SENSiQ

Weighbeam WB 11.5 t ... 600 t

- **Proven for over 30 years, extremely robust and maintenance-free with integrated surge protection, up to IP68**
- **Operating temperature range from -40 °C ... +180 °C with integrated temperature monitoring**
- **High accuracy, maximum error ±0.07% thanks to 6-wire technology and error compensation**
- **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

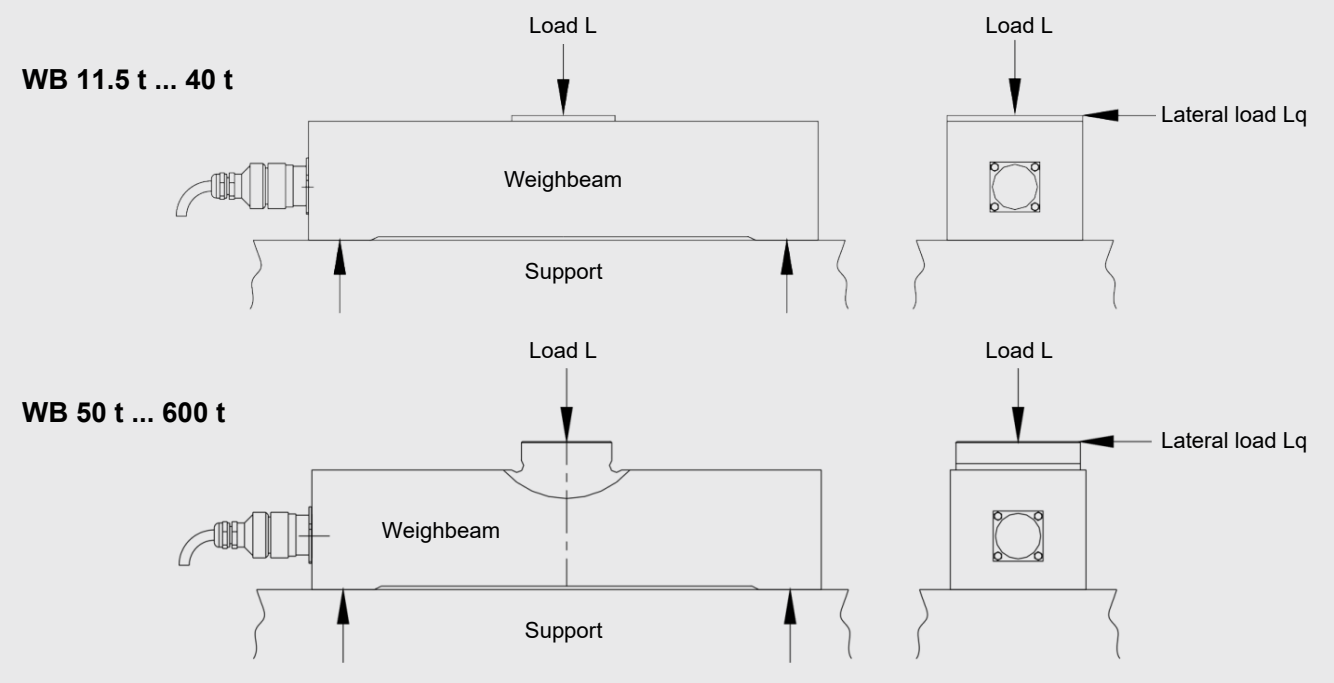
- Simple and cost-effective installation through direct bolted joint with the connecting structure without moving parts
- No additional straps or hold down bolts required
- High functional safety and availability, even with frequently unavoidable impact loads and constraining forces
- For maintenance-free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

Construction

- Compact, flat design
- From WB 50 t: locating head for form-fit absorption of lateral forces
- Plug connector, also available as an angle connector outlet (WB 40 t – WB 600 t)
- Transmission of high disturbance forces and moments with minimal influence on measured values
- 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 previous version of the DWB weighbeams in accordance with data sheets BV-D2059 and BV-D2058.

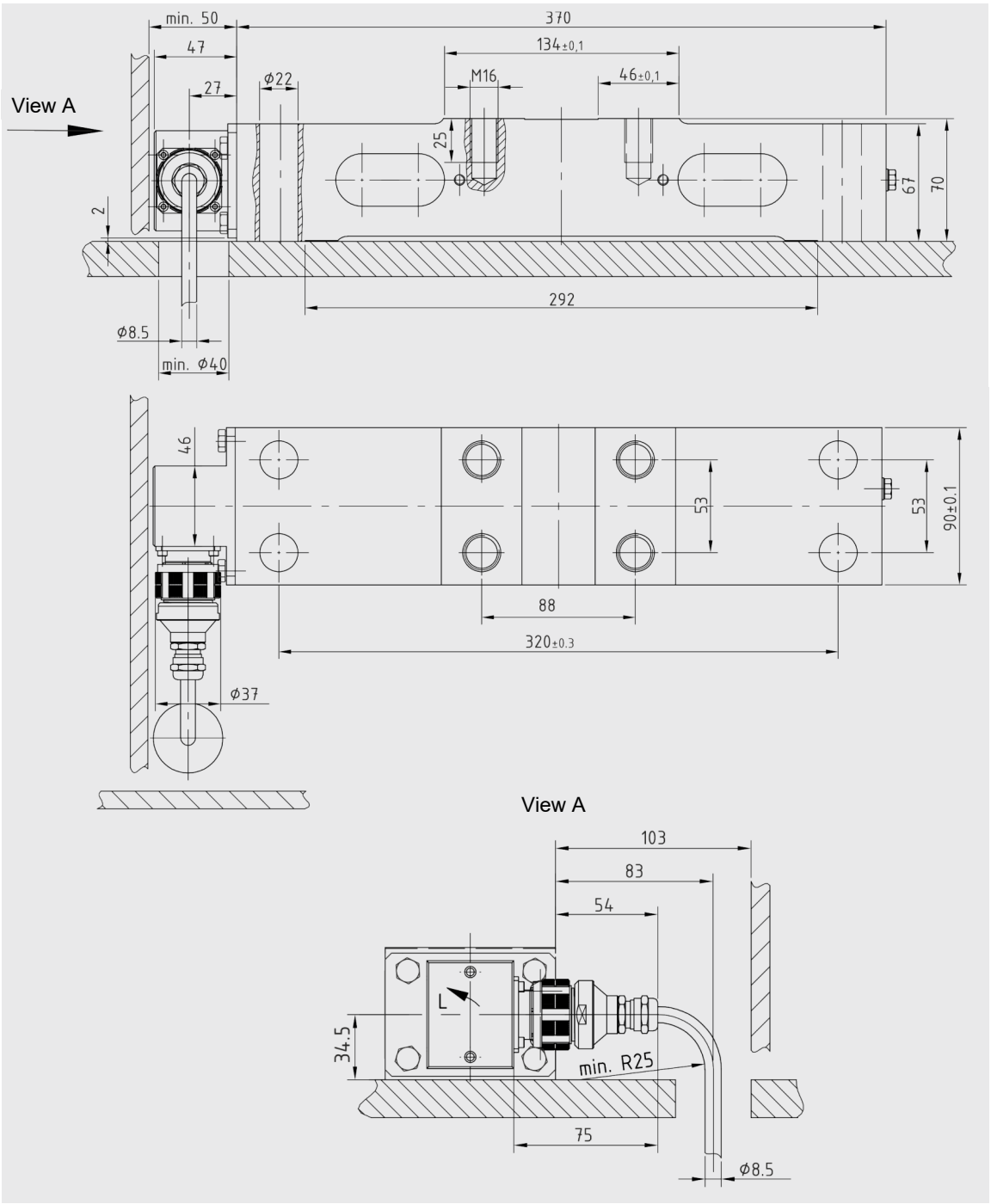
Operating Principle

WB 11.5 t … 600 t

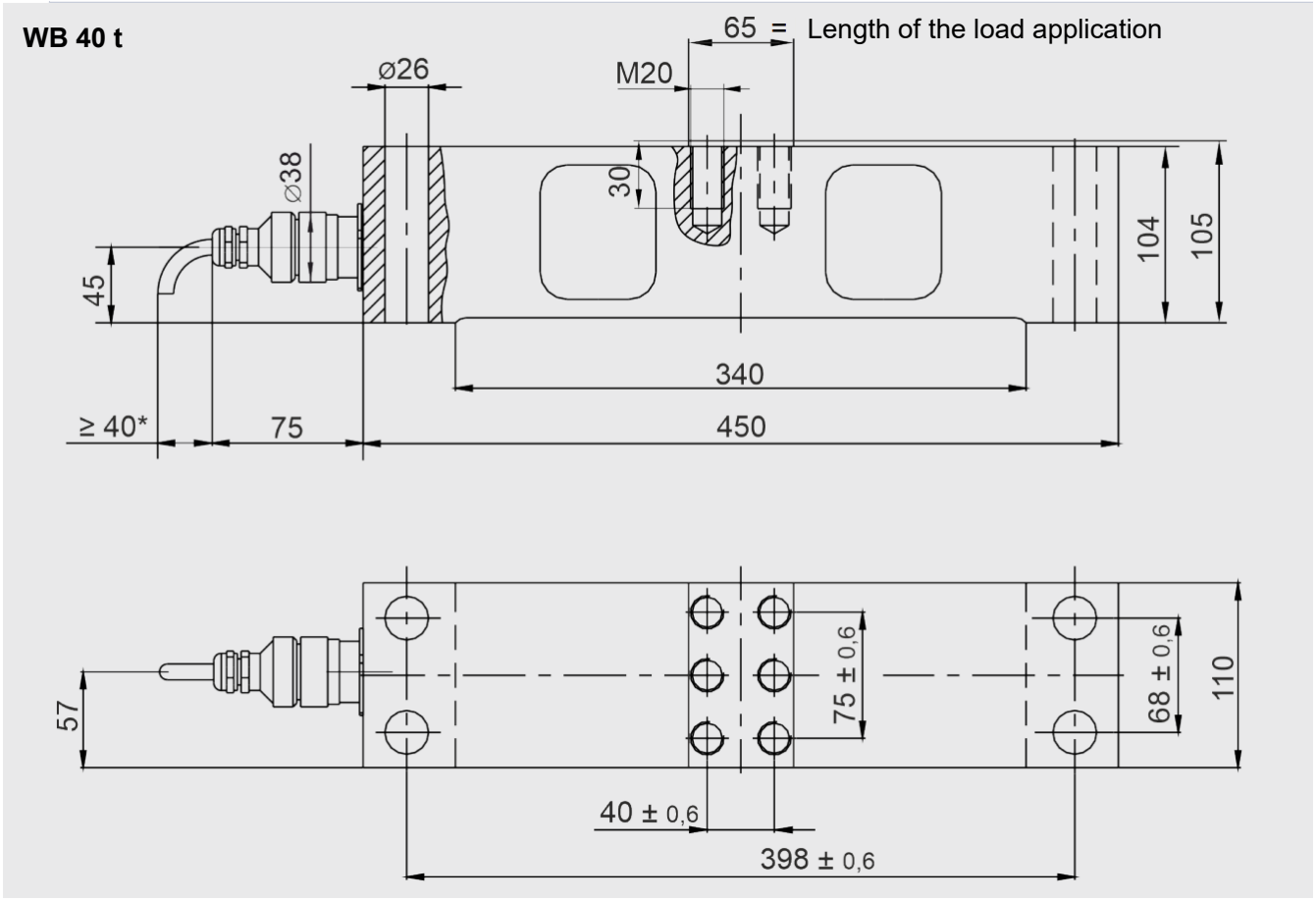


Dimension

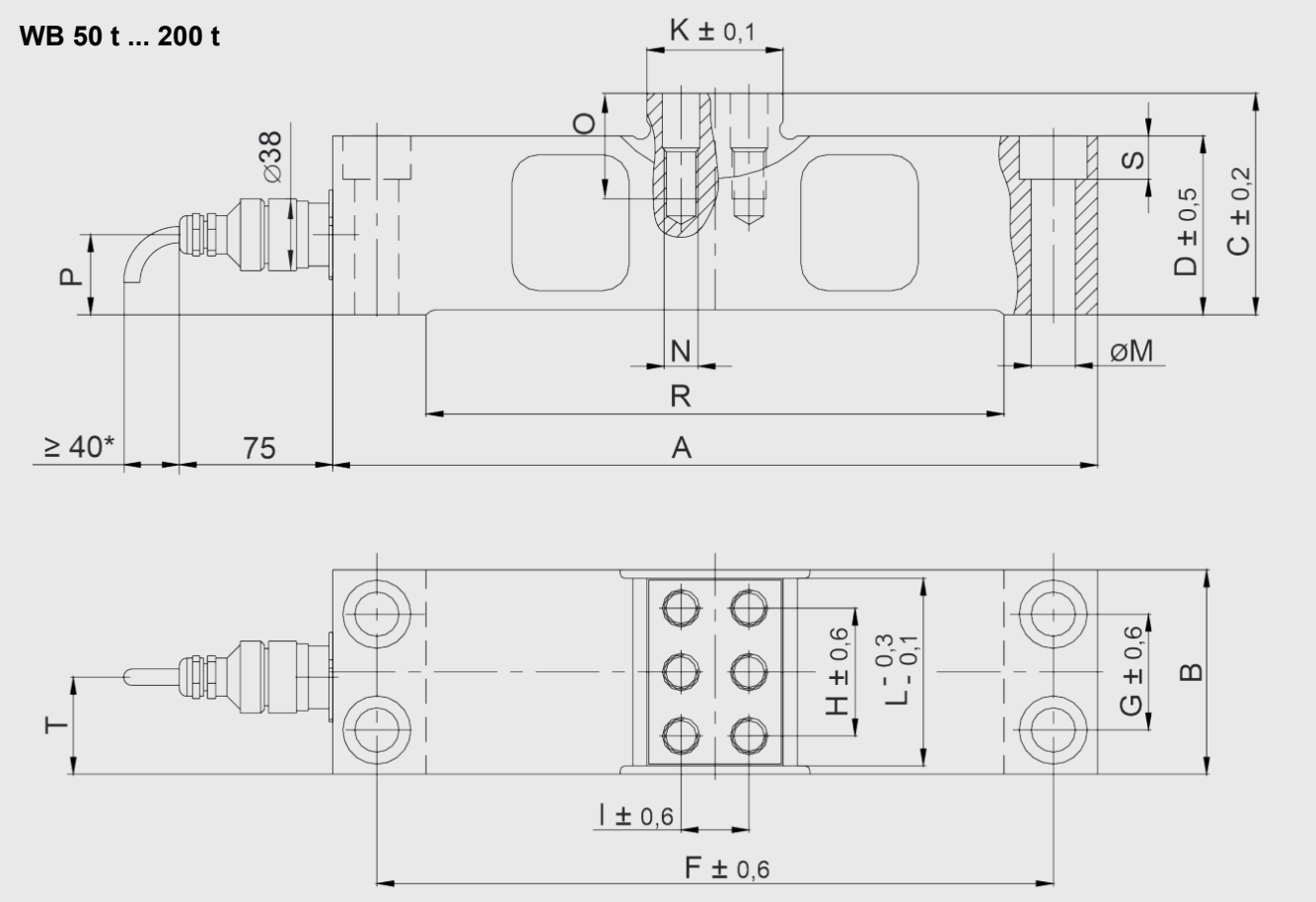
WB 11.5 t … 25 t with side outlet



Connection with straight connector



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



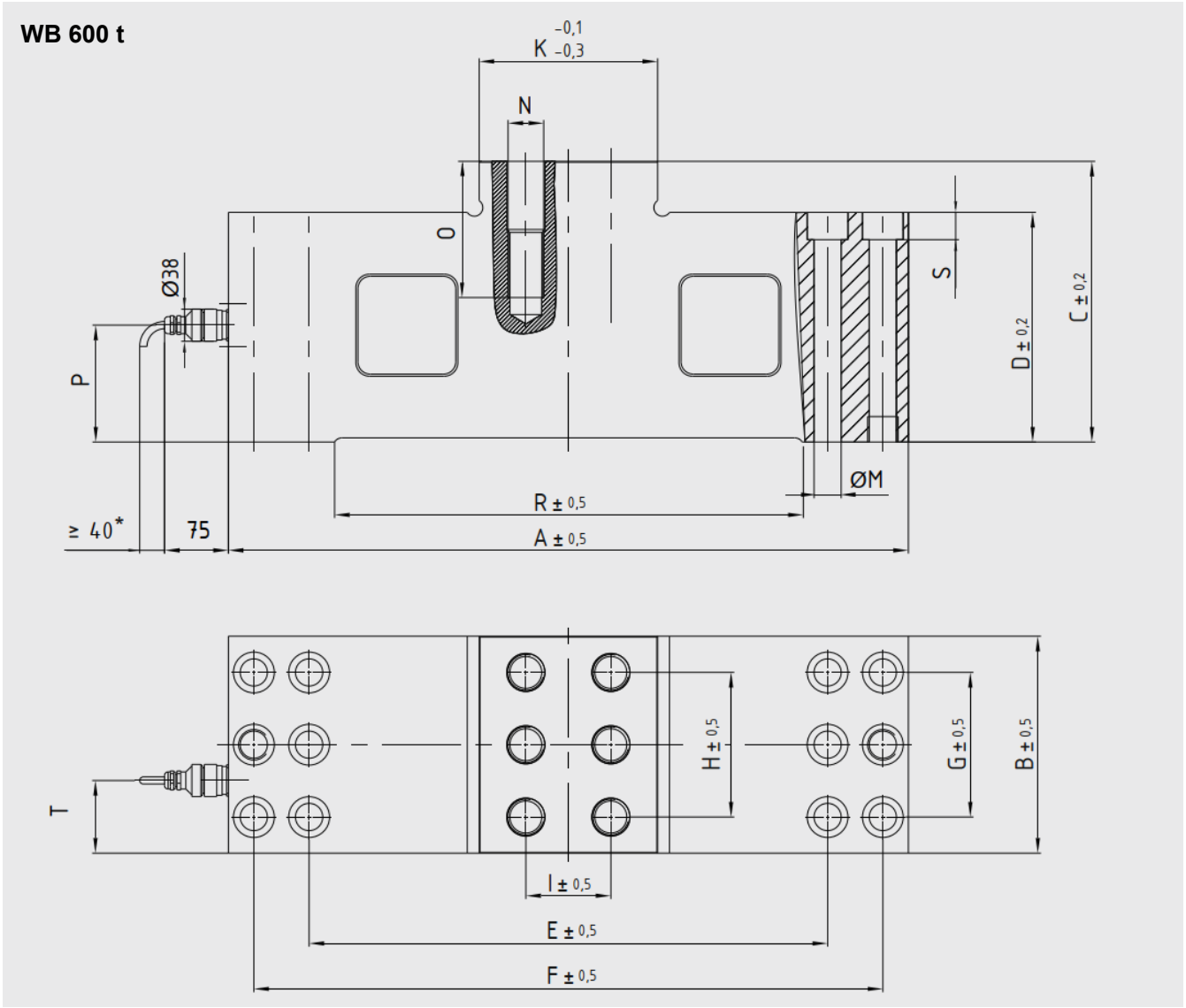
* Another 15 mm are needed for isolating the plug connection.

[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	62	45	340	25.5	57
WB 100 t	500	140	143	118	444	80	90	44	90	130	30 (M27)	M24	74	54	370	28.5	63
WB 150 t	560	160	158	133	500	94	102	44	90	150	33 (M30)	M24	74	66	410	32	69
WB 200 t	620	180	175	150	560	114	110	44	90	160	33 (M30)	M24	80	75	450	32	76

(**) Screw size

WB 600 t



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

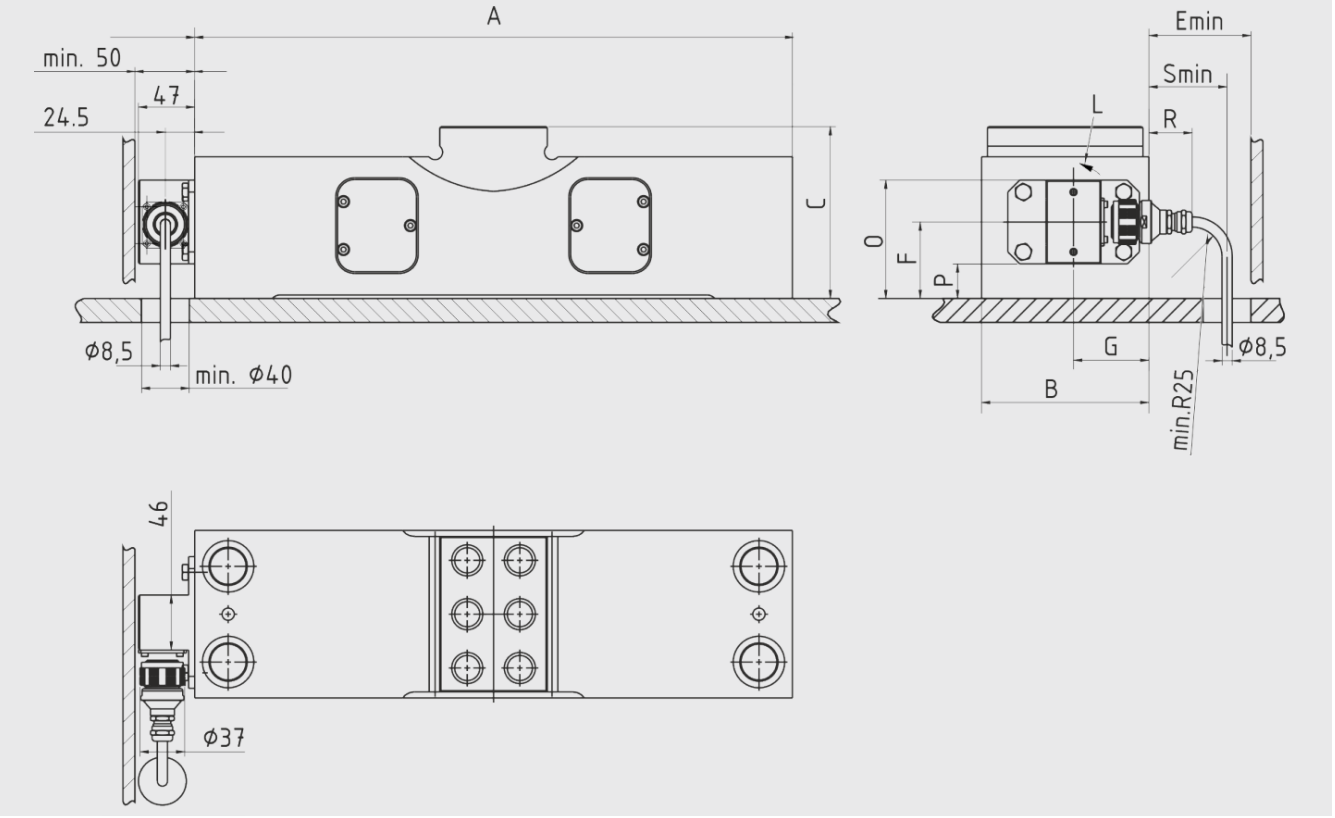
[mm]

Design	A	B	C	D	F	G	H	I	K	L	M (**)	N	O	P	R	S	T
WB 600 t	800	255	330	270	610	740	170	170	100	210	32 (M30)	M42	160	137.5	550	32	85.5

(**) Screw size

Optional angle connector

WB 40 t ... 600 t



[mm]

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 right

180 °: cable outlet left

Standard: cable outlet right

Technical Data

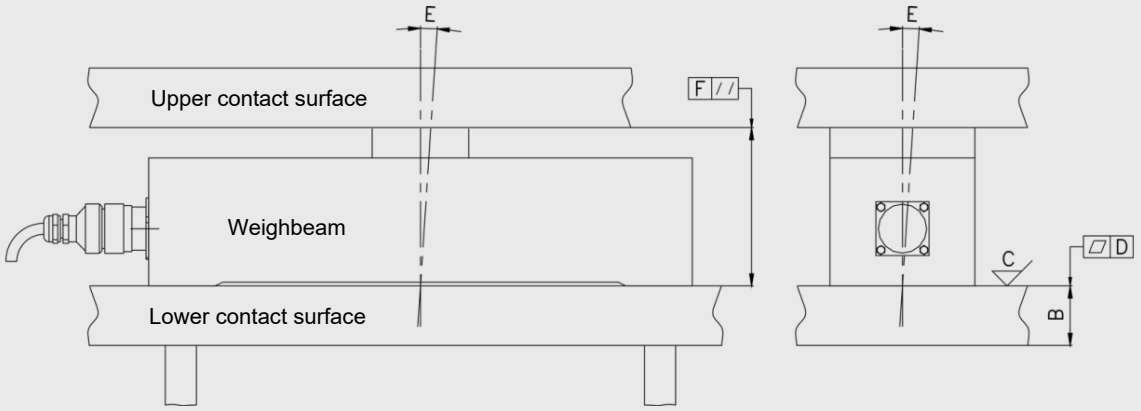
		WB 11.5 t	WB 15 t	WB 25 t	WB 40 t	WB 50 t	WB 100 t	WB 150 t	WB 200 t	WB 600 t	Ref.
Accuracy class [1]			-				D0,7				
Nominal load	E_{max}	11.5 t	15 t	25 t	40 t	50 t	100 t	150 t	200 t	600 t	
Load limit (with L_q=0.15 x L_l) Load limit = max. admissible load	L_l	23 t	26 t	35 t	100 t	120 t	210 t	290 t	360 t	1000 t	
Breaking load (with L_q = 0.15 x L_d)	L_d	35 t	38 t	40 t	160 t	200 t	350 t	480 t	600 t	1200 t	
Max. permitted lateral load	$L_{q, max}$	15 t	18 t	25 t	40 t	50 t	85 t	120 t	150 t	400 t	
Nominal characteristic value ±0.2 %	C_n	0.90 mV/V	1.16 mV/V	1.40 mV/V	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}		±0.2 % [2]		±0.1 % [2]		±0.07 % [2]			±0.1 % [2]	C_n
Creepage under load (30 min)	F_{cr}				±0.05 %						C_n
Max. admissible no. of legal-for-trade scale intervals [1]	n_{LC}		-				700				
Smallest scale interval [1]	V_{min}		-				E_{max} / 700				
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						
Reference temperature	T_r				+22 °C						
Temperature coefficient of the zero signal	TK_0				±0.05 % / 10 K [2]						C_n in the B_{tu}
Temperature coefficient of the characteristic value	TK_c		±0.05 % / 10 K [2]				±0.03 % / 10 K [2]				
Dead load	m_e		18 kg		39 kg	40 kg	55 kg	85 kg	120 kg	400 kg	
Surface					galvanized						
Type of protection			IP67				IP68				
Cable specification		The weighbeam has a plug connection. A separate shielded cable (Ø 8.5 mm x 15 m) with a matching socket connector is supplied. The following applies to the cable: Silicone cable, bending 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; Lilac/brown: temperature sensor Pt100 (Non-connected sense wires must be insulated.)									

[1] for information purposes only

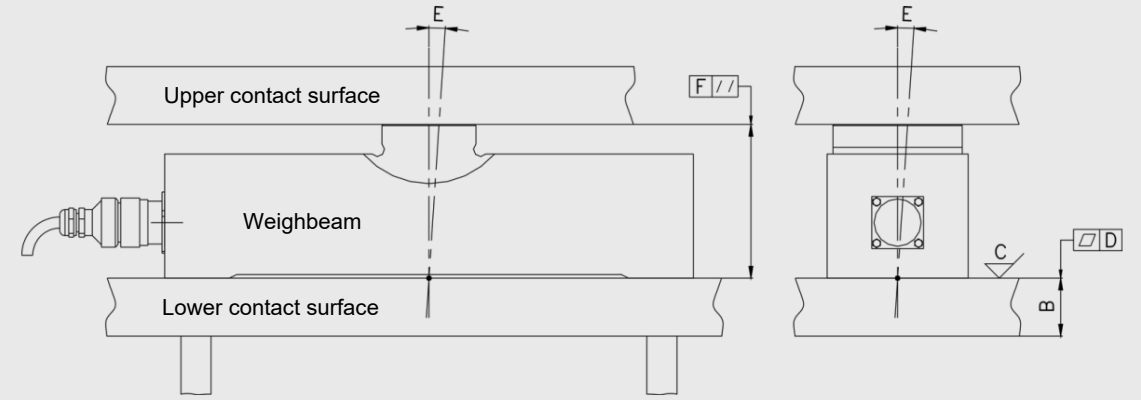
[2] in the isothermal state

Requirements of the Quality of both Contact Surfaces

WB 11.5 t ... 40 t



WB 50 t ... 600 t



- **Material selection „A“**: At least one structural steel of grade S355 must be used.
- **Plate 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 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 in both planes is ± 2.
- **Plane parallelism „F“**: The upper and lower contact surfaces to the weighbeam must be plane-parallel to each other within at least 0.1 mm.

Order numbers

Design	Order number with straight connector outlet (see drawing above)	Order number with right-side connector outlet (see *dimensions: optional angle connector*)*)
WB11.5 t	not available	V711375.B73
15 t	not available	V711375.B83
25 t	not available	V711375.B93
40 t	V711375.B03	V758596.B01
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: Plug socket with 15 m connecting cable	V090162.B01	
High-temperature cable: 15 m with socket connector 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	
Measurement cable: 30 m	V090162.B04	

*) Connector outlet in the opposite direction available on request