

## Flow Indicator for Solids

-Microwave technique

-Relay output

### System Description

The microwave-indicator **DYNAguard\_M** is used for monitoring the mass flow in open and closed transport processes.

Independent of particle moving direction solid materials with velocity of at least 0.1 m/s in the detection field will be discerned.

Flow problems with transports or the feeding of powders, pellets or granules can be detected early with this device. This helps to prevent serious difficulties that can occur due to clogged piping, material loss or other technical problems with the system.

The DYNAguard\_M has to be installed with an angle of 45° up to 90° of flow direction. Moving mechanical parts e.g. rotary valves, propellers or similar should not be in the detection field, because this might be detected as flow of material.

If these parts are not avoidable, they have to be shielded..

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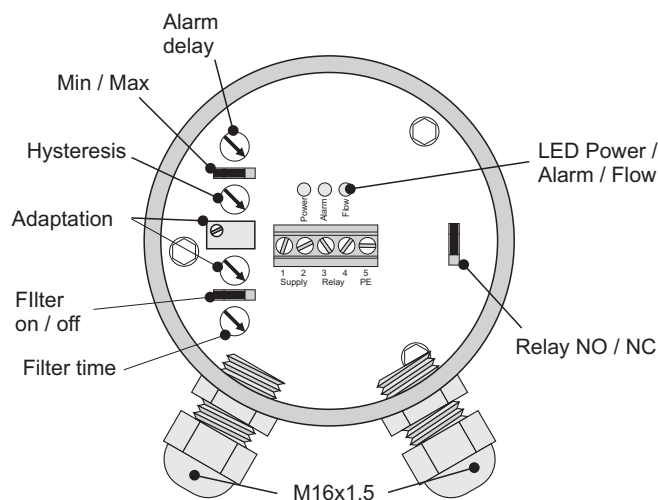
### Technical Data

|               |                      |                                            |
|---------------|----------------------|--------------------------------------------|
| material      | housing              | stainl. steel 1.4305 (AISI 303)            |
|               | window (standard)    | PTFE                                       |
|               | sealing (standard)   | NBR                                        |
| ambient cond. | temperature          | -20°C...+70°C (-4°F...158°F)               |
|               | degree of protection | IP 65 (EN 60529)                           |
|               | EMC                  | according to EN 61326-1                    |
| process cond. | temperature          | -20...90°C (-4...194°F)                    |
|               | pressure             | max. 2 bar (29 lbs)                        |
| relay         | switching voltage    | max. 110 VDC / 125 VAC<br>min. 10 mVDC     |
|               | switching current    | max. 1A, 30VDC / 0,5A, 125VAC<br>min. 10µA |
|               | switching power      | 30 W / 62,5 VA                             |
| microwave     | transmitting power   | 5 mW at 25°C,                              |
|               | frequency            | 24 GH                                      |
| supply        | voltage              | 18...36 VDC, 16...28 VAC                   |
|               | current consumption  | approx. 80 mA at 24 VDC                    |
| adjustment    | sensitivity          | relative                                   |
|               | damping              | 0...22 sec.                                |
|               | hysteresis           | 0...30 %                                   |

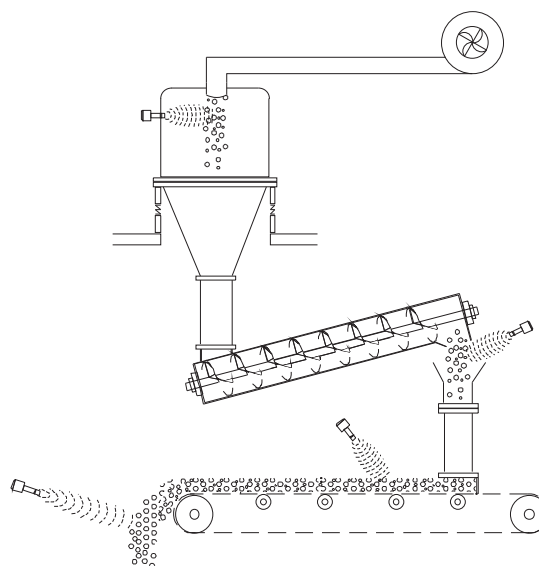
### Function

The measurement procedure of the DYNAguard is based on the physical principle of the Doppler effect. The sensor sends out a microwave field. If solids move through this field, the microwaves are reflected and received by the sensor again. The electronics unit converts this into a switching operation.

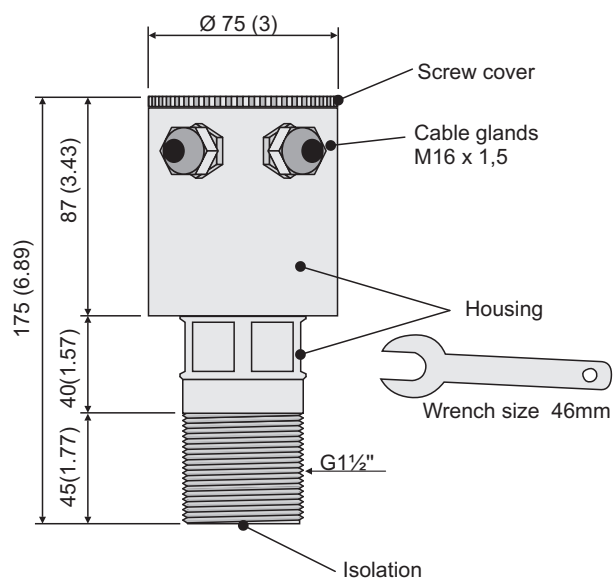
### Control- / Display units



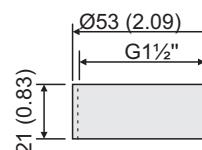
### Application



### Dimensions in mm (in)



### Accessory: thread bush



### Ordering key

#### DYNAguard A/B/C/D/E/F

- A: Output**
- M01: Relay
- B: Thread size**
- G1,5: G 1 ½"
- C: Material housing**
- 10: 1.4305 (AISI 303)
- D: Material window**
- 20: PTFE (standard)
- 30: Peek
- 40: Ceramic
- 51: PA
- E: Material of seals**
- 00: NBR (standard)
- 10: FPM
- 20: Silicone
- F: Accessories**
- 00: without
- 01: Thread bush 1.4301 (AISI 304)
- 02: Thread bush 1.4571 (AISI 316Ti)

technical data subject to change without notice

# DYNA Instruments

Instrumentation for Powder and Bulk Industries

Contact your national or area sales and service office