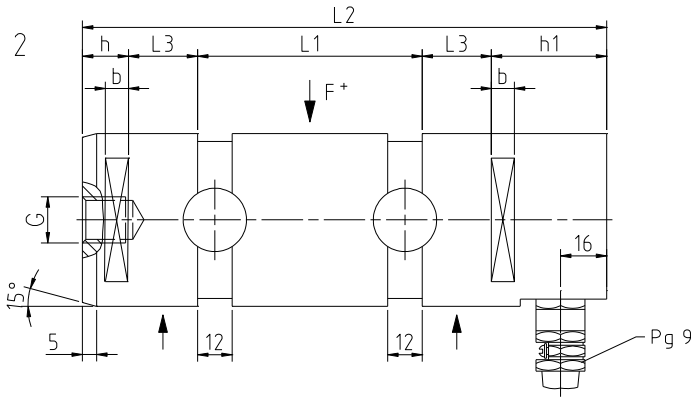
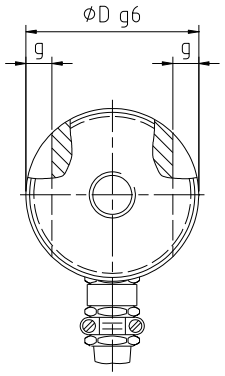


figure 2





06-5_LB version 08/02