

VDW Self-Centering Pressure Load Cell



- Legal for Trade Use Pressure Load Cell, Optimized for Use in Vehicle Scales
- Self-Straightening Function
- Simple Installation and Orientation thanks to Matching Accessories
- Comparison of Characteristic Value and Output Impedance Simplifies Corner-Load Comparison in Multiple-Cell Scales
- Excellent Protection Against Electromagnetic Influences thanks to an Optimized Screening Concept
- Integrated Over-Voltage Protection
- Laser-Welded, Protection Class IP 68 1m/100hr; IP69K

Application

Acting as a measuring transducer, the load cell converts the mechanical input variable load into the electrical output variable voltage.

The VDW has been consistently optimized for use in vehicle scales. :

- The design of the cell as a self-straightening stabilizer link keeps transverse forces away from it, even if the bridge is displaced horizontally to a large degree.
- The design allows for a rapid and cost-effective assembly of the cell with no expensive mounting parts.
- Matching accessories and fitting aids simplify installation.

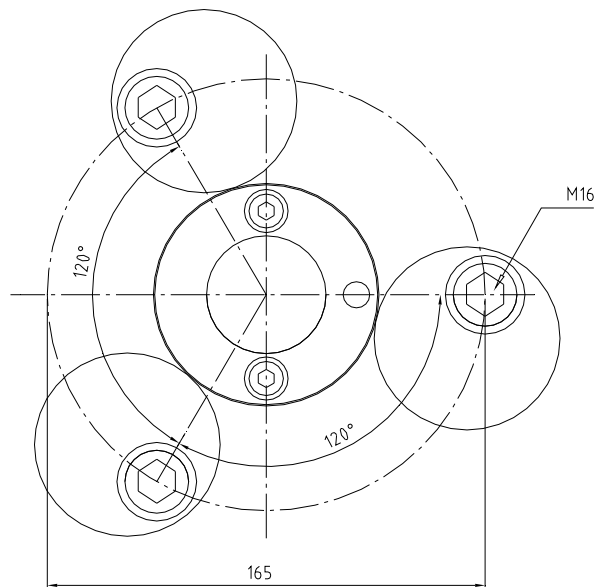
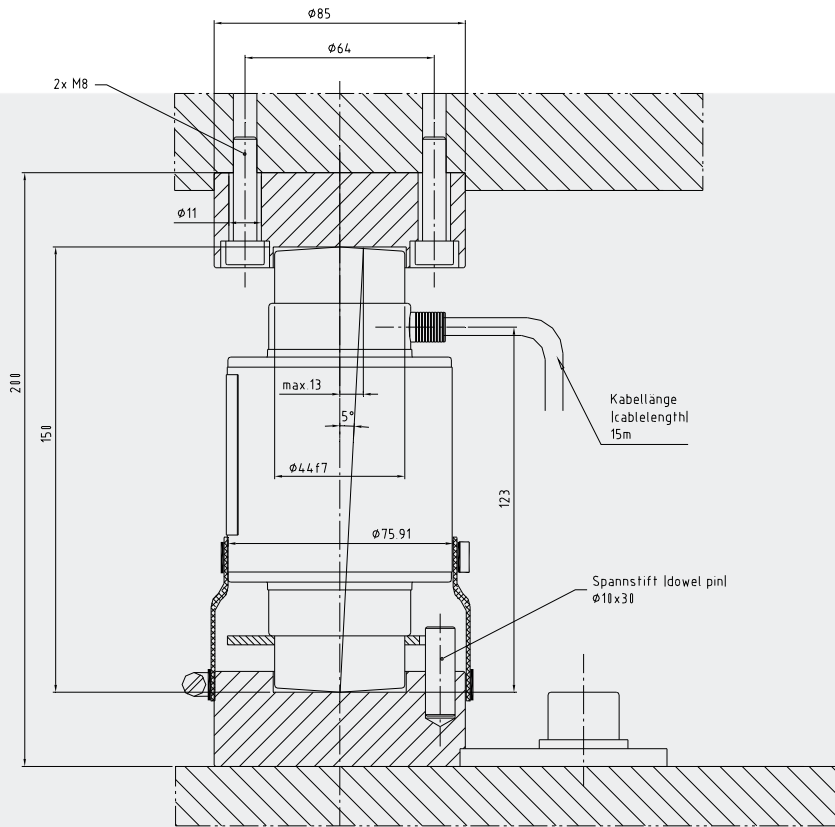
Construction

- Hermetically sealed thanks to the laser-welding (IP68)
- High corrosion protection thanks to the use of rustproof materials - incl. high-grade steel cable screw connections
- Built-in over-voltage protection
- All electrical components are located in the interior of the load cell and are thus optimally protected.
- Laser-welded, protection class IP 68 1m immersion depth /100hr, or IP69K (steam jet cleaning)

Function

- High measuring sensitivity
- High reproducibility
- High long term stability and thus continuously high accuracy over time.
- Characteristic value and output impedance of the VDW are compared to each other such that the corner-load comparison for a multiple-cell scales generally becomes redundant
- The optimized screening concept (no conductible connection from cable screen to load cell body) gives excellent protection against electromagnetic influences..

Dimensions:



Technical Data

Rated Capacity	E_{max}	33t / 44t	Reference
Accuracy Class:		C3	
Nominal Characteristic Value	C _n	2.2 mV/V ± 0.5% *)	
Combined Errors	F _{comb}	0.02 %	C _n
Zero-Signal Return After Loading (30m)	F _{dr}	± 0.12 %	C _n
Creeping Under Load (30 min)	F _{cr}	± 0.017 %	C _n
Temperature Coefficient of the Zero Signal per 10 K	TK ₀	± 0.014 % ± 0.04 %	C _n , B _{tn} C _n , B _{tu}
Temperature Coefficient of the Characteristic Value per 10 K	TK _c	± 0.008 % ± 0.025 %	C _n , B _{tn} C _n , B _{tu}
Max. Permissible Number of Legal for Trade Scale Intervals	n _{LC}	3000	
Smallest Scale Interval	V _{min}	E _{max} /10000	
Max. Application Area	B _{amax}	B _{amax} = E _{max}	
Input Resistance	R _e	700 Ω ± 3%	T _r
Output Resistance	R _a	706 Ω ± 0.5% *)	T _r
Zero Signal	S ₀	± 1%	C _n
Max. Supply Voltage	U _{smax}	12V +10%	
Nominal Temperature Range	B _{tn}	-10°C to +40°C	
Operating Temperature Range	B _{tu}	-30°C to +70°C	
Storage Temperature Range	B _{ts}	-50°C to +85°C	
Permissible Angle Error	α	5°	
Permissible Horizontal Displacement	S _{max}	13mm	
Restoring Force	F _r	0.76% / 0.94% per mm displacement	E
Nominal Measuring Displacement		0.8mm / 0.9mm	E _{max}
Limit Load	E _l	45t / 60t	
Breaking Load	L _d	100t / 125t	
Vibrational Loading (as per DIN 50100)		70% E _{max} . Peak load may not exceed the load E _{max}	
Protection Class		IP 68 (1m; 100hr); IP 69K	
Cable Specification		TPE (grey) Ø 5,3mm, silicone- and halogen-free, -30°C to +120°C; length 15m	
Connection Assignment		black: input + / blue: input - grey: sense + / green: sense - red: output + / white: output -	
Material		Stainless steel	
Weight including pressure pieces		4.7 kg	

*) Characteristic value and output impedance of the VDW are compared to each other such that the corner-load comparison for a multiple-cell scales generally becomes redundant - assuming that the mechanics of the scales can guarantee a clean, reproducible load distribution across the sensors.

Order Numbers

Design	Material number
VDW 33t, C3 without mounting parts	V080434.B01
VDW 44t, C3 without mounting parts	V080434.B02
Set of mounting parts (2 thrust pieces) for load cell VDW	V080494.B01

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