

Compact Direct Operated 2 Port Solenoid Valve For Water and Air

Series *VDW10/20/30*

How to Order Valves (Single unit)

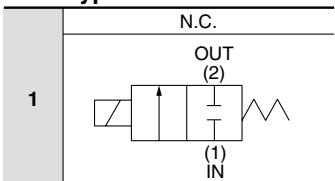
VDW 2 1 1 G 2 01

For Water, Air and Vacuum

Series

1	10
2	20
3	30

Valve type



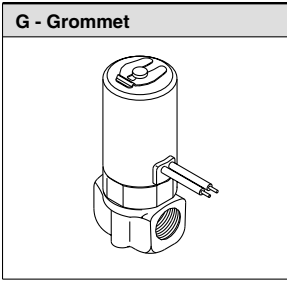
Voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

* Please consult with SMC regarding other voltages.

Electrical entry

G - Grommet



Option

Nil	None
F	Foot type bracket

Note) Foot brackets are packed with valves.

Material and insulation type

Symbol	Body material	Seal material	Coil insulation type
Nil	C37	NBR	Class B
A		FKM	
G	SUS	NBR	
H		FKM	
L ^{Note)}		FKM	

Note) For pure water: The armature assembly is a corrosion resistant construction.

Thread type

Nil	Rc
F	G
N	NPT

Port size

Symbol	Port size	Series		
		10	20	30
M5	M5	○	○	—
01	1/8 (6A)	—	○	○
02	1/4 (8A)	—	—	○

Orifice size

Symbol	Orifice size (mm ø)	Series
1	1	10
2	1.6	
1	1.6	20
2	2.3	
3	3.2	
2	2	30
3	3	
4	4	

Compact Direct Operated 2 Port Solenoid Valve For Water and Air Series VDW10/20/30



Standard Specifications

Valve specifications	Valve construction	Direct operated poppet
	Fluid ⁽²⁾	Water (except waste water or agricultural water), Air, low vacuum
	Withstand pressure (MPa)	2.0
	Ambient temperature (°C)	-10 to 50
	Fluid temperature (°C)	1 to 50 (No freezing)
	Environment	Location without corrosive or explosive gases
	Valve leakage (cm ³ /min)	0 (with water pressure) 1 (Air)
	Mounting orientation	Unrestricted
Coil specifications	Vibration/Impact (m/s ²) ⁽⁴⁾	30/150
	Rated voltage	24 VDC, 12 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC (50/60 Hz)
	Allowable voltage fluctuation (%)	±10% of rated voltage
	Coil insulation type	Class B
	Enclosure ⁽⁵⁾	Enclosed (equivalent to IP40)
Power consumption (W) ⁽³⁾	2.5 (VDW10), 3 (VDW20/30)	



- Note 1) Please consult with SMC when used under conditions which may cause condensation on the exterior of the product.
- Note 2) When used with pure water, select "L" (SUS, FKM) for the material type.
- Note 3) Since AC coil specifications include a rectifying device, there is no difference in power consumption between inrush and holding.
In the case of 110/220 VAC, VDW10 is 3 W and VDW20/30 is 3.5 W.
- Note 4) Vibration resistance No malfunction when tested with one sweep of 5 to 200 Hz in the axial direction and at a right angle to the armature, in both energized and deenergized states.
Impact resistance Nomalfunction when tested with a drop tester in the axial direction and at a right angle to the armature, one time each in energized and deenergized states.
- Note 5) Please consult with SMC regarding dust-protected splashproof type (equivalent to IP54).

Characteristic Specifications

Model	Port size	Orifice size (mm ø)	Max. operating pressure differential (MPa) ⁽¹⁾		Operating Pressure range ⁽²⁾ (MPa)	Weight (kg)
			Pressure port 1	Pressure port 2		
VDW10	M5	1	0.9	0.4	0 to 1.0	0.08
		1.6	0.4	0.2		
VDW20	M5 1/8 (6A)	1.6	0.7	0.2		0.1
		2.3	0.4	0.1		
		3.2	0.2	0.05		
VDW30	1/8 (6A) 1/4 (8A)	2	0.8	0.2		1/8: 0.23 1/4: 0.26
		3	0.4	0.1		
		4	0.2	0.05		



- Note 1) The maximum operating pressure differential changes depending on the flow direction of the fluid. Refer to page 17-2-63 for details.
- Note 2) For low vacuum specifications, the operating pressure range is 1 Torr (1.33 x 10² Pa) to 1.0 MPa.
Please consult with SMC if using below 1 Torr (1.33 x 10² Pa).

Flow Characteristics

Model	Port size	Orifice size (mm ø)	Water		Air		
			1→2 (IN→N.C.)		1→2 (IN→N.C.)		
			N.C.	Av x 10 ⁻⁶ (m ²)	Cv converted	C [dm ³ /(s·bar)]	b
VDW10	M5	1	0.96	0.04	0.14	0.40	0.04
		1.6	1.7	0.07	0.30	0.25	0.07
VDW20	M5 1/8 (6A)	1.6	1.9	0.08	0.31	0.45	0.09
		2.3	4.3	0.18	0.58	0.45	0.18
		3.2	7.2	0.30	1.2	0.38	0.33
VDW30	1/8 (6A) 1/4 (8A)	2	3.8	0.16	0.52	0.52	0.16
		3	6.7	0.28	1.0	0.52	0.30
		4	11	0.44	1.5	0.49	0.46

VC

VDW

VQ

VX2

VX

VX3

VXA

VN

LVC

LVA

LVH

LVD

LVQ

LQ

LVN

TI/
TIL

PA

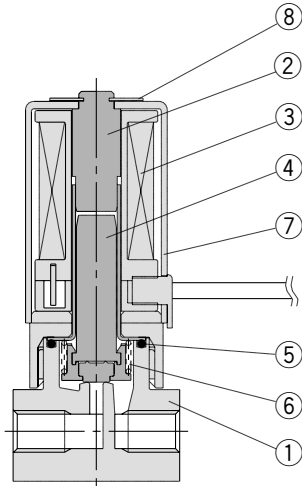
PAX

PB

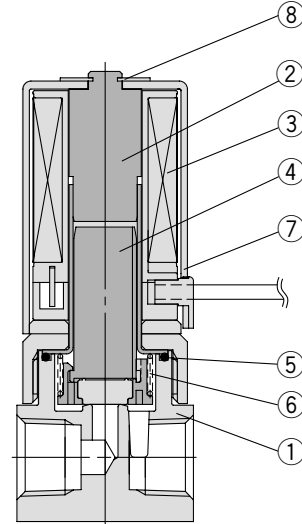
Series VDW10/20/30

Construction

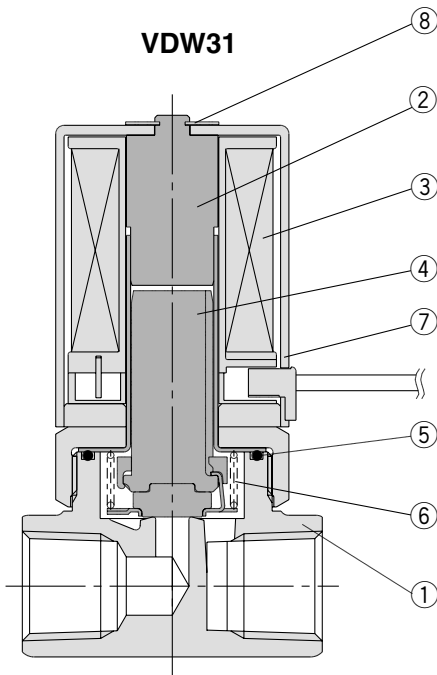
VDW11



VDW21



VDW31



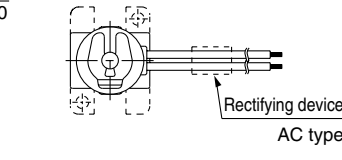
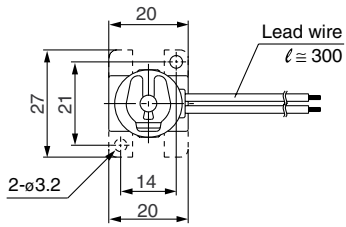
Component Parts

No.	Description	Material	
		Standard	Option
①	Body	C37	Stainless steel
②	Tube assembly	Stainless steel	—
③	Coil assembly	—	—
④	Armature assembly	Stainless steel, PPS, NBR	Stainless steel, PPS, FKM
⑤	O-ring (Body)	NBR	FKM
⑥	Return spring	Stainless steel	—
⑦	Cover	SPCE	—
⑧	Clip	Stainless steel	—

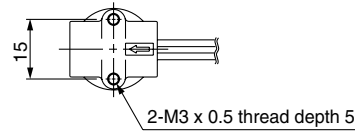
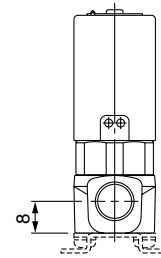
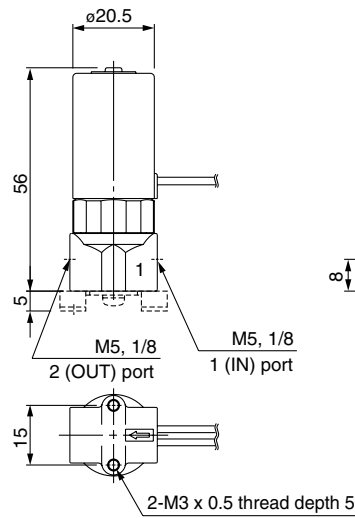
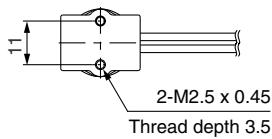
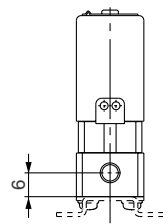
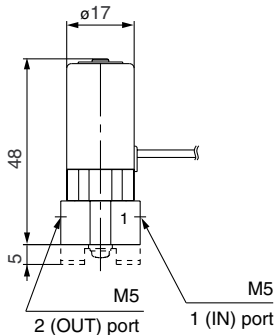
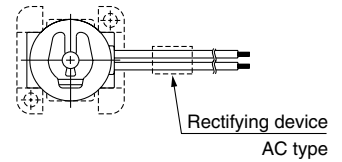
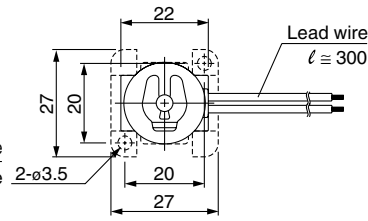
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Dimensions

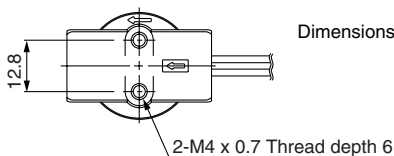
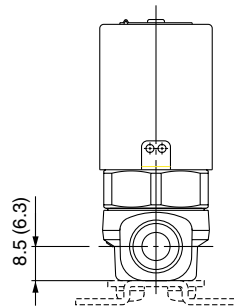
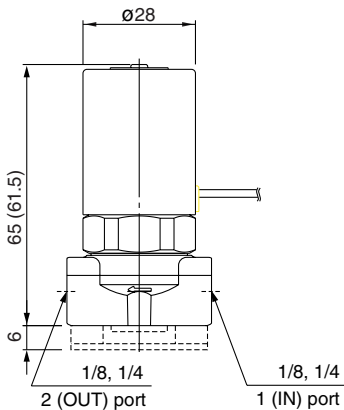
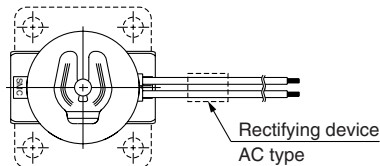
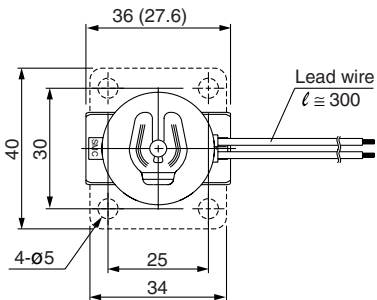
VDW11



VDW21



VDW31



Dimensions inside () are for port size 1/8.

VC

VDW

VQ

VX2

VX

VX3

VXA

VN

LVC

LVA

L VH

LVD

L VQ

LQ

LVN

TI/
TIL

PA

PAX

PB

Bracket assembly part no.

• Types 10, 20

VDW 2 0 - 15A - 1

• Series

1	10
2	20

• Type 30

VCW20 - 12 - 01A