ITS2022

Ionnic Technical Systems

ITS 2022

Ionnic

Mission Statement

To become 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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CLASS1
ELECTRONICS
DO NOT
OVERTAKE
TURNING
VEHICLE
IONNIC
Lighting | Safety | Electrical

MULTI PERSON LIFT
LOOK UP AND LIVE
FOAM INDUCTOR INLET
FOAM TANK
FOAM SYSTEM
000
EMERGENCY
000

ICS Switch Panel

The ICS Switch Panel has been developed specifically to control lighting and other electronic automotive accessories and incorporates the latest in onboard circuit protection technology.

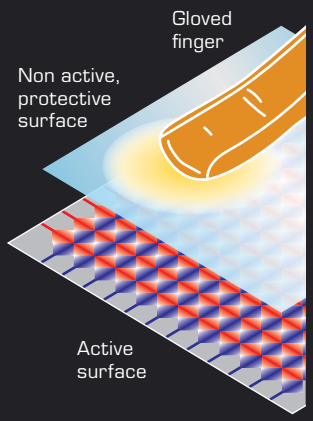
The switch panel and receiver communicate using a proprietary signal which allows the switching system to be configured using a single receiver module for typical applications, or with additional slave receiver modules on larger systems or vehicles.

Projected Capacitive Touch

Projected capacitive touch (PCT also PCAP) technology is a variant of capacitive touch technology but utilises a simple form of "Artificial Intelligence" to improve sensitivity to touch, accuracy, resolution and speed of touch.

This intelligent processing enables finger sensing to be projected, accurately and reliably, through very thick glass and even double glazing.

Unlike traditional capacitive touch technology, it is possible for a PCT system to sense a passive stylus or gloved finger.



Displays / HMI

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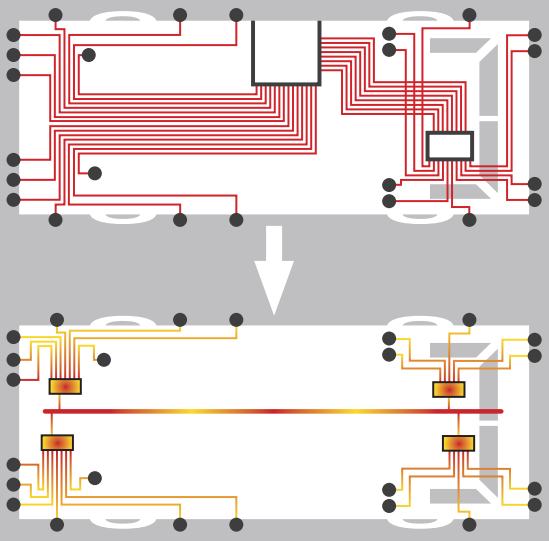
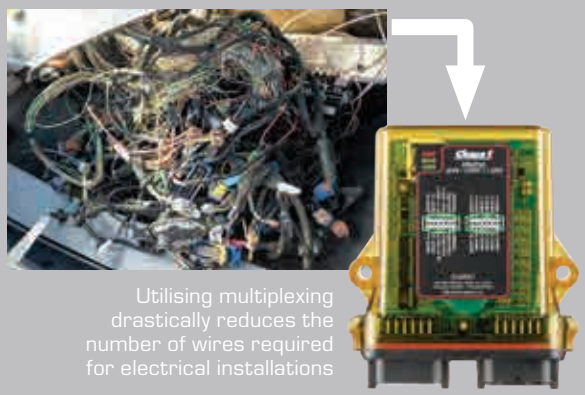
Multiplexing

Multiplexing

Multiplexing is a digital communication system using a controller area network (CAN) to link modules together in a backbone network topology.



Commonly used in vehicle based and mobile plant applications, multiplexing removes the requirement for large bulky relay and fuse panels and drastically reduces the number of wires required for electrical installations.



Utilising multiplexing drastically reduces the number of wires required for electrical installations

In every installation reliability is paramount and occasionally where things don't go smoothly technicians need to be able to rectify any issues quickly and easily. In traditionally wired electrical systems finding broken wires, short circuits or faulty components can be time consuming and costly, not to mention every connection is a potential failure point.

In multiplexed systems each device around a vehicle is connected to a module using a single wire, without the requirement for fuses and relays to switch the current and protect the harness. This results in less wiring per device than in a traditionally wired electrical system.

Additionally, each module is interconnected to each other by the CAN backbone, meaning any complex logic required of the system is seamlessly handled through programming rather than intricate wiring techniques.

Utilising software with input/output data, the system is then able to provide useful diagnostic information to both the operator and the technician for use in finding any fault.

The Class 1 multiplexing system has been designed, tried and tested in the harshest of conditions on some of the most complex machines. Meaning Class 1 is ready take on any application offering faster build times, greater reliability and more flexibility through reduced connections. Additional information at the user's fingertips and advanced diagnostic data for technical and service staff, makes for an extremely powerful mobile electrical control system.

Diagnostic Capabilities

By far one of the most powerful features of this multiplexed electrical system is the enhanced diagnostic function available to the technician.

Multiple reports are available which can help track all actions and associations in the system.

The technician is able to enter the system, via a PC or the Information Display if installed, to quickly diagnose the exact problem, often without even picking up a tool.

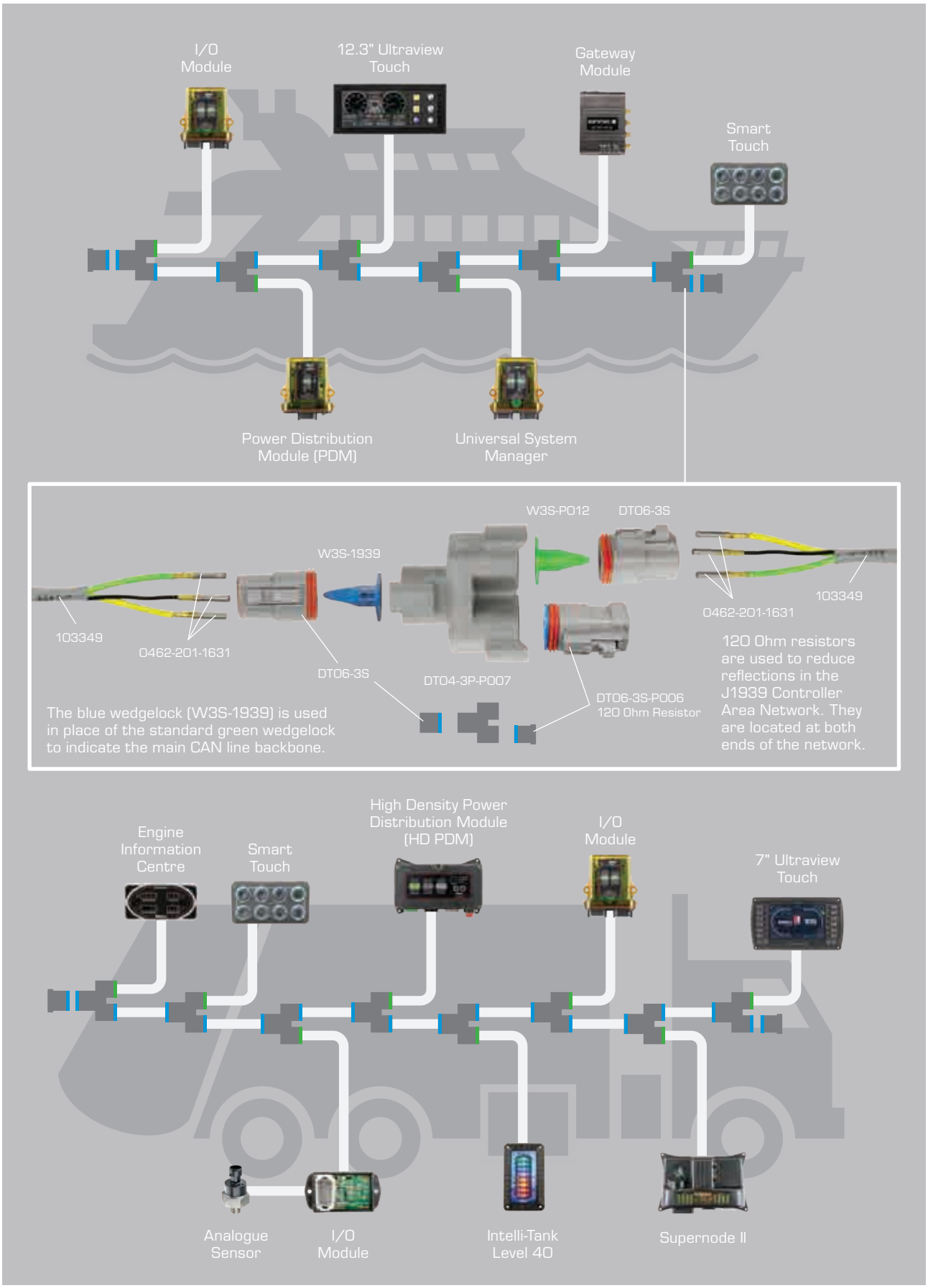
Communication Method

Messages are sent from node to node over the J1939 CAN (Controller Area Network) data bus and are simple 8-bit signals, similar to the signals used in your computer at home.

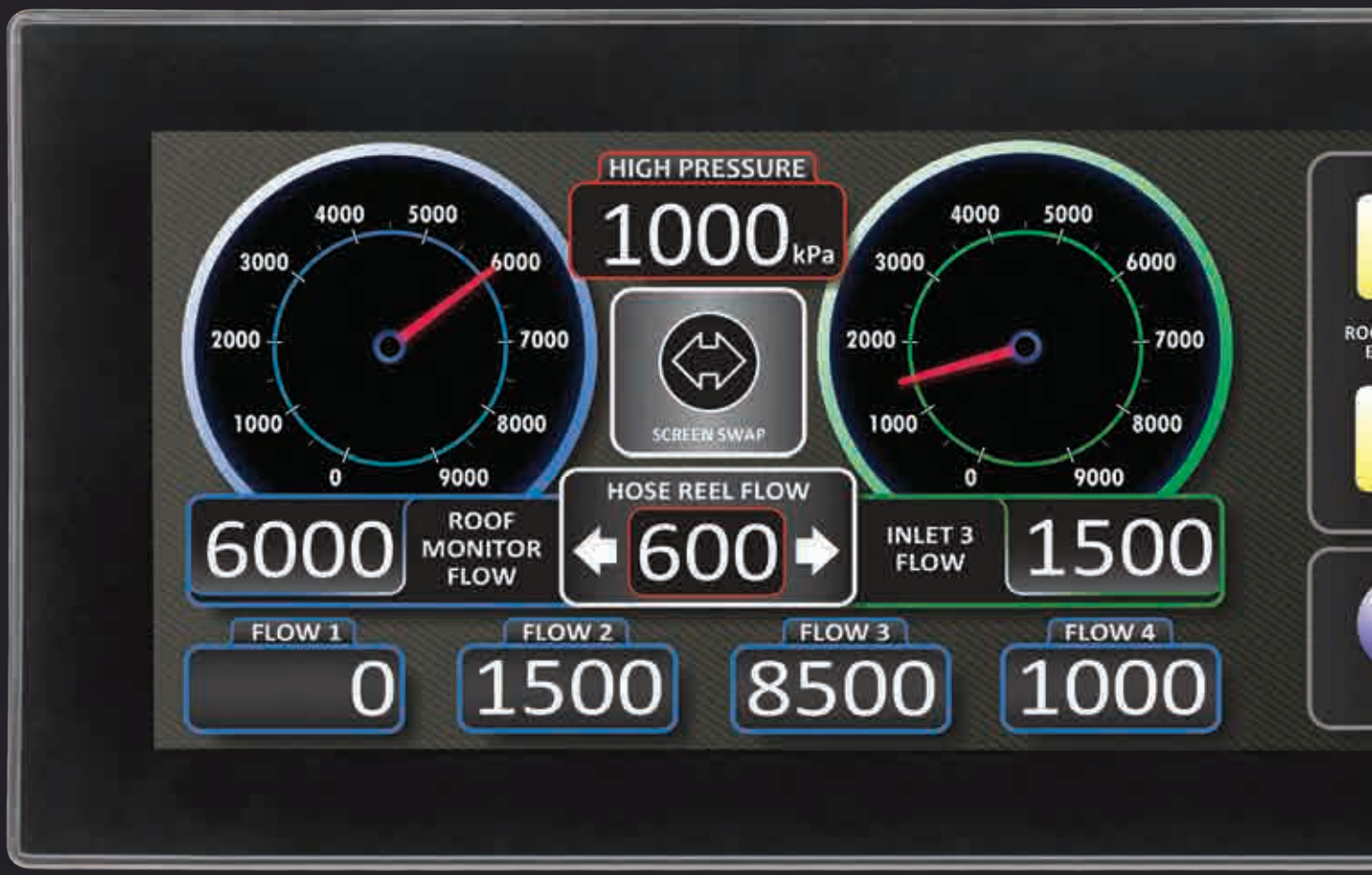
The signals transfer throughout the system at a rate of 250,000 bits per second, allowing plenty of room for all messages to get to and from the respective nodes.

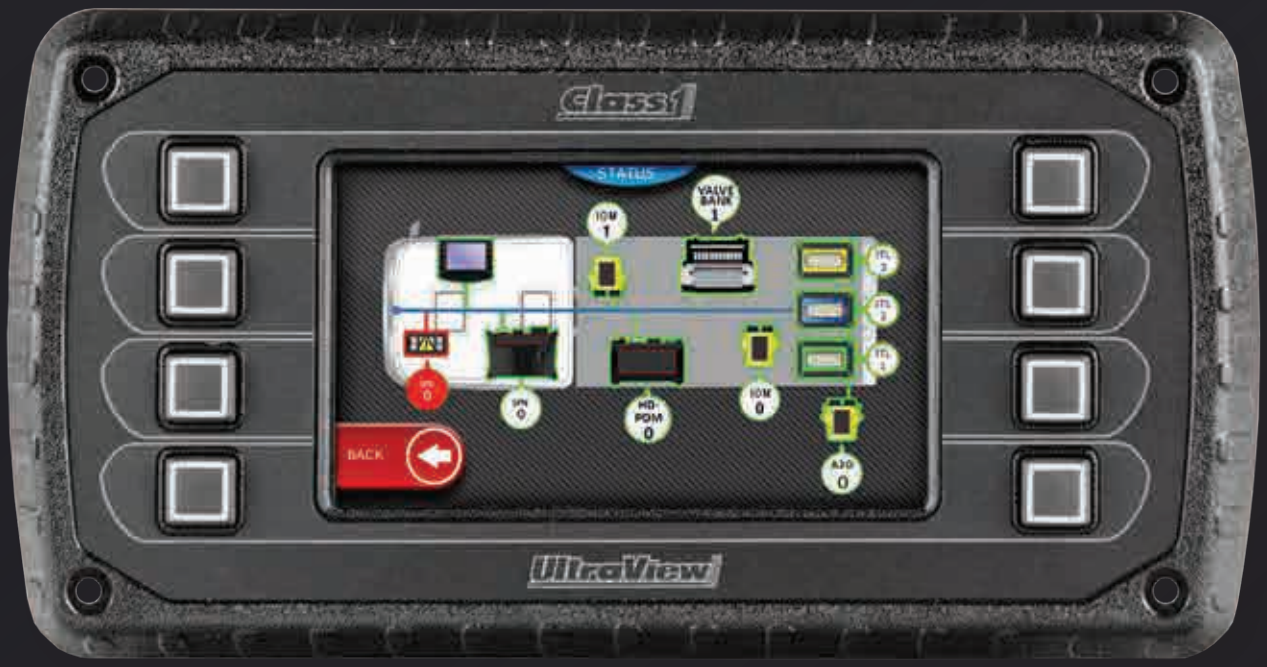
Additionally, using the communication network, the system can constantly monitor any device attached to it.

Through the intelligence of the software, the multiplexed system can be "taught" to look for certain problems and conditions in the system and act on the information, or indicate the condition to the operator on the System Display. This communication tool will increase the operator's ability to monitor and control activity on the vehicle.


I/O Module
12.3" Ultraview Touch
Gateway Module
Smart Touch
Power Distribution Module (PDM)
Universal System Manager
W3S-P012
DT06-3S
W3S-1939
103349
0462-201-1631
DT06-3S
DT04-3P-P007
DT06-3S-P006
120 Ohm Resistor
The blue wedgelock (W3S-1939) is used in place of the standard green wedgelock to indicate the main CAN line backbone.
120 Ohm resistors are used to reduce reflections in the J1939 Controller Area Network. They are located at both ends of the network.
Engine Information Centre
Smart Touch
High Density Power Distribution Module (HD PDM)
I/O Module
7" Ultraview Touch
Analogue Sensor
I/O Module
Intelli-Tank Level 40
Supernode II

Ultraview Touch Series





Class1 ELECTRONICS

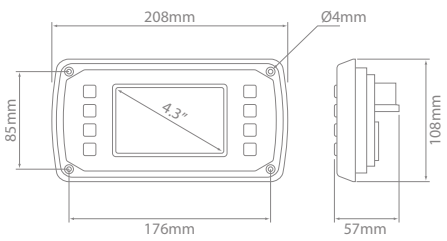
Displays / HMI

Ultraview Touch Series

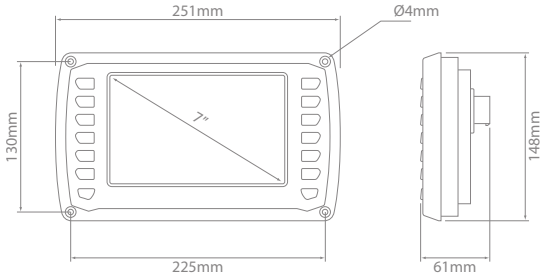
6V 36V | IP67 | Made in North America

- Projected capacitive touch screen on all models – can be used while wearing gloves.
- J1939 CAN based information display incorporating programmable switching.
- Infinitely customisable.
- Bonded LCD screen viewable in direct sunlight and whilst wearing polarised lenses.
- Reverse polarity and EMF protected.
- Horizontal or vertical screen orientation.
- Environmentally sealed – IP67.
- Models with tactile buttons.
- Multi-voltage.
- Made in North America.

Voltage :	6–36V
Video Input :	NTSC/PAL
Output :	Digital 500mA
CAN :	SAE J1939, NMEA 2000
Construction :	Polycarbonate
Ingress Protection :	IP67
Vibration :	7.86G rms 5–2000 Hz, 3 axis
Shock :	+/- 50G, 3 axis
Operating Temperature :	-40°C to 85°C



2045-052-00-CL1
"UV450"

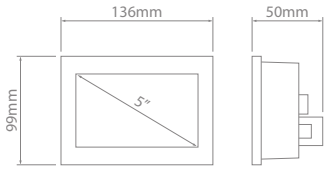


2070-053-00-CL1
"UV700"

Ultraview Touch Series – Tactile

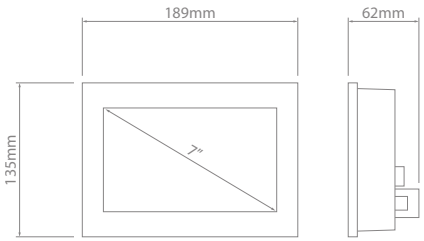
Part No.	Description	Screen Size	Resolution	Configurable Inputs	Video Inputs	Outputs	Current Draw (mA) @ 14.4V	Current Draw (mA) @ 28.8V
2045-052-**00**-CL1	UV450	4.3"	480 x 272	1	2	1	100	100
2070-053-**00**-CL1	UV700	7"	800 x 480	3	3	1	600	300

Featured



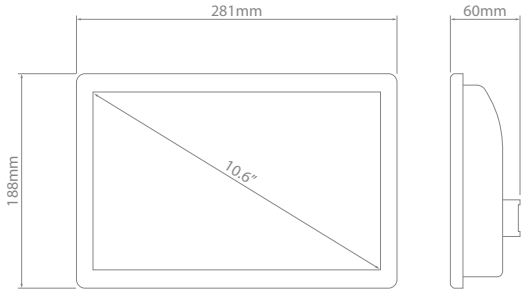
610-00060-050
"UV500"

Featured



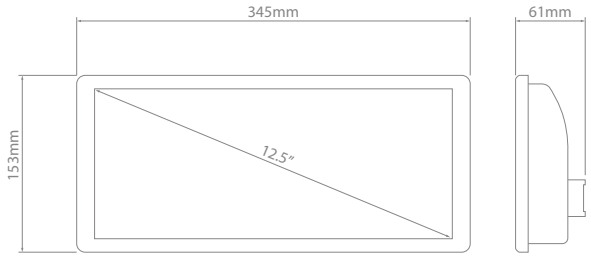
610-00060-080
"UV800"

Featured



610-00060-110
"UV1100"

Featured



610-00060-120
"UV1200"

Ultraview Touch Series

Part No.	Description	Screen Size	Resolution	Configurable Inputs	Video Inputs	Outputs	Current Draw (mA) @ 14.4V	Current Draw (mA) @ 28.8V
610-00060-**050**	UV500	5"	800 x 480	1	2	1	400	300
610-00060-**080**	UV800	7"	800 x 480	8	3	2	900	600
610-00060-**110**	UV1100	10.6"	1280 x 480	8	3	2	1200	700
610-00060-**120**	UV1200	12.3"	1280 x 768	8	3	2	1300	800

Displays / HMI

CONNKIT-UV450-VIDEO

122883

122829

122370

122965

AC-019

2070-3.75MOUNT

2070-6MOUNT

Used to attach a UV700 to 2070-3.75MOUNT or 2070-6MOUNT

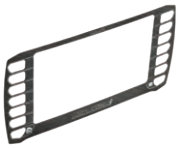
122448

629-00081

122387

122386

122451



122450

Ultraview Touch Series – Accessories – UV450, UV500 & UV700

Part No.	Description	UV450	UV500	UV700
CONNKIT-**UV**450-**VIDEO**	Pre-terminated connector – CCTV	•	—	—
122883	Pre-terminated connector – CAN & Power	—	—	•
122829	Pre-terminated connector – 3x RCA	—	—	•
122370	Programming cable	•	—	•
122965	Programming cable *	—	—	•
AC-019	Adaptor – Connect Backeye Elite cable to RCA connector	•	—	•
2070-3.75**MOUNT**	Mounting bracket – Adjustable pedestal – 80mm	•	•	•△
2070-6**MOUNT**	Mounting bracket – Adjustable pedestal – 150mm	•	•	•△
122448	Mounting bracket adaptor for 2070-3.75MOUNT & 2070-6MOUNT	—	—	•
629-00081	Mounting bracket – Panel mount	—	•	—
122387	Bezel	•	—	—
122386	Bezel	—	—	•
122451	Decal	•	—	—
122450	Decal	—	—	•

* UV700 requires both 122370 and 122965 cables for programming.

△ The UV700 requires the 122448 mounting adaptor to connect to either the 2070-3.75MOUNT or the 2070-6MOUNT.

513-00144-001

513-00144-005

2070-3.75MOUNT

2070-6MOUNT

629-00071

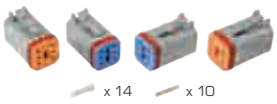
Shown mounted to UV800

610-00061-080

M12-CAP

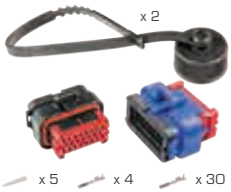
Ultraview Touch Series – Accessories – UV800, UV1100 & UV1200

Part No.	Description	UV800	UV1100	UV1200
513-00144-001	Pre-terminated connector – 1x RCA	•	—	—
513-00144-005	Pre-terminated connector – 3x RCA	•	—	—
2070-3.75**MOUNT**	Mounting bracket – Adjustable pedestal – 80mm	•	—	—
2070-6**MOUNT**	Mounting bracket – Adjustable pedestal – 150mm	•	—	—
629-00071	Mounting bracket – Panel mount	—	•	—
610-00061-**080**	Bezel with tactile buttons	•	—	—
M12-CAP	Screw on cap for M12 male connector. 130mm length	•	•	•



CONNKIT-UV450

CONNKIT-UV700



CONNKIT-UV800

CONNKIT-UV1100

Ultraview Touch Series – Connection Kits

Part No.	UV450	UV500	UV700	UV800	UV1100	UV1200
CONNKIT-**UV**450	•	•	—	—	—	—
CONNKIT-**UV**700	—	—	•	—	—	•
CONNKIT-**UV**800	—	—	—	•	—	—
CONNKIT-**UV**1100	—	—	—	—	•	—

Crimping tools can be found on page 96.
Supplied with bolts/nuts and washers.

Displays / HMI

Configuring the Ultraview Displays

Smart Touch Panel, found on page 24.

The Ultraview Touch interface can be infinitely customised to display and interact with the user, either through physical buttons, via touch screen or both.

If a design can be imagined, then the Class 1 team can assist in turning your concept into reality.

Once all operational requirements are determined, an interface is designed and programmed specifically for the application. All graphical elements including, colours, backgrounds, dials, gauges etc can be enhanced with real time animation.

A range of standard templates are available for less complex interface requirements.

Touch Interface

Touch Screen

Directly touching an icon or image on a screen is a popular and intuitive way to interact with a device.

Not being restricted by physical switches allows for a greater variety of actions and increased operational efficiency.

Combination

Some operators prefer physical buttons, others instinctively touch the screen.

The Ultraview series allows for both to be used, providing system designers and operators the flexibility to perform tasks in a manner best suiting their preference.

Tactile Push Buttons

Backlit push buttons are able to be configured to operate with all Ultraview displays. The switches are designed to provide positive tactile confirmation when pressed, even when wearing gloves, giving the operator confidence when actuating a switch function.

Personalisation

Splash/Intro

An initial screen shown during the power up of the Ultraview display can be customised with manufacturer/customer logo, graphic or message.

Display Video

Video

Ultraview screens can display video from either PAL or NTSC cameras. The image can be configured to the full height of the display or resized to be viewed in conjunction with other on-screen elements.

Warnings

There are several methods available to draw an operator's attention to a specific area of the Ultraview interface. The most popular are shown below.

Banner

This is typically a partial overlay on the current working screen when a trigger is activated or a parameter is out of range. This could show momentarily, or clear upon confirmation or item rectification.

Highlights

A gauge face turning red, a section of a graphic changing colour or simulated illumination can be used to show that a particular function is activated, a door or locker open or a work lamp is turned on.

Icons

Used in a similar way to a warning lamp or status notification, icons can be used to show that an item is activated or that a component is out of its operating range.

Combination

A combination of these events may be used to illicit action by the operator. The Ultraview Series also provides an output for an audible alarm if required.

Gauges

Traditionally machine operations are represented through analogue instruments and devices, the most effective of these have been programmed to display virtually on screen in the Ultraview series.

Rotary

The most common gauges viewed in equipment today. Typically a round fascia with a coloured needle to indicate the level reached by the sensor/pickup. The flexibility of the Ultraview rotary gauge is the ability to design it to whatever size, shape, colour etc the user desires.

Bar

A column of colour moving on a scale to indicate the feedback from a sensor or pickup. Orientation, colour, and triggered effects can be applied to this gauge to bring this component to life. Curving a bar graph around a gauge or graphic can add to the visual effect whilst being more space efficient.

Text/Digital

Usually a numerical value that changes based on the feedback from the sensor or pickup. Size, colour, and update rate are configurable to suit operational needs.

Combination

Combining two or more gauges is often the best way to display multiple pieces of related information at a glance. The flexibility of the Ultraview configuration software enables this and many more creative ideas.

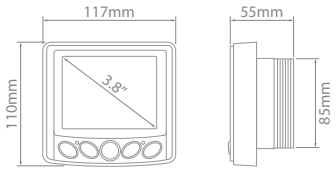
Displays / HMI

Ultraview Monochrome

- Easy to read QVGA 3.8" monochrome LCD screen with backlight and heater.
- Displays gauges, soft key commands, and custom messages.
- 5 tactile push buttons.
- J1939 CAN based information display incorporating programmable switching.
- Custom interfaces available on request.
- Reverse polarity and EMF protected.
- Connector kits available providing all required connectors, contacts etc.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

6V 36V | IP67 | Made in North America

Voltage :	6–36V
Current Draw :	130mA @ 13.8V
Resolution :	320 x 240
Output :	Digital 500mA
CAN :	SAE J1939
Construction :	Polycarbonate/ABS
Ingress Protection :	IP67
Vibration :	7.86G rms 5.2000 Hz, 3 axis
Shock :	+/- 50G, 3 axis
Operating Temperature :	-40°C to 85°C



Ultraview Monochrome

Part No.	Description	Screen Size	Inputs	Outputs
610-00026	UV26	3.8"	1 x Resistive Analogue	1 x 500mA
610-00027	UV27	3.8"	4 x Resistive Analogue, 1 x Analogue, 1 x Frequency	1 x 500mA, 1 x 5V Supply 70mA

CONNKIT-UV26

CONNKIT-UV27

M12-CAP

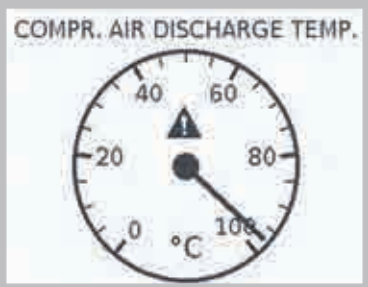
Ultraview Monochrome – Accessories

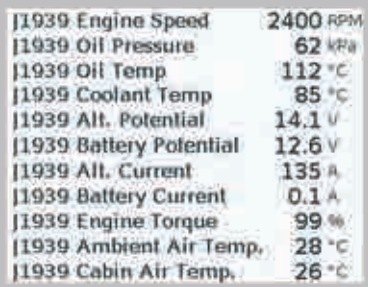
Part No.	Description	Suits
CONNKIT-**UV**26	Connection kit with M12 harness – 2m	UV26 (610-00026)
CONNKIT-**UV**27	Connection kit	UV27 (610-00027)
M12-CAP	Screw on cap for M12 male connector. 130mm length	UV26 (610-00026)

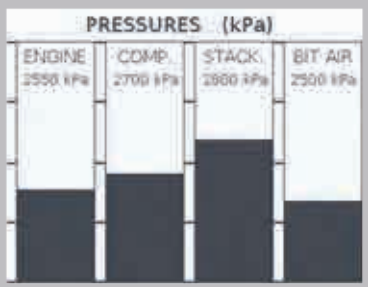
Crimping tools can be found on page 96.

Custom Interfaces

The Ultraview Monochrome units can have custom interfaces designed for specific application requirements.







Mining Equipm

UV700

Supernode II

UV1100

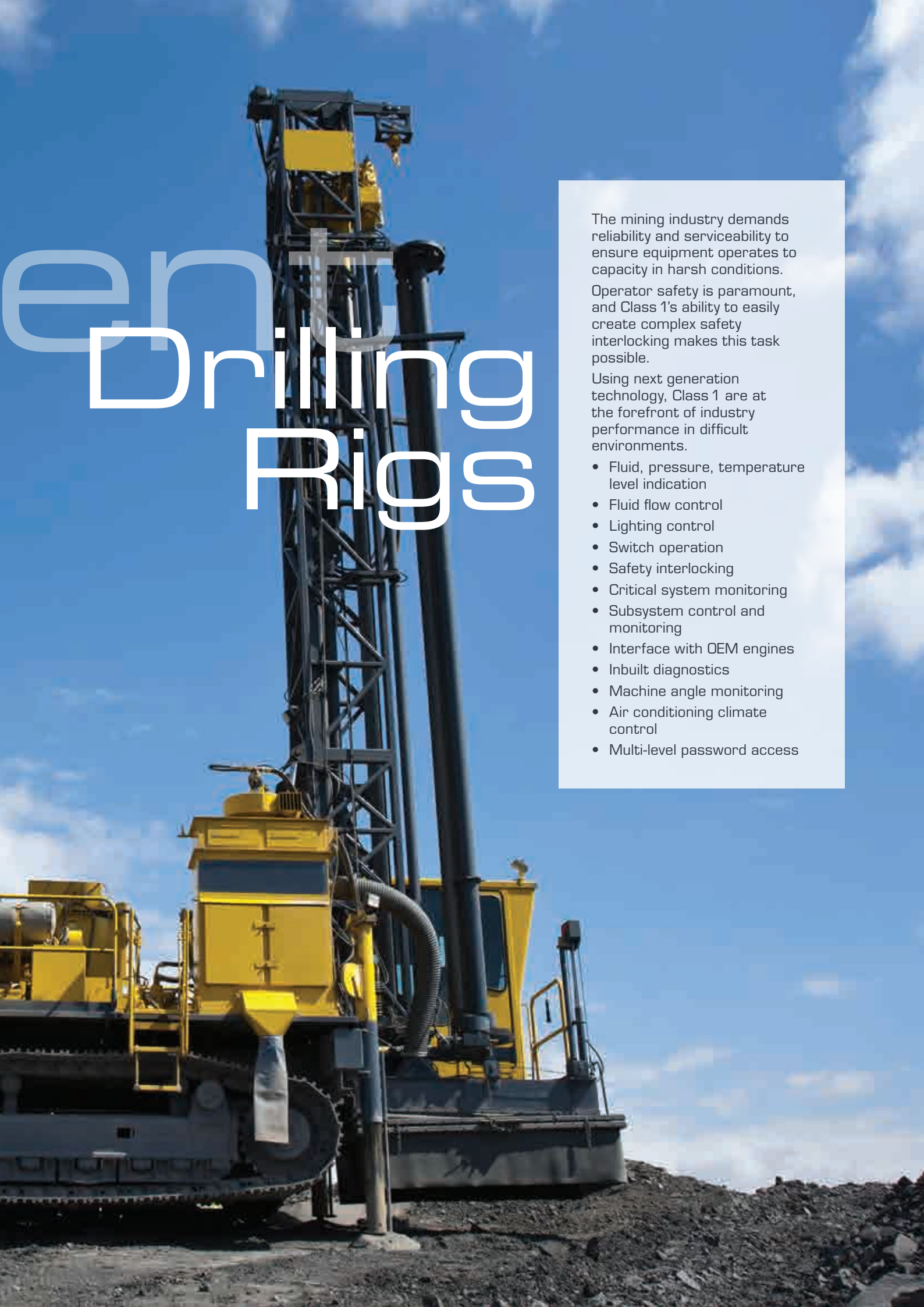
HD PDM

Smart Touch

Climate Control Module

PDM

I/O Module



Drilling Rigs

The mining industry demands reliability and serviceability to ensure equipment operates to capacity in harsh conditions.

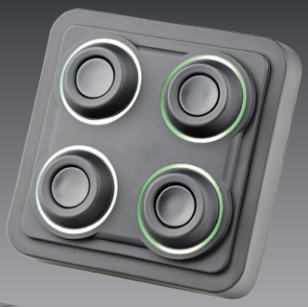
Operator safety is paramount, and Class 1's ability to easily create complex safety interlocking makes this task possible.

Using next generation technology, Class 1 are at the forefront of industry performance in difficult environments.

- Fluid, pressure, temperature level indication
- Fluid flow control
- Lighting control
- Switch operation
- Safety interlocking
- Critical system monitoring
- Subsystem control and monitoring
- Interface with OEM engines
- Inbuilt diagnostics
- Machine angle monitoring
- Air conditioning climate control
- Multi-level password access

Smart Touch Switch Panels

610-00061-004



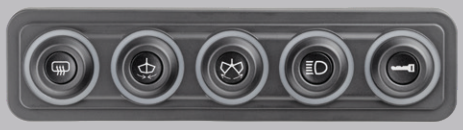
610-00061-008

- Dimmable illumination.
- LED backlit icons.
- Selectable coloured LED rings.
- Switch inserts can be laser etched.
- Vertical/horizontal mount.
- Low current draw.
- TE DEUTSCH compatible connector.
- Environmentally sealed – IP68.
- Made in North America.

9V 32V | IP68 | Made in North America

Operational Voltage :	9–32V
Max. Current Draw :	65mA @ 13.8V
CAN :	SAE J1939
Construction :	Silicone
Ingress Protection :	IP68
Operating Temperature :	-40°C to 85°C

Laser Etched Inserts Available



For further information ask your local reseller or enquire online at ionnic.com

CONNKIT-SMARTTOUCH

101-00296-016

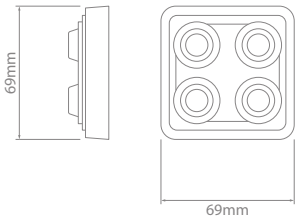
101-00296-017

101-00296-018

Smart Touch Switch Panels – Accessories

Part No.	Description
CONNKIT-SMART**TOUCH**	Connection Kit
101-00296-**016**	Switch Insert – Black
101-00296-**017**	Switch Insert – Red
101-00296-**018**	Switch Insert – Green

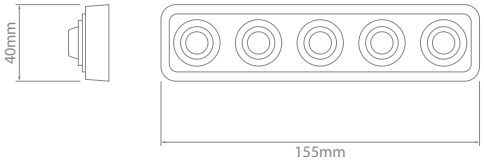
Switch inserts sold individually.



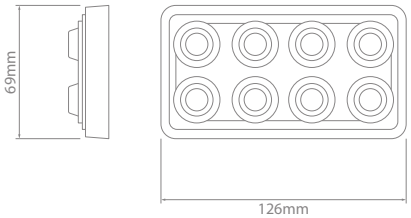
610-00061-004

Illuminated

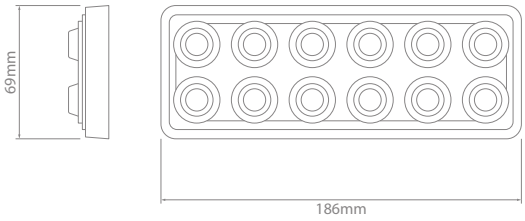
TE DEUTSCH compatible connector on all panels



610-00061-005

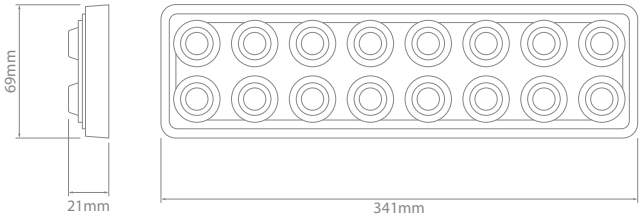


610-00061-008



610-00061-012

Illuminated



610-00061-016

Smart Touch Switch Panels

Featured

	4 Switches	5 Switches	8 Switches	12 Switches	16 Switches
Part No.	**610**-00061-004	**610**-00061-005	**610**-00061-008	**610**-00061-012	**610**-00061-016

All switch panels supplied with inserts to suit.

Displays / HMI

ICS Switch Panel Kit

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
Construction :	ABS
Operating Temperature :	-40°C to 85°C

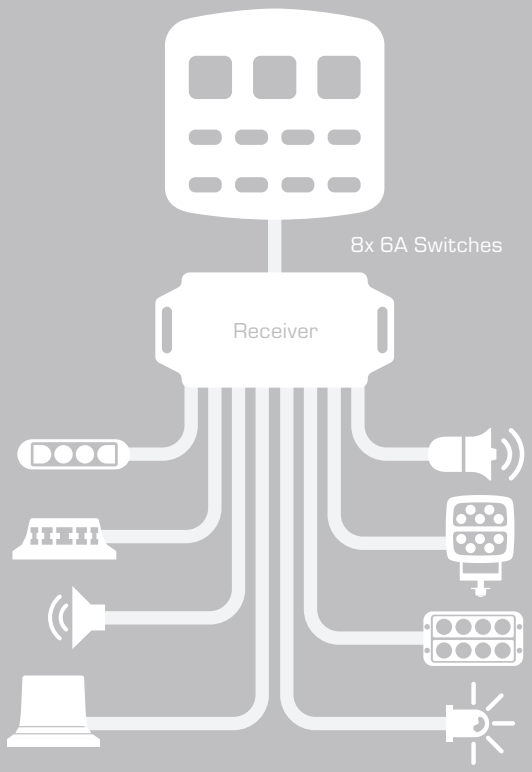
The ICS Switch Panel has been developed to control all types of lighting and other electronic automotive accessories.

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.

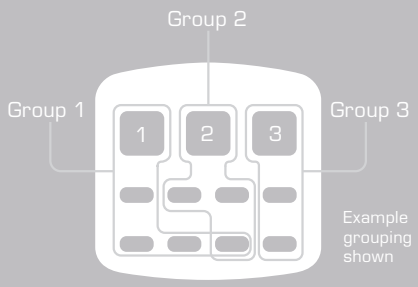


IONNIC

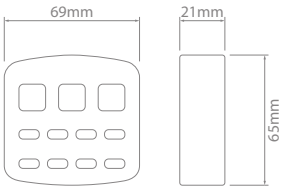
Master Switches

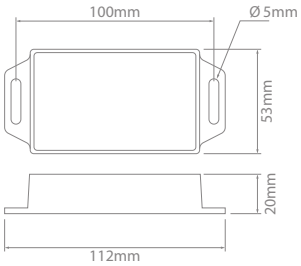
The ICS switch panel features 3 user configurable master switches.
These switches can be used to link any combination of the 8 individual switches together to allow activation of multiple circuits via the switching of a single button.

Note individual switches can be associated to more than one master switch.

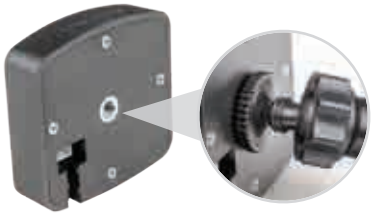


Custom assign any number of buttons to one of the three master switches





Receiver Module



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

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

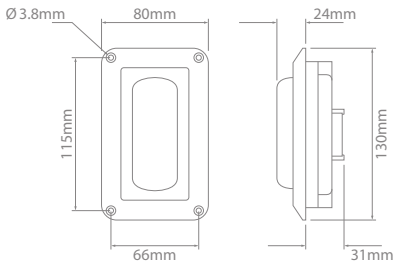
Part No.	Description
ICS-01**S**	Slave Receiver Module
50127	AMP Superseal kit – 3 circuits – Receptacle. Includes contacts and seals
50128	AMP Superseal kit – 3 circuits – Plug. Includes contacts and seals
HT-4301	Parallel Crimping tool. Crimp Range – 0.35–0.5, 0.75, 1.0, 1.5mm²

Intelli-Tank Level 40

- Easy calibration (1 to 9 point) suitable for all tanks of any size or shape.
- Programmable output, typically used for auto-fill function, low/high tank level warning etc.
- One wire data link allows for unlimited optional remote displays.
- Ultra bright LEDs easily viewable from 180° to 9 precise tank levels.
- Custom scrolling text sequences on power up.
- Built-in self diagnostics displayed through scrolling text.
- Optional remote driver module used to control external lights, sirens etc concurrent to ITL display.
- Uses proven industrial pressure transducer instead of probes.
- Multiple programmable features inbuilt, including LED dimming level and anti-slush function.
- Rocker switch sized Mini Remote Indicator available.
- Made in North America.

9V 32V | IP67 | Made in North America

Voltage :	9–32V
Current Draw :	100mA @ 13.8V
Output :	Digital 250mA ground
CAN :	SAE J1939
Construction :	Polycarbonate
Bezel :	Die-cast Alloy
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C



ITL-40 System Layout 1 – Simple Install

Illustration shows a typical tank monitoring system demonstrating the simplicity of installation and the use of the programmable output function.

ITLF-40R

Intelli-Tank Level 40 – Kits

Decal Text	Decal Colour	LED Colour Green	Blue	Yellow	Red	Multi
"WATER LEVEL"	Blue	ITL-40G	ITL-40B	ITL-40Y	ITL-40R	ITL-40M
"FOAM LEVEL"	Red	ITLF-40G	ITLF-40B	ITLF-40Y	ITLF-40R	ITLF-40M
"CLASS A FOAM LEVEL"	Yellow	—	—	—	—	ITLF-40MYA
"CLASS B FOAM LEVEL"	Yellow	—	—	—	—	ITLF-40MYB

Kit contents:
1 x ITL-40 Indicator
1 x Indicator Decal
1 x Harness – 3m (118485-10-DTM)
1 x Pressure Transducer (200-00093-001)
1 x Foam Adaptor (102219 Foam Kits only)

Multi-colour indicators feature 2 rows of Green, Blue, Yellow and Red LEDs from top to bottom.

112124

106743

107584

106877

107585

CONNKIT-ITL-DTM

Intelli-Tank Level 40 – Accessories

Part No.	Description
112124*	Mini Remote Indicator – 12–24V
106743	Mini Remote Indicator Decal – Blue "WATER LEVEL"
107584	Mini Remote Indicator Decal – Red "FOAM LEVEL"
106877	Driver Module 4 x 7.5A outputs – 12–24V
107585	Zero Pressure Vacuum Vent MNPT2"
CONNKIT-ITL-DTM	Connection kit. Suits ITL-40 harness (118485-10-DTM)

* 112124 supplied with 1 x Water Decal & 1 x Foam Decal.

Displays / HMI

Fig 1

117690 117691 117700 117692 117693 117695 117697 117698

200-00093-001

102219

118485-10-DTM

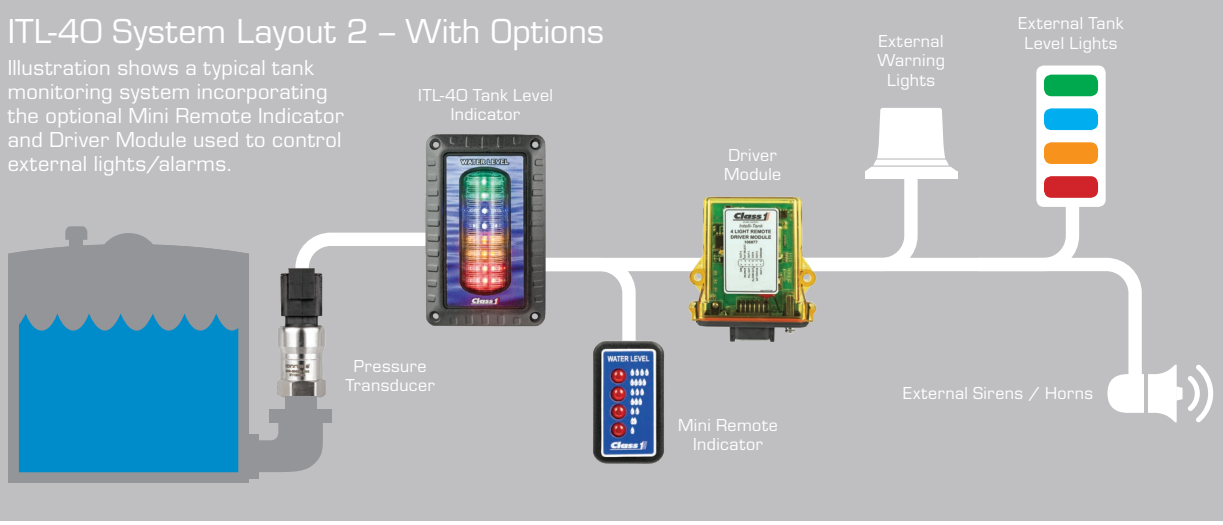
Intelli-Tank Level 40 – Individual Components

Part No.	Description	Fig
123340-**01**	LED Indicator, no decal – Red	1
123340-**03**	LED Indicator, no decal – Yellow	1
123340-**04**	LED Indicator, no decal – Green	1
123340-**05**	LED Indicator, no decal – Blue	1
123340-**06**	LED Indicator, no decal – Multi-colour	1
117690	Indicator decal – "WATER LEVEL" – Green	
117691	Indicator decal – "WATER LEVEL" – Blue	
117700	Indicator decal – "WATER LEVEL" – Orange	
117692	Indicator decal – "FOAM LEVEL" – Red	
117693	Indicator decal – "FOAM LEVEL" – Green	
117694	Indicator decal – "FOAM LEVEL" – Yellow	
117695	Indicator decal – "FOAM LEVEL" – Blue	
117696	Indicator decal – "CLASS A FOAM LEVEL" – Yellow	
117697	Indicator decal – "CLASS B FOAM LEVEL" – Yellow	
117698	Indicator decal – "CLASS B FOAM LEVEL" – Green	
200-00**093**-001	Pressure transducer	
102219	Foam tank adaptor for pressure transducer	
118485-**10-DTM**	Harness – 3m	

Custom labels available upon request.
Other harness lengths available upon request.

ITL-40 System Layout 2 – With Options

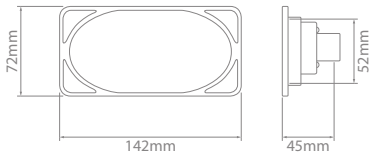
Illustration shows a typical tank monitoring system incorporating the optional Mini Remote Indicator and Driver Module used to control external lights/alarms.



- Engine RPM display.
- System voltage display & alarm.
- Engine oil pressure display & alarm.
- Engine temperature display & alarm.
- SAE J1587 & SAE J1939 compliant models.
- Super bright displays for maximum visibility in daylight.
- Output for external alarm (0.25A), input for alarm silencing.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

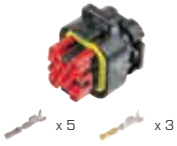
Voltage :	9–32V
Current Draw :	185mA @ 13.8V
Max Alarm Draw :	250mA
CAN :	SAE J1939
Construction :	Polycarbonate
Bezel :	Aluminium Alloy
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

Made in North America | 9V 32V | IP67



Engine Information Centre – IV

Part No.	Description
108661	Engine Information Centre IV



Engine Information Centre – Connection Kit

Part No.

CONNKIT-**ENFO**IV

Crimping tools can be found on page 96.

Emerge
service

Ap

ency
es

Fire pliances

For decades Class 1 systems have been the backbone of the fire appliance and allied emergency services vehicle industry.

Adoption of Class 1 multiplexing has simplified and reduced the hardware components required for the electrical system and have also increased the range of possibilities of what can be controlled.

- Pump governing
- Fluid level monitoring
- Fluid flow control
- Lighting operation
- Switch operation
- Safety interlocking
- P.T.O.
- Light mast
- Warning indication
- Interface with OEM chassis
- Emergency lighting
- Inbuilt diagnostics
- Low voltage management

UV800

Supernode II

Smart Touch

HD PDM

PDM

I/O Module

Sentry

Twister

ITL System

Seat Belt Warning System

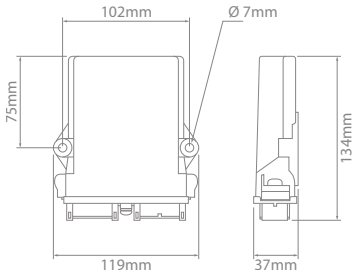
9V 32V

Made in North America

- Utilises SAE J1939 CAN standard to record NFPA required data.
- Large Seat Belt Warning System displays the status of up to 12 seats simultaneously.
- Display available in rocker size, can be integrated with Supernode.
- Can integrate with Vehicle Data Recorder for event archiving, see page 66.
- Input Module is environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

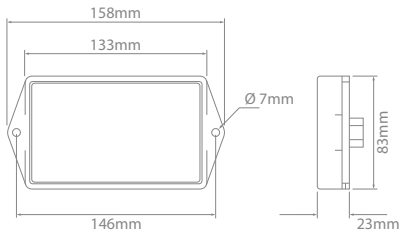
Voltage :	9–32V
CAN :	SAE J1939, 250 Kbit/second
Construction :	Polycarbonate
Ingress Protection :	Input Module IP67
Operating Temperature :	-40°C to 85°C

LED status indicators

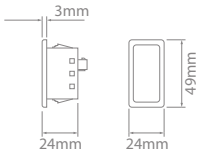


Seat Belt Warning System – Input Module

Part No.	Current Draw (mA) @ 13.8V
118093	57



118551



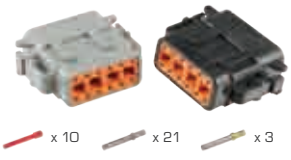
Indicates all occupied seats have seat belts engaged

Each occupied seat without a seat belt engaged is momentarily displayed until all are engaged

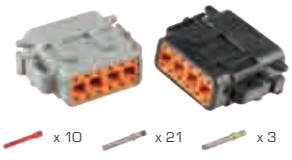
118620

Seat Belt Warning System – Displays

Part No.	Description	Current Draw (mA) @ 13.8V
118551	Large multi-seat belt display	75
118620	Small seat belt indicator	57



CONNKIT-IO



CONNKIT-IO-PB

CONNKIT-TWISTER

Seat Belt Warning System – Connection Kits

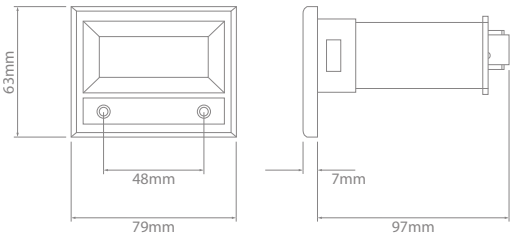
Part No.	Description	Suits
CONNKIT-**IO**	Connection Kit	Seat Belt Warning Input Module (118093)
CONNKIT-**IO**-PB	Connection Kit – Purple Band Socket	Seat Belt Warning Input Module (118093)
CONNKIT-**TWISTER**	Connection Kit	Large Seat Belt Display (118551)

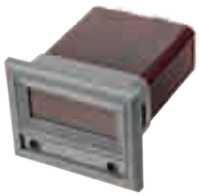
Crimping tools can be found on page 96.

- Super bright, easy to see display.
- 90dB warning buzzer included in selected models.
- Compact design.
- Silence button for audible alarm included.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

9V 32V | IP67 | Made in North America

Voltage :	9–32V
Alarm Output Polarity :	Negative
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C





111667

103523

102161

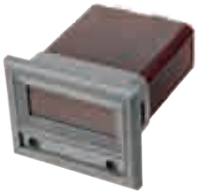
102035

102008

Minder Series Kits – Pressure Gauge

Part No.	Description	Kit Contents
PSIS	Digital Pressure Gauge Kit	1 x Display (111667) 1 x Decal "PRESSURE" (103523) 1 x Transducer (102161) 1 x Harness – 3m (102035) 1 x Display Mounting Kit (102008)

The Pressure Gauge displays current pressure or vacuum (kPa, PSI or BAR) in a numeric format.



111663

103522

102714

102033

102008

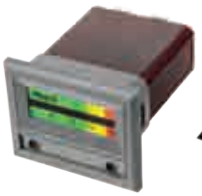
Optional accessory
Flow Sensor mounting boss

SFM

Minder Series Kits – Flowminder

Part No.	Description	Kit Contents
FMS	Flowminder Kit	1 x Display (111663) 1 x Decal "FLOWMINDER" (103522) 1 x Flow Sensor (102714) 1 x Harness – 3.1m (102033) 1 x Display Mounting Kit (102008)
SFM	Flow Sensor mounting boss	

Displays current flow (litres per minute) in a numeric format.



111653

101995

102606

102088

100571

102671

102008

Minder Series Kits – Loadminder

Part No.	Description	Kit Contents
LMS	Loadminder Kit	1 x Display (111653) 1 x Decal "LOW LEVEL AERIAL LOADING" (101995) 1 x Pressure Transducer (102606) 1 x Silence Button (102088) 1 x Buzzer 90dB (100571) 1 x Harness – 3m (102671) 1 x Display Mounting Kit (102008)

Loadminders display the current low-level load in a simple, easy-to-read LED bar style display that instantly adjusts as the ladder angle, extension or live load changes.

As the loading increases, so does the number of bars that are illuminated on the display. When the maximum low-level loading approaches (as determined by the aerial manufacturer and calibrated at the factory) the display will begin to flash.

A slight (25-50kg) additional load will cause the audible alarm to sound which alerts the operator to an overload condition.

- Display flashes when approaching maximum load
- Audible alarm when maximum reached
- Auxiliary output activates strobe (optional)

Displays / HMI

111654

101996

102606

102088

100571

102671

102008

Minder Series Kits – Oxyminder

Part No.	Description	Kit Contents
OMS	Oxygen Minder Kit	1 x Display (111654) 1 x Decal "% OXYGEN REMAINING" (101996) 1 x Pressure Transducer (102606) 1 x Silence Button (102088) 1 x Buzzer 90dB (100571) 1 x Harness – 3m (102671) 1 x Display Mounting Kit (102008)

Oxyminder displays current oxygen level in a simple, easy-to-read LED bar style display.

- Display flashes at 25% total air capacity
- Audible alarm sounds at 20% air capacity

111655

101994

102606

102088

100571

102671

102008

Minder Series Kits – Airminder

Part No.	Description	Kit Contents
AMS	Airminder Kit	1 x Display (111655) 1 x Decal "% AIR REMAINING" (101994) 1 x Pressure Transducer (102606) 1 x Silence Button (102088) 1 x Buzzer 90dB (100571) 1 x Harness – 3m (102671) 1 x Display Mounting Kit (102008)

Airminders display current breathing air level in a simple, easy-to-read LED bar style display.

- Display flashes at 25% total air capacity
- Audible alarm sounds at 20% air capacity
- Ideal for aerials, aerial platforms, air trucks and C.F.R. vehicles

Minder Series Kits – Spare Part

Part No.	Description	Suits
100944	Replacement display bezel	All Minder Series

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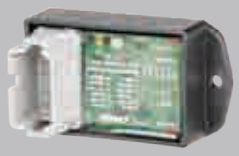
ionnic.com/product-updates.html

ionnic.com



I/O Controllers

System Managers 42

I/O Modules 46

Power Distribution Modules 50

I/O Controllers

System Managers

122116

119890

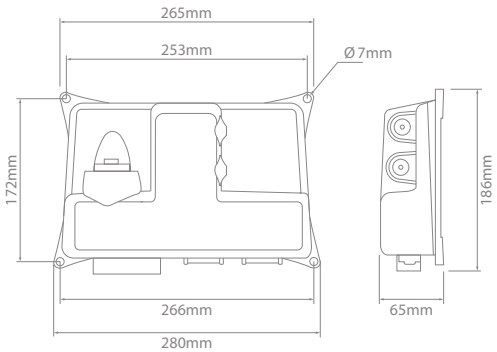
9V 32V | IP67 | Made in North America

- SAE J1939 CAN engine message reception and Es-Key network controller.
- Digital circuit breakers on all positive outputs.
- Output 'open load' detection.
- Diagnostic LED indicators.
- Optional modem available upon request.
- Selectable polarity for digital inputs models.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Die-cast/Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

Centralised Consolidation

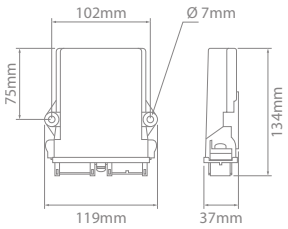
The Supernode II consolidates the functions of several modules – USM, Data Logger, Seatbelt, Vehicle Data Recorder (VDR), Climate Control, I/O Module & Power Distribution Module. This reduces node count and simplifies addressing making it well suited for applications where a centralised node location is required.



System Managers – Supernode II

Part No.	Inputs Polarity Selectable	Outputs Positive	Outputs Negative	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A) Positive	Max. Output Current Rating (A) Negative
119890	24	18	6	500	350	13	2

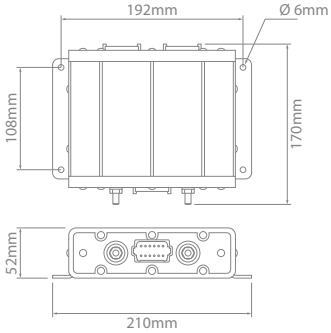
* Current Draw does not include draw from outputs.



System Managers – Universal System Manager 2

Part No.	Inputs Polarity Selectable	Outputs Polarity Selectable	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A) Polarity Selectable
122116	6	5	100	125	0.5

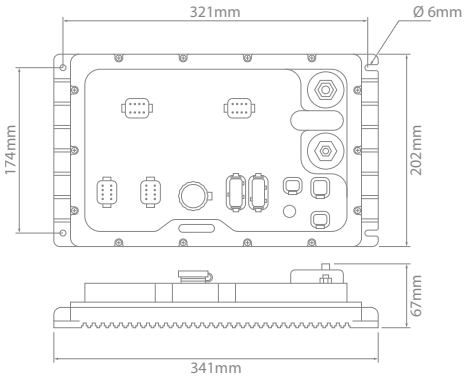
* Current Draw does not include draw from outputs.



System Managers – 8x16 Node

Part No.	Inputs Digital	Outputs	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A)
6730-0000-00	8	16	50	60	13

* Current Draw does not include draw from outputs.

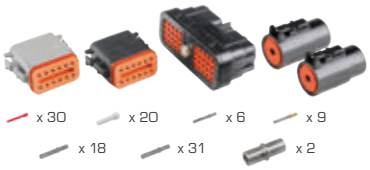


System Managers – Hercules HC

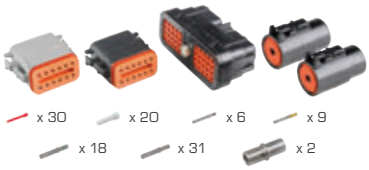
Part No.	Inputs Analogue	Inputs Digital	Outputs	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V	Max. Output Current Rating (A) Positive	Max. Output Current Rating (A) Negative
6060-0000-00	4	16	32	69	63	13	4

* Current Draw does not include draw from outputs.

I/O Controllers



CONNKIT-SN2



CONNKIT-SN2-PB

CONNKIT-DIAGSN2REM

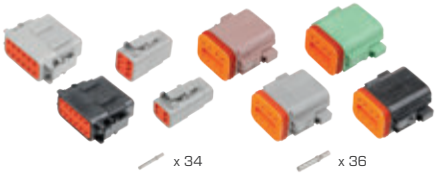
CONNKIT-DIAGSN2

CONNKIT-USM2

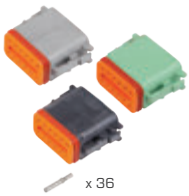
CONNKIT-USM2-PB

CONNKIT-DIAGUSM2

CONNKIT-DIAGUSM2REM



OK90-3462-00



OK90-2286-00

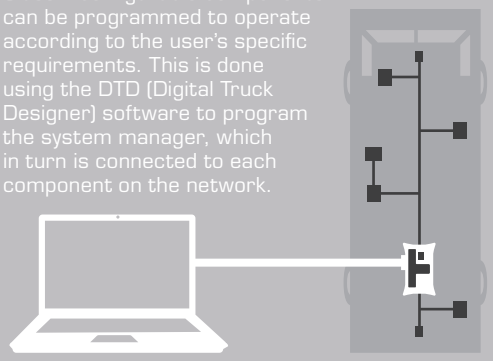
System Managers – Accessories

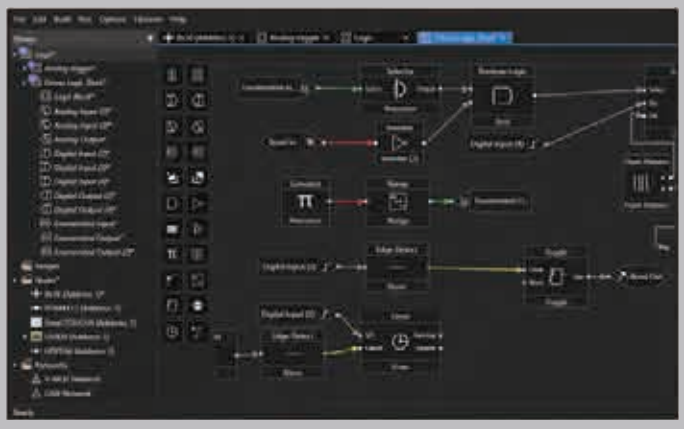
Part No.	Description	Suits
CONNKIT-**SN2**	Connection Kit	Supernode II (119890)
CONNKIT-**SN2**-PB	Connection Kit – Purple Band Socket	Supernode II (119890)
CONNKIT-**DIAG**SN2**REM**	Remote USB diagnostic connector	Supernode II (119890)
CONNKIT-**DIAG**SN2	USB Programming Cable	Supernode II (119890)
CONNKIT-**USM2**	Connection Kit	Universal System Manager 2 (122116)
CONNKIT-**USM2**-PB	Connection Kit – Purple Band Socket	Universal System Manager 2 (122116)
CONNKIT-**DIAG**USM2	Programming Cables	Universal System Manager 2 (122116)
CONNKIT-**DIAG**USM2**REM**	Remote USB diagnostic connector	Universal System Manager 2 (122116)
OK90-3462-**00**	Connection Kit	Hercules HC (6060-0000-00)
OK90-2286-**00**	Connection Kit – 3 Connectors	8x16 Node (6730-0000-00)

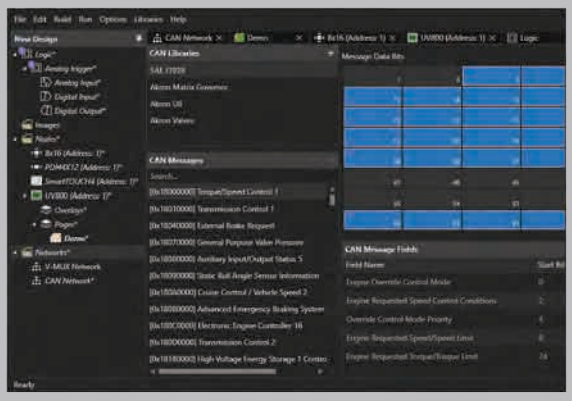
Crimping tools can be found on page 96.

Class 1 DTD Programming

Class 1 configurable components can be programmed to operate according to the user's specific requirements. This is done using the DTD (Digital Truck Designer) software to program the system manager, which in turn is connected to each component on the network.







The DTD software is an all in one program allowing the user to set up and program each component of an Es-Key network in a simple, user-friendly environment.

Each component on the application is added to the list of inputs, renamed for easy reference, and programmed to operate accordingly.

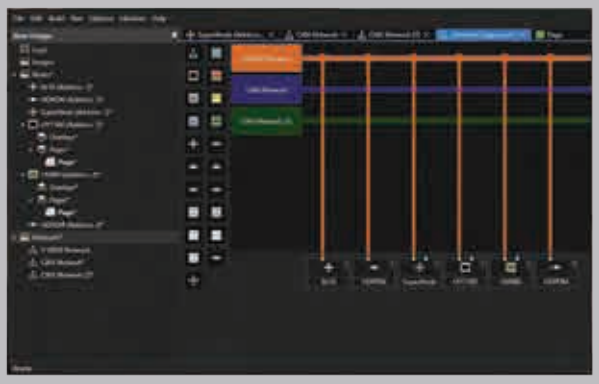
Programming can be as simple or as complex as required. All this is done through a comprehensive graphical user interface.

- Highly intuitive graphical user interface
- Rename circuits for easy reference
- Nest logic to perform any interlock
- Use previously designed component nest logic simply
- Simple to highly complex logic statements – it's up to you
- Use virtual circuits to create custom program functions
- Automatically create printable system reports
- Wire vehicles the same and change their behaviour by simply changing the program
- Activate options, change flash patterns and load management settings without changing a single wire

Diagnostics

The advanced diagnostic capability of the DTD program makes fault checking easier than ever. Connect to your vehicle locally or remotely, to initiate and simplify the diagnostic process.
Troubleshoot the entire system or just a single output. With the ability to force on or off any input/output, the software can assist with much of the fault diagnosis process before even opening your toolbox.

- Download reports and data logger information
- Real-time feedback
- Local or remote connection capability
- Detailed CAN information
- Fault code reporting
- Module status information
- Easy download capability
- Force on or force off any input or output



Easily see a comprehensive graphical view of the entire network

I/O Controllers

I/O Modules

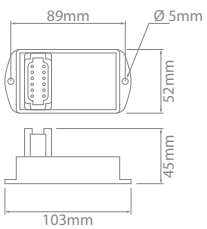
610-00041

610-00030

- Introduces switched inputs into the Es-Key network.
- 610-00041 incorporates H-Bridge functionality.
- Up to 18 inputs and 16 outputs.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

9V 32V | IP67 | Made in North America

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C



Accelerometer Input Signal

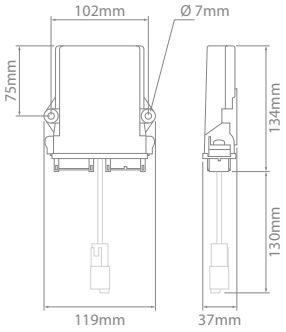
The 610-00033 can accept multiple input signal types.

Voltage – 0 to 5V/30V
Current – 4 to 20mA
Frequency – 5V peak to peak, or system voltage
Resistance – 0 to 2800 Ohms

I/O Modules – Accelerometer

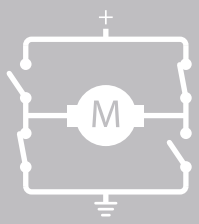
Part No.	Description	Input Signal Source		Digital Input	Digital Output	Polarity		Input Signal
		Internal	External			Input	Output	
610-00033	Accelerometer	2	2	1	1	Selectable	-0.25A	*See above*

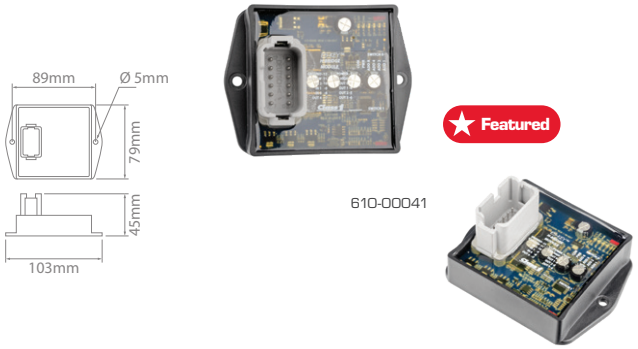
I/O Controllers

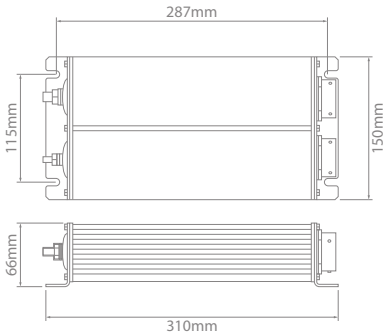


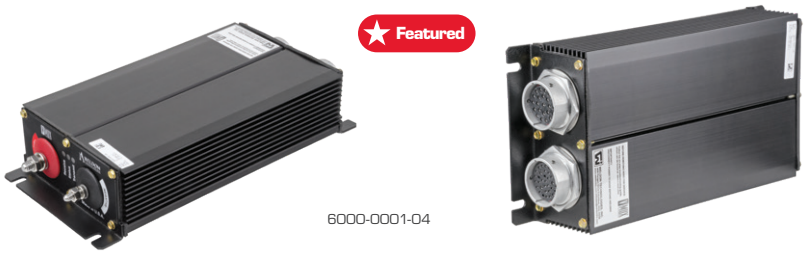
H-Bridge Functionality

An H-bridge is an electronic circuit that switches the polarity of a voltage applied to a load. These circuits are often used in robotics and other applications to allow DC motors to run forwards or backwards.







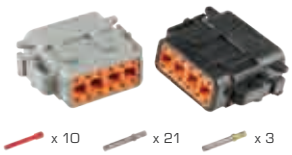


I/O Modules

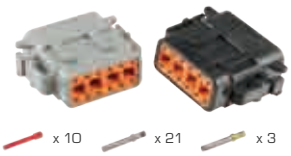
Part No.	Inputs Digital	Inputs Analogue	Current Draw (mA @ 13.8V)	Outputs	Max. Output Current Rating (A) Positive	Max. Output Current Rating (A) Negative	Input Polarity	Output Polarity
610-00030	18	1*	62	Up to 3	0.25		Selectable	Selectable
610-00031	—	—	62	16	0.25		—	Selectable
6010-0000-**00** ★	4	1	103	12	7.5		Selectable	Positive
6020-0000-**01** ★	16	0	53	0	—		Selectable	—
610-00041 ★	3	1△	30	5	2¤ x 6.0	3 x 0.5	Selectable	Selectable
6000-0001-**04** ★	16	3	45	26	16 x 10.5 8 x 4.0	2 x 4.0	Selectable	24x Positive /2x Negative

* Analogue input range: 4–20mA, 0-5V.
△ Analogue input range: 0–5V, 0–30V or frequency.
¤ Outputs: 2 x 6A designated for "H" Bridge functionality.

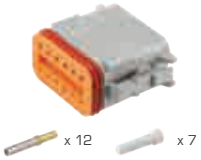
I/O Controllers



CONNKIT-IO



CONNKIT-IO-PB

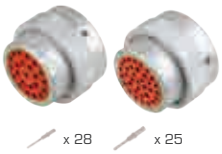


CONNKIT-DUALA2D

OK90-2282-00

OK90-2281-00

OK90-2286-00



OK90-2280-00

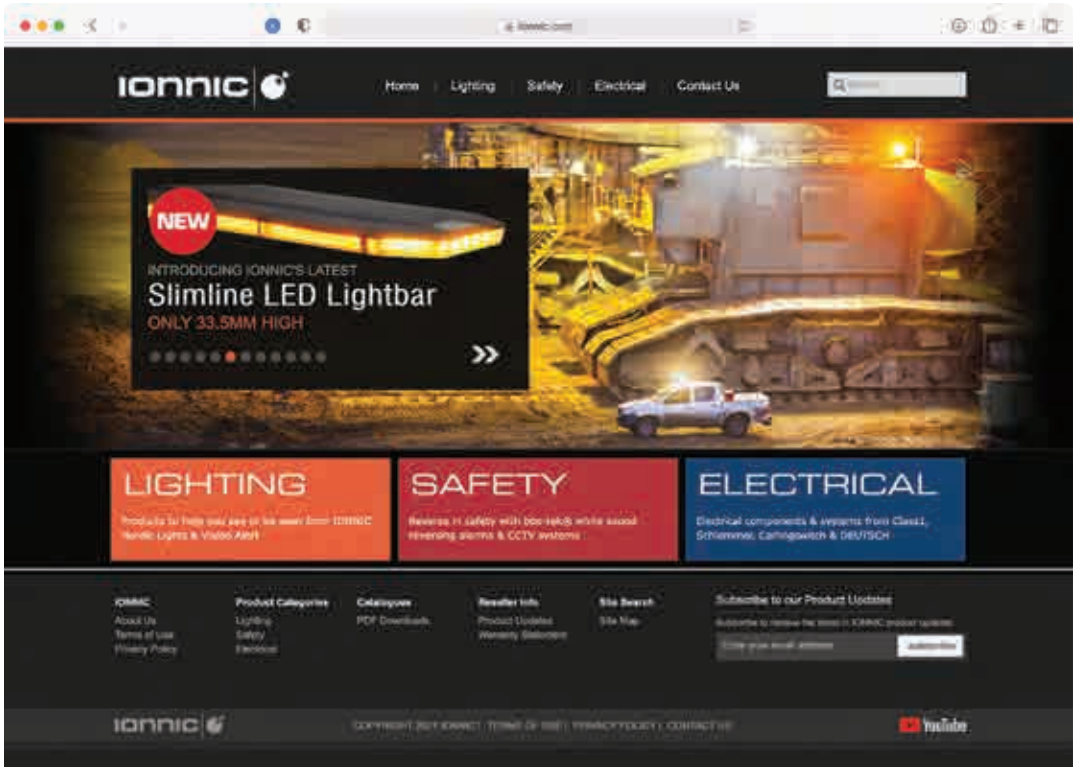
I/O Modules – Connection Kits & Accessories

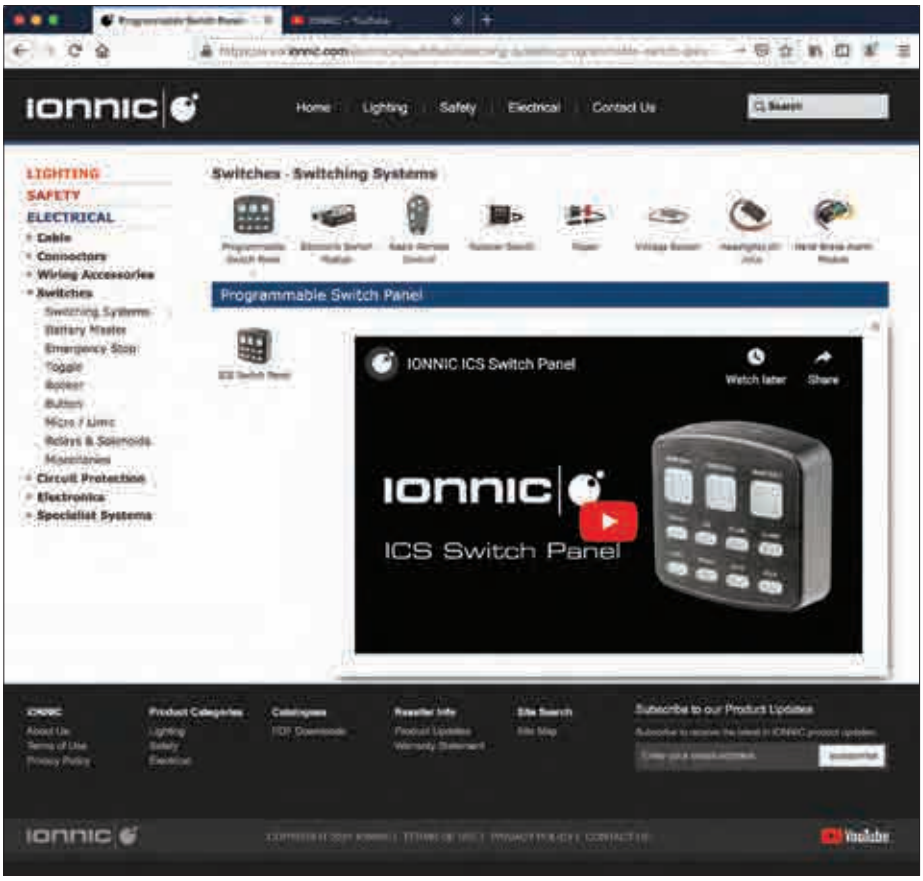
Part No.	Description	Suits
CONNKIT-**IO**	Connection Kit	610-00030, 610-00031
CONNKIT-**IO**-PB	Connection Kit – Purple Band Socket	610-00030, 610-00031
CONNKIT-**DUAL**A2D	Connection Kit	610-00041, 610-00033
OK90-2282-**00**	Connection Kit	6020-0000-01
OK90-2281-**00**	Connection Kit	6010-0000-00
OK90-2286-**00**	Connection Kit	6030-0000-01
OK90-2280-**00**	Connection Kit	6000-0001-04

Crimping tools can be found on page 96.

ionnic.com

Visit website





Check out videos on a range of products

The IONNIC website – for all the most up to date products and info

I/O Controllers

Power Distribution Modules

120727

- Supplies power to system loads, and introduces digital/analogue inputs into the Es-Key network.
- Selectable polarity for digital inputs models.
- Up to 21 outputs from a single module.
- High current model features 30A continuous output current rating.
- HD PDM & HC PDM incorporate LED displays with 2 buttons for diagnostic, indication and configuration purposes.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

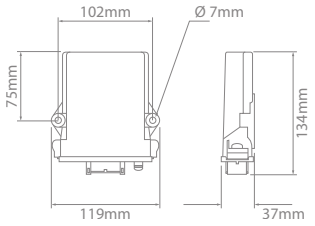
610-00034

9V 32V | IP67 | Made in North America

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Polycarbonate & Aluminium
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

610-00034

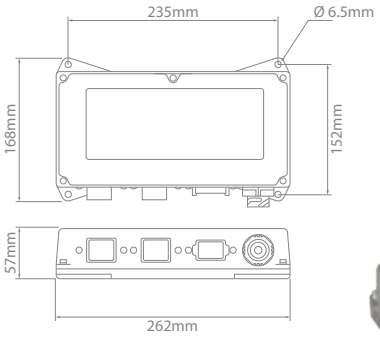
610-00035



Power Distribution Modules

Part No.	Description	Inputs	Input Type	Outputs	Max. Output (A)	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V
610-00034	PDM	0 – 4	Digital	4 – 8	7.5	65	85
610-00035	PDM	0 – 4	MFI	8 – 12	7.5	65	85

* Current Draw does not include draw from outputs.



Featured

120727
HD PDM

LED display with 2 buttons for diagnostic, indication and configuration purposes

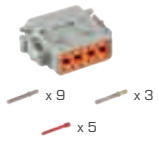
610-00046
HC PDM

Power Distribution Modules – High Density/High Current

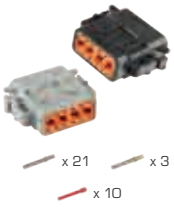
Part No.	Description	Inputs	Input Type	Outputs	Max. Output (A)	Current Draw (mA) * @ 13.8V	Current Draw (mA) * @ 27.6V
120727	High Density Power Distribution Module (HD PDM)	10	MFI	21	13	73	82
610-00046	High Current Power Distribution Module (HC PDM)	8	4 x Digital 4 x MFI	8	30	73	82

MFI inputs – Selectable 0-30V, 0-5V, 4-20mA, Digital, Resistive, Frequency. Refer to data sheet for individual product specifications.

* Current Draw does not include draw from outputs.



CONNKIT-PDM



CONNKIT-IO

121701

CONNKIT-HDPDM

CONNKIT-HCPDM

Power Distribution Modules – Accessories

Part No.	Description	Suits
CONNKIT-**PDM**	Connection Kit	PDM (610-00034)
CONNKIT-**PDM**-PB	Connection Kit – Purple Band Socket	PDM (610-00034)
CONNKIT-**IO**	Connection Kit	PDM (610-00035)
CONNKIT-**IO**-PB	Connection Kit – Purple Band Socket	PDM (610-00035)
121701	Power connector	HD PDM (120727) & HC PDM (610-00046)
CONNKIT-HD**PDM**	Connection Kit	HD PDM (120727)
CONNKIT-HC**PDM**	Connection Kit	HC PDM (610-00046)

Crimping tools can be found on page 96.

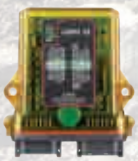
Heavy Industry

UV700

UV500

Twister

HD PDM



USM2

I/O Module

Mining Service Trucks

Solid state technology ensures that there are no wearing electrical components in the Class 1 system. Increased performance, added flexibility, reduced development time and lower cost over the life of the vehicle are just some of the Class 1 benefits.

- Can integrate with vehicle telematics
- Fluid monitoring
- Fluid flow control
- Lighting control
- Inbuilt diagnostics
- Graphical user interface
- Multi-level password access
- Access control

TPG+
IDLE
INC
DEC

MATRIX

Governors

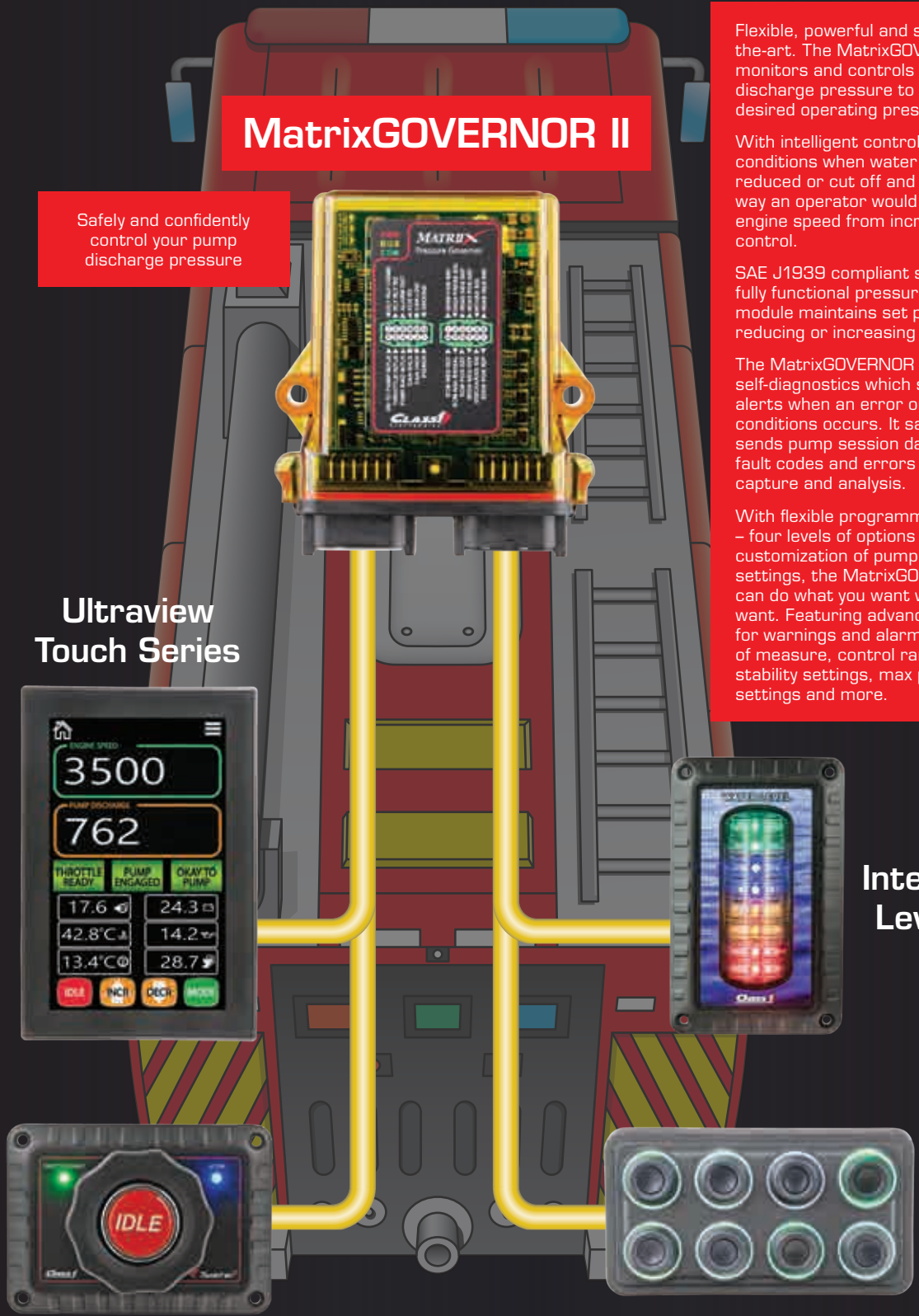
MatrixGOVERNOR II 57

Sentry Governor Kits 58

Twister 59

Total Pressure Governor Kits 60

MATRIX
Pressure Governor



MatrixGOVERNOR II

Safely and confidently control your pump discharge pressure

Flexible, powerful and state-of-the-art. The MatrixGOVERNOR II monitors and controls your pump discharge pressure to maintain desired operating pressure range.

With intelligent controls, it detects conditions when water supply is reduced or cut off and reacts the way an operator would to keep engine speed from increasing out of control.

SAE J1939 compliant stand-alone fully functional pressure governor module maintains set pressure by reducing or increasing engine RPM.

The MatrixGOVERNOR II features self-diagnostics which sends out alerts when an error or fault conditions occurs. It saves and sends pump session data, alarms, fault codes and errors over CAN for capture and analysis.

With flexible programming options – four levels of options providing customization of pump control settings, the MatrixGOVERNOR II can do what you want when you want. Featuring advanced settings for warnings and alarms, units of measure, control ramp rates, stability settings, max pressure settings and more.

Ultraview Touch Series

Intelli-Tank Level 40

Twister

Smart Touch Switch Panels

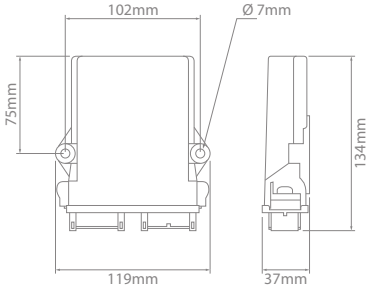
Fully networked system allows controls from multiple locations with various user interfaces

MatrixGOVERNOR II

- SAE J1939 compliant stand-alone fully functional pressure governor module.
- Monitors discharge pressure and maintains set pressure by reducing or increasing engine RPM.
- Hard wired interlocks (throttle ready, pump engaged, ok to pump).
- Increase, decrease, idle, mode (pressure or RPM), preset, high idle inputs.
- Programmable default mode (pressure, RPM or none).
- Self-diagnostic options – sends out alarms and warnings when error or fault conditions occur.
- Made in North America.

Voltage :	9–32V
Current Draw :	50mA @ 13.8V
Max Output Current :	250mA
CAN :	SAE J1939
Construction :	Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

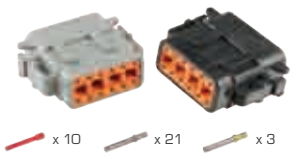
Made in North America | 9V 32V | IP67



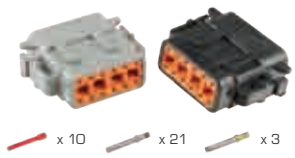
Featured

MatrixGOVERNOR II

Part No.	Description
610-00052	Pressure governor module



CONNKIT-IO



CONNKIT-IO-PB

MatrixGOVERNOR II – Connection Kits

Part No.	Description
CONNKIT-**IO**	Connection Kit
CONNKIT-**IO**-PB	Connection Kit – Purple Band Socket

Crimping tools can be found on page 96.

Governors

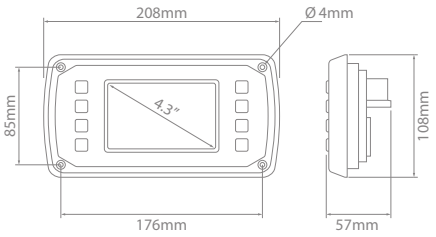
Sentry Governor Kits

9V 32V IP67 Made in North America

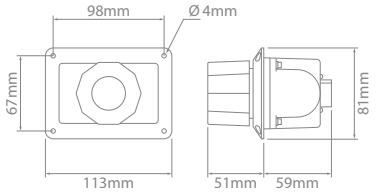
- SAE J1939 CAN based pressure governing system.
- Controls engine speed directly over J1939 network or analogue control.
- Monitors RPM and other pertinent data directly from the engine ECU.
- 4.3" full colour LCD display with 8 tactile feedback buttons.
- Kits include Sentry display, Twister throttle, pressure transducers and associated wiring.
- Available in horizontal or vertical models.
- Advanced diagnostics – 2 levels, one for operator and one for maintenance technician.
- Environmentally sealed – IP67.
- Made in North America.

Voltage :	9–32V
Current Draw :	240mA @ 13.8V
Analogue Output :	0–5V
CAN :	SAE J1939
Construction :	Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

Vertical orientation



599-00010-001



Advanced Diagnostics

The Sentry Governor pressure system has advanced diagnostic features unparalleled in the fire service industry.

It provides two levels of diagnostics; one for the operator, and one for the maintenance technician.

Error screen describing issue with suggested solution and illustration.

Sentry Governor Kits

Kits Including Twister

Vertical Orientation

599-00010-001

Kit Contents:
1 x Display (3045-101-00-CL1)
1 x Bezel (122387)
1 x Decal (122482)
1 x Harness (513-00019)
2 x Transducer 0-300 PSI (113557)
1 x Twister (119970)

Horizontal Orientation

599-00010-002

Kit Contents:
1 x Display (3045-102-00-CL1)
1 x Bezel (122387)
1 x Decal (122481)
1 x Harness (513-00019)
2 x Transducer 0-300 PSI (113557)
1 x Twister (119970)

Kits Not Including Twister

Vertical Orientation

599-00010-003

Kit Contents:
1 x Display (3045-101-00-CL1)
1 x Bezel (122387)
1 x Decal (122482)
1 x Harness (513-00019)
2 x Transducer 0-300 PSI (113557)

Horizontal Orientation

599-00010-004

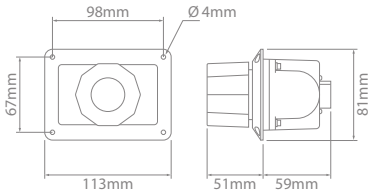
Kit Contents:
1 x Display (3045-102-00-CL1)
1 x Bezel (122387)
1 x Decal (122481)
1 x Harness (513-00019)
2 x Transducer 0-300 PSI (113557)

Optional 0-600 PSI transducer available, see page 75.

- Class 1's Twister is an electronic vernier style throttle for controlling the speed of:
  – SAE J1939 CAN compliant engines
  – Analogue (DC voltage) controlled engines
- Power-on state is always idle.
- Interlocked for safety.
- Clockwise or counter-clockwise operation.
- Ergonomic control with tactile feedback.
- Large and easily accessible idle button.
- Bright LED indicators. "Throttle Ready" for interlock, and "Active" for active engine control.
- Environmentally sealed – IP67.
- Made in North America.

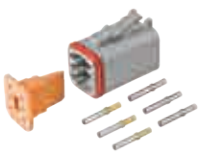
Voltage :	9–32V
Current Draw :	240mA @ 13.8V
Analogue Output :	0-5V
CAN :	SAE J1939
Construction :	Die-cast Alloy
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C

Made in North America | 9V 32V | IP67



Twister

Part No.	Output
119970	CAN
119971	Analogue



Twister – Connection Kit

Part No.	Suits
CONNKIT-**TWISTER**	Both CAN & Analogue Twisters

Crimping tools can be found on page 96.

Governors

Total Pressure Governor Kits

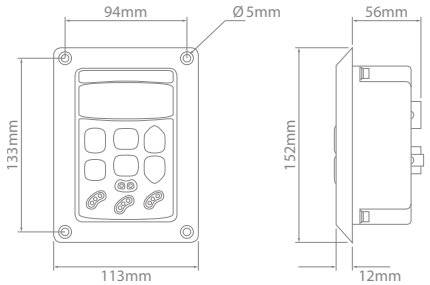
9V 32V | IP67 | Made in North America

- Controls engine speed directly over J1939 network or analogue control.
- Tactile feedback buttons.
- Water S.I.P. – Maximises pressure & flow with minimum engine RPM.
- Large, easy to read alpha-numeric displays.
- Easy setup & configuration.
- Dedicated Pump Intake and Pump Discharge displays. TPG+ only.
- Integrated warning lights – battery voltage, water temperature & oil pressure.
- Audible alarm output.
- Programmable presets.
- Environmentally sealed – IP67.
- Multi-voltage.
- Made in North America.

Voltage :		9–32V
Current Draw :	TPG	350mA @ 13.8V
	TPG+	400mA @ 13.8V
Analogue Output :		0-5V
CAN :		SAE J1939
Construction :		Die-cast Alloy
Ingress Protection :		IP67
Operating Temperature :		-40°C to 85°C

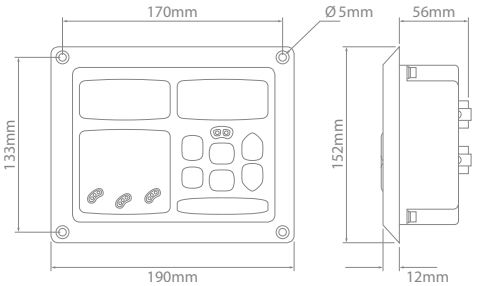
116600

TPG



Dedicated pump intake & discharge displays

TPG+



Total Pressure Governor Kits

Part No.	Kit	Description	Kit Contents	
116600	TPG	Pump governor	1 x TPG 1 x Transducer (113557)	1 x Harness (116053) 1 x Manual
119650	TPG+	Pump governor integrating dedicated pump intake & discharge displays	1 x TPG+ 2 x Transducer (113557)	1 x Harness (118453) 1 x Manual

113557, 117179

116053

118453

Total Pressure Governors – Accessories

Part No.	Description
113557	Pressure sensor – 0 to 300 PSI
117179	Pressure sensor – 0 to 600 PSI
116053	Harness – 1.2m. Suits TPG
118453	Harness – 1.2m. Suits TPG+

Climate Control

Auxiliary Controllers

Climate Control Module 64

Vehicle Data Recorder 66

Gateway Kit 67

ESM Mini Kit 68

Auxiliary Controllers

Climate Control Module

- Controls a vehicle's A/C compressor clutch, heat valve and fans.
- High current digital outputs.
- Dedicated inputs for two analogue temperature sensors – internal and external.
- Pulsed Width Modulation (PWM) for blower fan outputs.
- Automatic and manual modes of operation.
- Integrates control with Ultraview display.
- Configurable input/output.
- Multi-voltage.
- Made in North America.

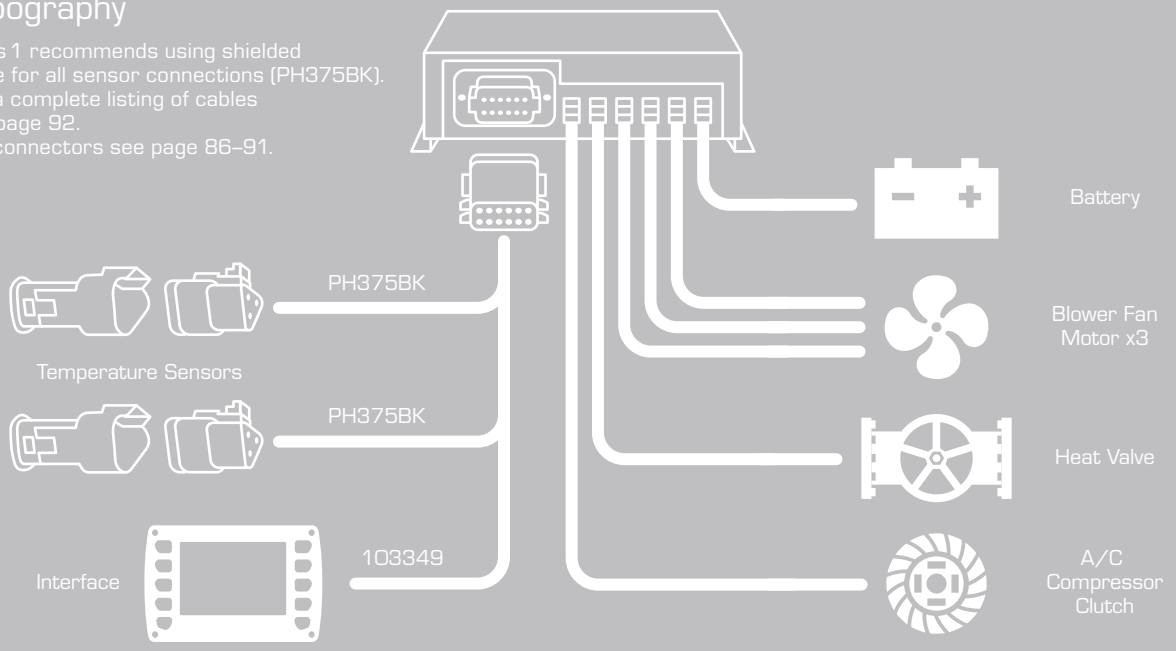
9V 32V

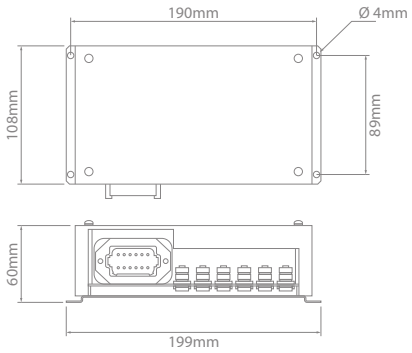
Made in North America

Voltage :	9–32V
CAN :	SAE J1939
Construction :	Powder-coated Steel
Operating Temperature :	-40°C to 85°C

Topography

Class 1 recommends using shielded cable for all sensor connections (PH375BK). For a complete listing of cables see page 92.
For connectors see page 86–91.





Climate Control Module

Part No.	Current Draw (mA) *		Max. Output Current Rating (A)			
	@ 13.8V	@ 27.6V	Fan Motors	AC Clutch	Heat Valve	Aux Output
610-00029	72	36	25	15	15	0.25

* Current Draw does not include draw from outputs.

Functionality of this module is integrated into the Supernode II (page 42) with firmware version 9.05 or later.

CONNKIT-CCMODULE

115722

CONNKIT-TEMPSENSOR

Climate Control Module – Accessories

Part No.	Description
CONNKIT-**CC**MODULE	Connection Kit
115722	Temperature Sensor with mounting clip. Range -30°C – 150°C
CONNKIT-**TEMP**SENSOR	Connection Kit for Temperature Sensor (115722)

Crimping tools can be found on page 96.

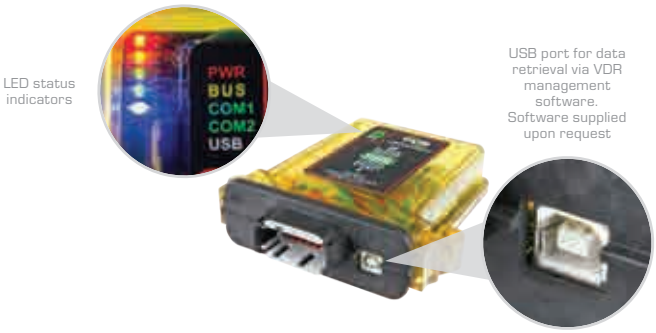
Auxiliary Controllers

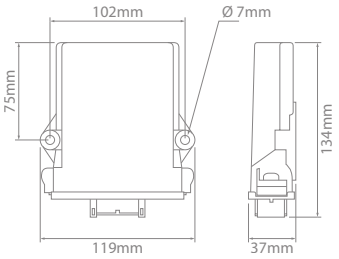
Vehicle Data Recorder

9V 32V | IP67 | Made in North America

- Utilises SAE J1939 CAN standard to record NFPA required data.
- Retains last 100 hours of stored data in memory.
- Internal real-time clock with 10 year battery back-up.
- Integrates with Seat Belt Warning System (page 34) to record seating data.
- 32-bit ARM processor.
- Software available for quick & easy data retrieval. Supplied upon request.
- USB port for data retrieval via VDR management software.
- Monitors and records Engine RPM, Throttle percentage, vehicle speed, ABS events, transmission range information, parking brake position, master warning position, seatbelt status.
- Made in North America.

Voltage :	9–32V
Current Draw :	55mA @ 13.8V
Output :	250mA per Output
CAN :	SAE J1939
Construction :	Polycarbonate
Ingress Protection :	IP67
Operating Temperature :	-40°C to 85°C





Vehicle Data Recorder (VDR)

Part No.	Description
119914	VDR control module

Vehicle Data Recorder – Connection Kits

Part No.	Description
CONNKIT-**PDM**	Connection Kit
CONNKIT-**PDM**-PB	Connection Kit – Purple Band Socket

Crimping tools can be found on page 96.

- Provides remote connection to compatible devices.
- Multi-carrier 4G LTE connectivity.
- Dual SIM card port (2x Mini 2FF).
- Multiple communication ports.
- Routing capabilities provide secure, reliable communication.
- Triggers alarms and sends SMS messages.
- Built-in GPS.
- Built-in Ethernet and serial connectivity.
- Data usage alerts via email/sms.
- Low power consumption.
- Made in North America.

Voltage :	7–30V
Current Draw :	0.15A
CPU :	32-bit ARM9 400 MHz
NAND :	512MB
RAM :	128MB
Ethernet :	10/100 Base-T RJ45 Ports
Serial :	RS-232 (DB9) 115,200bps
Antennas :	4x SMA Connectors
Humidity :	5 to 95% non-condensing
Approvals :	FCC/IC, UL HazLoc, PTCRB
Operating Temperature :	-40°C to 85°C

Made in North America

7V 30V

Gateway Router

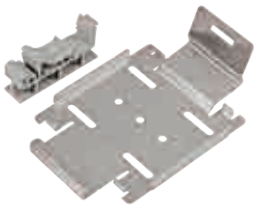
Secure and reliable wireless communication to remote assets. Telstra extranet 4G LTE connectivity with fallback to 3G network.

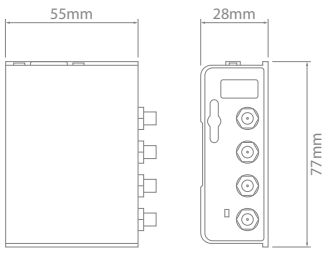
Featuring a web-based event engine that can trigger alarms and send SMS text messages based on real-time operational data.

Reliable local control and alerts of critical events sent to personnel.

Featured

610-117500





610-ANT-058

Gateway Kit

Part No.	Description	Kit Contents
610-117**500**	Cellular Gateway Kit	1 x Gateway Module (MHS117500) 1 x Power Cable (MHS041420) 1 x Mounting Bracket (MHS055040)
610-ANT-**058**	Antenna, externally mounted	

Auxiliary Controllers

ESM Mini Kit

- 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.

12V 24V

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

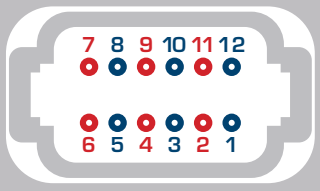
The ESM Mini is a compact, electronically controlled switch module with inbuilt circuit monitoring and protection.

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

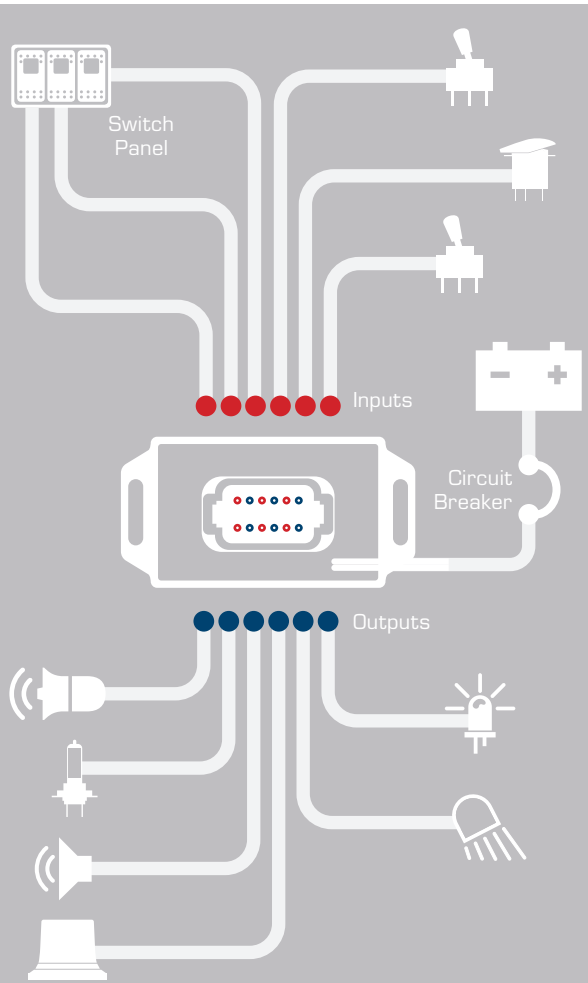
The ESM Mini can be used for any application, from connecting auxiliary lighting off original vehicle tails lights, e.g. Minebar hook up, to monitoring and protecting a range of auxiliary equipment switched off the original vehicle inputs or from after market toggle, rocker switches etc.

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.

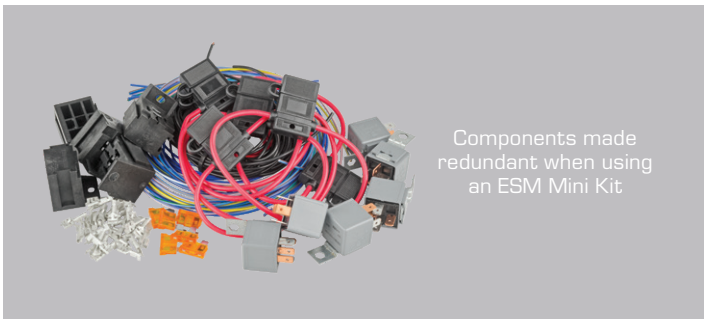
Circuit 1 Input – 4 Output – 3	Circuit 2 Input – 2 Output – 1	Circuit 3 Input – 6 Output – 5
Circuit 4 Input – 11 Output – 12	Circuit 5 Input – 9 Output – 10	Circuit 6 Input – 7 Output – 8

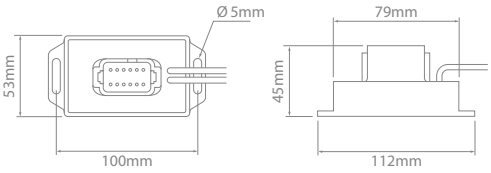


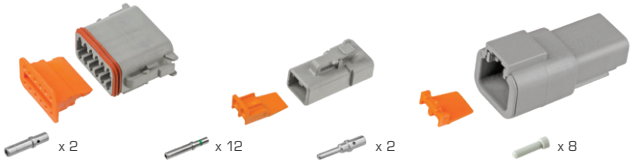
Inductive loads must not be used on the input or output circuits without additional external protection. Failure to do so may result in damage to the unit and will void warranty.



IONNIC







ESM Mini Kit

Part No.	Voltage	Switching
ESM006	12–24	Positive

Kit Contents:

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

BF*XX*/10

ESM Mini – Accessories & Related Products

Part No.	Description
DET12	Crimping tool. Size 12
DET16	Crimping tool. Size 16
HDT48-**00**	Crimping tool. Size 12, 16, 20 & 22
DET-RT	Multi-use hook tool
CB255-*XX*	Circuit breaker – Panel Mount Series Replace '*XX*' with desired amperage: 10, 15, 20, 25, 30, 35, 40, 50
P-WSBFH/**5**	ATC fuse holder kit – 30A Kit contents: 5 x Housing, 5 x Plugs, 10 x Terminals
BF*XX*/**10**	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

Class 1 provides a wealth of control and display flexibility giving the operator feedback at a glance.

By providing flexible uniform multiplex solutions and shorter prototype development, an improved overall build process schedule is achievable.

- Lighting control
- Switch operation
- Safety interlocking
- Subsystem control and monitoring
- Interface with OEM engines
- Inbuilt diagnostics
- Air conditioning climate control
- Multi-level password access
- Interface with vehicle suspension, transmission and engine systems

Commuter Buses

nsport
ervices

UV1200

Smart Touch

HD PDM

PDM

Gateway

I/O Module

FIRE AND RESCUE
FIELD
SERVICE
UNIT

BRIGADE

Accessories

Sensors & Switches	74
DT Detector Half Kits	79
Backsense Network Radar	80
Custom Engraved Panels	83
CAN Connectors	86
HD30 Breakaway	90
Wiring, Accessories & Tools	92

Accessories

Sensors & Switches

CMP25.0M

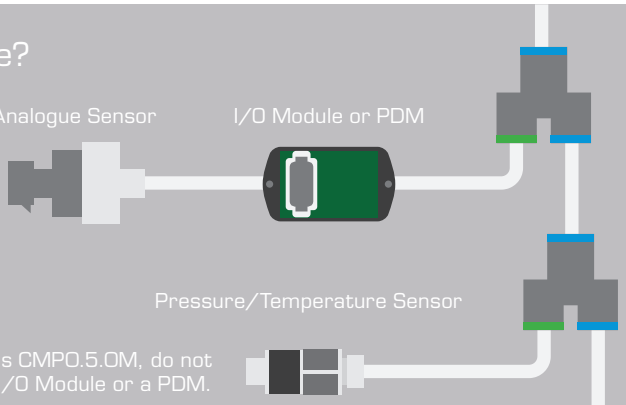
102714A

12-0001

- Wide range of sensors used to introduce input variables into the Controller Area Network (CAN).
- Side Mount Level switches are ideal for tank level applications with most commonly used liquids.
- Multi-voltage on most sensors & switches.
- An I/O Module or PDM provides a pathway for analogue signals into the network, these can be found on page 46 & 50–51.
- All sensors environmentally sealed – IP67.

Does your sensor require a module?

Analogue Sensors require an I/O Module (found on page 46) or a PDM (found on page 50–51) in order to transmit sensor data onto the Controller Area Network (CAN).



Featured

Made in Europe

Sensors – CAN – Pressure & Temperature

Range (Bar)	0 – 0.5	0 – 4	0 – 16	0 – 25	0 – 100	0 – 400
Part No.	**CMP**0.5.0M	**CMP**4.0M	**CMP**16.0M	**CMP**25.0M	**CMP**100.0M	**CMP**400.0M

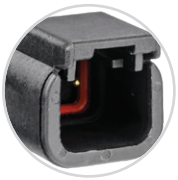
Ingress Protection: IP67
Detection range: -30°C to 150°C
Mounting Thread: G 1/4"
Voltage: 9–32V

IONNIC

3 pin
TE DEUTSCH DT
Series connector.
Includes mount

115722

740114



2 Pin TE DEUTSCH
DTM Series connector.
Supplied with mating connector

Featured

MSTS-DTM-CLOSED

MSTS-DTM-OPEN

Sensors – Analogue – Temperature

Part No.	Voltage	Output Signal	Range	Mounting Thread	Notes
115722	9–32	0V to 2V	-40°C – 120°C	—	Includes mount
740114	9–32	0.05Ω to 100Ω	-40°C – 150°C	1/4" NPT	
MSTS-DTM-**CLOSED** ★	5	0V to 5V	-30°C – 150°C	1/8" NPT	Includes mating connector
MSTS-DTM-**OPEN** ★	5	0V to 5V	-30°C – 150°C	1/8" NPT	Includes mating connector

Ingress Protection: IP67

3 Pin TE DEUTSCH DTM
Series connector

102162

200-00093-001

113557, 117179

102161

102606

Made in North America

3 pin
TE DEUTSCH DT
Series connector

Made in Europe

8252-G8-25-43-D3
8252-HA-25-30-D3

3 Pin TE DEUTSCH DTM
Series connector.
Supplied with mating
connector

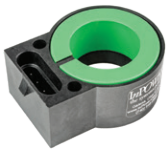
MSPP-DTM-10BAR

Sensors – Analogue – Pressure

Part No.	Voltage	Output Signal	Range (PSI)	Mounting Thread	Notes
102162	4–8	0V to 5V	0 – 5	1/4" NPT	
200-00**093**-001 ★	5	0V to 5V	0 – 5	1/4" NPT	
113557	9–32	0V to 5V	0 – 300	1/4" NPT	
102161	9–32	0V to 5V	0 – 500	1/4" NPT	
117179	9–32	0V to 5V	0 – 600	1/4" NPT	
102606	9–32	4mA to 20mA	0 – 7500	1/4" NPT	
8252-G8-**25**-43-**D3** ★	9–32	0V to 5V	0 – 150	1/8" NPT	
8252-HA-**25**-30-**D3** ★	9–32	0V to 5V	0 – 300	1/4" NPT	
MSPP-DTM-**10BAR** ★	5	0V to 5V	0 – 145	1/8" NPT	Includes mating connector

Ingress Protection: IP67

Accessories



DCS35-300-2

Made in North America

102714A

Sensors – Analogue – Current & Flow

Part No.	Voltage	Sensor Type	Output Signal	Range
DCS35-**300**-2	9–32	Current	0V to 5V	-300A – 300A
102714A	9–32	Flow	±5V	Frequency

Ingress Protection: IP67

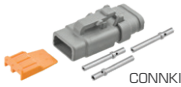
RKT5-228-2M

2m female to tail
M12 network cable – 5 pin

CONNKIT-CURRENT

CONNKIT-TEMPSENSOR

CONNKIT-THERMISTOR



CONNKIT-ITL-DTM

CONNKIT-TRANSITL

CONNKIT-TRANSHIPSI

CONNKIT-TRANSPSI

Sensors – Connection Kits

Part No.	Suits	
RKT5-228-**2M**	CAN – Pressure & Temperature	All
CONNKIT-**CURRENT**	Analogue – Current	DCS35-300-2, DCS36-300-2
CONNKIT-**TEMP**SENSOR	Analogue – Temperature, Pressure	115722, 8252-G8-25-43-D3, 8252-HA-25-30-D3
CONNKIT-**THERMISTOR**	Analogue – Thermistor	740114
CONNKIT-**ITL**-DTM	Analogue – Pressure	200-00093-001
CONNKIT-**TRANS**ITL	Analogue – Pressure	102162
CONNKIT-**TRANS**HIPSI	Analogue – Pressure	102606
CONNKIT-**TRANS**PSI	Analogue – Pressure, Flow	102714A, 113557, 117179, 102161

Crimping tools can be found on page 96.

DT04-4P-5V

Recommended to also install a 1A (maximum) fuse to the 9–32VDC input. Reverse polarity protected.

Do not remove ground supply while device is powered or damage to the device can occur.

Pin 1 – Ground, **Pin 2** – Output 1 (5VDC),
Pin 3 – Output 2 (5VDC),
Pin 4 – Input (9–32VDC), fused to 1A (maximum)

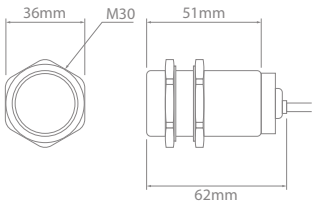
DT04-4P-5V

Optional accessory
Flow Sensor Boss.
Used to facilitate mounting
of Flow Sensor

SFM

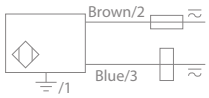
Sensors – Analogue – Accessories

Part No.	Description	Suits
DT04-4P-**5V**	5V Regulator	Pressure (all)
SFM	Mounting Boss	Flow (102714A)



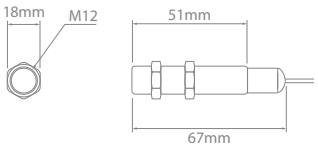
Featured

12-0001

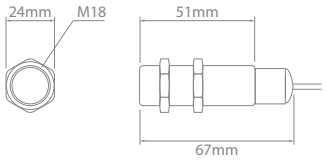


Made in Europe

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

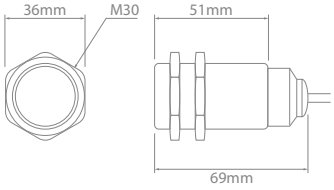


12-0120



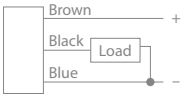
12-0180

Featured



12-0300

Made in North America

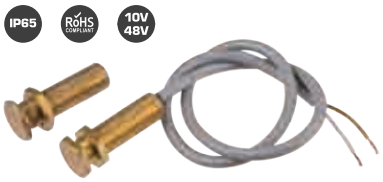


Switches – Inductive Proximity

Part No.	Voltage Type	Voltage	Output Type	Output Function	Sensing Range (mm)	IP Rating	Switching Capacity (mA) AC	Switching Capacity (mA) DC
12-0001	AC/DC	24–240	—	N/O	10	68, 6K9K	5–300	5–200
12-0120	DC	10–30	PNP	N/O	2	67	—	100
12-0180	DC	10–30	PNP	N/O	5	67	—	100
12-0300	DC	10–30	PNP	N/O	10	67	—	100

Cable Length: 2m

Accessories



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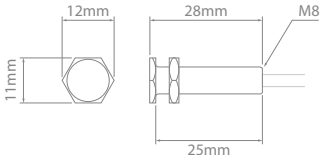
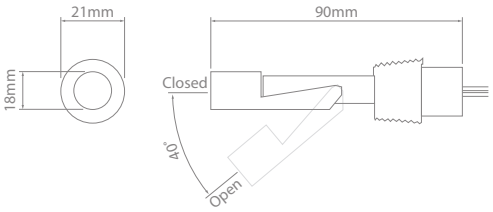
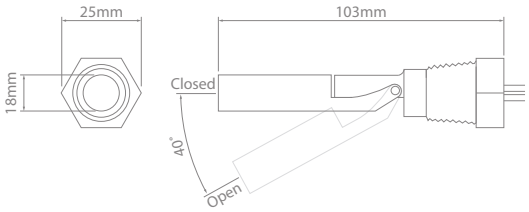


Switches – Proximity Reed

Part No.	Contact Type	Switching Distance (mm)	Voltage AC/DC	Current Rating (A)	Contact Resistance (Ohms)	Cable Length (mm)	Material
12-0050	N/O	10	10–48	0.5	0.2	280	Brass

Operating temperature: -20°C to 85°C





Featured

Weather-Pack
2 pin connector

12-0030

200-2110-02-0

Switches – Side Mount Level

Part No.	Contact Type	Switching Angle	Mounting Size	Switching Voltage AC	Switching Voltage DC	Current Rating (A)	Cable Length (mm)	Housing
12-0030	N/O & N/C	40°	1/2" NPT	300	300	1.0	1000	Nylon
200-2110-**02-0**	N/O & N/C	40°	1/2" NPT	250	200	1.0	500	Nylon

Functions as N/C or N/O dependent on fitting orientation.

Operating temperature:
12-0030: -20°C to 75°C
200-210-02-0: -30°C to 130°C

- Transparent housing with integrated LED on wedgelock for quick circuit diagnosis.
- Colour coded wedgelocks for operating voltages, 12V (yellow) and 24V (red).
- Joint retention fingers allow both contacts to be removed at the same time.
- Compatible with Pulse Width Modulated control.
- Sold as kit including nickel-plated or green band contacts.
- Environmentally sealed – IP68, IP6K9K, when installed to manufacturer's specifications.
- Industry proven TE DEUTSCH DT Series.
- Latched mating.

Housing :	Ultem
Seal :	Silicone Rubber
Wedgelock :	Thermoplastic
Contact Size :	16
Contact Rating :	13A @ 125°C
Shock :	50G
Vibration :	20G rms 10 – 2000Hz
Approvals :	20mm Flame Test per Standard UL-94
Ingress Protection :	IP68, IP6K9K
Operating Temperature :	-55°C to 125°C

Half Kits

Half Kits contain all components to make one half of a connection.

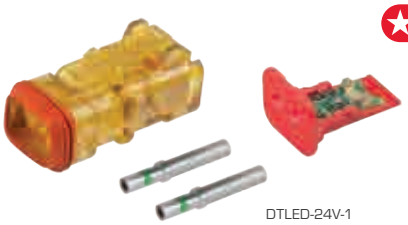
Each kit contains 2 x contacts and a DT Detector receptacle with a DT Detector Wedgelock.

W2S-SDT-24V

W2S-SDT-12V

DT06-2S-SDT-CE27

Featured



DTLED-24V-1

DTLED-12V-4

DT Detector Half Kits

Part No.	Voltage	Wedgelock Colour	Socket Type	Wire Size AWG	Wire Size mm²
DTLED-12V-**1**	12	Yellow	0462-209-16141 – Green Band, Nickel-plating	14	1.0 – 2.0
DTLED-24V-**1**	24	Red	0462-209-16141 – Green Band, Nickel-plating	14	1.0 – 2.0
DTLED-12V-**3**	12	Yellow	0462-201-16141 – Nickel-plating	20 – 16	0.5 – 1.0
DTLED-24V-**3**	24	Red	0462-201-16141 – Nickel-plating	20 – 16	0.5 – 1.0
DTLED-12V-**4**	12	Yellow	0462-209-1631 – Green Band, Gold-plating	14	1.0 – 2.0
DTLED-24V-**4**	24	Red	0462-209-1631 – Green Band, Gold-plating	14	1.0 – 2.0

Kit Contents:
1 x DT Detector Receptacle (DT06-2S-SDT-CE27)
1 x DT Detector Wedgelock (W2S-SDT-12V or W2S-SDT-24V)
2 x Solid Socket

Accessories

Backsense Network Radar

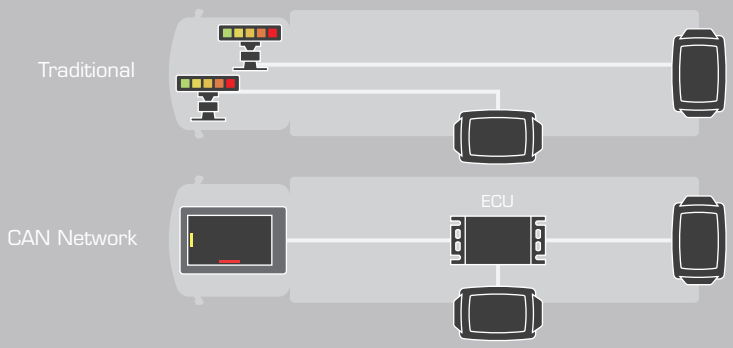
Monitor not included with kit

- Overlay detection data for up to 2 radar sensors on a single monitor.
- Compiles with CAN 2.0A Base Frame Format.
- Detects multiple moving and stationary objects.
- High frequency continuous wave provides increased reliability & low false alarm rates.
- Adjustable detection range up to 30m.
- 3 trigger inputs used for activating components such as alarms and beacons.
- Environmentally sealed sensor – IP69K
- Sensor can be steam & pressure cleaned.
- Multi-voltage.
- 3 year warranty.

Voltage :		12–24V
Current Draw :		0.4A
Radar Frequency :		24.05GHz to 24.25GHz
Weight :	Radar Sensor	0.7kg
Vibration :		8.3G
Shock :		100G
EMC :		CE & 'e' marked
Operating Temperature :		-40°C to 85°C
Ingress Protection :		IP69K

Backsense Network Radar

Brigade's Backsense® Network Radar is the next generation of radar-based obstacle detection.
Due to the number of complex blind spots on a vehicle, a single radar cannot always provide the detection required. Additionally, multiple in-cab displays for multiple radars can be more of a distraction than a benefit.
Aimed at OEM and specialist applications, Brigade's Network Radar OSD kit allows you to connect and link 2 sensors to cover large, sometimes complex blind spot zones around a vehicle or machine.



On-Screen Display

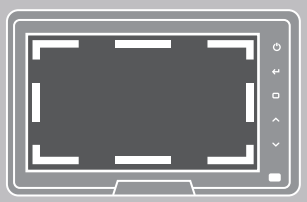
Multiple radars with individual in-cab displays can cause confusion and also be a challenge to install. Brigade's latest innovation, the Backsense® OSD (On-screen Display) ECU allows for the use of 2 Backsense® Network Radar units to be combined with any Brigade Backeye® camera system.

Radar detection data is overlaid transparently* along the edge of the monitor so as not to obscure the camera image with the audible warning via the monitor speakers.

* Transparency level can be adjusted via software.

When an object is detected in the YELLOW zone, the associated on-screen indicator will turn yellow and a pulsed audible alert is played through the monitor's speaker.)))))))))

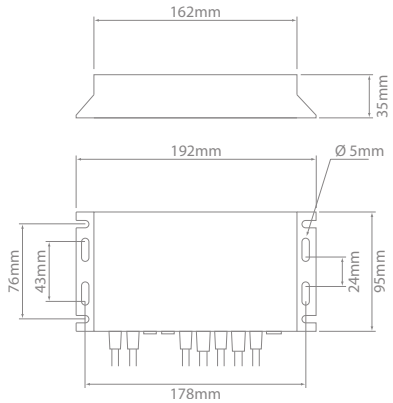
When object is detected in RED zone, the associated on-screen indicator will turn red and a constant audible alert is played through the monitor's speaker.))))))))))))



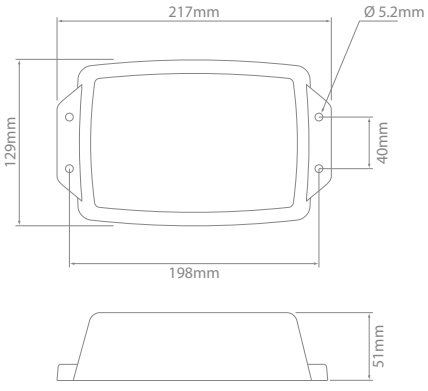
Each radar sensors detection notification can be assigned to one of eight predefined positions overlaid around the edge of a monitor.

Watch video

Featured



ECU



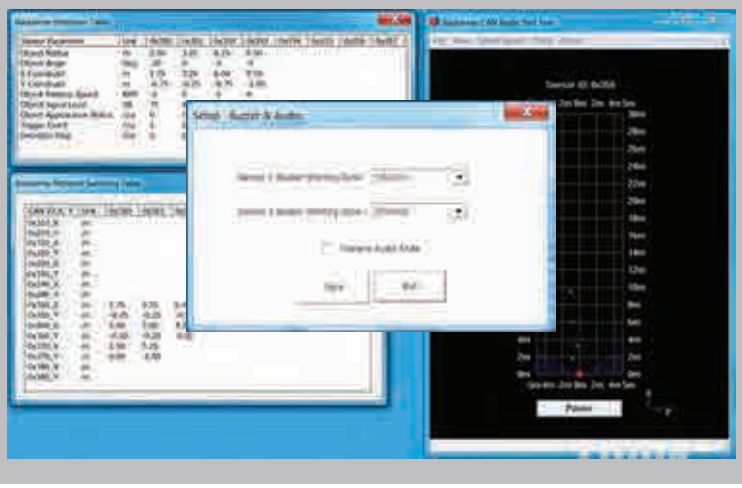
Sensor

Configurable

Backsense® Network Radar with OSD Kit is supplied with easy to use PC software used to adjust the following parameters:

- Detection zone length & width
- Blind area mapping
- Buzzer starting zone
- Trigger output length

Download the latest software and manual from ionnic.com



Backsense Network Radar – OSD Kit

Part No.	Detection Distance (m)	Detection Width (m)	Camera Inputs	Triggers	
				Input	Output*
BS-9001-OSD	3 – 30	2 – 10	2	3	3 x 0.5A

Supports up to 2 Backsense® Network Radars.

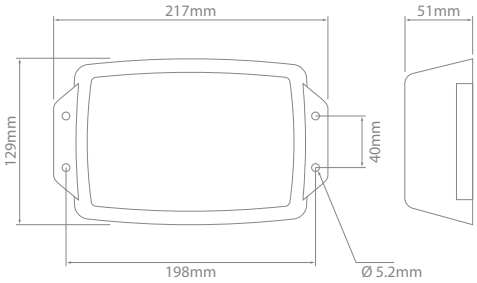
Compatible with Brigade Backeye systems, including Backeye 360 and Brigade Digital Mobile Recorder.

* 1 x output for alarm use only.

Kit contents:
1 x Sensor Unit (BS-9000)
1 x OSD ECU
3 x Network Y Cable (BS-00NYC)
2 x CAN Bus Terminator (BS-00NT)
1 x 9m Extension Cable (BS-09DCX)
1 x Network Power Input Cable (BS-02PIC)
Sensor Mounting Hardware

Manual & software available on IONNIC website

Accessories



CAN Integration BS-9000

The Backsense® Network Radar (BS-9000) can be integrated into a Controller Area Network (CAN) and configured to interact and display sensor data on existing components and screens.

Backsense Network Radar – Sensor

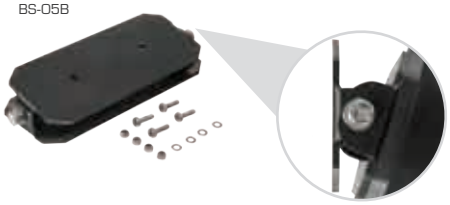
Part No.	Description	CAN	Baud Rate	Detection Distance (m)	Detection Width (m)
BS-9000	Single network radar sensor unit	SAE J1939	500K	3 – 30	2 – 10

Extensive Brigade Range Available

For the entire range of compatible Brigade systems, including the Backeye® 360 camera and the Brigade Mobile Digital Recorder, see the Safety Systems 2022 catalogue.

Download the complete catalogue from ionnic.com or free call from within Australia 1800 724 690

BS-05B



Extension Cable

BS-00NYC

BS-00NT

BS-02PIC

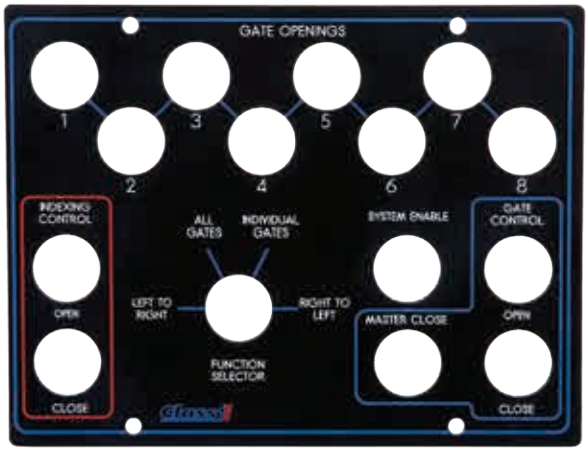
Backsense Network Radar – Accessories

Part No.	Description
BS-05B	Adjustable sensor bracket Supplied with bolts, washers and nylock nuts.
BS-05DCX	Extension cable – 5m
BS-09DCX	Extension cable – 9m
BS-00NYC	Network 'Y' cable
BS-00NT	120 Ohm CAN bus terminator
BS-02PIC	Network power input cable – 2m

Custom Engraved Panels

- Front or rear engraving.
- Large range of colour combinations including metallic finishes.
- Materials available for use with backlighting.
- UV Stabilised.
- Ideal for:
  - Safety signage
  - Control panels
  - Product tags
  - Name plates

Engraver Type : Rotary Flat Bed
Maximum Size : 500mm x 380mm
Materials : Laminated Impact Acrylic
UV Stabilised



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.

Waste Manage

Smart Touch

HD PDM

PDM

Backsense Radar

USM2

CAN Pressure & Temp Sensors

I/O Module

UV450

ement Refuse Trucks

Class 1's vehicle multiplex systems are well known throughout the heavy vehicle industry for improving reliability, efficiency and safety operations.

With reduced wiring and robust components readily integrated, Class 1 are able to reduce the complexity of the electrical system and offer the user a comprehensive control solution.

- Switch operation
- Safety interlocking
- Blade Automation
- Diagnostics
- Lighting control

Accessories

CAN Connectors

DTM04-2P-P007

DT04-3P-P006

HD10-9-1939PE

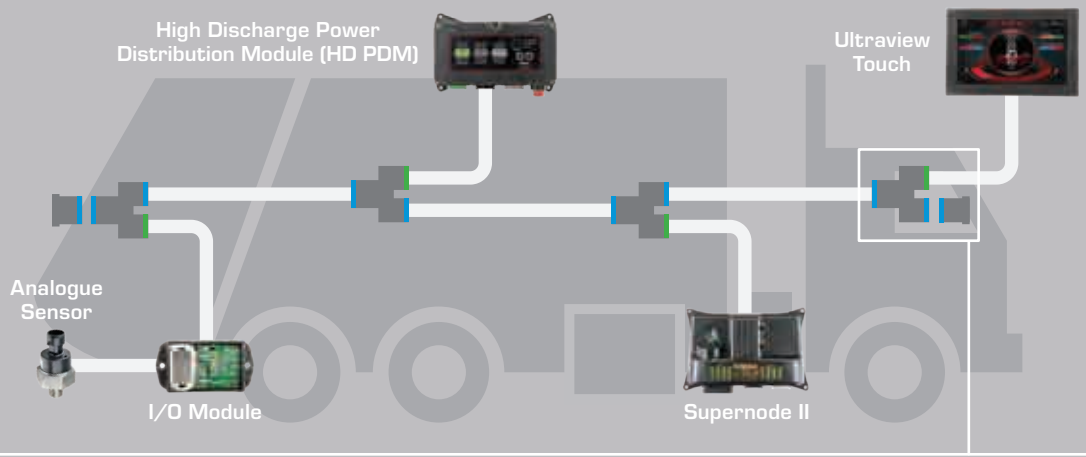
DT04-3P-P007

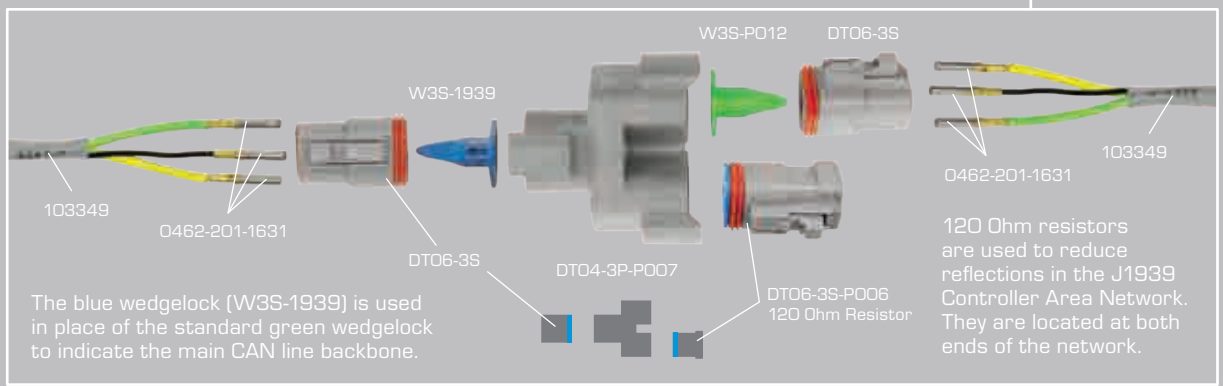
- Genuine TE DEUTSCH connectors.
- Environmentally sealed – IP68, IP6K9K, when installed to manufacturer's specifications.
- Multiple housing options available.
- Latched mating.
- Wedgelocks ensure contact alignment and retention.

Housing :	Thermoplastic
Seal :	Silicone Rubber
Wedgelock :	Thermoplastic
Vibration :	20G rms 10 – 2000Hz
Approvals :	20mm Flame Test per Standard UL-94
Ingress Protection :	IP68, IP6K9K
Operating Temperature :	-55°C to 125°C

Controller Area Networks (CAN)

Controller Area Networks, or CAN are multiplexed control systems. Multiplexing allows multiple data signals to travel on the same wires, integrating separate electronic systems and applications to a single point of control and monitoring system.





The blue wedgelock (W3S-1939) is used in place of the standard green wedgelock to indicate the main CAN line backbone.

120 Ohm resistors are used to reduce reflections in the J1939 Controller Area Network. They are located at both ends of the network.

J1939/11

J1939/11 is a 3-wire system that uses the TE DEUTSCH DT series connectors primarily for truck and bus. The DT series accepts size 16 contacts. Connector options include in-line, bulkhead, "Y" splitter, and terminating resistors.

DT06-3S-E008

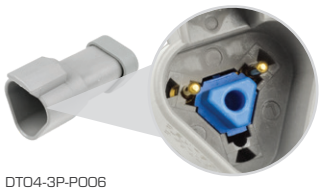
DT06-3S-EP11

DT06-3S-P006

W3S-P012

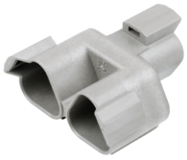
W3S-1939

DT04-3P-E008


DT04-3P-P006

W3P

W3P-1939


DT04-3P-P007

0460-202-1631

0462-201-1631

1062-16-0144

CONNKIT-BBJUNCTION

CONNKIT-RESISTOR

CAN Connectors – J1939/11 – Common Components

Part No.	Description	Cavities/Circuits
DT06-**3S**-E008	DT Series – Plug – Heat shrink adaptor	3
DT06-**3S**-EP11	DT Series – Plug – Heat shrink adaptor – Black. Requires W3S-P012	3
DT06-**3S**-P006	DT Series – Plug – 120 Ohm Resistor. Includes wedgelock & contacts	3
W3S-P012	DT Series – Wedgelock – Plug – Green	3
W3S-1939	DT Series – Wedgelock – Plug – Blue	3
DT04-**3P**-E008	DT Series – Receptacle – Heat shrink adaptor	3
DT04-**3P**-P006	DT Series – Receptacle – 120 Ohm Resistor. Includes wedgelock & contacts	3
W3P	DT Series – Wedgelock – Receptacle – Green	3
W3P-1939	DT Series – Wedgelock – Receptacle – Blue	3
DT04-**3P**-P007	DT Series – Receptacle "Y" Piece. Includes wedgelocks & contacts	3
0460-202-**1631**	Contact – Pin – Solid – Gold-plated – Size 16	
0462-201-**1631**	Contact – Socket – Solid – Gold-plated – Size 16	
1062-16-**0144**	Contact – Socket – F-Crimp – Gold-plated – Size 16	

CONNKIT-BBJUNCTION Connection Kit – CAN Splice. Used for splitting CAN Backbone

Kit contents:
1 x Receptacle – DT Series "Y" Piece (DT04-3P-P007)
3 x Plug – DT Series – 3 Circuit (DT06-3S-C015)
1 x DT Series 120 Ohm Resistor (DT06-3S-P006)
9 x Contact – Socket – Gold-Plated (0462-201-1631)
2 x Wedgelock – Blue (W3S-1939–P012)
1 x Wedgelock – Green (W3S-P012)

CONNKIT-RESISTOR Connection Kit – CAN Splice with Resistor. Used for terminated CAN Backbone

Kit contents:
1 x Receptacle – DT Series "Y" Piece (DT04-3P-P007)
2 x Plug – DT Series – 3 Circuit (DT06-3S-C015)
1 x DT Series 120 Ohm Resistor (DT06-3S-P006)
6 x Contact – Socket – Gold-Plated (0462-201-1631)
1 x Wedgelock – Blue (W3S-1939–P012)
1 x Wedgelock – Green (W3S-P012)

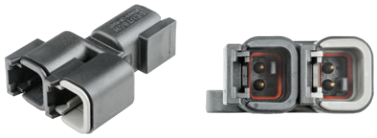
Accessories

J1939/15

SAE J1939/15 defines the requirements for reduced physical layer 2-wire CAN systems consisting of an unshielded twisted pair of wires.

DTM06-2S-EP10 DTM06-2S-P006 DTM04-2P-P006

DTM06-2S-E005 WM-2S WM-2SB



DTM04-2P-P007

0460-202-2031 0460-010-2031 1060-20-0144 0462-201-2031 0462-005-2031 1062-20-0144

DTM2-J1939-KIT

CAN Connectors – J1939/15 – Common Components

Part No.	Description	Cavities/Circuits
DTM06-**2S**-EP10	DTM Series – Plug – 120 Ohm Resistor – Black. Includes wedgelock & contacts	2
DTM06-**2S**-P006	DTM Series – Plug – 120 Ohm Resistor. Includes wedgelock & contacts	2
DTM04-**2P**-P006	DTM Series – Receptacle – 120 Ohm Resistor. Includes wedgelock & contacts	2
DTM06-**2S**-E005	DTM Series – Plug – End cap – Black	2
WM-2S	DTM Series – Wedgelock – Plug – Orange	2
WM-2SB	DTM Series – Wedgelock – Plug – Black	2
DTM04-**2P**-P007	DTM Series – Receptacle "Y" Piece – Black. Includes wedgelock & contacts	2
0460-202-**2031**	Contact – Pin – Solid – Gold-plated – Size 20	
0460-010-**2031**	Contact – Pin – Solid – Gold-plated – Size 20 – Purple Band	
1060-20-**0144**	Contact – Pin – F-Crimp – Gold-plated – Size 20	
0462-201-**2031**	Contact – Socket – Solid – Gold-plated – Size 20	
0462-005-**2031**	Contact – Socket – Solid – Gold-plated – Size 20 – Purple Band	
1062-20-**0144**	Contact – Socket – F-Crimp – Gold-plated – Size 20	
DTM2-J1939-KIT	DTM Series – 120 Ohm Resistor Kit Kit contents: 1 x Receptacle – DTM Series – 2 Circuit (DTM04-2P) 1 x Wedgelock – Orange (WM-2P) 1 x DTM Series 120 Ohm Resistor (DTM06-2S-P006) 2 x Contact – Pin – Gold-Plated (0460-202-2031) 1 x Mounting Clip (1011-026-0205)	

J1939/13

J1939/13 is a system that uses the TE DEUTSCH HD10 series connectors for on-board diagnostics. The HD10 series accepts size 16 contacts.

HD10-9-1939PE

HD16-9-1939SE

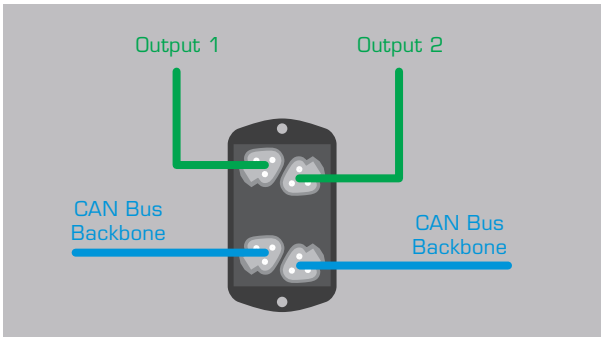
0460-202-1631

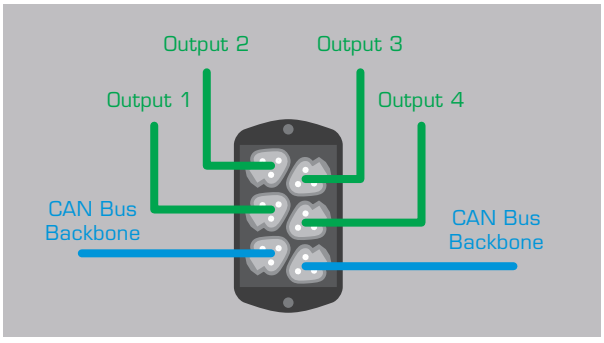
0462-201-1631

1062-16-0144

CAN Connectors – J1939/13 – Common Components

Part No.	Description	Cavities
HD10-**9**-1939**PE**	HD10 Series – Receptacle. Threaded rear – Black	9
HD16-**9**-1939**SE**	HD10 Series – Plug. Threaded rear – Black	9
0460-202-**1631**	Contact – Pin – Solid – Gold-plated – Size 16	
0462-201-**1631**	Contact – Socket – Solid – Gold-plated – Size 16	
1062-16-**0144**	Contact – Socket – F-Crimp – Gold-plated – Size 16	





Supplied with TE DEUTSCH 120 Ohm Resistor Plug (DT06-3S-P006)

CONNKIT-4JUNCTION

Featured

Supplied with TE DEUTSCH 120 Ohm Resistor Plug (DT06-3S-P006)

CONNKIT-6JUNCTION

CAN Connectors – J1939 Bus Splitter Kits

Part No.	Description
CONNKIT-4JUNCTION	CAN bus 2 branch hub with mating connectors + 120 Ohm resistor plug

Kit Contents:

1 x CAN Bus 2 Branch Hub (CONNKIT-4)
4 x Plug – DT Series – 3 Circuit (DT06-3S-C015)
1 x DT Series 120 Ohm Resistor (DT06-3S-P006)
2 x Wedgelock – Green (W3S-P012)
2 x Wedgelock – Blue (W3S-1939-P012)
12 x Contact – Socket – Gold-Plated (0462-201-1631)

Part No.	Description
CONNKIT-6JUNCTION	CAN bus 4 branch hub with mating connectors + 120 Ohm resistor plug

Kit Contents:

1 x CAN Bus 4 Branch Hub (CONNKIT-6)
6 x Plug – DT Series – 3 Circuit (DT06-3S-C015)
1 x DT Series 120 Ohm Resistor (DT06-3S-P006)
4 x Wedgelock – Green (W3S-P012)
2 x Wedgelock – Blue (W3S-1939-P012)
18 x Contact – Socket – Gold-Plated (0462-201-1631)

Accessories

HD30 Breakaway

- Breakaway coupling specifically designed to prevent damage to vehicle wiring and/or the attached implement by safely disconnecting and separating from vehicle in the event of an operator driving away without disconnecting beforehand.
- Dust cap suits all shell size 24 HD30 and HDP20 series connectors.
- Ideal for use in agricultural equipment as well as the truck, bus, mining and construction industry.
- Environmentally sealed – IP68, IP6K9K, when installed to manufacturer's specifications.
- Resistant to most fluids in industrial applications.

IP68 IP 6K9K Made in North America

Housing :	HD30 Series	Aluminium
	DT Series	Thermoplastic
Seal :		Silicone Rubber
Shock :		50G
Vibration :		20G rms 10 – 2000Hz
Approvals :	20mm Flame Test per Standard UL-94	
Ingress Protection :		IP68, IP6K9K
Operating Temperature :		-55°C to 125°C

HDBOX-24-91PN – Breakaway CAN Termination Assembly

Originally designed for agricultural applications, the TE DEUTSCH HDBOX-24-91PN Breakaway CAN Termination Assembly creates a communication pathway between an on-board CAN system and the electronic components on an attached implement.

The HDBox, which holds two DT13 connectors and an HD30 Series receptacle, mounts on the vehicle and mates with an HD30 Series plug connector featuring a breakaway coupling ring.

TE DEUTSCH breakaway couplings are designed to prevent damage to the CAN wiring of the vehicle and/or the attached implement by disconnecting and separating from the vehicle in the event of an operator driving away without disconnecting beforehand.

Houses
1 x DT13-2P, 1 x DT13-4P

Mates with
DT06-2S-EP06
DT06-4S-EP06

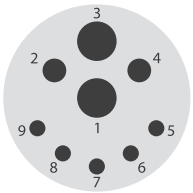
Houses
1 x HD34-24-91PN

Mates with
HDB36-24-91SN

TE connectivity DEUTSCH

Accessories

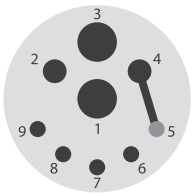
HDB0X-24-91PN



2 x size 8, 2 x size 12,
5 x size 16

HD34-24-91PN

HD34-24-91PN-059



Circuits 4 & 5 are bridged.
Circuit 5 is occupied with a size 16
contact and sealed with a cavity plug

HDB36-24-91SN

HDB36-24-91SN-059

5004-001-2405

DT06-2S-EP06

DT06-4S-EP06

W2S-P012

W4S-P012

0460-204-08141

0460-204-12141

0460-202-1631

0462-203-08141

0462-203-12141

0462-201-1631

HD30 Breakaway

Part No.	Description	Cavities
HDB0X-**24**-91**PN**	Breakaway CAN Termination Assembly	15
HD34-**24**-91**PN**	HD30 Series – Receptacle. Breakaway coupling	9
HD34-**24**-91**PN**-059	HD30 Series – Receptacle. Breakaway coupling incorporating strain relief	9
HDB36-**24**-91**SN**	HD30 Series – Plug. Breakaway coupling. Circuits 4 & 5 are bridged	9*
HDB36-**24**-91**SN**-059	HD30 Series – Plug. Breakaway coupling incorporating strain relief. Circuits 4 & 5 are bridged	9*
	* Circuit 5 is occupied with a non-removable size 16 contact and sealed with a cavity plug	
5004-001-**2405**	Dust cap suits shell size 24 HD34/HDP24 receptacles. Includes gasket	
DT06-**4S**-EP06	DT Series – Plug – Enhanced Seal Retention and End Cap – Black	4
DT06-**2S**-EP06	DT Series – Plug – Enhanced Seal Retention and End Cap – Black	2
W2S-**P012**	DT Series – Wedgelock – Plug – Green	2
W4S-**P012**	DT Series – Wedgelock – Plug – Green	4
0460-204-**08141**	Contact – Pin – Solid – Size 8	
0460-204-**12141**	Contact – Pin – Solid – Size 12	
0460-202-**1631**	Contact – Pin – Solid – Gold-plated – Size 16	
0462-203-**08141**	Contact – Socket – Solid – Size 8	
0462-203-**12141**	Contact – Socket – Solid – Size 12	
0462-201-**1631**	Contact – Socket – Solid – Gold-plated – Size 16	

Accessories

DET12

7427155

PH375BK

- Range of data cable available – Standard, Medium, Heavy Duty and Shielded.
- Noise suppressing ferrites available – Ø 19.3mm & Ø 27mm.
- Wide range of crimping tools available.
- HDT-48-00 crimps a wide range of contact sizes with no need to change out dies or locators.
- Ratcheting tools will not release contact until a full crimp is completed.

103349, 103349-302

Made in North America

103349B, 103349R

Wiring, Accessories & Tools – CAN Data Cable

Part No	Description	Core Colours	Roll Length (m)	Nom. Area (mm^2)	Nom. O.D. (mm)	Conductor	Max. Operating Temperature (°C)
103349	2 Core. Standard Duty	Yel/Grn	*	0.5	6.14	7 / 0.30	125
103349-**302**	2 Core. Standard Duty	Yel/Grn	302	0.5	6.14	7 / 0.30	125
103349**B**	2 Core. Medium Duty	Yel/Grn	*	0.5	7.46	19 / 0.20	125
103349**R**	2 Core. Heavy Duty	Yel/Grn	*	0.6	7.75	19 / 0.20	125

*** This product is modified/cut to customer specifications and is not returnable for credit.**

Made in North America

Wiring, Accessories & Tools – Serial Data Cable

Part No	Description	Core Colours	Roll Length (m)	Nom. Area (mm^2)	Nom. O.D. (mm)	Conductor	Max. Operating Temperature (°C)
0L20-1600-**22**	2 Core. Standard Duty	Wht/Blk	60	0.72	5.45	16 / 0.30	60

PH275BK, PH275BK-100

PH375BK, PH375BK-100

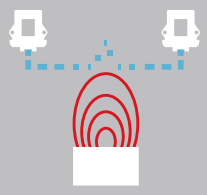
Wiring, Accessories & Tools – Shielded Drain Wire

Part No	No. of Cores	Colour	Roll Length (m)	Nom. Area (mm^2)	Nom. O.D. (mm)	Conductor	Max. Operating Temperature (°C)
PH275**BK**	2	Red/Blk	*	0.75	7.2	24 / 0.20	90
PH275**BK-100**	2	Red/Blk	100	0.75	7.2	24 / 0.20	90
PH375**BK**	3	Red/Blk/Wht	*	0.75	6.8	24 / 0.20	90
PH375**BK-100**	3	Red/Blk/Wht	100	0.75	6.8	24 / 0.20	90

*** This product is modified/cut to customer specifications and is not returnable for credit.**

Noise Suppression

Electromagnetic interference (EMI), also referred to as noise, is disturbance that affects an electrical circuit due to either electromagnetic induction or electromagnetic radiation emitted from an external source.



The disturbance may interrupt, obstruct, or otherwise degrade or limit the effective performance of the circuit. These effects can range from a simple degradation of data to a total loss of data.

A simple solution to electrical interference from noise is the utilisation of suppression ferrites. Ferrites are moulded metal powders, (ceramic), cast into various shapes and sizes.

Ferrite with Key (7427155)

A typical style of ferrite are clip-on chokes/ suppressors. Simply open and snap around the wires or cables emitting the noise.

You can stack as many as you want over a single pair or bundle of wires. In situations with severe noise problems multiple ferrites can be stacked.

Ferrites are non-conductive so can be used almost anywhere, including on higher voltage power lines and battery/inverter cables.

28A5776-0A2

7427155

Wiring, Accessories & Tools – Ferrites

Part No.	Description
28A5776-**0A2**	Ferrite core. Inside Ø 19.3mm. Impedance – 210 Ohm @100MHz
7427155	Ferrite core split with locking key. Inside Ø 27mm. Impedance – 327 Ohm @ 100MHz

Accessories

114009

D08

114008

0411-353-0805

D12

114010

0411-337-1205

D14

0411-291-1405

D16

0411-310-1605

0411-336-1605

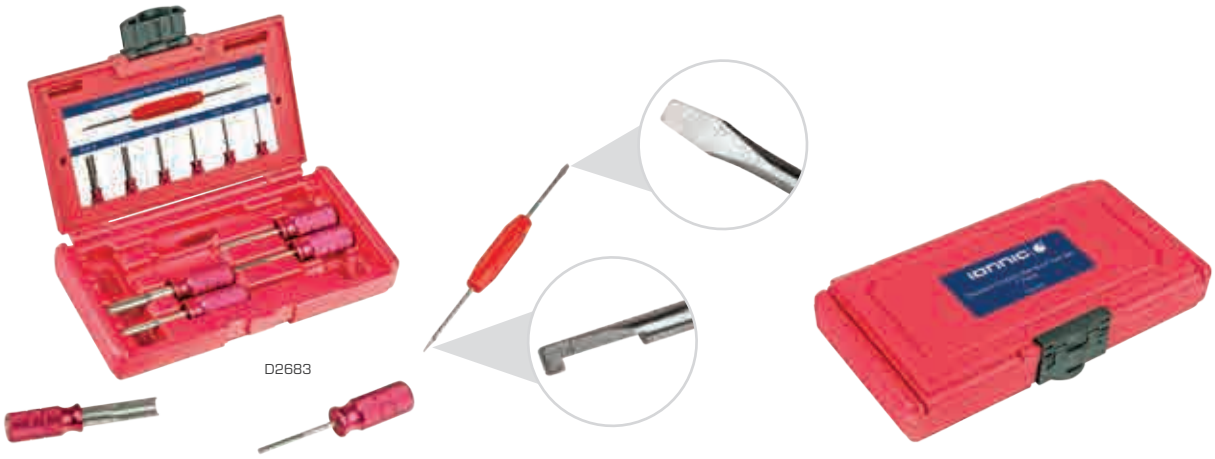
0411-204-1605

D20

0411-240-2005

Wiring, Accessories & Tools – TE DEUTSCH Contact Removal Tools

Part No.	Contact Size (TE DEUTSCH)	Wire Gauge Size (AWG)	Colour	Notes
114009	4	6	White	
D08	8	8	Magenta	Stainless steel shaft. Anodized aluminium handle
114008	8	10, 8	Green	
0411-353-**0805**	8	10, 8	Green	Extended
D12	12	12	Magenta	Stainless steel shaft. Anodized aluminium handle
114010	12	12	Yellow	
0411-337-**1205**	12	14, 12	Orange	Extra Thin Wall (E-Seal)
D14	14	14	Magenta	Stainless steel shaft. Anodized aluminium handle
0411-291-**1405**	14	16, 14	Green	
D16	16	16	Magenta	Stainless steel shaft. Anodized aluminium handle
0411-310-**1605**	16	18, 16	Light Blue	
0411-336-**1605**	16	18, 16	Blue	Extra Thin Wall (E-Seal)
0411-204-**1605**	16	18, 16	Dark Blue	
D20	20	20	Magenta	Stainless steel shaft. Anodized aluminium handle
0411-240-**2005**	20	24, 20	Red	

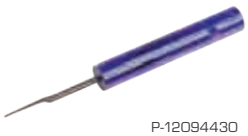


D2683

Wiring, Accessories & Tools – TE DEUTSCH Removal Tool Set

Part No.	Description	Contact Size (TE DEUTSCH)
D2683	7 piece contact removal tool set. Includes multi-use hook tool / flat-head screw driver	4, 8, 12, 14, 16, 20

P-12094429



P-12094430

P-12014012

7704489

7704496

HT-7200

DET-RT

DET-RT1

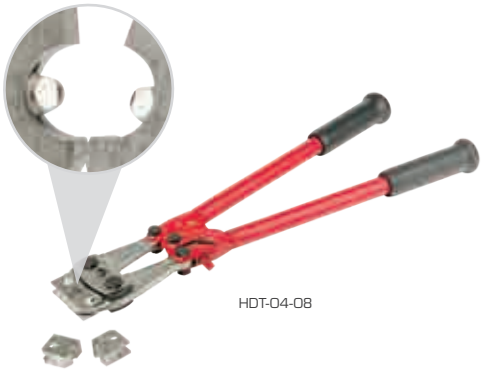
Wiring, Accessories & Tools – Removal Tools

Part No.	Suits
P-12094429	Metri-Pack GT150, GT280, 150, 280, 630 Pull-to-Seat
P-12094430	Metri-Pack 280, 480, 630, 800 Series Pin Tangless
P-12014012	Weather-Pack
7704489	Generic removal tool. Contact cavity Ø 5.2mm
7704496	Generic removal tool. Contact cavity Ø 3.3mm
HT-7200	Generic removal tool. Contact cavity Ø 2.9mm
DET-RT	Multi-use hook tool
DET-RT1	Multi-use hook tool & flat-head screw driver

Accessories

Made in North America

DET48



HDT-04-08

DET12, DET16, DET20

D2681

D2682

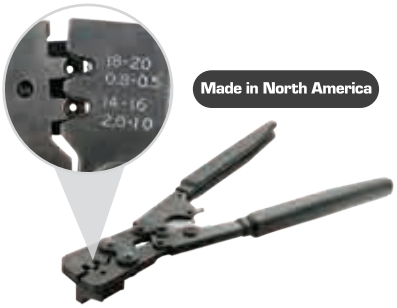
HDT-50-00

HDT-48-00

Wiring, Accessories & Tools – Crimpers – TE DEUTSCH – Solid Contacts

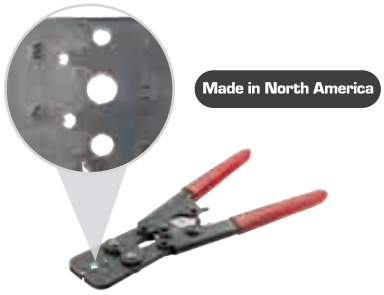
Part No.	Description	Contact Size (TE DEUTSCH)	Crimp Style
DET48	Two handed	8, 4	2 indent
HDT-04-**08**	Two handed	8, 4	2 indent
DET12	Ratcheting	12	4 indent
DET16	Ratcheting	16	4 indent
DET20	Ratcheting	20	4 indent
D2681	Ratcheting	20, 16, 12	2 indent
D2682	Ratcheting	20, 16, 12	2 indent
HDT-50-**00**	Ratcheting	20, 16, 12	1 indent
HDT-48-**00**	Ratcheting	20, 16, 12	4 indent

Attaches seal & cable in one action



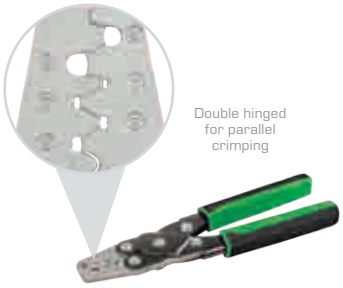
P-12014254

P-12071687



P-12085270

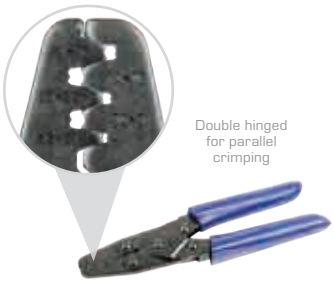
Double hinged for parallel crimping



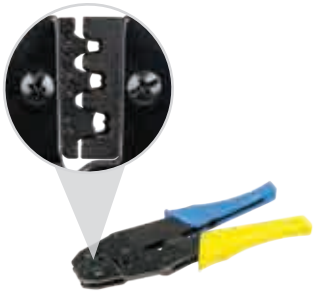
HT-4300

HT-4301

Double hinged for parallel crimping



HT-4220



HT-4560

Wiring, Accessories & Tools – Crimpers

Part No.	Description	Suits	Crimp Range (mm²)
P-12014254	Ratcheting. Attaches seal & cable in one action	Weather-Pack	0.5–0.8, 1.0–2.0
P-12071687	480 & 630 Series	Weather-Pack & Metri-Pack	3.0–5.0
P-12085270	Ratcheting	Weather-Pack & Metri-Pack	0.5–0.8, 1.0–2.0
HT-4300	Parallel jaws	Weather-Pack & Metri-Pack 150 & 280 Series	0.35, 0.5–0.8, 1.0–2.0, 3.0
HT-4301	Parallel jaws	TE Superseal	0.35–0.5, 0.75, 1.0, 1.5
HT-4220	Parallel jaws	Non-insulated contacts	0.2–0.3, 0.3–0.5, 0.5–0.8, 0.8–1.3, 1.3–2.0
HT-4560	Ratcheting	Non-insulated contacts	0.5–1, 1.5–2.5, 4–6

Accessories

DTT-16-00

D7000

D7000
6 Removable Dies

Die 1
14, 12AWG

Die 2
12, 10AWG

Die 3
18, 16, 14AWG

Die 4
20, 18, 16AWG

Die 5
20, 18-16AWG

Die 6
16, 14, 12AWG

Wiring, Accessories & Tools – Crimpers – TE DEUTSCH – Stamped & Formed

Part No.	Description	Crimp Range (AWG)
DTT-16-**00**	Ratcheting. 1 indent crimper "U" crimp	16 & 14
D7000	Ratcheting crimp tool set with 6 removable dies. 1 indent crimper "U" crimp	

5 Piece Crimp Tool Set for Packard™ Contacts

Tool Set contains tools suitable for:

- AMP Superseals
- Weather-Pack
- Metri-Pack 150, 280, 480 & 630 series
- Micro-Pack 064, 100 & 100W series.
- GT 150, 280, 630 series
- And other brands including Molex, Yazaki, Sumitomo etc

All housed in a handy storage tray.

Also included in the kit is a 32 page instruction manual detailing tool specifications as well as an OEM contact number/tool number matrix.

All tools in kit are premium quality – made in the USA.

Wiring, Accessories & Tools – IONNIC Crimping Tool Set – Packard Contacts

Part No.	Description
HT-K26**80**	5 piece crimping tool set for wide range of contacts, includes instruction manual Suits AMP Superseals, Weather-Pack and Metri-Pack contacts among others. For full list see above

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General Information

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