

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

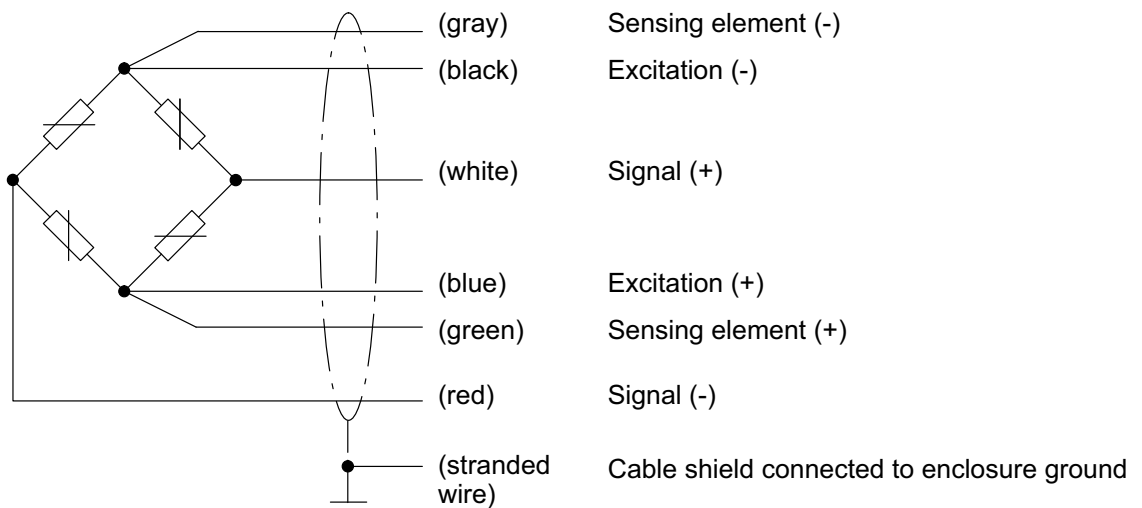
Load cells

Special features

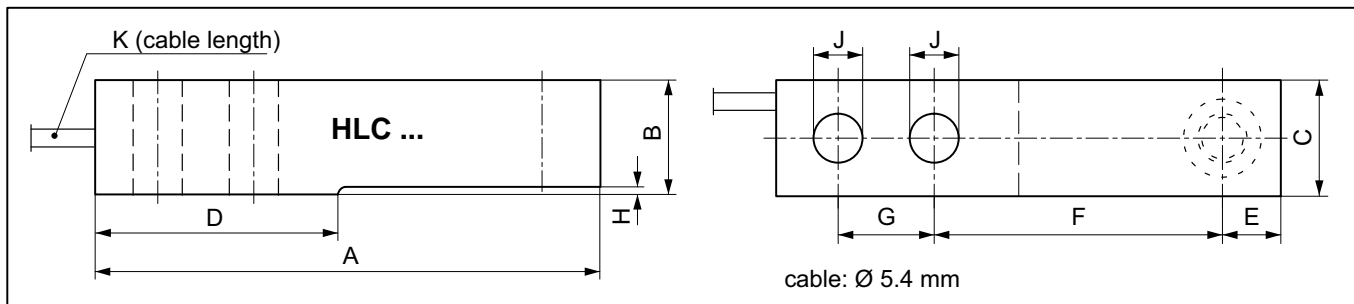
- Hermetically encapsulated (IP68)
- Maximum capacities: 110 kg ... 10 t
- Rust-resistant materials
- Low height of construction
- Meets EMC requirements as per EN 45501:2015
- Legal for trade per OIML R60 to 6000 divisions
- Explosion-proof versions per ATEX and IECEx, FM and EAEU



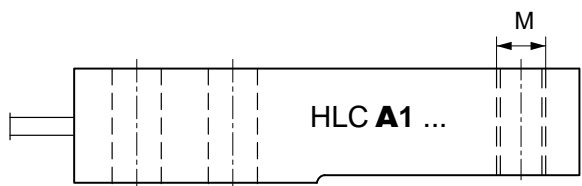
Cable assignment (six-wire configuration)



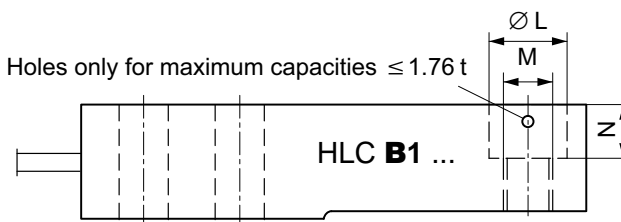
Dimensions (in mm; 1 mm = 0.03937 inches)



HLC A1...
(220 kg; 550 kg; 1.1 t; 1.76 t; 2.2 t; 4.4 t)

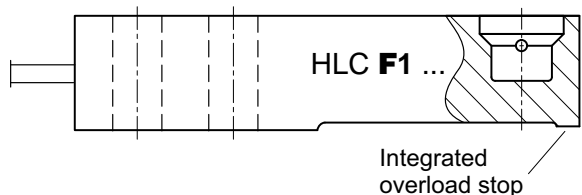


HLC B1...
(110 kg; 220 kg; 550 kg; 1.1 t; 1.76 t; 2.2 t; 4.4 t; 10 t)

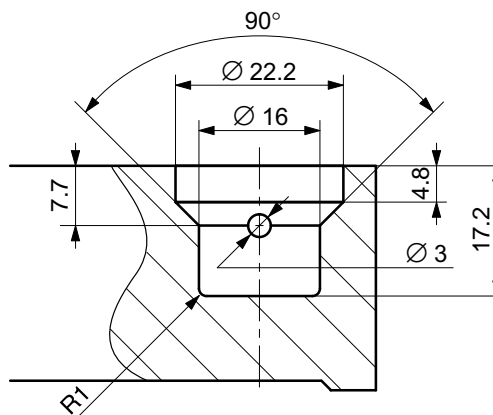


Mounting accessories for HLC B1...: see pages 4 and 5

HLC F1...
(220 kg; 550 kg; 1.1 t; 1.76 t)



Mounting accessories for HLC F1...: see page 5



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):

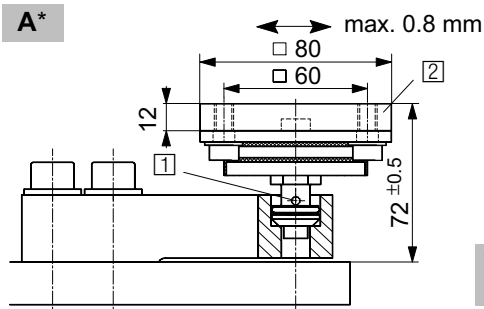
- HLCB/1.76T/ZEL: 4.5 mm
- HLCB/4.4T/ZEL: 8 mm
- HLCB/10T/ZEL: 9.5 mm

Type	Maximum capacity	B	∅ C _{0.1}	L	R	∅ 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

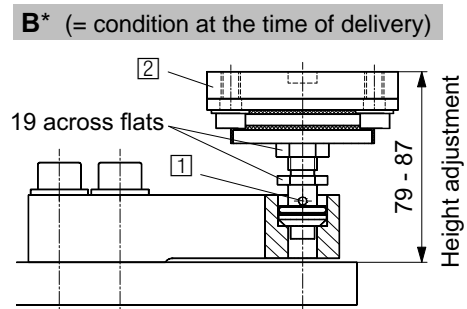
Accessories for HLC B ... + HLC F ...

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

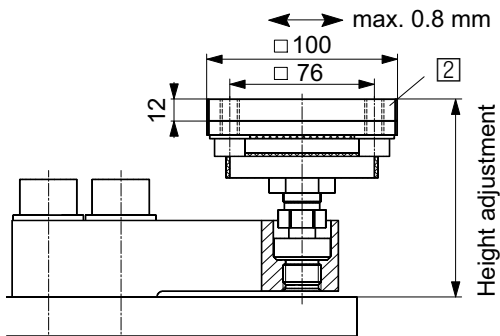
HLCB/ZDP/1.76 T Easy top - Rubber-metal bearing for HLC B / 220 kg ... 1.76 t
(Load application: stainless steel, welding plate: galvanized)



* 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



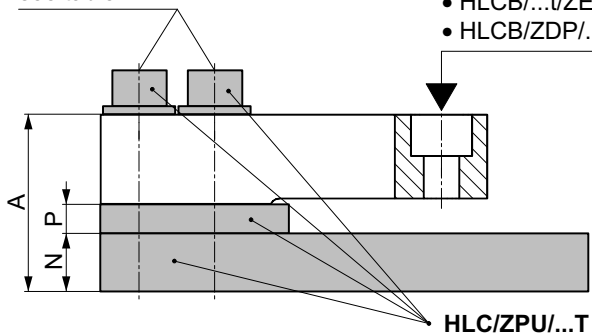
1) = maximum capacity 2.2 t
2) = maximum capacity 4.4 t

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

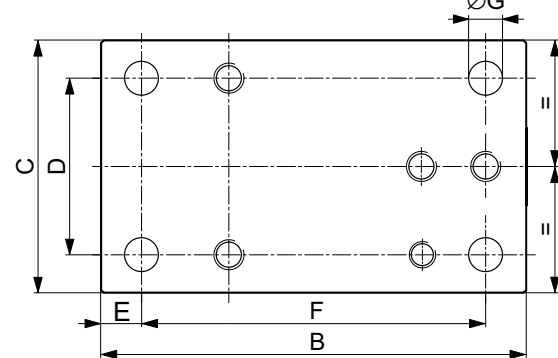
Tightening torque M_A :
see table

Load application via:

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

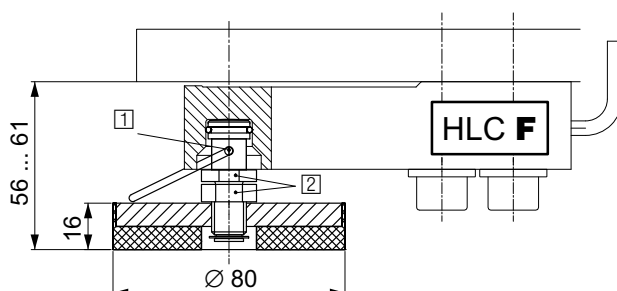


View from below



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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