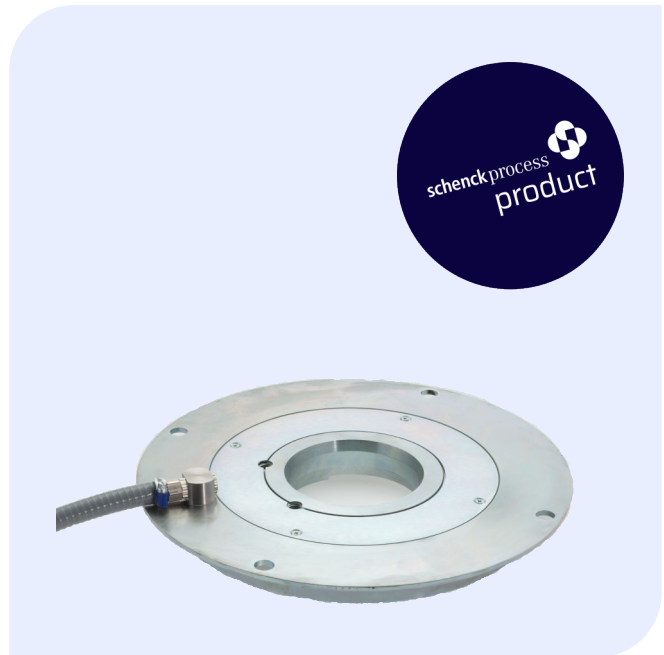


SENSiQ

Weighdisc Radial WDR 20 t ... 160 t

- High Accuracy
- For robust and maintenance-free crane scale design, e.g. for ladles
- Customizable; can be installed in modified bearing housings of existing cranes while maintaining the axle geometry
- Easy and quick installation and commissioning; minimal on-site effort required
- No negative impact on crane scales statics



Application

The Weighdisc Radial is a sensor for the design of heavy, maintenance-free crane scales or other systems for excessive-load measurement.

It can be installed:

- in the lifting beam or
- near the upper pulley

The sensor is particularly well-suited for retrofitting, as it can be easily integrated directly into the vertical bearing shields with minimal effort; however, it can also be easily incorporated into new designs. The WDR ideally combines a load-bearing function with a measuring task. This makes the structural analysis of the load-bearing structure with a fully integrated load cell extremely simple.

Construction

The WDR is of particularly robust design. It ensures safe, trouble-free operation even under the harsh conditions of an industrial environment.

Function

The Weighdisc Radial operates according to the manufacturer's proven direct weighing technology:

Shear forces and moments are safely transmitted. The effect on the weight measurement that occurs during the measurement can be disregarded.

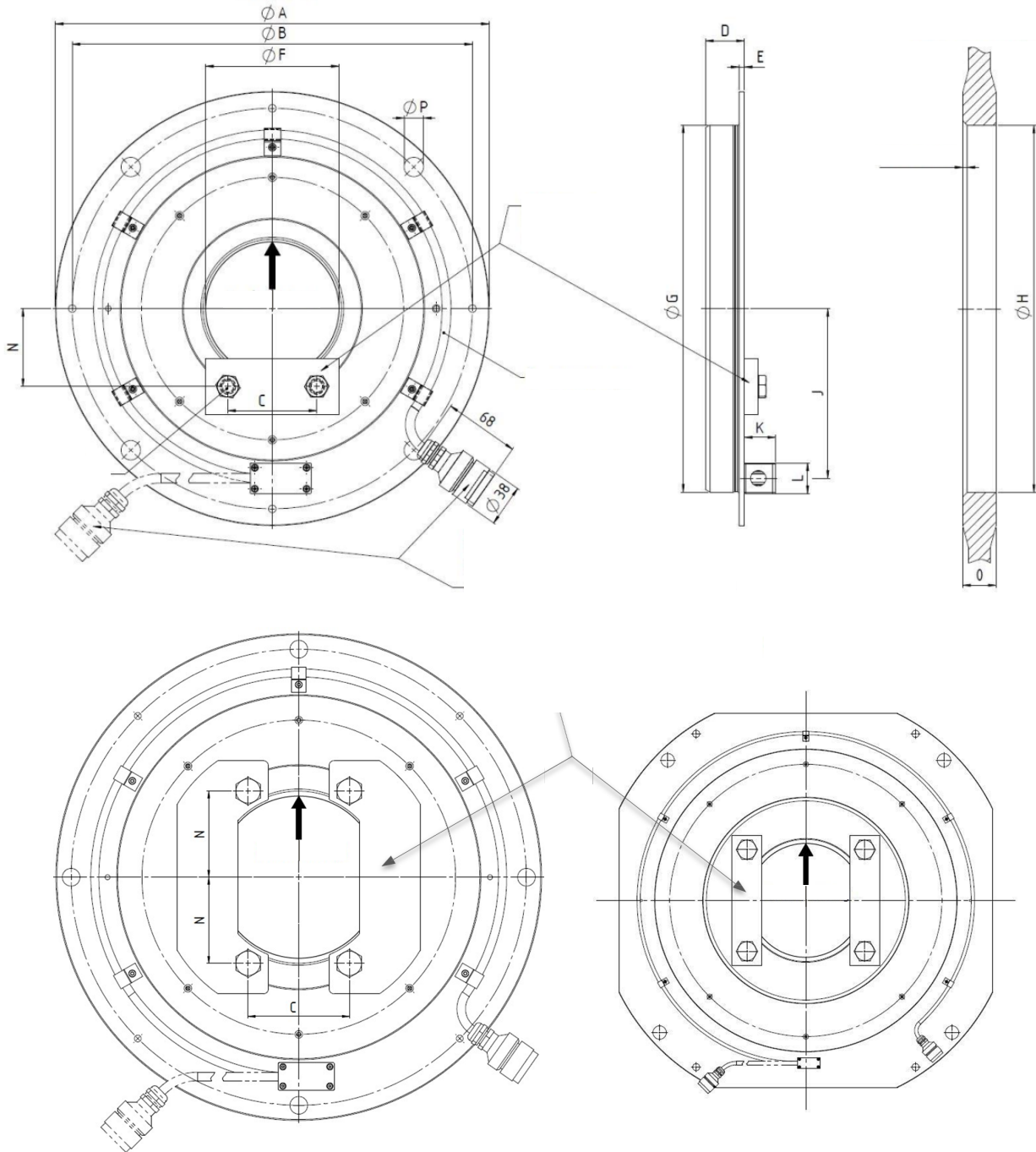
The sensor is installed directly into the vertical bearing housing for the cable drum shaft, such as in pan or coil transport cranes. The Weighdisc Radial WDR enables the construction of highly accurate crane scales that do not require any additional installation height.

Threaded holes are envisaged as standard for axle holders. The anti-twist protection can be supplemented as an option.

An integrated temperature sensor Pt 100 informs the customer of the current thermal load of the sensor.

The cable outlet is initially securely attached to the sensor; a connector is then attached to a short section of flexible cable to facilitate transport and servicing. This makes it very easy to adjust the cable outlet to the steel structure on-site.

Dimensions (in mm)

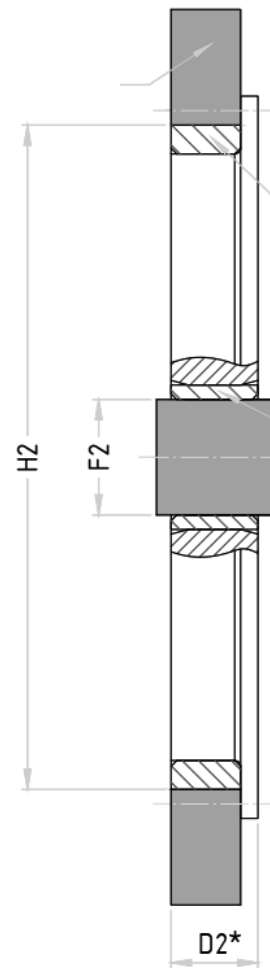


WDR type	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Q	R
20 t	390	360	80	35	5	120 ^{G8}	330 _{h9}	330 ^{G8}	152.5	30	27.5	70	30	17.5	1100	M12
40 t	480	450	100	60	12	160 ^{G8}	416 _{h9}	416 ^{G8}	196.5	30	27.5	85	48	17.5	1400	M16
60 t	600	560	130	70	10	200 ^{G8}	520 _{h9}	520 ^{G8}	245	30	27.5	105	60	22	1700	M20
80 t	660	610	200	68	8	220 ^{G8}	560 _{h9}	560 ^{G8}	265	30	27.5	105	60	22	1800	M20
160 t	1025	970	290	110	40	280 ^{G8}	900 _{h9}	900 ^{G8}	420	30	27.5	125	70	33	2700	M30

If necessary, the Weighdisc Radial can be adapted to standard shaft diameters smaller than dimension F and mounting holes larger than dimension H using adapter sleeves.

Typical geometries for adapter sleeves (for example, compatible with ASEA sensors of the QGPK-105 series):

WDR type	ASEA-H2	ASEA-F2	e.g., ASEA type
WDR 40 t	600 mm	160 mm	25 t
WDR 60 t	700 mm	200 mm	40 t / 63 t
WDR 80 t	800 mm	200 mm	100 t
WDR 160 t	900 mm	280 mm	160 t



* Similarly, our engineering team can accommodate installation lengths D2 specified by the client.

Technical Data

		WD 20 t	WD 40 t	WD 60 t	WD 80 t	WD 160 t	Ref.
Nominal load ¹⁾	E_{max}	20 t	40 t	60 t	80 t	160 t	
Breaking load ¹⁾	L_d	40 t	80 t	120 t	160 t	260 t	
Max. permissible axial force	L_{qmax}	3.5 t	10 t	15 t	20 t	40 t	
Char. value	C_n	1.3 mV / V	1.1 mV / V	0.9 mV / V	0.9 mV / V	1.0 mV / V	E_{max}
Linearity error	F_{lin}			±0.1 % ²⁾³⁾			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	B_{tu}			-40 °C ... +180 °C			
Reference temperature	T_r			+22 °C			
Storage temperature range	B_{ts}			-50 °C ... +180 °C			
Temperature coefficient of the zero signal	TK_0			±0.03 % / 10 K ³⁾			C_n in the B_{tu}
Temperature coefficient of the characteristic value	TK_c			±0.05 % / 10 K ³⁾			
Dead weight	m_e	35 kg	65 kg	100 kg	116 kg	475 kg	
Surface				galvanized,			
Type of protection				IP67			
Cable specification		<p>The Weighdisc has a cable assembly with a plug (for cable length, see the dimensions on page 2).</p> <p>A separate shielded cable (Ø8.5 mm x 15 m) with a matching connector is included for connection to the scale's summing box.</p> <p>The following applies to the cable: Silicone cable, bending radius: > 40 mm; temperature range: -50 °C ... +180 °C</p>					
Cable connection allocation		<p>Black: Input +; Blue: Input -</p> <p>Red: output +; White: output -</p> <p>Yellow: Sense +; Green: Sense -</p> <p>Lilac/Brown: Temperature sensor Pt100</p> <p>Black/Yellow: Shielding</p> <p>(Non-connected sense wires must be insulated.)</p>					

¹⁾ The sensors are designed in accordance with the FKM guideline, taking into account the crane-specific partial safety factor γ_p (γ_p) from Table 10 of DIN EN 13001-2. The characteristic value E_{max} and L_d listed above are reduced on an application-specific basis by the lifting load factor η from Section 4.2.2.2.1 of DIN EN 13001-2, depending on the lifting class and lifting speed.

For continuous operation, the alternating stress amplitude is reduced to 80 % of the nominal load E_{max} .

²⁾ In combination with the manufacturer's control electronics

³⁾ In an isothermal state

Order Numbers

Variants ^{*)}	Order number
WDR 20 t	V898269.B11
WDR 40 t	V898269.B31
WDR 60 t	V898269.B41
WDR 80 t	V898269.B51
WDR 160 t	V898269.B71
Spare part: Plug socket with 15 m connecting cable	V090162.B01
High-temperature cable: 15 m with socket connector	V090162.B07
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.	

^{*)} As shown in the illustration on page 2, threaded holes for the axle support have already been provided. However, the axle supports must be ordered separately as part of the customer's project.

Versions with anti-rotation devices are also available upon request.

For versions with adapter sleeves - for example, as replacements for products from other manufacturers - please inquire separately.

