

## Product Description

### Force Measurement Bolt KMB

#### 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

#### Scope of Supply

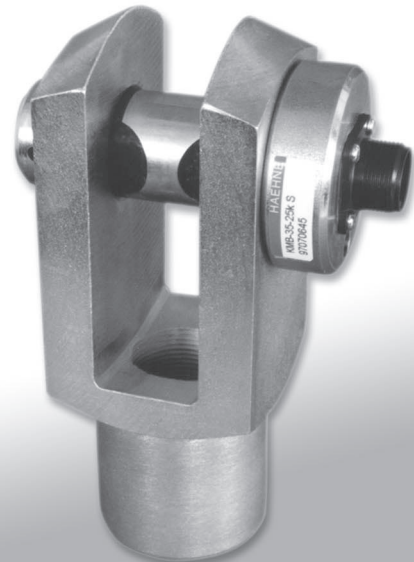
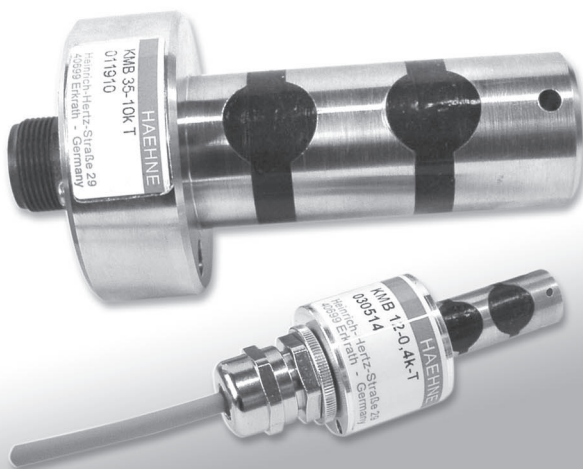
Force sensor with fixed cable, (PVC), 5 m in length with straight receptacle as standard (Option T)

#### Accessories

- **Option S:** Right angle plug
- **Option F:** Use in potentially explosive atmospheres with connection variant T (Adaption Modul J-Box contained in the scope of supply)

#### Additional Accessories:

- Systempartner Gabelköpfe:  
mbo Oßwald GmbH & Co KG  
Steingasse 13  
D-97900 Kulsheim  
Tel. (++49)0 9345-670-0  
Fax (++49)0 9345-62 55



KMB 35-25k-S  
with fork head

## Application

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.

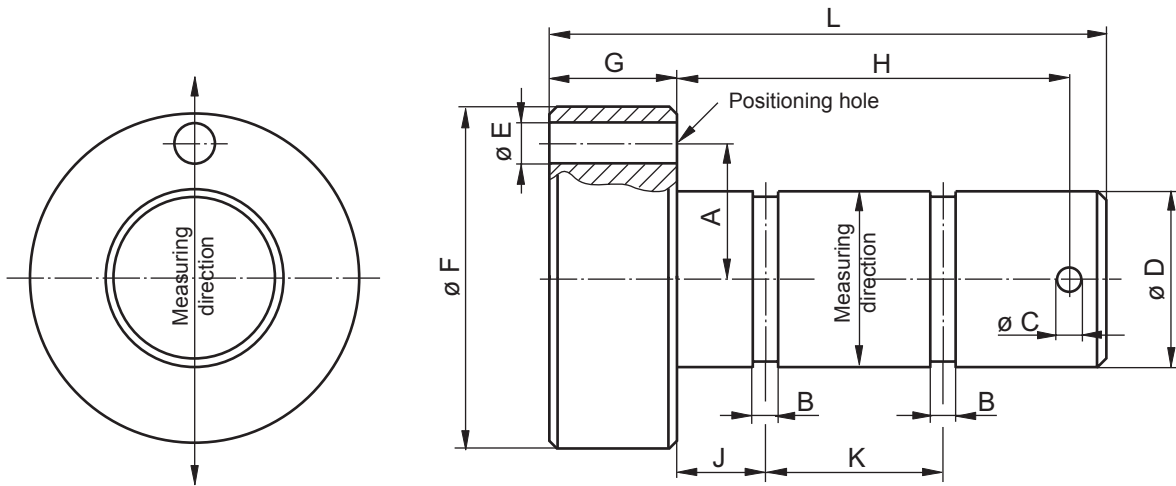
**HAEHNE** offers for all its sensors a corresponding range of amplifiers to condition the measuring signal and deliver the bridge voltage supply, e.g. the **MV 125** unit.

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.

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
Operational temperature range	-10 ...+70 °C (Applications with fix mounted cable)

KMB	Nominal Force [kN]						Nominal Rating [mV/V]	Fracture Force [%]	Nominal Resistance [ $\Omega$ ]	Material	Combined-Error [%]
	0,4	0,63	1	1,6	2,5	4					
12	0,4	0,63	1	1,6			1	800	350	aluminum	2
16	0,4	0,63	1	1,6	2,5	4					
20	1,6	2,5	4				0,75	400	700		1
35	4	6,3									
16	6,3	10					1	800	350	stainless steel	1
20	6,3	10	16								
35	10	16	25	40	63		0,75	700	700		1
50	100	160	250								

Standard: Calibration in positive range



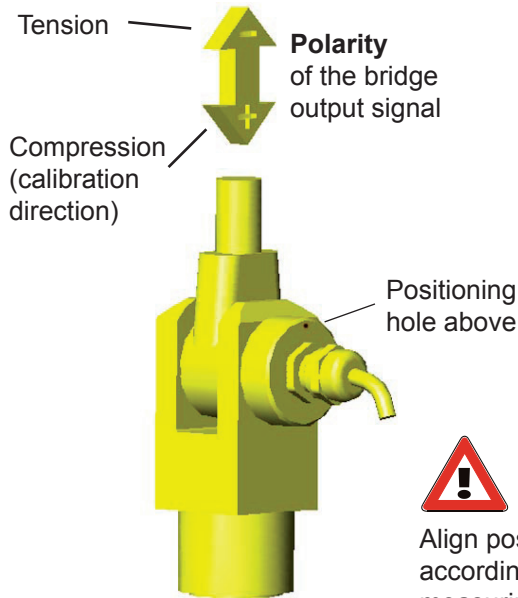
Dimensions in mm

KMB	$\varnothing D$	$\varnothing F$	G	$\varnothing E$	A	$\varnothing C$	H	L	J	K	B	Suitable Fork Head
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	9,5	16	6	G16 x XX
20	20f7	34	24	3,3	14	3	42,0	72	9,75	20,5	5,5	G20 x XX
35	35g6	65	25	8,2	25	5	77,5	110	17,5	35,0	8,0	G35 X XX
50	50g6	100	37	10,2	37,5	6,0	101	145	23	50	5,0	G50 x XX

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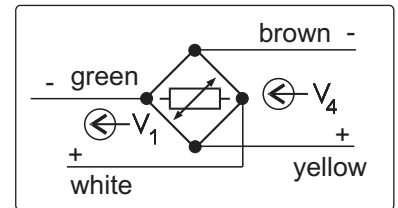
### Installation Example



#### 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)

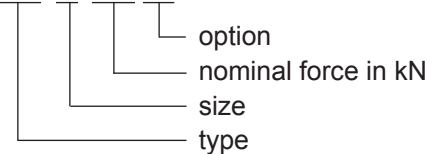
### Sensor cable lead colors



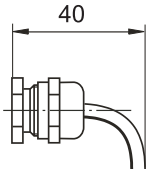
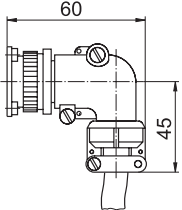
$V_1$ : Bridge output signal  
 $V_4$ : Bridge supply voltage

### Ordering Example:

**KMB35-25k-T**

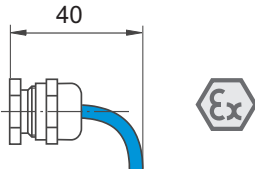


### Connections and Enclosure Protections

Option T	Option S
	
Straight receptacle,	Right angle plug
Protection IP 67	Protection IP 50
Protection as per DIN 40050	

KMB	Option T	Option S
12	T	-
16	T	-
20	T	-
35	T	S
50	T	S

### Exposion Protection

Option F
Use in potentially explosive atmospheres

With straight receptacle, (T) and blue sensor cable
Protection IP 67
Protection as per DIN 40050

KMB	Nominal Rating [mV/V]	
-	0,75 ... 1,5	Use J-Box for adjustment of zero point and nominal rating.
-		
20		
35		
50		

KMB

***HAEHNE***