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I.S. ALARM UNITS

P/N's – ALX20_IS, ALX30_IS; ALX2G_IS ALX3G_IS
IECEX TSA 13.0015X

RINGWAY INTRINSICALLY SAFE ALARM UNITS

DESCRIPTION:

Ringway Intrinsically Safe (I.S.) Alarm Units are low-power high-efficiency alarm enunciators. Operation simply requires connection to a correctly rated I.S. power supply. Options are available (see ordering information) with two types: X2 – 2 way audio only; and X3 – 3 way audio/visual. The polarity of the supply determines the output 'State' of connected alarms. When P1 output is positive in respect to P2, a two-tone audible (piezo) alarm sounds and, for X3 type units, a LED tower flashes red. With X3 type alarm units, the opposite polarity produces a solid green light with no sound output.

The Alarms are designed to provide maximum audible and visual presence for minimal power consumption. They are ideal for applications in hazardous areas where line-powered (up to 3.5km) alarm indication is required. Typical applications include conveyor pre-start alarm and remote isolation indication, evacuation systems, and remote / distributed security system monitoring.

The Alarm Units are very reliable low-maintenance devices that are fully line powered (no batteries). Competing units require internal batteries and offer limited alarm duration capability, or must limit the number of alarm units that operate concurrently. Overlapping alarm performance can be achieved at 100mtr centers between alarm units¹.

I.S. Alarm Units are typically used in conjunction with the Ringway I.S. Alarm Supply/Controller. This specifically designed Controller provides Intrinsically Safe power and 'State' control to the Alarm Units (refer to brochure for Prestart System for further details). Alternatively, the Alarm Units may be powered by a third-party I.S. power supply or through an I.S. barrier provided the supply and or barrier specifications conform to the I.S. parameters of the Alarm Units and the design and installation complies with requirements of Australian Standards AS 60079.25 and AS 60079.14.

Ringway I.S. Alarm Units are offered in an Orange, flame retardant, UV stabilized PBT/PC static-dissipative enclosure with screw-in modular components. Low cost encapsulated versions are available in a small grey PVC box. The low cast versions are not serviceable.



Figure 1: Low cost ALX3G_IS model

¹ The spacing may need to be reduced for high ambient noise environments.

FEATURES:

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

APPLICATIONS:

The Alarm Units can be used anywhere that a single or dual state warning or permissive function is required. Because of the Ex ia rating it is particularly suited to underground coal mining applications. The two main applications² to date are:

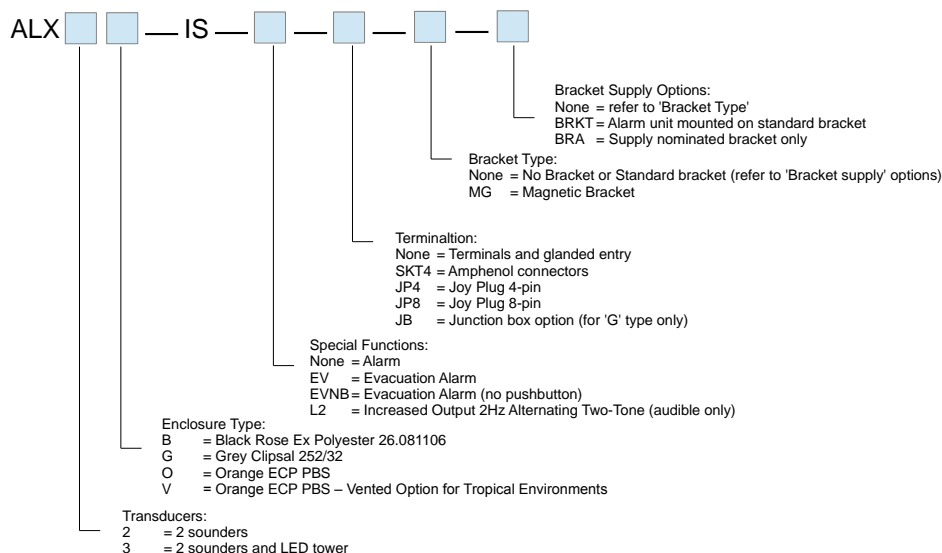
1: Conveyor / Machine Pre-Start / Operating Warning: An audible and visual (red flashing) alarm is sounded at each alarm site, while ever voltage is applied across the P1/P2 terminals of units (P1 positive). In this mode up to 37 units can be connected at 100mtr intervals on 5mm² cable to provide 'overlapping' performance (as required by AS1755) over the entire length of a 3.6km 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: Evacuation / Keep Clear Alarm: A large evacuation area can be supervised by a single system. System 'ready' status can be continually broadcast and observed by leaving the system in the Green State. The entire area can be placed on alarm / evacuation footing from a central command. E.G. tunneling or confined work places, Colliery Dolly-car **Drifts** – lift shafts, **Returns** etc.

SPECIFICATIONS:

Supply Voltage:		12.5 to 30V (Ui=30V)
Supply Current:		8.3mA (18V)
Alarm Tone:		Alternate Two tone - 2.8 / 3.7 kHz
Sound Pressure Level:		83dB min @ 1m (≥12.5V) ³
Luminous Intensity:	Red	3800 mcd nom.(≥15.5V)
	Green	750 mcd nom.(≥15.5V)
Operating Temperature Range		-20 → 40°C

ORDERING INFORMATION:



² Example applications require X3 models

³ Bus voltage drops with increased loading and distance from the controller. For maximum capacity systems bus voltage will approach 12.5V