

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 strength : 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.



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



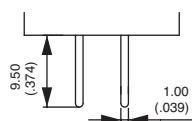
MATERIALS

- 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.



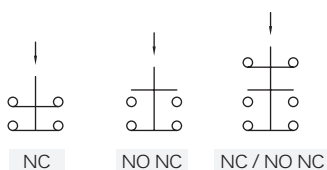
TERMINALS



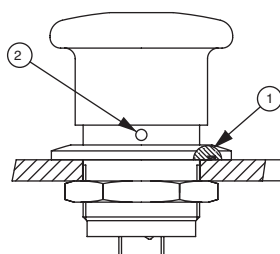
Straight PC



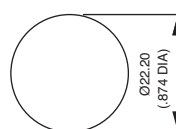
ELECTRICAL FUNCTIONS



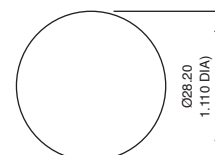
PANEL CUT-OUT



- ① - O-ring
- ② - Hole



2 pole



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

DOUBLE POLE - 2 NC

	POLE 1	POLE 2
C	Brown	Red
NC	White	Green

DOUBLE POLE - 1 NO/NC + 1 NC

	POLE 1	POLE 2
C	Brown	Grey
NC	White	Green
NO	Yellow	-

THREE POLE - 1 NO/NC + 2 NC

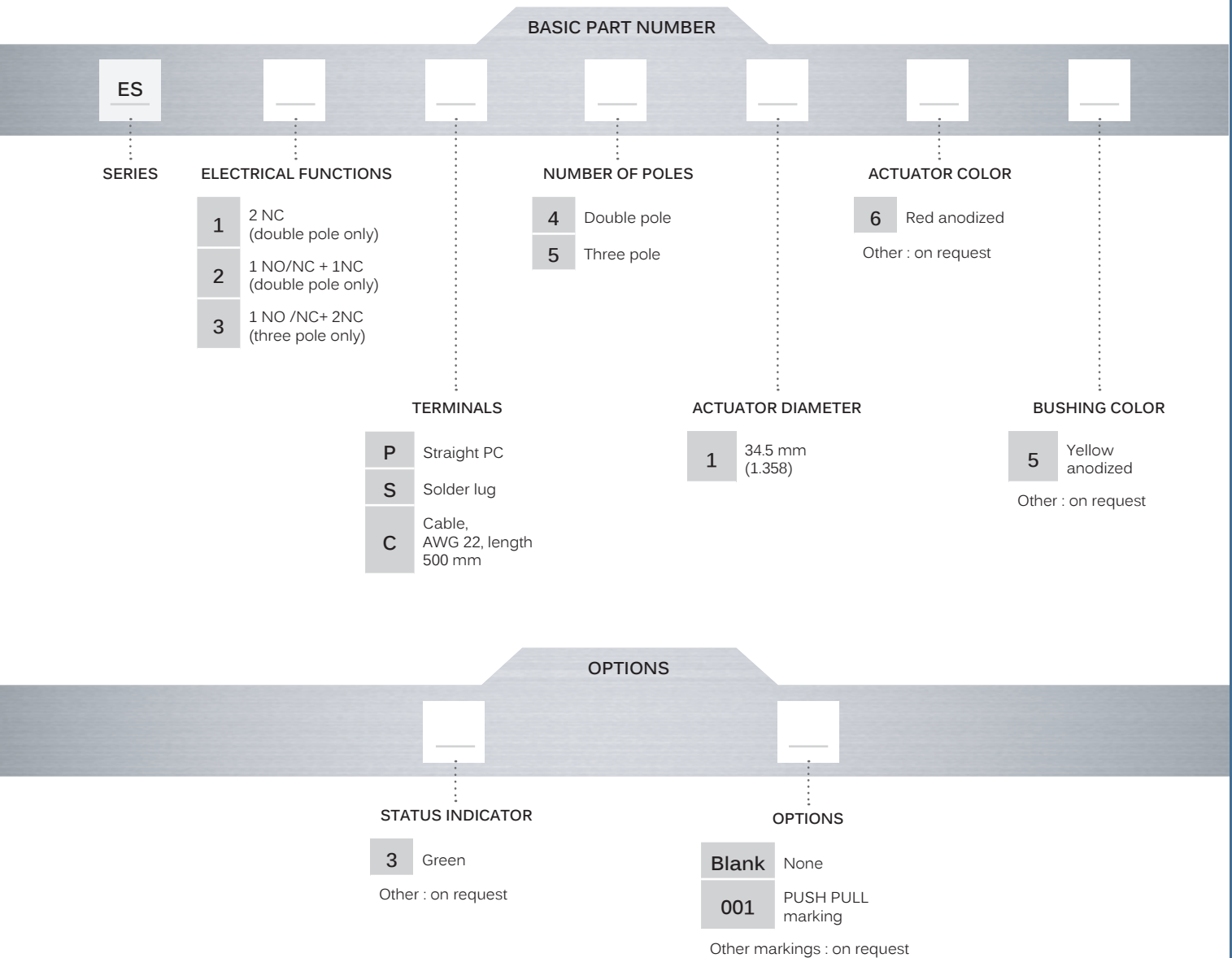
	POLE 1	POLE 2	POLE 3
C	White	Grey	Blue
NC	Brown	Green	Yellow
NO		Pink	

ES series

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



BUILD YOUR PART NUMBER



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

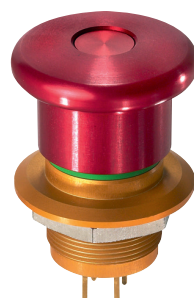
ES1C41653

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



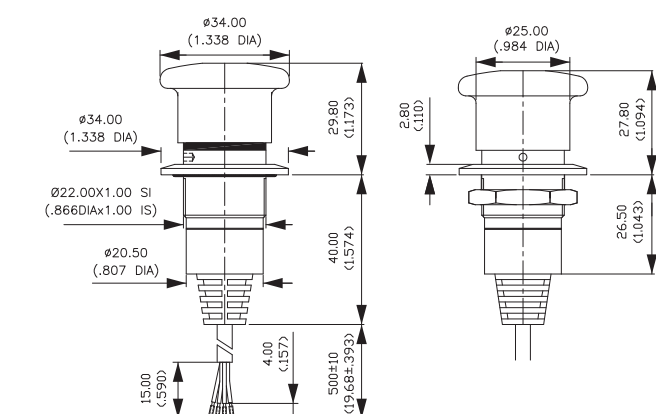
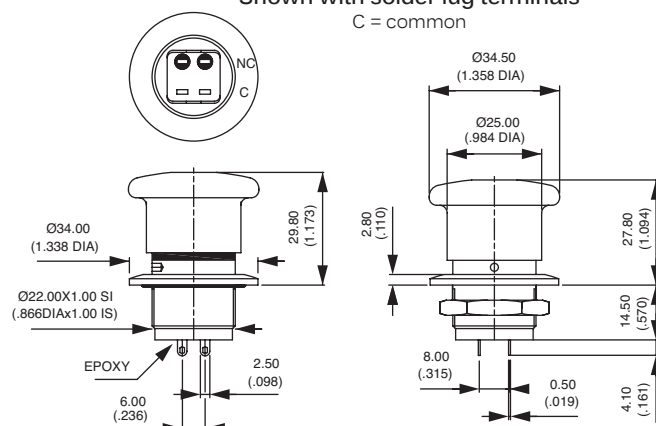
Solder lug terminals

ES3S51653

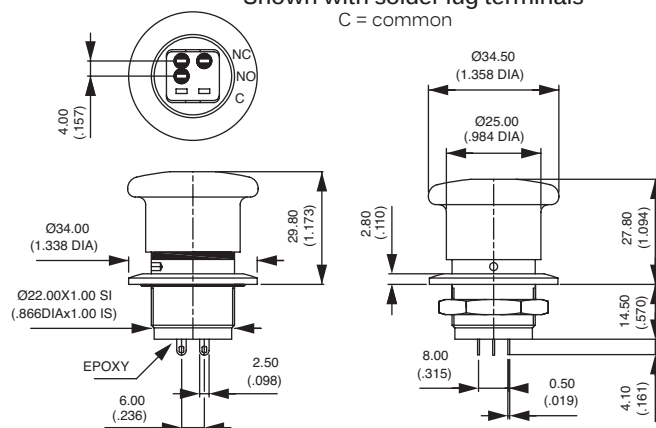
Straight PC terminals

ES3P51653

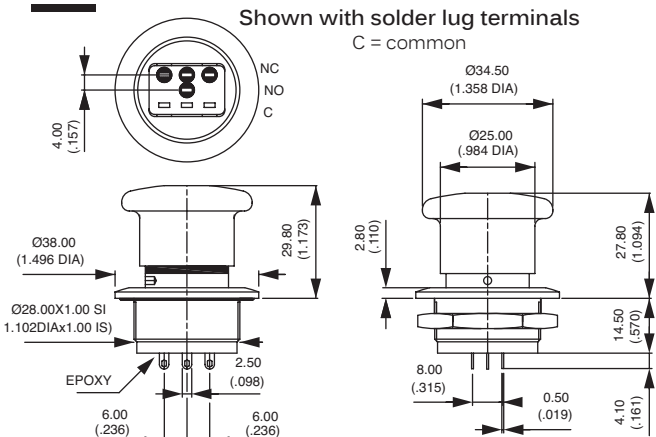
Shown with solder lug terminals
C = common



Shown with solder lug terminals
C = common



Shown with solder lug terminals
C = common



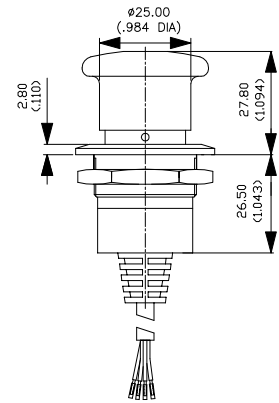
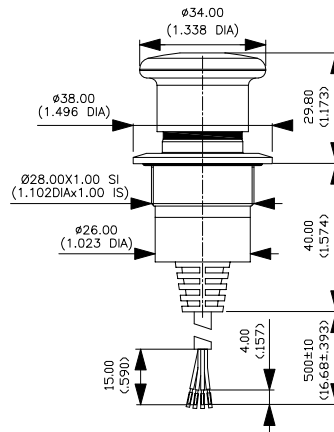
ES series

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

THREE POLE - 1NO/NC + 2 NC CONTACTS



Cable terminals
ES3C51653



STATUS INDICATOR COLOR

BASIN P/N		
-----------	--	--

3 Green

Other : on request.

OPTIONS

BASIN P/N		
-----------	--	--

Blank None
001 PUSH PULL marking

Other markings : on request