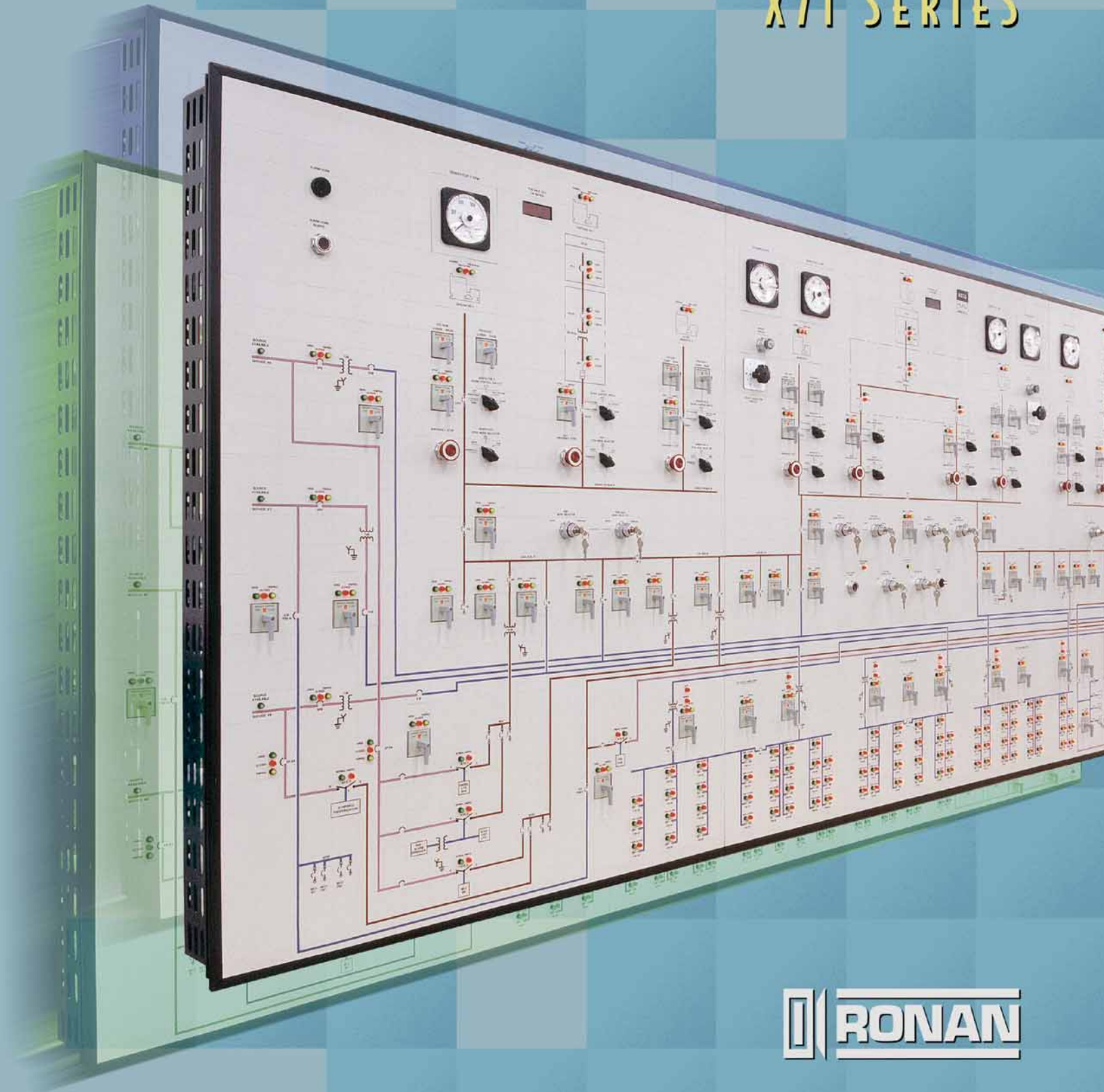
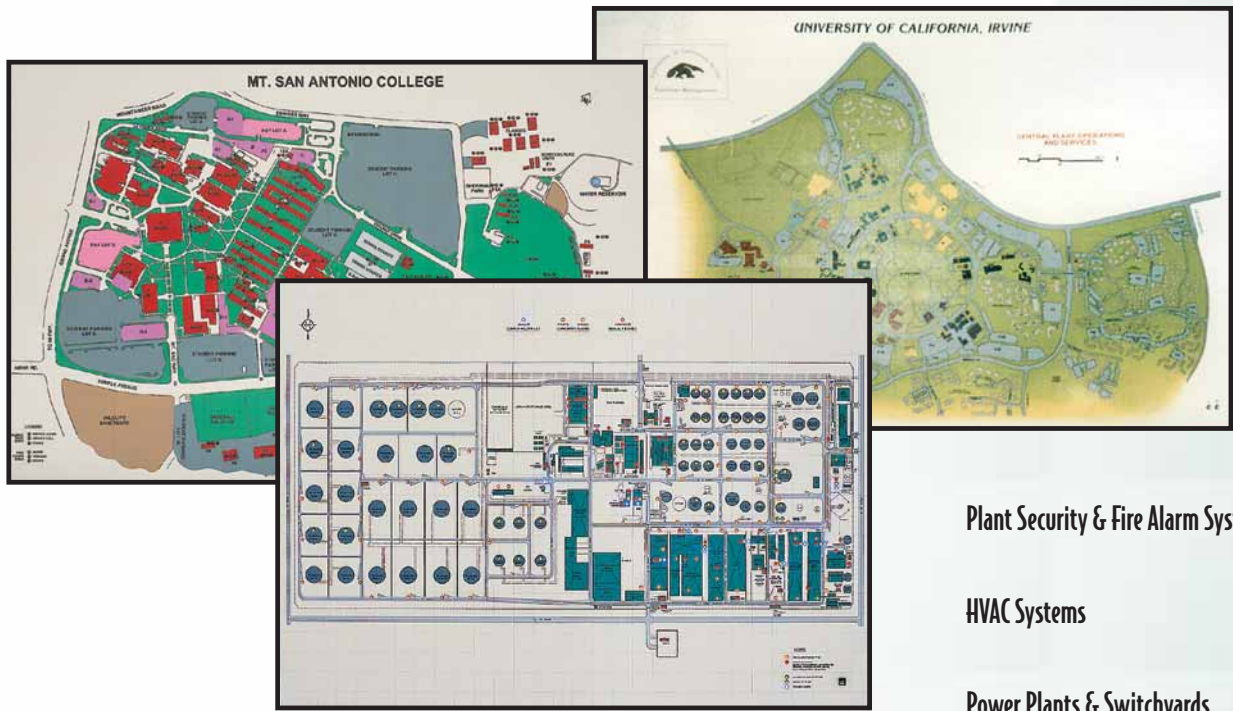


# MOSAIC GRAPHIC SYSTEM X71 SERIES



**RONAN**



The Ronan Series X71 Mosaic Graphic System is ideally suited for the graphic display of industrial processes, power distribution networks, security and fire alarm of buildings in aerial layout, airport runways and luggage handling facilities, etc. The graphic layout generally includes status or alarm LED indication, selector and push-button switches, analog meters, digital and bargraph readouts, annunciators and time clocks, etc.

The X71 Mosaic Graphic is best suited where applications require frequent modifications due to plant expansions or process changes. The surface of the mosaic tiles is silk-screened or engraved with the customized layout depicting the process or facilities. The panel or wall mounted graphic provides for a very functional and aesthetically pleasing process or facility annunciator/control system.

#### FEATURES

- High Strength Structural Mounting Frame
- 1" (25.40 mm) and 2" (50.80 mm) Square Tiles
- Multicolor Split Indicators
- Conventional and Serial Input Annunciators
- Smaller and Larger Depth Frames Available
- Large Number of Colors Available
- Through or Behind Tile Indicators
- Lamp Displays
- Glass Filled Nylon Grid for Maximum Strength
- Translucent Tiles for Rear-Lit Symbols
- Multifunction Switches and Push Buttons
- Custom Equipment Integration
- Multicolor Process Lines Outlined and Non-Outlined
- UL Listed

Plant Security & Fire Alarm Systems

HVAC Systems

Power Plants & Switchyards

Geographical Maps

Industrial Process Plants

Water Treatment & Power Plants

Power Distribution Networks

Information Systems & Data Highway

Gas Distribution Plants

Mass Transit & Subway Systems

Three Dimensional Plant Layouts

Airport Luggage Handling Facilities

Material Handling & Conveyor Systems

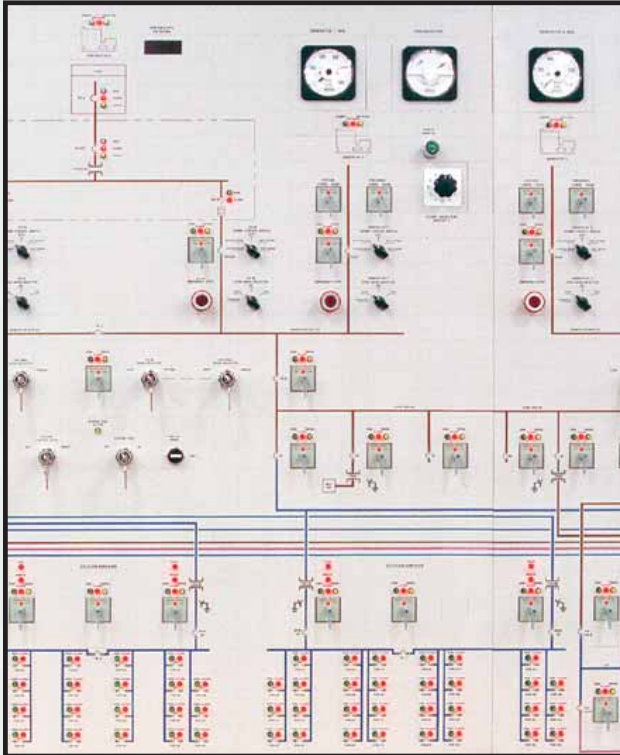
Emergency Power Switching Systems

Traffic Control Metering

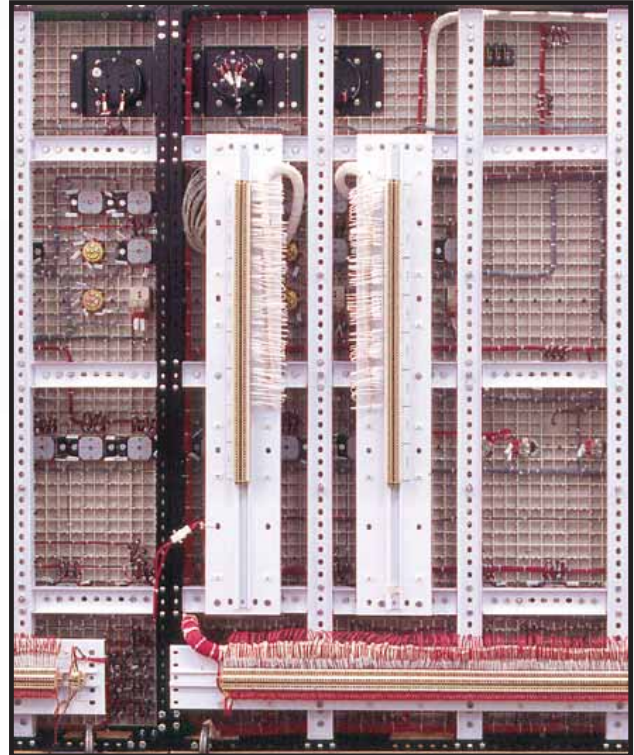
## MOSAIC TILES AND GRID

The grid and tile construction allows the highest flexibility in regard to overall sizing, modification of display layout and addition or omission of indicators, control devices, and equipment without the use of special tools or training. The tile assembly is customized to the specific requirement of an application in

multiples of a single tile size increment. The grid is supported from the peripheral framework and cross beam structure for maximum stability. The graphic assembly is installed through a single panel cutout of the control panel and secured with clamps provided.



*F r o n t   V i e w*

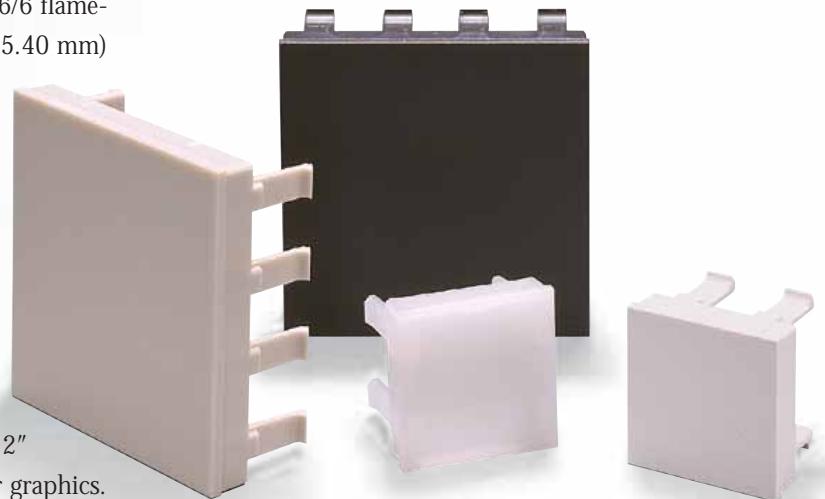


*R e a r   V i e w*

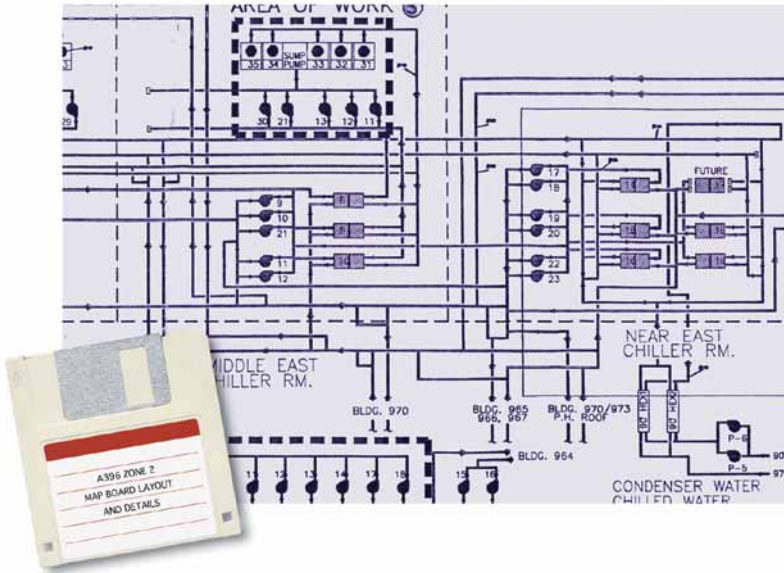
### TILES AND GRID MATRIX

The high precision 12" x 12" (304.80 mm x 304.80 mm) standard grid is molded from glass-filled nylon 6/6 flame-retardant 94V-0 material. The grid is cut in 1" (25.40 mm) increments and is assembled to meet size requirements.

The tiles are molded from polycarbonate flame-retardant 94V-0 material and are self-extinguishing, highly resistant to ultraviolet rays, and meet ASTM D648 heat deflection temperatures of 280° F. The tiles are available in 1" x 1" (25.40 mm x 25.40 mm) and 2" x 2" (50.80 mm x 50.80 mm). The two sizes may be mixed on the same grid, with 2" x 2" (50.80 mm x 50.80 mm) tiles suitable for larger graphics.



# GRAPHIC LAYOUT



## DOCUMENTATION

The graphic layout is best transferred via computer file. If not available, an actual size drawing will reduce customer approval time for layouts. Ronan factory personnel will verify compliance with tile and grid layout requirements and optional mounting facilities for special equipment. The customer is requested to select the color for lines, symbols, and tile background from the color chart.

(See back page)

## LINES

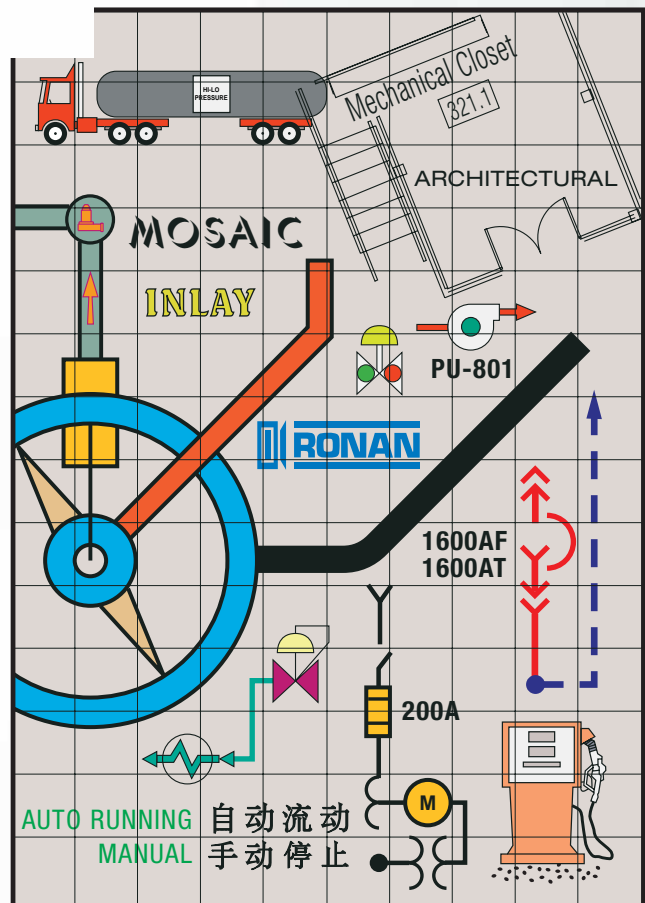
The process line width should be selected based on the graphic's overall size and is available outlined or not outlined (solid). Care should be taken in the selection of color for contrast in text/process outlines.

## TEXT/LETTERING

The recommended standard lettering style is gothic, with many other computer generated styles available. The letters should be sized for easy readability by the operator. Recommended sizes are from 7/16" (11.11 mm) to 1/2" (12.70 mm) high. The lettering is centered on symbols or tiles with adjustments to minimize screening across tile separation.

## SYMBOLS AND CUSTOM LOGO

A large number of standard symbols is available. These can be sized to fit on a single tile or a number of tiles and placed symmetrically for the best visual appearance. The standard symbols are available from Ronan on Auto CAD files to simplify the graphic layout for the customer. Custom symbols may be generated for specific applications, including customer's logo in the graphic layout.



## PROTECTIVE COATING

The final graphic display is coated with a non-glare UV resistant acrylic spray for a long-lasting, soil resistant appearance. The protective coating allows for cleaning with mild cleaners or soap solution.

# LIGHTS AND SWITCHES

## INDICATOR LIGHTS

All indicator lights utilized are LED type (Light Emitting Diodes) with current limiting to provide greater than 100,000 hours of life. The indicators are available in through-the-tile or behind-the-tile versions.

## THROUGH THE TILE

Typical through-the-tile LED indicators are available in various diameters and light intensity. The size of the indicators should be based on the size and density of the graphic. Single or dual color indicators available.

If the customer does not state a preference, Ronan will select the appropriate type, based on the client's application.

## BEHIND THE TILE

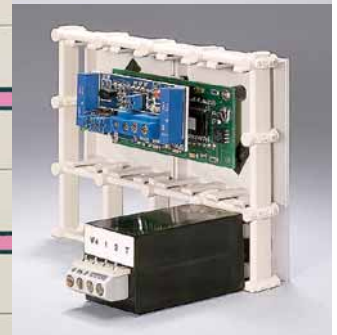
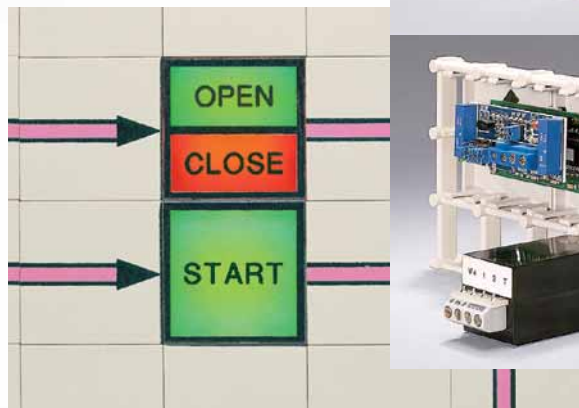
The Ronan Series X71 LED indicator is a 1" x 1" (25.40 mm x 25.40 mm) assembly which attaches to the grid from the rear behind a translucent tile. The translucent tile is typically screened with a process symbol or outline. The X71s are available in single or multiple colors (up to 3 colors), e.g. green, red or amber. The three colors are typical for motor or valve status indication.

## PUSH BUTTONS

Push buttons are available in many different sizes and may occupy a single tile or multiple tiles. The number of poles and contact ratings are application based and must be specified by the customer. Illuminated (LED type) and non-illuminated push buttons are available with round, square, and rectangular buttons. Momentary or ON/OFF functions with single or multi-poles are available.

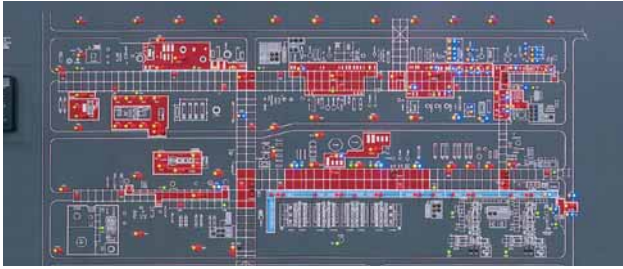
## SWITCHES

Proper selection of switches should be made by the customer based on the application, taking into consideration power requirements, number of poles, positions (maintain or spring return), actuator (key or handle), and size. Ronan's product specialists are available for technical support.



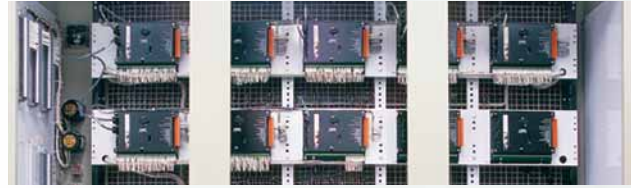
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## ANNUNCIATION AND PROCESS PARAMETER DISPLAYS



### ANNUNCIATORS

The X71 graphic may include conventional window annunciators mounted into the grid with special mounting facilities. Due to the annunciators' inherent heavy weight, there are limitations to their size. For applications where large numbers of windows are required, a combination of lamp cabinet, incandescent or LED type, with remote annunciator logic is recommended.



### SERIAL INPUT ANNUNCIATORS

The most suitable approach for a larger number of windows or indicators is to utilize the Ronan X110 Serial Input Annunciator Controller driven from a host such as a PLC, Ronan X120 Field Multiplexer, or an X500E Sequence of Events Recorder. Each X110 controller provides for 48 outputs with individually selectable alarm sequence per output. The X110s are typically mounted in the graphic enclosure or integral to the rear of the graphic assembly.

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## DIGITAL / ANALOG METERS AND DISPLAYS

### DIGITAL DISPLAYS/BARGRAPHS

Digital Indicators are available in many sizes and should be selected based on the application. Typical requirements are AC or DC currents and voltage, Watt and VAR, frequency, time clock, and process loop indicators. Typical indicators come with different size LEDs or LCDs, with any number of digits as specified by the customer. Digital Indicators typically span multiple tiles with Ronan providing custom mounting facilities.

Bargraphs can be utilized as process value indicators with 4-20 mA input and are available with single

or dual channel LED display, with digital indicators optionally. The bargraphs may be horizontally or vertically mounted onto Ronan supplied plates.



### ANALOG DISPLAYS

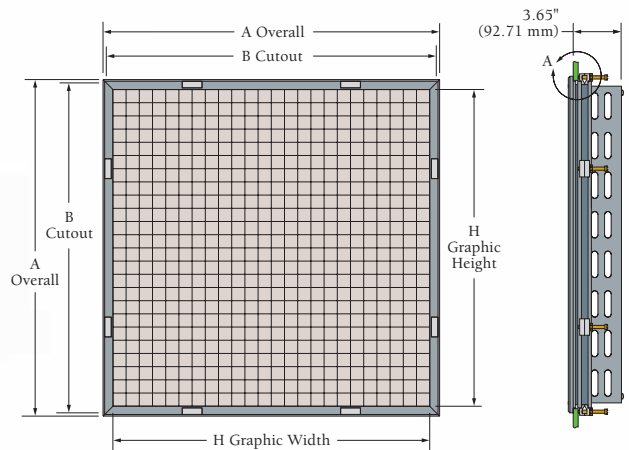
Analog Meters for specific custom requirements can be supplied. Selection should be made by the customer with Ronan to supply special mounting plates sized to the meter's dimensions.



# S P E C I F I C A T I O N S

## MECHANICAL

The X71 Mosaic Graphic System is assembled from 12" x 12" (304.80 mm x 304.80 mm) reinforced fiberglass matrix grids to the customer's specified size. The assembled grids are mounted into a heavy steel frame with cross beam support on each corner of each 12" (304.80 mm) matrix grid. The steel frame is selected from the two available depths based on the overall size of the graphic. The accurate panel cutout dimensions are supplied with the process layout approval drawings to allow preparation of the control or display panel.

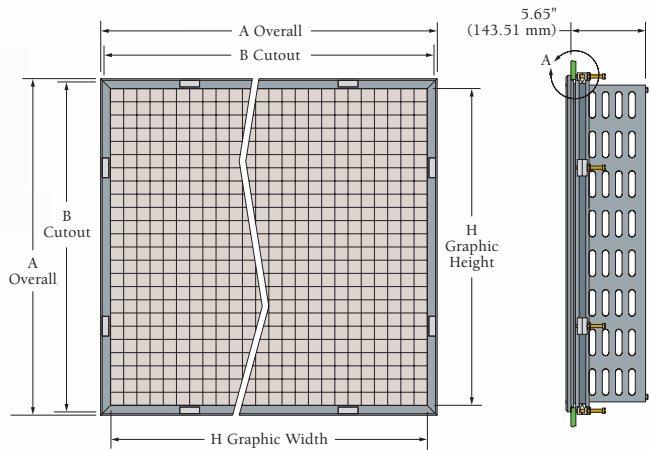


$$A \text{ Overall} = \text{Graphic H or W} \times .0015" (.0381 \text{ mm}) + \text{Graphic H or W} + 1.50" (38.10 \text{ mm})$$

$$B \text{ Cutout} = A \text{ Overall} - .62" (15.75 \text{ mm})$$

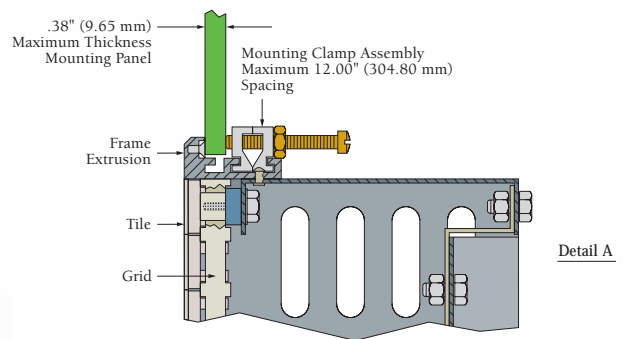
## MOUNTING

The X71 graphic assembly is fed through the panel cutout from the front of the panel and clamped from the rear with the furnished removable clamp assemblies. The maximum panel thickness allowed with the standard clamping assemblies is 1" (25.40 mm). Clearance behind the graphic is based on the depth of the custom equipment mounted in the graphic as well as optional termination facilities, connectors, or serial input annunciators.



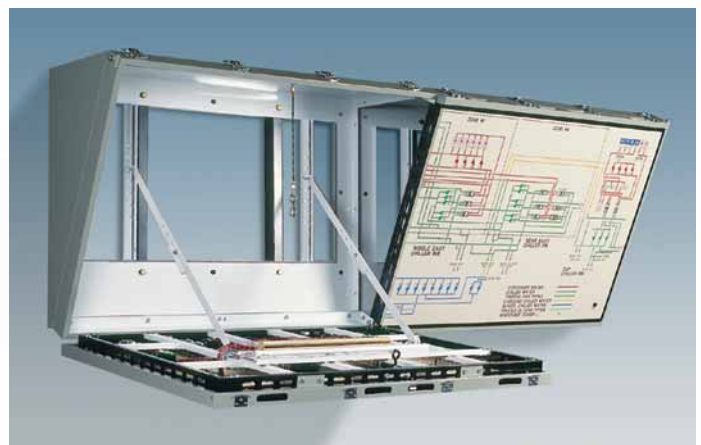
## ELECTRICAL

The indicators, control switches, push buttons, parameter displays, or other equipment required may be factory wired to terminals mounted to the rear of the mechanical structure. The indicators and/or window type lamp cabinets may be controlled from conventional solid state alarm logic or X110 Serial Input Annunciator Controller(s). The X110 may be integral mounted to the rear of the graphic and factory wired to the indicators. Optionally, Ronan may provide multiconductor cables wired to the indicators in the graphic, and multi-pin connectors for interface to the remote mounted X110 controllers.



## SPECIAL ENCLOSURES

The X71 graphic may be mounted into custom fabricated enclosures. The enclosures are manufactured from stainless steel or from cold-rolled steel and painted to customer specified color. They are sized to accommodate the graphic, termination facilities and/or serial input annunciator controllers.



# O R D E R I N G I N F O R M A T I O N

## Color and number selector for symbols and flow lines

100			164
103			165
104			132
106			133
108			134
109			135
114			137
115			138
116			166
117			136
118			139
161			140
162			141
163			142
119			143
120			146
121			144
122			145
123			147
127			150
124			152
125			153
126			154
129			155
130			159
131			160

## Complete the information below when ordering your X71 Mosaic Graphic

### Layout Size:

Height \_\_\_\_\_ Inches \_\_\_\_\_ (mm)

Width \_\_\_\_\_ Inches \_\_\_\_\_ (mm)

### Tile Size:

1" x 1" (25.40 mm x 25.40 mm)

2" x 2" (50.80 mm x 50.80 mm)

### Tile Color:

Beige  White

Light Gray  Charcoal Gray

### Process Layout:

Sketch  Drawing  Auto Cad

5 Colors or Less  Additional Colors

### Indicators:

Through Tile, Number of LEDs \_\_\_\_\_

Behind Tile, Number of Assemblies \_\_\_\_\_  
(Standard Voltage 24 Vdc, Current 20 mA.  
Other Lamp Voltages Available)

Number of Clocks \_\_\_\_\_

Number of Lamp Cabinets \_\_\_\_\_ Size \_\_\_\_\_

Number of Annunciators \_\_\_\_\_ Size \_\_\_\_\_

Serial Input Annunciator Controller X110  
(48 Outputs per Unit)

Terminals: Weidmueller SAK2.5

Terminals with Dual Gating Diodes:  
Weidmueller DK4D (Required for Lamp Test)

Analog Display, Model No. \_\_\_\_\_

Bargraphs, Model No. \_\_\_\_\_

Digital Display, Model No. \_\_\_\_\_

### Push-Button and Rotary Switches:

Number of Switches \_\_\_\_\_

Number of Poles \_\_\_\_\_

Number of Positions \_\_\_\_\_

Voltage \_\_\_\_\_ Current Requirement \_\_\_\_\_

## T H R E E - Y E A R W A R R A N T Y

Ronan warrants equipment of its own manufacture to be free from defects in material and workmanship, under normal conditions of use and service, and will repair or replace any component found to be defective, on its return, transportation charges prepaid, within three (3) years of its original purchase. This warranty carries no liability, either expressed or implied, beyond our obligations to replace the unit which carries the warranty.



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