



MSME
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An ISO 9001:2005 Certified

Mfgd. as per D.G.M.S. Guidelines



About us

Universal Electrical and Electronics develops and manufactures commercial and mining safety monitoring equipment for a wide range of mining applications, and industrial automation instrumentation, and all kinds of electronics research and developments. Inherent in these applications is a paramount need to protect personnel, facilities, and production and to comply with safety requirements. Universal E&E targets this need and strives to offer cost-effective solutions. Optimize your plant or operation performance with flexible service options.

The products developed by universal E & E have been certified for quality.

We would like to take an opportunity to introduce ourselves as a manufacturer of DGMS recommended safety equipment/quality products as per their safety norms and specifications.


Universal electrical and electronics, established in 2016 is amongst the premier organizations catering to Defense and other sectors like Mining, Industrial / Environmental protection.

Safety Solutions for Man and Machine

There is a litany of safety equipment that mining machines use for the safeguard of human life and machines. DGMS issues many circulars to reduce mining accidents. Out of which circular no. 05 of 2010 tells about the safety equipment's which are minimum requirement.

Our Vision

To be customer's first choice by providing excellent safety solutions through our innovative products and reliable services. No mining vehicle should run without our safety product.



Audiovisual Alarm

- ⊙ As per DGMS, at the time of reversing to avoid an accident, AVA is a must in every mining vehicle. We are a pioneer manufacturer of Audio-Visual Alarm and used by almost all OEM's.
- ⊙ Tested as per IP 67 & as per DGMS Circular No. 06 of 2020. The electronic circuits and buzzers are sealed by epoxy resin, so that nothing can enter them. Our Audio-Visual Alarm is 100% Water Proof. It even works after totally immersed in water. It does not have free space to accumulate ingress dust/water into its
- ⊙ Two synchronized piezo buzzers. (110dB sound from 1.2Meters)
- ⊙ 300 LUX Bright focus type Red LED
- ⊙ Operates ideally on 24 Volt DC. (12 Volt DC. optional)
- ⊙ The maximum current consumption is 150 Ma.



Audiovisual Alarm

Rearview Camera System



Rearview Camera System

- ⊙ A Rear Vision System (also called reversing camera) is a special type of video camera that is produced specifically to be attached to the rear of a vehicle to aid in backing up and to alleviate the rear blind spot.
- ⊙ Rear Vision System with the help of Camera & Monitor gives a clear view of the rear side to the vehicle operator and thereby achieves zero accident target for mining vehicle.
- ⊙ DGMS strongly stated in Circular no.06 of 2020 that the "Rear Vision System" must be installed in equipment especially in dumpers and tippers.
- ⊙ Rear Vision System is provided with a 7" LCD Color Monitor and Infra-Red Day & Night Camera.
- ⊙ 18 Infrared LED Lights to provide night view, 120 Degree Wide view angles.
- ⊙ Test certificates - IP69K According to as per DGMS Circular no.06 of 2020.

Dump Body Raising Position Indicator With Warning



Dump Body Raising Position Indicator With Warning

- ◎ Operators of HEMM, while operating, don't know the position of the dump body, whether it is in a high or low position. If the dumper moves in body lift position, overhead HT Lines may break or the hydraulic system may collide and cause a fatal accident.
- ◎ DGMS vide Circular instructed to install Body Lifting Indicator in every vehicle.
- ◎ A system or a device capable of sensing of non-return of dump body to completely retracted and transportation mode, restricting transmission of dumpers/tipper trucks, when engaged, up to first gear while the dump body is not completely lowered and simultaneously triggering an audible and or visual warning till such time the dump body is completely lowered.

Seat Belt With Human Voice Reminder

- ◎ The Seat Belt is a safety device used to secure the operator of a vehicle against a collision or a sudden stop. A seat belt functions to reduce causality or serious injury.
- ◎ DGMS vide Circular instructed to install Seat Belt with a Reminder on every vehicle.
- ◎ Seat Belt Reminder: Automation Controls has developed equipment named "Seat Belt Reminder" which serve this purpose. If Operator forgets or does not fasten it, "Seat Belt Reminder" alert him with Visual Indicator and also remind him in **English, Hindi, "kripya Seat Belt Pehanlijiye", "please Fasten Your Seat Belt"**.
- ◎ It operates on 10volts to 36 Volts DC.
- ◎ Protection: Withstand shocks & vibrations of heavy vehicles. Its electronic circuits and Speaker are sealed with the chemicals so that nothing can enter in it.



Seat Belt With Human Voice Reminder

Driver Fatigue Monitoring System (DFMS)

- ⊙ Driver Fatigue Monitoring System is designed to accurately predict and identify situations where drowsiness and fatigue may be setting into a driver.
- ⊙ It also alerts those drivers so that they can pull over to the side of the road and take other necessary steps to ensure their general safety along with the safety of other drivers.
- ⊙ The most important function of a driver fatigue monitor is to let the drivers understand they
- ⊙ are actually in fatigue driving and raise their alertness level. Once the monitor detects the driver is drowsy, it will send a warning immediately to the driver.
- ⊙ Our system monitors the pupils of the driver and makes alert sounds accordingly, in a human voice.
- ⊙ Facial feedback indicator, the green light is on when the angle between lens and the human face is proper.



Driver Fatigue Monitoring System (DFMS)

Proximity Warning Devices (Ultrasonic)



Proximity Warning Devices
(Ultrasonic)

- ⊙ The ultrasonic proximity warning system for HEMM consists of sensor modules and a display module. The multiple sensor modules maximum of up to 4 sensors can be connected to a display module.
- ⊙ Designed as per industrial/mining conditions. Can be used in dusty and humid conditions.
- ⊙ Separate sensor and display module (multiple sensors can be connected to a display module).
- ⊙ Micro-controller and sensor IC both are present in each sensor. This provides better calibration and communication with the display module.
- ⊙ A single cable interface makes it easy to connect in the field.

Proximity warning device RADAR

- ⊙ As per DGMS guideline, a Radar sensor, to operate in the frequency range which should be exempt from Licensing requirement form Government department. The radar sensor should have Equipment Type Approval (ETA) from Wireless Planning Coordination Wing (WPC), which is under Ministry of Communications and IT, Government of India."
- ⊙ DGMS vide Circular instructed to install Proximity Warning System in every vehicle.
- ⊙ Proximity warning device system detecting static and moving objects including human beings on its own during the vehicle movements for specific ranges and warn the operator in the operator's station.
- ⊙ We are having a range of 0-10 Mtr. 0-15 Mtr. 0-24 Mtr. Available with 2 sensors.
- ⊙ It gives both audios as well as a visual indicator to alert the Dumper operator



Proximity warning device RADAR

when it detects an object in the sensing range of the RADAR sensor (Radio Detection And Ranging).

- ⊙ Operating Voltage 9 to 28 VDC. Beam Width 80°, Beam Height 40°, Designed for outdoor mining environments.
- ⊙ Test certificates - According to as per DGMS Circular no.06 of 2020.

Auto Dipper System

- ⊙ While driving in the night a problem like many drivers does not dip the headlamps of their vehicles in the night while approaching. Several switching operations are used to dip the headlight which may distract the concentration. To overcome this type of problem Automation Controls developed an electronics gadget called "Auto Dipper".
- ⊙ DGMS vide Circular instructed to install Auto Dipper System in every vehicle.
- ⊙ Surrounding traffic/ lighting conditions. It is connected with an electronics system that acts like the human brain, making decisions about the appropriate use of the high beam headlamps. We call it 'human intelligence mapping' technology.
- ⊙ Withstand shocks & vibrations of heavy vehicles. Only Fire-retardant conduit pipes are used for the safety of Harness.
- ⊙ Restore the headlight beam within 2



Auto Dipper System

seconds when a vehicle from the opposite direction passes, As per SAE J565 standard.

- ⊙ This device approved by ARAI tested and NRDC.

Automatic Fire Detection and Suppression System (AFDSS)

- ⊙ Automatic Fire Detection and Suppression System (AFDSS) for Heavy Earth Moving Machinery (HEMM) and Surface Transportation Machine is Manufactured by us. This system is manufactured as per Director General of Mines Safety (DGMS).
- ⊙ The system is designed to use in mining conditions.
- ⊙ Our AFDSS is tailor-made, can be designed as per the customer's requirement, to protect both man and machine.
- ⊙ The system capacity can be increased by providing more cylinders and nozzles.
- ⊙ The numbers of nozzles can be increased to 4, 6, 8... or more to cover a larger area, and by combining cylinders we can make AFDSS of 10 Kg, 15 Kg, 20 Kg, 30 Kg, 45 Kg, etc. as per requirement.
- ⊙ When the temperature rises, the sensor



Automatic Fire Detection and Suppression System (AFDSS)

cable senses the heat/flame and gives the signal to the control panel. Control Panel then gives the alarm to alert the operator and surrounding people, then automatically activates the system. Through preset distribution system and nozzles, it sprays fire extinguishing agent to extinguish the fire.

- ⊙ A reliable and effective after-sales service is assured all through their life.

OUR PRODUCTS

- ⊙ Rearview camera system (CE, ARAI, IP69K approved)
- ⊙ Audio visual alarm (as per DGMS circular)
- ⊙ Wireless single and double antenna rear vision system
- ⊙ Forklift rear vision system
- ⊙ Body lifting alarm
- ⊙ Seat belt and reminder (human voice)
- ⊙ Auto dipper system (ARAI, NRDC approved)
- ⊙ Driver fatigue monitoring and alert system
- ⊙ Trimming alarm
- ⊙ Pre-start alarm for v cone crusher screener etc.,
- ⊙ Flasher LED light (heavy-duty)
- ⊙ Proximity warning device (RADAR)
- ⊙ Proximity warning device (ultrasonic)
- ⊙ Wireless proximity warning devices (ultrasonic)
- ⊙ Automatic fire detection and suppression system
- ⊙ The battery cut off switch
- ⊙ Solar power tire pressure monitoring system
- ⊙ GPRS vehicle tracking system
- ⊙ Load indicator and trip recording system
- ⊙ Industrial instruments automation, electronics R & D works.

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