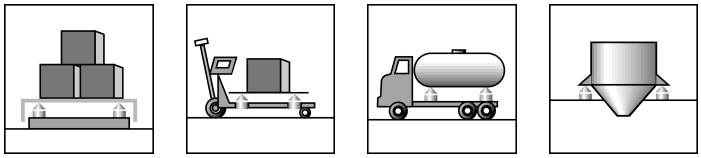
Data Sheet

HLC...

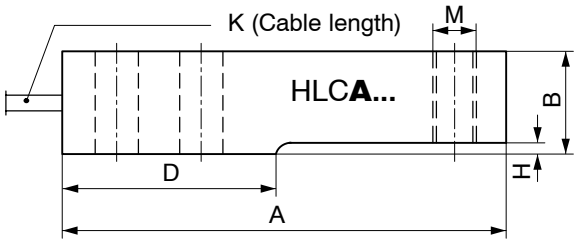
Load cells

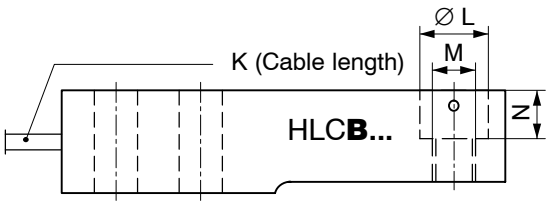
Special features

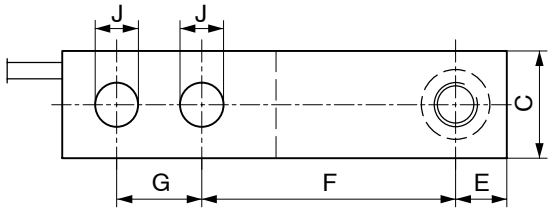
- **Hermetically sealed (IP68)**
- **Max. capacities: 220 kg ... 4.4 t**
- **Stainless steel**
- **Low overall height**
- **Meets EMC/ESD requirements according to EN 45 501**
- **Complies with OIML R60 regulations up to 3000d for scales acc. to EN 45 501**
- **Explosion–proof versions according to ATEX 95 optional**



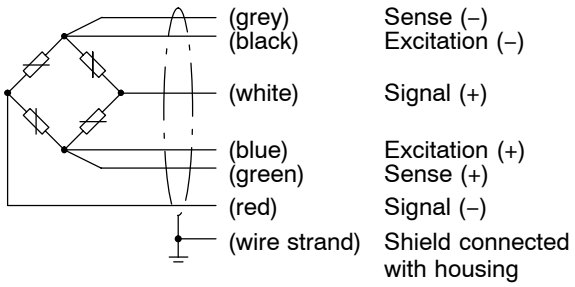
Dimensions (in mm; 1 mm = 0.03937 inches)







Wiring code (6-wire circuit)



Maximum capacity (E_{max})	A	B	C	D	E	F	G	H	J	K	∅ L	M	N
220 kg; 550 kg; 1.1 t; 1.76 t; 2 t	133.4	30.2	30.7	57.7	15.4	76.2	25.4	1.7	13	3 m	20.6	M12	14.2
2.2 t	171.5	36.5	36.8	76.2	19.1	95.3	38.1	2.5	20.5	6 m	30.2	M20	17.0
4.4 t	171.5	42.9	42.9	76.2	19.1	95.3	38.1	2.5	20.5	6 m	30.2	M20	20.1

Technical Data

Type (see type code below)		**HLC _(1) D1**							**HLC _(1) C3**						
Accuracy class according to OIML R 60		**D1**							**C3**						
Maximum number of load cell intervals (n_{LC})		1000							3000						
Maximum capacity (E_{max})		220 kg	550 kg	1.1 t	1.76 t	2 t	2.2 t	4.4 t	220 kg	550 kg	1.1 t	1.76 t	– –	2.2 t	4.4 t
Minimum LC verification interval (v_{min})	% of E_{max}	0.0285							0.0100 (220 kg; 1.76 t; 2.2 t; 4.4 t) 0.0090 (550 kg + 1.1 t)						
Sensitivity (C_n)	mV/V	1.94				2.00	1.94		1.94						
Sensitivity tolerance	%	± 0.5000							± 0.1000						
Temperature effect on zero balance (TK_0)	% of C_n / 10 K	± 0.0400							± 0.0140 (220 kg; 1.76 t; 2.2 t; 4.4 t) ± 0.0127 (550 kg + 1.1 t)						
Temperature effect on sensitivity (TK_C)[1)]		± 0.0500							± 0.0140						
Hysteresis error (d_{hy}) [1)]	% of C_n	± 0.0500							± 0.0170						
Non-linearity (d_{lin}) [1)]		± 0.0500							± 0.0170						
Creep (d_{cr}) over 30 min.		± 0.0500							± 0.0166						
Input resistance (R_{LC})	Ω	> 350													
Output resistance (R_0)		350 ± 2													
Reference excitation voltage (U_{ref})	V	5													
Nominal range of excitation voltage (B_U)		0.5 ... 15 (Ex–Versions max. 12 V !!!)													
Insulation resistance (R_{is})	GΩ	> 5													
Nominal temperature range (B_T)	°C [°F]	–10 ... +40 [+14 ... +104]													
Service temperature range (B_{tu})		–30 ... +70 [–22 ... +158]													
Storage temperature range (B_{tl})		–50 ... +85 [–58 ... +185]													
Safe load limit (E_L)	% of E_{max}	150													
Lateral load limit (E_{lq})		100													
Breaking load (E_d)		300													
Permissible dynamic load (F_{srel}) (vibration amplitude according to DIN 50100)		70													
Deflection at E_{max} (s_{nom}), approx.	mm	0.5													
Weight (G), approx.	kg	0.9					1.6	2.2	0.9					1.6	2.2
Protection class according to EN60529 (IEC529)		IP68													
Material: Measuring element **Cable fitting** **Cable-sheath**		Stainless steel Stainless steel / Gasket: Viton® PVC													

[1)] The data for Non-linearity (d_{lin}), Hysteresis error (d_{hy}) and Temperature effect on sensitivity (TK_C) are typical values. The sum of these data meets the requirements according to OIML R60.

Type code

1	2	3	4
HLC	**A1** **B1**	**D1** **C3**	**/ 220 kg; 550 kg; 1.1 t; 1.76 t**
HLC	**B1**	**D1**	**/ 2 t**
HLC	**A** **B**	**D1** **C3**	**/ 2.2 t; 4.4 t**

1 = Type (Load cell)

2 = Design (load introduction)
A / A1 = thread through
B / B1 = counterbore + thread

3 = Class
D1 = 1000d (OIML R 60)
C3 = 3000d (OIML R 60)

4 = Maximum capacity (E_{max})

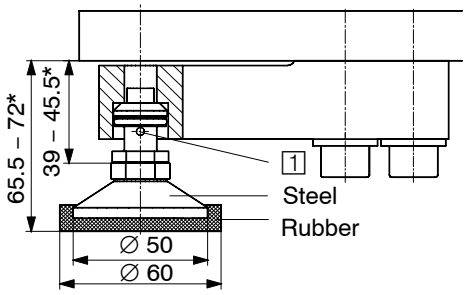
Type example:
HLC B1 C3 / 1.1 t = Load cell HLC with counterbore + thread, Class C3, Maximum capacity (E_{max}) 1.1 t

Options for HLC...:

- **Explosion-proof versions according to ATEX:** II 2 G EEx ia IIC T4 resp. T6 (Zone 1) **)
  II 3 G EEx nA II T6 (Zone 2)
  II 2 D IP68 T80 °C (Zone 21) **)
  II 3 D IP68 T80 °C (Zone 22 for non-conductive dust)
  **) with EC–Type Examination Certificate

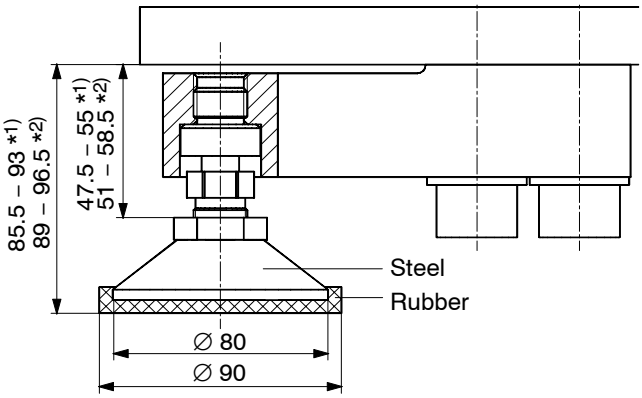
Mounting accessories (Dimensions in mm; 1 mm = 0.03937 inches)

HLCB/ZFP/1.76 T – Load introduction swivel foot (Stainless steel) for HLC**B** / 220 kg ... 2 t:



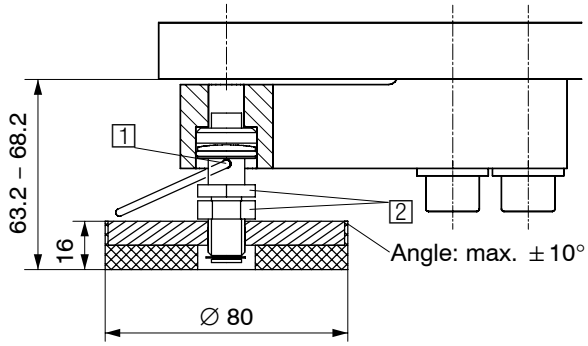
1 Foot fixed in the load cell with the enclosed spring shackle

HLCB/ZFP/4.4 T – Load introduction swivel foot (Stainless steel) for HLC**B** / 2.2 t + 4.4 t:



* = Hight adjustment ([1)] = Maximum capacity 2.2 t / [2)] = Maximum capacity 4.4 t)

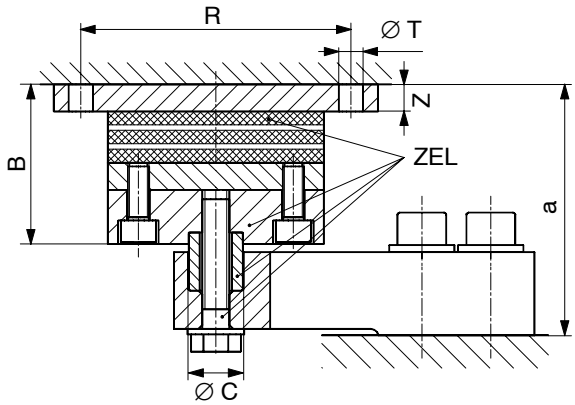
HLCB/ZAK/1.76T – Load introduction swivel foot (stainless steel) HLC**B** ≤ 2 t

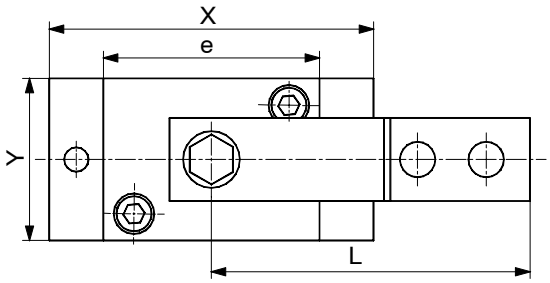


1 Foot fixed in the load cell with the enclosed spring shackle

2 Width across flats 19

HLCB/...T/ZEL – Elastomer bearing (galvanized material) for HLC**B**



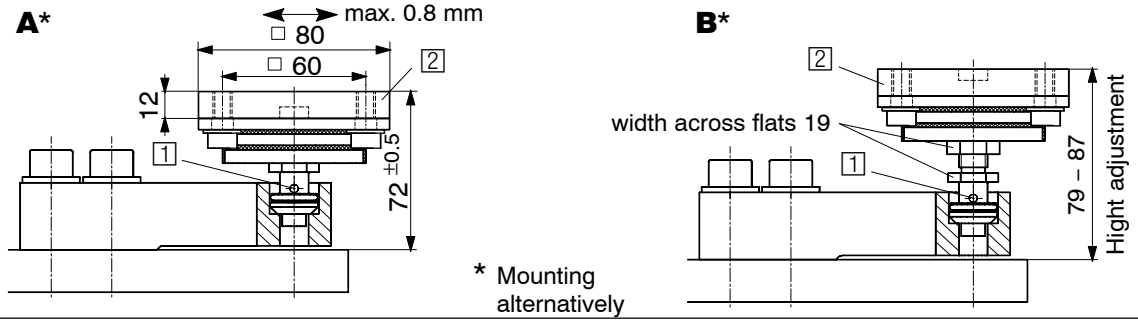


Maximum permissible lateral shift (when loaded with max. capacity): HLCB/1.76T/ZEL: 4 mm
HLCB/4.4T/ZEL: 7 mm

Type	Capacity	B	∅ $C_{-0.1}$	L	R	∅ T	X	Y	Z	a	e
HLCB/1.76T/ZEL	220 kg ... 2 t	58.8	20	118	100	9	120	60	10	92	80
HLCB/4.4T/ZEL	2.2 t	71.2	30	152.4	125	11	150	100	10	113	100
HLCB/4.4T/ZEL	4.4 t	71.2	30	152.4	125	11	150	100	10	116	100

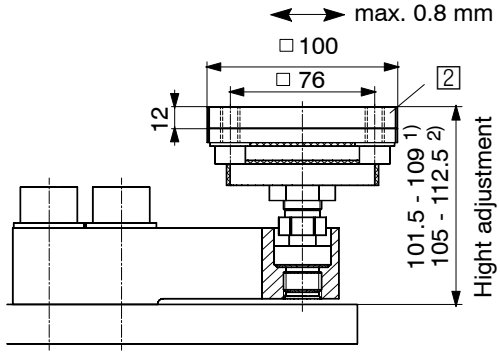
Mounting accessories (continued) (Dimensions in mm; 1 mm = 0.03937 inches)

HLCB/ZDP/1.76 T ***Easy top*** – Elastomer bearing for HLC**B** / 220 kg ... 2 t
(Load introduction: stainless steel, Ironing plate: galvanized material)



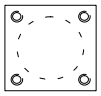
* Mounting alternatively

HLCB/ZDP/4.4 T ***Easy top*** – Elastomer bearing for HLC**B** / 2.2 t + 4.4 t
(Load introduction: stainless steel, Ironing plate: galvanized material)



1 ***Easy top*** fixed in the load cell with the enclosed spring shackle

2 Welding plate (schematically top view)



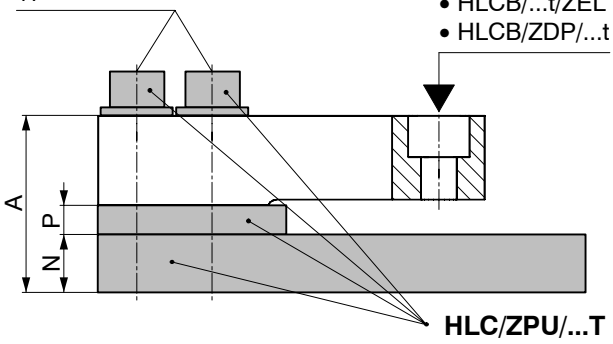
ZPU/1.76T: 4x M8
ZPU/2.2T + 4.4T: 4x M10

1) = Maximum capacity 2.2 t
2) = Maximum capacity 4.4 t

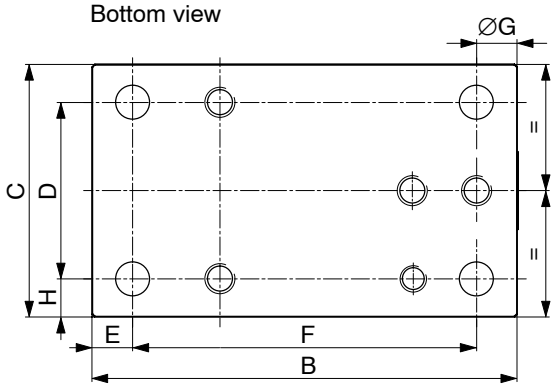
HLC/ZPU/...T – Base plate / Mounting kit (galvanized material) for HLC**B**

Wrench torque for screws M_A: see table

Load introduction via:
- HLCB/...t/ZEL
- HLCB/ZDP/...t



Bottom view



Type	Capacity	Breaking load	A	B	C	D	E	F	G	N	P	M_A
HLC/ZPU/1.76T	220 kg ... 2 t	3.52 t	60.5	168	100	70	16	136	13.5	20	10	130 N·m
HLC/ZPU/2.2T	2.2 t	4.4 t	81.5	212	120	84	18	175	14	25	20	400 N·m
HLC/ZPU/4.4T	4.4 t	8.8 t	88	212	120	84	18	175	14	25	20	400 N·m

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