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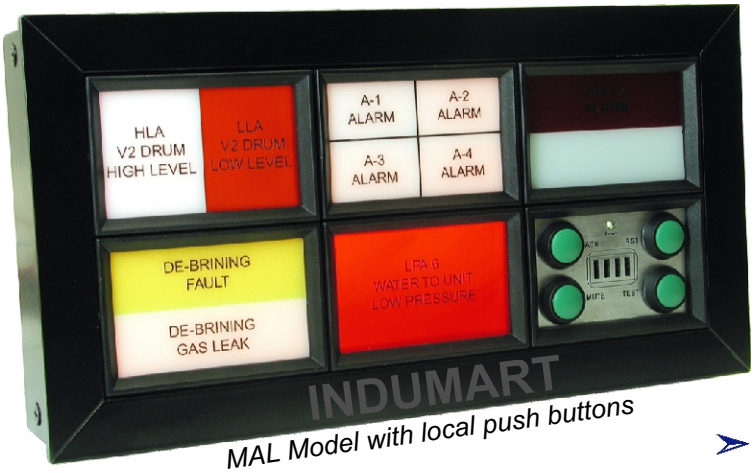
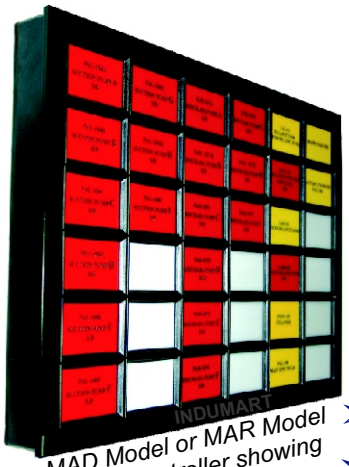
Alarm Annunciators - Modular Construction



MAL Model with local push buttons



MAD Model or MAR Model with no controller showing

SERIES: MA

- RELAY LOGIC BASED
- REMOTE CONTROLLER
- ANY NUMBER OF WINDOWS
- ISA-S18.1 ALARM SEQUENCE
- MODULAR MULTIPOINT DESIGN
- VARIOUS BRIGHT LED COLOURS
- COMMON AND AUXILIARY RELAYS
- FLUSH MOUNT WITH 68 OR 145 mm DEPTH
- FULL FUNCTION, FLEXIBLE AND RELIABLE
- LONG SERVICE LIFE AND GREAT STABILITY
- OPTO ISOLATED INPUTS AND RELAY OUTPUTS
- NO MASTER MODULE (NO SINGLE POINT FAILURE)
- ONE LOGIC CONTROLLER FOR EACH ALARM POINT
- SYNCHRONIZATION FOR MULTI-UNIT APPLICATIONS

INTRODUCTION

Indumart *MA Series* of Alarm Annunciators are relay logic based systems suitable for alarm control in various processes such as electrical substations, refineries, steels mills, pharmaceutical manufacturing, ships, machines, buildings and many commercial applications. The combination of great stability, noise immunity and simplicity of the logic circuits make these alarm annunciator systems ideal for any place with limited technical support.

The *MA Series* of Alarm Annunciators may be manufactured with any number of windows and in any size due to its modular construction capability. The controllers can be placed separately from the display window (MAR model with 78 mm depth) supporting all necessary push buttons; such as Acknowledge, Reset, Test and Mute for various operating sequences or the controllers may be integrated into the annunciator (MAL model with 145 mm depth). A number of MA Series can be chained together to form an expanded system with common features.

Conforming to the fact that "No Master Module" systems ensure a higher safety for critical application, the *MA Series* of Alarm Annunciators with individual alarm modules are mutually exclusive systems and are configured individually by the aid of jumper setting with no software required. Options for various voltage input from field, PLC and computers may be specified at the time of ordering. The alarm inputs may be specified to be supplied from an RS485 communicator. Each of the channels can be set to activate either with normally open/normally closed contact. The alarm logic is designed to generate major ISA 18.1 sequences, as well as a number of custom sequences.

As standard, the display windows are backlit bright LED in white, red or amber colours. This will provide an almost unlimited life span for the light boxes. However, each window can also be supplied with one or two long lasting bulbs instead of LED. This will result in a display bright enough to be clearly seen in the extreme ambient light.

Opto isolation of inputs and relay outputs along with common and auxiliary relays are other features of the *MA Series*. Any alarm point may be supplied with a repeat relay. In accordance with the input or the output, the repeat relay can be set to be a NO or NC contact. The system requires a 24 VDC (19...30 VDC) unregulated power supply for operation.

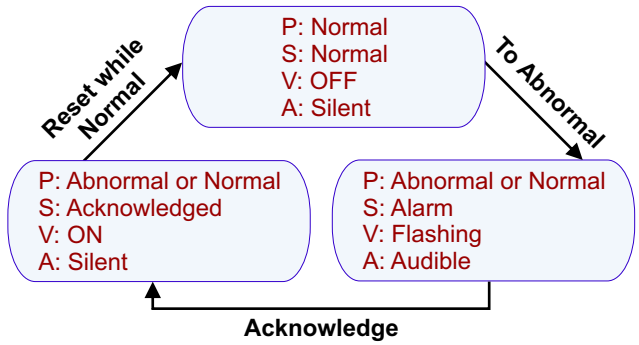
SPECIFICATIONS

No. of Windows	Must be Specified by the user, no limit
Enclosure (not face)	Aluminum painted black
Depth	78 mm for MAR and 145 mm for MAL
Push Buttons	Acknowledge, Reset, Test & Mute
LED Colours	White, red, yellow, green
Alarm Sequence	ISA-S18.1-1979; Manual Rest (M), Auto Reset (A) Manual Reset First Out (F2M-1) Auto Reset First Out (F1A) Available for both MAR and MAL models. Ring Back (R), No Lock In and Auto Reset First Out (F3A) are only available for MAL models.
Response Time	50 ms (std.); 1 ms to 2s (option)
Input	NO or NC voltage free contacts or 24 V, 48 V, 110 V or 220 V (AC or DC) All inputs are bipolar, which can accept AC or DC voltages
Output	Display, Audio, Auxiliary, First-up Common Alarm
Auxiliary Relay	NO or NC to follows input or output
Isolation	2000 VAC Opto isolated inputs, relay output
Power Supply	24 nominal, 20...36 VDC
Power Consumption	30 mA per channel including the relay
Operating Conditions	-20...+60 C; 0...95% RH
Mounting	Flush panel mount
Front Panel Protect'n	IP41
Weight	0.3 kg per H11 window
Alarm Text	Engraving

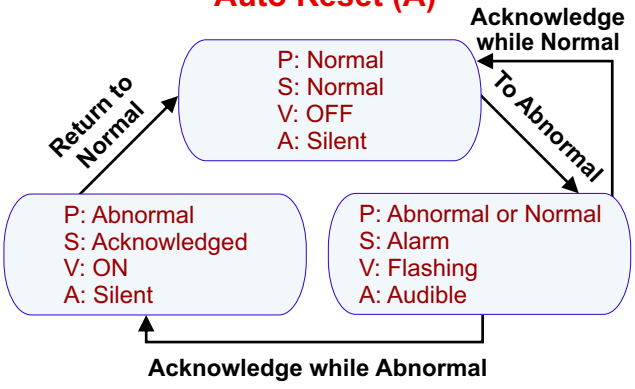
ALARM SEQUENCES

P = Process S = Sequence V = Visual A = Audible
AA: Alarm Audible RA: Ringback Audible

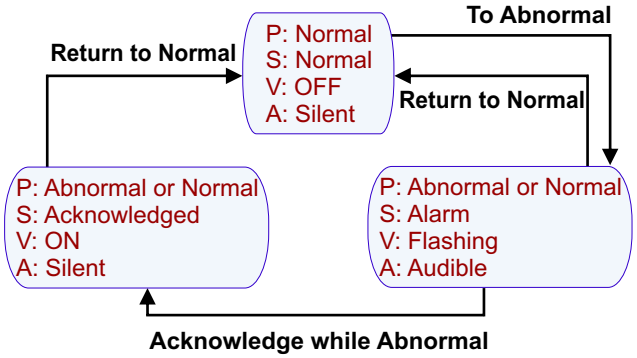
Manual Reset (M)



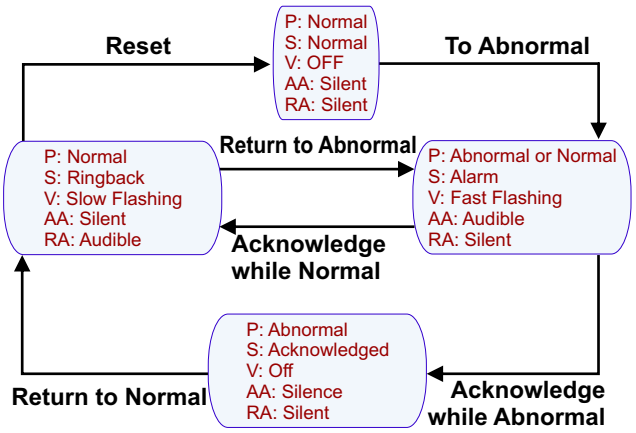
Auto Reset (A)



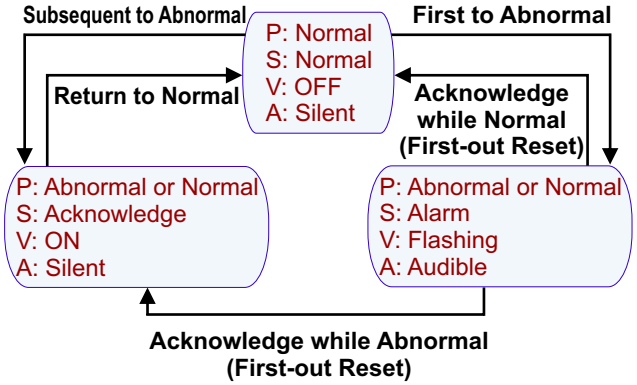
No Lock In - not available for MAR units



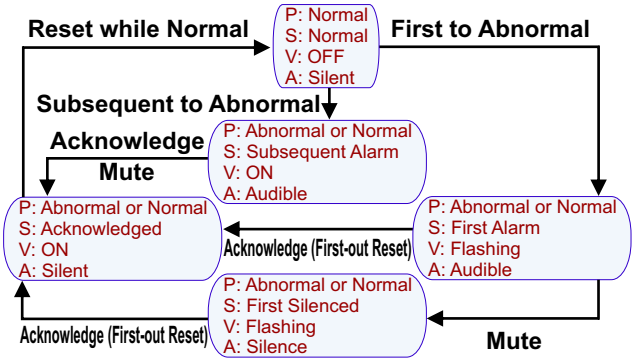
Ring Back (R) - not available for MAR units



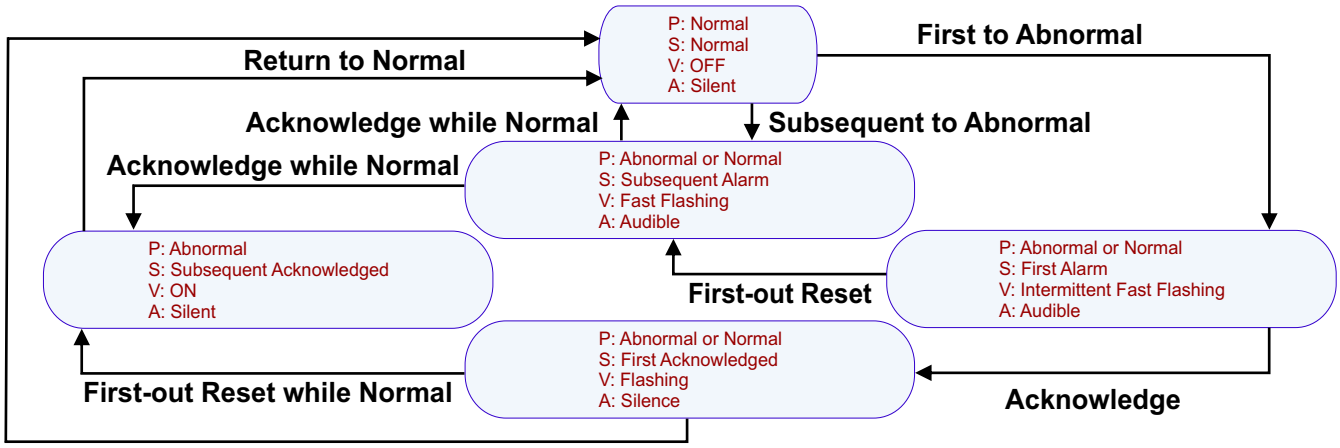
Auto Reset First Out (F1A)



Manual Reset First Out (F2M-1)

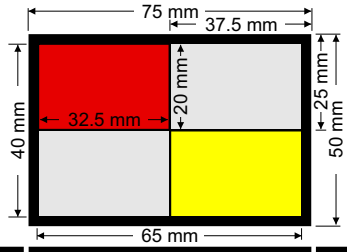


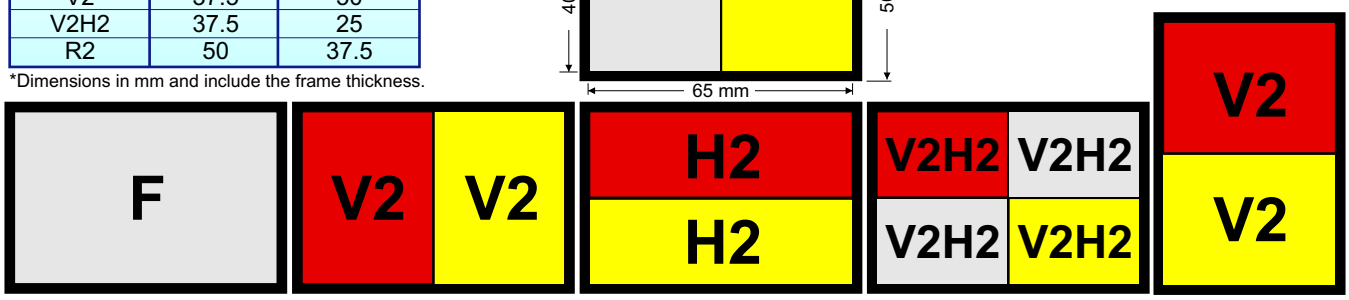
Auto Reset First Out (F3A) - not available for MAR units



Type of Cell	Cell Width*	Cell Height*
F	75	50
H2	75	25
V2	37.5	50
V2H2	37.5	25
R2	50	37.5

*Dimensions in mm and include the frame thickness.





ORDER CODES

Model MA ☐ - ☐ ☐ ☐

Controller
- No Controller - Display only — D
- Local — L
- Remote — R

Input Signal
- 24 VDC/AC or Dry Contact* — 1
- 48 VDC/AC or Dry Contact — 2
- 110 VDC/AC or Dry Contact — 3
- 220 VDC/AC or Dry Contact — 4
- RS485 Communication (not available for MAR units) — 8
- Other (please specify) — 9

Auxiliary Relay
- Not Required* — 0
- One for Each Point follow Input — 1
- One for Each Point follow output — 2

Illumination
- LED — 0
- Bulb (standard for MAR models and not available for MAL model) — 1

* must be specified for MAD units.

Note: Number of rows and columns along with the type of cells must be specified by the user. Requirements for push button and buzzer module must also be noted by the user.

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