

Control & Monitoring



- Data Transmission Systems
- Conveyor Control and Monitoring
- Surface and Underground Communications
- Plant Control and Monitoring
- Personnel Protection
- Vehicle Tracking

Speech Communication

A range of speech communications systems are available for surface and underground use to provide mine or plant wide loudspeaker communications, either directly or via a purpose built control room switchboard.



Industrial unit

Systems can be designed to incorporate audible alarms or voice messages to warn of dangerous conditions or they can provide pre-start warning for conveyors or other machinery.

A typical underground system would consist of power supply, a console unit and a number of loudspeaker amplifiers, all interconnected via a single 4 core cable.



Mining type loudspeaker

Each amplifier unit contains its own rechargeable battery unit so that in the event of a mains power failure, communications can be maintained for extended periods. Systems can be connected together directly or via a control room console. Underground units are certified to European Standards for use in underground coal mines.

For surface preparation plants and other arduous environments, robust loudspeaker systems are available with various configuration options including remote high output speakers, handset units and three channel systems.

Loudspeaker communication systems are high output, low maintenance and low cost leading to a safer and more efficient workplace.



Reader unit

Conveyor Protection

When belt conveyors are used for mineral transportation great benefits can be achieved by installing conveyor protection systems. Conveyor down time due to material spillage and delivery chute blockages can be greatly reduced when material detectors are installed. Dangerous occurrences such as fire, due to belt slippage or bearing overheating, can be avoided by installing belt speed and slip monitors and temperature monitors to bearings, brakes, scoops etc.



Belt monitoring

To ensure conveyors continue to operate in the correct line, various belt displacement switches can be utilised, and for correct belt tension, automatic tension control is an inexpensive and reliable option.

Davis Derby can provide a complete range of belt protection devices, monitors and systems for any size conveyor drive.

Access Control and Tracking

Davis Derby has developed a system for automatic detection and identification of personnel, equipment and vehicles for use in underground mineral and coal mines. A system requires a reader unit connected to a suitable antenna together with a number of radio frequency transponders.

When a transponder passes within range of the antenna (up to 3 metres) the unique 64 bit code electronically encoded onto the transponder or 'tag' is detected by the reader unit. The reader recognises the tag and can be configured to react accordingly. The reader units can also be connected to a data transmission system. This is particularly useful for vehicle management or manpower deployment systems.

Applications include crusher protection, personnel identification, vehicle management and security applications.

Control and Monitoring

It is often desirable to integrate conveyor communications, signalling, conveyor protection and control into one control station. Davis Derby have a range of consoles and control units for such duties. Several options are available for single or dual pilot applications, for belt or chain conveyors, incorporating communications, pre-start warning, signalling, monitoring and control.

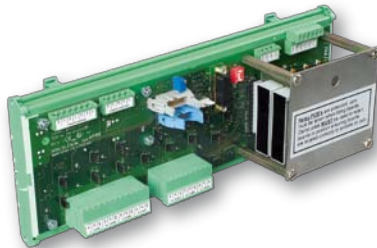
For efficient utilisation of conveyors, control can be centralised to a central control masterstation. Connection from the control station via a national standard data telemetry system can control outstations up to ten kilometres away.

For monitoring and control of mine and plant environment several different control outstations are available. Environmental sensors connected into these outstations allow continuous automatic monitoring of dangerous gases and conditions. The outstation can also be configured to perform control functions such as pump or fan control and can be connected into a telemetry system to give environmental monitoring at the main control room.

Davis Derby can provide the complete mine-wide monitoring and control package, certified to European Standards.



Minewatch 3 unit



PC21 module



PC21 module

Conveyor Signalling and Stop Systems

For safe operation of conveyor systems Davis Derby produce a range of safety pullwire systems for every application. Pullwire operated 'pullkeys' switches are installed at equal distances along the length of the conveyor. Pulling the pullwire causes the nearest pullkey to operate, stop the conveyor and lockout the control circuit.

Long line signalling systems include locked out pullkeys position indication, circuit condition with fault diagnosis. In underground intrinsically safe applications a single system is capable of protecting up to 10km of conveyor, and for other applications up to 20km of conveyor can be protected. These systems will also incorporate into any PLC control scheme.

Purpose designed robust lockout units are available for coal faces and other extremely arduous areas.

Coal mining systems are certified FLP/IS for Group I Coal Mines to European Standards.

Conveyor signalling and stop systems provide enhanced safety and reduced maintenance downtime.



Pullkey



Signalling key



Long line lockout and pre start alarm system

The Company



Davis Derby has over 200 years experience in supplying high technology equipment for industry. We have become a world leader in the fields of communication, control and monitoring systems for mining and extractive industries, and have an enviable reputation for service, reliability and quality.

Today Davis Derby continues to be at the forefront of high technology. With our all round engineering capability we specialise in the design, manufacture and assembly of safety monitoring and control system for the mining and extractive industries.

Worldwide Representation

<u>Canada</u>	<u>Zimbabwe</u>	<u>Chile</u>	<u>France</u>
<u>USA</u>	<u>Indonesia</u>	<u>Egypt</u>	<u>India</u>
<u>Russia/CIS</u>	<u>Malaysia</u>	<u>Spain</u>	<u>China</u>
<u>Mexico</u>	<u>Argentina</u>	<u>Italy</u>	<u>Norway</u>
<u>Australia</u>	<u>Iran</u>	<u>South Africa</u>	
<u>New Zealand</u>	<u>Turkey</u>	<u>Portugal</u>	



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Davis Derby is a world leader in the design, manufacture and installation of Control and Monitoring Systems for the Mining & Extractive Industries