



# SCHMERSAL Non-Illuminated 30mm IP65 Plastic Key Selector Switches

**ESS21S1.V****ESS32S1.V**

Non-Illuminated 30mm IP65 Plastic Key Selector Switches*				
Part Number	Price	Color	Drawing Link	Operation
<a href="#"><u>ESS21S1.V</u></a>	\$113.00	Black	<a href="#"><u>PDF</u></a>	2-position, maintained, key removable left position
<a href="#"><u>ESS21S12.V</u></a>	\$113.00	Black	<a href="#"><u>PDF</u></a>	2-position, maintained, key removable left and right position
<a href="#"><u>ESS21S2.V</u></a>	\$113.00	Black	<a href="#"><u>PDF</u></a>	2-position, maintained, key removable right position
<a href="#"><u>ESS32S1.V</u></a>	\$121.00	Black	<a href="#"><u>PDF</u></a>	3- position, maintained, key removable left position
<a href="#"><u>ESS32S123.V</u></a>	\$121.00	Black	<a href="#"><u>PDF</u></a>	3- position, maintained, key removable left, right and center position
<a href="#"><u>ESS32S2.V</u></a>	\$121.00	Black	<a href="#"><u>PDF</u></a>	3-position, maintained, key removable center position
<a href="#"><u>ESS32S3.V</u></a>	\$121.00	Black	<a href="#"><u>PDF</u></a>	3-position, maintained, key removable right position

\*Operator only. Purchase contact blocks separately.

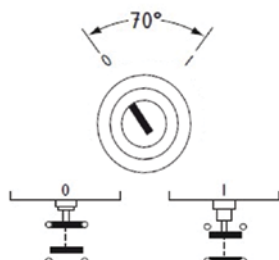
30mm IP65 Selector Switches Specifications	
<b>Toggle material</b>	Aluminum
<b>Front ring material</b>	Aluminum
<b>Front panel thickness</b>	1 to 6 mm
<b>Mechanical operations</b>	300,000
<b>Mounting screws tightening torque</b>	0.6 N·m [0.44 lb·ft]
<b>Ambient temperature</b>	-25 to +75°C [-13 to +167°F]
<b>Shock resistance</b>	< 50g
<b>Vibration resistance</b>	5g
<b>Ingress protection rating</b>	IP65
<b>Standards *</b>	IEC 60947-5-1; IEC 60947-1; UL File E57648

\* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

# **SCHMERSAL** Non-Illuminated 30mm IP65 Plastic Key Selector Switches

## Key Selector Switches with 2-Positions

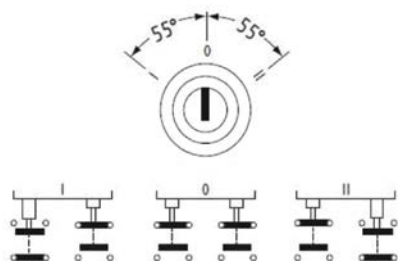
ESS21.V



Contact Blocks							
		Mounting Position 1		Mounting Position 3		Mounting Position 2	
Left (0)	Right (1)	N.C. Contact	N.O. Contact	N.C. Contact	N.O. Contact	N.C. Contact	N.O. Contact
X		1	0	1	0	1	0
	X	0	1	0	1	0	1

## Key Selector Switches with 3-Positions

ESS32.V

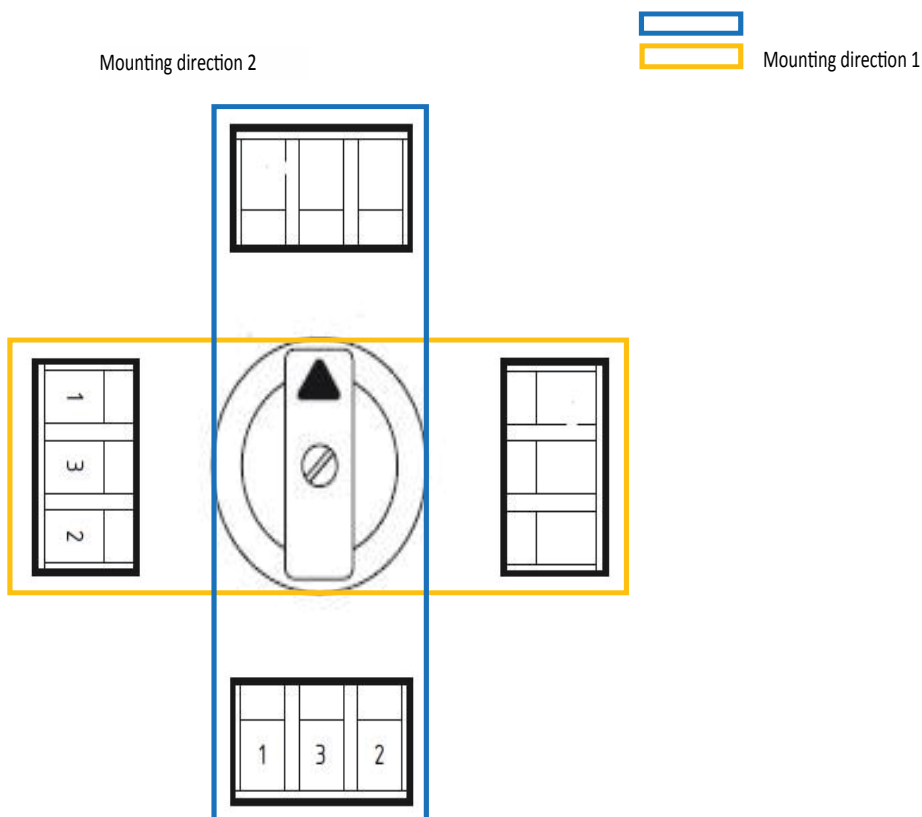


Contact Blocks							
			Mounting Position 1		Mounting Position 3	Mounting Position 2	
Left (1)	Middle (0)	Right (11)	N.C. Contact	N.O. Contact	Free	N.C. Contact	N.O. Contact
X			0	1		1	0
	X		1	0		1	0
		X	1	0		0	1

# SCHMERSAL Selector Switches

Important: The mounting flange can be mounted in 4 directions. Please have a look on the position of the mounting flange. Only in the two shown directions the truth table is right.

*Note: Only on one side are the numbers for the mounting position of the contact blocks.*

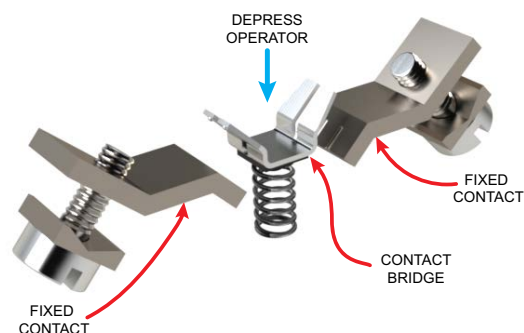
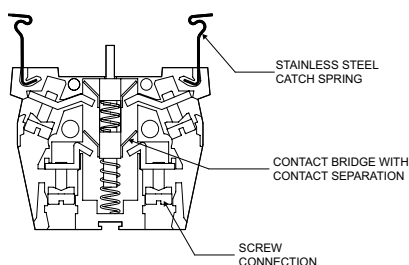



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# Contact Blocks and Light Terminal Blocks Overview

## Features

- A self-cleaning contact bridge system, known as Elan four-way system, which is particularly suitable for low voltage applications and has a lower switching capacity of 5VDC/3.2 mA (max. 400VAC/8A). It is designed in the form of a bent twin contact bridge, with parallel and also diagonal operation.
- Block mounting via snap-on stainless steel springs.
- Complete terminal designations visible at a glance in compliance with IEC 60 947-1 (VDE 0660, Part 100) with a complete function and sequence number (refer also to product ranges). The function number identifies the N.C. and N.O. contact. The sequence number specifies the number and the order of the contacts on the complete switching device.
- N.C. contacts with positive opening in compliance with IEC 60 947-5-1 (VDE 0660 Part 200).
- Galvanically isolated contact circuits in 2-pole blocks.
- High resistance to shock and vibrations.



## Technical Specifications

	Contact Blocks	Light Blocks (ELE)	Light Blocks (ELDE)
<b>General description</b>	Contact element	Light terminal block w/Ba9S base	Light terminal block w/LED
<b>Enclosure material</b>	Plastic, glass fiber reinforced	Plastic, glass fiber reinforced	Plastic, glass fiber reinforced
<b>Contact material</b>	Fine-silver, phosphor bronze or brass carrier	–	–
<b>Utilization category</b>	AC-15: 250 V / 8 A DC-13: 24 V / 5 A	–	–
<b>Suitability for low voltages</b>	≥ 5VDC / 3.2 mA	–	–
<b>Rated insulation voltage <math>U_i</math></b>	400V	440V	440V
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	4kV	–	–
<b>Thermal test current <math>I_{the}</math></b>	10A	–	–
<b>Max. fuse rating</b>	10A gG D-fuse slow blow	10A gG T-slow blow	10A gG T-slow blow
<b>Wire size</b>	0.5 mm <sup>2</sup> to 2.5 mm <sup>2</sup> (20 - 14 AWG)		
<b>Tightening torque wire connection</b>	Maximum 1 N·m (0.74 lb·ft)		
<b>NEMA contact rating</b>	A300 / P300	–	–
<b>Switching frequency</b>	1200 s/h	–	–
<b>Switching capacity</b>	5VDC / 3.2 mA (max 400VAC / 8A)	–	–
<b>Mechanical life</b>	10,000,000 operation	–	–
<b>Resistance to shock</b>	110 g/4ms to 30 g/18ms no bouncing	–	–
<b>Resistance to vibration</b>	> 20 g/10ms to 200Hz	–	–
<b>Ambient temperature</b>	-25 to +80°C [-13 to +176°F]		
<b>Ingress protection rating</b>	IP20 terminals / IP40 switching compartment	IP20 terminals	IP20 terminals
<b>Standards</b>	IEC 60947-5-1; IEC 60947-1; UL File E57648		

## NEMA Contact Rating Designation

	Thermal Current	Voltage	Volt amperes
<b>A300</b>	10	300 AC	N/A
<b>P300</b>	5	300 DC	138



# SCHMERSAL Contact Blocks



**EF03.2**



**EF10.1**



**EF103.2**



**EF220.2**



**EF303.2**



**EFM**

Contact Blocks								
Part Number	Price	Qty.	Drawing Link	Contacts	Mounting Position	Travel Diagram (mm)	Wiring Diagram	Application
<a href="#">EF10.1*</a>	\$10.00	1	<a href="#">PDF</a>	1 N.C.	1			Standard
<a href="#">EF10.2*</a>	\$10.00	1	<a href="#">PDF</a>		2			
<a href="#">EF10.3*</a>	\$10.00	1	<a href="#">PDF</a>		3			
<a href="#">EF03.1</a>	\$10.00	1	<a href="#">PDF</a>	1 N.O.	1			
<a href="#">EF03.2</a>	\$10.00	1	<a href="#">PDF</a>		2			
<a href="#">EF03.3</a>	\$10.00	1	<a href="#">PDF</a>		3			
<a href="#">EF110.1*</a>	\$15.50	1	<a href="#">PDF</a>	2 N.C.	1			
<a href="#">EF110.2*</a>	\$16.00	1	<a href="#">PDF</a>		2			
<a href="#">EF110.3*</a>	\$16.00	1	<a href="#">PDF</a>		3			
<a href="#">EF033.1</a>	\$16.00	1	<a href="#">PDF</a>	2 N.O.	1			
<a href="#">EF033.2</a>	\$16.00	1	<a href="#">PDF</a>		2			
<a href="#">EF033.3</a>	\$16.00	1	<a href="#">PDF</a>		3			
<a href="#">EF103.1*</a>	\$12.50	1	<a href="#">PDF</a>	1 N.C. / 1 N.O.	1			
<a href="#">EF103.2*</a>	\$12.50	1	<a href="#">PDF</a>		2			
<a href="#">EF103.3*</a>	\$12.50	1	<a href="#">PDF</a>		3			
<a href="#">EF220.1**</a>	\$16.00	1	<a href="#">PDF</a>	2 N.C.	1			Emergency Stop
<a href="#">EF220.2**</a>	\$16.00	1	<a href="#">PDF</a>		2			
<a href="#">EF220.3**</a>	\$16.00	1	<a href="#">PDF</a>		3			
<a href="#">EF303.1**</a>	\$12.50	1	<a href="#">PDF</a>	1 N.C. / 1 N.O.	1			
<a href="#">EF303.2**</a>	\$12.50	1	<a href="#">PDF</a>		2			
<a href="#">EF303.3**</a>	\$12.50	1	<a href="#">PDF</a>		3			

\*Not suitable for Emergency Stop devices

\*\*Not suitable for maintained selector switches NWS/NWT

## Travel Diagram Legend

= contact closed

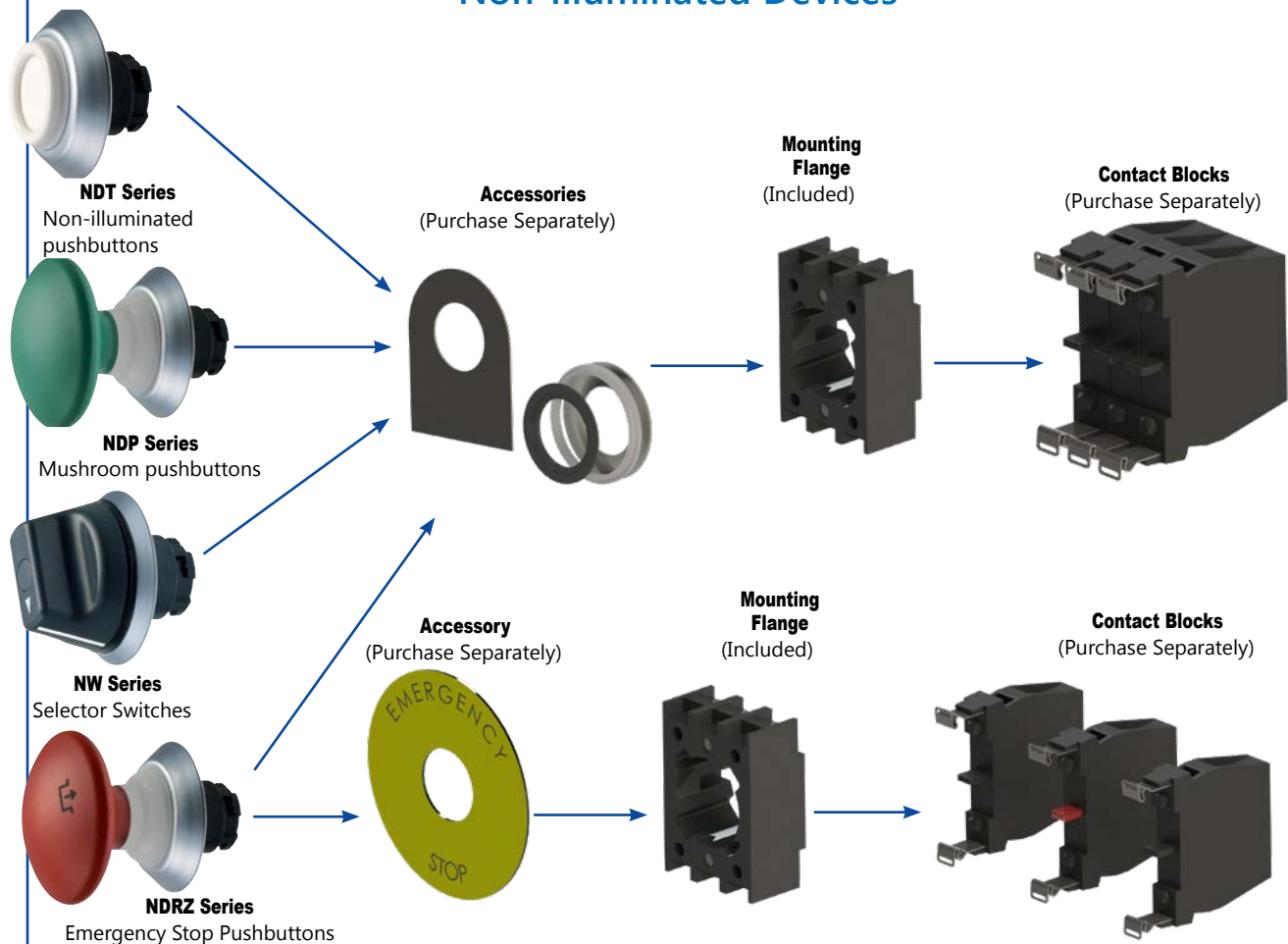
= contact open

Numbers indicate distance in mm

Mounting Flange			
Part Number	Price	Description	Drawing Link
<a href="#">EFM</a>	\$5.50	Schmersal mounting flange, replacement. For use with E and N series pushbuttons.	<a href="#">PDF</a>

# SCHMERSAL Modular Design Flexibility

## Non-Illuminated Devices



## Illuminated Devices

