schenckprocess

Weighbeam DWB 11.5 ... 25t

- **Simple and economical installation through direct screwing onto the connecting structure**
- **Transmission of high interferential forces and moments at minimal impact on measurement value**
- **Extremely low headroom**
- **Designed for rugged environment**
- **Suitable for construction of service free scales**
- **Option: HT-type for service temperature up to 120°C**

Application

- Silo and hopper scales
- Crane scales
- Rail weighbridges
- Scrap bucket, roller train, and tundish scales
- Platform scales

Construction

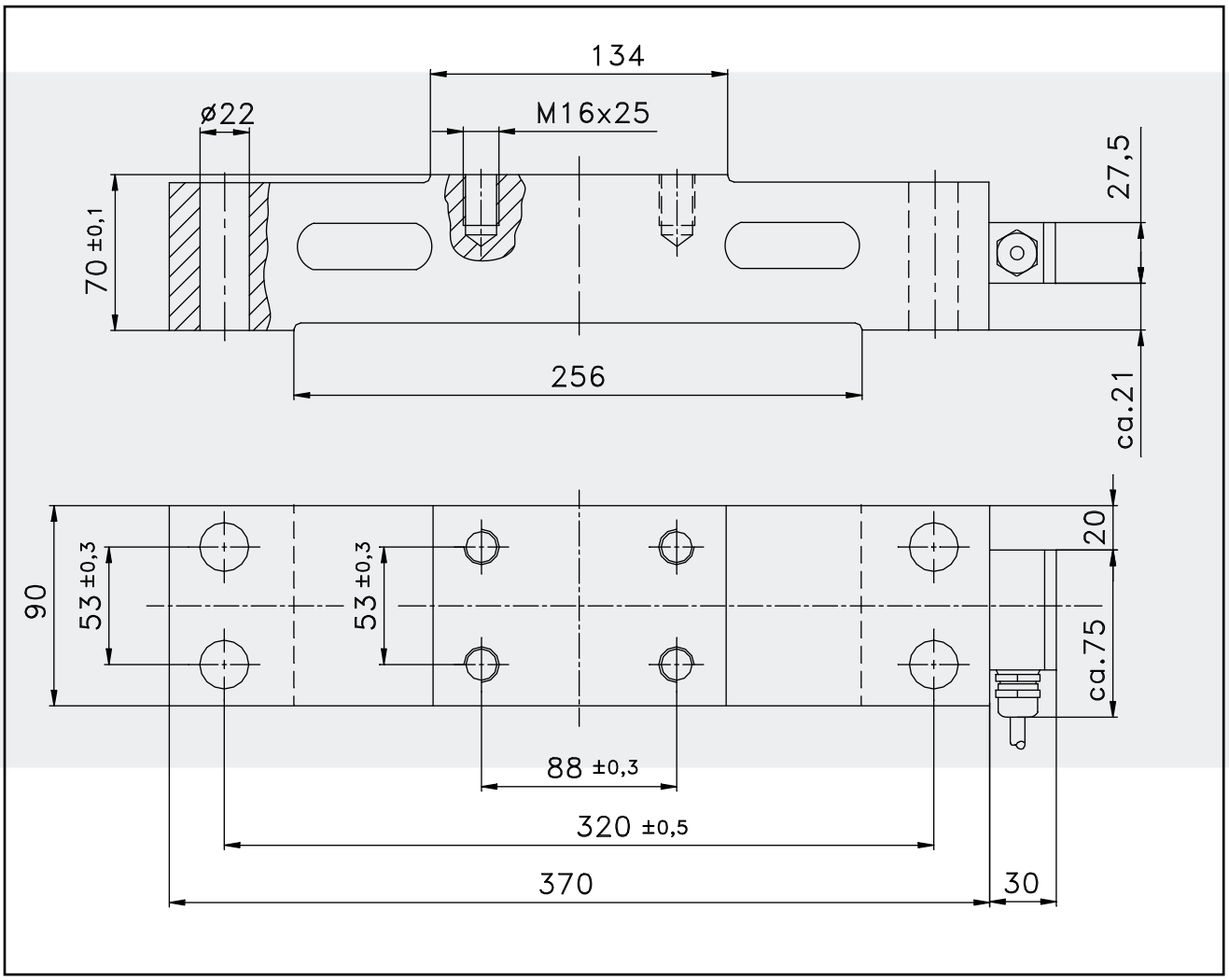
- Low and compact design
- Galvanized surface
- Protected to IP 67

Function

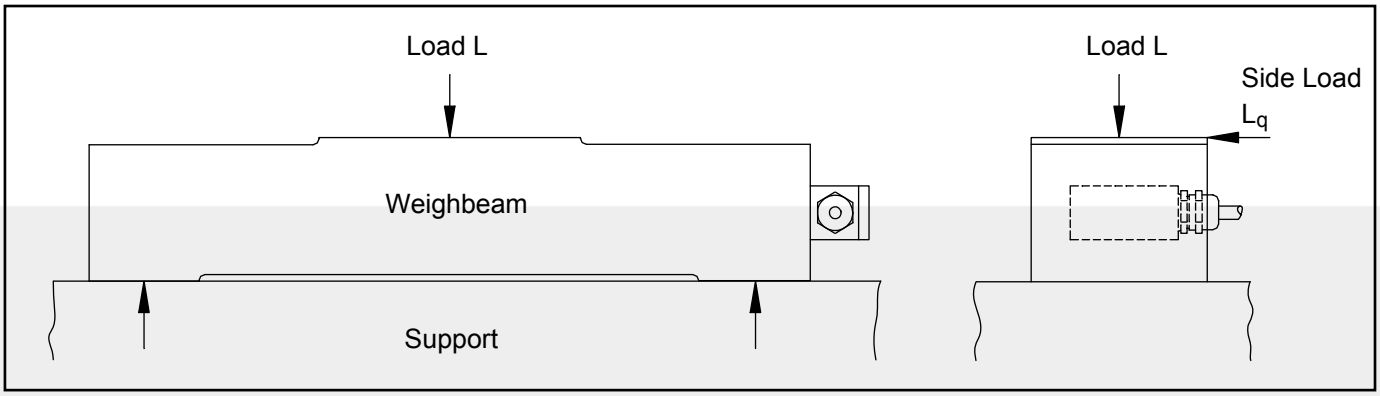
- High degree of reliability and availability
- Virtually impervious to shock loads and unavoidable side forces
- No need for additional tie-rods and hold-downs

we make processes work

Mounting Dimensions



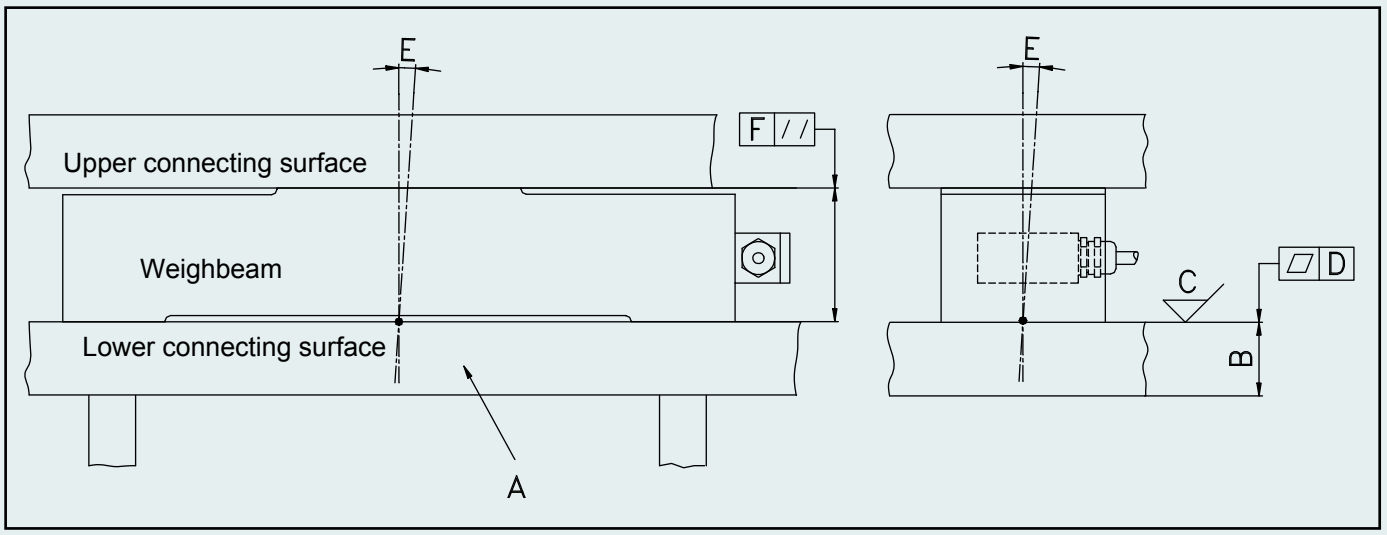
Operating Principle



Technical Data

		DWB 11.5 t	DWB 15 t	DWB 25 t	Reference
Rated capacity	L_n	11.5 t	15 t	25 t	
Limit load (with $L_q = 0.15xL_n$)	L_l	23 t	26 t	35 t	
Rupture load (with $L_q = 0.15xL_n$)	L_d	35 t	38 t	40 t	
Max. admissible side load	L_{qmax}	15 t	18 t	25 t	
Sensitivity	C_n	0.90 mV/V	1.16 mV/V	1.40 mV/V	L_n
Combined error	F_{comb}	± 0.3 %			C_n
Creep (30 m)	F_{cr}	± 0.05 %			C_n
Input resistance	R_e	378 Ω	378 Ω	756 Ω	T_r
Output resistance	R_a	350 Ω	350 Ω	700 Ω	T_r
Ref. supply voltage	U_{sref}	10V			
Max. supply voltage	U_{smax}	18V	18V	36V	
Nominal temperature range	B_{tn}	- 10°C to + 40°C			
Service temperature range	B_{tu}	- 15°C to + 80°C (HT quality + 120°C)			
Reference temperature	T_r	+ 22°C			
Storage temperature range	B_{ts}	- 30°C to + 85°C (HT quality + 120°C)			
Temperature effect on zero signal	TK_o	± 0.1% / 10K (HT quality: ± 0.05%)			C_n in B_{tu}
Temperature effect on sensitivity	TK_c	± 0.07% / 10K (HT quality: ± 0.05%)			
Dead weight	m_e	18kg	18kg	18kg	
Corrosion protection		hot dip galvanized			
Protection class		IP 67			
Cable specification		silicone RAL 7000 (grey) Ø 6.5mm x 15m – 30°C to + 150°C			
Colour code		black : input + (82) / blue : input - (81) red : output + (28) / white : output - (27) green-yellow : screening			

Contact surfaces quality requirements



- Material “A”:
  Usually, construction steel of a minimum quality S355 is used
- Plate thickness “B”:
  Plate thickness depends on total construction stiffness. Connecting surfaces plate thickness must be at least 40% of weighbeam height
- Surface quality “C”:
  The requisite mean rough value of connecting surfaces is around 6.3µm
- Planeness “D”:
  The maximum admissible tolerance of each contact surface is 0.05 mm
- Angular error to vertical axle “E”:
  The connecting surface angle may differ from the vertical. axle in both planes of view by max. ± 2°
- Plane parallelity “F”:
  The upper and lower connecting surfaces to the weighbeam must be plane parallel to minimum 0.1 mm

Variants	Order No.
DWB 11.5 t	D 703 100.01
DWB 15 t	D 703 100.02
DWB 25 t	D 704 280.03

Options:

HT quality for service temperature up to 120°C

Variants	Order No.
DWB 11.5 t HT	D 703 100.04
DWB 25 t HT	D 704 280.05

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Weighbeam DWB 40 t ... 200 t

- **Improved Combined Error: ±0.07 %**
- **Improved TK_C Error: ±0.03 % / 10 K**

Further Features:

- **Six-wire circuit**
- **Service temperature up to 150 °C**
- **Integrated sensor for temperature monitoring**
- **Separate mounting of connecting cable through connector**

Application

- Ladle turret scales
- Ladle ferries
- Scrap bucket, roller table weighing and tundish scales
- Silo and hopper scales

Construction

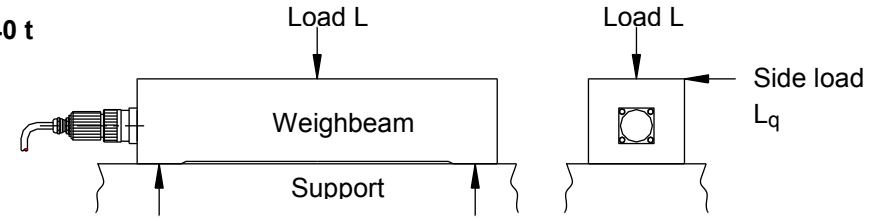
- Compact, flat design
- From 50 t: Locating head for form locking absorption of side forces
- Plug-in connector

Function

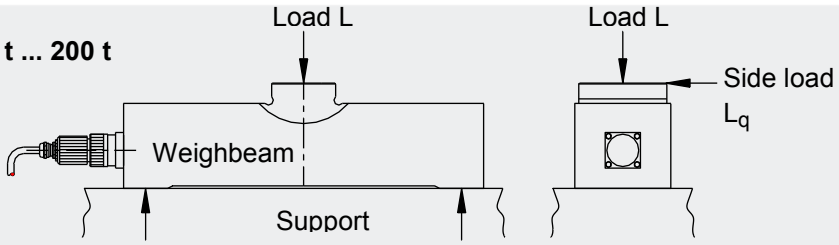
- Simple and economical installation through direct screwing to the connecting structure without movable parts
- No need for additional tie-rods and hold-downs
- Virtually impervious to shock loads and unavoidable side forces
- Suitable to the construction of service free scales in severe environments
- Minimal measurement value reaction on high interferential forces and moments
- High long-term stability
- High degree of repeatability
- Separate mounting of weighbeam and connecting cable possible
- Easy cable exchange

Operating principle

DWB 40 t



DWB 50 t ... 200 t



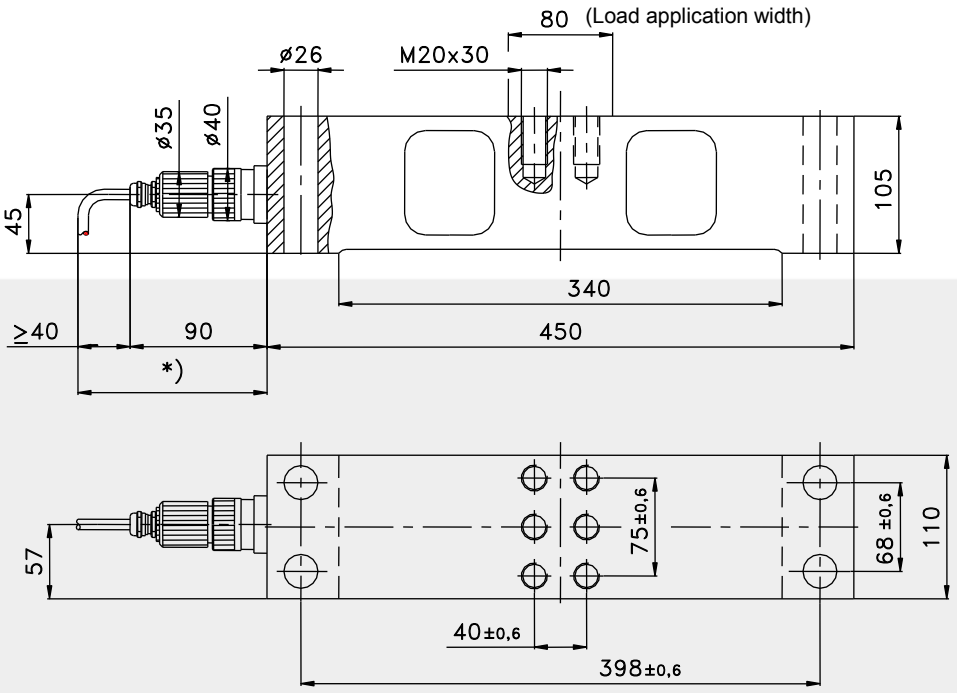
Technical Data

		DWB 40 t	DWB 50 t	DWB 100 t	DWB 150 t	DWB 200 t	Refer-ence
Rated capacity	E_{max}	40 t	50 t	100 t	150 t	200 t	
Limit load (with L_q = 0.15 x L_n) Limit load = Maximum admissible load	L_l	100 t	120 t	210 t	290 t	360 t	
Rupture load (with L_q = 0.15 x L_n)	L_d	160 t	200 t	350 t	480 t	600 t	
Max. admissible side load	L_{qmax}	40 t	50 t	85 t	120 t	150 t	
Sensitivity	C_n	0.95 mV / V	1.08 mV / V	1.38 mV / V	1.57 mV / V	1.63 mV / V	E_{max}
Combined error	F_{comb}	±0.1 %	±0.07 % *)				C_n
Creeping 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
Reference supply voltage	U_{sref}	10 V					
Max. supply voltage	U_{smax}	36 V					
Nominal temperature range	B_{tn}	-10 °C … +100 °C					
Service temperature range	B_{tu}	-15 °C … +150 °C					
Reference temperature	T_r	+22 °C					
Storage temperature range	B_{ts}	-40 °C … +180 °C					
Temperature effect on zero signal	TK_o	±0.05 % / 10 K *)					C_n in B_{tu}
Temperature effect on sensitivity	TK_c	±0.03 % / 10 K *)					
Dead weight	m_e	39 kg	40 kg	55 kg	85 kg	120 kg	
Corrosion protection		hot dip galvanized					
Protection class		IP65					
Cable specification		Silicone: ∅ 8.5 mm x 15 m, screened, including plug socket; Bending radius: ≥ 40 mm, Temperature range: -50 °C ... +180 °C; Wire assignment: 6 wires for measurement value; 2 wires for temperature monitoring					
Colour code		Black: Input + (82) Blue: Input - (81) Red: Output + (28) White: Output - (27) Yellow: Sense + (82.1) Green: Sense - (81.1) Lila/Brown: Temperature sensor PT100					

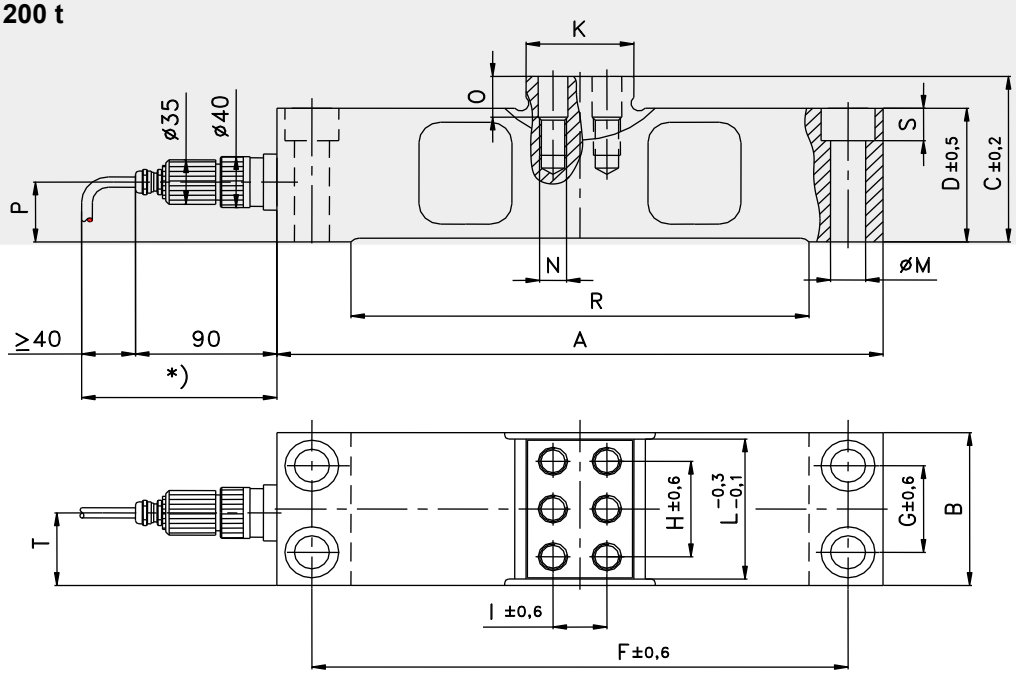
*) in the isothermal state

Mounting Dimensions

DWB 40 t



DWB 50 t ... 200 t



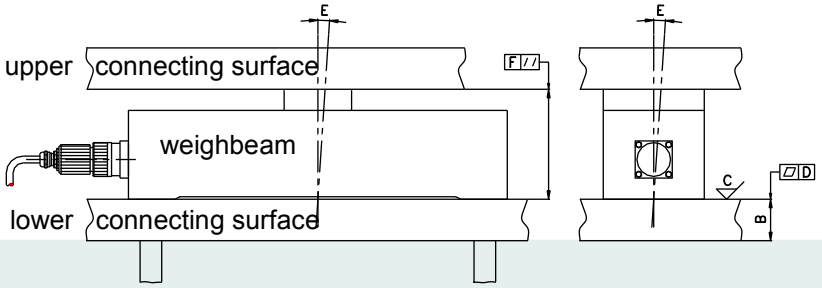
*) The optional version of the DWB with angular connector requires only 65 mm for the connection plus 15 mm for separating both parts of the connector.

Variant	A mm	B mm	C mm	D mm	F mm	G mm	H mm	I mm	K mm	L mm	M *) mm	N	O mm	P mm	R mm	S mm	T mm
DWB 50 t	450	120	130	105	398	68	75	40	80	110	26 (M24)	M20 x 30	32	45	340	25,5	57
DWB 100 t	500	140	143	118	444	80	90	44	90	130	30 (M27)	M24 x 36	38	54	370	28,5	63
DWB 150 t	560	160	158	133	500	94	102	44	90	150	33 (M30)	M24 x 36	38	66	410	32	69
DWB 200 t	620	180	175	150	560	114	110	44	90	160	33 (M30)	M24 x 40	40	75	450	32	76

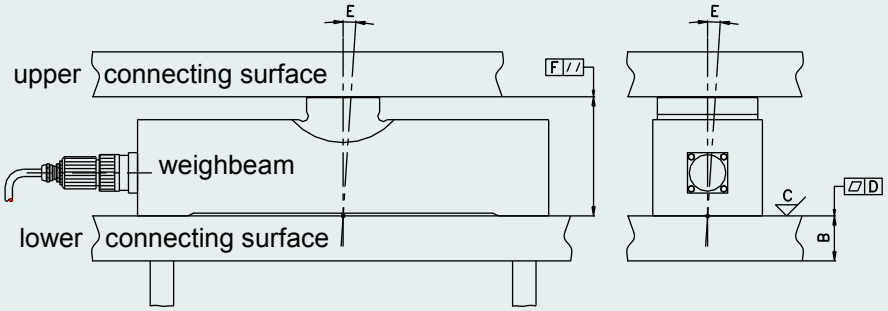
*) screw size

Connecting surface quality requirements

DWB 40 t



DWB 50 t ... 200 t



- Material quality “A”:
  Usually construction steel of a minimum quality S355 is used
- Plate thickness “B”:
  Depends on stiffness of total construction. Plate thickness of connecting surface must be at least 40 % of the weighbeam height
- Surface quality “C”:
  Requisite mean roughness of the connecting surfaces is 6.3 µm
- Planeness “D”:
  Maximum admissible planeness tolerance within every connecting surface is 0.05 mm
- Angular deviation error to vertical axis “E”:
  Angle deviation of connecting surface to vertical axis in both planes of view must not exceed ± 2°
- Plane parallelism “F”:
  Upper and lower connecting surfaces to the weighbeam have to be plane parallel to min. 0.1 mm

Variant	Order No.	*Variant *)*	*Order No.*
DWB 40 t	V094838.B01	DWB 40 t PUR	V094839.B01
DWB 50 t	V094838.B02	DWB 50 t PUR	V094839.B02
DWB 100 t	V094838.B03	DWB 100 t PUR	V094839.B03
DWB 150 t	V094838.B04	DWB 150 t PUR	V094839.B04
DWB 200 t	V094838.B05	DWB 200 t PUR	V094839.B05
Spare Part: Connecting cable 15 m with plug socket	V090162.B01		

**) Deviant technical data of the PUR variant:*
suitable for outdoor use (better protection class IP66), Temperature range for storage and use: -40 °C … +80 °C. Additionally, the PUR-types are equipped with an integrated overvoltage protection.

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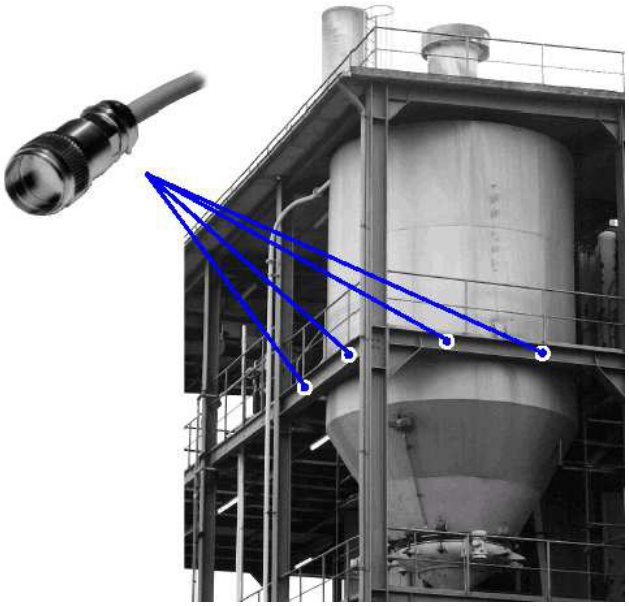
Measuring Eye, DMA Type



- **Compact sensor for measuring forces and masses**
- **Same sensor geometry for all load ranges**
- **Maintenance-free**
- **Hermetically sealed design, protection class IP68**
- **High corrosion protection through use of stainless steel**
- **Easy retrofit of existing silo structures**
- **No contact between sensor and material to be weighed**
- **ATEX categories**
  II 2G Ex ib IIC T6 Gb,
  II 2D Ex tb IIIC T85 °C Db
  II 3G Ex nA IIC T6 Gc
- **IECEx**

Application

The DMA measuring eye has been particularly designed for use as low-priced hopper level measuring system.

With very little effort it can be retrofitted into existing structures permitting gravimetric level measurement.

Other possible applications are, for instance, pre-assembled measuring supports or beams as well as threshold messages for cranes.

Construction

The DMA measuring eye is made of stainless steel. The knurled pressing-in area on circumference transmits the deformations of the supporting structure to a web equipped with strain gauges.

Measuring body and cable outlet are connected by laser welding which produces a hermetical sealing effect.

Function

The DMA measuring eye is pressed into the supporting structure of the construction to be weighed.

When the supporting structure is loaded, the resulting deformations generate a voltage change proportional to applied load.