

High-capacity load cell up to 300 t

Model F1270

WIKA data sheet FO 51.36

EAC

Applications

- Weighing, dosing systems, silo weighing
- Production lines
- Testing and production plants
- Truck scales

Special features

- Measuring ranges 0 ... 7.5 t to 0 ... 300 t
- For compression forces
- Ingress protection IP68, hermetically sealed
- Relative linearity error from 0.0166 % F_{nom}



High-capacity load cell, model F1270

Description

The model F1270 high-capacity load cell is available with rated loads of 7.5 t to 300 t and has been specially developed for application in container and silo weighing technology.

It is also suitable for use in harsh industrial applications and in the construction of testing and production plants, where robustness and long-term stability are required.

With its special geometry this high-capacity load cell is excellently suited for installation in truck scales. Here it automatically aligns itself in such a way that there is no need for complex and precise positioning of the vehicle on the weighing platform.

The use of stainless steel, the welded cover of the strain gauge measuring elements and a glass feed-through for the cable connection allow trouble-free use even under unfavourable ambient conditions.

Due to the integrated radii of the load supports, the installation can be carried out with simple force introduction elements.

Options

- Integrated surge arresters (4 x)
- Accessory mounting kits

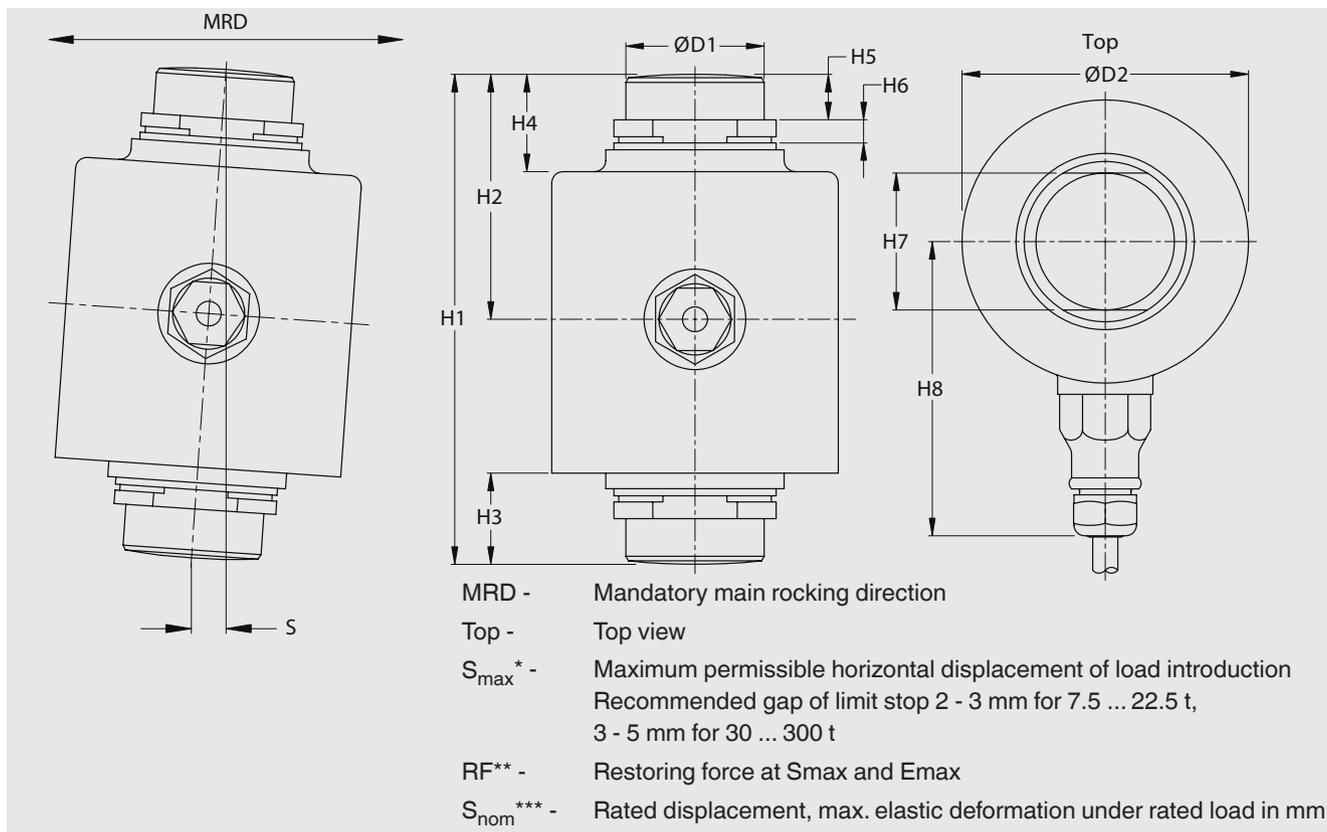
Specifications per VDI/VDE/DKD 2638

Model F1270		
Rated load F_{nom}	7.5, 15, 22.5, 30, 40, 50 t	100, 150, 300 t
Relative linearity error d_{lin}	$\pm 0.0166 \% F_{nom}$	$\pm 0.04 \% F_{nom}$
Relative repeatability error in unchanged mounting position b_{rg}	$\pm 0.0166 \% F_{nom}$	$\pm 0.04 \% F_{nom}$
Relative deviation of zero signal $d_{S,0}$	$\pm 5 \% F_{nom}$	
Relative creep, 30 min.	$\pm 0.0166 \% F_{nom}$	$\pm 0.06 \% F_{nom}$
Temperature effect on zero signal TK_0	$\leq \pm 0.0093 \% / 10 K$	$\leq \pm 0.04 \% / 10 K$
Temperature effect on characteristic value TK_C	$\leq \pm 0.01 \% / 10 K$	$\leq \pm 0.02 \% / 10 K$
Force limit F_L	$200 \% F_{nom}$	
Breaking force F_B	$> 300 \% F_{nom}$	
Material of the measuring body	Stainless steel	
Rated temperature range $B_{T, nom}$	-10 ... +40 °C	
Operating temperature range $B_{T, G}$	-40 ... +80 °C	
Output signal (rated characteristic value) C_{nom}	$2.00 \pm 0.1 \% mV/V$	
Input resistance R_e	$1,150 \pm 50 \Omega$	
Output resistance R_a	$1,000 \pm 2 \Omega$	
Insulation resistance R_{is}	$> 5 G\Omega$	
Electrical connection	4-pin, shielded cable (cable sheath made of polyurethane) <ul style="list-style-type: none"> ■ 7.5 to 22.5 t: AWG 24 (cable length 12 m, Ø 5 mm) ■ 30 and 40 t: AWG 24 or AWG 20 (cable length 18 m, Ø 7.8 mm) ■ from 50 t: AWG 20 (18 m) 	
Voltage supply		
without amplifier	DC 5 ... 15 V for mV/V output	
with integrated amplifier	DC 12 ... 28 V for output 0(4) ... 20 mA, DC 0 ... 10 V	
with cable amplifier		
Ingress protection (per IEC/EN 60529)	IP68 (down to 2 m water depth) / IP69K	
Encapsulation	Completely hermetically sealed Cable connection by means of a glass feed-through	
Rated load - weight in kg		
7.5 t	1.3 kg	
15 t	1.4 kg	
22.5 t	1.5 kg	
30 t	3.4 kg	
40 t	3.6 kg	
50 t	4.5 kg	
100 t	12.9 kg	
150 t	17.1 kg	
300 t	32.8 kg	

Approvals

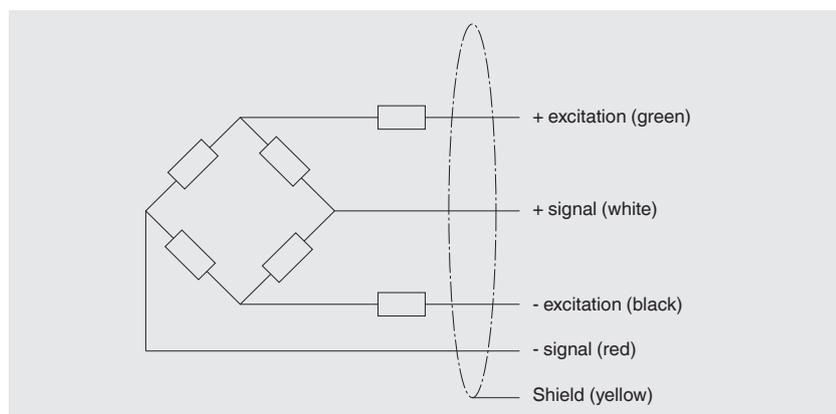
Logo	Description	Country
	EU declaration of conformity <ul style="list-style-type: none"> ■ EMC directive ■ RoHS directive 	European Union
	EAC <ul style="list-style-type: none"> ■ EMC directive 	Eurasian Economic Community

Dimensions in mm



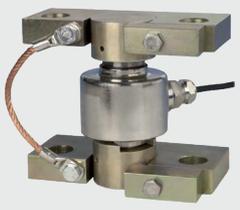
Rated load in kN	Dimensions in mm												
	H1	H2	H3	H4	H5	H6	H7	H8	D1	D2	S_{max}^*	RF**	S_{nom}^{***}
7.5	89	44	17	23	11	6	28	75	28	69	4.5	11 kN	0.5
15	89	44	17	23	11	6	28	75	28	69	4.5	20 kN	0.6
22.5	89	44	17	23	11	6	28	75	28	69	4.5	30 kN	0.6
30	140	70	26	28	13	6.5	39	84	39	81	10.5	34 kN	0.29
40	150	75	31	33	13	11.7	39	84	39	81	10	37 kN	0.8
50	178	89	32	34	17	8.5	44	94	44	99	9	51 kN	1
100	178	89	38.5	38.5	17	12	62	94	62	141.3	11.5	152 kN	0.3
150	210	105	42.7	42.7	20.6	12.8	76.2	121.5	76.2	165	14.5	240 kN	0.35
300	280	140	55.9	55.9	25	21.5	100	121.5	100	165	15	468 kN	0.5

Pin assignment

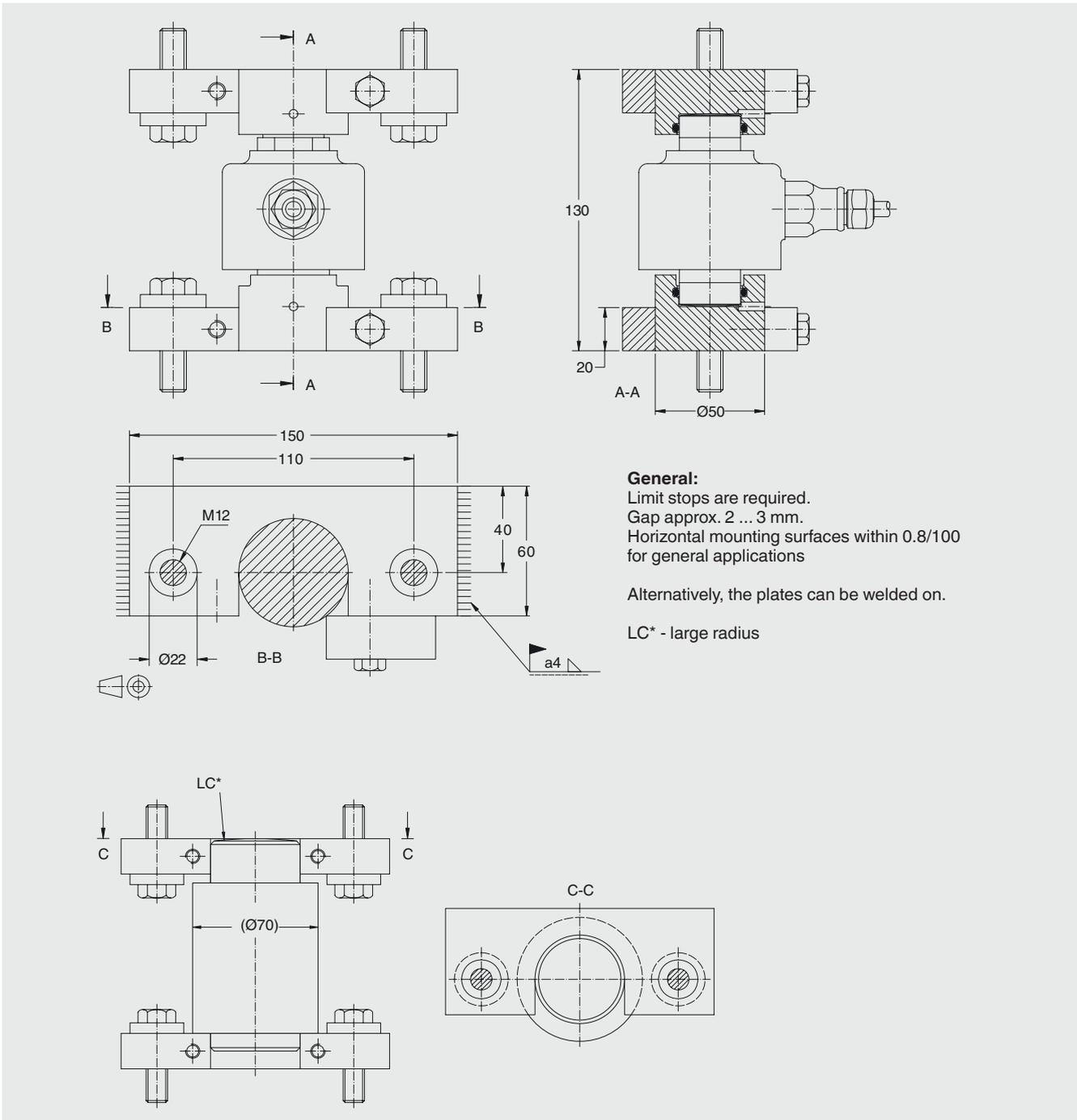


Electrical connection	
Excitation voltage (+)	Green
Excitation voltage (-)	Black
Signal (+)	White
Signal (-)	Red
Shield \oplus	Yellow

Accessories

Model AZK01X711	Description
	<p>Rocker pin mounting kit</p> <ul style="list-style-type: none"> ■ For rated loads 7.5, 15, 22.5 t ■ Material: Electrogalvanised or stainless steel ■ Specially designed for platform scales with a high rated load ■ Scope of delivery: 2 hardened compression pieces, with O-ring, 2 retaining plates, 2 clamps, bridging cable, 1 set of assembly screws

Dimensions in mm



General:
 Limit stops are required.
 Gap approx. 2 ... 3 mm.
 Horizontal mounting surfaces within 0.8/100
 for general applications

Alternatively, the plates can be welded on.

LC* - large radius

Model AZK01X713

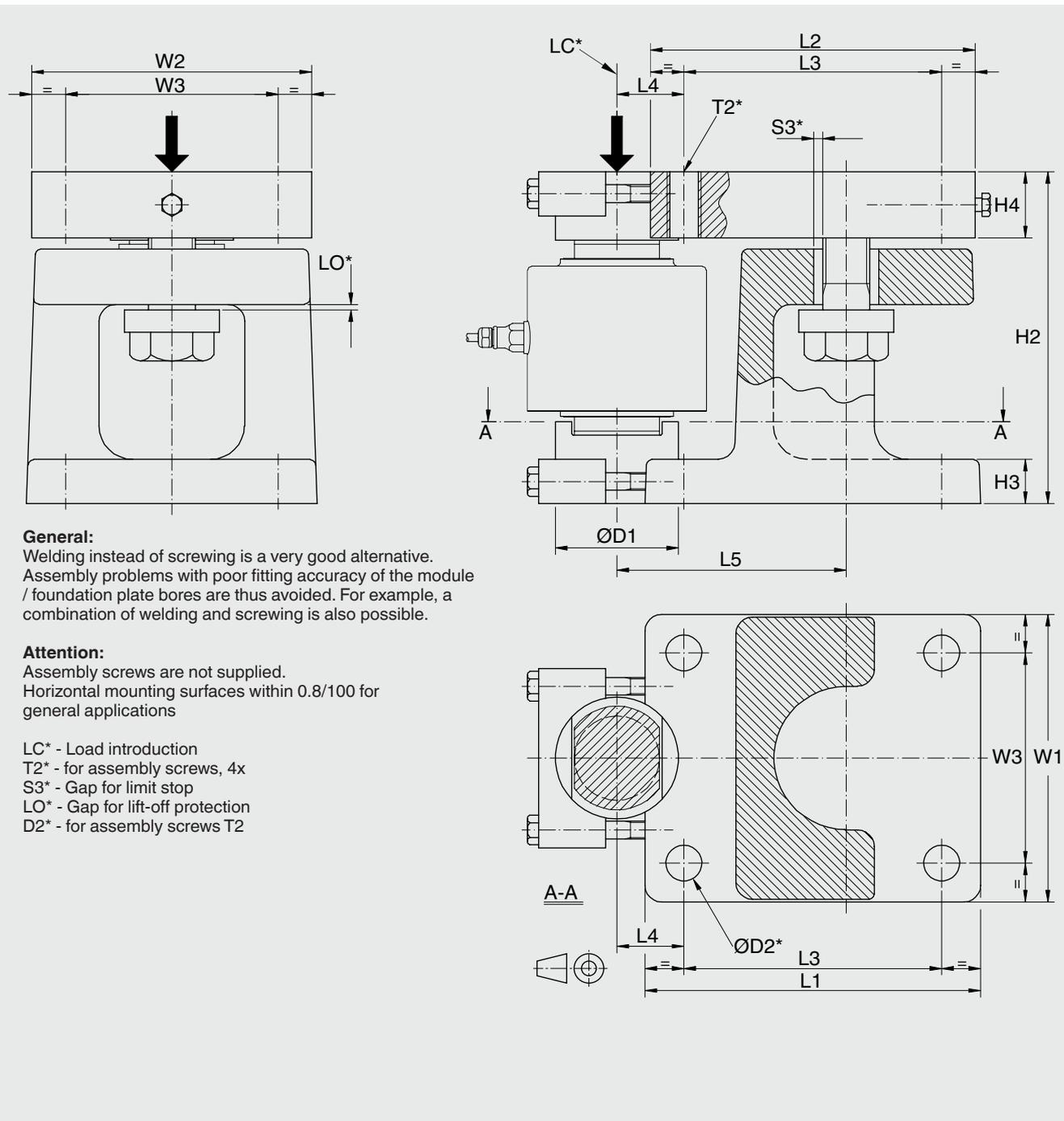
Description



Weighing module mounting kit

- For rated loads 7.5 ... 300 t
- Material: Steel, electrogalvanised
- Specially for silo weighing
- With integrated limit stop and integrated lift-off protection
- Replacement of load cells requires minor lifting

Dimensions in mm



General:

Welding instead of screwing is a very good alternative. Assembly problems with poor fitting accuracy of the module / foundation plate bores are thus avoided. For example, a combination of welding and screwing is also possible.

Attention:

Assembly screws are not supplied.
Horizontal mounting surfaces within 0.8/100 for general applications

- LC* - Load introduction
- T2* - for assembly screws, 4x
- S3* - Gap for limit stop
- LO* - Gap for lift-off protection
- D2* - for assembly screws T2

Rated load in t	Dimensions in mm														
	D1	D2	H2	H3	H4	L1	L2	L3	L4	L5	W1	W2	W3	S3	T2
7.5, 15, 22.5	50	17.5	130	20	30	166	160	130	25	100	136	130	100	5	M16
30, 40	60	22	200	28	40	220	210	170	30	125	160	150	110	6	M20
50.100	85	26	250	34	50	260	250	200	45	165	210	200	150	7	M24
150	110	33	300	40	60	300	290	230	60	205	260	250	190	8	M30
300	135	39	400	60	70	370	350	280	65	235	320	300	230	10	M36

Rated load in t			
	max. perm. force on lift-off protection ¹⁾	max. perm. force on the limit stop ²⁾	Weight without load cell
7.5, 15, 22.5	100 kN	50 kN	15 kg
30, 40	180 kN	90 kN	33 kg
50.100	300 kN	150 kN	65 kg
150	400 kN	200 kN	113 kg
300	600 kN	300 kN	225 kg

Notes:

1) In the worst case, the actual lifting force is absorbed by a module.

2) For container / silo applications with 3 or 4 weighing modules, it can be assumed that the actual lateral forces (wind) are distributed evenly over at least 2 modules.

When designed for earthquake conditions (minimum breaking load), the permissible forces at the lift-off protection are increased by 200 %, at the lateral limit stop by 250 %.

Model	Rated load	Description	Order number
AZK01X711001	7.5 ... 22.5 t	Rocker pin, material: steel	79101338
AZK01X711002	7.5 ... 22.5 t	Rocker pin, material: stainless steel	79101339
AZK01X711010	7.5 ... 22.5 t	AZK01 compression pieces (top and bottom) for rocker pin AZK01X711001/002 + weighing module AZ- K01X713010/011/012 with rated load 7.5 ... 22.5 t, material: stainless steel	79101342
AZK01X713010	7.5 t	Weighing module including high-capacity load cell F1270	79101352
AZK01X713511	15 t	Weighing module including high-capacity load cell F1270	79101353
AZK01X713513	30 t	Weighing module including high-capacity load cell F1270	79101354
AZK01X713516	100 t	Weighing module including high-capacity load cell F1270	79101355

Ordering information

Model / Rated load / Relative linearity error / Output signal / Supply voltage / Temperature range / Electrical connection / Accessories

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