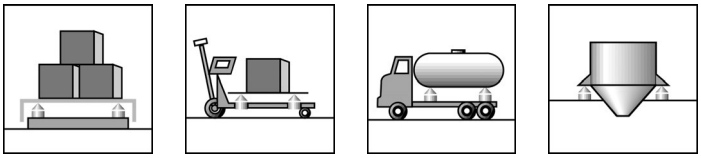
Data sheet

HLCB2...

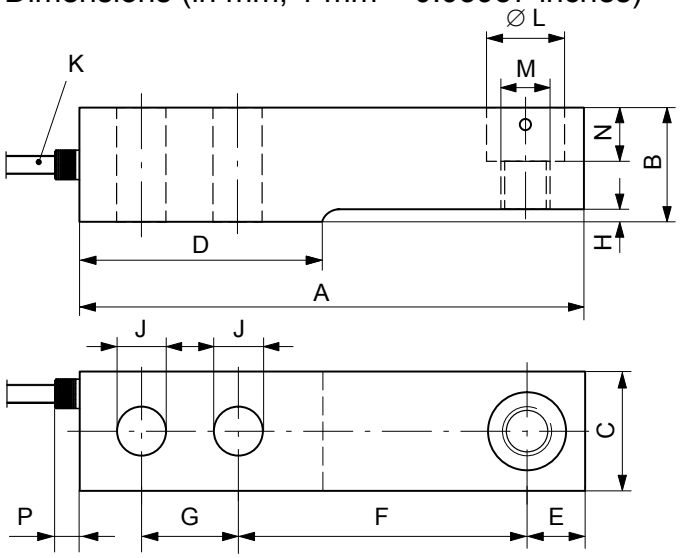
Load Cells



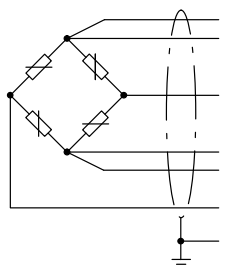
Special features

- **Hermetically encapsulated (IP68, IP69K)**
- **Maximum capacities: 220 kg to 4.4 t**
- **Rust-resistant materials**
- **Low height of construction**
- **Six-wire configuration**
- **Optimized for parallel connection**
- **Meets EMC requirements in accordance with EN 45 501**
- **Legal for trade per OIML R60 to 6000 divisions**
- **Explosion-proof versions per ATEX 95 (optional)**

Dimensions (in mm; 1 mm = 0.03937 inches)



Cable assignment (six-wire configuration)



(gray)	Sensing element (-)
(black)	Excitation (-)
(white)	Signal (+)
(blue)	Excitation (+)
(green)	Sensing element (+)
(red)	Signal (-)
(stranded wire)	Cable shield connected to enclosure ground

Maximum capacity (E_{max})	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**∅ L**	**M**	**N**	**P**
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	12
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	12
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	12
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	12

Specifications

Type			HLCB2		
Accuracy class [1]			**C3**	**C4**	**C6**
Number of load cell verification intervals	n_{LC}		3000	4000	6000
Maximum capacity	E_{max}		220 kg; 550 kg; 1.1 t; 1.76 t, 2.2 t, 4.4 t	220 kg; 550 kg; 1.1 t	
Minimum load cell verification interval	v_{min}	% of E_{max}	0.0100 (220 kg; 1.76 t; 2.2 t; 4.4 t) 0.0090 (550 kg; + 1.1 t)		
Nominal (rated) sensitivity	C_n	mV/V	1.94		
Sensitivity tolerance		%	± 0.1		
Temperature effect of zero signal [2]	TK_0	% of C_n / 10 K	± 0.0140 (220 kg; 1.76 t; 2.2 t; 4.4 t) ± 0.0127 (550 kg; + 1.1 t)		
Temperature coefficient of sensitivity [2]	TK_C		± 0.0140	± 0.0105	± 0.0070
Relative reversibility error [2]	d_{hy}	% of C_n	± 0.0166	± 0.0125	± 0.0083
Non-linearity [2]	d_{lin}		± 0.0170	± 0.0166	
Creep upon loading over 30 min.	d_{cr}		± 0.0166		± 0.0122
Minimum dead load output return	*MDLOR*		± 0.0166	± 0.0125	± 0.0083
Input resistance	R_{LC}	Ω	350 … 480		
Output resistance	R_0		350 ± 2	350 ± 0.12	
Reference excitation voltage	U_{ref}	V	5		
Nominal (rated) range of the excitation voltage	B_U		0.5 … 15 (Ex versions max. 12 V)		
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 permissible oscillatory stress (oscillation width per DIN 50100)	F_{srel}		70		
Nominal (rated) displacement at E_{max}, approx.	s_{nom}	mm	0.5 (1.76 t = 1.4 mm)		
Weight, approx.	G	kg	0.9 (220 kg …1.76 t); 1.6 (2.2 t); 2.2 (4.4 t)		
Degree of protection per EN 60 529 (IEC 529)			IP 68 / IP 69K		
Material: Measuring body			Stainless steel [3]		
Cable entry			Stainless steel [3] (seal: Viton®)		
Cable sheath			TPE		
Measuring point protection			Hermetically welded		

[1] Per OIML R60 with P_{LC} = 0.7.

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

[3] Per EN 10 088-1.

Accessories (see separate data sheet "HLC... load cells"):

To minimize error effects from load application, HBM offers different tried and tested load application elements for this type of load cell, according to the mounting conditions:

HLCB/ZFP/...T Oscillating loading foot

HLCB/PCX/1.76T Oscillating loading foot (height adjustable)

HLCB/...T/ZEL Elastomer bearing

HLCB/ZDP/...T Elastomer bearing ***Easy Top***

HLC/ZPU/...T Mounting base / mounting kit

Options

HLCB2 load cells, optional versions [!!!]

Order no.
K-HLCB2

Code	Option 1: Design
S	Standard **(= IP69K degree of protection; halogen and silicone-free connection cable)**

Code	Option 2: Accuracy class
C3	C3 (OIML)
C4	C4 (OIML) [only with Option 3 = 220 / 550 / 1100 + Option 5 = S3]
C6	C6 (OIML) [only with Option 3 = 220 / 550 / 1100 + Option 5 = S3]

Code	Option 3: Maximum capacity
220	220 kg
550	550 kg
1100	1.1 t

Code	Option 3: Maximum capacity
1760	1.76 t
2200	2.2 t
4400	4.4 t

Code	Option 4: Explosion protection (per ATEX 95)
N	no ATEX
1	ATEX Zone 1 + 21 and FM
2	ATEX Zone 2 + 22 (non-conductive dust)

Code	Option 5: Cable length	
S3	3 m (standard)	[only with Option 3 = 220 / 550 / 1100 / 1760]
S6	6 m (standard)	[only with Option 3 = 2200 / 4400]
6	6 m	[only with Option 3 = 220 / 550 / 1100 / 1760]
12	12 m	
20	20 m	

K-HLCB2 -- **S** **C 3** - ☐☐☐☐ - ☐ - ☐☐

[!!!]: Not all codes can be combined with one another. Take note of the conditions in square brackets!

Options for HLC...:

- **Explosion protection versions per ATEX:** Ex II 2G EEx ia IIC T4 and T6 (Zone 1) **)
  Ex II 2D Ex tD A21 IP68 T 80°C (Zone 21) **)
  **) with EC-type examination certificate

  Ex II 3G EEx nA II T6 (Zone 2)
  Ex II 3D IP68 T 80°C (Zone 22 for non-conductive dust)

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

B2456-2.0 en