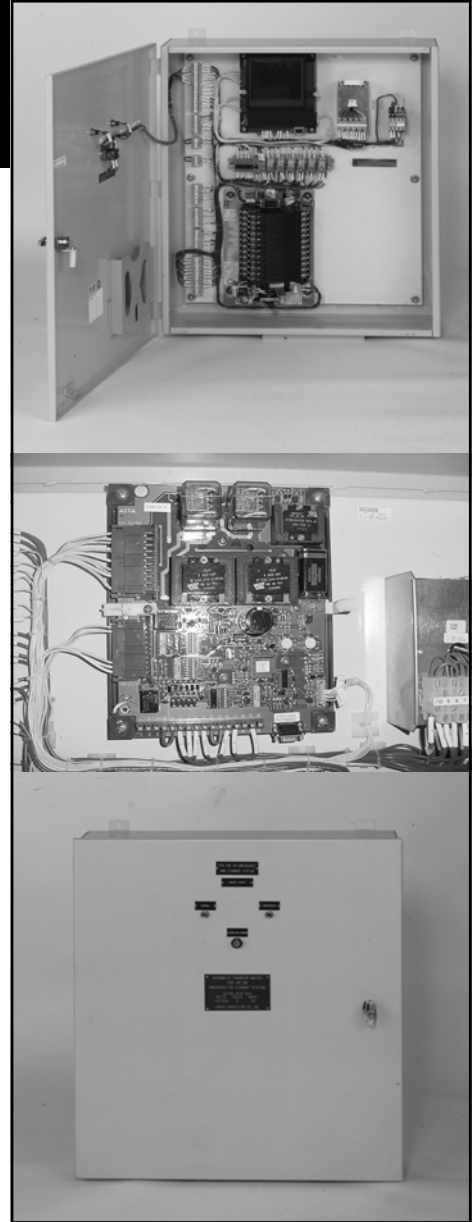


**UC700**  
**EMERGENCY TRANSFER SYSTEM**  
**SPECIFIER'S HANDBOOK**



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# Emergency Automatic Transfer System

## STANDARD SPECIFICATIONS

### 1.0 General

- 1.1 A Branch Circuit Automatic Transfer System with the number of poles, Voltage and Current ratings shall be provided as shown on the accompanying drawings. Each System shall consist of power transfer switches and a control module that are inter-connected so as to provide complete automatic protection.
- 1.2 The system shall comply with the following safety standards:
  - A. ANSI / UL 1008
  - B. ANSI / NFPA 70
  - C. ANSI / NFPA 110
- 1.3 The function of the ATS shall be to transfer critical lighting load branch circuits from dimmers or other secondary control outputs to a second power source, in the event of:
  - A. a loss of power to the dimmer rack or other control devices
  - B. activation of the facility fire alarm
  - C. a Normal system failure
  - D. a panic condition
- 1.4 The system shall be provided with a manual containing the following:
  - A. System Rating
  - B. Code and Standards Compliance
  - C. Theory of Operation
  - D. Installation Instructions
  - E. Testing and Adjustments
  - F. Troubleshooting Guide
- 1.5 Transfer poles shall be provided for the phase and neutral legs of each branch circuit Load.
- 1.6 Remote control stations for the system shall be provided as shown on the drawings.

### 2.0 Enclosure

- 2.1 The ATS shall be mounted in a hinged door, NEMA 1 type enclosure finished bright yellow. Material shall be no less than 14 gauge steel.
- 2.2 An enclosure containing no more than 24 transfer poles shall be 36" H. x 30" W. x 9" D. An enclosure containing from 26 to 48 transfer poles shall be 54" H. x 30" W. x 9".
- 2.3 The enclosure shall be separate and independent of all other equipment. In no instance shall the ATS be enclosed in a dimmer rack or in an enclosure containing other equipment.
- 2.4 The system shall be provided with an approved nameplate mounted on the Front of the enclosure, stating; "FOR USE ON EMERGENCY AND STAND BY SYSTEMS".
- 2.5 The enclosure shall be provided with an approval nameplate indicating that the System is UL 1008 Listed.
- 2.6 The ATS shall contain a recessed Local control station in the enclosure door. This station shall include a key switch and two transfer position indicator LEDs.

### 3.0 Remote Stations

- 3.1 Each remote control station shall contain a three-position key switch. The left and right positions of the switch shall be momentary and the switch shall always return to the center position.
- 3.2 The station faceplate shall be engraved; "NORMAL" for the left switch position; "EMERGENCY" for the right switch position and "AUTO" for the center position.
- 3.3 The faceplate shall contain two LED's for transfer switch position confirmation.
- 3.4 Each remote station shall mount in a standard 2-gang wall box (4" x 4" x 2 1/8").
- 3.5 Remote stations shall not be incorporated into, or mounted onto other equipment.
- 3.6 All wiring to remote stations shall be by 5-conductor Class 2 wiring (24V DC). A terminal strip shall be provided for contractor wiring.

### 4.0 Transfer Switch

- 4.1 The transfer switch unit shall be electrically-operated and mechanically-held. The electrical operator shall be a single solenoid mechanism, momentarily energized to minimize power consumption, noise and heat generation.
- 4.2 The switch shall be positively locked and unaffected by voltage variations or momentary outage, so that contact pressure is maintained at a constant value and temperature rise at the contacts is minimized.
- 4.3 The switch shall be mechanically interlocked to ensure only one of two possible positions – Normal or Emergency.
- 4.4 All of the Switch main contacts shall be silver-plated.
- 4.5 Inspection of all contacts shall be possible from the front of the switch without disassembly of operating linkages or power conductors.
- 4.6 A manual-operating handle shall be provided for backup operation and maintenance purposes. The handle shall permit the operator to stop the contact at any point throughout the entire travel of the contact.
- 4.7 Overload and endurance testing of the transfer switch shall comply with UL 1008 Tables 25.1, 25.2, 27.1, and 27.2 for mixed loads.
- 4.8 The transfer switch shall be rated to withstand the RMS symmetrical short circuit current with the type of over-current protection shown, without welding of the contacts.
- 4.9 Switch contacts shall withstand transfer without welding, with 180° phase displacement between Normal and Emergency power sources, both sources energized and with 100% load.
- 4.10 Transfer switch contacts shall be rated for mixed loads, including: motors, Electric discharge lamps, and tungsten filament lamps.

### 5.0 Logic Control Module

- 5.1 The control module shall direct the operation of the transfer switch.
- 5.2 The module's sensing and logic shall be controlled by a built-in microprocessor for maximum reliability and minimum maintenance.
- 5.3 The control module shall be connected to the transfer switch by an interconnecting wire harness. The harness shall include a keyed disconnect plug to enable the control module to be disconnected from the transfer switch for routine maintenance.

- 5.4 The control module shall be completely enclosed with a protective cover and be mounted separately from the transfer switch unit for safety and ease of maintenance
- 5.5 Sensing and control logic shall be provided on plug-in printed circuit boards, for maximum reliability.
- 5.6 Interfacing relays shall be industrial control grade plug-in type, with dust covers.
- 5.7 The control panel shall meet the voltage surge withstand capability in accordance with IEEE Standard 472-1978 (ANSI C37.90A-1978).
- 5.8 The control panel shall meet the impulse withstand voltage test in accordance with the proposed NEMA Standard ICS 1-109.

## 6.0 **Operation**

- 6.1 The voltage of each phase of the normal source shall be monitored, with pickup adjustable from 85 to 100% and dropout adjustable from 75 to 98% of pickup setting. These settings shall be adjustable in increments of 1%. Repetitive accuracy of settings shall be 2% or better over a temperature range of -20°C to 70°C. It is factory set to pickup at 90% and dropout at 85%.
- 6.2 Single-phase voltage sensing of the Emergency source shall be provided with a pickup adjustable from 85 to 100% and dropout fixed at 84 to 86% of pickup. Frequency sensing shall be provided with pickup adjustable from 90 to 100% and dropout fixed at 87 to 89% of pickup. Repetitive accuracy of settings shall be 2% or better over a temperature range of -20° to 70°C. Factory set to pick up at 90%.

The control module shall include four time delays that are field adjustable in increments of at least 13 steps over the entire range, as follows:

Time delay to override momentary Normal source outage, to delay all transfer switch and engine starting signals, adjustable from 0 to 6 sec. Factory set at 1 sec.

Transfer to Emergency time delay, adjustable for 0 to 5 min, is factory set at 0 min.

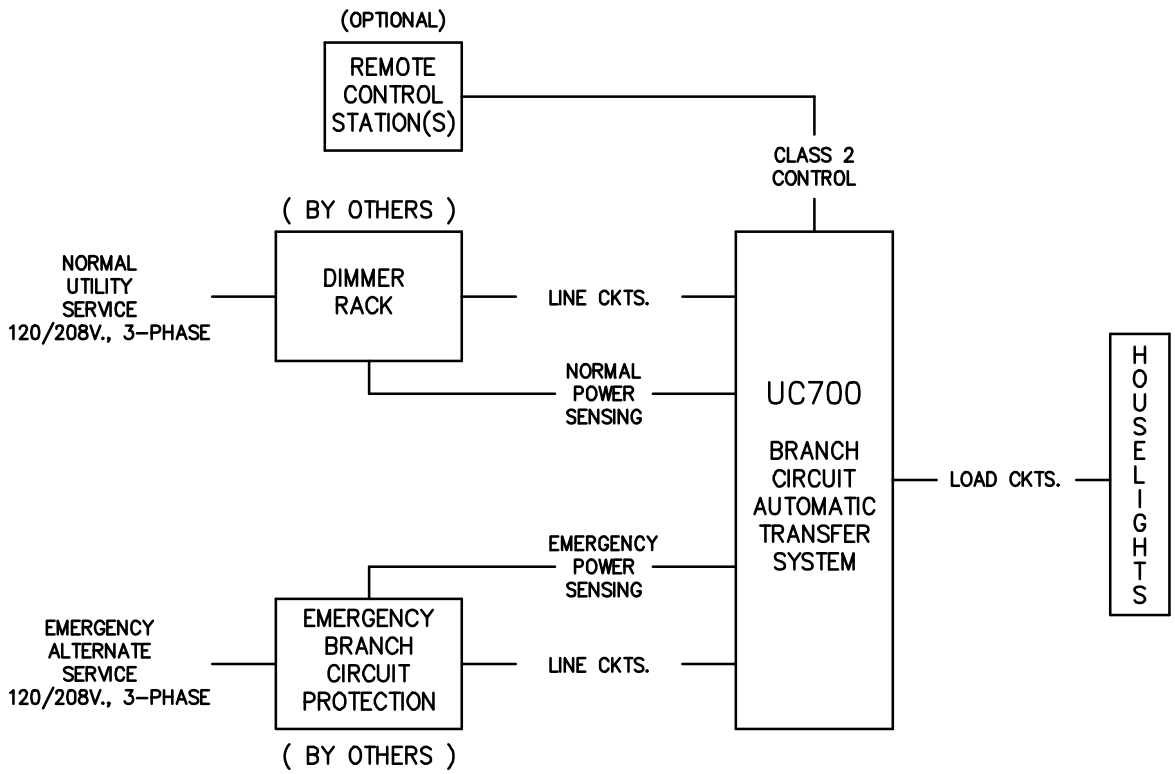
Retransfer to Normal time delay. Time delay is automatically bypassed if Emergency source fails and Normal source is acceptable. Adjustable from 0 to 30 min. Factory set at 1 min.

Unloaded running time delay for Emergency generator cool-down. Adjustable from 0 to 60 min. Factory set at 5 min.

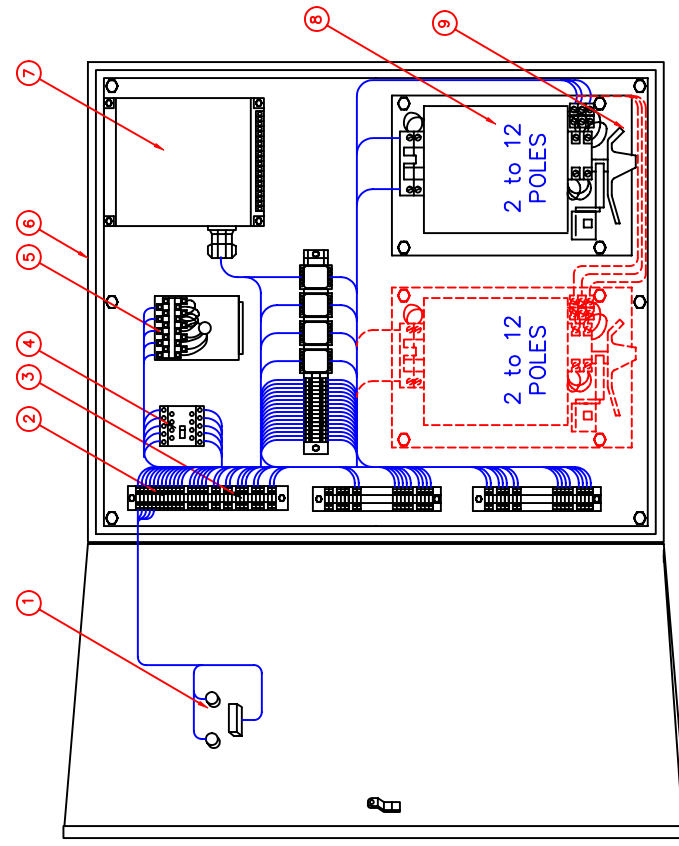
- 6.3 Control power for all logic and transfer functions shall always seek the acceptable Power source. This shall prevent the system from locking up in one position if either of the power sources is available, regardless of the sequence of failure events.
- 6.4 A self-supervising isolated signal input shall be provided for connection to the facility fire alarm. The ATS shall automatically transfer loads to the Emergency power source when the facility fire alarm is activated. 6.6 A key-operated double-throw, momentary test switch shall be provided to manually Control the ATS. All automatic functions shall override this control. Two indicator Lights shall be provided to show the position of the transfer switch.
- 6.5 All automatic functions shall override remote control functions. Any combination of open or shorted wiring to remote stations shall not affect automatic functions, or disable the local switch.

## 7.0 **Manufacturer**

- 7.1 The equipment described is a UC700 as manufactured by Union Connector, West Babylon, NY, 11704.



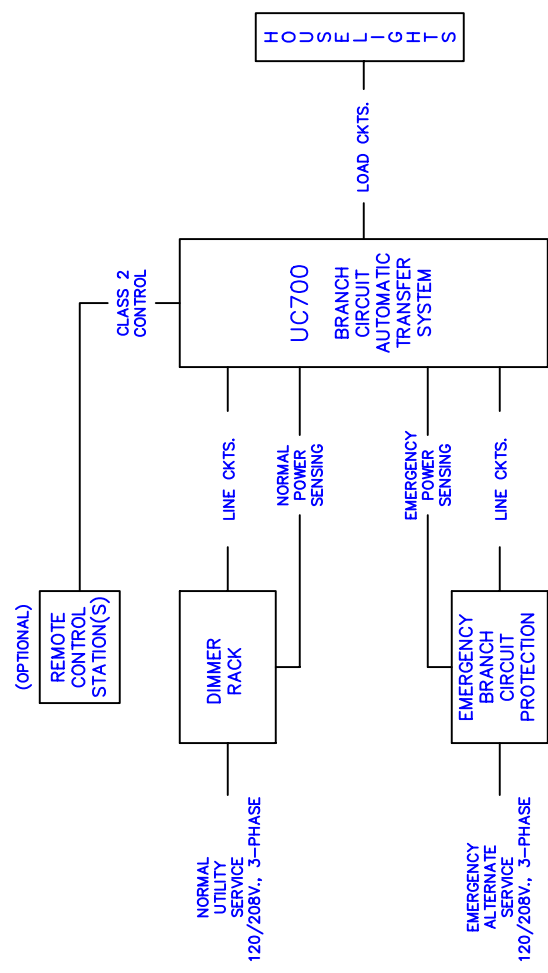
CATALOG No.	POLES	BRANCH BRKRS.	LINE	LOAD	NORMAL SENSE	EMER. SENSE	CONTROL STATION
UC700-0204-02A	4	4	(4) #12	(4) #12	(3) #12	(2) #12	(5) #18
UC700-0206-02A	6	5	(6) #12	(6) #12	(3) #12	(2) #12	(5) #18
UC700-0208-02A	8	6	(8) #12	(8) #12	(3) #12	(2) #12	(5) #18
UC700-0212-02A	12	8	(12) #12	(12) #12	(3) #12	(2) #12	(5) #18
UC700-0214-02A	14	9	(14) #12	(14) #12	(3) #12	(2) #12	(5) #18
UC700-0216-02A	16	10	(16) #12	(16) #12	(3) #12	(2) #12	(5) #18
UC700-0218-02A	18	11	(18) #12	(18) #12	(3) #12	(2) #12	(5) #18
UC700-0220-02A	20	12	(20) #12	(20) #12	(3) #12	(2) #12	(5) #18
UC700-0224-02A	24	14	(24) #12	(24) #12	(3) #12	(2) #12	(5) #18



DIMENSIONS: 36" H. x 30" W. x 9" D.

**KEY**

1. LOCAL CONTROL STATION
2. REMOTE STATION TERMINALS
3. CONTRACTOR CONNECTION TERMINALS
4. CONTROL POWER TRANSFER RELAY
5. DUAL SOURCE POWER SUPPLY
6. NEMA 1 ENCLOSURE
7. LOGIC CONTROL PANEL
8. TRANSFER SWITCH
9. MANUAL OPERATION HANDLE



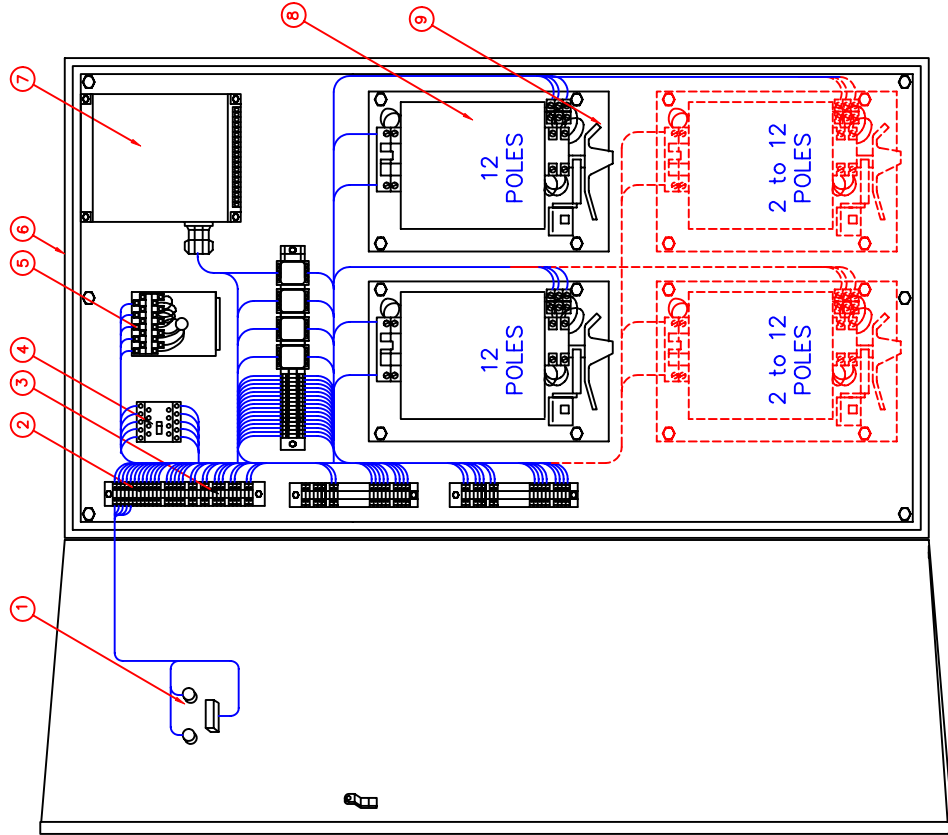
**UNION CONNECTOR Co., Inc.**  
 40 DALE ST. WEST BABYLON, NY 631-753-9550

<b>SCALE:</b> N. T. S.	<b>CATALOG NUMBER</b>	<b>DRAWN BY:</b> RW
<b>DATE:</b> 7/1/04	<b>SEE CHART</b>	<b>REVISED:</b>
<b>UC700™</b>		
SYSTEM DIAGRAM		
2-CIRCUIT TO 12-CIRCUIT		
<b>DRAWING NUMBER</b> UC7424		

**NOTES:**

1. BRANCH CIRCUIT AUTOMATIC TRANSFER SYSTEM (BATS) SHALL COMPLY WITH ANSI/NFPA 110, LEVEL 1 EQUIPMENT REQUIREMENTS.
2. COMPLETE SYSTEM SHALL BE IN A SEPARATE ENCLOSURE.
3. COMPLETE SYSTEM SHALL BE LISTED TO UL STANDARD UL1008.
4. SYSTEM SHALL BE THE UNION CONNECTOR UC700 SERIES.

CATALOG No.	POLES	BRANCH BRKRS.	LINE	LOAD	NORMAL SENSE	EMER. SENSE	CONTROL STATION
UC700-0226-02A	26	15	(26) #12	(26) #12	(3) #12	(2) #12	(5) #18
UC700-0228-02A	28	16	(28) #12	(28) #12	(3) #12	(2) #12	(5) #18
UC700-0230-02A	30	17	(30) #12	(30) #12	(3) #12	(2) #12	(5) #18
UC700-0232-02A	32	18	(32) #12	(32) #12	(3) #12	(2) #12	(5) #18
UC700-0236-02A	36	20	(36) #12	(36) #12	(3) #12	(2) #12	(5) #18
UC700-0238-02A	38	21	(38) #12	(38) #12	(3) #12	(2) #12	(5) #18
UC700-0240-02A	40	22	(40) #12	(40) #12	(3) #12	(2) #12	(5) #18
UC700-0242-02A	42	23	(42) #12	(42) #12	(3) #12	(2) #12	(5) #18
UC700-0244-02A	44	24	(44) #12	(44) #12	(3) #12	(2) #12	(5) #18
UC700-0248-02A	48	26	(48) #12	(48) #12	(3) #12	(2) #12	(5) #18

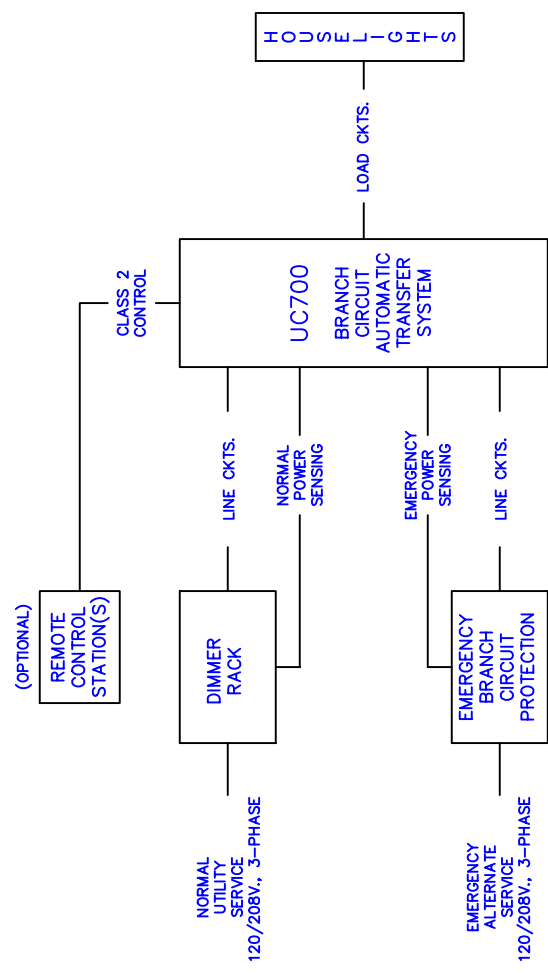


DIMENSIONS: 54" H. x 30" W. x 9" D.

- KEY**
1. LOCAL CONTROL STATION
  2. REMOTE STATION TERMINALS
  3. CONTRACTOR CONNECTION TERMINALS
  4. CONTROL POWER TRANSFER RELAY
  5. DUAL SOURCE POWER SUPPLY
  6. NEMA 1 ENCLOSURE
  7. LOGIC CONTROL PANEL
  8. TRANSFER SWITCH
  9. MANUAL OPERATION HANDLE

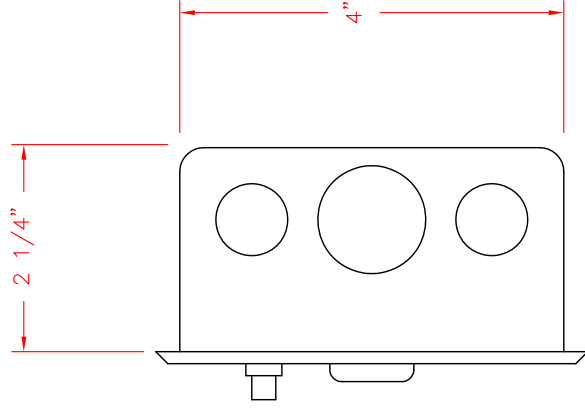
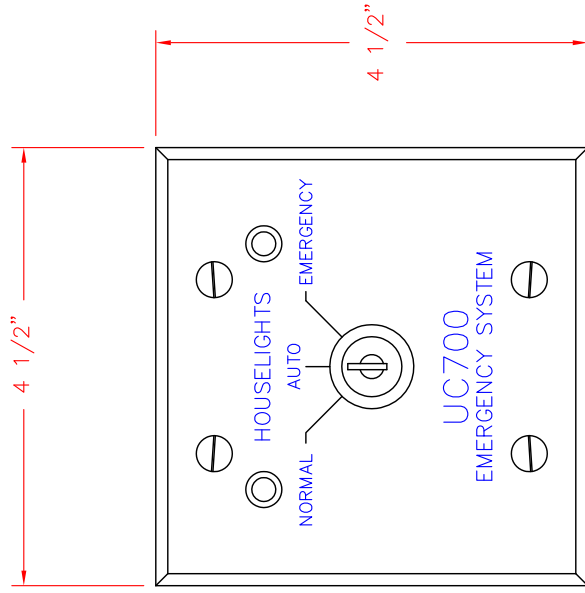
**NOTES:**

1. AUTOMATIC TRANSFER SYSTEM SHALL COMPLY WITH ANSI/NFPA 110, LEVEL 1 REQUIREMENTS.
2. COMPLETE SYSTEM SHALL BE IN A SEPARATE ENCLOSURE.
3. COMPLETE SYSTEM SHALL BE LISTED TO UL STANDARD UL1008.
4. SYSTEM SHALL BE THE UNION CONNECTOR UC700 SERIES.




**UNION CONNECTOR Co., Inc.**  
 40 DALE ST. WEST BABYLON, NY 631-753-9550

<b>SCALE:</b> N.T.S.	<b>CATALOG NUMBER</b>	<b>DRAWN BY:</b> RW	<b>REVISED:</b>
<b>DATE:</b> 3/1/04	SEE CHART		
<b>UC700™</b>			
SYSTEM DIAGRAM		<b>DRAWING NUMBER</b>	
13-CIRCUIT TO 24-CIRCUIT		UC72648	



- SPECIFICATIONS:
1. SWITCHPLATE TO BE STAINLESS STEEL, 2-GANG WALLPLATE.
  2. ENCLOSURE TO BE 4" SQUARE STEEL 2-GANG WALL BOX.
  3. ALL TEXT TO BE ENGRAVED AND PAINT FILLED.
  4. KEYSWITCH TO BE A DOUBLE-THROW, MOMENTARY CONTACT TYPE. (2) KEYS PROVIDED.
  5. INDICATOR LIGHTS TO BE:
    - RED - EMERGENCY
    - GREEN - EMERGENCY
  6. TERMINAL STRIP TO BE PROVIDED FOR CONTRACTOR CONNECTION.

 <b>UNION CONNECTOR Co., Inc.</b> 40 DALE ST. WEST BABYLON, NY 631-753-9550	SCALE: N.T.S.	CATALOG NUMBER	DRAWN BY: RW
	DATE: 7/1/04	UC700-RCS-1A	REVISED:
UC700			
REMOTE CONTROL STATION		DRAWING NUMBER UC7RCS1A	