

# GEMDS

## SYSTEM FOR SPINDLE GROWTH MONITORING

### Properties

- Measuring range 550  $\mu\text{m}$  and precision down to  $\pm 0.2 \mu\text{m}$
- Sensor is mapped based on the target
- 1 displacement signal, 3 temperature signals
- 8 different operating scenarios
- 5 different static alarms for each scenario
- Physical I/O interface (10 inputs, 4 outputs)
- Black box for alarm recording
- Integration into the machine control thanks to digital I/Os

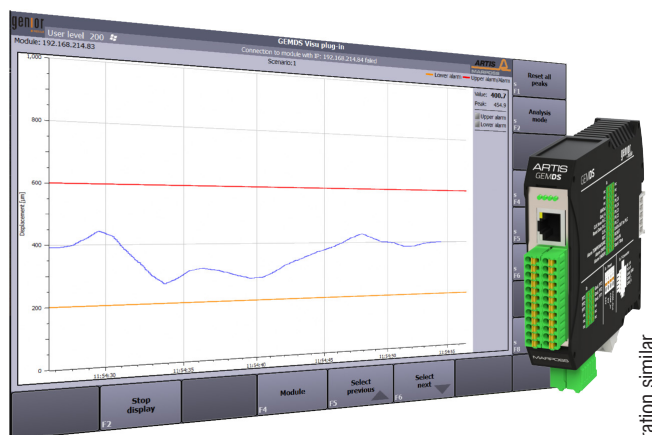


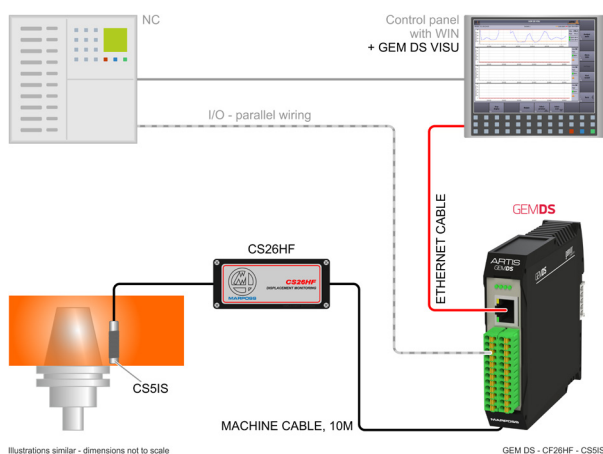
Illustration similar

### Application example

The GEMDS system offers real-time monitoring of spindle elongation due to temperature changes (on the z-axis).

Visualization on Windows PCs/operator panels is carried out with the GEM DS VISU plug-in software.

This application sketch shows a GEMDS module with an eddy current sensor (CS5IS) and a measuring amplifier (CS26HF).



Illustrations similar - dimensions not to scale

### System components

The system includes the following components:

- DIN rail module GEMDS
- Visualization software (GEM DS VISU)
- Measuring electronics (CS26HF)
- Connecting cable
- Eddy current sensor (CS5IS or CS6IS)

Optional additional component:

- Adjustable support for CS5IS sensor

### Article number

- GEMDS Module Code 0830ZA00501
- GEM DS VISU, Software (order separately)

# COMPONENTS OF THE SYSTEM FOR SPINDLE GROWTH MONITORING

## GEMDS Module

The GEMDS system offers real-time monitoring of spindle elongation due to temperature changes (on the z-axis).



Illustration similar

DIMENSIONS	see drawing
STANDARD IP ADDRESS	192.168.214.93
WEIGHT	138 g
MATERIAL	Polyamide PA 6.6
STORAGE TEMPERATURE	-20 °C... +60 °C
OPERATING TEMPERATURE	+5 °C... +55 °C
UL-CLASSIFICATION	VO (UL94)
ATMOSPH. REL. HUMIDITY STORAGE	max. 2 months, no condensation < 95 %
OPERATION	< 85 % and 85 % ≤ RH < 95 %
INSTALLATION	DIN EN 60715 standard rail
CONTACTING	Spring terminal, screw terminal

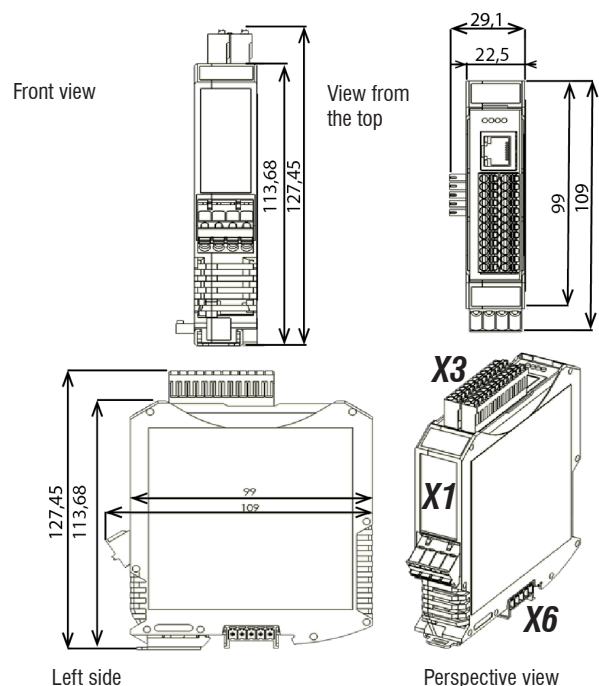
ETHERNET PORT	10/100 MBit
CABLE CROSS SECTION	0.2...1.5 mm²
CONNECTION X3	Sensor connection
INPUT/OUTPUT SIGNALS	10 input signals, 4 output signals
INPUTS 1-SIGNAL SOURCE 0-SIGNAL SOURCE 1-SIGNAL SINK 0-SIGNAL SINK	8 V ... 24 V / 10 mA 0 V ... 7 V / 10 mA 0 V ... 19 V / 10 mA 20 V ... 24 V / 10 mA
OUTPUTS 1-SIGNAL SOURCE 0-SIGNAL SOURCE 1-SIGNAL SINK 0-SIGNAL SINK	24 V typ., max. 100 mA open 0 V ... 1 V open
CONNECTION X1	24 V DC ±20 %, 300 mA SELV type acc. to EN 60950-1 Sink-/source operation selectable
CONNECTION X6	CAN bus, 24 V DC
CONFORMITY	CE, UKCA

MEASURING INPUTS	
MEASURING INPUTS	1 x Eddy current sensor, 3 x PT100 Temperature sensors
SUITABLE SENSORS	CS5IS and CS6IS
SAMPLING RATE	20 kHz
RESOLUTION	16 bit

VIBRATION LOAD	
TRANSPORT	ISTA 2
OP. TEST FC 2g max.	(10...55) / 0.15 / (10...55) / 0.35

VISUALIZATIONS	
FOR WINDOWS DEVICES	GEM DS VISU

REQUIREMENTS FOR VISUALIZATION	
OPERATING SYSTEM	<ul style="list-style-type: none"> <li>Microsoft Windows® as of WIN XP SP3</li> <li>Siemens 840D as of V 04.05. (PCU/TCU)</li> </ul>
MINIMUM RAM	512 MB
MINIMUM CLOCK FREQUENCY	600 MHz
MOUSE OPERATION	recommended



# COMPONENTS OF THE SYSTEM FOR SPINDLE GROWTH MONITORING

## Eddy current sensors CS5IS and CS6IS



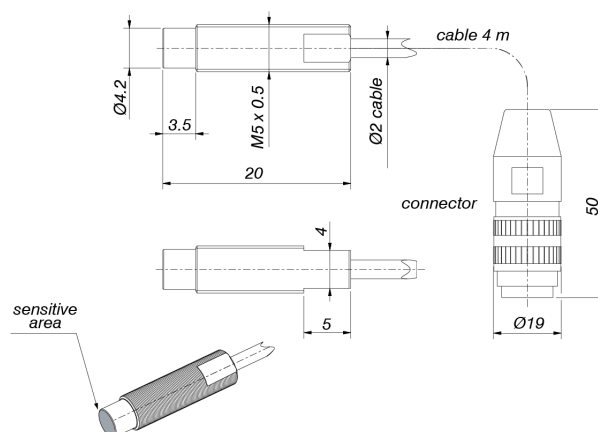
### CAUTION!

- No metal parts between sensor and target!
- No shortening/extending of sensor cable!
- Connector contains data about the specific sensor – exclusively use the corresponding sensor!

#### CS5IS SENSOR

MAX. MEASURING RANGE <i>with C40 target</i>	550 $\mu\text{m}$
MINIMUM GAP <i>with C40 target</i>	50 $\mu\text{m}$
LENGTH	20 mm
THREAD	M5 x 0.5
CABLE LENGTH	4 m
CABLE DIAMETER	2 mm
CABLE SHEAT MATERIAL	EU polyurethane-polyether
TARGET MIN. DIAMETER	10 mm
MAX. NO. OF TARGETS THAT CAN BE SAVED	5
OPERATING TEMPERATURE	+5 °C ... +70 °C
DEGREE OF PROTECTION ( <i>IEC 60529 standard</i> )	IP67
PRECISION	
MEASURING RANGE 0.05 ... 0.15 MM	$\pm 0.2 \mu\text{m}$
MEASURING RANGE 0.05 ... 0.3 MM	$\pm 0.5 \mu\text{m}$
MEASURING RANGE 0.05 ... 0.6 MM	$\pm 1.0 \mu\text{m}$

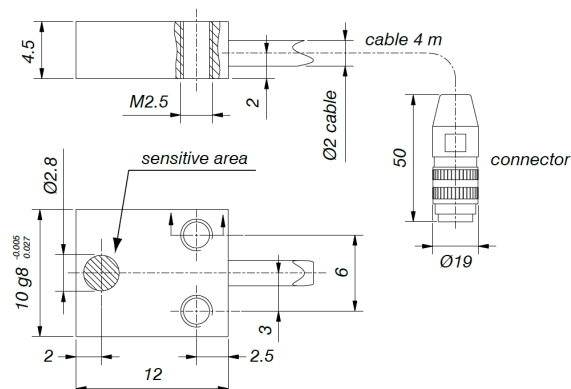
#### CS5IS SENSOR



#### CS6IS SENSOR

MAX. MEASURING RANGE <i>with C40 target</i>	550 $\mu\text{m}$
MINIMUM GAP <i>with C40 target</i>	50 $\mu\text{m}$
DIMENSIONS	see drawing
CABLE LENGTH	4 m
CABLE DIAMETER	2 mm
CABLE SHEAT MATERIAL	EU polyurethane-polyether
TARGET MIN. DIAMETER	8 mm
MAX. NO. OF TARGETS THAT CAN BE SAVED	5
OPERATING TEMPERATURE	5 °C...70 °C
DEGREE OF PROTECTION ( <i>IEC 60529 standard</i> )	IP67
PRECISION	
MEASURING RANGE 0.05 ... 0.15 MM	$\pm 0.2 \mu\text{m}$
MEASURING RANGE 0.05 ... 0.3 MM	$\pm 0.5 \mu\text{m}$
MEASURING RANGE 0.05 ... 0.6 MM	$\pm 1.0 \mu\text{m}$

#### CS6IS SENSOR



# **COMPONENT OF THE SYSTEM FOR SPINDLE GROWTH MONITORING** **CS26HF amplifier**

CS26HF AMPLIFIER	
DIMENSIONS	150 x 64 x 34
NUMBER OF APPLICABLE SENSORS	1
NUMBER OF SELECTABLE MAPPINGS	5

CONNECTION CABLE	
CODE	6739896008
CABLE DIAMETER	4.9 mm
CONFORMITY	CE



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For a full list of address locations, please consult the Marposs official website

ODN6422EN20 – Edition 01/2025 – Specifications are subject to modifications  
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