

Ø 16 mm
Emergency Switches



S16ER Series
PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Compact, space-saving 16 mm installation diameter
- Short rear-length size of only 29.5 mm
- Independent detachable contacts

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime / disaster prevention devices, etc.)**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use or store the unit in the place where flammable / explosive / corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- 03. Install on a device panel to use.**
Failure to follow this instruction may result in fire or electric shock.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- 05. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- 01. This unit shall not be used outdoors.**
Failure to follow this instruction may result in shortening the life cycle of the product or electric shock.
- 02. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 03. Do not use the load beyond rated switching capacity contact.**
Failure to follow this instruction may result in fire, relay broken, contact melt, insulation failure or contact failure.
- 04. For wiring the product, do not pull the wiring excessively or apply excessive force.**
Failure to follow this instruction may result in product damage or malfunction.
- 05. Use dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire or electric shock.
- 06. Keep the product away from metal chip, dust, and wire residue which from flowing into the unit.**
Failure to follow this instruction may result in fire or product damage.

Specifications

Series	S16ER Series
Actuation distance	2 to 4 mm
Actuation angle	35° ± 7°
Actuation force	1.7 to 4.7 kgf (17 to 47 N)
Installation	Extended
Shock	500 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times
Vibration	1.5 mm double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 2 hours
Vibration (malfunction)	1.5 mm double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 minutes
Mechanical life cycle (control unit life cycle)	≥ 100,000 operations (20 operations/min)
Ambient temperature	-15 to 55 °C, storage: -25 to 65 °C (no freezing or condensation)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Protection structure	Control unit: IP65 (IEC standard)
Certification	CE ⁽⁰¹⁾ UK     
Control unit weight	≈ 11.5 g
Housing weight	≈ 1.4 g

01) IEC-60947-5-1

Contact blocks					
Power supply / current	250 VAC~ / 3 A				
Dielectric strength	Between the charging part and the case : 3,000 VAC~ 50/60 Hz for 1 minute				
Insulation resistance	≥ 100 MΩ (500 VDC≡ megger)				
Contact resistance	≤ 50 mΩ (initial)				
Electrical life cycle	≥ 100,000 operations (20 operations/min)				
Contact material	AgNi10				
Terminal tensile force	≤ 30 N				
Terminal soldering time	At the end of tips within 3 sec with 350 °C (30 W-soldering machine)				
Certification	CE UKCA RoHS REACH EN60335-1				
Weight	≈ 1.6 g				
LED blocks					
Rated voltage	5 / 12 / 24 VDC≡ model				
Current consumption	Refer to the below Current consumption table.				
Certification	CE UKCA RoHS REACH EN60335-1				
Weight	≈ 1.9 g				
Current consumption	Red	Blue	Green	Yellow	White
SA16-L5□ (5 VDC≡)	6 to 9 mA	10 to 14 mA	5 to 7 mA	12 to 16 mA	10 to 14 mA
SA16-L12□ (12 VDC≡)	9 to 14 mA	10 to 15 mA	5 to 9 mA	10 to 16 mA	9 to 14 mA
SA16-L24□ (24 VDC≡)	15 to 20 mA	20 to 26 mA	16 to 22 mA	27 to 35 mA	23 to 30 mA

Sold Separately

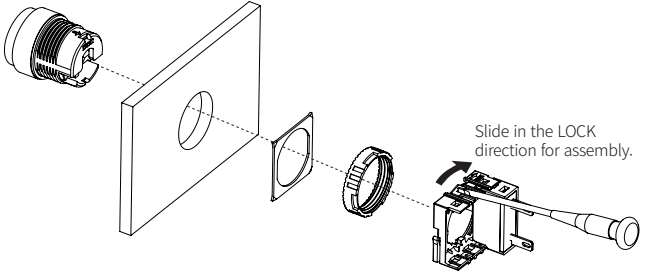
- Contact blocks (SA□-C□□)
- LED blocks (SA□-L□□□)
- Locking handle (SA□-LH)

Assembly / Disassembly

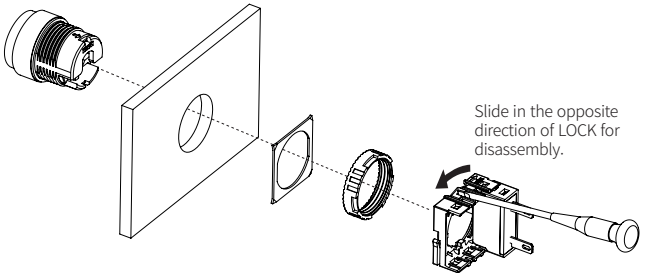
Control Switches	Panel thickness	Tightening torque
Ø 16 mm	Max. 3.5 mm	≤ 0.49 N·m

Assembly

Align the arrow on the control unit with the center of the housing.



Disassembly



Reset

Turn reset	Pull reset

Ordering Information

This is only for reference. For selecting the specified model, follow the Autonics website.

Model is based on control unit+block combination. Control units or blocks are sold separately. In case of block, refer to control switch accessories.

■ Non-illuminated

S16	①	-	②	③	④	⑤
			Control unit			Block

① Switch type

ER: Round emergency switch (extended)

④ Color

R: Red

② Operation

E: Push-lock, Turn / Pull-reset

⑤ Contact block

B: 1 B contact

2B: 2 B contacts

③ Illuminated

1: Non-illuminated

■ Illuminated

S16	①	-	②	③	④	⑤	⑥
			Control unit			Block	

① Switch type

ER: Round emergency switch (extended)

④ Color

R: Red

② Operation

E: Push-lock, Turn / Pull-reset

⑤ Contact block

B: 1 B contact

2B: 2 B contacts

③ Illuminated

3: Illuminated

⑥ LED block

5: 5 VDC

12: 12 VDC

24: 24 VDC

Model	Contact block	LED block
	B contact	DC voltage
S16ER-E1RB	1	
S16ER-E1R2B	2	

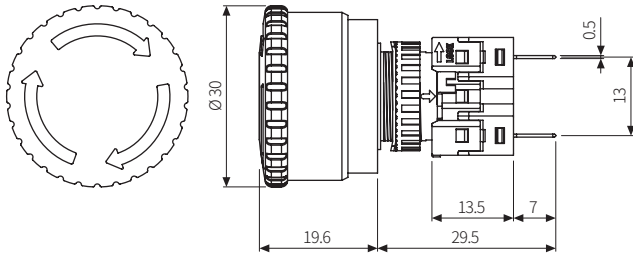
Model	Contact block	LED block
	B contact	DC voltage
S16ER-E3RB5	1	1 (5 VDC=)
S16ER-E3RB12		1 (12 VDC=)
S16ER-E3RB24		1 (24 VDC=)
S16ER-E3R2B5		1 (5 VDC=)
S16ER-E3R2B12	2	1 (12 VDC=)
S16ER-E3R2B24		1 (24 VDC=)

Dimensions

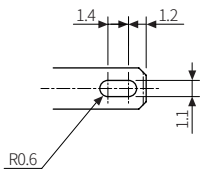
• Unit: mm, For the detailed drawings, follow the Autonics website.

• Panel thickness: ≤ 3.5 mm

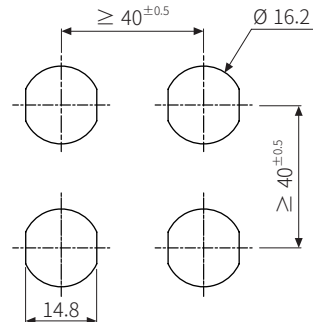
■ S16ER-□



■ Terminal pin



■ Panel cut-out



Ø 16 mm Control Switches Accessories

Contact Blocks (SA16-C□□)

Model	Contact	Applied switches	Appearance
SA16-CC	C contact (normally open, normally closed)	Ø 16 mm control switches (except Ø 16 mm emergency switches)	
SA16-CB	B contact (normally closed)	Ø 16 mm emergency switches	

Power supply/current	250 VAC~ / 3 A
Dielectric strength	Between the charging part and the case : 3,000 VAC~ 50/60 Hz for 1 minute
Insulation resistance	≥ 100 MΩ (500 VDC~ megger)
Contact resistance	≤ 50 mΩ (initial)
Electrical life cycle	≥ 100,000 operations (20 operations/min)
Contact material	AgNi10
Terminal tensile force	≤ 30 N
Terminal soldering time	At the end of tips within 3 sec with 350 °C (30 W-soldering machine)
Certification	CE UK ENEC EAC 
Weight	≈ 1.6 g

■ Removal

Separate the unit using a flat-head (-) screwdriver.



LED Blocks (SA16-L□□)

Model	Power supply	Applied switches	Appearance
SA16-L5□	5 VDC~	Ø 16 mm control switches for illuminated type, pilot lights	
SA16-L12□	12 VDC~		
SA16-L24□	24 VDC~		

□ : Color (R: Red / B: Blue / G: Green / Y: Yellow / W: White)

Rated voltage	5 / 12 / 24 VDC~ model
Current consumption	Refer to the below Current consumption table.
Certification	CE UK ENEC EAC 
Weight	≈ 1.9 g

■ Current consumption

LED color	Red	Blue	Green	Yellow	White
Rated voltage					
5 VDC~	6 to 9 mA	10 to 14 mA	5 to 7 mA	12 to 16 mA	10 to 14 mA
12 VDC~	9 to 14 mA	10 to 15 mA	5 to 9 mA	10 to 16 mA	9 to 14 mA
24 VDC~	15 to 20 mA	20 to 26 mA	16 to 22 mA	27 to 35 mA	23 to 30 mA

■ Removal

Separate the unit using a flat-head (-) screwdriver. Same as contact removal method.

Locking Handle (SA□-LH)

• For locking switch nuts behind the panels.

Model	Applied switches	Appearance
SA16-LH	Ø 16 mm Control switches, Pilot lights	