



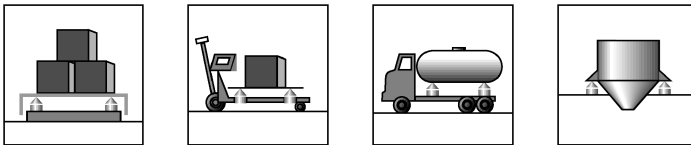
# HLC...

## Load cells

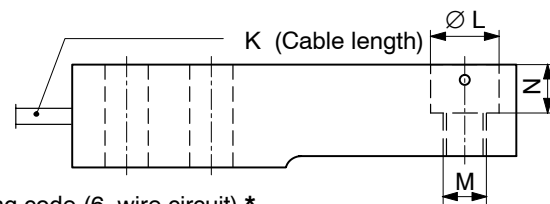
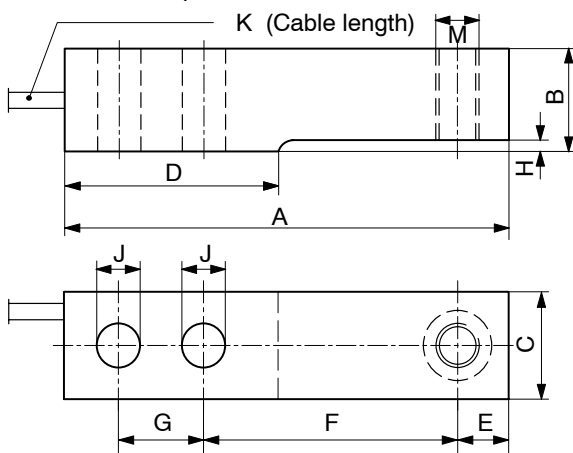
### Special features



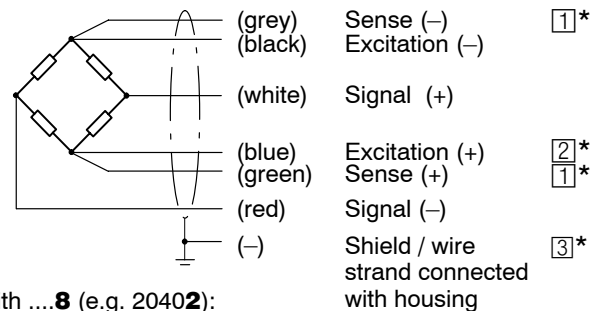
- Hermetically sealed (IP68)
- Max. capacities: 220 kg ... 4.4 t
- Stainless steel
- Low overall height
- Meets EMC/ESD requirements according to EN 45 501
- Complies with OIML R60 regulations up to 3000d for scales acc. to EN 45 501
- Explosion-proof versions accord. to ATEX 95 (for HLC\_C3) optional



### Dimensions (in mm; 1 mm = 0.03937 inches)



Wiring code (6-wire circuit) \*  
(HLC... / 2.2 t + 4.4 t as from Model No. ...**8**, e.g. 2040**8**)



\* Refers only for HLC... / 2.2 t and 4.4 t:

Wiring code (4-wire circuit) at Model No., which do **not** end with ...**8** (e.g. 2040**2**):

1 Sense not existing    2 Excitation (+) = green    3 Shield = yellow

Maximum capacity	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 <sub>LC</sub> )		1000						3000							
Maximum capacity (E <sub>max</sub> )		220kg	550kg	1.1t	1.76t	2t	2.2t	4.4t	220kg	550kg	1.1t	1.76t	—	2.2t	4.4t
Minimum LC verification interval (v <sub>min</sub> )	% of E <sub>max</sub>	0.0285						0.0100 (220 kg; 1.76 t; 2.2 t; 4.4 t) 0.0090 (550 kg + 1.1 t)							
Sensitivity (C <sub>n</sub> )	mV/V	1.94			2.00	1.94			1.94						
Sensitivity tolerance	%	±0.5000						±0.1000							
Temperature effect on zero balance (TK <sub>0</sub> )	% of C <sub>n</sub>	±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 <sub>C</sub> ) <sup>1)</sup>	/ 10 K	±0.0500						±0.0140							
Hysteresis error (d <sub>hy</sub> ) <sup>1)</sup>		±0.0500						±0.0170							
Non-linearity (d <sub>lin</sub> ) <sup>1)</sup>	% of C <sub>n</sub>	±0.0500						±0.0170							
Creep (d <sub>cr</sub> ) over 30 min.		±0.0500						±0.0166							
Input resistance (R <sub>LC</sub> )		> 350													
Output resistance (R <sub>0</sub> )	Ω	350 ± 2													
Reference excitation voltage (U <sub>ref</sub> )		5													
Nominal range of excitation voltage (B <sub>U</sub> )	V	0.5 ... 15 ( Ex-Versions max. 12 V !!! )													
Insulation resistance (R <sub>is</sub> )	GΩ	> 5													
Nominal temperature range (B <sub>T</sub> )		-10 ... +40 [+14 ... +104]													
Service temperature range (B <sub>tu</sub> )	°C [°F]	-30 ... +70 [-22 ... +158]													
Storage temperature range (B <sub>tl</sub> )		-50 ... +85 [-58 ... +185]													
Safe load limit (E <sub>L</sub> )		150													
Lateral load limit (E <sub>lq</sub> )		100													
Breaking load (E <sub>d</sub> )		300													
Permissible dynamic load (F <sub>srel</sub> ) (vibration amplitude according to DIN 50100)	% of E <sub>max</sub>	70													
Deflection at E <sub>max</sub> (s <sub>nom</sub> ), 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 <sup>2)</sup> Cable-sheath <sup>2)</sup>		Stainless steel Stainless steel / Sealing: Neoprene <sup>2)</sup> PVC <sup>2)</sup>													

<sup>1)</sup> The data for Non-linearity (d<sub>lin</sub>), Hysteresis error (d<sub>hy</sub>) and Temperature effect on sensitivity (TK<sub>C</sub>) are typical values. The sum of these data meets the requirements according to OIML R60.

<sup>2)</sup> HLC... / 2.2t and 4.4t with Model No., which do not end with ...**8** (e.g. 20402):

- 4-wire connection cable with colour-code green / black / white / red
- Sealing: perbunan; Cable-sheath: polyurethane.

### Type code

1	2	3	4	1 = Type (Load cell)
HLC	A1 B1	D1 C3	/ 220 kg; 550 kg; 1.1 t; 1.76 t	2 = Design (load introduction) A / A1 = thread through B / B1 = counterbore + thread
HLC	B1	D1	/ 2 t	3 = Class D1 = 1000d (OIML R 60) C3 = 3000d (OIML R 60)
HLC	A B	D1 C3	/ 2.2 t; 4.4 t	4 = Maximum capacity (E <sub>max</sub> )
<b>Type example:</b>				
HLC B1 C3 / 1.1 t = Load cell HLC with counterbore + thread, Class C3, Maximum capacity (E <sub>max</sub> ) 1.1 t				

### Options for HLCB\_C3:

#### Explosion-proof versions according to ATEX 95 (for HLCB\_C3):

- II 2 G EEx ia IIC T4 resp. T6 (Zone 1)
- II 3 G EEx nA II T6 (Zone 2)
- II 3 D IP68 (Zone 22 for non-conductive dust)

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

**HLCB/ZFP/1.76 t** – Load introduction swivel foot (Stainless steel) for HLCB / 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 HLCB / 2.2 t + 4.4 t:

\* = Height adjustment (1) = Maximum capacity 2.2 t / (2) = Maximum capacity 4.4 t

**HLCB/ZKP/1.76 t** – Load introduction swivel foot (Stainless steel) for HLCB / 220 kg ... 2 t

1 Foot fixed in the load cell with the enclosed spring shackle  
2 width across flats 17  
Angle: max. ±10°

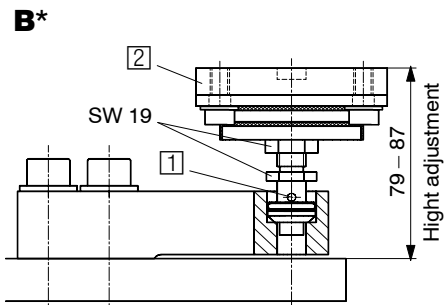
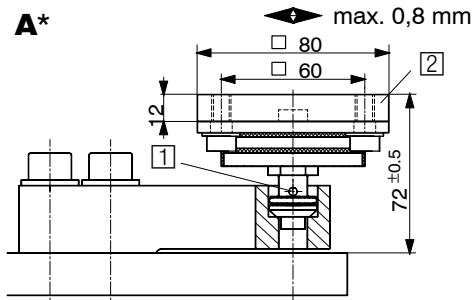
**HLCB/...t/ZEL** – Elastomer bearing (galvanized material) for HLCB

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 <sub>0,1</sub>	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

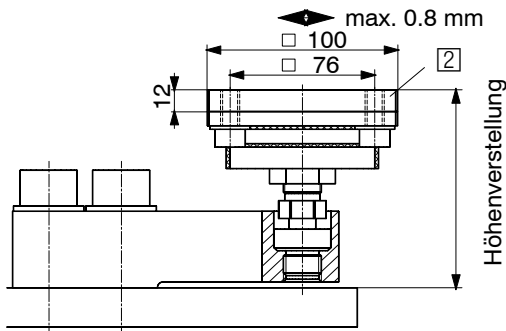
**Mounting accessories (continued)** (Dimensions in mm; 1 mm = 0.03937 inches)

**HLCB/ZDP/1,76 t *Easy top*** – Elastomer bearing for HLCB / 2.2 t + 4.4 t  
 (Load introduction: stainless steel, Ironing plate: galvanized material)



\* Mounting alternatively

**HLCB/ZDP/4,4 t *Easy top*** – Elastomer bearing for HLCB / 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/1.76 t: 4x M8  
 ZPU/2.2 t+4.4 t: 4x M10



1) = Maximum capacity 2,2 t

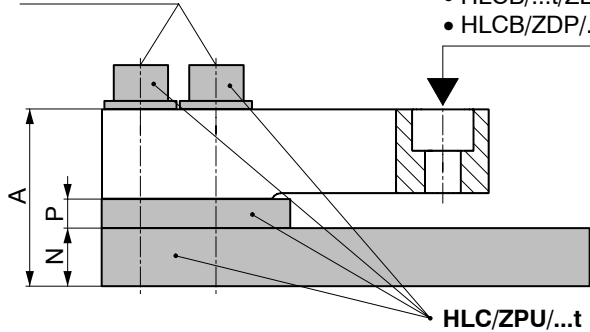
2) = Maximum capacity 4,4 t

**HLC/ZPU/...t** – Base plate / Mounting kit (galvanized material) for HLCB

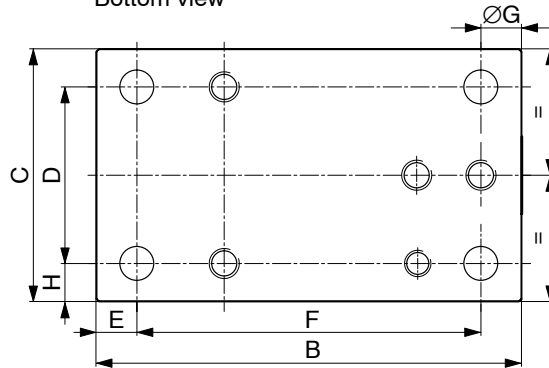
Wrench torque for screws  $M_A$ : see table

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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**Hottinger Baldwin Messtechnik GmbH**

Im Tiefen See 45, D-64293 Darmstadt, Germany  
 Tel.: +49 6151 8030; Fax: +49 6151 803 9100  
 E-mail: support@hbm.com www.hbm.com



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