



PREACC

DIAZ-T PRECISION ANTI-COLLISION SOLUTION
FOR TRUCKS AND MOBILE MACHINERY

Diaz-T



About PreAcc:

PreAcc specializes in professional safety consulting services & technological solution design, as well as the development of safety solution technologies for Steel industry, general heavy heavy industries, heavy construction, public works (roads, bridges and tunnels), quarry and mining operations, shipyards, ports/terminals, offshore rigs etc.

The DIAZ-T (Detection In Alert Zone) detection device of workers standing in the immediate proximity and in the direct path of a moving vehicle with instant alerting capabilities to pedestrian workers in danger and the driver.

Most accidents involving trucks and mobile machinery in open field operations happen due to the sudden movement (from stop position to start moving) and short distance manoeuvres while a worker stands in the direct path at very close proximity, out of visual range of driver and maybe a dirty camera.

RISK OF FALSE/ANNOYING ALERTS

Workers are working hand in hand with mobile machinery and trucks, guiding drivers, assisting with materials delivery etc. If alerts are made each time there is a worker-machine proximity without the distinction of co-working realities, the alerts will lose their meaningful alarm function.

Most general-purpose obstacle detection sensors (i.e. ultra-sonic, radar, etc.) will detect obstacles, humans and solid objects (i.e. walls) without differentiation, while vehicles do need to manoeuvre near objects and walls which as result generates a high number of false alerts.

To be efficient and limit false alerts, a detection solution must therefore:

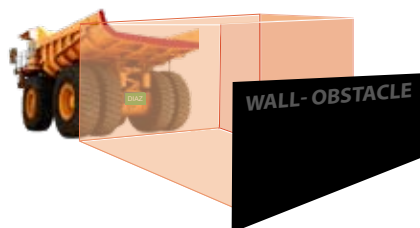
- *Recognize workers over other objects (walls, etc.)*
- *Detection sensors should work under all environmental conditions even when covered with mud*
- *Has the capacity to alert ground workers in danger in addition to the driver/operator.*
- *To prevent false alarms:*
 - *Avoid unnecessary all around style detection of workers that are not in the immediate active path of the vehicle*
 - *Only limited to the specific zone of danger hence in the direct path of the machinery*
 - *Active only when the vehicle is about to move or moving in the worker's direction*

THE DIAZ-T

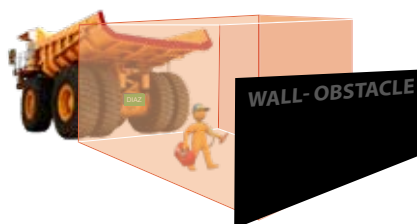
The DIAZ-T is a detection and alert trigger device that is based on the differentiation between workers and objects. The DIAZ-T is designed to handle the most frequent cases of machine/vehicle to worker collisions which is when the machinery/vehicle is to move risking to hit the unaware pedestrian workers standing in its immediate path.

The DIAZ-T uses PreAcc's unique very low energy EM/RF technology with high precision danger zone targeting exclusively focussing on the path of the moving machinery. The DIAZ-T taking in account that pedestrian workers do need to work along side machinery, in order to limit false and annoying alerts and hence must have high precision.

Important: The DIAZ-T will not be blinded by dirt, dust, snow, rain, ice, mud, is immune to all those factors.



OK to manoeuvre in reverse



NOT OK to manoeuvre in reverse



NOT OK to manoeuvre

The EM/RF danger zones of a detection device must not go all over the place because such indiscriminating zone of detection would lead to many false/annoying alerts (i.e. making circles around a vehicle/machinery will trigger unwanted alerts when workers are working side by side with the vehicle, however not in direct path of the vehicle).

The DIAZ-T EM/RF technology ensures that the zone covered is the precise zone at risk (danger zone) in the direct path of the moving vehicle. The DIAZ-T has a trigger line such to be activated by the vehicle gear selection.



METHODS OF ALERTING

Operator / Driver

1) Visual and/or sound signaling to the driver/operator



The DIAZ-T offers interface to light signal and/or uniquely identifiable sound buzzer in the cabin of the machinery.

2) Trigger to machinery

The DIAZ-T offers a DC relay trigger output to interface with the machinery itself e.g. speedcontrol and/or its on-board instruments (including camera monitor)

3) Personal Signal Device



The DIAZ-T can interface with an in-cabin alert signal relay that can trigger a calibrated wireless personal device (such as a vibrating bracelet) worn by the driver/operator

Pedestrian Workers

1) Visual and/or sound signaling to the workers

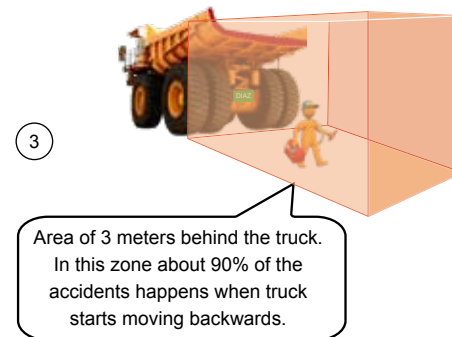
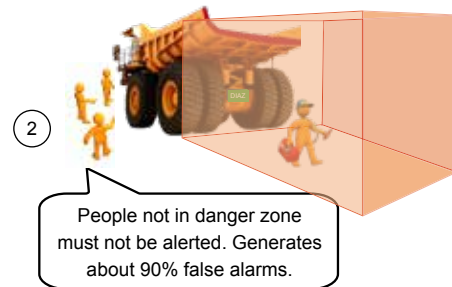
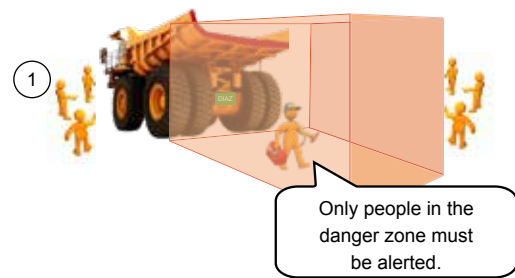


The DIAZ-T offers interface to « flash » type light signal and/or uniquely identifiable loud sound buzzer installed with the DIAZ-T

2) Personal Signal Device



The DIAZ-T can trigger a wireless personal device (such as a vibrating bracelet) worn by the pedestrian workers.



Site- and fleet safety

All of the above can be combined for maximum efficiency. The DIAZ-T can be a part of a more global integrated site specific custom designed safety solution and/or customized to match the specifics of operations and operational/logistics realities.



All weather conditions



SPECIFICATIONS:

- Power : 12V, 24V, 48V (operating tolerance any voltage and peaks between 10-60 VDC)
- Operating Temperature : -40 to + 80 ° C
- Industry standard protocol detection & localisation technology
- High precision very low energy EM/RF
- Antenna: Various antenna and configuration option, general purpose setting zone size 2-4 meters long by width of machinery / vehicle (length and width).





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The core of PreAcc high technology solutions regarding accident prevention:

- ✓ To limit false and annoying alerts such that the real alerts are NOT ignored by workers.
- ✓ To alert and protect workers and pedestrians.
- ✓ Prevent collision with dangerous obstacles and between cranes
- ✓ Integration with machine operation

