

# SENSiQ® Weighdisc

## WD 15 t ... 200 t

- The original, proven over more than 10 years, optimized to the latest state of technology
- Operating temperature from -40 °C ... 180 °C
- High precision:  
combined error only 0.07%
- Air chamber to the direct bolted joint, no bearing elements needed
- Extremely robust construction, IP68, overvoltage protection
- Minimum installation space
- 6-wire technology and integrated Pt100



### Application

- Ladle turret scale
- Ladle transfer car
- Scrap basket, roller and tundish scales
- Rail weighbridges
- Silo, container and furnace scales

### Construction

- Very low installation height and installation space
- Two contact surfaces for a direct bolted joint
- Robust measuring element without membrane

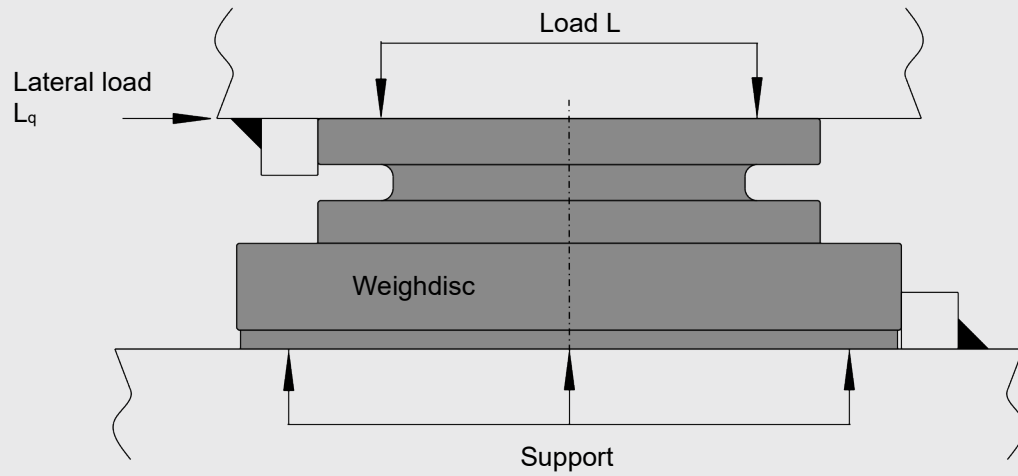
### Function

- Simple and cost-effective installation through direct bolted joints between the upper and lower connecting structure without moving parts

- High functional safety and availability, even with impact loads and constraining forces
- Minimum measuring value interference despite the transmission of large interference forces and moments
- For maintenance-free scales operated under harsh conditions
- High overload capability
- High reproducibility
- High long-term stability
- Connection dimensions and electrical data are compatible with the earlier design of WDI / WDI-K according to data sheet BV-D2206 / BV-D2220
- The plug connection differs from earlier designs of the WDI / WDI-K but is identical to the plug connection of the SENSiQ Weighbeam WB type series.

## Operating Principle

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## Technical Data

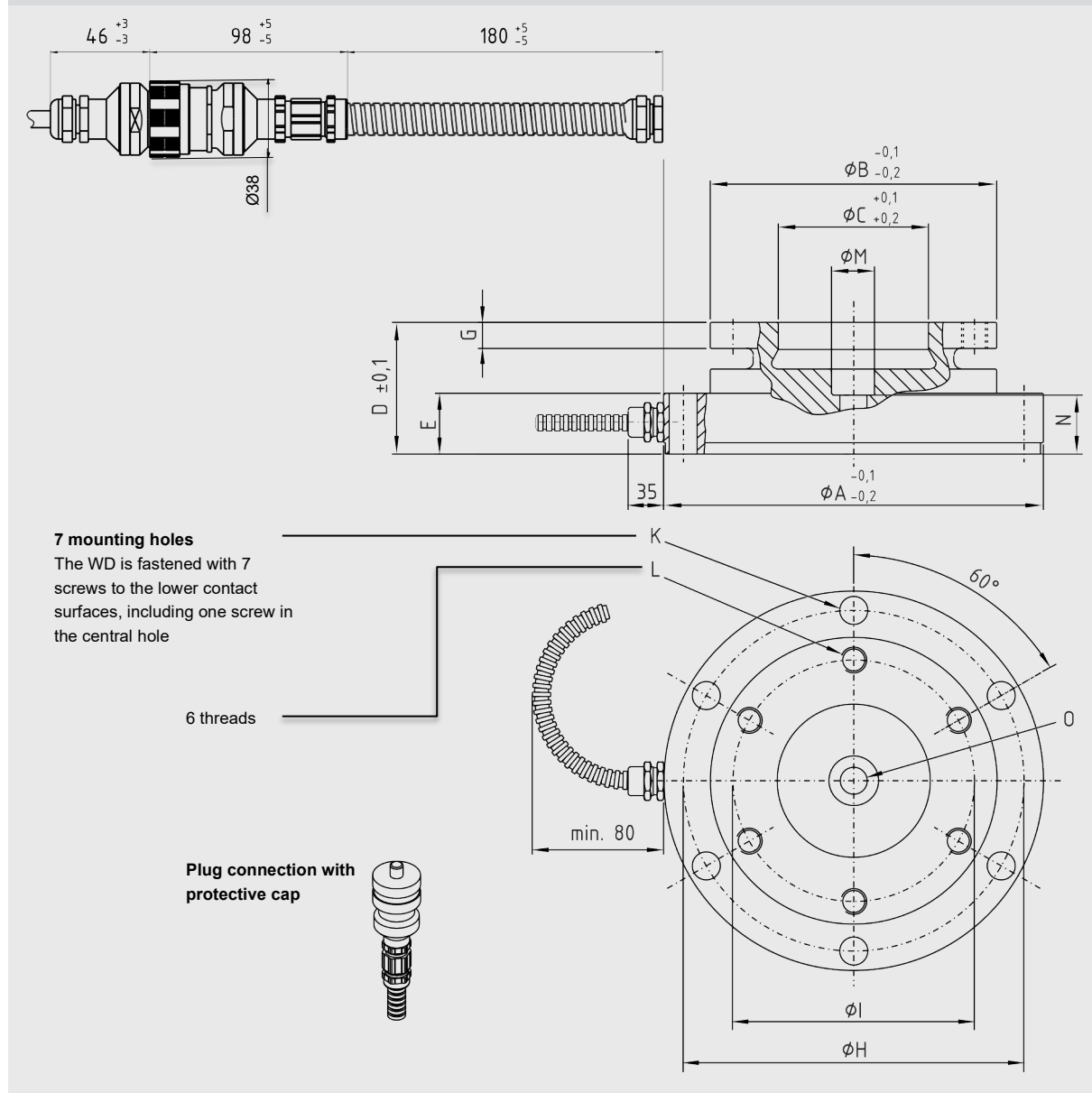
		WD 15 t	WD 25 t	WD 50 t	WD 100 t	WD 200 t	Ref
Accuracy class <sup>1)</sup>		D 0,1					
Nominal load	$E_{max}$	15 t	25 t	50 t	100 t	200 t	
Limit load (with $L_q = 0.15 \times L_l$ ) Limit load = max. safe load	$L_l$	75 t	75 t	150 t	300 t	600 t	
Breaking load (with $L_q = 0.15 \times L_d$ )	$L_d$	125 t	125 t	250 t	500 t	1000 t	
Max. permitted lateral load	$L_{q, max}$	12 t	12 t	25 t	50 t	100 t	
Nominal characteristic value	$C_n$	$0.54 \pm 0,002 \text{ mV} / \text{V}$					$E_{max}$
Compound error	$F_{comb}$	0,07 %					$C_n$
Creepage under load (30 min)	$F_{cr}$	0,05 %					$C_n$
max. admissible no. of legal-for-trade scale intervals <sup>1)</sup>	$n_{LC}$	1000					
Smallest scale interval <sup>1)</sup>	$V_{min}$	$E_{max} / 1000$					
Input resistance	$R_e$	$694 \Omega \pm 8 \Omega$					$T_r$
Output resistance	$R_a$	$700 \Omega \pm 4 \Omega$					$T_r$
Ref- supply voltage	$U_{sref}$	10 V					
Max. supply voltage	$U_{smax}$	36 V					
Nominal temperature	$B_{in}$	-10 °C bis +100 °C					
Operating temperature (and storage temperature range)	$B_{lu}$	-40 °C bis +180 °C					
Temperature	$T_r$	+22 °C					
Storage temperature range	$B_{ls}$	-50 °C to +180 °C					
Temperature coefficient of the zero signal	$TK_o$	$\pm 0.07 \% / 10 \text{ K}^*)$					$C_n$ in $B_{lu}$
Temperature coefficient of the characteristic value	$TK_c$	$\pm 0.15 \% / 10 \text{ K}^*)$					
Self-weight	$m_e$	10 kg	10 kg	10 kg	20 kg	47 kg	
Surface		galvanized					
Protection class		IP68					
Cable specification		<p>The Weighdisc has a 200 mm connection cable with plug-pin connections. A separate, shielded cable (Ø 8.5 mm x 15 m) with socket and free cable end for the connection to the summation box is also supplied.</p> <p>The following applies to the cable: Silicon cable, bend radius: &gt; 40 mm; temperature range: -50 °C ...+180 °C</p>					
Cable connection allocation		<p>black: input + / blue: input - red: output + / white: output - yellow: sense + / green: sense - purple: temperature sensor / brown: temperature sensor black/yellow: shielding</p> <p>(Not connected sense line – lines have to be insulated)</p>					

<sup>1)</sup> For information only

<sup>2)</sup> In isothermic state

## Dimensions

### WD 15 t ... 200 t



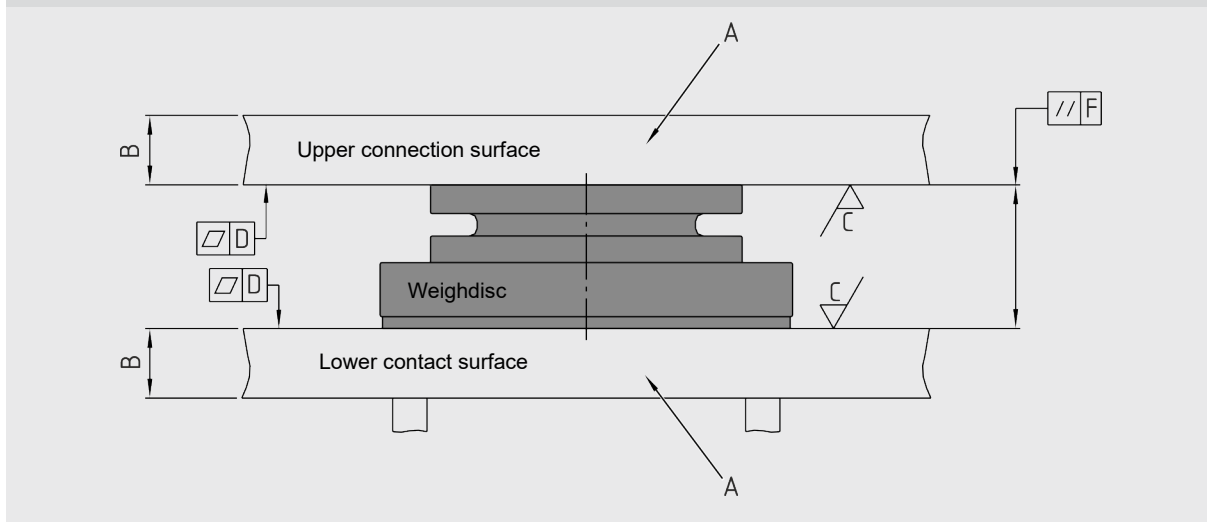
### Dimensions [mm]

Model	A	B	C	D	E	G	H	I	K	L*	M	N	O
WD 15 t / 25 t	192	136	70	65	28	16	168	115	16.5	M16	26	20	16.5
WD 50 t	192	136	70	65	28	16	168	115	16.5	M16	26	24	16.5
WD 100 t	265	195	100	88	36	23	234	164	22	M20	32	32	21
WD 200 t	350	263	140	120	54	25	310	220	26	M24	38	53.5	25

\* Metric thread

## Requirements of the Quality of both Contact Surfaces

WD 15 t ... 200 t



- Material selection "A":  
As a rule, construction steel is used of at least S235 grade
- Operating thickness "B":  
This depends on the stiffness of the overall construction. The operating thickness of the contact surfaces must be large enough such that the deflection under the rated load is less than 0.05 mm
- Surface quality "C":  
The average peak-to-valley height required of the contact surfaces is 6.3  $\mu\text{m}$
- Flatness "D":  
The maximum permissible flatness tolerance of each contact surface is 0.03 mm
- Plane parallelism "F":  
The upper and lower contact surfaces to the Weighdisc must be plan parallel to each other within at least 0.1 mm

### Installation note:

If the WD is mounted on an interim plate, the entire unit can be removed more easily. Otherwise, the entire load has to be dismantled in order to access the middle fixing screw.

## Order Numbers

Variants	Order Number
<b>Weighdisc with plug connection and 15 m cable</b>	
WD 15 t	V713566B01
WD 25 t	V713566B11
WD 50 t	V713566B21
WD 100 t	V713566B31
WD 200 t	V713566B41
<b>Spare part: 15 m connecting cable with plug connection</b>	V090162B01
<b>Spare part: 15 m connecting cable with old plug connection <sup>1)</sup></b>	V023643B01
<b>Adapter for the old 15 m connecting cable <sup>2)</sup></b>	V036069B10
<u>High-temperature cable:</u> 15 m with plug socket	V090162B07
<b>Constant operation</b> of the cable is permitted at <b>-65 °C -300 °C</b> .	
Operation is permitted at <b>700 °C</b> for a period of <b>up to 90 minutes</b> .	V090162B04
<u>Measuring Cable:</u> 30 m	

1) Only compatible with the old design WDI-K according to data sheet (BV-D2206 / BV-D2220); relevant for cable replacement on site.

2) If the old cable remains on site and the WDI-K is swapped for a WD.

Schenck Process Europe GmbH  
Pallaswiesenstr. 100  
64293 Darmstadt, Germany  
T: +49 61 51-15 31 0  
F: +49 61 51-15 31 66  
sales-eu@schenckprocess.com



<https://www.schenckprocess.com/contact>

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