HAUSNET

# DYNAvel

Online-Measurement

## For the determination of solids velocity

- Non-contact
- Reliable
- Maintenance-free


DYNA Instruments

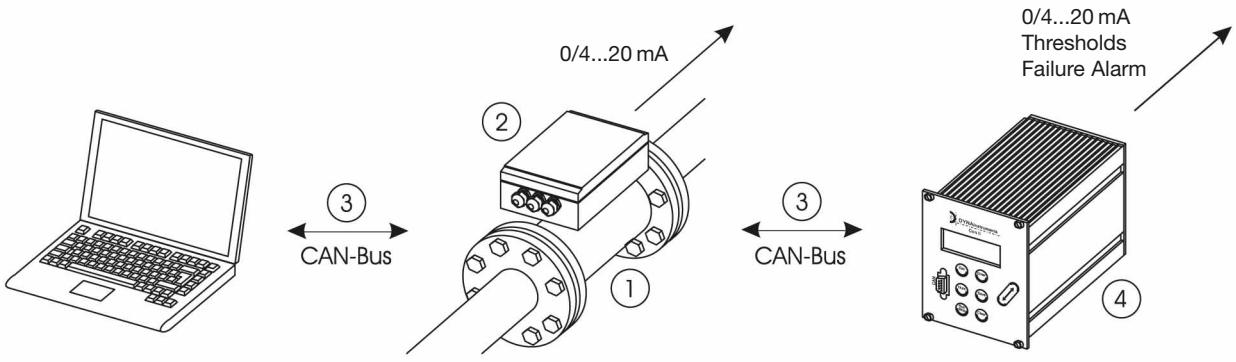
Instrumentation for Powder and Bulk Industries

# Highlights
## System

- Non-contact measurement
- Maintenance-free technology
- No calibration required
- Automatic adaptation allows wide product dynamic

## Highly Accurate and Reliable Measuring System without Calibration and Maintenance

The **DYNAvel** measuring system is a reliable solution to precisely determine the actual solids velocity in pneumatic conveying systems and free fall applications.
The measurement system consists out of the sensor ① the measurement electronics ② and the communication unit **DYNAcon** ④. A digital connecting cable ③ with a maximum length of 1000 metres offers a high degree of noise resistance and very little wiring effort, when several measuring points have to be installed, because it allows up to ten systems to be connected on one line.
Instead of using the communication unit, adjustments and back-up of parameters can very comfortably also be made with the software **DYNA Pro Visual** using a laptop computer.
In that case the velocity signal can also be output directly from the sensor.



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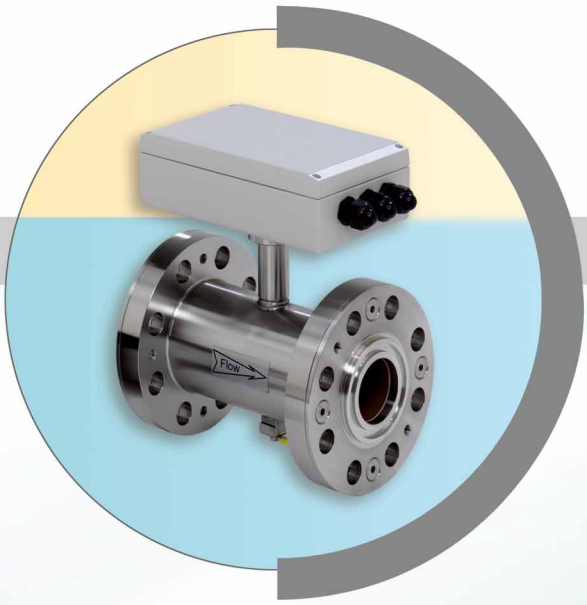
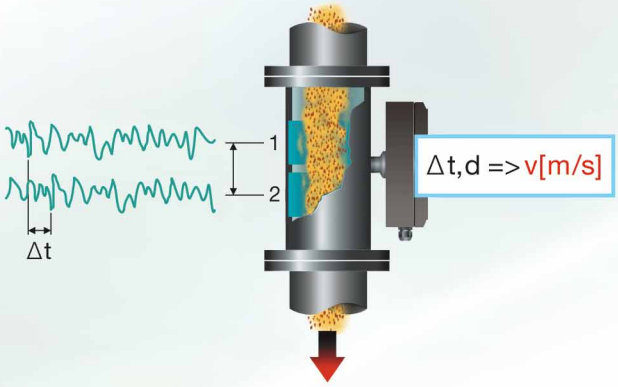


# DYNAvel

## Measuring Sensor




## Proven and Efficient Method

## for Measuring Solids Velocity

For a runtime measurement two sensors in the instrument (refer to the fig. above) record signals which are evaluated with the most modern microprocessor technology and automatically kept at an evaluable level. It is not necessary to adapt to changing product properties.

The time Δt which the product needs for the distance from sensor 1 to sensor 2 is calculated by means of the two signals using a correlation calculation. Since this is an absolute measured value, a calibration is not required.

## Technical data DYNAvel

| | |
|---|---|
| **Measuring range** | 0.2 ... 100 m/s |
| **Density range** | 1 g/m³ ... t/m³ |
| **Process coupling** | DIN/ANSII-flange,<br>flanged pipe DIN 24151 ... |
| **Nominal size** | 10 ... 400 mm (1/2"...16") |
| **Pressure** | maximal: 64 bar (900 lbs) |
| **Protection class** | IP 67 / IP 68 |
| **Option** | II 2G Ex d e IIC T4 Gb<br>II 2D Ex tbIIIC T130°C Db IP 68 |

| | |
|---|---|
| **Temperature** | |
| Ambient: | -20/-40 ... +60°C (-4/-40°F ... 140°F) |
| Storage: | -20 ... +80°C -4°F ... 176°F) |
| Process: | -20 ... +130°C (-4°F ... 266°F) |
| **Cable glands** | M20 x 1.5 for cable 6.5 ... 12 mm |
| **Supply** | 24 DC, 4W |
| **Material (standard)** | |
| Housing: | stainl. steel 1.4307 (AISI304) |
| Sensor pipe: | glass fibre reinforced epoxy resin |
| Seals: | FPM |
| Electronics housing: | pressure die-cast aluminium |



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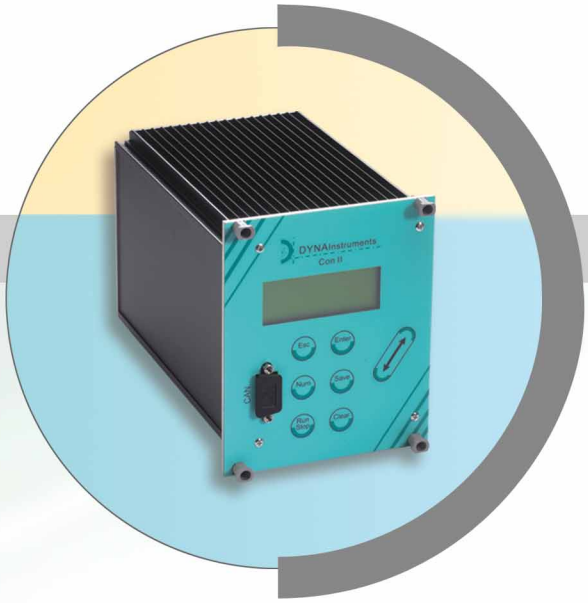
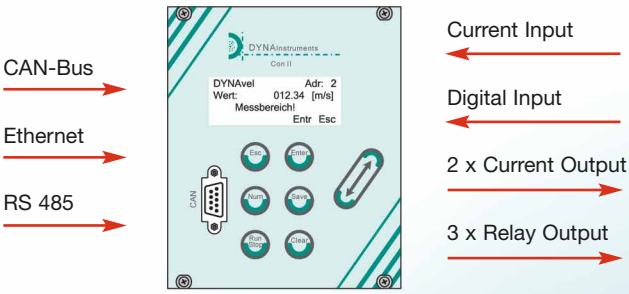


# DYNAcon
## Communication Unit




## Comfortable and Easy Operation
### for Set-up, Calculation and Output

The **DYNAcon** communications unit is used to set up the **DYNAvel** via the digital CAN-Bus line, for analogue output of the actual measuring value, threshold monitoring as well as for data backup of all settings in the flash memory (without batteries). High calculation speeds are achieved using state-oft-the-art 32 bit technology combined with the proven Linux operating system while offering an easy to use operating interface with online help options in the lower display line.

For determining the mass flow, the **DYNAcon** offers an easy option of integrating a concentration measurement via the analogue input or the serial port. Another software module then calculates the actual velocity and concentration values relating to the mass flow. In addition to the measuring values, the total sum of the mass of the solid particles can be displayed on the screen.

## Technical data DYNAcon

| | |
|---|---|
| **Housing** | 19“ Modul, 3HE, 21 TE |
| **Dimension/Weight** | 107 x 128 x 173 mm³/1,4 kg |
| **Protection class** | IP 20 |
| **Temperature** | Operating: 0 … + 40°C, no condensation<br>Storage: -10 … + 40°C, no condensation |
| **Assembly** | Panel, wall mounted, 19“ frame |
| **Supply** | 170 … 260 VAC, 47 … 63 Hz, 25VA<br>or 24 VDC, 15 W<br>LCD, 4 x 20 characters, illuminated |

| | |
|---|---|
| **Interfaces** | CAN-Bus, RS 485, Ethernet |
| **Input** | 4-20mA for Concentration<br>digital for batch start/stop |
| **Output** | 4-20mA, isolated, max. load 500 Ω<br>for sensor 24 VDC, 10 W<br>relay upper threshold<br>relay lower threshold<br>relay failure alarm<br>AC: max. 250V, max 1A, max 200VA<br>DC: max. 30 V, max. 1A<br>at resistive load |



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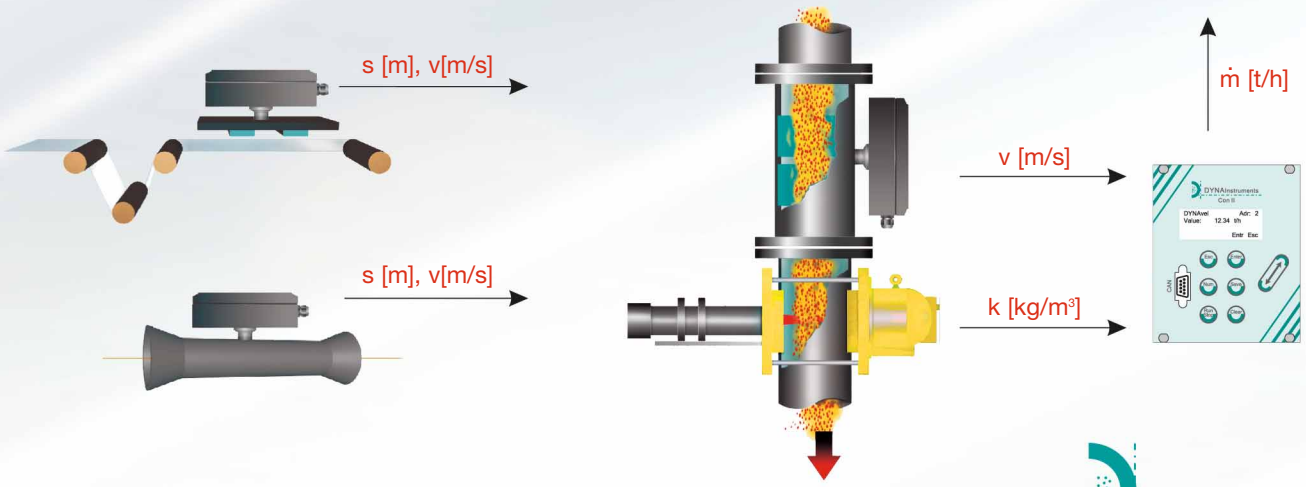
# Application
## Solutions

- Process control
- Product protection
- Energy saving
- Flow measurement in combination with a concentration measurement
- Length determination

## Robust Measuring Technology
## Also for Demanding Operational Conditions

The **DYNAvel** provides a reliable solution to optimize and control pneumatic conveying processes. Energy to produce transport gas can be saved, wear can be minimized and products can be conveyed more »gently« to avoid degradation. In combination with a concentration measurement the mass flow rate can be evaluated.

We offer a wide range of application expertise plus a variety of different sensor options for a large number of application options that, for example, can be used for highest pressure and temperature requirements.



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# DYNAInstruments

## Experts for bulk materials

- Tests with customer products possible in the DYNA test plant *(picture left)*
- In-house development & production
- Made in Germany

## Innovative Solutions · Proven Technology for more than 20 Years

- Mass Flow Rate Measurement
- Flow Monitoring
- Dust Monitoring
- Velocity Measurement

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DYNA Instruments GmbH
Tempowerkring 7
D-21079 Hamburg, Germany

Telephone: + 49 (0)40 79 01 85-0
Telefax: + 49 (0)40 79 01 85-18

info@dynainstruments.com
www.dynainstruments.com

Contact your local DYNA Instruments agent:

**HAUSNET S.R.L.**

**Tel Argentina: (+54-11) 5219-2211**

**Tel Chile: (+56-2) 2897-3999**

**E-Mail: hausnet@hausnet.com.ar**

**Web: www.hausnet.com.ar**