

## ISN 1521 sensor specification

The inductive rotation sensor is determined for the detection of shafts rotation slowing-down or stop or slowing-down and stop of ferromagnetic objects periodic movement, namely till the environment temperature up to 250°C.

- ◆ measurement of rpm 1 – 3000 rpm/min.
- ◆ rpm presentation on the display
- ◆ outputs 20 mA or RS485
- ◆ signalization of limit decline/overspeeding
- ◆ high temperature resistance ( pasive probe )
- ◆ extreme sensitivity 80 – 150 mm ( pasive probe )
- ◆ robust construction
- ◆ alternative implementation of proximity or inductives probes



## Examples of use

- ◆ indication of worm-conveyors of the cement, grain and fly ash stoppage
- ◆ indication of vibration conveyors function
- ◆ indication of belt conveyors movement
- ◆ indication of vibration sorting machines function
- ◆ measurement of rotatory machines rpm
- ◆ indication of shafts disruption
- ◆ indication of the direction of rotation

## Description

The part of the inductive sensor ISN 1521 is the sensor 520.1 and the basic module 1521.x (see the fig.), where „x“ is completed according to the type version of the sensor. The inductive rotation sensor ISN 1521 is generally determined for the evaluation of periodic changes of the magnetic field, done by the movement of ferromagnetic subjects in front of the sensor's pick-up. If some ferromagnetic inhomogeneity is rotating with the shaft (lug, hole), is possible to evaluate the movement of this inhomogeneity contactlessly till the distance 150 mm from the sensor and by this way to measure rpm of the shaft and their changes (rise, decline, stoppage). By the same way can be contactlessly evaluate also any other periodic movement, e.g. linear or vibrational.

The sensor 520.1 is in the basic version determined for hard industrial conditions, for the environment temperature till 150°C. It is connected with the basic module by the cable of standard length 5m. The basic module of the sensor is power supplied from mains 230 V/50 Hz, outputs are connected according to the type version.

ISN 1521 keeps the possibility of higher sensing distance between the sensor and moving part against wide-spread inductive sensors. All versions of ISN 1521 are dimensionally interchangeable with previous types ISN 520, ISN 521. The crucial change of ISN 1521 is in the internal electronics – by the microcomputer is controlled the processing of input signal, impulses evaluation, digital set-up of necessary parameters (rpm decline, hysteresis, delay) and outputs including the possibility of data communication.

Rpm measurement and presentation on the digital display is standardly done by all type versions of ISN 1521. Outputs in the level of relay, current loops 20mA or RS 485, are variant.

By the use of two phase displacement and connected sensors ISN 1521 on the circuit of the rotation sensor can provide information about the direction of rotation and also about the rpm size.

## Type versions

Type versions of ISN 1521 differ by the output design.

Type **ISN 1521.0** has as the output potentialless relay contact for switching of mains voltage 230V/2A. This contact is switched at the shaft rotation. At rpm decline under the set limit and after the expiration of adjustable time delay the relay will undo. The relay contact falls off also at the decline of power supply voltage in mains. By means of this contact is possible to control the signalling or breaking circuit of guarding device. ISN 1521.0 is the functional substitute of previous types.

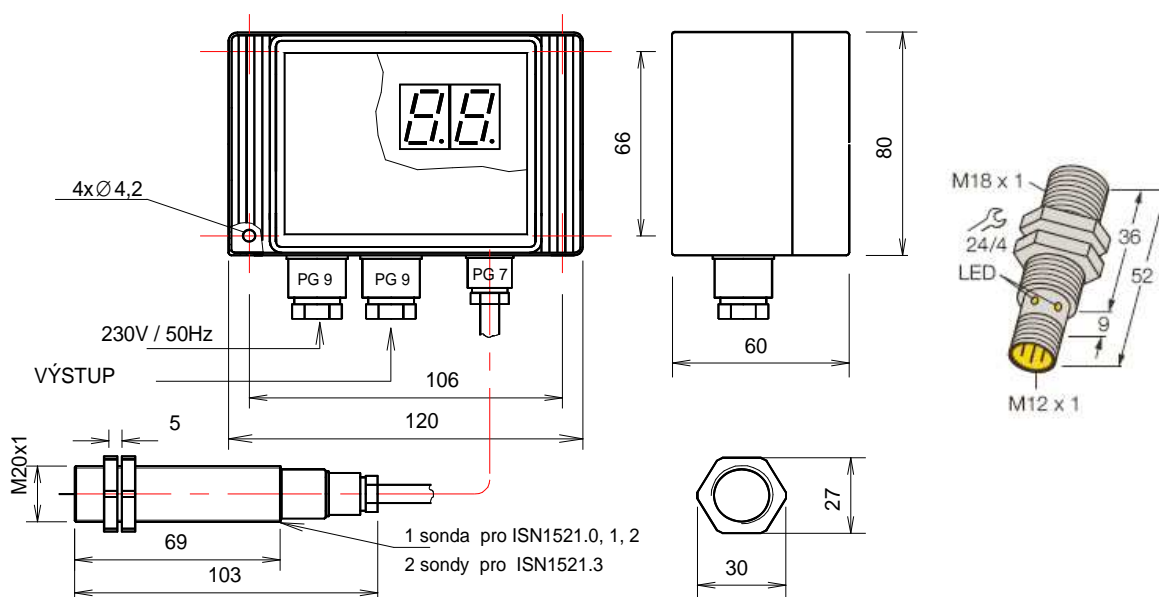
The type **ISN 1521.1** has the current loop 0-20mA or 4-20mA, the current corresponds with measured rpm in adjustable range.

The type **ISN 1521.2** is equipped by the computer communication bus RS485 where runs the transmission of measured values.

The type **ISN 1521.3** has two probes for rotation speed ISN and direction measurement and is by the computer communication bus RS485

The higher number of ISN 1521.2 and 1521.3 can be connected into one common network with the one and only point of connection to the control system.

End of part number is completed by suffix **-P ~ pasivní sonda**, nebo **-X ~ sonda Proximity Switch**



Parameters				
power supply	230 V/50 Hz			
power input	4 VA			
range of measurable rpm $n_0$	1 – 3000 rpm · min <sup>-1</sup> at 1 impulse/rpm			
Passive probe ISN 520.1, 520.2				
typical sensitivity reaction on the ferromagnetic subject moving by the speed 100 mm·s <sup>-1</sup> perpendicular to the sensor's axis				
for mass 10 g	25 mm			
for mass 100 g	80 mm			
sonda Proximity Switch				
Working range	sepnuto: < 6 mm, rozepnuto > 8 mm			
setting of parameters of the measurement and evaluation of rpm status	by means of the key and display in the control menu			
rpm presentation	digital 0,0 – 3,0 · 1000 rpm/min.			
rpm status presentation	by means of LED diodes			
rating of the switching relay contact (ISN 1521.0)	max. 250 V, max. 8 A DC and AC			
current output (ISN 1521.1)	0 – 20 mA or 4 – 20 mA			
communication output (ISN 1521.2)	RS485, selectable protocol (Modbus RTU, ASCII ...)			
Operating conditions	Sensor 520.1	Sensor 520.2	Sensor Prox.Switch	modul 1521.x
operating environmental temperature	-25 to +150 °C	-25 to +250°C (90 minutes)	-30 až +85°C	-25 to +55°C
pressure of air	86 to 106 kPa			
sealing	IP 65			