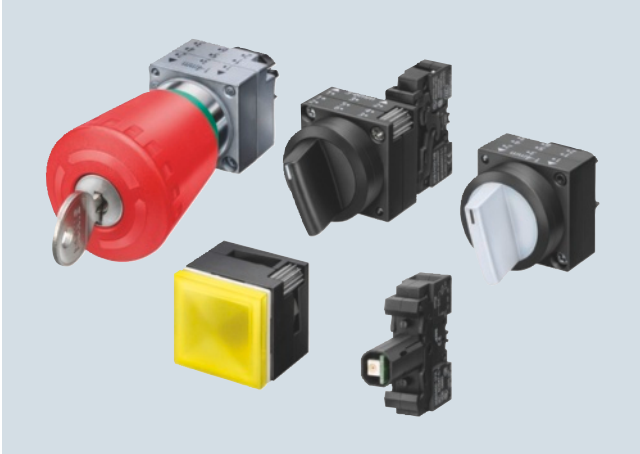


# 3SB3 Pushbuttons and Indicator Lights, 22 mm

## General data

### Design

The 3SB3 series is a modular range of commanding and signaling devices for front plate mounting and rear conductor connection. As an alternative, individual elements can also be supplied for use on printed circuit boards. Complete units are offered for the most commonly used applications.



Actuators and indicators and complete units

The 3SB3 series is available:

- Made of molded plastic in flat, round and square design
- Made of metal in round design

The devices are of modern industrial design and can be mounted rapidly by a single person. The operating surfaces of the pushbuttons and illuminated pushbuttons are concave. The lenses of the indicator lights are convex.

The metal version with a high degree of protection according to IP67 and NEMA 4 is available for the world market.

One command point comprises:

- An actuator or lens assembly in front of the control panel
- A holder for mounting behind the control panel
- Up to 3 contact blocks and/or 1 lampholder behind the control panel
- A comprehensive range of accessories for inscription

### Mounting of the contact blocks

Two contact blocks can be snapped onto the actuator in the standard version.

When three contact blocks or illuminated actuators are required, an additional holder must be plugged onto the actuator from the rear.

- 3SB3901-0AB holder for 3 contact blocks or for 2 contact blocks and 1 lampholder
- 3SB3901-0AC holder with pressure plates for actuating a central contact block when using a selector switch, key-operated switch and twin pushbutton with 3 contact blocks

For illuminated pushbuttons, illuminated switches and illuminated selector switches the holder is included in the scope of supply as standard.

### Contact blocks

The contact blocks are fitted with slow-action contacts (NO contact or NC contact) with double operating contacts. These ensure a high switching reliability even with small voltages and currents, such as 5 V/1 mA. They are suitable for use in electronic systems as well as conventional controls.

### Standards

IEC 60947-1, EN 60947-1,  
IEC 60947-5-1, EN 60947-5-1,  
IEC 60947-5-5, EN 60947-5-5  
for EMERGENCY-STOP mushroom pushbuttons

### Connection methods

The devices are available with screw terminals (box terminals), spring-type terminals or solder pins.



Screw terminals



Spring-type terminals



Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

### Support function

The 3SB3 pushbuttons and indicator lights can also be ordered via an online configurator.



Configurator available in the Industry Mall

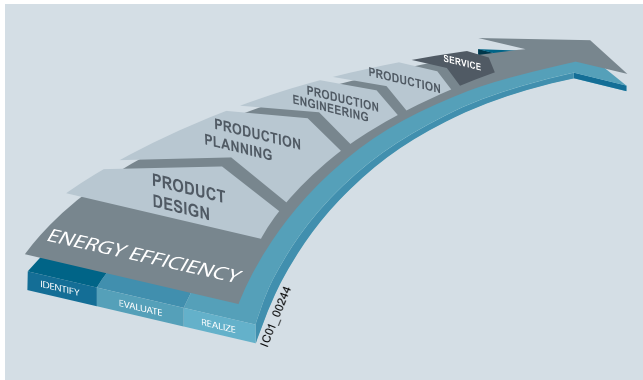
The online configurator is indicated in the corresponding tables by the symbol shown on an orange background.

# 3SB3 Pushbuttons and Indicator Lights, 22 mm

## General data

### Benefits

#### Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see [www.siemens.com/sirius/energysaving](http://www.siemens.com/sirius/energysaving)).

3SB3 pushbuttons and indicator lights contribute to energy efficiency throughout the plant as follows:

- Lower power consumption by means of LED technology
- Long service life

### Application

#### Environmental conditions

The devices are climate-proof (KTW 24) and suitable for standard industrial applications and operation in marine applications. For operation in oily atmospheres (organic oils/lubricants) we recommend actuators which are marked as "solvent-resistant".

#### AS-Interface solutions

The 3SB3 commanding and signaling devices can be connected to the AS-Interface communication system quickly and safely with the help of various solutions.

The following solutions are available:

- ASIsafe EMERGENCY-STOP mushroom pushbuttons (see page 13/69)
- AS-Interface enclosures with 1 to 6 command points (see page 13/98)
- AS-Interface front panel modules for 4 command points (see Catalog IK PI, "SIMATIC NET Industrial Communication")


#### "Intrinsic safety" type of protection EEx i according to ATEX directive 94/9/EC

The pushbuttons and indicator lights in round design can also be used in hazardous areas. The 3SB34...-0. contact blocks and the 3SB34...-1A lampholders (with 3SB3901-1.A LED lamp) with screw terminals or spring-type terminals can be used.

#### Safety EMERGENCY-STOP pushbuttons according to ISO 13850




For controls according to IEC 60204-1 or EN 60204-1, the mushroom pushbuttons of the 3SB3 series are suitable for use as safety EMERGENCY-STOP pushbuttons.

#### Safety circuits

The IEC 60947-5-1 and EN 60947-5-1 standards require positive opening, i.e. for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to IEC 60947-5-1 with the symbol .

Category 4 according to EN ISO 13849-1 can be attained with the EMERGENCY-STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK11 safety relays, the 3RK3 Modular Safety System (see Chapter 11, "Safety Technology") or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

## Technical specifications

Type	3SB3400-0, 3SB3420-0	3SB1400-0J	3SB3400-1, 3SB3420-1	3SB3403-0, 3SB3423-0	3SB3403-1, 3SB3423-1	3SB3411-0	3SB3411-1
<b>Contact blocks and lampholders</b>							
<b>Standards</b>	IEC 60947-5-1, IEC 60947-5-5, EN 60947-5-1, EN 60947-5-5						
<b>Connection type</b>	 Screw terminals			 Spring-type terminals		 Solder pins	
<b>Rated insulation voltage <math>U_i</math></b> For pollution degree according to IEC 60947-1	V	400 Class 3	250 Class 3	400 Class 3		250 Class 3	60 Class 3
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	kV	4	4	4	4	4	1.5
<b>Conventional thermal current <math>I_{th}</math></b>	A	10	--	10	--	10	--
<b>Rated operational current <math>I_e</math> at rated operational voltage <math>U_e</math></b>							
• Alternating current 50/60 Hz, AC-12							
- At $U_e = 24 \dots 230$ V	A	10	--	10	--	10	--
- At $U_e = 400$ V	A	10	--	10	--	--	--
• Alternating current 50/60 Hz, AC-15							
- At $U_e = 24 \dots 230$ V	A	6	6	--	6	--	4
- At $U_e = 400$ V	A	3	4	--	3	--	--
• Direct current DC-12							
- At $U_e = 24$ V	A	10	10	--	10	--	10
- At $U_e = 48$ V	A	5	--	--	5	--	5
- At $U_e = 110$ V	A	2.5	2	--	2.5	--	2.5
- At $U_e = 230$ V	A	1	0.5	--	1	--	1
• Direct current DC-13							
- At $U_e = 24$ V	A	3	5	--	3	--	3
- At $U_e = 48$ V	A	1.5	--	--	1.5	--	1.5
- At $U_e = 110$ V	A	0.7	0.5	--	0.7	--	0.7
- At $U_e = 230$ V	A	0.3	0.2	--	0.3	--	0.3
<b>Contact stability</b>							
• Test voltage	V	5	--	5	--	5	--
• Test current	mA	1	--	1	--	1	--
<b>Lampholders</b>	--	--	BA 9s	--	BA 9s	--	Wedge bases
<b>Lamps</b>	--	--	Incandescent lamps, glow lamps and LED lamps	--	Incandescent lamps, glow lamps and LED lamps	--	Incandescent lamps and LED lamps
<b>Short-circuit protection, weld-free, acc. to IEC 60947-5-1</b>							
• DIAZED fuse links, utilization category gG according to IEC 60269-3-1		Dz10 A					
• DIAZED fuse links, quick according to DIN VDE 0635		Dz 16 A					
• Miniature circuit breaker with C characteristic according to IEC 60898	A	10					
<b>Mechanical endurance</b>		10 x 10 <sup>6</sup> operating cycles					
<b>Electrical endurance</b>		10 x 10 <sup>6</sup> operating cycles					
• For utilization category AC-15 with 3RT2015 to 3RT2026 contactors		10 x 10 <sup>6</sup> operating cycles					
• With utilization category DC-12, DC-13		With direct current it depends on the operational voltage, the breaking current, the circuit inductance and the switching frequency					
<b>Switching frequency</b>	1/h	1 000 operating cycles					
<b>Degree of protection acc. to IEC 60529</b>							
• Connections		IP20		IP40	--	IP40	--
• Contact chambers		IP40	--	--	--	--	--
<b>Touch protection</b> according to EN 50274 and BGV A3		Finger-safe		Finger-safe		--	
<b>Conductor cross-sections<sup>1)</sup></b>							
• Finely stranded, without end sleeves	mm <sup>2</sup>	--		2 x (0.25 ... 1.5)		--	
• Finely stranded, with end sleeves to DIN 46228	mm <sup>2</sup>	2 x (0.5 ... 1.5)		2 x (0.25 ... 0.75)		--	
• Solid	mm <sup>2</sup>	2 x (1 ... 1.5)		2 x (0.25 ... 1.5)		--	
• Solid with end sleeves to DIN 46228	mm <sup>2</sup>	2 x (0.5 ... 0.75)		--		--	
• AWG cables, solid or stranded		2 x AWG 18 ... 14		2 x AWG 24 ... 16		--	
<b>Tightening torque, terminal screw</b>	Nm	0.8		--		--	
<b>Solder pins</b>	mm <sup>2</sup>	--		--		0.8 x 0.8	

1) For standard screwdriver size 2 or Pozidriv 2.

# 3SB3 Pushbuttons and Indicator Lights, 22 mm

## General data

Type	3SB3400-0, 3SB3420-0	3SB3400-1, 3SB3420-1	3SB3403-0, 3SB3423-0	3SB3403-1, 3SB3423-1	3SB3411-0	3SB3411-1
<b>Data according to UL and CSA</b>						
<b>Rated operational voltage</b>	V AC 300	--	300	--	300	--
<b>Conventional thermal current (uninterrupted current)</b>	A 10	--	10	--	10	--
<b>Switching capacity</b>	A 300, R 300, A 600 same polarity					
<b>Rated voltage (lamps)</b>						
• Lamp with BA 9s base	V AC --	125	--	125	--	--
• Lamp with wedge base	V AC --	60	--	60	--	60
• Lampholders with integrated LED	V --	24 AC/DC, 110 AC, 230 AC	--	24 AC/DC, 110 AC, 230 AC	--	--
<b>Rated power (lamps)</b>	W --	2.5	--	2.5	--	1

Type	3SB30, 3SB32	3SB31, 3SB33	3SB35, 3SB36
<b>Actuators and indicators</b>			
<b>Enclosure material</b>	Plastic		Metal
<b>Design</b>	Round	Square	Round
<b>Terminal designation</b> acc. to EN 50013	Identification number on the holder, function digit on the contact block		
<b>Device identification</b>	Snap-on label		
<b>Tightening torques</b>			
• Screw on holder	Nm	Max. 1	
<b>Mechanical endurance</b>			
• Pushbuttons		10 x 10 <sup>6</sup> operating cycles	
• Illuminated pushbuttons		3 x 10 <sup>6</sup> operating cycles	
• Actuators, rotary or latching		3 x 10 <sup>5</sup> operating cycles	
• Key-operated switch with key monitoring		1 x 10 <sup>5</sup> operating cycles	
<b>Switching frequency</b>	1/h	1 000 operating cycles	
<b>Climatic withstand capability</b> acc. to EN ISO 6270-2	Climate-proof KTW24; suitable for marine applications		
<b>Ambient temperature</b>			
• During operation, non-illuminated and with LED	°C	-25 ... +70	
• During operation, devices with incandescent lamp	°C	-25 ... +60	
• During storage, transport	°C	-40 ... +80	
<b>Degree of protection</b> acc. to IEC 60529			
• Actuators and indicators, standard	IP66	IP65	IP67 and NEMA Type 4
- with protective caps	IP67	IP67	--
• Key-operated switch with key monitoring	IP54	--	--
• Twin pushbuttons (3SB31)	IP65	--	--
<b>Protective measures</b>	When mounted on metal front plates and enclosures, the actuators and lens assemblies are not to be included in the protective measures.		Grounding with grounding screw is necessary for operation with protective extra-low voltage (PELV).
	When mounted in insulated enclosures, the "total insulation" protective measures are met.		
<b>Shock resistance</b> according to IEC 60068-2-27 For half-sine shock type, 11 ms shock duration			
• Devices without incandescent lamp		≤ 50 g	
• Devices with incandescent lamp		≤ 30 g	
<b>Vibration resistance</b> acc. to IEC 60068-2-6			
• Acceleration at frequency 20 ... 200 Hz		5 g	

Type	3SB38 0.-0, 3SB380.-1	--	3SB380.-2, 3SB380.-3
<b>Enclosures</b>			
<b>Enclosure material</b>	Plastic		Metal
<b>Actuators and indicators</b>	Plastic, round		Metal, round
<b>Degree of protection</b> acc. to IEC 60529	IP65		IP67 and NEMA Type 4
<b>Resistance to extreme climates</b> acc. to DIN 50017	KTW 24		KTW 24

# 3SB3 Pushbuttons and Indicator Lights, 22 mm

## General data

### Configuration

#### Mounting and fixing

The 3SB3 devices can be easily and quickly mounted:

- Actuators or indicator lights are positioned in the opening of the front plate from the front
- Position the holder from the rear
- Tighten the screw on the holder
- Snap on the contact block or the lampholder directly onto the actuator from the back

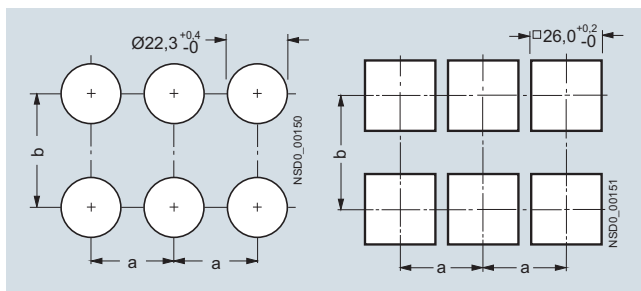
The holder for the round versions is set to a switchboard thickness of 1 to 4 mm when delivered and is placed in the direction of the arrow  $\uparrow$  1–4  $\uparrow$  mm on the actuator/indicator from the back. The fixing screw is located underneath, on the right.

For a switchboard thickness of 3 to 6 mm, the holder is reversed and mounted in the direction of the arrow at  $\uparrow$  3–6 mm  $\uparrow$  and the fixing screw is located on the upper right. In this case, the fixing screw must be rotated anticlockwise to its limit before mounting the holder.

The control panel depth of 1 to 4 mm can be compensated with the holder for the square version.

When label holders, protective caps or similar accessories are used, the greatest permissible control panel thickness must be reduced by the wall thickness of the accessory part.

#### Mounting dimensions on front plates

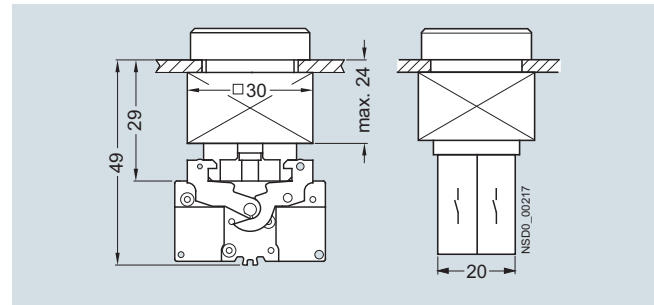


Minimum clearance	a	b
Contact blocks (1 contact) and lampholder		
• For front plate mounting, with screw terminals	30 <sup>1)</sup>	45
• For front plate mounting with spring-type terminals	30 <sup>1)</sup>	30 <sup>1)</sup>
• For use on PCB, with solder pin connections	30 <sup>1)</sup>	30 <sup>1)</sup>
Contact blocks with 2 contacts		
• For front plate mounting	30 <sup>1)</sup>	50
When using holders for inscription labels		
• 12.5 mm x 27 mm	30 <sup>1)</sup>	45 <sup>2)</sup>
• 27.0 mm x 27 mm	30 <sup>1)</sup>	60

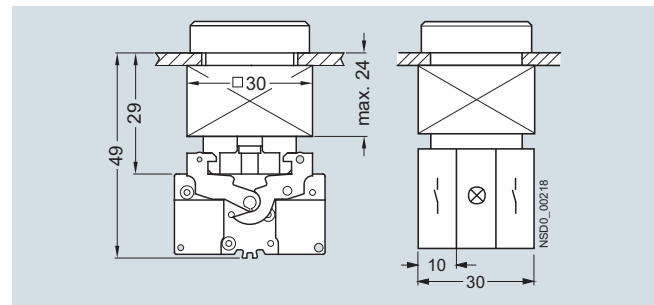
<sup>1)</sup> For mushroom pushbutton, EMERGENCY-STOP and push-pull button:  
Note mushroom diameter  $d = 40$  mm or  $60$  mm.

<sup>2)</sup> 60 mm with contact blocks having two contacts.

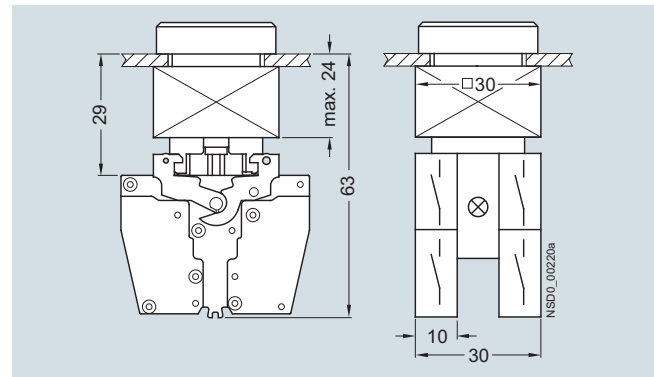
#### Mounting depth



Pushbuttons with two contact blocks

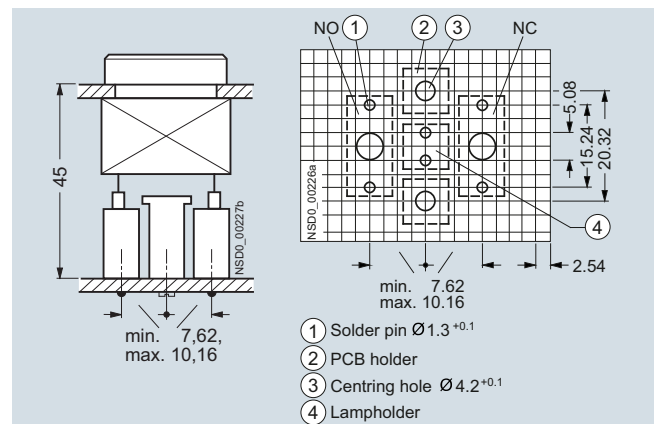


Illuminated pushbuttons with lampholder and two contact blocks



Illuminated pushbuttons with lampholder and two contact blocks with two contacts

#### Mounting on printed circuit boards


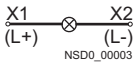

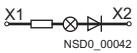
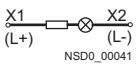

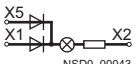
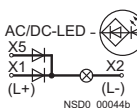
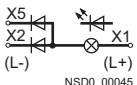
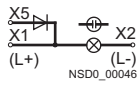

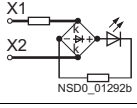
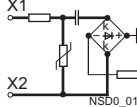
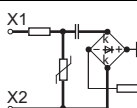




Illuminated pushbutton with solder pins

# 3SB3 Pushbuttons and Indicator Lights, 22 mm

## Components for Actuators and Indicators

### Contact blocks and lampholders

Version	Graphic symbols	Rated voltage	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
		V		Article No.	Price per PU			
<b>Contact blocks for front plate mounting</b>								
 3SB3400-1A	<b>BA 9s lampholders</b> , mounting depth 50 mm							
	Without lamp		Acc. to lamp	▶	<b>3SB3400-1A</b>	1	1 unit	41J
	With 24 V incandescent lamp (3SX1344)		24 AC/DC	B	<b>3SB3400-1D</b>	1	1 unit	41J
	With integrated voltage reducer and with 130 V lamp (3SX1731) <sup>1)2)</sup>		230/240 AC	B	<b>3SB3400-1C</b>	1	1 unit	41J
	With built-in resistor for longer endurance and with 130 V lamp (3SX1731) <sup>1)3)</sup>		110/130 AC/DC	B	<b>3SB3400-1B</b>	1	1 unit	41J
 3SB3400-1F	<b>BA 9s lampholders</b> , mounting depth 66 mm, with separate lamp test function <sup>4)</sup>							
	With integrated voltage reducer and with 130 V lamp (3SX1731) <sup>1)</sup>		230/240 AC	B	<b>3SB3400-1F</b>	1	1 unit	41J
	Without lamp		Acc. to lamp	B	<b>3SB3400-1G</b>	1	1 unit	41J
	For incandescent lamp, max. 2.6 W; for LED lamp, 24/48/230 V AC/DC <sup>5)</sup>							
	Without lamp		Acc. to lamp	B	<b>3SB3400-1L</b>	1	1 unit	41J
	For incandescent lamp, max. 2.6 W; for LED lamp, AC or DC							
	Without lamp		Acc. to lamp	B	<b>3SB3400-1H</b>	1	1 unit	41J
	For incandescent lamp, max. 2.6 W; for glow lamp, AC							
 3SB3400-1PA	<b>Lampholders with integrated LED</b>							
	Mounting depth 50 mm							
	Yellow		24 AC/DC	B	<b>3SB3400-1PA</b>	1	1 unit	41J
	Red		▶	<b>3SB3400-1PB</b>	1	1 unit	41J	
	Green		▶	<b>3SB3400-1PC</b>	1	1 unit	41J	
	Blue		B	<b>3SB3400-1PD</b>	1	1 unit	41J	
	White		▶	<b>3SB3400-1PE</b>	1	1 unit	41J	
	Yellow		110 AC	B	<b>3SB3400-1QA</b>	1	1 unit	41J
	Red		B	<b>3SB3400-1QB</b>	1	1 unit	41J	
	Green		B	<b>3SB3400-1QC</b>	1	1 unit	41J	
Blue	B		<b>3SB3400-1QD</b>	1	1 unit	41J		
White	B		<b>3SB3400-1QE</b>	1	1 unit	41J		
Yellow		230 AC	B	<b>3SB3400-1RA</b>	1	1 unit	41J	
Red		▶	<b>3SB3400-1RB</b>	1	1 unit	41J		
Green		▶	<b>3SB3400-1RC</b>	1	1 unit	41J		
Blue		B	<b>3SB3400-1RD</b>	1	1 unit	41J		
White		▶	<b>3SB3400-1RE</b>	1	1 unit	41J		
 3SB3400-3.	<b>Transformers</b>							
	For snapping onto 3SB3400-1A lampholder		127 / 24 240 / 24 260 / 24	B B D	<b>3SB3400-3A</b> <b>3SB3400-3C</b> <b>3SB3400-3E</b>	1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
	For incandescent lamp AC, max. 2 W		400 / 24	B	<b>3SB3400-3F</b>	1	1 unit	41J
	Mounting depth: 97 mm		127 / 6	B	<b>3SB3400-3M</b>	1	1 unit	41J
			240 / 6	B	<b>3SB3400-3P</b>	1	1 unit	41J
			400 / 6	B	<b>3SB3400-3S</b>	1	1 unit	41J
			480 / 6	B	<b>3SB3400-3U</b>	1	1 unit	41J
			600 / 6	D	<b>3SB3400-3W</b>	1	1 unit	41J

3SB3400-3.

1) The voltage reducer can only be used with this lamp.

2) Also suitable for LED lamp 230 V AC, 3SB3901-1.F

3) Also suitable for LED lamp 130 V AC, 3SB3901-1.D

4) The lampholder with separate lamp test function can not be installed in an enclosure.

5) Not suitable for LED lamps which are suitable only for AC or DC.