Ø16 mm

Mushroom-Head

Push Button Switches

# **Autonics**

#### Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.

- A symbol indicates caution due to special circumstances in which hazards may occur.
- **Warning** Failure to follow instructions may result in serious injury or death.

**Safety Considerations** 

- 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 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.

# S16BR Series CATALOGPRODUCT 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

### **Features**

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

improvement. Some models may be discontinued without notice.

# Specifications

Series	S16BR Series
Actuation distance	3 mm
Actuation force	0.2 to 0.35 kgf (2 to 3.5 N)
Installation	Extended
Shock	500 m/s <sup>2</sup> ( $\approx$ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s² ( $\approx 10$ G) in each X, Y, Z direction for 3 times
Vibration	$1.5~\rm{mm}$ double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 2 hours
Vibration (malfunction)	$1.5 \mbox{ mm}$ double amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 10 minutes
Mechanical life cycle (control unit life cycle)	$\geq$ 1 million 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	C E <sup>01)</sup> کلا او <b>ای او </b>
Control unit weight	≈ 4.1 g
Housing weight	$\approx$ 1.4 g

01) IEC-60947-5-1

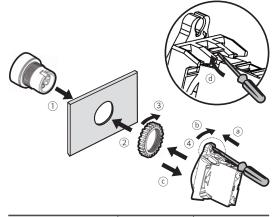
Contact blocks					
Power supply / current	$250 \text{ VAC} \sim$	250 VAC~/3 A			
Dielectric strength		Between the charging part and the case $:3,000 \text{ VAC} \sim 50/60 \text{ Hz}$ for 1 minute			
Insulation resistance	$\geq$ 100 M $\Omega$	$\geq$ 100 M $\Omega$ (500 VDC== megger)			
Contact resistance	$\leq$ 50 m $\Omega$	$\leq$ 50 m $\Omega$ (initial)			
Electrical life cycle	≥ 100,000	operations (20	0 operations/n	nin)	
Contact material	AgNi10	AgNi10			
Terminal tensile force	$\leq$ 30 N	$\leq$ 30 N			
Terminal soldering time	At the end	At the end of tips within 3 sec with 350 °C (30 W-soldering machine)			
Certification	C E F 🕅 🖓	C€ \K & \$ <b>?\$1</b> \$\$ EH < \$\$			
Weight	$\approx 1.6  \mathrm{g}$	≈ 1.6 g			
LED blocks	LED blocks				
Rated voltage	5/12/24	5 / 12 / 24 VDC== model			
Current consumption	Refer to th	Refer to the below Current consumption table.			
Certification	CE 5. S	C € ĽK ° <b>AD</b> °° EUI			
Weight	≈ 1.9 g	≈ 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

- Assembly order: ①→②→③→④
  Disassembly order: ③→ⓑ→ⓒ→ⓓ



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

# 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 <b>0</b>	-	0	8	4	6
	Contro	ol unit			Block
<b>O Switch type</b> BR: Round mushroom- switch (extended)	head push b	<b>4 Co</b> utton R: Re G: Gr	ed		
<b>2 Head size</b> H: Ø 23.5 mm		Contact block     C: 1 C contact     2C: 2 C contacts     3C: 3 C contacts			
Illuminated <ol> <li>Non-illuminated</li> </ol>					

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Control unit

BR: Round mushroom-head push button R: Red

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Color

G: Green

G Contact block

C: 1 C contact 2C: 2 C contacts

**G LED block** 5: 5 VDC==

12: 12 VDC== 24: 24 VDC== 4

6

Block

6

Model	Contact block	LED block
Model	C contact	DC voltage
S16BR-H1□C	1	
S16BR-H1 2C	2	-
S16BR-H1□3C	3	

Model	Contact block	LED block
model	C contact	DC voltage
S16BR-H3□C5		1 (5 VDC==)
S16BR-H3□C12	1	1 (12 VDC==)
S16BR-H3 C24		1 (24 VDC==)
S16BR-H3□2C5		1 (5 VDC==)
S16BR-H32C12	2	1 (12 VDC==)
S16BR-H32C24		1 (24 VDC==)

#### Dimensions

Illuminated

Switch type

switch (extended)

Head size

H: Ø 23.5 mm

Illuminated

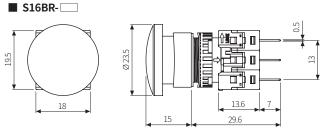
3: Illuminated

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**S16** 

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

- Panel thickness:  $\leq$  3.5 mm



#### Terminal pin

