



Model 910 Annunciator

FOR PETROLEUM, PETROCHEMICAL, POWER GENERATION AND OTHER
PROCESS INDUSTRIES



ANNUNCIATOR

AMETEK's Model 910 self-contained 10-alarm point annunciator is commonly used throughout the process industry. Ten alarm points of dedicated annunciation at its best! This annunciator accepts ten dry or ten 120 VAC wetted field contact inputs. Select from flush panel mounting or wall mounting type hardware to fit your physical installation requirements. On board field selectable jumpers allow the user to select from seven ISA alarm sequences. Specify the primary source voltage to the system along with the field contact voltage, integral or remote horn, flush panel or wall mounting style and you have successfully configured the best 10-point annunciator in the world, AMETEK's Model 910.

AMETEK's Model 910 annunciator can be found providing dedicated annunciation in many of the world's petrochemical and petroleum manufacturers plants as part of the alarm and safety shutdown systems. The unit is ideal for mounting in the field at a local process and sending a "local process alarm" signal to the control room.

Safety and swift alarm notification to an operator are important to the owners and operators of all process plants in all industries. Power generating plants, power distribution substations, pharmaceutical, paper and pulp, food processing and packaging, water treatment, water distribution, gas distribution, mass transportation, weapons manufacturing, automotive vehicle and parts manufacturing facilities all need reliable monitoring of their process variables through the dedicated annunciation provided by AMETEK's self-contained Model 910 annunciator!



FEATURES AND BENEFITS

- Provides dedicated annunciation
- Completely self-contained
- UL Listed 2017
- Approved for use in Class 1 Div, 2 applications
- Long life LED illumination
- Seven field selectable ISA sequences
- Flush panel or wall mount cabinets
- Horn relay and reflash relay contact output
- Integral or remote mounted horn

AMETEK[®]

**POWER
INSTRUMENTS**

Experience the Power™

SPECIFICATIONS

Input Power Source

- 120 VAC, 220 VAC, 125 VDC or 24 VDC

Legends

- Field replaceable paper card behind clear plastic

Illumination

- Red LED

Field Termination

- 14 AWG solid or stranded wire

Cabinet

- 16 gauge steel painted black

Agency Approvals

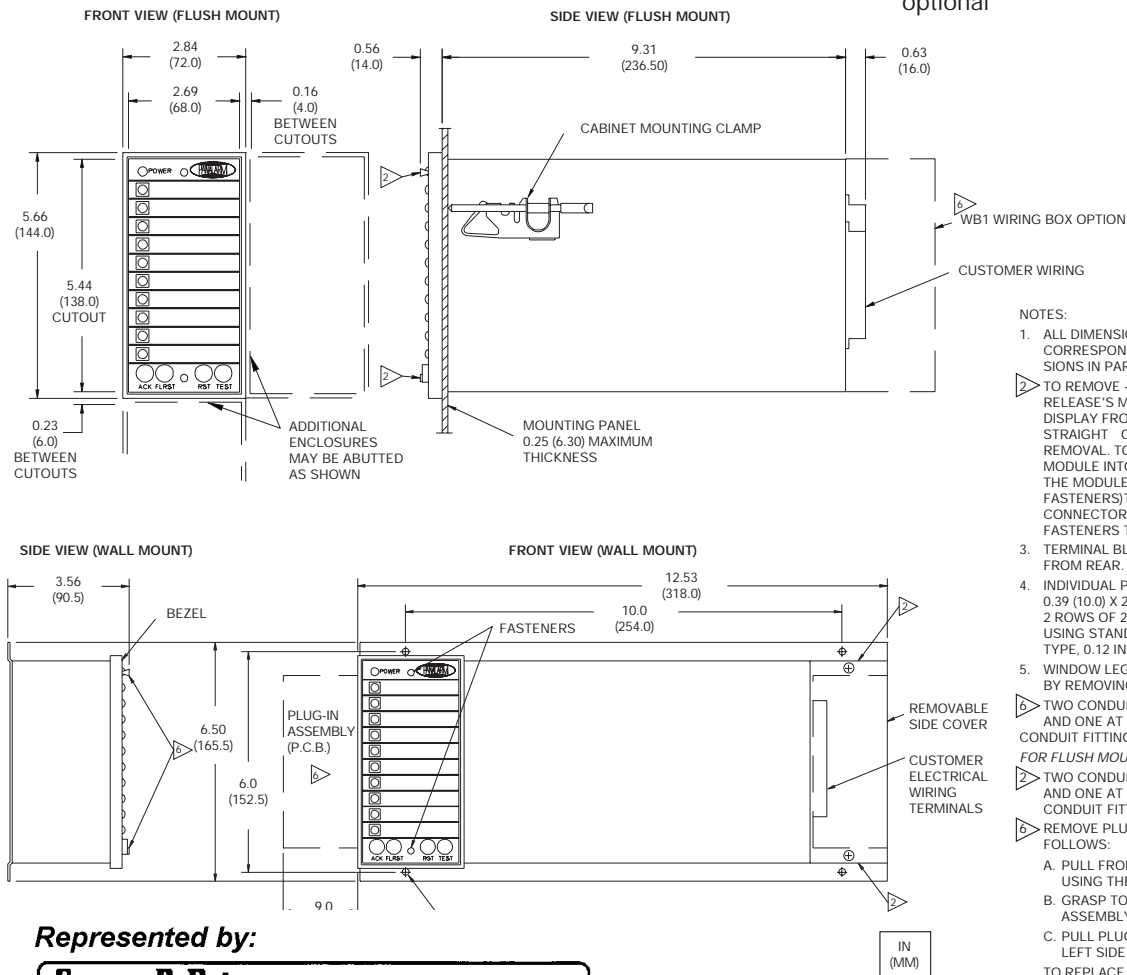
- UL 1971 General Purpose Signaling Devices and Systems
- FM Approved Class 1 Div. 2, Groups A, B, C & D

EMC Compliance

- ANSI/IEEE C37.90-1978 (SWC)
- SAMA PMC 33.1-1978, Class 2, Bands b & c (RFI)

Environmental

- Storage: -40° to 185°F (-40° to 85°C)
- Operating: 32° to 122°F (0° to 50°C)
- Humidity: 10 to 95% RH (non-condensing)
- NEMA 4 and 4X enclosures optional



- NOTES:
1. ALL DIMENSIONS ARE IN INCHES WITH CORRESPONDING MILLIMETER DIMENSIONS IN PARENTHESES.
 2. TO REMOVE - PULL ON FASTENERS. THIS RELEASES THE MODULE AND FRONT DISPLAY FROM CABINET, PULL STRAIGHT OUT TO COMPLETE REMOVAL. TO REPLACE - SLIDE MODULE INTO CABINET, PRESS ON THE MODULE FRONT PLATE (NOT FASTENERS) TO SEAT MODULE INTO CONNECTORS, THEN PUSH ON FASTENERS TO SECURE MODULE.
 3. TERMINAL BLOCKS ARE WIRED FROM REAR.
 4. INDIVIDUAL POINT WINDOWS SIZES ARE 0.39 (10.0) X 2.09 (53.0) WIDE. THIS ALLOWS 2 ROWS OF 22 CHARACTERS PER ROW USING STANDARD 12 PITCH TYPEWRITER TYPE, 0.12 INCH HIGH CHARACTERS.
 5. WINDOW LEGEND PAPER IS ACCESSIBLE BY REMOVING FRONT MODULE.
- FOR FLUSH MOUNT
6. TWO CONDUIT OPENINGS, ONE AT TOP AND ONE AT BOTTOM FOR ONE INCH CONDUIT FITTINGS.
 7. REMOVE PLUG-IN ASSEMBLY AS FOLLOWS:
 - A. PULL FRONT DISPLAY STRAIGHT OUT USING THE FASTENERS.
 - B. GRASP TOP AND BOTTOM OF BEZEL ASSEMBLY AND PULL STRAIGHT OUT.
 - C. PULL PLUG-IN ASSEMBLY OUT FROM LEFT SIDE OF ENCLOSURE
- TO REPLACE, REVERSE ABOVE PROCEDURE EXCEPT WHEN REINSTALLING FRONT DISPLAY. PRESS ON THE FRONT PLATE (NOT FASTENERS) TO SEAT DISPLAY INTO CONNECTOR, THEN PUSH IN ON FASTENERS

Represented by:

George R. Peters Associates ENGINEERING SALES REPRESENTATIVES

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ISO 9001 Certified



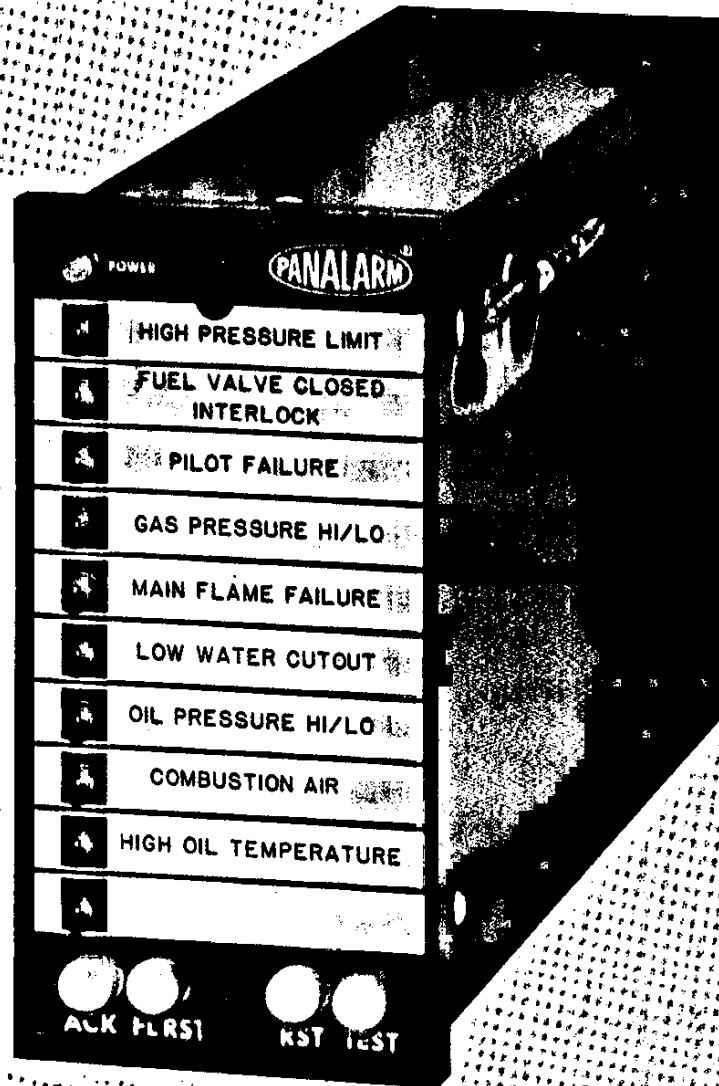
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910 Annunciator

ONE STANDARD SIZE / 10 POINT CONFIGURATION / COMPACT-COMPLETE



- INTEGRAL
 - LED Display
 - Audible (Optional)
 - Control Pushbuttons
 - Power Supply
 - Output Reflash Relay
 - Relay for External Audible
- Ten Alarm Points on One Card
- Dedicated I²L Logic IC Per Point
- NO/NC Signal Contacts
- DIN 43700 Standard
- Seven Operational Sequences

AMETEK

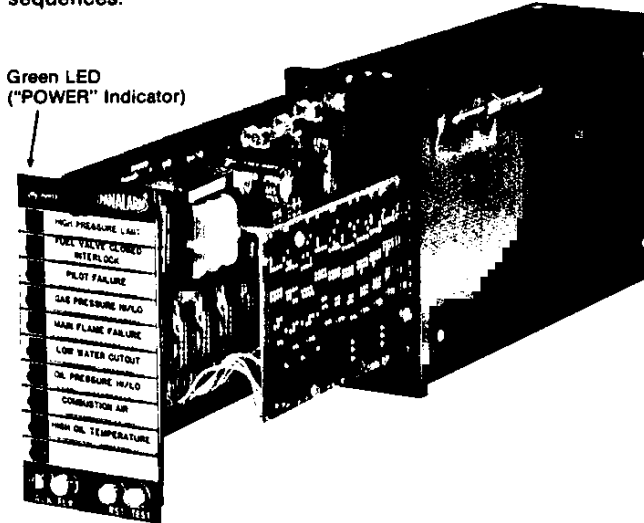
PANALARM DIVISION

910 ANNUNCIATOR

The PANALARM Model 910 is a compact ten-point annunciator that meets DIN 43700 standard dimensions. A complete integral package includes an LED display, power supply, pushbuttons, two relays (output reflash and common audible). Optional integral horn is also available.

The Model 910 offers a unique combination of economy and small size using microchip I²L logic.

It has normally open/normally closed field contact selectability with ten input points on one logic card. Operational sequences are field selectable; choose from seven available sequences.



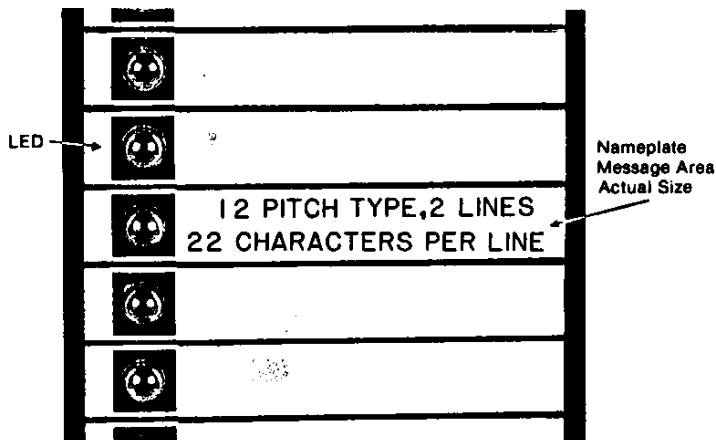
Available operating voltages are 12VDC, 24VDC, 48VDC, 100-280VDC, 120V, 50/60Hz or 230V, 50/60Hz.

A provision for connecting remote pushbuttons is also available on the rear terminal blocks.

Although available as a stand alone annunciator, multiple units can be added for side by side or top and bottom mounting to give a multiple array of visual display points.

LED DISPLAY

One long life LED (light emitting diode) visual indicator is used per point. The LED used in the 910 annunciator has extra brightness for greater visibility.



NAMEPLATE

Nameplate card inserts easily behind front transparent face. Individual alarm point message area is 10mm high x 53mm wide. Messages can be made using a standard office typewriter. Typical 12 pitch letter, gothic type style provides for two lines of 22 characters each.

RELAY OUTPUTS

A relay contact output for operating an external audible device is standard. A second relay contact output (reflash) for signaling a remote annunciator is also available as a standard feature.

Either relay can be field selectable as de-energized or energized during normal for self-policing operation. Environmentally sealed relays are optional. Standard Form C relay contact rating is 5 amps at 110 to 250 VAC or 28 VDC resistive.

OPERATIONAL SEQUENCES

Seven operational sequences are standard; AF, AFNL (Non Lock-In), AM, FR, FRM, TFS and TFSFR. Ordinarily, all 10 points must be the same sequence. However, TFS and AF can be mixed on the same unit. TFSFR and FR can also be mixed. Sequence TFS first-out grouping can be extended to additional units beyond the first ten. Up to 100 points can be connected in a single first-out group.

Operational sequence is field programmable using a combination of 10 "DIP-FIX" switches and 3 jumper blocks. NO/NC signal contact selection is also made via "DIP-FIX" switches.

OPERATIONAL SEQUENCE 'AF' (I.S.A. TYPE A)			
OPERATIONAL SEQUENCE 'AFNL' (I.S.A. TYPE A-4)			
Input Status	Visual	Audible	
Alarm or Test	Flashing	On	
Acknowledge	Steady-On	Off	
Return To Normal	Off	Off	
OPERATIONAL SEQUENCE 'FR' (I.S.A. TYPE A-1-2)			
Input Status	Visual	Audible	
Alarm or Test	Flashing	On	
Acknowledge	Flashing	Off	
Flash Reset	Steady-On	Off	
Return To Normal	Off	Off	
OPERATIONAL SEQUENCE 'AM' (I.S.A. TYPE M)			
Input Status	Visual	Audible	
Alarm or Test	Flashing	On	
Acknowledge	Steady-On	Off	
Return To Normal	Steady-On	Off	
Reset	Off	Off	
OPERATIONAL SEQUENCE 'FRM' (I.S.A. TYPE M-1-2)			
Input Status	Visual	Audible	
Alarm or Test	Flashing	On	
Acknowledge	Flashing	Off	
Flash Reset	Steady-On	Off	
Return To Normal	Steady-On	Off	
Reset	Off	Off	
OPERATIONAL SEQUENCE 'TFS' (I.S.A. TYPE F3A-3)			
Input Status	First Visual	Subsequent Visual	Audible
1st Alarm or Test	Interm. Fast Fl.		On
Subsequent Alarm		Fast Flash	On
Acknowledge	Slow Flash	Steady-On	Off
First Reset	Steady-On	Steady-On	Off
Return To Normal	Off	Off	Off
OPERATIONAL SEQUENCE 'TFSFR' (I.S.A. TYPE F3A-1-2-3)			
Input Status	First Visual	Subsequent Visual	Audible
1st Alarm or Test	Interm. Fast Fl.		On
Subsequent Alarm		Fast Flash	On
Acknowledge	Interm. Fast Fl.	Fast Flash	Off
Flash Reset	Slow Flash	Steady-On	Off
First Reset	Steady-On	Steady-On	Off
Return To Normal	Off	Off	Off

SPECIFICATIONS

Input Power

AC120: 105 to 130 VAC, 50-60 Hz, transformer isolated
 AC230: 210 to 260 VAC, 50-60 Hz, transformer isolated
 DC24: 24 VDC nominal, 20-30 VDC, converter isolated
 DCF12: 12 VDC nominal, 10.5-15 VDC, non-isolated filter
 DCF24: 24 VDC nominal, 20-30 VDC, non-isolated filter
 DC48: 48 VDC nominal, 40-60 VDC, converter isolated
 DC9: 100-280 VDC, converter isolated

DC inputs: 10% Max. allowable ripple.
 AC inputs: 100mS Power interrupt buffer
 Transformer/converter isolation—1500 VRMS
 Power consumption—Less than 10 VA, all models
 Flasher—Integral only, no provisions for external SYNC.

Operating Temperature Range 0 to 50°C. Ambient
 Humidity 5% to 95% Non-condensing
 Storage Temperature Range -55°C to +85°C

Signal Inputs

INPUT TYPE	NOMINAL INPUT VOLTAGE	MINIMUM MAXIMUM SIGNAL VOLTAGE	% OF NOMINAL w/o COMPONENT DAMAGE	MAXIMUM CURRENT INPUT	MAXIMUM SERIES RESISTANCE	MINIMUM LEAKAGE RESISTANCE
T12	12VDC	10.5-15	200%	3 mA	1.0K	6.0K
T24	24VDC	20-28	200%	3 mA	6.5K	45K
T48	48VDC	40-56	200%	3 mA	5.0K	65K
T125	125VDC	105-140	135%	3 mA	5.0K	150K
TC24	24VDC	20-28	200%	3 mA	6.5K	45K
TC48	48VDC	40-56	200%	3 mA	5.0K	65K
TC125	125VDC	105-140	135%	3 mA	5.0K	150K
K24	24VDC	20-28	200%	3 mA	10K	25K
KC24	24VAC/VDC	20-28	200%	3 mA	10K	25K
KC48	48VAC/VDC	40-56	200%	3 mA	10K	50K
KC120	120VAC	100-130	200%	3 mA	10K	100K
KC125	125VDC	105-140	200%	3 mA	10K	100K
KC240	240VAC	210-260	150%	3 mA	10K	100K
KC250	250VDC	210-260	110%	3 mA	10K	100K
KM120	120VAC/DC	105-130	110%	17 mA	N/A	N/A
KM240	240VAC/DC	210-250	110%	13 mA	N/A	N/A

Notes:

- Signal contact series resistance (maximum resistance of wiring and contacts to be recognized as a closed contact).
 Signal input leakage resistance (minimum resistance in parallel to input terminals to be recognized as an open contact).
 Maximum series resistance and minimum leakage resistance values are valid if field contact voltage is $\pm 15\%$ of nominal.
- Inputs of 24V or higher have been tested to meet or exceed the requirements of ANSI/IEEE C37.90-1978 (SWC)
- Isolation voltage rating for input opto-isolator is 1066 VRMS continuous and 1770 VRMS surge.

Response Time

Response time is defined as time between application of step voltage at signal input until sequence logic recognizes the voltage change as an alarm. System will not respond to momentary signals shorter than response time. Standard response time is 20 mS ± 2.5 mS. When opto-isolated inputs are used, 20 to 60 mS will be added to the response time.

Resolution Time

Resolution time is defined as minimum time between the start of two signals in a First-Out group required by the system to recognize only the first occurring signal as First-Out. Resolution time is 6 mS for standard time delay, and 25% of specified delay for other delay options. When opto-isolated inputs are used, resolution time is increased by 40 mS.

Relay Isolation

1500 VRMS from contacts to coil (logic voltage)
 750 VRMS across open contacts

Time Delay (Response Time)

Standard—20 mS $\pm 12.5\%$
 "D1" Option—50 mS $\pm 12.5\%$
 "D2" Option—100 mS $\pm 12.5\%$

Output Relay Ratings (Horn Relay, Reflash Relay) (Std. and Option "1E" Relays)

CONTACT RATING:

5A @ 250VAC or 28VDC RESISTIVE, DUST TIGHT RELAY (STANDARD)
 3A @ 250VAC or 28 VDC RESISTIVE, SEALED RELAY ("1E" OPTION)
 500 mA @ 125VAC or 28VDC LAMP LOAD
 500 mA @ 125VDC RESISTIVE LOAD ONLY
 125 mA @ 125VDC LAMP LOAD ONLY

Horn Relay

The horn relay is driven from the internal horn bus through a set of field-changeable jumpers to select normally energized or normally de-energized relay operation. Form "C" contacts are brought out to the main terminal block for complete flexibility in connecting an external horn.

Reflash Relay

The reflash relay operates on first alarm and momentarily changes state (100 mS) on subsequent alarms. The reflash relay will not operate on test if all points are clear. However, if test is activated while an alarm is present, the reflash relay will momentarily change.

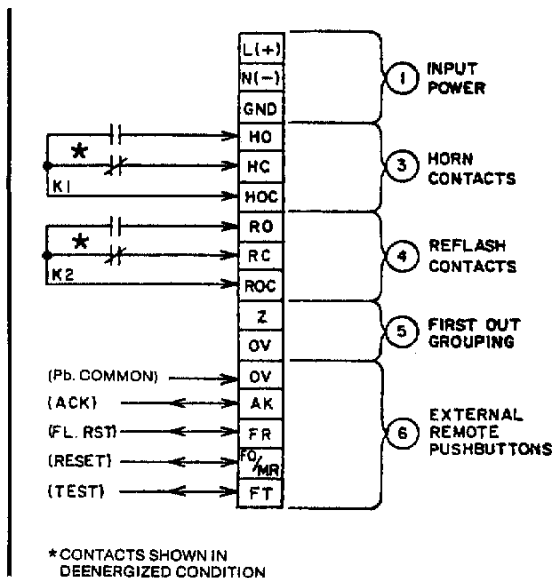
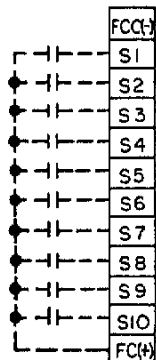
Integral Horn

The Model 910 annunciator is supplied with a horn relay. If an integral horn is required, option "H1" must be specified as part of the model number. The integral horn sound output is approximately 75 db at 10 feet.

TYPICAL WIRING DIAGRAM

TYPE T12, T24, T48 OR T125 INPUT (SWITCH CONTACT)

WIRING DIAGRAM WITH INTERNALLY SUPPLIED "FC" VOLTAGE, (12, 24, 48 OR 125 VDC ONLY).

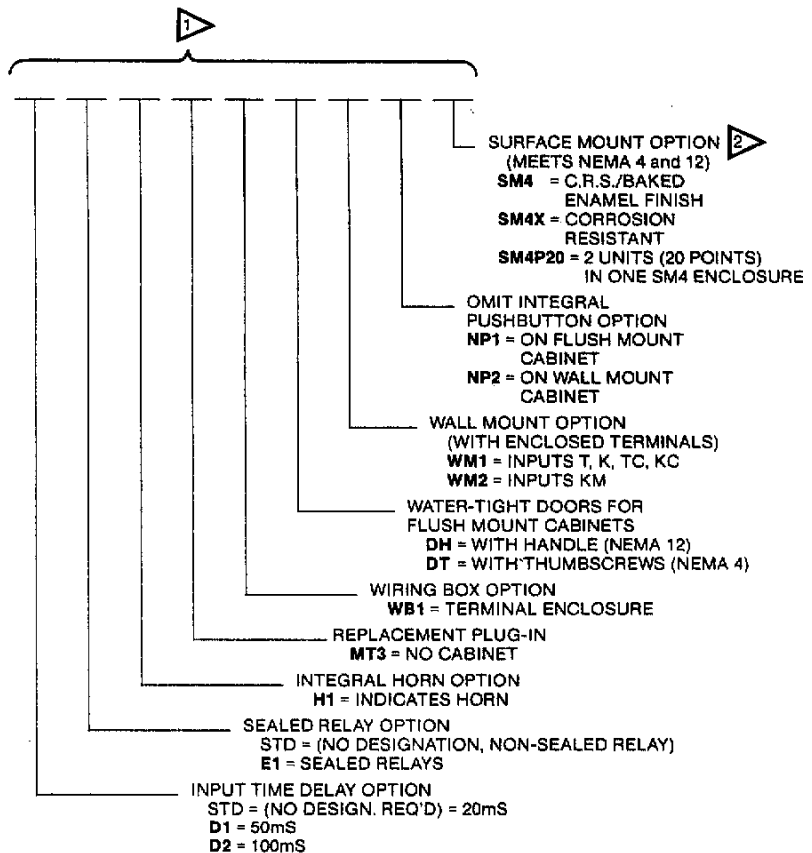


MODEL NUMBER EXPLANATION

- 910**
MODEL 910, FLUSH MOUNT
- POWER SUPPLY INPUT VOLTAGE
- AC120** — 120V, 50-60Hz (24VFC)
 - AC230** — 230V, 50-60Hz (24VFC)
 - DC24** — 24VDC, CONVERTER ISOLATED (24VFC)
 - DC48** — 48VDC, CONVERTER ISOLATED (24 OR 48VFC)
 - DC9** — 100-280VDC, CONVERTER ISOLATED (24 OR 125VFC)
 - DCF12** — 12VDC, NON-ISOLATED, FILTER ONLY (12VFC)
 - DCF24** — 24VDC, NON-ISOLATED, FILTER ONLY (24VFC)

- SIGNAL INPUT TYPE & VOLTAGE
- INTERNALLY SUPPLIED FC VOLTAGE**
- T12** — SWITCH CONTACT, 12VDC (AVAILABLE WITH DCF12 FILTER ONLY)
 - T24** — SWITCH CONTACT, 24VDC (AVAILABLE WITH ALL POWER SUPPLIES)
 - T48** — SWITCH CONTACT, 48VDC (AVAILABLE WITH DC48 CONVERTER ONLY)
 - T125** — SWITCH CONTACT, 125VDC (AVAILABLE WITH DC9 CONVERTER ONLY)
 - K24** — OPTICALLY COUPLED, 24VDC (AVAILABLE WITH ALL POWER SUPPLIES)

- CUSTOMER SUPPLIED FC VOLTAGE**
- TC24** — SWITCH CONTACT, 24VDC
 - TC48** — SWITCH CONTACT, 48VDC
 - TC125** — SWITCH CONTACT, 125VDC
 - KC12** — OPTICALLY COUPLED, 12VAC/VDC
 - KC24** — OPTICALLY COUPLED, 24VAC/VDC
 - KC48** — OPTICALLY COUPLED, 48VAC/VDC
 - KC120** — OPTICALLY COUPLED, 120VAC
 - KC125** — OPTICALLY COUPLED, 125VDC
 - KC240** — OPTICALLY COUPLED, 240VAC
 - KC250** — OPTICALLY COUPLED, 250VDC
 - KM120** — FOR SERIES
 - KM240** — CONTACT MONITORING



1 IF OPTIONS NOT REQUIRED, OMIT OPTION LETTERS AND NUMBERS

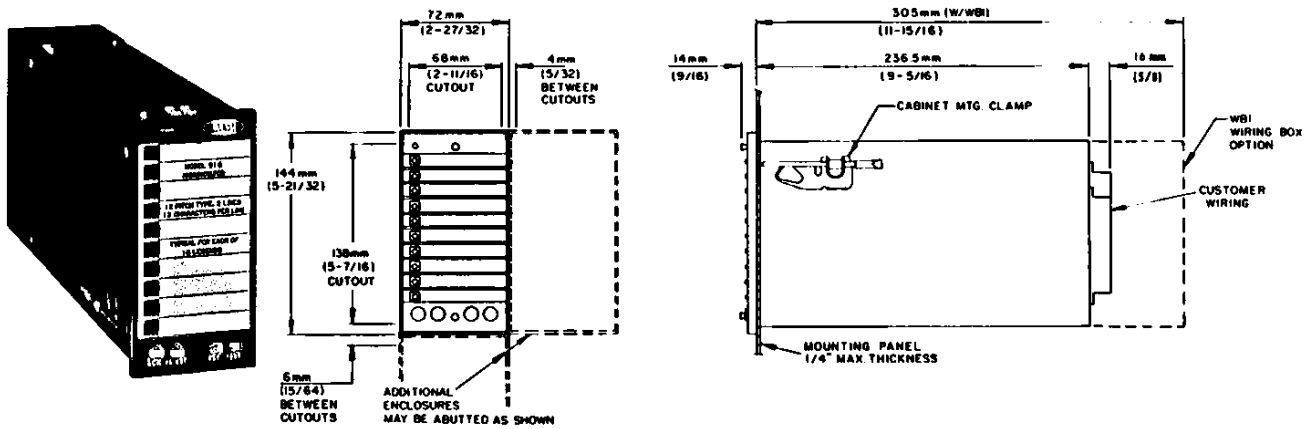
2 SPECIFY QUANTITY OF SW-101 PUSHBUTTONS TO BE MOUNTED ON ENCLOSURE DOOR. ALSO, ADD NOVATONE AUDIBLE MOUNTED ON ENCLOSURE WALL, IF REQUIRED.

3 REQUIRES SPECIAL WIRED CABINET

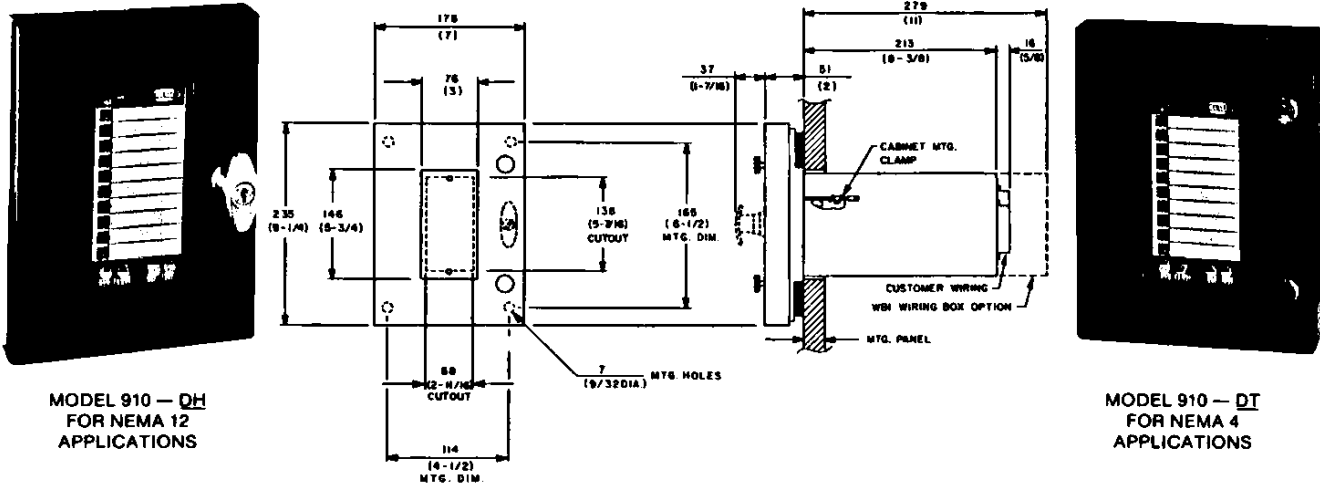


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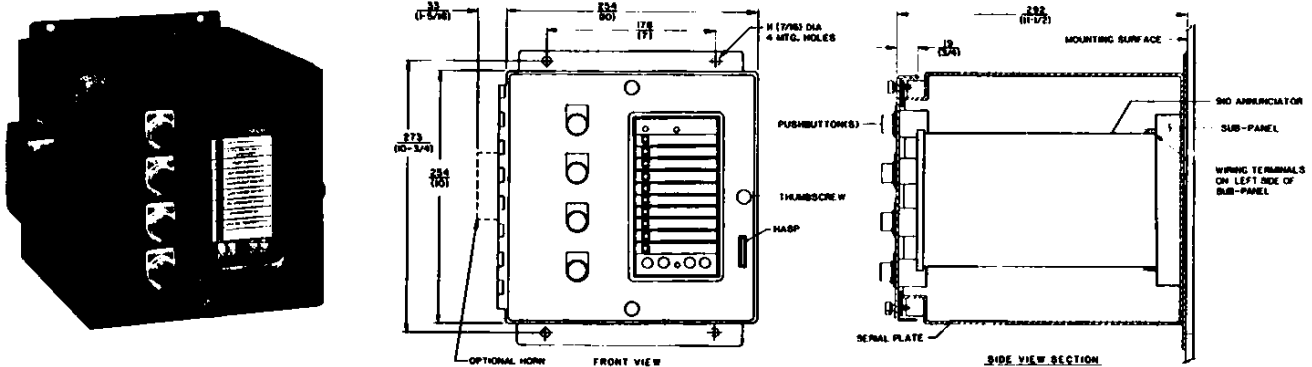
FLUSH MOUNT CABINET



WATERTIGHT DOORS



SURFACE MOUNT ENCLOSURE

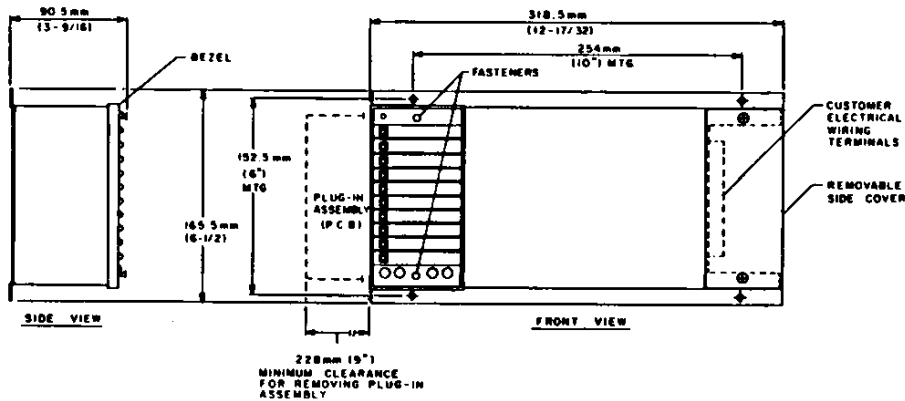


Also available with two units in one enclosure (Option SM4P20).
 Height and depth are as shown. 10" width becomes 15 1/2". 7" mtg. hole spacing becomes 12 1/16".



910 Annunciator

WALL MOUNT CABINET



TYPICAL ORDER

Model 910AC120T24D1H1WB1

The model number shown is for a Model 910 with 120 VAC power input, internally supplied 24VDC for signal contacts, an input time delay of 50mS, integral horn and wiring box terminal enclosure.

TERMS

Net 30 days, F.O.B., factory, freight collect. Shipments are normally made by Parcel Post, Truck or U.P.S. For faster shipment, specify Air Freight, Air Parcel Post, etc.

CONFIRMATION

Avoid duplication of Purchase Order by marking confirming Purchase Order "CONFIRMATION."

WARRANTY

Three year warranty in accordance with terms and conditions of sale, Form AP-85.

DELIVERY

Normal delivery is approximately two (2) weeks. However, please check with your nearest PANALARM representative's office. System requirements may be a determining factor.

Specifications and designs subject to change without notice.

AMETEK PROCESS & ANALYTICAL INSTRUMENTS DIVISION

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