




RHP-5 Rod Transfer Point Sensor

 zone 22



Another application is guarding a fall in the transfer point. The rod can only be mounted in the upper part of a closed transfer point. A disadvantage of this application is that it only indicates fall after the whole down-take is filled up with the material.

This transfer point sensor cannot be used with materials which enable immersing of the hanging part, i.e. the material flows around the sensor which is not deflected. For these materials, the RHP-5 board or cone model is used.

The transfer point sensor cannot be used for assembly on movable equipment such as travel conveyers, vibration feeders, etc. It is not intended for equipment the vibrations of which could cause self-actuation caused by setting vibrations.

Description:

The transfer point sensor is of a cylindrical shape with a vertical tube. 750mm long chains are welded on the upper part by which the sensor is hung to the required place.

The sensor is made of 3mm thick steel. The surface treatment of all types of sensors including the hanging components is made by brown Comaxit. The probe is inserted in a steel tube which is welded in the upper part of the sensor. The cable from the probe is led upwards in a flexible metal protecting pipe coated with PVC foil.

Use:

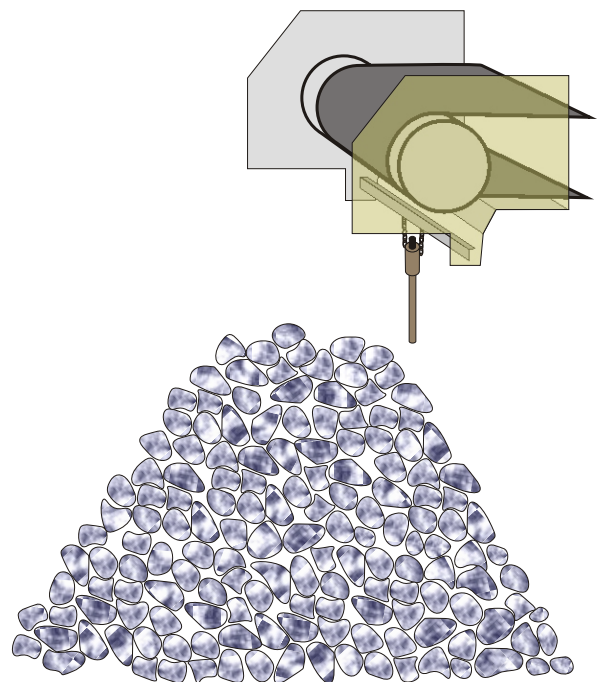
The RHP-5 transfer point sensor (hereinafter referred to as the "transfer point sensor") is intended for indicating blockage of transfer points on belt conveyers and chutes by loose material of fine to medium grain size which does not cause undesired mechanical damage to the sensor structure by their properties.

The sensor indicates without troubles any blockage of the transfer point by coal, iron ore, lime, gravel sand, various intermediate products, mine debris, coke and materials forming piles.

It can also be used for indicating an inclination of a part of the structure. The sensor rod can be disassembled and the sensor can be attached to a fixed part of the guarded structure.

The figure shows the most frequently used RHP-5 applications for indicating the state of filling up of a tank or a pile; see the figure. In the upper part there is an optimal placement of the switch which does not require any modification to the transfer point. It is used at places where another type of a sensor, e.g. RHP-5 flap, would be swung by the wind. It is also suitable for coarse fractions of the raw material.

During the coal transportation there is usually an explosive environment ZONE 22 etc. inside the transfer points. RHP-5 transfer point sensor, model NAMUR, is also used in such environment.



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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Principle:

The principle of the transfer point blockage indication by the transfer point sensor uses the function of a spherical induction switch which switches when it deviates from the vertical axis.

A condition for reliable function is that the material forms a cone at the transfer point blockage which deflects the hanging part of the transfer point sensor at least by 20° - 25° from the vertical position when it grows up.

Therefore, the sensor must be placed to be deflected by the necessary angle when the transfer point gradually blocks. The evaluation should be performed by a time element which excludes accidental short-term deviations caused by rebound material.

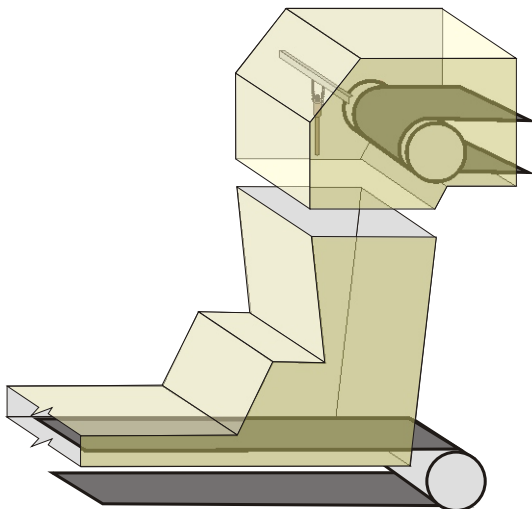
Models:

The RHP-5 flap transfer point sensors is recommended to be applied as directional sensors, which mean that only after its deviation to the determined side the caving fall is signalled. Its deviation to the opposite side does not result in any response. The all-directional switch needs a longer term to quiet the sensor and repeated sensor activation after the end of the caving fall signalisation (straightening of the flap position to the vertical position).

The RHP-5 with a rod is recommended for the all-directional application.

Type designation and order options:

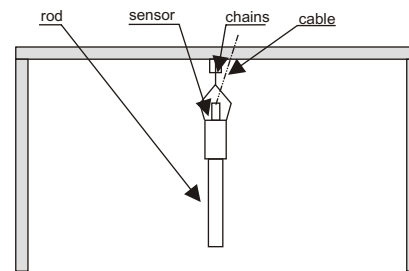
Designation	Movement	Cable	Voltage	Principle
RHP-5-S12200	directional	2m	230V AC 2-wire	
RHP-5-S12200-S	directional	2m	230V AC 2-wire	
RHP-5-V12200	all-direct.	2m	230V AC 2-wire	
RHP-5-V12200-S	all-direct.	2m	230V AC 2-wire	
RHP-5-S22200	directional	2m	24V 3-wire PNP	
RHP-5-S22500	directional	5m	24V 3-wire PNP	
RHP-5-V22200	all-direct.	2m	24V 3-wire PNP	
RHP-5-V22500	all-direct.	5m	24V 3-wire PNP	
RHP-5-S32200	directional	2m	NAMUR (Ex)	
RHP-5-V32200	all-direct.	2m	NAMUR (Ex)	



Installation and assembly:

The place of deployment is selected in such way that if a delay is set, the sensor switches off the drive of the respective conveyer before it is dangerously blocked and the drive is switched off by its protection. The place of deployment must be selected in such way that the number of accidental deviations (from the rebound material, by vibrations, etc.) is as low as possible, but not exceeding the status which can be eliminated by the set time delay. Chain hangers of the transfer point sensor are fixed to the bearing structure (e.g. a cover of the transfer point) by two M10 screws. Chain hangers can be shortened, if needed.

Hang the sensor so that the small rivet on its front side is oriented from the mounting material. This direction must always be adhered to with the directional type.



Technical parameters:

Model	II 3 D Ex tD A22 IP65 T85°C
Weight of the sensor with a flap	5.5kg
Dimensions of the sensor with a flap	200 x 350 x 58
Chain length of the sensor with a flap	750mm
Permitted ambient temperature	-25°C - +70°C
Protection	IP 65
Output PNP 3-wire	
Supply voltage	10...30V DC
Voltage drop	<= 1.5V at I _{a max}
Constant current, I _{a max}	<= 300mA
Conductor cross-section	0.25 mm ²
Conductor length	approximately 2 or 5 m
Time delay	2ms
Output 230 V AC 2-wire	
Supply voltage	20...250V AC
Voltage drop	<= 8.5V at I _{a max}
Constant current, I _{a max}	<= 250mA (...+50°C) <= 200mA (...+80°C)
Conductor cross-section	0.5 mm ²
Conductor length	approximately 2 m
Time delay	<= 10ms
NAMUR	
Supply voltage	5...25V DC
Current consumption unloaded	<= 1mA
Current consumption loaded	>= 2.2mA
Conductor cross-section	0.5 mm ²
Conductor length	approximately 2 m

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