

2PORT SOLENOID VALVES

TDW 21 Series (1/4, 3/8, 1/2, 3/4, 1)

How to order

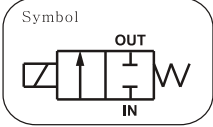
TDW 21 **2** - **N** - **A220** **Symbol**

① **Port Size**
 2 : PT 1/4 5 : PT 3/4
 3 : PT 3/8 6 : PT 1
 4 : PT 1/2

② **Seal Material**
 N : NBR
 V : Viton
 S : Silicone
 E : EPDM

③ **Voltage**
 A220 : AC220V
 A110 : AC110V
 D24 : DC24V
 D12 : DC12V

④ **Coil**
 Blank : Bonnet steel cover, Lead wire
 M : Mold lead wire, Lamp
 D : Din connector
 DL : Din connector, Lamp
 EX : Mold lead wire(Explosion proof)
 W : Bonnet steel cover, Lead wire(Water Proof)




Specifications

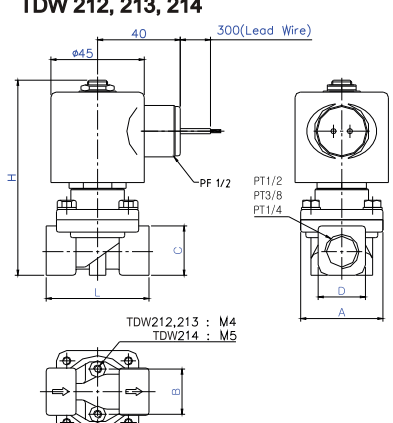
Fluid	Air, Water, Gas, Oil	
Fluid Temperature	-10~60°C	-10~140°C
Seal Material	NBR	VITON
Ambient Temperature	-10~60°C	
Insulation Grade	B	
Power Consumption	B	AC:10W DC:16W
	M, D, DL	AC:9W DC:12W
Voltage Allowance	± 10%	
Body Material	Brass	

Model

TDW21	2	3	4	5	6
Port Size (PT)	1/4	3/8	1/2	3/4	1
CV	1.8	1.8	4.2	6.9	11
Orifice (mm)	10	10	15	20	25
Operating Pressure (kgf/cm²)	0~10	0~10	0~10	0~10	0~10
Weight	0,47kg	0,47kg	0,55kg	0,8kg	1,0kg

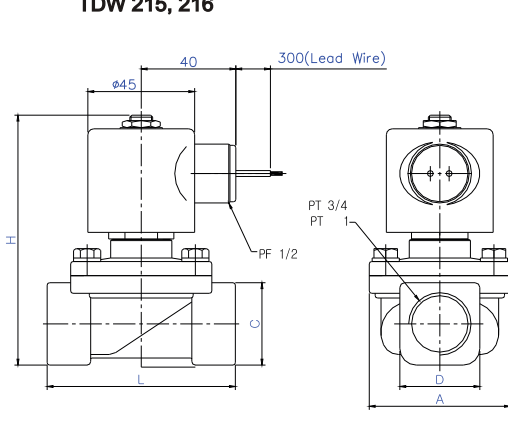
Dimensions

TDW 212, 213, 214



TDW212,213 : M4
TDW214 : M5

TDW 215, 216



TDW	A	B	C	D	H	L
212	40	22	24	23	95	50
213	40	22	24	23	95	50
214	50	30	29	27	100	66
215	60		35	34	107	80
216	65		43	41	114	90

2PORT SOLENOID VALVES

TDW 21 Series (1 1/4, 1 1/2, 2)

How to order

TDW 21 **2** - **N** - **A220** **W**

① **Port Size**
 7 : PT 1 1/4
 8 : PT 1 1/2
 9 : PT 2

② **Seal Material**
 N : NBR
 V : Viton

③ **Voltage**
 A220 : AC220V
 A110 : AC110V
 D24 : DC24V
 D12 : DC12V

④ **Coil**
 Blank : Bonnet steel cover, Lead wire
 M : Mold lead wire, Lamp
 D : Din connector
 DL : Din connector, Lamp
 EX : Mold lead wire(Explosion proof)
 W : Bonnet steel cover, Lead wire(Water Proof)

Symbol



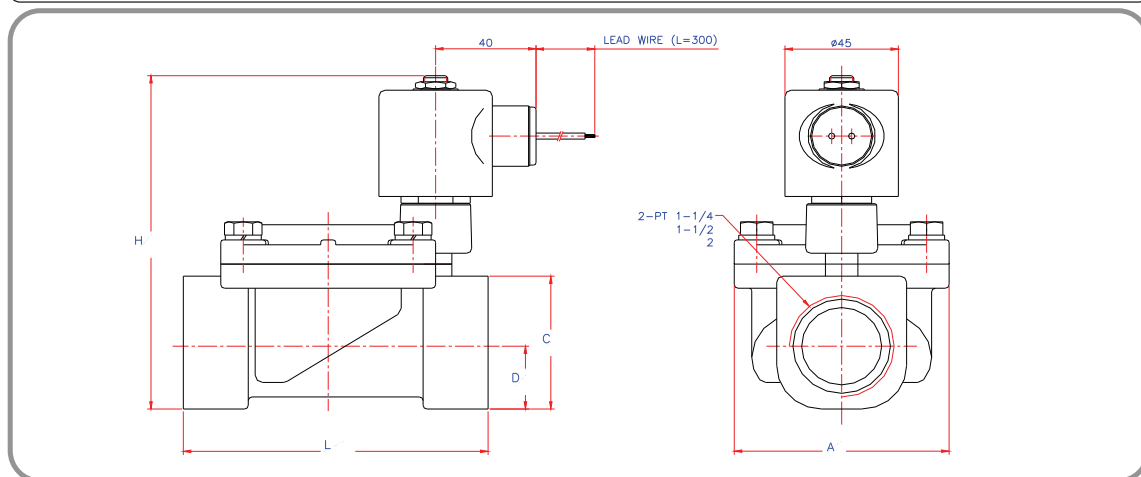
Specifications

Fluid	Air, Water, Gas, Oil	
Fluid Temperature	-10~60°C	-10~140°C
Seal Material	NBR	VITON
Ambient Temperature	-10~60°C	
Insulation Grade	B	
Power Consumption	B	AC:10W DC:16W
	M, D, DL	AC:9W DC:12W
Voltage Allowance	±10%	
Body Material	Brass	

Model

TDW21	7	8	9
Port Size (PT)	1 1/4	1 1/2	2
CV	30	35	43
Orifice (mm)	32	40	50
Operating Pressure (kgf/cm²)	0.3~10	0.3~10	0.3~10
Weight	2.5kg	2.7kg	4.2kg

Dimensions

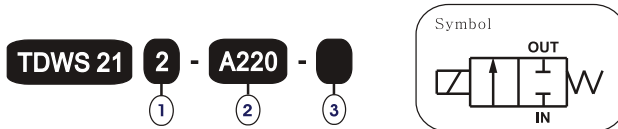


TDW	A	C	D	H	L	PT
217	86	55	26	138	122	1-1/4
218	86	61	29	144	122	1-1/2
219	102	75	36	161	140	2

2PORT SOLENOID VALVES

TDWS 21 Series

How to order



① Port Size

2 : PT 1/4 5 : PT 3/4
3 : PT 3/8 6 : PT 1
4 : PT 1/2

② Voltage

A220 : AC220V
A110 : AC110V

③ Coil

Blank : Bonnet steel cover, Lead wire
M : Mold lead wire, Lamp
D : Din connector
DL : Din connector, Lamp
EX : Mold lead wire(Explosion proof)
W : Bonnet steel cover, Lead wire(Water Proof)



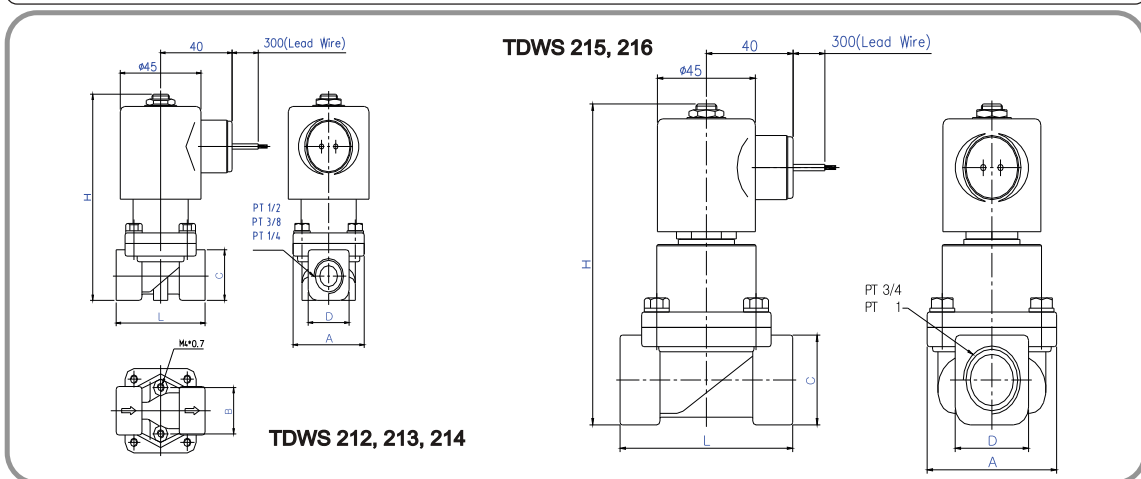
Specifications

Fluid	Air, Water, Steam
Fluid Temperature	-10~180°C
Seal Material	Teflon
Ambient Temperature	-10~60°C
Insulation Grade	H
Power Consumption	AC:10W
Voltage Allowance	±10%
Body Material	Brass

Model

TDWS21	2	3	4	5	6
Port Size (PT)	1/4	3/8	1/2	3/4	1
CV	1.8	1.8	4.2	6.9	11
Orifice (mm)	10	10	15	20	25
Operating Pressure (kgf/cm²)	0.3~10	0.3~10	0.3~10	0.3~10	0.3~10
Weight	0.47kg	0.47kg	0.55kg	0.8kg	1.0kg

Dimensions

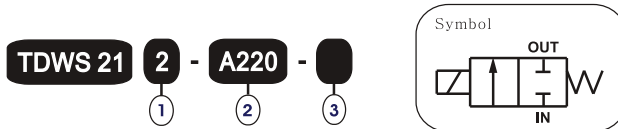


TDW	A	B	C	D	H	L
212	40	22	24	23	99	50
213	40	22	24	23	99	50
214	50	30	28	27	104	66
215	60		35	34	127	80
216	65		41	40	138	90

2PORT SOLENOID VALVES

TDWS 21 Series (1 1/4, 1 1/2, 2)

How to order



- ① **Port Size**
 2 : PT 1/4 5 : PT 3/4
 3 : PT 3/8 6 : PT 1
 4 : PT 1/2
- ② **Voltage**
 A220 : AC220V
 A110 : AC110V
- ③ **Coil**
 Blank : Bonnet steel cover, Lead wire
 M : Mold lead wire, Lamp
 D : Din connector
 DL : Din connector, Lamp
 EX : Mold lead wire(Explosion proof)
 W : Bonnet steel cover, Lead wire(Water Proof)



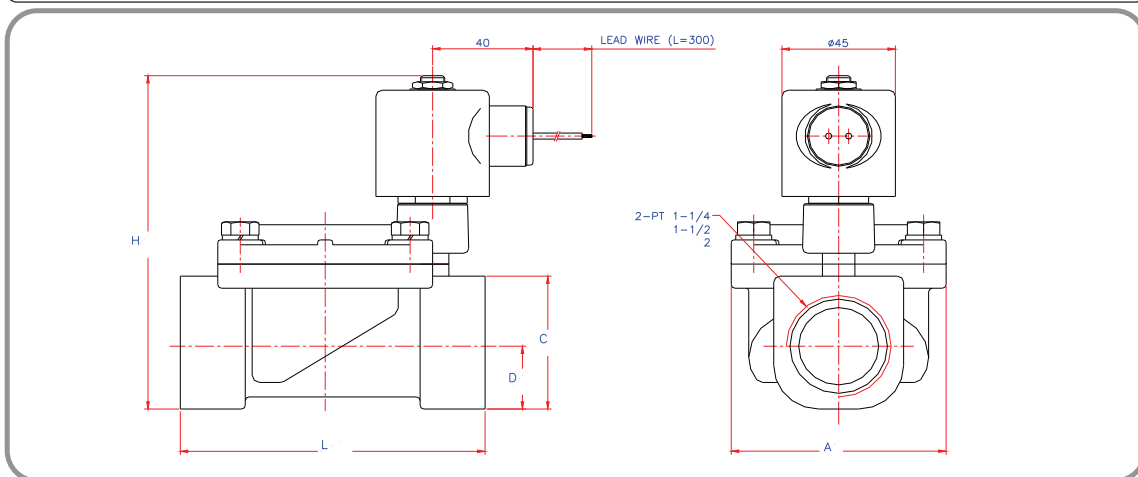
Specifications

Fluid	Air, Water, Steam
Fluid Temperature	-10~180°C
Seal Material	Teflon
Ambient Temperature	-10~60°C
Insulation Grade	H
Power Consumption	AC:10W
Voltage Allowance	±10%
Body Material	Brass

Model

TDW21	7	8	9
Port Size (PT)	1 1/4	1 1/2	2
CV	30	35	43
Orifice (mm)	32	40	50
Operating Pressure (kgf/cm²)	0.3~10	0.3~10	0.3~10
Weight	3.0kg	3.3kg	4.8kg

Dimensions

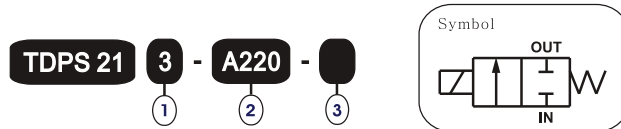


TDWS	A	C	D	H	L	PT
217	86	55	26	153	122	1-1/4
218	86	61	29	159	122	1-1/2
219	102	75	36	175	140	2

2PORT SOLENOID VALVES

TDPS 21 Series

How to order



- ① **Port Size**
 3 : PT $\frac{3}{8}$ 7 : PT $1\frac{1}{4}$
 4 : PT $\frac{1}{2}$ 8 : PT $1\frac{1}{2}$
 5 : PT $\frac{3}{4}$ 9 : PT 2
 6 : PT 1
- ② **Voltage**
 A220 : AC220V
 A110 : AC110V
 D24 : DC24V
 D12 : DC12V
- ③ **Coil**
 Blank : Bonnet steel cover, Lead wire
 M : Mold lead wire, Lamp
 D : Din connector
 DL : Din connector, Lamp
 EX : Mold lead wire(Explosion proof)
 W : Bonnet steel cover, Lead wire(Water Proof)



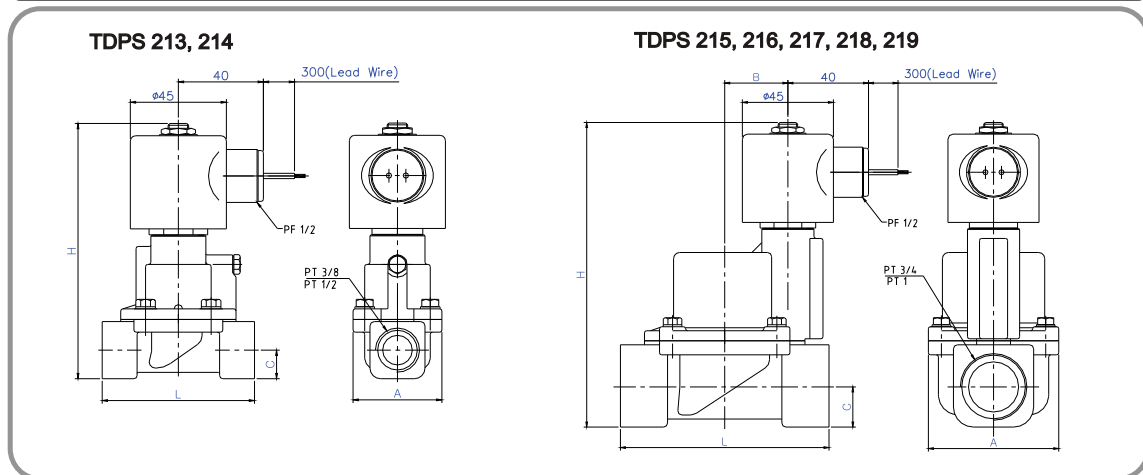
Specifications

Fluid	Air, Water, Steam	
Fluid Temperature	-10~180°C	
Seal Material	Teflon	
Ambient Temperature	-10~60°C	
Insulation Grade	H	
Power Consumption	B	AC:10W DC:16W
	M, D, DL	AC:9W DC:12W
Voltage Allowance	±10%	
Body Material	Brass	

Model

TDPS21	3	4	5	6	7	8	9
Port Size (PT)	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
CV	3.5	3.5	9.5	12	30	35	43
Orifice (mm)	13	13	25	25	40	40	50
Operating Pressure (kgf/cm ²)	0.3~10	0.3~10	0.3~10	0.3~10	0.3~10	0.3~10	0.3~10
Weight	0.6kg	0.6kg	1.1kg	1.1kg	3.1kg	2.9kg	4.3kg

Dimensions



TDPS	L	H	A	PT
213,4	72	121	42	3/8, 1/2
215,6	104	152	65	3/4, 1
217,8	145	185	102	1 1/4, 1 1/2
219	172	211	118	2



Precautions

Piping

- ❶ The piping should be thoroughly flushed to remove sludge, cutting oil and dust.
- ❷ During piping and coupling connection, care should be taken so as to prevent contamination by cut thread chips or sealing materials. (one screw thread should extend beyond the tape when applying sealing tape to threads)
- ❸ Be sure to pay attention to the piping direction (IN, OUT). IN or other marks are indicated on the inlet side.
- ❹ It is preferred that the coil should not be subjected to an extended force. Be sure to apply a wrench to the outside of the pipe mounting area only when tightening.
- ❺ Grounding the piping system should be avoided. Otherwise electrolytic corrosion may occur.
- ❻ It is preferred to install a relief valve within the circuit so as to prevent collection of fluid within the piping circuit.

Mounting

- ❶ It is preferred that the solenoid valve can be installed in any orientation. Foreign material in the fluid is liable to adhere to the core when mounted upside down. Avoid installation. Be sure to mount the valve with its coil facing up.
- ❷ Coil assembly warm with insulating material etc should be avoided. The coil may burn out. Anti-freezing tape, heater, etc. Should be applied to piping and body areas only.
- ❸ Placing the valve in areas of severe vibration is avoided. Otherwise, the arm to a minimum to avoid resonance may be shortened.

Storage

It is preferred that in order to prevent corrosion and deterioration of rubber parts, long time storage after using the valve for water will require complete removal of moisture.

Long Period Energization or De-energization

The valve switching period is determined based on the type and quality of the fluid. The valve should be switched at least once every 10 days when pure water is taken as a standard. A system check mechanism should be installed if the cycle is greater than 10 days. The valve should not be used as an emergency circuit breaker. Be sure to specify operational conditions for use under conditions similar to that.

Fluid Temperature

Be sure to check the temperature range for each model. The temperature range changes according to the sealing material, coil insulation, power, supply, etc. Contact our representative for use other than standard use.

Wiring

- ❶ Be sure to check that the minimum diameter for 0.5mm².
- ❷ It is preferred to use an electric circuit which prevents chattering at the point of contact.
- ❸ It is preferred to place a surge suppressor in parallel with the solenoid voltage suppressor (option) when the electric is apt to be damaged by surge voltage.
- ❹ Be sure to check that the allowable voltage range is $-10\% \sim +10\%$ of the rated voltage. In event that great response is desired for DC power, it is needed to adjust the voltage range to within $\pm 5\%$ of the rated voltage. Voltage drop is measured at a part of the lead wire connected to the coil.
- ❺ Be sure to check that the voltage found on both ends of the coil is AC:20% or less of the rated voltage DC:2% or less of the rated voltage when it de-energizes.
Here, the DC value is for a temperature of $20 \pm 5^{\circ}\text{C}$.
At lower temperatures, the DC value will be lower.

Applicable Fluid

❶ Fluid Classification

When selecting a valve for your application, ensure the compatibility of the fluid and valve materials. Generally, the recommended viscosity of fluid is 50cSt max.

For further details, contact our representative.

<Reference> Standard materials

Body: Brass or BC6 Seal: NBR, Coil: Insulation Type B.

These are for water, air, and oil use. For materials other than standard, refer to the "Option list" and "Applicable fluid check list." The specifications may be slightly different.

❷ Fluid Quality

Wearing of the valve seat and iron core may be promoted by fluid mixed with foreign material. Function of the valve or sealing trouble may be on adhesion of foreign particles to the iron core and sliding section. So as to prevent this, it is preferred to place a filter (strainer) immediately in front of the solenoid valve. In general, a mesh of 80~100 is recommended.

❸ Lubricant

Lubricant is not needed in our solenoid valves. However, be sure to check that lubricated air will increase their life.

❹ When flammable oil and gas is supposed to be used, prevention of leakage both inside and outside of the valve should be exercised.

❺ When oil and other impurities are not allowed in the fluid, be sure to use nonlube treated parts.

❻ The option and fluid may not be applicable as they are since only general applications are shown. It is needed to check actual conditions on your own for appropriate selection under conditions near the limit of valve operation.