

Acvatix™

Electromotoric rotary actuators for butterfly valves

SQL341E.., SQL361E..



- SQL341E..: Operating voltage AC 230 V, on/off and 3-position positioning signal
- SQL361E..: Operating voltage AC 230 V, DC 0...10 V, 4...20 mA positioning signal
- Nominal angle of rotation 90°
- Handwheel and position indicator
- Built-in heating element to prevent condensation
- Compatible with EN ISO 5211 flanges

Use

VFW41..., VFL41... butterfly valves operated as shutoff and control valves in heating, ventilation and air conditioning systems.

Type summary

Product No.	Stock No.	Operating voltage ¹⁾	Positioning signal	Position feedback signal	Positioning time for 90° ¹⁾ at 50 Hz [s]	Nominal torque [Nm]	Flange connection EN ISO 5211
SQL341E25	S55162-A124	AC 230 V ±10 %, 50/60 Hz	2P and 3P	Double auxiliary switch	17 s	25	F04 (double square)
SQL341E40	S55162-A125	AC 230 V ±10 %, 50/60 Hz	2P and 3P	Double auxiliary switch	24 s	40	F05 (double square)
SQL341E100	S55162-A126	AC 230 V ±10 %, 50/60 Hz	2P and 3P	Double auxiliary switch	39 s	100	F07
SQL341E400	S55162-A127	AC 230 V ±10 %, 50/60 Hz	2P and 3P	Double auxiliary switch	47 s	400	F10
SQL341E1200	S55162-A128	AC 230 V ±10 %, 50/60 Hz	2P and 3P	Double auxiliary switch	47 s	1200	F12/16
SQL361E25	S55162-A129	AC 230 V ±10 %, 50/60 Hz	DC 0...10 V / 4...20 mA	Double auxiliary switch / DC 0...10 V / 4...20 mA	17 s	25	F04 (double square)
SQL361E40	S55162-A130	AC 230 V ±10 %, 50/60 Hz	DC 0...10 V / 4...20 mA	Double auxiliary switch / DC 0...10 V / 4...20 mA	24 s	40	F05 (double square)
SQL361E100	S55162-A131	AC 230 V ±10 %, 50/60 Hz	DC 0...10 V / 4...20 mA	Double auxiliary switch ¹⁾ / DC 0...10 V / 4...20 mA	39 s	100	F07
SQL361E400	S55162-A132	AC 230 V ±10 %, 50/60 Hz	DC 0...10 V / 4...20 mA	Double auxiliary switch ¹⁾ / DC 0...10 V / 4...20 mA	47 s	400	F10
SQL361E1200	S55162-A133	AC 230 V ±10 %, 50/60 Hz	DC 0...10 V / 4...20 mA	Double auxiliary switch ¹⁾ / DC 0...10 V / 4...20 mA	47 s	1200	F12/F16

¹⁾ Must be ordered separately.

Ordering

The actuator, butterfly valve and any accessories must be ordered separately.
When ordering, specify the quantity, product name and product number.

Example

Product No.	Stock No.	Description	Quantity
SQL361E100	S55162-A131	Rotary Actuator	1
ASC10.21	S55845-Z122	Double auxiliary switch	1

Delivery

The actuator, accessory and butterfly valve are packed separately and delivered as individual items.

Rev. No.

See Revision numbers [► 14].

Equipment combinations

Butterfly valve	Electromotive actuators ¹⁾				
	SQL341E25 SQL361E25	SQL341E40 SQL361E40	SQL341E100 SQL361E100	SQL341E400 SQL361E400	SQL341E1200 SQL361E1200
	Δp_s [kPa]				
VFW41.40	1600	-	-	-	-
VFW41.50	1600	-	-	-	-
VFW41.65	1600	-	-	-	-
VFW41.80	-	1600	-	-	-
VFW41.100	-	1600	-	-	-
VFW41.125	-	1000	-	-	-
VFW41.150	-	-	1600	-	-
VFW41.200	-	-	1000	-	-
VFW41.250	-	-	-	1000	-
VFW41.300	-	-	-	1000	-
VFW41.350	-	-	-	600	-
VFW41.400	-	-	-	300	-
VFW41.450	-	-	-	-	300
VFW41.500	-	-	-	-	300
VFW41.600	-	-	-	-	300
VFL41.40	1600	-	-	-	-
VFL41.50	1600	-	-	-	-
VFL41.65	1600	-	-	-	-
VFL41.80	-	1600	-	-	-
VFL41.100	-	1600	-	-	-
VFL41.125	-	1000	-	-	-
VFL41.150	-	-	1600	-	-
VFL41.200	-	-	1000	-	-
VFL41.250	-	-	-	1000	-
VFL41.300	-	-	-	1000	-
VFL41.350	-	-	-	600	-
VFL41.400	-	-	-	300	-
VFL41.450	-	-	-	-	300
VFL41.500	-	-	-	-	300
VFL41.600	-	-	-	-	300

¹⁾ SQL341E..., SQL361E... Electromotive actuators can be mounted directly on VFL41..., WFW41... butterfly valves

Δp_s [kPa] Maximum permissible differential pressure at which the motorized butterfly valve closes securely against the pressure (close off pressure)

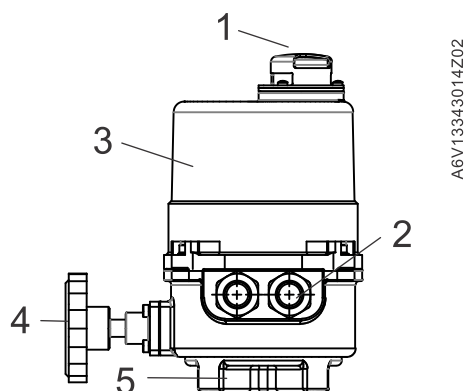
Mechanical design

The actuator is driven by a 2P/3P or DC 0...10 V, 4...20 mA positioning signal from the controller and generates a rotary motion which is transferred to the butterfly valve via a driver.

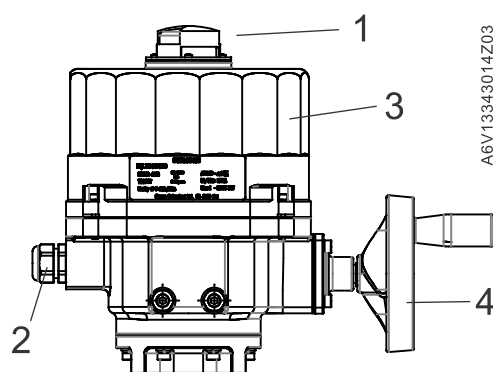
These electromotive actuators are maintenance free. They have a reversible asynchronous motor which drives the main shaft via gear train, which accommodates the parallel square head of the butterfly valve. For SQL341E25, the coil spring is fitted with a handwheel shaft that is engaged when pushed in. The other versions feature a worm shaft fitted with a direct-acting handwheel and non-clutch operation.

The actuators are 90° rotated so as to work with Siemens VFW41..., VFL41.. butterfly valves. Two built-in end-switches stop rotation during automatic operation.

The actuators are equipped with a built-in heating element to prevent the temperature inside the housing from falling below the dew point.

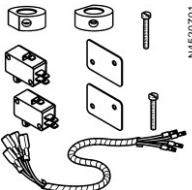


- 1 Position indication
- 2 Terminal compartment
- 3 Cover (motor inside)



- 4 Handwheel
- 5 EN ISO 5211 flange connection

Accessories

Product No.	Stock No.	Figure	Description	For Actuators
ASC10.21	S55845-Z122		Double auxiliary switch	SQL361E100 SQL361E400 SQL361E1200

Electrical installation

The actuators must be electrically connected in accordance with local regulations and the electrical diagrams.

WARNING! Always observe all regulations and requirements to ensure the safety of people and protect property.

Mounting notes

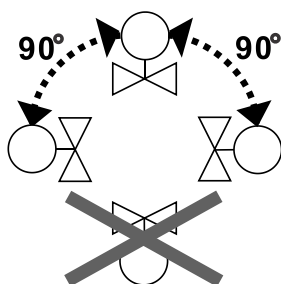
Product No.	Documentation No.
ASC10..	74 319 0810 0 (M4520.1)
SQL..E..	A5W00246142

SQL341E.., SQL361E..

The actuators can be mounted directly on type VFW41.., VFL41.. butterfly valves. The butterfly valves must be closed at "0 %" when mounted.

Orientation

The valve and actuator can be assembled on site; no special tool are required.



Upright to horizontal

Commissioning

When commissioning the motorized butterfly valves, always check wiring and test functionality. This also applies to any additional components, e.g. auxiliary switch.

WARNING! To avoid pressure shocks on the butterfly valve, the valve must be driven to its fully open position either manually or via positioning signal prior to activating the pump(s).

The flow rate can be adjusted by operating the electric actuators as needed or by operating the handwheel.

Operation**Manual operation mode**

SQL341E25...E40 SQL361E25...E40	Handwheel is engaged by pushing the handwheel in.
SQL341E100...E1200 SQL361E100...E1200	The handwheel is always engaged.

Reversing the direction of rotation

To reverse the direction of rotation simply exchange the connections Y2 and Y1 (SQL341E.. only).

Setting the angle of rotation

The 0...90° angle of rotation for the mechanical limit switches is factory-set and cannot be changed.

The potential-free auxiliary switches are equipped with adjustable switching points.

Maintenance notes

The actuators and butterfly valves require no maintenance.

WARNING



Before performing any service work on the valve or actuator:

- Switch off the pump and power supply
- Close the main shut-off valves in the pipe work
- Release pressure in the pipes and allow them to completely cool down.

If necessary, disconnect electrical connections from terminals.

The handwheel or actuator must be correctly assembled to re-commission it.

Disposal



The device is considered an electronic device for disposal in accordance with European Directive and may not be disposed of as domestic waste.

- Use only designated channels for disposing the devices.
- Comply with all local and currently applicable laws and regulations.

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

When using the actuators in connection with butterfly valves of other manufacture, correct functioning must be ensured by the user, and Siemens will assume no responsibility.

Power supply		
Operating voltage	AC 230 V +/- 10 %	
Frequency	50/60 Hz	
Power consumption	SQL341E25, SQL341E40	51 VA
	SQL341E100	96 VA
	SQL341E400	165 VA
	SQL341E1200	430 VA
	SQL361E25, SQL361E40	53 VA
	SQL361E100	99 VA
	SQL361E400	168 VA
	SQL361E1200	433 VA

Signal input		
Positioning signal	SQL341E25...1200	3P and 2P ¹⁾
	SQL361E25...1200	DC 0-10 V / 4-20 mA, ± 2.5 % (selected by DIP switch)
Parallel operation	SQL341E25...1200	Several actuators cannot be operated in electrical parallel.
	SQL361E25...1200	Multiple actuators can be operated in parallel but only on DC 0-10 V control applications.
Position feedback	SQL341E25...1200	Double auxiliary switch, AC 230 V, 3 A resistive, 1.5 A inductive, approx.1°, DC 24 V, 3 A resistive, 1.5 A inductive.
	SQL361E25...1200	DC 0...10 V / 4...20 mA feedback , It can be chosen arbitrarily. Refer Mounting Instructions for detail.

¹⁾ >1 s break time between switching moving directions

Operating data		
Positioning time for 90° at 50 Hz	SQL341E25.., SQL361E25..	17 s
	SQL341E40.., SQL361E40..	24 s
	SQL341E100.., SQL361E100..	39 s
	SQL341E400.., SQL341E1200.., SQL361E400.., SQL361E1200..	47 s
Angle of rotation	90° \pm 1° (factory setting)	
Nominal torque	SQL341E25.., SQL361E25..	25 Nm
	SQL341E40.., SQL361E40..	40 Nm
	SQL341E100.., SQL361E100..	100 Nm
	SQL341E400.., SQL361E400..	400 Nm
	SQL341E1200.., SQL361E1200..	1200 Nm
Medium temperature	-30...120 °C	

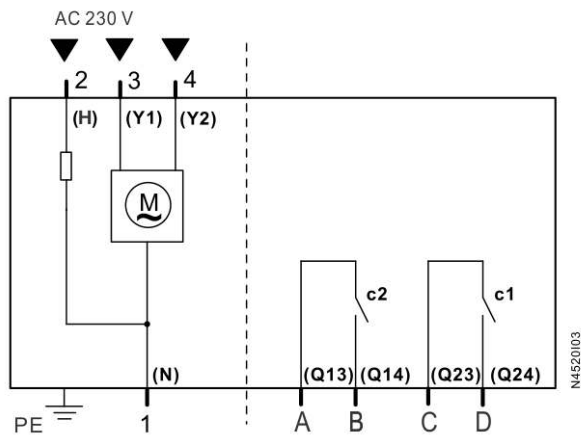
Standards, directives and approvals	
Housing protection	IP 67 to IEC 60529
Insulation class	I refer to EN 60730
Motor isolation class	H
CE mark on actuators	EMC Directive 2014/30/EU EN 61000-6-2 EN 61000-6-3 LVD 2014/35/EU EN 60730-1 EN 60730-2-14 RoHS Directive 2011/65/EU EN IEC 63000
RCM mark on actuators	AS/NZS/EN 61000-6-3
UKCA mark on actuators	S.I.2016 No. 1101, S.I.2016 No. 1091, S.I.2012 No. 3032

Materials	
Housing	Die-cast aluminum
Cover	Die-cast aluminum
Indicator	Polycarbonate

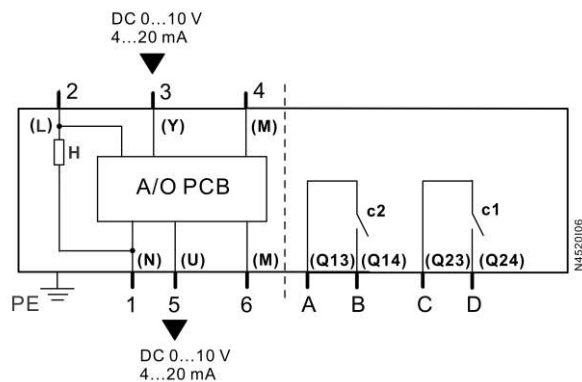
Dimensions/weight		
Dimensions	See Dimensions (mm) [► 13]	
Weight	See Dimensions (mm) [► 13]	
Cable gland	SQL341E25.., SQL361E25.., SQL341E40.., SQL361E40..	2*PG13.5, Suitable for 6-12 mm diameter cables
	SQL341E100.., SQL361E100.., SQL341E400.., SQL361E400.., SQL341E1200.., SQL361E1200..	2*PG16, Suitable for 10-14 mm diameter cables

General ambient conditions			
	Operation	Transport	Storage
Temperature	-20...65 °C	-30...65 °C	-15...55 °C
Humidity	15...100 % r.h.	<95 % r.h.	0...95 % r.h.

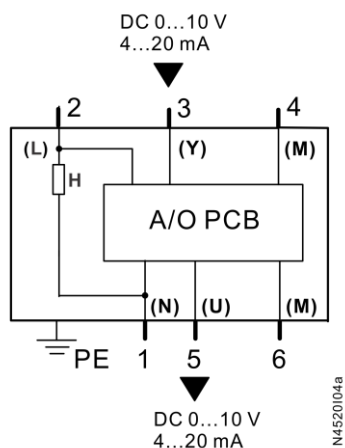
SQL341E..



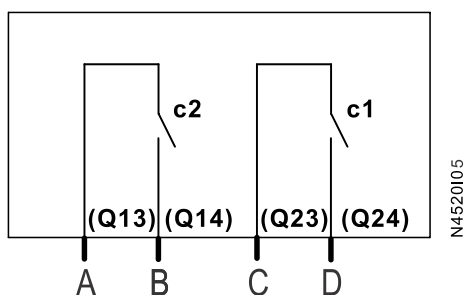
Pin	Terminal no.	Code	Meaning
Actuator AC 230 V	PE	-	Grounding
	1	N	System neutral
	2	H	Heating element SQL341E25, SQL341E40: power consumption= 3 W SQL341E100, SQL341E400, SQL341E1200: power consumption = 6 W
	3	Y1	AC 230 V, positioning signal (open)
	4	Y2	AC 230 V, positioning signal (closed)
Auxiliary signal feedback	A	Q13	Auxiliary switch c2, open
	B	Q14	Auxiliary switch c2, open
	C	Q23	Auxiliary switch c1, close
	D	Q24	Auxiliary switch c1, close

SQL361E25, SQL361E40

SQL361E100...E1200

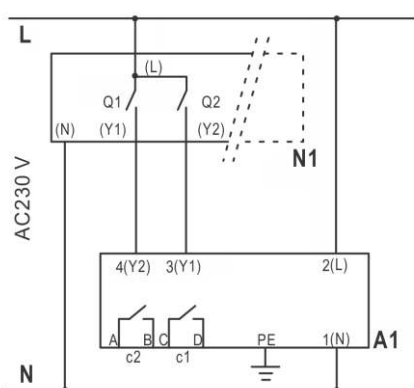


Accessory: ASC10.21



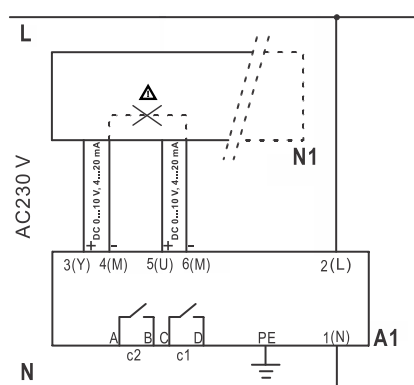
Pin	Terminal no.	Code	Meaning
Actuator AC 230 V	PE	-	Protective earth
	1	N	Neutral
	2	L	System potential, AC 230 V
	3	Y	Positioning signal, DC 0...10 V, 4...20 mA
	4, 6	M	Measuring neutral
	5	U	Position feedback, DC 0...10 V, 4...20 mA
	-	H	Heating element SQL361E25, SQL361E40: power consumption= 3 W SQL361E100, SQL361E400, SQL361E1200: power consumption = 6 W
Auxiliary signal feedback	A	Q13	Auxiliary switch c2, open
	B	Q14	Auxiliary switch c2, open
	C	Q23	Auxiliary switch c1, close
	D	Q24	Auxiliary switch c1, close

SQL341E..



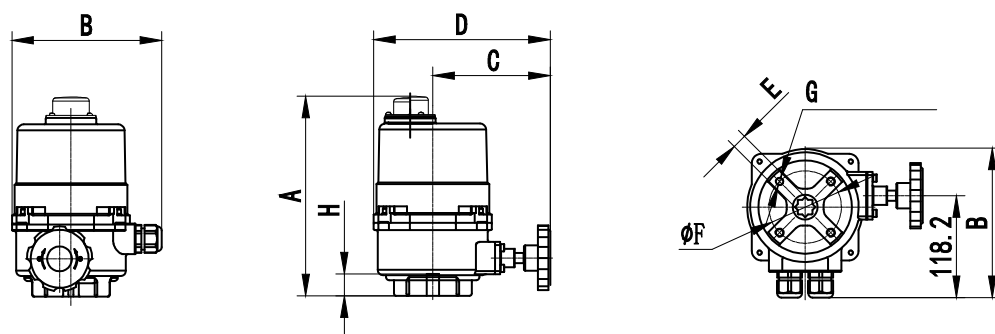
N1	Controller
A1	Actuator
L	1 phase AC 230 V
N	Neutral
Q1, Q2	Controller contacts
Y2	Positioning signal (Closed)
Y1	Positioning signal (Open)
c1	Auxiliary dry contact switch, close
c2	Auxiliary dry contact switch, open

SQL361E..



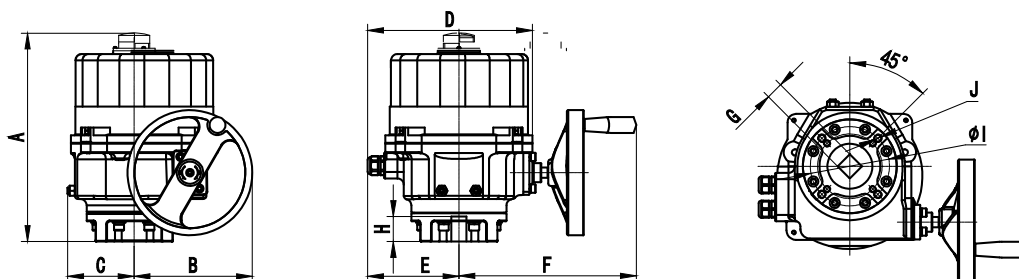
N1	Controller
A1	Actuator
L	1 phase AC 230 V
N	Neutral
Y	Positioning signal DC 0...10 V / 4...20 mA
M	Measuring neutral
U	Feedback signal DC 0...10 V / 4...20 mA

Note: The signal ground 4 (M) and 6 (M) are interconnected in the actuator. Do not connect the terminals on the controller side to avoid a ground loop!

SQL341/361E25...40


A6V101029254Z00

Product type	A	B	C	D	E	ØF	G	H	Net weight (KG)	EN ISO 5211
SQL341E25	192	145	114	171	11×11	42	4-M5	20	3.6	F04
SQL341E40	192	145	114	171	14×14	50	4-M6	20	3.6	F05
SQL361E25	212	145	114	171	11×11	42	4-M5	20	3.8	F04
SQL361E40	212	145	114	171	14×14	50	4-M6	20	3.8	F05

SQL341/361E100...1200


A6V101029254Z01

Product type	A	B	C	D	E	F	G	H	ØI	J	Net weight (KG)	EN ISO 5211
SQL341/361E100	275	125	77	216	125	242	17×17	35	70	4-M8	11	F07
SQL341/361E400	327	187	105	262	150	280	22×22	55	102	4-M10	22	F10
SQL341/361E1200	383	121	242	293	161	333	32×32	65	125	4-M12	35	F12/F16
									165	4-M20		

Revision numbers

Product No.	Valid from Rev. No.
SQL341E25	..A
SQL341E40	..A
SQL341E100	..A
SQL341E400	..A
SQL341E1200	..A
SQL361E25	..A
SQL361E40	..A
SQL361E100	..A
SQL361E400	..A
SQL341E1200	..A

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