VEHICLE CONTROL SYSTEMS OVERVIEW

POLICE & CORRECTIVE SERVICES

AMBULANCE & PATIENT TRANSPORT

ROADSIDE & FIELD SERVICE

RVs, CARAVANS & TRAILERS

FIRE & RESCUE VEHICLES
WE UNDERSTAND VEHICLE DEVICE CONTROL SYSTEMS

For more than 20 years, Impart has created the vehicle after-market device connectivity solutions that have helped Australia’s leading motor body builders and vehicle after-market fit-out specialists create the purpose-built vehicles used by many of Australia’s Police, Correctional Services, Emergency Services, Ambulance, Fire, Road Service and Field Service fleet owners. From simple light and siren controls for field service vehicles, to complex device control solutions for fire appliances, we’ve been creating systems and delivering innovations that have set the standard for reliability and functionality.

As the needs of body builders and end users have changed, so too has Impart evolved smarter, more flexible, more feature-rich vehicle networking and control solutions. From industry-leading traditional wiring systems, we’re now delivering solutions to take even the smallest body builder into the 21st Century and give them a competitive edge.

CAN-BUS - THE WAY FORWARD

‘Traditional’ vehicle wiring systems can be quite complex, with every device (such as a siren or pump) requiring power, switched via a relay, that is in turn activated by a switch. Because of the architecture of these systems, they require more cabling and can be problematic when it comes to fault finding. Further, it’s not always possible to apply an overall ‘control logic’ to a traditionally wired system system.

For that reason, today’s vehicles use simpler, ‘multiplexed’ control backbones to which all devices are attached and from which they draw power and control signals. This backbone (or ‘bus’) is called a CAN-Bus (Controller Area Network Bus) and delivers the following benefits:

For the installer:
• requires less cabling and less training to install
• improves network management, fault finding and vehicle safety
• more easily allows implementation of safety interlock (fail safe) features
• is an open platform that will work with any preferred supplier’s accessories (eg siren systems and lights)
• can be integrated with existing J1939 compliant CAN-Bus systems used by vehicle manufacturers via Body Builders Interface Plug

For the end user and fleet owner/manager:
• protects investment in existing vehicle cabling by allowing future upgrades and modifications
• allows customisation via software without any hardware changes, reducing upgrade and maintenance times
• improves system reliability, thus reducing vehicle downtime

In short, CAN-Bus systems deliver the improved functionality, and superior cost and safety benefits that body builders and end users demand.

NOT ONE CAN-BUS SOLUTION, BUT TWO

Impart Special Products delivers CAN-Bus solutions geared to the needs of body builders, whether they are creating simple or complex vehicle solutions, and whether they are producing small or larger volumes of vehicles. However, because different fit-outs involve different levels of complexity (depending on the use of the vehicle and the number and type of devices that need to be controlled), we’ve created two CAN-Bus solutions to deliver optimal outcomes:

• minicAN for smaller, less complex applications of typically less than 10-12 attached devices (uses pre-programmed logic system); and
• iCAN for larger, more complex applications or typically more than 10-12 attached devices (uses re-programmable logic module)

So regardless of whether you require a pre-configured, off-the-shelf solution to address frequently replicated designs, or a highly customisable solution for specialty applications where upgrades and enhancements will be required during the life of the vehicle, we can provide a system to meet your needs.

NOT JUST CAN-BUS SOLUTIONS

Not only do we deliver CAN-Bus cabling systems, we’re also a major supplier of aftermarket devices, including:
• highly reliable siren systems for emergency service vehicles
• highly flexible cabin and storage cabinet (interior) and portable area (exterior) lighting solutions
• highly accurate and reliable engine governors for fire appliances
• simple and cost-effective waste water collection systems for field service vehicles
• feature-rich pump controllers for fire and emergency services vehicles

We also deliver a range of innovative user control interfaces, including:
• programmable toggle and push-button (standard or membrane) switch panels
• smart ‘display’ switch panels that use innovative LED faced buttons to provide users with feedback via text or graphical icons
• touch screen controls, that offer the ultimate in flexibility

WE UNDERSTAND VEHICLE DEVICE CONTROL SYSTEMS
CONTROL AND LOGIC INPUTS

We offer you the ultimate in design flexibility. How? Because we design and build multi-way toggle/push-button, ‘display switch’ and touch screen control panels in our Sydney factory to suit your requirements. Alternately, you can use standard toggle, push-button or limit switches you supply yourself. These can be connected to a miniCAN or iCAN Input Module (see below) which we can program to suit.

STANDARD SWITCHES

We supply standard or custom toggle, push-button (standard or membrane type) and limit switches. These can be momentary, latched or timed. Suitable for iCAN or miniCAN systems.

NOTE: in a miniCAN system, INPUT device connectivity is via Deutsche (standard) or (optional) customer specified plug on rear of Master Control Panel.

‘DISPLAY’ SWITCHES

These push-button style switches feature in-built LED displays that deliver variable text &/or graphics on the keys. Suitable for iCAN systems only.

TOUCH SCREENS

Touch panels deliver the ultimate in flexibility, delivering both control and variable feedback/system information. Suitable for iCAN systems only.

iCAN MASTER CONTROL MODULE

Re-programmable logic module with removable SD card (stores system logic, allows fast in-field updates).

NOTE: in a miniCAN system, the Master Switch Panel provides the pre-programmed system logic (loaded into firmware in the factory): ie not field re-programmable.

INPUT DEVICE INTERFACES

iCAN

Available for 12V or 24V vehicles.

miniCAN

Available for 12V vehicles only.

INPUT DEVICES:

- USER INTERFACES
  (eg control panels, discrete switches)
- SENSORS
  (eg flow, rotary motion, height/distance, light, pressure, temp)

OUTPUT DEVICES & DEVICE CONTROL INTERFACES

iCAN & miniCAN

Output Module (suitable for both iCAN & miniCAN systems).

We also have an extensive range of ‘output devices’, such as work area and cabin lighting systems, siren systems, etc (list below is indicative only). Contact us for more information.

OUTPUT DEVICES:

- LIGHTS & WARNING BEACONS
- SIRENS
- MOTORS, PUMPS AND COMPRESSORS
- POWER TAKE-OFFS
- PNEUMATIC, HYDRAULIC & ELECTRIC ACTUATORS

iCAN

12 digital inputs + 3 analogue inputs
Selectable high or low inputs

miniCAN

10 digital inputs (2 negative, 8 positive) + 12 digital outputs

NOTE: INPUTS are provided on the Output Module for feedback circuits such as limit switches associated with a motor, or pressure sensors associated with a compressor.

iCAN

6 digital outputs + 2 digital inputs

miniCAN

6 digital outputs + 2 digital inputs

NOTE: INPUTS are provided on the Output Module for feedback circuits such as limit switches associated with a motor, or pressure sensors associated with a compressor.

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ABOUT IMPART

Since 1989, Impart has been delivering control systems and accessories for Emergency Services, Field Service and other commercial vehicle body builders. Our light and siren control systems evolved to become the ELS System, which set the benchmark in Australia for reliable in-vehicle power distribution for the control of vehicle devices such as lights, sirens, pump controllers, safety interlock systems, etc.

In 2009 Impart began deployment of a new class of CAN-Bus based systems. Today these newer systems are setting the standard in design flexibility, scalability, ease of deployment and cost effectiveness; delivering the features of more expensive and complex imported solutions with the added benefit of local design support and with the ability to greater customisation than possible with any other vehicle device control and management solution.

Add to that more than 500 individual products for a range of applications, ranging from gauges and indicators, to application-specific lights, sirens and accessories such as hand wash basins, to engine governors and custom storage systems, plus our Australian-based design and manufacturing capabilities, and you start to understand why Impart Special Products remains a reliable and much valued partner for so many vehicle fit-out specialists.

OUR CAPABILITIES

DESIGN INNOVATION

We’re a fully fledged electronics engineering business with a number of Australian and world firsts to our credit, that helped establish our reputation for innovation. Our ability to quickly adapt and improve, to address the needs of small to large body builders, as well as to address the increasingly sophisticated needs of major end users, has kept us at the forefront of the motor body building industry.

In addition, we’re AS/NZS 9001:2008 quality accredited, which covers us for design services as well as manufacturing (something that only a very small percentage of Australian companies have achieved).

CUSTOMISATION SERVICES

With more than 20 years experiencing delivering world-class control solutions for a range of commercial, industrial, security, banking, medical and emergency services customers, our experience goes way beyond just supplying a range of off-the-shelf components. Not only will we design your system for you, we’ll develop custom interfaces, output devices and control logic to ensure the system you deliver to your customers is more fully featured, more reliable and world-class.

We can even develop custom control systems that integrate with existing vehicle systems, to deliver optimal application-specific outcomes. From vehicle-specific or even device-specific control panels, to custom control logic for complex installations, we can tailor solutions to suit any need.

TOTAL SOLUTIONS

We deliver everything you need to create a fully installed vehicle CAN-Bus control and management system for a broad range of applications. That includes the design support, custom programming, custom control panel or device design, installer training, and after sales technical support. Whether you’re building a fire appliance, a road service and field maintenance van, a caravan or mobile home, a waste disposal truck or a general purpose trailer, we deliver the expertise and the sub-systems you need to create a world-class finished solution for your customers.