

IS Alarm Indicator

IECEX ITA 06.0007X Ex ia I

1. Description

The Ampcontrol ISA Intrinsically Safe Alarm Indicator forms part of the Gasguard Range of Group I certified Gas Detection and Alarm Systems and is also suitable for use with other applications.

The ISA Alarm Indicator is an IP 66 encapsulated, low profile visual alarm, originally designed for Group I underground applications. Two versions of the indicator are available, a basic dual colour digital input flashing alarm and a smart, customer programmable, device for use with analogue and/or digital signals.

Mounting is by a 12mm Stainless Steel mounting spigot that for certified applications has to be connected to a suitable minimum IP 54 enclosure.

The alarm indicators are mounted in a 180 deg arc.

Connections are made by 300mm flying leads.

The smart version provides a green LED heartbeat flash and has two field configurable alarm indications consisting of Amber and Red LEDs which can be configured for rising or falling alarms from the analogue input signals. There is an option for a digital input and one digital output. Programming is by magnetic contact.

2. Features

- Certified for IS (Ex ia I)
- High Intensity LEDs
- User configurable Alarm and Trip Level (For analogue signal)
- User configurable Signal Direction (Rising or Falling)
- Hysteresis: 2 % of full scale
- User configurable LED colours/flash rates (For digital input signal)
- Simple user interface (2 Reed switches and 13 LEDs)
- Digital Input
- Program enable input
- Configurable Digital Output (30mA current sink to drive a relay or a sounder)

3. Operation

3.1 Basic Device:

The basic device has five Amber LEDs and five Red LEDs. There is a three wire connection from the base and operates in the following modes.

Wiring / Operating Details:

- Red wire +9 – 16.5V Supply (starts slow amber flash)
- Black wire 0V Supply
- Purple wire Digital Input (connect to red wire for fast red flash)

It is possible to have factory built configurations.



3.2 Smart Device:

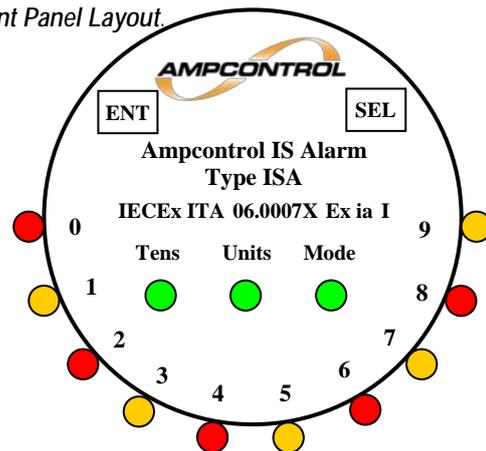
The smart device has a seven wire connection from the base. There are five Amber LEDs, five Red LEDs and three Green LEDs.

The LEDs have dual functionality related to the programming and operation mode of the unit and they are:

Normal Mode: The Amber LEDs indicate alarm conditions and have a slow flash rate. The Red LEDs indicate trip conditions and have a fast flash rate. Three Green LEDs indicate the Heart Beat when there is no alarm or trip of the unit with a very slow flash rate.

Setup Mode: The three Green LEDs indicate the state of the setup mode. The flash rate/pattern will be either a single flash or a double flash. The other ten LEDs are used to indicate the digits of the alarm/trip set points and also to indicate the other configuration data.

Front Panel Layout.



Configuration:

The configuration in the Setup mode use two Reed Switches and thirteen LEDs. The Reed switches (ENT and SEL) can be operated using a special magnetic pen.

To initiate the configuration mode the PGM wire must be connected to the +V supply.

The three green Mode LEDs are used to indicate the different states in the configuration mode.

Parameter	Tens	Units	Mode	LED Pattern
Alarm Ones	Off	On	Off	1 Flash
Alarm Tens	On	Off	Off	1 Flash
Trip Ones	On	Off	Off	2 Flash
Trip Tens	Off	On	Off	2 Flash
Input Mode	Off	Off	On	1 flash
DO Mode	On	On	Off	1 flash

- Hold the magnet over the ENT switch for 3 Seconds. Once the configuration mode is entered a single green LED will flash with one constant amber or red LED indicating the set "Alarm Tens" setting as a percentage of range. The alarms and trip values of the unit are settable 1-99% of range.
- To change the current value, activate the SEL key for 0.5 Seconds.
- To go to next State (as table above), activate the ENT key for 0.5 Seconds.
- Holding the magnet over SEL for 2 Seconds from any state will initiate an exit without saving the changed value.
- Once the parameters have been selected and changed holding the magnet over the ENT switch for 2 seconds will save and exit to operation mode.

If there is no switch operation for **2 Minutes** the configuration mode will be exited.

The following parameters are available for configuration:

- Alarm Set point 1 - 99%
- Trip Set point 1 - 99%
- Input Mode 0 - Rising Current
1 - Falling current
2 - Rising Voltage
3 - Falling Voltage
4 - Digital Amber
5 - Digital Red
6 - Digital Amber and Red Slow
7 - Digital Amber and Red Fast
- Digital Output Mode 0 - Disable
1 - Alarm Sounder
2 - Trip Sounder
3 - Alarm Relay (Non Fail Safe)
4 - Trip Relay (Non Fail Safe)
5 - Alarm Relay (Fail Safe)
6 - Trip Relay (Fail Safe)

Calibration Mode: (Normally Factory Set)

If it is necessary to recalibrate the analogue scale of the ISA Alarm Indicator special instructions are included in the ISA Alarm Indicator User Manual (121603).

Default Mode: (Factory Set)

The Smart version of the ISA Alarm (106019) is programmed with the following setting on leaving the factory.

- Alarm set 20% Rising (1% on a range of 0-5%).
Trip set 25% Rising (1.25% on a range of 0-5%).
Input mode (0) Rising current (4 – 20 mA).
Digital output mode (0) Disabled

Wiring Details:

- Black Wire 0V
Red Wire +9 – 16.5V Supply
Blue Wire 4-20mA Loop Out
Brown Wire 4-20mA loop In
Pink Wire Voltage/Dig In
Violet Wire PGM Enable
Yellow Wire Digital Out

4. Specifications

Power Input: 9-16.5VDC - Power consumption 50mA

Temperature Range: -20 to 60C

Sealing IP 66

IS Parameters: Vi 16.5V, Ci 0.12µF, Li Negligible

Mounting Spigot M 12 Stainless Steel thread

Signal input 4-20mA current loop (Loop Resistance 35 ohms), 0.4-2V or 9-16.5V digital input voltage

Alarms adjustment: 1-99% of range (2 levels)

Programming by menu system activated by magnetic probe

Program reset time 2 minutes with no input

Digital Output current sink up to 30mA current limited in IS applications.

5. Parts List

- 106019 ISA Alarm Indicator (Smart Unit)
101868 ISA Alarm Indicator (Basic Unit)
121603 ISA Alarm Indicator User Manual

AMPCONTROL ELECTRONICS

Ampcontrol CSM Pty Ltd ABN 35 000 770 141
7 Billbrooke Close CAMERON PARK NSW 2285

Phone: (02) 4903 4800

Fax: (02) 4903 4888

E-mail: electronics@ampcontrolgroup.com

Web site: www.ampcontrolgroup.com

