ES series

Heavy-duty safety switches •
panel cut-out Ø 22 mm or Ø 28 mm

DISTINCTIVE FEATURES

Rugged version : 100,000 cycles mechanical life

Locked/unlocked status indicator

Lower behind-panel depth

Sealed to IP65, IP67 and IP69K

Complies with EN 60947-5-1

ELECTRICAL SPECIFICATIONS

• Electrical function : push-pull ON-ON

• Current/voltage rating : 1 A 24 VDC DC-14

• Electrical life : 6,050 cycles

• Contact resistance : 10 mΩ max.

• Insulation resistance : 1,000 MΩ min. at 500 VDC

• Dielectric stength : 1,000 Vrms 50 Hz min. between terminals
  2,000 Vrms 50 Hz min. between poles and between terminals and frame

ENVIRONMENTAL SPECIFICATIONS

• Front panel sealing : IP65, IP67 and IP69K according to IEC 60529 and
  DIN 40050

• Rear sealing : IP67 - only for cable version (**C**)

• Salt spray : 96 hours according to IEC 68-2-11

• Vibrations : 10-500 Hz - 10 g according to IEC 68-2-6

• Shock resistance : 50 g according to IEC 68-2-27

• Robustness (axial) : IK10

• Operating temperature : -40 °C to +85 °C (-40 °F to +185 °F)

• Complies with EN 60947-5-1

The company reserves the right to change specifications without notice.

APEM

ES series

Heavy-duty safety switches •
panel cut-out Ø 22 mm or Ø 28 mm

GENERAL SPECIFICATIONS

- • Panel thickness : 1.5 mm (.059) min to 6 mm (.236) max.
- • Low level or mechanical life : 100,000 cycles
- • Travel to lock : 2.20 mm ± 0.3 mm
- • Total travel : 4.20 mm ± 0.3 mm
- • Torque : 5 Nm min. - 14 Nm max. applied to nut
- • Operating force :
  2 pole models : Push : 30 N ± 7 N / Pull : 25 N ± 5 N
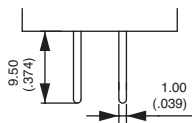 3 pole models : Push : 45 N ± 7 N / pull : 25 N ± 5 N

MATERIALS

- • Case : diallylphthalate (DAP)
- • Actuator : aluminum, red anodized
- • Bushing : aluminum, yellow anodized
- • Contacts : silver, gold plated
- • Terminal seal : epoxy
- • Cable : 4 wires, AWG 22, section 0.34 mm², lenght 500 mm

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.
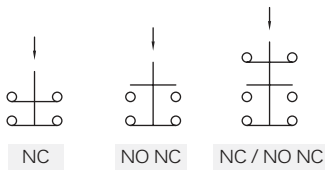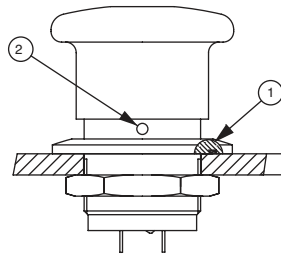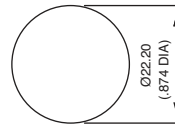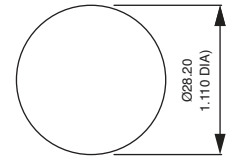
TERMINALS

Straight PC

ELECTRICAL FUNCTIONS

NC   NO NC   NC / NO NC

PANEL CUT-OUT

① - O-ring
② - Hole

Ø22.20 (.874 DIA)

2 pole

Ø28.20 1.110 DIA)

3 pole

NOTE : the hole in the bushing is designed for insertion of a Ø 2 mm metal rod helping to fasten the switch on the panel.
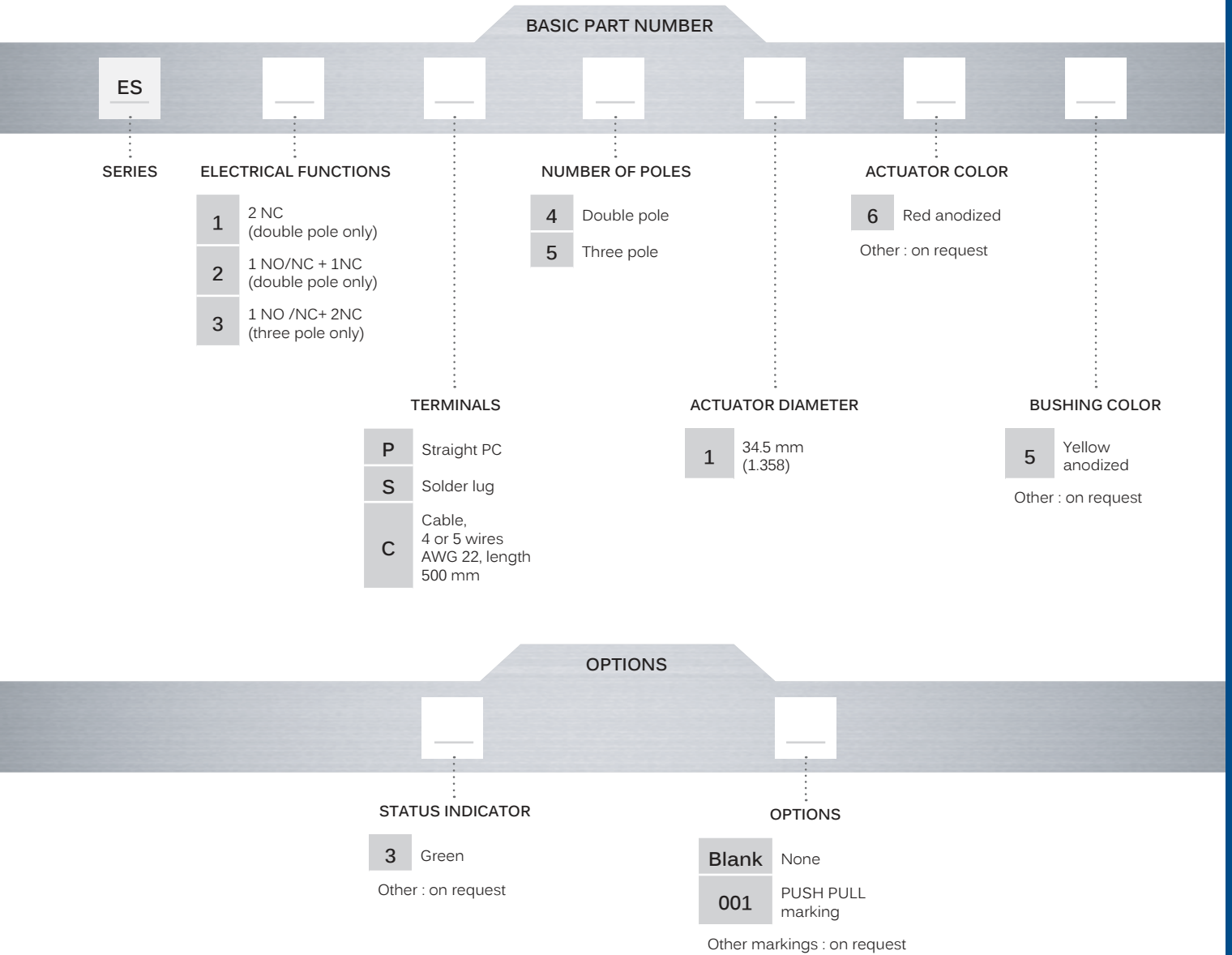
CONNECTIONS

	POLE 1	POLE 2
C	White	Brown
NC	Red	Green

ES series

Heavy-duty safety switches •
panel cut-out Ø 22 mm or Ø 28 mm

BUILD YOUR PART NUMBER

BASIC PART NUMBER

| ES | __ | __ | __ | __ | __ | __ |

SERIES

ELECTRICAL FUNCTIONS

1   2 NC (double pole only)

2   1 NO/NC + 1NC (double pole only)

3   1 NO /NC+ 2NC (three pole only)

NUMBER OF POLES

4   Double pole

5   Three pole

ACTUATOR COLOR

6   Red anodized

Other : on request

TERMINALS

P   Straight PC

S   Solder lug

C   Cable, 4 or 5 wires AWG 22, length 500 mm

ACTUATOR DIAMETER

1   34.5 mm (1.358)

BUSHING COLOR

5   Yellow anodized

Other : on request

OPTIONS

| __ | __ |

STATUS INDICATOR

3   Green

Other : on request

OPTIONS

Blank   None

001   PUSH PULL marking

Other markings : on request

ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

Notice : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

Mounting accessories : Standard hardware supplied : 1 hex nut 25 (.984) or 32 (1.260) across flats and 1 O-ring.

ES series

Heavy-duty safety switches •
panel cut-out Ø 22 mm or Ø 28 mm

DOUBLE POLE - 2 NC CONTACTS

Solder lug terminals
ES1S41653

Straight PC terminals
ES1P41653

DOUBLE POLE - 2 NC & 1 NO/NC + 1 NC CONTACTS

Cable terminals
2 NC
ES1C41653

Cable terminals
1 NO/NC+ 1 NC
ES2C41653

DOUBLE POLE - 1 NO/NC + 1 NC CONTACTS

Solder lug terminals
ES2S41653

Straight PC terminals
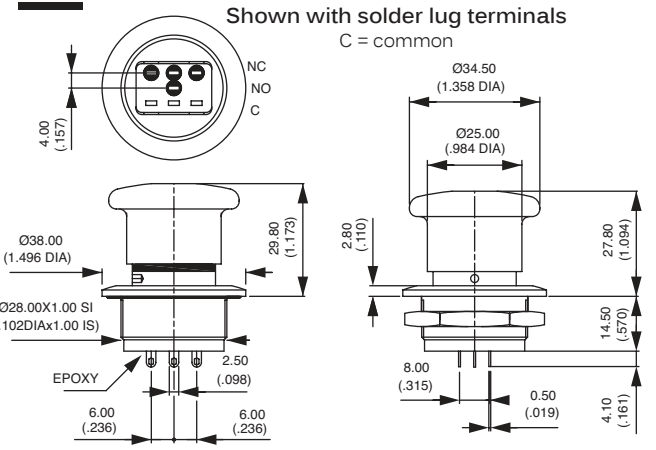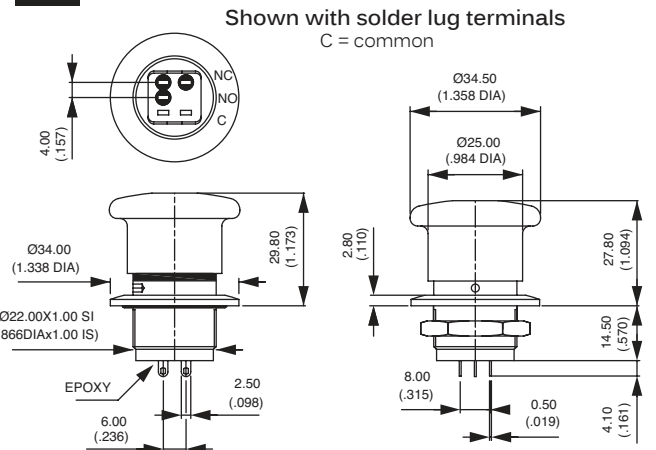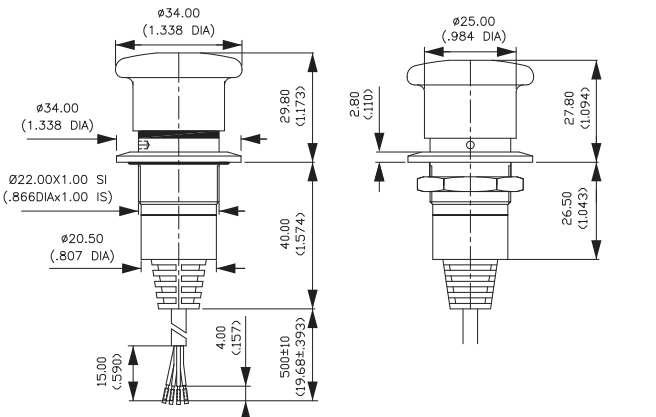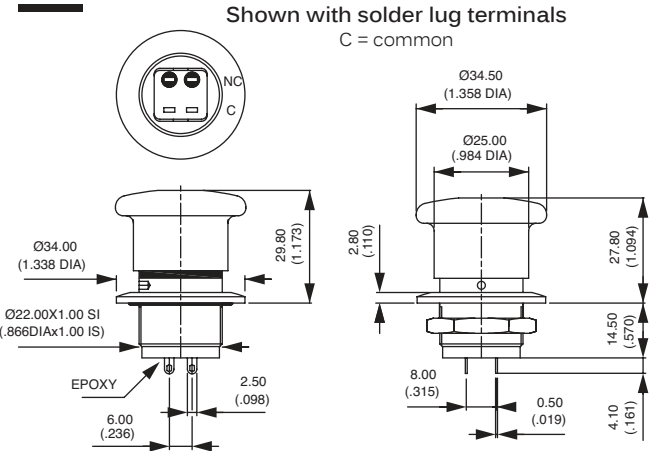**ES2P41653**

THREE POLE - 1 NO/NC + 2 NC CONTACTS

Solder lug terminals
ES3S51653

Straight PC terminals
ES3P51653

Shown with solder lug terminals
C = common

ES series

Heavy-duty safety switches •
panel cut-out Ø 22 mm or Ø 28 mm

STATUS INDICATOR COLOR

| BASIN P/N | | |

3   Green   Other : on request.

OPTIONS

| BASIN P/N | | |

Blank   None   Other markings : on request
001   PUSH PULL marking