

Weighing Technology for Industry

Extensive, application-specific, certified



Solutions in Weighing Technology for Different Industries



Plant engineering and vehicle scales

Plant safety, product quality, and reproducibility: Numerous certificates verify that all HBM components meet the most stringent demands – anywhere in the world. We provide load cells, weighing modules, and electronics for:

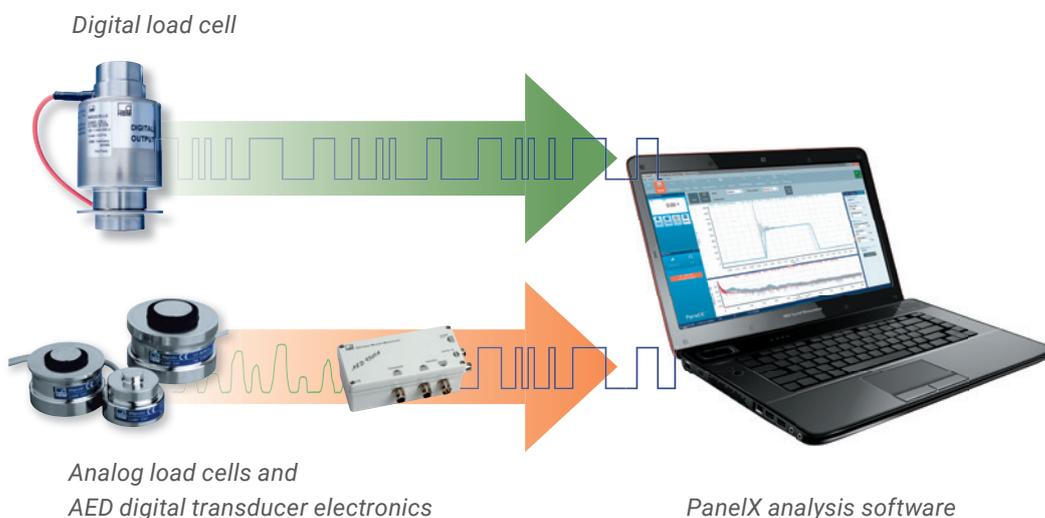
- Tank weighers and batching scales
- Platform scales
- Additive and silo weighing
- Weighbridges for road vehicles
- Level monitoring



Weighing, batching, and filling

Digital load cells and components from HBM offer additional advantages:

- High-speed visualization of results
- Good setting value reproducibility (zero signal, full scale value, etc.)
- Easy integration into plant and process sequences; all current interfaces are available
- No mechanical damping elements that are subject to wear are required
- High operational safety through individual communication with each load cell in the process



Digital load cell

Analog load cells and AED digital transducer electronics

PanelX analysis software



Individual solutions

Fast prototyping and state-of-the-art FEM technologies enable us to satisfy your weighing technology needs in the shortest possible time. For example, we develop and manufacture specific components for:

- Scale manufacturers
(platform scales, legal-for-trade scales)
- Medicine (weighing hospital patients)
- Building industry (weighing materials, power shovels)
- Agriculture (automatic feeders)
- Public sector (weighing garbage)
- Quality assurance



Components that meet your individual requirements

Wide range of weighing technology components

- Load cells and weighing modules
- Mounting aids and extensive accessories
- Bus-capable electronics and amplifiers
- Software for visualization, process control, and analysis

Safety with certification

- International approvals for convenient use of HBM load cells (OIML, NTEP, EAC, etc.) in legal-for-trade scales
- Extensive range of weighing technology products in compliance with IECEx/ATEX or FM (USA)

Comprehensive range of services offered

- HBM expertise available on any site anywhere in the world
- Individually customized advice
- Training and seminars

Your Advantages with HBM

Outstanding mechanical and measurement characteristics are critical to your application. HBM load cells are both state-of-the-art and best-in-class.



Z6 load cell

Highly precise

Some load cell types providing OIML C5 and C6 accuracy classes can be produced and supplied in large quantities thanks to consistent research in the fields of material science, metal-foil strain gauges, and sensors.

Z6, HLCB1/2 and C16(A/I) high-accuracy load cells can be used with maximum capacities up to 60 t.



Z6R and HLCB2 load cell

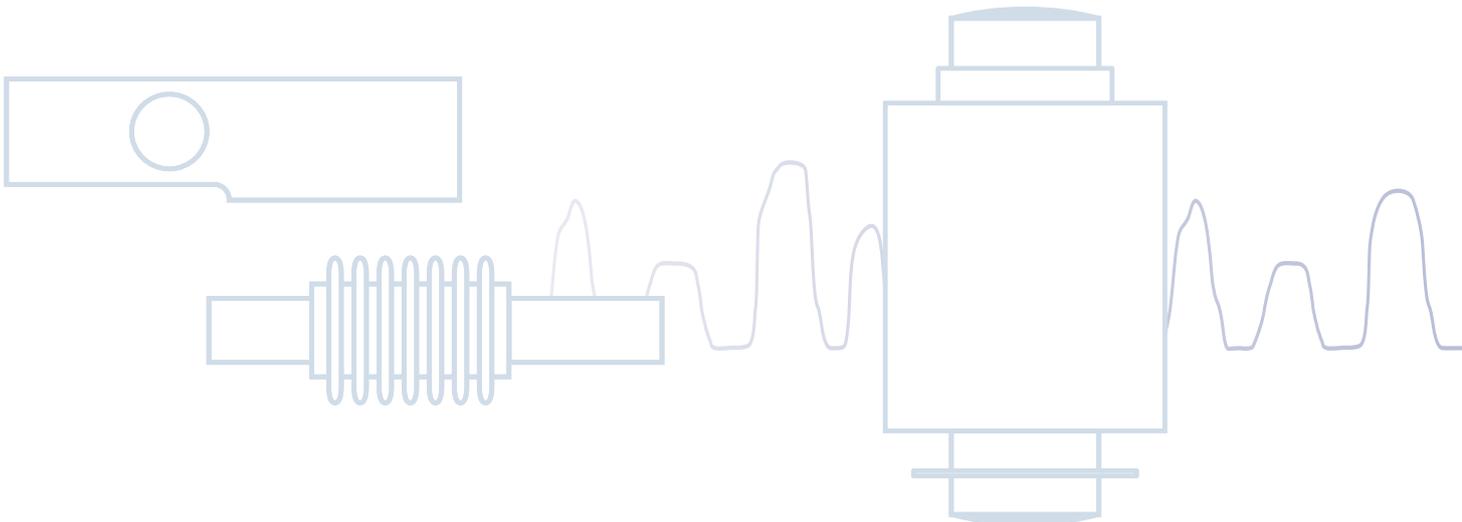
Robust

HBM load cells guarantee maximum service life and reliability even in harsh environments. They are ideally protected from adverse conditions thanks to their stainless steel measuring bodies* and electropolished surfaces.

Load cells with IP68/IP69K degree of protection offer maximum service life in applications in the chemical, pharmaceutical, and food industries.

Use in potentially explosive atmospheres (IECEx: Zone 1 + 21, Zone 2 + 21) is not a problem for most HBM load cells.

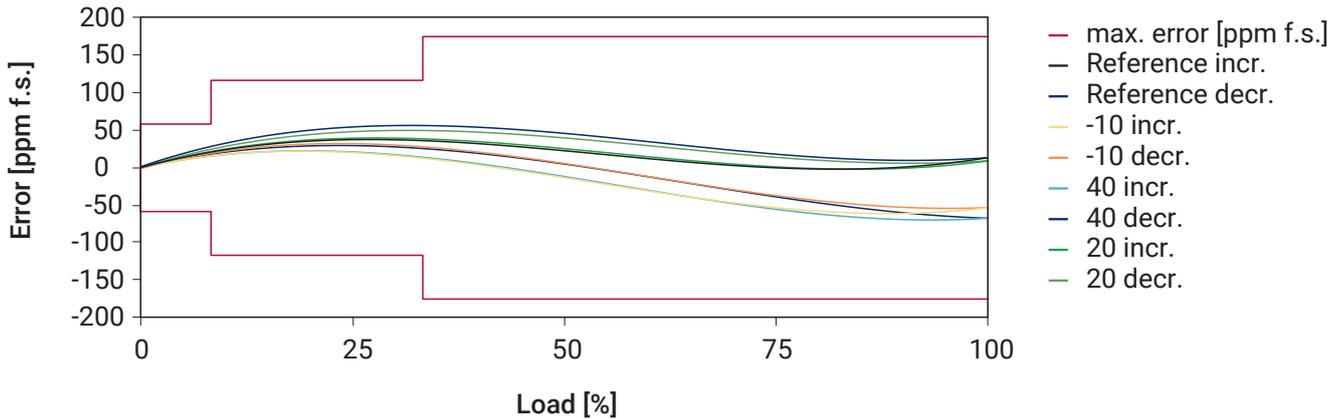
*except Z7



Measurements insensitive to temperature

HBM provides load cells based on innovative six-wire technology. This technology reliably compensates for variations in load cell cable resistance resulting from temperature fluctuations.

OIML C6 error curves



Reliable measurement results

HBM load cells have complied with the ever more stringent requirements* of OIML Guidelines R60/ R76, e.g. for electromagnetic compatibility (EMC) of 10 V/m for many years. This ensures that measurement results cannot be affected.

Fit for export

HBM load cells have been approved in almost all countries around the world. Many specific technical requirements for load cells varying from place to place are easily complied with. You can trust that your weighing systems are fit for export.



* except C2 and C2A load cells for compressive force

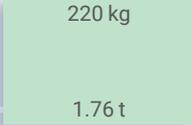
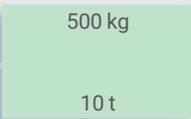
Load Cells with Certified Safety

Load cells for industrial scales



Load cell type	Bending beam load cell			
	Z6	Z6R	HLCB2	HLCB1
Output signal	analog	analog	analog	analog
Accuracy class	D1, C3, C4, C6	D1, C3	C3, C4, C6	D1, C3, C4, C6
Approvals	OIML NIP NMI	OIML	OIML NMI	OIML NMI
Degree of protection	IP68	IP68/IP69K	IP68/IP69K	IP68
Explosion protection	IECEx Ex FM APPROVED EAC	IECEx Ex	IECEx Ex FM APPROVED EAC	IECEx Ex FM APPROVED EAC
Material/Surface	stainless steel/ electro-polished	stainless steel/ electro-polished	stainless steel/ electro-polished	stainless steel/ electro-polished
Force application	through hole	through hole	stepped bore	stepped bore
Cable length [m]	3, 6, 12	3, 6, 12	3, 6, 12, 20	3, 6, 12
Cable sheath	PVC	PVC	TPE-O ¹⁾	PVC
Cable option		TPE-O ¹⁾	braided wire	
Application	all-rounder	extreme ambient conditions, e.g. chemical, food, etc.	extreme ambient conditions, e.g. chemical, food, etc.	all-rounder
Maximum capacity from ... to	5 kg	20 kg 200 kg	110 kg	110 kg
kg				
t	1 t		4.4 t	10 t
Special feature	Load cell family with identical dimensions and electrical values		Load cell family with identical dimensions and electrical values	

¹⁾ TPE-O cable sheath: Cable from thermoplastic elastomer offering high resistance against many aggressive media

Bending beam load cell		
HLCA	HLCF	Z7
		
analog	analog	analog
D1, C3	C3	D1, C3
		
IP68	IP68	IP67
		
stainless steel/ electro-polished	stainless steel/ electro-polished	galvanized steel/nickel-plated
through thread	blind hole	stepped through hole
3, 6, 12	3	3, 6, 12
PVC	PVC	PVC
		braided wire
all-rounder	all-rounder	simple, humid environment
		
Load cell family with identical dimensions (except force application) and electrical values		

Save costs – with safety and quality

From legal-for-trade operation to explosion protection – HBM's certified load cells offer maximum safety and reliability. Anywhere in the world. Save costs and minimize downtime.

Table continued >>

Load Cells with Certified Safety

Load cells for industrial scales



Load cell type	Load cell for tensile force		Load cell for tensile and compressive force	Load cell for compressive force
	RSCC	Z16	U2A	RTN
Output signal	analog	analog	analog	analog
Accuracy class	C3	D1, C3	0.1 %, D1	0.05 %, C3
Approvals				
Degree of protection	IP68	IP68, IP69K	IP67	IP68, IP69K
Explosion protection				
Material/Surface	stainless steel	stainless steel	stainless steel	stainless steel
Force application	thread	thread	thread	spherical surface
Cable length [m]	7.6, 12, 20	12, 20, 40	3, 6, 12, 20	5, 12, 15, 20
Cable sheath	PVC	TPE-O ¹⁾	PVC	TPE-O ¹⁾
Cable option		braided wire		braided wire
Application	all-rounder	all-rounder	all-rounder	all-rounder
Maximum capacity from ... to				
kg	50 kg 5 t		50 kg 20 t	
t		7.5 t 15 t		1 t 470 t
Special feature	Option: Protective cable conduit system		Option: wider temperature range	Ring torsion principle of measurement Option: wider temperature range

¹⁾ TPE-O cable sheath: Cable from thermoplastic elastomer offering high resistance against many aggressive media

²⁾ TPE-U cable sheath: Cable from thermoplastic polyurethanes

Load cell for compressive force				Pressure transducer
C16A	C16i	C2	C2A	P8WT
analog	digital	analog	analog	analog
D1, C3, C4, C5	C3, C4	0.1 %	D1, C3, C4	D 0.3
   NMI	   NMI			
IP68, IP69K	IP68, IP69K	IP67	IP67	IP67
   		   	   	
stainless steel/ electro-polished	stainless steel/ electro-polished	stainless steel/ electro-polished	stainless steel/ electro-polished	stainless steel
spherical surface	spherical surface	spherical surface	spherical surface	pressure
12, 20, 40	12, 20, 40	3, 6, 12, 20	6, 12, 20	
TPE-O ¹⁾	TPE-O ¹⁾	PVC	PVC	TPE-U ²⁾
braided wire outside	braided wire outside			
all-rounder	all-rounder	all-rounder	all-rounder	special transducer for wheel loaders
		50 kg		0 bar
				500 bar
20 t	20 t		1 t	
400 t	60 t	50 t	10 t	
		Option: wider tempera- ture range		

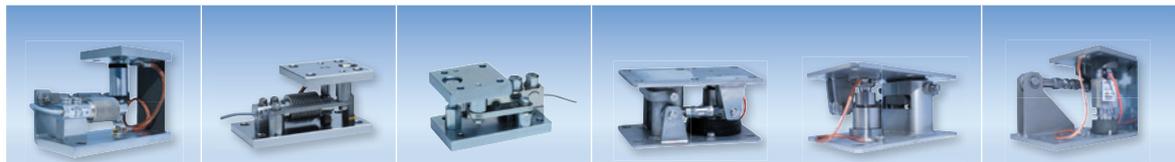
Compact Weighing Modules for Tank Weighing

HBM weighing modules contain all the components you need for optimum tank weighing:

- Anti-liftoff device for continuous load application
- Stay rod to protect the load cell against lateral forces
- Exact load application thanks to pendulum and rubber-metal bearings
- Ground cable to prevent any damage caused by welding currents or flashes of lightning etc.

Additional advantages for use:

- Maintenance-free operation, even under difficult environmental conditions
- Load cells can be quickly inserted or replaced at any time, to meet specific accuracy requirements



Module type	Z6/AM	Z6/M	HLC/M ¹⁾	RTN		C16/M
				M2A/M2LA	M2B/M2LB	
Accuracy class	C4, C6	D1, C3	D1, C3	0.05 %, C3	0.05 %, C3	D1, C3
Material/Surface	steel/galvanized or stainless steel	steel/galvanized or stainless steel	steel/galvanized or stainless steel	stainless steel	stainless steel	steel/galvanized or stainless steel
Bearing	pendulum bearing	pendulum bearing	pendulum bearing	rubber-metal bearing	pendulum bearing	self-restoring
Stay rod/ Anti-liftoff device	yes/no	yes/yes	yes/yes	optional (L)/yes	optional (L)/yes	yes/optional
Scope of delivery	load cell included	load cell included	load cell included	load cell not included	load cell not included	load cell included
Maximum capacity from ... to	50 kg 500 kg	30 kg 500 kg	110 kg 4.4 t	1 t 33 t	1 t 33 t	20 t 200 t
kg						
t						

¹⁾ Optionally available with type HLCB1 or HLCB2 load cells

A Range of Professional Accessories for Industrial Scale Manufacturers

- Robust mounting aids for exact load application prevent incorrect loading caused by lateral forces and moments
- Measuring leads and junction boxes – also with explosion protection – meet high metrological requirements
- Scale electronics and process control electronics for optimum load cell adjustment and measurement signal conditioning
- Control and analysis software for self-contained control systems in plants and intelligent measurement signal conditioning and analysis at the press of a button



Mounting aid	Thrust pieces	Rubber-metal bearings	Pendulum bearings	Knuckle eyes	Cones, conical pans
Characteristics	steel/galvanized or stainless steel	steel/galvanized or stainless steel	stainless steel	stainless steel	stainless steel
For load cell	C16 A, C16 i, C2	Z6F, Z6R, C2A, C2, RTN, HLCB	Z6F, Z6R, C2A, C2..., RTN	Z6F, Z6R, U2A, RSC...	Z6F, Z6R



Mounting aid	Loading foot	Easy top	Mounting base	Fixed bearing	Quadro set
Characteristics	stainless steel			steel/galvanized	4 x HLCB load cell, 4 x swivel load foot, 1 x junction box, 1 x cable reel
For load cell	HLC, Z6, Z6R	HLCB	Z6F, Z6R, HLC	for weighing modules, RTN...	HLCB

Go to the world of HBM weighing technology at: www.hbm.com/weighing



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