

COMPLETE COMMUNICATION SOLUTIONS

- DOZAFE
- TUFF-TALK
- COS 1
- CERBERUS
- THE SCRIBE



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TECOM



INNOVATION THROUGH TECHNOLOGY

TECOM Australia Pty Ltd is part of WINDER CONTROLS Australia Pty Ltd, member of the SIEMAG TECBERG group, a provider for end-to-end hoisting solutions, specialising in the design, manufacture, installation, upgrading and maintenance for the global mining industry.

TECOM specialises in systems for remote data, video and voice transfer. Capitalising on over 45 years of experience, we provide a wide range of sophisticated products.

TECOM offers cost effective solutions to your problems, which will increase your productivity and profitability.

IMPROVE YOUR OPERATION WITH

- Full maintenance programs
- Communication networks
- Remote equipment monitoring
- Display and interface data
- Complete breakdown service
- Gas extraction
- Gas monitoring

Our team will analyse your specific requirement and develop a system or program that delivers reliable, cost effective, trouble free operations. TECOM offers survey, design and implementation of sophisticated radio systems and custom products to private organisations throughout the global mining sector. Services offered by TECOM include:

- Custom ancillaries
- System design and installation
- On-site survey and facilities assessment
- Preventative maintenance
- Breakdown service
- System design consultants



DOZAFE

SIL2 RATED STOCKPILE DOZER

TELEMETRY SAFETY SYSTEM

Dozer drivers work alone and often are in locations where they are not in view and not under direct supervision. This places dozer drivers at risk.

- One serious hazard is the risk of falling or inadvertently driving into a stockpile draw down hole.
- Another is driving over bridged material causing a sudden collapse of the coal above the draw down valve. A number of such serious incidents have taken place both in Australia and overseas.

Our DOZAFE system secures the dozer and its driver through two separate appliances:

- A SIL2 rated emergency stop for use by the dozer operator on the coal stockpile to stop the tripper and/or the plough conveyors as well as valve operation.
- A dozer operator interface (HMI) to the main plant monitoring system, providing tripper and plough position, belt status feedback and alarms.



PLC's are located on the dozer and in the clean coal tower. PLC's communicate via a safety Ethernet protocol over a wireless network. This wireless system enables signals, transmitted either through the various antennas located on the tripper conveyor or directly from the source to the receiver, to find alternate/reliable paths.

By procedure, dozers must manually log on/ off the coal stockpile via a selector switch. The dozer safety control system (DSCS) will only enable the stop circuit for a dozer that is logged on to the coal stockpile, which prevents accidental shutdowns of the plant.

The DSCS is programmed with a set protection zone and uses global navigation satellite systems (GNSS) to read the position of the dozer. If the dozer position is within this zone, the operator will be alerted.



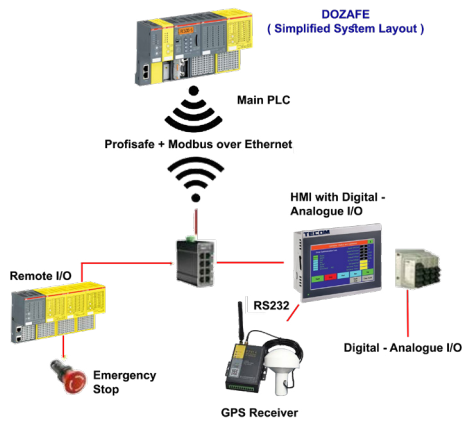
HAZARDOUS WARNING SYSTEM

The controller on the dozer will utilise a GNSS receiver to regularly identify its position. When the dozer crosses into the stockpile zone, an audible alarm will alert the driver without actually impinging the operation of the dozer in any way.

COMMUNICATION MEDIUM

SIL3 integrity I/O data transfer for critical signals via

- Fibre
- Copper
- Radio



FEATURES

- 24 digital inputs
- 16 digital outputs
- Human Machine Interface (HMI)
- Low power consumption
- Robust design and construction
- In-built data logging
- ACMA compliant

Increasing operator safety is made easier with DOZAFE, it will assist your operations in saving lives and preventing damage to infrastructure.



TUFF-TALK REMOTE COMMUNICATION UNIT

The TUFF-TALK device is a fixed location audio station, designed to interface with a winder voice radio network.

The associated audio and PTT request are simply conveyed by a twisted-pair, reticulated from the required fixed location back to either the winder communications panel or another fixed audio station (i.e. multi dropped). The unit can be powered by a local 12 VDC supply or an internal 85-265VAC switch mode power supply.

TYPICAL APPLICATIONS:

- Mine Drift Winders
- Mine Shaft Winders
- Shaft Sinking Winders
- Material Handling Plants
- Conveyors



FEATURES:

Microphone
The microphone is located in the centre of the front panel and accepts the audio of a person's speech, whenever the "Press-to-talk" button is depressed.

Volume
The audio level, received from other devices, is controlled by the volume adjustment located on the front panel.

Power/PTT Indication
There is a 8mm Ø green LED located in the central area of the front panel. The IP67 rated LED will be partially illuminated to indicate optional capability and fully illuminated when the "Press-to-talk" button is depressed.

Press-to-talk
To indicate communications from this device to other voice radio devices on this network, simply hold the "Press-to-talk" button, speak towards the microphone and release to receive audio.



COS-1 CONVEYANCE OVERSPEED SYSTEM

COS-1 is designed as a primary safety circuit conveyance over-speed device.

With the use of SIL2 rated frequency counters, inductive sensors and either a single or dual solenoid system within the hydraulic pack, the system will automatically de-energise power to the solenoids and therefore release hydraulic pressure from the on-board braking system, should an over-speed condition of the conveyance be experienced.

- The EUC (Equipment Under Control) hydraulic circuit in turn lowers the EUC onto the designated rail braking system
- The COS-1 will display the speed at which the EUC is travelling and give indication of either healthy or tripped status of the over-speed system.
- A “Speed Monitor Selection” switch is used to interchange between sensors an frequency counters that are being displayed on the “Speed”meter.
- Failure of either one or both of the inductive sensors is monitored and alarmed and will cause the EUC to apply the on-board braking system.

TYPICAL APPLICATIONS:

- Mine Drift Winders
- Mine Shaft Winders
- Shaft Sinking Winders



FEATURES:

- SIL2 compliant in accordance with AS 61508
- Compliant with DII EES-008
- Extensive self diagnosis
- Housed in an IT65 stainless steel enclosure
- 24 Volt DC power supply
- Low DC power consumption
- Motion detection output
- Analogue output for speed reference



CERBERUS SIL2 CONVEYANCE COMMUNICATION

The TECOM Conveyance Management System CERBERUS is a powerful SIL3 PLC based data acquisition device, designed to interface with many different industry standard devices that support discrete SIL2 digital and analog I/O. Data gathered from these devices can either be transferred to a central monitoring facility or other remote locations via a designated 5.8 GHz telemetry channel.

CERBERUS is capable of interfacing with several devices through SIL3 remote digital and analog I/O blocks all simultaneously. 5.8 GHz wireless data transfer between devices is achieved via SIL3 Ethernet concepts over a fixed point aerial network.

This provides a robust and safe means of sending safety related data over a long distances, using the communication medium that suits the application best.

CERBERUS is equipped with 24 digital inputs and 16 digital outputs, including analogs. CERBERUS can be supplied with varying I/O arrangements, however the basic form consists of 8 control inputs and 8 control outputs with an additional 8 control I/O that are configurable. IN addition to the control I/O there are 8 safety inputs and 8 safety outputs. The state (HIGH or LOW) of each input and output is signalled by the HMI, located at the main console. This HMI allows the operator to confirm the correct stature of all inputs and outputs associated with the conveyance.

CERBERUS is designed for operation up to a maximum temperature of 60°C. The temperature status is evaluated by the CPU module in the controller.

TYPICAL APPLICATIONS:

- Mine Shaft Winders (Single, Double & Koepe Drum)
- Shaft Sinking Winders
- Mine Drift Winders

FEATURES:

- SIL2 approved in accordance with AS 61508
- Supports remote isolation
- Compliant with DII EES-008
- Supports video channels
- Supports voice channels
- Extensive diagnostics
- Supports controls and SIL based I/O
- Supports analog signals



THE SCRIBE RF SIGNAL STRENGTH MONITORING

THE SCRIBE has been designed to assist in logging the RF signal, being received from a mine winder conveyance, in order to give site personnel the ability to detect low RF signal conditions without the need of specialised test equipment and specialist personnel on site.

This can reduce invaluable winder downtime during instances such as unscheduled aerial repair/realignment or rudimentary fault-finding.

The ability to import the data in to SCADA packages also allows for tolerance alarming, should the expected RF signal vary from mine prescribed pre-set datum levels for a given location.

The RF signal, received by the device, is converted and provided as an analogue 0-5 DC output to the winder control PLC.

In order to capture the RF spread of a typical winder's SMS transmission throughout a shaft/drift, we have ranged the new SCRIBE device typically over 60 dBm sweep.

As most installations rarely have signals higher than -40 dBm or lower than -100 dBm, this spread will enable the capture of the total distance-travelled signal plot for the majority of installations.

TYPICAL APPLICATIONS:

- Mine Drift Winders
- Mine Shaft Winders
- Shaft Sinking Winders
- Main Ventilation Fan Telemetries



PRODUCT SPECIFICATIONS:

- The accuracy will be better than 1 dBm
- Can be manufactured to operate in one of the following frequency bands:
 - 150-175 MHz (current band)
 - 410-520 MHz (special order)
 - 820-960 MHz (special order)
 - Specific frequency (serial) programmable within the manufactured band

LOCATIONS AND CO-OPERATION PARTNER SIEMAG TECBERG GROUP



The SIEMAG TECBERG group, which includes WINDER CONTROLS, TECOM AUSTRALIA, TECBERG HERCO, METEC SYSTEMS, TECBERG HESE and EVI-ANOS, has been providing hoisting solutions for decades, specialising in the design, manufacture, installation, upgrading and maintenance for the global mining industry.

The SIEMAG TECBERG group is represented by at least one subsidiary on each continent. In addition to the headquarter in Haiger in Germany it has locations in Rugby in the United Kingdom, Sydney in Australia, Johannesburg in South Africa, Milwaukee in the United States, Tianjin in China, Moscow in Russia and Katowice in Poland.

Since the addition of TECOM to the SIEMAG TECBERG GROUP in September 2017, we also offer survey, design and implementation of sophisticated SIL-rated shaft communication systems and monitoring devices.

At SIEMAG TECBERG GROUP we see safety and reliability as the key to overall system design. Our outstanding team of experienced engineers, technicians and technical specialists work together in order to meet all our customer's needs.



**SIEMAG
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