TOGGLE SWITCHES

SERIES 1A

• Miniature toggle switches

AGENCY APPROVALS

File N° E195524

File N° E195524

CHARACTERISTICS

• The most comprehensive range of terminations, brackets, toggle sizes and bushings.
• Diallylphthalate case and stainless steel housing.

SPECIFICATIONS

Contact Rating: Silver - 5A with resistive load @ 125 VAC or 28 VDC - 2A with resistive load @ 250 VAC
Electrical life: 50,000 make and break cycles at full load
Contact Resistance: 10 mΩ max. initial @ 2-4 VDC, 100 mA, for both coin silver and gold plated contacts
Insulation Resistance: 1000 MΩ min.
Dielectric Strength: 1500 VRMS @ sea level
Operating Temperature: -30°C to 85°C

MATERIALS

Case: Diallylphthalate (DAP)
Toggle handle: Brass, chrome plated
Bushing: Brass, nickel plated
Housing: Stainless Steel

HOW TO ORDER

N° OF POLES

1 SPDT
2 DPDT
3 3PDT
4 4PDT

ACTUATORS

N_ Round (std)
N2 Short round
L1 Long 13.97
L2 Long 16.26
L3 Long 21.32
L4 Long 15.75
L5 Long 18.08
P Flat
PS Flat Short
C (◊) Plastic
G Large
GX Extra large
LK (◊) Locking lever
LK1(◊) Locking lever

TERMINATIONS

PC PCB
W1 Wire wrap 19.05mm
W3 Wire wrap 10.80mm
ST Solder tag
H9 90° horizontal
V9 90° vertical
U2 U bracket 11.68 mm
U3 U bracket 16.00 mm
U4(◊)U bracket 1.68 mm
U5(◊)U bracket 16.00 mm
QC Quick connect

BUSHING

F1 Threaded standard
F2 Unthreaded
F3 Threaded
F4 Unthreaded
F5 High torque flat
F6 High torque
F7 Long thread
F8 Metric
F9 (◊) Splash proof
F0 Large
FS (◊) Large splash proof
FA Non Threaded (std)
FB Metric
FG Non Thread
FK For LK Act. Only

E Seal

CONTACT MATERIAL

S Silver (std)
A Gold
G Gold on silver

STANDARD HARDWARE

2 Nuts
1 Locking Ring
1 Lockwasher

1 A

◎ 3-way external wiring required - Please enquire
(◊) Min qty required
(◊) Please enquire
# TOGGLE SWITCHES

## SERIES 1A

### ELECTRICAL FUNCTIONS

<table>
<thead>
<tr>
<th>SPDT</th>
<th>1 on</th>
<th>none</th>
<th>on</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>on</td>
<td>none</td>
<td>on</td>
</tr>
<tr>
<td>3</td>
<td>on</td>
<td>off</td>
<td>on</td>
</tr>
<tr>
<td>4</td>
<td>(on)</td>
<td>off</td>
<td>(on)</td>
</tr>
<tr>
<td>5</td>
<td>on</td>
<td>off</td>
<td>(on)</td>
</tr>
<tr>
<td>6 [G]</td>
<td>on</td>
<td>on</td>
<td>on</td>
</tr>
</tbody>
</table>

2 Comm.  5 Comm.  8 Comm.  11 Comm.  12 Comm.

1 \[3\]  6 \[4\]  9 \[7\]  10 \[8\]  12 \[9\]

### DPDT

<table>
<thead>
<tr>
<th>DPDT</th>
<th>1 on</th>
<th>none</th>
<th>on</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
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<td>none</td>
<td>on</td>
</tr>
<tr>
<td>3</td>
<td>on</td>
<td>off</td>
<td>on</td>
</tr>
<tr>
<td>4</td>
<td>(on)</td>
<td>off</td>
<td>(on)</td>
</tr>
<tr>
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<td>(on)</td>
</tr>
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1 \[3\]  6 \[4\]  9 \[7\]  10 \[8\]  12 \[9\]

### 3PDT

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<th>none</th>
<th>on</th>
</tr>
</thead>
<tbody>
<tr>
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<td>none</td>
<td>(on)</td>
</tr>
<tr>
<td>3</td>
<td>on</td>
<td>off</td>
<td>(on)</td>
</tr>
<tr>
<td>4</td>
<td>(on)</td>
<td>off</td>
<td>(on)</td>
</tr>
<tr>
<td>5</td>
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<td>(on)</td>
</tr>
<tr>
<td>6 [G]</td>
<td>on</td>
<td>(on)</td>
<td>on</td>
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</tbody>
</table>

2 Comm.  5 Comm.  8 Comm.  11 Comm.  12 Comm.

1 \[3\]  6 \[4\]  9 \[7\]  10 \[8\]  12 \[9\]

### 4PDT

<table>
<thead>
<tr>
<th>4PDT</th>
<th>1 on</th>
<th>none</th>
<th>on</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>on</td>
<td>none</td>
<td>(on)</td>
</tr>
<tr>
<td>3</td>
<td>on</td>
<td>off</td>
<td>(on)</td>
</tr>
<tr>
<td>4</td>
<td>(on)</td>
<td>none</td>
<td>(on)</td>
</tr>
<tr>
<td>5</td>
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<td>(on)</td>
</tr>
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<td>on</td>
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(See wiring for 3-Way Switching Functions pag. iii in the Technical Notations section)

Part N° shown: 1A11-NF1STSE

Part N° shown: 1A21-NF1STSE

Part N° shown: 1A31-NF1STSE

Part N° shown: 1A41-NF1STSE

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**DIMENSIONS**

- **SPDT**
  - 2 Comm.
  - 5 Comm.
  - 8 Comm.
  - 11 Comm.
  - 12 Comm.

- **DPDT**
  - 2 Comm.
  - 5 Comm.
  - 8 Comm.
  - 11 Comm.
  - 12 Comm.

- **3PDT**
  - 2 Comm.
  - 5 Comm.
  - 8 Comm.
  - 11 Comm.
  - 12 Comm.

- **4PDT**
  - 2 Comm.
  - 5 Comm.
  - 8 Comm.
  - 11 Comm.
  - 12 Comm.
TOGGLE SWITCHES

SERIES 1A

ACTUATORS

N (std) | N2 | L1 | L2 | L3

P

(collectible available with F6 & FG bushing)

N2 (◊)

PS (◊)

G

GX

COLOURS
1. White
2. Black (std)
3. Red
4. Orange
5. Yellow
6. Green
7. Blue
8. Brown
9. Gray

C (◊)

LK

LK1

For H9 - V9 - right angle version & All U - Brackets

N2 (◊) | N | L4 | L5

[i] Please enquire
[j] Min qty required
[b] Only available 1A11 model (on - on)
TOGGLE SWITCHES

SERIES 1A

BUSHING

F1 Threaded (STD)
F2 Non Threaded

F3 Threaded
F4 Non Threaded

F5 High Torque
FA Non Threaded (STD)
FB Metric

F6 High Torque
FC Metric
FG Non Threaded

F7 (△) Long
FD (△) Non Threaded
FE (△) Metric

F8 Metric

F9 Splash-proof
Available only for on-on and on-off-on functions - Only for "N" Actuator

F0 (△) Not splashproof
FS (△) Splashproof. (Available only for on-on functions)

For H9 - V9 - right angle version & All U - Brackets

FK (△) Threaded,
only for locking lever

(△) Min qty required
### SERIES 1A TERMINATIONS

<table>
<thead>
<tr>
<th>ST</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>THK .030 (0.76)</td>
<td>THK .030 (0.76)</td>
</tr>
<tr>
<td>.078</td>
<td>.156</td>
</tr>
<tr>
<td>1.98</td>
<td>3.96</td>
</tr>
<tr>
<td>.067</td>
<td>.050</td>
</tr>
<tr>
<td>2.03</td>
<td>1.27</td>
</tr>
<tr>
<td>.080</td>
<td>.250</td>
</tr>
<tr>
<td>W1 .750 (19.05)</td>
<td>W3 .425 (10.80)</td>
</tr>
</tbody>
</table>

### CONTACT MATERIALS

**S (std)**  
- **Moving Contacts**: silver plated brass  
- **Terminals**: silver plated brass  
- **Rating**: 2 Amps with resistive load @ 250 VAC  
  5 Amps with resistive load @ 125 VAC or 28 VDC

### CONTACT RATINGS

**A**  
- **Moving Contacts**: gold plating over nickel plated brass  
- **Terminals**: gold plating over nickel plated brass  
- **Rating**: 0.4 Volts/Amps max @ 20 Volts max (AC or DC)

**G**  
- **Moving Contacts**: gold plating over silver plated brass  
- **Terminals**: gold plating over silver plated brass  
- **Note**: G option is used for either “high” (2 Amps @ 250 VAC) or “low” (0.4 Volts/Amps max) contact rating (one excludes the other)

### PANEL CUT-OUT

**1/4 IN. BUSHING**

**METRIC BUSHING**

**15/32 IN. BUSHING**
## TOGGLE SWITCHES

### SERIES 1A

#### ACCESSORIES

#### SEALINGS

Rubber Hood sealing for toggle “N”

1AK1 Metric
1AE1 Inch (STD)

Rubber Hood sealing for toggle “G” and “GX”

1AF0

#### TOGGLE CAPS

C1

C2

### TOGGLE CAPS COLOUR

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Black (std)</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td></td>
</tr>
</tbody>
</table>

#### PACKAGING

**Transparent Trays 15x21x4 cm**

The switches are individually marked with the following information:

**Side 1**

TRADE MARK
SERIES AND MODEL
DATE CODE

**Side 2**

RATING
CONTACTS

Note: Not all information may be available on some products.

The label on each tray gives full information on the products contained.

A Bar code indicating Model, Quantity, Date Code enables easy traceability.

### MARKING (on products)

### LABELLING (on packaging)

Qty per tray: (ST, PC Terminals)

- Series 1A1x 200 pcs
- 1A2x 100 pcs
- 1A3x 100 pcs
- 1A4x 50 pcs

\(\Delta\) Min qty required

Made in Taiwan

Remarks

P/N: ELFNC:
QTY:
DATE CODE:

\(\Delta\) Min qty required

A 8