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A1RS A1 Reversing Systems | REVERSE SMART

SAFETY IN FOCUS

A1 REVERSING SYSTEMS (A1RS) AND REVERSE SMART INTRODUCE NEW STATE-OF-THE-ART FOCUSABLE RADAR DETECTION UNITS

Since the installation of the first Reverse Smart AEB (Automatic Emergency Braking) system in Melbourne in 2015, Reverse Smart - and their exclusive Australian distributor A1 Reversing Systems (A1RS) - have been at the forefront of heavy-duty, radar-based safety systems for large trucks and mobile plant & equipment.

Some six years on, they continue to lead the way, with the introduction of a number of new products and equipment safety solutions – including a state-of-the-art 'tunable' radar unit, a new automated braking system which applies the parking/emergency brakes in the event that the operator alights the cabin without first applying the park brake, and a new interface which allows the Reverse Smart system to connect directly to the vehicle or equipment's CANBUS for more efficient operation and greater flexibility.

As evidenced in the majority of new vehicles available on the market today, automated hazard detection and safety technology has moved ahead in leaps and bounds in recent years. While many of these new advanced safety systems have predominantly focussed on the passenger vehicle market, the advancements in technology and available componentry have been critical in the development of specialised systems including the Reverse Smart and Rollaway Stop technologies. As with the passenger vehicle market, these new technologies are set the change the face of safety for large vehicles and heavy mobile plant and equipment. Davin Hamnett, Business Manager with Reverse Smart, explained: "Things certainly have come a long way since A1RS and Reverse Smart started out in 2015."

"This new state-of-the-art technology represents a real 'watershed moment' in terms of the safety solutions that we're now able to offer our clients," Davin said.

"When we first started out, our initial Reverse Smart AEB system was utilising a number of 'off the shelf" components, including the fixed beam radar detection units. While that wasn't an issue in terms of the quality or longevity of the systems or componentry, it did limit us in terms of how far we were able to customise the system for specific tasks or to suit specific applications."

"With that in mind, we set out to build a completely new system from the ground up. From the radar units and ECU, through to the display unit and system electronics, all components within the new Reverse Smart and Side Smart systems have been specifically designed and built for purpose."

"When it comes to radar-based safety detection, the level of control you have over the radar to provide clearly defined safety zones, and the speed with which the system can process and interpret the radar detection data, are both critical factors in providing an effective safety system," Davin said.

"Our new ECU is able to process data at over 3 times the speed of the previous unit and that, combined with the fact that we're now able to 'tune' the beam (both in terms of beam shape and intensity), not only makes the system more accurate and responsive, it also gives us the flexibility to customise a solution to suit almost any type of large vehicle or mobile plant, including equipment with moving components that extend or operate beyond the confines of the cab-chassis."

"Without full control of the beam shape and intensity, it can prove nearly impossible for a radar-based system to be set up so it can identify and differentiate between the shapes that should and shouldn't be in a particular zone while the equipment is mobile and/or operating. That can either lead to 'false alarms' and unnecessary shut-downs, or the system missing a person or object moving into a hazard zone – neither of which are acceptable outcomes," he said.

"The new 'tunable' radar units not only enable us to better define the shape and length of the beam, they also allow us to pinpoint each of the hazard zones so that we can eliminate issues such as false alarms caused by the plant or equipment's own moving parts," Davin added.

ROBUST & RELIABLE PERFORMANCE

Built tough to withstand even the harshest operating conditions, ultra heavy-duty Reverse Smart radar units have been specifically designed for use on heavy vehicles and large mobile plant. Fully sealed to protect them from dust or other contaminants, the units are extremely robust and maintenance-free.

TUNED FOR MAXIMUM SAFETY AND PERFORMANCE

The key to the success of the Reverse Smart system lies within its purpose-designed radar, which not only allows for an accurately focussed detection area, but also overcomes many of the limitations that can be experienced by traditional ultrasonic detection.

Unlike traditional ultrasonic reversing or hazard detection, which is a common feature on many passenger vehicles, the Reverse Smart and new Side Smart radar units are not affected by vibration or frequency clashes which can result in 'ghosting' and false proximity alarms. In addition, the fact that the radar unit is a purpose-built, heavy duty, fully-sealed unit, means that it is unaffected by dust and dirt and is suitable for use in even the harshest operating environments.

Importantly, rather than trying to apply a 'one size fits all' solution, each Reverse Smart / Side Smart application is customised to suit the individual vehicle or plant. Once the radar units have been fitted, they are individually tuned and calibrated to that specific location on that specific vehicle or piece of equipment.

Each radar unit is tuned to a specific width, height, transmission distance and intensity - taking into account the shape of the cab-chassis, as well as the location and operation of moving components and/or attachments including grab arms, screeds, spreader boxes, lifting arms, buckets and conveyors.

"Being able to tune each individual radar unit has provided an exponential boost to the system's capabilities," Davin said.

"Having the ability to focus the radar beam to suit the unit's specific installation location has not only provided us with greater flexibility in terms of where we can install the units on different plant and equipment, it has also helped us all but eliminate any instances of 'ghosting' or false-positive system faults."

"In fact, even after more than 6-months of testing in the field in Australia and overseas, we've not had any instances of false-positive detections with the new radar units."

"Equally importantly, we've also not had any instances of the units failing to detect a critical object or person entering a safety zone," Davin added

MORE THAN JUST REVERSING PROTECTION

Together with the new fully-tunable radar unit, Reverse Smart and A1RS have also introduced a newly updated version of the system's central ECU (Electronic Control Unit). As well as providing for even greater definition of the radar detection zones, the new ECU allows for the addition of up to four separate detection zones per ECU.

"The new Electronic Control Unit has allowed us to expand the system from a Reversing AEB system to a fully customisable safety system with multiple protection zones, enabling us to provide a full 360-degrees of protection," Davin Hamnett said.

Indeed, the newly designed ECU was also the primary catalyst behind the introduction of the new Side Smart system, which has been specifically developed to provide pedestrian protection in blind spots, danger zones and activity zones along the sides of large plant and equipment.

Side Smart radars can be programed to activate a rage of functions, including the activating the Reverse Smart AEB brake if required.

"The new ECU provides us with the flexibility to design bespoke solutions for a wide range of specialist vehicles, plant and equipment," Davin said.

SIDE SMART

NEW ROLLAWAY STOP EMERGENCY BRAKING SYSTEM

As the latest addition to Reverse Smart's range of vehicle safety systems, the new Rollaway Stop system has been specifically developed to eliminate accidents involving runaway heavy vehicles resulting from the driver failing to correctly engage the park brake.

Connected to the Reverse Smart ECU, the Rollaway Stop system sounds an alarm and activates the vehicle's emergency brake if the operator moves from the driver's seat without applying the park brake – providing a safe and reliable solution to this surprisingly common problem.

Not surprisingly, the new Rollaway Stop system is already gaining significant interest from contractors large and small. Indeed, following the success of a number of recent trials, several major contractors have starting installing Rollaway Stop units across their fleets, with one also recommending the technology be installed on all sub-contractor vehicles entering their worksites.

ROLLAWAY STOP

"Thanks to the new ECU and Side Smart components, we're now able to set up and customise 'protection zones' around moving parts and components which extend beyond the confines of the cab-chassis."

The other major advantage of the new Reverse Smart ECU is that rather being installed on a vehicle as a separate sub-system, it can now also be connected directly to a vehicle's CANBUS system for even greater flexibility and response times.

The first Australian CANBUS-connected Reverse Smart systems were recently installed on a number of Volvo FM Front Loader waste collection vehicles in Brisbane. The team from Reverse Smart and A1RS worked with Volvo Engineers to integrate the systems and allow the Reverse Smart ECU to control the Volvo braking system via the vehicle's own CANBUS rather than via an addition external system.

Importantly, the CANBUS-connected Reverse Smart units are performing extremely well in the field, with no negative impacts on either the vehicles' or systems' performance. The team from Reverse Smart are also currently working with a number of other equipment manufacturers on CANBUS connectivity, with a number of other brands expected to be available over the coming months.

EASY TO USE

Importantly, from an operator's perspective, the Reverse Smart is extremely easy to use. The driver or operator doesn't have to change the way they operate the equipment, and there are no additional steps required to operate or calibrate the Reverse Smart or Side Smart system once it has been installed. Reverse Smart and Side Smart both use the one in-cabin display, which automatically switches between the two when reverse gear is selected.

The in-cabin display provides a quick visual indicator as to the presence of people or objects in any of the detection zones, displaying either green, yellow or red indicator lights. If an object is detected in the red zone, the unit also emits an audible warning and activates the appropriate safety measure (applying the brakes, stopping equipment operations, etc).

The only driver interactions with the system are when they are intentionally reversing close to a solid object, in which instance they can press a button to 'sleep' the braking function while still maintaining the proximity detection alert.

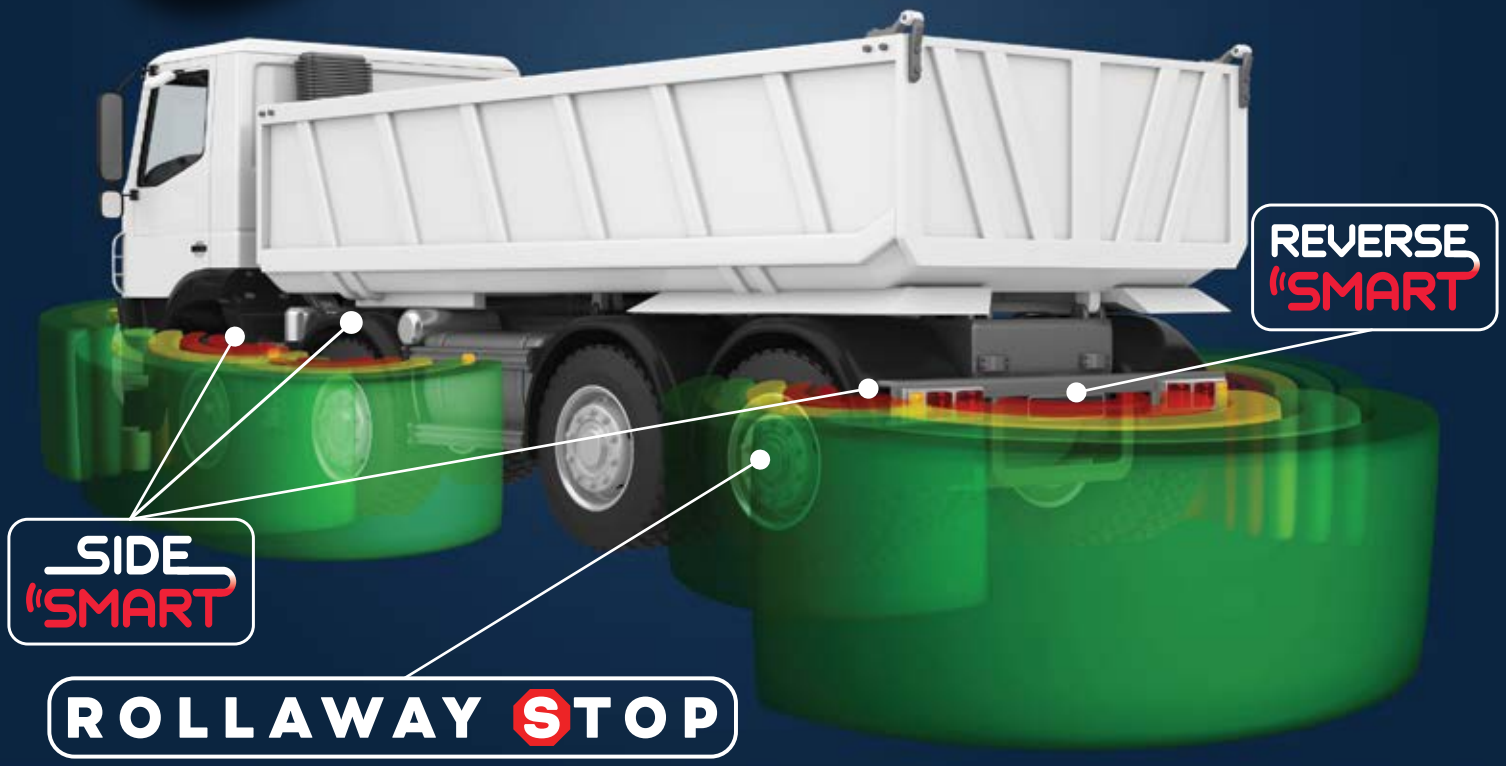
A1RS A1 Reversing Systems

For further information, or to arrange a demonstration, call T: 03 8899 6619 or email: davin@reversesmart.com.au or visit:

www.reversesmart.com.au

REVERSE SMART

360° ALL-ROUND PROTECTION







From AEB (Automatic Emergency Braking) systems and purpose-designed safety systems that stop equipment movement and/or operation if a safety zone is breached, through to our state-of-the-art Rollaway Stop system that sounds an alarm and applies the emergency brakes if the driver leaves the cabin without applying the park brake, A1 Reversing Systems has you covered.

We offer world-leading technology, including extra heavy-duty, tuneable radar detection units, and purpose-designed safety systems that can even connect directly with your vehicle or equipment's CANBUS system to prevent specific equipment operations or movement. Cutting-edge technology that's built tough - so it keeps performing in even the harshest operating environments.

REVERSE SMART ROLLAWAY STOP SIDE SMART

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