



p-u-l-s-o-t-r-o-n-i-c

Subject to change without notice!  
Rev. 1501

# Tunnel Detector

## M-Pulse2 / M-Pulse / Digital+

# BD

### Application

Tunnel detectors are used where high detection capacity and reliability are requested. For operation the user chooses among various operating electronics according to his application. Thus even complex tasks can be realised. The stainless steel housing and the smoothly grouting are the advantages making this sensor first class for the use in the food industry. Products with conductive components can be faded out easily due to modern digital technology. The sensors are maintenance- and calibration free.

### Function

Contrary to classic metal sensors the working principle of this device is based on a system of three coils. This enables the user to analyse signals precisely and to draw conclusions on their origin. By this it is for example possible to distinguish the signals into vibration, product or metal. This additional data allows a more sensible reaction on metallic residua.

### Handling

Depending on the operating electronics the handling is realised via a membrane keyboard with LC-display or Touchscreen. Thus all important parameters can be viewed easily and fast and changed if necessary. The sensitivity of the detector also is adjustable this way. Detailed information you will find in the documentation of the electronics M-PULSE2, M-PULSE and Digital+.



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### Mounting

The sensing range of the sensor partially is situated above and under the opening of the detector. Big metal pieces can already be detected in this sector. In order to guarantee the accurate functioning of the sensor, these sectors must be kept free of metal. This so-called metal-free zones are divided into two types:

- Metal-free zones for movable pieces
- Metal-free zones for non-movable pieces

The dimensions of these zones are specified in the particular data sheets.



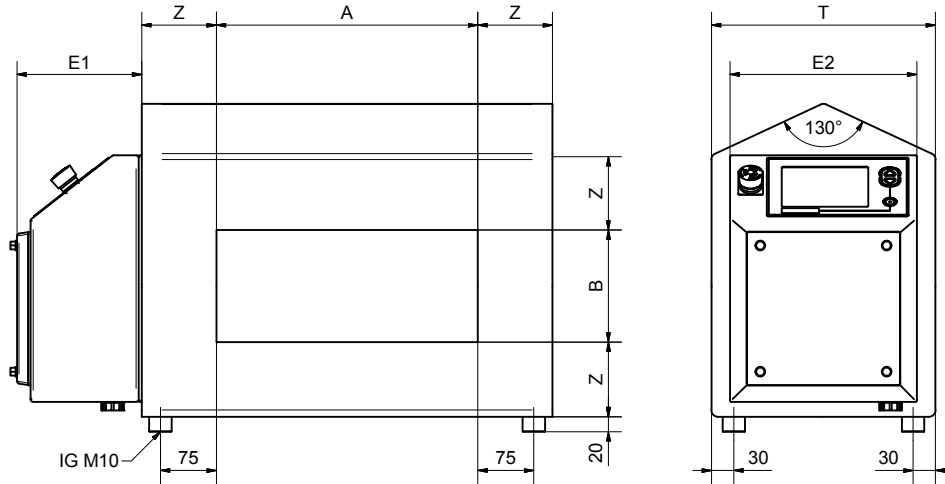
Type	BD		
<b>Mechanical data</b>			
Sensor aperture - height	50 .. 500 mm (50 mm steps) - special size on request		
Sensor aperture - width	100 .. 700 mm (50 mm steps) - special size on request		
Material	Stainless steel (Interior zone: Epoxy)		
Mounting	4x female thread M10 / deep 10		
Metall free zone for static parts	1,0 x Sensor's height		
Metall free zone for moving parts <sup>2</sup>	1,5 x Sensor's height		
<b>Conditions of use</b>			
Storage temperature	-10 .. 50°C		
Operating temperature	0 .. 50°C		
Protection class	IP65 (IP67 for versions HPW)		
Electrical connection	Supply via control unit; Control unit mounted directly at the sensor or optionally mounted up to 3 m away		
<b>Sensitivity<sup>1</sup> Example</b>			
Detection height [mm]	Fe-ball	Stainless steel - ball	Used sensor
Detection height 100	0,6 mm	0,8 mm	M-Pulse2 BD 350x100
Detection height 150	0,8 mm	1,1 mm	M-Pulse2 BD 350x150
Detection height 200	1,0 mm	1,6 mm	M-Pulse2 BD 400x200
Detection height 250	1,2 mm	1,8 mm	M-Pulse2 BD 450x250
Detection height 300	1,5 mm	2,0 mm	M-Pulse2 BD 450x300
Detection height 350	1,8 mm	2,1 mm	M-Pulse2 BD 600x350
Detection height 400	2,0 mm	2,5 mm	M-Pulse2 BD 750x400

<sup>1</sup> The actual sensitivity depends on various factors. Unfavourable environmental conditions or vibrations can reduce the sensitivity. Conductive test material can also influence the sensitivity. For obliging information please contact our service or sales department. Our service includes product tests in our headquarters.

<sup>2</sup> Large metallic objects can cause faulty activation even from great distances. The data refers to smaller pieces like deviating pulleys etc.. For precise information please contact our service or sales department.



## Dimensions



Dimensions E1 and E2 are dependent on the chosen electronics  
(Illustration with M-PULSE electronics)

Dimension A or B (minor dimension)	Dimension T	Dimension Z
< 100 mm	available on request	available on request
101 - 175 mm	300 mm	100 mm
176 - 250 mm	350 mm	120 mm
251 - 300 mm	400 mm	140 mm
301 - 350 mm	450 mm	160 mm
351 - 400 mm	450 mm	180 mm
401 - 500 mm	500 mm	200 mm
501 - 600 mm	550 mm	220 mm
> 600 mm	available on request	available on request

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## Notes

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