

DIS 5 Intrinsically Safe Communication System

- ATEX MI certified
- Superb speech clarity
- High output >95db
- Amplifier enclosure acoustically designed to maximise output
- Battery backed in the event of power failure
- Plug-in trickle charged replaceable battery
- Battery state indicator
- Long life plastic cone loudspeakers
- Vibration tested at 5g
- Optional integrated lockout facility for coal face applications

The ATEX MI certified DIS 5 system provides speech communications and pre-start warning facilities over long distances via a 4 core cable allowing several amplifiers to be connected to a single 12 volt intrinsically safe power supply.

Each amplifier is equipped with a trickle charged NiMH (Nickel metal hydride) re-chargeable battery giving long standby in the event of a loss of mains power.

The system can also be used as part of an integrated control system.

System Components

The DIS 5 communication system comprises of a console amplifier, several remote amplifiers, a pre-start warning generator, safety couplers and a 12 volt intrinsically safe power supply unit.

Versions of the console amplifier, remote amplifier and pre-start warning generator are available fitted with either plugs and sockets or cable glands for the incoming and outgoing cables.

Console Amplifier Type 26823

The intrinsically safe console amplifier is housed in a rugged sheet metal enclosure. The unit comprises a plug in chassis, a durable telephone handset, a loudspeaker with a mylar cone and an audio safety coupling transformer which allows the system to be connected to other audio systems or the surface audio switchboard.

The amplifier circuitry and the NiMH (Nickel metal hydride) re-chargeable battery are each separately encapsulated and are plug in for ease of maintenance. The trickle charged battery provides stand-by power in the event of a mains power failure.

The front panel of the amplifier unit is equipped with a light emitting diode to indicate the state of the internal battery and three push button switches as follows:

LOCAL Allowing communication to the remote amplifier units.

SURFACE Allowing private speech to the audio system connected to the audio coupling transformer, usually this is the surface control room audio switchboard.

CALL Allowing a 5kHz call tone to be generated to alert the operator in the surface control room, in addition to activating the internal battery test function.

Amplifier Unit Type 26821

The amplifier unit comprises a die cast front panel housed in a rugged sheet metal enclosure designed to enhance the audio performance of the twin mylar coned loudspeakers. Each end of the enclosure has an aperture to direct sound along the coal face or mine roadway.

The amplifier unit has an output of 95db and has been vibration tested at 5g. In addition to the two loudspeakers, the unit is equipped with a microphone, a light emitting diode battery state indicator and a three position lever switch which allows speech or the call function to be selected.



**Console Amplifier
Type 26823**



**Pre-Start Warning Generator
Type 26822/S**

Pre-start Warning Generator Type 26822/S

The construction of the Pre-start Warning generator is similar to the remote amplifier unit type 26821. It uses the same encapsulated amplifier and battery used in the console amplifier and remote amplifier. In addition the unit has a tone generator to produce the pre-start warning tone and a three position test switch on the front panel.

The pre-start warning generator has two loudspeakers to broadcast the pre-start warning tone enabling the unit to be used as a stand alone pre-start warning unit for fixed items of plant, the loudspeakers do not broadcast speech.



**Amplifier Unit
Type 26821**

Barrier Safety Coupler Unit Type 27020

The intrinsically safe barrier coupler unit is designed for use on very long systems where a second DIS 5 system is to be connected with a separate power supply.

Surface Barrier Assembly Type 25235

The surface barrier unit type 25235 is an encapsulated module equipped with a coupling transformer, and safety devices. It enables the extension audio connection from a DIS 5 console amplifier to be connected to un-certified apparatus on the surface of the mine.

The encapsulated barrier assembly can be housed on a chassis, a multiple barrier chassis or in a sheet metal enclosure.

The cable used to connect the extension audio connection to the control room should be two core twisted pair telephone cable.

Control Systems

The DIS 5 system can be incorporated into composite control systems, there is also an option of a combined key amplifier unit for coal face applications.

Certification

The DIS 5 system is certified intrinsically safe to the ATEX M1 standard. The cable used to connect the DIS 5 system amplifiers should be a 4 core cable with a maximum L/R ratio of 44 μ H/ Ω .



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