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SHR-2 Induction Sensor

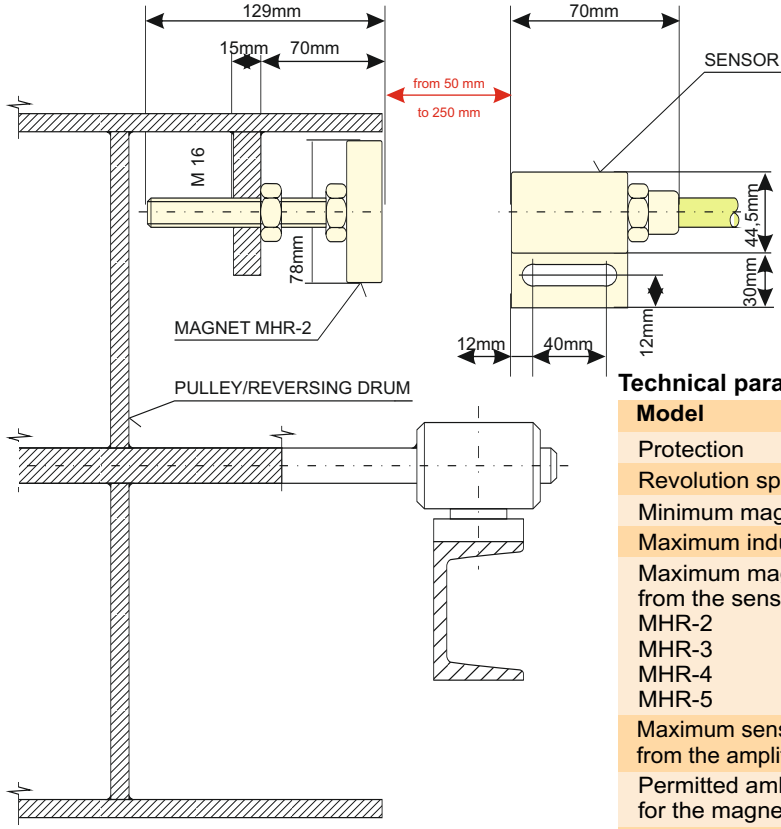
Zone 22

Use:
The set of the SHR-2 induction sensor, MHR-2, MHR-3, MHR-4 and MHR-5 magnets is intended for monitoring a rotary or oscillatory movement. A robust model enables their usage in the most difficult operational conditions such as for checking belt conveyers, sorting machines or vibration feeders in quarries. It is highly mechanically resistant and reliably works in a larger temperature range. **The sensor does not need any power supply.**

Description:
The sensor casing is made of steel with a surface treatment in which an electrical sensing element is buried (without electronic components). At the end of the casing there is a Pg16 bushing. A cable with a rubber hose protecting the cable is fixed to the bushing. The rubber hose is resistant to perforation by the falling material and accidental hits and thus protects the cable. The cable with the protecting duct is ended in a plastic box (a standard delivery). The box can be ordered made of another material such as cast steel, etc.

Assembly and principle:
The sensor functions on the principle of magnetic induction. The magnet is mounted to the movable part of the checked equipment (a reversing drum of the belt conveyer, a movable part of the vibration feeder, a screen in the sorting machine, etc.) The distance of the MHR-2 magnet from the sensor ranges from 50 mm to 250 mm while the same function is preserved. This distance guarantees a minimum damage to the sensor caused by the rotating part movements in the axis. The maximum achievable distance is determined by the magnet location in the steel structure and to determine the threshold, it is necessary to test the application in question.

The magnet movement around the sensor induces a voltage impulse in the sensor which is further processed in the VHR-Z amplifier. The amplified and shaped voltage impulse can be used as an input signal to the VHR-10M evaluation unit or to the control system.



Technical parameters:

Model	II 3 D Ex mD A22 IP65 T85°C
Protection	IP65
Revolution speed range	4-600/minute
Minimum magnet speed	0.15 m/s
Maximum induced voltage	5V AC
Maximum magnet distance from the sensor MHR-2 MHR-3 MHR-4 MHR-5	depends on revolutions and the magnet size up to 250 mm up to 100 mm up to 200 mm up to 80 mm
Maximum sensor distance from the amplifier	300 m (e.g. JYTY cable 2 A x 1)
Permitted ambient temperature for the magnet and the sensor	-25°C - + 70°C
Relative humidity	95% w/o condensation
Dimensions	See the figure

The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.

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VHR-Z amplifier

VHR-Z description

The VHR-Z amplifier unit is produced in a module box having the size of 1 single-pole circuit breaker intended for being mounted on a 35mm DIN rail.

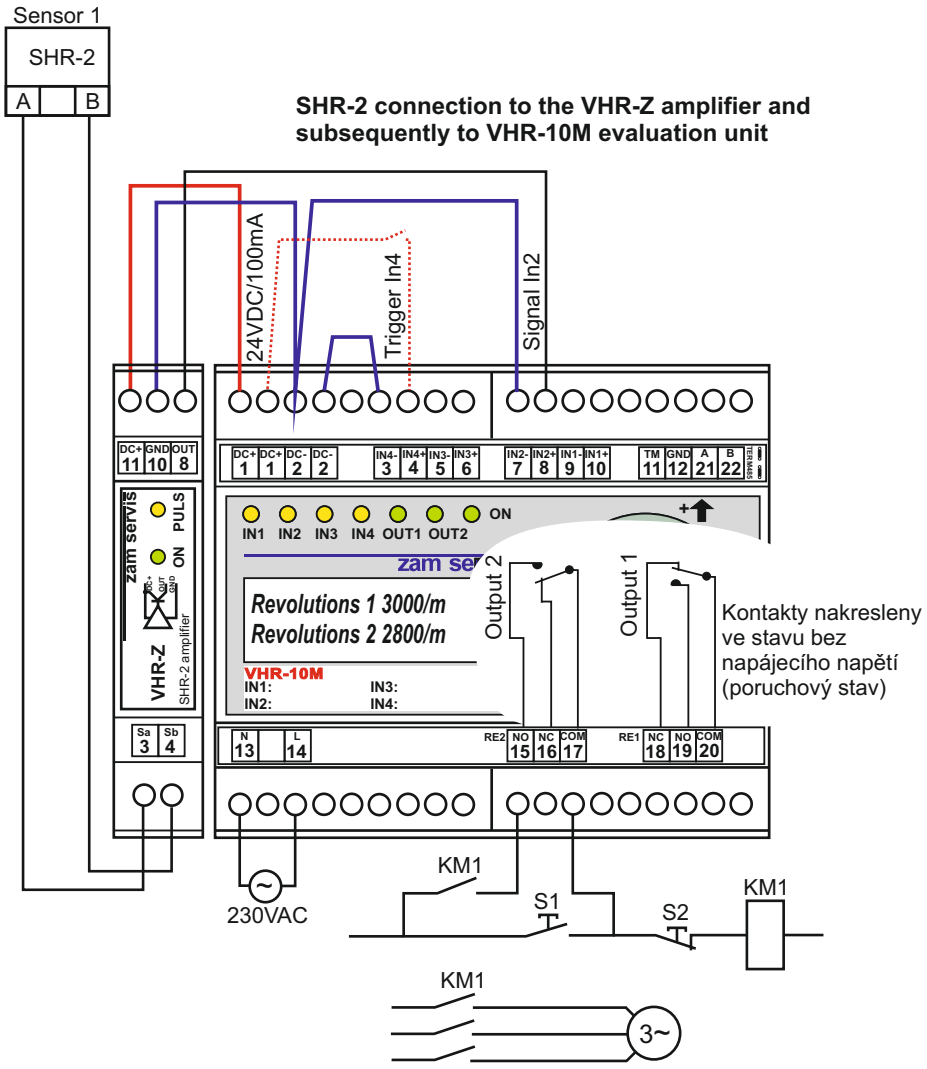
The amplifier reads voltage impulses from the SHR-2 coil which it filters and transfers to a standard 24V output by means of a PNP switching transistor. The output current (typically 5 mA, the maximum of 25 mA) is added to the amplifier consumption (max. 25 mA).

The amplifier can also be connected to 24V digital outputs of PLC automated machine with software for evaluating slippage of revolutions. It means you can keep the existing sensors when changing the control for a control system with a PLC automated machine and only replace the old VHR evaluation unit with a VHR-Z amplifier which can be placed at the PLC automated machine (it depends on the distance).

Technical parameters:

VHR-Z supply	19 - 28 V DC; 25 mA
Maximum output current on VHR-Z	25 mA (internally limited) typically 5 mA (with VHR-10M)
Output type	PNP
SHR-2 distance from VHR-Z	Maximum of 300 m (JYTY cables 2 A x 1)
VHR-Z distance from VHR-10M	Maximum of 1 km
Humidity	Maximum of 90% without condensation
Protection	IP20
Dimensions	17mm x 95mm x 60mm
Weight	Maximum of 0.1 kg
Conductor cross-section	Maximum of 4 mm^2

SHR-2 connection to the VHR-Z amplifier and subsequently to VHR-10M evaluation unit



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