

Shear beam up to 10 t

Model F3831

WIKA data sheet FO 51.21



Applications

- Floor scales
- Weigh feeders
- Platform scales
- Laboratory technology
- Process industry

Special features

- Measuring ranges 0 ... 500 kg up to 0 ... 10,000 kg
- Steel/stainless steel
- High long-term stability
- High side load tolerance



Shear beam, model F3831

Description

Shear beams are designed for static and dynamic measurement tasks in both directions of tension and compression. They determine the shear forces in a wide scope of applications.

These shear beams are used in industrial weighing and laboratory as well as in the process industry. In this way, i.e. tanks and vessels can be weighed very precisely.

The shear beam F3831 is made of steel or stainless steel, which is particularly suitable for the application areas. The output signal is a mV/V signal.

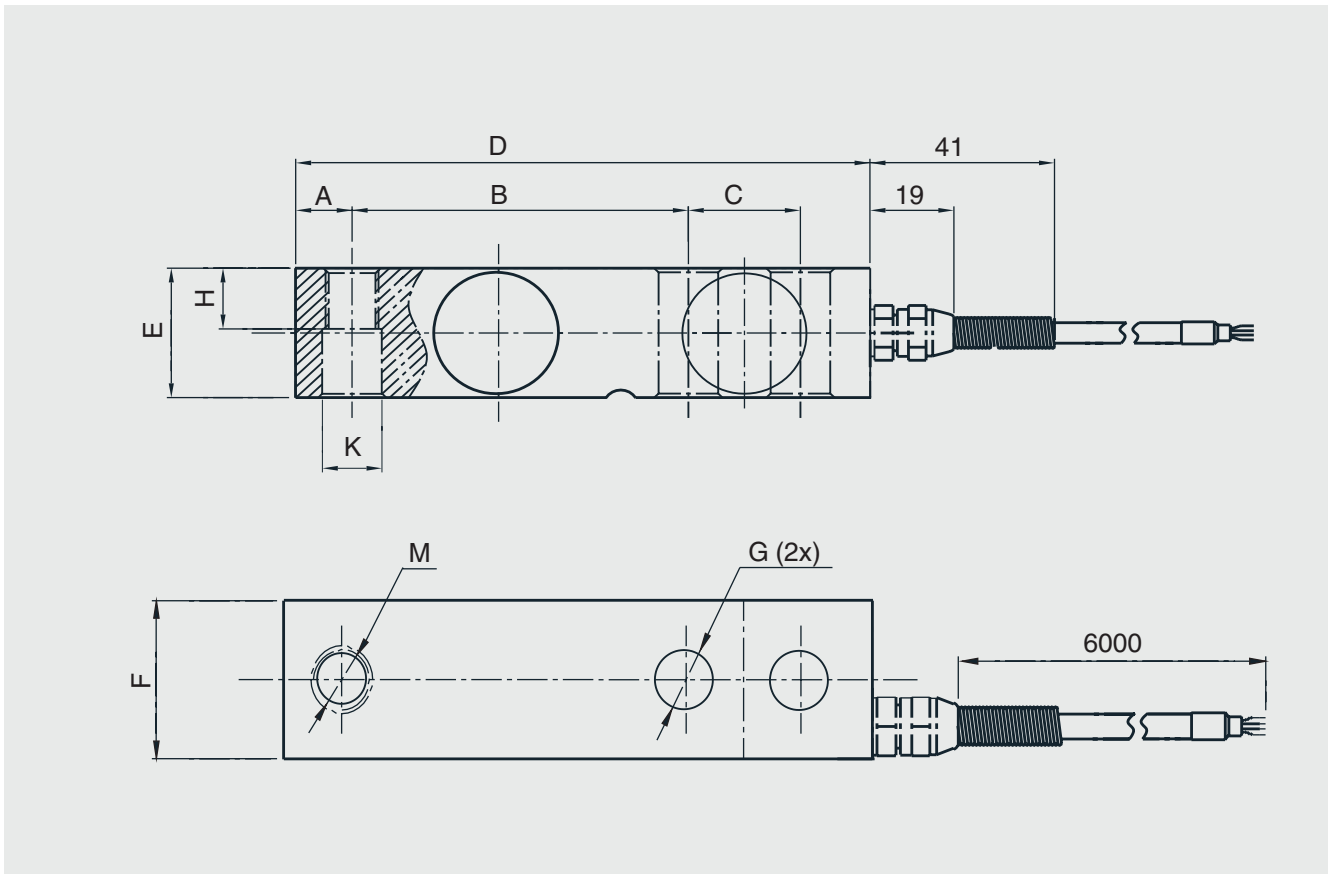
Specifications in accordance with VDI/VDE/DKD 2638

Model F3831	
Nominal load F_{nom} kg	500 / 750 / 1.000 / 1.500 / 2.000 / 2.500 / 3.000 / 5.000 / 7.500 / 10.000
Relative linearity error d_{lin}	
■ Steel	$\pm 0.03 \% F_{nom}$
■ Stainless steel	$\pm 0.05 \% F_{nom}$
Relative creep, 30 min.	
■ Steel	$\pm 0.03 \% F_{nom}$
■ Stainless steel	$\pm 0.05 \% F_{nom}$
Relative reversibility v	
■ Steel	$\pm 0.03 \% F_{nom}$
■ Stainless steel	$\pm 0.05 \% F_{nom}$
Relative repeatability error in unchanged mounting position b_{rg}	
■ Steel	$\pm 0.03 \% F_{nom}$
■ Stainless steel	$\pm 0.05 \% F_{nom}$
Relative deviation of zero signal $d_{S,0}$	$\pm 2 \% F_{nom}$
Temperature effect on zero signal TK_0	$\leq \pm 0.025 \% / 10^\circ C$
Temperature effect on characteristic value TK_C	$\leq \pm 0.025 \% / 10^\circ C$
Force limit F_L	$150 \% F_{nom}$
Breaking force F_B	$> 200 \% F_{nom}$
Material	Steel, stainless steel
Rated temperature range $B_{T, nom}$	$-10 \dots +40^\circ C$
Operating temperature range $B_{T, G}$	$-20 \dots +80^\circ C$
Input resistance R_e	$385 \pm 10 \Omega$
Output resistance R_a	$350 \pm 5 \Omega$
Insulation resistance R_{is}	$\geq 5,000 M\Omega / DC 100 V$
Output signal (rated output) C_{nom}	$2.0 \pm 0,02 mV/V$
Electrical connection	Cable $\varnothing 5 \times 6,000 mm$
Rated range of excitation voltage $B_{U, nom}$	$5 \dots 10V DC (max. 15 VDC)$
Protection (acc. to IEC/EN 60529)	IP67
Nominal load - weight in kg	
■ 500 ... 2,500 kg	1 kg
■ 3,000 ... 5,000 kg	1.9 kg
■ 7,500 ... 10,000 kg	4.5 kg

Approvals

Logo	Description	Country
	EU declaration of conformity ■ EMC directive ■ RoHS directive	European Union
	EAC (Option) ■ EMC directive	Eurasian Economic Community

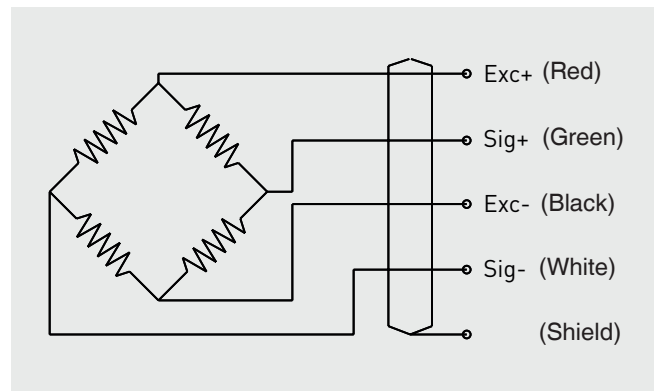
Dimensions in mm



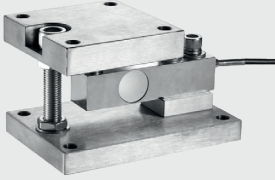
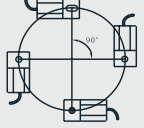
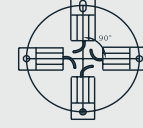


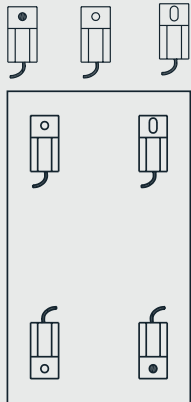


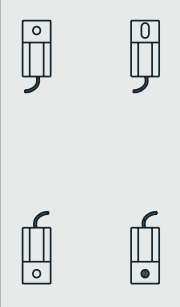
Nominal load F _{nom} in kg	Dimensions in mm									
	A	B	C	D	E	F	ØG	H	ØK	M
500 / 750 / 1,000 / 1,500 / 2,000 / 2,500	12.7	76.2	25.4	130	31.8	31.8	13	15.7	13.5	M12x1.75
3,000 / 5,000	19	95.3	38.1	171.5	38.1	38.1	20	26	20	M18 x 1.5
7,500 / 10,000	25.3	124	50.8	225.5	50.8	50.8	27	25.4	27	M24 x 2

Pin assignment

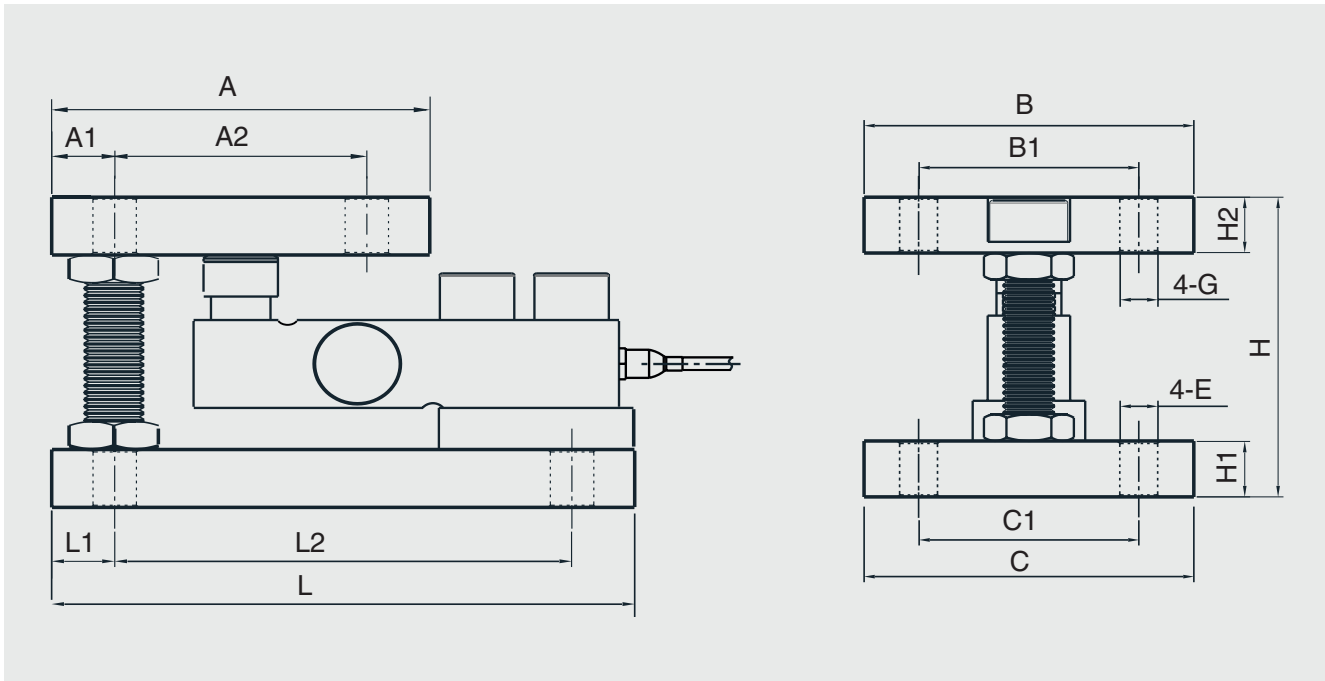
Electrical connection	
Excitation voltage (+)	Red
Excitation voltage (-)	Black
Signal (+)	Green
Signal (-)	White
Screen ⊕	Screen



Accessories

Model AZK02	Description
	<p>Installation kit</p> <ul style="list-style-type: none"> ■ Material steel or stainless steel ■ Weight 7 kg <p>Mounting options</p> <p>4 Vessels feet</p> <p>Tangential Mounting  Radial Mounting </p> <p>3 Vessels feet</p> <p>Tangential Mounting  Radial Mounting </p> <p>Explanation of symbols:</p> <p>Fixed  Full floating  Semi floating </p> 

Dimensions in mm



Nominal load in kg	Dimensions in mm														
	L	L1	L2	A	A1	A2	B	B1	C	C1	H	H1	H2	ØG	ØE
500 / 750 / 1,000 / 1,500 / 2,000 / 2,500	177.8	12.7	152.4	114.3	12.7	88.9	114.3	88.9	114.3	88.9	104.8	19,5	25,4	11	11
3,000 / 5,000	235	25.4	184.2	152.4	25.4	101.6	152.4	101.6	152.4	101.6	136.5	25,4	31,8	17.5	17.5
7,500 / 10,000	355.6	25.4	304.8	203.2	25.4	152.4	203.2	152.4	203.2	152.4	190.5	44.5	44.5	20.6	20.6

Model	Nominal load module	Modules per set	Description	Order number
AZK02 Weighing module-set	0.5 ... 2.5 t	3	Weighing module-set for model F3831 (half thread) 1 x fixed / 1 x semi floating / 1 x full floating material stainless steel	79100795
AZK02 Weighing module-set	3 ... 5 t	3	Weighing module-set for model F3831 (half thread) 1 x fixed / 1 x semi floating / 1 x full floating material stainless steel	79100798
AZK02 Weighing module-set	7.5 ... 10 t	3	Weighing module-set for model F3831 (half thread) 1 x fixed / 1 x semi floating / 1 x full floating material stainless steel	79100799
AZK02 Weighing module-set	0.5 ... 2.5 t	4	Weighing module-set for model F3831 (half thread) 1 x fixed / 1 x semi floating / 2 x full floating material stainless steel	79100800
AZK02 Weighing module-set	3 ... 5 t	4	Weighing module-set for model F3831 (half thread) 1 x fixed / 1 x semi floating / 2 x full floating material stainless steel	79100796
AZK02 Weighing module-set	7.5 ... 10 t	4	Weighing module-set for model F3831 (half thread) 1 x fixed / 1 x semi floating / 2 x full floating material stainless steel	79100797
AZK02 weighing module	0.5 ... 2.5 t	1	fixed	83805770
AZK02 weighing module	3 ... 5 t	1	fixed	83805773
AZK02 weighing module	7.5 ... 10 t	1	fixed	83805782
AZK02 weighing module	0.5 ... 2.5 t	1	semi floating	83805771
AZK02 weighing module	3 ... 5 t	1	semi floating	83805774
AZK02 weighing module	7.5 ... 10 t	1	semi floating	83805783
AZK02 weighing module	0.5 ... 2.5 t	1	full floating	83805772
AZK02 weighing module	3 ... 5 t	1	full floating	83805775
AZK02 weighing module	7.5 ... 10 t	1	full floating	83805784

Ordering information

Model / Nominal load / Relative linearity error / Temperature range / Output signal / Electrical connection / Options

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