SENSORS & SYSTEMS

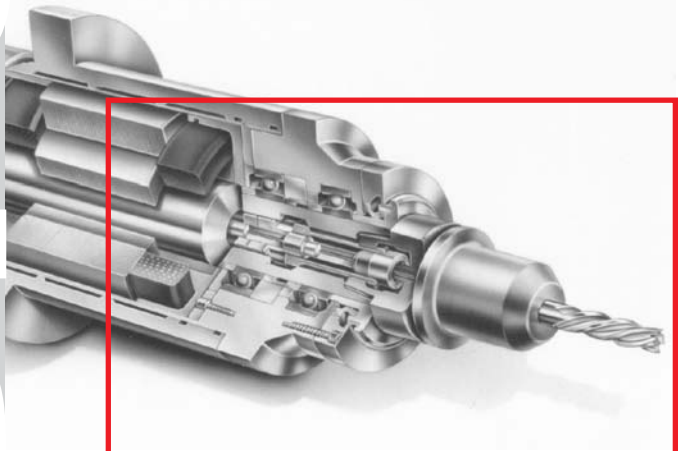
Authority in Displacement Measurement

MICRO-EPSILON

EDDY CURRENT PRINCIPLE

EDDY NCDT

OEM-system
for spindle- and
machine-manufacture

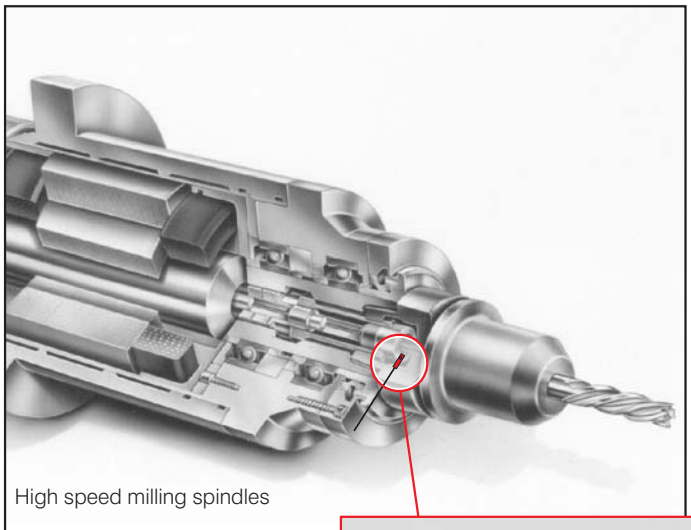


Digital
Eddy-Current-
Measuring System
for Machine Tooling

Spindle Growth System
eddyNCDT SGS

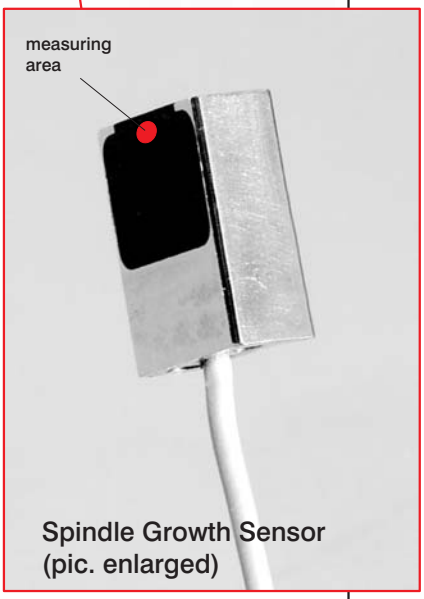
eddyNCDT

Spindle-Growth System



High speed milling spindles

The mechanical design of the sensor can be adapted to the special requests of OEM-customers



Spindle Growth Sensor
(pic. enlarged)

- miniature sensor
- non-contact and wear free
- factory calibrated
- changing sensor without calibration
- very high temperature stability (0.01 %/C)
- resolution <0.5 µm

SGS
Spindle Growth System

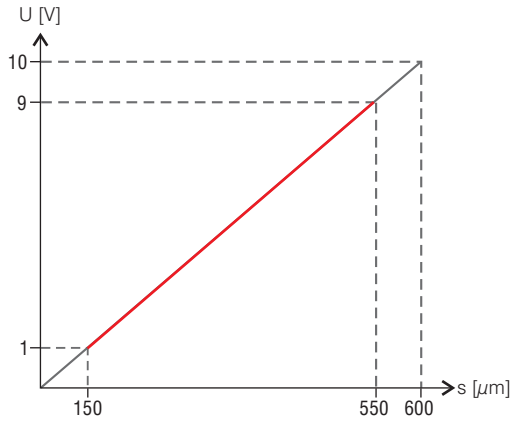
The displacement measuring system SGS is developed for recording the extension of high-speed milling spindles.
This enables the active compensation of the axial spindle extension via CNC-machine tool.

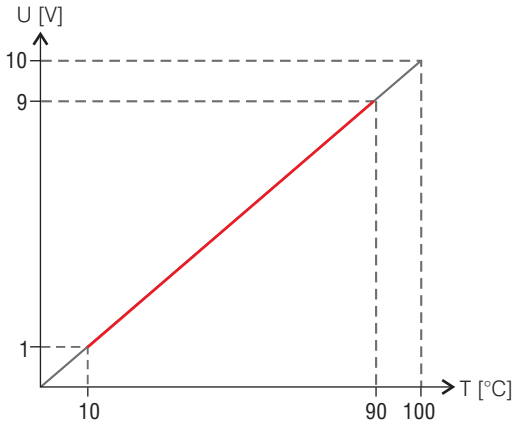
Eddy-current principle

The displacement measuring system SGS is using the eddy current principle. The sensor will be integrated in the spindle. The sensor is controlled by an electronics with a DSP (digital signal processor). All sensor-specific data are stored in the sensor (EEPROM). After changing the spindle, the system is ready to run without any calibration.

Technical Data

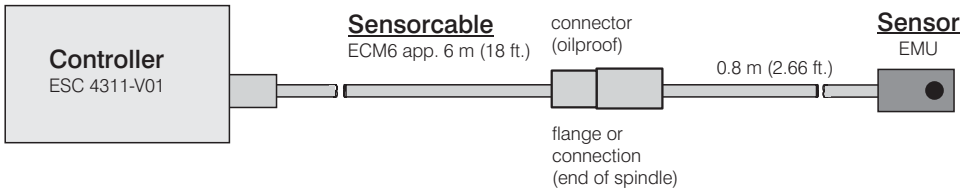
Model		SGS 4311-V01-EMU04-C680
Measuring range		400 µm
Reference distance		app. 150 µm
Linearity (total measuring range)		±5 µm
Resolution		0,5 µm
Frequency	analog	100 Hz *
Temperature stability	sensor	±0.01 % FSO / °C
	controller	±0.05 % FSO / °C
Temperature range	sensor	0 ... +70 °C
	controller	10 ... 50 °C
Sensitivity	displacement	20 mV/µm
	temperature	0.1 V/°C
Interface	analog	0.2 ... 10 V
	digital	on request
Supply		+24 VDC (±15 %)
Sensor		EMU 04-C080 Sensor parameter are stored in EEPROM temperature sensor integrated in sensor housing
Cable length total		app. 7 m
Sensor replacement		sensor specific data is read out automatically from the sensor EEPROM





■ = specified measuring range

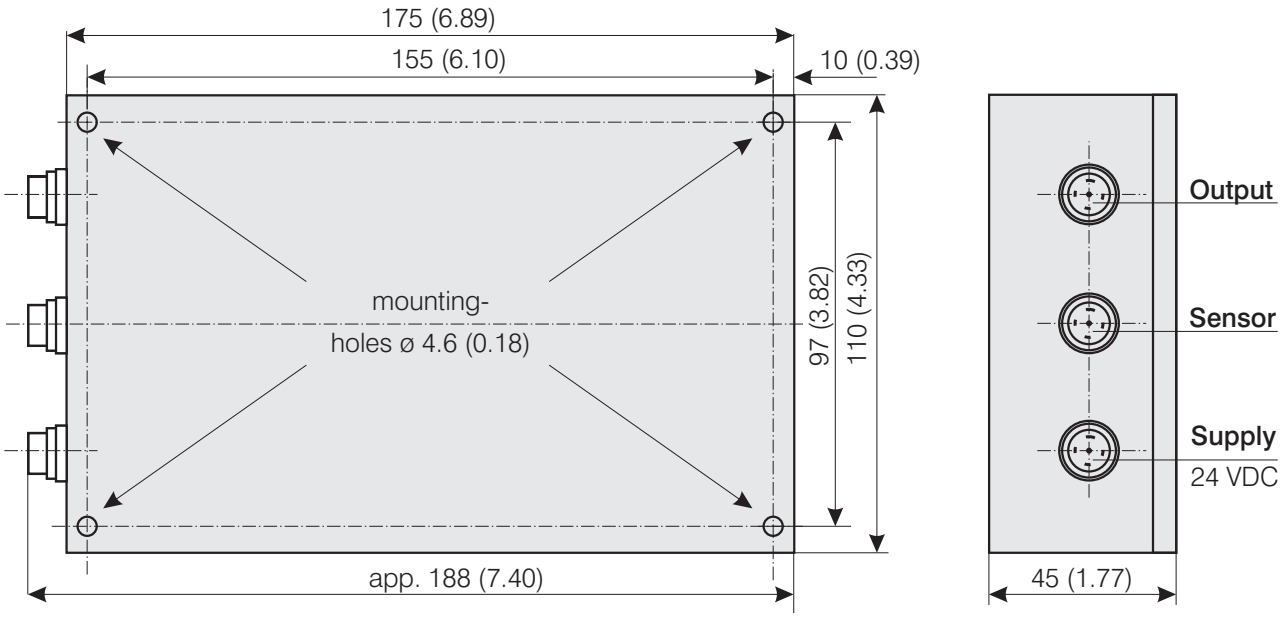
Block diagram



The sensor cable ECM6 and the electronics ESC4311-V01 are adjusted to each other.
The serial number has to be the same.

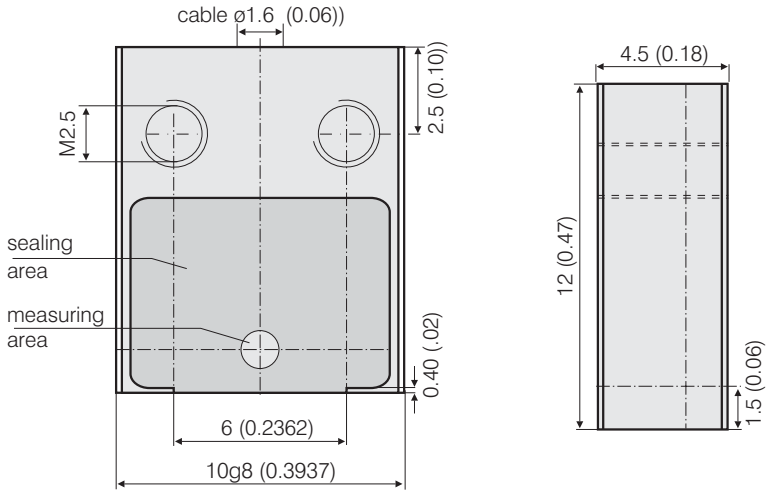
eddyNCDT dimensions in mm (inch), not to scale

Controller



The controller housing is a heavy duty aluminum cast housing. This means a high protection against electromagnetic noise and dirty environment (protection class: IP 67)
The connectors for output and power supply are done according DIN.
Output: 8-pin female (Binder series 423; IP 67)
Power supply: 8-pin male (Binder series 423; IP 67)

Sensor



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