# Force Measurement Bolt KMB

## Scope of Supply

Force sensor with 5 m cable (PVC), axial output with cable connection T: cable gland, straight

**Variant (except ø 12)**

S1: Plug connection, right-angled, M12, metal

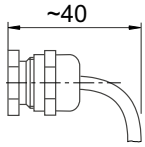
S2: Plug connection, right-angled, M12, moulded

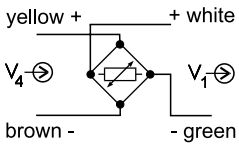
**Additional Option**

F: For use in explosive areas, incl. J-Box
- for ø 20, 35 und 50

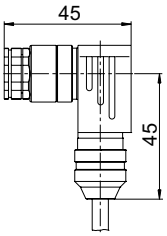
## Connections

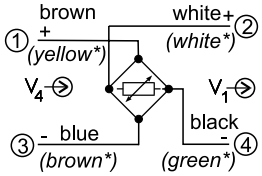
Variant T



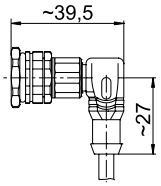

Variant S1



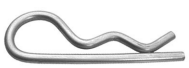

*Alternatve color coding

Variante S2




$V_4$ Supply voltage
$V_1$ Signal voltage

## Accessories



Spring cotter for axial lock

## Ordering Example

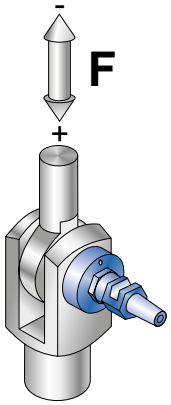
**KMB 35-25k-T**

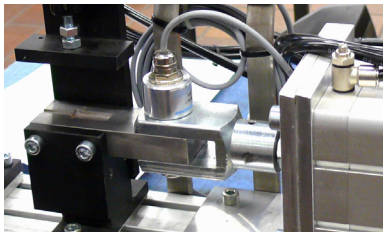
- Type
- Size
- Nominal force [kN]
- Variants / Options

## Special Features

- Simple mounting even in confined spaces
- Easy retrofitted into existing machinery
- Measuring range from 0,4 to 250 kN
- Ø 12, 16, 20, 35 and 50 mm
- Fit in commercially available standard fork heads

The force measurement bolt KMB was specifically developed to capture tension and compression forces in machine parts equipped with standard fork heads, e. g. in conjunction with pneumatic and hydraulic cylinders.
The KMB can be used in all applications where such fork heads are either already available or can be easily retrofitted.
Simple and cost effective mounting of the KMB make it especially suitable for up-grading existing equipment. Strain gauges applied to the active surfaces of the double shearing beam measure the acting forces.
*HAEHNE* offers for all its sensors a corresponding range of amplifiers to condition the measuring signal and deliver the bridge voltage supply, e.g. the DMA3 unit. The signals at the output terminals of the amplifier are proportional to the acting shearing force. The signals can be digitally displayed or used as actual values in closed loop controls.



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# KMB

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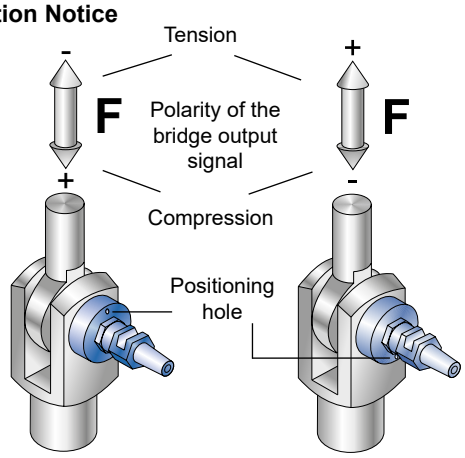
| Technical Data | % Values based on nominal force |
|---|---|
| Max. operating force | 160 % |
| Absolute max. force | 300 % |
| Lateral force | 100 % |
| Max. bridge supply voltage | 10 V DC |
| Nominal ambient temperature | +10 ... + 60 °C / 32... 140 °F |
| Operational temperature range | - 10 ... + 70°C / 14... 158 °F<br>(Applications with fix mounted cable) |
| Enclosure protection | IP67 |

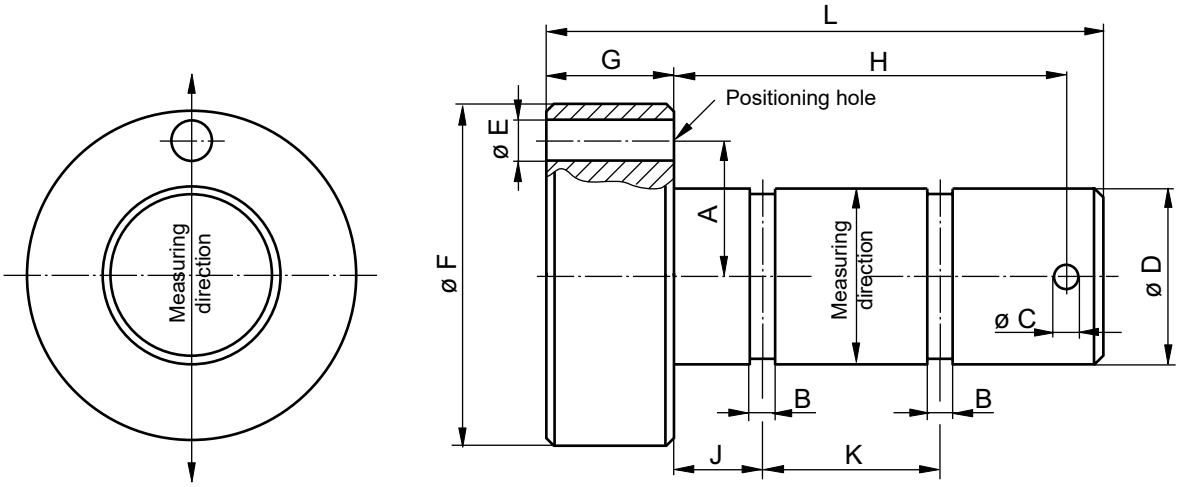
**Installation Notice**




**Attention!**
Align positioning bore hole according to action line of the measuring direction. In order to obtain reverse polarity turn the KMB by 180° (positioning bore hole is at the bottom)

| KMB | Nominal Force [kN] | | | | | | Nominal Rating [mV/V] | Fracture Force [%] | Nominal Resistance [Ω] | Material | Combined-Error [%] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **12** | 0,4 | 0,63 | 1 | 1,6 | | | 1 | 400 | 1000 | aluminum | 2 |
| **16** | 0,4 | 0,63 | 1 | 1,6 | 2,5 | 4 | | | | | 1 |
| **20** | 1,6 | 2,5 | 4 | | | | | | | | |
| **35** | 4 | 6,3 | | | | | 0,75 | | 700 | | |
| **16** | 6,3 | 10 | | | | | 1 | 400 | 1000 | stainless steel | 1 |
| **20** | 6,3 | 10 | 16 | | | | | | | | |
| **35** | 10 | 16 | 25 | 40 | 63 | | 0,75 | | 2000 | | |
| **50** | 100 | 160 | 250 | | | | 1,5 | | | | |

Standard: Calibration in positive range
KMB12 ...KMB35 is calibrated to tension, KMB50 to compression




Dimensions in mm (1 mm = 0.03937 inches)

| KMB | ø D | ø F | G | ø E | A | ø C | H | L | J | K | B | Suitable Fork Head mbo |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **12** | 12f7 | 27 | 26 | 3 | 11,5 | 3 | 26 | 56 | 6 | 12 | 2 | G12 x XX |
| **16** | 16h7 | 32 | 20 | 3,2 | 13,2 | 3 | 35,5 | 60 | 8 | 16 | 6 | G16 x XX |
| **20** | 20f7 | 34 | 24 | 3,3 | 14 | 4,5 | 42,75 | 72 | 9,75 | 20,5 | 5,5 | G20 x XX |
| **35** | 35g6 | 65 | 25 | 8,2 | 25 | 7 | 78,5 | 110 | 17,5 | 35 | 8 | G35 X XX |
| **50** | 50g6 | 100 | 37 | 10,2 | 37,5 | 8 | 102 | 145 | 23 | 50 | 9 | G50 x XX |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