FG320 - Tester for vibration, displacement and speed supervisor

- Tool for complex function testing of Machine Monitoring Systems
- Powered and controlled by PC
- Configurable multifunctional output
- Output for testing current loops 0/4 ÷ 24mA
- Simulate signals from sensors distance, speed and acceleration
- Output for reference pulse

Functionality:

The tester FG320 is a unique compact instrument intended in particular for complete testing of functions of the systems of vibration, offset and speed measurement. The instrument parameters are selected in such a way that they can cover the most frequent tasks during the servicing of these devices or that they can simulate the output signal of the sensors used.

FG320 is powered and controlled from the PC (notebook) through the USB interface, it means, that the usage and configuration is possibly only with computer.

FG320 is microcontroller-based device, which provide all specific functions and communicates with PC.

Operation modes:
FG320 tester is intended for three typical applications with different demands for the testing signal: Voltage mode, Speed mode and Current mode.

Voltage mode:
It allows testing measuring systems of vibrations and displacement by simulating voltage signals normally measured by electrodynamic, piezoelectric or eddy-current sensors. In this case it is necessary to have low level voltage signal with high DC offset. It generates signal with shape of sinus, square, triangle or saw.

Besides the actual simulation signal, some systems require moreover a Reference Pulse (KEY) as information about frequency and phase of the signal. Impulse is available on two outputs: open collector or active output with different levels.

Speed mode:
Testing of the speed measurement systems with a selection of 2 from 3 (e.g. epro DOPS or MMG1000).

Current mode:
Testing of 0/4 ÷ 24mA current loops. The tester works as a direct current source to the load of up to 500 Ohm. Attention! - The instrument cannot be used for simulation of passive converters powered by the current loop!

Instrument could generate DC signal or combination of AC/DC signal.

Individual modes cannot be operated simultaneously. The switching over of the modes is controlled by the control program.
### Technical data:

**General:**
- Connection to PC: USB 1.0 - 3.0
- USB port power consumption: max. 400mA
- Dimensions: 175x115x30mm
- Weight: 0.2 kg
- Working temperature: 0 °C - 40 °C

**Signal mode:**
- "Signal" connector
  - Output signal is combination of DC and AC voltage. Customize signal shapes of voltage: Sinus, square, triangle, saw
  - Frequency range: 0,1 ÷ 20000Hz
  - Resolution: 0,1Hz
  - Accuracy: +/- (0,1% + 0,2 Hz)
  - DC voltage range: -22 ÷ +22V
  - Resolution: 0,01V
  - Accuracy: +/- 0,1V
  - Maximum load: >10kΩ

**Step setting:** 1°
- It is possible to generate the pulse by multiple period of output signal.

**Open Collector Output:**
- "Passive" connector
  - Maximum voltage: 40V DC
  - Maximum current: 0,2 A

**Active output:**
- "Active" connector
  - Basic level and the pulse level are freely adjustable within range -22 ÷ +22 V
  - Maximum load: >10kΩ

**Current mode:**
- a) only DC
- b) Output signal is combination of DC and AC current.
  - Customize signal shapes of voltage: Sinus, square, triangle, saw
  - "mA" connector
  - Source of DC current.
  - Range: 0 ÷ 24mA
  - Resolution: 0,01mA
  - Accuracy: 1%
  - Maximum load: <500Ω
  - No other voltage connected to this output.

**Key Pulse Output:**
- Pulse is generated synchronously with signal on output connector "Signal".
- Key angle of impulse against Signal output: 0 ÷ 360°

**Speed mode:**
- 9-pin connector on the back side of device. Output simulates the function of eddy-current sensors epro type PR642X/CON01x or MMG1070 during setup following manual from manufacturer of overspeed measurement DOPS and it is used for testing this system. For usage with different systems the function is not guaranteed.
  - Frequency range: 0,1 ÷ 20 kHz
  - Resolution: 0,1Hz
  - Accuracy: +/- (0,1%+0,2 Hz)
  - Pulse symmetry: approx. 50%
  - Maximum voltage on pin -24V: -30V against pin 0V
  - Maximal load of resistors of output circuit: 0.5W/resistor

**Application FG Programmer:**
- Program allows comfortable configuration of all modes of FG320.
- Features:
  - contains two-ways calculator for easy determination of voltage for simulation of vibration from different sensors (displacement, velocity, acceleration)
  - Ramp function allows switching preset configurations of simulator with configured delay between steps and works with all modes of application
  - it is possible to save every configuration to file and one configuration could be setup like default for starting the application
  - could work with both metric and imperial units
  - equipped with help and has option on-line update from Profess web server
  - the program is NOT backward compatible with older devices FG120C and FG220.
- Minimal requirements of HW:
  - Pentium III 800 MHz, 512 MB RAM, OS MS Windows XP/7/8/10, .NET Framework 4.0, USB 1.0 - 3.0
Packaging:

Hardware – FG320 1x
Software CD or USB flash disc 1x
USB Cable 1x
Cable for DOPS testing 1x
Magnetic adapter 1x
Case with filling 1x
Magnetic holder 1x

Options:

- Calibration certificate of speed output (function: SPEED)
- Calibration certificate of complete device (function: SIGNAL, SPEED, CURRENT)
- Calibration will be performed by authorized calibration laboratory.

Note: Photograph is exemplificative only. Content of packaging could change