

D-vel DF-Series

Reliable Compact Reasonable

Data Sheet

VELOCITY MEASUREMENT FOR BULK SOLIDS

PROCESS COUPLING: DIN-FLANGE

Function

The velocity measurement **D-vel** is used to determine the velocity of bulk material like dust, powder or granulates which are being transported in pneumatic conveying systems or by gravity in pipelines.

Integrated into a control concept the value can be used to reduce product degradation / abrasion and to minimize the quantity of required conveying gas.

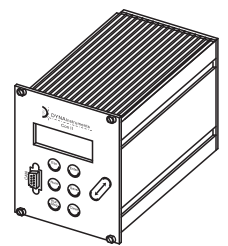
In combination with a concentration measurement the mass flow rate can be determined.

The measurement principle is based on the detection of moving solid particles. Nonmoving particles are not being detected. For a runtime measurement two sensors in the instrument record signals. The time 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.

Adjustments to different products or process conditions are done automatically.

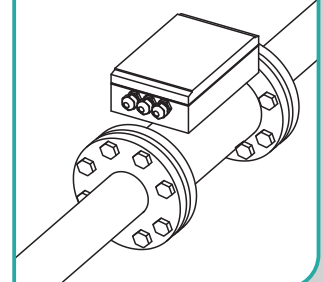
The device can not be used if the product creates an electrically conductive layer on the pipeline walls by abrasion or caking.

- Non-contact measurement
- Without calibration
- Maintenance-free



Technical Data

| | | |
|------------------|-----------------------|---|
| Measuring range | freely selectable | 0.2...100 m/s |
| Accuracy | typically | 1 % of the end value |
| Process | temperature | standard: max. 130°C (266°F) |
| | pressure | max. 64 bar (900 lbs) |
| Ambient cond. | temperature | -20°C...+70°C (-4°F...158°F) |
| | protection class | IP 67 (EN 60529) |
| | interference immunity | according to EN 61326-1 |
| Materials | see overleaf | |
| Parameterization | via CAN-Bus | with DYNAcon / Notebook |
| Output | via CAN-Bus | through DYNAcon: |
| | | value in m/s, failure, simulation value, limit status |
| CAN-Bus | transmission rate | 40 kbaud |
| | | cable length max. 1000 m |
| Supply voltage | | 18...36 V DC, max. 6 W |
| Damping | | 1-30 s, fast adaptation to rapid change of the value |
| | | |



D-vel DF-Series

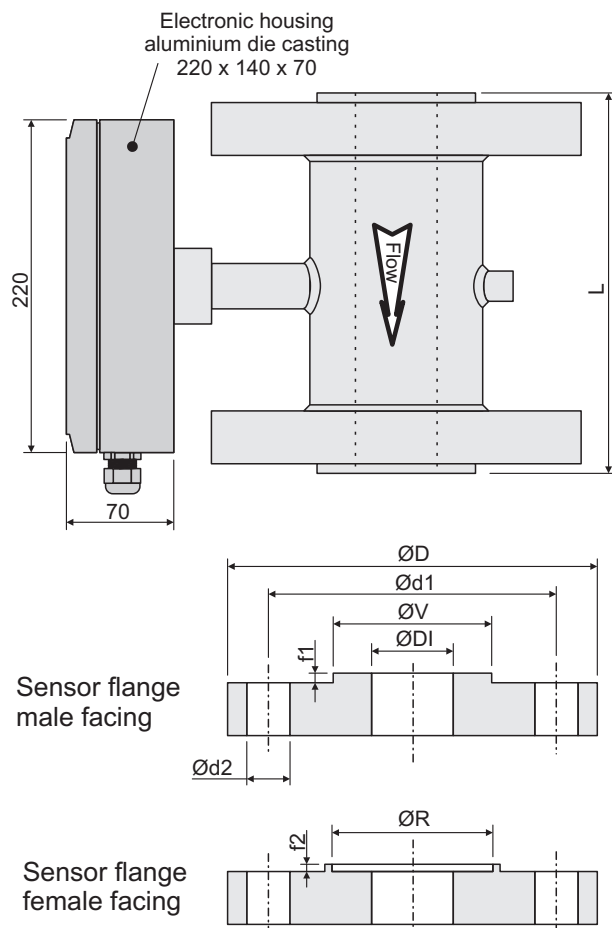
Data Sheet

Reliable Compact Reasonable

Dimensions in mm

DIN-Flange DF

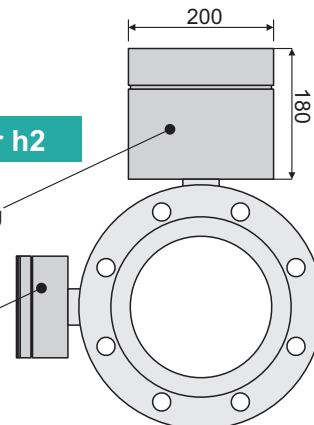
| DN | L | ØV | ØR | f1 | f2 | PN 10 | | | | PN 16 | | | | PN 25 | | | | PN 40 | | | | PN 64 | | | |
|-----|-----|-------|-----|-----|-----|-------|-----|-----|------|-------|-----|-----|------|-------|-----|-----|------|-------|-----|-----|------|-------|-----|-----|------|
| | | | | | | ØD | Ød1 | Ød2 | Anz. | ØD | Ød1 | Ød2 | Anz. | ØD | Ød1 | Ød2 | Anz. | ØD | Ød1 | Ød2 | Anz. | ØD | Ød1 | Ød2 | Anz. |
| 10 | 250 | 34.9 | 35 | 4 | 3 | 90 | 60 | 14 | 4 | 90 | 60 | 14 | 4 | 90 | 60 | 14 | 4 | 90 | 60 | 14 | 4 | 100 | 70 | 14 | 4 |
| 15 | 250 | 39.9 | 40 | 4 | 3 | 95 | 65 | 14 | 4 | 95 | 65 | 14 | 4 | 95 | 65 | 14 | 4 | 95 | 65 | 14 | 4 | 105 | 75 | 14 | 4 |
| 20 | 250 | 50.9 | 51 | 4 | 3 | 105 | 75 | 14 | 4 | 105 | 75 | 14 | 4 | 105 | 75 | 14 | 4 | 105 | 75 | 14 | 4 | 130 | 90 | 14 | 4 |
| 25 | 250 | 57.9 | 58 | 4 | 3 | 115 | 85 | 14 | 4 | 115 | 85 | 14 | 4 | 115 | 85 | 14 | 4 | 115 | 85 | 14 | 4 | 140 | 100 | 18 | 4 |
| 32 | 250 | 65.9 | 66 | 4 | 3 | 140 | 100 | 18 | 4 | 140 | 100 | 18 | 4 | 140 | 100 | 18 | 4 | 140 | 100 | 18 | 4 | 155 | 110 | 22 | 4 |
| 40 | 250 | 75.9 | 76 | 4 | 3 | 150 | 110 | 18 | 4 | 150 | 110 | 18 | 4 | 150 | 110 | 18 | 4 | 150 | 110 | 18 | 4 | 170 | 125 | 22 | 4 |
| 50 | 250 | 87.9 | 88 | 4 | 3 | 165 | 125 | 18 | 4 | 165 | 125 | 18 | 4 | 165 | 125 | 18 | 4 | 165 | 125 | 18 | 4 | 180 | 135 | 22 | 4 |
| 65 | 250 | 109.9 | 110 | 4 | 3 | 185 | 145 | 18 | 4 | 185 | 145 | 18 | 4 | 185 | 145 | 18 | 8 | 185 | 145 | 18 | 8 | 205 | 160 | 22 | 8 |
| 80 | 250 | 120.8 | 121 | 4 | 3 | 200 | 160 | 18 | 8 | 200 | 160 | 18 | 8 | 200 | 160 | 18 | 8 | 200 | 160 | 18 | 8 | 215 | 170 | 22 | 8 |
| 100 | 250 | 149.8 | 150 | 4.5 | 3.5 | 220 | 180 | 18 | 8 | 220 | 180 | 18 | 8 | 235 | 190 | 22 | 8 | 235 | 190 | 22 | 8 | 250 | 200 | 26 | 8 |
| 125 | 250 | 175.8 | 176 | 4.5 | 3.5 | 250 | 210 | 18 | 8 | 250 | 210 | 18 | 8 | 270 | 220 | 26 | 8 | | | | | | | | |
| 150 | 300 | 203.7 | 204 | 4.5 | 3.5 | 285 | 240 | 22 | 8 | 285 | 240 | 22 | 8 | 300 | 250 | 26 | 8 | | | | | | | | |
| 200 | 350 | 259.7 | 260 | 4.5 | 3.5 | 340 | 295 | 22 | 8 | 340 | 295 | 22 | 12 | 360 | 310 | 26 | 12 | | | | | | | | |
| 250 | 350 | 312.6 | 313 | 4.5 | 3.5 | 395 | 350 | 22 | 12 | 405 | 355 | 22 | 12 | | | | | | | | | | | | |
| 300 | 400 | 363.6 | 364 | 4.5 | 3.5 | 445 | 400 | 22 | 12 | 460 | 410 | 26 | 12 | | | | | | | | | | | | |
| 350 | 400 | 421.5 | 422 | 5 | 4 | 505 | 460 | 22 | 16 | 520 | 470 | 26 | 16 | | | | | | | | | | | | |
| 400 | 450 | 473.5 | 474 | 5 | 4 | 565 | 515 | 26 | 16 | 580 | 525 | 30 | 16 | | | | | | | | | | | | |



Option Heater h2

housing for heater h2
aluminium die casting
230 x 200 x 180

electronic housing
aluminium die casting
220 x 140 x 70



Ordering key D-vel_DF/a/b/c/d/e/f/g/h/i/k

* = Standard

a: Flange form

- 1: male and female facing
- 3: female facing on both sides
- * 5: male facing on both sides

b: Nominal pressure PN

- 10, 16, 25, 40, 64 bar

c: Nominal diameter DN

- 10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400

d: Inner diameter DI

in mm

Standard:

- * 10.0 / 15.0 / 20.0 / 25.0 / 28.1 /
- * 38.0 / 40.0 / 42.7 / 50.0 / 54.0 /
- * 54.7 / 59.0 / 60.3 / 62.7 / 65.0 /
- * 67.4 / 80.0 / 83.3 /
- * 100.0 / 107.9 / 125.0 / 133.6 /
- * 150.0 / 160.9 / 200.0 / 210.9 /
- * 250.0 / 263.0 / 300.0 / 312.9 /
- * 350.0 / 400.0

e: Material of housing

- * 00: Steel galvanized, chromated, varnished

- 10: Stainless steel 1.4301 / AISI 304
- 20: Stainless steel 1.4571 / AISI 316 Ti
- 21: Stainless steel 1.4541 / AISI 321
- 22: Stainless steel 1.4435 / AISI 316 L (Mo+)

f: Material of sensor pipe

- * 01: glass fiber reinforced epoxy resin
- 02: glass fiber reinforced vinyl ester epoxy resin
- 20: PTFE
- 30: PEEK
- 50: PVC51: PA
- 52: PE
- 54: UHMW PE
- 55: POM
- 56: PVDF

g: Material of seals

- 00: Nitrile butadiene rubber (NBR)
- * 10: fluorinated rubber (FPM/FKM)
- 20: Silicon (MH)

h: Options

- without: no options
- h2: heater (processes with humidity)

i: Atex temperature group

- 1: process temperature -30°C...+160°C temperature class T3, T160°C
- 2: process temperature -15°C...+120°C temperature class T4, T120°C
- 3: process temperature -15°C...+70°C temperature class T4, T120°C

k: Certificates

- without: Version for non-hazardous
- Ex2: Version for the use in ATEX zone 2 and/or 22 II 3G Ex nA IIB T4 Gc II 3D Ex tc IIIB T100°C Dc IP65



Technical data subject to change without notice.

GTS, Inc.
70 6th Avenue, Shalimar Florida 32579
PH: 850-651-3388
Fax: 850-651-4777
Email: info@onthelevel.com
Website: www.onthelevel.com

