EN

Superior with Solids

SWR

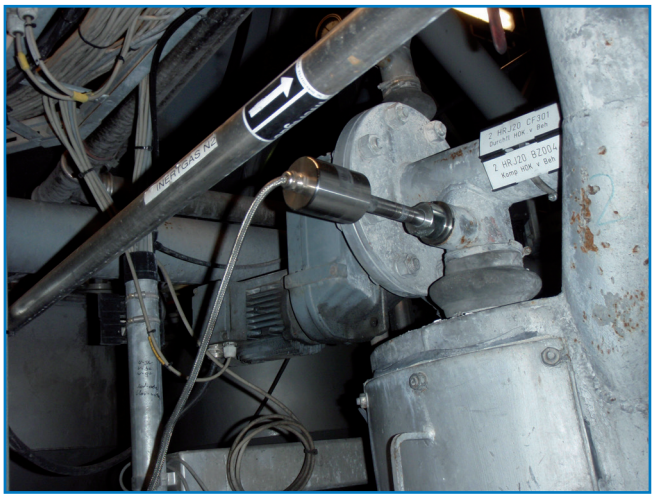
SpeedFlow

Measurement of velocity for solids

Product information

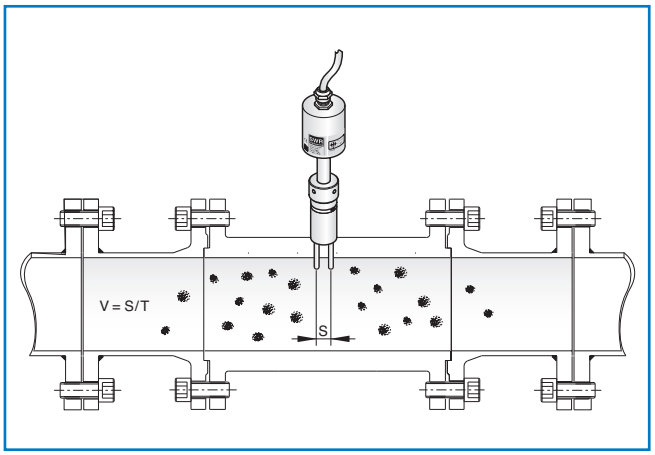
Use

SpeedFlow has been specially developed for the continuous speed measurement of solids such as granules, powder and dust in metal pipelines.
As the measurement is taken directly in the stream of material, the material can be measured during free fall or while being transported on pneumatic conveyors.
The measurement is completely independent of the material itself.
Its range of application starts at material speeds of as little as 0.75 m/s.



Function

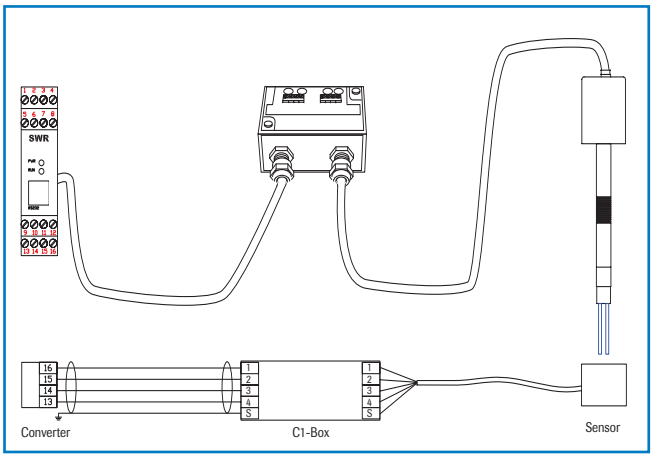
SpeedFlow is based on triboelectric charging.
Solid particles fly past, impacting the 2 sensor rods and causing a charge transfer (induced voltage).
These electric signals are fed to the correlator which precisely calculates the transit time between the two rods.
The speed can thus be determined using the defined distance of 8 mm between the two rods.
Once installed, the system is started by help of the supplied software.
The speed is displayed as a 4 ... 20 mA-signal.



System

A complete measuring point consists of the following components:

- Weld-on socket for mounting the sensor, including plugs
- Sensor with a 2-meter connection cable
- Transmitter (including start-up software)

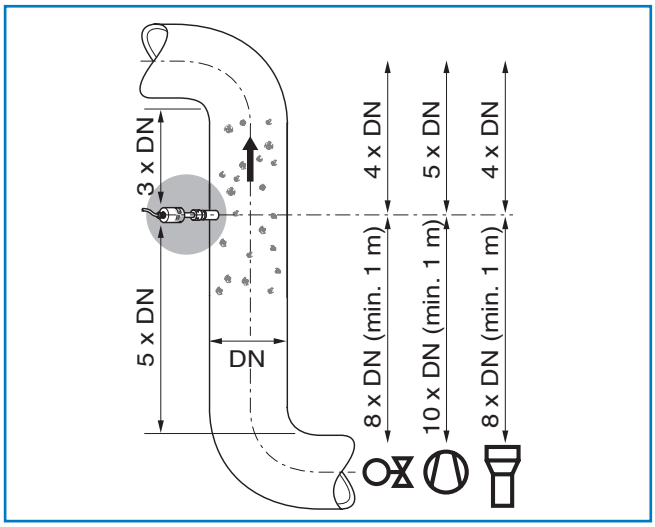


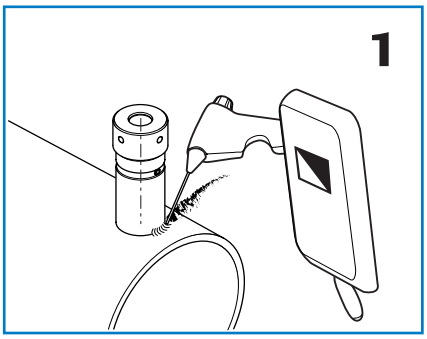
Mounting and installation

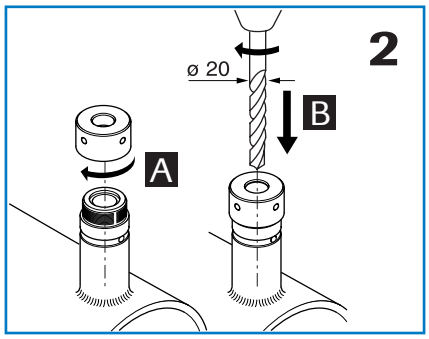
To install the sensor, the installation location must be determined according to the required inlet and outlet areas. At the specified installation location, the socket is welded on and a borehole is drilled through the socket and through the pipe wall.

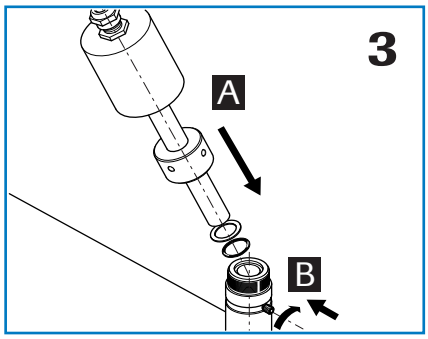
The sensor is then adjusted to the wall thickness, inserted and fixed with the aid of union nuts.

The distance between the sensor and the transmitter can be up to 300 meters.









Start-up procedure

The measuring device is started by the DIN rail transmitter.
This PC software enables convenient menu-guided input of parameters such as measuring range, required physical units or measuring signal attenuation.

A current output of 4 ... 20 mA is available.

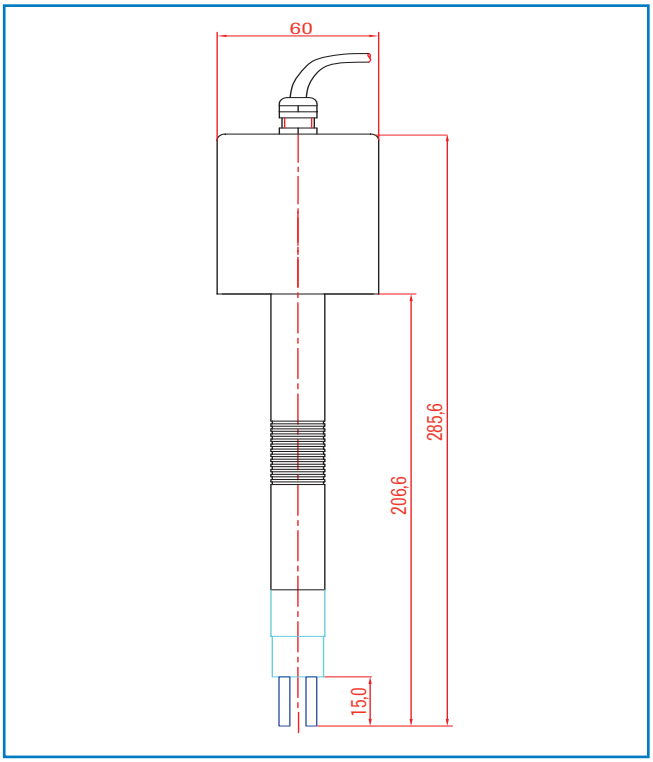
The menu language options are German, English or French.

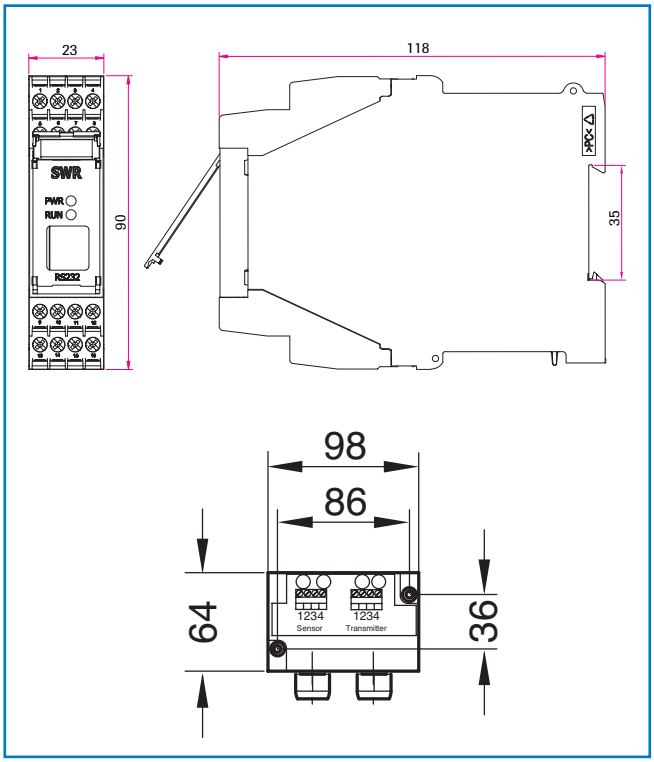
Technical data

Sensor	
Socket	St52 or stainless steel 1.4571
Rod	Tungsten Carbid (abrasion-resistant)
Housing	Stainless steel 1.4571
Protection category	IP 65 to E 60529/10.91
Rod length	15 mm
Velocity range	0.75 … 35 m/s
Temperature inside the pipe	-20 … 80 °C (higher temperatures available on request)
Temperature outside the pipe	0 … +60 °C
Weight	approx. 1.5 kg
Dimensions	Ø 60, Ø 20, L 320 mm (including rod length)
Measuring accuracy	± 1 % (in the calibrated measuring range)

C1-Box	
Dimensions	98 x 64 x 35 mm (W x H x D)

Transmitter	
Power supply	24 V DC ±10 %
Power consumption	20 W / 24 VA
Protection type	IP 40 to EN 60 529
Ambient operating temperature	-10 … +45 °C
Dimensions	23 x 90 x 118 (W x H x D)
Weight	Approx. 172 g
DIN rail fastening	DIN 60715 TH35
Connection terminals cable cross-section	0.2 - 2.5 mm² [AWG 24-14]
Current output	4-20 mA (0- 20 mA), Load < 500 Ω
Switch output measurement alarm	Relay with switchover contact Max. 250 V AC at 1 A
Data backup	Flash memory





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