



## Sensor to detect the presence of material on the belt – MANAPA-01x(Ex01x)



Certificate: ATEX



MANAPA-01

### Application:

The MANAPA-01 sensor to detect the presence of material on the belt is used for the continuous detection of layers of material on the conveyor belt in adverse conditions such as dust, humidity and temperature. It is suitable for materials such as raw and washed coal, stone, gravel and similar materials. It is designed to be used in potentially explosive methane, flammable gases and combustible dust.

### Description and features:

The load-bearing part of the sensor consists of solid housing with four holes for M 10 screws to mount it to a firm structure. The sensor is firmly attached to the housing. This material sensor is available in two basic designs.

The MANAPA01x is designed for normal environments, while the MANAPA-Ex01x is intended for use in potentially explosive methane, flammable gases and combustible dust. Inductive sensors are used in various versions with various outputs. Only version MANAPA-Ex014 is used as an omnidirectional sensor with a contact output.

The rotating part consists of a valve gear and rocker arm with rolling wheel, mounted to the sensor housing.

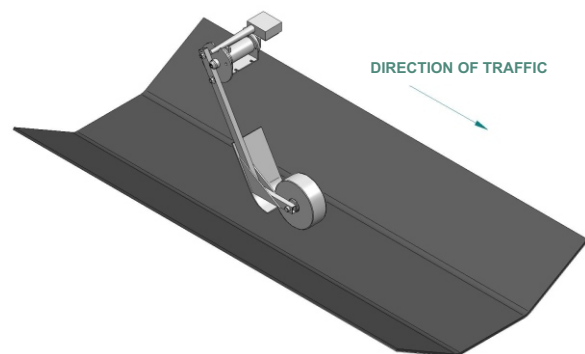
This sensor to detect the presence of material on the belt works by the rolling wheel touching the surface of the conveyor belt as it moves with force applied by the spring in the housing of the sensor. This condition is signaled through the closed (open) state of the sensor.

### Technical specifications:

Design	
MANAPA-011	
MANAPA-012	
MANAPA-013	
MANAPA-Ex011	II 1 G Ex ia II C T6 II 1 D Ex ia D 20 T115°C
MANAPA-Ex012	I M1 Ex ia I
MANAPA-Ex013	II 3 G Ex nA II T4X II 3 D Ex tD A22 T110°C
MANAPA-Ex014	I M1 Ex ia I
Switching System	
MANAPA-011	two-wire 230VAC switch closed
MANAPA-012	two-wire 230VAC switch open
MANAPA-013	three-wire PNP 24VDC switch closed
MANAPA-Ex011	two-wire NAMUR
MANAPA-Ex012	two-wire NAMUR
MANAPA-Ex013	three-wire PNP 24VDC switch closed
MANAPA-Ex014	contact
Ambient temperature	-20°C to +60°C
Relative humidity	95%
Sensor case	IP 67 (IP54 -Ex014)
Dimensions	295 x 635 x 390mm
Weight	8.5 kg

If a layer of material is detected on the conveyor belt, the wheel is slightly raised, causing the rocker arm to rotate the valve gear so that the nose of the induction sensor slips into the notch of the valve gear, thereby opening (closing) of the sensor.

### View of the material sensor on the belt



The height of the MANAPA-01 sensor housing is a standard 0.5 m above the belt. The device is attached to an appropriate structural part of the conveyor belt.

**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.**