

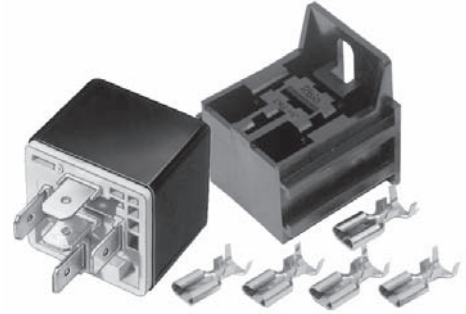
# Lucas Relays

## TERMINATIONS GUIDE

Terminal designations		Recommended		Terminal definitions
British	DIN 72651	DIN 72552	Polarity	
W2	1	86	+	Start of winding
W1	2	85	-	End of winding to negative
C1	5	87		N/O contacts
C2	3	30		Switch Input
C3	4	87a		N/C contacts
		87b		N/O double contacts
		87c		N/O double contacts
		86a		Start of winding or 1st winding
		86b		Winding Tap or 2nd winding
		88		Relay input (make-contact side)
		88a		1st Output (make-contact side)
		88b, c, d, e, f		Other outputs (make-contact side)
		88z		1st Input (make-contact)
		88y, x		2nd & 3rd Input (make-contact)
		15		Switched + from Battery (output of ignition or start switch)
		1		Ignition coil – Low voltage side
		50	+	Starter control (direct)
		31	-	Return to battery -ve (ground)
		TD		12 V square wave input from ECU
		51	+	Positive output from Generator / Alternator
		85b		End of second winding

### SRB502

1 x SRB500 Relay  
 1 x Relay mounting block  
 5 x 1/4" Lucar connectors

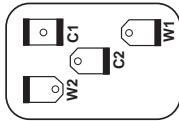


- Normally Open Contacts
- Normally Closed Contacts
- Double Contacts
- Changeover Relay

## 26RA

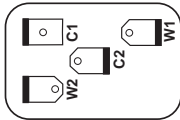
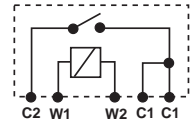


		<p><b>SRB402</b> 12 V 20 A STANDARD</p> <hr/> <hr/> <hr/>	
		<p><b>SRB400</b> 12 V 20 A STANDARD</p> <hr/> <hr/> <hr/>	
		<p><b>SRB411</b> 12 V 20 A STANDARD</p> <p><b>SRB420</b> 24 V 10 A STANDARD</p> <hr/> <hr/> <hr/>	

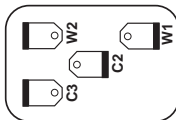
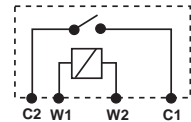


**SRB111** 12 V 20 A NEOPRENE

**SRB201** 24 V 10 A STANDARD

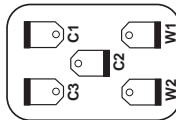
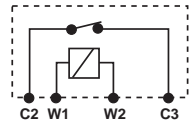


**SRB113** 12 V 20 A NEOPRENE



**SRB131** 12 V 20 A NEOPRENE

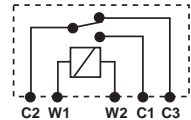
**SRB220** 24 V 10 A NEOPRENE



**SRB143** 12 V 20 A STANDARD

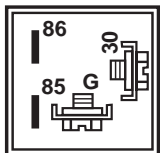
**SRB146** 12 V 20 A STANDARD

**SRB230** 24 V 10 A NEOPRENE



## Split Charge Relays

# 39RA

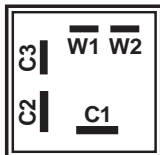
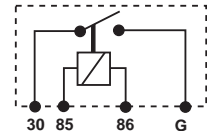


**SRB600** 12 V 60 A STANDARD CONTINUOUS

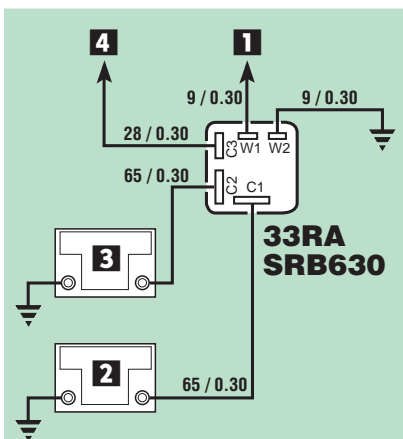
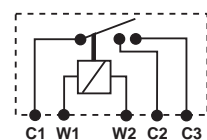
**SRB601** 24 V 40 A STANDARD CONTINUOUS

**SRB631** 12 V 60 A STANDARD INTERMITTENT

**SRB632** 24 V 40 A NEOPRENE INTERMITTENT



**SRB630** 12 V 60 A STANDARD CONTINUOUS



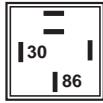
**SRB630 is suitable for charging two independent batteries from a single source. Extra terminal for refrigerator operation.**

- Select a splash free area to mount the 33RA relay, preferably in the engine compartment.
- Identify return of earth connection of existing battery and link or earth the similar terminal of the additional battery.
- Using the cable sizes specified connect the 33RA relay as shown in the diagram.

Keep cable runs as short as possible, particularly main charging leads. Ensure insulation sleeves are fitted to all connectors. Loads over 35A (connected to the additional battery), should not be switched on when the engine is running.

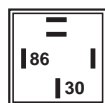
- Alternator – Warning Light Terminal
- Main battery
- Additional battery
- Refrigerator terminal

## A

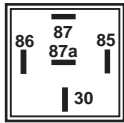


BMW, FORD, JAGUAR,  
OPEL, VOLVO (car).

## B

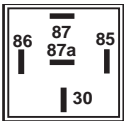
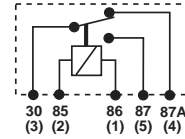


AUDI, BRITISH LEYLAND, CITROËN, DAIMLER BENZ, HMF,  
MAN, KHD, MASSEY FERGUSON, PEUGEOT, PORSCHE,  
RENAULT, SAAB, SIMCA, VOLVO & VW.



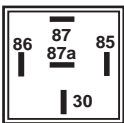
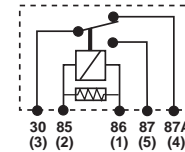
### B

<b>SRB500</b>	12 V	20/30 A	-	<b>x</b>
<b>SRB501</b>	12 V	20/30 A	-	Optional
<b>SRB510</b>	24 V	10/20 A	-	<b>x</b>
<b>SRB511</b>	24 V	10/20 A	-	Optional



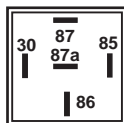
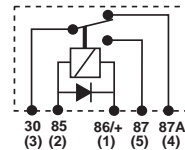
### B

<b>SRB525</b>	12 V	20/30 A	RESISTOR	Optional
<b>SRB535</b>	24 V	10/20 A	RESISTOR	Optional



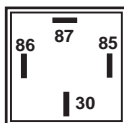
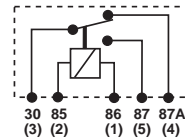
### B

<b>SRB506</b>	12 V	20/30 A	DIODE	Optional
<b>SRB507</b>	24 V	10/20 A	DIODE	Optional



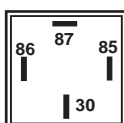
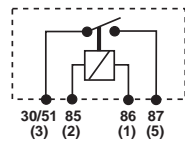
### A

<b>SRB527</b>	12 V	30/40 A	-	Optional
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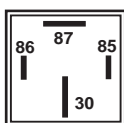
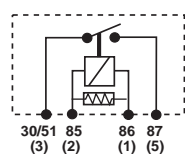
### B

<b>SRB520</b>	12 V	30 A	-	Optional
<b>SRB530</b>	24 V	20 A	-	Optional



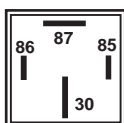
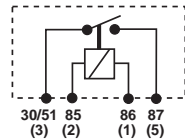
### B

<b>SRB537</b>	12 V	40 A	RESISTOR	Optional
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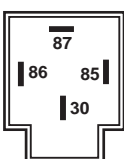
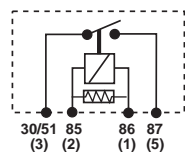
### B

<b>SRB539</b>	12 V	70 A	-	Optional
<b>SRB541</b>	24 V	40 A	-	Optional



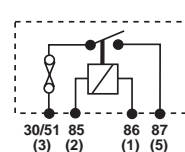
### B

<b>SRB540</b>	12 V	70 A	RESISTOR	<b>x</b>
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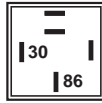
### B

<b>SRB522</b>	12 V	15 A	FUSED	Optional
<b>SRB532</b>	24 V	15 A	FUSED	Optional



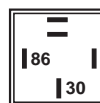


## A

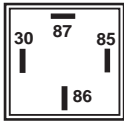


BMW, FORD, JAGUAR,  
OPEL, VOLVO (car).

## B

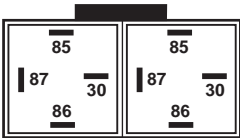
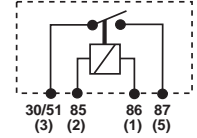


AUDI, BRITISH LEYLAND, CITROËN, DAIMLER BENZ, HFF,  
MAN, KHD, MASSEY FERGUSON, PEUGEOT, PORSCHE,  
RENAULT, SAAB, SIMCA, VOLVO & VW.



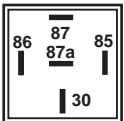
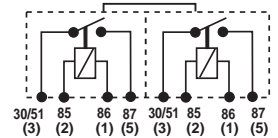
### A

<b>SRB523</b>	12 V	30 A	-	Optional
<b>SRB533</b>	24 V	20 A	-	Optional



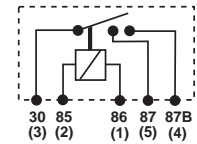
### B

<b>SRB526</b>	12 V	2 x 30 A	-	✓
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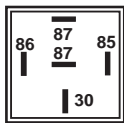
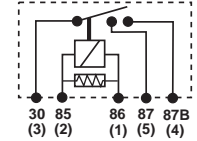
### B

<b>SRB521</b>	12 V	2 x 20 A	-	Optional
<b>SRB531</b>	24 V	2 x 10 A	-	Optional



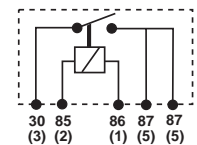
### B

<b>SRB529</b>	12 V	2 x 20 A	RESISTOR	x
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### B

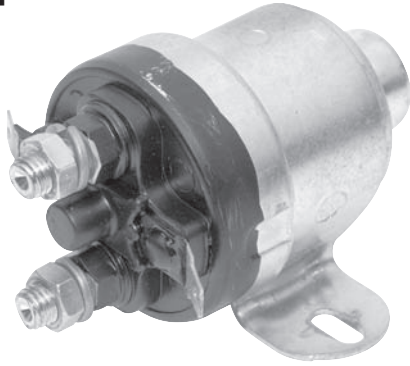
<b>SRB528</b>	12 V	2 x 15 A	-	Optional
<b>SRB538</b>	24 V	2 x 10 A	-	Optional





# Solenoids

## 2ST

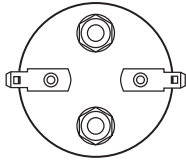


### SURGE CURRENT

600 Amps – 12 Volt  
250 Amps – 24 Volt

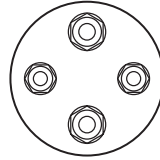
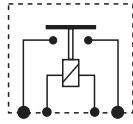
### CARRYING & BREAKING CURRENT

200 Amps – 12 Volt  
100 Amps – 24 Volt



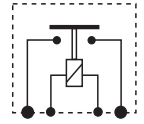
#### SRB319

12 V  
Insulated Earth Return  
2.3 Ohms

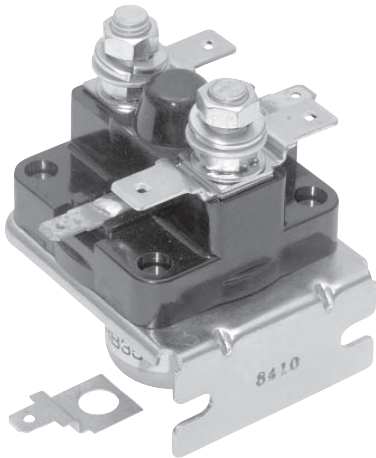


#### SRB321

24 V  
Insulated Earth Return  
10.0 Ohms



## 4ST

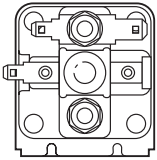


### SURGE CURRENT

600 Amps – 12 Volt  
250 Amps – 24 Volt

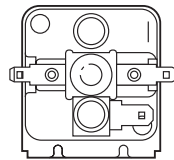
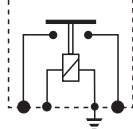
### CARRYING & BREAKING CURRENT

200 Amps – 12 Volt  
100 Amps – 24 Volt



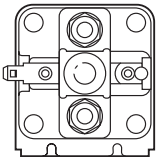
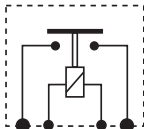
#### SRB325

12 V  
Earth Return  
2.3 Ohms



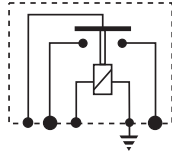
#### SRB341

12 V  
Insulated Earth Return  
2.3 Ohms

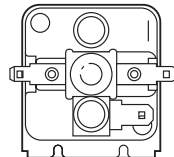


#### SRB333

12 V  
Earth Return  
2.3 Ohms

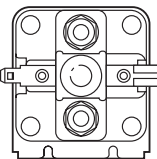
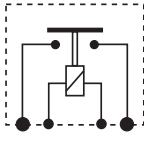


For use with Ballasted Ignition Coil



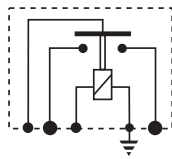
#### SRB351

24 V  
Insulated Earth Return  
10.0 Ohms

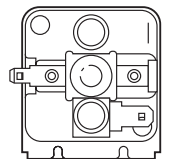


#### SRB335

12 V  
Earth Return  
2.3 Ohms

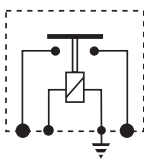


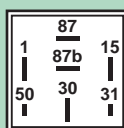
For use with Ballasted Ignition Coil



#### SRB346

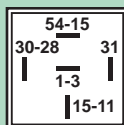
24 V  
Earth Return  
10.0 Ohms





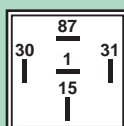
### FDB501

Fuelling Relay GM, Vauxhall, Opel 12 V 16 A Prime time : N/A  
Fall time : 0,5 sec max.



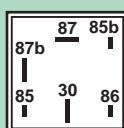
### FDB502

Fuelling Relay Ford 12 V 16 A Prime time : 0,8 – 0,9 sec  
Fall time : 0,5 – 0,9 sec



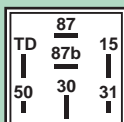
### FDB503

Fuelling Relay Ford 12 V 16 A Prime time : N/A  
Fall time : 0,7 – 1,1 sec



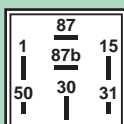
### FDB504

Fuelling Relay GM, Vauxhall, Opel 12 V 7,5 A Prime time : N/A



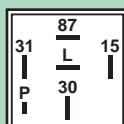
### FDB505

Fuelling Relay Citroën, Ferrari, Fiat, Lancia, Peugeot & Seat 12 V 16 A Prime time : N/A  
Fall time : 0,1 – 0,5 sec



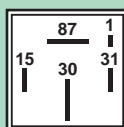
### FDB506

Fuelling Relay Citroën 12 V 16 A Prime time : N/A  
Fall time : 0,2 – 0,6 sec



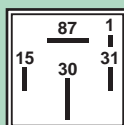
### FDB507

Fuelling Relay VAG, VW 12 V 16 A Delay time :–  
120 seconds minimum after 'turn off'  
of terminal 15 with L & P connected



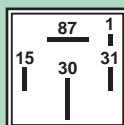
### FDB508

Fuelling Relay VAG, VW 12 V 16 A Prime time : N/A  
Fall time : 0,8 – 1,2 sec  
Limit : 6500 rpm (4 cyl)



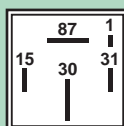
### FDB509

Fuelling Relay VAG, VW, Audi 12 V 16 A Prime time : N/A  
Fall time : 0,8 – 1,2 sec  
Limit : 6500 rpm (5 cyl)



### FDB510

Fuelling Relay VAG, VW, Audi 12 V 16 A Prime time : N/A  
Fall time : 0,8 – 1,2 sec  
Limit : 7100 rpm (5 cyl)



### FDB511

Fuelling Relay VAG, VW, Audi 12 V 16 A Prime time : N/A  
Fall time : 0,8 – 1,2 sec  
Limit : 6700 rpm (4 cyl)



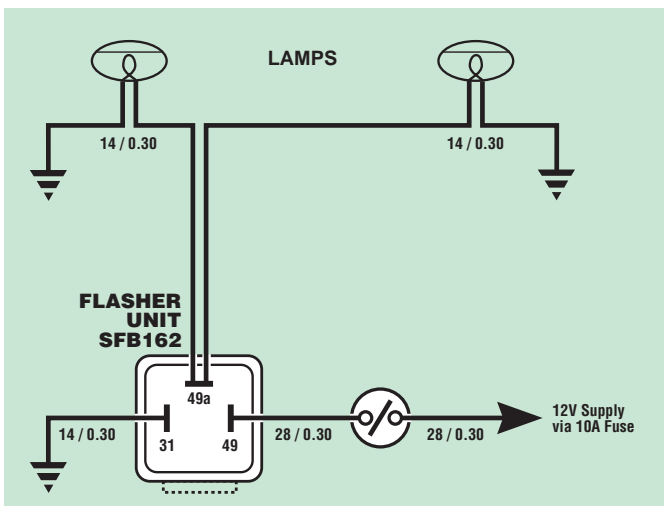


## TERMINATIONS GUIDE

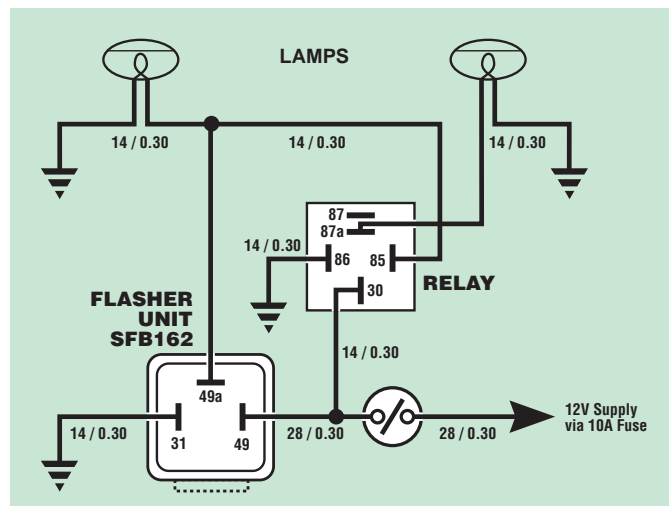
LUCAS TERMINALS		ALTERNATIVE MARKINGS
Markings	Connections	
B, X, +, 49	Ignition Controlled Supply	1, 15, 2, 4, +49, +15, 14A, 15X, 153, H, 15A
P, C	Vehicle Pilot Light	R, KP, 1P, 8, REP, T, KBC, 5, KBL
L, 49a	Direction Indicator Switch	C, 2, 5, S54, 1L, 49S, 6, COM, 54L, L54, 0, CL, S
C2	Trailer Pilot Light	P2, Lead
-, 31	Earth (Ground)	1, 5, 31, E, Masse, $\Sigma$

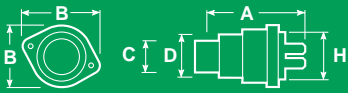
### Suggested Wiring Combinations

#### To produce synchronised flashing lamps

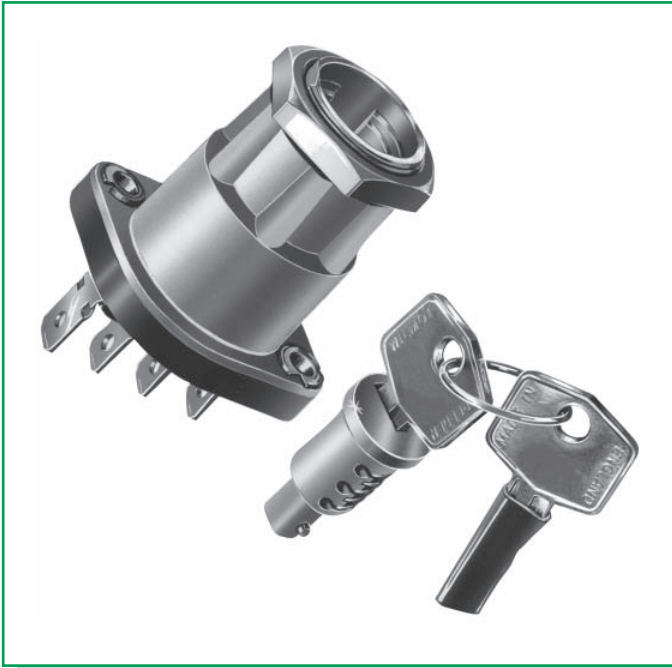


#### To produce alternating flashing lamps



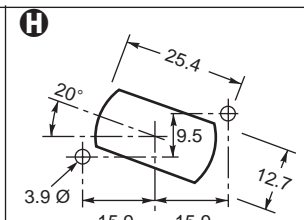
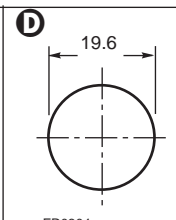
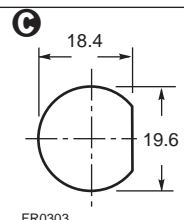
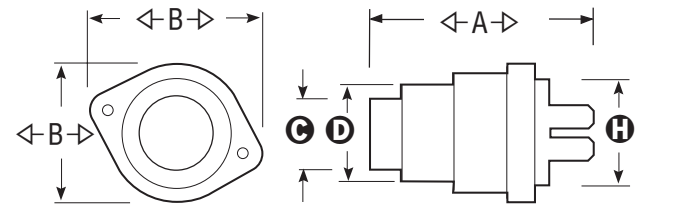
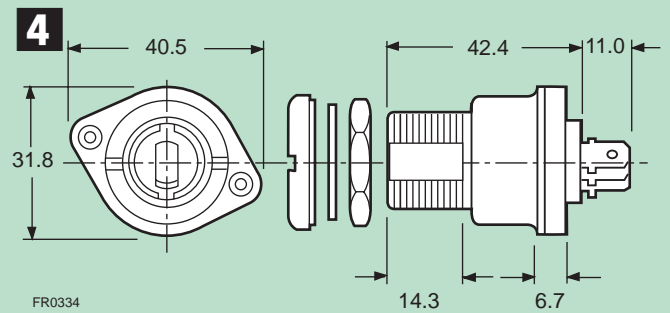
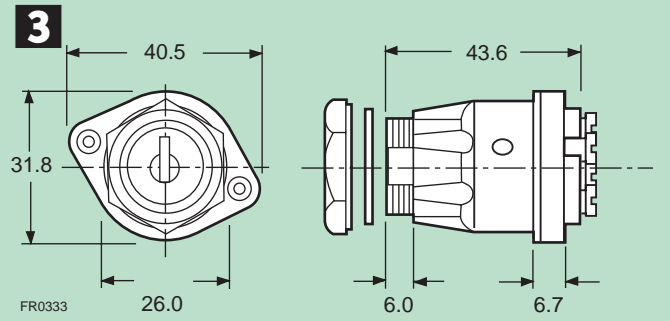
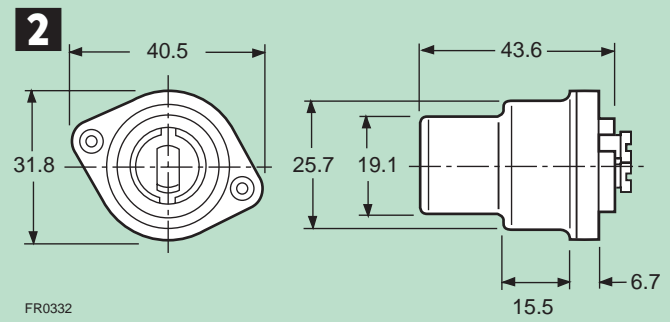
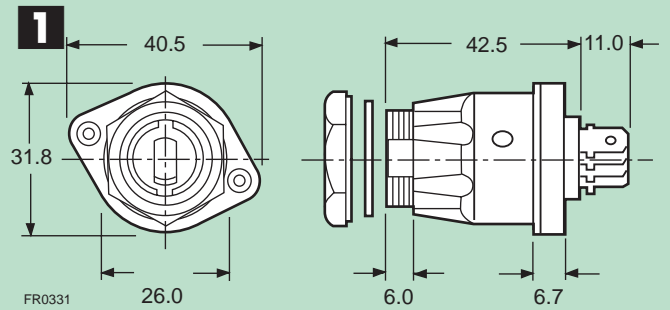


S45



**Ignition switch**

Key operated two position panel mounted rotary switch. Key can be withdrawn in the "off" position only. Electrical connections are Lucar blade or screw terminals. Supplied with or without lock and keys.



**30608** 2 **1**

Type **1**

Dimensions:  $\leftarrow A \rightarrow = 54$ ,  $\leftarrow B \rightarrow = 32 \times 41$

Piercing = **C**

Finish = STANDARD = K1

Circuit 1 2

'OFF' \_\_\_\_\_

'ON' \_\_\_\_\_

Max Current 17.5 A

**31287** 2 **2**

Type **2**

Dimensions:  $\leftarrow A \rightarrow = 50$ ,  $\leftarrow B \rightarrow = 32 \times 41$

Piercing = **D H**

Finish = CHROME = K1

Circuit 1 2

'OFF' \_\_\_\_\_

'ON' \_\_\_\_\_

Max Current 17.5 A

**34387** 2 **4**

Type **4**

Dimensions:  $\leftarrow A \rightarrow = 54$ ,  $\leftarrow B \rightarrow = 32 \times 41$

Piercing = **C**

Finish = STANDARD = K1

Circuit 1 2

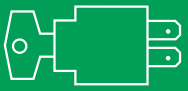
'OFF' \_\_\_\_\_

'ON' \_\_\_\_\_

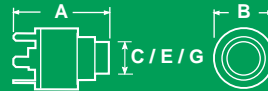
Max Current 17.5 A

K1 Order lock and keys separately, standard lock and keys part no. 54316732 or unique lock and keys part no. 54316731.  
K2 Replacement lock and keys part no. 54316732.





# 47SA

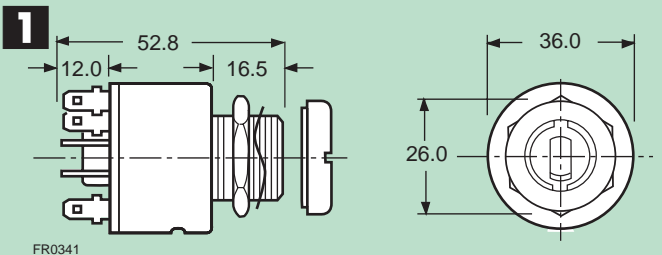


PS0001

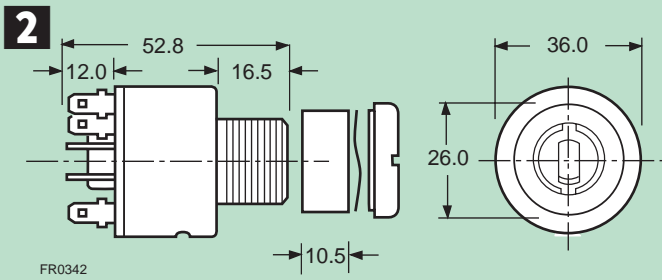
### Accessories/ignition/starter

Three or four position, key operated rotary switch. Key can be removed in 'Off' position only. Panel mounted, not suitable for marine use.

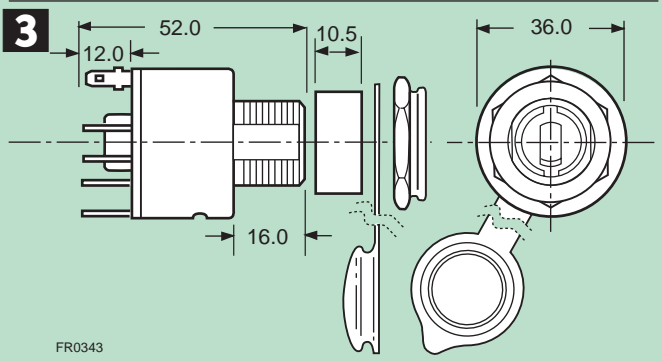
Supplied complete with bezel and locking nut. Suitable for 12 V applications only. Electrical connections are Lucar blade terminals.



FR0341



FR0342



FR0343



K1 Order lock and keys separately, standard lock and keys part no. 54316732 or unique lock and keys part no. 54316731.  
K2 Replacement lock and keys part no. 54316732.

**31973** 3 12V

Type **1**

Dimensions:  $\leftarrow A \rightarrow = 55$   $\leftarrow B \rightarrow = 36$

Piercing = **C**

Finish = STANDARD = K1

Circuit

'OFF'	1 STR	2 IGN	3 FEED
'IGN'		▲	▲
'IGN/STR'	▲	▲	▲

Max Current  $\left[12V\right]$  16 A 5 A

FR0337

**34680** 4 12V

Type **1**

Dimensions:  $\leftarrow A \rightarrow = 55$   $\leftarrow B \rightarrow = 36$

Piercing = **C**

Finish = STANDARD = K1

Circuit

'AUX'	1 FEED	2 IGN	3 STR	4 AUX
'OFF'				
'AUX/IGN'	▲	▲	▲	▲
'IGN/STR'	▲	▲	▲	

Max Current  $\left[12V\right]$  5 A 16 A 15 A

FR0340

**35351** 4 12V

Type **3**

Dimensions:  $\leftarrow A \rightarrow = 55$   $\leftarrow B \rightarrow = 36$

Piercing = **E**

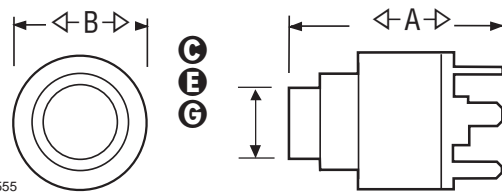
Finish = STANDARD = K1

Circuit

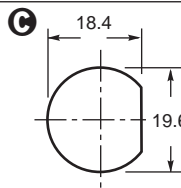
'AUX'	1 FEED	2 IGN	3 LTS	4 PK LTS
'OFF'				
'IGN'	▲	▲	▲	▲
'IGN/LTS'	▲	▲	▲	

Max Current  $\left[12V\right]$  5 A 15 A 15 A

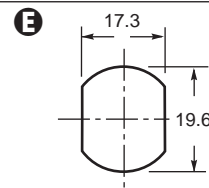
FR0339



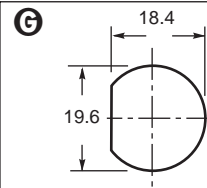
FR0555



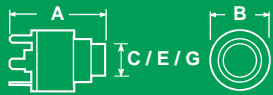
FR0303



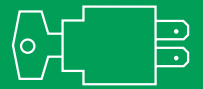
FR0305



FR0353

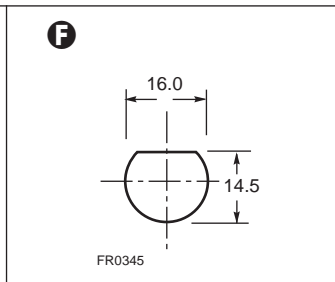
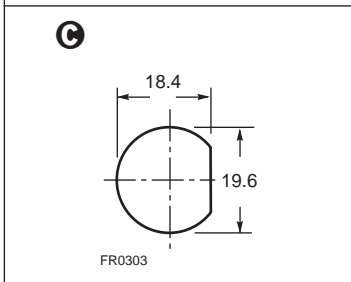
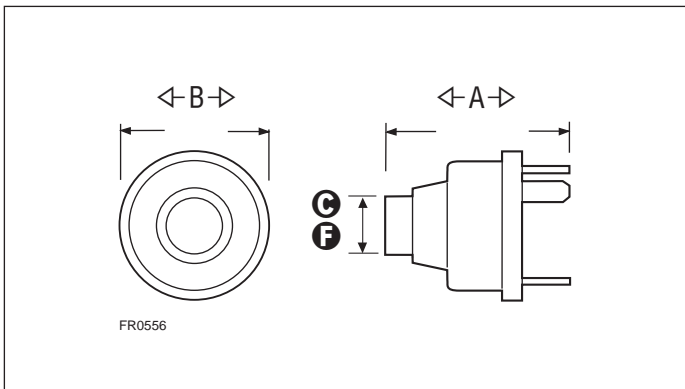


# 128SA



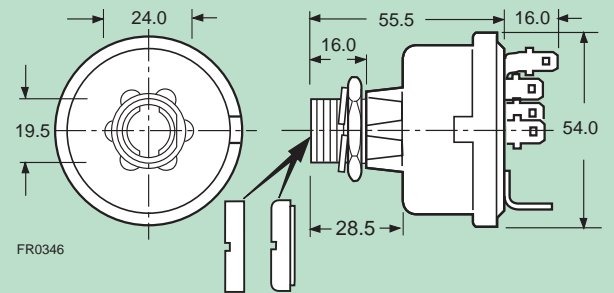
### Ignition/heater/starter

Heavy duty rotary, key operated switch, suitable for commercial, agricultural and industrial applications. Petrol or diesel engines. Panel mounted, splash proof. Available in three, four and five position versions, Lucas type lock or barrel lock and keys. Electrical connections are Lucar blade terminals.

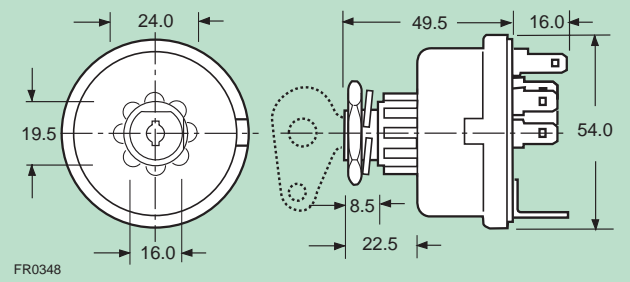


- K1 Order lock and keys separately, standard lock and keys part no. 54316732 or unique lock and keys part no. 54316731.
- K2 Replacement lock and keys part no. 54316732.
- K3 Replacement keys part no. 54324157.
- K4 Order knob separately part no. 54340037.

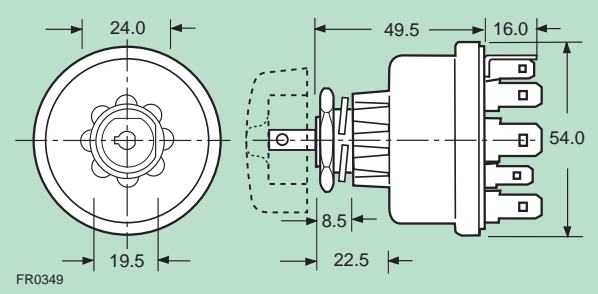
**1**



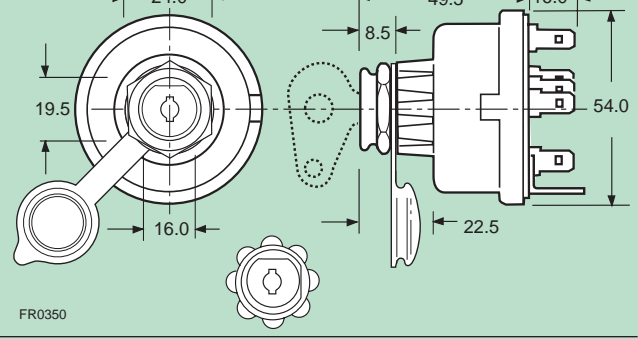
**2**

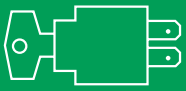


**3**

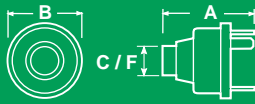


**4**





# 128SA



**30792** 4

Type **2**

Dimensions:  $\leftarrow A \rightarrow = 66$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = STANDARD = K3

Circuit

'HTR/STR'	↓	1 FEED	2 HTR	3 STR
'HTR'	↓	▲	▲	
'OFF'				
'START'	↑	▲	▲	

Max Current 15/7.5 A 16/5 A

**33820** 4

Type **2**

Dimensions:  $\leftarrow A \rightarrow = 66$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = NEOPRENE = K3

Circuit

'OFF'		1 FEED	2 AUX	3 HTR	4 STR
'AUX'		▲	▲		
'AUX/HTR'	↑	▲	▲	▲	
'AUX/HTR/STR'	↑	▲	▲	▲	▲

Max Current 10 A/- 15/7.5 A 16/5 A

**33838** 4

Type **3**

Dimensions:  $\leftarrow A \rightarrow = 66$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = STANDARD = K4

Circuit

'STP'	↓	1 FEED	2 AUX	3 STP	4 STR
'OFF'					
'AUX'		▲	▲		
'AUX/STR'	↑	▲	▲		▲

Max Current 10 A/- 16/5 A

**33884** 4

Type **1**

Dimensions:  $\leftarrow A \rightarrow = 72$   $\leftarrow B \rightarrow = 54$

Piercing = **C**

Finish = NEOPRENE = K1

Circuit

'OFF'		1 FEED	2 AUX	3 HTR	4 STR
'AUX'		▲	▲		
'AUX/HTR'	↑	▲	▲	▲	
'AUX/HTR/STR'	↑	▲	▲	▲	▲

Max Current 10 A/- 15/7.5 A 16/5 A

**33940** 3

Type **2**

Dimensions:  $\leftarrow A \rightarrow = 62$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = CRONAK = K3

Circuit

'OFF'		1 FEED	2 STR	3 IGN
'IGN'		▲	▲	
'STR'	↑	▲	▲	

Max Current 16 A 5 A

**33942** 4

Type **2**

Dimensions:  $\leftarrow A \rightarrow = 66$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = CRONAK = K3

Circuit

'OFF'		1 FEED	2 AUX	3 HTR	4 STR
'AUX'		▲	▲		
'AUX/HTR'	↑	▲	▲	▲	
'AUX/HTR/STR'	↑	▲	▲	▲	▲

Max Current 10 A/- 15/7.5 A 16/5 A

**35288** 4

Type **1**

Dimensions:  $\leftarrow A \rightarrow = 72$   $\leftarrow B \rightarrow = 54$

Piercing = **C**

Finish = STANDARD = K1

Circuit

'OFF'		1 FEED	2 FSO	3 STR	4 AUX	5 HTR
'FSO/AUX'		▲	▲			
'FSO/HTR'	↑	▲	▲	▲		▲
'FSO/HTR/STR'	↑	▲	▲	▲	▲	▲

Max Current 16/5 A 10 A/- 15/7.5 A

**35628** 4

Type **2**

Dimensions:  $\leftarrow A \rightarrow = 66$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = STANDARD = K3

Circuit

'OFF'		1 HTR	2 STR	3 AUX	4 FEED
'HTR'	↑	▲	▲		
'HTR/STR'	↑	▲	▲		

Max Current 15/7.5 A 16/5 A 10 A/-

**35630** 4

Type **4**

Dimensions:  $\leftarrow A \rightarrow = 66$   $\leftarrow B \rightarrow = 54$

Piercing = **C/F**

Finish = STANDARD = K3

Circuit

'HTR/STR'	↓	1 FEED	2 HTR	3 STR
'HTR'	↓	▲	▲	
'OFF'				
'START'	↑	▲	▲	

Max Current 15/7.5 A 16/5 A

**35640** 4

Type **1**

Dimensions:  $\leftarrow A \rightarrow = 72$   $\leftarrow B \rightarrow = 54$

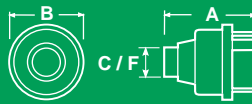
Piercing = **C**

Finish = STANDARD = K1

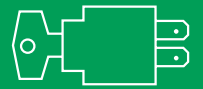
Circuit

'OFF'		1 FEED	2 AUX	3 HTR	4 STR
'AUX'		▲	▲		
'AUX/HTR'	↑	▲	▲	▲	
'AUX/HTR/STR'	↑	▲	▲	▲	▲

Max Current 10 A/- 15/7.5 A 16/5 A



# 128SA



**35641** 4

Type **2**

Dimensions: <-A-> = 66 <-B-> = 54

Piercing = **C F**

Finish = CRONAK = K3

Circuit 1 FEED 2 AUX 3 HTR 4 STR

'OFF'

'AUX'

'AUX/HTR'

'AUX/HTR/STR'

Max Current 10 A/- 15/7.5 A 16/5 A

FR0321

**35670** 4

Type **2**

Dimensions: <-A-> = 66 <-B-> = 54

Piercing = **C F**

Finish = STANDARD = K3

Circuit 1 FEED 2 AUX 3 HTR 4 STR

'OFF'

'AUX'

'AUX/HTR'

'AUX/HTR/STR'

Max Current 10 A/- 15/7.5 A 16/5 A

FR0315

**35703** <sup>(supercedes 34228)</sup> 4

Type **1**

Dimensions: <-A-> = 72 <-B-> = 54

Piercing = **C**

Finish = STANDARD = K1

Circuit 1 FEED 2 AUX 3 HTR 4 STR

'OFF'

'AUX'

'AUX/HTR'

'AUX/HTR/STR'

Max Current 10 A/- 15/7.5 A 16/5 A

FR0322

**39427** 4

Type **1**

Dimensions: <-A-> = 72 <-B-> = 54

Piercing = **C**

Finish = CRONAK = K1

Circuit 1 FEED 2 AUX 3 HTR 4 STR

'OFF'

'AUX'

'AUX/HTR'

'AUX/HTR/STR'

Max Current 10 A/- 15/7.5 A 16/5 A

FR0323

**39589** 5

Type **2**

Dimensions: <-A-> = 66 <-B-> = 54

Piercing = **C F**

Finish = CRONAK = K3

Circuit 1 FEED 2 AUX 3 HTR 4 STR

'HTR/STR'

'HTR'

'OFF'

'AUX'

'AUX/STR'

Max Current 10 A/- 15/7.5 A 16/5 A

FR0324

**39798** 4

Type **2**

Dimensions: <-A-> = 66 <-B-> = 54

Piercing = **C F**

Finish = CRONAK = K3

Circuit 1 FEED 2 AUX 3 STOP 4 STR

'STOP'

'OFF'

'AUX'

'AUX/STR'

Max Current 10 A/- 16/5 A

FR0325

**54033527** 4

Type **1**

Dimensions: <-A-> = 72 <-B-> = 54

Piercing = **C**

Finish = NEOPRENE = K1

Circuit 1 HTR 2 STR 3 AUX 4 FEED

'OFF'

'AUX'

'HTR'

'HTR/STR'

Max Current 15/7.5 A 16/5 A 10 A/-

FR0327

**33940** 3

Type **2**

Dimensions: <-A-> = 62 <-B-> = 54

Piercing = **C**

Finish = STANDARD = K3

Circuit 1 FEED 2 STR 3 IGN

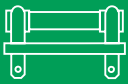
'OFF'

'IGN'

'STR'

Max Current 15/7.5 A 16/5 A

FR0313



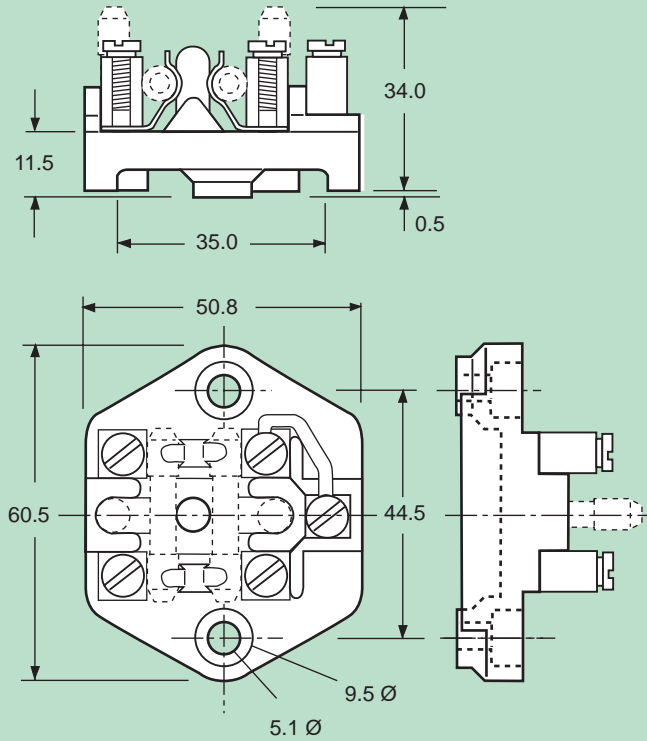
# SF6



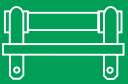
### Fuse boxes

Surface mounted fuse box supplied without cover. Suitable for 12 V or 24 V, car, light commercial vehicle and industrial applications. Connections are made to heavy duty brass screw terminals. Accepts glass cartridge fuses. Supplied less fuses.

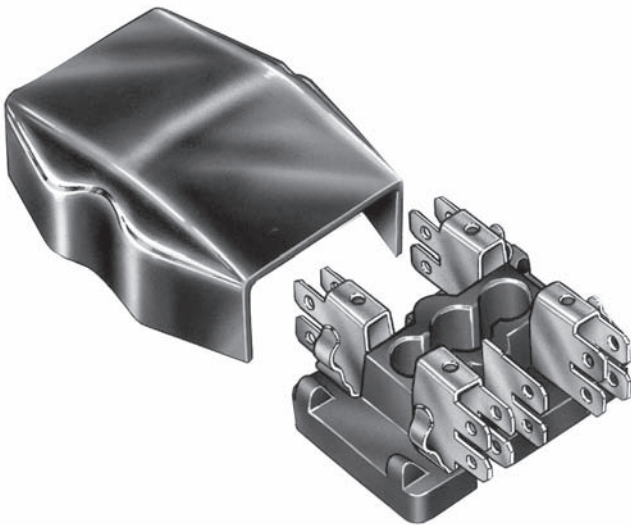
## 37132



Fuse positions ..... 2 | Spare fuse positions ..... 2



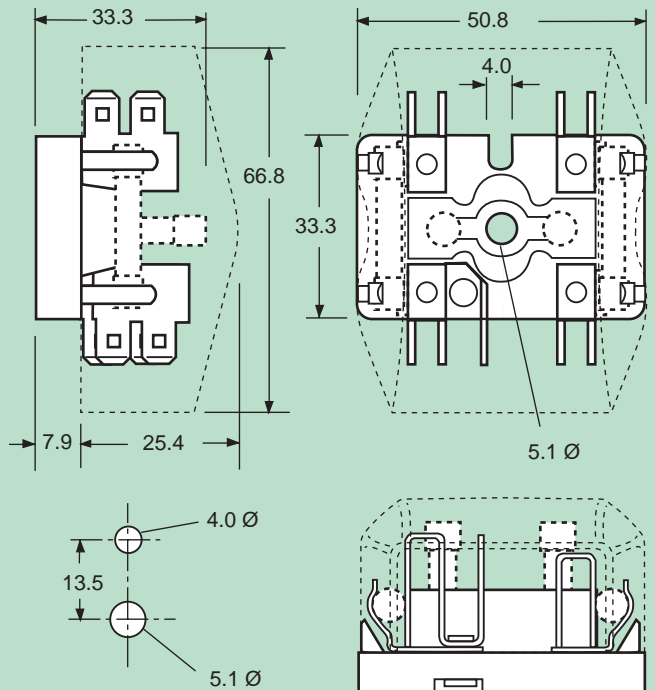
# 4FJ



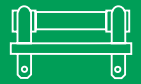
### Fuse boxes

Surface mounted fuse box with detachable cover. Suitable for car and light commercial vehicles, 12/24 V applications, not marine. All terminals are 6.35 mm, 17.5 A Lucar blades. Accepts glass cartridge fuses 29.4 mm long. Built-in positions for spare fuses. Supplied less fuses.

## 54038068



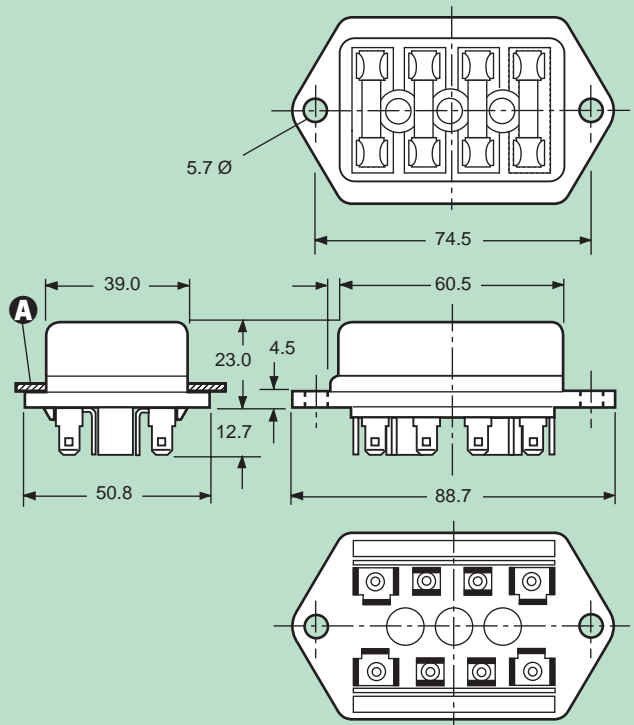
Fuse positions ..... 2 | Spare fuse positions ..... 2



### Fuse boxes

General purpose fuse box suitable for car, agricultural, industrial and commercial vehicles. 12/24 V applications, excluding marine. Designed for mounting through vehicle bulkhead, detachable cover. All terminals are 6.35 mm, 17.5 A Lucar blades. Accepts glass cartridge fuses 29.4 mm long. Built-in positions for 2 spare fuses. Supplied less fuses.

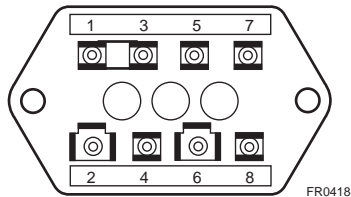
**1**



Fuse positions ..... 4 | Spare fuse positions ..... 2

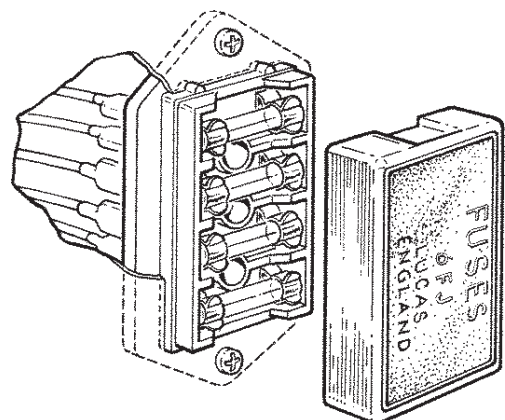
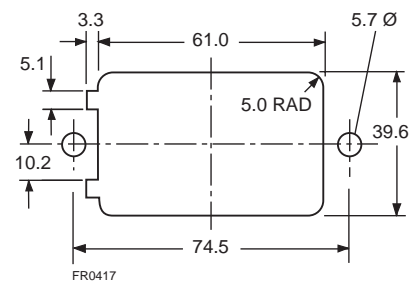
### 37409

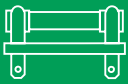
Type	<b>I</b>
Piercing	<b>A</b>



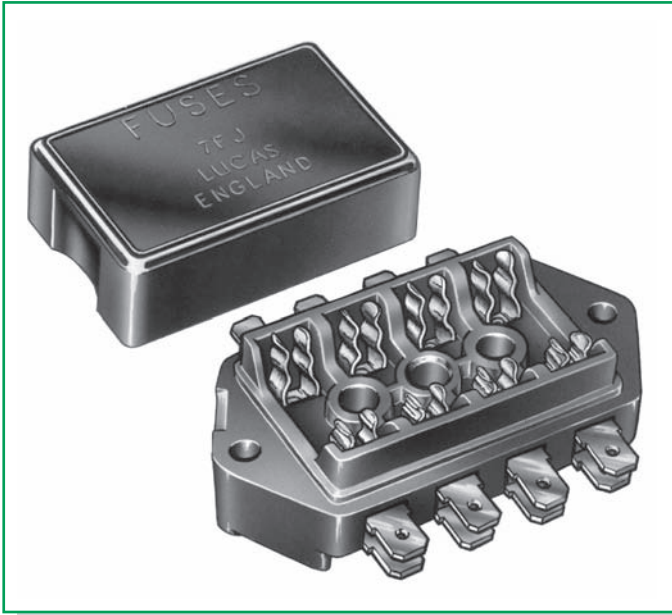
FR0418

**A**





# 7FJ

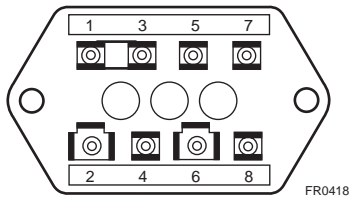


### Fuse box

General purpose fuse box suitable for car, agricultural, industrial and commercial vehicles. 12/24 V applications, excluding marine. Surface or through bulkhead mounting, detachable cover. All terminals are 6.35 mm, 17.5 A Lucar blades. Accepts glass cartridge fuses 29.4 mm long. Built-in positions for 2 spare fuses. Supplied less fuses.

### 37416

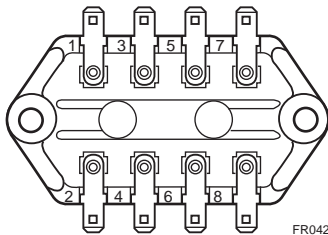
Type	<b>1</b>
Piercing	<b>A</b>
_____	_____
_____	_____



FR0418

### 37420

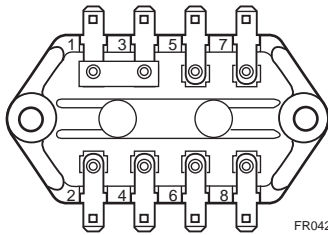
Type	<b>2</b>
Piercing	<b>A B</b>
_____	_____
_____	_____



FR0422

### 37552

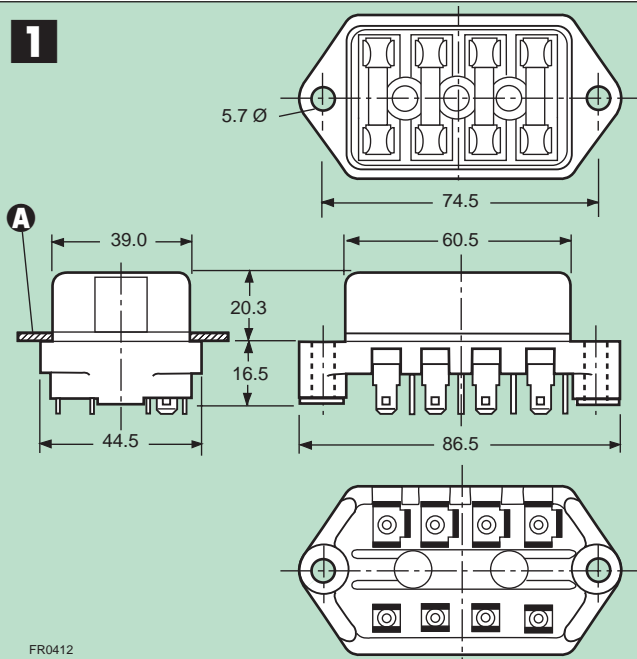
Type	<b>2</b>
Piercing	<b>A B</b>
_____	_____
_____	_____



FR0424

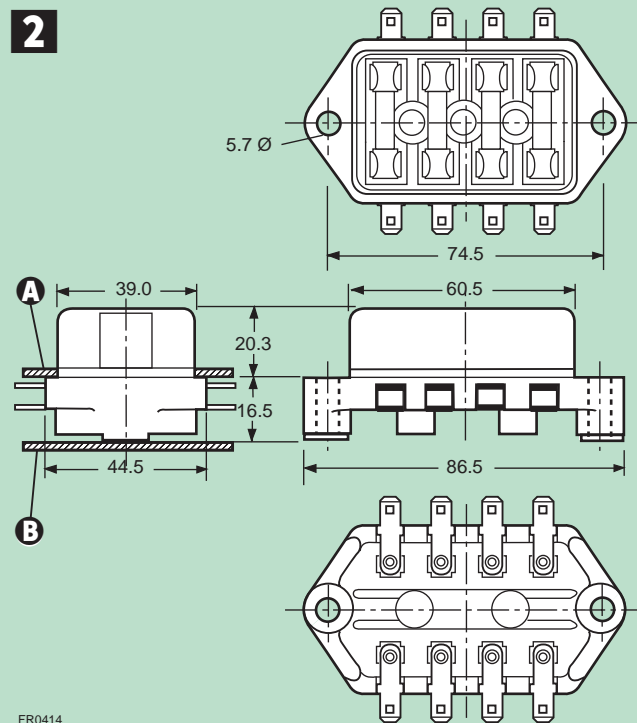
Fuse positions ..... 4 | Spare fuse positions ..... 2

## 1

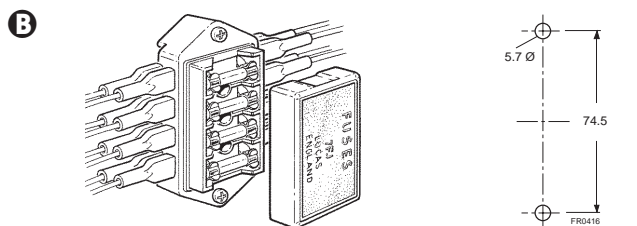
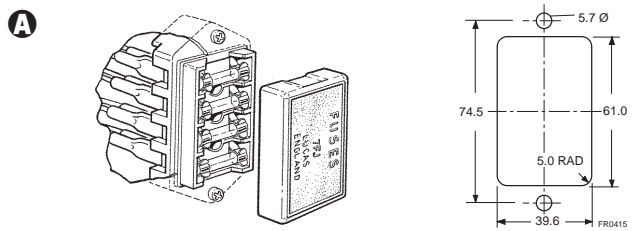


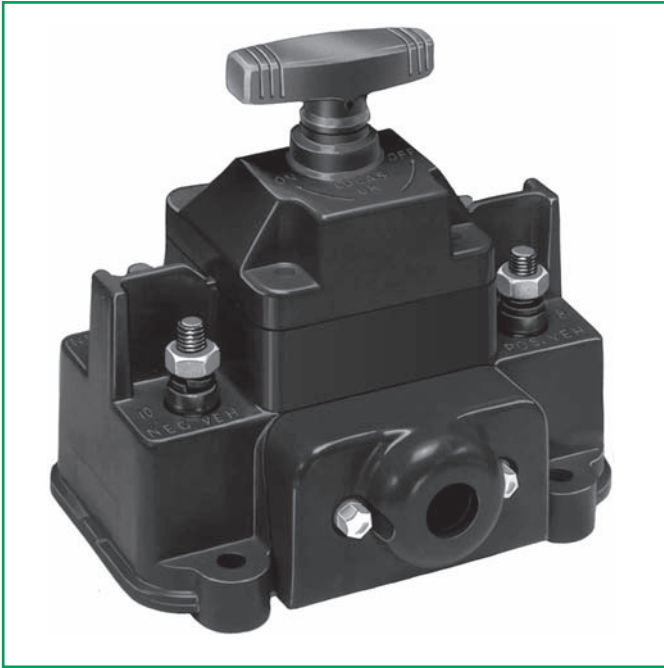
FR0412

## 2



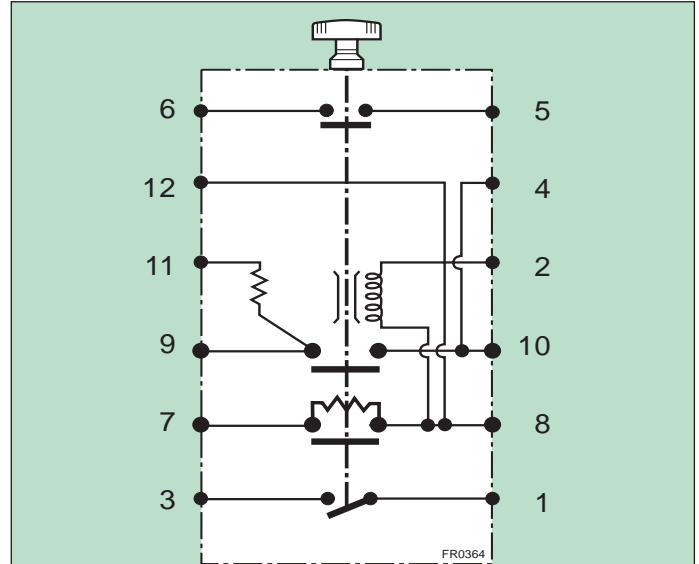
FR0414





### Battery master switch

Fully sealed, heavy duty master switch specially designed for commercial vehicles. Essential for vehicles carrying dangerous loads, i.e. petroleum products, gases, acids, etc. Resistant to water, salt spray and chemical attack. Made from a self extinguishing material. Easily secured to a flat horizontal or vertical surface. Window display to indicate switch position. 'T' bar handle affords easy mechanical on/off operation. Can also be switched 'off' electrically by remote switches. Complies with existing UK legislation. Approved by British Approval Service for Electrical Equipment in Flammable Atmospheres (B.A.S.E.E.F.A 2218/U) Standard SFA3012 Intrinsic Safety, for the carriage of dangerous goods by road.



### TERMINAL ARRANGEMENTS

#### i) Main terminals

- 7 To battery '+' positive terminal.
- 8 To vehicle '+' positive supply cables.
- 9 To battery '-' negative terminal.
- 10 To vehicle '-' negative return cables.

#### ii) Auxiliary terminals – All leads to the auxiliary terminal must pass through the centre of the cover. A suitable hole must be drilled in the pre-marked position and cable entry sealed with a waterproof gland.

- 1, 3 For use with alternators which do not include a surge protection device. Terminals 1 and 3 must be wired in series with the alternator field circuit.
- 2 Operating terminal for remote switching of internal solenoid. Return circuit via terminal 4.

**NOTE** If required an additional push switch may be fitted to the rear of the vehicle and wired in parallel with a cab switch.

- 4 Auxiliary '-' negative supply via main contacts.

- 5, 6 Auxiliary contacts.

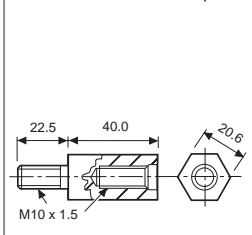
- 11 Return '-' negative connection for vehicle tachograph, if fitted. Enables tachograph to continue to operate when switch is in 'OFF' position.

- 12 Auxiliary '+' positive supply via main contacts.

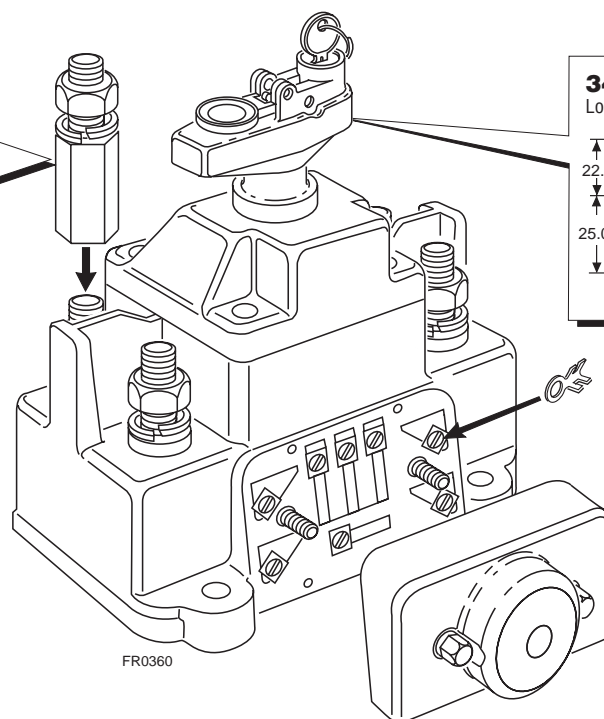
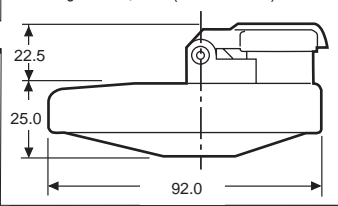
**NOTE** Internal circuit shown is for standard switch.

### ADDITIONAL PARTS AVAILABLE

**60033061**  
Main terminal extension posts

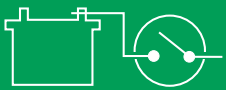


**34199\***  
Locking handle, Red (SSB100/102)

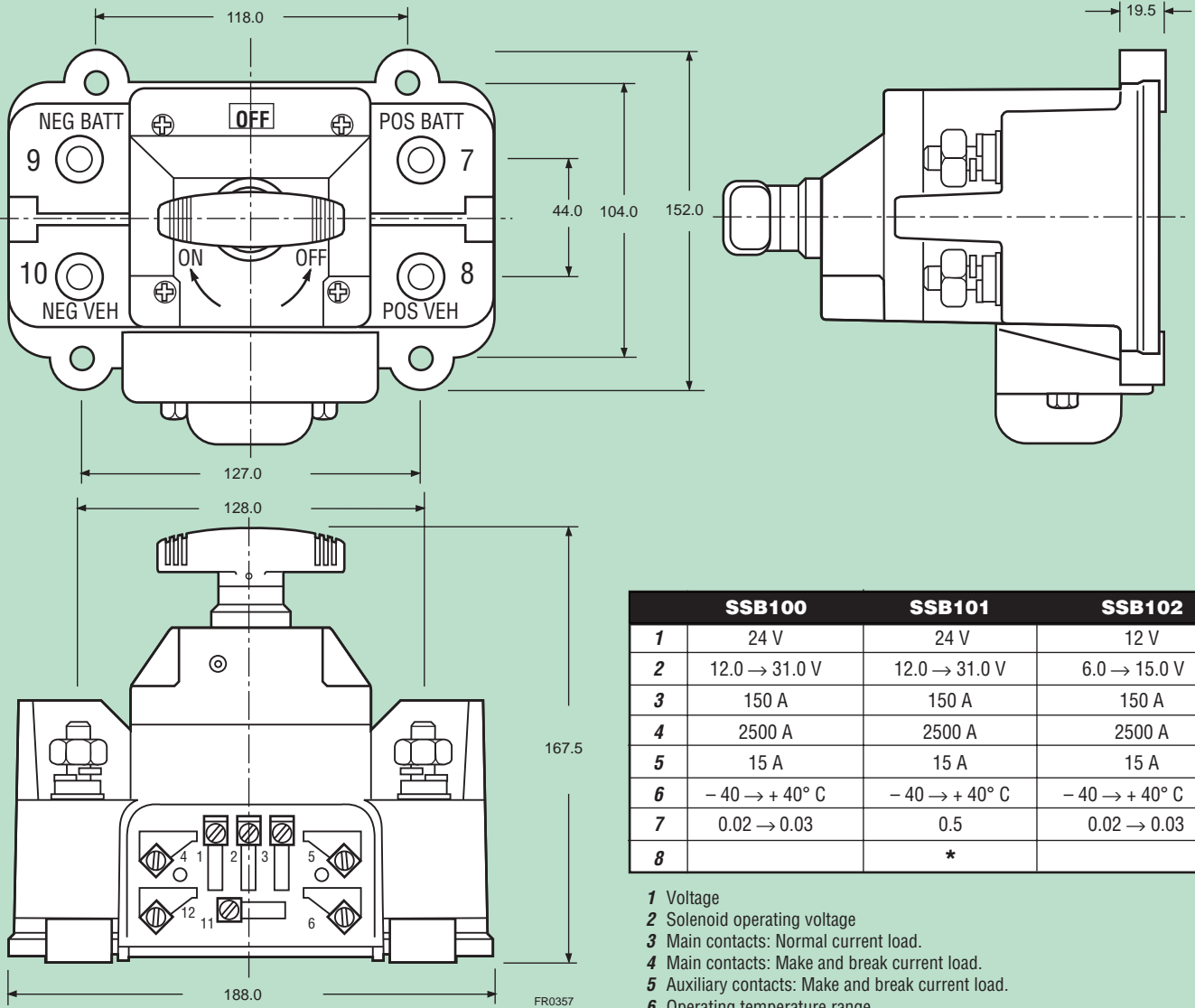


\* Prevents unauthorised switch operation. Key can be removed in locked or unlocked, 'ON' or 'OFF' positions.





# 196SA



	SSB100	SSB101	SSB102
1	24 V	24 V	12 V
2	12.0 → 31.0 V	12.0 → 31.0 V	6.0 → 15.0 V
3	150 A	150 A	150 A
4	2500 A	2500 A	2500 A
5	15 A	15 A	15 A
6	- 40 → + 40° C	- 40 → + 40° C	- 40 → + 40° C
7	0.02 → 0.03	0.5	0.02 → 0.03
8		*	

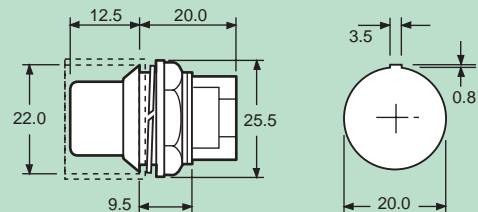
- 1 Voltage
- 2 Solenoid operating voltage
- 3 Main contacts: Normal current load.
- 4 Main contacts: Make and break current load.
- 5 Auxiliary contacts: Make and break current load.
- 6 Operating temperature range
- 7 Delay between main and auxiliary terminals opening.  
Solenoid operation only (seconds)
- 8 Delay type, solenoid operation only.\*

\* Increased delay period for alternators which require a longer period for the field circuit to collapse. Identified by yellow handle.

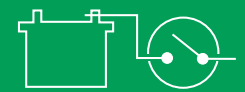
## SUITABLE SWITCHES FOR REMOTE CUT-OFF FACILITY

### SPB105

Push button switch, model, Model SS5

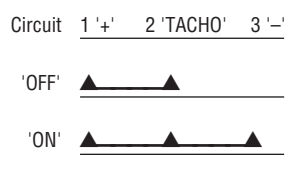
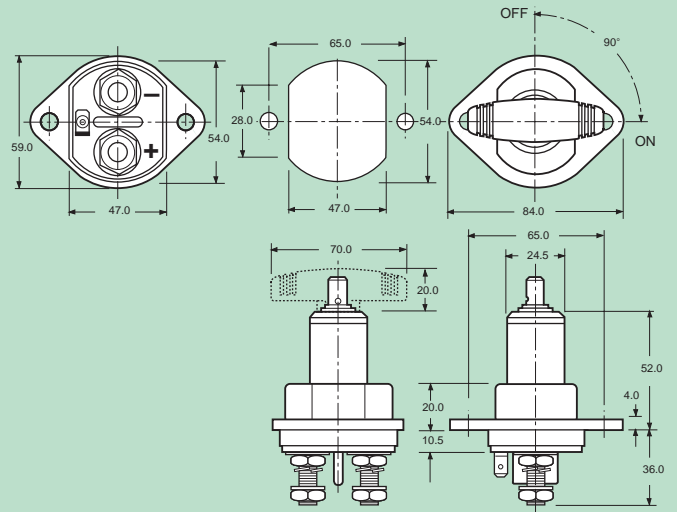


# 219SA



## Battery master switch

Rotary, battery isolator switch designed for panel or bulkhead mounting. Incorporates a 100 Ohm tachograph barrier resistor. Suitable for 12 V or 24 V passenger, commercial vehicle and marine applications.

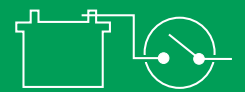


Maximum current ratings		SSB110 ‡	
Voltage		12 V	24 V
Intermittent loads	5 Secs	1500 A *	750 A
Intermittent loads	60 Secs	600 A *	300 A
Continuous loads		150 A *	150 A
Locking Handle (red) Order separately		34199	

‡ Switch & plain handle (red)

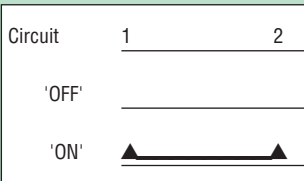
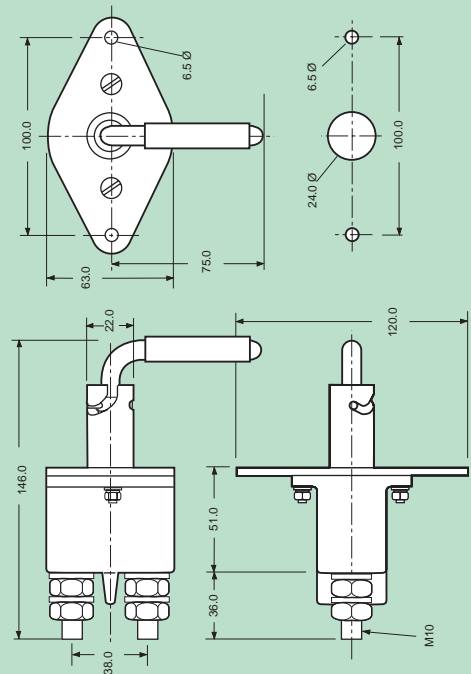
\* NOTE: For 1500 A and 600 A applications, cables fitted to the main terminals should be 120 mm<sup>2</sup> csa min.

# 219SA

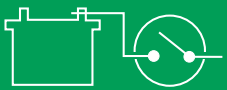


## Battery master switch

A heavy duty rotary operated Battery Isolation Switch, capable of switching up to 250 A continuous load. Incorporates a removable key for added security. Suitable for 12V or 24V passenger and commercial vehicles.



Maximum current ratings		SSB111	
Voltage		12/24 V	
Intermittent loads	5 Secs	2500 A	
Continuous loads		250 A	

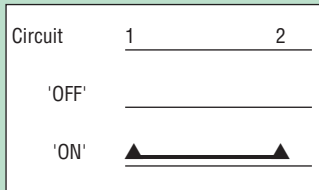
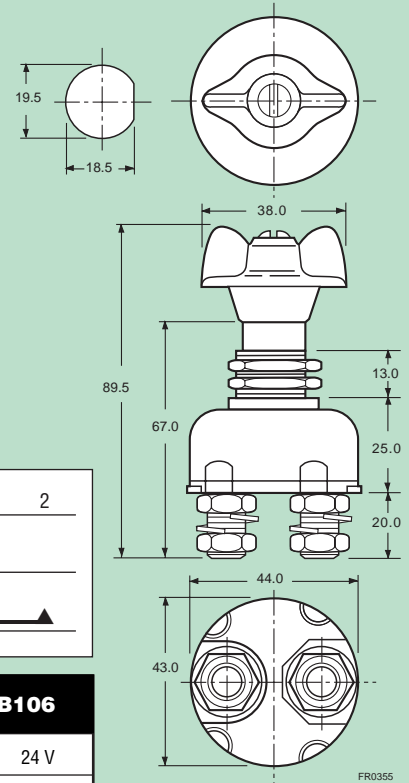


# ST360



### Battery master switch

Panel mounted rotary 'ON-OFF' battery isolation switch. Suitable for cars, light commercial vehicles and industrial applications. 12 V or 24 V systems. Electrical connections are stud terminals.



Maximum current ratings	SSB106	
Voltage	12 V	24 V
Intermittent loads	1500 A	500 A
Continuous loads	150 A	100 A

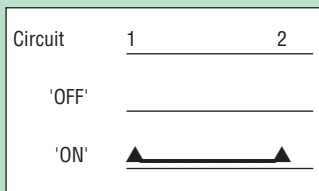
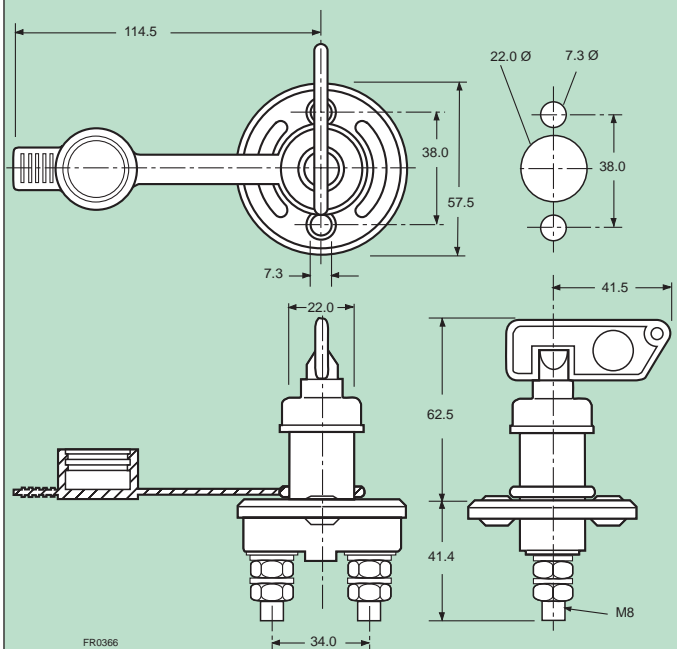


# ST360



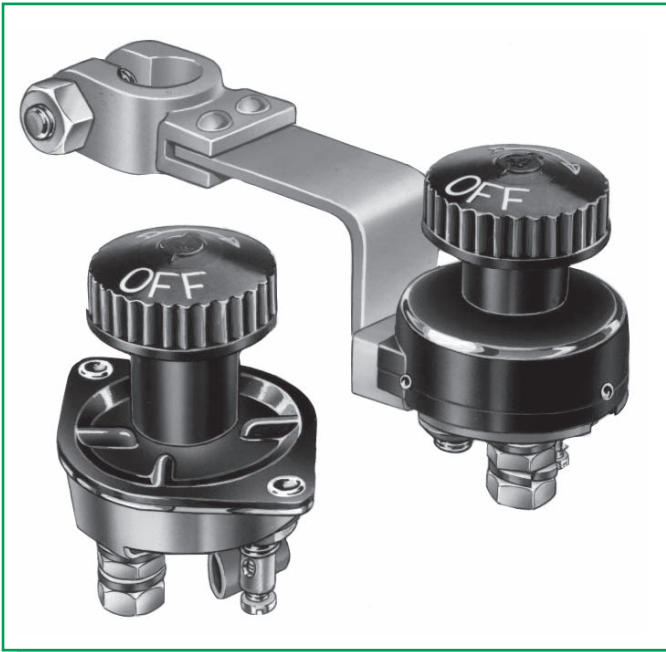
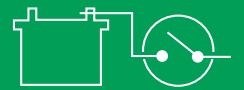
### Battery master switch

Rotary operated Battery Isolation Switch designed for panel or bulkhead mounting. Incorporates removable 'Flag Key' for added security, and is supplied complete with a splash cap. Suitable for 12 V or 24 V passenger, commercial vehicles and marine applications. A replacement key can be ordered using part number SSB113.



Maximum current ratings	SSB112	
Voltage		12/24 V
Intermittent loads	10 Secs	500 A
Continuous loads		100 A

# ST330/ST350



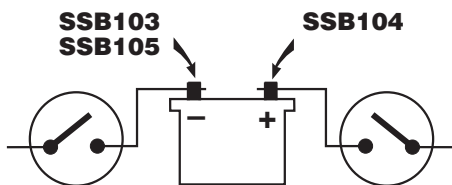
## Battery master switch

Knob operated rotary battery isolation switch. Panel or battery mounted. Suitable for cars, light commercial vehicle and light industrial applications. 12 V or 24 V systems. Incorporates a small third terminal for connections to the low tension (LT) circuit, which prevents the vehicle from being started by towing or pushing, when the switch is in the 'OFF' position. Electrical connections are stud terminals.

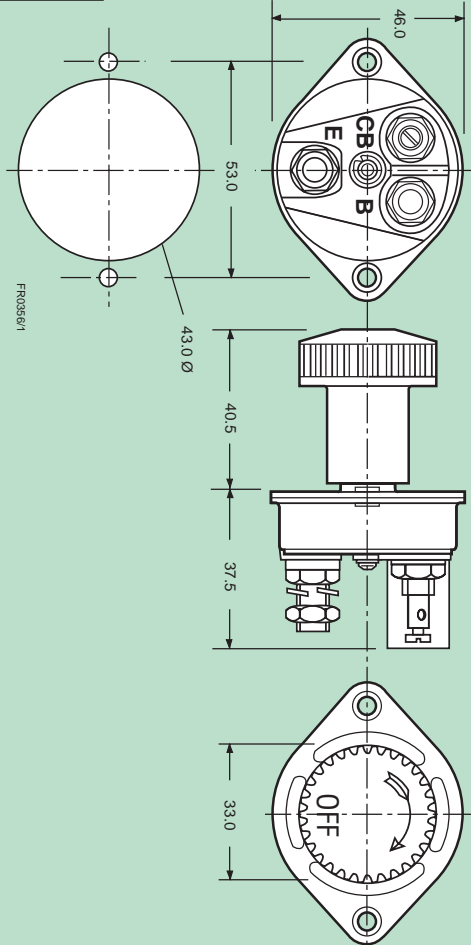
Maximum current ratings	SSB103		SSB104		SSB105	
	12 V	24 V	12 V	24 V	12 V	24 V
Voltage Intermittent loads-45 secs max	500 A	250 A	500 A	250 A	500 A	250 A
Continuous loads	150 A	75 A	150 A	75 A	150 A	75 A

- SSB103 - ST330 '-': Panel mounted negative terminal
- SSB104 - ST350 '+': Battery mounted positive terminal
- SSB105 - ST350 '-': Battery mounted negative terminal

Ensure switch is connected to the correct battery terminal polarity

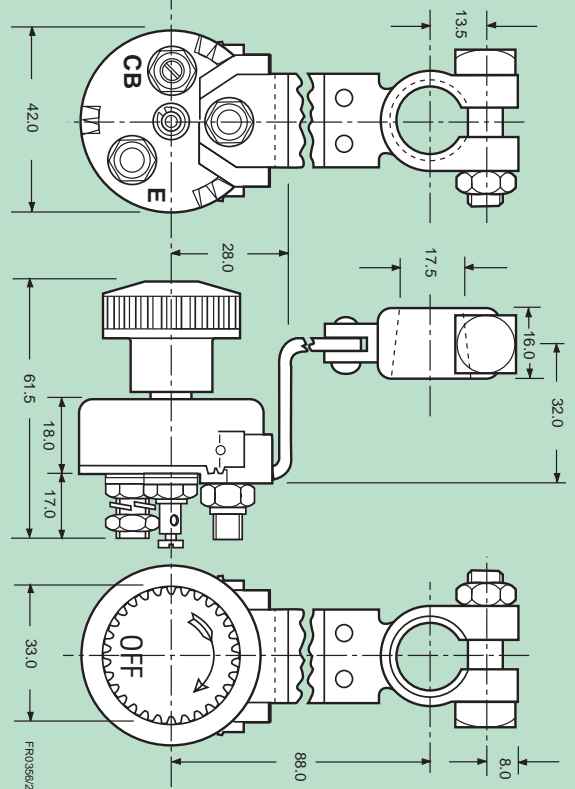


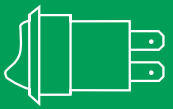
## SSB103



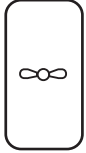
## SSB104

## SSB105





# 159SA Rocker Switch Knob Symbols



30952



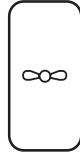
33963



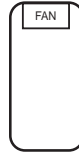
33988



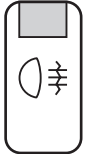
39745



39739



39915



33816



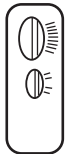
33930



34245



30377



30731



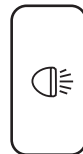
30875



30876



36546



39298



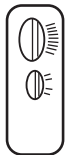
39314



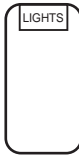
39463



39737



39746



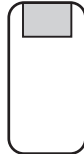
39914



30593



30829



30990



33737



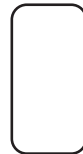
33847



39629



39823



39824



39831



30365



30434



39302



39315



39710

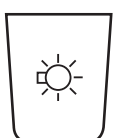
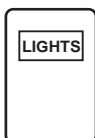
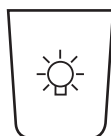
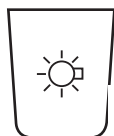
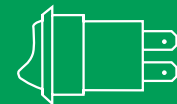


39736



39748

# 183SA Rocker Switch Knob Symbols

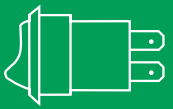


FR0546



39980





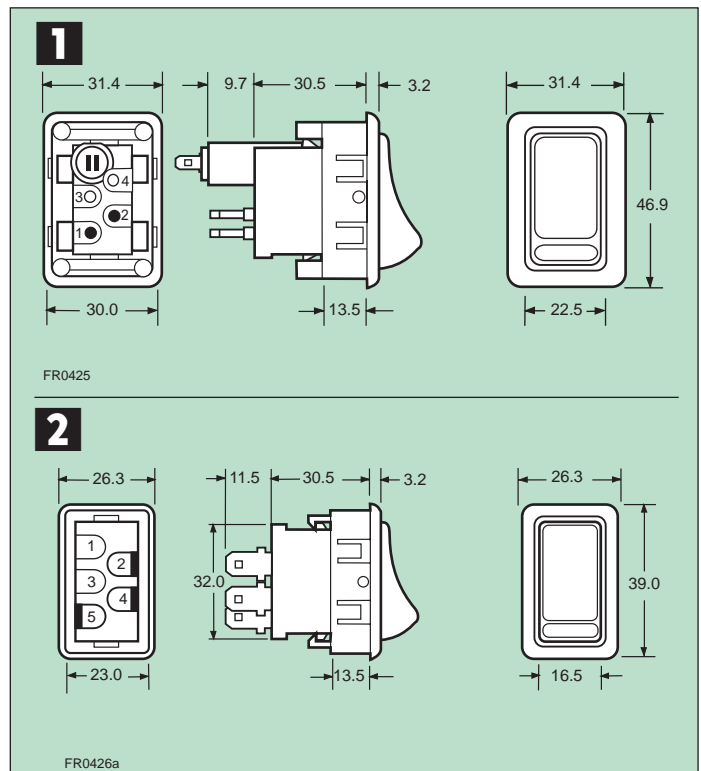
# 159SA

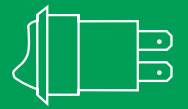


## Panel mounted rocker switch.

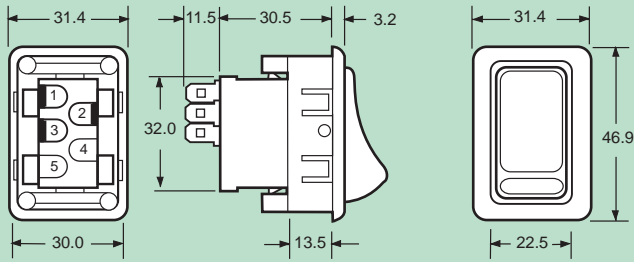
Panel mounted rocker switch. Two or three position versions available. Electrical connections are Lucar terminals or 3 mm pins. Knobs with translucent windows are illuminated by a bulb in a holder which is either fitted into a chimney or clipped to the end of the nacelle.

	A		B		C	
Current Rating						
	12 V		12 V		24 V	
Resistive Load	*26 A	17.5 A	*10 A	8 A		
Inductive Load		5 A		3 A		
* Heavy action						



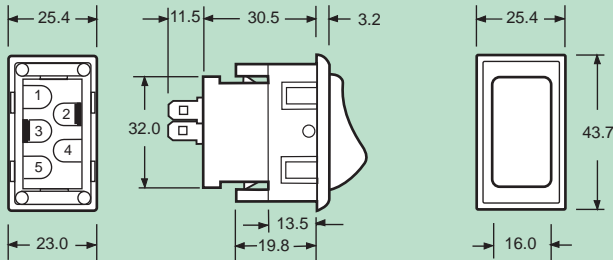


### 3



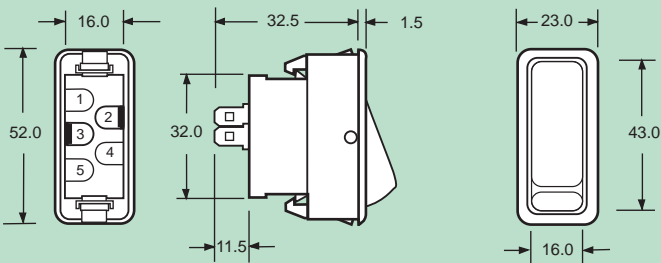
FR0427

### 4



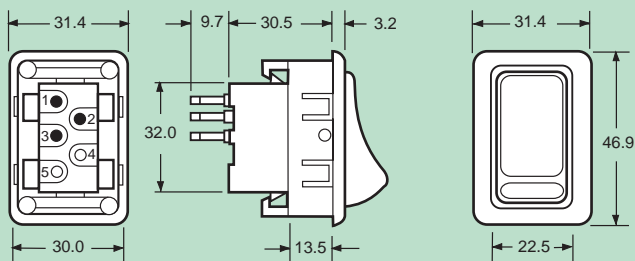
FR0428

### 5



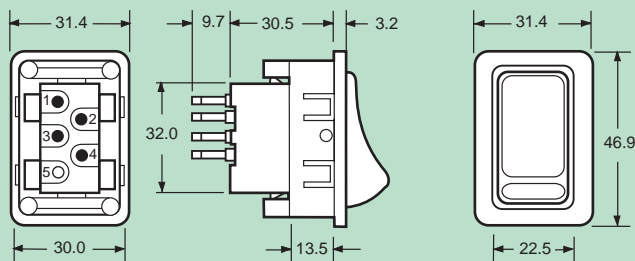
FR0429

### 6



FR0430

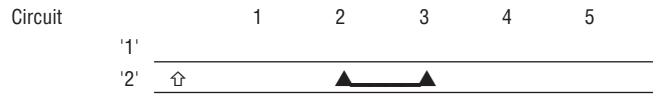
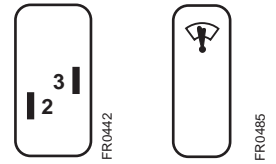
### 7



FR0431

**30365** 2

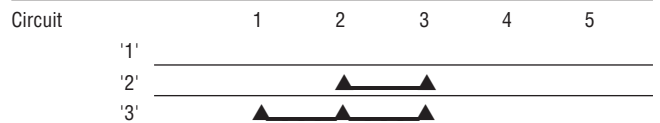
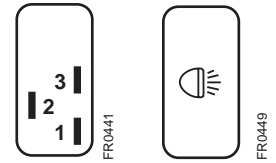
Type **5**  
 Function WASH  
 Piercing = **C**  
 Finish = METALLISED  
 Illuminated = -



Max. panel thickness : 1.1 → 1.4 mm

**30377** 3

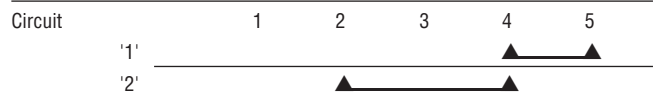
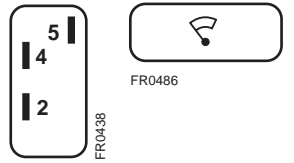
Type **3**  
 Function LIGHTING  
 Piercing = **A**  
 Finish = BLACK  
 Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm \* HEAVY ACTION

**30434** 2

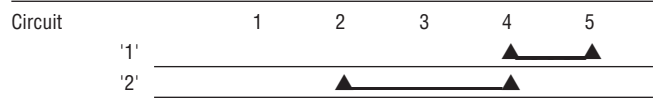
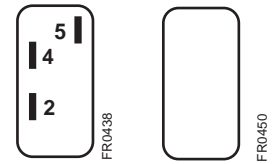
Type **5**  
 Function WIPER  
 Piercing = **C**  
 Finish = BLACK  
 Illuminated = -



Max. panel thickness : 1.1 → 1.4 mm

**30593** 2

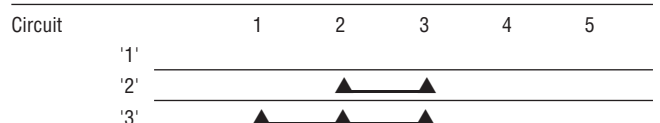
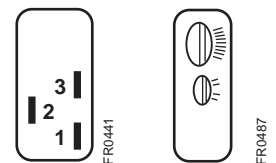
Type **3**  
 Function -  
 Piercing = **A**  
 Finish = BLACK  
 Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

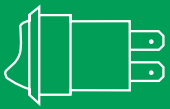
**30731** 3

Type **5**  
 Function LIGHTING  
 Piercing = **C**  
 Finish = BLACK  
 Illuminated = -



Max. panel thickness : 1.1 → 1.4 mm

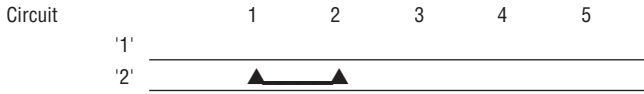
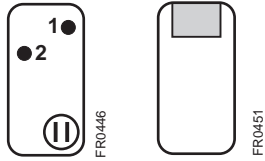




# 159SA

**30829** 2

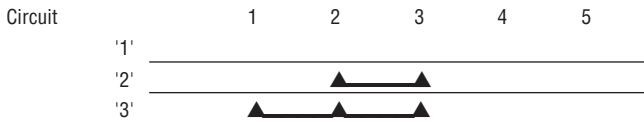
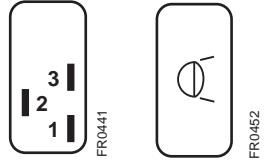
Type **I**  
Function -  
Piercing = **A**  
Finish = BLACK  
Illuminated = AMBER



Max. panel thickness : 0.9 → 1.4 mm 24 V use bulb LLB508

**30875** 3

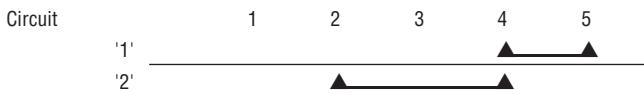
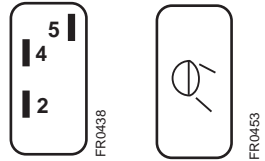
Type **E**  
Function LIGHTING  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**30876** 2

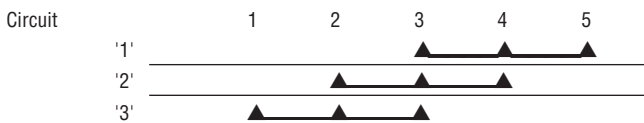
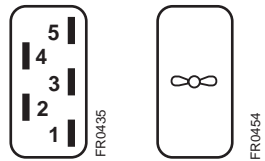
Type **E**  
Function LIGHTING  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**30952** 3

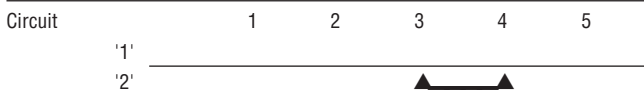
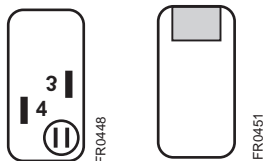
Type **B**  
Function FAN  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**30990** 2

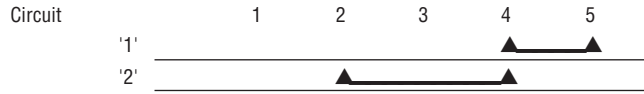
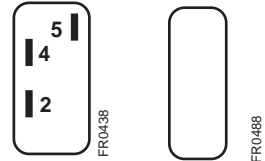
Type **I**  
Function -  
Piercing = **A**  
Finish = METALLISED  
Illuminated = AMBER



Max. panel thickness : 0.9 → 1.4 mm 24 V use bulb LLB508

**33737** 2

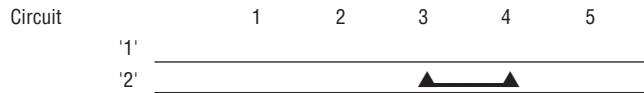
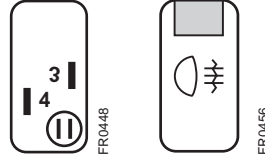
Type **E**  
Function -  
Piercing = **C**  
Finish = METALLISED  
Illuminated = -



Max. panel thickness : 1.1 → 1.4 mm

**33816** 2

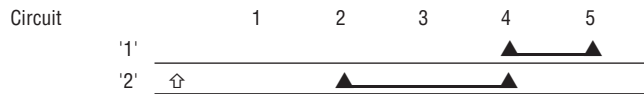
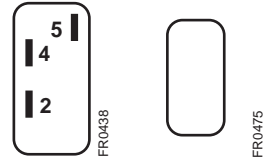
Type **I**  
Function FOG  
Piercing = **A**  
Finish = BLACK  
Illuminated = AMBER



Max. panel thickness : 0.9 → 1.4 mm 24 V use bulb LLB508

**33847** 2

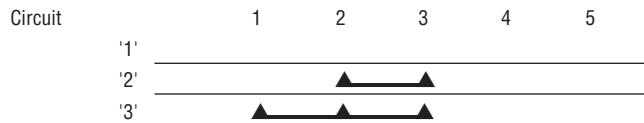
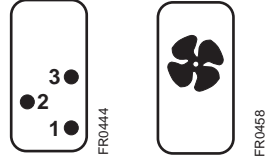
Type **E**  
Function -  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**33963** 3

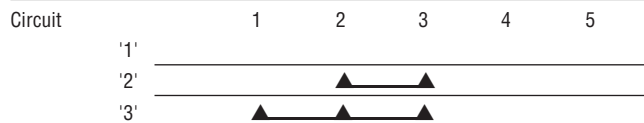
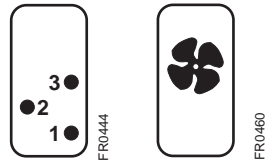
Type **F**  
Function FAN  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



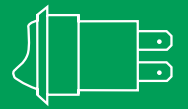
Max. panel thickness : 0.9 → 1.4 mm

**33988** 3

Type **G**  
Function FAN  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm



**34245** 2

Type **7**

Function FOG

Piercing = **A**

Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____		_____▲		

Max. panel thickness : 2.0 → 2.5 mm

**39315** 2

Type **2**

Function WIPER

Piercing = **B**

Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____▲		_____▲		

Max. panel thickness : 0.7 → 0.9 mm

**36546** 3

Type **7**

Function LIGHTING

Piercing = **A**

Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

Max. panel thickness : 2.0 → 2.5 mm

**39463** 3

Type **2**

Function LIGHTING

Piercing = **B**

Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

Max. panel thickness : 0.7 → 0.9 mm

**39298** 3

Type **B**

Function LIGHTING

Piercing = **A**

Finish = METALLISED

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

Max. panel thickness : 0.9 → 1.4 mm

**39629** 2

Type **B**

Function -

Piercing = **A**

Finish = METALLISED

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____▲		_____▲		

Max. panel thickness : 0.9 → 1.4 mm

**39302** 3

Type **B**

Function WIPER

Piercing = **A**

Finish = METALLISED

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____		_____▲		
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

Max. panel thickness : 0.9 → 1.4 mm

**39710** 3

Type **B**

Function WIPER

Piercing = **A**

Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____		_____▲		
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

Max. panel thickness : 0.9 → 1.4 mm

**39314** 3

Type **2**

Function LIGHTING

Piercing = **B**

Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____				
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

Max. panel thickness : 0.7 → 0.9 mm

**39736** 3

Type **2**

Function WIPER

Piercing = **B**

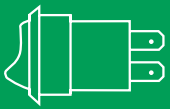
Finish = BLACK

Illuminated = -

Circuit

	1	2	3	4	5
'1'	_____		_____▲		
'2'	_____▲		_____▲		
'3'	_____▲		_____▲		

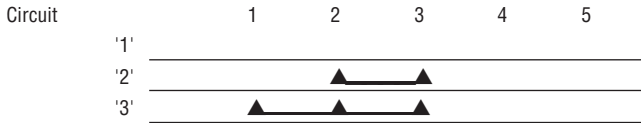
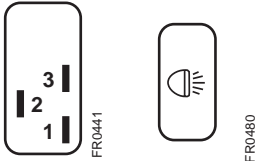
Max. panel thickness : 0.9 → 1.8 mm



# 159SA

**39737** 3

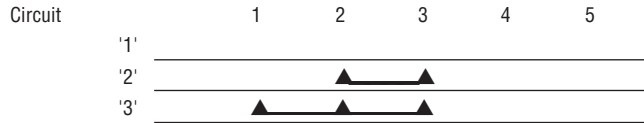
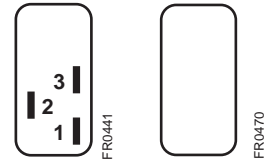
Type **2**  
Function LIGHTING  
Piercing = **B**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.8 mm

**39823** 3

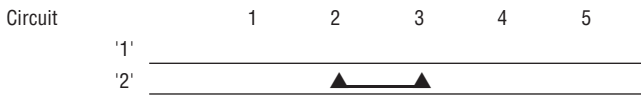
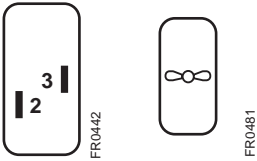
Type **3**  
Function -  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 > 1.4 mm

**39739** 2

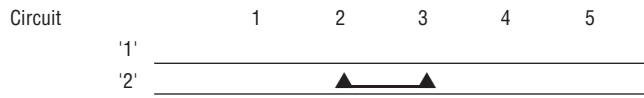
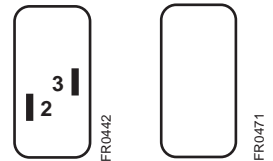
Type **2**  
Function FAN  
Piercing = **B**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.8 mm

**39824** 2

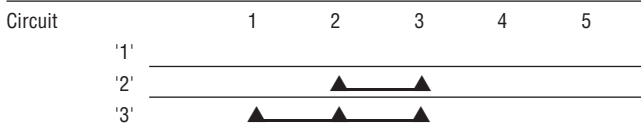
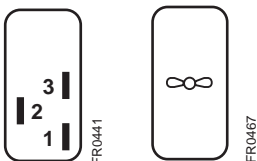
Type **3**  
Function -  
Piercing = **A**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**39745** 3

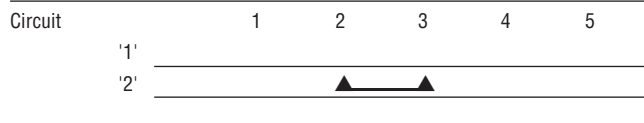
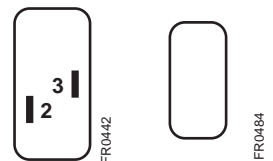
Type **3**  
Function FAN  
Piercing = **A**  
Finish = METALLISED  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**39831** 2

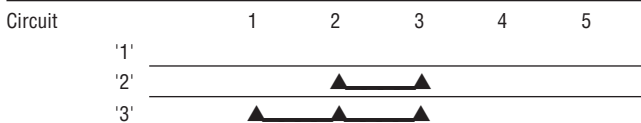
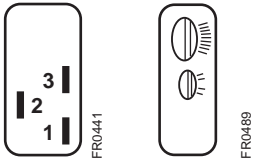
Type **2**  
Function -  
Piercing = **B**  
Finish = BLACK  
Illuminated = -



Max. panel thickness : 0.7 → 0.8 mm

**39746** 3

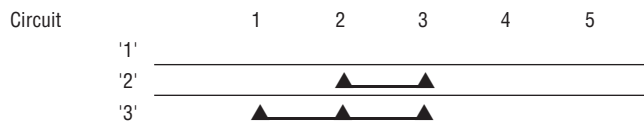
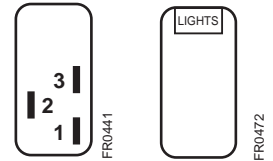
Type **5**  
Function LIGHTING  
Piercing = **C**  
Finish = METALLISED  
Illuminated = -



Max. panel thickness : 1.12 → 1.37 mm

**39914** 3

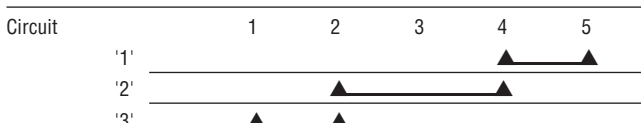
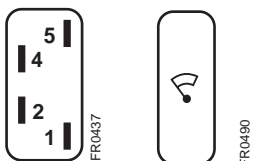
Type **3**  
Function LIGHTING  
Piercing = **A**  
Finish = METALLISED  
Illuminated = -



Max. panel thickness : 0.9 → 1.4 mm

**39748** 3

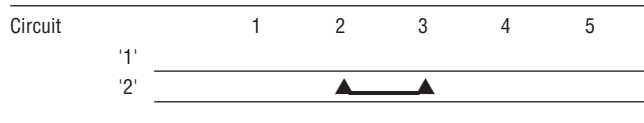
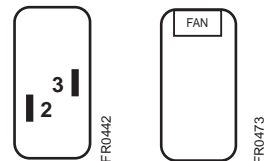
Type **5**  
Function WIPER  
Piercing = **C**  
Finish = METALLISED  
Illuminated = -



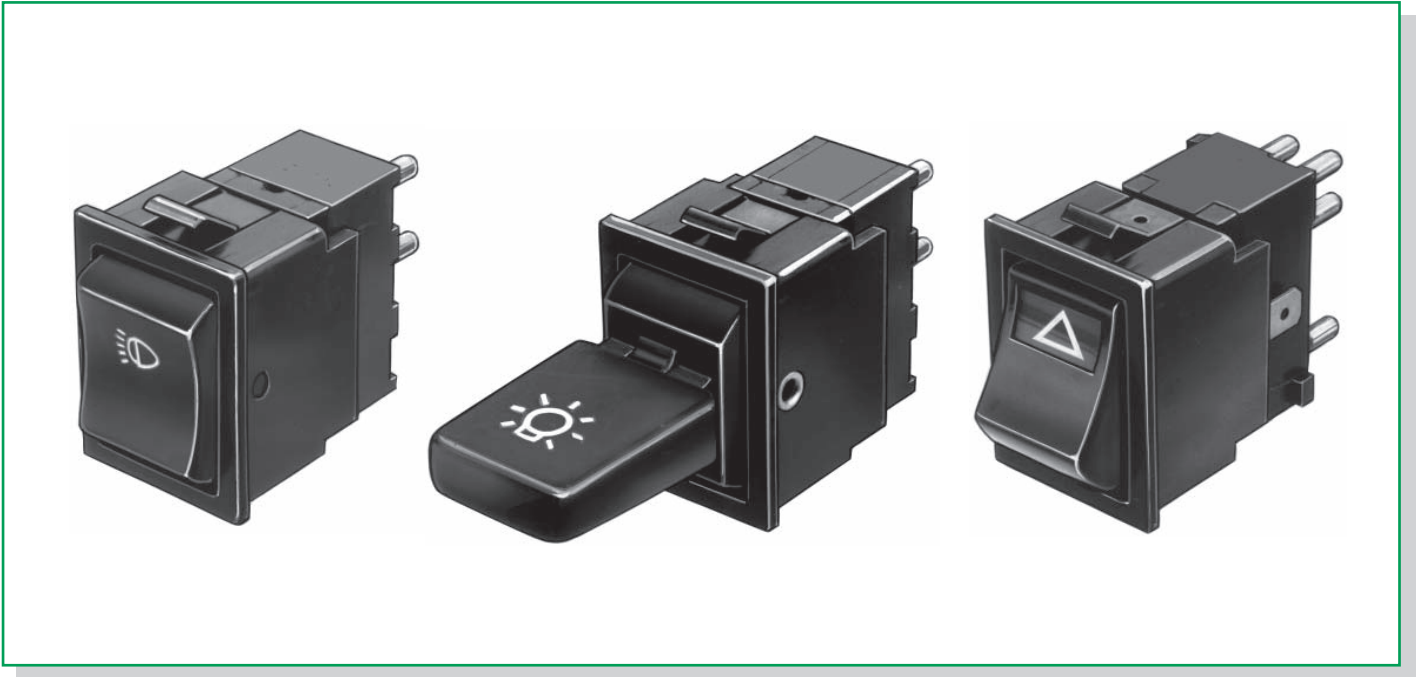
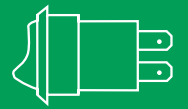
Max. panel thickness : 1.12 → 1.37 mm      24 V use bulb LLB508

**39915** 2

Type **3**  
Function FAN  
Piercing = **A**  
Finish = METALLISED  
Illuminated = -

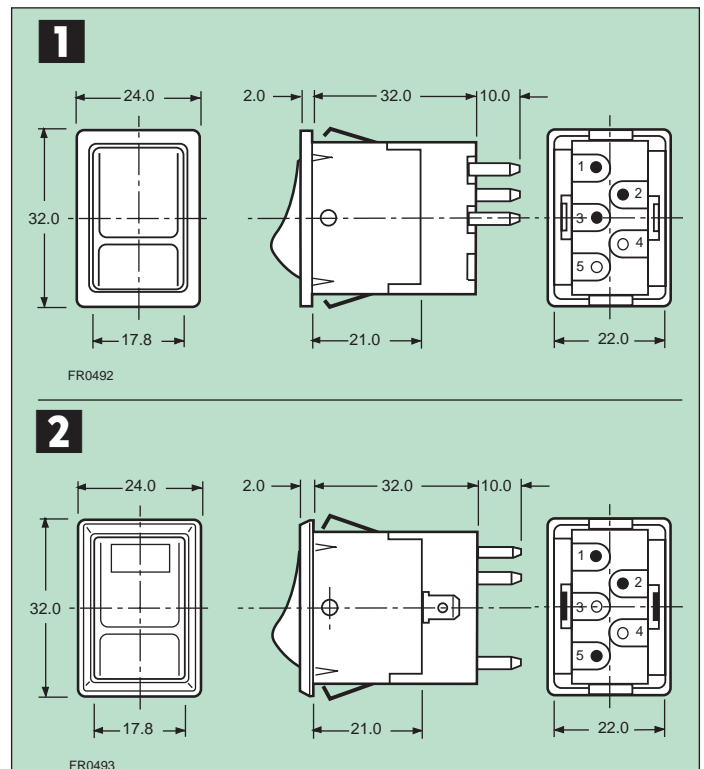
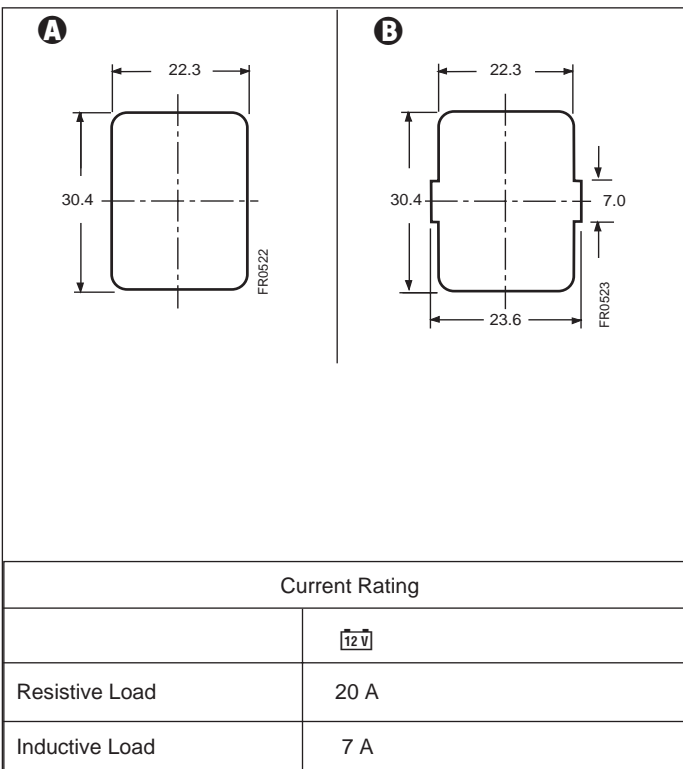


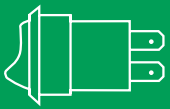
Max. panel thickness : 0.9 → 1.4 mm



### Panel mounted miniature rocker switch.

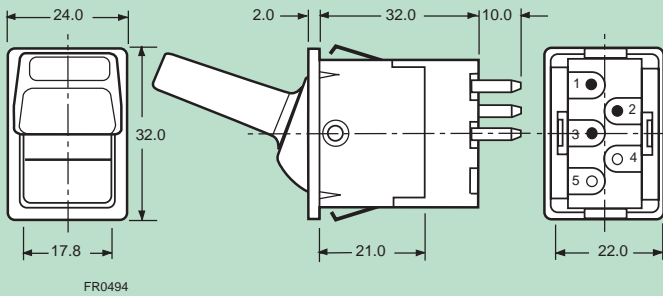
Panel mounted miniature rocker switch. Suitable for cars and commercial vehicles. Electrical connections are Lucar terminals or 3 mm pins. Knobs with translucent windows are illuminated by a bulb built into the switch action.





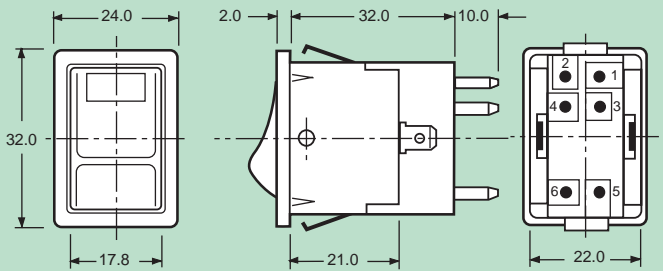
# 183SA

### 3



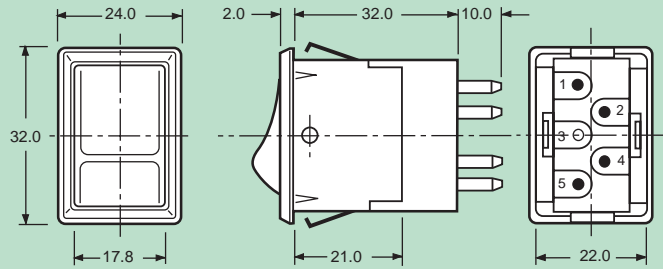
FR0494

### 4



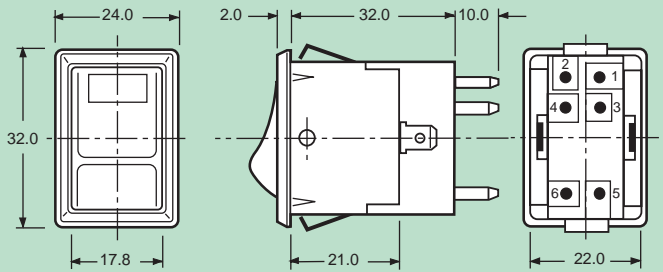
FR0495

### 5



FR0496

### 6



FR0497

### 30452

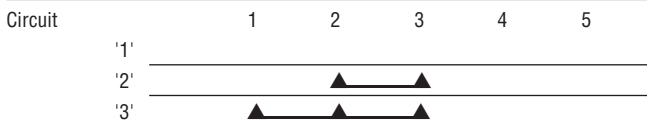
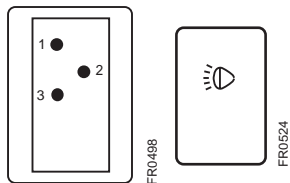
Type **1**

Function LIGHTING

Piercing = **A**

Finish = BLACK

Illuminated = -



Max. panel thickness : 2.5 → 2.6 mm

### 30713

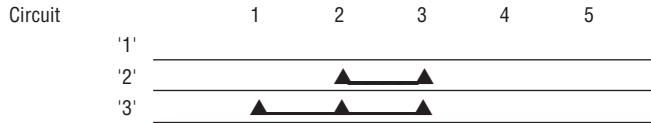
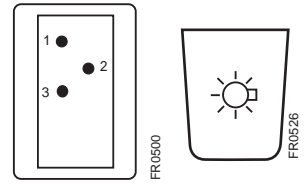
Type **3**

Function LIGHTING

Piercing = **B**

Finish = BLACK

Illuminated = -



Max. panel thickness : 2.4 → 2.6 mm

### 30771

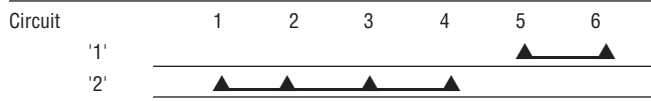
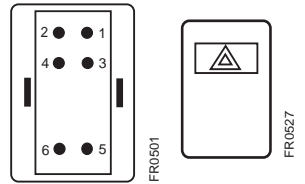
Type **4**

Function HAZARD

Piercing = **A**

Finish = BLACK

Illuminated = GREEN



Max. panel thickness : 0.6 → 0.8 mm

### 30924

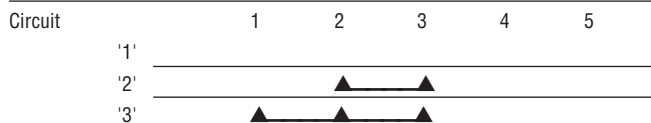
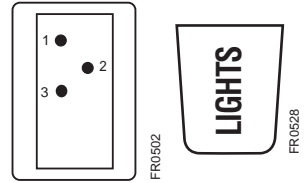
Type **3**

Function LIGHTING

Piercing = **B**

Finish = BLACK

Illuminated = -



Max. panel thickness : 2.4 → 2.6 mm

### 30926

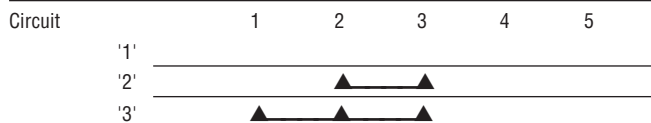
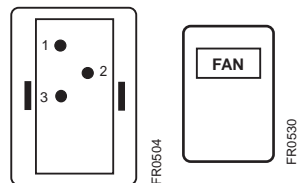
Type **2**

Function FAN

Piercing = **A**

Finish = BLACK

Illuminated = GREEN



Max. panel thickness : 4.3 → 4.6 mm

### 30927

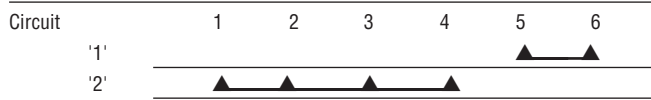
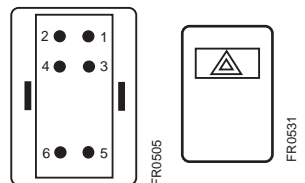
Type **6**

Function HAZARD

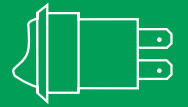
Piercing = **A**

Finish = BLACK

Illuminated = GREEN



Max. panel thickness : 4.3 → 4.6 mm



**30928** 2

Type **6**

Function HAZARD

Piercing = **A**

Finish = BLACK

Illuminated = GREEN

Circuit

'1' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 4.3 → 4.6 mm

**36565** 3

Type **3**

Function LIGHTING

Piercing = **B**

Finish = BLACK

Illuminated = -

Circuit

'1' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'3' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 2.4 → 2.6 mm

**30935** 3

Type **1**

Function LIGHTING

Piercing = **A**

Finish = BLACK

Illuminated = -

Circuit

'1' \_\_\_\_\_

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'3' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 0.6 → 0.8 mm

**36642** 3

Type **5**

Function INTERIOR LIGHT

Piercing = **A**

Finish = BLACK

Illuminated = -

Circuit

'1' \_\_\_\_\_

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'3' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 1.2 → 1.5 mm

**30949** 3

Type **3**

Function LIGHTING

Piercing = **B**

Finish = BLACK

Illuminated = -

Circuit

'1' \_\_\_\_\_

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'3' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 2.4 → 2.6 mm

**39980** 2

Type **1**

Function -

Piercing = **A**

Finish = BLACK

Illuminated = -

Circuit

'1' \_\_\_\_\_

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 1.2 → 1.3 mm

**30992** 3

Type **2**

Function LIGHTING

Piercing = **A**

Finish = BLACK

Illuminated = GREEN

Circuit

'1' \_\_\_\_\_

'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'3' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 2.4 → 2.6 mm

**35283** 3

Type **5**

Function INTERIOR LIGHT

Piercing = **A**

Finish = BLACK

Illuminated = -

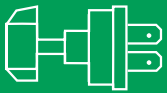
Circuit

'1' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

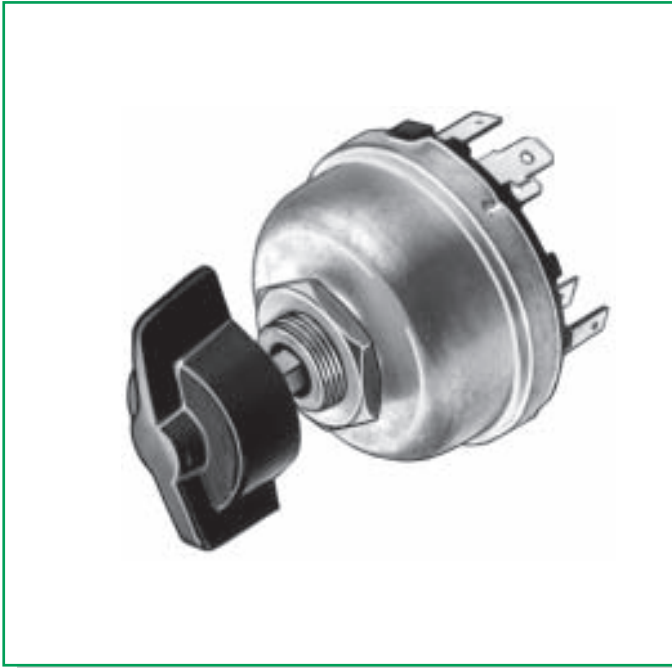
'2' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

'3' \_\_\_\_\_ ▲ \_\_\_\_\_ ▲

Max. panel thickness : 1.2 → 1.5 mm

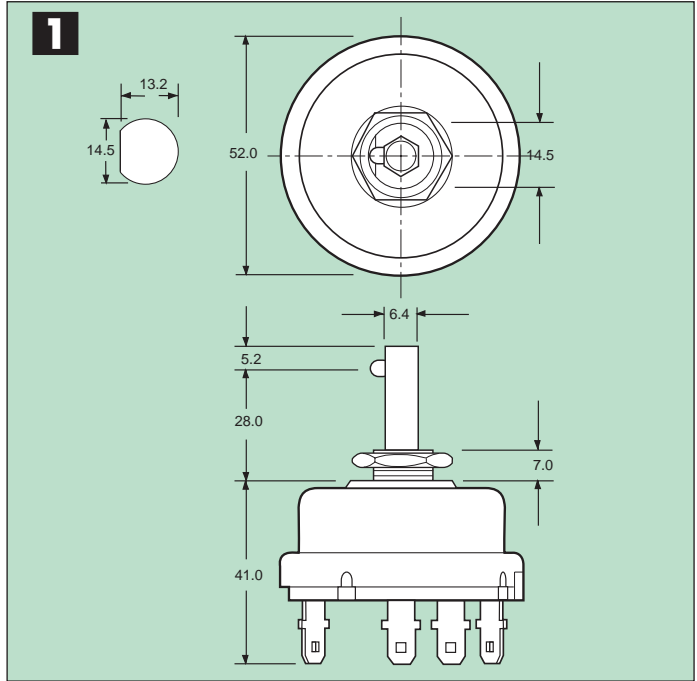


# 16SA

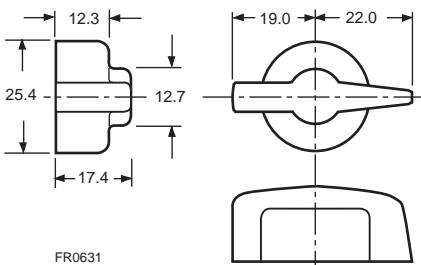


## Rotary switch

A 4 or 6 position rotary operated lighting switch. Suitable for 12 V or 24 V applications. Supplied with or without knob. Splash proofed by an internal rubber sealing ring. Electrical connections are made via Lucar blade terminals.

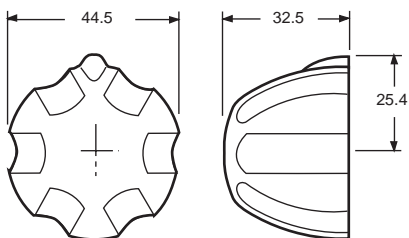


54340037



FR0631

54331311



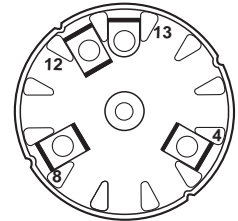
FR0632

**A** Order knob separately using part number 54340037

**B** Order knob separately using part number 54331311

**34952** 4 12 V 24 V

Type	<b>I</b>
Function	LIGHTING
Finish	STANDARD
Illuminated	-
Knob	<b>A B</b>
Max. panel thickness :	3.0 mm



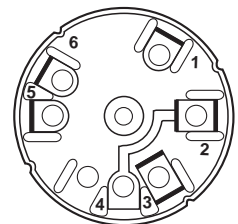
FR0608

Circuit	4 SIDE/ TAIL/ PANEL	8 FEED	12 MAIN BEAM	13 DIP
1	_____	_____	_____	_____
2	▲_____▲	_____	_____	_____
3	▲_____▲	▲_____▲	_____	_____
4	▲_____▲	▲_____▲	▲_____▲	_____

Max. current 12 V/24 V      4/2 A                      20/5 A      20/5 A

**35698** 6 12 V 24 V

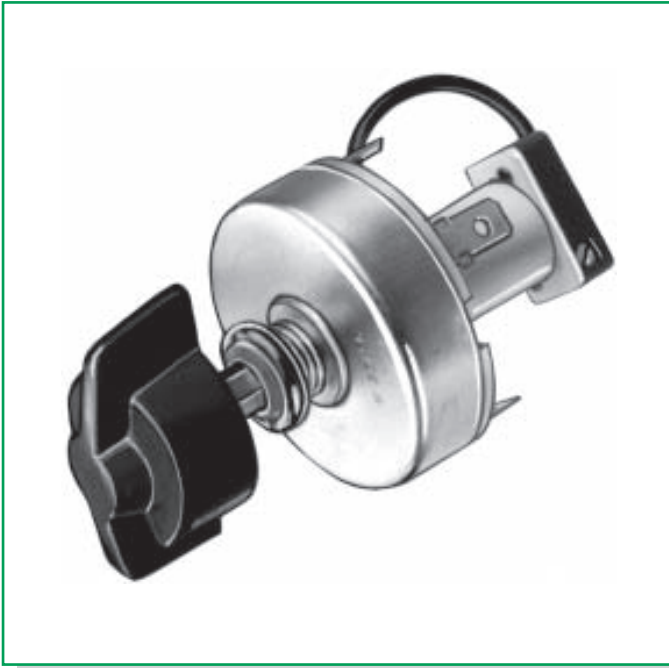
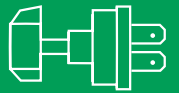
Type	<b>I</b>
Function	LIGHTING
Finish	STANDARD
Illuminated	-
Knob	<b>A B</b>
Max. panel thickness :	3.0 mm



FR0607

Circuit	1 WORK LIGHT	2 FEED	3 SIDE/ TAIL/ PANEL	5 MAIN BEAM	6 DIP
1	_____	_____	_____	_____	_____
2	_____	▲_____▲	_____	_____	_____
3	_____	▲_____▲	▲_____▲	_____	_____
4	_____	▲_____▲	▲_____▲	▲_____▲	_____
5	▲_____▲	▲_____▲	▲_____▲	_____	_____
6	▲_____▲	_____	_____	_____	_____

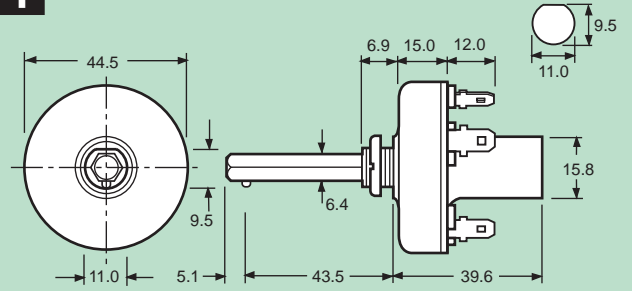
Max. current 12 V/24 V      4/2 A                      4/2 A      20/5 A      20/5 A



### Rotary switch

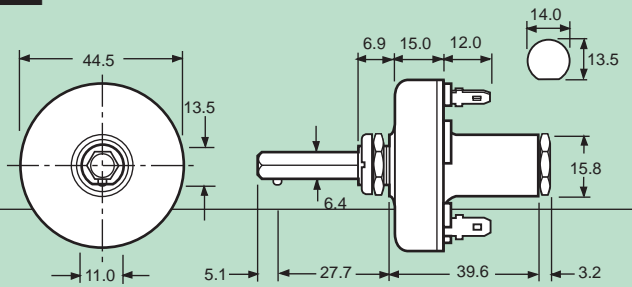
A 2 or 3 position rotary operated wiper switch. For 12 V applications only. Supplied without knob. Available with a 'wash' facility which is engaged by depressing the switch knob. Electrical connections are made via Lucas blade terminals.

**1**



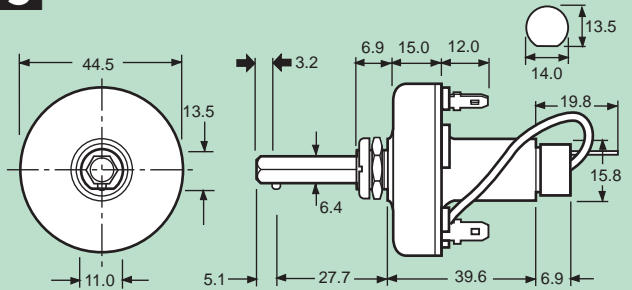
FR0610

**2**



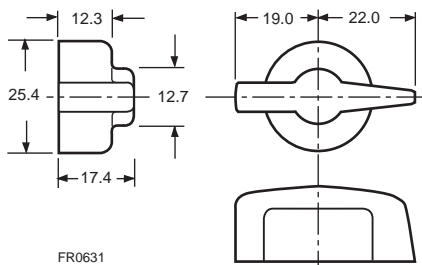
FR0611

**3**



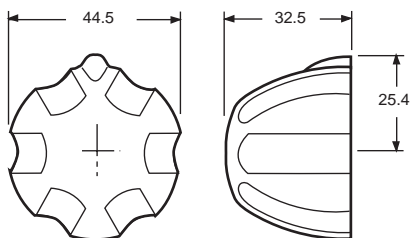
FR0612

54340037



FR0631

54331311



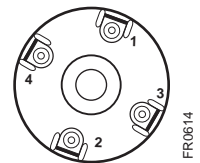
FR0632

**A** Order knob separately using part number 54340037

**B** Order knob separately using part number 54331311

**39125** 3

Type	<b>I</b>
Function	WIPERS
Finish	STANDARD
Knob	<b>A</b> <b>B</b>

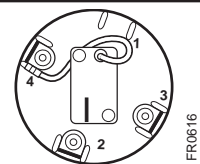


FR0614

Circuit	1 FAST WIPE	2 SLOW WIPE	3 LIMIT SWITCH FEED	4
1	_____			
2	_____▲_____▲_____			
3	▲_____▲_____			
Max. current	4 A	4 A		

**SQB967** 2

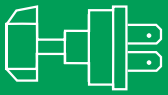
Type	<b>E</b>
Function	WIPERS
Finish	STANDARD
Knob	<b>A</b> <b>B</b>



FR0616

Circuit	2 WIPER	3 LIMIT SWITCH	4 FEED
1	_____		
2	▲_____▲_____		
	← → "PUSH KNOB FOR WASH"		
Max. current	4 A	4 A	





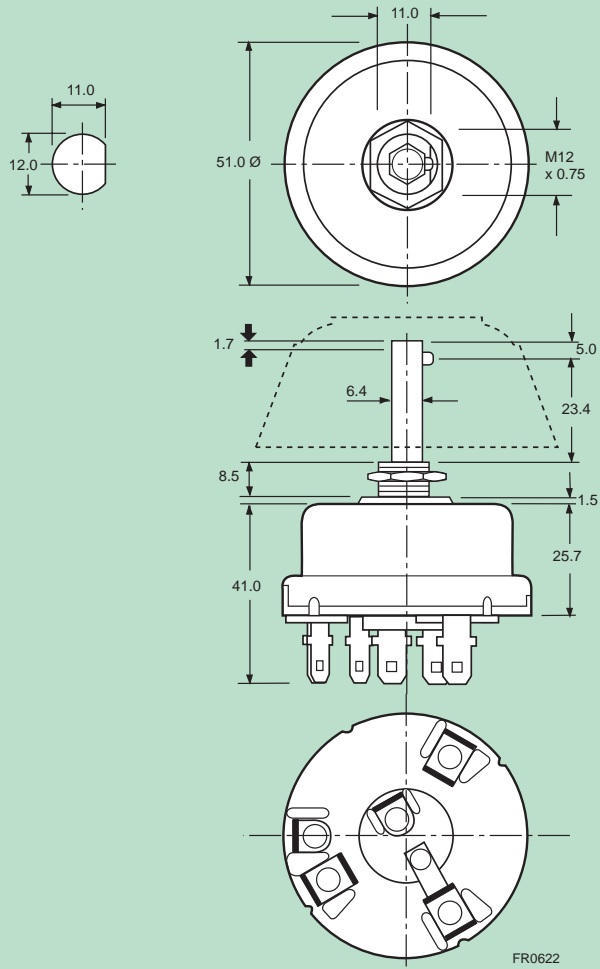
# 199SA



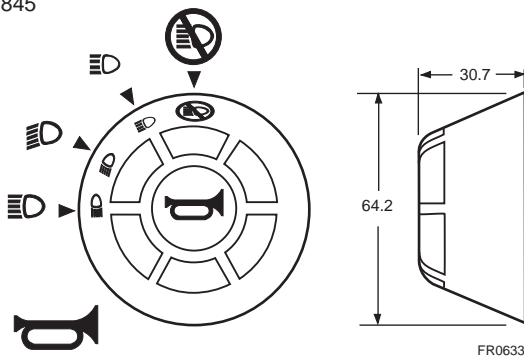
### Rotary switch

A 3 or 4 position rotary operated Lighting switch. Suitable for 12 V or 24 V applications. Supplied without knob. Available with a 'Horn' facility which is sounded by depressing the switch knob. Electrical connections are made via Lucar blade terminals.

## 33714



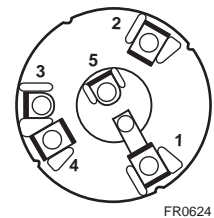
54310845



- FEED
- SIDE/TAIL/PANEL
- DIP
- MAIN BEAM
- HORN

### 33714 4

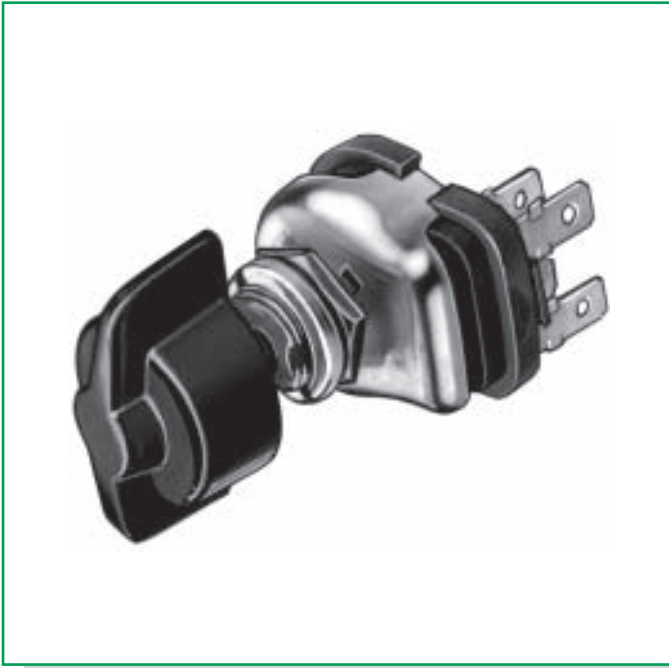
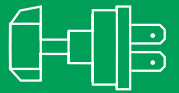
Function	LIGHTING
Finish	STANDARD
Knob	
Illuminated	-



Circuit	1 FEED	2 SIDE/TAIL /PANEL	3 DIP	4 MAIN BEAM	5 HORN
1	_____				
2	▲	▲			
3	▲	▲	▲		
4	▲	▲		▲	

↔ "PUSH KNOB FOR HORN"

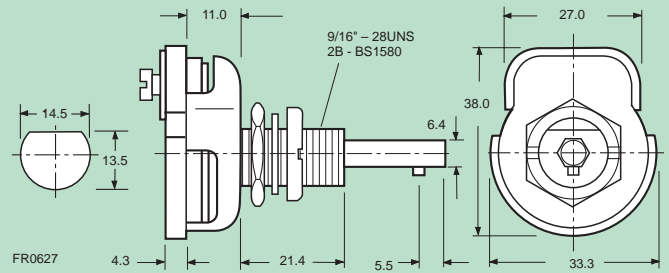
Max. current		4/2 A	20/5 A	20/5 A	4/2 A
/					



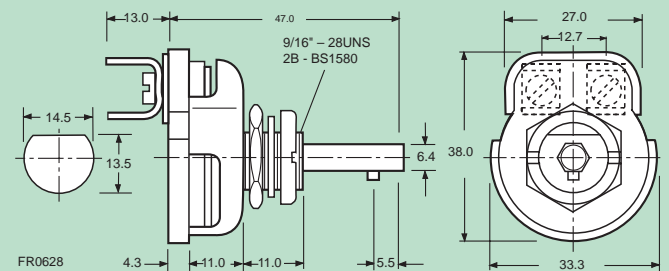
## Rheostats

Panel mounted, rotary action, variable resistance switch. Used for dimming panel lights or to control motor speeds. Supplied without knob. Resistive values vary according to the current load to be controlled, together with the amount of panel dimming or motor speed control required. Electrical connections are made via Lucar blade terminals.

### 78353

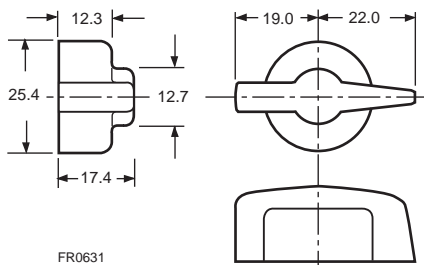


### 78405

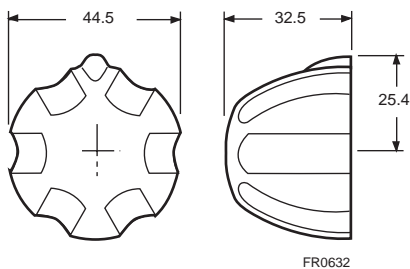


	FINISH	DIRECTION OF ROTATION	KNOB	VOLTAGE	RESISTANCE
<b>78353</b>	STANDARD		<b>A</b> <b>B</b>	<b>12 V</b> <b>24 V</b>	0 → 25 Ω
<b>78405</b>	STANDARD		<b>A</b> <b>B</b>	<b>12 V</b> <b>24 V</b>	0 → 12.5 Ω

54340037

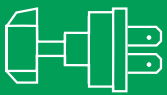


54331311



**A** Order knob separately using part number 54340037

**B** Order knob separately using part number 54331311



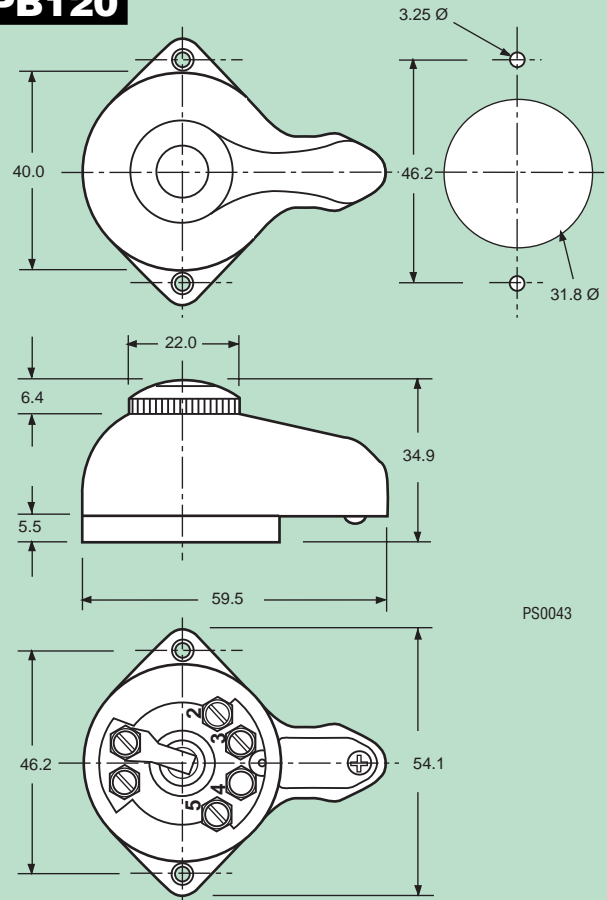
# SD84



### Rotary switches various

Robust, heavy duty, 3 position rotary switches for general use. Electrical connection is made via brass screw terminals. Illuminates in required positions.

## SPB120



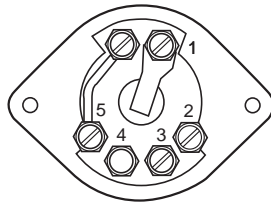
PS0043

FR0619

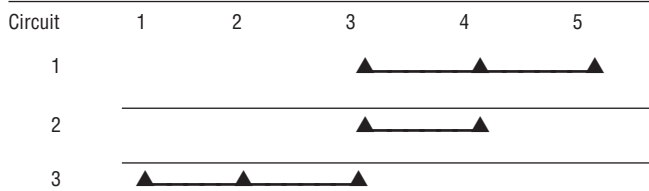
### SPB120 3

12V

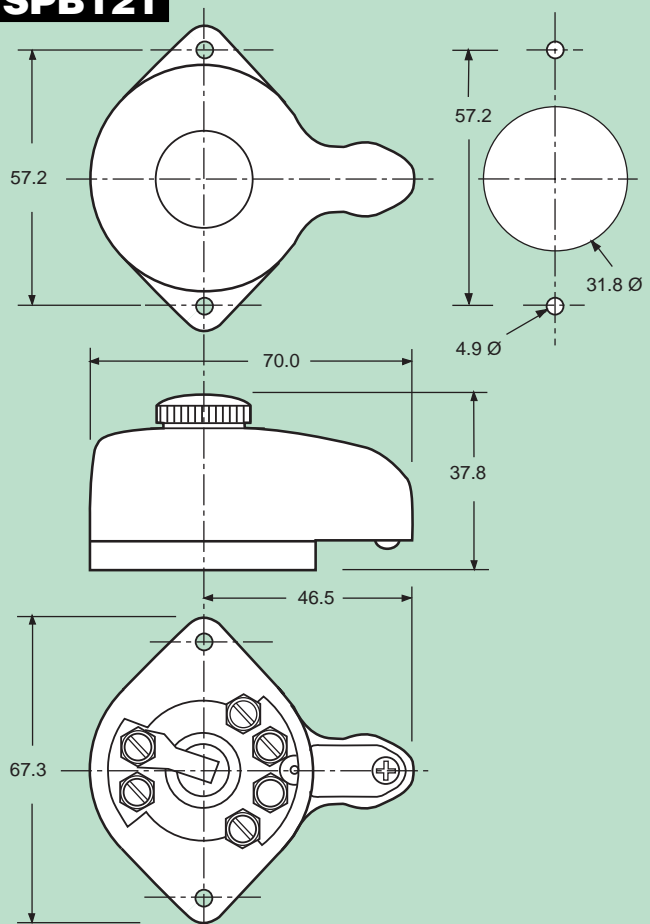
Finish WHITE  
Illuminated RED



FR0617



## SPB121

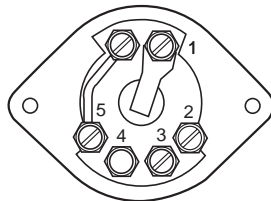


FR0620

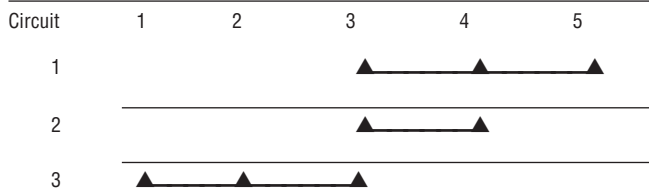
### SPB121 3

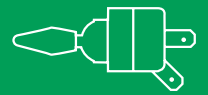
24V

Finish BLACK  
Illuminated RED



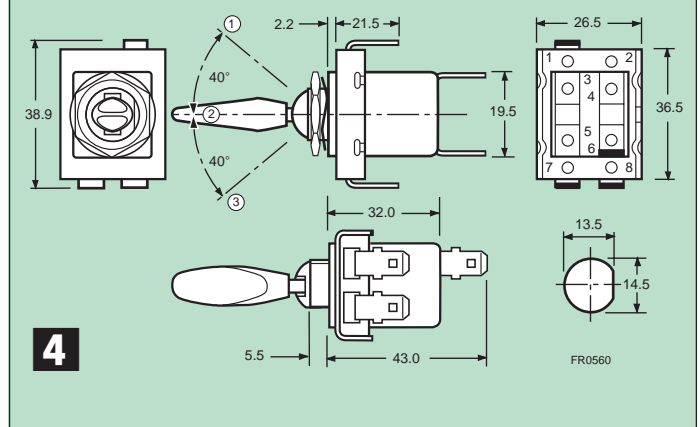
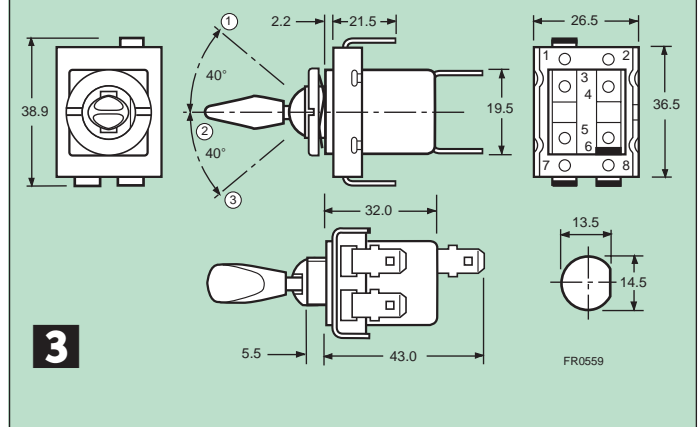
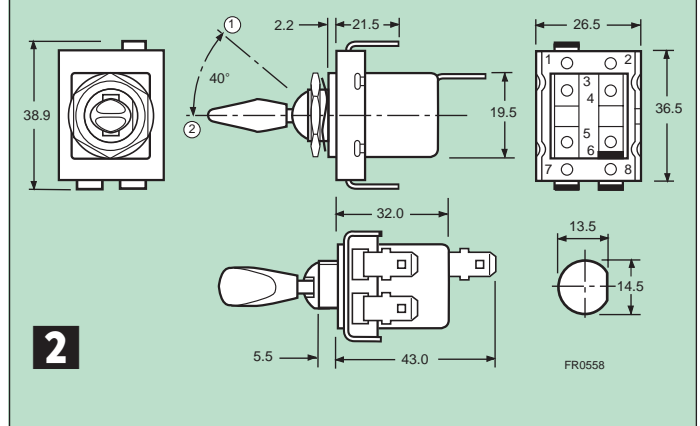
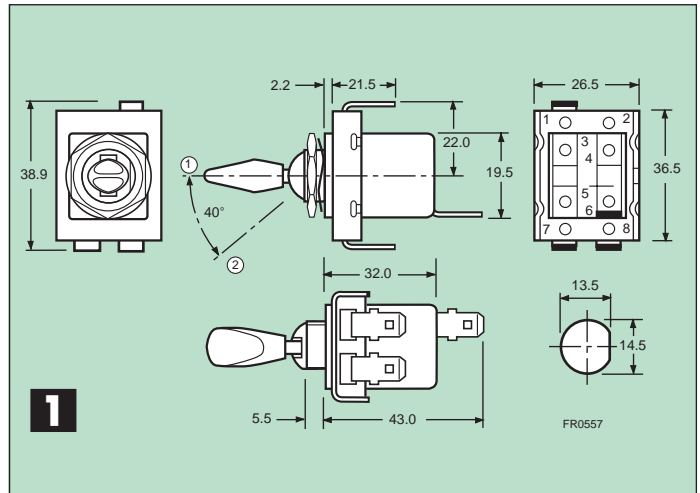
FR0617





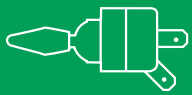
### Lever switch

A 2 or 3 position lever panel switch. Available with a spring return action. The multi-terminal design will accommodate 2 independent circuits. Suitable for 12 V or 24 V applications. Electrical connections are made via Lucar blade terminals.



### Current Rating

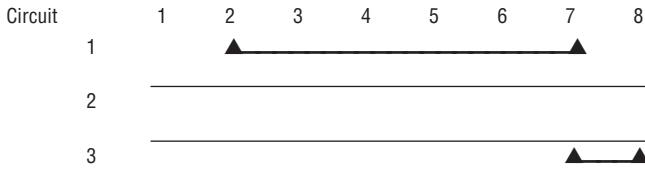
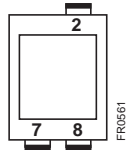
	12 V	24 V
Resistive Load	10 A	4 A
Inductive Load	5 A	2A



# 57SA

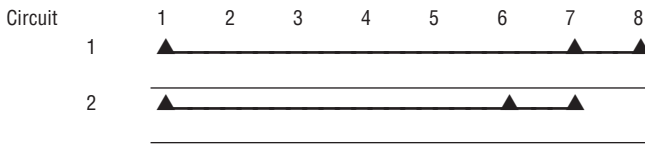
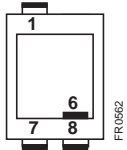
**31743** 3

Type **4**  
Finish -  
Illuminated -  
Max. panel thickness : 3.1 mm



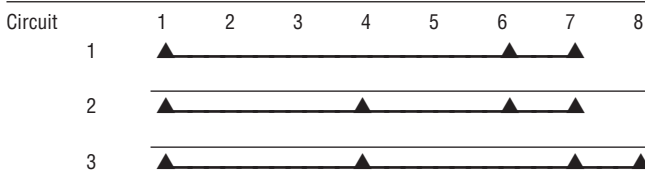
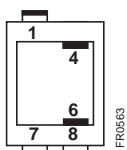
**31780** 2

Type **1**  
Finish -  
Illuminated -  
Max. panel thickness : 3.1 mm



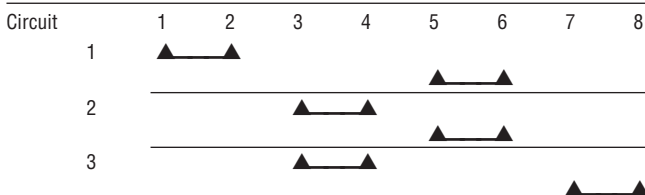
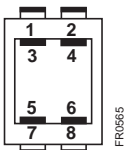
**31788** 3

Type **3**  
Finish -  
Illuminated -  
Max. panel thickness : 2.6 mm



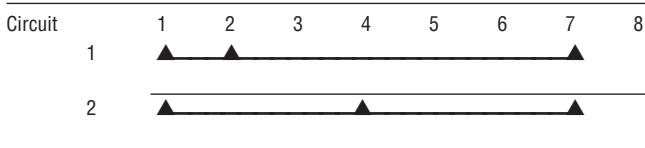
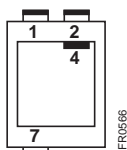
**34419** 3

Type **3**  
Finish -  
Illuminated -  
Max. panel thickness : 2.6 mm



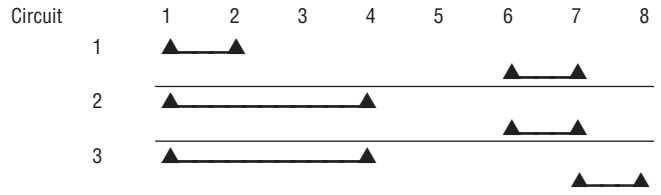
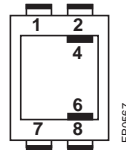
**34426** 2

Type **2**  
Finish -  
Illuminated -  
Max. panel thickness : 3.1 mm



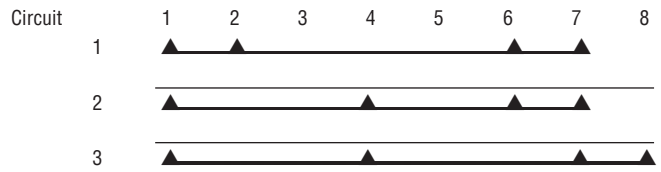
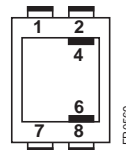
**34734** 3

Type **3**  
Finish -  
Illuminated -  
Max. panel thickness : 2.6 mm



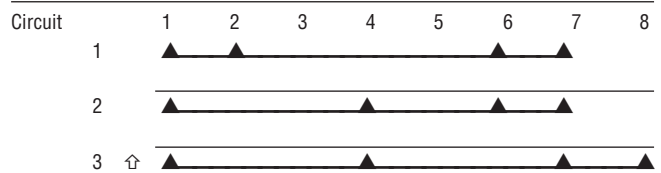
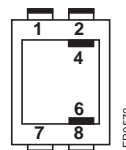
**35927** 3

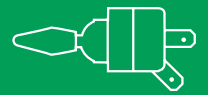
Type **3**  
Finish -  
Illuminated -  
Max. panel thickness : 2.6 mm



**35940** 3

Type **3**  
Finish -  
Illuminated -  
Max. panel thickness : 2.6 mm

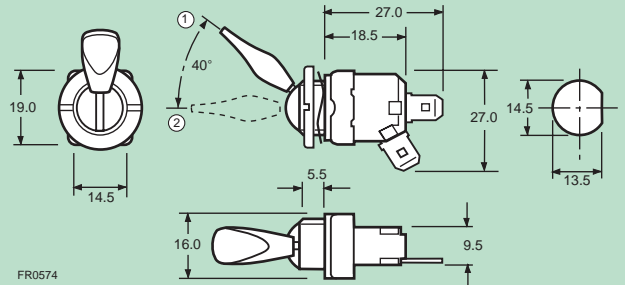




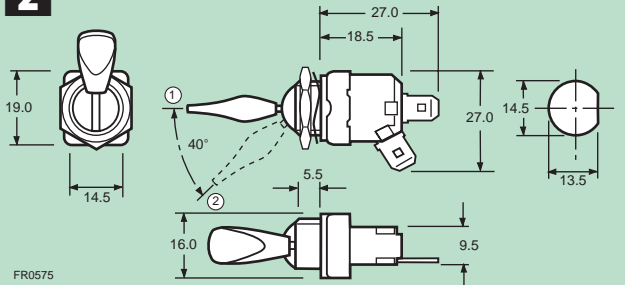
### Lever switches various

A range of simple 2 position 'ON-OFF' lever panel switches. Available with a spring return action. Suitable for 12 V or 24 V applications. Electrical connections are made via Lucar blade terminals.

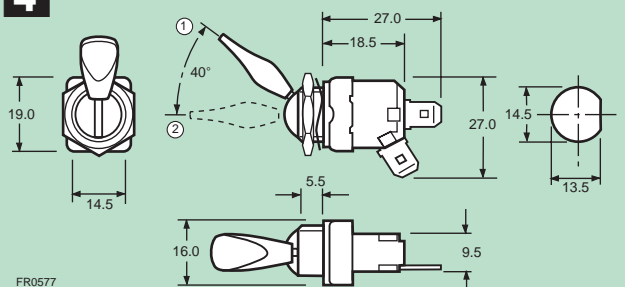
**1**



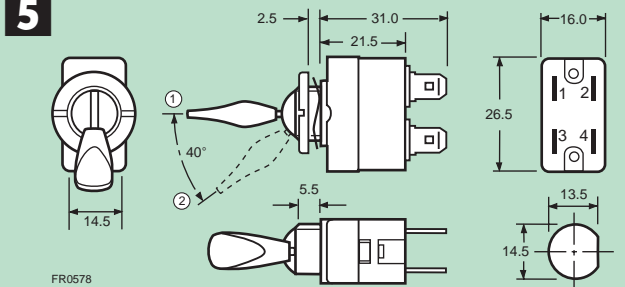
**2**



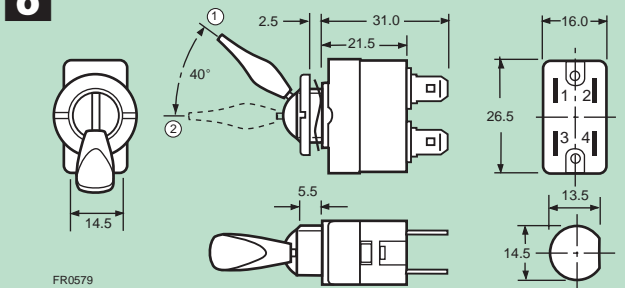
**4**



**5**



**6**



### Current Rating

	12 V		24 V
Resistive Load	*5 A	18 A	8 A
Inductive Load	*2.5 A	5 A	2A

\* Applies to part numbers SPB200, SPB203, SPB204 which are 12 V only.



# 65SA / 108SA

## SPB200

2



FR0580

Type

**1**

Finish

-

Max. panel thickness : 2.0 mm

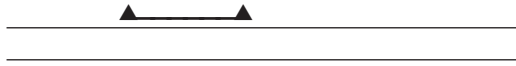
Circuit

1

2

1

2



## SPB203

2



FR0580

Type

**2**

Finish

-

Max. panel thickness : 2.0 mm

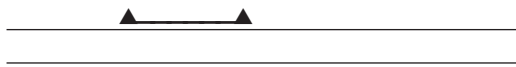
Circuit

1

2

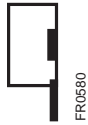
1

2



## SPB204

2



FR0580

Type

**4**

Finish

-

Max. panel thickness : 2.2 mm

Circuit

1

2

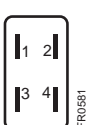
1

2



## 34775

2



FR0691

Type

**5**

Finish

-

Max. panel thickness : 2.2 mm

Circuit

1

2

3

4

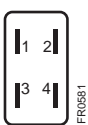
1

2



## 34889

2



FR0691

Type

**6**

Finish

-

Max. panel thickness : 2.2 mm

Circuit

1

2

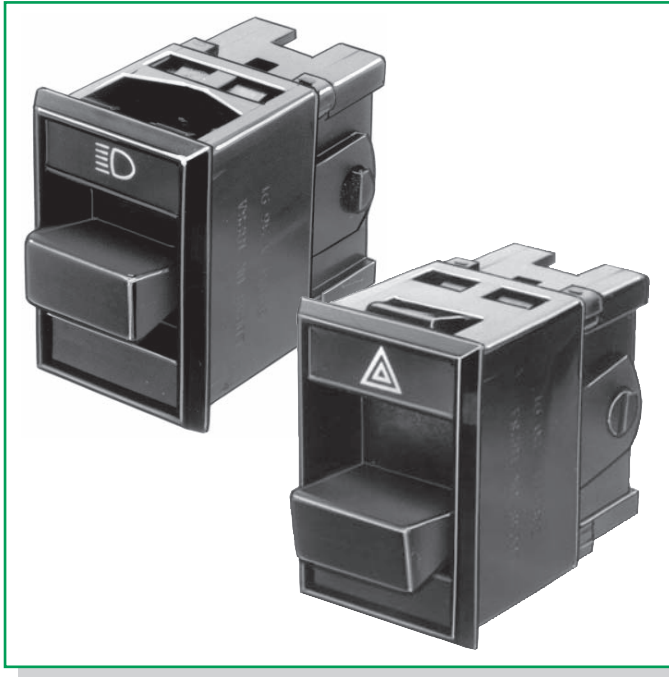
3

4

1

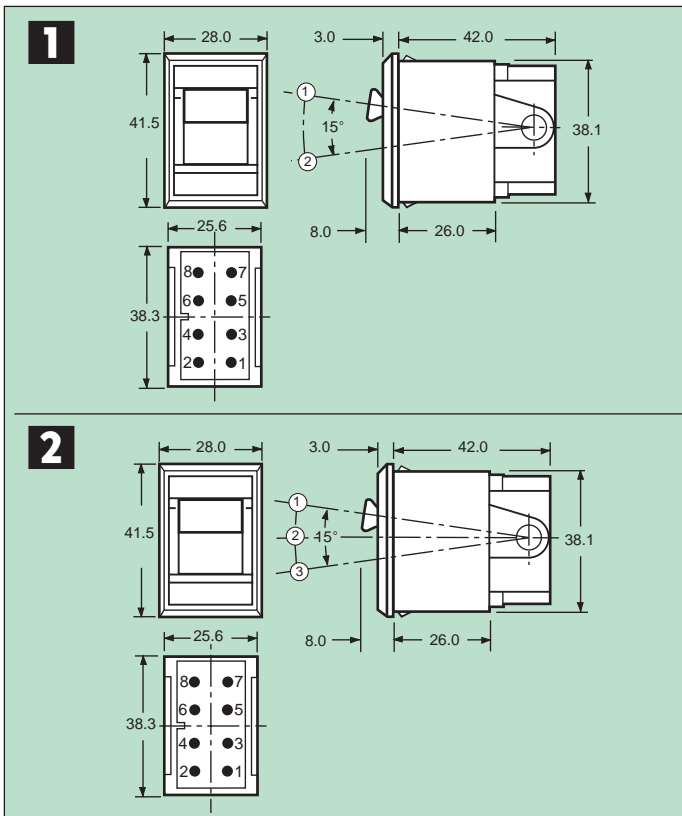
2



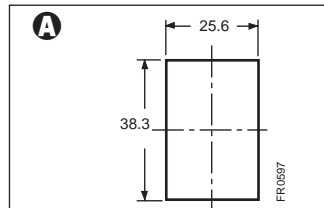


### Lever switch

A 2 or 3 position lever panel switch. Available with a spring return action. The multi-terminal design will accommodate 2 independent circuits. Available with illumination. Suitable for 12 V applications only. Electrical connections are made to 3 mm pins.



Current Rating	
	12 V
Resistive Load	20 A



**30860** 3 12 V

Type **2**

Function = LIGHTING

Finish = BLACK

Piercing = **A**

Illuminated = GREEN

Max. panel thickness : 1.25 → 1.75 mm

Circuit	1	2	3	4	5	6	7	8
1								
2			▲	▲	▲	▲	▲	▲
3			▲	▲	▲	▲	▲	▲

**33852** 3 12 V

Type **2**

Function = WINDOW LIFT

Finish = BLACK

Piercing = **A**

Illuminated = GREEN

Max. panel thickness : 1.50 → 2.00 mm

Circuit	1	2	3	4	5	6	7	8
1 ↓	▲	▲	▲	▲	▲	▲	▲	▲
2			▲	▲	▲	▲	▲	▲
3 ↑			▲	▲	▲	▲	▲	▲

**34224** 3 12 V

Type **2**

Function = LIGHTING

Finish = BLACK

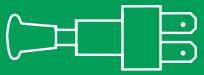
Piercing = **A**

Illuminated = -

Max. panel thickness : 1.25 → 1.75 mm

Circuit	1	2	3	4	5	6	7	8
1	▲	▲	▲	▲	▲	▲	▲	▲
2			▲	▲	▲	▲	▲	▲
3			▲	▲	▲	▲	▲	▲





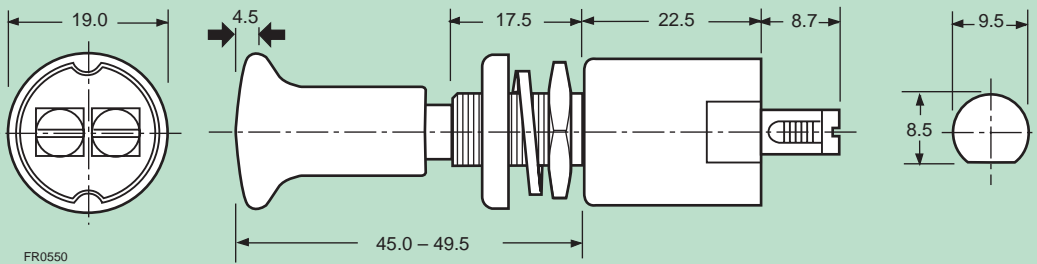
# SPB104-106 / SPB160



## Push/pull switches various

A range of popular push/pull switches for general purpose. The range includes simple spring returned push button switches, illuminated pull/push switches and a mini-push switch.

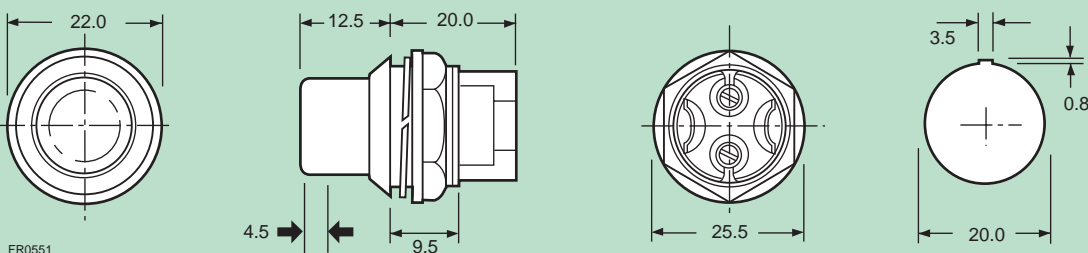
### SPB104



FR0550

Action	PULL/PUSH
Finish	STANDARD
Panel thickness	8.0 mm
Voltage	12V 24V
Resistive loads	10 A 3 A

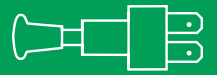
### SPB105



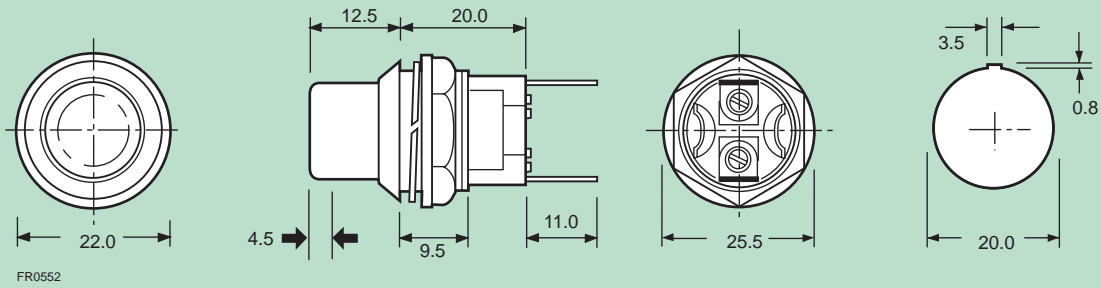
FR0551

Action	PUSH
Finish	CHROME
Panel thickness	3.0 mm
Voltage	12V 24V
Inductive loads	11 A 2.5 A

# SPB104-106 / SPB160



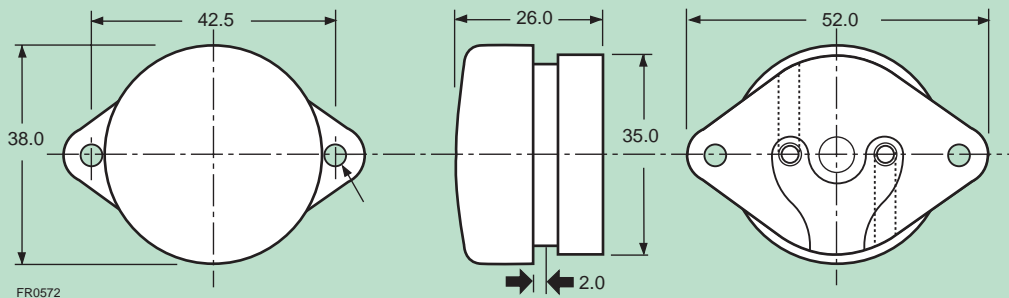
## SPB106



FR0552

Action	PUSH
Finish	CHROME
Illuminated	-
Panel thickness	3.0 mm
Voltage	12 V 24 V
Inductive loads	11 A 2.5 A

## SPB160



FR0572

Action	PUSH
Finish	BLACK
Voltage	12 V
Inductive loads	5 A

