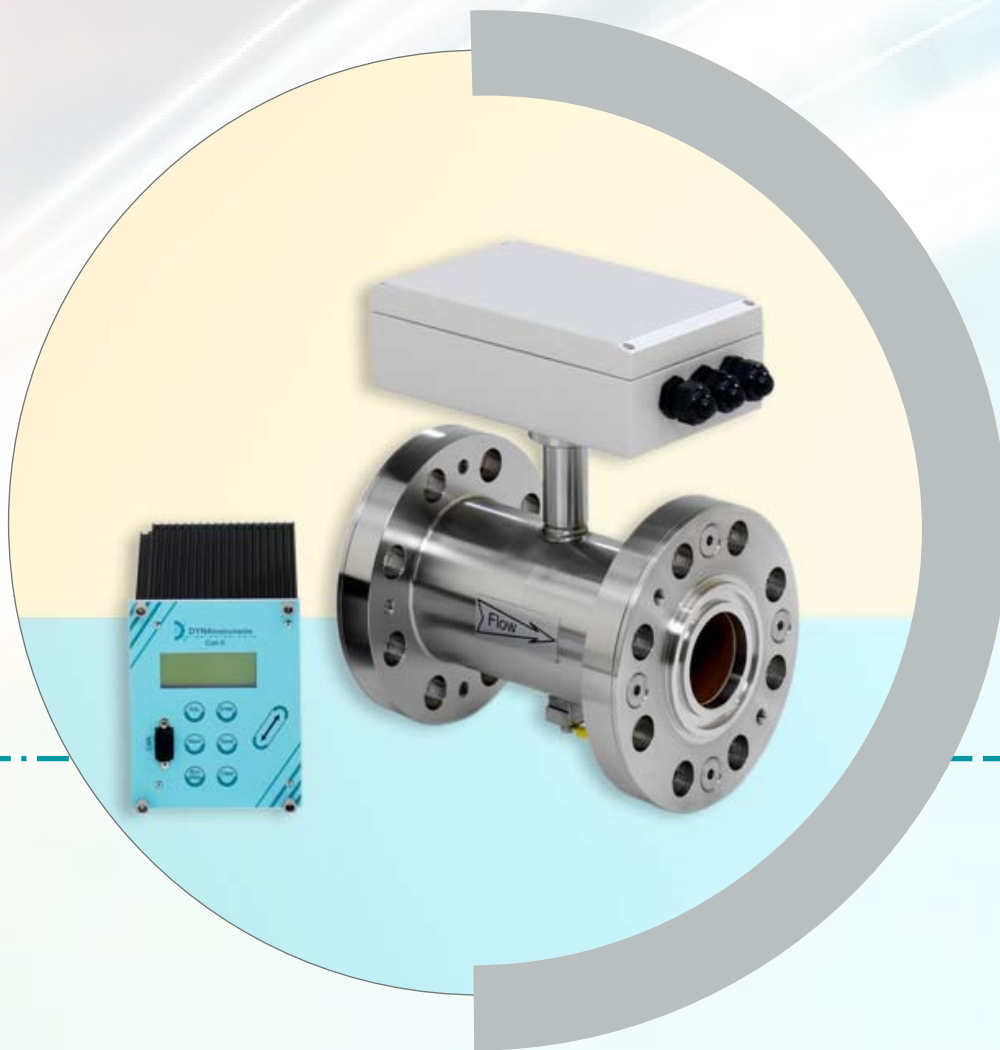


DYNA^{ve} | Online Measurement

For the determination of solids velocity

- Non-contact
- Reliable
- Maintenance-free



DYNA Instruments

Instrumentation for Powder and Bulk Industries

Highlights System



- No influence on the material to be measured
- Non-contact
- Maintenance-free technology
- No calibration as a result of absolute run time measurement
- Wide product dynamic range as a result of automatic adaptation capabilities
- Also for exact length measurements

HIGHLY ACCURATE AND RELIABLE MEASURING SYSTEM

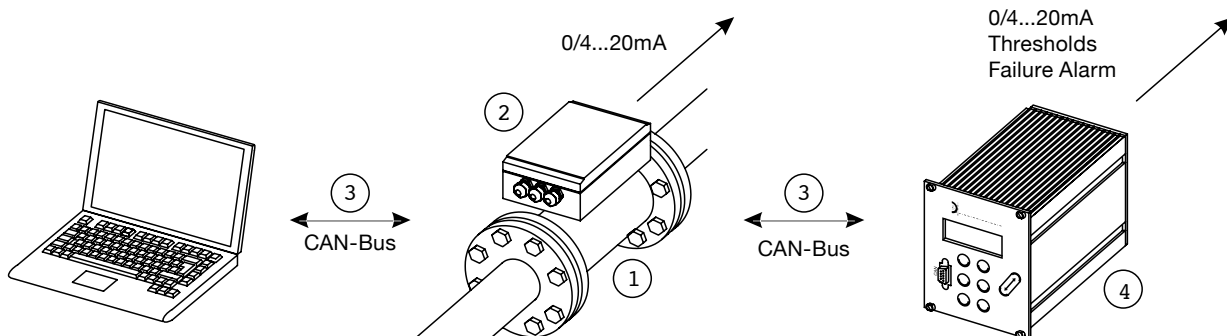
WITHOUT CALIBRATION AND MAINTENANCE

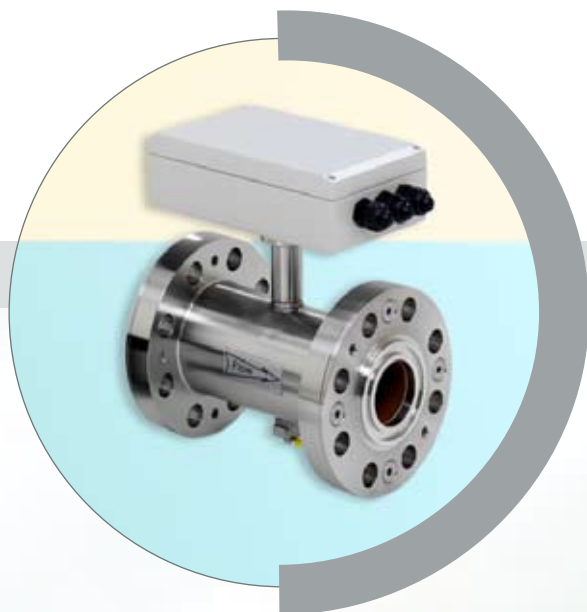
The DYNAvel measuring system provides a method that is just as reliable as it is accurate, which allows you to determine without contact the actual solids velocity in pneumatic flow processes as well as in free fall applications, but also at filaments, films or sheets.

The measurement arrangement consists of the process connection implemented in the flow line made up of sensor technology (1), the “intelligent” measurement electronics unit (2) and the DYNAcon communication unit (4). A digital connecting cable (3) with a maximum length

of 1000 metres offers a high degree of noise resistance and at several measuring points very little wiring effort, because it allows up to ten systems to be connected on one line.

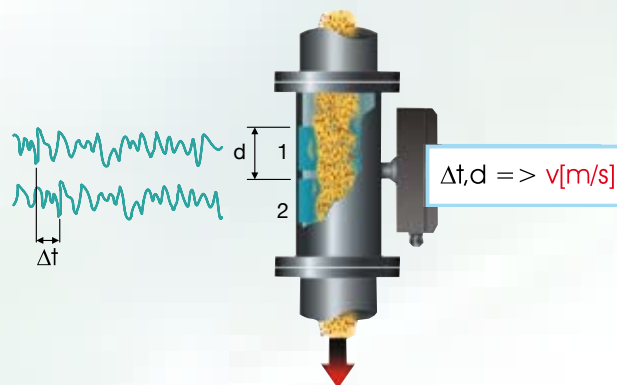
Alternately or in addition to the communication unit, the DYNA PRO Visual software in combination with a notebook can be used for the setting and back up of the parameters. Then, the DYNAvel sensor electronics unit directly carries out the analogue output of the measured values.





DYNAvel

Measuring Sensor




PROVEN AND EFFICIENT METHOD FOR MEASURING SOLIDS VELOCITY

The proven measurement principle of the DYNAInstruments is based on the detection of electrical charges on the solid particles to be measured. These charges generally occur naturally through friction in the flow process. In order to measure run time, signals are recorded at two sensors at a distance of d (see illustration above), are analyzed using state-of-the-art microprocessor technology and are automatically maintained at an analyzable level. This greatly simplifies operation, because it is not

necessary to adapt to a change in the properties of the solid particles.

In a correlation calculation, from the two signals the time Δt is detected during which the solid particle needs to travel the distance from sensor 1 to sensor 2. Because the calculation involves an absolute measuring value, no calibration is necessary.

Technical Data DYNAvel

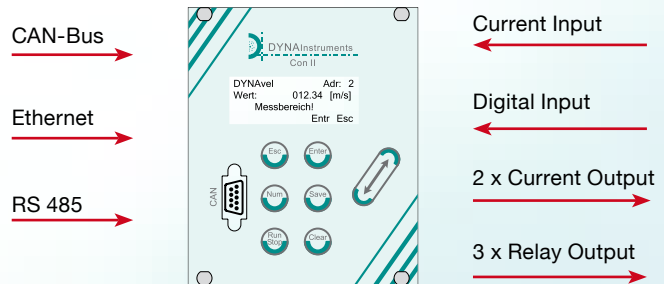
Measuring range	0.2 ... 100 m/s
Density range	1 g/m ³ ... t/m ³
Process coupling	DIN/ANSI-flange, Ermeto-connection, flanged pipe DIN 24151...
Nominal size	10 ... 400 mm (1/2" ... 16")
Pressure	maximal: 64 bar (900 lbs)
Protection class	IP 67
Option	II 3G Ex nA II T4,  I 3D IP67 T120°C

Temperature	
Ambient:	- 20 ... + 70°C (-4°F...158°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	18 ... 36 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



DYNAcon

Communication Unit



EASY-TO-USE AND SIMPLE OPERATION

FOR SETTING UP, ADJUSTMENT 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-of-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, 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	Interfaces	CAN-Bus, RS 485, Ethernet
Dimension/Weight	107 x 128 x 173 mm ³ /1,4 kg	Input	4-20mA for Concentration digital for batch start/stop
Protection class	IP 20	Output	4-20mA, isolated, max. load 500 Ω supply for DYNAvel: 24 VDC, 10 W relay upper threshold relay lower threshold relay failure alarm
Temperature	Operating: 0 ... + 50°C, no condensation Storage: -10 ... + 50°C, no condensation		AC: max. 250V, max 1A, max 200VA DC: max. 30 V, max. 1A at resistive load
Assembly	Panel, wall mounted, 19" frame		
Supply	88 ... 264 VAC, 47 ... 63 Hz, 25VA oder 18 ... 36 VDC, 15 W LCD, 4 x 20 characters, illuminated		



Application Solutions

- Pure velocity measurement
- Length determination
- Flow measurement combined with a concentration measurement
 - radiometric
 - microwave

VERSATILE OR ADAPTED TECHNOLOGY

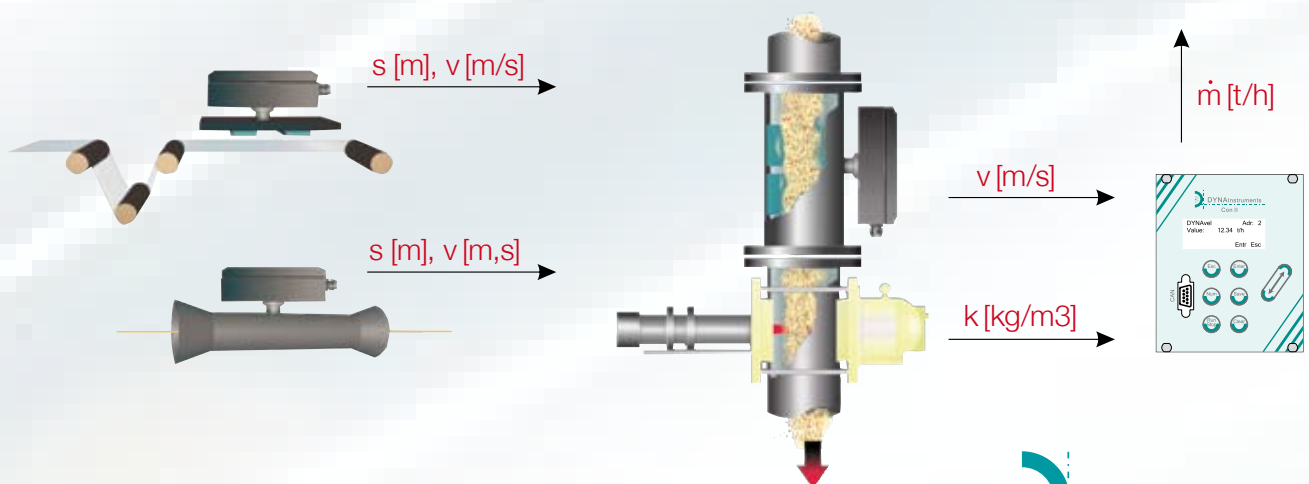
FOR BOTH GENERAL AND CUSTOM APPLICATIONS

The DYNAvel velocity measurement provides a reliable method to optimize flow processes. Not only is it possible to utilize flow gas more efficiently and minimize wear, but a more “gentle” flow reduces friction to the flow particle.

What’s more, a timely integration of the velocity values makes it possible to realize a more accurate length measurement of, for example, filaments, films and sheets.

In combination with a separate concentration measurement (radiometry or microwave) the result is a unique flow measurement that provides continuous mass flow detection.

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. Of course, this is only possible by using state-of-the-art manufacturing and testing procedures made in Germany.





DYNA Instruments

- Robust and proven measurement technology
- High level of application expertise
- Proprietary developments
- In-house manufacturing
- Made in Germany

WE HAVE BEEN PRODUCING AND DELIVERING SOLUTIONS
FOR MORE THAN **15** YEARS



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