

GEMRO02

SYSTEM FOR TOOL HOLDER RUN-OUT DETECTION

Properties

- Reliable detection of chips between tool holder and spindle cone
- Reliable function even with interrupted surfaces (notches)
- Compatible with any toolholder
- Wide measuring range
- Sensor distance to tool holder 0.5 - 1.9 mm
- 100% Stainless steel sensor and coolant tight
- Measuring time 400 ms
- 2 run-out alarms (warning, run-out)
- Sensor mispositioning alarm
- Black box for alarm recording
- Integration into the machine control allows repeated tool change (cleaning included) without operator intervention

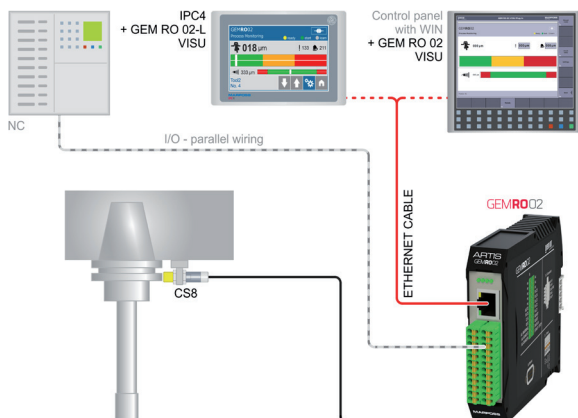


Application example

The GEMRO02 system offers ideal protection against unforeseen machining errors thanks to the fast and reliable identification of chips on the spindle chuck after ATC operation. There are two ways of visualizing the measurement data:

- visualization via Windows PC/operator panel
- or alternatively visualization via the compact 4-inch operator panel (IPC4)

This application sketch shows a GEMRO02 module with GEM RO 02 VISU via operator panel with Windows (or alternatively GEM RO 02-L visualization for IPC4 (with housing)) and an eddy current sensor (CS8I).



Illustrations similar - dimensions not to scale

GEM RO 02 - 002

System components

The system includes the following components:

- DIN rail module GEMRO02
- Visualization software (GEM RO 02 VISU/ GEM RO 02-L VISU)
- Eddy current sensor with connecting cable

Optional additional components:

- Adjustable support for CS8I sensor, for Robodrill machines
- 4-inch operator panel (IPC4)

Performance

- Repeatability: $\pm 2 \mu\text{m}$
- Measuring time: 400 ms
- Spindle speed during measuring: 300 rpm
- Measuring range: 2.0 mm
- Minimum sensor gap: $100 \mu\text{m}$
- Detection of down to $10 \mu\text{m}$ chips

COMPONENTS OF THE SYSTEM FOR TOOL HOLDER RUN-OUT DETECTION

GEMRO02 Module

CODE: O830ZA00502

GEMRO02 is used for the real-time detection of tool holder run-out based on measurement data of an eddy current sensor.



Illustration similar

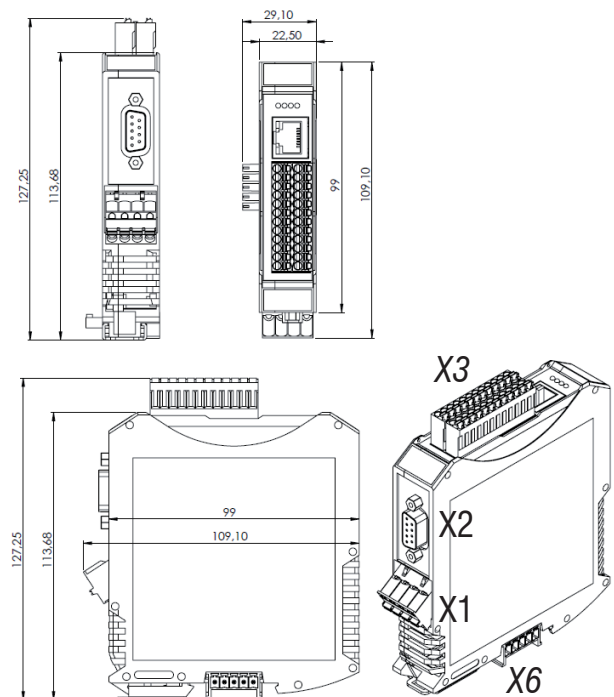
DIMENSIONS	see drawing
STANDARD IP ADDRESS	192.168.214.106
WEIGHT	138 g
MATERIAL	Polyamide PA 6.6
STORAGE TEMPERATURE	-20 °C... +60 °C
OPERATING TEMPERATURE	+5 °C... +55 °C
UL-CLASSIFICATION	VO (UL94)
DEGREE OF PROTECTION	IP30
ATMOSPHERIC REL. HUMIDITY STORAGE	max. 2 months, no condensation < 95 %
OPERATION	< 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 mm ²
CONNECTION X2	Sensor connection, SUB-D
CONNECTION X3 INPUT/OUTPUT SIGNALS	10 input signals, 4 output signals (Warning, Danger, Runout, Ready)
INPUTS	
1-SIGNAL SOURCE	8 V ... 24 V / 10 mA
0-SIGNAL SOURCE	0 V ... 7 V / 10 mA
1-SIGNAL SINK	0 V ... 19 V / 10 mA
0-SIGNAL SINK	20 V ... 24 V / 10mA
OUTPUTS	
1-SIGNAL SOURCE	24 V typ., max. 100 mA
0-SIGNAL SOURCE	open
1-SIGNAL SINK	0 V ... 1 V
0-SIGNAL SINK	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

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

VISUALIZATIONS	
FOR WINDOWS DEVICES	GEM RO 02 VISU
FOR IPC4	GEM RO 02-L VISU

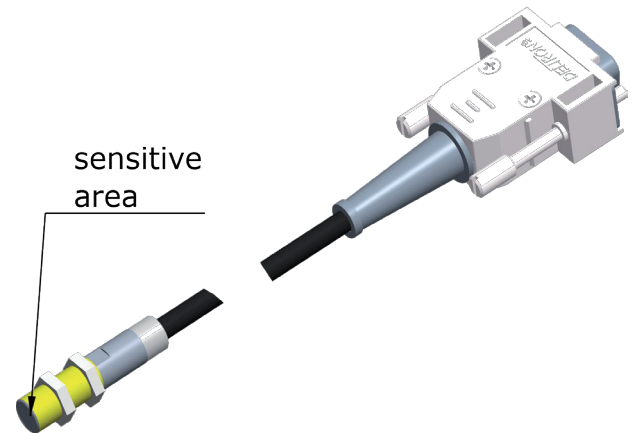
SOFTWARE REQUIREMENTS	
OPERATING SYSTEM	<ul style="list-style-type: none"> Microsoft Windows® as of WIN XP SP3 Siemens 840D as of V 04.05. (PCU/TCU)
MINIMUM RAM	512 MB
MINIMUM CLOCK FREQUENCY	600 MHz
MOUSE OPERATION	recommended
CONFORMITY	CE



COMPONENTS OF THE SYSTEM FOR TOOL HOLDER RUN-OUT DETECTION

Eddy current sensor CS8I

CODE: O3PZ0510130

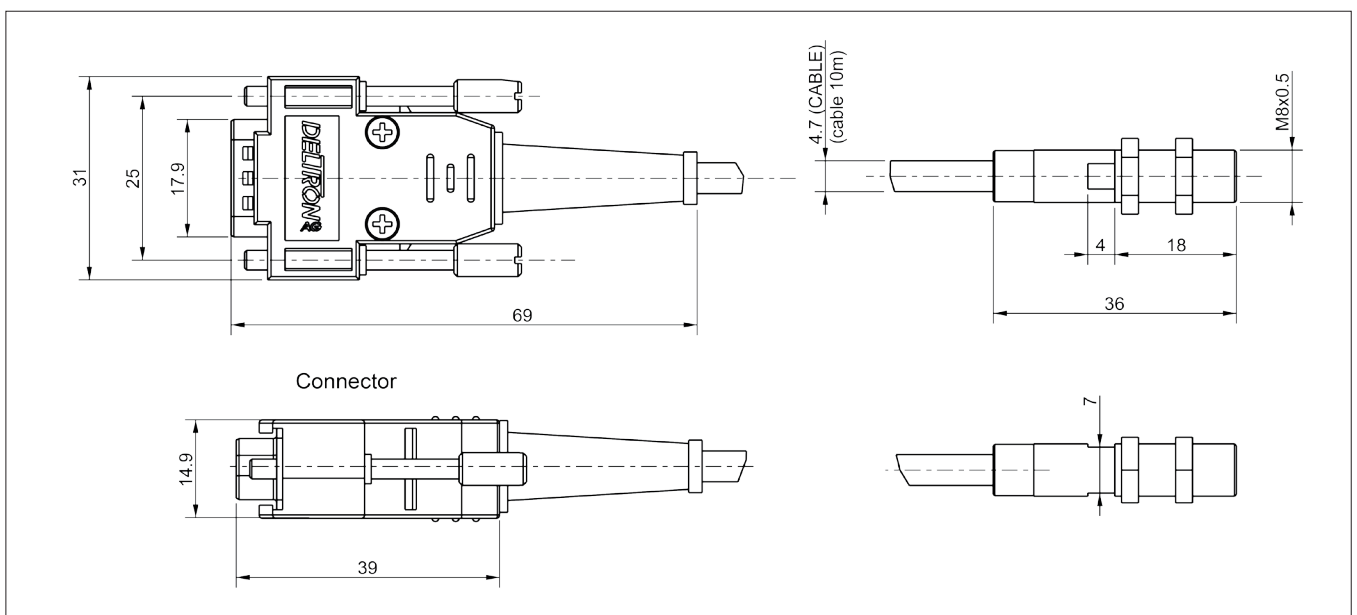


CS8I SENSOR	
DIMENSIONS	see drawing
DEGREE OF PROTECTION	IP67
OPERATING TEMPERATURE	5 °C...70 °C
MEASURING RANGE	2 mm
THERMAL DRIFT	$\pm 0.1 \mu\text{m}/^\circ\text{C}$
ACCURACY	2 μm
CABLE LENGTH	10 m
CABLE DIAMETER	4.7 mm
CABLE SHEAT MATERIAL	EU polyurethane-polyether



CAUTION!

- No metal parts between sensor and target!
- No shortening/extending of sensor cable!
- Connector contains data about the specific sensor – exclusively use corresponding connector!
- The custom made mechanic support for CS8I sensor must comply with the instructions supplied by the manual.



COMPONENTS OF THE SYSTEM FOR TOOL HOLDER RUN-OUT DETECTION

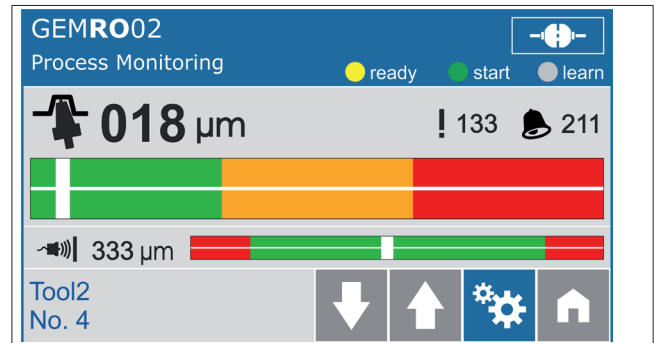
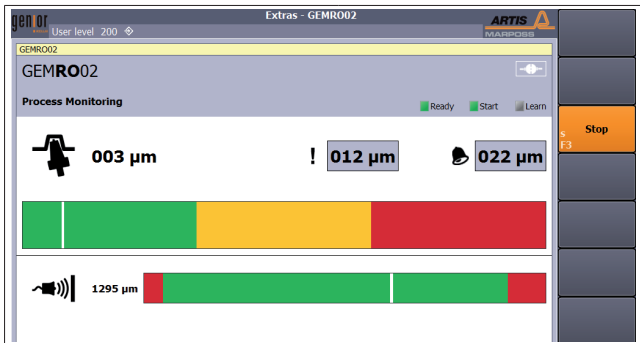
Visualization

Product description

GEMRO02 has two different visualization options:

- GEM RO 02 VISU – Visualization on Windows devices
- GEM RO 02-L – Visualization on IPC4 Linux devices

OCMZ0113010	GEM RO 02 VISU Software
OCMZ0113110	GEM RO 02-L Handling and operation software for GEMRO02 for use with the IPC4 operator panel



GEM RO 02 VISU	
HARDWARE-REQUIREMENTS	<ul style="list-style-type: none"> • IPC7/IPC10 operator panel with integrated computer unit or similar PC-system • Min. RAM 512 MB • Min. clock frequency 600 MHz • Mouse operation or touchscreen recommended
OPERATING SYSTEM	Microsoft Windows® as of WIN XP SP3 or Siemens 840D as of V 04.05 (PCU/TCU)

GEM RO 02-L	
HARDWARE-REQUIREMENTS	<p>IPC4 compact operator panel with fan-less system design</p> <p>2 variants available:</p> <ul style="list-style-type: none"> • IPC4 for switch panel mounting • IPC4 with housing, mounting bracket included
OPERATING SYSTEM	Linux, Yocto



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

ODN6438EN10 – Edition 08/2023 – Specifications are subject to modifications
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