

REV	ZONE	ECN	DESCRIPTION OF REVISION	CK APPD DATE	ENG APPD DATE
A			6375 SCHEM RELEASE	10/4/2K1	10/4/2K1
B			CHANGE TRIAC TO SCR	10/17/2K1	10/17/2K1
C			FIX C5 & 230VAC OPTIONS	2/15/2K2	2/15/2K2


TABLE OF CONTENTS		
Section	Page	Description
Contents	1.	Cover Page
Technical	2.	Technical Block Diagram
	3.	6375 Schematic
Other	4.	Reference Info & Revision History

PCB VERSION SUPPORT				
PART NUMBER	QTY	DESCRIPTION	ASSOCIATED REFERENCE DESIGNATORS	BOM OPTION
6375 PCB	1	PCB, 6375	PCB	\$PCB REV. A

**BOM OPTIONS  
SPECIAL CHARACTERS  
LEGEND**  
 (SHOWN DIRECTLY IN FRONT OF THE BOM OPTION NAME)

"\$" = DEFAULT BOM OPTION  
 "-" = COPY TO COOKED BOM  
 BUT DO NOT COOK

Cover Page

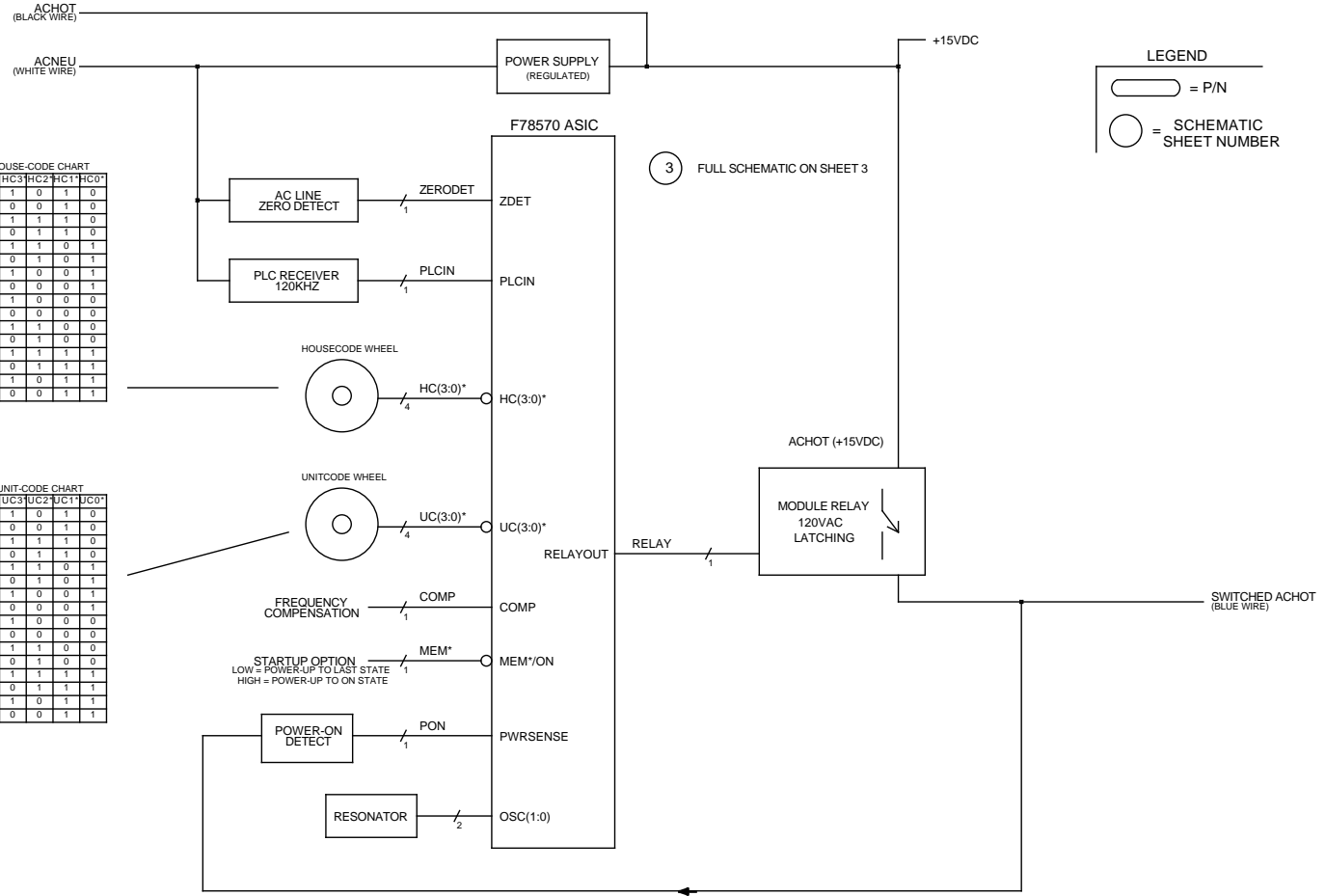
DIMENSIONS ARE EXPRESSED IN MILLIMETERS X.X * _____ X.XX * _____ X.XXX * _____ ANGLES * _____ DO NOT SCALE DRAWINGS		<b>METRIC</b> DRAFTER <input type="checkbox"/> DESIGN CK <input type="checkbox"/> ENG APPD <input type="checkbox"/> MFG APPD <input type="checkbox"/> QA APPD <input type="checkbox"/> DESIGNER <input type="checkbox"/> RELEASE <input type="checkbox"/> SCALE NONE <input type="checkbox"/>		<b>ORYSHNET SYSTEMS</b> NOTICE OF EDUCATIONAL INFORMATION THE INFORMATION CONTAINED HEREIN IS FOR EDUCATIONAL PURPOSES ONLY. ORYSHNET SYSTEMS IS NOT RESPONSIBLE FOR ANY USE OF THIS INFORMATION.	
 THIRD ANGLE PROJECTION		MATERIAL FINISH NOTED AS APPLICABLE		TITLE <b>6375 X-10 RELAY MODULE</b>	
DRAWING NUMBER <b>0001</b>				REV. <b>C</b>	
SHT 1 OF 4					

HOUSE-CODE CHART

HC	HC3	HC2	HC1	HC0
A	1	0	1	0
B	0	0	1	0
C	1	1	1	0
D	0	1	1	0
E	1	1	0	1
F	0	1	0	1
G	1	0	0	1
H	0	0	0	1
I	1	0	0	0
J	0	0	0	0
K	1	1	0	0
L	0	1	0	0
M	1	1	1	1
N	0	1	1	1
O	1	0	1	1
P	0	0	1	1

UNIT-CODE CHART

UC	UC3	UC2	UC1	UC0
1	1	0	1	0
2	0	0	1	0
3	1	1	1	0
4	0	1	1	0
5	1	1	0	1
6	0	1	0	1
7	1	0	0	1
8	0	0	0	1
9	1	0	0	0
10	0	0	0	0
11	1	1	0	0
12	0	1	0	0
13	1	1	1	1
14	0	1	1	1
15	1	0	1	1
16	0	0	1	1



LEGEND

○ = P/N

○ = SCHEMATIC SHEET NUMBER

3 FULL SCHEMATIC ON SHEET 3

Block Diagram

WARNING: LOCAL +15V = AC HOT

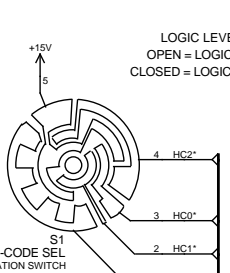
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ORYSHNET SYSTEMS		SIZE D	DRAWING NUMBER 6375 RELAY MODULE	REV. C
SCALE	SEE SHEET 1	SHT 2	OF 4	

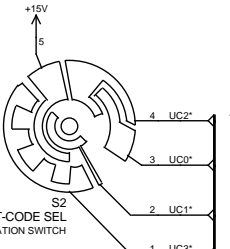
ACNEU  
(WHITE WIRE)

HOUSE-CODE CHART

HC	HC3*	HC2*	HC1*	HC0*
A	1	0	1	0
B	0	0	1	0
C	1	1	1	0
D	0	1	1	0
E	1	1	0	1
F	0	1	0	1
G	1	0	0	1
H	0	0	0	1
I	1	0	0	0
J	0	0	0	0
K	1	1	0	0
L	0	1	0	0
M	1	1	1	1
N	0	1	1	1
O	1	0	1	1
P	0	0	1	1



LOGIC LEVELS:  
OPEN = LOGIC1 = 0V  
CLOSED = LOGIC0 = 15V



UNIT-CODE CHART

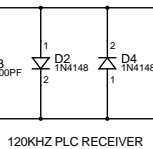
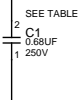
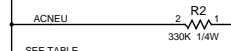
UC	UC3*	UC2*	UC1*	UC0*
1	1	0	1	0
2	0	0	1	0
3	1	1	1	0
4	0	1	1	0
5	1	1	0	1
6	0	1	0	1
7	1	0	0	1
8	0	0	0	1
9	1	0	0	0
10	0	0	0	0
11	1	1	1	0
12	0	1	1	0
13	1	1	1	1
14	0	1	1	1
15	1	0	1	1
16	0	0	1	1

CUT HERE AND INSERT R12 FOR 230VAC RELAY OPERATION

SWITCHED POWER  
(300W MAX INDUCTIVE LOAD)

B

ACNEU



FREQUENCY COMPENSATION



25 MIL TRACE



U1 78570



RELAYOUT



RELAY



SC1 MCR 100-B



VR1 145V MOV



ACHOTSW (BLUE WIRE)

C

ACNEU



SEE TABLE



SEE TABLE



120KHZ



NC120KHZ



PLCIN



120KHZ PLC RECEIVER



START-UP OPTION

RS NOSTUFF = POWER ON AT STARTUP

RS STUFF = LAST STATE AT STARTUP

PLCIN



CLOCK RESONATOR



POWER-ON DETECT



ACHOTSW



POWER CONVERTER



POWER CONVERTER

ACHOT (BLACK WIRE)

15V (14.7V)

110V 60HZ / 230V 50HZ SUPPORT

PART NUMBER	QTY	DESCRIPTION	ASSOCIATED REFERENCE DESIGNATORS	BOM OPTION
CAP-0.68UF-250V	1	CAP. 0.68UF 250VWV	C1	SPWR, 120VAC
RES-220-1/2W	1	RES. 220-OHM, 1/2W	R1	SPWR, 120VAC
MOV-145V	1	MOV, 145V TRIP	VR1	SPWR, 120VAC
CAP-0.33UF-400V	1	CAP. 0.33UF 400VWV	C1	PWR, 230VAC
RES-440-1W	1	RES. 440-OHM, 1W	R1	PWR, 230VAC
RES-100-2W	1	RES. 100-OHM, 2W	R12	PWR, 230VAC
MOV-275V	1	MOV, 275V TRIP	VR1	PWR, 230VAC

WARNING: LOCAL +15V = AC HOT

6375 Schematic

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ORYSHNET SYSTEMS

SIZE D	DRAWING NUMBER 6375 RELAY MODULE	REV. C
SCALE	SEE SHEET 1	SHT 3 OF 4

1

2

3

4

5

6

7

8

REVISION HISTORY

6375 DESIGN HISTORY  
 09/01/2001 - SCHEMATIC CREATED  
 - VERSION A RELEASED  
 10/04/2001 - CORRECT TRIAC TO SCR  
 - VERSION B RELEASED  
 02/15/2001 - CORRECT C5 & 230VAC 50HZ BOM OPTIONS  
 - VERSION C RELEASED

REFDES LOCATIONS	
C1	3-B1
C2	3-D2
C3	3-C2
C4	3-D2
C5	3-C3
C6	3-B4
C7	3-C4
C8	3-C6
C9	3-B6
C10	3-B6
C11	3-B6
D1	3-D2
D2	3-C2
D3	3-B2
D4	3-C2
D5	3-B2
D6	3-C6
D7	3-C6
DZ1	3-D2
K1	3-B7
L1	3-C1
R1	3-C1
R2	3-B2
R3	3-C3
R4	3-C3
R5	3-C4
R6	3-C6
R7	3-C6
R8	3-C7
R9	3-B6
R10	3-B6
R11	3-B8
R12	3-A8
S1	3-A2
S2	3-A4
SC1	3-B6
U1	3-C5
VR1	3-B7

GLOBAL NETS		
NET NAME		PAGE
GND	3	
+15V	3	

REFERENCE DESIGNATIONS	
LAST USED	NOT USED
C11	
D7	
DZ1	
K1	
L1	
R12	
S2	
SC1	
U1	
VR1	

Reference Info & Revision History

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**ORYSHNET**  
**SYSTEMS**

SIZE D	DRAWING NUMBER 6375 RELAY MODULE	REV. C
SCALE SEE SHEET 1	SHT 4 OF 4	

## 6375 vC 110VAC.xls

<b>6375.bom</b>										
<b>Item#</b>	<b>Qty</b>	<b>Part#</b>	<b>Description</b>	<b>Value</b>	<b>Voltage</b>	<b>Wattage</b>	<b>Tolerance</b>	<b>Mfg</b>	<b>Mfg PN</b>	<b>Ref. Designators</b>
<b>STUFF List:</b>										
1	1	6375 PCB	PCB, 6375							PCB
2	1	78570-ASIC-18PDIP	IC, ASIC, NEC-DECODER					MICROCHIP	78570	U1
3	2	CAP-0.022UF	CAPACITOR, NON-POLARIZED,	0.022UF						C8,C9
4	3	CAP-0.047UF	CAPACITOR, NON-POLARIZED,	0.047UF	50V					C4,C6,C11
5	1	CAP-0.1UF	CAPACITOR, NON-POLARIZED,	0.1UF						C10
6	1	CAP-0.68UF-250V	CAP, 0.68UF 250WV							C1
7	1	CAP-1000PF	CAPACITOR, NON-POLARIZED,	1000PF						C3
8	1	CAP-150PF	CAPACITOR, NON-POLARIZED,	150PF						C7
9	1	CAP-220UF-ELEC	CAPACITOR, POLARIZED,	220UF	25V					C2
10	1	CAP-330PF-CER	CAPACITOR, NON-POLARIZED,	330PF						C5
11	1	DIODE-1N4004	DIODE,	1N4004						D1
12	6	DIODE-1N4148	DIODE,	1N4148						D2,D3,D4,D5,D6,D7
13	1	IND-VAR-120KHZ-X10	IND, X10 TUNEABLE RF COIL							L1
14	1	MOV-145V	MOV, 145V TRIP							VR1
15	1	RELAY-SPST-110VAC								K1
16	1	RES-100K	RESISTOR,	100K						R6
17	1	RES-100K-1/2W	RESISTOR,	100K		1/2W				R11
18	1	RES-10K	RESISTOR,	10K						R5
19	1	RES-1K	RESISTOR,	1K						R10
20	2	RES-1M	RESISTOR,	1M						R3,R7
21	1	RES-220-1/2W	RES, 220-OHM, 1/2W							R1
22	1	RES-3.3K	RESISTOR,	3.3K						R9
23	2	RES-330K-1/4W	RESISTOR,	330K		1/4W				R2,R8
24	1	RES-68K	RESISTOR,	68K						R4
25	1	TRA-SCR-MCR 100B	TRA, SCR	MCR 100-B						SC1
26	1	ZENER-14V	ZENER,	ZENER	14V					DZ1

6375 vC 230VAC.xls

<b>6375.bom (230VAC)</b>										
<b>Item#</b>	<b>Qty</b>	<b>Part#</b>	<b>Description</b>	<b>Value</b>	<b>Voltage</b>	<b>Wattage</b>	<b>Tolerance</b>	<b>Mfg</b>	<b>Mfg PN</b>	<b>Ref. Designators</b>
<b>STUFF List:</b>										
1	1	6375 PCB	PCB, 6375							PCB
2	1	78570-ASIC-18PDIP	IC, ASIC, NEC-DECODER					MICROCHIP	78570	U1
3	2	CAP-0.022UF	CAPACITOR, NON-POLARIZED,	0.022UF						C8,C9
4	3	CAP-0.047UF	CAPACITOR, NON-POLARIZED,	0.047UF	50V					C4,C6,C11
5	1	CAP-0.1UF	CAPACITOR, NON-POLARIZED,	0.1UF						C10
6	1	CAP-0.33UF-400V	CAP, 0.33UF 400WV							C1
7	1	CAP-1000PF	CAPACITOR, NON-POLARIZED,	1000PF						C3
8	1	CAP-150PF	CAPACITOR, NON-POLARIZED,	150PF						C7
9	1	CAP-220UF-ELEC	CAPACITOR, POLARIZED,	220UF	25V					C2
10	1	CAP-330PF-CER	CAPACITOR, NON-POLARIZED,	330PF						C5
11	1	DIODE-1N4004	DIODE,	1N4004						D1
12	6	DIODE-1N4148	DIODE,	1N4148						D2,D3,D4,D5,D6,D7
13	1	IND-VAR-120KHZ-X10	IND, X10 TUNEABLE RF COIL							L1
14	1	MOV-275V	MOV, 275V TRIP							VR1
15	1	RELAY-SPST-110VAC								K1
16	1	RES-100-2W	RES, 100-OHM, 2W							R12
17	1	RES-100K	RESISTOR,	100K						R6
18	1	RES-100K-1/2W	RESISTOR,	100K		1/2W				R11
19	1	RES-10K	RESISTOR,	10K						R5
20	1	RES-1K	RESISTOR,	1K						R10
21	2	RES-1M	RESISTOR,	1M						R3,R7
22	1	RES-3.3K	RESISTOR,	3.3K						R9
23	2	RES-330K-1/4W	RESISTOR,	330K		1/4W				R2,R8
24	1	RES-440-1W	RES, 440-OHM, 1W							R1
25	1	RES-68K	RESISTOR,	68K						R4
26	1	TRA-SCR-MCR 100B	TRA, SCR	MCR 100-B						SC1
27	1	ZENER-14V	ZENER,	ZENER	14V					DZ1