RINGWAY 2-WIRE TECHNOLOGIES

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I.S. ALARM CONTROLLER

P/N – ALSUP_IS; ALSUP_IS (TF)

Ex ia – IECEx TSA 13.0015X

RINGWAY INTRINSICALLY SAFE ALARM CONTROLLER

DESCRIPTION:

The 2-Wire I.S. alarm system is foolproof, simple & functional. Being down-line powered, it requires no batteries or repeaters. The heart of the alarm system is the I.S. power supply / controller (**ALSUP_IS**). The controller is mounted in the safe area and powers alarm enunciators via a two-wire supply bus. There are several enunciator types, each of which may be mounted in the hazardous zone. The principle of operation is that there are two output states, which are 'safe' (green) & 'alarm' (red). The polarity of the two-wire determines the output 'state' and is set by the controller on command. Either output state can be maintained indefinitely. There are three voltage-free output contacts that are used (if required) to indicate the current output state and to confirm the operation of all connected units.

FEATURES:

- **Simple**, **robust** and **functional**.
- Intrinsically safe – **Ex ia.**
- Long distances achievable – fully **down line powered**.
- **No barriers** – **no repeaters** – **no batteries**.
- Alarm **output duration** = zero to **indefinite**.
- Operation **confirmation at source** or remotely.
- **Dual state** output allows **alarm / warning** as well as **healthy / safe** to be broadcast.

APPLICATIONS:

The system can be used anywhere that a single or dual state warning or permissive function is required. Because of the Ex ia Group 1 rating it is particularly suited to underground coal mining applications. The two main applications to date are:

1: Conveyor / Machine Pre-Start Warning: When audio/visual enunciators (**ALUNT_IS**) are used an audible and visual (red flashing) alarm is sounded at each alarm site, while ever the controller 'red' input is energised. In this mode up to 37 units can be connected at 100mtr intervals on 5mm2 cable to provide 'overlapping' performance (as required by AS1755) over the entire length of a 3.6klm conveyor; even longer installations may be achieved with higher CSA cable. The alternate (green) state lights a solid green light at each alarm site and (if required) can be used to confirm whole current remote isolation.

2: Traffic Light Controller: When the 'cross/arrow traffic light' LED enunciators (**BLITE_IS**) are used a highly visible (underground) solid red LED 'cross' is illuminated at each alarm site in the 'red' state. The cross is used as a 'do not proceed beyond this point' warning to vehicles. The alternate (green) state changes the red 'cross' display to a solid green 'arrow' at each alarm site. The arrow is used to indicate that traffic may proceed. A switch across the 2-wire adjacent to the lights is used to change the output status (either automatically or manually). This configuration can accommodate up to 4 traffic light (BLITE_IS) and 4 LED Tower (BLLED_IS) alarms.

BRIEF TECHNICAL SPECIFICATIONS:

Power Supply:	110V, 0.2A or 240V, 0.1A ac
Alarm Output:	18V dc, 300mA
Digital Inputs (24V):	1= Calibrate; 2= Green 3= Red
Digital Outputs (voltage free contacts):	1= Calibrate Confirm; 2= Green Confirm; 3= Red Confirm
Indication LEDs:	'Ready'; 'Fault'; 'Red'; 'Green' & 'Output'
Dimensions:	Base = 125 (w) x 145 (h) Depth = 175mm
Operating Temperature Range:	-20 → +40 ºC

ALSUP_IS

ALX3O_IS - AUDIO VISUAL ALARM UNITS

2-WIRE ALARM SYSTEM 'DAISY CHAIN' PARALLEL CIRCUIT
1: ALARM SOUNDS WHEN OUTPUT IS ON & P1 IS POSITIVE
2: GREEN 'SAFE' OUTPUT IS ON WHEN P2 IS POSITIVE

ALSUP_IS (TF)

BLITE_IS - CROSS / ARROW VISUAL ALARM UNITS

BLLED_IS - LED TOWER INDICATOR

2-WIRE TRAFFIC SYSTEM PARALLEL CIRCUIT
1: RED CROSS ILLUMINATES WHEN P1 IS POSITIVE
2: GREEN ARROW ILLUMINATES WHEN P2 IS POSITIVE