# SCHMERSAL Illuminated 22mm IP69K Plastic Pushbuttons

NDLBL

NDLGB

NDLGN

NDLRT

NDLWS

| Illuminated 22mm IP69K Plastic Pushbuttons* | | | | | |
|---|---|---|---|---|---|
| ***Part Number*** | ***NDLBL*** | ***NDLGB*** | ***NDLGN*** | ***NDLRT*** | ***NDLWS*** |
| ***Color*** | Blue | Yellow | Green | Red | White |
| ***Price*** | $20.00 | $20.00 | $20.00 | $20.00 | $20.00 |
| ***Drawing Link*** | PDF | PDF | PDF | PDF | PDF |
| ***Description*** | Momentary action illuminated IP69K pushbuttons with mounting flange | | | | |
| ***Mounting diameter*** | 22.3 mm [0.88 in] | | | | |
| ***Actuating stroke*** | 5mm | | | | |
| ***Dome material*** | ABS | | | | |
| ***Front ring material*** | ABS, chromium-plated | | | | |
| ***Front panel thickness*** | 1.5 to 6 mm | | | | |
| ***Weight*** | 30g [1.06 oz] | | | | |
| ***Mounting screws tightening torque*** | 0.6 N·m [0.44 lb·ft] | | | | |
| ***Ambient temperature*** | -25 to +80°C [-13 to +176°F] | | | | |
| ***Shock resistance*** | < 50g | | | | |
| ***Vibration resistance*** | 5g | | | | |
| ***Ingress protection*** | IP67 and IP69K | | | | |
| ***Standards*** | EN 60947-5-1; IEC/EN 60947-1; UL File E57648, CE | | | | |

***Operator only. Purchase contact and light blocks separately.**

# SCHMERSAL Light Terminal Blocks

ELDE.Nxx230

ELDE.Nxx24

ELE

ELE230

## Light Terminal Blocks

| Part Number | Color | Price | Drawing Link | Voltage | Wattage | Diagram | Function |
|---|---|---|---|---|---|---|---|
| ELDE.NBL230 | Blue | $45.50 | PDF | 115-230 VAC | 4 | X1 X2 | Integrated LED |
| ELDE.NBL24 | | $24.50 | PDF | 24 VAC/VDC | 0.4 | | |
| ELDE.NGB230 | Yellow | $45.50 | PDF | 115-230 VAC | 4 | | |
| ELDE.NGB24 | | $24.50 | PDF | 24 VAC/VDC | 0.4 | | |
| ELDE.NGN230 | Green | $45.50 | PDF | 115-230 VAC | 4 | | |
| ELDE.NGN24 | | $24.50 | PDF | 24 VAC/VDC | 0.4 | | |
| ELDE.NRT230 | Red | $45.50 | PDF | 115-230 VAC | 4 | | |
| ELDE.NRT24 | | $24.50 | PDF | 24 VAC/VDC | 0.4 | | |
| ELDE.NWS230 | White | $45.50 | PDF | 115-230 VAC | 4 | | |
| ELDE.NWS24 | | $24.50 | PDF | 24 VAC/VDC | 0.4 | | |
| ELE | – | $10.50 | PDF | 24 VAC/VDC | 1 | X1 X2 | Ba9S Lamp holder |
| ELE230 | – | $28.00 | PDF | 115-230 VAC | 1 | X1 X2 | |

## Ba9S Bulbs for ELE and ELE230 Light Terminal Blocks

| Part Number | Color | Price | Qty | Lamp Voltage | Current Consumption | Power Consumption | Lamp Durability |
|---|---|---|---|---|---|---|---|
| APX510-24R | Red | $17.00 | 2 | 24V AC/DC | 12mA AC 11mA DC | 0.8 W | 30,000h |
| APX510-24G | Green | $17.00 | | | | | |
| APX510-24Y | Yellow | $17.00 | | | | | |
| APX510-24S | Blue | $63.00 | | | | | |
| APX510-24O | Orange | $17.00 | | | | | |

APX510-24R

## Replacement LED Lamps for ELE and ELE230 Light Terminal Blocks

| Part Number | Color | Price | Qty | Lamp Voltage | Current Consumption | Power Consumption | Lamp Durability |
|---|---|---|---|---|---|---|---|
| ECX1911-2 | Red | $17.50 | 2 | 24V AC/DC | 14mA | 0.6 W | 100,000h |
| ECX1912-2 | Green | $22.00 | | | 13mA | | |
| ECX1913-2 | Yellow | $17.50 | | | 13.3 mA | | |
| ECX1914-2 | Blue | $23.50 | | | 13mA | | |
| ECX1915-2 | White | $28.00 | | | 19mA | | |

ECX1915-2

*NOTE: ELE230 has transformer to step down to 24V*

## Mounting Flange

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

ELM

# SCHMERSAL Contact Blocks

EF03.2

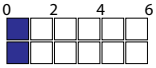
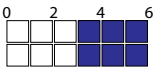
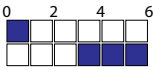
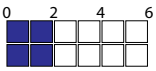
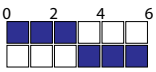
EF10.1

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

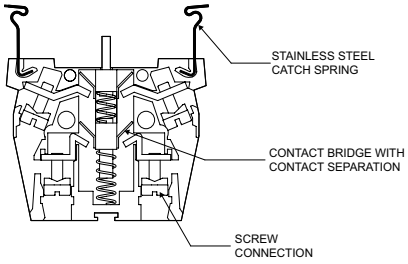
| Part Number | Price | Description | Drawing Link |
|---|---|---|---|
| EFM | $5.00 | Schmersal mounting flange, replacement. For use with E and N series pushbuttons. | PDF |

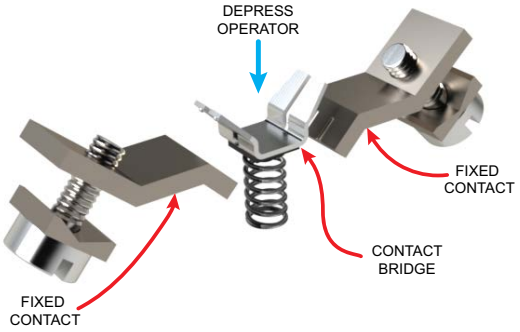
SCHMERSAL

# 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<br>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

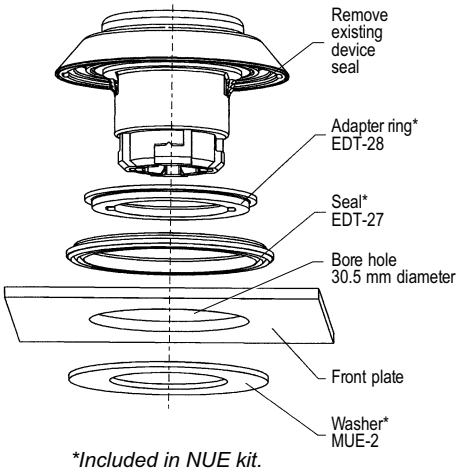
EDT-25-5ST

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



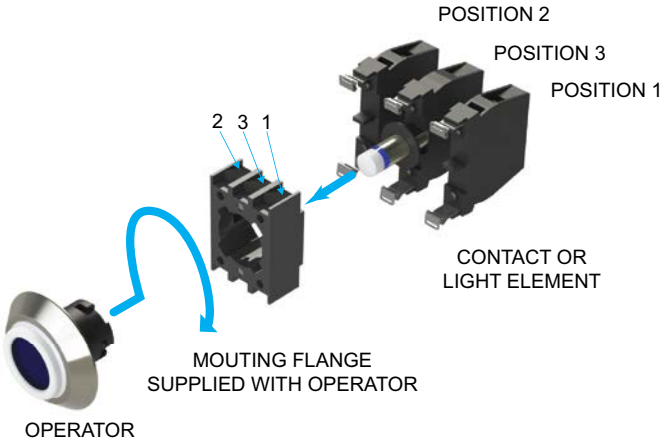

*Included in NUE kit.

# 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

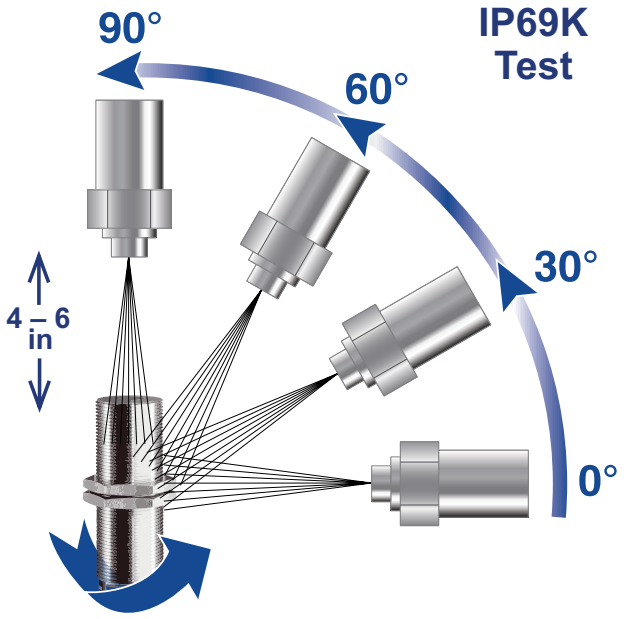
- Special seals prevent product residue from penetrating in the gaps between the fixed and moving device parts, thus preventing the collection of dirt and bacteria in places that are not easily accessible for cleaning.
- Smooth designs make the devices easy to clean.
- Modular contact and light terminal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

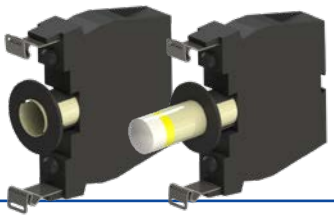
**Contact Blocks**
(Purchase Separately)

## Illuminated Devices

**NDL Series**
Illuminated Pushbuttons

**NML Series**
Indicator Lights

**Accessories**
(Purchase Separately)

**Mounting Flange**
(Included)

**Contacts and Light Terminal Blocks**
(Purchase Separately)