



ALARM MONITOR/ANNUNCIATOR MODEL PE 102-8 INSTRUCTION MANUAL

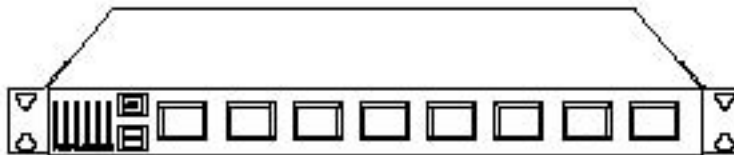
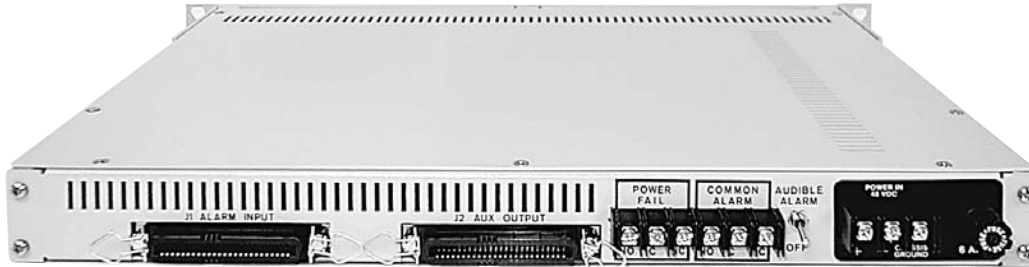


TABLE OF CONTENTS

SUBJECT	PAGE
• PHOTOS, ALARM MONITOR/ANNUNCIATOR MODEL PE102-8, FRONT AND REAR VIEWS	1
• GENERAL DESCRIPTION	1
• SEQUENCE OF OPERATION TABLES	1
• GENERAL SPECIFICATIONS	2
• COMMON ALARM	2
• POWER FAIL	2
• AUXILIARY OUTPUTS	2
• CONTROL OPTION	2
• INSTALLATION	2
• MAINTENANCE	3
• FUSES	3
• LED REPLACEMENT	3
• ALARM INPUT CIRCUIT INTERFACE	3
• ALARM INPUT OPTIONS	3
• RESISTANCE TABLES	4
• 25-PAIR INSIDE TELEPHONE CABLE	5
• ALARM ANNUNCIATOR PE202 SCHEMATIC	6
• PE 202-8 ANNUNCIATOR SCHEMATIC	7
• PE 202 P.C. BOARD	8
• RELAY SPECIFICATIONS	9
• PE 102-8 PARTS LIST	10
• NOTES	11



FRONT VIEW



REAR VIEW

ALARM MONITOR / ANNUNCIATOR MODEL PE 102-8 GENERAL DESCRIPTION

The Model PE102-8 Alarm Annunciator monitors the status and change of isolation alarm contacts. Changes are annunciated by an audible alarm and flashing LEDs. Momentary changes are also detected and latched in until acknowledged.

Instead of alarm contacts, the presence or absence of d.c. Voltages 12, 24 or 48 can also be monitored. The number of alarm points monitored is 8. The sequence of operation can be either No.1 or No. 3 as indicated in the tables at bottom.

As an option, the legend windows can also be used as switches, either momentary or alternate action. These switches do not control any function within the annunciator, the wiring from the switches is brought out to a connector in the back panel.

Auxiliary relay contacts that repeat the alarm inputs are provided. Power input options are as follow: 12-24-48-125 Vdc or 115- 220-Vac. If power input is 12 Vdc, no power supply is required. Other models require either a dc-dc converter or an ac-dc power supply to convert input power supplied by user to 12 Vdc.

Annunciator can be rack, panel, or desk mounted.

SEQUENCE OF OPERATION TABLES

SEQUENCE OF OPERATION NO.1		
Condition	Status Lamps	Audible Alarm
Normal	Red Lamp Off Green Lamp On	Off
Alarm	Red Lamp Flashing Green Lamp Off	On
OPERATE ACKNOWLEDGE BUTTON		
Alarm	Red Lamp On Steady Green Lamp Off	Off
Return to Normal	Red Lamp Off Green Lamp Flashing	On
OPERATE ACKNOWLEDGE BUTTON		
Normal	Red Lamp Off Green Lamp on Steady	Off

A fleeting, or momentary alarm condition, will cause green lamp to flash and audible alarm to sound. Operating the ACKNOWLEDGE button will silence the audible alarm and cause the green lamp to stop flashing and remain on steady.

SEQUENCE OF OPERATION NO. 3		
Condition	Status Lamps	Audible Alarm
Normal	Red Lamp Off	Off
Alarm	Red Lamp Flashing	On
OPERATE ACKNOWLEDGE BUTTON		
Alarm	Red Lamp On Steady	Off
Return to Normal	Red Lamp Off	Off

GENERAL SPECIFICATIONS

Weight: 12 pounds

Chassis Size: 17"Wx1.75" Hx13"D

(without mounting ears)

Operating Temperature:-25 C to +70 C

Power Requirements:

To operate annunciator: 10 W

To operate interface relays: 5 W

COMMON ALARM

Screw terminals on the back of the unit provide the user with a set of relay contacts which transfer whenever **ANY** of the LEDs go into the flashing mode. They will transfer back into the normal position after the ACK pushbutton is depressed and the flashing stops.

This function can be used to perform emergency shutdown of other equipment whenever one or more points being monitored goes into an alarm state. It can also be used as a grouping function that will operate some other device if **ANY** alarm point goes into an alarm state.

POWER FAIL

The power fail function is an isolated form C relay. The contacts transfer whenever power to the annunciator fails. These relay contacts are available to the user through screw terminals on the back panel.

AUXILIARY OUTPUTS

The auxiliary outputs are isolated relay contacts that follow the alarm inputs. These contacts may be used to repeat the monitored inputs to some other equipment. The contacts are strappable for normally open or normally closed operation. They are available to the user through a 50-pin connector located on the back panel.

CONTROL OPTION

The control option includes a momentary or alternate action single pole double throw switch as part of the legend window. The switch contacts are available to the user through a 50pin connector located on the back panel.

These switches do not control any function within the annunciator.

INSTALLATION

The annunciator is normally mounted on a 19" rack. Accessory options are available for mounting on a 23" rack, or desktop mounting or panel mounting. A bezel hood is also available.

In connecting to the alarm input cable, note that **NOT** all the wires in the 25-pair cable are used.

If the remote lamp test and the remote ACK are to be used, jumpers must be put in place on the main P.C. board in the unit.

Connectors used for the alarm input J1 and aux output J2 are industry standard, 50-pin connectors. To mate to them use 180 degree AMP Champ male connectors part number 552020-1 with bail lock plug. Equivalents of this connector are also available from 3M, TRW and Amphenol. Interconnecting cables are available from the web site www.25Pair.com .

For connections to the common alarm, power fail and power terminals (if dc power input is used) use ring or spade wire terminals to connect to the No. 6-32 screw terminals.

MAINTENANCE

No routine maintenance is required other than checking the LEDs by operating the lamp test pushbutton on a routine basis.

FUSES

The F1 and F2 fuses on the large P.C. Board are both 2 amps.

LED REPLACEMENT

When replacing LEDs, the polarity indicated on the P.C. Board must be observed.

ALARM INPUT CIRCUIT INTERFACE

A relay is used as an isolation device which interfaces with the user's alarm inputs. This provides extremely good isolation between the solid state circuitry and the user's input circuits which may be subjected to a harsh electrical noise environment. If the user's input is an isolated contact or open collector, the instrument may supply the sensing voltage, otherwise, the user will supply the energy to operate the interface relay coils. See relay specification in this manual.

Jumpers are used to configure the input circuit to accommodate a number of alarm input schemes. In all cases, a minimum of 4 alarm points must be grouped to form a particular alarm input configuration.

Maximum allowable alarm input loop resistance can be determined by the use of the resistance table and the relay specification which gives the "must operate" voltage required at the interface relay coil; keeping in mind that the voltage drop among the common return will increase as the number of alarm relays are activated.

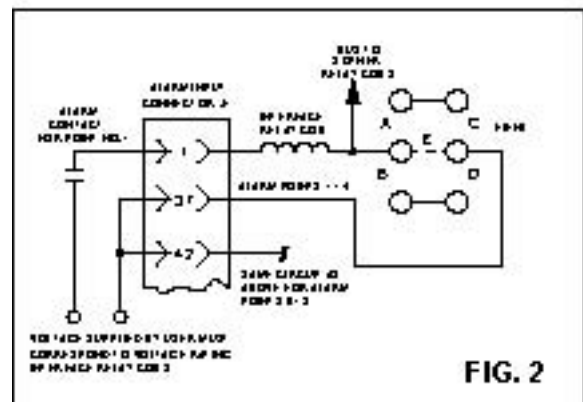
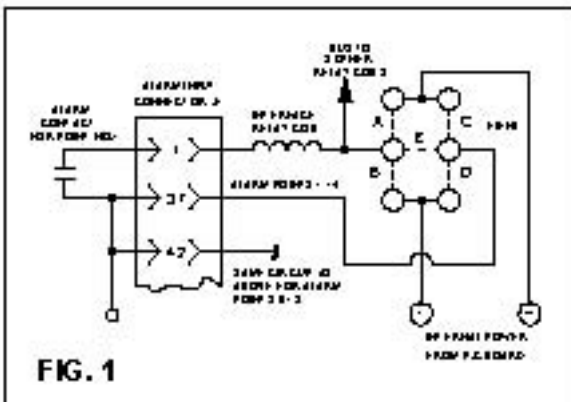
ALARM INPUT OPTIONS:

1. User provides isolation alarm contacts. Power to operate the interface relays supplied from the power on the P.C. board in the instrument.

Place jumpers E5-E6 in the B & C or A & D position for the desired polarity + or - on the relay coil buses. See Figure 1.

2. User provides isolation alarm contacts AND power to operate the interface relay (voltage can be 12, 24, or 48 Vdc).

Place jumpers E5-E6 in E positions. This will bring out the relay buses (4 relays to a bus) through pins 37, 42 of alarm input connector J1. See Figure 2.



Solid, Bare, Copper Wire

AWG Size	Ohms/1000'
10	.9989
11	1.260
12	1.588
13	2.003
14	2.525
15	3.184
16	4.016
17	5.064
18	6.385
19	8.051
20	10.15
21	12.80
22	16.14
23	20.36
24	25.67
25	32.37
26	40.81
27	51.47
28	64.90
29	81.83
30	103.2
31	130.1
32	164.1
33	206.9
34	260.9
35	331.0
36	414.8
37	512.1
38	648.6
39	847.8
40	1080.0

Stranded, Tinned, Copper Wire

AWG Size	Ohms/1000'
36	371.0
34	237.0
32	164.0
32	136.4
30	103.2
30	87.3
28	64.9
28	56.7
27	51.47
26	37.3
26	41.48
26	34.43
24	23.3
24	26.09
24	21.08
24	25.59
22	14.74
22	13.73
22	15.94
20	10.32
20	8.63
20	10.05
20	10.02
18	5.86
18	6.48
18	5.46
18	6.37
18	6.39
16	3.67
16	4.27
16	4.00
16	4.02
16	3.99
14	2.31
14	2.70
14	2.53
14	2.49
12	1.45
12	1.70
12	1.75
12	1.58
10	1.11
10	1.09
10	.98

RESISTANCE TABLES

**RESISTANCE
PER LENGTH
OF STRANDED
AND SOLID WIRE**

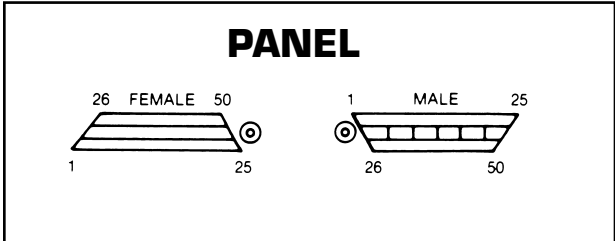
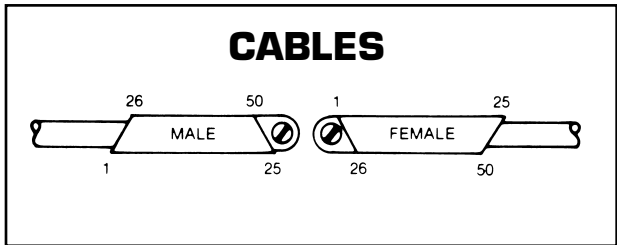
25 PAIR INSIDE TELEPHONE CABLE



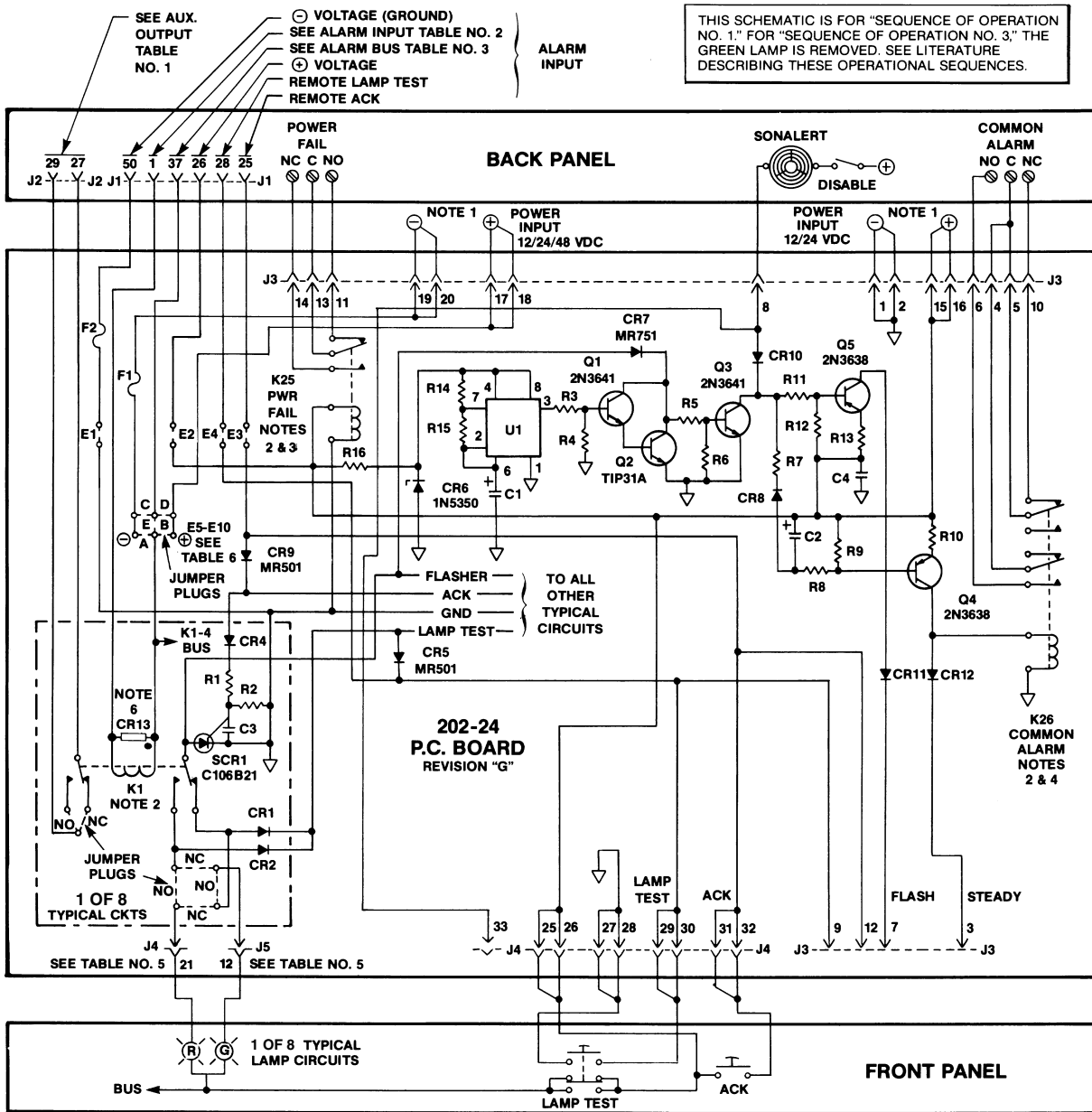
PAIR NO	BODY COLOR	BAND COLOR	50-PIN CONNECTOR PIN NO.
1	Blue	White	1
	White	Blue	26
2	Orange	White	2
	White	Orange	27
3	Green	White	3
	White	Green	28
4	Brown	White	4
	White	Brown	29
5	Slate	White	5
	White	Slate	30
6	Blue	Red	6
	Red	Blue	31
7	Orange	Red	7
	Red	Orange	32
8	Green	Red	8
	Red	Green	33
9	Brown	Red	9
	Red	Brown	34
10	Slate	Red	10
	Red	Slate	10
11	Blue	Black	11
	Black	Blue	36
12	Orange	Black	12
	Black	Orange	37
13	Green	Black	13
	Black	Green	38
14	Brown	Black	14
	Black	Brown	39
15	Slate	Black	15
	Black	Slate	40
16	Blue	Yellow	16
	Yellow	Blue	41
17	Orange	Yellow	17
	Yellow	Orange	42
18	Green	Yellow	18
	Yellow	Green	43
19	Brown	Yellow	19
	Yellow	Brown	44
20	Slate	Yellow	20
	Yellow	Slate	45
21	Blue	Violet	21
	Violet	Blue	46
22	Orange	Violet	22
	Violet	Orange	47
23	Green	Violet	23
	Violet	Green	48
24	Brown	Violet	24
	Violet	Brown	49
25	Slate	Violet	25
	Violet	Slate	50

Information about cable pairs is provided for educational purposes only, input wiring is to be accomplished using tables provided elsewhere in this manual.

CONDUCTORS: 24 AWG Solid Bare Copper
INSULATION: 008 Wall Semi-Rigid PVC
CABLE ASSEMBLY: Paired
JACKET: Olive Grey
RESISTIVITY AT 20°C: 26 Ohms per 1000'



GO TO
www.25PAIR.com
FOR ALL YOUR
CABLE NEEDS



THIS SCHEMATIC IS FOR "SEQUENCE OF OPERATION NO. 1" FOR "SEQUENCE OF OPERATION NO. 3." THE GREEN LAMP IS REMOVED. SEE LITERATURE DESCRIBING THESE OPERATIONAL SEQUENCES.

AUXILIARY OUTPUT TABLE NO. 1

ALARM POINT NO.	J2 PIN NO.
1	27-29
2	31-33
3	35-37
4	39-41
5	43-45
6	47-49
7	1-3
8	5-7

ALARM INPUT TABLE NO. 2

ALARM POINT NO.	J1 PIN NO.
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

ALARM INPUT BUS TABLE NO. 3

ALARM POINT NO.	J1 PIN NO.
1-2-3-4	37
5-6-7-8	42

LAMP TABLE NO. 2

ALARM POINT NO.	PIN NO.	RED	GRN
1	21	12	
2	17	14	
3	11	16	
4	9	18	
5	3	9	
6	6	10	
7	10	23	
8	1	15	

CONNECTOR TABLE NO. 4

Connector	Pin Count	Part Number
J1	50 pin	AMP Champ 552130-1
J2	50 pin	AMP Champ 552130-1
J3	20 pin	3M 3428-1302
J4	34 pin	3M 3431-1302
J5	26 pin	3M 3429-1302

"E" JUMPER TABLE NO. 6

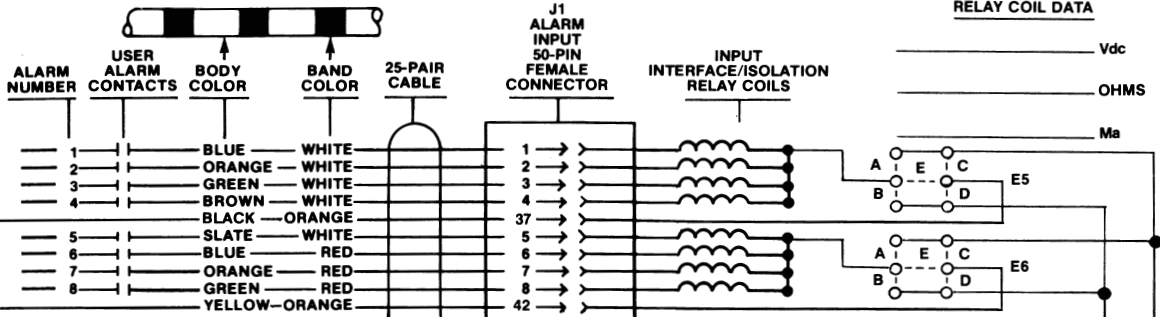
E1	BRINGS OUT GROUND TO PIN 50 OF J1	1-4
E2	BRINGS OUT + VOLTAGE TO PIN 26 OF J1	1-4
E3	BRINGS OUT "ACK" TO PIN 25 OF J1	1-4
E4	BRINGS OUT "LAMP TEST" TO PIN 28 OF J1	1-4
E5	SELECTS POWER FOR ALARM INPUT RELAYS	1-4
E6	SELECTS POWER FOR ALARM INPUT RELAYS	5-8

NOTES:

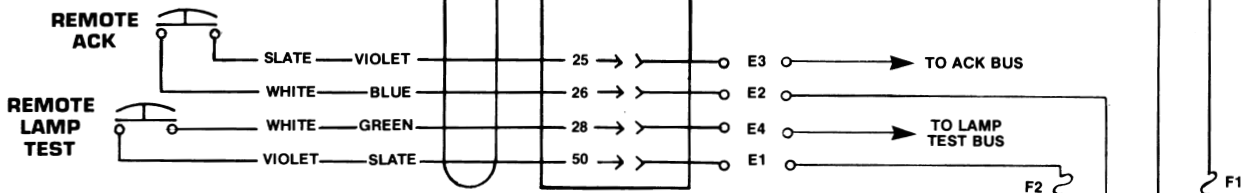
- Internal power supply or power input from screw terminals on back panel.
- Relay shown in de-energized position.
- Relay shown in "power off" position.
- Relay shown in "after ack" position.
- Resistors R10, R13, & R16 are jumped & diode CR6 is omitted for 12V dc power input.
- Diode across relay coil in accordance with polarity selected at jumpers E5 & E6

**ALARM ANNUNCIATOR
PE202 SCHEMATIC**

USER | EQUIPMENT



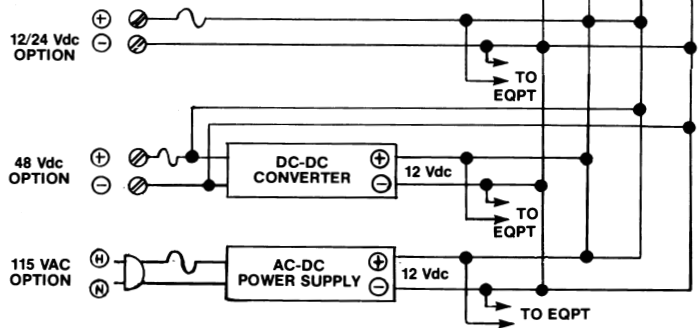
* These leads are used to provide external power to operate interface/isolation relay coils or when alarm inputs are isolated dry contacts.



USE OF JUMPERS E5-E10	
ALARM INPUT	USE JUMPER
(-)	B
(+)	A
ISOLATED DRY CONTACTS	B and C OR A and D
USER PROVIDES POWER TO OPERATE INTERFACE RELAY COILS	E

12/24/48 Vdc Power Input ONLY

POWER INPUT

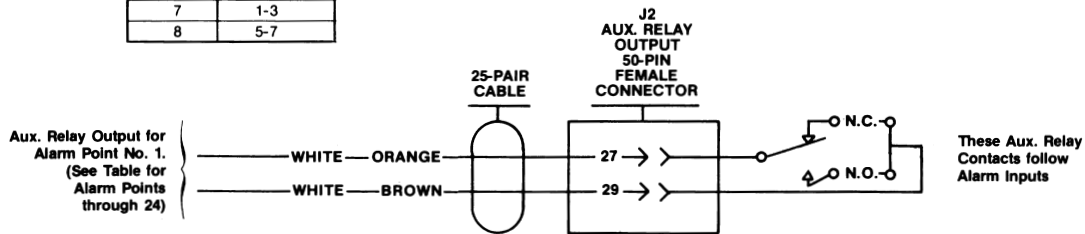
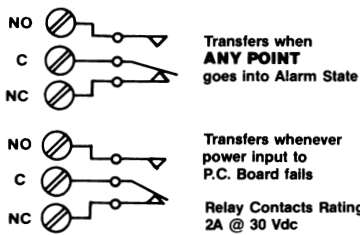


AUX. RELAY OUTPUT TABLE

ALARM POINT NO.	CONN. PIN NO.
1	27-29
2	31-33
3	35-37
4	39-41
5	43-45
6	47-49
7	1-3
8	5-7

COMMON ALARM

POWER FAIL

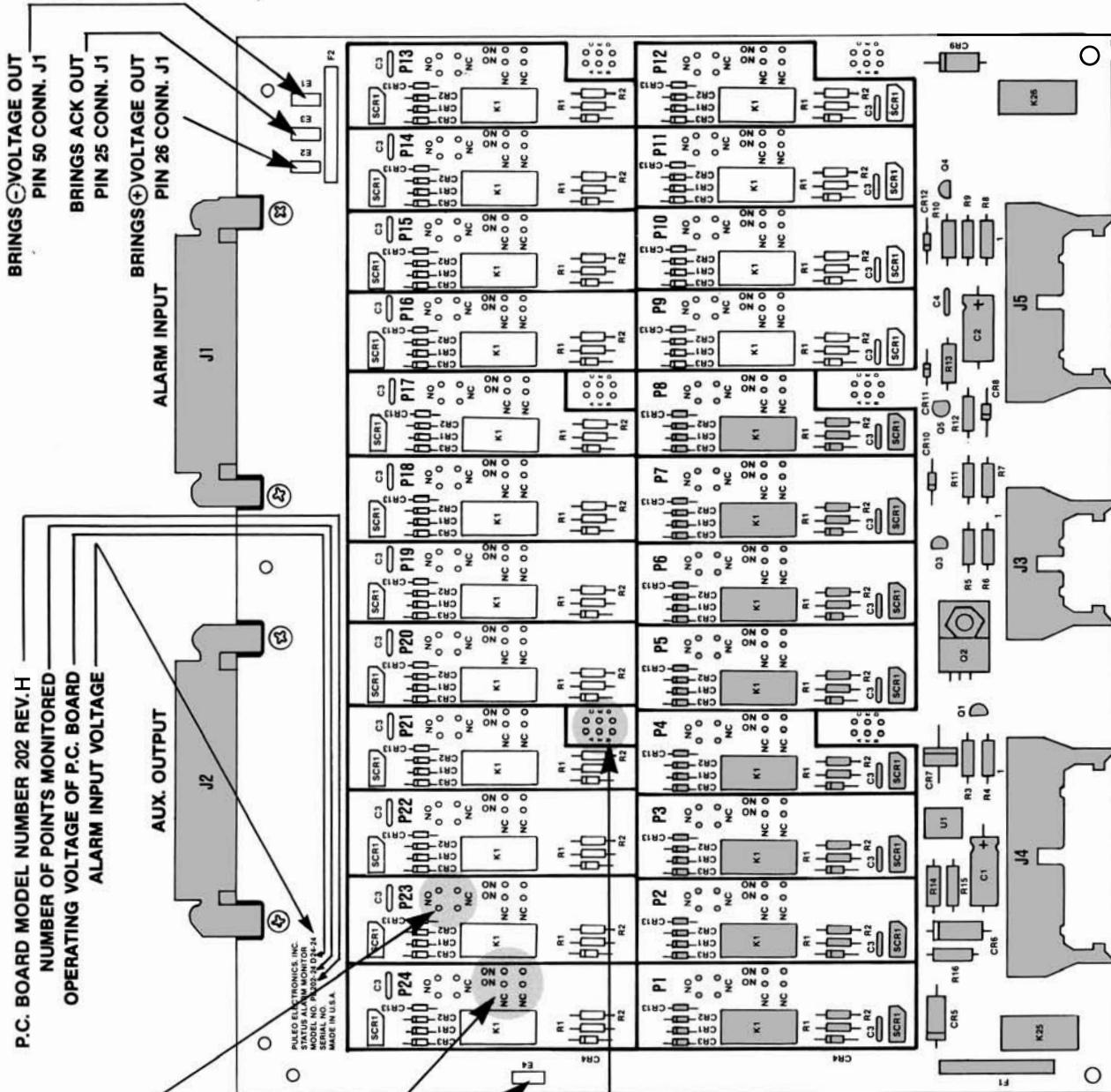


USER | EQUIPMENT

SERIAL NO. _____

- NOTES:**
- The PE 202 P.C. Board can be configured in a number of ways using the E Jumper Plugs (E1 through E6). The configuration selected when the unit leaves the factory is indicated by RED markings on this sheet.
 - Cross-Connect Panel PE 302-001 is available for special wiring arrangements to unit.
 - See D10 Documentation Sheet for 25-Pair Cable Color Coding.
 - Mating Connector: AMP Champ P.N. 552020-1 Plug 180°.

**PE 202-8
ANNUNCIATOR
SCHEMATIC**



JUMPER ARRANGEMENTS FOR AUX. OUTPUT	
FOR AUX. OUTPUTS TO BE THE SAME AS ALARM INPUTS	NO O O O O NC
FOR AUX. OUTPUTS TO BE OPPOSITE THE ALARM INPUTS	NO O O O O NC

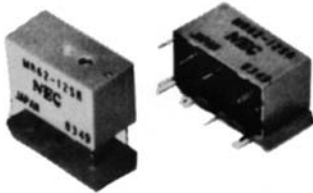
JUMPER ARRANGEMENTS FOR NORMALLY OPEN OR NORMALLY CLOSED ALARM INPUT CONTACTS	
FOR N.O. CONTACTS	NO NO NC O O NC O O
FOR N.C. CONTACTS	NO NO NC O O NC O O

JUMPER ARRANGEMENTS FOR ALARM INPUTS ES-E10	
ALARM INPUT IS NEGATIVE SIDE OF POWER INPUT TO UNIT	A O O C E O O E B O O D
ALARM INPUT IS POSITIVE SIDE OF POWER INPUT TO UNIT	A O O C E O O E B O O D
ISOLATED CONTACTS	A O O C E O O E B O O D
POWER SUPPLIED BY USER TO OPERATE RELAY	A O O C E O O E B O O D

ABOVE SHOWN FOR 1 OF 6 GROUPS:		
ALARM POINTS	E JUMPER	J1 PIN NO.
1-4	5	37
5-8	6	42
9-12	7	49
13-16	8	48
17-20	9	41
21-24	10	45

PE 202 P.C. BOARD

RELAY SPECIFICATIONS

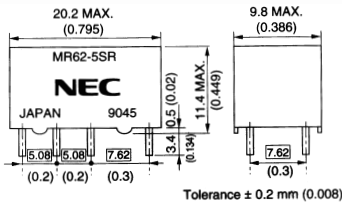


The MR62-Y series relay operates at the nominal operating power of 400 mW. All other characteristics are the same as that of the 550 mW relay except the must operate voltage which is specified at 70 % of the nominal coil voltage.

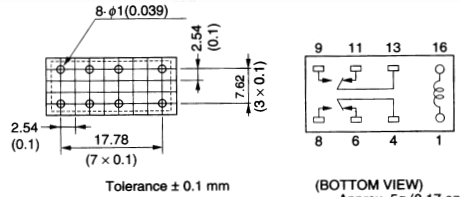
■ FEATURES

- 1500V FCC surge between coil and contacts and between adjacent contacts.
- 400mW nominal operate power.

■ DIMENSIONS mm (inch)



■ PCB PAD LAYOUT and SCHEMATICS mm (inch)



■ SPECIFICATIONS

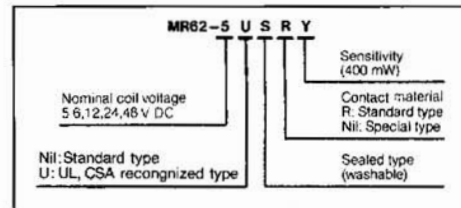
Contact Form	2 Form C	
Contact Rating	Max. Switching Power	60W 125VA
	Max. Switching Voltage	220V DC 250V AC
	Max. Switching Current	2A
	Max. Carrying Current	3A
Initial Contact Resistance	50mΩ Max.	
Contact Material	Silver alloy With gold overlay	
Nominal Operate Power	400mW	
Operate Time (Excluding Bounce)	Approx. 4ms without diode	
Release Time (Excluding Bounce)	Approx. 2ms without diode	
Insulation Resistance	1,000 MΩ at 500V DC	
Breakdown Voltage	Between Open Contacts	500 V AC (for 1 minute)
	Between Adjacent Contacts	1,000 V AC (for 1 minute)
	Between Coil and Contacts	1,000 V AC (for 1 minute)
Coil Temperature Rise	35°C (at nominal coil voltage) (400mW)	
Shock Resistance	30 G (misoperating), 100 G (destructive failure)	
Vibration Resistance	10 G (misoperating), 30 G (destructive failure)	
Electrostatic Capacitance	Between Open Contacts	Approx. 2pF
	Between Adjacent Contacts	Approx. 2pF
	Between Coil and Contacts	Approx. 3pF
Ambient Temperature	- 40 to +85°C (- 40 to +185°F)	
Life Expectancy	Mechanical	10 ⁷ operations
	Electrical	24 VDC, 1A (resistive), 10 ⁸ operations 24 VDC, 0.5A (resistive), 3 × 10 ⁸ operations
Weight	Approx. 5g	

■ STANDARD PART NUMBERS

at 25°C (77°F)

Part Number	Nominal Voltage (V DC)	Coil Resistance (Ω) ± 10%	Must Operate Voltage (V DC)	Must Release Voltage (V DC)
MR62-5SR	5	62.5	3.5	0.25
MR62-6SR	6	90	4.2	0.33
MR62-9SR	9	202.5	6.3	0.45
MR62-12SR	12	360	8.4	0.68
MR62-24SR	24	1,440	16.8	1.3
MR62-48SR	48	5,760	33.6	2.6

■ NUMBERING SYSTEM



PE102-8 PARTS LIST

<u>Description</u>	<u>Puleo Part Number</u>	<u>Total No. Used In Unit</u>	<u>Reco- mended Spares</u>
Rectangular Indicator Housing	018-055	8	1
Rectangular Full White Lens Cap	018-056	8	1
Red LED	018-057	8	2
Green LED	018-058	8	2
Power Supply (If 115 Vac Power Input)	014-059	1	1
Power Supply (If 125 Vdc Power Input)	014-059	1	1
Power Supply (If 24 & 48 Vdc Power Input)	014-016	1	1
Power Supply (If 220 Vac Power Input)	014-055	1	1
Pushbutton Switch	018-031	1	1
Test Button Cap	018-034	1	1
Ack Button Cap	018-032	1	1
Fuse (On P.C. Board)	020-002	2	2
Fuse (AC & DC 125V Power Input)	020-002	1	2
Fuse (DC 12V, 24V & 48V Power Input)	020-004	1	2
Fuse Holder	020-001	1	1

*** IF Legend Window Used as Pushbutton**

Rectangular P.B. SW. housing Alt. Action*	018-064	8	1
Rectangular P.B. SW. housing Mon. Action*	018-065	8	1
Rectangular Full White Lens Cap (P.B. SW.)*	018-063	8	1

NOTES

