

# Positive displacement flow sensors // VZAL



## US versions available

**Note:** The US versions are separate products.  
The units are not converted, but pre-configured at the factory for the respective variants.

## Highlights

- Variety of sealing materials → Universally use for different measurement media
- Output signal: pulse signal

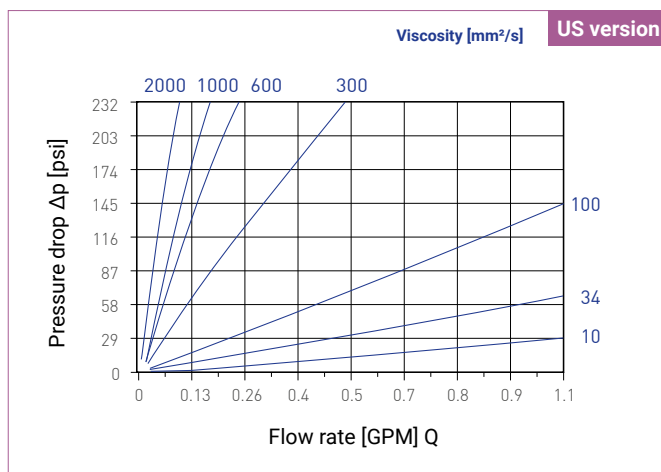
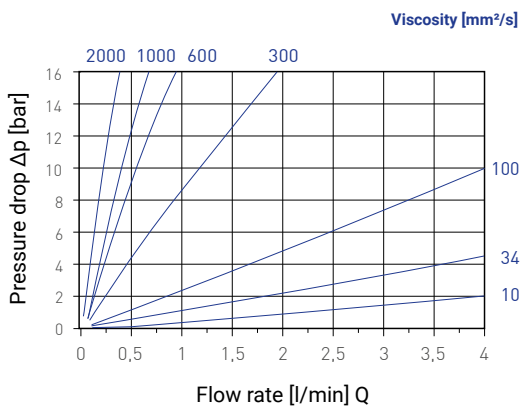
# Technical data

Technical data				
Type	VZ0.04AL	VZ0.2AL	VZ2AL	VZ5AL
Size	0.04	0.2	2	5
Process connection	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{3}{4}$	G 1
Measuring range [l/min]*	0.02...4	0.16...16	1...65	1...200
Measuring range [l/h]*	1.2...240	9.6...960	60...3,900	60...12,000
Measuring range [GPM]*	0.005...1.06	0.04...4.23	0.26...17.2	0.26...52.9
Measuring range [GPH]*	0.32...63.5	2.5...254	15.9...1,032	15.9...3,175
Geometric gear volume [cm <sup>3</sup> ]	0.04	0.245	2	5.222
Measuring accuracy	±1 % of reading	±1 % of reading	±1 % of reading	±1 % of reading
Repeatability	Up to 0.5 % under same conditions			
Start of gear wheel rotation [l/min]	0.004	0.01	0.12	0.1
Start of gear wheel rotation [l/h]	0.24	0.6	7.2	6
Start of gear wheel rotation [GPM]	0.001	0.003	0.032	0.026
Start of gear wheel rotation [GPH]	0.06	0.16	1.9	1.59
Viscosity of medium	20...4000 mm <sup>2</sup> /s	20...4000 mm <sup>2</sup> /s	20...4000 mm <sup>2</sup> /s	20...4000 mm <sup>2</sup> /s
Medium temperature range	-10...80 °C (14...176 °F) integrated preamplifier 0...60 °C (32...140 °F) without preamplifier (for TD8250)			
Ambient temperature	-10...80 °C (14...176 °F)			
Maximum pressure rating	240 bar	200 bar	200 bar	100 bar
Maximum pressure rating	3481 psi	2901 psi	2901 psi	1450 psi
Indication	Cable socket with one LED for pulse signal	Cable socket with two LED for pulse signal (two channels)	Cable socket with one LED for pulse signal	Cable socket with one LED for pulse signal
Degree of protection EN 60529	IP65			
Weight [kg]	0.5	0.6	1.9	6
Weight [lb]	1.1	1.3	4.2	13.2
<b>Output signals</b>				
→ Puls rate [pulses/l]	25 000	4081.63	500	191.5
→ Puls rate [pulses/gallon]	94,636.00	15,450.77	1,892.72	724.90
→ Resolution [ml/pulse]	0.04	0.245	2	5.222
→ Signal shape	Pulse signal, squarewave, PNP, pulse duty ratio 1:1 ±15 %			
<b>Electrical data</b>				
Electrical connection	Plug connector incl. cable socket			
Power supply	12...30 V DC reverse polarity protection			
Power consumption [short-circuit proof]	0.6 W	0.9 W	0.6 W	0.6 W

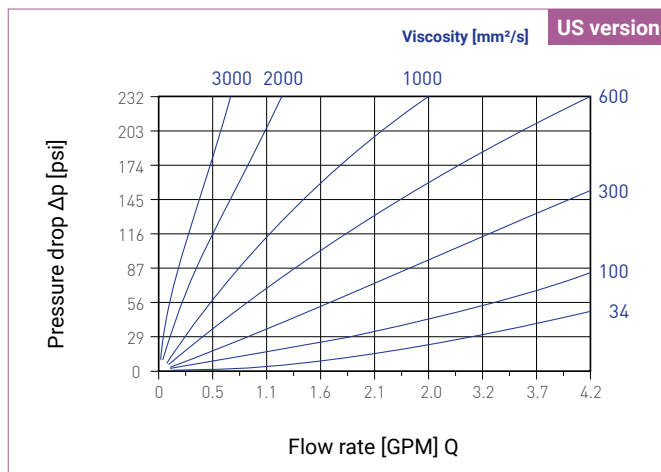
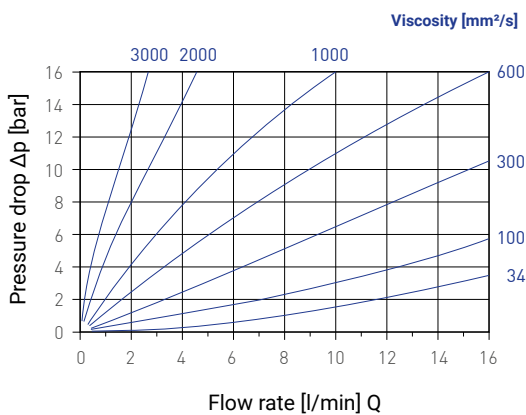
\* For media with high viscosity the measuring range is reduced. The max. pressure drop shouldn't exceeded 16 bar (230 psi) (see pressure drop diagrams).

# Typical pressure drop // VZ0.04AL // VZ0.2AL

## Typical pressure drop VZ0.04AL

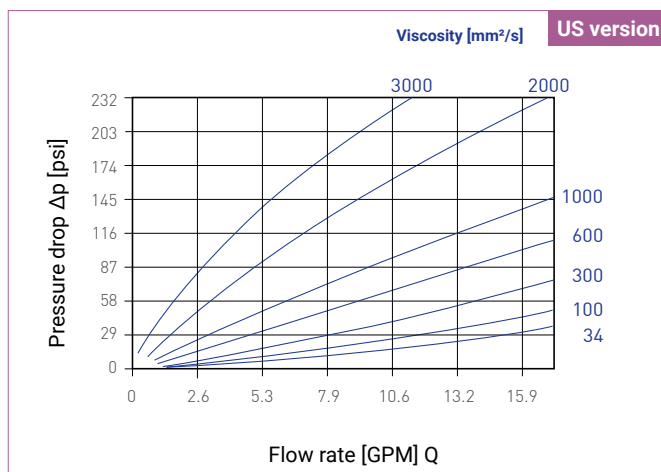
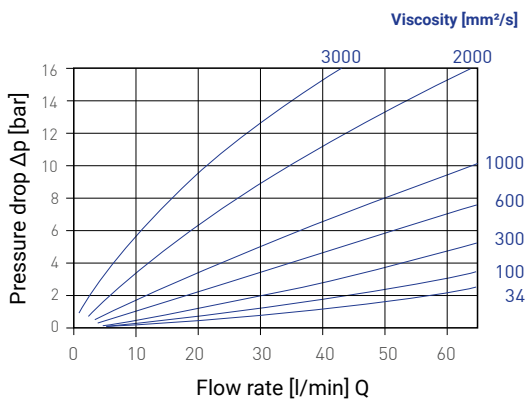


## Typical pressure drop VZ0.2AL

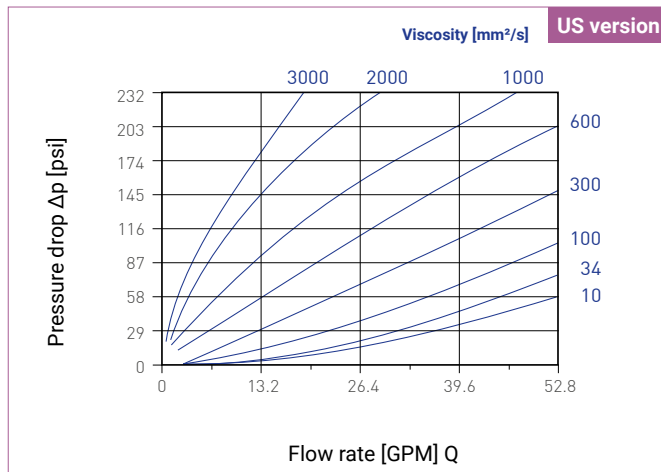
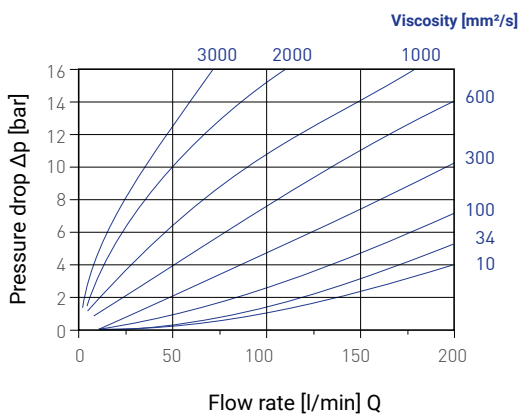


# Typical pressure drop // VZ2AL // VZ5AL

## Typical pressure drop VZ2AL

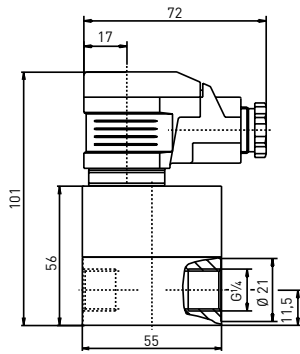


## Typical pressure drop VZ5AL

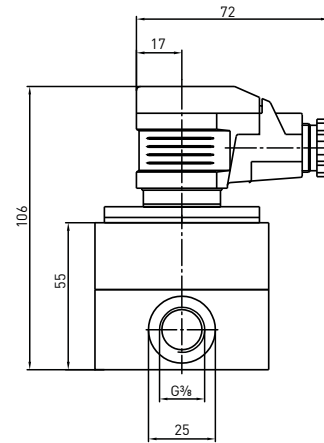


# Technical drawings

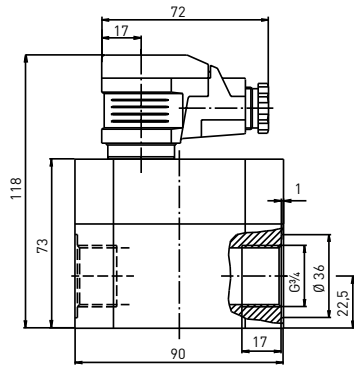
VZ0.04AL



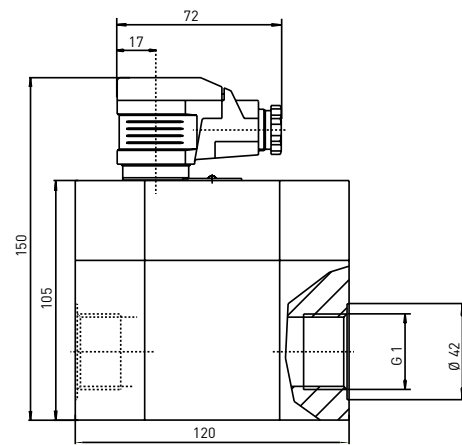
VZ0.2AL



VZ2AL

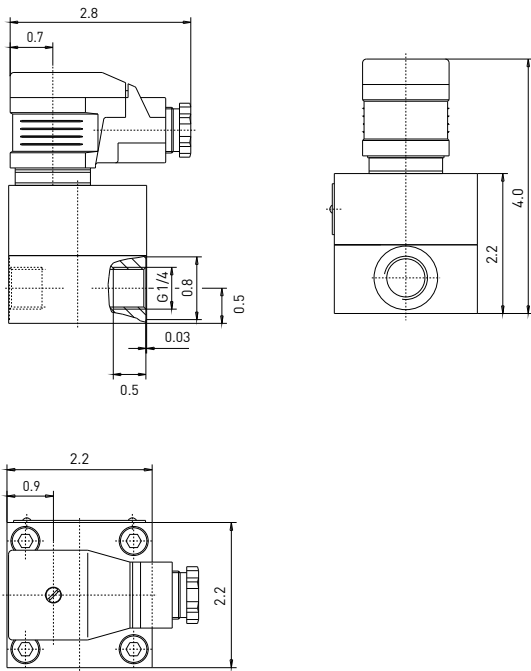


VZ5AL

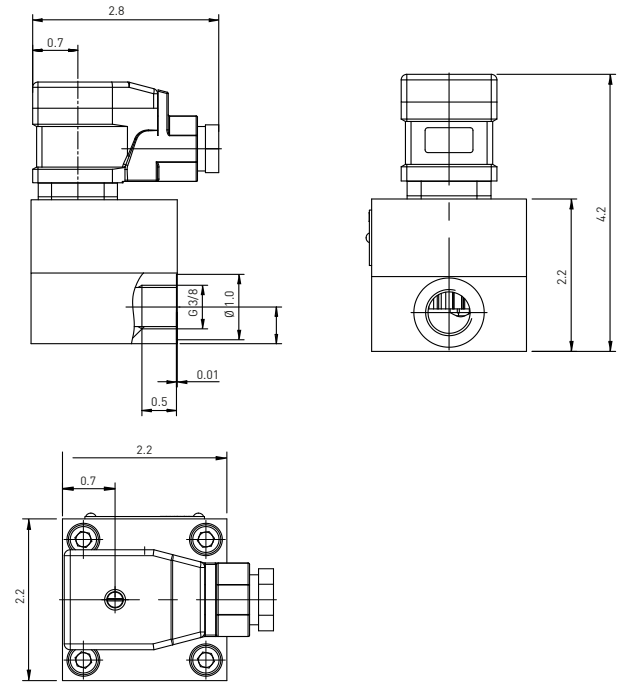


# Technical drawings // US-Versions

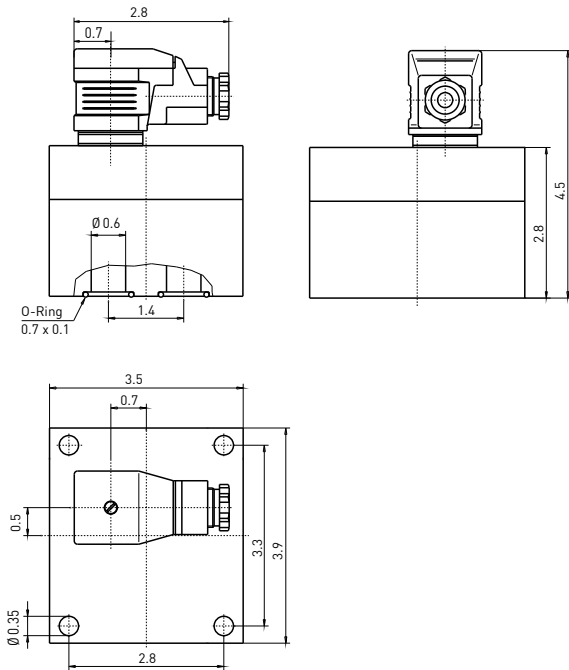
VZ0.04AL



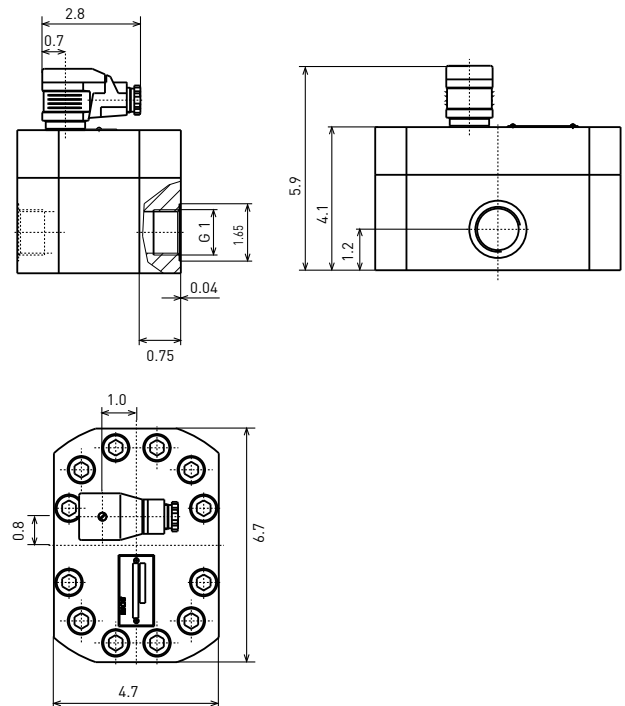
VZ0.2AL



VZ2AL



VZ5AL



# Materials

Materials				
Type	VZ0.04AL	VZ0.2AL	VZ2AL	VZ5AL
<b>Housing</b>	Aluminium, gold-colour anodised	Aluminium, gold-colour anodised	Aluminium AlMgSi F30 (hard coated)	Aluminium AlMgSi F30 (hard coated)
<b>Gear wheels</b>	Stainless steel 1.4462	Steel 1.7139	Steel 1.7139	Steel 1.7139
<b>Bearings</b>	Ball bearings	Ball bearings stainless steel	Sleeve bearings (P10)	Ball bearings
<b>Seals</b>	FKM	FKM	FKM	FKM

## Article numbers

Order code			
Type	Size		
VZ0.04AL	0.04	VZ004ALV31	
VZ0.2AL	0.2	VZ020ALV31	
VZ2AL	2	VZ200ALV31	
VZ5AL	5	VZ500ALV31	
Preamplifier			
Integrated			I00S
Without preamplifier (for TD8250)			K00S
<b>Example order number</b>		<b>VZ004ALV31</b>	<b>I00S</b>

## Article numbers // US-Versions

Order code			
Type	Size		
VZ0.04AL	0.04	VZ004ALV31	
VZ0.2AL	0.2	VZ020ALV31	
VZ2AL	2	VZ200ALV31	
VZ5AL	5	VZ500ALV31	
Preamplifier			
Integrated			I00U
Without preamplifier (for TD8250)			K00U
<b>Example order number</b>		<b>VZ004ALV31</b>	<b>I00U</b>

# Local display // TD8250



## Highlights

- Three output signal versions
  - Pulse output 2-channel, depending on flow sensor
  - Analogue output 0(4)...20 mA
  - Two alarm contacts
- Easy retrofitting

Technical data	
<b>Signal input</b>	Pulse signal from flow sensor
<b>Programming</b>	Via 2 buttons, data retention on power off
<b>Display</b>	Four-digit LED display, red, 7.6 mm high
<b>Power supply</b>	19...28 VDC, optional 10...19 VDC
<b>Current consumption</b>	Max. 120 mA
<b>Ambient temperature</b>	0...60 °C
<b>Ambient temperature</b>	32...140 °F
<b>Storage temperature</b>	-25...85 °C
<b>Storage temperature</b>	-13...185 °F
<b>Output signals</b>	Pulse output (2-channel, depending on flow sensor) or analogue output 0(4)...20 mA or 2 alarm contacts max. 24 VDC / 1 A
<b>Housing</b>	Aluminium, 60 x 35 x 60 (W x H x D) without plug connector
<b>Housing</b>	Aluminium, 2.36 x 1.38 x 2.36 (W x H x D) without plug connector
<b>Weight [g]</b>	Approx. 120
<b>Weight [lb]</b>	Approx. 0.26
<b>Degree of protection EN 60529</b>	IP65
<b>Electrical connection</b>	Plug connector DIN EN 175301-803-A, 4 pin



# Article numbers

Order code		
<b>Output signals</b>		
Pulse output	ED825F	
Analogue output 0(4)...20 mA	ED825A	
Two alarm contacts	ED825R	
<b>Power supply</b>		
19...28 VDC (standard)		60
10...19 VDC (option)		50
<b>Example order number</b>	<b>ED825F</b>	<b>60</b>