HAEHNE

Web Tension Sensor BZN

Scope of Supply

Force measurement bearing sensor in flange design with 5 m cable (PVC) and connection variant S1: plug connection, right angled, M12, metal

Variants

S2: Plug connection, right angled, M12, moulded

T: Cable gland, straight with flexible spring cable shield

Additional Options

Q: Increased protection

F: For use in explosive areas, incl. J-Box

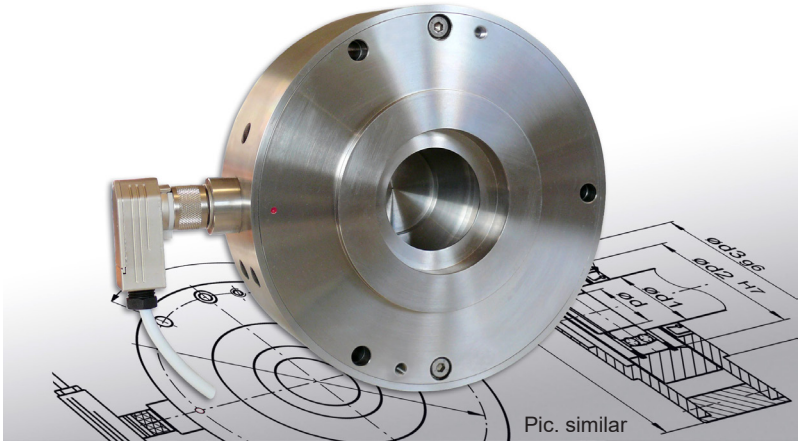
Additional Accessories

Sealing rings*not in explosive areas

Different bearings

Snap rings

Bearing support blocks

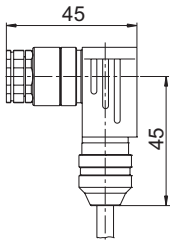


Special Features

- Made of stainless steel-enclosure meets IP67
- Nominal force ranges follow the geometric progression
- High overload protection - due to mechanical stops
- Small space requirement

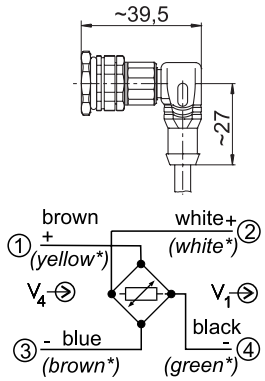
Connections

Variant S1

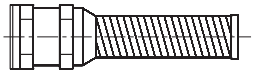


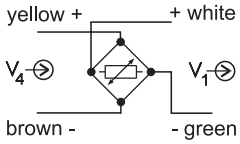
*Alternatve color coding

Variant S2



Variant T

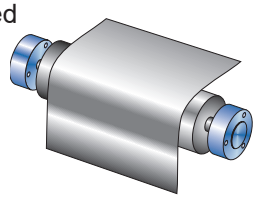




V_4 Supply voltage
V_1 Signal voltage

The force measuring bearing of the BZN series are designed for the direct measurement of tension forces which occur during the manufacturing and further processing of web materials.

The flange bearing design is optionally suited for mounting to machine frames or to bearing support blocks resulting in a pillow block type mounting arrangement.

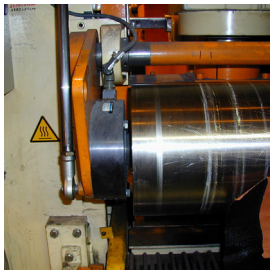


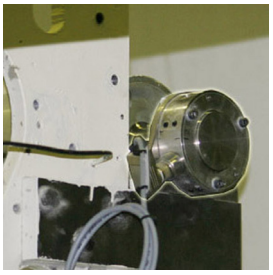
Radial force sensors of the series BZN basically consist of the seat of the bearing, the measuring elements and the flange housing with cover disks. The measuring elements function according to the double beam principle. The acting forces are captured by strain gauges applied to the measuring elements. The full bridge strain gauges are designed for maximum signal usage and temperature compensation. *HAEHNE* offers for all its sensors a corresponding range of amplifiers to condition the measuring signal and deliver the bridge voltage supply.

Ordering Data

BZN1-17A400-S1

Type
Size
ø Shaft
Design
Nominal force
Variants / Options





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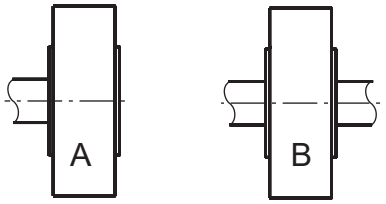
Technical Data	Values (%) based on nominal force
Sizes	1; 2; 3; 4
Nominal force (Measuring range)	160 …15000 N
Max. operating force	160 %
Absolute max. force with 160 ...6300 N with 10000 ...15000 N	1000 % 600 %
Nominal rating	1,5 mV / V
Combined error	0,5 %
Nominal ambient temperature	+10...+60° C [1] (+50...+140° F)
Operational temperatue range	-10... +70° C [1] (+14... +158° F)
Nominal resistance of strain gauge bridge	1000 Ω
Bridge supply voltage	10 VDC
Sensor cable (standard)	PVC, grey, 4 x 0,34 mm²
Enclosure protection (related to measuring point)	IP67
[1] A cable in motion reduce the value to 50° C (122 °F)	

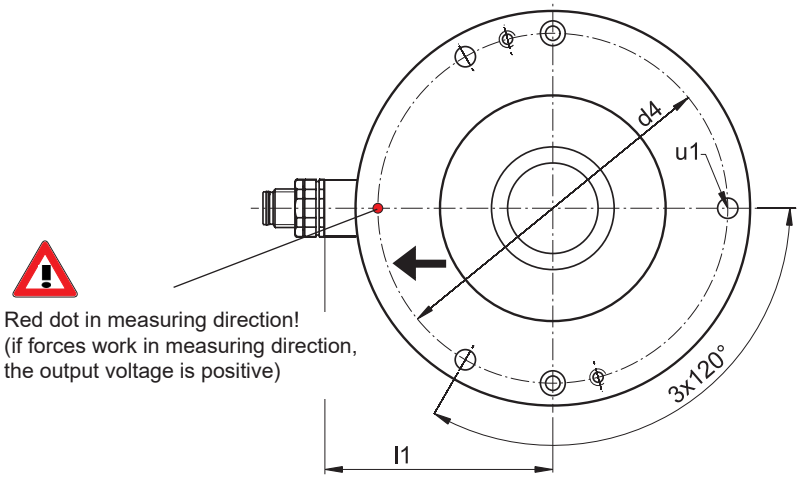
Design



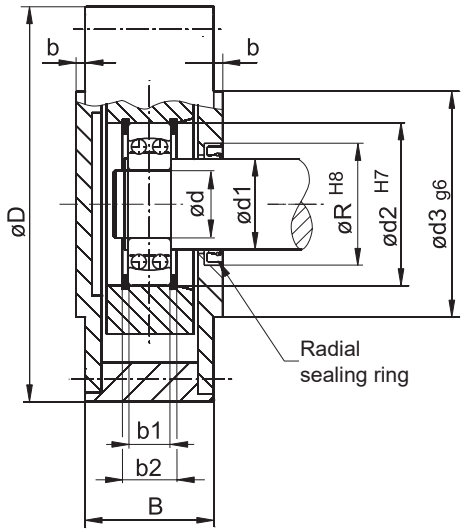
open cover disk on one side

open cover disk on both sides

Installation notice (floating-/fixed bearing) and lead colors of sensor cable see "Practice Guide"



Red dot in measuring direction!
(if forces work in measuring direction, the output voltage is positive)



Dimensions in mm (1 mm = 0.03937 inches)

Size	Nominal force F_{nom} [N]	d	d1	d2	d3	d4	D	B	b	b1	b2	l1	R	u1	recomm. bearing
1	160; 250; 400; 630; 1000	15	20	35	60	90	105	32	3	11	14,2	97	26	6,6	1202 [2]
		17	22	40						12	15,7		28		1203 [2]
		20	24	35						11	15,2		32		GE 20 [3]
2	250; 400; 630; 1000; 1600	20	25	47	70	105	125	40	4	14	17,7	107	32	6,6	1204 [2]
		25	32	52						15	19,3		42		1205 [2]
		30	35	47						18	21,7		45		GE 30 [3]
3	630; 1000; 1600; 2500; 4000	30	40	72	100	155	175	57	4	19	24,3	131	60	9	1306 [2]
		35	45	80						21	26,3		68		1307 [2]
		40	50	80						18	23,3		70		1208 [2]
4	1000; 1600; 2500; 4000; 6300; 10000; 15000	40	50	90	130	200	225	67	4	23	29,3	122	70	11	1308 [2]
		45	60	100						25	31,3		80		1309 [2], 21309 [4]
		50	65	100						27	35,3		85		1310 [2]
		55	68	100						25	31,3		85		2211 [2], 22211 [4]
		60	70	110						28	36,3		90		2212 [2], 22212 [4]

[2] Spherical ball bearing [3] Radial plain spherical bearing for rigid axles [4] Spherical roller bearings

When designing the bearing, observe the static load rating of the bearing!

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