

DVZ COMPACT VORTEX FLOWMETER



Flow
Pressure
Level
Temperature
Measurement
Monitoring
Control



- Measuring Ranges:
0.13-1.2 GPM to 2.7-26 GPM
- Accuracy: $\pm 2.5\%$ of F.S.
- Vortex Shedding Technology with No Moving Parts
- Ryton Body with Nickel Plated Brass or 316 SS Fittings
- Outputs: Analog, Frequency, Switching, Compact Electronics with Digital Displays, Batching and Totalizing Electronics
- Economically Priced



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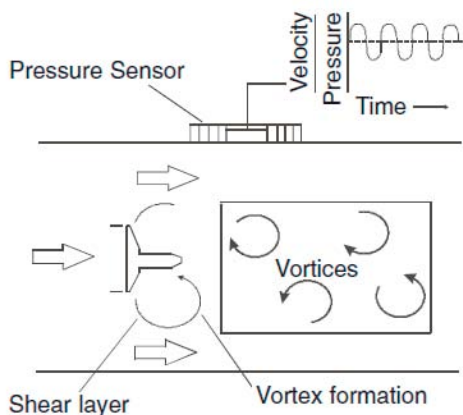
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Model:
DVZ

Description

The KOBOLD DVZ series vortex flowmeters are the perfect solution for applications where reliability and low cost are desired. The DVZ senses the flowrate of low viscosity liquids using the vortex shedding principle. A small obstruction called a bluff body is placed in the flowpath. As fluid flows across the bluff body, a small low-pressure area called a vortices is created just behind the bluff body. The position of the vortices alternates to either side of the bluff body in a uniform pattern. The frequency of the vortices shift is directly proportional to flowrate. This shift in the vortices is detected by a very sensitive pressure sensor and processed as a flowrate signal.



The vortex flowmeter has no moving parts and thus is very reliable. The DVZ series is available with a Ryton body and a choice of either nickel plated brass or 316 stainless steel fittings. The bluff body is available in either ryton or ceramic, which has excellent long term wear characteristics. The available outputs are frequency, 4-20 mA, adjustable relay, and compact electronics with digital flowrate display, 4-20 mA output and adjustable transistor switch options. The device series is rounded off by an optionally available batching or totalizing electronic.

Areas of Application

- Monitoring the flow of low viscosity liquids
- Measuring of aggressive, high-purity, or salty solutions
- Not suitable for abrasive media or media containing a large proportion of fibers



KOBOLD DVZ Vortex Flowmeter

Specifications

Available Ranges:	0.13-1.2 through 2.7-26 GPM water
Max. Liquid Viscosity:	3 Centistoke
Accuracy:	± 2.5% of full scale
Repeatability:	± 1% of full scale
Straight Pipe Requirement:	10 X Diameter upstream and 2X downstream
Oper. Temp. Range:	32-176°F
Maximum Pressure	
DVZ-1... & DVZ-2...:	145 PSIG
DVZ-3... & DVZ-4...:	290 PSIG
Max. Pressure Drop:	3.6 PSI at 100% rated flow
Wetted Parts	
Sensor Housing:	PPS
Sensing Diaphragm:	PVDF
Bluff Body:	PPS or ceramic depending on model code
Seals:	NBR, EPDM, or FKM depending on model code
Fittings:	Nickel plated brass or 316 SS depending on model code

Electrical Specifications

DVZ-...S300, S30D

Power Supply: 24 V_{DC} ± 20%
Switching Output
DVZ-...S300: Relay change over, max.1A, 30 V_{DC}
DVZ-...S30D: PNP 24 V_{DC}, N/C, N/O
Electrical Connection: Micro-DC, 4-pin or 5-pin male
Electrical Protection: NEMA 4/IP 65

DVZ-...F300, F390

Power Supply: 24 V_{DC} ± 20%
Output: PNP open collector, 200 mA Max.
Frequency at f.s.
DVZ-...F300: 500 Hz
DVZ-...F390: 50...1000 Hz (user specified)
Electrical Connection: Micro-DC, 4-pin male
Electrical Protection: NEMA 4/IP 65

DVZ-...L343, L443

Power Supply: 24 V_{DC} ± 20%
Output: 4-20 mA, 3-wire
Max. Load: 500 Ω
Electrical Connection:
L343: Micro-DC, 4-pin male
L443: DIN 43650 Plug
Electrical Protection: NEMA 4/IP 65

DVZ-...L443 with optional AUF-3000

Power Supply: 24 V_{DC} ± 20%
Output: 4-20 mA, 3-wire
Max. Load: 250 Ω with AUF-3000
Electrical Connection: DIN 43650 Plug
Electrical Protection: NEMA 4/IP 65

DVZ-...C30R, C30M

Power Supply: 24 V_{DC} ± 20%, 3- wire techn.
Output
C30M: 2-NPN open collector switches
C30R: 2-PNP open collector switches
Switch Ratings: 300 mA Max.
Programming: Switch setpoint, reset point, switching logic, dampening, lock out code via 2-button keypad

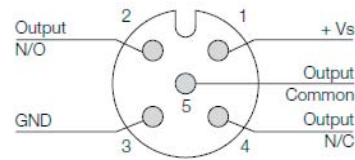
Power consumption: Approx. 100 mA
Electronic Connection: Micro-DC, 5-pin, male
Electronic Protection: NEMA 4/IP 65

DVZ-...C34P, C34N

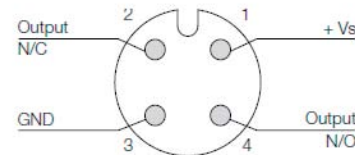
Power Supply: 24 V_{DC} ± 20%
Output
C34N: 4-20mA, 3-wire and 1-NPN open collector
C30P: 4-20mA, 3-wire and 1-PNP open collector
Switch Rating: 300 mA Max.
Programming: Switch setpoint, reset point, switching logic, 4-20 mA span and zero, dampening and lockout code via 2 button keypad
Electronic Connection: Micro-DC, 5-pin, male
Electronic Protection: NEMA 4/IP 65

Electrical Connections

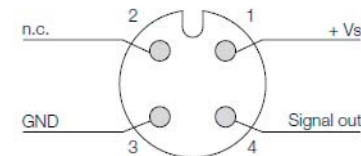
DVZ-...S300



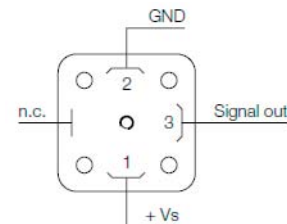
DVZ-...S30D



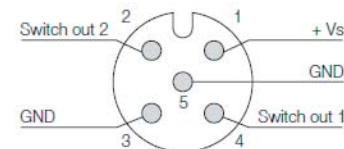
DVZ-...F300, F390, L343



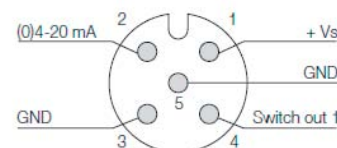
DVZ-...L443



DVZ-...C30R, C30M



DVZ-...C34P, C34N





Electrical Specifications (continued)

DVZ-...E14R

Display:	LCD, 2 x 8 digit, illuminated total, part and flow quantities, units selectable
Quantity Meter:	8-digit
Analog Output:	4-20 mA adjustable
Load:	Max. 500 Ω
Switching Output:	2 relays, max. 250 V, 5 A, 1000 VA
Settings:	Via 4 buttons
Functions:	Reset, MIN/MAX memory, flow monitor, monitoring for part and total quantity, language
Power Supply:	24 V _{DC} $\pm$ 20 %, 3-wire
Power Consumption:	Approx. 150 mA
Electrical Connection:	Cable connection

DVZ-...G14R

Display:	LCD, 2 x 8 digit, illuminated, batching-, total-, and flow quantity, units selectable
Quantity Meter:	8-digit
Batcher:	5-digit
Analog Output:	4-20 mA adjustable
Load:	Max. 500 Ω
Switching Output:	2 relays, max. 250 V, 5 A, 1000 VA
Settings:	Via 4 buttons
Functions:	Batching (relay S2), start, stop, reset, fine batching, correction amount, flow switch, total quantity, language
Power Supply:	24 V _{DC} $\pm$ 20 %, 3-wire
Power Consumption:	Approx. 150 mA
Electrical Connection:	Cable connection

DVZ-...E14R, G14R Cable Connections

Wire Number	DVZ-...E14R Totalizer	DVZ-G14R Batcher
1	24 VDC	24 VDC
2	GND	GND
3	4-20 mA	4-20 mA
4	n.c.	control 1*
5	GND	GND
6	reset part quantity	control 2*
7	relay S1 open without current	relay S1 open without current
8		
9	relay S2 open without current	relay S2 open without current
10		

*Control 1 <-> GND: Start-batching
Control 2 <-> GND: Stop-batching
Control 1 <-> Control 2 <-> GND: Reset-batching

Approximate Weight

Model	Fixed Connections	Rotatable Connections
DVZ...S300, S30D DVZ...F300, F390 DVZ...L303, L343, L443	1.1 LBS	2.0 LBS
DVZ...C34P, C34N, C30M, C30R DVZ...E14R, G14R	1.5 LBS	2.5 LBS

Order Details (Example: DVZ-34U6P5L343)

Housing/Bluff Body	Fitting/Seals	Flow Ranges	Connections		Output
			Fixed	Rotatable	
DVZ-1.. = PPS/PPS DVZ-2.. = PPS/Ceramic DVZ-3.. = PPS/PPS High Pressure Design ** DVZ-4.. = PPS/Ceramic High Pressure Design **	..1.. = Brass/NBR ..2.. = SS/NBR ..4.. = Brass/EPDM ..5.. = SS/EPDM ..7.. = Brass/FKM ..8.. = SS/FKM	..04.. = 0.5 - 4.5 LPM ..07.. = 0.8 - 6.5 LPM ..10.. = 1.3 - 10 LPM ..U1.. = 0.13 - 1.2 GPM ..U2.. = 0.2 - 1.7 GPM ..U3.. = 0.4 - 2.6 GPM ..16... = 2.0 - 16 LPM ..U4.. = 0.6 - 4.2 GPM ..22.. = 3.2 - 22 LPM ..32.. = 4.0 - 32 LPM ..U5.. = 0.9 - 5.8 GPM ..U6.. = 1.1 - 8.5 GPM ..40.. = 4 - 40 LPM ..50.. = 5 - 50 LPM ..63.. = 6.5 - 63 LPM ..80.. = 8 - 80 LPM ..99.. = 10 - 100 LPM ..U7.. = 1.1 - 10.5 GPM ..U8.. = 1.3 - 13 GPM ..U9.. = 1.7 - 16 GPM ..UA.. = 2.1 - 21 GPM ..UB.. = 2.7 - 26 GPM	..G2.. = G 1/4 ..G3.. = G 3/8 ..G4.. = G 1/2 ..N2.. = 1/4" NPT ..N3.. = 3/8" NPT ..N4.. = 1/2" NPT ..G3.. = G 3/8 ..G4.. = G 1/2 ..G5.. = G 3/4 ..N3.. = 3/8" NPT ..N4.. = 1/2" NPT ..N5.. = 3/4" NPT ..G4.. = G 1/2 ..G5.. = G 3/4 ..G6.. = G 1 ..N4.. = 1/2" NPT ..N5.. = 3/4" NPT ..N6.. = 1" NPT ..G5.. = G 3/4 ..G6.. = G 1 ..N5.. = 3/4" NPT ..N6.. = 1" NPT	..B2.. = G 1/4 ..B3.. = G 3/8 ..B4.. = G 1/2 ..P2.. = 1/4" NPT ..P3.. = 3/8" NPT ..P4.. = 1/2" NPT ..B3.. = G 3/8 ..B4.. = G 1/2 ..B5.. = G 3/4 ..P3.. = 3/8" NPT ..P4.. = 1/2" NPT ..P5.. = 3/4" NPT ..B4.. = G 1/2 ..B5.. = G 3/4 ..B6.. = G 1 ..P4.. = 1/2" NPT ..P5.. = 3/4" NPT ..P6.. = 1" NPT	Switching Output ..S300 = Relay, M12-plug ..S30D = PNP 24 V _{DC} , M12-plug Frequency Output ..F300 = M12-plug, 500 Hz ..F390 = M12-plug, 50...1000 Hz * Analog Output ..L343 = M12-plug, 4-20 mA ..L443 = DIN-plug, 4-20 mA Compact Electronics ..C30R = 2xOpen Coll., PNP ..C30M = 2xOpen Coll., NPN ..C34P = 4-20 mA, 1xOpen Coll., PNP ..C34N = 4-20 mA, 1xOpen Coll., NPN Totalizer Electronics ..E14R = LCD, 4-20 mA, 2xrelays, 1 m cable Batching Electronics ..G14R = LCD, 4-20 mA, 2xrelays, 1 m cable
Accessories: 807.037 = Mating 4-Pin Micro-DC plug with 6 Ft. cable for output F300, F390, S30D & L343 807.007 = Mating 5-pin Micro-DC plug with 6 Ft. cable for output C30M, C30R, C34N, C34P, & S300					

*Please specify frequency out at max. flow when ordering

**High Pressure Design only available with Fixed Connections



DVZ-...S30x
DVZ-...F3x0
DVZ-...L3x3



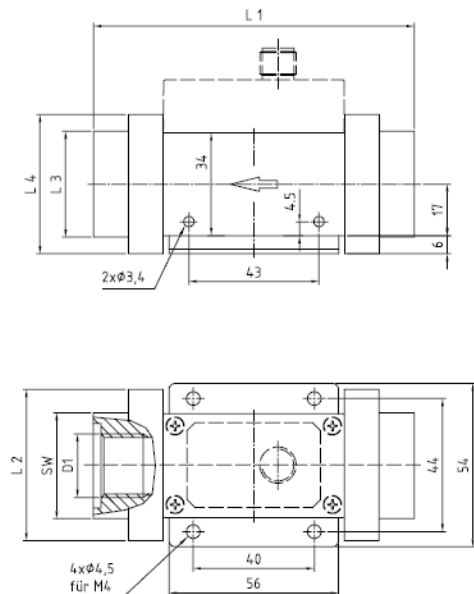
DVZ-...L443
with AUF-3000



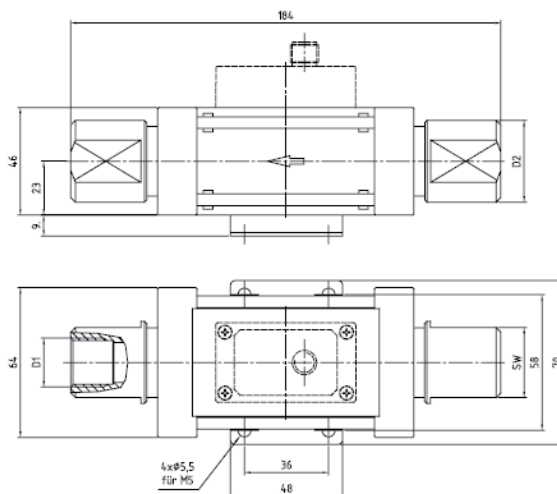
DVZ-...C3xx

Dimensions

DVZ Flowmeters with fixed connections
Flow Range up to 8.5 GPM



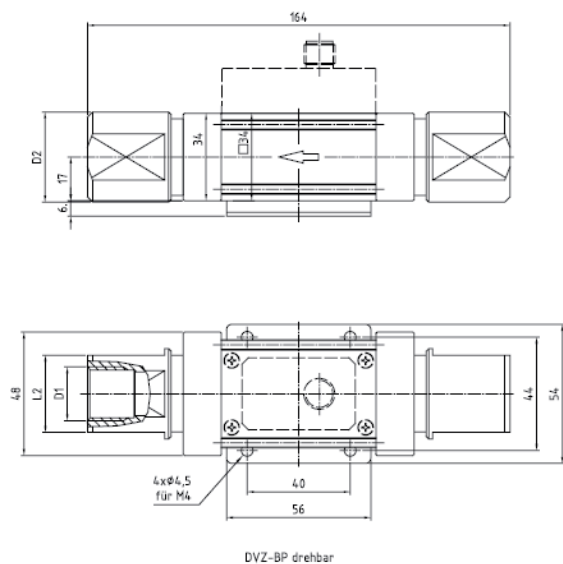
DVZ Flowmeters with fixed connections
Flow Range from 10.5 GPM



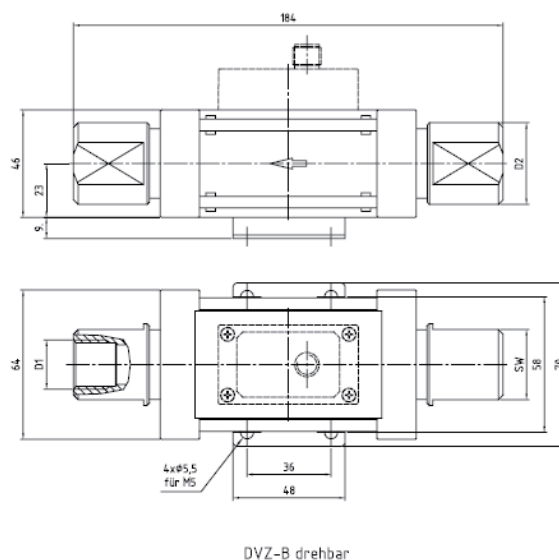
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D1	1/4"	3/8"	1/2"	3/4"	1"
SW	35 mm	35 mm	35 mm	34 mm	-
L1	100 mm	100 mm	106 mm	120 mm	128 mm
L2	-	-	-	50 mm	50 mm
L3	35 mm	35 mm	35 mm	34 mm	-
L4	-	-	-	-	46 mm

Dimensions

DVZ Flowmeters with rotatable connections
Flow Range up to 8.5 GPM



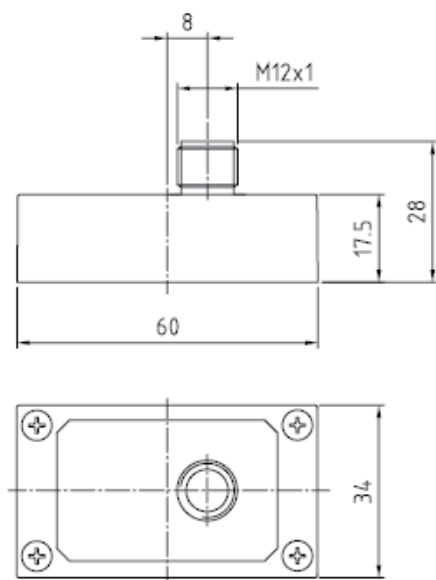
DVZ Flowmeters with rotatable connections
Flow Range from 10.5 GPM



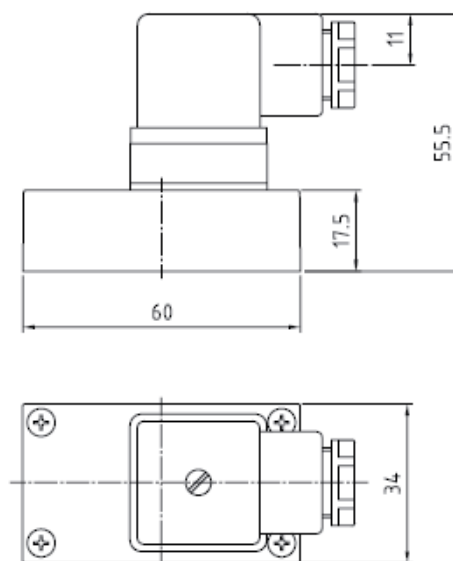
MB	..U1/..U3/..U3	..U1/..U2/ ..U3/..U4	..U1/..U2/..U3/ ..U4/..U5/..U6	..U4/..U5/..U6	..U5/..U6	..U7/..U8/..U9/ ..UA/..UB	..U7/..U8/..U9/ ..UA/..UB
D1	1/4"	3/8"	1/2"	3/4"	1"	3/4"	1"
D2	24 mm	28 mm	35 mm	40 mm	45 mm	40 mm	45 mm
SW	19 mm	24 mm	30 mm	36 mm	41 mm	36 mm	41 mm

Electrical Dimensions

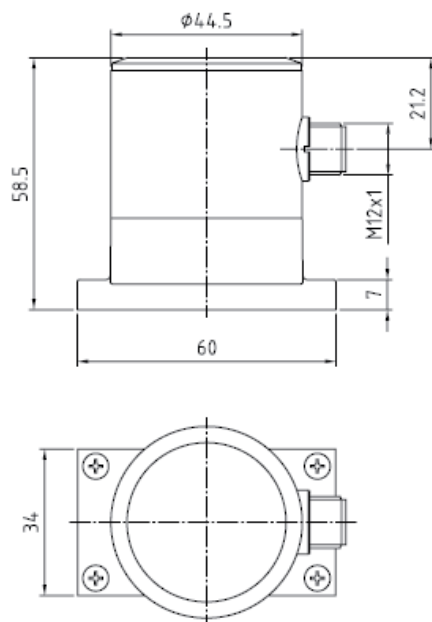
DVZ-...S30x, F3x0, L3x3



DVZ-...L443



DVZ-...C3xx



DVZ-...E14R, G14R

