SCHMERSAL Non-Illuminated 22mm IP69k Plastic Selector Switches

Black

White

Non-Illuminated 22mm Selector Switches*

Part Number	Price	Color	Drawing Link	Operation
NWS21GR	$24.50	Black	PDF	2-position maintained
NWS21WS	$24.50	White	PDF	
NWT21	$24.50	Black	PDF	2-position, spring return from right
NWT21WS	$24.50	White	PDF	
NWS32	$32.50	Black	PDF	3-position maintained
NWS32WS	$32.50	White	PDF	
NWT32	$32.50	Black	PDF	3-position, spring return to center from right or left
NWT32WS	$32.50	White	PDF	
NWTS32	$32.50	Black	PDF	3-position, spring return to center from right, maintained left
NWTS32WS	$32.50	White	PDF	
NWTS321	$32.50	Black	PDF	3-position, spring return to center from left, maintained right
NWTS321WS	$32.50	White	PDF	

*Operator only. Purchase contact blocks separately.

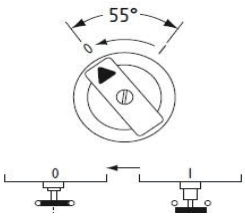
Selector Switches Specifications

Toggle material	ABS
Front ring material	ABS, chrome-plated
Front panel thickness	1.5 to 6 mm
Mechanical operations	300,000
Mounting screws tightening torque	0.6 N·m [0.44 lb·ft]
Ambient temperature	0 to +80°C [32 to +176°F]
Shock resistance	< 50g
Vibration resistance	5g
Ingress protection rating	IP67 and IP69K
Standards *	IEC 60947-5-1; IEC 60947-1; UL File E57648,CE

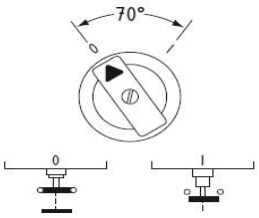
* To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Selector switches with 2-positions

NWT21



NWS21



Contact Blocks

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

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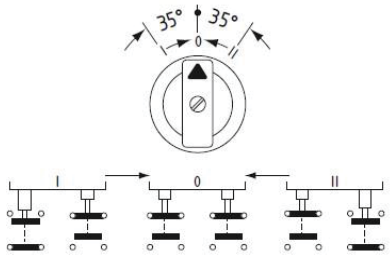
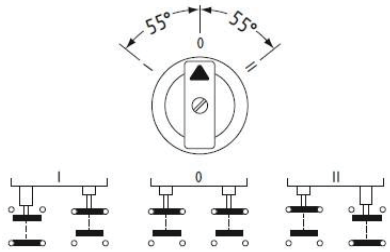
Selector switches with 3-positions

NWT32



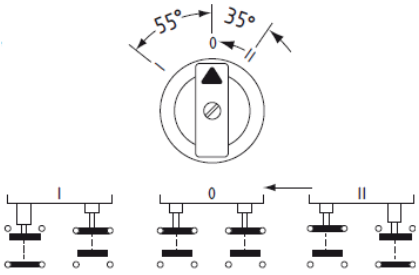
NWS32



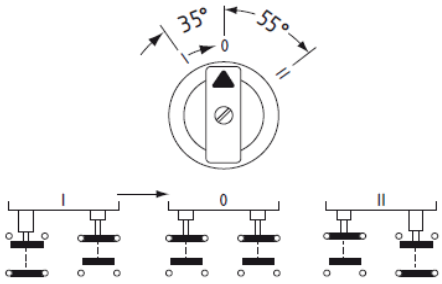
Contact Blocks							
			Mounting Position 1		Mounting Position 3	Mounting Position 2	
Left (1)	Middle (0)	Right (11)	N.C. Contact	N.O. Contact		N.C. Contact	N.O. Contact
X			0	1	Free	1	0
	X		1	0		1	0
		X	1	0		0	1

Selector switches with 3-positions (mix with latching and spring return)

NWTS32



NWTS321

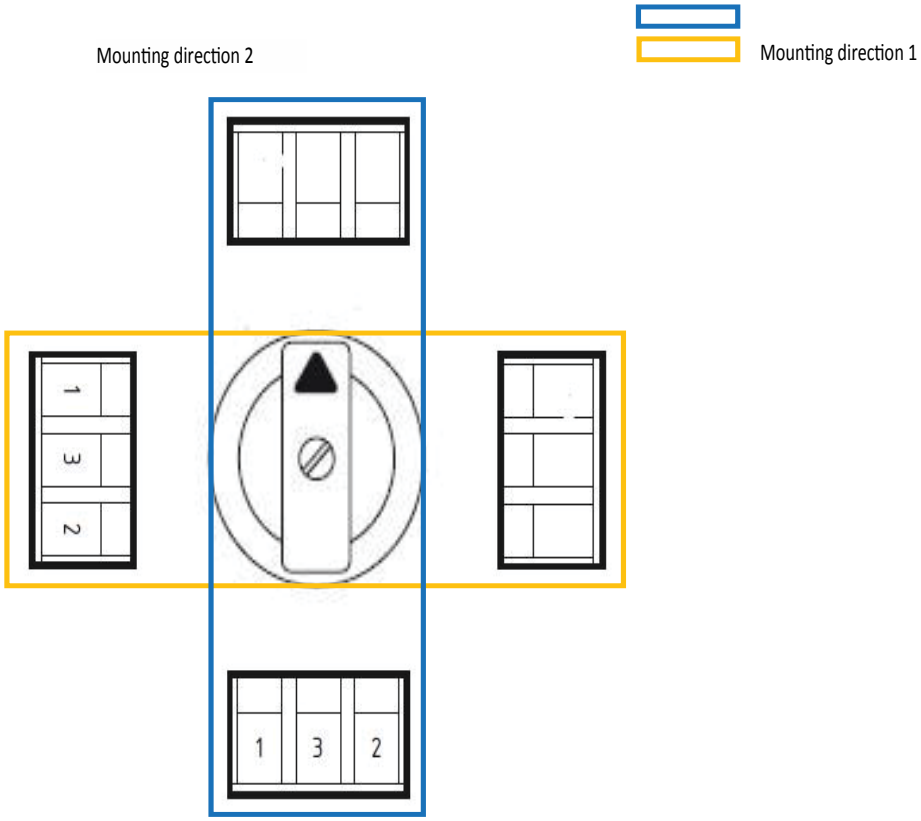


Contact Blocks							
			Mounting Position 1		Mounting Position 3	Mounting Position 2	
Left (1)	Middle (0)	Right (11)	N.C. Contact	N.O. Contact		N.C. Contact	N.O. Contact
X			0	1	Free	1	0
	X		1	0		1	0
		X	1	0		0	1

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.



SCHMERSAL Contact Blocks

EF03.2

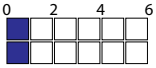
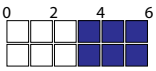
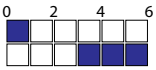
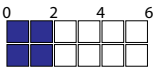
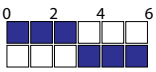
EF10.1

EF103.2

EF220.2

EF303.2

Contact Blocks

Part Number	Price	Qty.	Drawing Link	Contacts	Mounting Position	Travel Diagram (mm)	Wiring Diagram	Application
EF10.1*	$9.25	1	PDF	1 N.C.	1			Standard
EF10.2*	$9.25	1	PDF		2			
EF10.3*	$9.25	1	PDF		3			
EF03.1	$9.25	1	PDF	1 N.O.	1			
EF03.2	$9.25	1	PDF		2			
EF03.3	$9.25	1	PDF		3			
EF110.1*	$14.00	1	PDF	2 N.C.	1			
EF110.2*	$14.50	1	PDF		2			
EF110.3*	$14.50	1	PDF		3			
EF033.1	$14.50	1	PDF	2 N.O.	1			
EF033.2	$14.50	1	PDF		2			
EF033.3	$14.50	1	PDF		3			
EF103.1*	$11.50	1	PDF	1 N.C. / 1 N.O.	1			
EF103.2*	$11.50	1	PDF		2			
EF103.3*	$11.50	1	PDF		3			
EF220.1**	$14.50	1	PDF	2 N.C.	1			Emergency Stop
EF220.2**	$14.50	1	PDF		2			
EF220.3**	$14.50	1	PDF		3			
EF303.1**	$11.50	1	PDF	1 N.C. / 1 N.O.	1			
EF303.2**	$11.50	1	PDF		2			
EF303.3**	$11.50	1	PDF		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

EFM

Mounting Flange

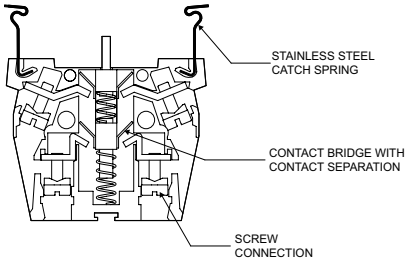
Part Number	Price	Description	Drawing Link
EFM	$5.00	Schmersal mounting flange, replacement. For use with E and N series pushbuttons.	PDF

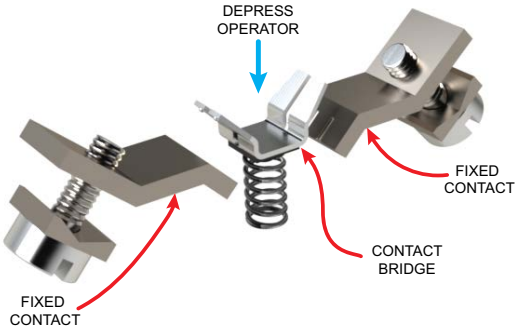
SCHMERSAL

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)
General description	Contact element	Light terminal block w/Ba9S base	Light terminal block w/LED
Enclosure material	Plastic, glass fiber reinforced	Plastic, glass fiber reinforced	Plastic, glass fiber reinforced
Contact material	Fine-silver, phosphor bronze or brass carrier	–	–
Utilization category	AC-15: 250 V / 8 A DC-13: 24 V / 5 A	–	–
Suitability for low voltages	≥ 5VDC / 3.2 mA	–	–
Rated insulation voltage Ui	400V	440V	440V
Rated impulse withstand voltage U_{imp}	4kV	–	–
Thermal test current Ithe	10A	–	–
Max. fuse rating	10A gG D-fuse slow blow	10A gG T-slow blow	10A gG T-slow blow
Wire size	0.5 mm² to 2.5 mm² (20 - 14 AWG)		
Tightening torque wire connection	Maximum 1 N·m (0.74 lb·ft)		
NEMA contact rating	A300 / P300	–	–
Switching frequency	1200 s/h	–	–
Switching capacity	5VDC / 3.2 mA (max 400VAC / 8A)	–	–
Mechanical life	10,000,000 operation	–	–
Resistance to shock	110 g/4ms to 30 g/18ms no bouncing	–	–
Resistance to vibration	> 20 g/10ms to 200Hz	–	–
Ambient temperature	-25 to +80°C [-13 to +176°F]		
Ingress protection rating	IP20 terminals / IP40 switching compartment	IP20 terminals	IP20 terminals
Standards	IEC 60947-5-1; IEC 60947-1; UL File E57648		

NEMA Contact Rating Designation

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

SCHMERSAL Accessories

NB

NDP-70-ES

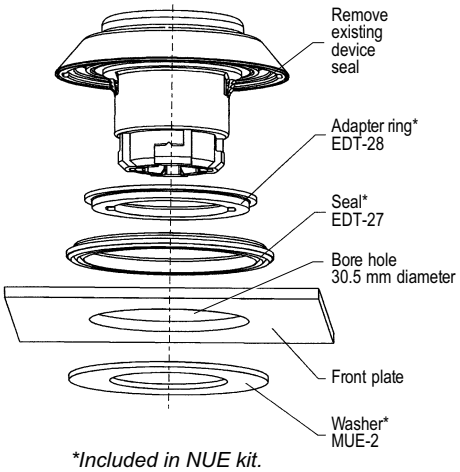
EDT-25-5ST

NZSO-V4A

IP69K Accessories

Part Number	Price	Drawing Link	Description
NB	$11.50	PDF	Schmersal pilot device hole seal, 22mm, silver.
NDP-70-ES	$9.25	N/A	Schmersal legend plate, metal, round, yellow field, yellow background, black engraved text, legend plate marking "Emergency Stop". For use with 22mm pilot devices.
NUE	$6.50	N/A	Schmersal pilot device hole adapter, reduces from 30.5 mm to 22.3 mm. Adapter ring, seal and washer included.
EDT-25-5ST	$6.75	N/A	Schmersal pilot device seal, replacement. Package of 5.
NZSO-V4A	$3.75	N/A	Schmersal legend plate, metal, rectangular, gray field, gray background, legend plate marking "blank". For use with 22mm pilot devices.

NUE



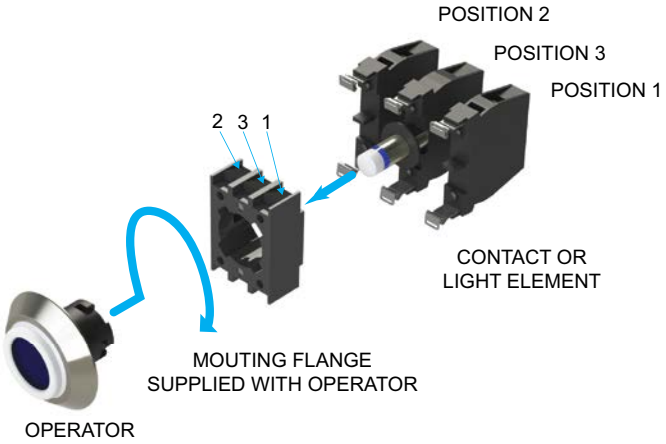
*Included in NUE kit.

SCHMERSAL Control and Signaling Devices 22mm IP69K

Schmersal control and signaling devices have a number of special design features that make the devices suitable for food processing, pharmaceutical, and medical applications. When utilized in food processing machines, these devices comply with the special cleaning requirements of the industry to prevent cross-contamination, particularly when used in machines that process raw goods. With an ingress protection rating of IP69K, Schmersal control and signaling devices are also suitable for marine applications, traffic systems, commercial vehicles, and in dusty and dirty environments.

Features

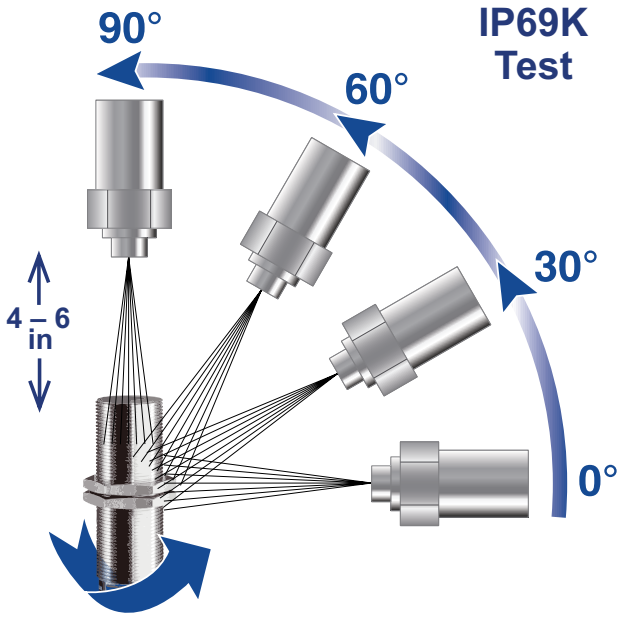
- Special seals prevent product residue from penetrating in the gaps between the fixed and moving device parts, thus preventing the collection of dirt and bacteria in places that are not easily accessible for cleaning.
- Smooth designs make the devices easy to clean.
- Modular contact and light terminal blocks make the devices easy to install.



IP69K Ingress Protection Rating Overview

IP69K high-pressure cleaning test
This rating applies to devices tested in accordance with DIN 40050-9. The goal of this test is to duplicate pressure cleaning conditions on a plant floor. In the test fixture, the devices are exposed to a 1450psi spray of water at a temperature of 175˚F. The duration of each cleaning cycle is 30 seconds. The test is performed at specified angles using a spray nozzle located at a distance of 4" from the devices. Devices with this rating must withstand test conditions and still be operable. This rating ensures water proofing protection that exceeds NEMA 4X rating.

Thermal endurance
In pressure environments, controls and signaling devices can be exposed to extreme temperature conditions. To meet the criteria for IP69K rating, devices must undergo a thermal shock test by cycling the environmental temperature to ensure consistent high reliability.



SCHMERSAL Modular Design Flexibility

Non-Illuminated Devices

NDT Series
Non-illuminated pushbuttons

NDP Series
Mushroom pushbuttons

NW Series
Selector Switches

NDRZ Series
Emergency Stop Pushbuttons

Accessories
(Purchase Separately)

Accessory
(Purchase Separately)

Mounting Flange
(Included)

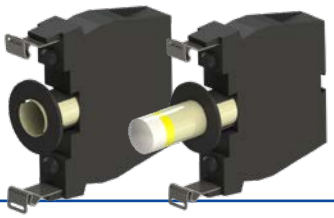
Contact Blocks
(Purchase Separately)

Illuminated Devices

NDL Series
Illuminated Pushbuttons

NML Series
Indicator Lights

Accessories
(Purchase Separately)

Mounting Flange
(Included)

Contacts and Light Terminal Blocks
(Purchase Separately)