



R.F. Remote Control

Radio Frequency (RF) remote control utilises radio frequency transmission to instantly pass data from one point to another without the restriction of physical wiring or cables.

RF does not require line of sight and does not have to be aimed at a specific point in order to be detected. RF is emitted in all directions from the transmitter and can pass through physical structures making it an extremely useful communication method.



User Programmable

The Programmable Switch Panel is able to control up to 8 separate functions. Highly configurable, and featuring momentary or latching switch function, the user can select from multiple switch symbols stored in the memory of the unit to display on the integrated backlit LCD. The switch panel and receiver modules communicate using a dedicated CAN communication protocol and can be expanded by connecting multiple receivers to the CAN line.



Tipping Point

All fuel tankers are required to shutdown their electrical systems in the event of a roll over. Accuracy and reliability is paramount in this circumstance as a faulty or poorly designed sensor can lead to all truck electricals being turned off mid corner with disastrous results.

iROS uses a 2-axis accelerometer along with sophisticated software to monitor both angle and g-forces to determine if a rollover has really occurred before sending out the signal to turn off the power.

This same detection technology is also used in the iROS-T to help alert drivers to dangerous lean angles while raising their tipper bodies. A three staged warning gives the operator ample time to stop the body raising, potentially saving lives and equipment damage.





Switching Systems

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Switching Systems

NEW



ESM



- Electronically monitored switch centre with inbuilt circuit monitoring and protection.
- Each output surge-protected to 10A.
- 10 inputs, 13 outputs.
- 1 grouped input – 4 separate outputs
- On board LEDs indicate circuit output.
- Saves space and installation time.
- Multi-voltage
- Environmentally sealed - IP67.
- Available in positive, or positive/negative switched models.

Voltage :	12-24V
Current Draw :	10mA @ 13.8V
Inputs :	10
Outputs :	13
Max. Output Current Rating (per output) :	7.5A
Max. Output Current Rating (total) :	50A
Construction :	Polycarbonate
Ingress Protection :	IP67
Approvals :	C-Tick
Operating Temperature :	-40°C to 85°C

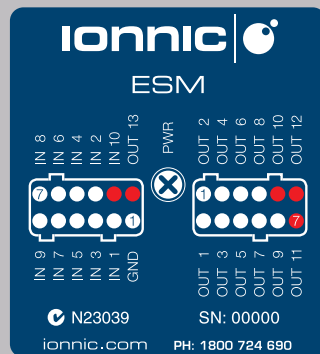
The ESM is an electronically monitored switch centre with inbuilt circuit monitoring and protection.

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

The ESM can be used for any application from connecting auxiliary lighting off original vehicle tails lights, eg Minebar hook up, to using it to monitor and protect a range of auxiliary equipment switched off the original vehicle inputs or after market toggle, rocker switches etc.

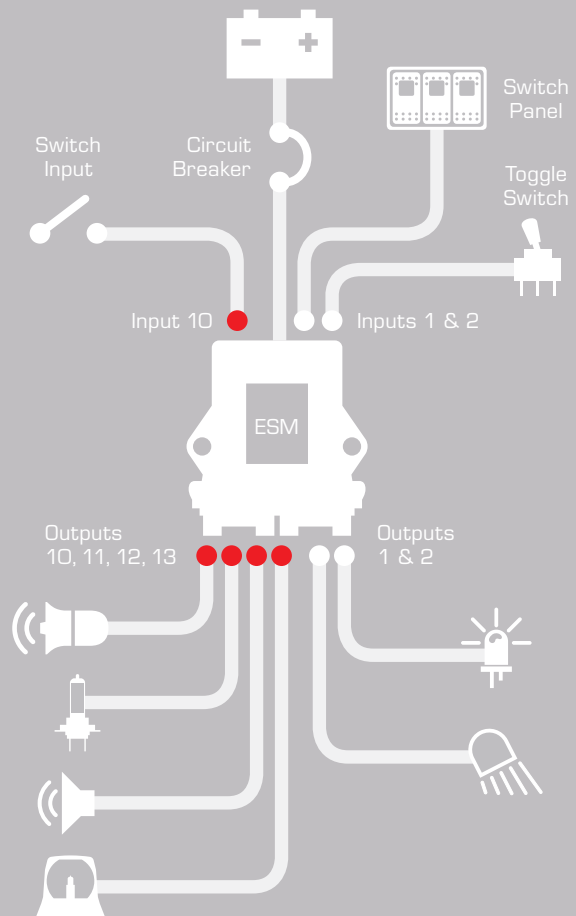
If a short or over current condition presents on any of the outputs then the output will shut down. This will then cycle 3 times (on/off).

If the over current situation is still present the output will then shut down permanently until the input is turned off.

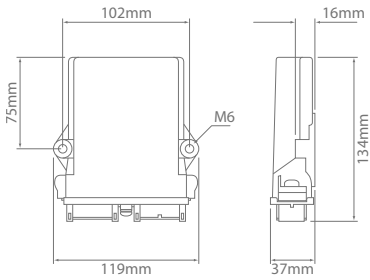


Inputs 1 to 9 controls outputs 1 to 9 respectively.
Input 10 controls outputs 10, 11, 12, 13.

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



Switching Systems



NEW

ESM

Part No.	Switching	Notes
ESM0013	Positive	—
ESM2013	Positive & Negative	ESM2013 will switch on both positive or negative inputs, diodes may be required to prevent false triggering.



Accessories & Related Products

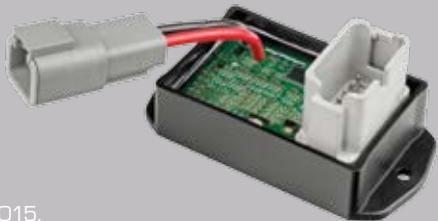
Part No.	Description	
ESM9001	Connection Kit	
DET-20	Crimp tool. Size 20	
HDT-48-00	Crimp tool. Size 12, 16, 20 & 22	
DET-RT	Multi-use hook tool	
CB187-XX	Circuit breaker. Surface mount series	See page 160 for complete range
CB255-XX	Circuit breaker. Panel mount series	See page 160 for complete range
AMIXX	AMI Fuse Series	See page 172 for complete range
AMIFH	AMI Fuse holder. Surface mount	

ESM Mini

The ESM006 is a compact version of our original ESM with the following specifications:

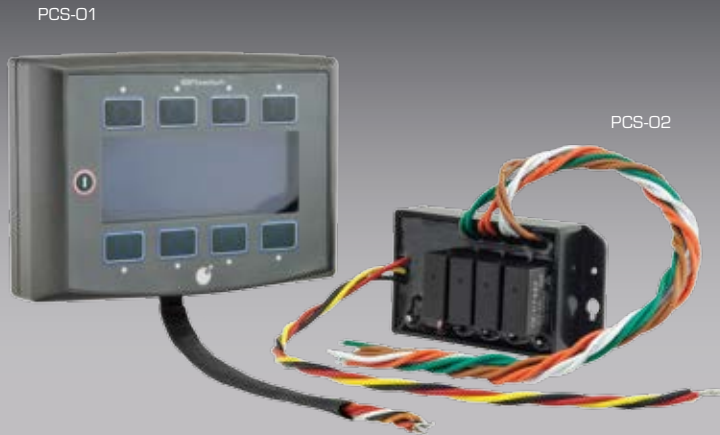
- 6 Input.
- 6 Output.
- Max. Current Draw 25A @ 13.8V.

Due for release 2nd quarter of 2015.



Switching Systems

Programmable Switch Panel



- User programmable LCD switch panel.
- Switch panel can control up to 8 separate functions.
- User selectable switch function symbols.
- Clean contacts.
- Efficient system wiring via CAN communication.
- Fixed or momentary outputs.
- Dimmable backlit switch panel.
- Epoxy sealed receivers.
- On-board diagnostics.
- Audible user feedback.
- Multi-voltage.
- Ability to add multiple receivers.
- Lightweight panel design - ideal for various mounting options.

10V
24V

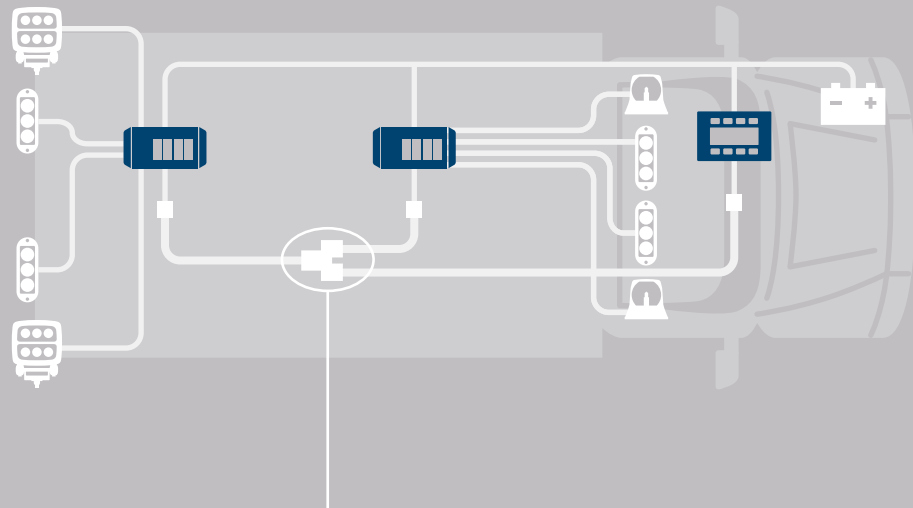
Voltage : 10-24V
Current Rating : 10A max. per circuit
Panel Material : ABS

Programmable Switch Panel System Integration

The Programmable Switch Panel can be installed into any vehicle system and can control up to 8 separate functions per switch panel.

Each switch panel connects to multiple receivers via a single 3 core CAN data cable, the "backbone".

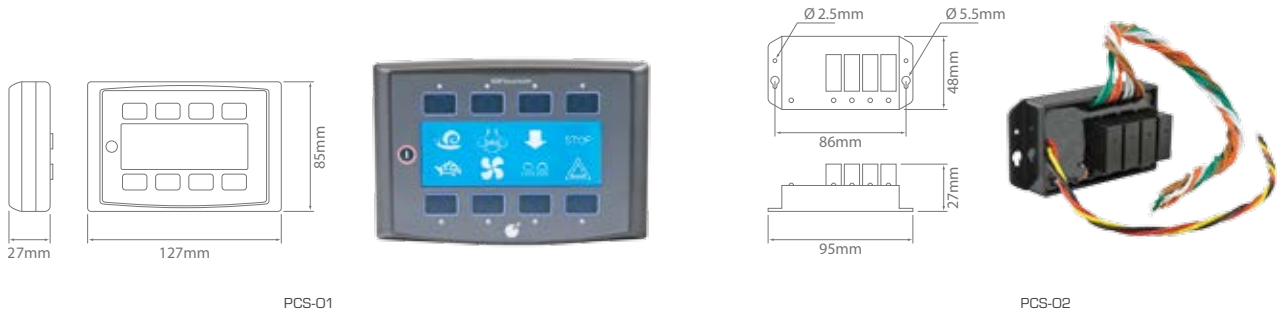
A Deutsch "Y" piece connector is used to branch out from the "backbone" to the receivers which in turn can control up to 4 outputs each.



Deutsch "Y" Piece Connection



Switching Systems



Programmable Switch Panel

Part No.	Description
PCS-O1	Switch Panel
PCS-O2	Receiver



Accessories & Related Products

Part No.	Description
103349	CAN data cable - metre
DT04-3P-P007	Deutsch DT Series - Receptacle "Y" Piece. Includes wedgelocks & contacts
DT04-3P	Deutsch DT Series - Receptacle - 3 circuit
W3P	Deutsch DT Series - Wedgelock - Receptacle - Green . Suits DT04-3P
W3P-1939	Deutsch DT Series - Wedgelock - Receptacle - Blue . Suits DT04-3P
DT06-3S	Deutsch DT Series - Plug - 3 circuit
W3S	Deutsch DT Series - Wedgelock - Plug - Orange . Suits DT06-3S
W3S-1939	Deutsch DT Series - Wedgelock - Plug - Blue . Suits DT06-3S
0460-202-1631	Contact - Pin - Solid - Gold Plated - Size 16
0462-201-1631	Contact - Socket - Solid - Gold Plated - Size 16
DET16	Crimp tool - Size 16
HDT-48-00	Crimp tool - Size 12, 16, 20 & 22
DET-RT	Multi-use hook tool
BMM-013	Mount for PCS-O1. Adhesive/bolt-down
BMM-014	Mount for PCS-O1. Bolt-down



Switching Systems

Radio Remote Control

R1000-TR4



R1000-TF4



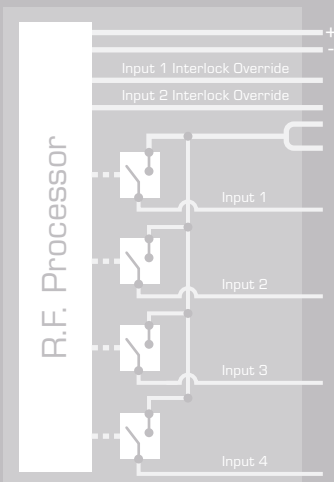
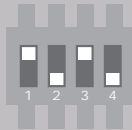
R1500-R12

- 4 output, user programmable remote switching system.
- 2 transmitter styles available:
 - Palm-sized fob
 - Heavy duty pendant
- 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
Battery : Pendant 2 x AA
 Fob 1 x CR2032
Transmitter Battery Life : 100,000 activations
Receiver Cable Length : 300mm
Encryption : Rolling Codes

DIP Switches

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



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



Kits:
R15-R12-F, R15-R24-F

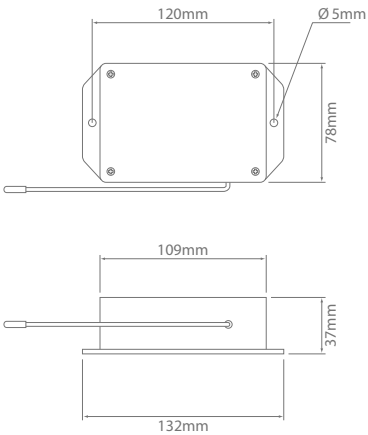


Kits:
R15-R12-P, R15-R24-P

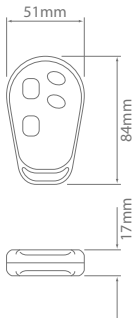
Kits

Part No.	Voltage	Transmitter Style	Contents
R15-R12-F	12	Fob	1 x R1500-R12, 1 x R1000-TF4
R15-R24-F	24	Fob	1 x R1500-R24, 1 x R1000-TF4
R15-R12-P	12	Pendant	1 x R1500-R12, 1 x R1000-TR4
R15-R24-P	24	Pendant	1 x R1500-R24, 1 x R1000-TR4

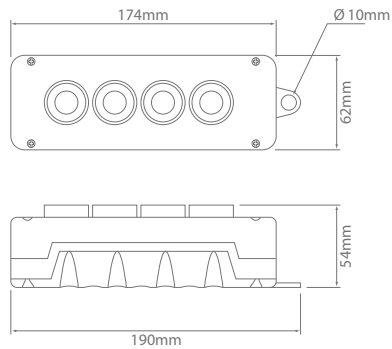
Switching Systems



R1500-R12, R1500-R24



R1000-TF4



R1000-TR4

Components

Part No.	Voltage	Description
R1500-R12	12	Receiver
R1500-R24	24	Receiver
R1000-TF4	12-24	Transmitter - Fob style
R1000-TR4	12-24	Transmitter - Pendant style



Switching Systems

Rollover

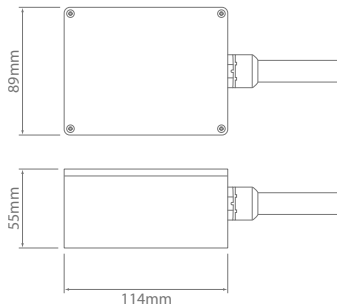


- AS2809 compliant rollover switch.
- Solid state electronics.
- Microprocessor controlled.
- Multi-voltage.
- Senses vertical & horizontal axis through an accelerometer (angle and G-force sensing device).
- Conducts system self-tests without shutdown.
- EMF spike suppression.

10V
30V

Voltage :
Housing :
Compliance :

10-30V
Die-cast
AS2809

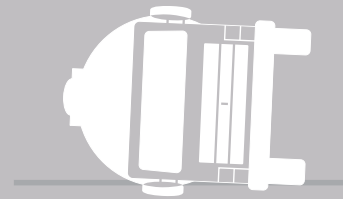


Intelligent Rollover Switch

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.



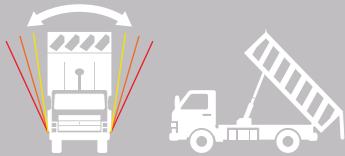
Voltage : 10-30V
Housing : Die-cast
Connector Ingress Protection : IP65



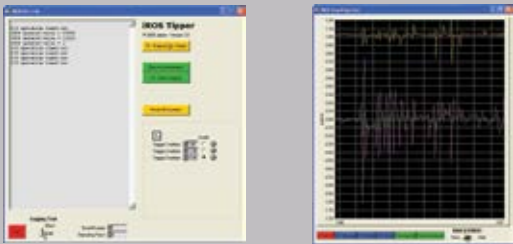
Tipper Safety

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.

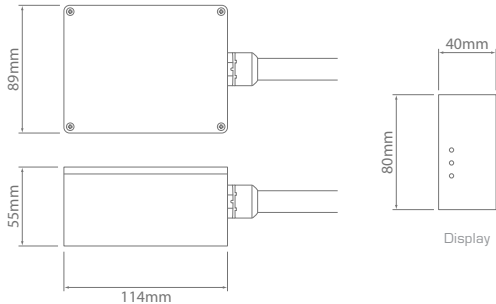
The supplied dash mounted display indicates system status and angle warnings with the 3rd (and highest) level activating an output for an external alarm or control.



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.



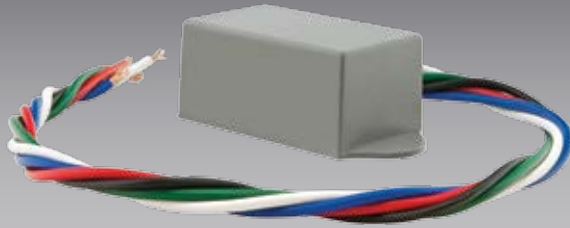
Tipper

Part No.	Description
iROS-T	Kit includes sensor unit & connector, display and 1.8m harness
iROS-T-USB	Proprietary cable required to program iROS-T. Includes software disc



Switching Systems

Voltage Sensor

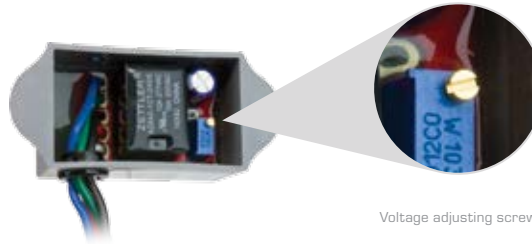


- Internal change-over relay activates when the voltage falls below or rises above the preset level.
- Adjustable sensing range.
- Example uses:
 - Helps prevent the over-discharging of a battery.
 - Triggering an alert when a battery discharges to a preset level.
 - Automatic activation of a battery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

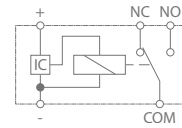


Body :
Wire Length :
Operating Temperature :

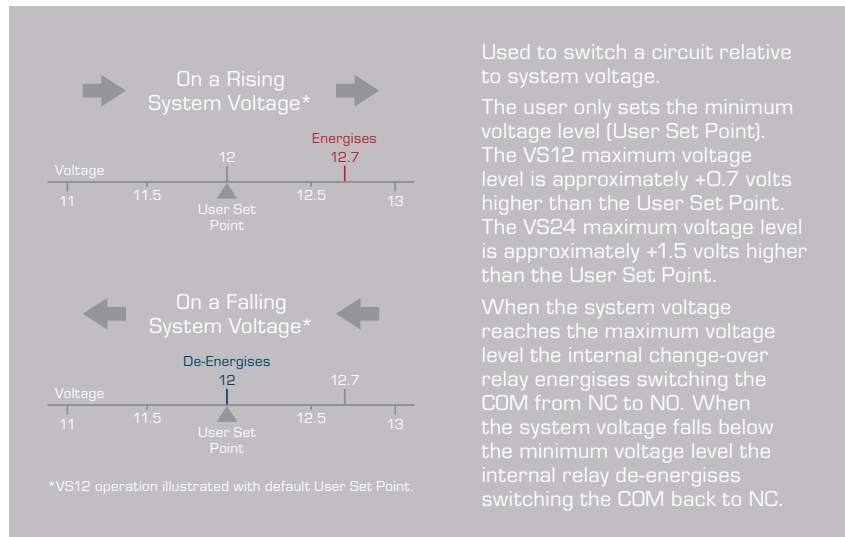
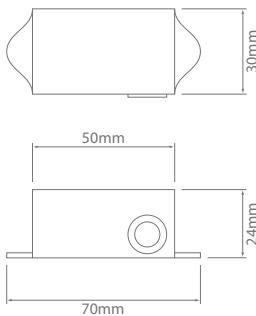
ABS
300mm
0°C to 50°C



Voltage adjusting screw



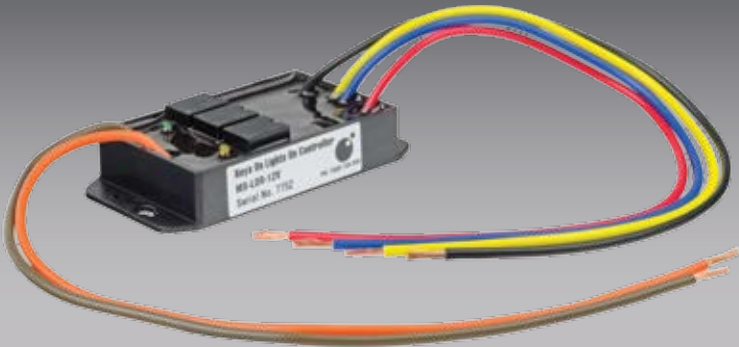
5 Terminal - Change Over (C/O)



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.
- Can be wired to disable control unit eg. hand brake switch, door switch.
- 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.



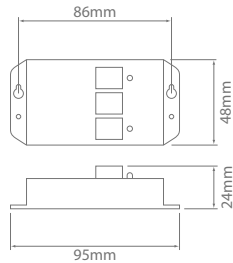
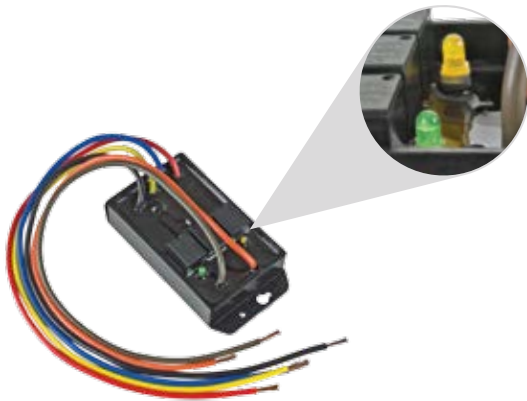
Body : ABS
 Wire Length : 200mm
 Operating Temperature : -40°C to 70°C

2Yrs

MS-LOR-12V-KIT - Easy Installation

MS-LOR-12V-KIT Headlights On Units are exceptionally easy to install. The kit is supplied with plug-in harness to suit Toyota Hi-Lux.

Plugs directly into headlight harness



Headlights On Units

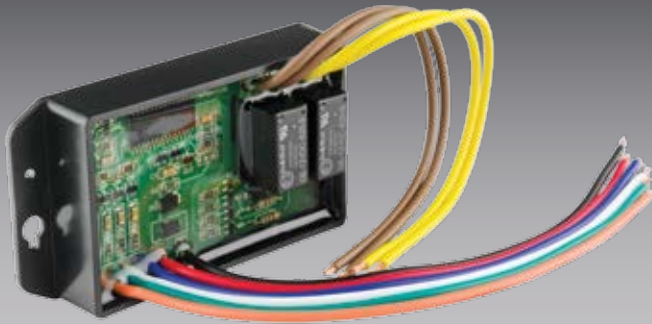
Part No.	Description
MS-LOR-12V	Suits any negatively switched headlight
MS-LOP-12V	Suits any positively switched headlight
MS-LOR-12V-KIT	Suits Toyota Hi-Lux up to 2011 model. Supplied complete with plug-in harness

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



Switching Systems

Hand Brake Alarm Module



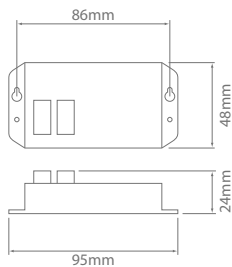
12V
24V

2Yrs

- Can be adapted to any vehicle.
- Can be used as a general 2 stage alarm module.
- 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.
- Clean contacts.
- 2 year warranty.

Voltage : 12-24V
Current Rating : 2 x 10A @ 12V
Body : ABS
Wire Length : 150mm
Operating Temperature : -40°C to 70°C

Epoxy filled for enhanced moisture and vibration protection

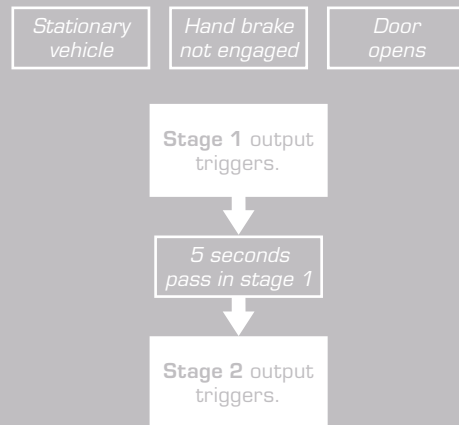


Hand Brake Alarm Operation

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

- 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
Weight :	Controller Unit	255g
Enclosure :		ABS
Ignition Output :		10A
Auxiliary Output :		0.7A
Ingress Protection :		IP65
Approvals :		CE, C-Tick
Operating Temperature :		-40°C to 85°C



IT10450



B657



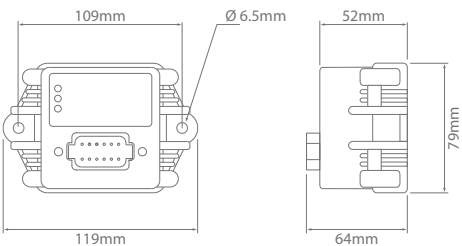
IT10451



Illuminated push button switch (Red)



Engraved label



IT11451



Illuminated pilot light (Amber)



IONNIC Idle Timer

Part No.	Description	
IT10452	Idle Timer kit - push button switch	Kit contains: 1 x IT11450, 1 x IT10451
IT11452	Idle Timer kit - toggle switch	Kit contains: 1 x IT11450, 1 x IT11451
IT11450	Idle Timer controller unit	
IT10451	Harness with stainless steel push button switch & engraved label - 1.8m	
IT11451	Harness with toggle switch, boot & pilot light - 1.8m	
B657	Optional warning buzzer	



Switching Systems

Idle Timers

BES-124/ST-4



CST-515



BES-925/ST-1

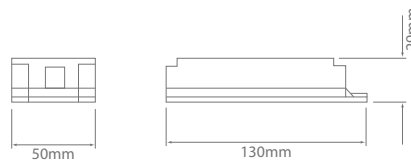
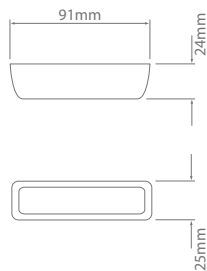


12V
24V

- Multiple mounting options.
- Energise to run or stop models.
- Models with remote face.
- 5 Minute Fixed models feature 30A switching capacity via serviceable external relay.
- Multi-voltage.
- Vehicle specific pre-terminated models available on request, lead times apply.

Voltage :
Current Rating :

12-24V
10A max.

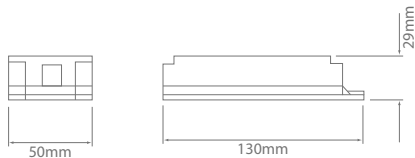


Adjustable - Remote Face

Part No.	Outputs	Energise to	Time Intervals (min)	Park Brake Override	Description
BES-925/ST-1	1	Run	0.5, 1, 2, 3, 4, 5	Yes	Non-electronic engine management
BES-925/ST-3 NEW	2*	Run	0.5, 1, 2, 3, 4, 5	Yes	Non-electronic engine management
BES-925/ST-4	1	Run	0.5, 1, 2, 3, 4, 5	Yes	Electronic engine management
BES-925/ST-5	2	Run	0.5, 1, 2, 3, 4, 5	Yes	Electronic engine management
CTR-M	1	Stop	0.5, 1, 2, 3, 4, 5	No	Electronic engine management

* Second output used to isolate power to EDIC (shutdown) motor during idle period.

Switching Systems

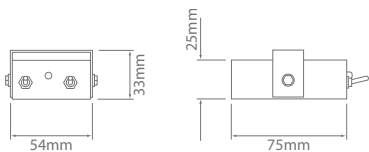


Illuminated push button switch for manual Stop override, mounts in supplied bracket

NEW

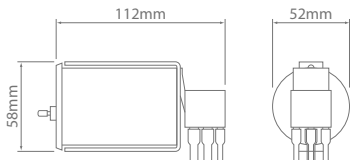
Adjustable - X-Series

Part No.	Outputs	Energise to	Time Intervals	Park Brake Override	Description
BES-X104	1	Run	30 sec to 30 min	Yes	Suitable for both electronic & non-electronic engine management
BES-X105	2	Run	30 sec to 30 min	Yes	



Adjustable

Part No.	Outputs	Energise to	Time Intervals (min)	Park Brake Override	Description
BES-124/ST-1	1	Run	1, 3, 5	No	Non-electronic engine management
BES-124/ST-2	2	Run	1, 3, 5	No	Non-electronic engine management
BES-124/ST-4	1	Run	1, 3, 5	No	Electronic engine management



Fixed - Gauge Mount

Part No.	Outputs	Energise to	Time Intervals (min)	Park Brake Override	Description
CST500	1	Run	Fixed @ 5	No	Relay driven output
CST515	1	Stop	Fixed @ 5	No	Relay driven output



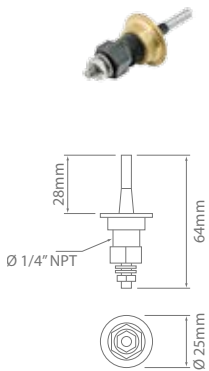
Switching Systems

Low Coolant Alarm

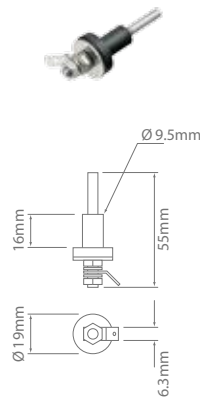


- Visual & audible warning device for water/coolant level monitoring.
- LED indicator on modules.
- 7 second "slosh" delay preventing false triggering.
- Epoxy encapsulated modules.
- Brass sleeve or rubber multi-fit style probes available.

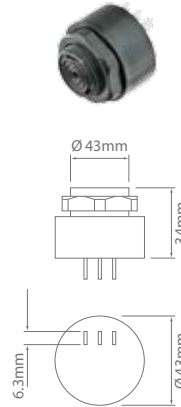
Voltage :		12-24V
Sensing Depth :	WL601PS1	25mm
	WL601P	35mm
Current Rating :	WL601LP	3A @ 12V
	8015002	10A



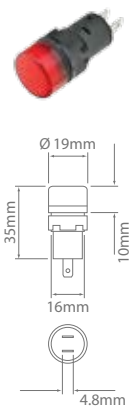
WL601PS1



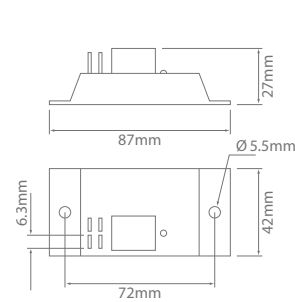
WL601P



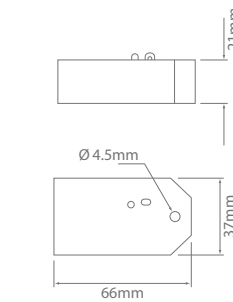
B657



BA16DS-RED



WL601LP



8015002



Kits

Part No.	Description	Kit Contents			
		Probe (x 1)	Module (x 1)	Pilot Lamp (x 1)	Buzzer (x 1)
WL-1	10A Module with Threaded Probe	WL601PS1	WL601LP	BA16DS-RED	B657
WL-2	10A Module with Multi-fit Probe	WL601P	WL601LP	BA16DS-RED	B657
WL-3	3A Module with Threaded Probe	WL601PS1	8015002	BA16DS-RED	B657
WL-4	3A Module with Multi-fit Probe	WL601P	8015002	BA16DS-RED	B657

All components available separately.