



Schematic Symbol	NuTone Part No.	Description
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### MODEL S-2152 FIRE DETECTOR SUPERVISOR PC BOARD

	42449-000	Complete Assembly
	38987-000	Wall Plate
	39209-003	Screw, #6 x 3/8", sltd. pan mounting & wire terminals
	48726-000	Label, installation wiring and testing
	42450-000	PC Board, complete assembly
B301	36117-000	Buzzer, 8 mA @ 12V typical; 450 Hz. Star Micronics CMB-12
D301	36549-000	Silicon Rectifier, 1A 100PIV Type 1N4002
I301	36683-000	LED, RED, 20 mA @ 2.4V, 5PIV CIRCUIT ARMED STATUS Litronix RL4403 Fairchild FLV-160 (Original Production)
I301	36676-000	LED, RED, 20 mA @ 2.4V, 5 PIV CIRCUIT ARMED STATUS Xciton XC556-2 (Later production)
K301	39337-000	Relay, reed, form A; Coil voltage 12VDC nominal; Maximum coil voltage 20Vdc; Coil resistance 960 ohms ± 10%. Contact rating, dry circuit and 500 mA RMS audio @ 6V. New Product Engr. Co. + 118-0003-001
R301	33082-222	Resistor, 2.2K
R302	33082-102	Resistor, 1K
S301	39711-000	Switch, DPTT, 125Vac/dc, 3Aac, .5Adc Stackpole S5123BD03-O
	39674-001	Screws, #6-32 x 1 1/4", wall plate mounting

### MODEL S-2220 DIGITAL DECODER

	42638-000	PC Board, complete assembly
	35282-000	Decoder Mounting Plate
	48755-000	Label, Wiring
	48756-000	Installation Instructions
	48804-000	Homeowners Manual

#### CAPACITORS

C1-C4	.1 uf, 25V,
C5-C6	.05 uf, 25V,
C7	.001 uf,
C8	10 uf, 35 WVDC, Electrolytic
C9	.01 uf,
C10	100 uf, 25 WVDC, Electrolytic
C11	.001 uf,
S12	33 uf, 25 WVDC Electrolytic
C12	25 uf, 25 WVDC, Electrolytic (alternate)

#### DIODES

D1-D4	Zener, 16V ± 5%, 1N4745A
D5-D13	1N4148
D14	Zener, 16V ± 5%, 1N4745A
D15	1N4148
D16	1N4001
D17-19	1N4148
D20	Zener, 16V ± 5%, 1N4745A
D21	1N4001
D22-D24	1N4148

Schematic Symbol	NuTone Part No.	Description
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#### TRANSISTORS

Q1		PNP, 2N4403
Q2-Q3		NPN, 2N4401

#### RESISTORS

R1-R4	33082-103	10K
R5-R8	33082-104	100K
R9	33082-474	470K
R10-R11	33082-105	1M
R12-R14	33082-104	100K
R15-R17	33082-474	470K
R18-R19	33082-274	270K
R20-R24	33082-105	1M
R25	33082-103	10K
R26-R27	33082-474	470K
R28-R30	33082-103	10K
R31-R32	33082-015	15 ohms
R33-R34	33082-105	1M
R35	33082-103	10K
R36	33082-564	560K
R36	33082-474	470K

#### TERMINAL BOARD

14 connector, barrier type, #6 terminals, Magnum 10211

#### INTEGRATED CIRCUITS

Z1		CMOS ANALOG DIGITAL CONTROLLED MULTIPLEXERS/DEMULTIPLEXERS Type 4051B Motorola Type MC14051B RCA Type CD4051B
Z2		DUAL BINARY TO 1-OF-4 DECODER/DEMULTIPLEXER, CMOS Type 4555B Motorola Type MC14555B RCA Type CD4555B
Z3	36666-000	CMOS, QUAD 2-INPUT NAND GATE Type 4011B Motorola Type MC14011B RCA Type CD4011B
Z4	46730-000	CMOS, DUAL TYPE D FLIP-FLOP Type 4013B Motorola Type MC14013B RCA Type CD4013B

### MODEL S-2222 INSIDE DIGITAL REMOTE CONTROL

	42648-000	Keyboard & Housing, complete assembly
	35283-000	Housing
	35285-005	Mounting Plate
	48766-000	Installation Instructions
	39873-000	Keyboard
	39209-005	Screw, terminal wiring, #6 x 3/8"
	47513-000	Tape, mounting double-faced
	42654-000	Hardware, installation, bag assembly
	39877-000	Grommet, rubber
	42651-000	PC Board, complete assembly
B201	42653-000	Buzzer, complete assembly
D201-D213	36549-000	Diode, Silicon Rectifier, 1 A, 100 PIV Type 1N4002
I201	36637-000	LED, GRN, System Status Indicator XCITON XC556-G-2
I202	36636-000	LED, YEL, Interior Circuit Indicator Xciton XC556-Y-2
	0005-S02	Sleeving, LED lead insulation
R201-R202	33101-102	Resistor, 1200 ± 5%, 1/2 W, Carbon Film

Schematic Symbol	NuTone Part No.	Description
<b>MODEL S-2223 OUTSIDE DIGITAL REMOTE CONTROL</b>		
	42649-000	Keyboard and Housing, complete assembly
	35284-000	Housing
	35285-005	Mounting Plate
	48767-000	Installation Instructions
	39819-000	Keyboard
	39209-003	Screw, mounting, #6 x 3/8"
	39687-000	"O" Ring
	39877-000	Grommet, rubber
	42655-000	Hardware, installation, Bag Assembly
	39879-000	Wire Connectors, solderless type
	42650-000	PC Board, humi-sealed, complete assembly
D301-D313	36549-000	Diode, Silicon Rectifier, 1 A, 100 PIV Type 1N4002
I301	36637-000	LED, GRN, System Status Indicator XCITON XC556-G-2
I302	36676-000	LED, RED, Alarm Activated, Timed Entry Indicator XCITON XC556-R-2
	0005-S02	Sleeving, LED lead insulation
R301-R302	33101-681	Resistor, 680 ± 5%, 1/2 W, Carbon Film

#### MODEL S-2226 OUTSIDE REMOTE CONTROL

	42443-000	Complete Assembly
	38983-000	Wall Plate, outdoor
	38984-000	Gasket, installation mounting
	10303-001	Screw, #6-32 x 3/4", slotted oval, mounting
	42444-000	Switch Plate, complete assembly
	31463-001	Screw, #6-32 x 1", PH Rd. Switch Plate mounting
I501	36637-000	LED, GREEN, 10 mA @ 2V (2.8V max) 5PIV SYSTEM STATUS INDICATOR Xciton XC556-G-2
I502	36683-000	LED, RED, 10 mA @ 2.4V, 5PIV ALARM MEMORY BLINKER AND TIMED ENTRY INDICATOR Litronix RL4403 Fairchild FLV-160 (Original production)
I502	36676-000	LED, RED, 10 mA @ 2-2.4VDC 5PIV ALARM MEMORY BLINKER AND TIMED ENTRY INDICATOR Xciton XC556-R-2 (Later production)
R501	33082-391	Resistor, 390
R502	33082-102	Resistor, 1K
S501	34674-000	Switch, TAMPER, plunger type (complete with mounting nuts and terminal screws #5-40 x 3/8")
TB501	39145-000	Terminal Strip, 4-post, wiring solder connection
	42445-000	Envelope Assembly (including installation and mounting screws)

Schematic Symbol	NuTone Part No.	Description
<b>MODEL S-2227 INSIDE REMOTE CONTROL</b>		
	42451-000	Complete Assembly
	38988-000	Wall Plate
	39807-003	Screws, #6 x 3/8" slotted mounting and wiring terminal connections
	39674-001	Screws, #6-32 x 1 1/4", PH, oval, wall plate mounting
	39878-015	Ring Lug
	48785-000	Installation instructions
B401	42452-000	PC Board, complete assembly
	36117-000	Buzzer, 8 mA @ 12V typical, 450 Hz. Micronics CMB-12
D401	36549-000	Diode, Silicon Rectifier, 1A, 100PIV Type 1N4002
I401	36637-000	LED, GREEN, 10 mA @ 2-2.8Vdc, 5PIV SYSTEM STATUS INDICATOR Xciton XC-556-G-2
I402	36636-000	LED, YELLOW, 10 mA @ 2-3Vdc 5PIV INTERIOR CIRCUIT ON/OFF INDICATOR Xciton XC-556-Y-2
R401	33082-391	Resistor, 390
R402	33082-102	Resistor, 1K

#### MODEL S-2228 INSIDE MASTER REMOTE CONTROL

	42494-000	Complete assembly
	42495-000	Control Panel, complete assembly
	35207-000	Control Panel
	35211-000	Control Panel Inlay
	42497-000	Envelope Assembly (includes mounting screws, mounting tape, and cable clamp)
	39807-003	Screw, #6 x 3/8" slt. pan HD, PC board mounting and wiring terminal connectors)
	39878-000	Ring Lug
	48786-000	Installation instructions
	42496-000	PC Board, complete assembly
B601	36117-000	Buzzer, 8 mA @ 12V typical, 450 Hz. Star Micronics CMB-12
D601	36716-000	Diode, Silicon Zener, 3.9V ± 5% Type 1N4730A
H601	36120-000	Horn, alarm 85 DBA @ 10 ft. 100 mA @ 9V nominal Star Micronics SDB-09TS
I601	36712-000	LED, GREEN, 20 mA @ 2.4V, 5PIV AC ON/OFF INDICATOR Litronix GL4950-951
I602-I604	36683-000	LED, RED, 20 mA @ 1.6V EXIT/ENTRY, PERIMETER, and INTERIOR TROUBLE INDICATOR Litronix RL4403 Fairchild FLV-160
I605-I606	36712-000	LED, GREEN, 20 mA @ 2.4V, 5PIV INTERIOR READY and SYSTEM ARMED INDICATOR Litronix GL4950-951
	0003-S10	Sleeving, LED lead insulation
R601	33082-102	Resistor 1K

Schematic Symbol	NuTone Part No.	Description
R602	33101-391	Resistor, 390, 1/2 w, Carbon
S601	34678-000	Switch, DPDT, slide type INTERIOR ON/OFF
S602	34677-000	Switch, DPDT, momentary in EMERGENCY ON

### MODEL S-2252 MASTER CONTROL UNIT

42454-000	Housing Assembly, complete
39606-000	Lock, with hardware
42457-000	PC Control Board, complete assembly

#### CAPACITORS

C1	35055-103	.1 ± 20%, 100V, polyester film
C2	35055-101	.47 ± 20%, 100V, polyester film
C3	35055-103	.1 ± 20%, 100V, polyester film
C4	35055-101	.47 ± 20%, 100V, polyester film
C5	35055-103	.1 ± 20%, 100V, polyester film
C6	35055-101	.47 ± 20%, 100V, polyester film
C7	35055-103	.1 ± 20%, 100V, polyester film
C8	35055-101	.47 ± 20%, 100V, polyester film
C9	35091-102	10 +100%, -10%, 16WVDC, Electrolytic
C10-C11	35100-166	.01 ± 20%, 25V
C12-C13	35055-101	.47 ± 20%, 100V, polyester film (Original production, use when Quad NOR gate used for Z2)
C12-C13	35055-112	.01, 100V, polyester film (Later production, use when Quad Schmitt NAND gate used for Z2)
C14	35055-101	.47 ± 20%, 100V, polyester film
C15-C16	35100-166	.01 ± 20%, 25V
C17-C18	35055-103	.1 ± 20%, 100V, polyester film
C19	35100-166	.01 ± 20%, 25V
C20-C22	35055-103	.1 ± 20%, 100V, polyester film
C23-C24	35100-139	.01 +80%, -20%, 100V
C25	35055-106	.047, 100V, polyester film
C26	35100-166	.01 ± 20%, 25V
C27	35055-108	.015, 100V, polyester film
C28	35091-117	1000 +100%, -10%, 35WVDC, Electrolytic
C29-C30	35055-103	.1 ± 20%, 100V, polyester film
C31-C32	35100-139	.01 +80%, -20%, 100V
C33	35100-171	470 pf
C34	35091-103	4.7 +100%, -10%, 25WVDC, Electrolytic
C35-C36	35100-166	.01 ± 20%, 25V
C37-C38	35055-103	.1 ± 20%, 100V, polyester film
C39	35100-191	.03 ± 20%, 50V

#### DIODES

D1-D5	36639-000	Silicon Zener, 18V ± 10% Type 1N4746 (1N4746A ± 5%)
D6	36549-000	Silicon Rectifier, 1 A, 100 PIV Type 1N4002
D7-D11	36617-000	Silicon Switching, Type 1N914
D12-D14	36549-000	Silicon Rectifier, 1 A, 100 PIV Type 1N4002
D15-D16	Not Used	
D17-D20	36639-000	Silicon Zener, 18V ± 10% Type 1N4746 (1N4746A ± 5%)
D21	Not Used	
D22-D25	36608-000	Silicon Rectifier, 3 A, 200PIV Type 1N5402 Motorola Type MR-5

Schematic Symbol	NuTone Part No.	Description
D26	36549-000	Silicon Rectifier, 1 A, 100 PIV Type 1N4002
D27	36611-000	Silicon Zener, 36V ± 10% Type: 1N5258. Dickson Electronics DZ-730123E
D28	36608-000	Silicon Rectifier, 3 A, 200 PIV Type 1N5402 Motorola Type MR-5

#### FUSES

F1	39664-000	3 Amp, 250 V, Type AGC3
F2-F3	39765-000	1 Amp, 32 V, Type AGW1.0
	39830-000	Clip, fuseholder, PC board mounting

#### INDICATOR LIGHTS (Light Emitting Diodes)

I1	36712-000	LED, GRN, 20 mA @ 2.4 V AC POWER INDICATOR Litronix GS4950-951
I2-I4	36683-000	LED, RED, 20 mA @ 1.6 V Indicator for: EXIT/ENTRY CIRCUIT PERIMETER CIRCUIT INTERIOR CIRCUIT Litronix RL4403 Fairchild FLV-160
	0003-S13	Sleeving, LED lead insulation
I5	35245-000	Lamp, Indicator, short to earth ground, .04 A @ 28 V (Later production, use with 470 ohm R90) GE Type 2287-T Sylvania Type 1918 (Alternate)

#### CONNECTORS

J1	39338-101	Male Jack, 5-post, PC board mounting S-152 Fire Detector Control Connection
J2	39688-000	Male Jack 4-post, PC board mounting S-2228 Remote Control Connection

#### RELAYS

K1	39506-000	SPST, Form A; Nominal Coil voltage 12Vdc ± 33%; Pull-in 8V @ 25°C; Coil resistance 360 (minimum) to 550 ohms; Contact 30 mA to 5A resistive, 2 1/2 A inductive @ 24 Vdc. North Americal Phillips 25B111AE-0120 Dubilier 601-675B series RBM #64-153151-100 series Price Electric 28B111AE-0102 series
K2	39522-000	SPST, Form A, nominal coil voltage 12 Vdc, pull-in 9V @ 25°C; coil 400 ohms ± 10%; Contact 1 A inductive, 2 A resistive @ 12Vdc Sigma Inst. 78RE1-12DC

#### TRANSISTORS

Q1	36613-000	NPN Silicon, Motorola MPS A20 Texas Inst. T1S-98
Q2	36598-000	NPN Silicon Motorola MPS 6532
Q3	36613-000	NPN Silicon, Motorola MPS A20 Texas Inst. T1S-98
Q4	36598-000	NPN Silicon Motorola MPS 6532
Q5	36616-000	NPN Silicon, Power, Voltage Regulator Motorola Type 2N3055

Schematic Symbol	NuTone Part No.	Description
	38994-000	Heat Sink, for Q5
	31990-015	Screw, #4-40, 1/2" PH Pan Machine for mounting heat sink
	39764-000	Washer, insulating shoulder
	11159-003	Nut, hex #4-40
<b>RESISTORS</b>		
R1	33082-222	2.2K
R2	33082-561	560
R3	33082-102	1K
R4	33082-474	470K
R5	33082-104	100K
R6	33082-105	1M
R7-R8	33082-154	150K
R9	33082-104	100K
R10	33082-222	2.2K
R11	Not Used	(Original production)
R11	33082-680	68 (Later production)
R12	33082-102	1K
R13	33082-474	470K
R14	33082-104	100K
R15	33082-105	1M
R16-R17	33082-154	150K
R18	33082-104	100K
R19-R20	33082-102	1K
R21	33082-682	6.8K
R22	33082-102	1K
R23	33082-394	390K
R24	33082-104	100K
R25	33082-105	1M
R26-R27	33082-154	150K
R28	33082-104	100K
R29	33082-102	1K
R30-R31	33082-682	6.8K
R32	33082-474	470K
R33	33082-104	100K
R34	33082-105	1M
R35-R36	33082-154	150K
R37-R39	33082-104	100K
R40	33082-105	1M
R41-R44	33082-395	3.9M
R45-R46	33082-105	1M
R47	33082-104	100K
R48	34058-000	0-750K $\pm$ 20%, 0.1 watt, Carbon, Linear-Taper, Rheostat, ALARM TIMER CONTROL C.T.S. Corp. type X-201
R49	33082-105	1M
R50	33082-474	470K
R51	33082-154	150K
R52-R53	34042-000	0-100K $\pm$ 30%, 0.1 watt, Carbon, Linear-Taper, Rheostat ENTRY TIMER CONTROL EXIT TIMER CONTROL C.T.S. Corp. type X-201
R54	33082-154	150K
R55	33082-105	1M
R56	33082-225	2.2M
R57	33082-822	8.2K
R58	33082-103	10K
R59	33082-102	1K
R60	33082-273	27K
R61	33082-225	2.2M
R62	33082-332	3.3K
R63	33082-273	27K
R64	Not Used	(Original production)
R64	33082-680	68 ohm (Later production)

Schematic Symbol	NuTone Part No.	Description
R66	33028-470	47 ohm $\pm$ 10%, 2 watt, wirewound
R66	33028-102	1K $\pm$ 10%, 2 watt, wirewound
R67	33028-470	47 ohm $\pm$ 10%, 2 watt, wirewound
R68	33082-105	1M
R69	33082-332	3.3K
R70	33082-102	1K (Original production)
R70	33082-152	1.5K (Later production)
R71	33082-224	220K (Original production)
R71	33082-474	470K (Later production)
R72	33082-105	1M
R73-R75	33082-162	1.5K
R76	33082-103	10K
R77	33206-392	3.9K $\pm$ 2%, Metal Film
R78	34081-000	0-15K $\pm$ 30%, 0.1 watt, Carbon Potentiometer 255° rotation, modified log taper REGULATED VOLTAGE ADJUST Piher Corp. type PT15MD C.T.S. type U2015H
R79	33206-472	4.7K $\pm$ 2%, Metal Film
R80	33084-010	1 ohm, 0.5 watt, Carbon Composition
R81	33082-103	10K
R82	33082-104	100K
R83	Not Used	(Original production)
R83	33082-273	27K (Later production)
R84	33082-105	1M (Original production)
R84	33082-474	470K (Later production)
R85	33082-395	3.9M
R86	33082-100	10 ohm (Original production)
R87	33082-561	560
R88-R89	33082-332	3.3K
R90	33082-471	470 (Later production, use with I5)
<b>VARISTORS</b>		
RV1-RV2	36718-000	Varistor, Metal Oxide, 72 VDC, 57 VAC, 200 mW General Electric V100MA4A
<b>TERMINAL BOARD</b>		
TB1	39767-000	Terminal Strip, 24 No. 6-32 screw terminals with clamp washers. Female plug-in female connectors to PC board.
<b>TRANSFORMERS</b>		
T1	30611-000	Power, plug-in type to 120 Vac, 15 A standard duplex outlet. Primary 120 Vac 60 Hz. Secondary 18 Vac @ 1 A (1.5 A @ 16.8 Vac) 20VA. U.L. Listed Class 2 Secondary, short circuit blows one-shot overload protector in 3-minutes. Ault Inc. type 308-2018
<b>INTEGRATED CIRCUITS</b>		
Z1	36625-000	Monolithic Quad Operational Amplifier Motorola Type MC3301P National Semiconductor: LM3900N, LM2900N
Z2	36644-000	CMOS, Quad 2-input NOR Gate (Original production, use only when C12 & C13 are .47 uf.) RCA Type CD4001AE

Schematic Symbol	NuTone Part No.	Description
Z2	36732-000	CMOS, Quad 2-input Schmitt NAND Gate (Late production, must be used when C12 & C13 is .01 uf) Motorola Type MC14093BCP RCA Type CD4093BE
Z3	36644-000	CMOS, Quad 2-input NOR Gate RCA Type CD4001AE
Z4	36661-000	CMOS, Dual 4-input NOR Gate Motorola Type MC14002CP RCA Type CD4002AE
Z5	36633-000	CMOS OSCILLATOR/TIMER Motorola Type M14541CP
Z6	36666-000	CMOS, Quad 2-input NAND Gate Motorola Type MC14011 CP RCA Type CD4011AE
Z7	36630-000	CMOS, Quad 2-input AND Gate Motorola Type MC14081CP Solid State Scientific Type SCL4081AE
Z8	36661-000	CMOS, Dual 4-input NOR Gate Motorola Type MC14002CP RCA Type CD4002AE
Z9	36633-000	CMOS Oscillator/Timer Motorola Type MC14541CP
Z10	36666-000	CMOS, Quad 2-input NAND Gate Motorola Type MC14011CP RCA Type CD4011AE

Schematic Symbol	NuTone Part No.	Description
Z11	36644-000	CMOS, Quad 2-input NOR GATE RCA Type CD4001AE
Z12	Not Used	
Z13	36633-000	CMOS Oscillator/Timer Motorola Type MC14541CP
Z14	36711-000	Voltage Regulator Motorola Type MC1723CP National Semi. Type LM723CN Fairchild Type uA723PC
	39811-000	Socket (Preferred) IC, 14 DIP
	39501-000	Socket (Alternate) IC, 14 DIP
<b>MISCELLANEOUS</b>		
	39247-000	Cable Clamp
	11732-W66	Wire and Plug Assy. Battery plus (+) RED connector
	11731-W31	Wire and Plug Assy. Battery negative (-) BLACK connector
	47105-000	Label, Battery Plus
	47104-000	Label, Battery Negative
	13028-000	Ground Screw
	39680-000	Foot Bumper, door
	48408-000	Homeowners Manual
	48644-000	Installation Instructions
	48537-00A	Operators Label
	42475-000	Door Assembly
	48412-00A	Wirina Label