

Pilot Operated 2 Port Solenoid Valve For Dry Air

Series VQ20/30

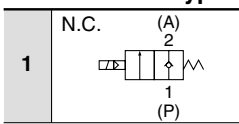
How to Order Valves (Single unit)

VQ 2 1 A 1 - 1 G **C6**

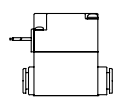
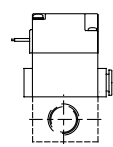
Series/ Orifice size

Symbol	Series
2	VQ20
3	VQ30

Valve type



Body type

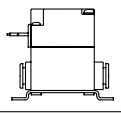
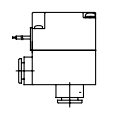
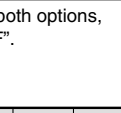
A: Single unit	
M: For manifold	

Coil voltage

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

Note 1) Please consult with SMC for other voltages.
Note 2) There is polarity for DC voltage (with power-saving circuit type).

Option

Nil: None	
F: With bracket	
L: Type L (VQ20 only)	

Note) If ordering both options, indicate "LF".

Port size

Symbol	Port size	VQ20	VQ30
C6	One-touch fitting for ø6	○	—
C8	One-touch fitting for ø8	○	—
C10	One-touch fitting for ø10	—	○
C12	One-touch fitting for ø12	—	○

Manual override

Nil	None
B^{Note)}	Slotted locking type (tool required)

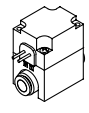
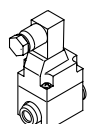
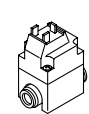
Note) Only normally closed DIN terminal in-line style is applicable.

Electricity circuit

Symbol	DC voltage	AC voltage
Nil	With power-saving circuit (With surge voltage suppressor protection circuit)	With full wave rectifier circuit (With surge voltage suppressor protection circuit)
Z	With power-saving circuit (With light/surge voltage suppressor protection circuit)	With full wave rectifier circuit (With light/surge voltage suppressor protection circuit)
H^{Note)}	High speed response type (Without energy-saving, light/surge voltage suppressor circuit)	

Note) H is available only for DC voltage and cannot be energized continuously.

Electrical entry

G: Grommet	
Y: DIN terminal	
YO: DIN terminal without connector	

Made to Order Specifications


Oil-free specifications

VQ₃²_M¹A¹- □□□ - □□ - □ - X2

Note) Please consult with SMC when using. Not available for manual operation.

Seal material fluorine rubber specifications

VQ₃²_M¹A¹- □□□ - □□ - □ - X5

Please contact SMC for further specifications, delivery and price. 

Pilot Operated 2 Port Solenoid Valve For Dry Air Series VQ20/30

Standard Specifications



Series	VQ20	VQ30		
	Valve construction	2 port poppet pilot operated		
Fluid	Air/Inert gas			
Ambient and fluid temperature	-10 to 50°C ⁽¹⁾			
Lubrication	Not required			
Manual override	Slotted locking type (tool required) ⁽²⁾			
Shock resistance/Vibration resistance	150/30 m/s ² ⁽³⁾			
Enclosure	Dustproof ⁽⁴⁾			
Mounting orientation	Unrestricted			
Weight	46 g	80 g		
Electric specifications	Coil rated voltage	12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC		
	Allowable voltage fluctuation	±10% of rated voltage		
	Coil insulation type	Class B or equivalent		
	Power consumption (Current value)	DC voltage (with power-saving circuit)	Inrush: 2.9 W, Holding: 0.6 W	
		DC voltage (without power-saving circuit)	2.9 W	
AC		2 VA		
Electrical entry	Grommet, DIN terminal			



Note 1) Use dry air to prevent condensation when operating at low temperatures.

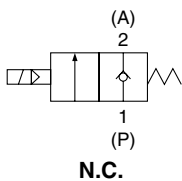
Note 2) Manual override is available only for DIN terminal type.

Note 3) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature (value at the initial state).

Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature for both energized and de-energized states (value at the initial state).

Note 4) DIN terminal type: Applicable to dusttight and low jetproof (IP65).

JIS Symbol



Characteristic Specifications

Series	VQ20	VQ30			
	C6	C8	C10	C12	
Flow characteristics	C [dm ³ /(s·bar)]	1.4	1.5	2.8	3.0
	b	0.23	0.42	0.42	0.37
	Cv	0.33	0.39	0.80	0.81
Min. operating pressure	0.01 MPa				
Max. operating pressure	0.6 MPa		0.5 MPa		
Response time ⁽¹⁾	Electricity circuit	With power-saving circuit	High speed response type ⁽²⁾	With power-saving circuit	High speed response type ⁽²⁾
		ON	10 ms or less	7 ms or less	25 ms or less
	OFF	15 ms or less	5 ms or less	15 ms or less	5 ms or less

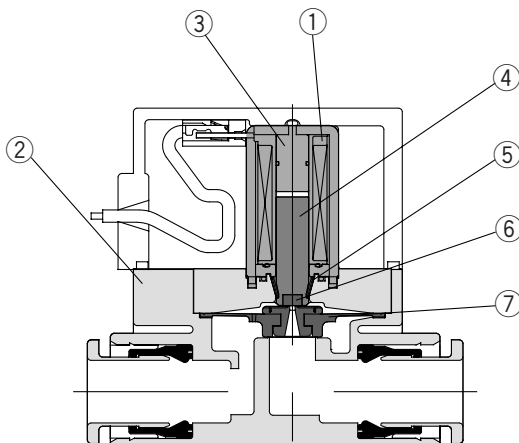


Note 1) JIS B 8375 (value of DC voltage specifications at 0.5 MPa supply pressure)

(Value of high response time is subject to change upon pressure, quality of air.)

Note 2) It cannot be used when energized continuously.

Construction



Component Parts

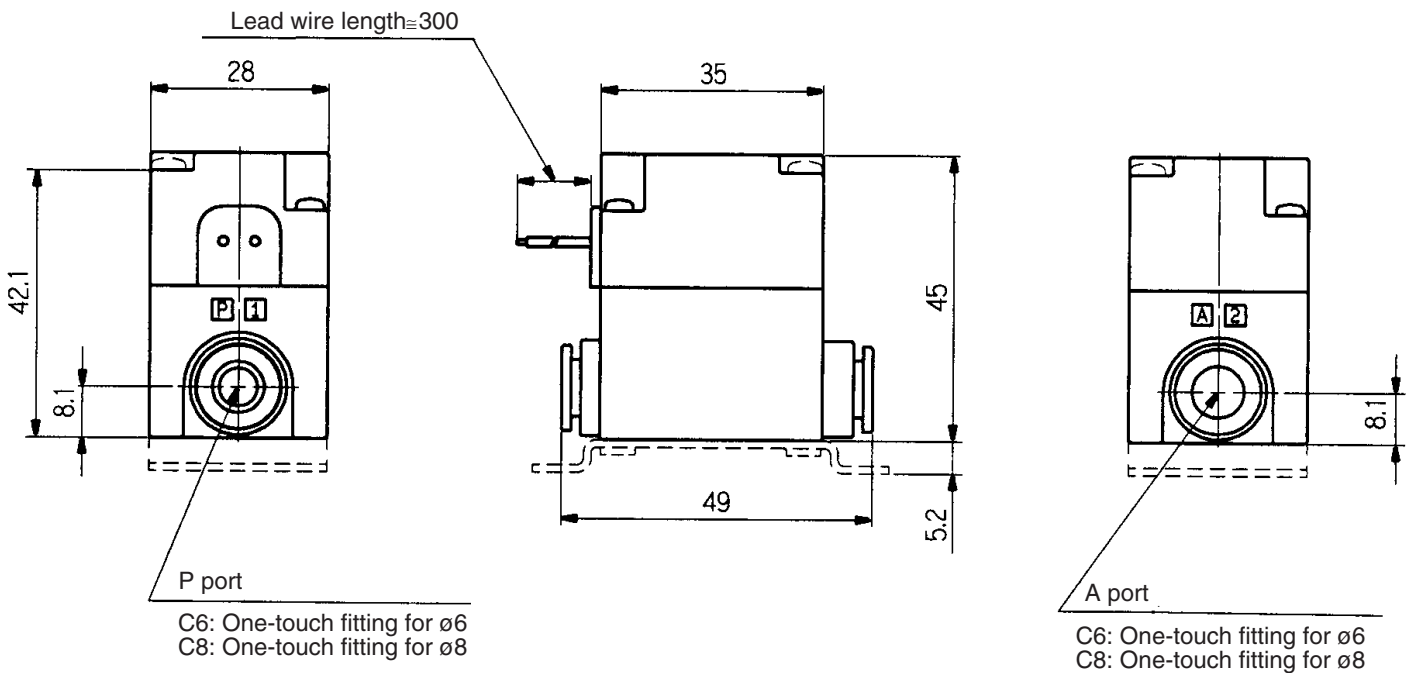
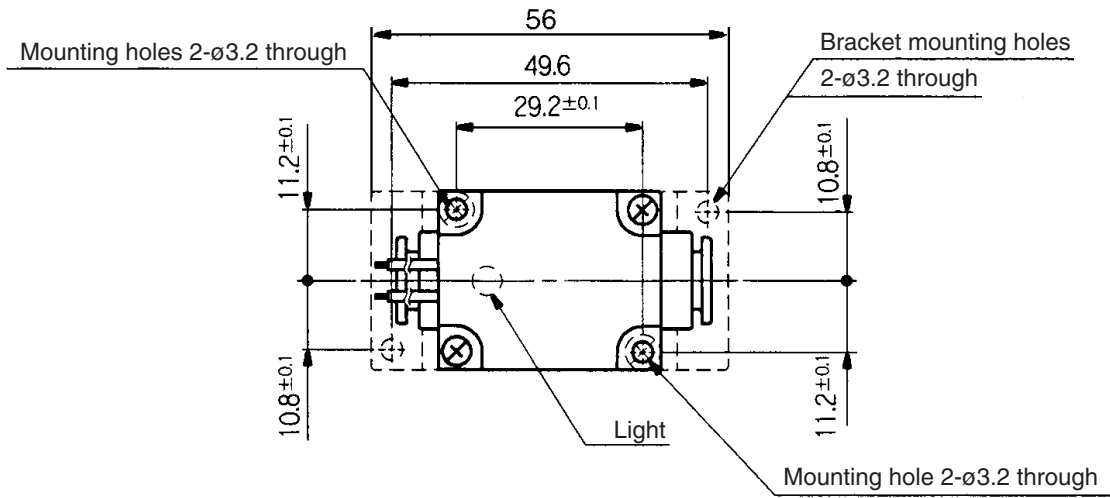
No.	Description	Material
①	Solenoid coil	—
②	Body	Resin
③	Fixed armature	Stainless steel
④	Armature	Stainless steel
⑤	Return spring	Stainless steel
⑥	Poppet	NBR
⑦	Diaphragm assembly	HNBR, Resin


Series VQ20/30

Dimensions: Series VQ20

In-line Type: Grommet (G)

VQ21A1-□G□-□-□



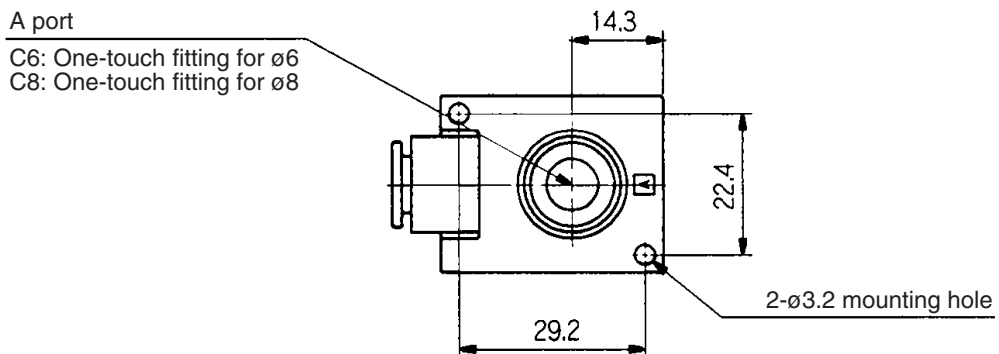
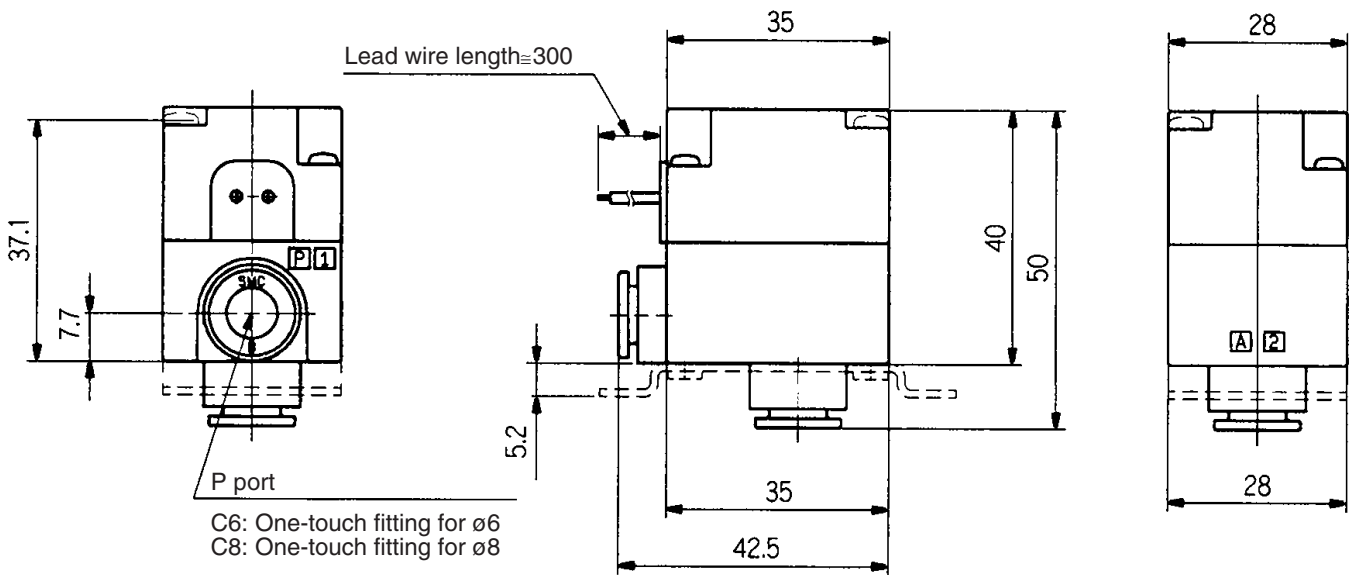
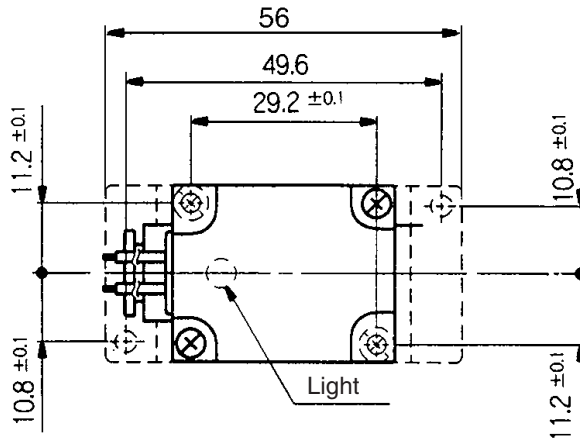
 Dotted line: Bracket mounting style (-F)


Pilot Operated 2 Port Solenoid Valve
For Dry Air **Series VQ20/30**

Dimensions: Series VQ20

Type L: Grommet (G)

VQ21A1-□G□-□-L□



 Dotted line: Bracket mounting style (-LF)

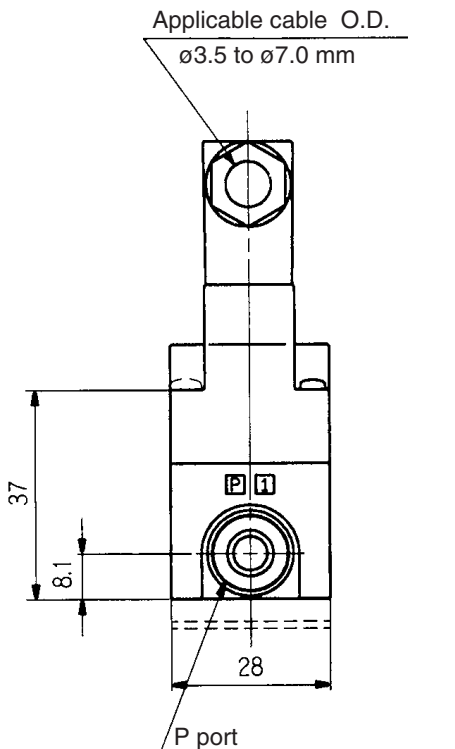
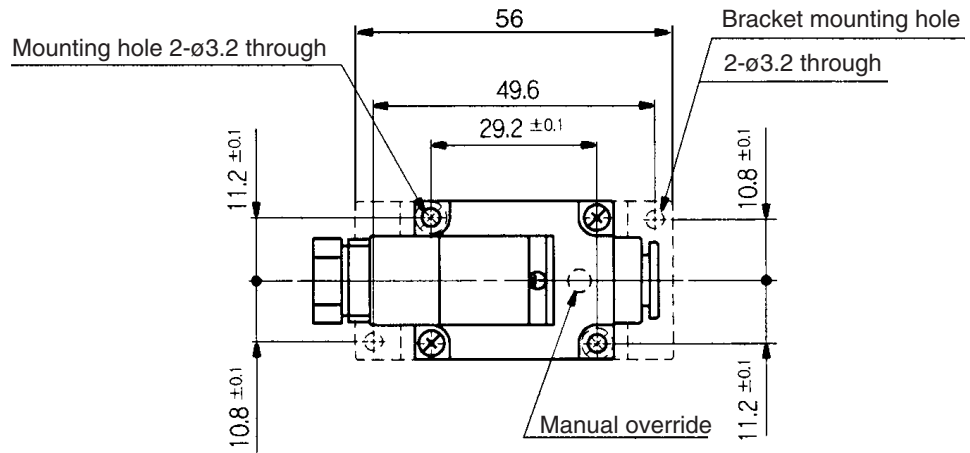
- VC□
- VDW
- VQ**
- VX2
- VX□
- VX3
- VXA
- VN□
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ
- LVN
- TI/
TIL
- PA
- PAX
- PB

Series VQ20/30

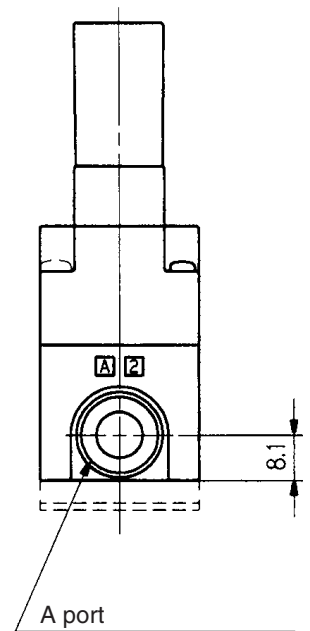
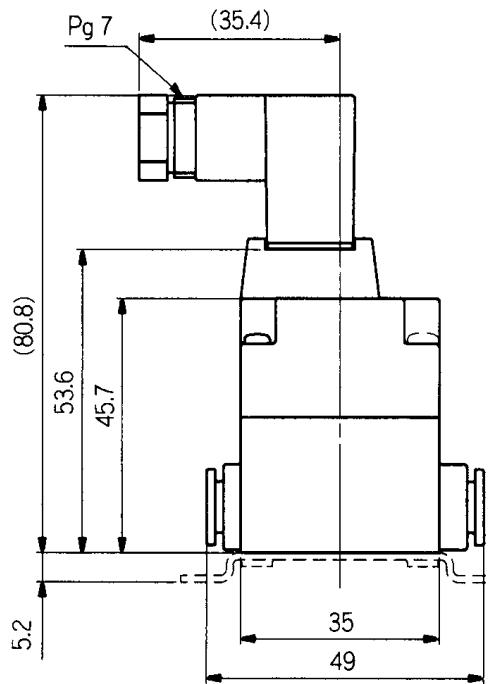
Dimensions: Series VQ20

In-line Type: DIN terminal (Y)

VQ21A1-□Y□□-□-□



C6: One-touch fitting for ø6
C8: One-touch fitting for ø8



C6: One-touch fitting for ø6
C8: One-touch fitting for ø8



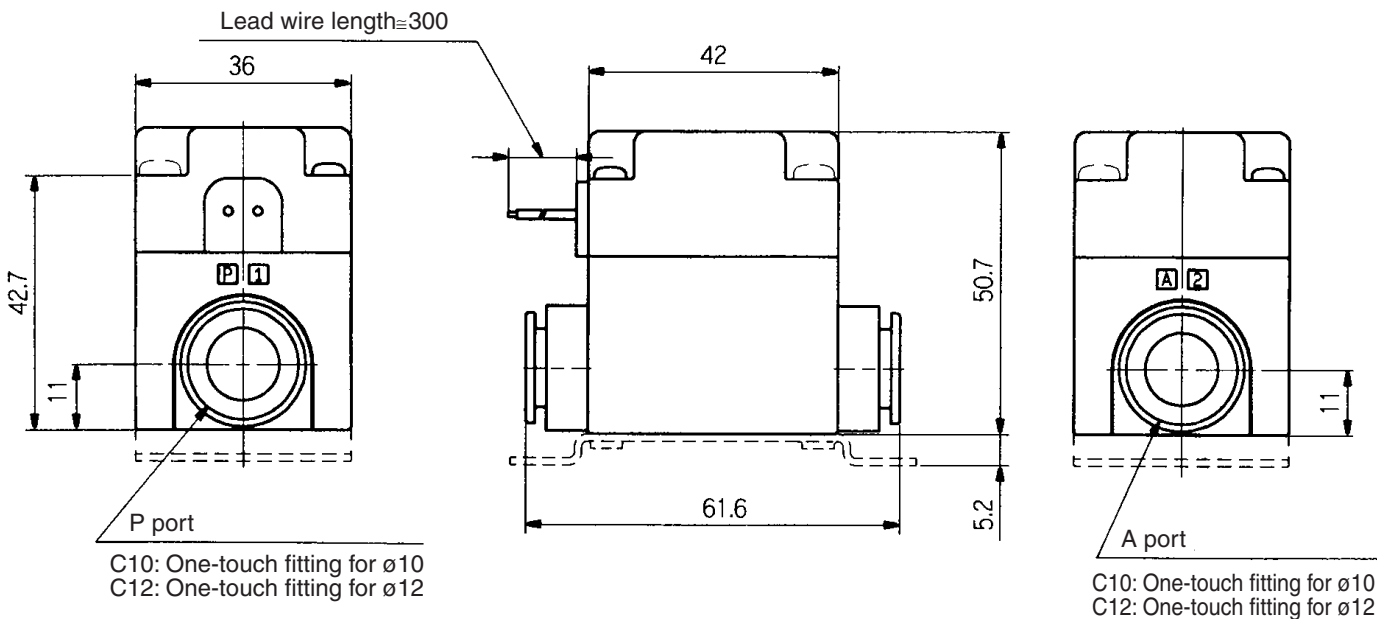
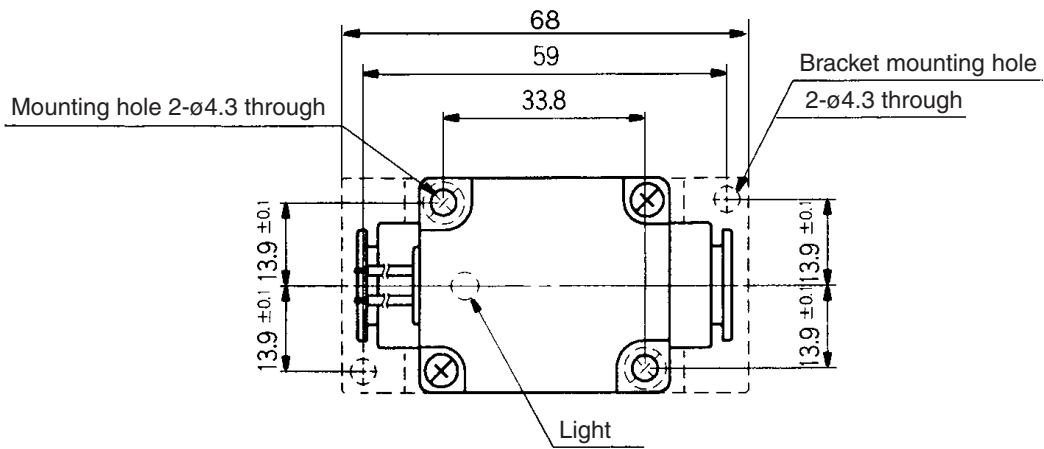
Dotted line: Bracket mounting style (-F)


Pilot Operated 2 Port Solenoid Valve
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Dimensions: Series VQ30

In-line Type: Grommet (G)

VQ31A1-□G□-□-□



 Dotted line: Bracket mounting style (-F)

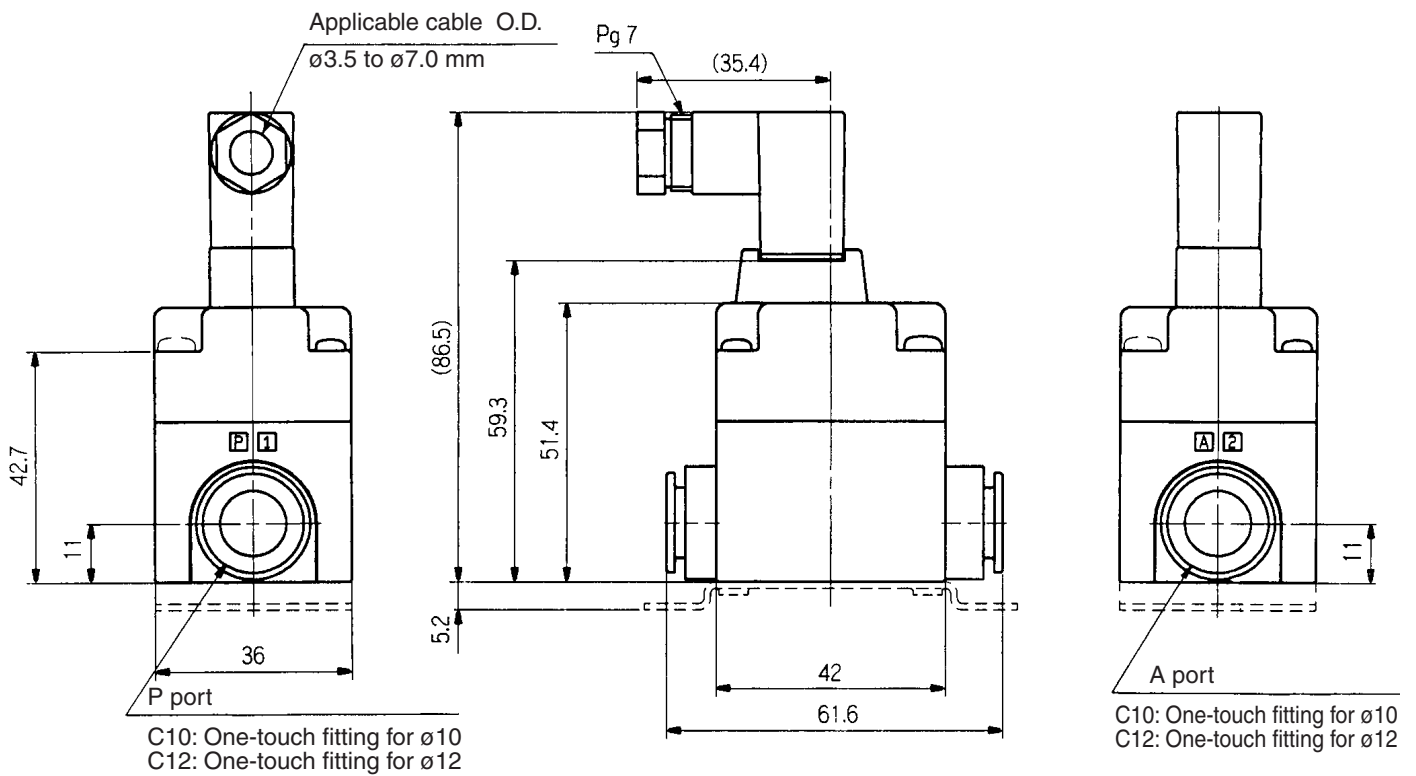
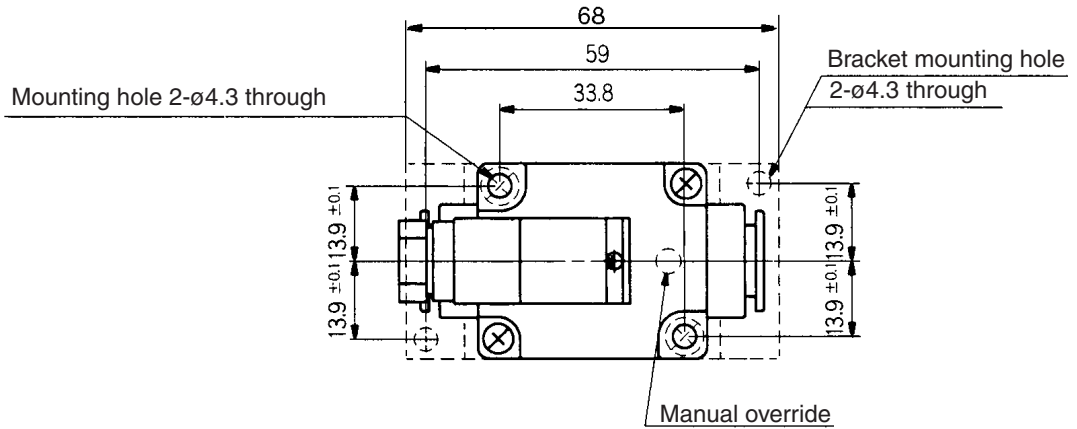
- VC□
- VDW
- VQ**
- VX2
- VX□
- VX3
- VXA
- VN□
- LVC
- LVA
- L VH
- LVD
- LVQ
- LQ
- LVN
- T/
TIL
- PA
- PAX
- PB


Series VQ20/30

Dimensions: Series VQ30

DIN terminal (Y)

VQ31A1-□Y□□-□-□



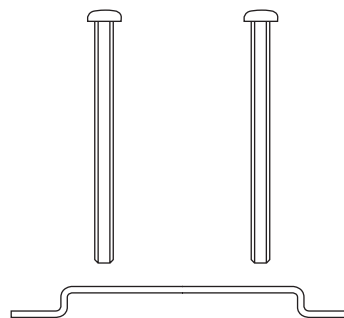
 Dotted line: Bracket mounting style (-F)

Series VQ20/30

Single Unit Option

Bracket assembly (with 2 mounting screws)

For fixing this solenoid valve.



Type	Bracket assembly	(Mounting screws, 2 pcs.)
VQ20 Grommet in-line type	AXT835-13A	M3 x 45
VQ20 Grommet L type, DIN terminal type	AXT835-13A-2	M3 x 40
DIN terminal L type	AXT835-13A-3	M3 x 35
VQ30	AXT837-13A	M4 x 45

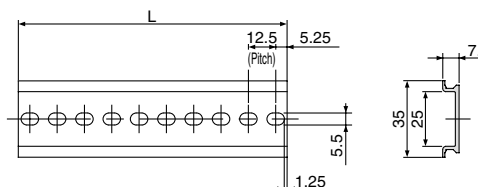
Manifold Option

DIN rail

AXT100-DR-□

* Suffix the number from DIN rail dimensions table below. Refer to the dimension drawing for each manifold for L dimension.

Each manifold can be mounted on a DIN rail. Order with the option symbol “-D” to specify DIN rail mounting style. The DIN rail is approximately 30 mm longer than the length of manifold.



L dimension

• Series VQ20

Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
No.	6	8	11	13	15	17	20	22	24	27	29	31	34	36	38	40	43	45	47	50
L	85.5	110.5	148	173	198	223	260.5	285.5	310.5	348	373	398	435.5	460.5	485.5	510.5	548	573	598	635.5

• Series VQ30

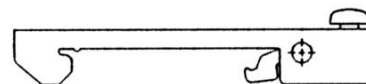
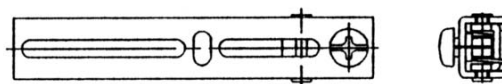
Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
No.	6	9	12	15	18	21	24	27	30	33	36	39	42	45	47	50	53	56	59	62
L	85.5	123	160.5	198	235.5	273	310.5	348	385.5	423	460.5	498	535.5	573	598	635.5	673	710.5	748	785.5

DIN rail mounting bracket

VVQZ100-DB-5

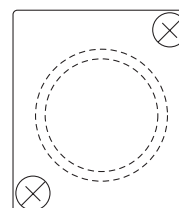
This bracket is used for mounting the manifold on the DIN rail. DIN rail mounting bracket is attached on the manifold.

1 set of DIN rail mounting brackets for 1 manifold includes 2 brackets.



Blanking plate assembly (with O-ring and 2 mounting screws)

Mount a blanking plate on valve manifold when a valve is disassembled for maintenance purposes, or when spare valve unit is supposed to be mounted in the future.



Series	Blanking plate assembly	(O-ring)	(Mounting screws, 2 pcs.)
VQ20	AXT835-35A	OR-1679-100-H	M3 x 6
VQ30	AXT837-35A	OR-2400-150-H	M4 x 6