

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

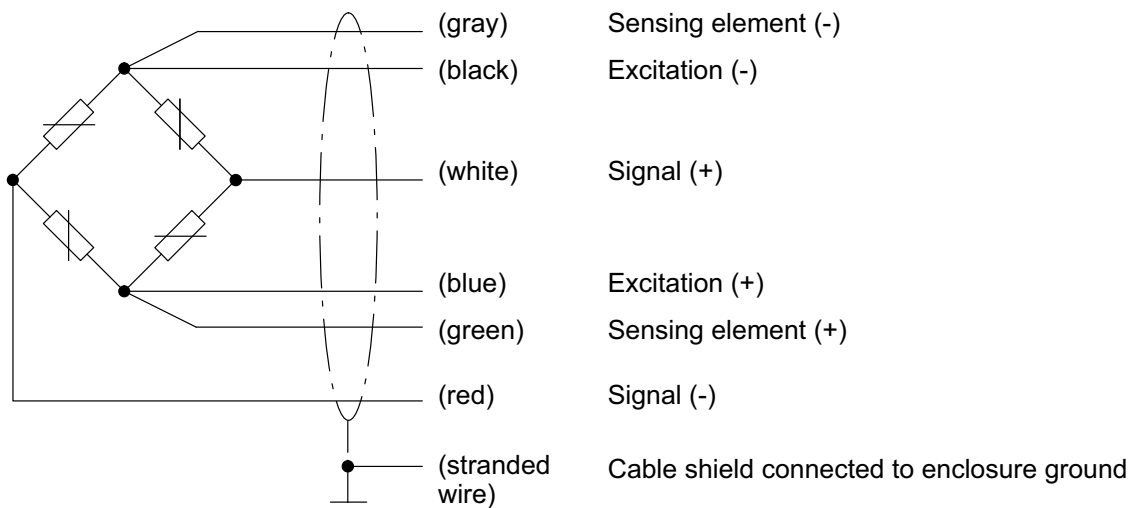
Load cells

Special features

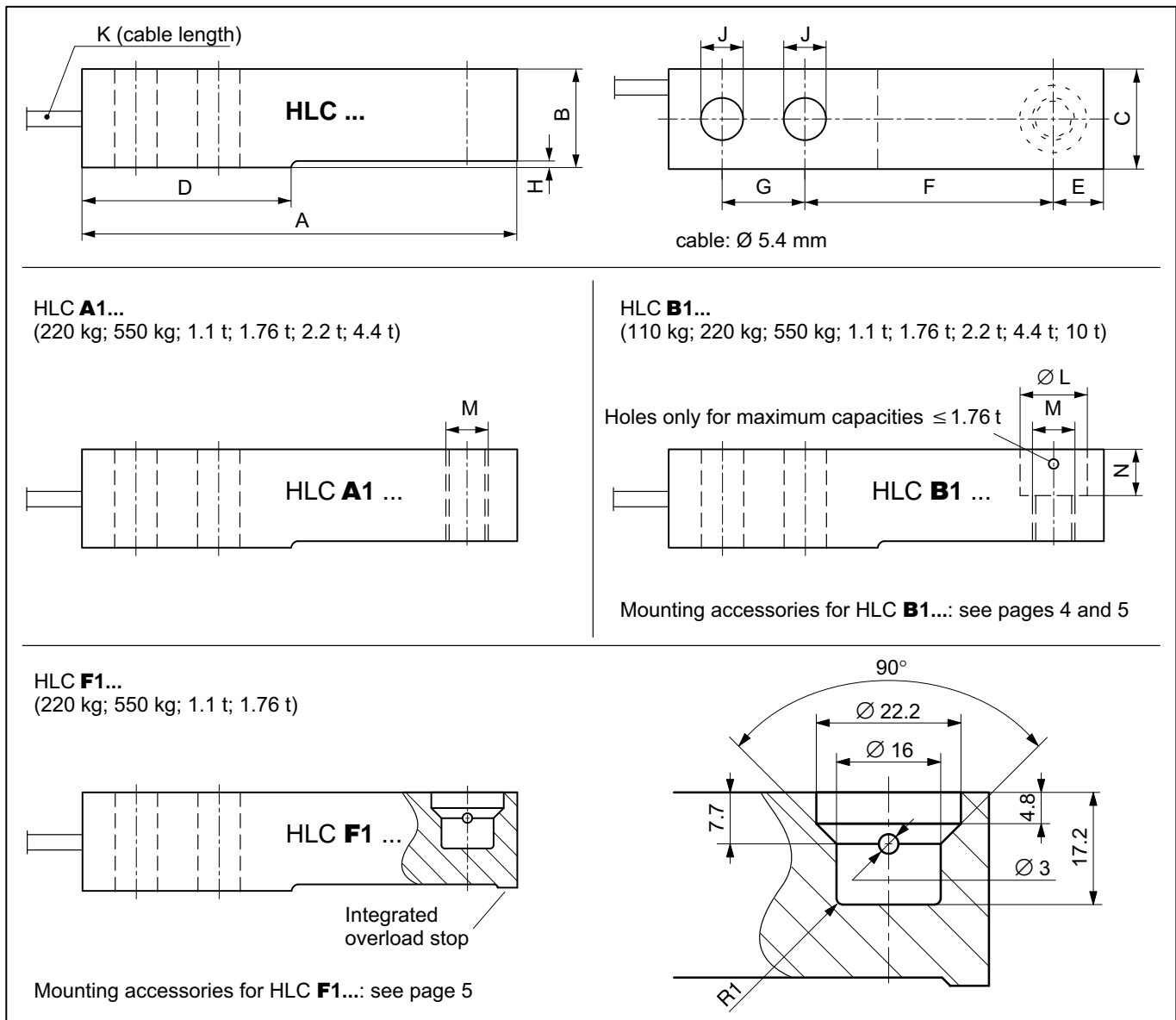
- Hermetically encapsulated (IP68)
- Maximum capacities: 110 kg ... 10 t
- Rust-resistant materials
- Low height of construction
- Meets EMC requirements as per EN 45501:2015
- Legal for trade per OIML R60 to 6000 divisions
- Explosion-proof versions per ATEX and IECEx, FM and EAEU



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	Ø L	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	Ø 32	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 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			
		0.0100 (220 kg; 1.76 t; 2.2 t; 4.4 t) 0.0090 (110 kg, 550 kg + 1.1 t)			
Nominal (rated) sensitivity (C_N)	mV/V	1.94 (10 t = 2.00 mV/V)			
Sensitivity tolerance	%	± 0.5	± 0.1		
Temperature coefficient of zero signal (TC_0)	% of C_N	± 0.0400	± 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⁾	/ 10 K	± 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			
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			

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

2) 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.

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

4) 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:

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

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:

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

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

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

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

(not for 110 kg)

Maximum permissible lateral displacement (when loaded at maximum capacity):

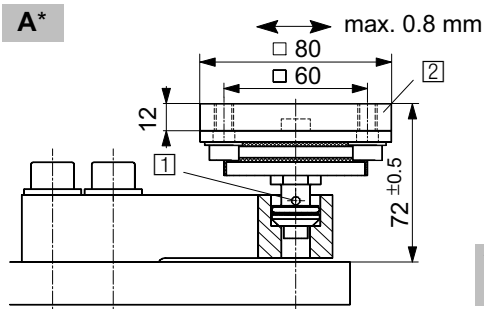
- HLCB/1.76T/ZEL: 4.5 mm
- HLCB/4.4T/ZEL: 8 mm
- HLCB/10T/ZEL: 9.5 mm

Type	Maximum capacity	B	Ø C _{0.1}	L	R	Ø T	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

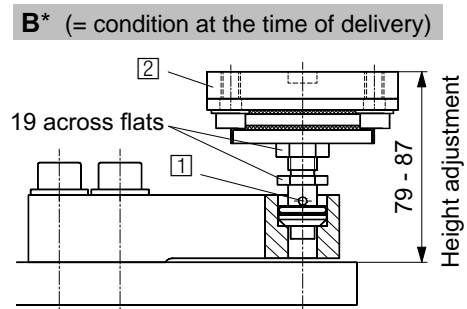
Accessories for HLC B ... + HLC F ...

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

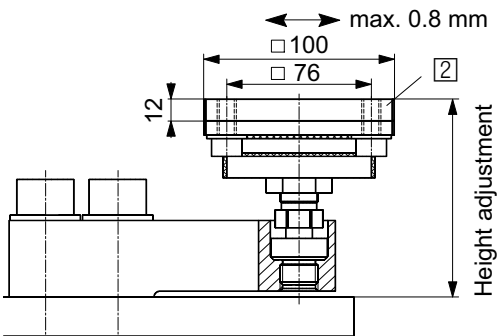
HLCB/ZDP/1.76 T Easy top - Rubber-metal bearing for HLC B / 220 kg ... 1.76 t
(Load application: stainless steel, welding plate: galvanized)



* 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



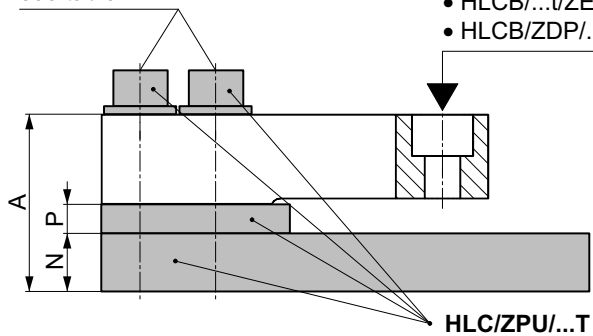
1) = maximum capacity 2.2 t
2) = maximum capacity 4.4 t

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

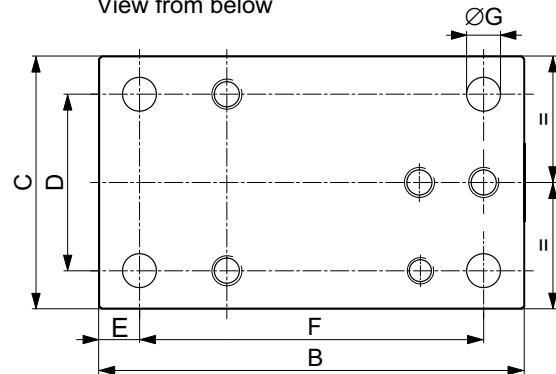
Tightening torque M_A :
see table

Load application via:

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

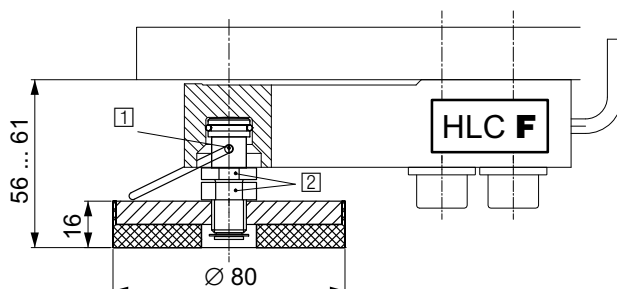


View from below



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 \leq 1.76 t



1) Loading foot secured in load cell with accompanying bracket

2) 19 across flats



HLC load cells, optional versions

Order no.
K-HLC

Code	Option 1: Design
A	HLCA [not with Option 3 = 110 / 10]
B	HLCB
F	HLCF [only with Option 3 = 220 / 550 / 1100 / 1760]

Code	Option 2: Accuracy class
D1	D1 (OIML)
C3	C3 (OIML) [not with Option 3 = 10]
C4	C4 (OIML) [only with Option 1 = B + Option 3 = 20 / 550 / 1100 + Option 5 = S3]
C6	C6 (OIML) [only with Option 1 = B + Option 3 = 20 / 550 / 1100 + Option 5 = S3]

Code	Option 3: Maximum capacity
110	110 kg [only with Option 1 = B + Option 4 = N/(AI2/21)]
220	220 kg
550	550 kg
1100	1,1 t
1760	1,76 t
2200	2,2 t [only with Option 1 = A / B]
4400	4,4 t [only with Option 1 = A / B]
10	10 t [only with Option 1 = B]

Code	Option 4: Ex protection
N	No Ex protection
AI1/21	IECEX-ATEX zone 1/21 and FM [not with Option 3 = 110] 
AI2/21	IECEX-ATEX zone 2/21 
R1/21	EAEU zone 1/21
R2/21	EAEU zone 2/21

Code	Option 5: Cable length
S3	3 m (standard) [only with Option 3 = 110/220/550/1100/1760]
S6	6 m (standard) [only with Option 3 = 2200/4400]
6	6 m [only with Option 2 = D1/C3+Option 3= 110/220/550/1100/1760]
12	12 m [only with Option 2 = D1/C3]

Code	Option 6: Other
N	None

K-HLC - [] - [] - [] - [] - [] - N

Options

Ex protection versions per IECEx, ATEX and FM

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 nA 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)

** IECEx zone 2/21 includes option ATEX2/22 and also offers the additional customer benefit of usage with conductive dust as well.

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

R1/21 EAEU 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 EAEU zone 2/21 TR ZU 012/2011 Ex certificate, 2 Ex ia 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.

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