

Bending beam

For rated loads up to 500 kg [1,102 lb]

Model F3833

WIKA data sheet FO 51.22



For further approvals,
see page 3

Applications

- Gravimetric level measurement
- Hopper scales, industrial scales
- Dosing units
- Laboratory technology
- Process industry

Special features

- Rated load 5 ... 500 kg [11 ... 1,102 lb]
- Material of the measuring body is stainless steel
- Fully-welded bellows
- Ingress protection IP68



Bending beam, model F3833

Description

The model F3833 bending beam is suitable for static and dynamic measuring requirements in both tension and compression force direction. It serves for determining bending forces or weights in diverse application areas.

This bending beam is used in industrial weighing and laboratory technology, and also in the process industry, and features high measurement accuracy.

The bending beam is also used for gravimetric level measurement of vessels such as silos or tanks.

Various load feet and mounting kits are available for mounting or attachment to the base.

Depending on the application, corresponding approvals are available.

The material of the measuring body is stainless steel.

An mV/V signal is available as a standard output signal, which can be amplified to an analogue signal using a cable amplifier or summed via a junction box. A junction box with up to four inputs is available for combining several bending beams.

The measured weight can be displayed using a weighing indicator.

In combination with the model NETRIS[®]F radio unit, the measured values of the instrument can be transmitted wirelessly. This radio unit can be used to realise solutions for web-based remote monitoring.

Specifications

Basic information

Standard	In accordance with directive VDI/VDE/DKD 2638
Material of the measuring body	Stainless steel
Ingress protection (per IEC/EN 60529)	IP68
Weight	0.6 kg [1.3 lb]

Measuring element

Type of measuring element	Strain gauge
Working range	Determination of bending forces or weights in the tension or compression force direction
Input resistance R_e	$385 \pm 10 \Omega$
Output resistance R_a	$350 \pm 5 \Omega$

Accuracy specifications

Relative linearity error d_{lin}	$\pm 0.02 \% F_{nom}$
Relative creep, 30 min. at F_{nom}	$\pm 0.02 \% F_{nom}$
Relative reversibility error v	$\leq \pm 0.02 \% F_{nom}$
Relative deviation of zero signal $d_{s,0}$	$\pm 2 \% F_{nom}$
Temperature effect on zero signal TC_0	$\leq \pm 0.02 \% / 10 K$
Temperature effect on characteristic value TC_C	$\leq \pm 0.02 \% / 10 K$

Rated load F_{nom}

kg	lb
5	11
10	22
20	44
30	66
40	88
50	110
75	165
100	221

Further details on the rated load

Force limit F_L	$150 \% F_{nom}$
Breaking force F_B	$300 \% F_{nom}$

Output signal

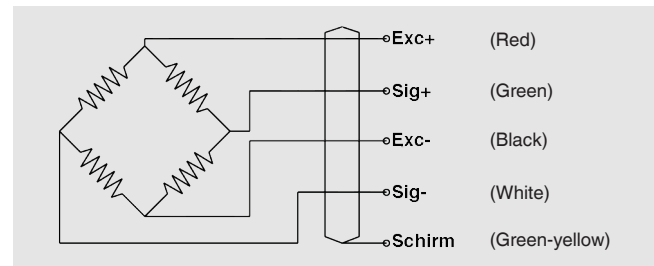
Rated characteristic value C_{nom}	$2.0 \pm 0.02 mV/V$
Supply voltage U_B	DC 10 V (max. 15 V)

Electrical connection	
Connection type	Cable
Cable diameter	5 mm [0.2 in]
Cable length	3,000 mm [118 in]
Insulation resistance R_{IS}	$\geq 5,000 \text{ M}\Omega / \text{DC } 100 \text{ V}$
Material	PVC

Pin assignment

For products with raw signals (mV/V)

Signal		Cable colour
Exc+	Supply voltage +	Red
Exc-	Supply voltage -	Black
Sig+	Signal +	Green
Sig-	Signal -	White
Shield \oplus	Shield	Green-yellow



Operating conditions	
Rated temperature range B_T, nom	$-10 \dots +40 \text{ }^\circ\text{C}$ [$14 \dots +104 \text{ }^\circ\text{F}$]
Operating temperature range B_T, G	$-20 \dots +80 \text{ }^\circ\text{C}$ [$-4 \dots +176 \text{ }^\circ\text{F}$]

Approvals

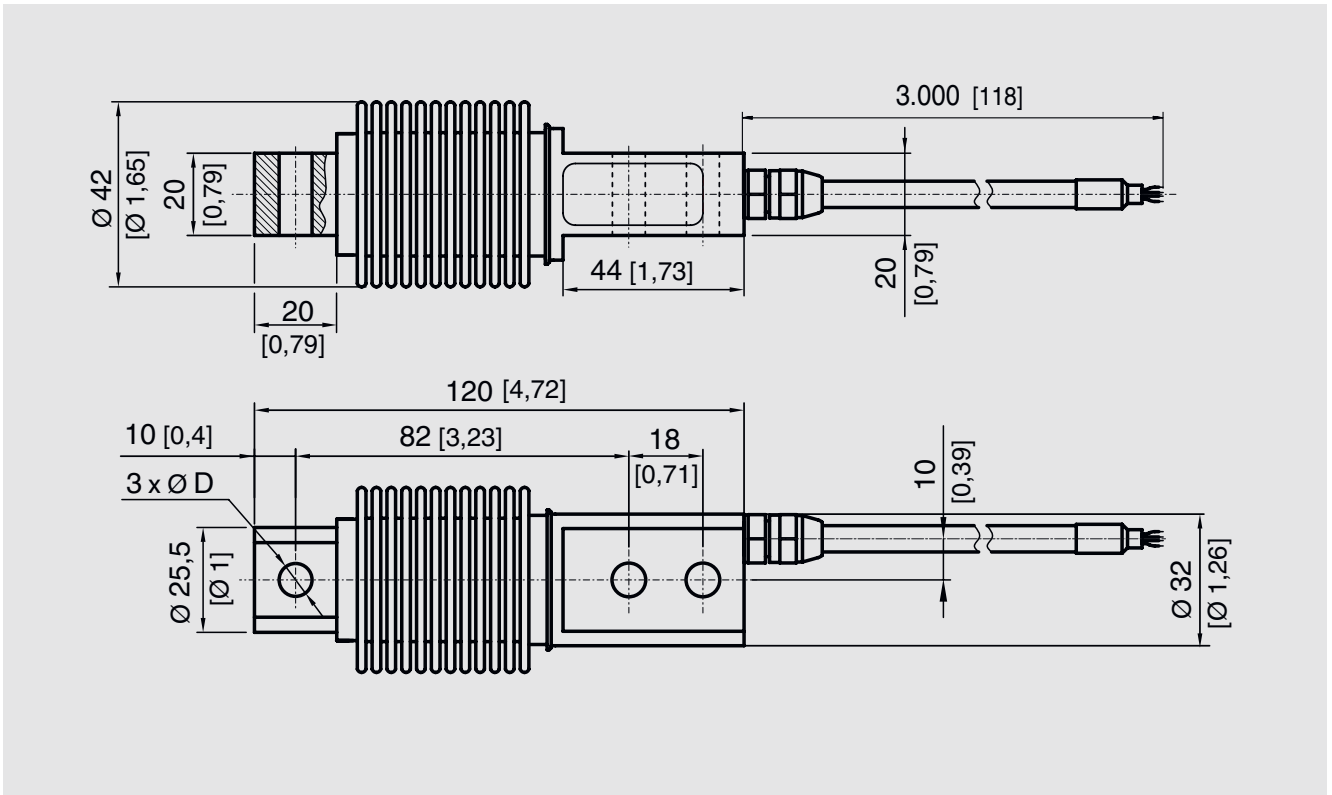
Logo	Description	Region
CE	EU declaration of conformity	European Union
	RoHS directive	
EAC	EAC	Eurasian Economic Community
	RoHS directive	

Optional approvals

Logo	Description	Region
EX NEPSI	NEPSI Hazardous areas - Ex Zone 0 gas Ex ia IIC T4 Ga	China

→ For approvals and certificates, see website

Dimensions in mm [in]









Rated load in kg	Dimensions in mm
	ØD
5 ... 250	8.2
300, 500	10.2

Rated load in lb	Dimensions in Inch
	ØD
11 ... 551	0.32
661, 1,102	0.39

Dimensioning: The customer-specific drawing of the respective order number has priority.

Accessories

Model	Description	Order number
 FA205	Mounting kit for shear or bending beams → See data sheet AC 50.17	On request
 B1940	Analogue cable amplifier → See data sheet FO 58.04	64440308
 B6578	Junction box for load cells → See data sheet FO 58.02	64418893
 FE430	Weighing indicator → See data sheet AC 50.14	14671552
 NETRIS®F	Radio unit with BLE and LoRaWAN® for force measuring instruments → See data sheet AC 40.10	On request
 EZE53	Connectors with moulded cable Straight or angled version, 4- or 5-pin → See data sheet AC 50.08	On request

→ WIKA accessories can be found online at www.wika.de

Ordering information

Model / Material / Rated load / Output signal / Electrical connection / Approvals / Dimensions / Accessories

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