Series 90A Integral Annunciators

90A Model Number

90A-	___	-	___	-	___	-	___	-	___	-	___	-	___
	Item 1 Mounting Options		Item 2 # of Cells High		Item 3 # of Cells Wide		Item 4 Common Service		Item 5 Window Size		Item 6 Active Points		Item 7 Window Color
	___	-	___	-	___	-	___	-	___	-	___	-	___
	Item 8 Operational Sequence		Item 9 Repeat Relay		Item 10 Power Input		Item 11 Field Contact Voltage		Item 12 Window Legends		Item 13 Comm. Options		Item 14 Options

Example: 90A-PM-3H-6W-INTB-2-34-W-AF-RR-B-X-TP-MB-TS-IB-RLY

Item 1 Mounting Option

PM	Semi-Flush Panel Mounting
PC	Semi-Flush Panel Mounting w/ rear cover
RK	19" Rack Mounting (5 wide systems only)
S	Surface (Wall) Mounting (1H to 5H x 2W to 5W)
N4	Nema-4 Enclosure (1H - 6H x 3W - 8W)
N4PB	Same as above with 4 PB's and Horn wired to door

Item 2,3 Annunciator Size

_____ - _____

# of Cells High (1-13) — # of Cells Wide (2-13)

Item 4 Common Service Cell (lower right cell)

INTB	Integral Pushbuttons (ACK, SIL, TEST, RESET)
NPB	Pushbuttons replaced w/ a Half or Full Size Window

Note: For either selection above, external pushbuttons can be connected to the Annunciator terminal blocks.

Item 5 Window Size

4	Quad Size, 4 inputs per cell, ea 1.5"H x 1.5"W
3	Third Size, 3 inputs per cell, ea 1.0"H x 3.0"W
2E	Half Size, 2 inputs per cell, ea 1.5"H x 3.0"W
2S	Half Size, 2 inputs per cell, ea 1.5"H x 3.0"W
2	Half Size, 2 inputs per cell, ea 1.5"H x 3.0"W
1E	Full Size, 1 input per cell, ea 3.0"H x 3.0"W
IMW	Intermixed window size (must include matrix)

*Note: Option **1E** indicates that the cell is expandable up to 2 inputs.*
*Option **2E** indicates that the cell is expandable up to 4 inputs.*
*Option **2S** indicates one input module per single input provided.*
Do not include the CSM Cell in your quantity.

Item 6 Active Points

____ Total # of active points (see chart)

Item 7 Window Color

W	White Window Filter
R	Red Window Filter
A	Amber Window Filter
G	Green Window Filter
B	Blue Window Filter
IMC	Intermix color, matrix must be included

Item 8 Operational Sequence

LN, AO, AONL, AF, AFNL, FR, AM, FRM, AS, ASFR, ASFRM, TFS, TFSFRM, TFSM, ARR, FRR, MC

VS, VSRR (Dual Color Sequence for window size 1,2)

IMO Intermixed Sequences (Up to 4 available)

Item 9 Repeat Relay Option

RR	Auxiliary Repeat Relay Provided for every Input. (Can be field configured to follow: alarm input status, alarm sequence operation or Lamp Flash. Relays can be set for normally energized or de-energized operation and are jumper selectable for a Form A or Form B contact arrangement.)
FRC	Auxiliary Repeat Relay Provided for every Input with Form C (SPDT) Contacts. (Can only be used with Window Size 1 or 2S.)
2RR	Two Repeat Relays for every input. (Selectable for a Form A or Form B contact arrangement. Can only be used with Window Size 1 or 2S.)
NR	No Repeat Relays required

(Note: Can only choose one selection from above.)

Item 10 Power Input

F	24 VDC
E	48 VDC
C	125 VDC
B	120 VAC, 60HZ
A	230 VAC, 50HZ

Item 11 Field Contact Voltage (FCV)

Field Contact Voltage internally supplied by AMETEK, with common system-wide FCV return.
*For System Input Power Voltages of 120/230VAC or 125VDC.

D	125 VDC FCV
X	24 VDC FCV

Field Contact Voltage externally supplied by Customer, internally bussed to all input modules.

DC	125 VDC FCV supplied by Customer
TC	48 VDC FCV supplied by Customer
XC	24 VDC FCV supplied by Customer
JC	12 VDC FCV supplied by Customer

Field Contact Voltage externally supplied by Customer. Every input is isolated and requires a separate FCV connection.

D/ISO	125 VDC FCV supplied by Customer
T/ISO	48 VDC FCV supplied by Customer
X/ISO	24 VDC FCV supplied by Customer
Y/ISO	120 VAC FCV supplied by Customer
J/ISO	12 VDC FCV supplied by Customer

NR No Field Contact Voltage (Serial Inputs Only)

Item 12 Window Legends

TP	Legends printed on Transparency Film (field changeable)
E	Legends Engraved on Windows

Note: Window engraving or printed legends can be provided at the factory at no charge if provided 1 week before shipment.

Item 13 Serial Communications

SIM	Modbus Serial Input Only (no Field Contact Inputs)
MB	Modbus Communications, Transmit or Receive
DNP	DNP 3.0 Communications, Transmit
SD	Serial ASCII Data Output of Time Stamped Alarms (Used with the Time Stamping option **SER** only.)

Note: Can only select one of the above options.
All options above are field selectable for RS-232 or RS-485 operation.

Item 14 Options

ETH Ethernet Port (RJ-45 , T1 connection)
(Used with Modbus or DNP Communication options. Must select option MB or DNP. Replaces RS-232/485 Serial Port.)

FR 1 msec Input Response (50 msec Standard)
(This will capture alarms that last 1 msec or longer. If Time Stamping is required, select option SER instead)

SER Time Stamping of alarms (4msec response)
Each alarm is accompanied with a time stamp, containing point #, state, time & date. The Time Stamp output can be selected as Serial ASCII Data to a printer or terminal [must select option SD], Modbus [must select option MB] or DNP [must select option DNP].

SERFR Time Stamping of alarms (1msec response)
Each alarm is accompanied with a time stamp, containing point #, state, time & date. The Time Stamp output can be selected as Serial ASCII Data to a printer or terminal [must select option SD], Modbus [must select option MB] or DNP [must select option DNP].
*Limited to systems 25 cells or smaller

IB IRIG-B Time Sync Input (used with SER Option)
(Standard BNC Input)

SP Serial Printer used for Time Stamped Alarms
(Used with SER option [time stamped alarms] and SD option [serial data output]. Modbus, DNP and Ethernet are not available when selecting this.)

GF Ground Fault Detector (internally mounted)

RLY Additional Two CSM Common Relays
(System includes 2 CSM Common Relays configurable for Critical or Non-Critical Horn, Ringback Horn. The additional 2 CSM Common Relays can be configured for additional horns or Critical/Non-Critical Reflash or Fault, Power Fail, System Watchdog, or Ground Fault Detect)

SW External Inhibit Switch Input
(Software configurable for inhibit of LED Lamps, Horn, Repeat Relay Outputs or CSM Common Relay Outputs. Two switch inputs provided, unless Option FS Flash Synchronization is specified, where only one is provided.)

FS Flash Synchronization
Synchronizes the flash rate to remote displays. Needs to be specified for each Annunciator that will be synchronized together. (Requires wiring between Annunciator Systems.)

HN Internal Horn

AS Automatic Horn Silence
(Software configurable delay up to 60 seconds, in 0.25 second increments. Independent setting for internal or external horns.)

STM Moisture/ Fungus Proof Coating

CE CE Certification
CE Certification available for all configurations except for FCV options D, DC, D/ISO, Y/ISO.
In these cases, a NEMA Enclosure (option N4, N4PB) or Front Cover (option NCB, NCT) is required. 120/230VAC & 125VDC Input Power provided via External Supplies unless the NEMA Enclosure or Front Cover is used.

FM FM Class 1, Div.2 Groups A,B,C,D Certification
(option N4, N4PB) or Front Cover (option NCB, NCT) is required. Power option A (230Vac), B(120Vac), C(125Vdc), (see ITEM 10), is provided via External Supplies only.