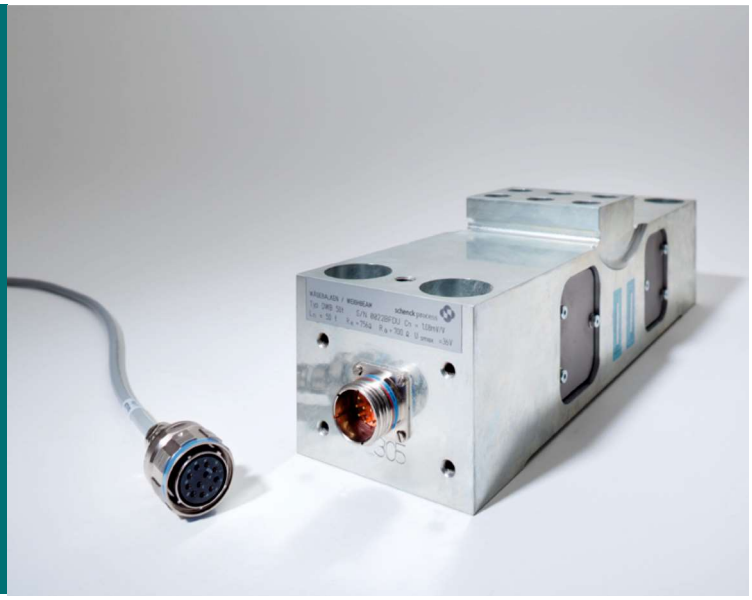
SENSiQ® Weighbeam
WB 40 t … 600 t

- **The original, proven over more than 30 years, optimized to the latest state of technology**
- **Expanded to an operating temperature from -40 °C … 180 °C**
- **High precision with a maximum combined error of ±0.07 %**
- **Extremely robust and maintenance-free, IP68**
- **6-wire circuit**
- **Integrated sensor for temperature monitoring and compensation, and integrated overvoltage protection**
- **Separate installation of the connecting cable through plug connection on the Weighbeam, also available as hinged plug outlet**



Application

- Ladle turret scale
- Ladle transfer car
- Scrap basket, roller and tundish scales
- Silo and bin weighers

Function

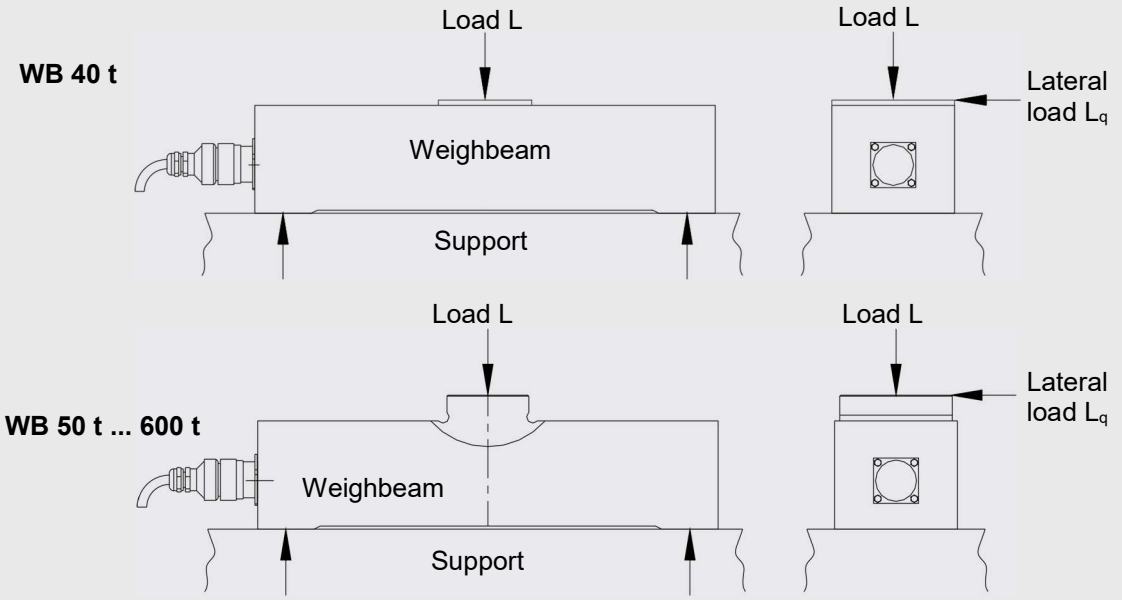
- Simple and cost-effective installation through direct bolted joint with the connecting structure without moving parts
- No additional straps or hold down bolts required
- High functional safety and availability, even with frequently unavoidable impact loads and constraining forces
- For maintenance-free scales operated under harsh conditions

Construction

- Compact, flat design
- From WB 50 t: Fit head for form-locking take-up of lateral forces
- Plug connection, also available as hinged plug outlet
- Transfer of high disturbance forces and torques with minimum measuring value interference
- High long-term stability
- High reproducibility
- Separate installation of Weighbeam and connecting cable possible
- Cable change without problems
- Connection dimensions and electrical data are compatible with the earlier design of the weighbeam DWB according to data sheet BV-D2059

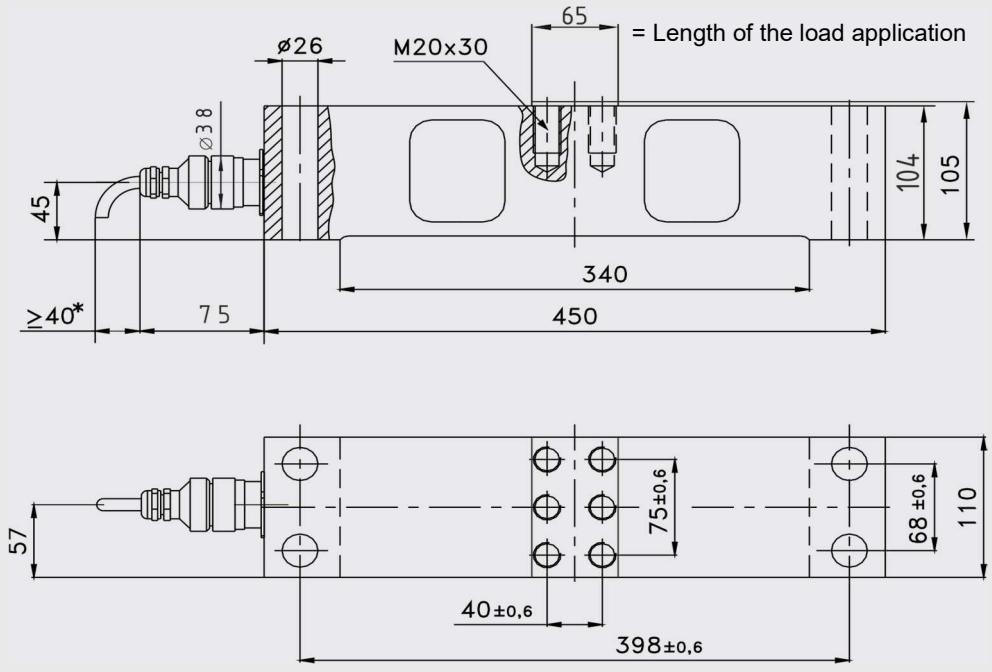
Operating Principle

WB 40 t … 600 t



Installation dimensions

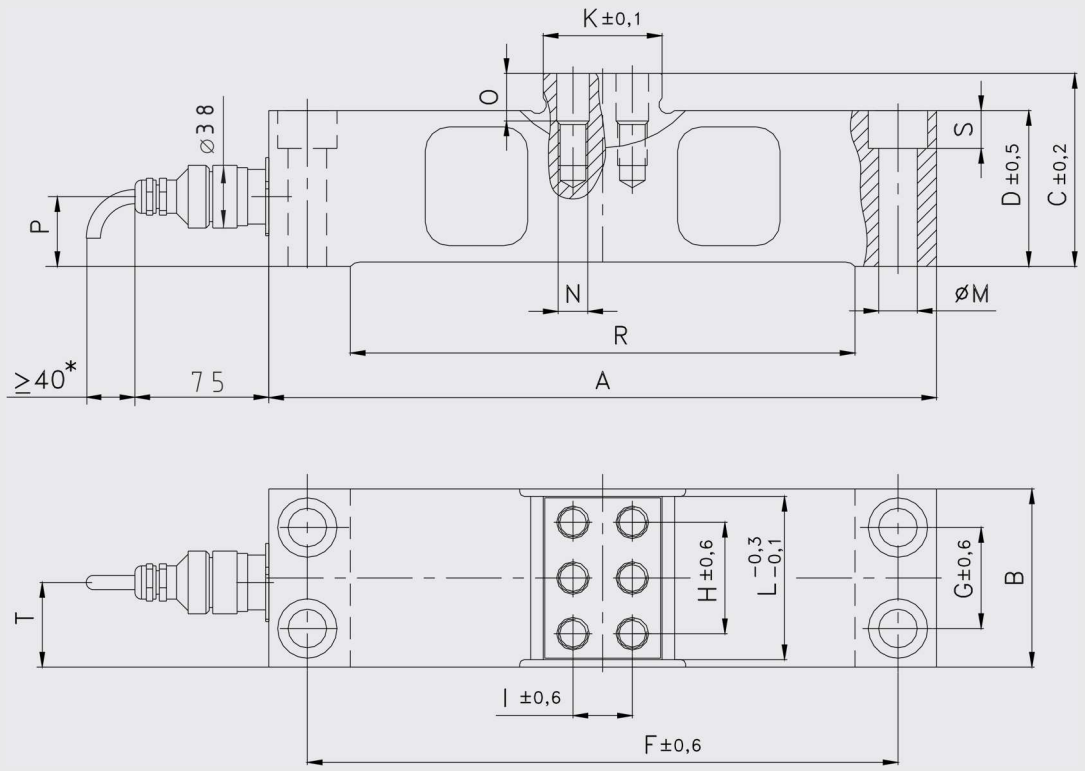
WB 40 t



* Another 15 mm are needed for isolating the plug connection.

Fitting dimension when connecting with a straight plug connection

WB 50 t … 200 t



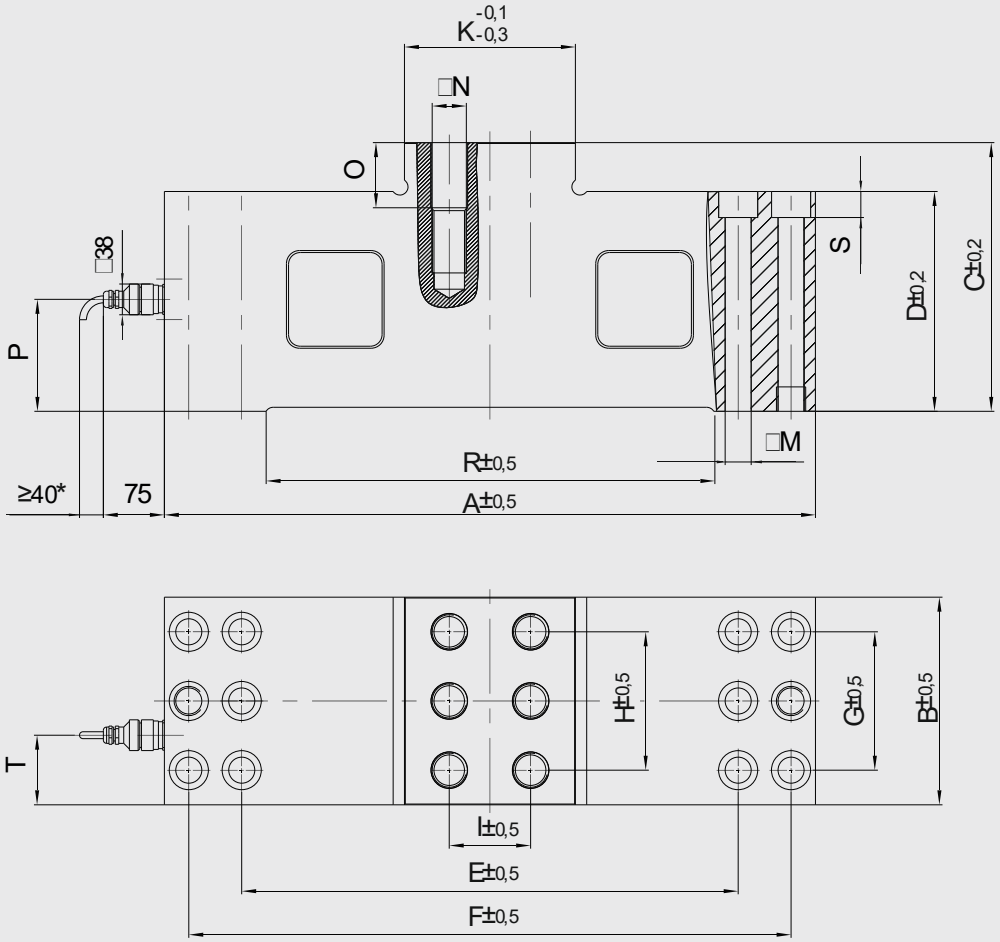
* Another 15 mm are needed for isolating the plug connection.

[mm]

Design	A	B	C	D	F	G	H	I	K	L	M (**)	N	O	P	R	S	T
WB 50 t	450	120	130	105	398	68	75	40	80	110	26 (M24)	M20 x 30	32	45	340	25.5	57
WB 100 t	500	140	143	118	444	80	90	44	90	130	30 (M27)	M24 x 36	38	54	370	28.5	63
WB 150 t	560	160	158	133	500	94	102	44	90	150	33 (M30)	M24 x 36	38	66	410	32	69
WB 200 t	620	180	175	150	560	114	110	44	90	160	33 (M30)	M24 x 40	40	75	450	32	76

(**) Screw size

WB 600 t



* Another 15 mm are needed for isolating the plug connection.

[mm]

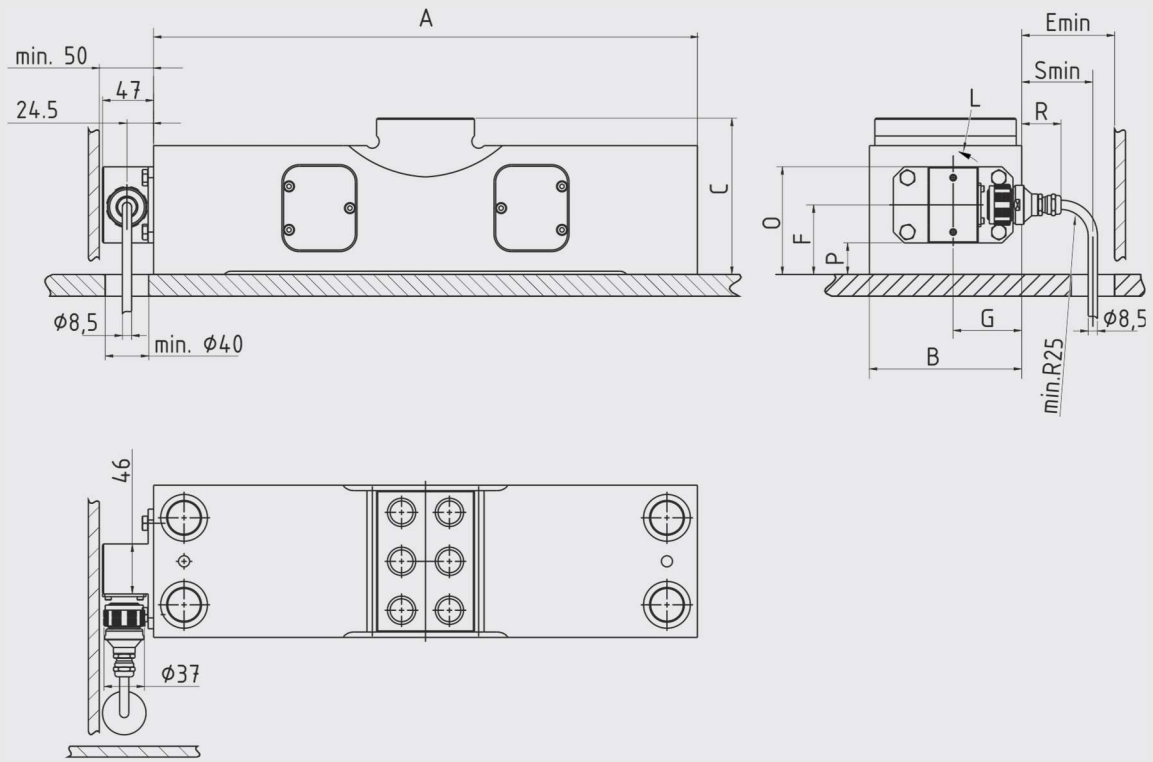
Design	A	B	C	D	E	F	G	H	I	K	M (**)	N	O	P	R	S	T
WB 600 t	800	255	330	270	610	740	170	170	100	210	32 (M30)	M42 x 80	80	137.5	550	32	85.5

(**) Screw size

schenck process

Fitting dimension when connecting with hinged plug connection

WB 40 t … 600 t



Design	A	B	C	E	F	G	L *)	O	R	S	P
WB 40 t	450	110	105	96	45	57	0°/180°	80	47	76	10
WB 50 t	450	120	130	91	45	57	0°/180°	80	42	71	10
WB 100 t	500	140	143	85	54	63	0°/180°	89	36	65	19
WB 150 t	560	160	158	79	66	69	0°/180°	101	30	59	31
WB 200 t	620	180	175	74	75	76	0°/180°	110	25	54	40
WB 600 t	800	255	330	64	137.5	85.5	0°/180°	172.5	15	44	102.5

*) Cable outlet possible on both sides.

0°: Cable outlet on the right

180°: Cable outlet on the left

Standard: Cable outlet on the right

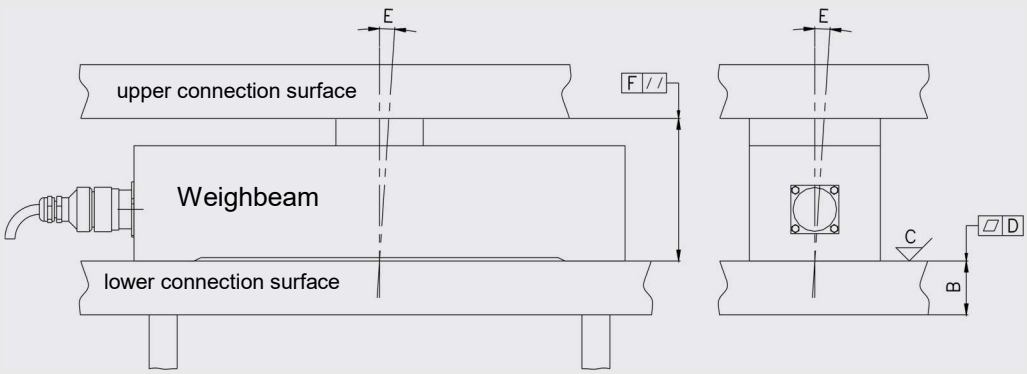
Technical Data

		WB 40 t	WB 50 t	WB 100 t	WB 150 t	WB 200 t	WB 600 t	Ref
Nominal load	E_{max}	40 t	50 t	100 t	150 t	200 t	600 t	
Limit load (with $L_q = 0.15 \times L_l$) Limit load = max. safe load	L_l	100 t	120 t	210 t	290 t	360 t	1000 t	
Breaking load (with $L_q = 0.15 \times L_d$)	L_d	160 t	200 t	350 t	480 t	600 t	1200 t	
Max. permitted lateral load	$L_{q, max}$	40 t	50 t	85 t	120 t	150 t	400 t	
Nominal characteristic value	C_n	0.95 mV / V	1.08 mV / V	1.38 mV / V	1.57 mV / V	1.63 mV / V	1.40 mV/V	E_{max}
Compound error	F_{comb}	±0.1 % *)	±0.07 % *)				0.1 % *)	C_n
Creepage under load (30 min)	F_{cr}	±0.05 %						C_n
Input resistance	R_e	694 Ω ±8 Ω						T_r
Output resistance	R_a	700 Ω ±4 Ω						T_r
Ref- supply voltage	U_{sref}	10 V						
Max. supply voltage	U_{smax}	36 V						
Nominal temperature	B_{tn}	-10 °C … +100 °C						
Operating temperature (and storage temperature range)	B_{tu}	-40 °C … +180 °C						
Temperature	T_r	+22 °C						
Temperature coefficient of the zero signal	TK_o	±0.05 % / 10 K *)						C_n in B_{tu}
Temperature coefficient of the characteristic value	TK_c	±0.03 % / 10 K *)						
Self-weight	m_e	39 kg	40 kg	55 kg	85 kg	120 kg	400 kg	
Surface		galvanized,						
Protection class		IP68						
Cable specification		The weighbeam has a plug connection. A separate, shielded cable (Ø 8.5 mm x 15 m) is also supplied with suitable plug socket. The following applies to the cable: Silicon cable, bend radius: > 40 mm; temperature range: -50 °C ...+180 °C						
Cable connection allocation		Black: input + (82) Blue: Input - (81) Red: Output + (28) White: Output - (27) Yellow: sense + (82.1) Green: sense - (81.1) Black/yellow: shielding Purple/brown: temperature sensor Pt100 (Not connected sense line – lines have to be insulated)						

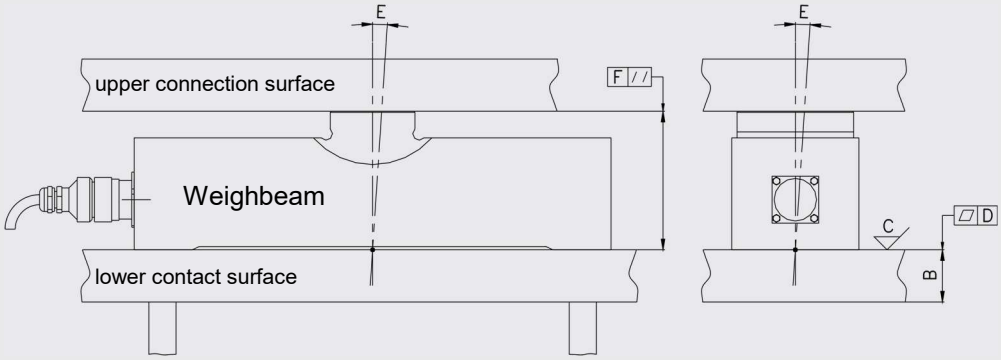
*) in isothermic state

Requirements of the Quality of both Contact Surfaces

WB 40 t



WB 50 t … 600 t



- **Material selection "A"**: Construction steel is used of at least S355 grade must be used.
- **Operating thickness "B"**: This depends on the stiffness of the overall construction. The operating thickness of the connect surfaces must be at least 40% of the the weighbeam height.
- **Surface quality "C"**: The average peak-to-valley height required of the contact surfaces is 6.3 µm.
- **Flatness "D"**: The maximum permissible flatness tolerance of each contact surface is 0.05 mm.
- **Angle error to the vertical axis "E"**: The permitted maximum value for the angle deviation of the contact surface to the vertical axis is ± 2° in both planes.
- **Plane parallelism "F":** The upper and lower contact surfaces to the weighbeam must be plan parallel to each other within at least 0.1 mm.

Order Numbers

Design	Order number with straight plug outlet (see drawing above)	Order number with lateral plug outlet on the right (cf. page 5) *)
WB 40 t	V711375.B03	V758596.B01
WB 50 t	V711375.B13	V758596.B11
WB 100 t	V711375.B23	V758596.B21
WB 150 t	V711375.B33	V758596.B31
WB 200 t	V711375.B43	V758596.B41
WB 600 t	V711375.B53	V758596.B51
Spare part: Connecting cable 15 m with plug connection	V090162.B01	
High-temperature cable: 15 m with plug socket **Constant operation** of the cable is permitted at **– 65 °C - 300 °C.** Operation is permitted at **700 °C** for a period of **up to 90 minutes.**	V090162.B07	

*) Plug outlet in the other direction possible on request

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