

3 Port Solenoid Valve

VQZ100/200/300

Valve Single Unit

How to Order Valve VQZ100

VQZ 1 1 5 — **5 M** — **01**

Series

1	VQZ100 Body width 10mm
---	------------------------

Configuration

1	N.C.
---	------

Body style

5	Base mounted
---	--------------

Function

Symbol	Specification	DC	AC
—	Standard	(1.0W)	(3)
K ⁽¹⁾	High pressure	(1.0W)	—
Y	Low wattage	(0.5W)	—
R ⁽²⁾	External	○	○

Note 1) Option
 Note 2) Refer to p.2.10-38 for details about external pilot specification.
 Note 3) Refer to p.2.10-26 for power consumption of AC type.
 Note 4) When specifying more than one option, indicate them alphabetically.

Port size {2(A)port}

CP	Without sub-plate
01	Rc(PT)1/8

Manual override

—: Non-locking push style (Flush) B: Locking style (Slotted)

Electrical entry

G: Grommet (DC specification)	L: L plug connector with lead wire	LO: L plug terminal without connector	M: M plug connector with lead wire	MO: M plug terminal without connector

Note) Standard lead wire length: 300mm
 *With light and surge voltage suppressor.

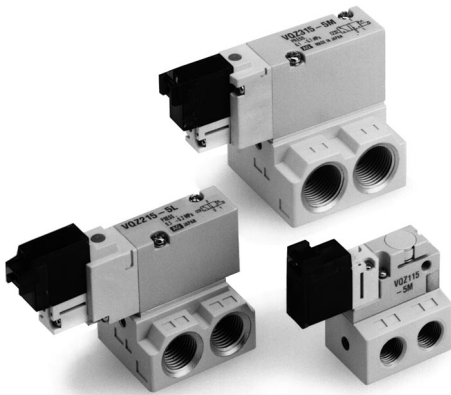
Coil voltage

1 *	100V AC (50/60Hz)
2 *	200V AC (50/60Hz)
3 *	110V AC (50/60Hz)
4 *	220V AC (50/60Hz)
5	24V DC
6	12V DC
9 *	Others

Note) Refer to p.2.10-39 for sub-plate part No.

* When requiring AC specification of grommet and/or special voltage, consult SMC.

VQZ100/200/300 Base Mounted



Standard Specifications

Valve	Seal	Metal seal	Rubber seal
	Fluid	Air, Inert gas	Air, Inert gas
	Max.operating pressure	0.7MPa (High pressure style: 1.0MPa)	0.7MPa
	Min.operating pressure	0.1MPa	0.15MPa
	Ambient and fluid temp.	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾
	Max.operating frequency	20Hz	5Hz
	Pilot valve EXH	Individual EXH	
	Lubrication	Not required	
	Manual override	Non-locking push style/Locking slotted style	
	Shock/Vibration resistance ⁽²⁾	150/30 m/s ²	
	Enclosure	Dust proof	
	Coil rated voltage	12V, 24V DC 100V, 110V, 200V, 220V AC	
	Allowable voltage	±10% of rated voltage	
Solenoid	Coil insurance	Class B	
	Power consumption (Current value)	24V DC	1W DC (42mA), 0.5W DC (21mA)
		12V DC	1W DC (83mA), 0.5W DC (42mA)
		100V AC	Inrush 0.5VA (5mA), Holding 0.5VA (5mA)
		110V AC	Inrush 0.55VA (5mA), Holding 0.55VA (5mA)
		200V AC	Inrush 1.0VA (5mA), Holding 1.0VA (5mA)
		220V AC	Inrush 1.1VA (5mA), Holding 1.1VA (5mA)

- Note 1) Use dry air to prevent condensation when operating at low temperatures.
- Note 2) Shock resistance: No malfunctions resulted from the impact test using a drop impact tester. The tests were performed on the axis and right angle direction of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)
- Vibration resistance: No malfunctions occurred in a one-sweep test between 8.3 and 2,000 Hz. Tests were performed at both energized and de-energized states to the axis and right angle direction of the main valve and armature. (Value in the initial stage.)

Model

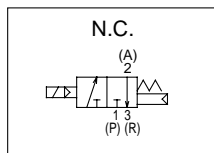
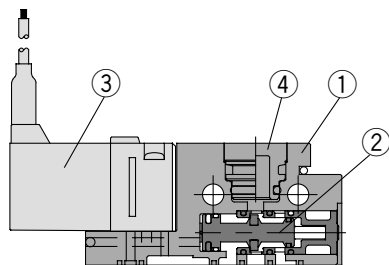
Series	Valve configuration	Model		Effective area(mm ²)(Cv) ⁽¹⁾	Response time (ms) ⁽²⁾		Weight (g) ⁽³⁾
					Standard: 1W	High pressure: 1W Low wattage and AC	
VQZ100	N.C.	Poppet	VQZ115	5.4 (0.3)	10 or less	13 or less	25
VQZ200	N.C.	Metal	VQZ215	10.8 (0.6)	14 or less	18 or less	53
		Rubber	VQZ235	12.6 (0.7)	15 or less	20 or less	
	N.O.	Metal	VQZ225	10.0 (0.55)	14 or less	18 or less	
		Rubber	VQZ245	12.6 (0.7)	15 or less	20 or less	
VQZ300	N.C.	Metal	VQZ315	16.2 (0.9)	17 or less	22 or less	77
		Rubber	VQZ335	21.6 (1.2)	25 or less	33 or less	
	N.O.	Metal	VQZ325	15.3 (0.85)	17 or less	22 or less	
		Rubber	VQZ345	21.6 (1.2)	25 or less	33 or less	

- Note 1) Valve of sub-plate and maximum diameter.
- Note 2) As per JIS8375-1981 (Supply pressure: 1.5MPa; with indicator light and surge voltage suppressor; clean air) The response time is subject to the pressure and the air quality. The values at the time of ON are given for the double styles.
- Note 3) Weight without sub-plate.

Construction

VQZ100

Poppet

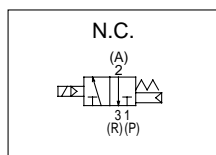
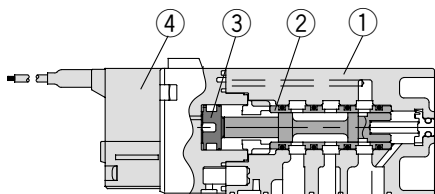


Component Parts

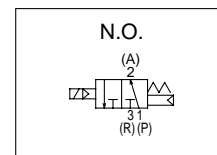
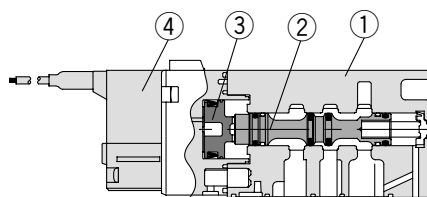
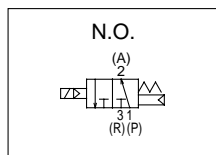
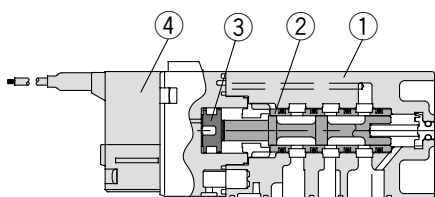
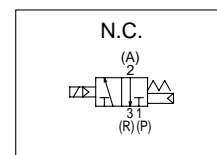
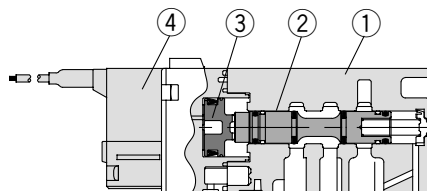
No.	Description	Material	Notes
①	Body	Resin	
②	Spool valve	Aluminum/NBR	
③	Pilot valve	—	
④	Port plug	Resin/NBR	VVQZ100-CP

VQZ200/300

Metal seal



Rubber seal



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die cast	
②	Spool/Sleeve	Stainless steel	Metal seal
	Spool valve	Aluminum/NBR	Rubber seal
③	Piston	Resin	
④	Pilot valve	—	

SY

SYJ

VK

VZ

VT

VT

VP

VG

VP

VQ

VQZ

VZ

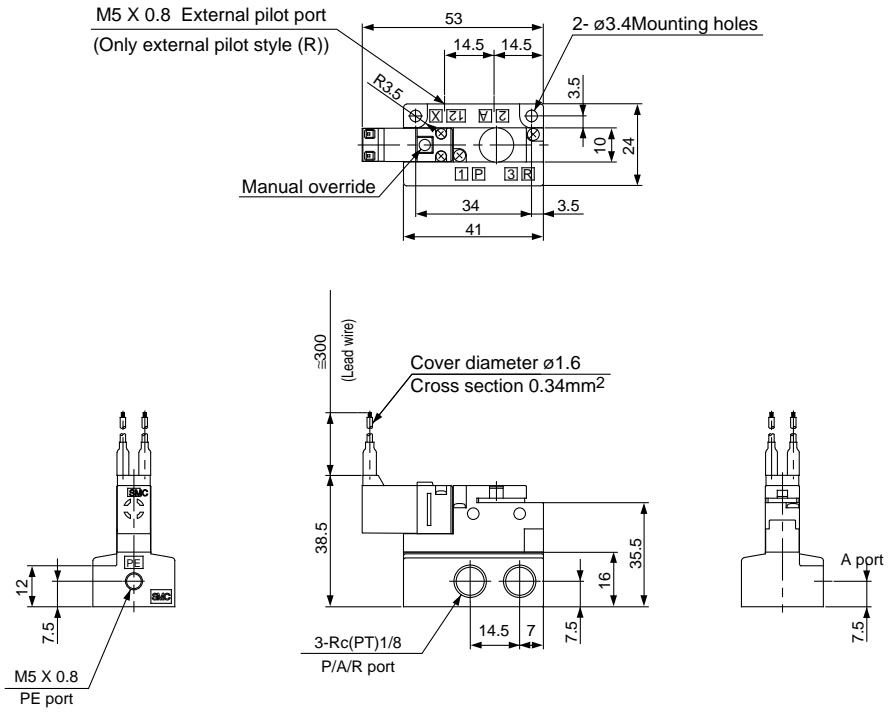
VS

VQZ100/200/300 Base Mounted

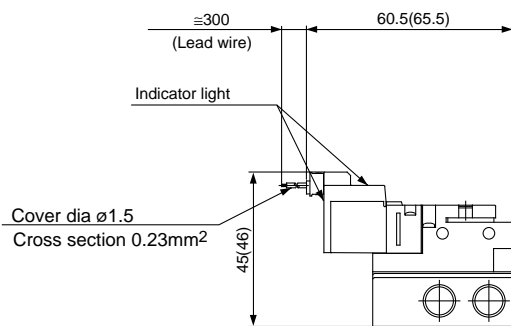
Dimensions: VQZ100

Valve single unit

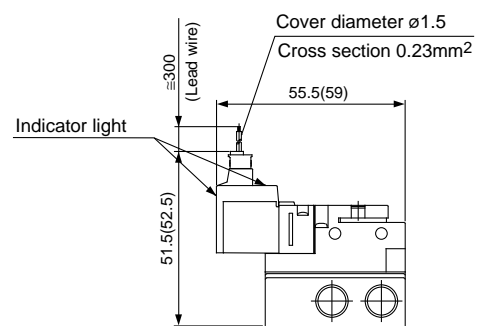
Grommet (G): VQZ115(R)-□G□-01



L plug connector (L): VQZ115(R)-□L□-01



M plug connector (M): VQZ115(R)-□M□-01



Option

External Pilot Specification

The external pilot specification must be used when the operating pressure is below the minimum operating pressure 0.1 to 0.2MPa or when valve is being used for a vacuum application. For the external pilot valve, an "R" should be attached to the valve and the manifold part number. (See the below.)

Example/Valve

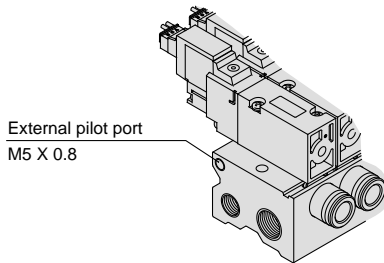
VQZ215R—5M—02

External pilot specification

Example/Manifold

VV3QZ25—06C6C—R

External pilot specification



Pressure specifications

Series		VQZ100 ⁽²⁾	VQZ200 VQZ300		
External pilot pressure range ⁽¹⁾	Metal seal	—	0.1 to 0.7MPa		
	Rubber seal (VQZ100: Poppet)	0.2 to 0.7MPa	0.15 to 0.7MPa	0.1 to 0.7MPa	0.2 to 0.7MPa
Operating press range ⁽¹⁾		Vacuum to 0.7MPa			



Note 1) In case of the high pressure style, the upper limit of max. operating pressure and external pressure range is 1MPa.

Note 2) If VQZ100 is applied in vacuum, vacuum from P port. When finishing the vacuum application, supply pressure from R port. Make sure that the supply pressure is less than half of the external pilot pressure.

Inch Size One-touch Fittings and Optional Thread

Manifolds are available with inch size One-touch fittings for the cylinder ports.

How to Order Manifold

VV3QZ15—08 N7 T C

Thread (Cylinder ports and P, R ports)

—	Rc(PT)
N	NPT
T	NPTF
F	G(PF)

Cylinder ports

Symbol	N1	N3	N7	N9	N11	NM ⁽¹⁾	M5	01	02
Tube O.D. (Inch)	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	Mix	M5	1/8	1/4
Cylinder port	VQZ100	●	●	—	—	●	●	—	—
	VQZ200	—	●	●	—	●	—	●	—
	VQZ300	—	—	●	●	●	—	—	●



Note 1) Mixing One-touch fittings and thread types is impossible except for VQZ100.

Note 2) Millimeter size One-touch fittings (C□) are also available.

Optional Thread <Rc(PT) is standard. style>

Sub-bases and manifolds with NPT, NPTF or PF type threads are available.

How to Order Valve with Sub-base

VQZ215—5M—02 T

Thread (Cylinder ports and P/R ports)

—	Rc(PT)
N	NPT
T	NPTF
F	G(PF)

Dust Tight/Jet Proof (IP65)

Optional IP65 model is available on valves with DIN connector electrical entry.

How to Order Valve

(Applicable to VQZ200/300 rubber style)

VQZ335—5YZB W—03

IP65 rated

—	No (Standard)
W ⁽¹⁾	IP65 rated



Note 1) The pilot exhaust of the IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)

Replacement Parts

One-touch Fitting Assembly (For cylinder port)

Fitting size	C3	C4	C6	C8	C10	M5 (VQZ100 only)
VQZ100	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—	VVQ1000-50A-M5
VQZ200	—	VVQ1000-51A-C4	VVQ1000-51A-C6	VVQ1000-51A-C8	—	—
VQZ300	—	—	VVQ2000-51A-C6	VVQ2000-51A-C8	VVQ2000-51A-C10	—

Note) Order is accepted from 10 pcs. unit.

<Plug connector assembly>

DC (+COM)

• Single

AXT661-14A- □

• Latching

AXT661-13A- □

DC (-COM)

• Latching

AXT661-13AN- □

100V, 110V AC

• Single

AXT661-31A- □

• Latching

AXT661-32A- □

200V, 220V AC

• Single

AXT661-34A- □

• Latching

AXT661-35A- □

Only connector and sockets (3 pcs.)

AXT661-12A

Lead wire length

—	300mm
6	600mm
10	1000mm
20	2000mm
30	3000mm

Standard wire length of valve with plug connector is 300mm.

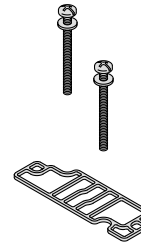
When requiring valve with a 600mm length lead wire specify the model number of the valve without plug connector and the plug connector assembly.

<Gasket and screw assembly>

	Part No.
VQZ100	VQZ100-GS-5
VQZ200	VQZ200-GS-5
VQZ300	VQZ300-GS-5



Note) Above part number consists of 10 units with one gasket and two screws. Orders are accepted in 10 pcs.units.



<Pilot valve assembly>

VQ11 **1** □ — **5** **G**

Series

0	VQZ100
1	VQZ1000/2000/3000

Function

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○
K ⁽¹⁾	High pressure (Metal seal only)	(1.0W) ○	—
Y	Low wattage	(0.5W) ○	—
L ⁽³⁾	Latching	(1.0W) ○	○

Note 1) Option
 Note 2) When specifying more than one option, please indicate them alphabetically.
 Note 3) K (High pressure) and Y (Low wattage) are not available.
 Electrical entry: L/M plug connector only.

Electrical entry

G	Grommet (DC specification)
L ⁽¹⁾	L plug connector with lead wire
LO ⁽¹⁾	L plug terminal without connector
M ⁽¹⁾	M plug connector with lead wire
MO ⁽¹⁾	M plug terminal without connector
Y ⁽²⁾	DIN terminal
YO ⁽²⁾	DIN terminal without connector
YZ ⁽²⁾	DIN terminal
YOS ⁽²⁾	DIN terminal without connector

Note 1) L, LO, M and MO are attached light and surge voltage suppressors as standard.
 Note 2) DIN is applicable to VQZ 200 and 300.
 Note 3) Electrical entry of pilot valve for VQZ100(L and M) is opposite side of valve body part number.

<Sub-plate>

Model	Sub-plate part No.
VQZ100	VQZ100-S-01(R) ⁽¹⁾
VQZ200	VQZ200-S- ⁰¹ [Rc1/8] ⁰² [Rc1/4]
VQZ300	VQZ300-S- ⁰² [Rc1/4] ⁰³ [Rc3/8]



Note 1) Symbol "R" indicates an external pilot. The part No. is common to the external pilot and internal pilot style except for VQZ100.

Coil voltage

1*	100V AC (50/60Hz)
2*	200V AC (50/60Hz)
3*	110V AC (50/60Hz)
4*	220V AC (50/60Hz)
5	24V DC
6	12V DC
9*	Others

*Consult SMC when requiring grommet, AC specification and others.

Valve style	Pilot valve style
VQZ115 □-□L□	VQ110 □-□M□
VQZ115 □-□M□	VQ110 □-□L□

SY

SYJ

VK

VZ

VT

VT

VP

VG

VP

VQ

VQZ

VZ

VS