

SR2025

SR  
2025

# Switches & Relays

ionnic | 

#### Mission Statement

To be the preferred supplier of electrical, lighting and safety solutions for mobile plant and equipment in the mining and services industry.

We will continue to improve and expand our range of products that meet and exceed OEM standards, maintaining the latest technology and innovation available backed by technical support and supply.



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# What's new in SR2025

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IONNIC Idle Timer SE



## **NEW** in Battery Master Switches

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Fixed Handle - Polymer



## **NEW** in Emergency Stop Switches

52

Heavy Duty

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Standard Duty

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Illuminated

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Recessed

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KISSLING



# What's new in SR2025

## **NEW** in Micro & Limit Switches



Micro – TMV Series

130

## **NEW** in Proximity



Inductive Switches

138

Reed Switches

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144

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# Switching Systems



# Switching Systems

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# Switching Systems

## ICS Switch Panel



Actual size

12V  
24V

- Developed to control lighting and other electronic automotive accessories.
- Incorporates the latest in onboard circuit protection and monitoring technology.
- Each output surge protected to 6A.
- 3 user-configurable master switches.
- All switches can be set to latching or momentary.
- Mounting point on back of switch panel – use with common 1/4" thread adjustable mounts.
- Epoxy-encapsulated receiver module for enhanced moisture and vibration protection.
- Includes 4 decals.
- 8 outputs (6A each).
- Multiple outputs can be combined to allow switching of high current loads.
- Eliminates excess wiring.
- Multi-voltage.
- Compact design.

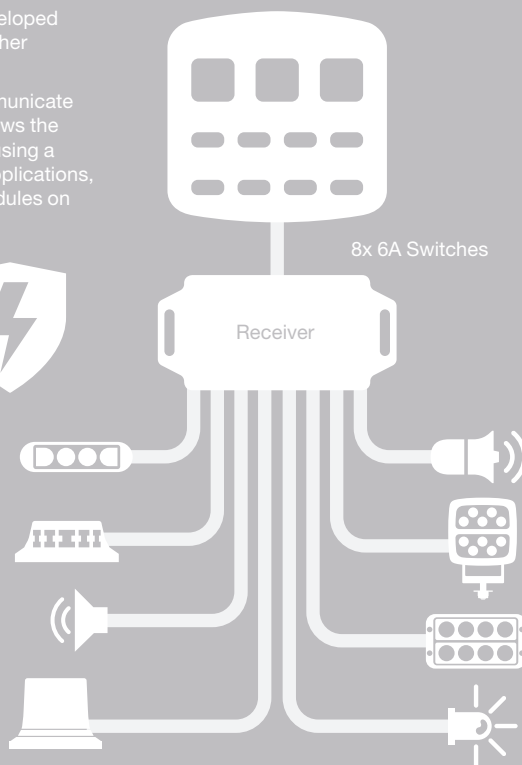
Voltage :	12–24V
Outputs :	8
Max. Output Current Rating (per output) :	6A
Max. Output Current Rating (total) :	40A
Cable Length :	4.5m
Housing :	ABS
Operating Temperature :	-40°C to 85°C

The ICS Switch Panel has been developed to control all types of lighting and other electronic automotive accessories.

The switch panel and receiver communicate using a proprietary signal which allows the switching system to be configured using a single receiver module for typical applications, or with additional slave receiver modules on larger systems or vehicles.

The ICS Switch Panel incorporates the latest in onboard circuit protection technology.

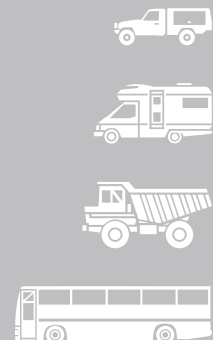
In the event of a short circuit the system immediately turns off the affected output preventing damage to the switch panel and devices controlled by it. The panel provides real-time feedback to the operator via LED's on both the panel and receiver module as to the state of each output.



In the event of an intermittent short circuit the output of the affected circuit will turn off and remain off for 4 seconds.

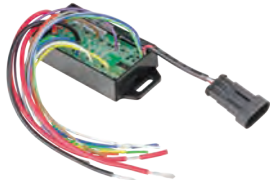
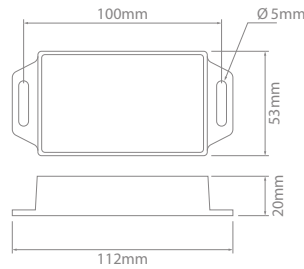
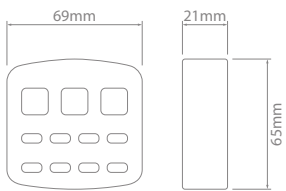
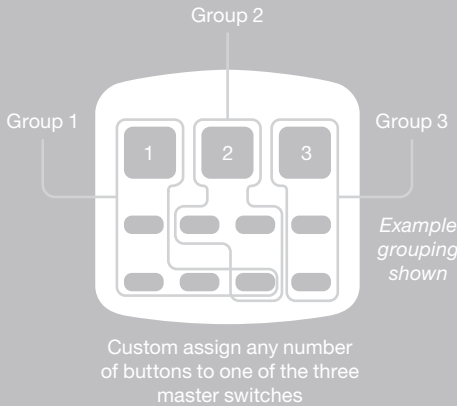
After this period of time the ICS will check the circuit, if no short is present, it will automatically turn the output back on.

All circuits are monitored and controlled independently. In the case of a short circuit, only the affected output is isolated while all others remain operational.

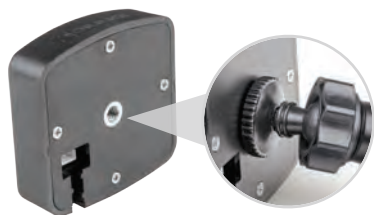


## Master Switches

The ICS switch panel features 3 user-configurable master switches. These switches can be used to link any combination of the 8 individual switches together to allow activation of multiple circuits via the switching of a single button. Note that individual switches can be associated with more than one master switch.



Receiver Module



Mounting point on back of switch panel – use with common 1/4" thread adjustable mounts. Mount not supplied



## ICS Switch Panel Kit

Part No.	Voltage	Kit Contents
ICS-01	12–24	1 x Switch Panel 1 x Receiver Module 1 x 4.5m Cable (Switch Panel to Receiver) 4 x Overlay Function Decals 1 x Mounting Screws & Washers 1 x Double-sided Mounting Tape



ICS-01S



50127



50128



HT-4301

## ICS Switch Panel – Accessories & Related Products

Part No.	Description
ICS-01S	Receiver module
50127	Superseal kit – 3 circuits – Receptacle. Includes contacts and seals
50128	Superseal kit – 3 circuits – Plug. Includes contacts and seals
HT-4301	Parallel crimping tool. Crimp range – 0.35–0.5, 0.75, 1.0, 1.5mm <sup>2</sup>



# Switching Systems

ESM Mini



12V  
24V

- Electronically controlled switch module with inbuilt circuit monitoring and protection.
- Each output surge protected to 8A.
- 6 inputs, 6 outputs – 12V.
- 5 inputs, 5 outputs – 24V.
- Compact design.
- Save space and installation time.
- Eliminates excess wiring.
- Multi-voltage.
- Epoxy filled for enhanced moisture and vibration protection.

Voltage :	12-24V
Inputs :	6 x 12V, 5 x 24V
Outputs :	6 x 12V, 5 x 24V
Max. Output Current Rating (per output) :	7A
Max. Output Current Rating (total) :	20A
Body :	ABS
Cable Length :	120mm
Operating Temperature :	-40°C to 85°C

The ESM Mini is a compact, electronically controlled switch module with inbuilt circuit monitoring and protection.

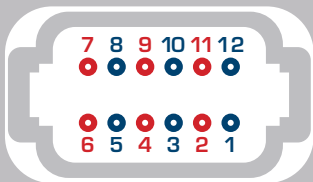
The unit can be used in any application where conventional circuit protection may have been used in the past.

The ESM Mini can be used for any application, from connecting auxiliary lighting off original vehicle tails lights, e.g. Minebar hook up, to monitoring and protecting a range of

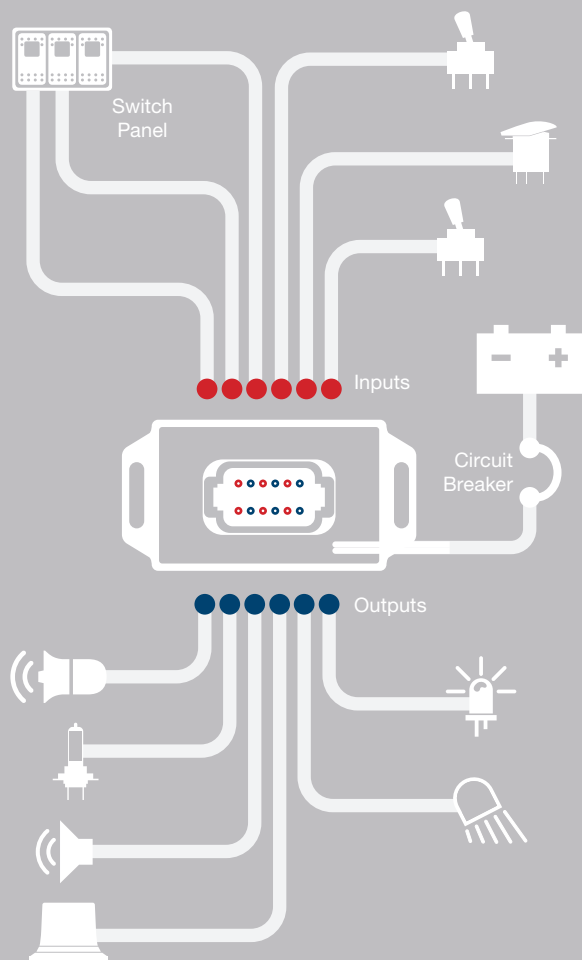
auxiliary equipment switched off the original vehicle inputs or from after market toggle, rocker switches etc.

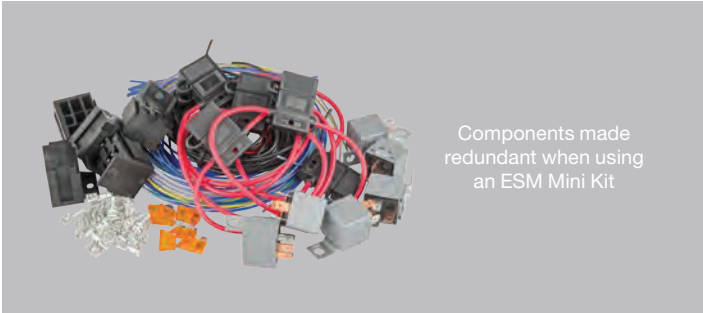
If a short circuit or over current condition presents on any of the outputs then the affected output will shut down. This circuit will then cycle 3 times (on/off) and if the over current situation is still present the output will then be locked in the off state until the fault is rectified and the input is reset.

Circuit 1 Input - 4 Output - 3	Circuit 2 Input - 2 Output - 1	Circuit 3 Input - 6 Output - 5
Circuit 4 Input - 11 Output - 12	Circuit 5 Input - 9 Output - 10	Circuit 6 Input - 7 Output - 8

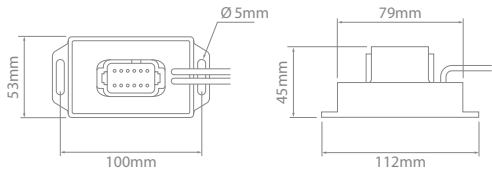


Inductive loads must not be used on the input or output circuits without additional external protection. Failure to do so may result in damage to the unit and will void warranty.





Components made redundant when using an ESM Mini Kit



## ESM Mini Kit

Part No.	Voltage	Switching	Kit Contents:
<b>ESM006</b>	<b>12-24</b>	<b>Positive</b>	1 x ESM006 Control Module 1 x Connector – DT Series (DT06-12SA) 1 x Connector – DTP Series (DTP04-2P) 1 x Connector – DTP Series (DTP06-2S) 8 x Cavity Plug (114017)
			1 x Wedgelock – DT Series (W12S) 1 x Wedgelock – DTP Series (WP2P) 1 x Wedgelock – DTP Series (WP2S) 2 x Pin – Solid (0460-204-12141) 2 x Socket – Solid (0462-203-12141) 12 x Socket – Solid Green Band (0462-209-16141)



DET12, DET16



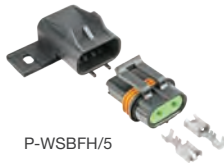
HDT48-00



DET-RT



CB255-XX



P-WSBFH/5



BFXX/10

## ESM Mini – Accessories & Related Products

Part No.	Description
<b>DET12</b>	Crimping tool. Size 12
<b>DET16</b>	Crimping tool. Size 16
<b>HDT48-00</b>	Crimping tool. Size 12, 16, 20 & 22
<b>DET-RT</b>	Multi-use hook tool
<b>CB255-XX</b>	Circuit breaker – Panel Mount Series Replace 'XX' with desired amperage: 10, 15, 20, 25, 30, 35, 40, 50
<b>P-WSBFH/5</b>	ATC fuse holder kit – 30A Kit contents: 5 x Housing, 5 x Plugs, 10 x Terminals
<b>BFXX/10</b>	ATC/ATO blade fuses, pack of 10 Replace 'XX' with desired amperage: 1, 2, 3, 4, 5, 7.5, 10, 15, 20, 25, 30, 40



# Switching Systems

## Radio Remote Control



R1000-TF4



R1500-R24

- 4 output, user programmable remote switching system.
- Up to 90 metre range.
- Rolling codes, secure encryption.
- Multiple transmitters able to be paired with single receiver.
- All 4 outputs can be momentary or latching.
- Hard-wired interlock feature on 2 outputs.

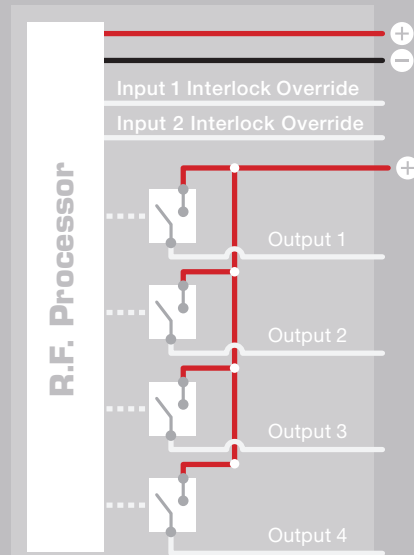
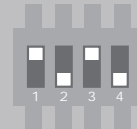
Typical Range : 90m  
 Frequency : 433 MHz  
 Current Rating : 5A max. per output  
 Fob Battery : 1 x CR2032  
 Transmitter Battery Life : 100,000 activations  
 Receiver Cable Length : 300mm  
 Encryption : Rolling Codes



R15-R12-F, R15-R24-F

### DIP Switches

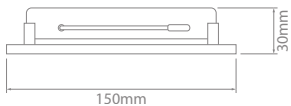
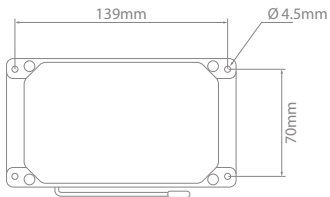
DIP switches found inside receiver enclosure can be set to achieve either latching or momentary for each output respectively.



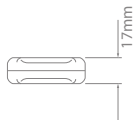
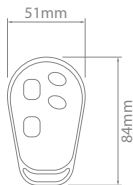
Interlock Override inputs can be used to manually override outputs 1 and 2 only.

### Radio Remote Control – Kits

Part No.	Voltage	Kit contents
R15-R12-F	12	1 x Receiver (R1500-R12), 1 x Transmitter (R1000-TF4)
R15-R24-F	24	1 x Receiver (R1500-R24), 1 x Transmitter (R1000-TF4)



R1500-R12, R1500-R24



R1000-TF4



R1500-ADP-HNS

## Radio Remote Control – Components

Part No.	Voltage	Description
<b>R1500-R12</b>	12	Receiver
<b>R1500-R24</b>	24	Receiver
<b>R1000-TF4</b>	—	Transmitter – Fob style. Suits 12V or 24V
<b>R1500-ADP-HNS</b>	—	10 Pin to 8 Pin harness. May be required if replacing older R1500-R12 models



# Switching Systems

Rollover

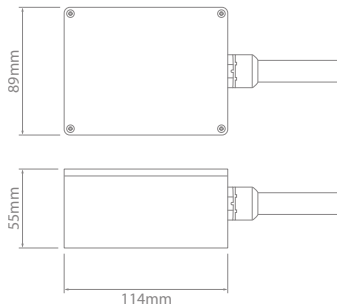


- AS2809 compliant rollover switch.
- Solid state electronics.
- Microprocessor controlled.
- Multi-voltage.
- Senses vertical & horizontal axis through an accelerometer (angle and G-force sensing device).
- Conducts system self-tests without shutdown.
- EMF spike suppression.

10V  
30V

Voltage :  
Housing :  
Compliance :

10–30V  
Die-cast  
AS2809

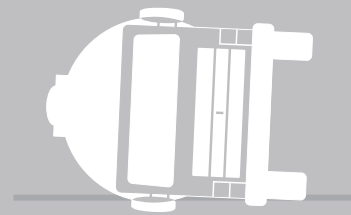


## Intelligent Rollover Switch

The iROS uses a 2 axis accelerometer to determine angle and G-force. The output will only be switched if all of the criteria for angle and motion are met and held for a set period.

The iROS has an input for a 'System Test' button that when pushed and held will activate the sensor to the rollover point, making testing a simple task.

Compliant to AS2809, the iROS will activate any of the remotely switched battery isolation switches commonly used on the Australian market.



## Rollover

Part No.	Description
IROS	AS2809 compliant rollover switch

- Determines when there's an unsafe lean on a raised tipper body.
- Solid state electronics.
- Microprocessor controlled.
- Multi-voltage.
- Data logs the last 15 activations.
- Conducts system self-tests.



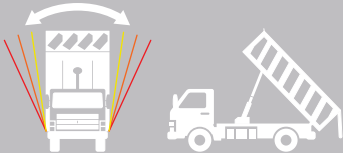
Voltage : 10–30V  
 Housing : Die-cast  
 Connector Ingress Protection : IP65

10V 30V IP65

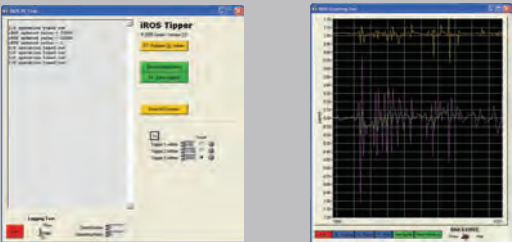
## Tipper Safety

The iROS-T (intelligent roll over switch – tipper) warns the driver of a potentially unsafe lean on a tipper body as it is being raised.

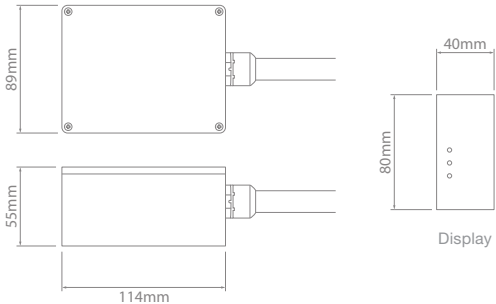
The supplied dash mounted display indicates system status and angle warnings with the 3rd (and highest) level activating an output for an external alarm or control.



Each iROS-T requires the three warning angles to be programmed into the unit once installed. This requires the iROS-T cable and PC compatible software (supplied).



This software also allows access to the data logs of the last 15 activations.



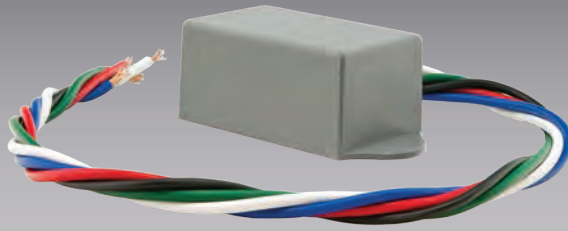
## Tipper

Part No.	Description
<b>IROS-T</b>	Kit includes sensor unit & connector, display and 1.8m harness
<b>IROS-T-USB</b>	Proprietary cable required to program iROS-T



# Switching Systems

## Voltage Sensor

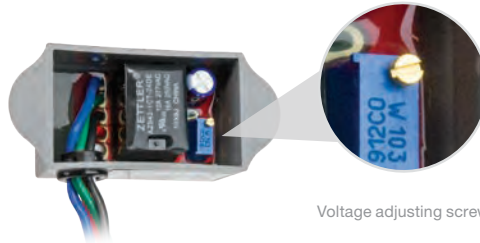


- Internal change-over relay activates when the voltage falls below or rises above the preset level.
- Adjustable sensing range.
- Example uses:
  - Helps prevent the over-discharging of a battery.
  - Triggering an alert when a battery discharges to a preset level.
  - Automatic activation of a battery charger.
- Made in Australia.
- 2-year warranty.

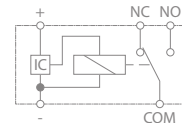


Body :  
Wire Length :  
Operating Temperature :

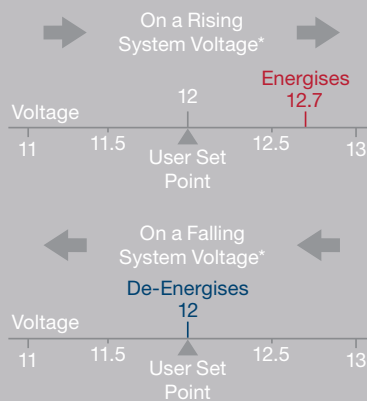
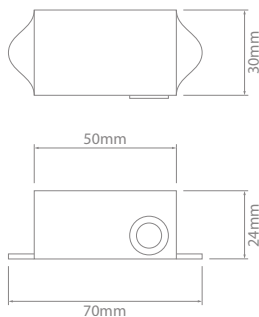
ABS  
300mm  
0°C to 50°C



Voltage adjusting screw



5 Terminal – Change Over (C/O)



Used to switch a circuit relative to system voltage.

The user only sets the minimum voltage level (User Set Point).

The VS12 maximum voltage level is approximately +0.7 volts higher than the User Set Point.

The VS24 maximum voltage level is approximately +1.5 volts higher than the User Set Point.

When the system voltage reaches the maximum voltage level the internal change-over relay energises switching the COM from NC to NO.

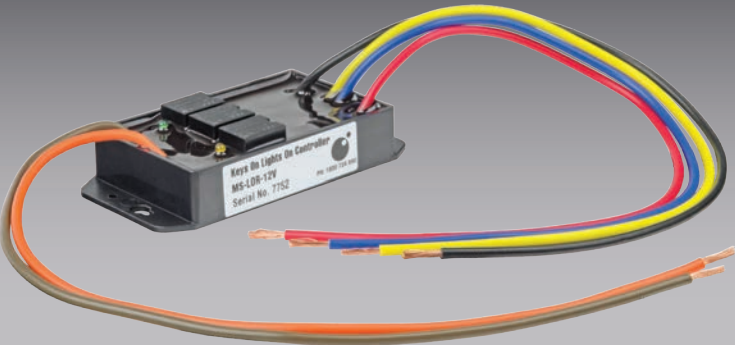
When the system voltage falls below the minimum voltage level the internal relay de-energises switching the COM back to NC.

\*VS12 operation illustrated with default User Set Point.

## Voltage Sensor

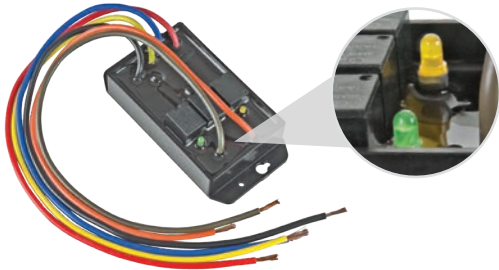
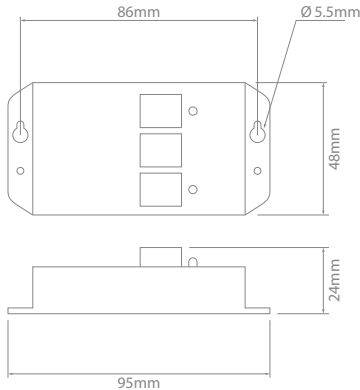
Part No.	Voltage	Current Rating (A)	Adjustable Sensing Range (V)	Factory Trigger Setting	
				Minimum Voltage	Maximum Voltage
VS12	12	10	9.0 – 16.0	12.0 ± 0.2	12.7
VS24	24	10	18.0 – 35.0	24.0 ± 0.2	25.2

- Designed to operate park & low beam lights any time vehicle ignition is on.
- 10 seconds start up delay.
- Compact easy installation.
- Diagnostic LEDs.
- Available in positively and negatively switching models.
- Epoxy filled for enhanced moisture and vibration protection.
- 2-year warranty.



Body : ABS  
 Wire Length : 200mm  
 Operating Temperature : -40°C to 70°C

2Yrs



## Headlights On Units

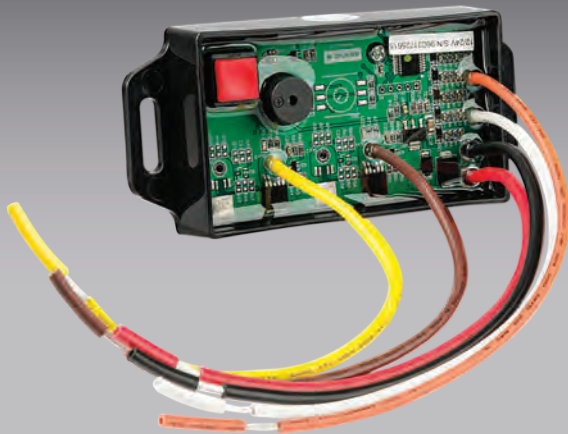
Part No.	Description
<b>MS-LOR-12V</b>	Suits any negatively switched headlight
<b>MS-LOP-12V</b>	Suits any positively switched headlight

Installation on late model multiplexed vehicles must be performed by a qualified technician.



# Switching Systems

## Hand Brake Alarm Module



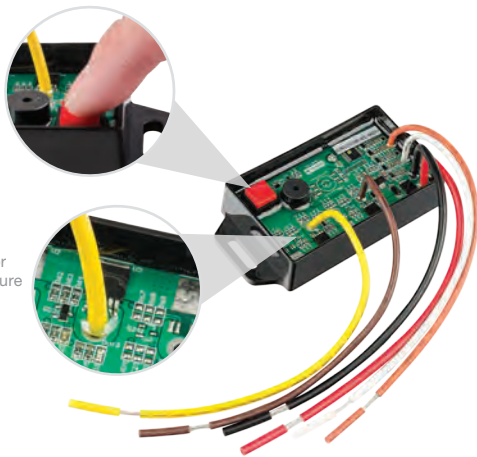
12V  
24V

2Yrs

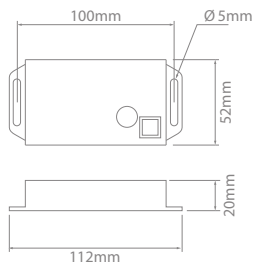
- Can be adapted to any vehicle.
- Self learning function automatically detects vehicle triggers for quick and easy installation.
- Designed to signal when hand brake is not engaged and vehicle door opens.
- Satisfies mine site requirements.
- 2 stage outputs.
- Compact easy installation.
- Suitable for positive and negatively switched vehicles/applications.
- Epoxy filled for enhanced moisture and vibration protection.
- Can be used as a general 2 stage alarm module.
- 2-year warranty.

Voltage : 12–24V  
 Current Rating : 2 x 4A @ 12V  
 Body : ABS  
 Wire Length : 150mm  
 Operating Temperature : -40°C to 70°C

Self learning function automatically detects vehicle triggers for quick and easy installation



Epoxy filled for enhanced moisture and vibration protection

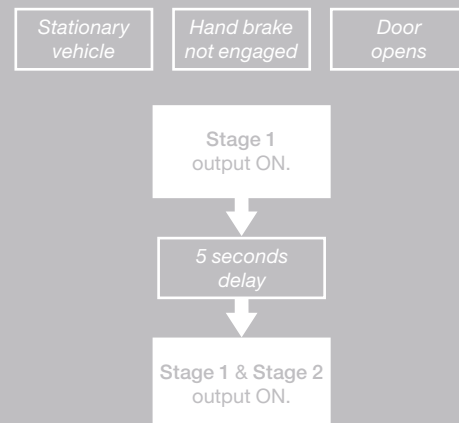


### Hand Brake Alarm Operation

The MS-HB01 Hand Brake Alarm Module is designed to satisfy the mine site requirement where all stationary vehicles must have the hand brake engaged.

The MS-HB01 does this by triggering alarms when a vehicle operator attempts to leave the vehicle by opening one or more of the doors without applying the hand brake.

The MS-HB01 unit is a 2 stage device.



Device deactivation will only occur when the hand brake is applied. Closing the door alone will not deactivate the unit.

### Hand Brake Alarm Module

Part No.	Description
MS-HB01	Suits any positive or negatively switched vehicle

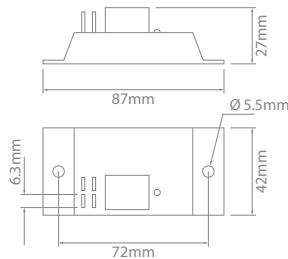
# Switching Systems

- Visual & audible warning device for water/ coolant level monitoring.
- LED indicator on modules.
- 7 second “slosh” delay preventing false triggering.
- Epoxy encapsulated modules.
- Brass sleeve or rubber multi-fit style probes available.

<b>Voltage :</b>		12–24V
<b>Sensing Depth :</b>	WL601P	35mm
	WL601PS1	25mm
<b>Current Rating :</b>	8015002	3A @ 12V
	WL601LP	10A

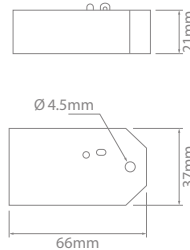


12V  
24V



WL601LP

Modules



8015002

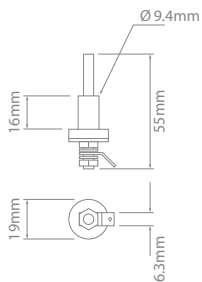
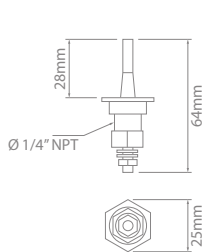


WL601PS1

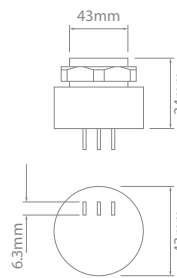
Probes



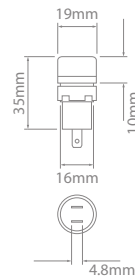
WL601P



Buzzer  
B657



Pilot Lamp  
BA16DS-RED



## Low Coolant Alarm – Kits

Part No.	Description	Module		Probe		Buzzer	Pilot Lamp
		WL601LP	8015002	WL601PS1	WL601P	B657	BA16DS-RED
<b>WL-1</b>	10A Module with Threaded Probe	•	—	•	—	•	•
<b>WL-2</b>	10A Module with Multi-fit Probe	•	—	—	•	•	•
<b>WL-3</b>	3A Module with Threaded Probe	—	•	•	—	•	•
<b>WL-4</b>	3A Module with Multi-fit Probe	—	•	—	•	•	•

All components available separately.



# Switching Systems

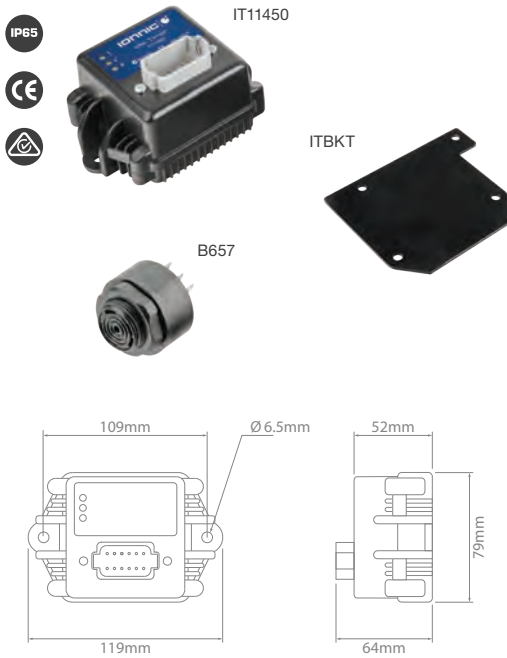
## IONNIC Idle Timer



12V  
24V

- Selectable idle time cycle.
- LED indicators for visual warning.
- Multi-voltage.
- Environmentally sealed – IP65.
- Push & toggle switch kits available.
- Suitable for Energised To Run (ETR) systems. Energised To Stop (ETS) model available on request.

Voltage : 12–24V  
 Enclosure : ABS  
 Ignition Output : 10A  
 Auxiliary Output : 0.7A  
 Ingress Protection : IP65  
 Approvals : CE, C-Tick  
 Operating Temperature : -40°C to 85°C



### IONNIC Idle Timer

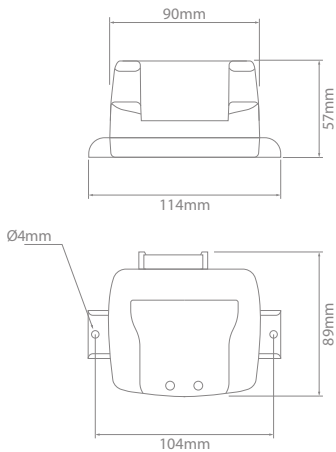
Part No.	Description	
IT11450	Idle timer controller unit	
ITBKT	Optional mounting bracket. Powder-coated aluminium	
B657	Optional warning buzzer	
IT10451	Harness with stainless steel push button switch & engraved label – 1.8m	
IT11451	Harness with toggle switch, boot & pilot light – 1.8m	
IT10452	Idle timer kit – push button switch	Kit contents: 1 x Controller Unit (IT11450), 1 x Harness (IT10451)
IT11452	Idle timer kit – toggle switch	Kit contents: 1 x Controller Unit (IT11450), 1 x Harness (IT11451)

**NEW**

- Three-minute engine idle timer.
- Positive and negative shut-down output.
- Integrated hand brake alarm function.
- Hand brake input self-learn function.
- Multi-voltage.
- LED indicators for visual warning.
- Supplied with TE DEUTSCH connector kit.

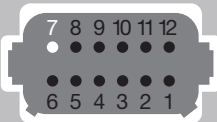


Voltage : 12-24V  
 Enclosure : Polycarbonate  
 Ignition Output : 8A  
 Auxiliary Output : 1A  
 Approvals : C-Tick  
 Operating Temperature : -40°C to 85°C



### Integrated Hand Brake Alarm Function

The IONNIC Idle Timer SE has an integrated handbrake alarm function. If the ignition is turned off and the handbrake is not engaged, power will be output to pin 7, allowing the user to activate an alarm, buzzer, or light.



## IONNIC Idle Timer SE NEW

Part No.	Description
IT2001	Idle timer controller unit with connector kit

Kit contents:  
 1 x Idle Timer Controller Unit  
 1 x DEUTSCH DT Series 12 Pin Connector  
 1 x Wedgelock  
 6 x Cavity Plug  
 10 x Size 16 Green Band Contact



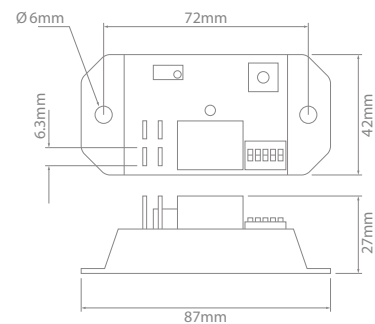
# Switching Systems

## Speed/Frequency Switch



- Selectable frequency via DIP switches.
- Designed to work with all standard signal inputs e.g. magnetic pick up, computer signal, ignition coil, sensor.
- Ground signal sent once predetermined frequency has been reached.
- Adjustable hysteresis to help prevent chattering at the switch point.
- LED indicates activation.
- Epoxy filled for enhanced moisture & vibration protection.
- 12 or 24 volt operation, selectable via DIP switch.

Voltage :	12V or 24V (selectable)
Current Rating :	3A @ 12V
Hysteresis :	Adjustable
Input Frequency :	10–12,000 Hz
Input Signal :	Sine, square wave
Input Voltage :	1.5–50VAC



### Speed/Frequency Switch

Part No.	Description
SS301	Multi-adjustable frequency switch

- Protects batteries being completely discharged from non-essential loads potentially denying engine cranking power.
- Protects from overvoltage – shuts down over 16V (12V mode), 32V (24V mode).
- Microprocessor controlled with 10 different selectable under-voltage thresholds on 12 and 24 Volt.
- LED for output status (on/off) and programming.
- Programmable delayed alarm output.
- Programmable delayed load disconnect.
- 5-year warranty.
- Made in Europe.



Voltage : 12V/24V  
 Cable Diameter : 50mm<sup>2</sup> (min.)  
 Weight : 730g  
 Ingress Protection : IP66  
 Approvals : CE, C-Tick

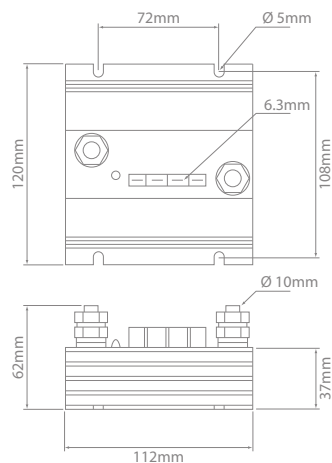


## Don't Let Your Battery Run Flat

Utilising the Low Battery Cutout you can be assured your battery won't be drained while in action.



Program the Low Battery Cutout to trigger an alarm when your charge is getting low.



## Low Battery Cutout

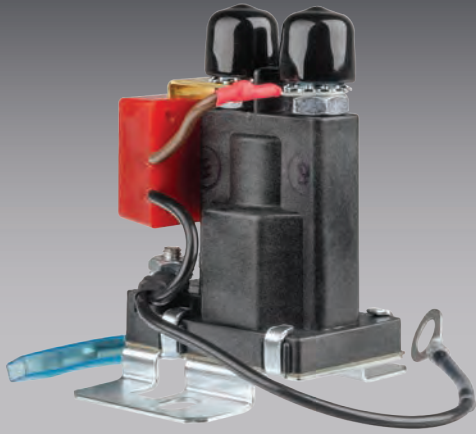
Part No.	Max. Load (A)	Peak Current (A)	Under Voltage Disconnect Voltage		Over Voltage Disconnect Voltage	
			12V Mode	24V Mode	12V Mode	24V Mode
<b>ED-LBC1224-200</b>	200-210	480	10-12V*	20-24V*	16V	32V

\*10 different selectable under-voltage thresholds for 12 and 24 Volt.



# Switching Systems

## Smart Battery Isolator

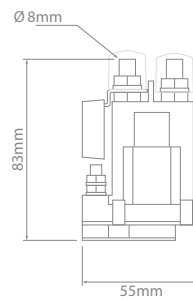
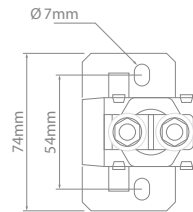
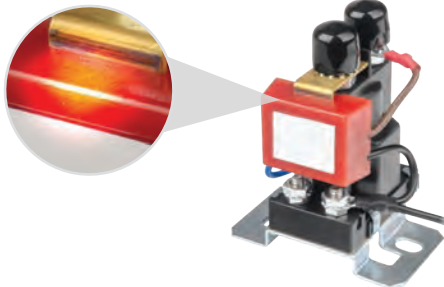


- Microprocessor-controlled battery isolator designed for use in multi-battery applications.
- Cost-effective protection against a flat battery.
- Cooler operating temperature compared to standard solenoid.
- Silver alloy contacts for longer life.
- Power saving technology.
- Fault indication LED.
- Surge protected.
- Designed and manufactured in Australia.
- 2-year warranty.

Body : Polymer  
 Contacts : Silver Alloy  
 Operating Temperature : 0°C to 50°C  
 Approvals : CE, C-Tick, AS/NZS CISPR11:2004



Fault indication LED



### Smart Battery Isolator

Part No.	Voltage	Current Rating (A)		Off Volts	On Volts	Current Draw (A)
		Inrush	Continuous			
<b>SBI-12</b>	12	400	100	12.7	13.2	0.15
<b>SBI-24</b>	24	400	100	25.4	26.4	0.15

- Microprocessor-controlled battery isolators designed for use in multi-battery applications.
- Cost-effective protection against flat battery.
- Intelligent battery monitoring to prevent unwanted switching.
- Starter battery priority.
- No voltage loss.
- Surge-protected.
- 5-year warranty.
- Ideal for service vehicles, solar power systems, caravans, RVs, trailer homes, industrial systems and maritime applications.



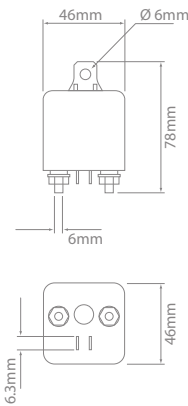
ED-VSR1224-160



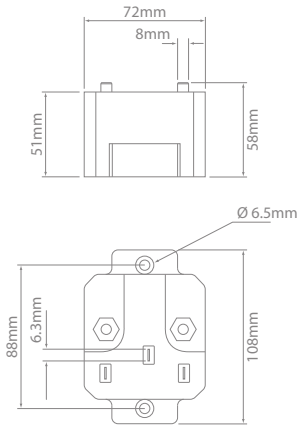
ED-VSR1224-140



Voltage : 12/24V  
 Approvals : C-Tick  
 Operating Temperature : -10°C to 40°C



ED-VSR1224-140



ED-VSR1224-160

## Battery Separators

Part No.	Current Rating (A)		Off Voltage		On Voltage		Weight (kg)
	Inrush	Continuous	@12V	@24V	@12V	@24V	
ED-VSR1224-140	—	140	12.8	25.6	13.2	26.4	0.1
ED-VSR1224-160	480	160	12.8	25.6	13.2	26.4	0.5





# Battery Master Switches

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# Battery Master Switches

	Fixed Handle – Polymer	28
	Fixed Handle – Metal	30
	L Handle	32
	Removable Key	36
	T Handle	37
	General	38
	Marine Series	39
	Big Red	40
	Battery Lockout Kits	42
	Universal Lockout Kits	44
	BMS – Accessories	46

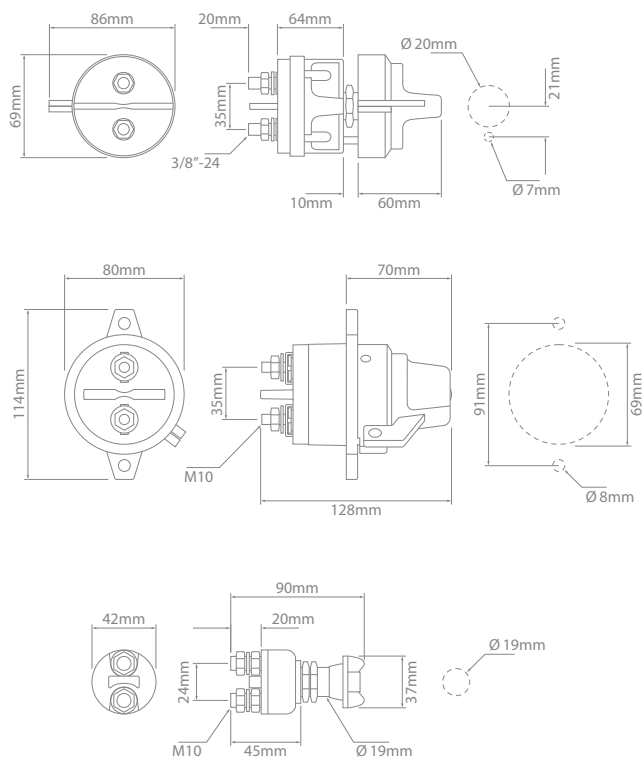
# BMS - Manual Switching

Fixed Handle - Polymer



- Single and Double Pole models available.
- Silver alloy contacts on most models.
- Weather resistant.
- Multi-voltage.
- Environmentally sealed.
- Integrated lockout except BMS-20.
- Optional lockout brackets available for BMS-20.
- 75930 series features auxiliary contacts.

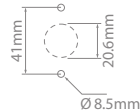
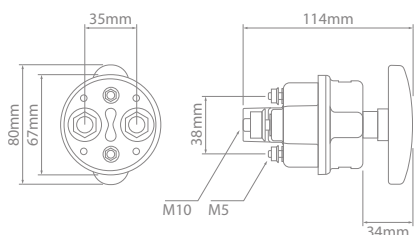
<b>Voltage :</b>	Single Pole	6-36V
	75930 Series	12-32V
	Double Pole	12-48V
<b>Contacts :</b>		Silver Alloy
	75930 Series	Copper
<b>Operating Temperature :</b>	75930 Series	-40 to 85°C
	Double Pole	-50 to 105°C



## Fixed Handle - Polymer - Single Pole

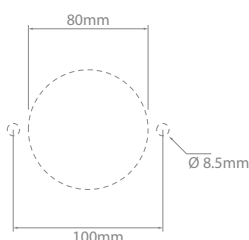
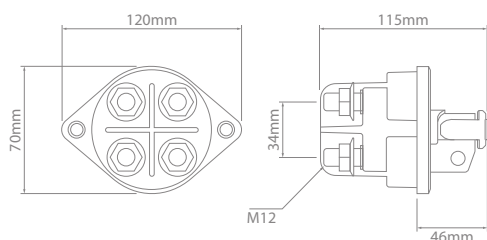
Part No.	Description	Main Contacts (A)		Fits Panel Thickness (mm)	IP Rating
		Intermittent	Continuous		
<b>75920</b>	Single Pole - Red handle	3000	300	12	IP67
<b>75920-01B</b>	Single Pole - Yellow handle	3000	300	12	IP67
<b>BMS-001</b>	Single Pole - Red handle	2000	250	—	IP67
<b>BMS-002</b>	Single Pole - Yellow handle	2000	250	—	IP67
<b>BMS-20</b>	Single Pole	1000	125	8.8	IP53

# BMS - Manual Switching



## Fixed Handle – Polymer – Single Pole with Auxiliary NEW

Part No.	Description	Main Contacts (A)		Auxiliary Contacts (A)	IP Rating
		Intermittent	Continuous	Continuous	
<b>75930-01</b>	Single Pole with Auxiliary – <span style="color: red;">Red</span> handle	1000	300	20	IP67, IPX9K
<b>75930-02</b>	Single Pole with Auxiliary – <span style="color: yellow;">Yellow</span> handle	1000	300	20	IP67, IPX9K



## Fixed Handle – Polymer – Double Pole NEW

Part No.	Description	Main Contacts (A)		IP Rating
		Intermittent	Continuous	
<b>880175R</b>	Double Pole – <span style="color: red;">Red</span> handle	3000	500	IP67, IP69K
<b>880175Y</b>	Double Pole – <span style="color: yellow;">Yellow</span> handle	3000	500	IP67, IP69K



BMS-003BKT



BMS-004BKT



BMS-3R



BMS-3Y



BMS-IMP, BMS-ES

## Fixed Handle – Polymer – Accessories

Part No.	Description	Suits	Suits
		Battery Master Switch	High Current Connector
<b>BMS-003BKT</b> <span style="color: red;">NEW</span>	Mounting bracket – powder coated Black	BMS-001, BMS-002	–
<b>BMS-004BKT</b> <span style="color: red;">NEW</span>	Mounting bracket – powder coated Black	BMS-001, BMS-002	SB175, SB350
<b>BMS-3R</b>	Lockout – 2 piece nylon – <span style="color: red;">Red</span>	BMS-20	–
<b>BMS-3Y</b>	Lockout – 2 piece nylon – <span style="color: yellow;">Yellow</span>	BMS-20	–
<b>BMS-IMP</b>	60mm Brass extension stud – 3/8"-24	75920, 75920-01B	–
<b>BMS-ES</b>	60mm Brass extension stud – M10	BMS-001, BMS-002, BMS-20	–



# BMS - Manual Switching

Fixed Handle - Metal



- Single and Double Pole models available.
- Silver alloy contacts on most models.
- Multi-voltage.
- Optional lockout bracket where available.
- Auxiliary contacts on Single Pole models.

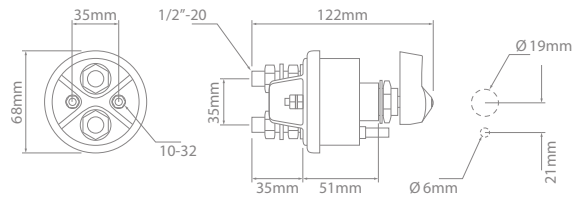
6V  
36V

Voltage :  
Contacts :

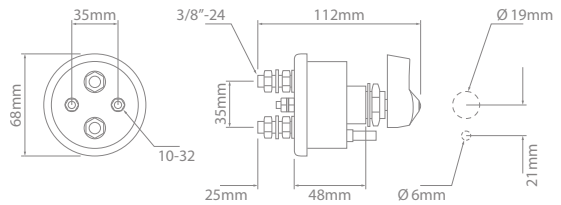
6-36V  
Silver Alloy  
Copper  
75903



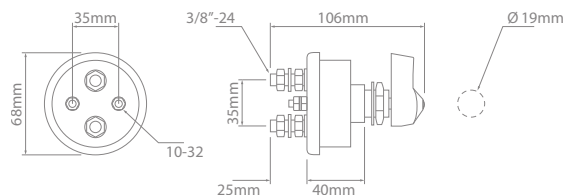
75907



BMS-17, 75910B



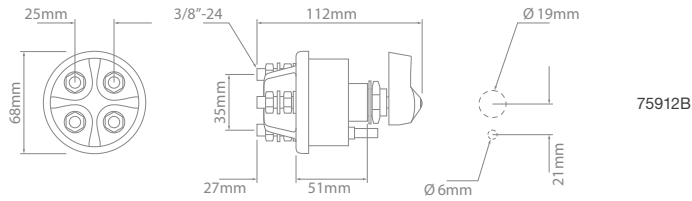
75903



## Fixed Handle - Metal - Single Pole

Part No.	Description	Main Contacts (A)		Auxiliary Contacts (A)	Fits Panel Thickness (mm)
		Intermittent	Continuous	Continuous	
<b>75907</b>	Single Pole with Auxiliary	2000	300	20	6.4
<b>BMS-17</b>	Single Pole with Auxiliary	1000	300	20	6.4
<b>75910B</b>	Single Pole with Auxiliary	1000	125	20	6.4
<b>75903</b>	Single Pole with Auxiliary	1000	125	20	4.8

# BMS - Manual Switching



75912B

## Fixed Handle - Metal - Double Pole

Part No.	Description	Main Contacts (A)		Auxiliary Contacts (A)	Fits Panel Thickness (mm)
		Intermittent	Continuous	Continuous	
<b>75912B</b>	Double Pole	750	125	—	6.5



BMS-005BKT



BMS-006BKT



BMS-007BKT



Shown with 2 x BMS-17, BMS-18R and BMS-18Y installed to a BMS-007BKT



BMS-18



BMS-18R



BMS-18Y



Padlock not supplied with lockout brackets



LS11004-01



LS11004-02



Padlock not supplied with lockout brackets



BMS-IMP

## Fixed Handle - Metal - Accessories

Part No.	Description	Suits	Suits
		Battery Master Switch	High Current Connector
<b>BMS-005BKT</b> <span style="color:red">NEW</span>	Mounting bracket - powder coated Black	BMS-17	SB175, SB350
<b>BMS-006BKT</b> <span style="color:red">NEW</span>	Mounting bracket - powder coated Black	BMS-17	—
<b>BMS-007BKT</b> <span style="color:red">NEW</span>	Mounting bracket - powder coated Black	2 x BMS-17	—
<b>BMS-18</b>	Lockout - 2 piece metal	All Fixed Handle - Metal	—
<b>BMS-18R</b>	Lockout - 2 piece metal - powder coated Red	All Fixed Handle - Metal	—
<b>BMS-18Y</b>	Lockout - 2 piece metal - powder coated Yellow	All Fixed Handle - Metal	—
<b>LS11004-01</b>	Lockout - Hinged stainless steel - powder coated Red	All Fixed Handle - Metal	—
<b>LS11004-02</b>	Lockout - Hinged stainless steel - powder coated Yellow	All Fixed Handle - Metal	—
<b>BMS-IMP</b>	60mm Brass extension stud - 3/8"-24	BMS-17, 75910B, 75903, 75912B	—



# BMS - Manual Switching

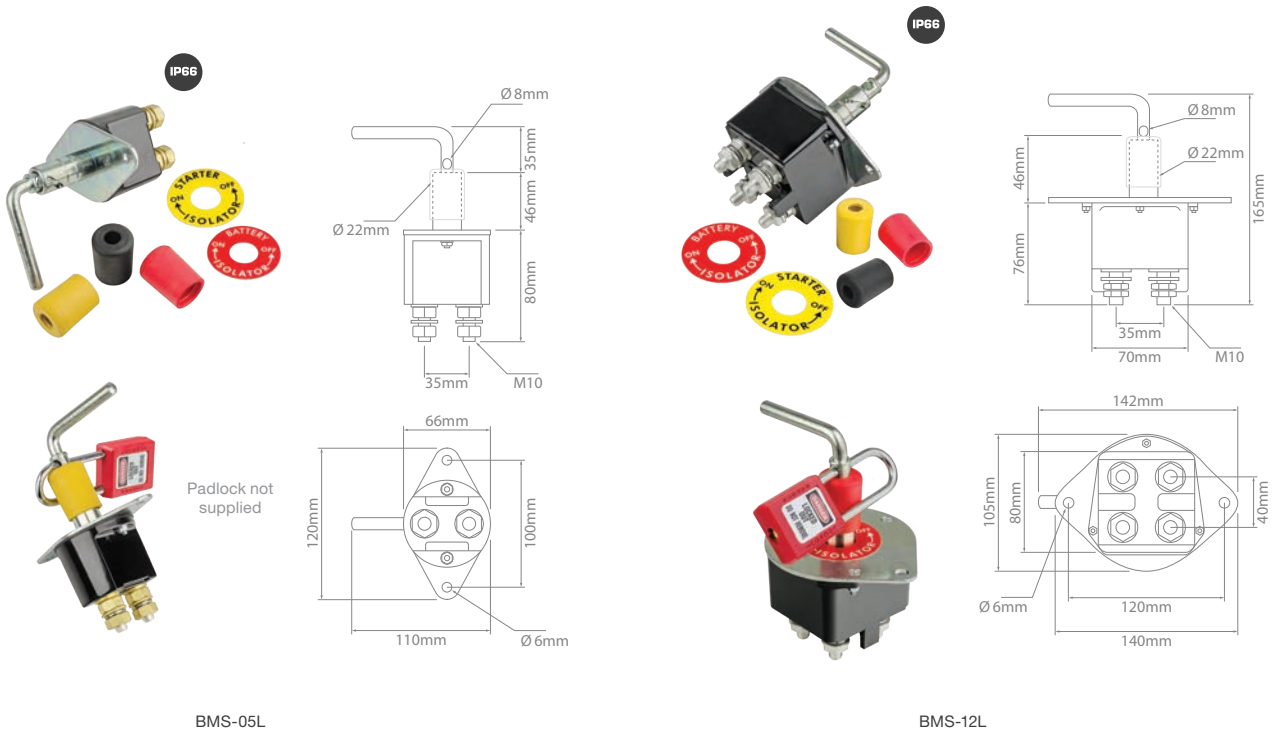
L Handle



- BMS-05L & BMS-12L feature an integrated locking facility.
- BMS-05/L & BMS-12/L environmentally sealed – IP66.
- Single and Double Pole models.
- Lockout brackets available for BMS-05 & BMS-12.
- BMS-12/L features silver-plated contacts.

6V  
36V

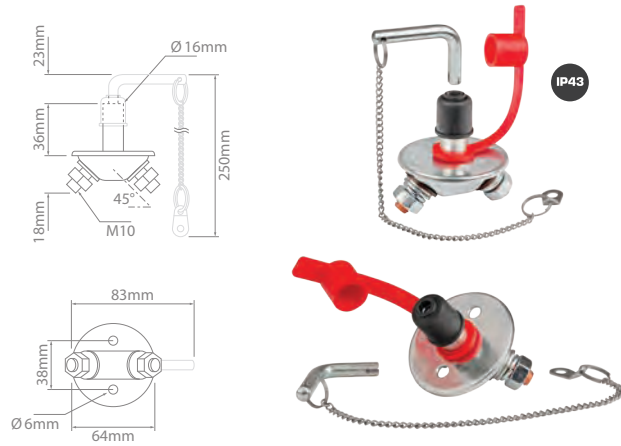
Voltage :	6–36V
Contacts :	Copper
Handle :	BMS-12/L Silver-plated Copper
Body :	BMS-07 Zinc-plated
	BMS-05/L, BMS-12/L Zinc-plated
Ingress Protection :	BMS-07 IP43
	BMS-05/L, BMS-12/L IP66



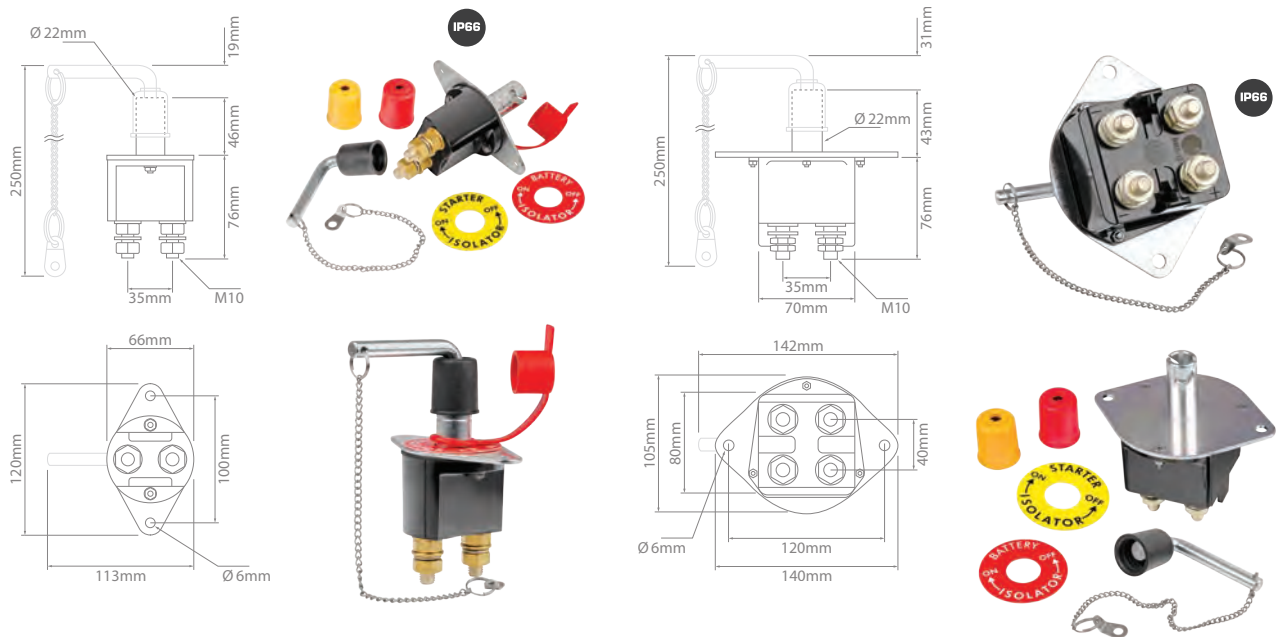
## L Handle – Lockable

Part No.	Description	Contacts (A)	
		Intermittent	Continuous
<b>BMS-05L</b>	Single Pole. Supplied with Starter & Battery decals	2500	250
<b>BMS-12L</b>	Double Pole. Supplied with Starter & Battery decals	2500	250

# BMS - Manual Switching



BMS-07



BMS-05

BMS-12

## L Handle – Removable

Part No.	Description	Contacts (A)	
		Intermittent	Continuous
<b>BMS-07</b>	Single Pole	500	100
<b>BMS-05</b>	Single Pole. Supplied with Starter & Battery decals	2500	250
<b>BMS-12</b>	Double Pole. Supplied with Starter & Battery decals	2500	250



# BMS - Manual Switching



BMS-2R



BMS-2Y



BMS-05K



Not supplied with  
lockout brackets or  
mounting hardware



BMS-05BKT



## L Handle - Accessories

Part No.	Description	Suits
<b>BMS-2R</b>	Metal lockout bracket for use with a padlock. Powder coated <b>Red</b>	BMS-05
<b>BMS-2Y</b>	Metal lockout bracket for use with a padlock. Powder coated <b>Yellow</b>	BMS-05
<b>BMS-05K</b>	Spare lever handle key with rubber boot and chain	BMS-05, BMS-12
<b>BMS-05BKT</b>	Metal mounting bracket. Powder coated Black	BMS-05/L

# BMS - Manual Switching



Not supplied with lockout brackets or mounting hardware

## L Handle – Accessories cont.

Part No.	Description	Suits
<b>BMS-1R</b>	Metal lockout bracket for use with a padlock. Powder coated <b>Red</b>	BMS-12
<b>BMS-1Y</b>	Metal lockout bracket for use with a padlock. Powder coated <b>Yellow</b>	BMS-12
<b>LS11003-01</b>	Metal lockout bracket for use with a padlock – Stainless steel. Powder coated <b>Red</b>	BMS-12, BMS-05
<b>LS11003-02</b>	Metal lockout bracket for use with a padlock – Stainless steel. Powder coated <b>Yellow</b>	BMS-12, BMS-05
<b>BMS-4R</b>	Metal lockout bracket for use with a padlock. Powder coated <b>Red</b>	BMS-12, BMS-05
<b>BMS-4Y</b>	Metal lockout bracket for use with a padlock. Powder coated <b>Yellow</b>	BMS-12, BMS-05
<b>BMS-12BKT</b>	Metal mounting bracket. Powder coated <b>Black</b>	BMS-12/L
<b>BMS-ES</b>	60mm Brass extension stud – M10	All L Handle



# BMS - Manual Switching

Removable Key

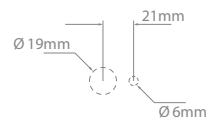
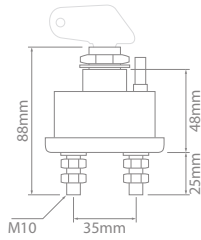


- Weather resistant.
- Removable keys.
- Silver alloy contacts.

6V  
36V

Voltage :  
Contacts :  
Key :  
Body :

6-36V  
Silver Alloy  
Zinc-plated  
Zinc-plated



Mounting Dimensions



## Removable Key

Part No.	Description	Contacts (A)		Fits Panel Thickness (mm)
		Intermittent	Continuous	
<b>BMS-10</b>	Single Pole	1000	125	4.8

# BMS - Manual Switching

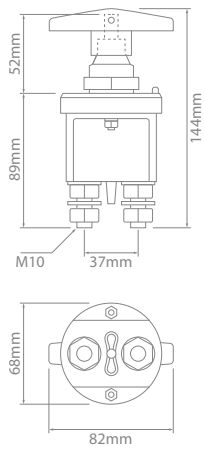
- Fixed T handles.
- Marine model (BMS-15) with polyester coating.
- Environmentally sealed.
- BMS-09 silver alloy contacts.



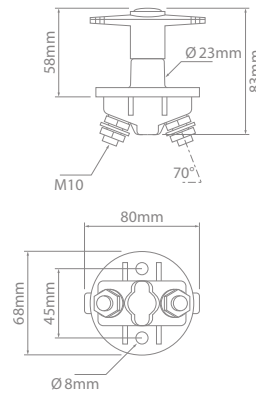
T Handle

Voltage :	BMS-09 6-36V	BMS-15 6-36V
Contacts :	Silver Alloy	Copper
Handle :	Die-cast	Polymer
Body :	Bakelite	Bakelite
Ingress Protection :	IP65	IP64

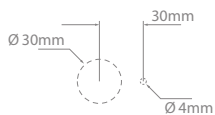
6V  
36V



BMS-09



BMS-15



Mounting Dimensions

## T Handle

Part No.	Description	Contacts (A)		Fits Panel Thickness (mm)
		Intermittent	Continuous	
<b>BMS-09</b>	Single Pole	2500	250	11
<b>BMS-15</b>	Single Pole Marine	1000	150	—



# BMS - Manual Switching

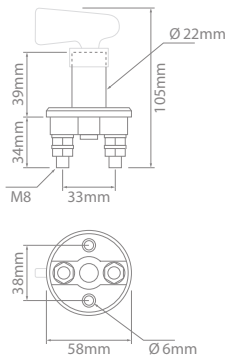
General



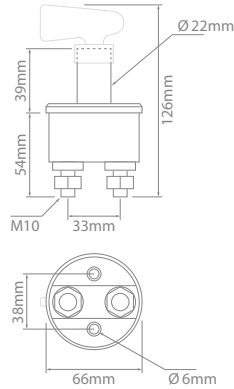
- Removable key.
- Dust cover.
- Corrosion resistant construction.
- BMS-16 features auxiliary contacts.

12V  
24V

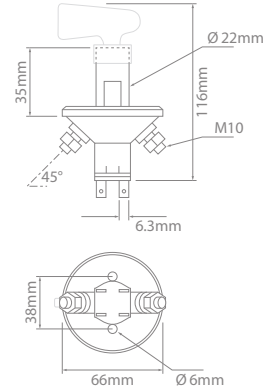
Voltage : 12-24V  
 Contacts : Copper  
 Handle: Polymer PA6  
 Body : Polymer PA6  
 Ingress Protection : BMS-08 IP53  
 BMS-06, BMS-16 IP43



BMS-06



BMS-08



BMS-16

## General

Part No.	Description	Main Contacts (A)		Auxiliary Contacts (A)
		Intermittent	Continuous	Continuous
<b>BMS-06</b>	Single Pole	500	100	—
<b>BMS-08</b>	Single Pole	500	100	—
<b>BMS-16</b>	Single Pole with Auxiliary	500	100	5
<b>BMS-06K</b>	Replacement key			

BMS-16 Auxiliary Contacts: NO & NC.

# BMS - Manual Switching

- 2 & 4 position models.
- Removable panels for easy cable entry/access.
- BMS-21 features removable actuator.
- Single and dual battery applications.
- BMS-22 allows for switching between two batteries without power interruption.



BMS-22



BMS-21

Voltage : 12-24V  
 Contacts : Tinned Copper  
 Handle: PBT  
 Body : Thermoplastic



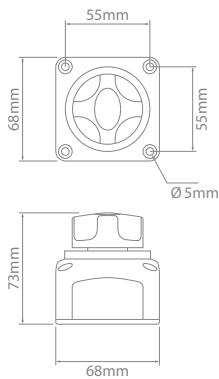
BMS-21 features removable actuator



BMS-21

BMS-22

Removable panels



BMS-21



BMS-22

## Marine Series

Part No.	Positions	Current Rating (A)		Terminals
		Intermittent	Continuous	
<b>BMS-21</b>	Off - On	1000	200	2 x 10mm Studs
<b>BMS-22</b>	Off - 1 - 1 + 2 - 2	1000	100 + 100	3 x 8mm Studs



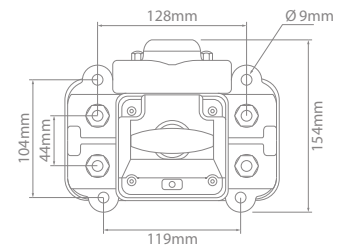
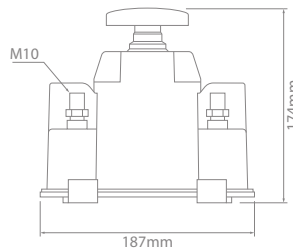
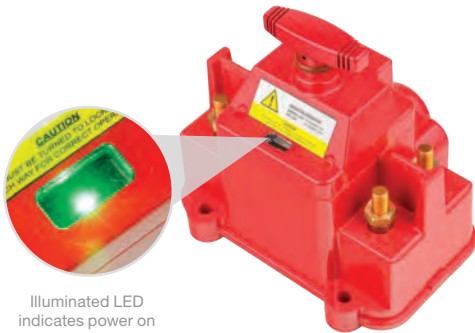
# BMS - Remote / Manual Switching

Big Red



- Fully sealed, heavy duty, double pole.
- Designed for commercial, marine and industrial applications, specifically those carrying flammable loads.
- Anti-crack outer case material.
- Highly resistant to impact, fuel oils, petroleum etc.
- Self extinguishing during fire.
- Manual and remote switching capabilities.
- LED display indicates switched position.
- Environmentally sealed – IP66.
- 2-year warranty.

Contacts :	Silver Alloy
Current Rating :	200A @ 5 Min
Current Rating – Intermittent :	500A
Handle :	Zinc Alloy
Body :	Thermoset Polyester
Weight :	3.8kg
Approvals :	AS3947.3.2001, C-Tick
Ingress Protection :	IP66



## Delayed Switching – Manual vs Electrical

A unique feature of the Big Red battery isolator is delayed switching of the auxiliary contacts. The delay is different when being electrically switched vs manually switched.

**Electrically Switched:**  
Approximately 2-3 milliseconds prior to the main contacts opening.

**Manually Switched:**  
100-150 millisecond prior to the main contacts opening.

For full details on the iROS Rollover Switch see page 14.



## Big Red

Part No.	Voltage	Description
SSB100	24	Battery Isolator for use with AS2809.2 compliant rollover switch
SSB102	12	Battery Isolator for use with AS2809.2 compliant rollover switch

For full details of the iROS Rollover Switch see page 14.

# Newsletter

Receive the latest ionnic news and updates  
via email, sign up

[ionnic.com/product-updates.html](http://ionnic.com/product-updates.html)



[Download the PDF](#)

## Connectors 2024

Our latest catalogue is now available to download from the IONNIC website or you can request a printed copy from your local sales representative.

Included in this catalogue:

- Popular TE DEUSTCH.
- Weather-Pack & Metri-Pack.
- Superseal.
- TE AMPSEAL & TE AMPSEAL 16.
- Crimp Connectors.
- Battery Terminals & Cable Lugs.
- High Current.
- Suzi Coils.
- Tail Light Harnesses.
- + More.

## Electrical



DEUTSCH

...ility with Genuine TE DEUTSCH

...y, especially in challenging ep



[ionnic.com](http://ionnic.com)

# BMS - Kits

## Battery Lockout Kits



MS-HL03/16

- Kits to suit popular mine site vehicles.
- Install with minimal engine bay modification.
- Models incorporate both a battery isolator and starter isolator.
- Pre-assembled.
- Switches clearly labelled.
- Powder coated brackets.
- Manufactured in Australia.

Brackets :	Powder Coated Aluminium	
Wire Size :		35mm <sup>2</sup>
Main Contacts :	Intermittent	1000A
	Continuous	125A
Auxiliary Contacts :	Continuous	20A



MS-PD03/18



MS-LC03/18

### Easy Installation

Manufactured in Australia the IONNIC range of battery lockout kits are pre-assembled and designed to be installed with minimal need for drilling or other engine bay modifications. Kits to suit the popular vehicles used on mine sites are available in multiple configurations all with jump start receptacles.

High quality components are used in their construction and the attention to detail extends to the use of terminal insulators and conduit clips to ensure the harness protection will always remain in place.





MS-HL03/16



MS-LC03/18



MS-PD03/18

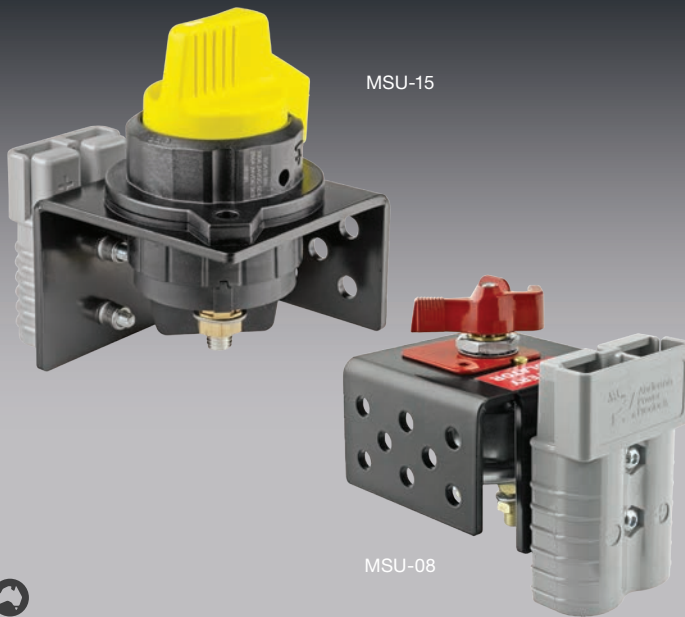
## Battery Lockout Kits – Toyota

Part No.	Suits
<b>MS-HL03/16</b>	Hi-Lux – mid 2016 on (diesel & hybrid diesel)
<b>MS-LC03/18</b>	Landcruiser – 70 Series V8 2018 on (diesel only)
<b>MS-PD03/18</b>	Prado – 150 Series 2018 on



# BMS - Kits

Universal Lockout Kits



- Compact size.
- Suitable for use on any vehicle.
- Kits to suit battery or starter isolation.
- BMS-17 features auxiliary contacts.
- Available with either a 175A or 350A 'Jump Start Receptacle'.
- Powder coated brackets.
- Manufactured in Australia.

Bracket : Powder Coated Aluminium

*For specs on the BMS-001, BMS-002 and BMS-17 see page 28*

## Universal Lockout Kit Components



Fixed Handle - Metal  
BMS Switch  
BMS-17



Fixed Handle - Polymer  
BMS Switch **Red**  
BMS-001



Fixed Handle - Polymer  
BMS Switch **Yellow**  
BMS-002



Gasket for  
BMS-001 &  
BMS-002



High Current - 175A  
Connector with bolts  
SB175



High Current - 350A  
Connector with bolts  
SB350



Label -  
Battery Isolator



Label -  
Starter Isolator



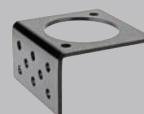
Metal Lockout  
Bracket - **Red**  
BMS-18R



Metal Lockout  
Bracket - **Yellow**  
BMS-18Y



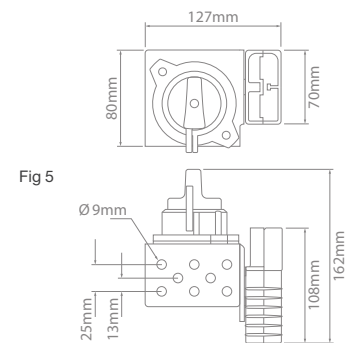
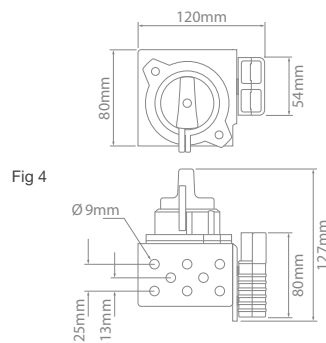
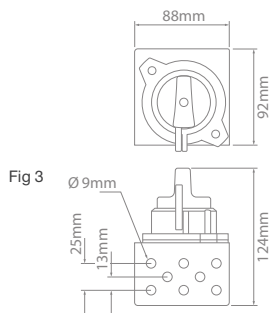
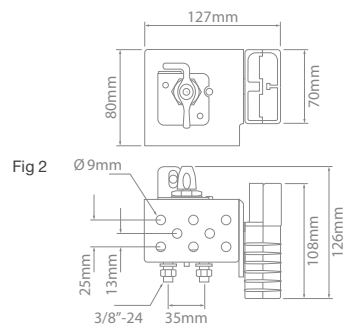
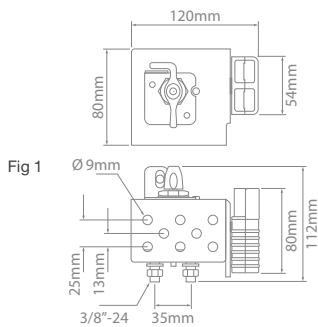
Universal  
Mounting Bracket  
BMS-005BKT



Universal  
Mounting Bracket  
BMS-003BKT



Universal  
Mounting Bracket  
BMS-004BKT



## Universal Lockout Kits2

Part No.	Current Rating (A)	BMS Switch	High Current Connector	Lockout Colour	Label		Universal Mounting Bracket	Fig
					Battery Isolator	Starter Isolator		
<b>MSU-04</b>	175	BMS-17	SB175	Red	•	—	BMS-005BKT	1
<b>MSU-05</b>	175	BMS-17	SB175	Yellow	—	•	BMS-005BKT	1
<b>MSU-08</b>	350	BMS-17	SB350	Red	•	—	BMS-005BKT	2
<b>MSU-09</b>	350	BMS-17	SB350	Yellow	—	•	BMS-005BKT	2
<b>MSU-01</b>	—	BMS-001*	—	Red	•	—	BMS-003BKT	3
<b>MSU-02</b>	—	BMS-002*	—	Yellow	—	•	BMS-003BKT	3
<b>MSU-14</b>	175	BMS-001*	SB175	Red	•	—	BMS-004BKT	4
<b>MSU-15</b>	175	BMS-002*	SB175	Yellow	—	•	BMS-004BKT	4
<b>MSU-18</b>	350	BMS-001*	SB350	Red	•	—	BMS-004BKT	5
<b>MSU-19</b>	350	BMS-002*	SB350	Yellow	—	•	BMS-004BKT	5

\*Includes gasket.

All kits supplied in component form.

Most components available separately.



# BMS - Accessories

## Terminal Insulators



Made in North America

- Protects terminals from electrical shorts and shocks.
- Colour coded for easy identification.
- Wide range of sizes & styles available.
- 200 Series feature finger tab for easy removal.
- Bulk packs available.
- Made in North America.

Material :  
Operating Temperature :  
Burning Behaviour :

Flexible PVC  
105°C max.  
UL94V2



SY2906-RED  
(Right hand)



SY2914-BLK  
(Left hand)



SY2915-RED  
(Double)

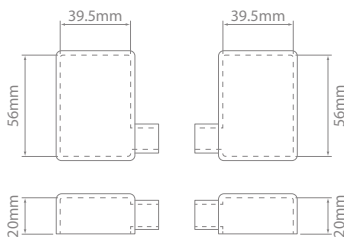


Fig 1

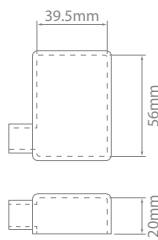


Fig 2

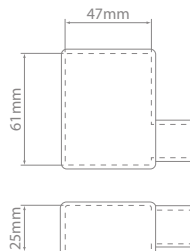


Fig 3

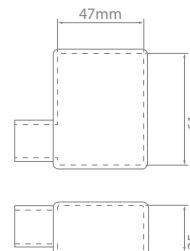


Fig 4

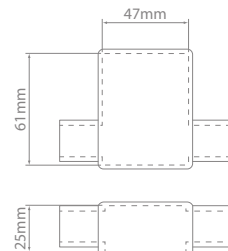
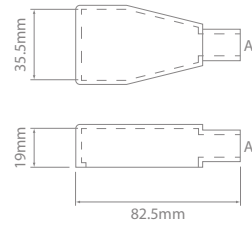


Fig 5

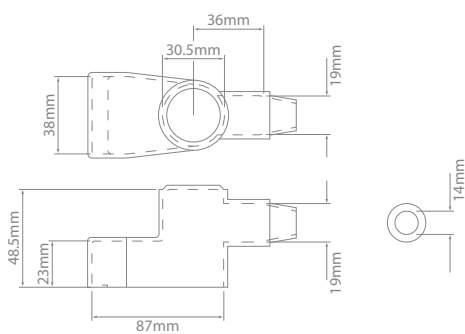
## Battery Terminal Insulators

Red	Black	Pack Qty	Post Height (mm)	Cable Ø (mm)	Cable Entry	Material Thickness (mm)	Fig
<b>SY2906-RED</b>	<b>SY2906-BLK</b>	1	20	12.5	Right Hand	1.5	1
<b>SY2910-RED</b>	<b>SY2910-BLK</b>	1	20	12.5	Left Hand	1.5	2
<b>SY2912-RED</b>	<b>SY2912-BLK</b>	1	25	17.5	Right Hand	2.3	3
<b>SY2914-RED</b>	<b>SY2914-BLK</b>	1	25	17.5	Left Hand	2.3	4
<b>SY2915-RED</b>	<b>SY2915-BLK</b>	1	25	17.5	Double	2.3	5



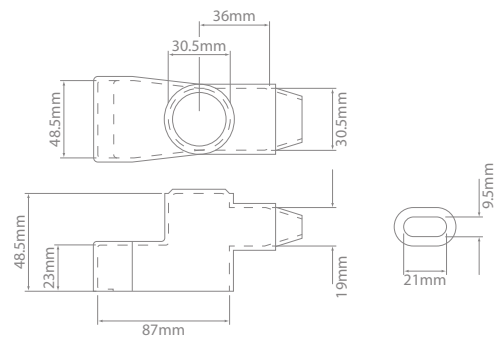
## Battery Terminal Insulators – Straight Leads

Red	Black	Pack Qty	Post Height (mm)	Cable Ø A (mm)	Material Thickness (mm)
<b>SY2917-RED</b>	<b>SY2917-BLK</b>	1	19	12.5	2.3
<b>SY2917R/100</b>	<b>SY2917B/100</b>	100			
<b>SY2919-RED</b>	<b>SY2919-BLK</b>	1	19	16	2.3
<b>SY2919R/100</b>	<b>SY2919B/100</b>	100			



SY2990

Fig 1



SY2995

Fig 2

## Battery Terminal Insulators

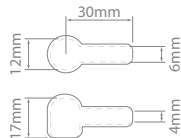
Red	Black	Pack Qty	Terminal Ø (mm)	Post Height (mm)	Material Thickness (mm)	Fig
<b>SY2990-RED</b>	<b>SY2990-BLK</b>	1	30.5	23	2	1
<b>SY2990R/100</b>	<b>SY2990B/100</b>	100				
<b>SY2995-RED</b>	<b>SY2995-BLK</b>	1	30.5	23	2	2
<b>SY2995R/100</b>	<b>SY2995B/100</b>	100				



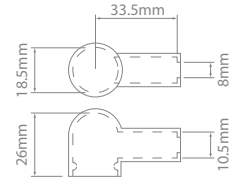
# BMS - Accessories



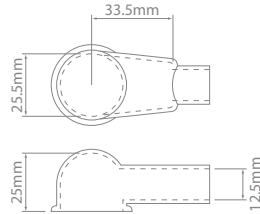
SY2900



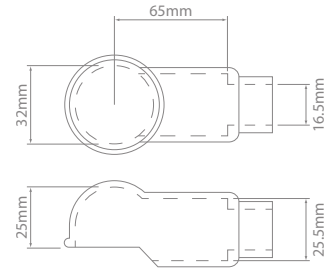
SY2980



SY2982



SY2984

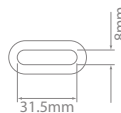
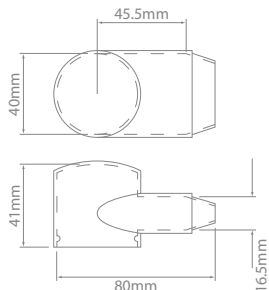


## Terminal Insulators – Lug & Ring

Red	Black	Pack Qty	Terminal Ø (mm)	Post Height (mm)	Terminal Length (mm)	Inside Grip (mm)	Cable Ø (mm)	Material Thickness (mm)
<b>SY2900-RED</b>	<b>SY2900-BLK</b>	1	13	16	21	6	4 – 6	1
<b>SY2900R/100</b>	<b>SY2900B/100</b>	100						
<b>SY2980-RED</b>	<b>SY2980-BLK</b>	1	18.5	26	33.5	10.5	8	1.5
<b>SY2980R/100</b>	<b>SY2980B/100</b>	100						
<b>SY2982-RED</b>	<b>SY2982-BLK</b>	1	25.5	25	33.5	12.5	12.5	1.5
<b>SY2982R/100</b>	<b>SY2982B/100</b>	100						
<b>SY2984-RED</b>	<b>SY2984-BLK</b>	1	32	25	65	25.5	16.5	2.5
<b>SY2984R/100</b>	<b>SY2984B/100</b>	100						



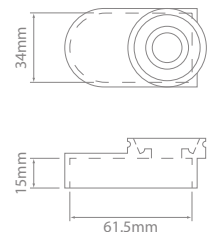
SY2999-RED



SY2998-RED

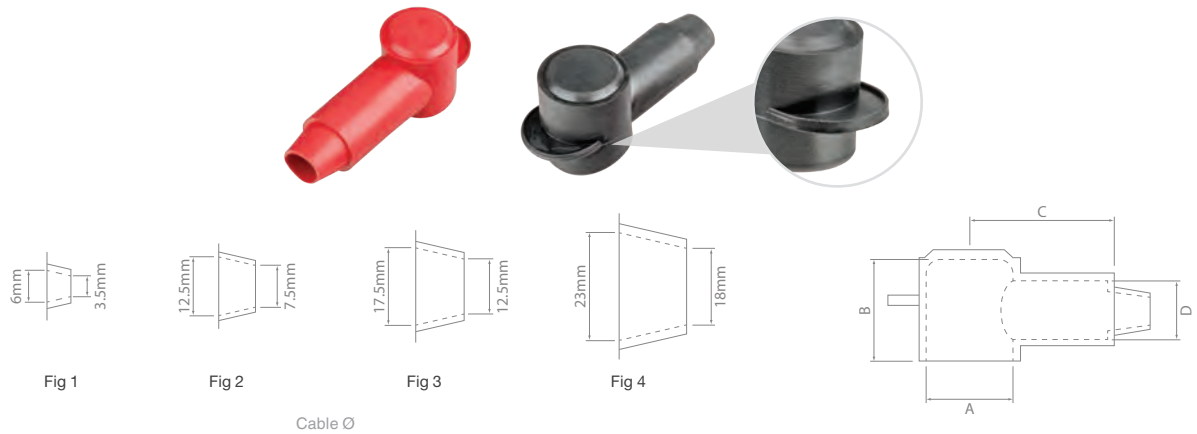


SY2998-RED



## Terminal Insulators – Lug & Ring – Marine

Red	Black	Pack Qty	Terminal Ø (mm)	Post Height (mm)	Terminal Length (mm)	Material Thickness (mm)
<b>SY2999-RED</b>	<b>SY2999-BLK</b>	1	40	41	58.5	1.5
<b>SY2999R/100</b>	<b>SY2999B/100</b>	100				
<b>SY2998-RED</b>	<b>SY2998-BLK</b>	1	Base for use with SY2999			2.5



## Terminal Insulators – Lug & Ring – 200 Series

Red	Black	Pack Qty	Terminal Ø A (mm)	Post Height B (mm)	Terminal Length C (mm)	Inside Grip D (mm)	Cable Ø Fig	Material Thickness (mm)
<b>SY2959-RED</b>	<b>SY2959-BLK</b>	1	12	18	25.5	12.5	1	1.5
<b>SY2959R/100</b>	<b>SY2959B/100</b>	100						
<b>SY2960-RED</b>	<b>SY2960-BLK</b>	1	14	19	25.5	12.5	1	1.5
<b>SY2960R/100</b>	<b>SY2960B/100</b>	100						
<b>SY2963-RED</b>	<b>SY2963-BLK</b>	1	16	20.5	25.5	12.5	2	1.5
<b>SY2963R/100</b>	<b>SY2963B/100</b>	100						
<b>SY2965-RED</b>	<b>SY2965-BLK</b>	1	18	22	25.5	12.5	2	1.5
<b>SY2965R/100</b>	<b>SY2965B/100</b>	100						
<b>SY2966-RED</b>	<b>SY2966-BLK</b>	1	20	24	33.5	18	3	1.8
<b>SY2966R/100</b>	<b>SY2966B/100</b>	100						
<b>SY2968-RED</b>	<b>SY2968-BLK</b>	1	22	26.5	44.5	19	3	1.8
<b>SY2968R/100</b>	<b>SY2968B/100</b>	100						
<b>SY2971-RED</b>	<b>SY2971-BLK</b>	1	26	32	52.5	18	3	2
<b>SY2971R/100</b>	<b>SY2971B/100</b>	100						
<b>SY2970-RED</b>	<b>SY2970-BLK</b>	1	28	33.5	44.5	19	3	2.3
<b>SY2970R/100</b>	<b>SY2970B/100</b>	100						
<b>SY2973-RED</b>	<b>SY2973-BLK</b>	1	32	38	44.5	23	4	2.5
<b>SY2974-RED</b>	<b>SY2974-BLK</b>	1	32	38	60.5	23	4	2.5
<b>SY2974R/100</b>	<b>SY2974B/100</b>	100						
<b>SY2975-RED</b>	<b>SY2975-BLK</b>	1	32	38	44.5	23	4	2.5
<b>SY2975R/100</b>	<b>SY2975B/100</b>	100						



## Extension Studs

Part No.	Description
<b>BMS-ES</b>	60mm brass extension stud – M10
<b>BMS-IMP</b>	60mm brass extension stud – 3/8"-24









---

# Emergency Stop Switches



# Emergency Stop Switches

	Heavy Duty	52
	Standard Duty	54
	Illuminated	57
	Recessed	58
	KISSLING	60
	BA Series	61

# Emergency Stop

Heavy Duty

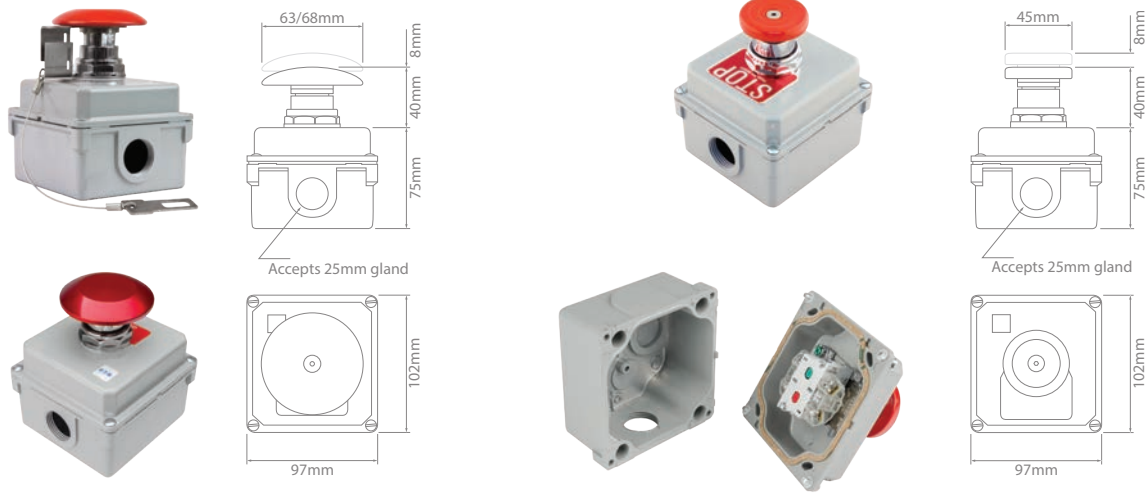


- Available in kit and component form.
- Solid metal housings.
- Multiple actuator types available including locking version.
- Multiple contact blocks available.
- Environmentally sealed – IP65.
- Multi-voltage.

6V  
36V

IP65

Voltage : 6–36V  
 Contacts : Silver Alloy  
 Button : Die-cast  
 Housing : Die-cast  
 Ingress Protection : IP65  
 Operating Temperature : -17°C to 65°C



CHS2, CHS3, CHS4

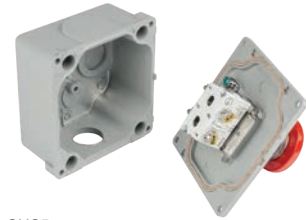
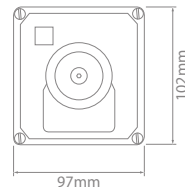
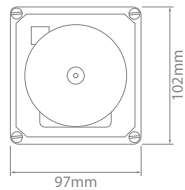
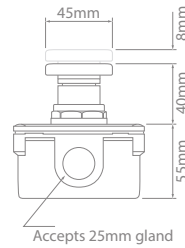
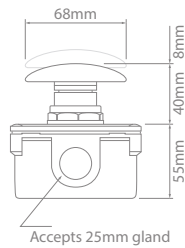
CHS6

## Heavy Duty – Kits – 75mm Enclosure

Part No.	Enclosure Type	Button Type	Legend	Contact Blocks
<b>CHS2</b>	75mm – TN11	68mm Lockable – T176P	“STOP PULL TO RESET” – D2179-53CP	N/O & N/C – T1P
<b>CHS3</b>	75mm – TN11	63mm Momentary – T172	“STOP” – TJ34	N/O & N/C – T1P
<b>CHS4</b>	75mm – TN11	68mm Push/Pull – T176M	“STOP PULL TO RESET” – D2179-53CP	N/O & N/C – T1P, N/O & N/O – T2P
<b>CHS6</b>	75mm – TN11	45mm Push/Pull – T129M	“STOP PULL TO RESET” – D2179-53CP	N/O & N/C – T1P



# Emergency Stop



CHS1, CHS7

CHS5

## Heavy Duty – Kits – 55mm Enclosure

Part No.	Enclosure Type	Button Type	Legend	Contact Blocks
<b>CHS1</b>	55mm – TN01	68mm Push/Pull – T176M	“STOP PULL TO RESET” – D2179-53CP	N/O & N/C – T1P
<b>CHS7</b> <span style="color:red">NEW</span>	55mm – TN01	68mm Lockable – T176P	“STOP PULL TO RESET” – D2179-53CP	N/O & N/C – T1P
<b>CHS5</b>	55mm – TN01	45mm Push/Pull – T129M	“STOP PULL TO RESET” – D2179-53CP	N/O & N/C – T1P



TN01



TN11



T129M



T172



T1P



T2P



T3P



T176P



T176M



D2179-53CP



TJ34



220S25

## Heavy Duty – Components

Part No.	Description
<b>TN01</b>	Enclosure – Die-cast 55mm
<b>TN11</b>	Enclosure – Die-cast 75mm
<b>T129M</b>	Button – 45mm Push/Pull
<b>T172</b>	Button – 63mm Momentary
<b>T176P</b>	Button – 68mm Lockable Push/Pull
<b>T176M</b>	Button – 68mm Push/Pull
<b>T1P</b>	Contact block – N/O & N/C
<b>T2P</b>	Contact block – N/O & N/O
<b>T3P</b>	Contact block – N/C & N/C
<b>D2179-53CP</b>	Legend – “STOP PULL TO RESET”
<b>TJ34</b>	Legend – “STOP”
<b>220S25</b> <span style="color:red">NEW</span>	Blanking plug – 25mm. Not a Eaton product



# Emergency Stop

Standard Duty



6V  
36V

IP65

- Available in kit and component form.
- Metal & Polymer housings.
- Multiple actuator types available including locking version.
- Multiple contact blocks available.
- Custom legends available.
- Environmentally sealed – IP65.
- Multi-voltage.

Voltage : 6–36V  
 Contacts : Silver Alloy  
 Button : Polymer  
 Body : Die-cast  
 TMS-14 Polycarbonate  
 TMS-15  
 Ingress Protection : IP65 *excludes TMS39*  
 Operating Temperature : -25°C to 70°C

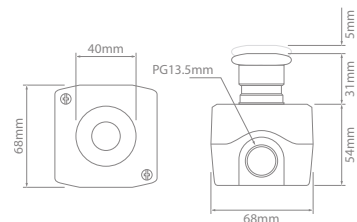


Ideal for panel mounting

Mounting Dimensions

## Standard Duty – Kit – Panel Mount

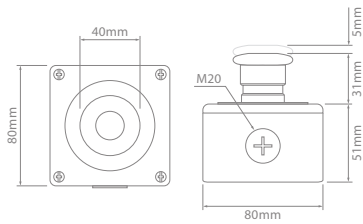
Part No.	Enclosure Type	Button Type	Legend	Contact Blocks
<b>TMS39</b>	NA (panel mount)	Latching – TMS12	Rectangle – TMS17	N/O & N/C – TMS10



## Standard Duty – Kits – Polymer

Part No.	Enclosure Type	Button Type	Legend	Contact Blocks
<b>TMS01</b>	Polymer – TMS15	Momentary – TMS11	Rectangle – TMS17	N/O & N/C – TMS10
<b>TMS02</b>	Polymer – TMS15	Latching – TMS12	Round – TMS18	N/O – ZEN-L1111, N/C – ZEN-L1121
<b>XALK178E</b> <span style="color: red; font-weight: bold;">NEW</span>	Polymer – TMS15	Latching – TMS12	–	N/O – ZEN-L1111, N/C – ZEN-L1121
<b>TMS03</b>	Polymer – TMS15	Push/Pull – TMS13	Rectangle – TMS17	N/O & N/C – TMS10
<b>TMS08</b>	Polymer – TMS15	Lockable – TMS21	Rectangle – TMS17	N/O & N/C – TMS10

# Emergency Stop



## Standard Duty – Kits – Metal

Part No.	Enclosure Type	Button Type	Legend	Contact Blocks
<b>TMS04</b>	Metal – TMS14	Momentary – TMS11	Round – TMS18	N/O & N/C – TMS10
<b>TMS05</b>	Metal – TMS14	Latching – TMS12	Round – TMS18	N/O & N/C – TMS10
<b>TMS06</b>	Metal – TMS14	Push/Pull – TMS13	Round – TMS18	N/O & N/C – TMS10
<b>TMS31</b>	Metal – TMS14	Latching – TMS12	Round – TMS18	N/C & N/C – TMS26
<b>TMS32</b>	Metal – TMS14	Push/Pull – TMS13	Round – TMS18	N/C & N/C – TMS26
<b>TMS33</b> <span style="color: red; font-weight: bold;">NEW</span>	Metal – TMS14	Latching – TMS12	Round – TMS18	N/O & N/C – TMS10, N/C – ZBE102



## Standard Duty – Components

Part No.	Description
<b>TMS14</b>	Enclosure – Metal. (T Series contact blocks only)
<b>TMS15</b>	Enclosure – Polymer
<b>TMS11</b>	Mushroom button – 40mm Momentary.
<b>TMS12</b>	Mushroom button – 40mm Latching, turn to release.
<b>TMS13</b>	Mushroom button – 40mm Push/Pull.
<b>TMS21</b>	Mushroom button – 40mm Lockable, unlock to release.
<b>TMS27*</b>	Booted button – 30mm Momentary Black
<b>TMS28*</b>	Booted button – 30mm Momentary Green
<b>TMS29*</b>	Booted button – 30mm Momentary Red
<b>TMS30*</b>	Booted button – 30mm Momentary Yellow

\*Not compatible with TMS-15 when used with T Series contact blocks.



# Emergency Stop



TMS16



TMS17



TMS18



T Series  
Contact Block - Single



T Series  
Contact Block - Dual



ZBE101



ZBE102



Shown with a ZBE102  
mounted to a  
T Series contact block



Z Series  
ZEN-L1111





Z Series  
ZEN-L1121



220S20

## Standard Duty – Components *cont.*

Part No.	Description
<b>TMS16</b>	Rectangle legend – “STOP”
<b>TMS17</b>	Rectangle legend – “EMERGENCY STOP”
<b>TMS18</b>	Round legend – “EMERGENCY STOP” – <b>Yellow</b>
<b>TMS23</b>	Contact block – T Series – Single – N/O. Mounts to switch
<b>TMS24</b>	Contact block – T Series – Single – N/C. Mounts to switch
<b>TMS10</b>	Contact block – T Series – Dual – N/O & N/C. Mounts to switch. Used in all standard kits
<b>TMS25</b>	Contact block – T Series – Dual – 2 x N/O. Mounts to switch
<b>TMS26</b>	Contact block – T Series – Dual – 2 x N/C. Mounts to switch
<b>ZBE101</b> 	Contact block – Single – N/O. Mount to T Series contact block
<b>ZBE102</b> 	Contact block – Single – N/C. Mount to T Series contact block
<b>ZEN-L1111</b>	Contact block – Z Series – Single – N/O. Mounts to enclosure base. (Not compatible with TMS14)
<b>ZEN-L1121</b>	Contact block – Z Series – Single – N/C. Mounts to enclosure base. (Not compatible with TMS14)
<b>220S20</b>	Blanking plug – 20mm. Not a Telemecanique product

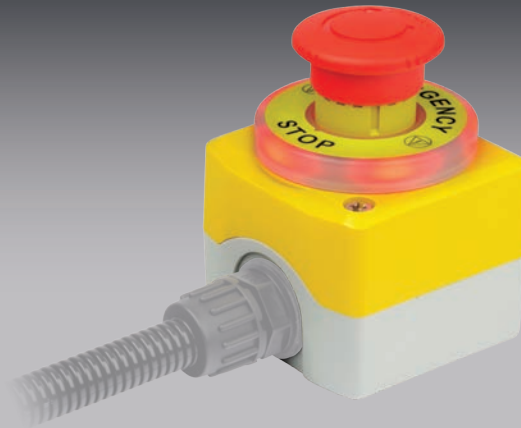
# Emergency Stop

- Illuminated legend ensures easy identification of switch activation status.
- Legend illuminates in white when open, red when engaged.
- Available in kit and component form.
- Environmentally sealed – IP65.

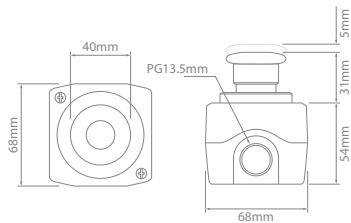
**NEW**

Illuminated

Voltage : 24V  
 Contacts : Silver Alloy  
 Button : Polymer  
 Body : Polycarbonate  
 Ingress Protection : IP65  
 Operating Temperature : -25°C to 70°C



IP65



Legend illuminates in white when open, red when engaged



## Illuminated – Kit NEW

Part No.	Enclosure Type	Button Type	Legend	Contact Blocks
<b>TMS09</b>	Polymer – TMS20	Latching – TMS12	Round Illuminate – TMS19	N/O & N/C – TMS10, N/C – ZBE102



TMS20



TMS12



TMS19



TMS10



ZBE102

## Illuminated – Components NEW

Part No.	Description
<b>TMS20</b>	Enclosure – Polymer
<b>TMS12</b>	Mushroom button – 40mm Latching, turn to release
<b>TMS19</b>	Round legend – “EMERGENCY STOP” – White and Red illumination – 24 volt only
<b>TMS10</b>	Contact block – T Series – Dual – N/O & N/C
<b>ZBE102</b>	Contact block – Single – N/C. Mount to T Series contact block



# Emergency Stop

Recessed

**NEW**



TMS43

TMS40

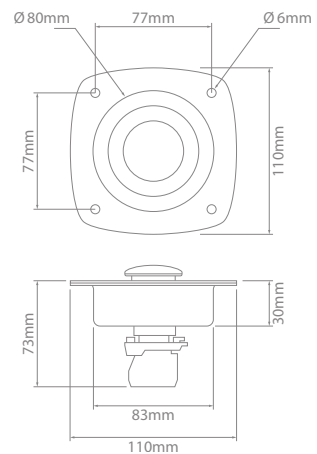
6V  
36V

- Protect switches from accidental activation.
- Supplied with latching Telemecanique emergency stop switches.
- Telemecanique contact blocks.
- Round emergency stop legends.
- Each component also sold separately.
- Multi-voltage.

Voltage :	6–36V
Contacts :	Silver Alloy
Button :	Polymer
Enclosure :	Steel Coated Carbon Steel
	Nylon PA66
Operating Temperature :	-25°C to 70°C



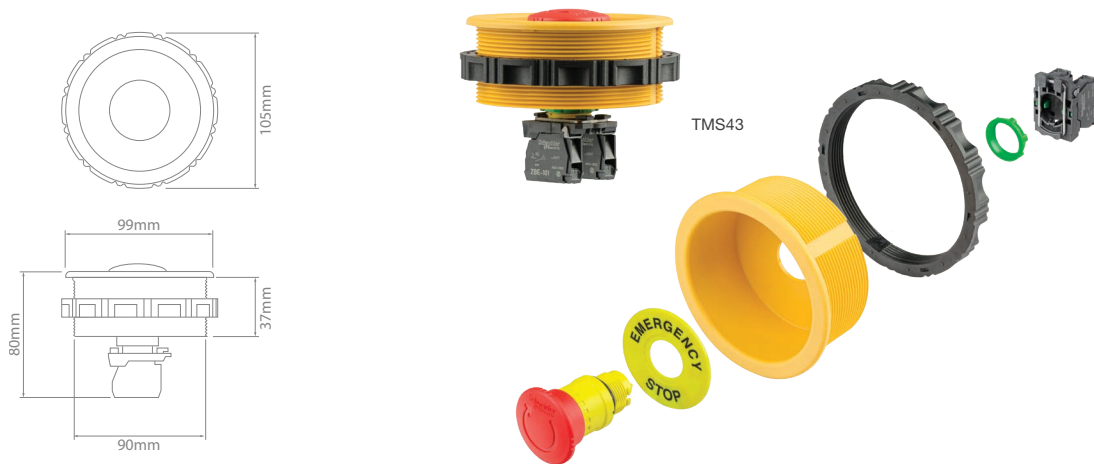
TMS40



## Recessed – Kits – Panel Mount – Steel **NEW**

Part No.	Bracket	Button Type	Legend	Contact Blocks
TMS40	Steel – TMS51	Latching – TMS12	Round – TMS52	N/O & N/C – TMS10
TMS41				N/O & N/O – TMS25

# Emergency Stop



## Recessed – Kit – Panel Mount – Nylon NEW

Part No.	Bracket	Button Type	Legend	Contact Blocks
<b>TMS44</b>				N/O & N/C – TMS10
<b>TMS43</b>	Nylon – TMS53	Latching – TMS12	Round – TMS52	N/O & N/O – TMS25



## Recessed – Components NEW

Part No.	Description	A (mm)
<b>TMS51</b>	Recessed panel mounting bracket – Steel. Rubber gasket and round legend	22.5
<b>TMS56</b>	Recessed panel mounting bracket – Steel. Rubber gasket and round legend	30.5
<b>TMS53</b>	Recessed panel mounting bracket – Nylon	22.5
<b>TMS54</b>	Recessed panel mounting bracket – Nylon	30.5
<b>TMS52</b>	Round legend – “EMERGENCY STOP” – Yellow	22.5
<b>TMS55</b>	Round legend – “EMERGENCY STOP” – Yellow	30.5
<b>TMS10</b>	Contact block – T Series – Dual – N/O & N/C	
<b>TMS25</b>	Contact block – T Series – Dual – 2 x N/O	



# Emergency Stop

KISSLING

**NEW**



TMS50

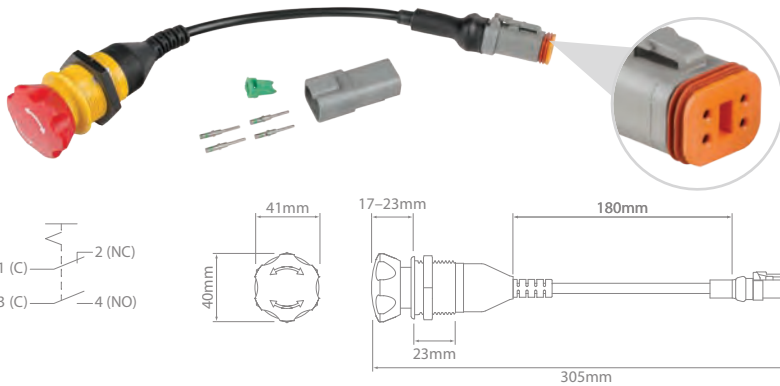
- Plug & play emergency stop switch.
- Multi-voltage.
- Available in N/O & N/C, and C/O models.
- TE DEUTSCH connector on fly lead.
- Incorporated strain relief on both ends of lead.
- Resistant to shock, vibration, dust and moisture.
- Environmentally sealed – IP67, IP6K9K, when installed to manufacturer's specifications.

9V  
32V

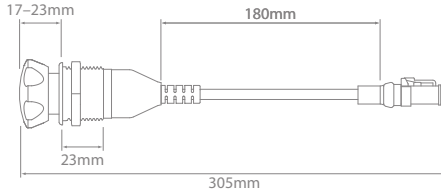
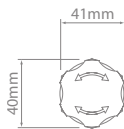
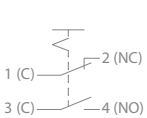
IP67

IP  
6K9K

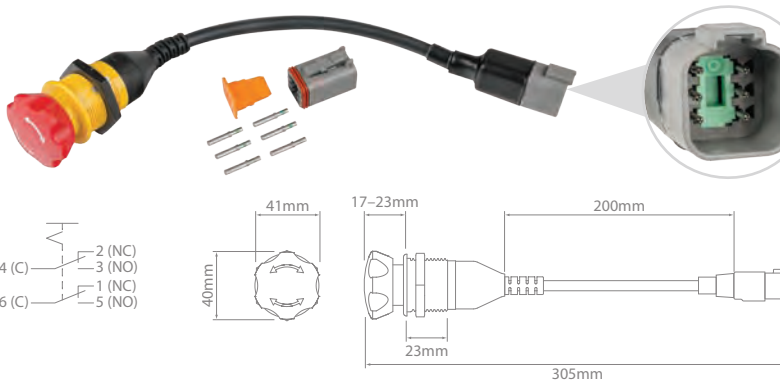
Voltage :	9–32V
Max Current Rating :	10A Continuous
Terminals :	Copper Zinc Alloy
Contacts :	Silver Alloy
Switch :	Polyamide
Connector :	Thermoplastic
Cable Length :	TMS49 180mm
	TMS50 200mm
Thread Size :	M30 x 1.5
Shock :	50G
Vibration :	ISO 16750-3
Ingress Protection :	IP67, IP6K9K
Operating Temperature :	-40°C to 85°C



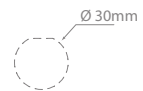
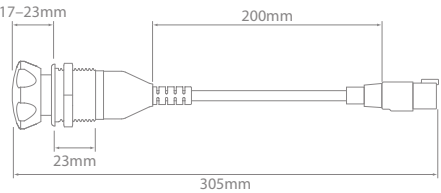
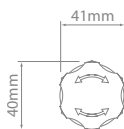
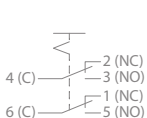
**TMS49**  
TE DEUTSCH  
DT Series  
4 Pin Connectors



Compatible with TMS54 Recessed Panel Mount & TMS55 Emergency Stop Round Legend, see page 59



**TMS50**  
TE DEUTSCH  
DT Series  
6 Pin Connectors



Mounting Dimensions

## KISSLING – Kits **NEW**

Part No.	Description	Button Type
<b>TMS49</b>	Single Pole. 1 x N/O, 1 x N/C	Latching (Turn to Release)
<b>TMS50</b>	Double Pole. 2 x Independent C/O	Latching (Turn to Release)

Kit Contents:  
1 x KISSLING E-Stop with integrated TE DEUTSCH connector  
1 x Mating connector components, including housing, wedgelock & size 16 green band contacts to suit.



# Emergency Stop

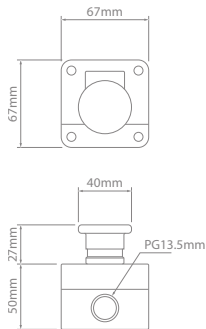
BA Series

- Multiple actuator types available including locking version.
- Supplied with 1 x N/O & 1 x N/C contact block.
- Supplied with emergency stop legend.
- Environmentally sealed – IP65.
- Multi-voltage.



Voltage : 6–36V  
 Current Rating : 10A  
 Contact Type : 1 x N/O & 1 x N/C  
 Contacts : Silver Alloy  
 Button : Polymer  
 Body : Polycarbonate  
 Ingress Protection : IP65  
 Operating Temperature : -25°C to 70°C

6V  
36V IP65



BA-J164, BA-J174



BA-J184, BA-J194

## BA Series – Kits

Part No.	Button Type	Contact Blocks
BA-J164	Push/Pull	Mounts to Lid
BA-J174	Latching (Turn to Release)	Mounts to Lid
BA-J184	Lockable	Mounts to Base
BA-J194	Momentary	Mounts to Base



BA-Z11



BA-Z21



220S20

## BA Series – Components

Part No.	Description	Suits
BA-Z11	Contact block – Single – N/O. Mounts to enclosure lid	BA-J164, BA-J174
BA-Z21	Contact block – Single – N/C. Mounts to enclosure lid	BA-J164, BA-J174
220S20	Blanking plug – 20mm	



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# Rocker Switches



# Rocker Switches

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Contura Series **64**



G Series **70**



RS Series **72**



Round Rocker **73**

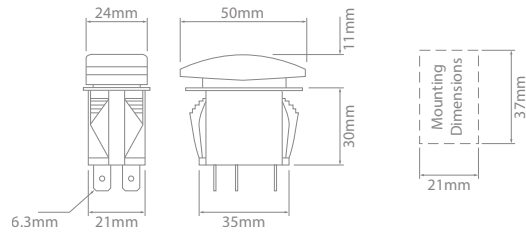


444 & 777 Series **74**



- 2 actuator series available.
- LED illumination, rated to 100,000 hours.
- Illumination wired independent of switching circuit.
- Ideal for marine applications.
- Custom symbols for R Series.
- Environmentally sealed – IP66 (face only).

Current Rating : 20A @ 4–14V, 15A @ 15–28V  
 Actuator : Nylon 66  
 Contacts : Silver Alloy  
 Body : Polyester  
 Ingress Protection : IP66 (face only)  
 Approvals : UL, CSA, VDE



## Specifying Actuator Symbol

Printed actuator symbols are only available with the R Series rocker switches.

The 'XX' at the end of the part number specifies the symbol, if required, on the actuator.

**R404-24A-XX**



Windscreen Washer – 08



Headlamps – 15



R403-12A-08



R402-12RR-15

All illuminated Contura Series rocker switches are supplied with a plain window actuator if unspecified.

Actuator symbols are found on page 85.

Printed actuator symbols are **not available for the V Series** rocker switches.



R403-12A

## R Series



No Illumination    Single Illumination    Double Illumination    Locking

## V Series

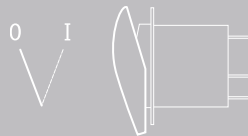


## LED Illumination

Illumination provided by LEDs. LEDs determine colour of illumination.



Single    Double



Default at Rest Position (off)

## Normally Open Contact

Action	Wiring Diagram	Notes	Illumination	Voltage	R Series	V Series
OFF ON		Single Pole	Nil	12-24	<b>R403</b>	<b>V403</b>
			Amber	12 24	<b>R403-12A-XX</b> <b>R403-24A-XX</b>	<b>V403-12A</b> <b>V403-24A</b>
			Green	12 24	<b>R403-12G-XX</b> <b>R403-24G-XX</b>	<b>V403-12G</b> <b>V403-24G</b>
			Red	12 24	<b>R403-12R-XX</b> <b>R403-24R-XX</b>	<b>V403-12R</b> <b>V403-24R</b>
			Blue	12 24	<b>R403-12B-XX</b> <b>R403-24B-XX</b>	— —
For dual illumination, use R402-12RR / V402-12RR.						
OFF ON		Single Pole Lock Out (l)	Red	12 24	<b>R403-12R-L</b> <b>R403-24R-L</b>	—
OFF ON		Double Pole	Nil	12-24	<b>R404</b>	<b>V404</b>
			Amber	12 24	<b>R404-12A-XX</b> <b>R404-24A-XX</b>	<b>V404-12A</b> <b>V404-24A</b>
			Red	12 24	<b>R404-12R-XX</b> <b>R404-24R-XX</b>	<b>V404-12R</b> <b>V404-24R</b>
For dual illumination, use R402-12RR / V402-12RR.						
OFF Mom.ON		Single Pole	Red	12 24	<b>R508-12R-XX</b> <b>R508-24R-XX</b>	<b>V508-12R</b> <b>V508-24R</b>
OFF ON Collective ON		Double Pole	Red	12	<b>R511-12R-XX</b>	<b>V511-12R</b>

## Normally Closed Contact

Action	Wiring Diagram	Notes	Illumination	Voltage	R Series	V Series
ON Mom.OFF		Single Pole	Nil	12-24	<b>R509</b>	<b>V509</b>

## Change-over Contact

Action	Wiring Diagram	Notes	Illumination	Voltage	R Series	V Series
ON ON		Double Pole	Nil	12-24	<b>R402</b>	<b>V402</b>
ON ON		Double Pole	Red	12 24	<b>R402-12RR-XX</b> <b>R402-24RR-XX</b>	<b>V402-12RR</b> <b>V402-24RR</b>



# Rocker

## Change-over Contact II – O – I

Action	Wiring Diagram	Notes	Illumination	Voltage	R Series	V Series
ON OFF ON		Single Pole	Nil	12–24	<b>R101</b>	<b>V101</b>
			Red	24	–	–
ON OFF ON		Double Pole	Nil	12–24	<b>R102</b>	<b>V102</b>
			Green	12	<b>R102-12GG-XX</b>	<b>V102-12GG</b>
				24	<b>R102-24GG-XX</b>	–
			Red	12	<b>R102-12RR-XX</b>	<b>V102-12RR</b>
			24	<b>R102-24RR-XX</b>	<b>V102-24RR</b>	
Mom.ON OFF Mom.ON		Double Pole	Nil	12–24	<b>R302</b>	<b>V302</b>
			Red	12	<b>R302-12RR-XX</b>	<b>V302-12RR</b>
				24	<b>R302-24RR-XX</b>	<b>V302-24RR</b>

## Contura Series – Accessories

	Description	Illumination	Voltage	Part No.	
	Warning Lamp Panel 2 Window	Red	12	<b>R001</b>	
			24	<b>R002</b>	
	Socket Housing Suits R403-12R-L & R403-24R-L			<b>VCH</b>	
				AMP™ Terminal to suit	<b>42282-2/100</b>
	Socket Housing Suits all Contura Series switches excluding R403-12R-L & R403-24R-L			<b>VCH-2</b>	
				AMP™ Terminal to suit	<b>42282-2/100</b>
	Mounting Panels			Middle Section	<b>VMM</b>
				End Section	<b>VME</b>
				1 Switch	<b>VMS</b>
				3 Switch	<b>VMS-3</b>
				Blanking Plate	<b>VHP</b>
	Panel cutouts 28mm x 48mm				
	Panel cutouts 24mm x 48mm				
	Panel cutouts 77mm x 48mm				
	Removal Tool			Releases switch body from mounting panel and for removing actuator from switch body	
	Once both removal tools are firmly in place, the switch can be expelled from panel as shown.			<b>VRT</b>	

## Removing Actuator From Switch

Firmly insert forked end of the removal tool (VRT), flat side down, in between the bottom of the actuator and the top of the switch body as shown.



The forks of the removal tool should disengage the 2 prongs allowing the actuator to separate from switch body.



To attach new actuator simply insert centre post into switch body as shown and push on firmly.



## Specifying Actuator with Symbol

Printed actuator symbols are only available with the R Series rocker switches.

**R404-24A-XX**

The 'XX' at the end of the part number specifies the symbol, if required, on the actuator.

Only a select number of symbols are available for double window actuators. See product description.

All illuminated Contura Series rockers switches are supplied with a plain window actuator if unspecified.



## Actuators




















Colour	Description	Part No.
	R Series Actuator – Black No Window	<b>R2-0</b>
	R Series Actuator – Grey No Window	R2-0G
	R Series Actuator – Red No Window	<b>R2-0R</b>
	R Series Actuator – White No Window	<b>R2-0W</b>
	R Series Actuator – Black Single Window	<b>R2-1</b>
	R Series Actuator – Red Single Window	<b>R2-1-R</b>
	R Series Actuator – Black Double Window	<b>R2-2</b>
	V Series Actuator – Black No Window	<b>V2-0</b>
	V Series Actuator – Black Single Window	<b>V2-1</b>
	V Series Actuator – Black Double Window	<b>V2-2</b>

## Actuators with Symbol













Symbol	Description	Part No.
	Windscreen Wipers	R2-X-21
	Windscreen Washer	R2-X-08
	Power	R2-X-49
	Spot Light	R2-X-09
	High Beam	R2-X-10
	Headlamps Available for single or double window actuators	R2-X-15
	Side Marker Lamps	R2-X-14
	Fog Lights	R2-X-13
	Fog Warning Lamp	R2-X-05
	Front Lamps	R2-X-31
	Rear Lamps	R2-X-32

# Rocker

## Actuators with Symbol cont.


Symbol	Description	
	Service Lamps	R2-X-03
	Search Lamp	R2-X-01
	Worklamps Available for single or double window actuators	R2-X-22
	Worklamp Left Available for single or double window actuators	R2-X-25
	Worklamp Right Available for single or double window actuators	R2-X-26
	Interior Light	R2-X-18
	Reverse Light	R2-X-34
	Rotating Beacon Available for single or double window actuators	R2-X-19
	Strobe Lights	R2-X-24
	Hazard Lights Available for single or double window actuators	R2-X-17
	Fan	R2-X-07
	Air Conditioning Available for single or double window actuators	R2-X-11
	Demister	R2-X-28
	Differential Lock	R2-X-06
	Dolly Lock	R2-X-45
	Left Arrow	R2-X-23
	Raise	R2-X-33
	Raise/Lower Available for single or double window actuators	R2-X-38
	Increase Speed	R2-X-16

## Actuators with Symbol cont.

Symbol	Description	
	Air Filter	R2-X-04
	Transmission Oil Temperature	R2-X-12
	Water Temperature	R2-X-20
	Engine Oil Pressure	R2-X-27
	Auxiliary Fuel	R2-X-29
	Traction Control System	R2-X-42
	Horn	R2-X-02
	Window Lifter	R2-X-41
	Tail Gate	R2-X-37
	Stairs Down/Up	R2-X-46
	Bilge Pump	R2-X-43
	Bilge Blower	R2-X-44
<b>AUX</b>	Auxiliary Available for single or double window actuators	R2-X-30
<b>YARD</b>	Yard	R2-X-35
<b>PTO</b>	Power Take Off	R2-X-36
<b>SYS</b>	System	R2-X-39
<b>ABS</b>	Anti-Lock Brakes	R2-X-40
<b>SIREN</b>	Siren Available for single or double window actuators	R2-X-47
<b>UP</b>	Up	R2-X-53

## Actuators with Symbol cont.



Symbol	Description	
<b>DOWN</b>	Down	R2-X-54
<b>LEFT</b>	Left	R2-X-55
<b>RIGHT</b>	Right	R2-X-56
<b>OPEN</b>	Open	R2-X-57
<b>CLOSE</b>	Close	R2-X-58
<b>START</b>	Start	R2-X-59
<b>STOP</b>	Stop	R2-X-60
<b>PAUSE</b>	Pause	R2-X-61
	Bell	R2-X-62
<b>PUMP IGN</b>	Pump IGN	R2-X-63
<b>PUMP START</b>	Pump Start	R2-X-64
<b>DECK LIGHTS</b>	Deck Lights	R2-X-65
<b>COMP</b>	Comp	R2-X-66
<b>240V INV</b>	240V INV	R2-X-67
<b>FUEL PUMP</b>	Fuel Pump	R2-X-68
<b>AUX HYD</b>	Aux Hyd	R2-X-69
<b>CRANE</b>	Crane	R2-X-70
<b>TIP BODY</b>	Tip Body	R2-X-71
<b>SCENE</b>	Scene	R2-X-72

## Actuators with Symbol cont.

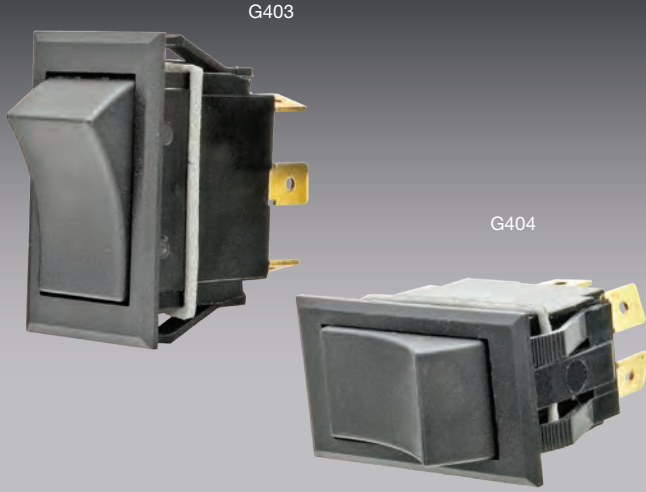


Symbol	Description	
<b>LOWER</b>	Lower	R2-X-73
<b>ALLEY LEFT</b>	Alley Left	R2-X-74
<b>ALLEY RIGHT</b>	Alley Right	R2-X-75
<b>LED</b>	LED	R2-X-76
<b>RAISE</b>	Raise	R2-X-77
<b>3% FOAM</b>	3% Foam	R2-X-48
<b>BIN EMPTY</b>	Bin Empty	R2-X-50
<b>TAILGATE OPEN</b>	Tailgate Open	R2-X-51
<b>HOPPER EMPTY</b>	Hopper Empty	R2-X-52



# Rocker

G Series



- Textured non-slip actuators.
- Push on blade terminals.
- Compatible with Contura mounting panels.

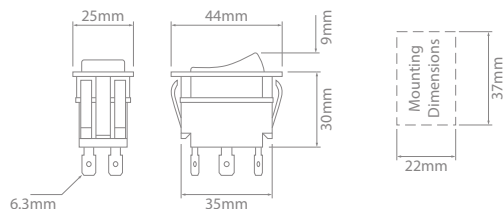


Voltage : 12–24V  
 Current Rating : 20A @ 4–14V, 15A @ 15–28V  
 Contacts : Silver Alloy  
 Actuator : Nylon 66  
 Body : Phenolic  
 Approvals : UL, CSA, VDE



G Series rocker switches are compatible with mounting panels, see page 84

With TSH Terminal block



## Normally Open Contact

Action	Wiring Diagram	Notes	Illumination	Voltage	Part No.
<p>OFF</p> <p>ON</p>		Single Pole	Nil	12–24	<b>G403</b>
<p>OFF</p> <p>ON</p>		Double Pole	Nil	12–24	<b>G404</b>

## G Series – Accessories

	Description	Part No.
	6 Contact Terminal Block. Suits all G Series switches	<b>TSH</b>
	AMP™ Terminal to suit	<b>605001BL2/100</b>



# Rocker

RS Series



- Compact design.
- LED illumination.
- Illumination wired independent of switching circuit.
- Double pole circuitry.
- Custom symbols.
- Blade terminals.

Voltage :  
Current Rating :  
Contacts :  
Housing :

12V  
35A  
Copper  
PA6



Rocker switches with symbol

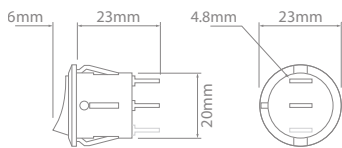
## Normally Open Contact

Action	Wiring Diagram	Notes	Illumination	Symbol	Symbol Description	Part No.	
						Plain	With Symbol
OFF ON		Double Pole	Amber		Rotating Beacon	RS12A	RS12A-19
			Blue		Worklamp	RS12B	RS12B-22
			Green		Worklamp	RS12G	RS12G-22
			Red	AUX	Auxiliary	RS12R	RS12R-30

- Compact design.
- Coloured actuator for illumination models.
- LED illumination except RR12.
- Blade terminals.
- RR12 multi-voltage.



Current Rating : Illuminated 20A @ 12V  
 Non-illuminated 10A @ 12.5V, 6A @ 25V  
 Housing : PA6



## Normally Open Contact

Action	Wiring Diagram	Notes	Illumination	Voltage	Part No.
OFF ON		Single Pole	—	12–24	RR12
OFF ON		Single Pole	Amber Blue Green Red	12	RR12A RR12B RR12G RR12R



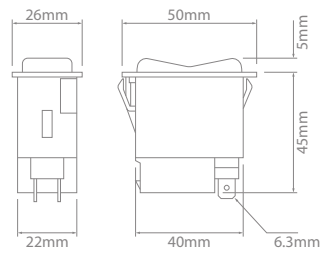
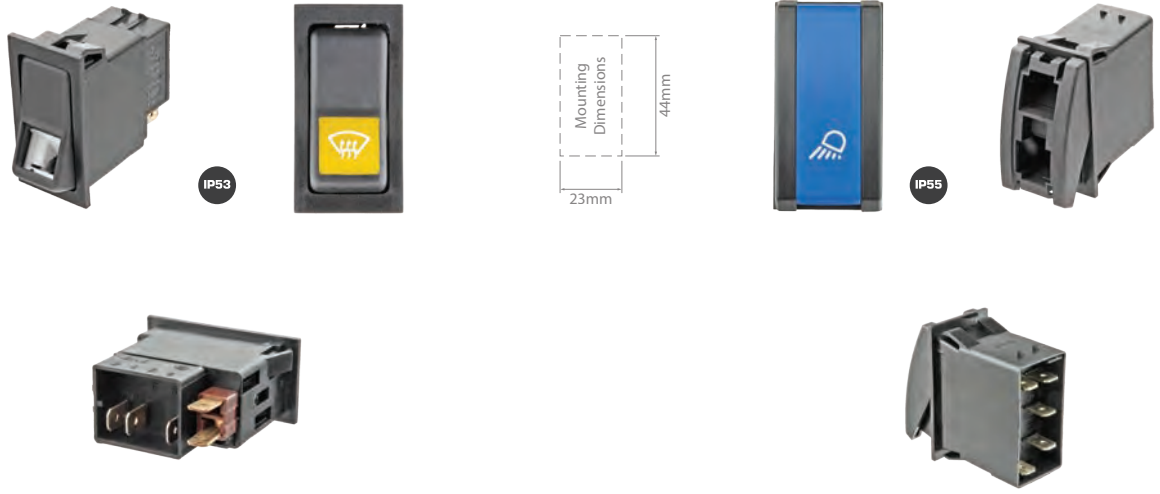
# Rocker

## 444 & 777 Series

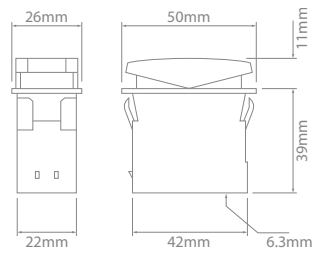
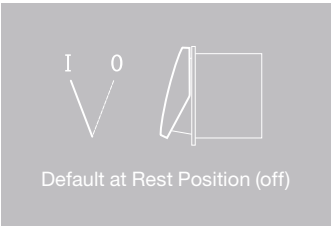


- SWF™ compatible.
- Integrated LED illumination in 777 Series.
- Replaceable LED or incandescent lamps for 444 Series.
- Hundreds of switch configurations.
- Hundreds of symbol options.

Current Rating :	16A @ 12V, 8A @ 24V
Actuator :	PA6
Contacts :	Silver alloy
Body :	Polyacetal
Ingress Protection :	444 Series IP53 777 Series IP55



444 Series



777 Series

## Illumination

Nil	No lighting option.
Function	Illuminates when switch is activated.
Location	Illuminates constantly while the park/head lights are active.
Function + Location	Illuminates constantly while the park/head lights are active. When switch is activated the illumination becomes brighter indicating the circuit is active.

*Lamp circuit is wired independent of switch circuit.*



All the 444 Series featuring illumination come standard with incandescent lamps. Replacement LEDs are available for the 444 Series and can be found on page 70.



All the 777 Series featuring illumination use integrated **green** LEDs.

## Availability

Due to the extensive range of combinations manufactured not all of the listed switches are available from local stock holdings.

Part No.	Part No.
<b>444109</b>	<i>777109</i>
↑ in-stock item	↑ non-stock item

*Italic part numbers are available by special order only and a lead time will apply.*

Minimum order quantities may apply.

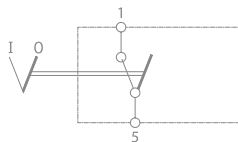
## Normally Open Contact

Action

Wiring Diagram

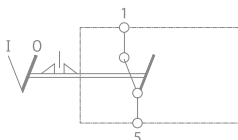
Notes

OFF  
ON



Single Pole

OFF   
ON



Single Pole  
Lock Out (0) & (I)

Illumination	Voltage		
		444 Series	777 Series
Nil	12-24	<b>444000</b>	<i>777000</i>
Function	12	<b>444001</b>	—
	24	<b>444002</b>	—
Location	12	<b>444003</b>	<i>777003</i>
	24	<b>444004</b>	<i>777004</i>
Function + Location	12	<b>444005</b>	<b>777005</b>
	24	<b>444006</b>	<b>777006</b>
Nil	12-24	<i>444174</i>	<i>777174</i>
Function	12	<b>444175</b>	—
	24	<b>444176</b>	—
Location	12	<i>444177</i>	<i>777177</i>
	24	<i>444178</i>	<i>777178</i>
Function + Location	12	<i>444179</i>	—
	24	<i>444180</i>	—



# Rocker

## Normally Open Contact cont.

Action	Wiring Diagram	Notes	Illumination	Voltage	444 Series	777 Series
OFF ON		Single Pole Dual Terminal	Nil	12-24	444012	777012
			Function	12	444013	—
				24	444014	—
			Location	12	444015	777015
				24	444016	777016
OFF ON		Single Pole Lock Out (I)	Nil	12-24	444167	777167
			Function	12	444168	—
				24	444169	—
			Location	12	444170	777170
				24	444171	777171
OFF Mom.ON		Single Pole	Nil	12-24	444007	777007
			Function	12	444008	—
				24	444009	—
			Location	12	444010	777010
				24	444011	777011
OFF Mom.ON		Single Pole Lock Out (0)	Nil	12-24	444160	777160
			Function	12	444161	—
				24	444162	—
			Location	12	444163	777163
				24	444164	777164
OFF Mom.ON		Double Pole	Nil	12-24	444127	777127
			Function	12	444128	—
				24	444129	—
			Location	12	444130	777130
				24	444131	777131
	Function + Location	12	—	777802		
		24	—	777803		

## Change-over Contact

Action	Wiring Diagram	Notes	444 Series	777 Series		
ON ON		Single Pole	444 Series	777 Series		
			Nil	12-24	<b>444019</b>	<b>777019</b>
			Function	12	<b>444020</b>	—
				24	<b>444021</b>	—
			Location	12	<b>444022</b>	<b>777022</b>
ON ON		Double Pole	444 Series	777 Series		
			Nil	12-24	<b>444105</b>	<b>777105</b>
			Function	12	<b>444106</b>	—
				24	<b>444107</b>	—
			Location	12	<b>444108</b>	<b>777108</b>
ON ON		Double Pole Lock Out (I)	444 Series	777 Series		
			Nil	12-24	<b>444233</b>	<b>777233</b>
			Function	12	<b>444234</b>	—
				24	<b>444235</b>	—
			Location	12	<b>444236</b>	<b>777236</b>
ON ON		Double Pole Lock Out (O & I)	444 Series	777 Series		
			Nil	12-24	<b>444181</b>	<b>777181</b>
			Function	12	<b>444182</b>	—
				24	<b>444183</b>	—
			Location	12	<b>444184</b>	<b>777184</b>
ON Mom.ON		Double Pole	444 Series	777 Series		
			Nil	12-24	<b>444197</b>	<b>777197</b>
			Function	12	<b>444198</b>	—
				24	<b>444199</b>	—
			Location	12	<b>444200</b>	<b>777200</b>
	24	<b>444201</b>	<b>777201</b>			
Function	12	—	<b>777804</b>			
+ Location	24	—	<b>777805</b>			



## No Contact / Change-over Contact

Action	Wiring Diagram	Notes	Illumination	Voltage	444 Series	777 Series
OFF ON ON		Single Pole	Nil	12-24	444026	777026
Refer to Comments		Single Pole Used for one speed wiper motor and washer. Includes park circuit. Lock Out (I) 31b = Park Circuit 53 = Motor 53a = Positive P = Pump	Function	12	444027	—
			Function	24	444028	—
			Location	12	444029	777029
			Location	24	444030	777030
			Function + Location	12	444031	777031
			Function + Location	24	444032	777032
			Nil	12-24	444202	777202
			Function	12	444203	—
			Function	24	444204	—
			Location	12	444205	777205
Location	24	444206	777206			
Function + Location	12	444207	—			
Function + Location	24	444208	—			
ON ON ON		Double Pole	Nil	12-24	444095	777095
OFF ON ON		Double Pole Special Headlamp	Function	12	444096	—
			Function	24	444097	—
			Location	12	444098	777098
			Location	24	444099	777099
			Function + Location	12	—	777814
			Function + Location	24	—	777815
			Nil	12-24	444085	777085
			Function	12	444086	—
			Function	24	444087	—
			Location	12	444088	777088
Location	24	444089	777089			
Function + Location	12	444138	777138			
Function + Location	24	444137	777137			
OFF ON Mom.ON		Double Pole Special Wiper/Washer Lock Out (I)	Nil	12-24	444264	777264
			Function	12	444265	—
			Function	24	444266	—
			Location	12	444267	777267
			Location	24	444268	777268
			Function + Location	12	444269	—
			Function + Location	24	444270	—
			Nil	12-24	444139	777139
			Function	12	444140	—
			Function	24	444141	—
OFF ON ON		Double Pole Special	Location	12	444142	777142
			Location	24	444143	777143
			Function + Location	12	444144	777144
			Function + Location	24	444145	777145
			Nil	12-24	444240	777240
			Function	12	444241	—
			Function	24	444242	—
			Location	12	444243	777243
			Location	24	444244	777244
			Function + Location	12	444245	777245
Function + Location	24	444246	777246			
ON ON Mom.ON		Double Pole Special	Nil	12-24	444240	777240
ON ON Mom.ON		Double Pole Special	Function	12	444241	—
			Function	24	444242	—
			Location	12	444243	777243
			Location	24	444244	777244
			Function + Location	12	444245	777245
			Function + Location	24	444246	777246

## Change-over Contact I - 0 - II

Action	Wiring Diagram	Notes	444 Series	777 Series	
Mom.ON OFF Mom.ON		Single Pole	Nil	12-24	<b>444065</b> <b>777065</b>
			Function	12	<b>444066</b> —
Mom.ON OFF Mom.ON		Single Pole Lock Out (II - 0)	Function	12	<b>444067</b> —
			Location	24	<b>444068</b> <b>777068</b>
Mom.ON OFF Mom.ON		Double Pole	Location	24	<b>444069</b> <b>777069</b>
			Function + Location	12	— <b>777818</b>
ON OFF ON		Double Pole Lock Out (II - 0)	Function + Location	24	— <b>777819</b>
			Nil	12-24	<b>444286</b> <b>777286</b>
ON OFF ON		Double Pole	Function	12	<b>444287</b> —
			Location	24	<b>444288</b> —
Mom.ON OFF ON		Double Pole Lock Out (II - 0)	Function + Location	12	—    —
			Nil	12-24	<b>444050</b> <b>777050</b>
ON OFF ON		Double Pole	Function	12	<b>444051</b> —
			Location	24	<b>444052</b> —
Mom.ON OFF ON		Double Pole Lock Out (II - 0)	Function + Location	12	— <b>777822</b>
			Nil	12-24	<b>444053</b> <b>777053</b>
Mom.ON OFF ON		Double Pole	Location	24	<b>444054</b> <b>777054</b>
			Function + Location	12	— <b>777823</b>
Mom.ON OFF ON		Double Pole Lock Out (II - 0)	Nil	12-24	<b>444060</b> <b>777060</b>
			Function	12	<b>444061</b> —
Mom.ON OFF ON		Double Pole	Location	24	<b>444062</b> —
			Function + Location	12	<b>444063</b> <b>777063</b>
Mom.ON OFF ON		Double Pole Lock Out (II - 0)	Location	24	<b>444064</b> <b>777064</b>
			Function + Location	12	— <b>777824</b>
Mom.ON OFF ON		Double Pole	Function + Location	24	— <b>777825</b>
			Nil	12-24	<b>444055</b> <b>777055</b>
Mom.ON OFF ON		Double Pole Lock Out (II - 0)	Function	12	<b>444056</b> —
			Location	24	<b>444057</b> —
Mom.ON OFF ON		Double Pole	Function + Location	12	— <b>777826</b>
			Nil	12-24	<b>444058</b> <b>777058</b>
Mom.ON OFF ON		Double Pole Lock Out (II - 0)	Location	24	<b>444059</b> <b>777059</b>
			Function + Location	12	— <b>777827</b>
ON OFF ON		Double Pole Special	Nil	12-24	<b>444070</b> <b>777070</b>
			Function	12	<b>444071</b> —
ON OFF ON		Double Pole Special	Location	24	<b>444072</b> —
			Function + Location	12	<b>444073</b> <b>777073</b>
Mom.ON ON Mom.ON		Double Pole Special	Location	24	<b>444074</b> <b>777074</b>
			Function + Location	12	— <b>777828</b>
Mom.ON ON Mom.ON		Double Pole Special	Function + Location	24	— <b>777829</b>
			Nil	12-24	<b>444211</b> <b>777211</b>
Mom.ON ON Mom.ON		Double Pole Special	Function	12	<b>444212</b> —
			Location	24	<b>444213</b> —
Mom.ON ON Mom.ON		Double Pole Special	Function + Location	12	<b>444214</b> <b>777214</b>
			Location	24	<b>444215</b> <b>777215</b>
Mom.ON ON Mom.ON		Double Pole Special	Function + Location	24	<b>444216</b> <b>777216</b>
			Function + Location	24	<b>444217</b> <b>777217</b>



# Rocker

## Change-over Contact II - O - I

Action

Wiring Diagram

Notes

Illumination

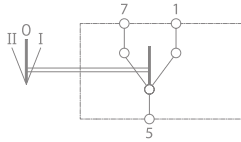
Voltage



444 Series

777 Series

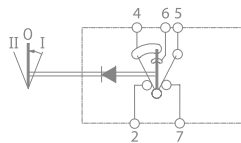
ON  
OFF  
ON



Single Pole

Illumination	Voltage	444 Series	777 Series
Nil	12-24	444146	777146
Function	12	444147	—
	24	444148	—
Location	12	444149	777149
	24	444150	777150
Function + Location	12	—	777816
	24	—	777817
Nil	12-24	444151	777151
Function	12	444152	—
	24	444153	—
Location	12	444154	777154
	24	444155	777155
Function + Location	12	—	777820
	24	—	777821

Mom.ON  
ON  
ON



Double Pole  
Special

## Double Change-over II - I - O

Action

Wiring Diagram

Notes

Illumination

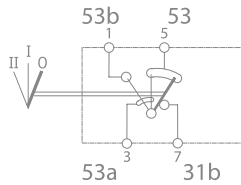
Voltage



444 Series

777 Series

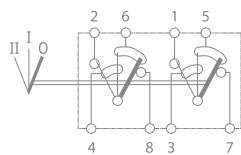
Refer to  
Notes



Single Pole  
Used for two speed wiper motor.  
Includes park circuit.  
31b = Park Circuit  
53 = Low Speed  
53a = Positive  
53b = High Speed

Illumination	Voltage	444 Series	777 Series
Nil	12-24	444045	777045
Function	12	444046	—
	24	444047	—
Location	12	444048	777048
	24	444049	777049
Function + Location	12	—	777830
	24	—	777831
Nil	12-24	444090	777090
Function	12	444091	—
	24	444092	—
Location	12	444093	777093
	24	444094	777094
Function + Location	12	—	777834
	24	—	777835

Refer to  
Notes



Double Pole  
Special

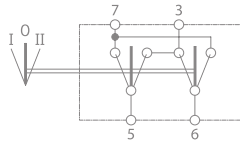
## Double Change-over I - O - II

Action

Wiring Diagram

Notes

Refer to  
Notes



Double Pole  
Special

Illumination  
Nil

Voltage  
12-24



444 Series  
444100



777 Series  
777100

Function

12  
24

444101  
444102

—  
—

Location

12  
24

444103  
444104

777103  
777104

Function  
+  
Location

12  
24

—  
—

777840  
777841

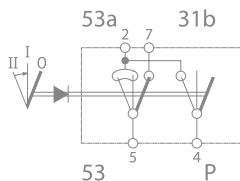
## Change-over / Contact Momentary

Action

Wiring Diagram

Notes

ON  
ON  
Mom.ON



Double Pole  
Special

31b = Park Circuit  
53 = Motor  
53a = Positive  
P = Pump

Illumination  
Nil

Voltage  
12-24



444 Series  
444112



777 Series  
777112

Function

12  
24

444113  
444114

—  
—

Location

12  
24

444115  
444116

777115  
777116

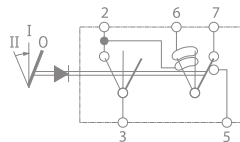
Function  
+  
Location

12  
24

—  
—

777832  
777833

OFF  
ON  
Mom.ON



Double Pole  
Special

Nil

12-24

—

777117

Function

12  
24

—  
—

777120  
777121

Location

12  
24

—  
—

—  
—

Function  
+  
Location

12  
24

—  
—

777836  
777837

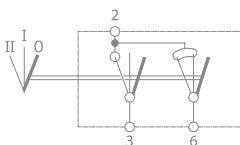
## 2 Contacts in Series

Action

Wiring Diagram

Notes

OFF  
ON  
ON



Double Pole  
For use with Headlights

Illumination  
Nil

Voltage  
12-24



444 Series  
444080



777 Series  
777080

Function

12  
24

444081  
444082

—  
—

Location

12  
24

444083  
444084

777083  
777084

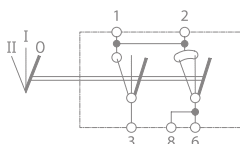
Function  
+  
Location

12  
24

444209  
444210

777209  
777210

OFF  
ON  
ON



Double Pole

Nil

12-24

444075

777075

Function

12  
24

444076  
444077

—  
—

Location

12  
24

444078  
444079

777078  
777079

Function  
+  
Location

12  
24



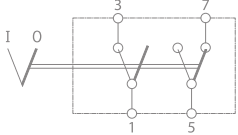
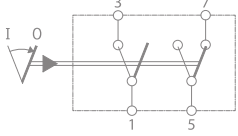
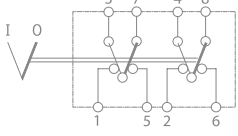
—  
—

777838  
777839



# Rocker

## Selector




















Action	Wiring Diagram	Notes	Illumination	Voltage	 444 Series	 777 Series
Refer to Notes		Double Pole One Pole N/O One Pole N/C	Nil	12-24	<b>444033</b>	<b>777033</b>
			Function	12	<b>444034</b>	—
				24	<b>444035</b>	—
			Location	12	<b>444036</b>	<b>777036</b>
				24	<b>444037</b>	<b>777037</b>
Refer to Notes		Double Pole Momentary One Pole N/O One Pole N/C	Function	12	<b>444041</b>	—
				24	<b>444042</b>	—
			Location	12	<b>444043</b>	<b>777043</b>
				24	<b>444044</b>	<b>777044</b>
			Function + Location	12	—	<b>777810</b>
ON ON		Double Pole	Nil	12-24	<b>444271</b>	<b>777271</b>
			Function	12	<b>444272</b>	—
				24	<b>444273</b>	—
			Location	12	<b>444274</b>	<b>777274</b>
				24	<b>444275</b>	<b>777275</b>
Function + Location	12	<b>444276</b>	<b>777276</b>			
	24	<b>444277</b>	<b>777277</b>			

## Hazard Warning Only

Action	Wiring Diagram	Notes	Illumination	Voltage	444 Series	777 Series
OFF ON		Single Pole Special 10A	Function	24	444218	—
OFF Mom.ON		Single Pole Special 10A	Function	24	444220	—
OFF ON		Single Pole Special 10A Lock Position (0)	Function	12 24	444219-12V 444219	— —
ON ON		Single Pole Special 10A	Function	12	444247	—
ON ON		Double Pole Special 10A	Function	12 24	444262 444263	— —
Refer to Diagram		Double Pole Special Contact 6-2 & 6-8 = 10A Remainder = 5A	Function	12 24	444190 444191	— —
Refer to Diagram		Double Pole Special Contact 6-2 & 6-8 = 10A Remainder = 5A	Function	12 24	444192 444193	— —
Refer to Diagram		Double Pole Special Contact 4-2 & 6-8 = 10A Remainder = 5A	Function	12 24	444194 444195	— —
Refer to Diagram		Double Pole Special Lock Position (I) Contact 4-2 & 6-8 = 10A Remainder = 5A	Function	24	444278	—



## 444 & 777 Series – Accessories

		Description	Illumination	Voltage	444 Series	777 Series	
 		444 Series Warning Lamp Panel	Incandescent	12	<b>611502</b>	—	
		2 Lamps		24	<b>611503</b>	—	
 		777 Series Warning Lamp Panel	LED	12	—	<b>633500</b>	
		1 Green Lamp		24	—	<b>633501</b>	
 		777 Series Warning Lamp Panel	LED	12	—	<b>633502</b>	
		2 Green Lamps		24	—	<b>633503</b>	
 		444 Series Replacement Lamp Incorporating Holder	Incandescent	12	<b>696956</b>	—	
				24	<b>696710</b>	—	
			LED	12	<b>627081</b>	—	
				24	<b>627082</b>	—	
 		444 Series Socket Housing			<b>696289</b>	—	
		8 Contact			<b>42282-2/100</b>	—	
 		444 Series Lamp Holder Connector Housing			<b>613328</b>	—	
					<b>42282-2/100</b>	—	
 		777 Series Socket Housing			—	<b>689790</b>	
		12 Contact			—	<b>925575-1/100</b>	
<p>Panel cutout 28mm x 48mm</p>      <p>Panel cutout 77mm x 48mm</p> <p>Panel cutout 156mm x 48mm</p>		444 & 777 Series Mounting Panel	Middle Section		<b>694801</b>		
			End Section		<b>694802</b>		
			Blanking Plate		<b>696273</b>		
			3 Switch		<b>695502</b>		
			6 Switch		<b>695902</b>		

## Insert Availability

Due to the extensive range of combinations manufactured not all of the listed inserts are available from local stock holdings.

*Italic* part numbers are available by special order only and a lead time will apply.

Minimum order quantities may apply.

Green	<b>896627</b>	<i>894720</i>
Yellow	<b>896609</b>	<i>895180</i>
	↑	↑
	<b>in-stock item</b>	<i>non-stock item</i>

	Blue	<b>896169</b>	
	Yellow Black	<b>892348</b>	
	Black	<b>894746</b>	
COMMS BATTERY LOW	Orange	<b>896320-CBL</b>	COMMS BATT LOW

## 444 Series Inserts

Switches not supplied with inserts.

Symbol inserts available in categories such as lighting, heating & ventilation and drives.

Many inserts are available in 4 orientations for situations when switch mounting needs to be horizontal or even upside down. Multiple colours available.



## Insert Rotations



## No Symbol

Symbol	Description	Colour	0°	90°	180°	270°
	Blank	Black	<b>896620</b>			
	Blank	Blue	<b>895620</b>			
	Blank	Green	<b>896650</b>			
	Blank	Dark Green	<b>894645</b>			
	Blank	Orange	<b>896320</b>			
	Blank	Red	<b>896615</b>			
	Blank	Dark Red	<b>894646</b>			
	Blank	White	<b>896100</b>			
	Blank	Yellow	<b>896610</b>			

## Wiper Washer











	Windscreen Wiper	Black	<i>896611</i>		<i>896401</i>	
		Green	<b>896625</b>	<i>894719</i>	<i>896416</i>	<i>895116</i>
	Intermittent Wiper	Green	<b>896394</b>	<i>896718</i>	<i>896409</i>	
	Windscreen Wiper Washer	Black	<i>896801</i>	<i>892787</i>		<i>894763</i>
		Green	<b>896603</b>			<i>895117</i>
		Yellow	<b>895107</b>			












## Wiper Washer cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Windscreen Washer	Black	<i>894706</i>		<i>894703</i>	
		Green	<b>896627</b>	<i>894720</i>		<i>895118</i>
		Yellow	<i>895109</i>			
	Rear Window Wiper	Green	<b>896307</b>	<i>894400</i>	<i>896136</i>	<i>893306</i>
	Rear Window Washer	Green	<b>896305</b>			
	Rear Window Wiper Washer	Black				<b>892776</b>
		Green	<b>894769</b>			
		Orange				<i>893063</i>
	Rear Window Interval Wiper	White	<i>892704</i>			
		Green			<i>896109</i>	
	Headlamp Wiper Washer	Green	<i>896647</i>			<i>896408</i>
	Headlamp Washer	Green	<i>895112</i>			



# Rocker

Lighting						
Symbol	Description	Colour	0°	90°	180°	270°
	Light	Black	896619			
		Green	896648	893304	896400	894782
	High Beam	Blue	896169	895195		
		Dark Blue	894788	894770	894787	
	Dipped Beam	Green	896303	892480	893303	
		Masked Headlamp	Green	896655		
	Side Marker Lamps	Green	896654	891879	896336	
		Side Marker Lamps	Green	895105		
	Side Marker Lamps	Yellow	894493			
		Position Lamp	Green	896424		
	Position Lamp	Blue	896484			
		Fog Lamp	Green	896649	895181	896414
	Fog Lamp	Yellow	896148			
		Fog Lamp	Green	895433		
	Fog Warning Lamp	Green	896626	896417		
		Yellow	896609	895180	896404	894798
	Fog Warning Lamp	Yellow	896146			
		Service Lamp	Yellow	893631		
	General Service Lamp	Black	896601			
		Green	896473	894401	896134	

Lighting cont.							
Symbol	Description	Colour	0°	90°	180°	270°	
	Rear General Service Lamp	Black	896600				
		Green	896472				
		Red	895106				
	Worklamp	Black	896312	896192			
		Green	896313	894738			
		Orange	896151	894433	893070		
	Worklamp	Yellow	895402	891978			
		Yellow Black	894474				
		Black				895426	
	Worklamp	Green	894767	894768		894428	
		Orange	896137	894705			
		Yellow	895401	894714			
	Service Lamp Up-Down	Yellow Black	894475				
		Yellow				892896	
	General Service Lamp Adjustable	Green	894708				
		Orange	892889				
	Cargo Area Lighting	Orange	892870				
		Yellow	894485				
	Loading Floor Lamp	Black	895847	894746			
		Green	896629	894721	894779	894749	
	Lamp Indicator	Orange	895143	893315	893629		
		Main Light	Black	896621	895418		
	Main Light	Green	896651	895182	895102	894800	
		Interior Light	Black	896175			
		Green	896641	893305	893678		
	Interior Light Medium	Green	896640	896799			
		Interior Light Dim	Green	896639			

Lighting cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Instrument Lighting	Green	896636	892860	896418	894751
	Instrument Lighting	Green	895439			
	Instrument Lighting	Green	895100			
	Driving Seat Lighting	Green	896637			893311
	Reading Light	Green	896638			
	Trunk Light	Green	895965			
		Green	896628	895188	896406	
	Rotary Beacon	Orange		892373	892916	893067
		Yellow	896426		894715	
		Yellow Black	894480			
	Rotary Beacon	Green	892876			
		Orange	895113			
		Yellow Black	892348			
	Light Reduction	White	894416			
	Lamp Test	Green	896123			894781
	Lamp Test	Green	896110			
	Tester	Green	896184			893308
	Hazard Warning	Orange	896170			
		Red	896191	894739	895417	894408
	Hazard Warning	Red	896614	895191		

Lighting cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Attention	Dark Red	894665			
<b>Heating &amp; Ventilation</b>						
	Thermometer	Green	895133			
	Temperature	Red	895101			
	Outside Temperature	Green	894464			
		Yellow	895344			
	Heating	Green	896622			
	Auxiliary Heating	Black				892119
		Green	896395	896410		
	Warm Air Blower	Black	896180			
		Green	896632			896407
	Pre-warm Fuel	Green	893289			
		Green				896631
	Pre-heating Glow Plug	Orange				893068
		Yellow	896120	896402	894796	
	Pre-heating	Yellow	896117			894742
		Yellow Black	894479			
	Engine Heating	Green	895146			
	Additional Heating	Green	896121			
	Heating Passenger Room	Black	893606			
		Green	895132	893316		




# Rocker













Heating & Ventilation cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Heating Front	Green	895142	893318		
	Heating Driver's Seat	Green	895141	893317		
	Defroster	Green	896422			
	Fresh Air	Green	896630	892594		
	Air Cleaner	Red Yellow Black	894423 896140 894470		895192	
	Blower	Green	896195			
	Fan	Black Green	894702 894700			
	Blower Slow	Black Green Yellow Black			896388	
	Blower Fast	Black Green Yellow	896612 896642 895108			
	Speed Adjustment Fan	Green	895127			
	Speed Adjustment Fan	Green	894458			
	Fan Speed	Green	893279		892898	
		Green	894466			
	Ventilation Motor	Green	895138			

Heating & Ventilation cont.						
Symbol	Description	Colour	0°	90°	180°	270°
		Green	894466			
	Ventilation Motor	Green	895138			
	Duct	Green	895139			
	Ceiling Fan	Green	895140			
	Roof Ventilator	Green	896633			
		Green	894438			
	Cooling	Black Green	895159 896101			
	Seat Heating	Green Yellow	895437 896139			
	Seat Heating	Green	895135			
	Heating & Ventilation	Green Yellow	892022 894465			
	Rear Window Defroster	Green Red Yellow	896390 896172 893307	896190		
	Rear Window Heating	Green Yellow	894462 894496			
	Exterior Mirror Defroster	Green	896645	896646	894795	896411
	Exterior Mirror Defroster	Green	895137			















## Heating & Ventilation cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Exterior Mirror Defroster	Green	<b>895440</b>			
		Yellow	<b>895149</b>	<b>894451</b>		
		Yellow Black	<b>894455</b>			

## Drives

	Differential Lock Longitudinal	Black	<b>896606</b>			
		Green	<b>896471</b>			
		Red	<b>891691</b>			
	Differential Lock Longitudinal	Green	<b>896219</b>			
		Yellow		<b>896420</b>		
	Differential Lock Transversal	Green		<b>896791</b>		
		Yellow		<b>896166</b>		
	Differential Lock Front	Green	<b>894483</b>		<b>896803</b>	
		Red	<b>894410</b>			
		Yellow	<b>893310</b>		<b>896165</b>	
	Differential Lock Rear	Black	<b>896378</b>			
		Green	<b>896220</b>		<b>896405</b>	
		Red	<b>894409</b>			
	Differential Lock Rear	Yellow	<b>892593</b>		<b>896164</b>	
		Red	<b>892521</b>			
	Differential Lock	Green	<b>896623</b>			
		Red	<b>894777</b>			
	Differential Lock	Yellow	<b>894794</b>			
	Differential Lock	Yellow	<b>896116</b>			
		Yellow Black	<b>894473</b>			
	Differential Lock Longitudinal	Yellow	<b>896111</b>			
		Yellow Black	<b>894472</b>			
	Rear Differential Lock	Green	<b>896199</b>			

## Drives cont.

Symbol	Description	Colour	0°	90°	180°	270°	
	Front Differential Lock	Green	<b>896200</b>				
	Rear Differential Lock	Green	<b>897034</b>				
	Front Differential Lock	Green	<b>897033</b>				
	Differential Lock	Black			<b>892716</b>	<b>893633</b>	
		Green	<b>894426</b>		<b>896181</b>		
		Orange	<b>893625</b>	<b>893065</b>	<b>895413</b>	<b>892766</b>	
		Yellow	<b>892856</b>		<b>892411</b>		
	Differential Lock 4th Axle	Green	<b>896218</b>				
	Transversal Lock 2nd-3rd Axle	Green	<b>896131</b>				
	Transversal Lock 1st Axle	Green	<b>896130</b>				
	Longitudinal Lock 1st-2nd Axle	Green	<b>896132</b>				
	Engage 2nd Axle	Green	<b>896133</b>				
	Disengage 1st Axle	Red	<b>896129</b>				
	All Wheel Drive	Green			<b>896802</b>		
		Red	<b>892519</b>				
	All Wheel Drive	Green	<b>896183</b>		<b>895427</b>		
		Orange	<b>891508</b>	<b>893057</b>			
	Front Wheel Drive	Yellow Black			<b>896163</b>		
	All Wheel Drive	Black	<b>896605</b>				
		Green	<b>896470</b>				

# Rocker

Drives cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	All Wheel Drive 6WD	Green	896201			
		Green		894736		894783
	Auxiliary Drive	Green	896624			
		Red	892026		896413	
		Yellow	895155	895185	896168	
		Green				894786
		Green				894785
		Yellow				892857
	One Axle Locked	Red				893045
		Green				894784
		Black	896616			
	Power Take Off	Green	896392			
		Orange		893066		
		Dark Red	894402			
	Power Take Off	Red	895349			
	Power Take Off Fast	Orange	894404			
		Yellow	892318		892881	
	Power Take Off Slow	Orange	894403			
		Yellow	892317		892882	
		Orange	894740			
		Green	894735			
	Break Power Take Off Shaft	Orange	893071			

Drives cont.						
Symbol	Description	Colour	0°	90°	180°	270°
		Green	894424		893634	
		Green	896236			
		Green			895175	
		Green		895177		
	Trailing Axle	Green	896396		896412	892859
		Orange	894776	894748		
		Yellow	894443			
		Green	893043			
		Yellow	892671	894747	894712	892858
		Yellow	894435			
	Front Axle - Front & Rear Axle	Green	894406			
	Disengage Rear Axle	Green	891994			
		Red	892487			
		Red			893409	
	Axle Raise-Lower	Yellow	893415			
	3rd Axle Raise-Lower	Yellow	893400			
	Axle 3&4 Raise	Yellow	892575			
	Rear Axle	Red	893406			

Drives cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Axle Load Distribution	Red	892914			
	Axle 1,2,3 Load Distribution	Green	892880			
	Cross-shaft Axle Lock	Yellow	895435			
	Cross-shaft Axle Off	Red	895147			
	Cross-shaft Axle	Orange	896158			
	Cross-shaft Axle Lock	Red	892917		894753	
	Cross-shaft Axle Lock	Orange	894491			
	Slewing Damper	Red	893618			
	Anti-slewing Break	Red	892850			
	Axle Suspension 1-3	Yellow	893418			
		Orange	896159			
	Pneumatic Suspension	Yellow			893444	
		Red	892601			
	Level Control	Red	895430			
	Level Control	Green	893412			
	Centre of Gravity	Yellow	893421			

Drives cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Level Control	Green			892904	
	Level Control	Red			892899	
	Normal Level	Green	894407			
	Level Control	Yellow	893624			
		Red	894778			
		Yellow	895161			
	Raise	Green	895423			
	Lower	Green	895422			
		Green	894431			
		Green	894432			
		Yellow	892518			
	Raise Lower	Green	894405			
		Orange	892901			
	Slope Compensation	Green	893280			
	Steep Slope	Green			892902	
	Maximum Slope Compensation	Green			892903	
Miscellaneous						
	Throttle Valve	Yellow	896403		894797	
		Yellow Black	894469			



# Rocker

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Working Speed	Green	<b>896198</b>			
		Black	894764			
	Ether Injection	Black	894425		893632	
		Red	895443			
		Yellow	894463		894760	893313
ETHER	Ether Injection	Black	893641		892180	
	Engine Stop	Green	895434			
		Red			895152	
	Hydraulic Fan Off	Yellow Black	893290			
	Motor Start	Green	893445			
	Motor Stop	Green			895103	
		Red	895429			
	Increase Speed	Green	895432			
		Green	894436		894716	
	Hydraulic Motor	Red	896142			
	Engine Overheat	Red	895436			
	Fire Alarm	Red	894468			
	Control Pump	Red	896150			

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Auxiliary Control Pump	Red	896149			
		Green				893666
	Out of Gear	Red	895410			
		Yellow	896118			
		Green	896182			
		Green			894756	
		Red	892481			
		Red	894482			
	Hold Gear Position	Dark Green	893774			894773
		White	894729			
TEST	Test Gear	Green	892878			
		Green	892522			
	Transmission Oil Pressure	Red	896114			894422
	Transmission Oil Pressure & Temperature	Red	896141		895197	
	Transmission Oil Pressure & Temperature	Red	893355			
		Yellow	893425			
		Red	894420			
	Temperature of Oil Pressure	Red	894476			
		Yellow Black	894447			

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Increase Oil Pressure	Yellow	895120			
		Yellow Black	894450			
	Reduce Oil Pressure	Yellow	895119			
		Yellow Black	894449			
		White	894733			
		White	894734			
	Reverse Gear Release	Green	895853			
	Release Brakes	Red	894499			
	Retarder	Black	896602			
		Green	896391			
	Deceleration Brake	Green	896338			
		Orange	893642			
	Retarder	Green	894417			
	Electric Brake System	Green	895419			
	Retarder	Green	894429			
		Yellow	891844			
	Retarder Out	Yellow	893496			
		Green	896309			
	Parking Brake	Red	896173	895193	894752	
		Dark Red	894648			

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Stop Brake	Red	895111	895183		
	Retarder Fault	Red			894754	
		Green	895164			
	Auxiliary Brake	Red	892031			
		Yellow	892592			
	Engine Brake	Green	894440			
	Engine Brake	Yellow	893676			
	Exhaust Brake	Black	894414			
		Green	894761			
	Brake System Trouble	Green	895148			
		Red	896144	895194		
	Brake Lining Check	Black			895494	894594
		Red				894707
	Brake Fluid Pressure	Green	895158			
		Red	896113			
	Test ABS Unit	Red	893301			893293
		Orange	897040			
	ASR	Green	897039			
		Red	897005			
	Fault Trailer ABS	Red	893295			893296
	Trailer Without ABS	Yellow	893194			893297
		Yellow Black	893594			
<b>LUFT</b> 	Compressed Air Supply	Orange	895154			
<b>AIR</b>						



# Rocker

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Compressed Air Tank 1	Red				
<b>893401</b>						
	Compressed Air Tank 2	Red				
<b>893402</b>						
	Compressed Air Tank 3	Red				
<b>893403</b>						
	Automatic Steering Device	Green				
<b>895121</b>						
	Automatic Steering Device	Green				
<b>893281</b>						
	Steering Lock	Black				
<b>896311</b>						
	Steering Lock	Green				
<b>896381</b>						
	Steering Lock	Yellow				
<b>894492</b>						
	Emergency Steering	Red				
<b>895404</b>						
	Emergency Steering	Yellow				
<b>895403</b>						
	Emergency Steering	Yellow				
<b>894456</b>						
	Converter Clutch Unit	Green				
<b>893405</b>						
	Converter Clutch Open	Yellow				
<b>893404</b>						
	Automatic Lubricant	Green				
<b>896103</b>						
	Lubricant Oil	Green				
<b>896652</b>						
	Lubricant Oil	Red				
<b>896171 895199</b>						
	Lubricant Oil	Yellow				
<b>895110</b>						
		White				
<b>894437</b>						

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Air Horn	Green				
<b>896463</b>						
	Horn	Black				
<b>896176</b>						
	Horn	Green				
<b>896196</b>						
	Horn Backwards	Black				
<b>891628</b>						
	Horn Backwards	Yellow				
<b>895400</b>						
	Horn Backwards	Yellow				
<b>894478</b>						
	Bell	Green				
<b>895134</b>						<b>893314</b>
	Bell	Red				
<b>895129</b>						
	Stop Request	Green				
<b>894430</b>						
	Direction Indicator	Green				
<b>894460 892371</b>						
	Direction Indicator	Yellow				
<b>894497</b>						
	Direction Indicator	Green				
<b>894461 892368</b>						
	Direction Indicator	Yellow				
<b>894498</b>						
	Direction Indicator	Dark Green				
<b>894789</b>						
	Direction Indicator	Green				
<b>893345</b>						
	1st Trailer	Green				
<b>895441 894737</b>						
	1st Trailer	Dark Green				
<b>894650 894791</b>						
	2nd Trailer	Green				
<b>895442</b>						
	2nd Trailer	Dark Green				
<b>894649 894790</b>						
	Window Lifter	Black				
<b>896064</b>						
	Window Lifter	Green				
<b>896393</b>						
	Window Lifter	Dark Green				
<b>893772 893773</b>						
	Window Lifter	Yellow				
<b>896238 892765</b>						
	Window Lifter	Green				
<b>896301 895200</b>						
	Window Lifter	Dark Green				
<b>894792</b>						

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Speed	Green	894731		893283	
	Speed Limit	Yellow	894495			
		Orange	893665			
	km/h	Green		892912		
	km/h	Green		892911		
	Speed Controller	Yellow			894709	
	Cruise Control	Yellow	895350			
	El. Speed Limiter	Yellow	891731	895190		
	Fuel	Green			895104	
		Orange	895425			
		Red	895157			
		Dark Red	894647			
	Tank Selector Switch	Green	896298		896296	
	Tank 2	Black	896112			
		Red	894775			
	Tank Filling Level	Green	896222			
		Red	896174	895196		
	Refrigerator	Blue	895160			
		Green	896613			
	Hostess Call	Green	896635			

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Perambulator	Blue	895115			
		Orange	895431			
		Black	894415			
		Orange	894762			
	Weighted to Side	Red	895340			
	Double Command	Green	896108			
	School Bus	Yellow	895144			
	Wheel Chair	Red	895338			
	Seat Belt	Red	895339			
	Door Opener	Black	896178			
		Green	895967			
	Door Opener Door 1	Red	896152			
		Green	895851			
	Door Opener Door 2	Red	894445			
		Green	895852			
	Door Opener	Red	894444			
		Green	896194			
	Window Lifter	Green	896122			
	Exterior Mirror	Green	895136			
	Lifting Roof	Green	896634			


















# Rocker
















Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Radio	Green Yellow	<b>895153</b>			
	Radio Music	Green	<b>896186</b>			
	Camera	Green	<b>895421</b>			
	Monitor	Green	<b>894442</b>			
	TV	Green	<b>894441</b>			
	Control Lever	Green	<b>896653</b>			
	Gear Selector 1	Green	<b>893413</b>			
	Gear Selector	Yellow	<b>893414</b>			
	Stabilisation Centre	Green	<b>896197</b>			
	Tipped to Right	Yellow	<b>893420</b>			
	Tipped to Left	Yellow	<b>893419</b>			
	Support Right Hand	Green	<b>896156</b>		<b>894710</b>	<b>893050</b>
	Support Left Hand	Green	<b>896157</b>		<b>894755</b>	<b>893051</b>
	Lock Support Right	Green	<b>892852</b>			
	Lock Support Left	Green	<b>892851</b>			

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Unlock Support	Yellow	<b>893437</b>	<b>892582</b>		
	Support 1 Up-Down	Yellow	<b>893416</b>			
	Support 2 Up-Down	Yellow	<b>893407</b>			
	Support 3 Up-Down	Yellow	<b>893417</b>			
	Support 3 Up-Down	Yellow	<b>893408</b>			
	Left Front Support	Yellow	<b>893441</b>			
	Right Front Support	Yellow	<b>893439</b>			
	Left Rear Support	Yellow	<b>893442</b>			
	Right Rear Support	Yellow	<b>893438</b>			
	Support Left Extend-Retract	Yellow		<b>893440</b>		
	Support Right Extend-Retract	Yellow				<b>893443</b>
	Support 1+2 Extend-Retract	Yellow		<b>893410</b>		
	Support 3+4 Extend-Retract	Yellow		<b>893411</b>		
		Red	<b>895162</b>			
		Yellow	<b>892989</b>			

## Miscellaneous cont.




















Symbol	Description	Colour	0°	90°	180°	270°
	Tipper	Green Red	896469		895184	
	Tipper to Horizontal	Green Red			892906	892095
	Lower Trailer	Yellow	895346			
	Crane Operation	Green	896202		894711	
	Grab	Green	896092			
	Excavator Arm	Green	895114			
	Lock Rotating Platform	Yellow	892637			
	Boom Lock	Yellow	893424			
	Hitch	Green	893622			
	Ejector H+S	Green	893620			
	On Tow	Yellow	893422			
	Tip to Stop	Yellow White	896119 895409			
	Lift Against Stop	White	895408			
	Tip	White	895406			
	Up-Down	White	895405			
















## Miscellaneous cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Quick Damp	White	895407			
		Green	892874			
	Appliance Holder	Green	896104			
	Open Accessory Unit	Red	894411			
		White	893664			
		White	892995			
		White	895489			
	Shovel Horizontally	Green	895428			
	Heading Floating Program	Green			892905	
	Float Position	Green White	895438 892703			
	HEIGHT	Green			894758	
	RET. TRAVEL	Green			894757	
	RET. DIG	Green			894759	
		Yellow			894412	
		Green			894446	



# Rocker

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Fifth Wheel	Black				
		Green				
		Green				
		Green				
		Green				
	Slope Compensation	Green				
	Auxiliary Step	Green				
		Red				
	Boot Lid	Red				
	Regulator for Press	Green				
	Cutting Tool	Green				
	Cutting Tool Reversing	Green				
	Cutters Locked	Red				
	Cutter Tool Up-Down	Red				
	Hasp Horizontal	Green				
		Green				
	Hasp Horizontal	Green				
	Hasp H+S	Green				

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Hasp Backward Forward	Green				
		Green				
	Hasp Speed Adjustment	Green				
	Auxiliary Brake	Green				
		Green				
		White				
		White				
		White				
	Threshing Drive	Green				
	Adjust Rotation Direction	Green				
		Green				
	Screen	Green				
	Ladder	Green				
	Run-out Step	Green				
		Green				
	Trencher	Yellow				
		Red				
		Orange				

## Miscellaneous cont.
















Symbol	Description	Colour	0°	90°	180°	270°
	Overload Warning	Red White	<b>896091</b>			
	High Lifting	Yellow	<b>896090</b>			
	Ballast Locked	Red	<b>893284</b>			
	Ballast Up-Down	Green		<b>893447</b>		
	Ballast Unlock-Lock	Green		<b>893446</b>		
		Blue	<b>896161</b>			
	Hammer	Green	<b>896093</b>			
		Red	<b>893435</b>			
	Circular Broom	Green	<b>896126</b>			
	Spray Water Circular Broom	Green	<b>893322</b>			
	Broom Up-Down	Green	<b>896127</b>			
	Broom Up-Down	Green			<b>895368</b>	
	Sweeping Roller	Green	<b>894487</b>			
	Spray Water Rolling Boom	Green	<b>893324</b>			
	Dirt Scraper	Green	<b>893323</b>			
















## Miscellaneous cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Garbage Pick Up	Green	<b>896125</b>			
	Large Item Garbage Pick Up	Green	<b>893320</b>			
	Operate Garbage Pick Up	Green	<b>894488</b>			
	Spray Water Suction	Green	<b>893321</b>			
	Water	Green	<b>896128</b>			
	Spray Water	Green	<b>893302</b>			
	Grit Spreader	Green	<b>893319</b>			
	Stop	Orange			<b>892900</b>	
	Change Size	Green	<b>896124</b>			
	Filling Safety Device	Yellow	<b>894494</b>			
	Separator Drum	Green	<b>893282</b>			
		Green	<b>893346</b>			
		Black	<b>893627</b>			
	Heater	Green	<b>895424</b>			
		Green	<b>893644</b>			



# Rocker

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Main Switch	Black	<b>896179</b>			
		Green	<b>896397</b>	<b>896398</b>	<b>894780</b>	
	On	Green	<b>893042</b>			
		White	<b>895151</b>			
	Off-On	Green	<b>894500</b>			
	Socket	Green	<b>896106</b>	<b>894741</b>		
	Carbon Brushes Worn	Red	<b>894421</b>			
	Carbon Brushes Worn	Red	<b>892919</b>			
	Battery	Green	<b>892032</b>			
		Red	<b>896153</b>	<b>895198</b>		
		Yellow	<b>896138</b>			
	Battery 1+2	Green	<b>892032</b>			
	Battery 1+2	Green	<b>895331</b>			
		Red	<b>893329</b>			
	Unlock Battery	Red	<b>893635</b>			
	Cable Winch	Yellow	<b>893616</b>			
	Cable Winch	Green	<b>896187</b>	<b>894713</b>		
	Peeling Knife	Green	<b>896188</b>			
	Hydr Connection	Green	<b>896105</b>			

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Idle Automatic	Red	<b>896162</b>			
	Metal Detector On	Red	<b>895499</b>			
	Metal Detector Off	Green	<b>895498</b>			
	Blade Grinder	Green	<b>895497</b>			
		Black	<b>894793</b>			
		Black	<b>892996</b>			
		Orange	<b>893628</b>	<b>893064</b>		
	RESET	Green	<b>894490</b>	<b>895176</b>		
	Main Drive	Green	<b>895496</b>			
		Red	<b>895337</b>			
		Green		<b>893040</b>		
		Orange	<b>893619</b>			
		Yellow	<b>893309</b>	<b>893327</b>		
	Slow	Green	<b>895969</b>	<b>895186</b>		
		Orange	<b>896185</b>	<b>895501</b>		
	TEST	Green	<b>892879</b>			
	EXTRA	Yellow	<b>896147</b>			
	START	Red		<b>893044</b>		
		White	<b>894418</b>			
	STOP	Green		<b>896340</b>		
		Red	<b>894434</b>		<b>894419</b>	

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
WC	Water Closet	Green				
		895420				
FRESH AIR	Fresh Air	Green				
		894467				
BLACKOUT OVERRIDE	Blackout Override	Yellow				
		893292				
EL	EL	Black				
					896226	
ACC	Accessories	Black				
					894704	
VS	VS	Green				
		894413				
123	123	Black				
					895189	
STOP ENGINE	Stop Engine	Red				
					896615-SE-1	
					896615-SE	
		Blue				895620-CE
CHECK ENGINE	Check Engine	Orange				
					896320-CE-1	
					896320-CE	
FRIDGE	Fridge	Blue				
					895620-F	
					895620-F-1	
	Fast	Green				
		895971				893312
	Fast	Black				
		894765				
	Warning	Red				
		892520				
WC	WC	Green				
		895359				

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Wait	Yellow				
WAIT		895335				
I	I	Green				
		892855				
II	II	Green				
		892854				
H	H	White				
		894730				
		Yellow				894427
L		Green				
		896107				
		Yellow				891732
R	R	Green				
		895163				
		Orange				894766
R		White				
		893639				
r/s	Speed	Green				
		896115				
r/min	Speed	Green				
		896102				
ROAD MODE	Road Mode	Blue				
		895620-RM				
COMMS BATTERY LOW	Comms Battery Low	Orange				
		896320-CBL				
CHARGER CONNECT	Connect Charger	Orange				
		896320-CH				
MAINS CONNECT	Mains Connect	Orange				
		896320-MC				
T/GATE BATTERY LOW	Tailgate Battery Low	Orange				
		896320-TBL				
VEHICLE BATTERY LOW	Vehicle Battery Low	Orange				
		896320-VBL				







# Rocker

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
240 VOLT ON	240 Volt On	Red		<i>896615-LW-1</i>		
AIR SYSTEM FAULT	Air System Fault	Red		<b>896615-AS</b>		
CLASS1 SYSTEM FAULT	Class1 System Fault	Red		<b>896615-C1</b>		
COMPRESSOR ENGAGED	Compressor Engaged	Red		<b>896615-CE</b>		
LOCKER OPEN	Locker Open	Red		<b>896615-LO</b>		
LOW WATER	Low Water	Red	<i>896615-LW-1</i>	<b>896615-LW</b>		
MAST MONITOR UNHOUSED	Mast Monitor Unhoused	Red		<b>896615-MMU</b>		
MAST UNHOUSED	Mast Unhoused	Red		<b>896615-MU</b>		
PTO ENGAGED	PTO Engaged	Red		<b>896615-PE</b>		
POLE LIGHT RAISED	Pole Light Raised	Red		<i>896615-PLR</i>		
PLATFORM UNSTOWED	Platform Unstowed	Red		<b>896615-PU</b>		
STEP UNSTOWED	Step Unstowed	Red		<i>896615-SU</i>		
WORK LIGHTS	Work Lights	Red		<b>896615-WL</b>		
BEACON LIGHTS	Beacon Lights	Green		<b>896650-BL</b>		
HAZARD LIGHTS	Hazard Lights	Green		<b>896650-HL</b>		

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
HP PUMP	HP Pump	Green		<b>896650-HP</b>		
NP PUMP	NP Pump	Green		<b>896650-NP</b>		
OK TO PUMP	OK to Pump	Green		<b>896650-OK</b>		
SPRAY BAR	Spray Bar	Green	<b>896650-SB-1</b>	<b>896650-SB</b>		
AIR HORN	Air Horn	Green		<b>896650-AH</b>		
CRUISE	Cruise	Orange	<i>896320-CRUISE-1</i>	<i>896320-CRUISE</i>		
LOW	Low	Orange	<i>896320-LOW-1</i>	<i>896320-LOW</i>		
ATB OVERRIDE	ATB Override	Red		<i>896615-ATBO/RIDE</i>		
POLE LIGHT RAISED	Pole Light Raised	Red		<i>896615-PLR-1</i>		
LOW WATER OVERRIDE	Low Water Override	Orange		<b>896320-LWO</b>		
CHECK VEHICLE BODY	Check Vehicle Body	Orange		<b>896320-CVB</b>		
CREW PROTECTION	Crew Protection	Red		<b>896615-CP</b>		
CHECK TRANS	Check Trans	Red		<b>896615-CT</b>		
DO NOT SHIFT	Do Not Shift	Red		<b>896615-DNS</b>		
FOAM PUMP	Foam Pump	Red		<b>896615-FP</b>		



## Miscellaneous cont.

Symbol	Description	Colour	 0°  90°  180°  270°
LMI OVERRIDE	LMI Override	Red	<b>896615-LMIO/RIDE</b>
MONITOR UNHOUSED	Monitor Unhoused	Red	<b>896615-MON/UN</b>
MAIN PUMP	Main Pump	Red	<b>896615-MP</b>
INSERT OVER RIDE	Insert Over Ride	Red	<b>896615-O/RIDE</b>
PUMP ENGAGE	Pump Engage	Red	<b>896615-PENG</b>
PUMP FAULT	Pump Fault	Red	<b>896615-PF</b>
PUMP & ROLL	Pump & Roll	Red	<b>896615-PR</b>
AIR HORN	Air Horn	Green	<b>896650-AH-1</b>
BEACON LIGHTS	Beacon Lights	Green	<b>896650-BL-1</b>
CAMERA	Camera	Green	<b>896650-CAM-1</b>
DEPLOY	Deploy	Green	<b>896650-DEPLOY</b>
HAZARD LIGHTS	Hazard Lights	Green	<b>896650-HL-1</b>
PUMP RUNNING	Pump Running	Green	<b>896650-PR</b>
EDC	EDC	Yellow	<b>897004</b>



## Availability

Due to the extensive range of combinations manufactured not all of the listed inserts are available from local stock holdings.

Blue	<b>788622</b>	<i>788613</i>
Grey	<b>788583</b>	<i>784738</i>
		
	in-stock item	non-stock item

*Italic part numbers are available by special order only and a lead time will apply.*

Minimum order quantities may apply.

## 777 Series Inserts

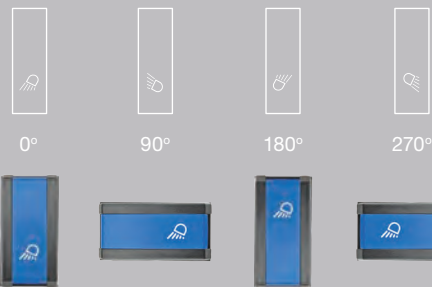
Switches not supplied with inserts. Symbol inserts available in categories such as lighting, heating & ventilation and drives.

Many inserts are available in 4 orientations for situations when switch mounting needs to be horizontal or even upside down.





Multiple colours available.



## Insert Rotations










## No Symbol

Symbol	Description	Colour	0°	90°	180°	270°
	Blank	Black	<b>788409</b>			
	Blank	Blue	<b>788402</b>			
	Blank	Grey	<b>788401</b>			
	Blank	Red	<b>788400</b>			


## Wiper Washer

	Rear Window Wiper	Grey	<b>788095</b>			
	Rear Window Wiper	Grey	<b>788577</b>	<b>784400</b>	<b>786136</b>	<b>783306</b>
	Rear Window Wiper/Washer	Blue	<b>788071</b>			
	Rear Window Wiper/Washer	Grey	<b>788303</b>			
	Rear Window Wiper/Washer	Blue	<b>788718</b>			
	Rear Window Wiper/Washer	Grey	<b>788710</b>	<b>787007</b>		

## Wiper Washer cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Rear Window Wiper/Washer	Grey	<b>788548</b>			
	Intermittent Wiper	Grey	<b>788312</b>	<b>786718</b>	<b>786409</b>	
	Windscreen Wiper	Grey	<b>788627</b>	<b>784719</b>	<b>786416</b>	<b>785116</b>
	Windscreen Wiper/Washer	Grey	<b>788042</b>			
	Windscreen Wiper/Washer	Grey	<b>788626</b>	<b>787010</b>	<b>786415</b>	<b>785117</b>
	Window Wiper/Washer	Grey	<b>788056</b>			
	Headlamp Wiper/Washer	Grey	<b>788398</b>			<b>786408</b>

## Lighting

	Light	Grey	<b>788097</b>			
---	-------	------	---------------	--	--	--

## Lighting cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Light	Grey	788586	783304	786400	784782
	High Beam	Blue	798099			
	High Beam	Grey	788573			
	Dipped Beam	Blue	788060			
	Dipped Beam	Grey			782480	783303
	Side Marker Lamps	Blue	788088			
	Side Marker Lamps	Blue	788111			
	Position Lamp	Blue	788087			
	Fog Lamp	Grey	788394	785181	786414	784799
	Fog Warning Lamp	Grey	788175			
	Fog Warning Lamp	Grey	788310	787102	786417	
	General Service Lamp Front	Blue	788090			
	General Service Lamp Front	Grey	788142			
	General Service Lamp Front	Blue	788621			
	General Service Lamp Front	Grey	788585			
	General Service Lamp Rear	Blue	788089			
	Worklamp	Blue	788719			
	Worklamp	Grey	788711			
	Worklamp	Blue	788622			
	Worklamp	Grey	788583	784738		787008
	Worklamp	Blue	788135			
	Worklamp	Grey	788233			
	Worklamp	Grey	788576		784768	784428

## Lighting cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Loading Floor Lamp	Blue	788137			
	Light Indicator	Grey	788322			
	Main Light	Blue	788074			
	Main Light	Grey	788234			
	Main Light	Grey	788584	785182	785102	784800
	Interior Light	Blue	788715			
	Interior Light	Grey	788688	783305	783678	
	Interior Light Medium	Grey	788581		786799	
	Interior Light Dim	Grey	788336			
	Driving Seat Light	Grey	788335			783311
	Reading Light	Grey	788334			
	Night Light	Grey	787187			
	Rotary Beacon	Blue	788020			
	Rotary Beacon	Grey	788712			
	Rotary Beacon	Grey	788628	785188	786406	
	Rotary Beacon	Blue	788136			
	Rotary Beacon	Grey	788049			
	Test	Grey	788213			
	Lamp Test	Grey	788550			784781
	Hazard Warning	Red	788231			



## Lighting cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Hazard Warning	Grey				
		Red	<b>788587</b>	<b>788435</b>	<b>784739</b>	<b>785417</b>
	Hazard Warning	Grey				
		Red	<b>788551</b>	<b>786614</b>		

## Heating & Ventilation

	Pre-Warm Fuel	Grey				
	Additional Heating	Grey				
	Heating Passenger Room	Grey				
	Heating Front	Grey				
	Defroster	Grey				
	Fresh Air	Grey				
	Blower	Blue				
		Grey	<b>788716</b>	<b>788708</b>		
	Blower Slow	Grey				
	Blower Fast	Grey				
	Blower Speed Adjustment	Grey				
	Ventilation Motor	Grey				
	Cooling	Grey				
	Cooling	Grey				

## Heating & Ventilation cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Seat Heating	Grey				
	Heating & Ventilation	Grey				
	Rear Window Defroster	Grey				
	Rear Window Defroster	Grey				
	Rear Window Heating	Grey				
	Exterior Mirror Defroster	Blue				
		Grey	<b>787969</b>	<b>788143</b>		
	Exterior Mirror Defroster	Grey				

## Drives

	Differential Lock	Grey				
	Differential Lock	Grey				
	Axle Lock	Grey				
	All Wheel Drive	Blue				
		Grey	<b>788076</b>	<b>788228</b>		
	Wheel Drive Behind	Grey				
	Slewing Damper	Red				
	Slewing Damper	Red				
	Level Control	Grey				

## Drives cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Level Control	Grey				
	Raise	Grey				
	Level Control	Grey				
	Raise Lower	Grey				
	Raise Lower	Blue				
	Raise Lower	Grey				

## Miscellaneous

	Working Speed	Grey				
	Working Speed	Grey				
	Speed Automatic	Grey				
	Engine Liquid Indicator	Grey				
	Engine	Grey				
	Engine Grade 3	Grey				
	Stop Engine	Grey				<i>785103</i>
	Fire Alarm	Grey				
	Control Pump	Red				
	Control Pump	Red				
	Control Pump	Red				

## Miscellaneous cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Out of Gear	Grey				
	Gear Trouble	Grey				
	Forward Gear/Reverse Gear	Blue				
	Forward Gear/Reverse Gear	Grey				
	Electric Brake System	Grey				
	Retarder	Grey				
	Retarder	Grey				<i>784429</i>
	Retarder Out	Grey				
	Retarder Out	Grey				
	Exhaust Brake	Grey				
	Engine Brake	Grey				
	Engine Brake	Grey				
	Exhaust Brake Retarder	Grey				
	Engine Brake Retarder	Grey				
	Brake System Trouble	Grey				<i>788321</i>
	Parking Brake	Red				



# Rocker

## Miscellaneous cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Parking Brake	Grey				
		Red				
	ABS	Grey				
	Test ABS Unit	Grey				
	ASR	Blue				
		Grey				
	Steering Lock	Grey				
	Automatic Lubricant	Blue				
		Grey				
	Automatic Lubricant	Grey				
	Oil Level Control	Grey				
	Horn	Blue				
		Grey				
	Horn Backwards	Grey				
	Horn Backwards	Grey				
	Horn Out	Red				
	Stop Request	Grey				
	Sounder Out	Grey				
	Turn Signals	Blue				
	Turn Signals	Grey				

## Miscellaneous cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Cruise On	Grey				
	CR.+	Grey				
		Grey				
	CR.-	Grey				
	Fuel	Grey				
	Tank Filling Level	Grey				
	Hostess Call	Grey				
	Level & Kneeling	Grey				
	Kneeling	Grey				
	School Bus	Grey				
	Wheel Chair	Grey				
	Door Opener	Grey				
	Door Opener	Grey				
	Door Opener	Red				
	Door Opener	Grey				
	Door Opener	Grey				
	Window Lifter	Grey				
	Radio Music	Grey				
	Camera	Grey				

## Miscellaneous cont.














Symbol	Description	Colour	0°	90°	180°	270°
	Monitor	Grey	784422			
	DVD	Grey	787166			
	Position Open	Grey	788189			
	Hydraulic Lever Locked	Grey Red	788222 788070			
	Tipper to Horizontal	Grey	788157			
	Overload	Grey Red	788224 788067			
	Lift Against Stop	Grey	787967			
	Lift Against Stop	Grey	788038			
	Bucket Loader Unlocked	Grey	788218			
	Bucket Loader Unlocked	Grey	788115			
	Bucket Loader Unlocked	Grey Red	788230 788068			
	Side Shift	Grey Red	788226 788069			
	Bucket Loader Locked	Red	787917			
	Bucket Loader Locked	Red	788034			
	Bucket Loader Suspension	Blue Grey	788075 788220			
	Bucket Loader LSM	Grey	788124			

## Miscellaneous cont.

Symbol	Description	Colour	0°	90°	180°	270°
	Float Position	Grey	788126			
	Bucket Loader Horizontal	Grey	788131			
	Bucket Loader Unlocked	Grey	788014			
	Bucket Loader Float	Grey	788012			
	Auxiliary Step	Grey	785145			
	Boot Lid	Grey	788330			
	Regulator for Press	Red	787984			
	Spray Water	Grey	787795			
	Rolling Broom	Grey	787979			
	Water	Grey	785377			
	Water	Grey	788316			
	Heater	Grey	785424			
	Main Switch	Grey	788311	788096	786398	784780
	Battery	Blue Grey Red	788714 788687 798086	788320		
	Peeling Knife	Grey	788315			
	Locked	Grey	787186			



# Rocker

Miscellaneous cont.						
Symbol	Description	Colour	0°	90°	180°	270°
	Fast Slow	Grey	<b>788046</b>			
	Economy Power	Grey	<b>787185</b>			
	Mode	Grey	<b>788036</b>			
	Warning	Grey	<b>787130</b>			
	Water Closet	Grey	<b>788332</b>			
	Information	Grey	<b>788623</b>			
	Reset	Grey	<b>788110</b>			
	123	Grey	<b>788299</b>			
		Grey	<b>785361</b>			
	Press Out	Grey	<b>788122</b>			
		Blue	<b>787685</b>			
		Blue	<b>787686</b>			
		Blue	<b>787687</b>	<b>787688</b>		

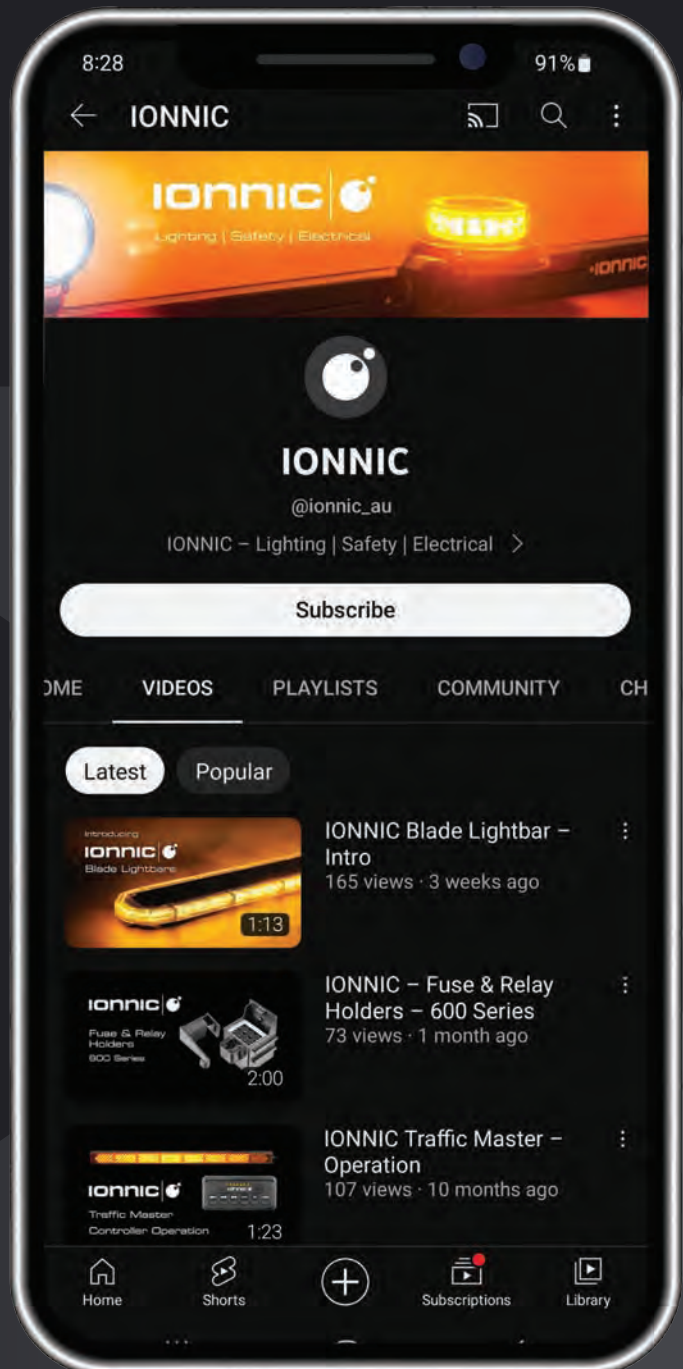
# IONNIC YouTube Channel



Product videos,  
configuration tutorials  
and more



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# Toggle Switches



# Toggle Switches

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Environmentally Sealed **114**



Heavy Duty **116**



Standard Duty **120**



PVC Coated **122**



Accessories **123**

# Toggle

Environmentally Sealed



- Sealed to NEMA 3, 3R, 4, 13 and IP68.
- Single & double pole circuitry.
- 2 and 3 position maintained, and momentary toggle action.
- UL recognised. CSA certified.
- Up to 250V AC operation.
- High impact strength thermoplastic case.
- Flexible elastomer seal between frame and lever.
- For accessories including switch guards and boots see page 123.

Voltage :	12-24V
Current Rating @ 28V (Resistive Load) :	20A
	Momentary 15A
Contacts :	Silver Alloy
Terminals :	Screw #6-32
Ingress Protection :	IP68
Operating Temperature :	-40°C to 71°C
Approvals :	CE, UL, CSA
	Seal NEMA 3, 3R, 4, 13



## Normally Open Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
OFF ON		Single Pole	12-24	Screw	<b>MTS403</b>
OFF ON		Double Pole	12-24	Screw	<b>MTS404</b>
OFF Mom.ON		Single Pole	12-24	Screw	<b>MTS508</b>

## Change-over Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
ON ON		Single Pole	12-24	Screw	<b>MTS401</b>
ON ON		Double Pole	12-24	Screw	<b>MTS402</b>
ON Mom.ON		Single Pole	12-24	Screw	<b>MTS501</b>

## Change-over Contact II - O - I

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
ON OFF ON		Single Pole	12-24	Screw	<b>MTS101</b>
ON OFF ON		Double Pole	12-24	Screw	<b>MTS102</b>
ON OFF Mom.ON		Single Pole	12-24	Screw	<b>MTS111</b>
Mom.ON OFF Mom.ON		Single Pole	12-24	Screw	<b>MTS301</b>
Mom.ON OFF Mom.ON		Double Pole	12-24	Screw	<b>MTS302</b>



# Toggle

Heavy Duty

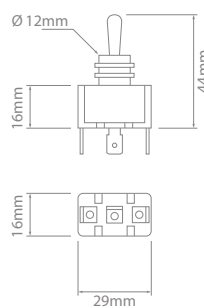


- Single, Double & Triple Pole models available.
- Multi-voltage.
- Blade & screw terminals.
- Shaft sealed by 'O' ring.
- Wide variety of switching configurations.
- Slow-make, slow-break contact mechanism.
- For accessories including switch guards and boots see page 123.

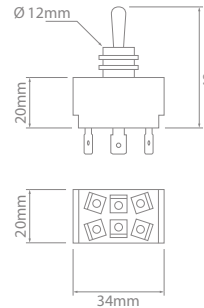
Voltage :	12-24V
Current Rating :	20A @ 4-14V, 15A @ 15-28V
Contacts :	Silver Alloy
Terminal :	Blade 6.3mm
	Screw #6-32
Body :	Phenolic
Actuator & Bushing :	Nickel-plated Brass
Approvals :	UL, CSA



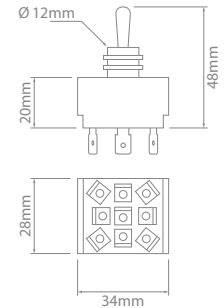
TS101A



Single Pole



Double Pole



Triple Pole

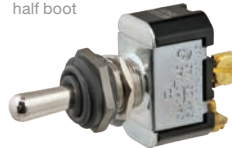


TS402A



ST325EF

With TS002 half boot



With ST0579 switch guard

## Normally Closed Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
ON Mom.OFF		Double Pole	12-24	Blade	TS509E

## Normally Open Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
<b>OFF</b> <b>ON</b>		Single Pole	12-24	Screw	<b>TS403A</b>
				Blade	<b>TS403E</b>
<b>OFF</b> <b>ON</b>		Double Pole	12-24	Screw	<b>TS404A</b>
				Blade	<b>TS404E</b>
<b>OFF</b> <b>Mom.ON</b>		Single Pole	12-24	Screw	<b>TS508A</b>
<b>OFF</b> <b>Mom.ON</b>		Double Pole	12-24	Solder	<b>TS510S</b>

## Change-over Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
<b>ON</b> <b>ON</b>		Single Pole	12-24	Screw	<b>TS401A</b>
				Blade	<b>TS401E</b>
<b>ON</b> <b>ON</b>		Double Pole	12-24	Screw	<b>TS402A</b>
				Blade	<b>TS402E</b>
<b>ON</b> <b>Mom.ON</b>		Single Pole	12-24	Blade	<b>TS501E</b>
<b>ON</b> <b>Mom.ON</b>		Double Pole	12-24	Blade	<b>TS502E</b>

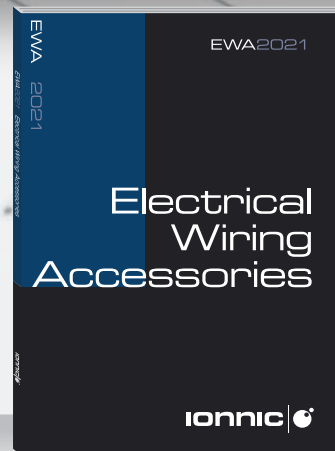
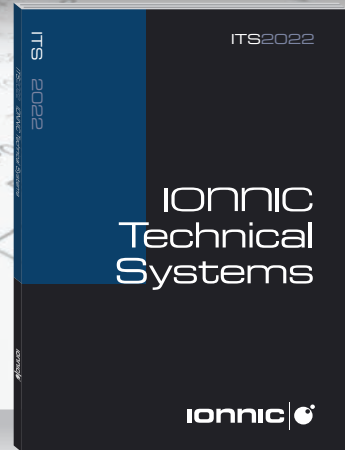
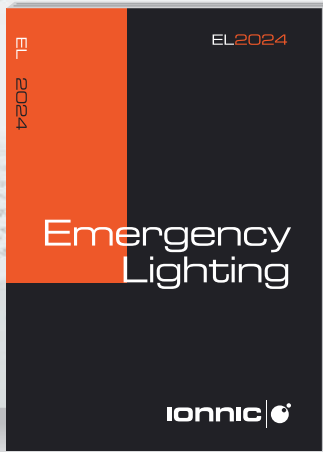


# Toggle

## Change-over Contact II - 0 - I

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
ON OFF ON		Single Pole	12-24	Screw	<b>TS101A</b>
				Blade	<b>TS101E</b>
ON OFF ON		Double Pole	12-24	Screw	<b>TS102A</b>
				Blade	<b>TS102E</b>
ON OFF ON		Triple Pole	12-24	Blade	<b>ST325EF</b>
Mom.ON OFF Mom.ON		Single Pole	12-24	Screw	<b>TS301A</b>
				Blade	<b>TS301E</b>
Mom.ON OFF Mom.ON		Double Pole	12-24	Screw	<b>TS302A</b>
				Blade	<b>TS302E</b>

# Catalogues



Visit [ionnic.com](http://ionnic.com) or contact your nearest reseller for a copy

# Toggle

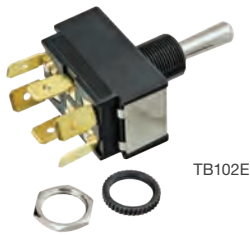
Standard Duty



12V  
24V

- Single & Double Pole models available.
- Multi-voltage.
- Shaft sealed by 'O' ring.
- Wide variety of switching options.
- For accessories including switch guards and boots see page 123.

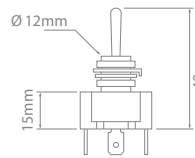
Voltage : 12-24V  
 Current Rating : 20A @ 4-14V, 15A @ 15-28V  
 Contacts : Silver Alloy  
 Body : PBT +15% Glass Fibre  
 Actuator & Bushing : Nickel-plated Brass



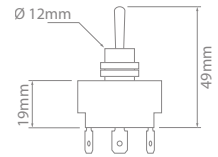
With P23U name plate



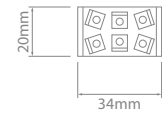
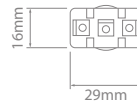
With TB001-BLK toggle boot



Single Pole



Double Pole



## Change-over Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
ON ON		Single Pole	12-24	Blade	<b>TB401E</b>
ON ON		Double Pole	12-24	Blade	<b>TB402E</b>

## Normally Open Contact

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
<p>OFF</p> <p>ON</p>		Single Pole	12-24	Blade	<b>TB403E</b>
<p>OFF</p> <p>ON</p>		Double Pole	12-24	Blade	<b>TB404E</b>
<p>OFF</p> <p>Mom.ON</p>		Single Pole	12-24	Blade	<b>TB508E</b>

## Change-over Contact II - 0 - I

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
<p>ON</p> <p>OFF</p> <p>ON</p>		Single Pole	12-24	Blade	<b>TB101E</b>
<p>ON</p> <p>OFF</p> <p>ON</p>		Double Pole	12-24	Blade	<b>TB102E</b>
<p>Mom.ON</p> <p>OFF</p> <p>Mom.ON</p>		Single Pole	12-24	Blade	<b>TB301E</b>
<p>Mom.ON</p> <p>OFF</p> <p>Mom.ON</p>		Double Pole	12-24	Blade	<b>TB302E</b>



# Toggle

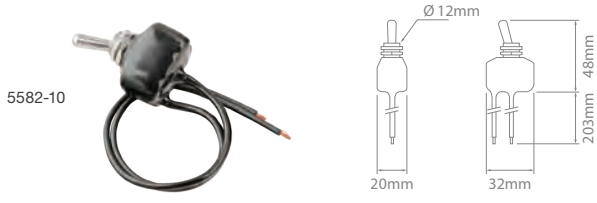
PVC Coated

12V  
24V



- Single & Double Pole models.
- Multi-voltage.
- Shaft sealed by 'O' ring.
- PVC coating for enhanced sealing and protection from the elements.

Voltage : 12-24V  
 Current Rating : 25A @ 12V, 15A @ 24V  
 Contacts : Silver Alloy  
 Body : Phenolic  
 Actuator & Bushing : Nickel-plated Brass

















## PVC Coated

Action	Wiring Diagram	Notes	Voltage	Terminal	Part No.
OFF ON		Single Pole	12-24	Lead 200mm	<b>5582-10</b>
Mom.ON OFF Mom.ON		Single Pole	12-24	Lead 200mm	<b>55021-07</b>

# Toggle - Accessories

## Toggle - Accessories

	Description	Part No.
	Switch Guard – Red – Cutler-Hammer  For use with two position switches only	<b>8497K1</b>
	Switch Guard – Carbon Fibre Switch Guard – Blue Switch Guard – Green Switch Guard – Black Switch Guard – Red Switch Guard – Yellow	<b>ST0574</b> <b>ST0575</b> <b>ST0576</b> <b>ST0577</b> <b>ST0578</b> <b>ST0579</b>
	Name Plate – OFF/ON	<b>P23</b>
	Name Plate – ON/OFF	<b>P23U</b>
 	Full Toggle Boot – Black Silicone Full Toggle Boot – Blue Silicone Full Toggle Boot – Red Silicone Full Toggle Boot – Yellow Silicone	<b>TS001</b>  <b>TS001-BLU</b>  <b>TS001-RED</b> <b>TS001-YEL</b>
	Half Toggle Boot – Black Silicone	 <b>TS002</b> 
	Full Toggle Boot – Black Silicone	<b>TB001-BLK</b>
	6 Contact Terminal Block Suits Blade Terminal, Double Pole Heavy Duty & Standard Duty Toggle Switches AMP™ Terminal to suit	<b>TSH</b> <b>605001BL2/100</b>



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# Micro & Linnet Switches



# Micro & Limit Switches

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Micro – TM Series **126**



Micro – TMV Series **130**



Limit – TZ-7 Series **132**



Limit – TZ-9 Series **134**

# Micro & Limit

Micro – TM Series



TM1307



TM1305



TM1743



SW15

- Wide variety of actuators.
- High breaking capacity – 15A.
- Single Pole Change Over.
- Long life – 500,000 operations.



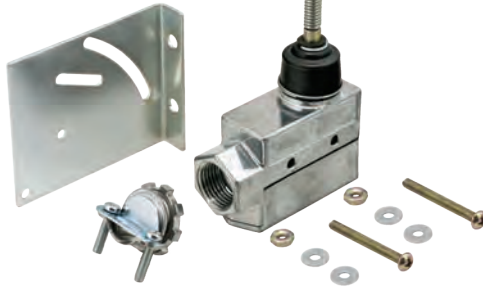
Voltage : 12–24V  
 Circuitry : SPCO (Single Pole Change Over)  
 Current Rating : 10A @ 12V, 5A @ 24V  
 Service Life : Min. 500,000 operations  
 Approvals : CE, CSA, UL, VDE



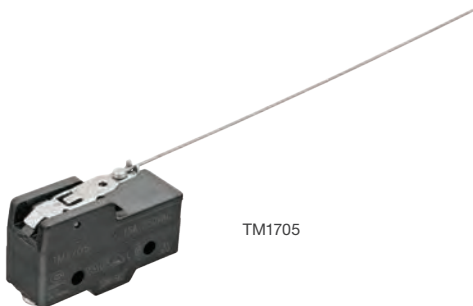
SPCO (Single Pole Change Over)



TM1701

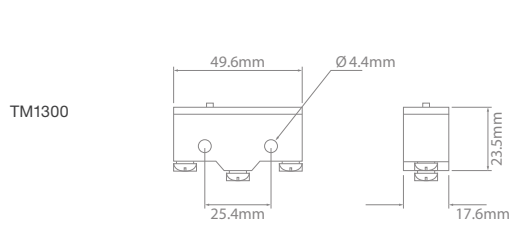


SW15

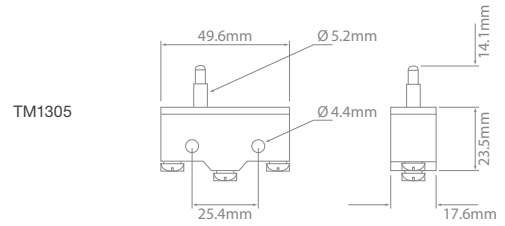


TM1705

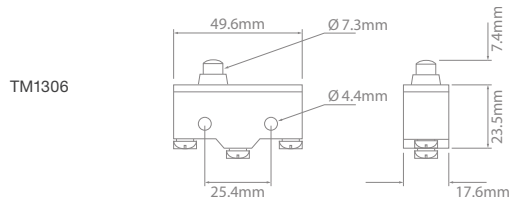




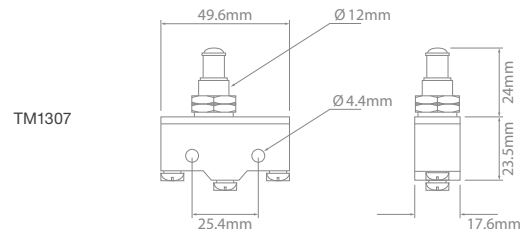
TM1300



TM1305



TM1306

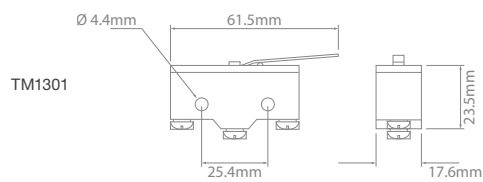


TM1307

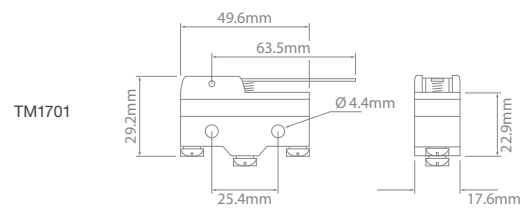
## Micro – TM Series – Plunger

Part No.	Description
<b>TM1300</b>	Pin head plunger
<b>TM1306</b>	Short button plunger

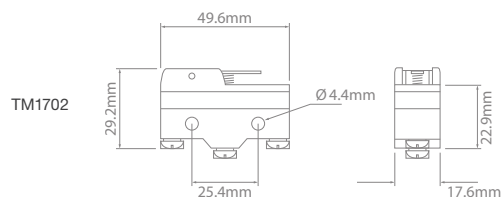
Part No.	Description
<b>TM1305</b>	Slim plunger
<b>TM1307</b>	Long button plunger



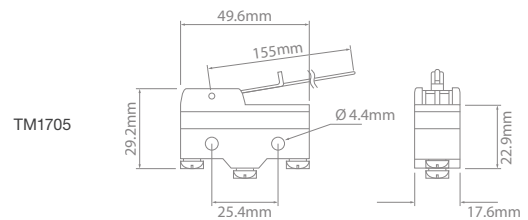
TM1301



TM1701



TM1702



TM1705

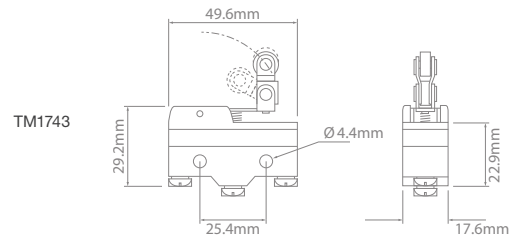
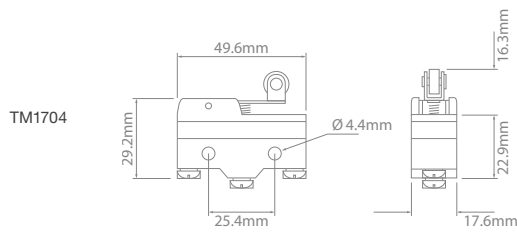
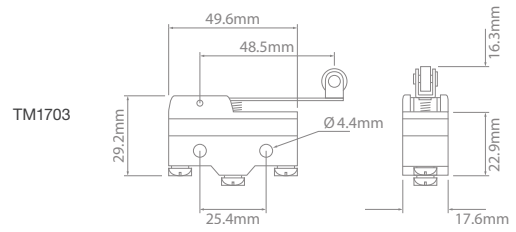
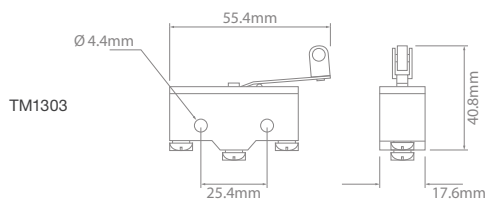
## Micro – TM Series – Lever

Part No.	Description
<b>TM1301</b>	Pin head plunger with lever
<b>TM1702</b>	28mm lever

Part No.	Description
<b>TM1701</b>	63mm lever
<b>TM1705</b>	110mm wire lever



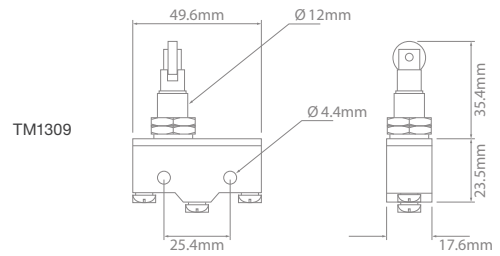
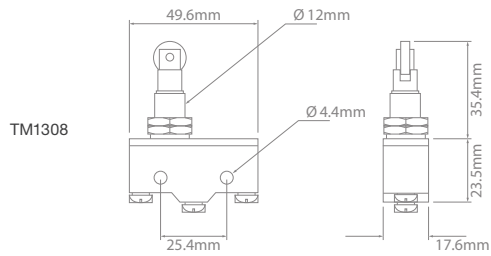
# Micro & Limit



## Micro – TM Series – Lever with Roller

Part No.	Description
<b>TM1303</b>	Pin head plunger with roller lever
<b>TM1704</b>	27mm lever with roller

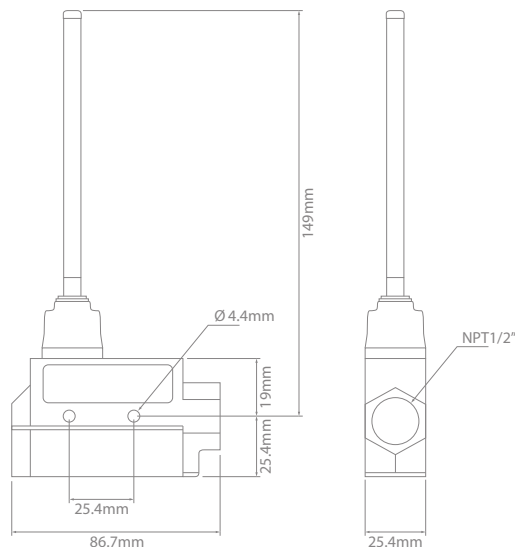
Part No.	Description
<b>TM1703</b>	48mm lever with roller
<b>TM1743</b>	32mm double pivot roller lever



## Micro – TM Series – Plunger with Roller

Part No.	Description
<b>TM1308</b>	Button plunger with roller

Part No.	Description
<b>TM1309</b>	Button plunger with cross roller



## Micro – TM Series – Heavy Duty Spring Lever

Part No.	Description
<b>SW15</b>	TM1300 with heavy duty spring lever casing



# Micro & Limit

Micro – TMV Series

**NEW**



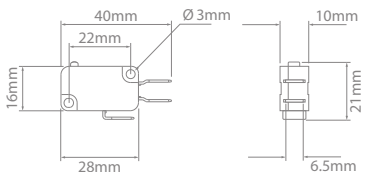
- High breaking capacity – 16A.
- Single Pole Change Over.
- Long life – 100,000 operations.



Voltage : 12–24V  
 Circuitry : SPCO (Single Pole Change Over)  
 Terminals : 6.5mm Blade  
 Current Rating : 10A @ 12V, 5A @ 24V  
 Service Life : Min. 100,000 Operation  
 Approvals : CE, UL, CSA, VDE  
 Operating Temperature : -25°C to 65°C

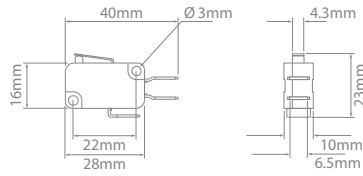


SPCO (Single Pole Change Over)

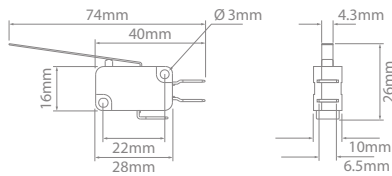


## Micro – TMV Series – Plunger **NEW**

Part No.	Description
TMV160-C	Pin head plunger



TMV162-C

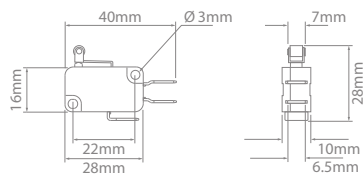


TMV165-C



## Micro – TMV Series – Lever NEW

Part No.	Description
<b>TMV162-C</b>	Pin head plunger with 14mm lever
<b>TMV165-C</b>	Pin head plunger with 51mm lever



## Micro – TMV Series – Lever with Roller NEW

Part No.	Description
<b>TMV164-C</b>	Pin head plunger with roller



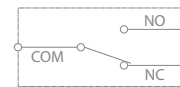
# Micro & Limit

## Limit – TZ-7 Series

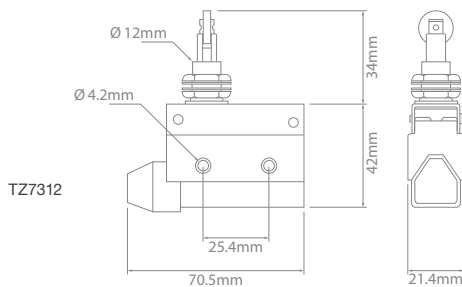
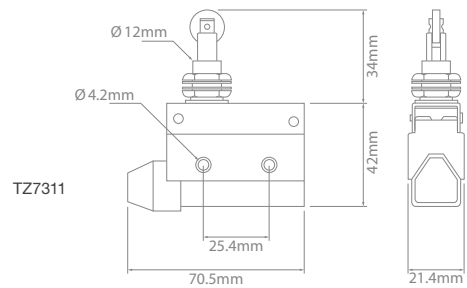
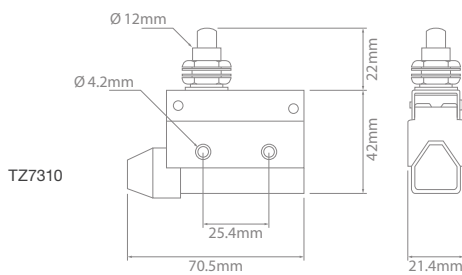


- Environmentally sealed – IP65.
- High precision.
- Long life – 500,000 operations.
- Sealed with gasket diaphragm.
- Single Pole Change Over.

Voltage : 12–24V  
 Circuitry : SPCO (Single Pole Change Over)  
 Ingress Protection : IP65  
 Current Rating : 10A @ 12V, 5A @ 24V  
 Service Life : Min. 500,000 operations  
 Approvals : CE, UL

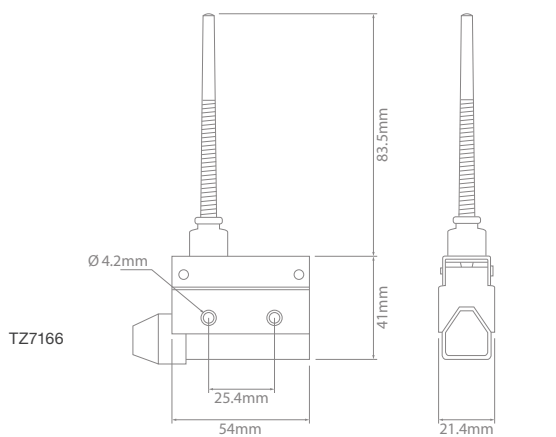
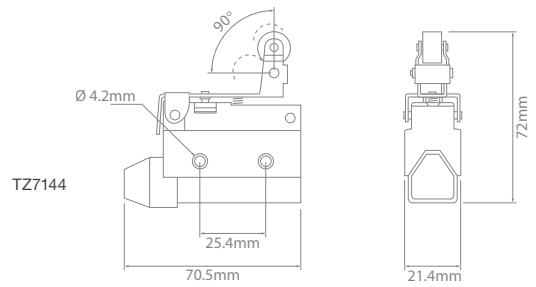
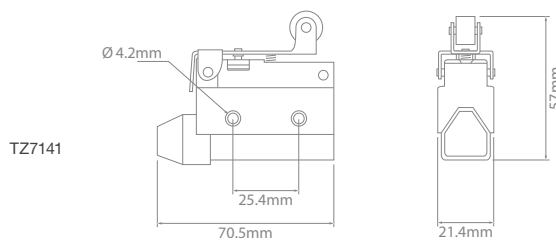
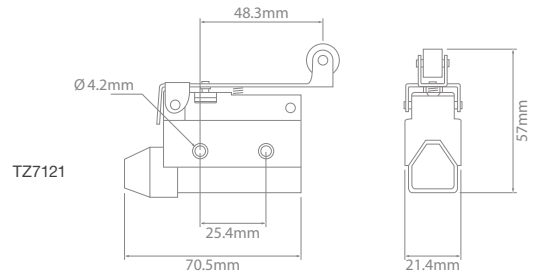
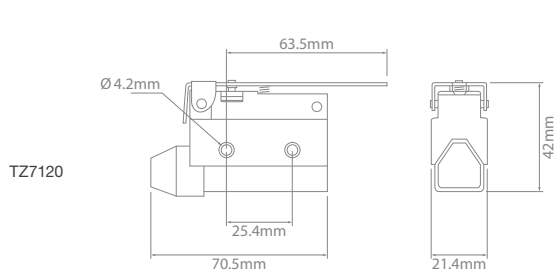


SPCO (Single pole Change Over)



### Limit – TZ-7 Series – Plunger

Part No.	Description	Part No.	Description
TZ7310	Long button plunger	TZ7311	Button plunger with roller
TZ7312	Cross roller plunger		



## Limit – TZ-7 Series – Lever

Part No.	Description
<b>TZ7120</b>	63.5mm lever
<b>TZ7141</b>	30mm roller lever
<b>TZ7166</b>	Polymer spring lever

Part No.	Description
<b>TZ7121</b>	48mm roller lever
<b>TZ7144</b>	30mm double pivot roller lever



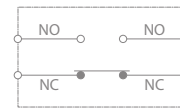
# Micro & Limit

## Limit – TZ-9 Series

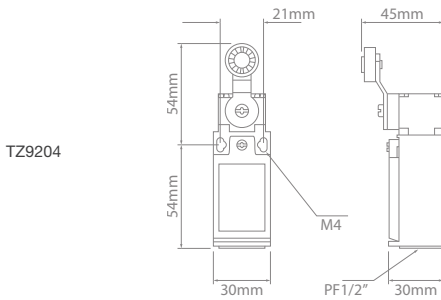


- Environmentally sealed – IP65.
- Long life – 500,000 operations.
- Robust glass reinforced polymer.
- Smooth operation with greater over travel.
- Easy-to-wire design.
- Normally Open, Normally Closed.

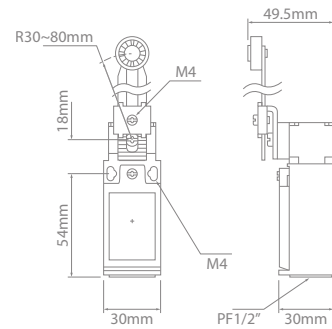
Voltage : 12–24V  
 Circuitry : Double Pole N/O & N/C  
 Ingress Protection : IP65  
 Current Rating : 5A  
 Service Life : Min. 500,000 operations  
 Approvals : CE, UL



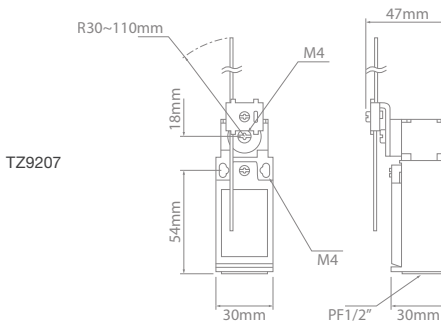
Circuitry



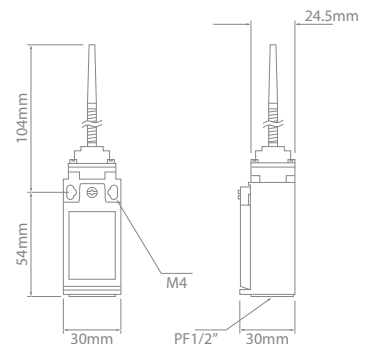
TZ9204



TZ9208



TZ9207



TZ9266

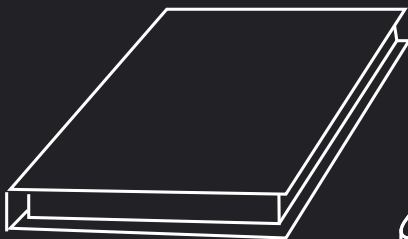
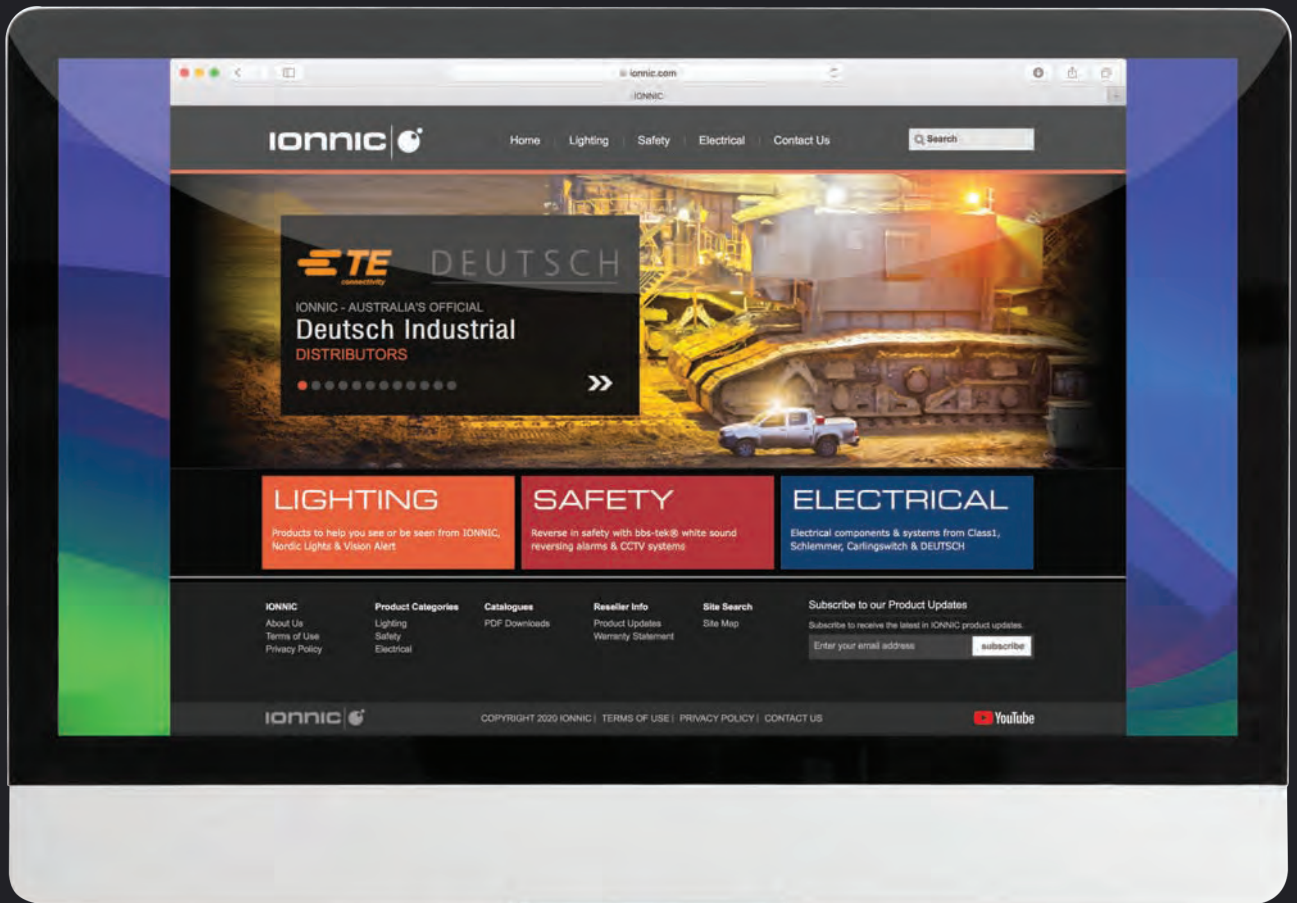
### Limit – TZ-9 Series

Part No.	Description
TZ9204	Angle adjustable roller lever
TZ9207	Height adjustable rod lever

Part No.	Description
TZ9208	Height adjustable roller lever
TZ9266	Polymer spring lever

# ionnic.com

For all the most up to date products and information



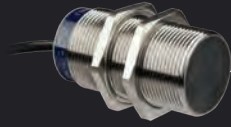
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# Proximity

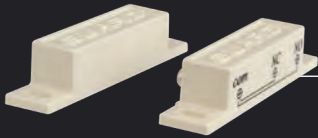


# Proximity

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Inductive Switches **138**



Reed Switches **140**



Limit Switches **141**

# Proximity

Inductive Switches

**NEW**



12-0001

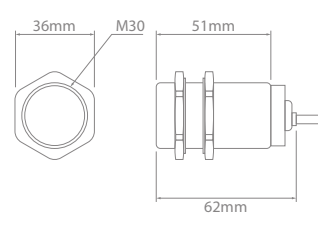


12-0120

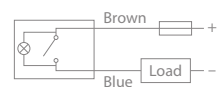


- DC & AC/DC models available.
- Non-contact sensor for metal objects.
- Suitable for harsh industrial environments.
- Environmentally sealed – IP67 or greater.
- Reverse polarity protected.
- Output status LED indicator.
- Ideal for machine tool detection, press applications, cam detection, material handling, valve and shaft position, automotive assembly.

<b>Body :</b>	AC/DC	Nickel-plated Brass
	DC	Stainless Steel
<b>Front Cap :</b>	AC/DC	Polyphenylene Sulfide (PPS)
	DC	Ryton
<b>Shock :</b>	AC/DC	50GN (IEC 60068-2-27)
	DC	30G (IEC 60947-5-2)
<b>Vibration :</b>		10 – 55HZ
<b>Cable Length :</b>		2m
<b>Approvals :</b>		CE, UL, RoHS
<b>Operating Temperature :</b>		-25°C to 70°C



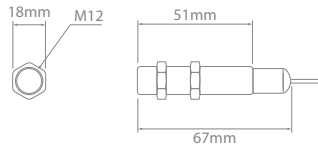
Made in Europe



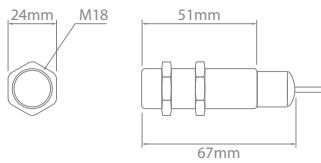
Ensure maximum current load is not exceeded. Compatible with automotive relays & electronic modules.

## Inductive Switch – AC/DC **NEW**

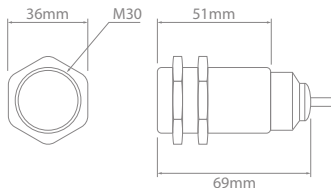
Part No.	Voltage Type	Voltage	Output Type	Output Function	Sensing Range (mm)	IP Rating	Switching Capacity (mA)	
							AC	DC
12-0001	AC/DC	24–240	–	N/O	10	IP68, IP6K9K	5–300	5–200



12-0120



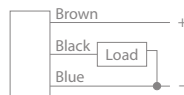
12-0180



12-0300



Ensure maximum current load is not exceeded. Compatible with automotive relays & electronic modules.



Made in North America

IP67

## Inductive Switches – DC NEW

Part No.	Voltage Type	Voltage	Output Type	Output Function	Sensing Range (mm)	IP Rating	Switching Capacity (mA) DC
<b>12-0120</b>	DC	10–30	PNP	N/O	2	IP67	100
<b>12-0180</b>	DC	10–30	PNP	N/O	5	IP67	100
<b>12-0300</b>	DC	10–30	PNP	N/O	10	IP67	100

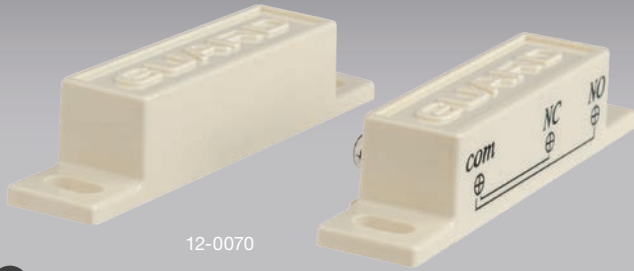


# Proximity

## Reed Switches

**NEW**

12-0050



12-0070



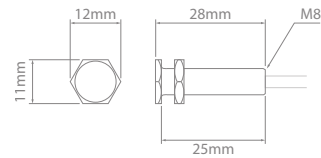
- Available with inductive or surface style.
- Compact size.
- 12-0050 fully threaded for adjustments.
- Ideal for position sensing, linear actuator, security switching, and safety guard/device applications.

<b>Voltage :</b>	12-0050	12-48V
<b>Body :</b>	12-0050	Brass
	12-0070	ABS
<b>Approval :</b>		RoHS
<b>Operating Temperature :</b>	12-0050	-20°C to 85°C

10V  
48V

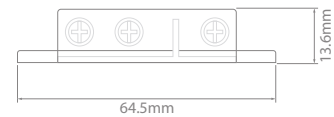
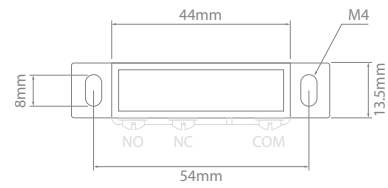


12-0050



Supplied with mounting double sided tapes

12-0070



## Reed Switches **NEW**

Part No.	Contact Type	Style	Switching Distance (mm)	Contact Resistance (Ohms)	Current Rating (A)	Cable Length (mm)
12-0050	N/O	Panel	10	0.2	0.5	280
12-0070	N/O & N/C	Surface	15	0.15	0.25	—

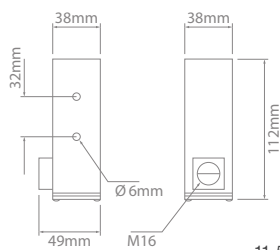
- Simple, rugged stainless steel body design.
- Long sensing ranges – up to 90mm using target magnet.
- Environmentally sealed – IP68, when used with similar rated conduit and fittings.



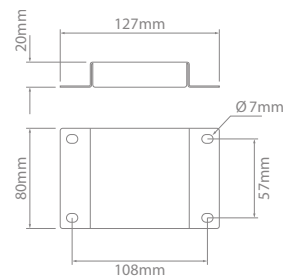
AMC5

11-51118

**Voltage :** 12–24V  
**Current Rating :** 3A @ 24VDC  
**Contacts :** Silver cadmium oxide, gold flashed  
**Body :** Stainless Steel  
**Operating Temperature :** -40°C to 105°C



11-51118



AMC5



Seesaw armature provides snap action and solid contact pressure, eliminating 'contact teasing' and 'contact chatter' in high vibration applications.

Sensing range can be extended to 90mm using external target magnet.

Permanent magnets never lose their strength.

Rugged stainless steel housing withstands physical abuse, moisture, and corrosives.

Versatile gold flashed contact are suitable for high and low electrical loads, and can be wired AC or DC, N/O or N/C.

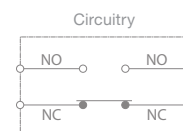
Sealed contact chamber prevents moisture or dust from reaching the contacts

Consumes no power to operate and has no current leakage or voltage drop.

Potting fills the entire switch cavity, forming a barrier against moisture.

## Limit Switches

Part No.	Circuitry	Sensing Range (mm)	Approvals
11-51118	Double Pole N/O & N/C	10	UL General Purpose
AMC5	Mountable magnet – Extends sensing range to 90mm		













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# Relays & Solenoids

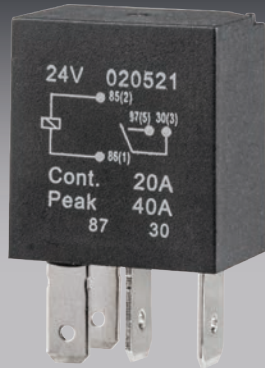


# Relays & Solenoids

	Micro	144
	Micro - 280 Series	145
	Solid State	148
	Mini	149
	Latching	155
	Timer	156
	High Current	160
	Specials	164
	Flasher Units	165
	Solenoids	166

# Relays & Solenoids

Micro



PM1424

- Most models resistor protected.
- N/O or C/O contact configurations.
- 12V or 24V models available.
- Environmentally sealed – IP54
- Full range of accessories available.
- Broad operating temperature.



Contacts :  
Body :  
Ingress Protection :  
Approvals :  
Operating Temperature :

Silver Alloy  
Polymer  
IP54  
CSA, RoHS  
-40°C to 125°C



PM2512R

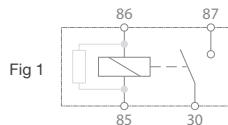


Fig 1

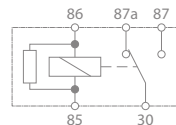
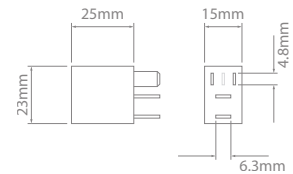


Fig 2

4 Terminal – Normally Open (N/O)

5 Terminal – Change Over (C/O)



## Micro

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Protection	Fig	Note
PM1412R	12	40	N/O	4	Resistor	1	
PM1424R	24	20	N/O	4	Resistor	1	
PM1424 <b>NEW</b>	24	20	N/O	4	—	1	Epoxy sealed base
PM2512R	12	10/20	C/O	5	Resistor	2	
PM2524R	24	5/10	C/O	5	Resistor	2	



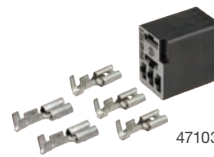
47002, 47002/100



47102/10



47003



47103/10



42282-2



281197-2

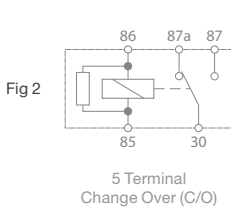
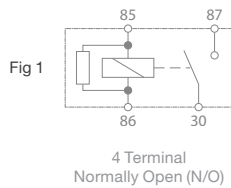
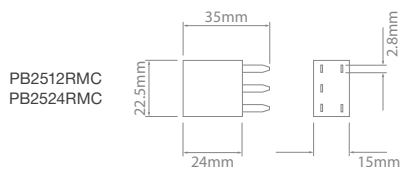
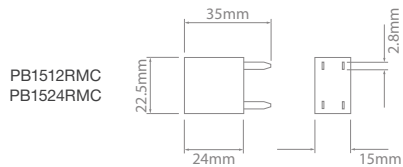
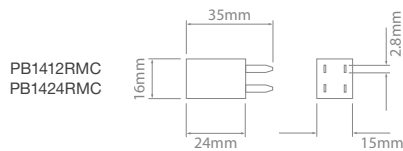
## Micro – Accessories

Part No.	Description	Cable Size (mm <sup>2</sup> )	Pack Qty
47002	Micro relay base. Interlocking base with mounting bracket	—	1
47002/100	Micro relay base. Interlocking base with mounting bracket	—	100
47102/10	Micro relay base kit. Interlocking base with mounting bracket Kit contents: 10 x Bases (47002), 20 x AMP™ Terminals (42282-2), 30 x AMP™ Terminals (281197-2)	0.8 – 2.0	10
47003	Micro relay base	—	1
47103/10	Micro relay base kit Kit contents: 10 x Bases (47003), 20 x AMP™ Terminals (42282-2), 30 x AMP™ Terminals (281197-2)	0.8 – 2.0	10
42282-2	AMP™ Terminal – 6.3mm	0.8 – 2.0	100
281197-2	AMP™ Terminal – 4.8mm	1 – 2.5	100

- Resistor protected.
- N/O or C/O contact configurations.
- 12V or 24V models available.
- Full range of accessories available.
- Broad operating temperature.

Protection :  
 Contacts :  
 Body :  
 Approvals :  
 Operating Temperature :

Resistor  
 Silver Alloy  
 Polymer  
 RoHs  
 -40°C to 125°C

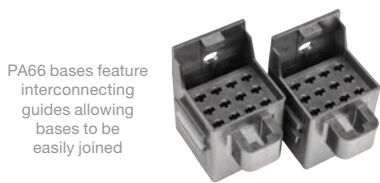


## Micro – 280 Series

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Fig
<b>PB1412RMC</b>	12	20	N/O	4	1
<b>PB1424RMC</b>	24	10	N/O	4	1
<b>PB1512RMC</b> <span style="color: red; font-weight: bold;">NEW</span>	12	20	N/O	4	1
<b>PB1524RMC</b> <span style="color: red; font-weight: bold;">NEW</span>	24	15	N/O	4	1
<b>PB2512RMC</b>	12	20	C/O	5	2
<b>PB2524RMC</b>	24	10	C/O	5	2



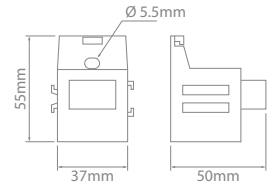
# Relays & Solenoids



PA66 bases feature interconnecting guides allowing bases to be easily joined



Watertight seal included in the FH602 & FH603 kits



Watch video



Watch a hands-on video showcasing the holders and kit combinations. See more product videos on the ionnic YouTube channel.

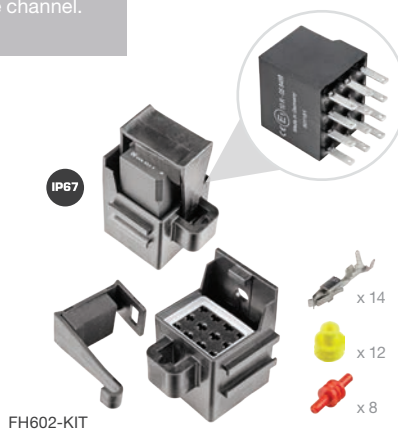
Shown with a Microplex CAN Controller mounted securely. For more info on IONNIC's Microplex CAN Controllers visit [ionnic.com](http://ionnic.com) or contact your nearest reseller.

Shown with 2 x micro 280 series relays mounted securely

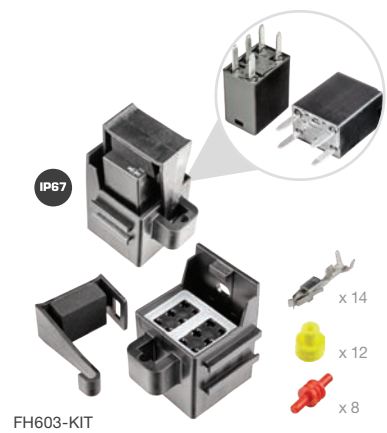


Shown with fuses, circuit breaker and 280 Series relay

FH601-KIT



FH602-KIT



FH603-KIT

## Micro – 280 Series – Fuse & Relay Holder Kits NEW

### FH601-KIT



- 1 x Mounting Base
- 14 x Terminals (929939-3)
- 12 x Wire Seal (281934-2)

### FH602-KIT



- 1 x Mounting Base
- 1 x Seal
- 1 x Locking Bracket
- 14 x Terminals (929939-3)
- 12 x Wire Seal (281934-2)
- 8 x Cavity Plug (WS1008)

### FH603-KIT



- 1 x Mounting Base
- 1 x Seal – Twin
- 1 x Locking Bracket
- 14 x Terminals (929939-3)
- 12 x Wire Seal (281934-2)
- 8 x Cavity Plug (WS1008)

Melting temperature: 260°C



927779-3



929939-3



WS1009



WS1007



5021SY



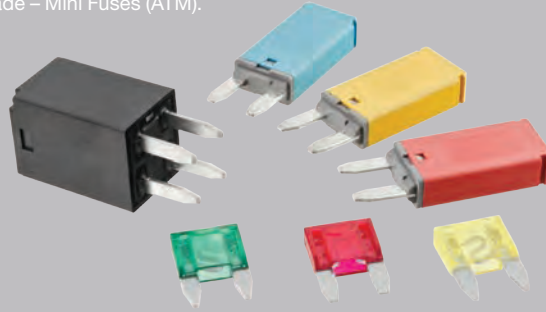
WS1008

## Micro – 280 Series – Fuse & Relay Holder Accessories NEW

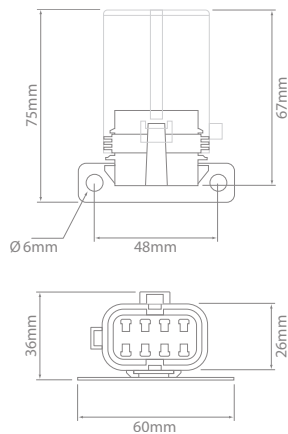
Part No.	Description	Blade Size (mm)	Wire Size (mm <sup>2</sup> )	Cable O.D. Range (mm)	Pack Qty
927779-3/100	Terminal	2.8	0.5 – 1.0	1.4 – 2.3	100
929939-3/100	Terminal	2.8	0.5 – 1.0	1.4 – 3.4	100
WS1009/100	Wire Seal – Ø 5.2mm. <span style="color: blue;">Blue</span>			1.2 – 1.7	100
WS1007/100	Wire Seal – Ø 5.2mm. <span style="color: red;">Red</span>			2.2 – 2.85	100
5021SY/100	Wire Seal – Ø 5.7mm. <span style="color: yellow;">Yellow</span>			1.7 – 2.4	100
WS1008/100	Cavity Plug – Ø 5.2mm. <span style="color: red;">Burgundy</span>			–	100

## Mini Electrical Centre is compatible with:

- IONNIC Micro 280 Series Relays.
- Bussmann Mini (ATM) Blade Circuit Breakers.
- Blade – Mini Fuses (ATM).



For more info on IONNIC's circuit breakers & fuses visit [ionnic.com](http://ionnic.com) or contact your nearest reseller.



FH09



Shown with various relay and fuses fitted



P-12077411/100



P-15324982/100



P-12129493/100



P-15324980/100



P-12010300/100

## Micro – 280 Series – Mini Electrical Centre Kit

Part No.	Description	Colour	Cable Size (mm <sup>2</sup> )	Pack Qty
<b>FH09</b>	<b>Mini Electrical Centre kit</b>	—	0.8 – 1	1
Kit contents: 1 x Base & Cover, 8 x Terminals (12077411), 8 x Wire Seals (15324982)				
<b>P-12077411/100</b>	Terminal – 2.8mm	—	0.8 – 1	100
<b>P-15324982/100</b>	Wire Seal	Green	0.8 – 1	100
<b>P-12129493/100</b>	Terminal – 2.8mm	—	1 – 2	100
<b>P-15324980/100</b>	Wire Seal	Grey	1 – 2	100
<b>P-12010300/100</b>	Cavity Plug	Green	—	100

Terminal and Seals are products of Packard™.



# Relays & Solenoids

Solid State



- Solid state reliability.
- Multi-voltage.
- Fast switching speed.
- Silent operation.
- No moving parts.
- Replacement to mechanical relays.
- SY4086 high current model.

12V  
24V

Voltage :

12-24V

Body :

Polymer

Ingress Protection :

PE Series

IP5K4

## Solid State Relays



No moving parts, no contacts

Solid state relays have no moving parts, eliminating failures normally associated with conventional mechanical switching relays.

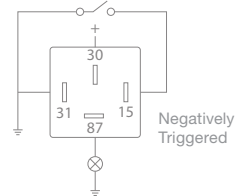
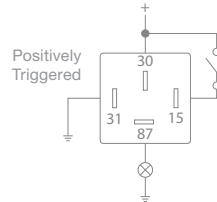
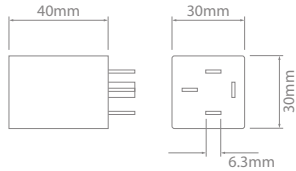
Rated up to 100A, solid state relays provide faster switching time, improved reliability and the convenience of 12-24V operation.



IP5K4



PE Series

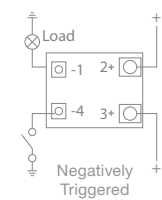
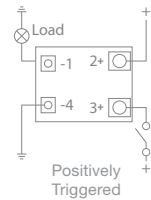
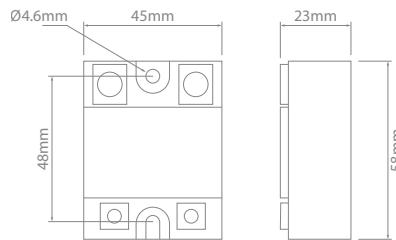


RoHS



LED indicator

SY4086



## Solid State

Part No.	Voltage	Switching	Current Rating (A)		Supply Current (mA)	
			Continuous	Max. Surge@10ms	Off State	On State
PE14-10P	12-24	Positive	10	35	0.5	5
PE14-25P	12-24	Positive	25	100	0.5	5
PE14-10N	12-24	Negative	10	35	0.5	5
PE14-25N	12-24	Negative	25	100	0.5	5
SY4086	12-24	Positive/Negative	100	260	0.1	28

For accessories see page 159.

# Relays & Solenoids

Mini

- Weatherproof Mini relays are environmentally sealed – IP67.
- Most models resistor protected.
- Full range of accessories available, found on page 152 & 163.
- Models available with mounting bracket.



Contacts : Silver Alloy  
 Body : Polymer  
 Operating Temperature : -40°C to 125°C



P1424R



P1524



P2512R



P3512R

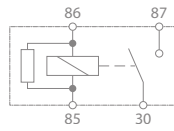
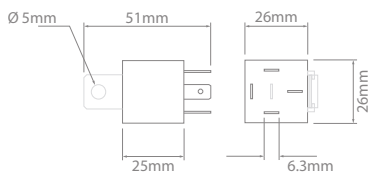


Fig 1

4 Terminal –  
Normally Open (N/O)

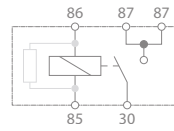


Fig 2

5 Terminal –  
Normally Open (N/O)

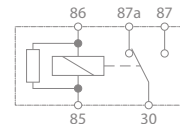


Fig 3

5 Terminal –  
Change Over (C/O)

## Mini – General

Part No.	Pack Qty – 200	Voltage	Current Rating (A)	Contact Type	Terminals	Mounting Bracket	Fig
<b>P1424R</b>	<b>P1424R/200</b>	24	40	N/O	4	Removable	1
<b>P1512R</b>	<b>P1512R/200</b>	12	40	N/O	5	Removable	2
<b>P1524*</b>	<b>P1524/200*</b>	24	20	N/O	5	Removable	2
<b>P2512R</b>	<b>P2512R/200</b>	12	40/30	C/O	5	Removable	3
<b>P2524R</b>	<b>P2524R/200</b>	24	40/30	C/O	5	Removable	3
<b>P3512R</b>	–	12	40/30	C/O	5	–	3

For accessories see page 152 & 163.

\*No resistor.



# Relays & Solenoids



P1512RWP



P1512RWP-KIT

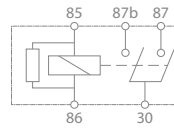
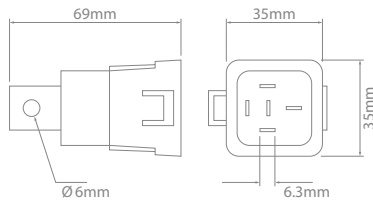


Fig 1

5 Terminal – Normally Open (N/O)

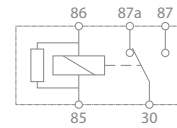


Fig 2

5 Terminal – Change Over (C/O)

## Mini – Weatherproof

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Mounting Bracket	Fig
P1512RWP	12	2 x 30	N/O	5	Removable	1
P1524RWP	24	2 x 10	N/O	5	Removable	1
P2512RWP	12	50/30	C/O	5	Removable	2
P2524RWP	24	20/15	C/O	5	Removable	2
P1512RWP-KIT	12V N/O Weatherproof Relay Kit			Kit contents: 1 x Mini Weatherproof Relay 1 x Base Connector (12065685) 1 x Sealing Blank (114017) 2 x Terminals 1–2mm <sup>2</sup> (12066614L) 3 x Terminals 2–3mm <sup>2</sup> (12033997L)		
P1524RWP-KIT	24V N/O Weatherproof Relay Kit					
P2512RWP-KIT	12V C/O Weatherproof Relay Kit					
P2524RWP-KIT	24V C/O Weatherproof Relay Kit					



## Mini – Weatherproof – Relay Base

Part No.	Pack Qty – 10	Pack Qty – 400	Terminal Type	Cavities	Terminal (6.3mm)
P-12065685	P-12065685/10	P-12065685-BULK	Pull-to-Seat	5	Sockets



P-12066614

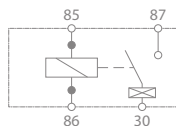


P-12033997

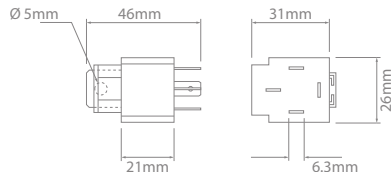
## Mini – Weatherproof – Terminals

Pack Qty – 100	Bulk Pack	Bulk Qty	Terminal Type	Cable Size (mm <sup>2</sup> )
P-12066614/100	P-12066614-BULK	2000	Packard™ Terminal with pull to seat locking tab – 6.3mm	1 – 2
P-12033997/100	P-12033997-BULK	1800	Packard™ Terminal with pull to seat locking tab – 6.3mm	3.0

# Relays & Solenoids



4 Terminal –  
Normally Open (N/O)



P141230

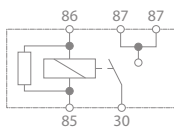


P142415

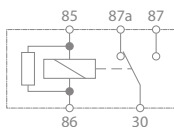
## Mini – Fused

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Mounting Bracket
<b>P141230</b>	12	30	N/O	4	Removable
<b>P142415</b>	24	15	N/O	4	Removable

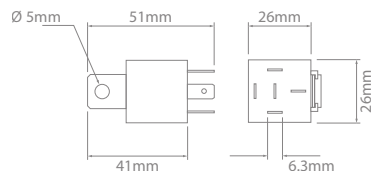
For accessories see page 152 & 163.



**Fig 1**  
5 Terminal –  
Normally Open (N/O)



**Fig 2**  
5 Terminal –  
Change Over (C/O)



PB2512R



PB2524R

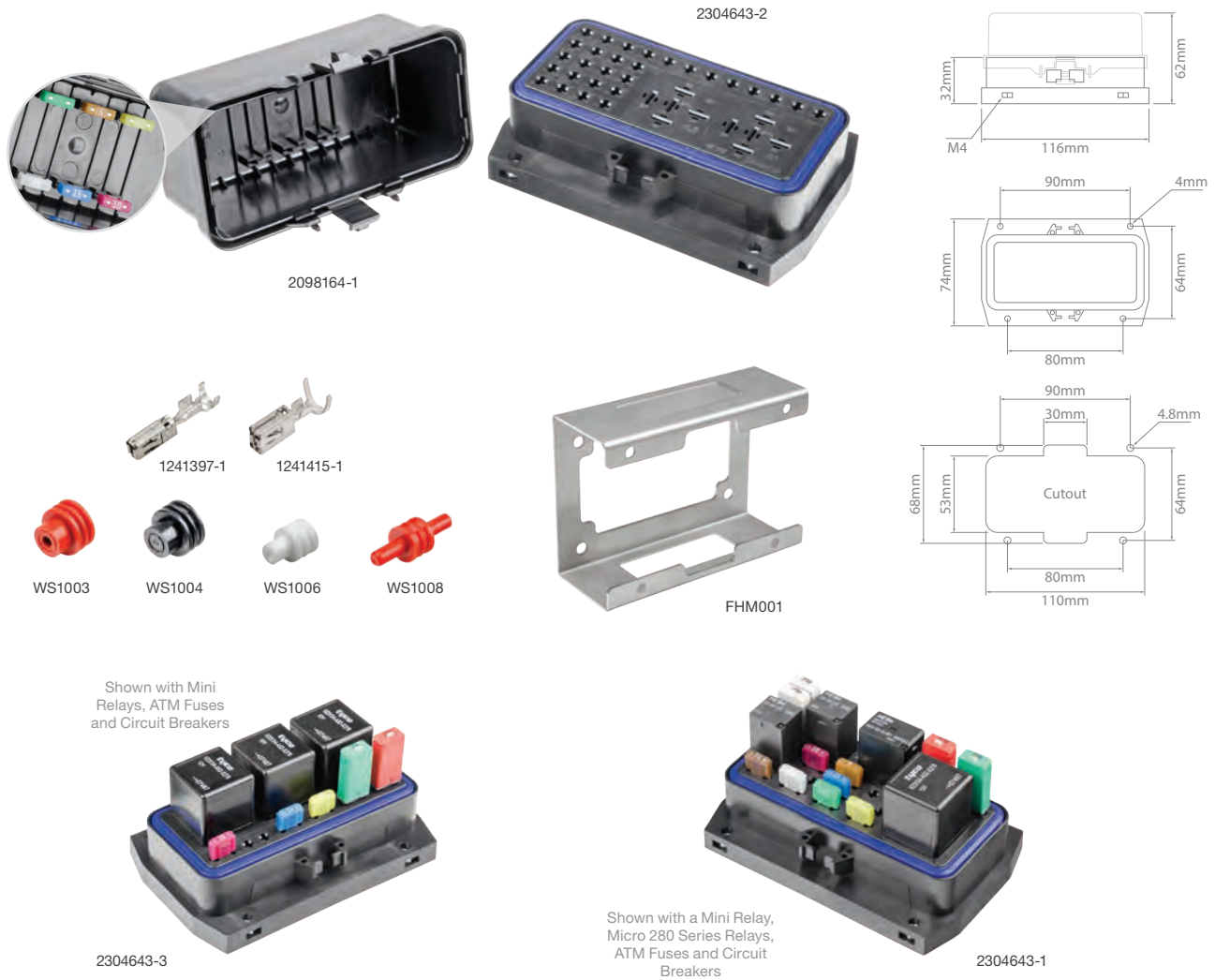
## Mini – PB Series

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Mounting Bracket	Fig
<b>PB1512R</b>	12	30	N/O	5	Removable	1
<b>PB1524R</b>	24	20	N/O	5	Removable	1
<b>PB2512R</b>	12	50/30	C/O	5	Removable	2
<b>PB2524R</b>	24	20/15	C/O	5	Removable	2

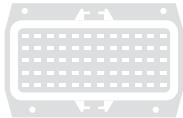
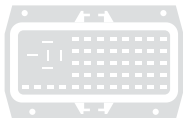
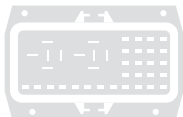

For accessories see page 152 & 163.



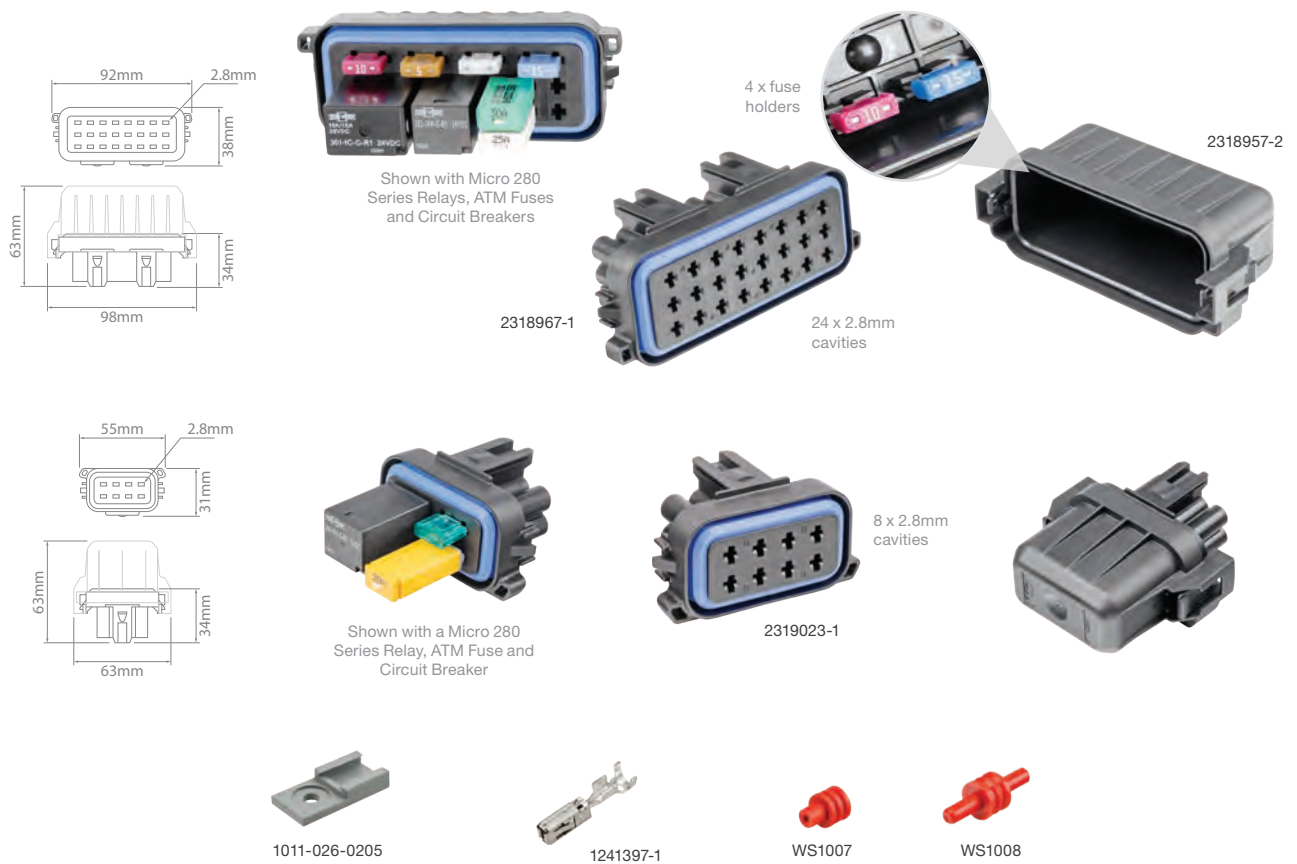
# Relays & Solenoids



## Fuse & Relay Enclosure Kits – 2.8mm & 6.3mm Cavities NEW

Part No.	Cavities		Suits	Kit Contents
FH301	60 x 2.8mm		Micro – 280 Series, Mini	1 x Housing (2304643-4) 1 x Cover (2098164-1) 1 x Mount (FHM001) 60 x Seals (WS1006) 20 x Seals (WS1008) 60 x Terminals (1241397-1)
FH302	49 Total 44 x 2.8mm 5 x 6.3mm		Micro – 280 Series, Mini	1 x Housing (2304643-1) 1 x Cover (2098164-1) 1 x Mount (FHM001) 5 x Seals (WS1003) 1 x Seals (WS1004) 44 x Seals (WS1006) 12 x Seals (WS1008) 44 x Terminals (1241397-1) 5 x Terminals (1241415-1)
FH303	38 Total 28 x 2.8mm 10 x 6.3mm		Micro – 280 Series, Mini	1 x Housing (2304643-2) 1 x Cover (2098164-1) 1 x Mount (FHM001) 10 x Seals (WS1003) 2 x Seals (WS1004) 28 x Seals (WS1006) 10 x Seals (WS1008) 28 x Terminals (1241397-1) 10 x Terminals (1241415-1)
FH304	27 Total 12 x 2.8mm 15 x 6.3mm		Micro – 280 Series, Mini	1 x Housing (2304643-3) 1 x Cover (2098164-1) 1 x Mount (FHM001) 15 x Seals (WS1003) 3 x Seals (WS1004) 22 x Seals (WS1006) 12 x Seals (WS1008) 44 x Terminals (1241397-1) 15 x Terminals (1241415-1)

# Relays & Solenoids



## Fuse & Relay Enclosure Kits – 2.8mm Cavities NEW

Part No.	Cavities	Suits	Kit Contents
<b>FH305</b>	24 x 2.8mm	Micro – 280 Series	1 x Housing (2318967-1) 1 x Cover (2318957-2) 24 x Seals (WS1007) 6 x Cavity Plugs (WS1008) 24 x Terminals (1241397-1) 2 x Mounts (1011-026-0205)
<b>FH306</b>	8 x 2.8mm	Micro – 280 Series	1 x Housing (2319023-1) 1 x Cover (2319021-2) 8 x Seals (WS1007) 2 x Cavity Plugs (WS1008) 8 x Terminals (1241397-1) 1 x Mount (1011-026-0205)

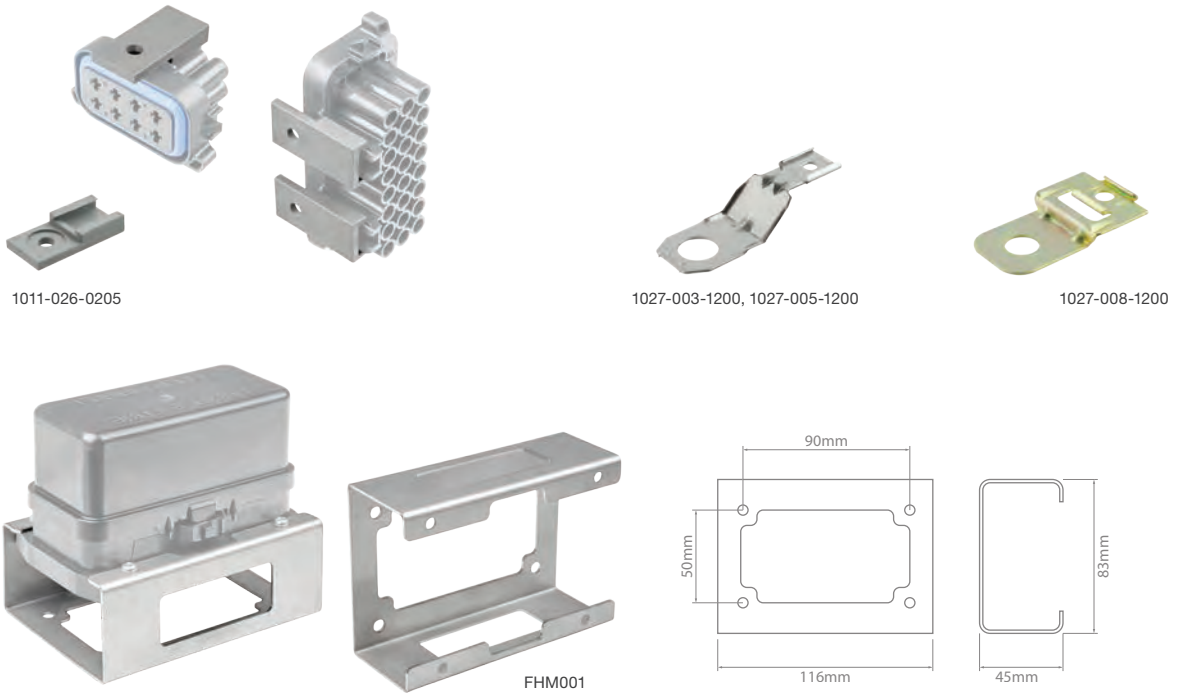


## Fuse & Relay Enclosure Kits – Seals & Cavity Plugs NEW

Pack Qty – 100	Description	Connector Cavity Ø (mm)	Cable O.D. Range (mm)	Colour
<b>P-15324976/100</b>	Wire Seal	5.2	1.6 – 2.5	White
<b>WS1007/100</b>	Wire Seal	5.2	2.2 – 2.85	Red
<b>WS1003/100</b>	Wire Seal	8.5	2.3 – 2.9	Red
<b>WS1008/100</b>	Cavity Plug	5.2	–	Burgundy
<b>WS1004/100</b>	Cavity Plug	8.5	–	Black

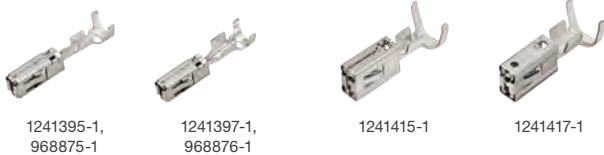


# Relays & Solenoids



## Fuse & Relay Enclosure Kits – Mounts NEW

Part No.	Mounting Hole Ø (mm)	Mounting Direction	Material	Suits
1011-026-0205	5	Straight	Thermoplastic	8 & 24 cavity housings
1027-003-1200	11	Straight	Stainless steel	8 & 24 cavity housings
1027-005-1200	13	Straight	Stainless steel	8 & 24 cavity housings
1027-008-1200	11	Side	Zinc	8 & 24 cavity housings
FHM001	—	—	Stainless steel	60, 49, 38 & 27 cavity housings



## Single Wire Sealing System

Terminals crimp directly to seals



## Terminals – TE MCP – Single Wire Sealing System NEW

Pack Qty – 100	Pack Qty – Reel	Reel Qty	Type	Blade Size (mm)	Wire Size (mm <sup>2</sup> )	Locking Tab
1241395-1/100	1241394-1-BULK	3500	Receptacle	2.8	0.5 – 1.0	Yes
968875-1/100	—	—	Receptacle	2.8	0.5 – 1.0	Yes
1241397-1/100	1241396-1-BULK	3500	Receptacle	2.8	1.0 – 2.5	Yes
968876-1/100	—	—	Receptacle	2.8	1.0 – 2.5	Yes
1241415-1/100	1241414-1-BULK	1500	Receptacle	4.8 & 6.3	1.0 – 2.5	Yes
1241417-1/50	1241416-1-BULK	1500	Receptacle	4.8 & 6.3	2.5 – 4.0	Yes

# Relays & Solenoids

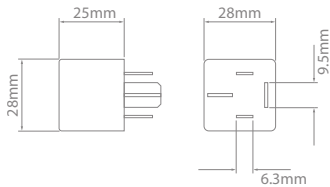
- High current relay with magnetic latched switching.
- Reversed polarity pulse signal to change state.
- Low power consumption – short pulse of energy applied to the coil to change the switching state.
- Single coil with plus potential for set, invert polarity for reset.
- 70A continuous current.
- Broad operating temperature.

**NEW**

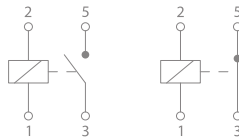


Latching

Voltage : 12V  
 Contact : Silver Alloy  
 Contact Switching Current : 1000mA @ 5V  
 Body : Glass Reinforced Nylon  
 Ingress Protection : IP54  
 Approvals : RoHS  
 Operating Temperature : -40°C to 125°C



4 Terminal – Normally Open (N/O)



## Latching **NEW**

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals
<b>P1412FF</b>	12	70 @ 85°C	N/O	4



## Latching – Relay Base Kit **NEW**

Part No.	Description
<b>47105/1</b>	Relay base kit with mounting bracket

Not a TE product

Kit Contents:  
 1 x Base  
 3 x AMP™ 9.5mm Terminals (280756-4)  
 2 x AMP™ 6.3mm Terminals (42282-2)



# Relays & Solenoids

Timer



- Programmable time periods.
- Compact design.
- 10A switching current on most units.

Protection : Resistor  
Body : Polymer

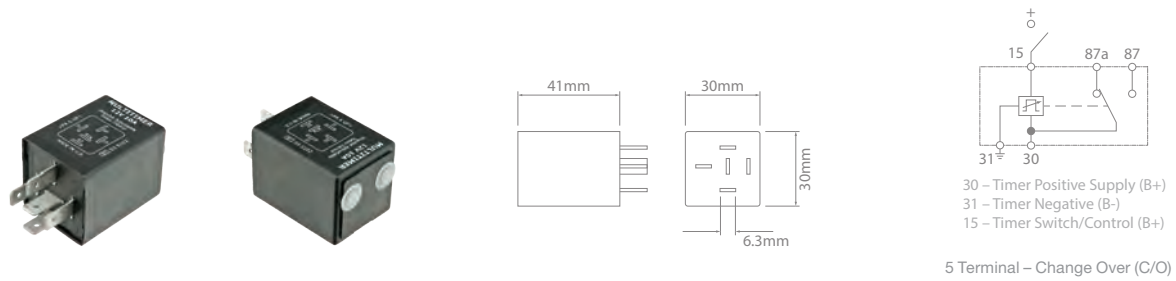
### Adjustable Timer

Delay Type

0:	OFF = 0.5 sec	- 10 sec
1:	OFF = 5 sec	- 60 sec
2:	OFF = 30 sec	- 10 min
3:	OFF = 5 min	- 60 min
4:	OFF = 30 min	- 6 hrs
5:	ON = 30 min	- 6 hrs
6:	ON = 5 min	- 60 min
7:	ON = 30 sec	- 10 min
8:	ON = 5 sec	- 60 sec
9:	ON = 0.5 sec	- 10 sec

Delay ON: [Red bar] - [Adjustable Time] - [Activation (+)]

Delay OFF: [Red bar] - [Adjustable Time] - [Activation (+)]




## Timer – Adjustable


Part No.	Function	Voltage	Current Rating (A)	Time Delay
<b>PT40-205</b>	Delayed turn OFF or Delayed turn ON	12	10	0.5 sec to 6 hrs
<b>PT40-405</b>	Delayed turn OFF or Delayed turn ON	24	10	0.5 sec to 6 hrs

For accessories see page 136.

## Multifunction




Red LED indicates when relay is energised






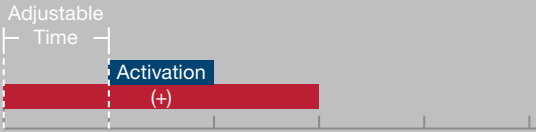

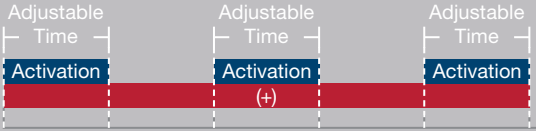
Increase Time

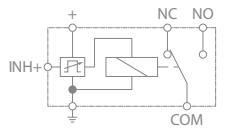
Decrease Time



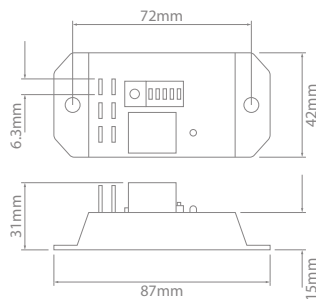
**Switch**

1: OFF = Delay ON	ON = Instant ON – Delay OFF
2: OFF = Once only	ON = Cycle ON–OFF–ON–etc
3: OFF = Seconds	ON = Minutes
4: OFF = 1–30 Time	ON = 2–60 Time
5: OFF = 24V	ON = 12V

	<p>Temporary activation at Turn ON</p> 
	<p>Delayed Activation at Turn On</p> 
	<p>Cycle activation at Turn ON</p> 



6 Terminal – Change Over (C/O)



## Timer – Multifunction

Part No.	Function	Voltage	Max. Current Rating (A)	Time Delay
<b>TIM01</b>	Multi	12–24	3 @ 12V	1 sec to 60 min

Protected microprocessor timer control circuit.  
Incorporates timer reset terminal.



# Relays & Solenoids

## Delay On/Off

Increase Time

Decrease Time

Switch 1:  
Specifies when timer activates

Switch 2:  
ON: Minutes  
OFF: Seconds

**TIM05**

Temporary activation at Turn ON

**TIM06**

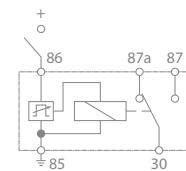
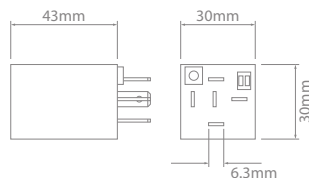
Delayed Activation at Turn On

Delayed Off

Temporary activation at Turn OFF



- 12V  
24V
- 2Yrs
- 

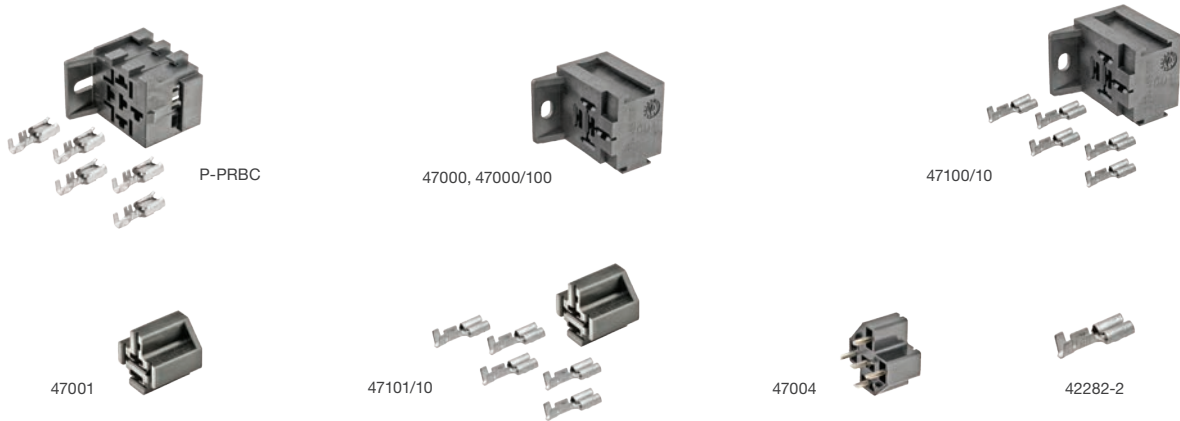


5 Terminal – Change Over (C/O)

## Timer – Delayed On/Off

Part No.	Function	Voltage	Max. Current Rating (A)	Time Delay
<b>TIM05</b>	Delayed turn Off	12–24	10 @ 12V	1 sec to 60 min
<b>TIM06</b>	Delayed turn On	12–24	10 @ 12V	1 sec to 60 min

Protected microprocessor timer control circuit.  
2-year warranty.



## Solid State, Mini & Timer – Accessories

Part No.	Description	Cable Size (mm <sup>2</sup> )	Pack Qty
<b>P-PRBC</b>	Mini relay base kit. Interlocking base with mounting bracket Kit contents: 1 x Packard™ Base (12033871), 5 x Packard™ Terminals (12015870)	1 – 2	1
<b>47000</b>	Mini relay base. Interlocking base with mounting bracket	—	1
<b>47000/100</b>	Mini relay base. Interlocking base with mounting bracket	—	100
<b>47100/10</b>	Mini relay base kit. Interlocking base with mounting bracket Kit contents: 10 x Bases (47000), 50 x AMP™ Terminals (42282-2)	0.8 – 2.0	10
<b>47001</b>	Mini relay base	—	1
<b>47101/10</b>	Mini relay base kit Kit contents: 10 x Bases (47001), 50 x AMP™ Terminals (42282-2)	0.8 – 2.0	10
<b>47004</b>	Mini relay base. For mounting to PCBs'	—	—
<b>42282-2</b>	AMP™ Terminal – 6.3mm	0.8 – 2.0	100



# Relays & Solenoids

High Current

P141275HD



P141270



PB1412RHD

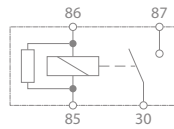


PR12V200

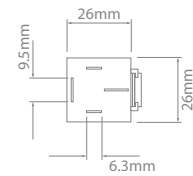
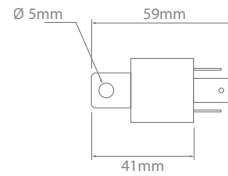
- High current power relays.
- Models available up to 200A.
- Various mounting styles.
- Most models resistor protected.

Contacts :  
 Body :  
 Mount :  
 Operating Temperature :

Silver Alloy  
 Polymer  
 Stainless Steel  
 -40°C to 85°C



4 Terminal – Normally Open (N/O)



## High Current – Mini – PB Series

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Mounting Bracket
PB1412RHD	12	70	N/O	4	Removable
PB1424RHD	24	25	N/O	4	Removable

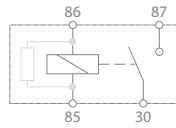
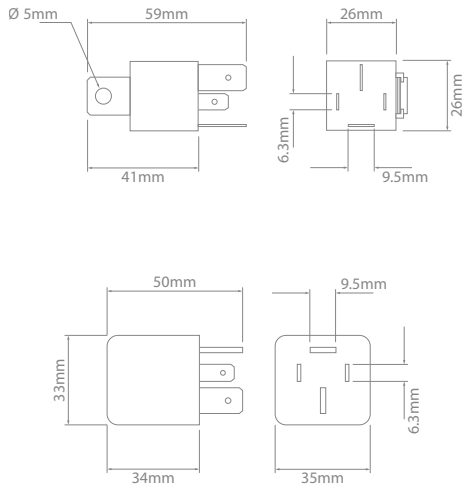


## High Current – Mini & PB Series – Relay Base Kit

Part No.	Description
47105/1	Relay base kit with mounting bracket

Kit contents:  
 1 x Base  
 3 x AMP™ 9.5mm Terminals (280756-4)  
 2 x AMP™ 6.3mm Terminals (42282-2)

# Relays & Solenoids



4 Terminal – Normally Open (N/O)

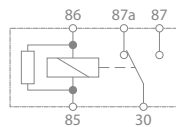
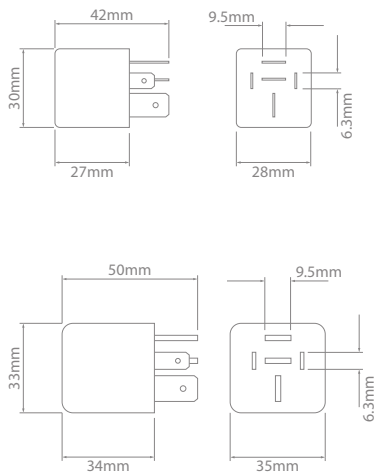


P141270

Fig 1



P142450



5 Terminal – Change Over (C/O)



P252450

Fig 2



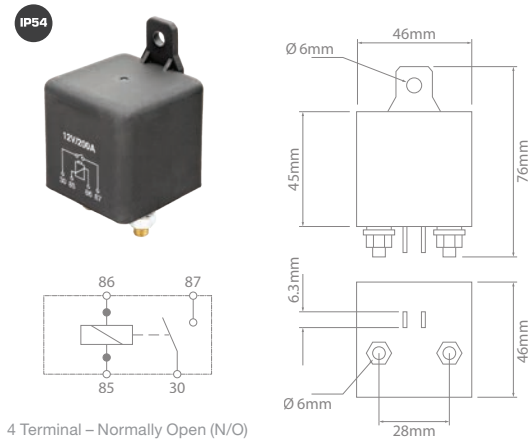
P251270

## High Current – Mini

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Protection	Mounting Bracket	Fig
<b>P141270</b>	12	70	N/O	4	—	Removable	1
<b>P142450</b>	24	50	N/O	4	Resistor	—	1
<b>P251270</b>	12	70/60	C/O	5	Resistor	—	2
<b>P252450</b>	24	60/50	C/O	5	Resistor	—	2

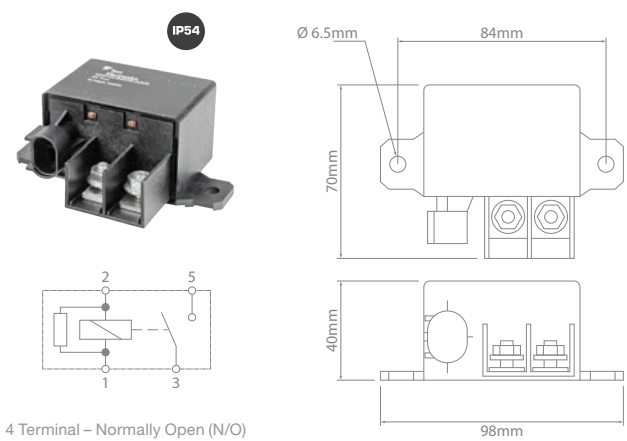


# Relays & Solenoids



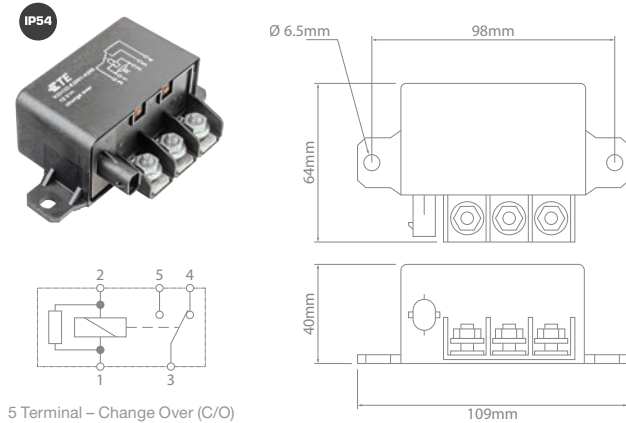
4 Terminal – Normally Open (N/O)

PR12V200, PR24V100



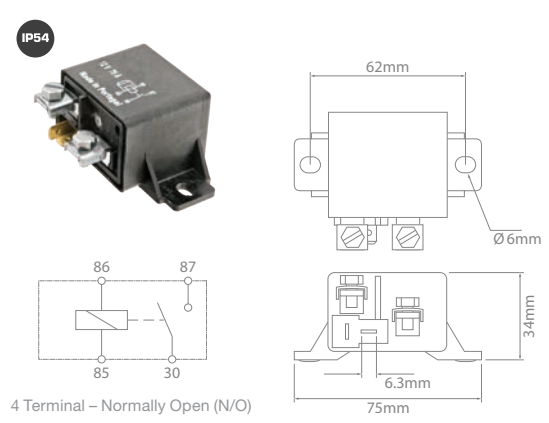
4 Terminal – Normally Open (N/O)

P1412150HD, P1424150HD



5 Terminal – Change Over (C/O)

P2512150HD



4 Terminal – Normally Open (N/O)

P141275HD

## High Current

Part No.	Voltage	Current Rating (A)	Contact Type	Terminals	Mounting Bracket	Connector Kit
<b>PR12V200</b>	12	200	N/O	4	Fixed	
<b>PR24V100</b>	24	100	N/O	4	Fixed	
<b>P1412150HD</b>	12	130	N/O	4	Fixed	50126
<b>P1424150HD</b>	24	130	N/O	4	Fixed	50126
<b>P2512150HD</b>	12	130	C/O	5	Fixed	1670916-KIT
<b>P141275HD</b>	12	75	N/O	4	Fixed	

# Relays & Solenoids



50126



1670916-KIT

## High Current – Accessories

Part No.	Description	Suits
50126	Connector Kit	P1412150HD, P1424150HD
1670916-KIT	Connector Kit	P2512150HD



RB-01



RB-02



RB-L

### Modular Relay Base for Mini & High Current Mini Relays

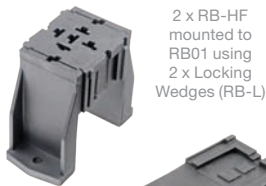
The modular design allows the user to construct a relay configuration to suit their own needs. Easy to use Locking Wedges securely connect each component together.

Push individual components together (relay base or mount)

Locking Wedges securely hold each component together

Insert Locking Wedge (RB-L)

Unlimited configurations



2 x RB-HF mounted to RB01 using 2 x Locking Wedges (RB-L)



RB-HF



2 x RB-LF mounted to RB02 using 2 x Locking Wedges (RB-L)



RB-LF



RB-S mounted to RB02



RB-S



42282-2/100



281197-2/100

## Modular Relay Base NEW

Part No.	Description	Suits	Terminal Size (mm)
RB-01	Thermoplastic Relay Base	Mini Relays	6.3
RB-02	Thermoplastic Relay Base	High Current Mini Relays	6.3 & 9.5
RB-L	Locking Wedge		
RB-HF	Mounting Bracket – Surface – High Profile. 5mm mounting hole		
RB-LF	Mounting Bracket – Through Panel – Low Profile. 5mm mounting hole		
RB-S	Mounting Bracket – Side – Surface. 5mm mounting hole		
42282-2/100	AMP™ Terminal – 6.3mm. Cable Size – 0.8–2.0mm <sup>2</sup> . Pack of 100.		
280756-4/100	AMP™ Terminal – 9.5mm. Cable Size – 3.3–5.3mm <sup>2</sup> . Pack of 100.		



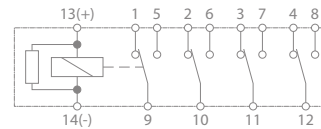
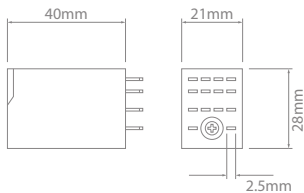
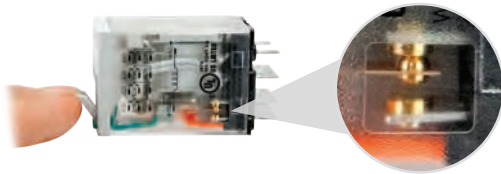
# Relays & Solenoids

Specials



- Flag indicator shows relay status in manual or powered condition.
- Bipolar LED status lamp allows for reverse polarity applications – ideal in low light conditions.
- Colour-coded push button with lock-up door – allows for manual operation of relay without the need for coil power.
- White polymer ID tag for labelling in multi relay circuits.

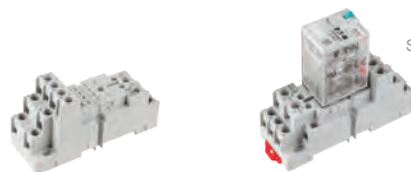
Protection : Resistor  
 Contacts : Silver Alloy  
 Body : Polymer  
 Ingress Protection : IP40  
 Operating Temperature : -40°C to 55°C  
 Approvals : UL, CSA, CE, RoHS



14 Terminal – Change Over (C/O)

## Specials – 4 Pole Change Over

Part No.	Coil Voltage	Current Rating per Contact (A)	Contact Type	Terminals
P4512	12	4	C/O	14
P4524	24	4	C/O	14



Shown with P4512 mounted

## Specials – Relay Base

Part No.	Description	Current Rating (A)	Terminal	No. of Poles	Receptacle
47006	Relay base	7	M3 Screw	4	14 Blade



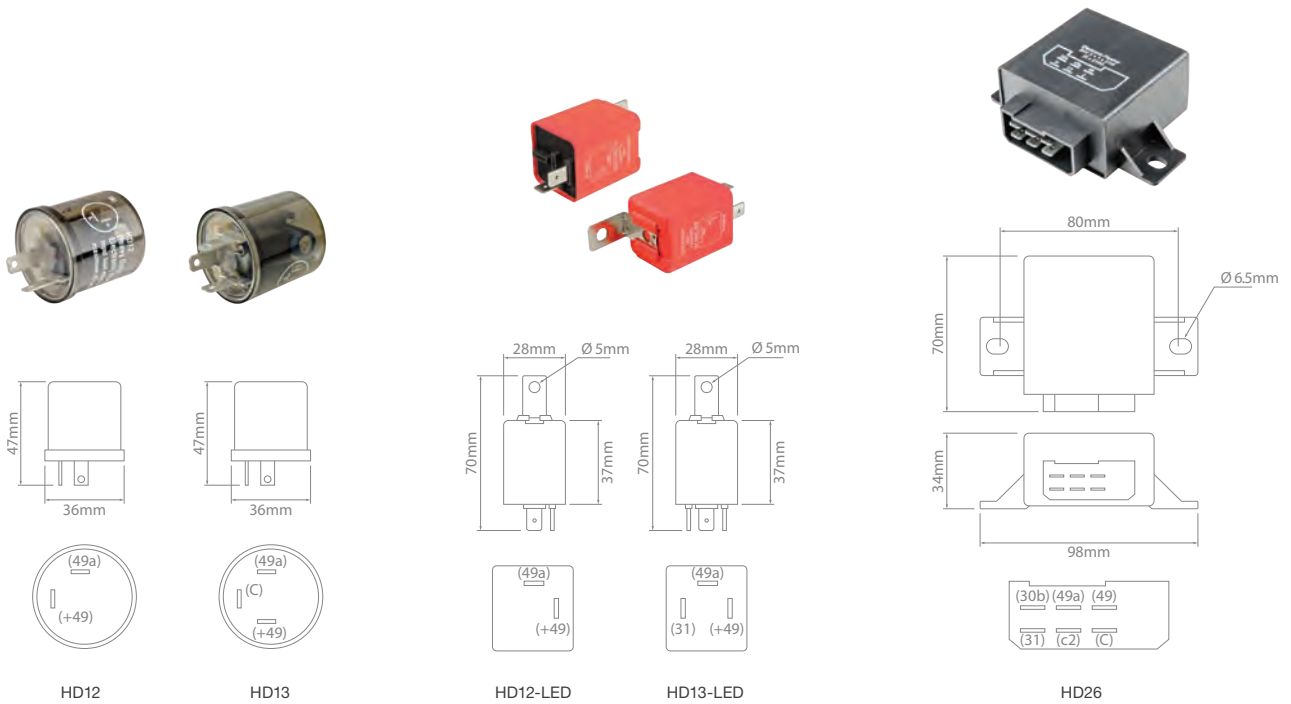
# Relays & Solenoids

- Suitable for indicators & hazard lights.
- Suitable for LED & incandescent applications.
- Flash rate is not influenced by load variation.



Terminals :

Blade 6.3mm



## Flasher Units

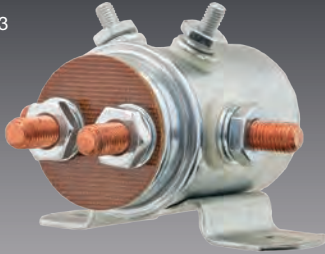
Part No.	Voltage	No. of Terminals	Side Repeater Lamps	Indicator Lamps	Max. Load (W)	Bulb Failure Indicator
<b>HD12</b>	12	2	—	1 to 6 x 25W	210	No
<b>HD13</b>	12	3	—	1 to 10 x 21W	210	Yes
<b>HD12-LED</b>	12	2	1 x 5W	1 x 21W & 1 LED Cluster	30	Yes
<b>HD13-LED</b>	12	3	1 x 5W	1 x 21W & 1 LED Cluster	30	Yes
<b>HD26</b>	24	6	—	4 x 21W & 2 x 21W	170	Yes



# Relays & Solenoids

Solenoids

15-323

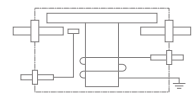
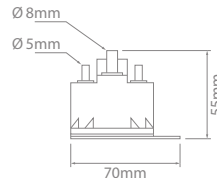
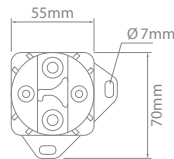


24063-08



15-3F

- Range of normally open & change over style contacts.
- Integrated mounting brackets.
- 12 & 24 volt models available.
- PVC dipped marine model available.

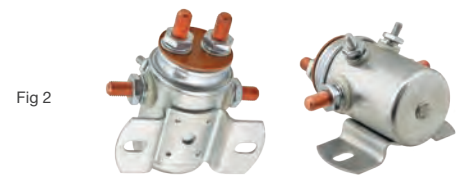
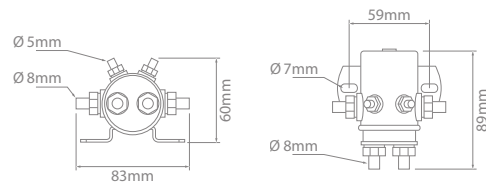
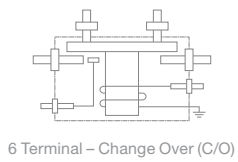
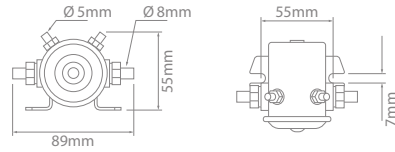
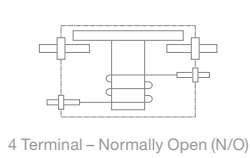


4 Terminal – Normally Open  
Includes Auxiliary Output (N/O)

## Solenoids – Intermittent Duty

Part No.	Voltage	Current Rating (A)	Contact Type
15-3F	12	200	N/O

# Relays & Solenoids



## Solenoids – Continuous Duty

Part No.	Voltage	Current Rating (A)	Contact Type	Fig	Note
<b>24063-08</b>	24	65	N/O	1	PVC dipped. ISO 8846 Marine
<b>ST85</b>	12	80	N/O	1	
<b>ST88</b>	24	80	N/O	1	
<b>15-132</b>	12	100	N/O	1	
<b>15-269</b>	24	100	N/O	1	
<b>15-133</b>	12	200	N/O	1	
<b>15-141</b>	24	200	N/O	1	
<b>15-323</b>	12	100/100	C/O	2	
<b>15-326</b>	24	100/100	C/O	2	



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# Miscellanaries



# Miscellanies



LED Pilot Lamps 170



Vandal Resistant 172



Push Button 174



Push Button – Hi-Lux 175



Ignition 176



General 179



Pendant 180



Side Mount Level Switch 182



Tilt Switch 183



Pressure 184



- LED illumination.
- Vandal Resistant model available with ring and centre style illumination.
- Epoxy filled electronics for enhanced moisture & vibration protection.
- Reverse polarity protected.
- Flashing models available in Dome series.
- Dome models environmentally sealed – IP67.
- Variety of colours.

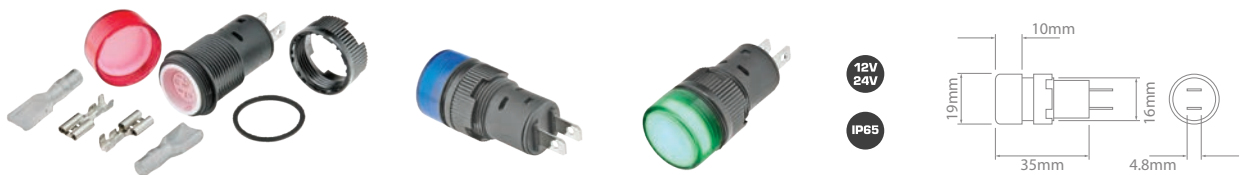
Body :	Vandal Resistant	Polymer
Light Source :		Stainless Steel
Ingress Protection :		LED
Operating Temperature :	Dome	IP65 (face only)
Approvals :	Vandal Resistant	IP67
		-24°C to 50°C
		CE, RoHS



## LED Pilot Lamps – Wide View – Dome

Voltage	Size (mm)	Max. Panel Thickness (mm)	Type	Red	Green	Amber	Blue
12-24	17	29	Continuous	<b>PL109</b>	<b>PL110</b>	<b>PL111</b>	<b>PL112</b>
12-24	17	29	Flashing	<b>PL393</b>	<b>PL403</b>	<b>PL394</b>	—

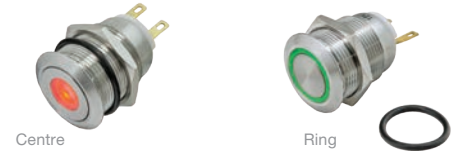
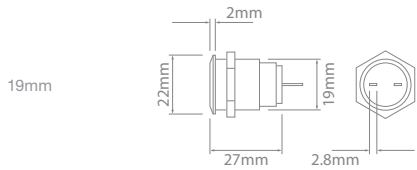
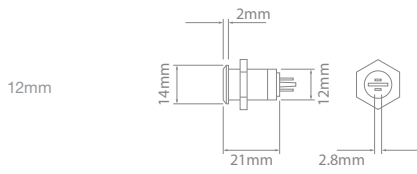
LR01 Load resistor maybe required when used as an alternator warning light.



## LED Pilot Lamps – Wide View

Voltage	Size (mm)	Max. Panel Thickness (mm)	Red	Green	Amber	Blue	White
12-24	16	9	<b>BA16DS-RED</b>	<b>BA16DS-GRN</b>	<b>BA16DS-AMB</b>	<b>BA16DS-BLU</b>	<b>BA16DS-WHT</b>

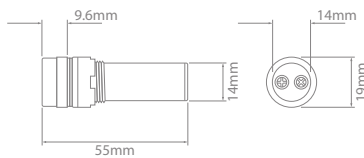
LR01 Load resistor maybe required when used as an alternator warning light.



## LED Pilot Lamps – Vandal Resistant

Voltage	Size (mm)	Max. Panel Thickness (mm)	Red		Green		Amber		Blue	
			Ring	Centre	Ring	Centre	Ring	Centre	Ring	Centre
12-24	12	7	—	<b>P12-CR</b>	—	<b>P12-CG</b>	—	<b>P12-CA</b>	—	—
12-24	19	7	<b>P19-RR</b>	<b>P19-CR</b>	<b>P19-RG</b>	<b>P19-CG</b>	<b>P19-RA</b>	<b>P19-CA</b>	<b>P19-RB</b>	<b>P19-CB</b>

LR01 Load resistor maybe required when used as an alternator warning light.



## LED Pilot Lamp – Buzzer NEW

Voltage	Size (mm)	Max. Panel Thickness (mm)	Red	Sound Level (dB)
12-24	16	11	<b>BA16RB</b>	80



## LED Pilot Lamps – Load Resistor

Part No.	Description
<b>LR01</b>	Pre-wired 5W load resistor



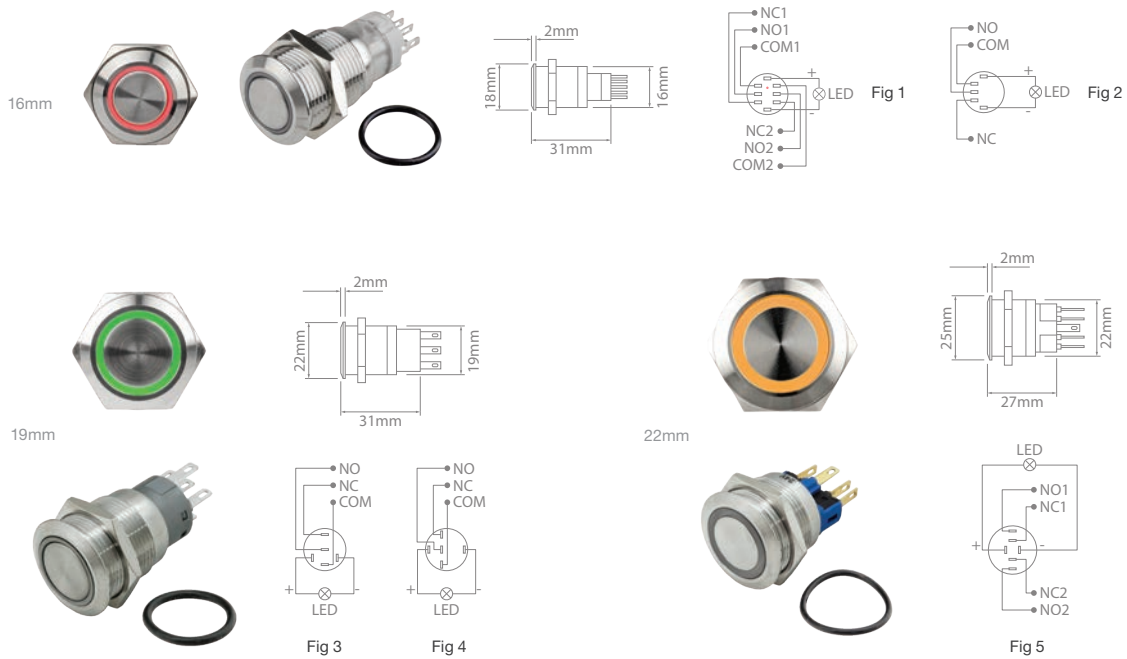
# Miscellanies

Vandal Resistant



- Vandal resistant momentary or latching switches.
- Black anodised stainless steel models available.
- Laser etching available for anodised models.
- LED illumination.
- Highly impact resistant.
- Variety of illumination colours available
- Environmentally sealed – IP65 (face only).

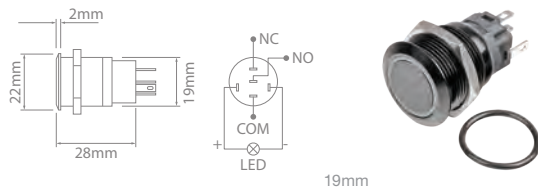
Current Rating : High Current 2A / 20A  
 Contacts : Silver Alloy  
 Body : Stainless Steel  
 Ingress Protection : IP65 (face only)  
 Approvals : CE, RoHS



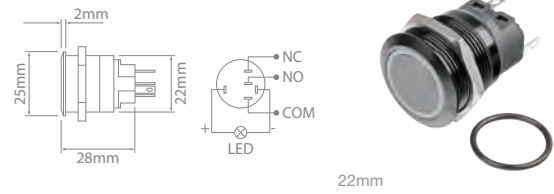
## Vandal Resistant Switches

Size (mm)	Voltage	Max. Panel Thickness (mm)	Function	Contact Type	Fig	Illumination			
						Red	Green	Amber	Blue
16	12–24	10	Momentary	N/O & N/C*	1	<b>L16-RR-DC</b>	–	–	–
16	12–24	10	Momentary	N/O & N/C	2	<b>L16-RR</b>	<b>L16-RG</b>	<b>L16-RA</b>	<b>L16-RB</b>
19	12–24	10	Momentary	N/O & N/C	3	<b>L19-RR</b>	<b>L19-RG</b>	<b>L19-RA</b>	<b>L19-RB</b>
19	12–24	10	Momentary	N/O & N/C	4	<b>L19TF-RR</b>	–	–	<b>L19TF-RB</b>
19	12–24	10	Latching	N/O & N/C	4	–	–	–	<b>L19TF-RB-L</b>
22	12–24	8	Momentary	N/O & N/C*	5	<b>L22-RR</b>	–	<b>L22-RA</b>	<b>L22-RB</b>

\*Double Pole.



19mm



22mm

## Laser Etching for Anodised Switches

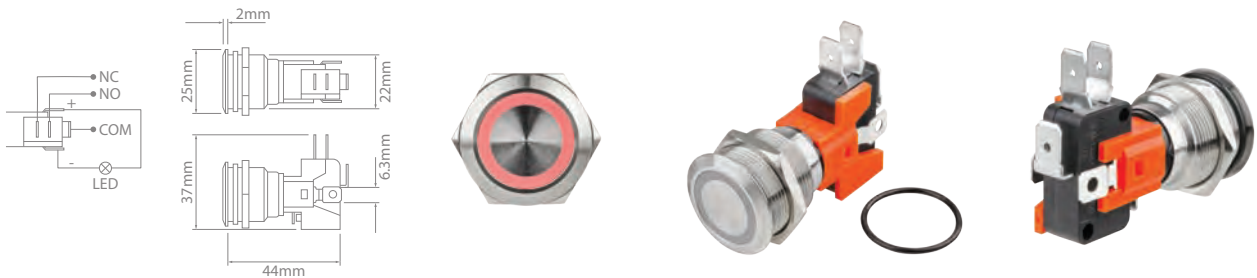


For further information ask your local reseller or enquire online at [ionnic.com](http://ionnic.com)



## Vandal Resistant Switches – Anodised NEW

Size (mm)	Voltage	Max. Panel Thickness (mm)	Contact Type	Blue Illumination	
				Momentary	Latching
19	12–24	10	N/O & N/C	<a href="#">L19TAF-RB</a>	<a href="#">L19TAF-RB-L</a>
22	12–24	10	N/O & N/C	<a href="#">L22TAF-RB</a>	<a href="#">L22TAF-RB-L</a>



## Vandal Resistant Switches – High Current

Size (mm)	Max. Panel Thickness (mm)	Function	Contact Type	Red Illumination	
				12V	24V
22	13	Latching	N/O & N/C	<a href="#">L22HD-RL12V</a>	<a href="#">L22HD-RL24V</a>
22	13	Momentary	N/O & N/C	<a href="#">L22HD-RM12V</a>	<a href="#">L22HD-RM24V</a>



## Vandal Resistant Switches – Accessory

Part No.	Description	Suits
<b>L16-PLUG</b>	Push on plug with 15cm fly lead	16mm



# Miscellanies

## Push Button



90030



C936



C936/K

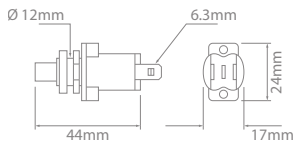
- Heavy & standard duty models available.
- Multi-voltage.
- Blade and screw terminal types available.
- Protective boot on 90030 model.

12V  
24V

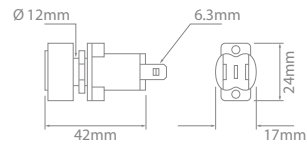
Voltage :  
Circuitry :  
Contacts :

12-24V  
SPST  
Silver Alloy  
Polymer  
Die-cast

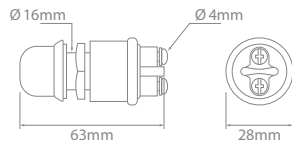
90030



C936



C936/K



90030

### Push Button

Part No.	Current Rating (A) @ 12V	Contact Type	Action	Max. Panel Thickness (mm)	Terminal Type
<b>C936</b>	10	N/O	Off - Mom.On	5	Blade
<b>C936/K</b>	10	N/O	Off - Mom.On	5	Blade
<b>90030</b>	35	N/O	Off - Mom.On	8	Screw

- Suits 2016 on (N80 models) Toyota Hi-Lux switch cut-outs.
- Connector supplied.
- LED Function & Location illumination.

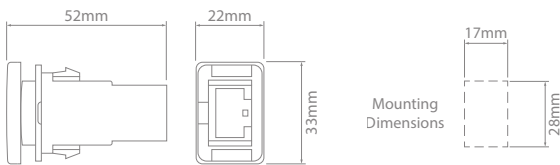


RHL163-19



RHL163-00

Voltage : 12V  
 Current Rating : 3A  
 Actuation : Single Pole  
 Illumination : Blue



RHL163-19



RHL163-09

## Hi-Lux Series – Normally Open Contact

Action	Wiring Diagram	Illumination	Symbol	Text	Part No.
		Blue	—	—	<b>RHL163-00</b>
		Blue		DRIVING LIGHT	<b>RHL163-09</b>
OFF ON		Blue		BEACON	<b>RHL163-19</b>
		Blue		WORK LAMP	<b>RHL163-22</b>
		Blue		LIGHTBAR	<b>RHL163-79</b>
OFF Mom.ON		Blue		BATTERY LINK	<b>RHL168-78</b>



# Miscellanies

Ignition



6V  
36V

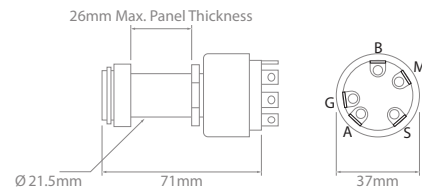
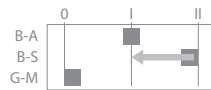
- Bosch™ & Lucas™ style heat start switches.
- Die-cast & polymer models available.
- Marine version available – IGS-03.
- Multi-voltage.
- IGS-08 environmentally sealed – IP67.

Voltage :  
Ingress Protection :

IGS-08  
6–36V  
IP65  
IP67



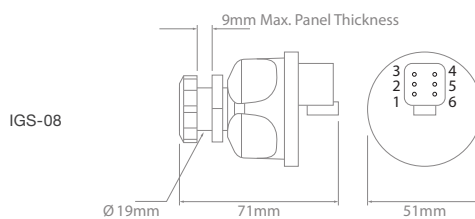
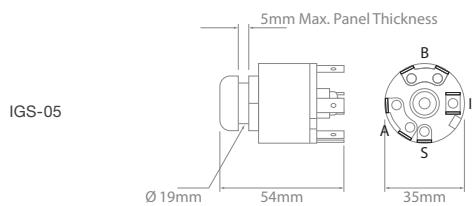
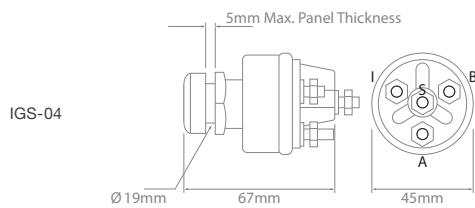
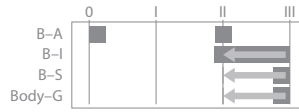
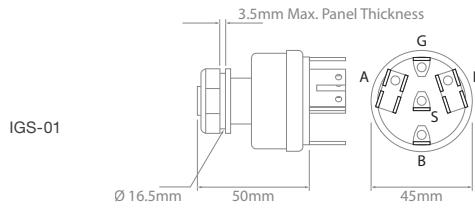
IP65



## Ignition – Marine

Part No.	Key Positions	Terminal Size (mm)	Terminal Type	Ground	Battery	Terminal ID Magneto	Start	Ignition
<b>IGS-03</b>	Off – Ignition – Start	4	Screw	G	B	M	S	A

Terminals G and M are bridged when key is in 'Off' position.



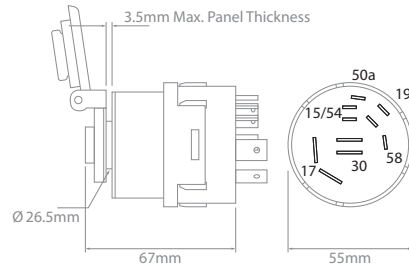
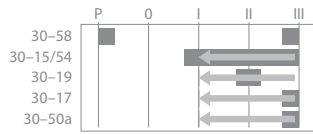
## Ignition – Universal

Part No.	Key Positions	Terminal Size (mm)	Terminal Type	Terminal ID				
				Ground	Ignition	Start	Battery	Accessory
<b>IGS-01</b>	Accessory – Off – Ignition – Start	6.3	Blade	G	I	S	B	A
<b>IGS-04</b>	Accessory – Off – Ignition – Start	5	Stud	–	I	S	B	A
<b>IGS-05</b>	Accessory – Off – Ignition – Start	6.3	Blade	–	I	S	B	A
<b>IGS-08</b>	Accessory – Off – Ignition – Start*	–	DEUTSCH	–	4/5	2	1/6	3

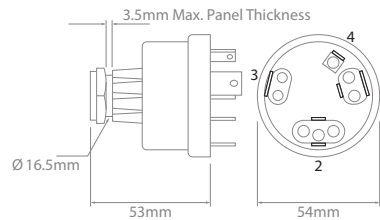
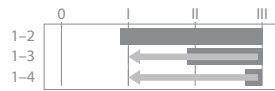
\*To re-engage 'Start' position, key must be cycled through 'Off' first. This feature prevents the starter motor clashing with running engine.



# Miscellanies



IGS-02



IGS-07

## Ignition – Preheat

Part No.	Key Positions	Terminal Size (mm)	Terminal Type	Terminal ID				
				Start	Preheat	Ignition	Battery	Park
<b>IGS-02</b>	Park – Off – Ignition – Preheat – Start	6.3 & 9.4	Blade	50a, 17	19	15/54	30	58
<b>IGS-07</b>	Off – Ignition – Preheat – Start	6.3 & 9.4	Blade	4	3	2	1	–

\*Park\* – this key position provides power for use on auxiliary circuits while vehicle is not operating, i.e. external park lights etc.



IGS-02/KEY



IGS-02/BOOT



IGS-07/KEY

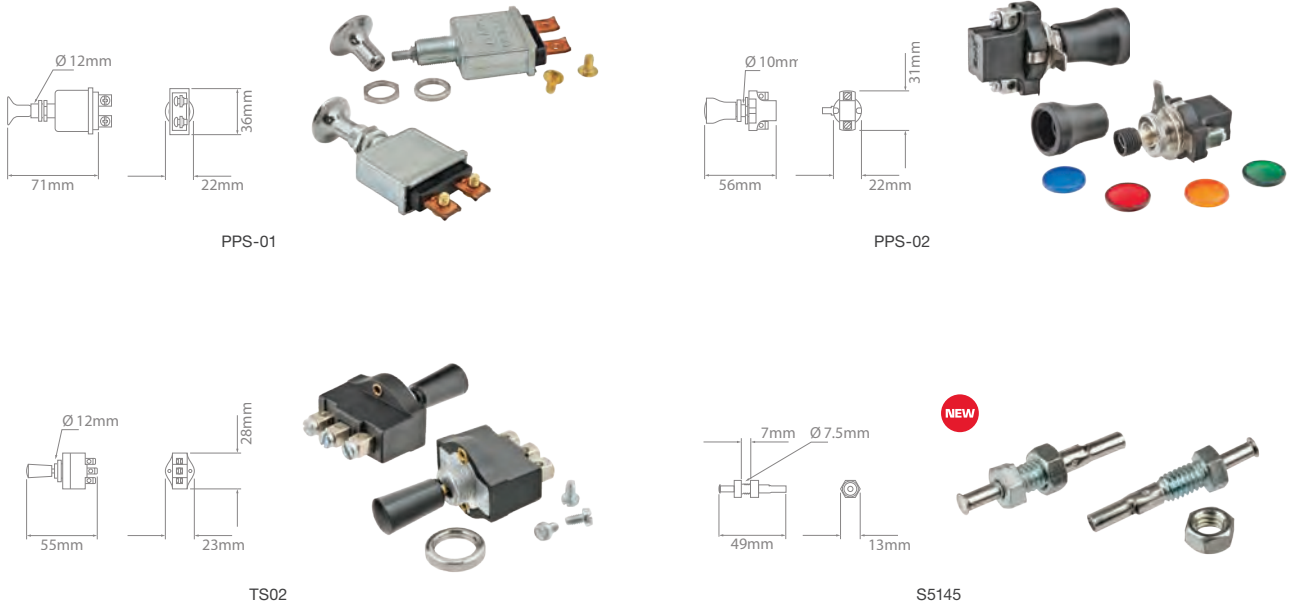
## Ignition – Preheat – Accessories

Part No.	Description	Suits
<b>IGS-02/KEY</b>	Spare key	IGS-02
<b>IGS-02/BOOT</b>	Protective boot	IGS-02
<b>IGS-07/KEY</b>	Spare key	IGS-07

- Heavy & standard duty push-pull switches available.
- PPS-02 supplied with 4 coloured caps.
- PPS-02 can be illuminated, bulb not supplied.
- S5145 ideal for bonnet & boot alarm applications.



Contacts : Silver Alloy  
 Body : PPS-02, TS02 Polymer  
 PPS-01 Die-cast



## General

Part No.	Description	Voltage	Current Rating (A)	Action	Max. Panel Thickness (mm)	Travel Distance (mm)
PPS-01	Heavy duty push-pull	12-24	75	Off - On	10	—
PPS-02	Standard duty push-pull	12-24*	20	Off - On	2.5	—
TS02	Toggle	12-24	10	On - Off - On	2.5	—
S5145 <span style="color:red">NEW</span>	Momentary pin switch	12	5	On - Off	7	8

\*Bulb not included with PPS-02. Bulb type - BA7S.







Customised face plates available on request

## Pendant Control

Part No.	Description
<b>HC1</b>	Hand controller body
<b>FP</b>	Face plate – blank
<b>FP2</b>	Face plate – 2 hole. 8mm switch hole
<b>FP3</b>	Face plate – 3 hole. 8mm switch hole
<b>CG16SR</b>	Strain relief adaptor – 5mm to 10mm. IP68

Requires 7 x 8mm screws for face plate.  
Engraved face plates available on request.



## Suzi Coils

Part No.	No. of Cores	Cores x mm <sup>2</sup>	Plug	Working Length (m)	Closed Coil Ø (mm)	Tails	Tail Lengths (mm)	Sheathing
<b>RC013</b>	7	7 x 0.5	—	3	20	2 x Tangent	2 x 200	Polyurethane
<b>RC014</b>	7	7 x 0.5	—	2	20	2 x Tangent	2 x 200	Polyurethane
<b>RC031</b>	7	7 x 1.5	—	8	25	2 x Tangent	2 x 200	Polyurethane
<b>RC032</b>	7	1 x 2, 6 x 1	—	3	28	2 x Tangent	2 x 200	Polyurethane
<b>RC022</b>	7	7 x 0.75	1 x N12	7.2	29	2 x Tangent	2 x 200	Hytrek

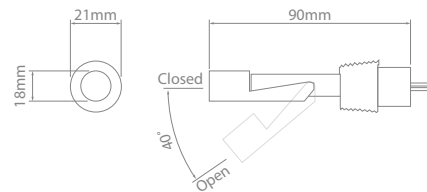




- Ideal for tank level applications with most commonly used liquids.
- Compact size.
- AC & DC compatible.
- Can be operated as N/C or N/O dependant on fitting orientation.



Current Rating : 1A  
 Body : Nylon  
 Approvals : RoHS  
 Operating Temperature : -20°C to 75°C



## Side Mount Level Switch NEW

Part No.	Contact Type	Switching Angle	Mounting Size	Switching Voltage AC/DC	Cable Length (mm)
12-0030	N/O & N/C	40°	1/2" NPT	300	1000

Can operate as N/C or N/O dependant on fitting orientation.

- 15° switching angle.
- Compact size.
- AC & DC compatible.
- Can be operated as N/C or N/O dependant on fitting orientation.
- Environmentally sealed – IP65.



Tilt Switch



Current Rating : 0.25A  
 Body : ABS  
 Ingress Protection : IP65  
 Approvals : RoHS  
 Operating Temperature : -20°C to 70°C

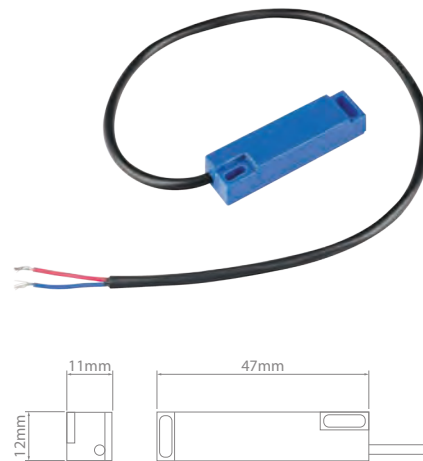
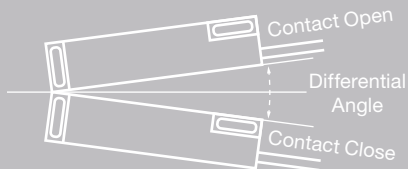


## Differential Angle

The tilt switch operates when tilted from the horizontal position. The switch movement required to cause a contact change (e.g. from off to on) is called the differential angle.

It is very important when designing a tilt switch to allow for the differential angle and to understand that, when in the horizontal position, the switch contact may be open or closed.

This switch module operates with the housing in any orientation.



## Tilt Switch NEW

Part No.	Contact Type	Max Differential Angle	Switching Voltage AC/DC	Cable Length (mm)
12-1039	N/O & N/C	15°	60	300

Can operate as N/C or N/O dependant on fitting orientation.



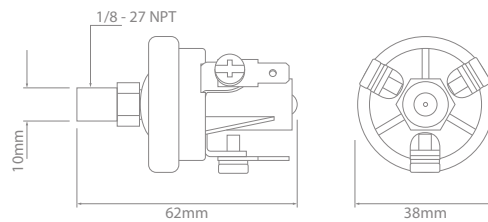


- Compatible with a wide range of substances including air, motor oils, transmission oils, fuels and other similar petroleum based liquids and gases.
- Water compatible model on request.
- Single Pole Change Over.
- Robust, compact design suitable for harsh environments.
- Tolerates high pressure spikes.
- Supplied with 6.3mm blade terminals.

**Voltage :** 6-24V  
**Circuitry :** SPCO  
**Proof Pressure :** 500 psi  
**Current Rating :** 8A @ 12V  
**Terminals :** #8-32 screws & 6.3mm blade  
**Connection :** 1/8 - 27 NPT Male  
**Base :** Brass  
**Body :** Glass Reinforced Polyester  
**Diaphragm :** Polyimide Film  
**Contact :** Silver Alloy, Gold-plated  
**Operating Temperature :** -40°C to 120°C  
**Approvals :** CE, UL



Shown with optional protective boot



## Pressure

Part No.	Switching Pressure		Maximum Operating Pressure		Burst Pressure	
	psi	kPa	psi	kPa	psi	kPa
<b>PS3-4</b>	4	27	150	1034	750	5171
<b>PS3-10</b>	10	69	150	1034	750	5171
<b>PS3-15</b>	15	103	150	1034	750	5171
<b>PS3-20</b>	20	137	150	1034	750	5171
<b>PS3-30</b>	30	206	250	1723	1250	8618
<b>PS3-40</b>	40	275	250	1723	1250	8618
<b>PS3-50</b>	50	344	250	1723	1250	8618
<b>PS3-60</b>	60	413	250	1723	1250	8618
<b>PS3-BOOT</b>	Protective Boot					



# Laser Engraving

Permanently engrave your company's logo on to almost any surface.

Laser engraving is a process where the laser beam physically removes the surface of the material to expose a cavity that reveals an image at eye level.

- Ideal for applications where the mark must be permanent e.g. anti-counterfeiting, serialisation.
- Mark any shape including text and barcodes.
- Incredible precision.
- Most metals and many non-metal materials.

Applications:



Date Codes & Batch Codes



Promotional Symbols/Icons



Primary GTIN Barcodes



Two Dimensional Codes



# IONNIC Services



# Engraving

- Large range of colour combinations including metallic finishes.
- Materials available for use with backlighting.
- UV stabilised for interior & exterior use.
- Optional adhesive back.
- Ideal for:
  - Safety signage
  - Control panels
  - Product tags
  - Name plates



ENG-STARTERISO  
45 x 20mm

ENG-BATTISO  
45 x 20mm

STARTER

ENG-STARTER  
40 x 10mm

BATTERY

ENG-BATTERY  
40 x 10mm

## Custom Engraving

Custom engraving is available for the creation of control panels and name plates up to a maximum size of 500mm x 380mm.

Choose from a large range of colours with some materials suitable for use with backlighting.

For further information ask your local reseller or enquire online at [ionnic.com](http://ionnic.com).

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## General Information

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