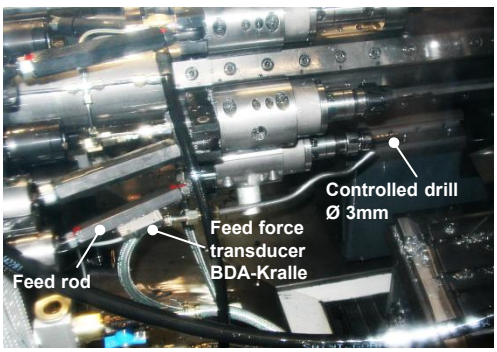
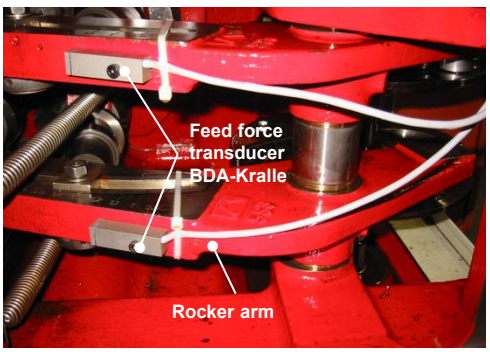
NORDMANN
METAL CUTTING MONITORING

Force sensor

BDA-Kralle

(Fig. in actual size)





Specifications:

Dimensions (BxHxT):	15 x 15 x 55mm
Weight:	385g (Sensor incl. cable)
Cable to ADDM:	2 x 0.25mm^2 UNITRONIC FD CP plus Length 8m / Outside Ø = 5.1mm
Temperature range:	-20°C…+70°C

- **Application mainly for feed force measurement for tools in multi-spindle automatic lathes**
- **Based on the measurement of surface strains via an eddy current displacement measurement.**
- **High measurement sensitivity by means of mechanical transmission by a factor of 10**
- **Easy installation with only one M5 screw**

Application:

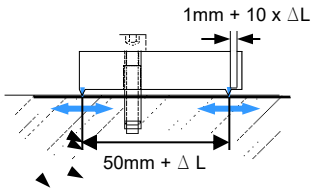
The sensor BDA-Kralle was used to control the forces acting on machining tools, but can equally well be used otherwise for the control of the forces acting on mechanical structures. The forces cause elastic compression or stretching in the nano or micrometer range of mechanical parts exposed to the force.

Measuring principle:

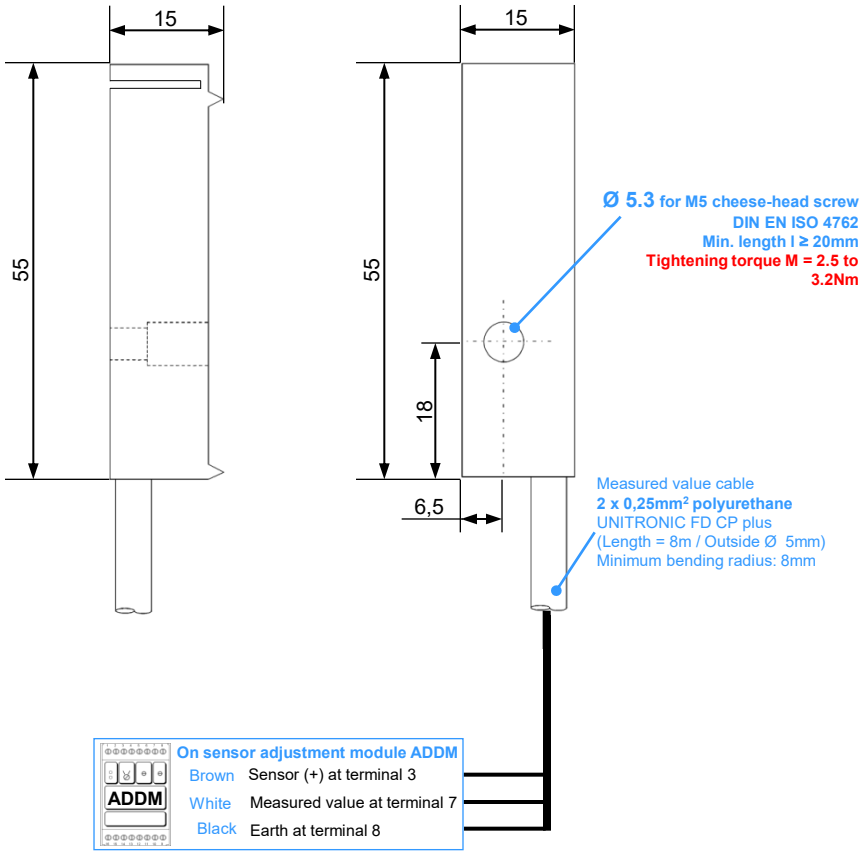
The elongation of the machine structure is converted via the sharp-edged support feet ("claw") of the sensor into the ten times as strong movement of a latch whose deflection is measured with an eddy current displacement transducers. The gap between the latch and the housing is filled with permanently elastic silicone to protect against the ingress of metal chips. The silicone does not interfere in the movement that is only within the range of a few micrometers.The electricity supply of the extensometer occurs via sensor adjustment module ADDM (order number 6.2.5). This has other functions, too:

Amplification, smoothing, taring to initial values (Zero points), before the force increase, rectifying, logarithm

Measuring the structure expansion ∆ L between the two claw feet with respect to elongation and compression



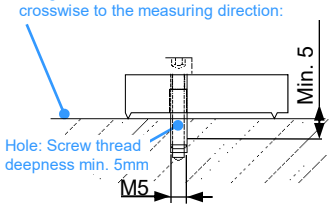
Detail drawing BDA-Kralle:



All dimensions in [mm]

Installation Note:

Roughen surface before installation - crosswise to the measuring direction:



Order number:

8.1.2	BDA-Kralle
8. 1.2.K	Protective Case BDA-Kralle

Protective Case BDA-Kralle (Not in the scope of delivery)

For the minimisation of a temperature drift by a strong airflow or, e.g., cooling lubricant.