

HLC A1 ... HLC B1 ... HLC F1 ...

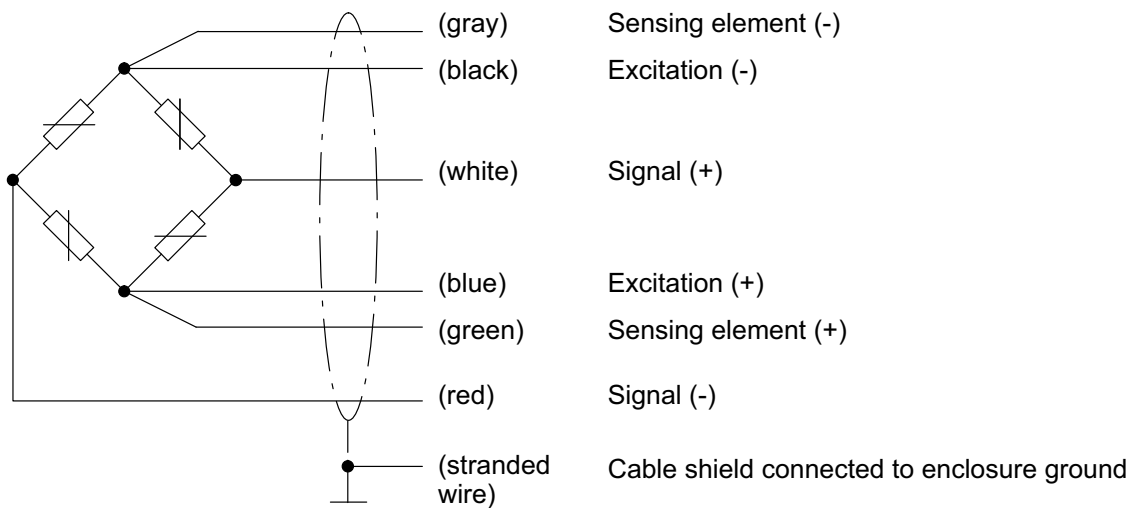
Load cells

Special features

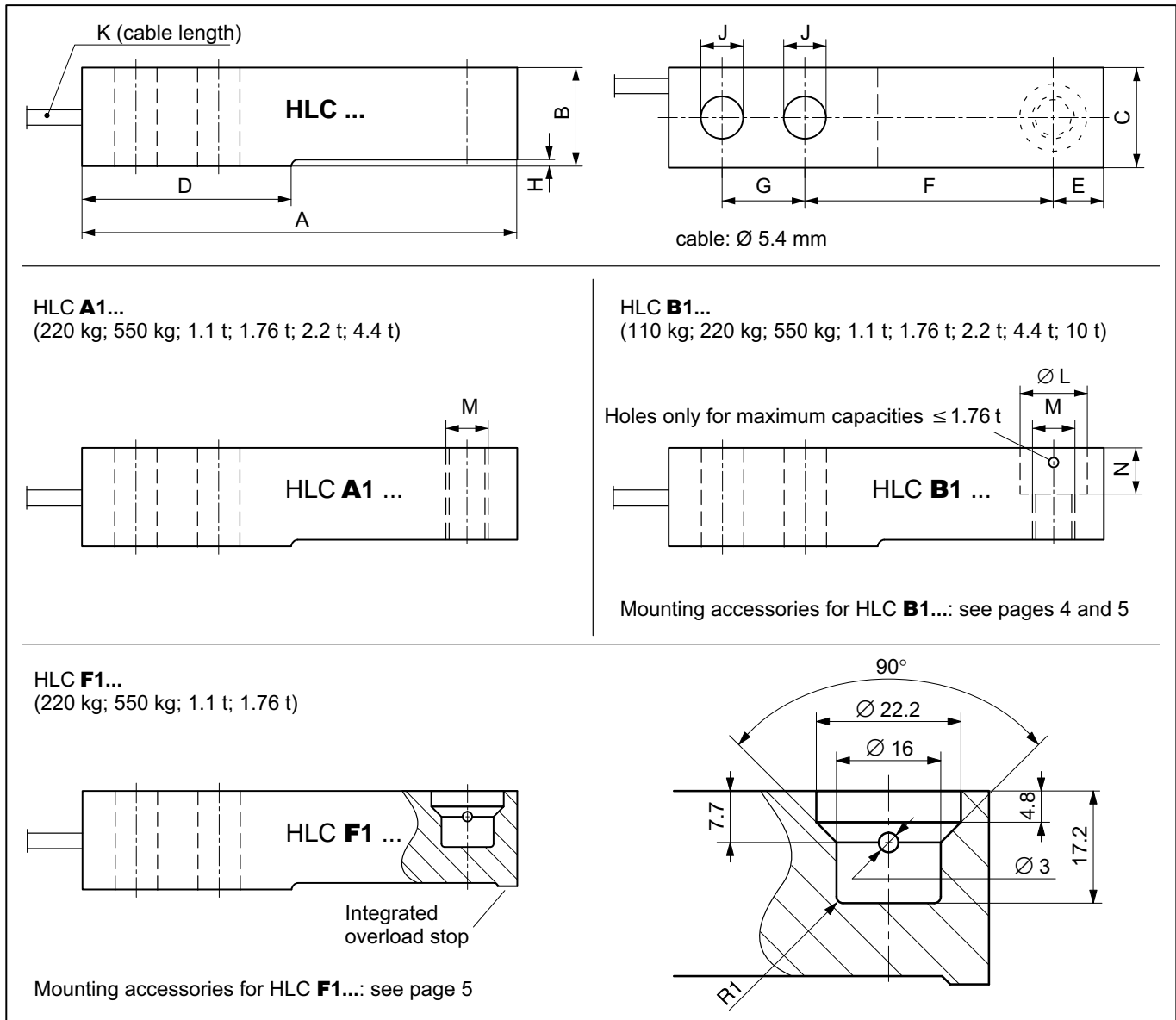
- Hermetically encapsulated (IP68)
- Maximum capacities: 110 kg ... 10 t
- Rust-resistant materials
- Low height of construction
- Meets EMC requirements as per EN 45501:2015
- Legal for trade per OIML R60 to 6000 divisions
- Explosion-proof versions per ATEX, IECEx, FM (US) and EAC



Cable assignment (six-wire configuration)



Dimensions (in mm; 1 mm = 0.03937 inches)






Maximum capacity	A	B	C	D	E	F	G	H	J	K	ØL	M	N
110 kg; 220 kg; 550 kg; 1.1 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
1.76 t	133.4	30.2	30.7	51.7	15.4	76.2	25.4	1.7	13	3 m	20.6	M12	14.2
2.2 t ¹⁾	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 ¹⁾	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
10 t ²⁾	245.1	72.9	60	119.9	30.2	134.9	50 ± 0.05	11.2	27	6 m	51 ± 0.2	Ø32	20

1) Maximum capacities 2.2 t and 4.4 t only for HLC **A1** ... + HLC **B1** ...
 2) Maximum capacity 10 t only for HLC **B1 D1** ...

Mounting accessories (to be ordered separately)

According to the mounting conditions, HBM presents different, tested load applications for load cell types HLC **B1** ... and HLC **F1** ... (see pages 4 and 5), to minimize the effects of load application errors.

Specifications

Type HLC A1 ... Maximum capacity (E_{max})  (Load application = tapped through hole)	HLC A1 D1 / ... + HLC A1 C3 / ... 220 kg; 550 kg; 1.1 t; 1.76 t; 2.2 t; 4.4 t				
Type HLC B1 ... Maximum capacity (E_{max})  (Load application = sinking + tapped hole) ³⁾	HLC B1 D1 / ... 110 kg; 220 kg; 550 kg; 1.1 t; 1.76 t; 2.2 t; 4.4 t; 10 t HLC B1 C3 / ... 110 kg; 220 kg; 550 kg; 1.1 t; 1.76 t; 2.2 t; 4.4 t HLC B1 C3ET/ 220 kg; 550 kg; 1,1 t HLC B1 C4 / ... + HLC B1 C6 / ... 220 kg; 550 kg; 1.1 t				
Type HLC F1 ... Maximum capacity (E_{max})  (Load application = blind hole + integrated overload stop)	HLC F1 D1 / ... + HLC F1 C3 / ... 220 kg; 550 kg; 1.1 t; 1.76 t				
Accuracy class per OIML R60 Number of load cell verification intervals (n_{LC})	D1	C3	C4 ⁵⁾	C6 ⁵⁾	
	1000	3000	4000	6000	
Minimum load cell verification interval (v_{min})	% of E_{max}	0.0285			
Y value		3500			
Nominal (rated) sensitivity (C_N)	mV/V	1.94 (10 t = 2.00 mV/V)			
Sensitivity tolerance	%	±0.5			
Temperature coefficient of zero signal (TC_0)	% of C_N / 10 K	±0.0140 (220 kg; 1.76 t; 2.2 t; 4.4 t) ±0.0126 (110 kg; 550 kg + 1.1 t)			
Temperature coefficient of sensitivity (TC_S) ⁴⁾		±0.0420	±0.0140	±0.0105	±0.0070
Relative reversibility error (d_{hy}) ⁴⁾	% of C_N	±0.0500	±0.0166	±0.0125	±0.0083
Non linearity (d_{lin}) ⁴⁾		±0.0500	±0.0170	±0.0166	
Creep upon loading (d_{cr}) over 30 min.		±0.0500	±0.0166	±0.0166	±0.0122
Minimum dead load output return (MDLOR)		±0.0500	±0.0166	±0.0125	±0.0083
Input resistance (R_{LC})	Ω	350 ... 480			
Output resistance (R_0)		350 ±2	350 ±0.12		
Reference voltage (U_{ref})	V	5			
Nominal (rated) supply voltage range (B_U)		0.5 ... 15 (Ex versions max. 12 V !!!)	5 ... 10		
Insulation resistance (R_{is})	GΩ	>5			
Nominal (rated) ambient temperature range (B_T)	°C	-10 ... +40	-10 ... +40		
Operating temperature range (B_{tu})		-30 ... +70			
Storage temperature range (B_{tl})		-50 ... +85			
Limit load (E_L)	% of E_{max}	150			
Limit lateral loading (E_{lq})		100			
Breaking load (E_d)		300			
Relative perm. vibrational stress (F_{srel}) (oscillation width per DIN 50100)		70			
Nominal (rated) displacement at E_{max} (s_{nom}), approx.	mm	0.5 (1.76 t = 1.4 mm)			
Weight (G), approx.	kg	0.9 (110 kg ... 1.76 t); 1.6 (2.2 t); 2.2 (4.4 t); 6.2 (10 t)			
Degree of protection per EN 60 529 (IEC 529)		IP68			
Material Measuring body Cable entry Cable sheath		stainless steel ⁶⁾ stainless steel ⁶⁾ / seal: Viton [®] PVC			

³⁾ Maximum capacity 10 t: Load application = sinking + tapped hole

⁴⁾ The values for non-linearity (d_{lin}), relative reversibility error (d_{hy}) and temperature coefficient of sensitivity (TC_S) are recommended values. The sum of these values is within the cumulated error limit laid down by OIML R60.

⁵⁾ Accuracy classes **C4** and **C6** only for **HLC B1 ... / 220 kg; 550 kg; 1.1 t**

⁶⁾ As per EN 10088-1

Mounting accessories (to be ordered separately)

According to the mounting conditions, HBM presents different, tested load applications for load cell types HLC **B1** ... and HLC **F1** ... (see pages 4 and 5), to minimize the effects of load application errors.

Accessories for HLC **B** ...

(to be ordered separately; Dimensions (in mm; 1 mm = 0.03937 inches))

HLCB/PCX/1.76 t - Oscillating loading foot (stainless steel) for HLC **B** / 110 kg ... 1.76 t, suitable up to accuracy class C6:

59.5 ... 65.5*
54.5 ... 60.5*
2.3
13 a/f
17 a/f
Steel
10
Ø50
Ø60
Rubber plate, can be removed

HLCB/ZFP/1.76 T - Oscillating loading foot (stainless steel) for HLC **B** / 110 kg ... 1.76 t:

65.5 - 72*
39 - 45.5*
1
Steel
Rubber
Ø50
Ø60
1 Loading foot secured in load cell with accompanying bracket

* Height adjustment

HLCB/ZFP/4.4 T - Oscillating loading foot (stainless steel) for HLC **B** / 2.2 t + 4.4 t:

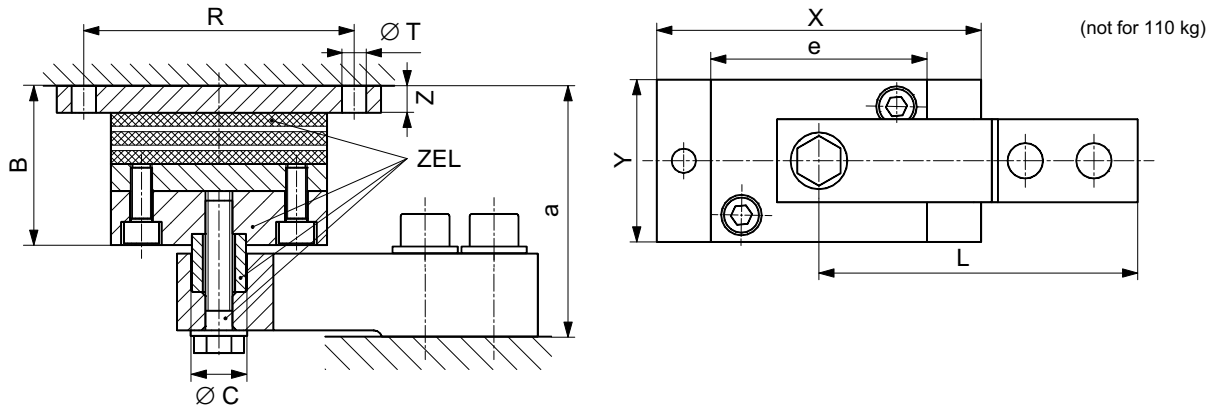
85.5 - 93 *1)
89 - 96.5 *2)
47.5 - 55 *1)
51 - 58.5 *2)
Steel
Rubber
Ø80
Ø90

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

HLCB/ZAK/1.76T - Oscillating loading foot, height-adjustable (stainless steel) for HLC **B** ≤ 1.76 t:

63.2 - 68.2
1
16
Ø80
2
1 Loading foot secured in load cell with accompanying bracket
2 19 across flats

HLCB/...T/ZEL - Rubber-metal bearing (galvanized; HLCB/1.76T/ZELR made from rust-resistant material) for HLC B



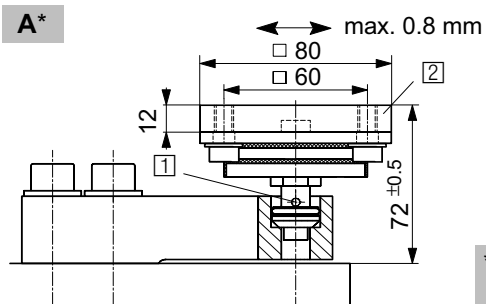
Maximum permissible lateral displacement (when loaded at maximum capacity):
 HLCB/1.76T/ZEL: 4.5 mm
 HLCB/4.4T/ZEL: 8 mm
 HLCB/10T/ZEL: 9.5 mm

Type	Maximum capacity	B	ØC _{-0.1}	L	R	ØT	X	Y	Z	a	e
HLCB/1.76T/ZEL HLCB/1.76T/ZELR	220 kg ... 1.76 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
HLCB/10T/ZEL	10 t	85	50.8	214.9	175	13	200	100	12	167	150

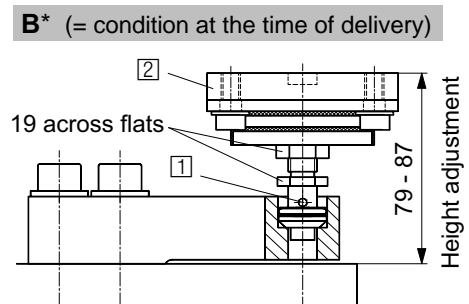
Accessories for HLC B ... + HLC F ...

(to be ordered separately; Dimensions (in mm; 1 mm = 0.03937 inches))

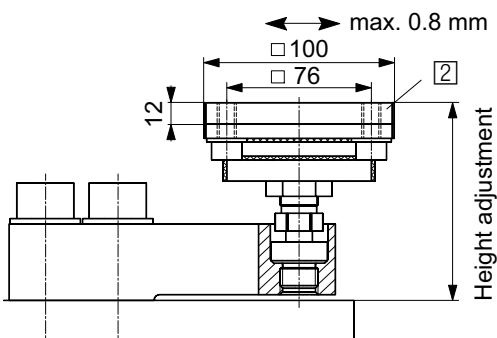
HLCB/ZDP/1.76 T Easy top - Rubber-metal bearing for HLC B / 220 kg ... 1.76 t
 (Load application: stainless steel, welding plate: galvanized)



* Mounting optional



HLCB/ZDP/4.4 T Easy top - Rubber-metal bearing for HLC B / 2.2 t + 4.4 t
 (Load application: stainless steel, welding plate: galvanized)



1) **Easy top** secured in load cell with accompanying bracket

2) Welding plate (schematic top view)
 ZPU/1.76T: 4x M8
 ZPU/2.2T + 4.4T: 4x M10



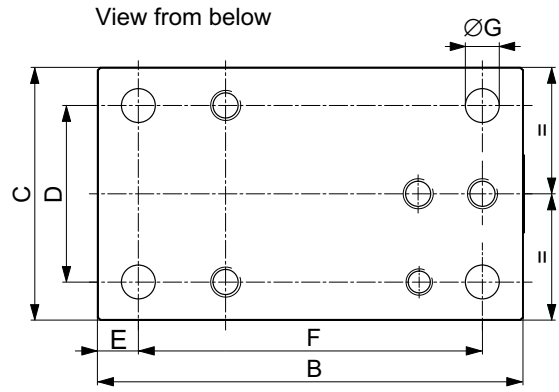
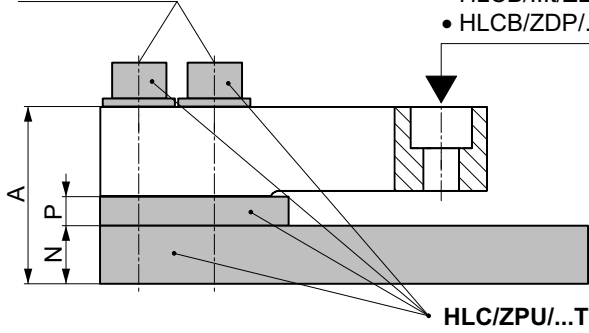
1) = maximum capacity 2.2 t
 2) = maximum capacity 4.4 t

HLC/ZPU/...T - Mounting base / mounting kit (galvanized) for HLC B

Tightening torque M_A :
see table

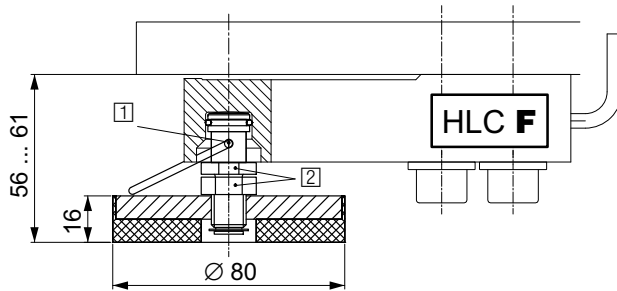
Load application via:

- HLCB/...t/ZEL
- HLCB/ZDP/...t



Type	Max. capacity	Breaking load	A	B	C	D	E	F	G	N	P	M_A
HLC/ZPU/1.76 T	110 kg ... 1.76 t	3.52 t	60.5	168	100	70	16	136	13.5	20	10	130 N·m
HLC/ZPU/2.2 T	2.2 t	4.4 t	81.5	212	120	84	18	175	14	25	20	400 N·m
HLC/ZPU/4.4 T	4.4 t	8.8 t	88	212	120	84	18	175	14	25	20	400 N·m

HLCF/ZKP/1.76T - Oscillating loading foot, height adjustable; (stainless steel) for HLC F ≤ 1.76 t



- 1 Loading foot secured in load cell with accompanying bracket
- 2 19 across flats

Options

Ex protection versions per IECEx, ATEX and FM (USA)

AI1/21 IECEx+ATEX zone 1/21 + FM intrinsically safe, II 2G Ex ia IIC T6/T4 Gb, II 2D Ex ia IIIC T125°C Db*
AI2/21** IECEx+ATEX zone 2/21 not intrinsically safe, II 3G Ex ec IIC T6/T4 Gc, II 2D Ex tb IIIC T125°C Db*

* With EU type examination certificate (BVS13ATEX E 108 X) and IECEx Certificate of Conformity (IECEx BVS 13.0109 X)

** Option AI2/21 IEC + ATEX zone 2/21 includes zone 2/22

Ex protection versions per EAC (Eurasian economic union with the member states: Russia, Belarus, Armenia, Kazakhstan, Kyrgyzstan)

R1/21 EAC zone 1/21 TR ZU 012/2011 Ex certificate, 1 Ex ia IIC T6/T4 Gb X / Ex ia IIIC T125°C Db X***
R2/21 EAC zone 2/21 TR ZU 012/2011 Ex certificate, 2 Ex nA IIC T6/T4 Gc X / Ex tb IIIC T125°C Db X***

*** With certificate "СЕРТИФИКАТ СООТВЕТСТВИЯ № ТС RU C-DE.ГБ08.В.01138"

Subject to modifications.
All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

Hottinger Baldwin Messtechnik GmbH
Im Tiefen See 45 · 64293 Darmstadt · Germany
Tel. +49 6151 803-0 · Fax +49 6151 803-9100
Email: info@hbm.com · www.hbm.com

measure and predict with confidence

