SENSiQ® Self-Centering Pressure Load Cell
VDW

- **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 IP68 1 m/100 hours; 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 – including 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 IP68 1 m immersion depth/100 hours, 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 optimize screening concept (no conductible connection from cable screen to load cell body) gives excellent protection against electromagnetic influences

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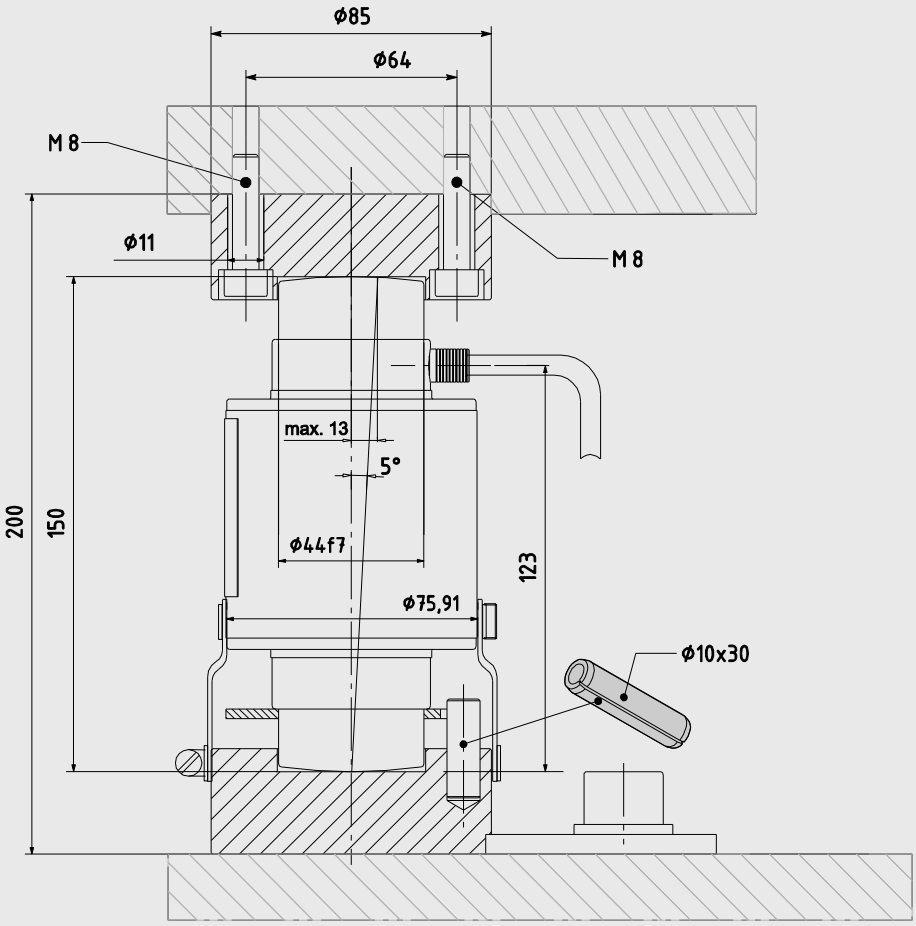
Dimensions

VDW



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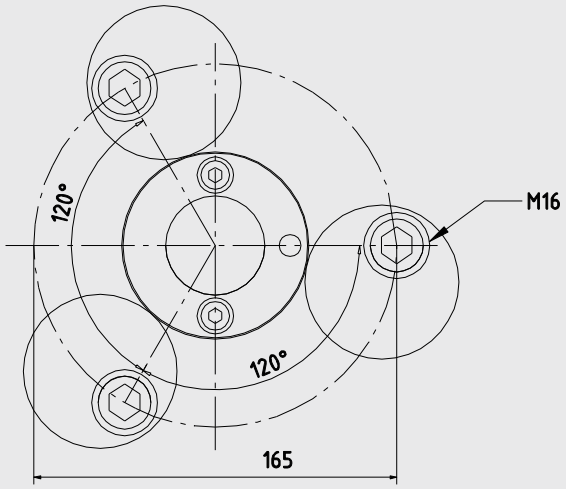

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Technical Data

Rated Capacity	**E_{max}**	**44 t**	**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 (30 min)	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}/1000	—
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}	12 V +10 %	—
Nominal Temperature Range	B_{tn}	−10 °C bis +40 °C	—
Operating Temperature Range	B_{tu}	−30 °C bis +70 °C	—
Storage Temperature Range	B_{ts}	−50 °C bis +85 °C	—
Permissible Angle Error	α	5°	—
Permissible Horizontal Displacement	S_{max}	13 mm	—
Restoring Force	F_r	0.94 % pro mm displacement	E
Nominal Measuring Displacement	—	0.9 mm	E_{max}
Limit Load	E_l	60 t	—
Breaking Load	L_d	125 t	—
Vibrational Loading (DIN 50100)	—	70 % E_{max}. Peak load may not exceed the load E_{max}	—
Protection Class	—	IP68 (1 m, 100 hours); IP69K	—
Cable Specification	—	TPE (red) Ø5.3 mm, silicone- und halogen-free, –30 °C to +120 °C; length = 15 m	—
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	Order Number/Material number
VDW 44 t, C3 without mounting parts	V080434.B02
Set of mounting parts (2 thrust pieces) for load cell VDW	V080494.B01

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