Applications Cookbook
Omnistat3 (RC500) Hospitality Thermostat & Guestroom Control
Version 4.0

FOR REFERENCE ONLY
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1. Refer to installation instructions for device-specific terminations
2. Refer to RC500 installation manual for HVAC connection instructions
3. Line feed 120/230/277VAC, 60Hz
4. Line feed shall not be connected to the RC500 Thermostat
5. All wiring on terminals 1-8 for the RC500 is 24VAC. Wiring to pin header is dry contact only.
6. Ground not shown. Ground devices per applicable national and local codes and best practices.
7. For emergency power situations, illustrations assume transfer switch by others upstream of shown devices
8. Line voltage load not to exceed contact rating per device specifications
9. Power packs receiving separate feeds for switched loads and self power must have both feeds on the same phase
10. All low-voltage loads not to exceed contact rating per device specifications
11. Maximum run length for analog wiring is 1,000' @ #18 AWG
12. Sensors wired in parallel will cause line voltage relay closure when occupancy is detected by any unit
   Devices in series requiring contact closure from a single device, (clock input, demand response, emergency, etc.) must follow these wiring conventions: first device in sequence provides the +V to the triggering relay; signal from closure attached to all devices in sequence input; com from first device in sequence attached to com on all devices in sequence
13. Ultrasonic ceiling mount sensors should be located a minimum of six (6) feet from HVAC supply/return vents
14. Trough-mounted, pendant mounted and pendant-mounted indirect lighting sources affect the operation of locally mounted sensors. Contractor is responsible for adjusting sensor locations to allow for proper operation.
15. Contractor is responsible for proper sensitivity and time delay settings for non-adaptive products, following the manufacturer’s recommended placement, and field verification of circuits with respect to power pack placement
16. Contractor is responsible for coordinating the operational options of sensors and power packs with the specific work requirements:
   - Work relevant energy code requirements affect circuits to be controlled and their control characteristics
   - One power pack is required for each controlled circuit
17. Refer to power pack data sheet for output and installation guide for maximum number of sensors connected to a power pack
   - If multiple circuits are to be controlled by a sensor, auxiliary relays may be used in conjunction with a power pack
18. Ceiling sensors mounted over doorways should be placed one (1) foot inside the threshold
19. Up to 100 Mark VII style ballasts may be controlled per daylighting zone by miniZ™
20. All relays shown in de-energized state
21. Individually cap off unused leads
22. One-line parenthesis use:
   (x) - Function 
   (#) - Terminal
23. Plug load control—commercial receptacle P/Ns:
   Standard duplex:
   - Split control (1 outlet) CR015-1PX, CR020-1PX
   - Full control (2 outlets) CR015-2PX, CR020-2PX
   Decora:
   - Split control (1 outlet) 16252-1PX, 16352-1PX
   - Full control (2 outlets) 16252-2PX, 16352-2PX

DRAWING SYMBOLS

- No connection
- Connection

Devices wired in parallel

DRAWING ABBREVIATIONS

LC  LumaCan
LV  Low voltage
HV  High voltage switch (maintained)
LVM Low voltage switch (momentary)- equal to Leviton 1081 (toggle) or Leviton 56081 (Decora)
LVT  Low voltage switch (maintained)-equal to Leviton 12021-2 (toggle) or Leviton 56021-2 (Decora)
LV2 IRC low voltage switch
UON Unless otherwise noted
BLK  Black
WHT  White
BLU  Blue
YEL  Yellow
ORG  Orange
VIO  Violet
BRN  Brown
NOTES:

1. Minimum system requirements for automated occupancy/vacancy room control:
   - OmniStat 3 (RC300), Door/window sensor, (LUMINA Series)
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER—LUMINA RF AND KEY CARD SWITCH (OPTION 1)

RESTRICTIONS: SYSTEMS THAT WILL NOT WORK WHEN HVAC TERMINAL 1 USED:
- TWO SPEED HEAT PUMP (3 STAGE HEAT / 2 STAGE COOL)
- SINGLE STAGE CONVENTIONAL (1 STAGE HEAT/ 1 STAGE COOL) WITH 3 SPEED FAN
- TWO STAGE CONVENTIONAL (2 STAGE HEAT/ 2 STAGE COOL)
- SINGLE SPEED HEAT PUMP (2 STAGE HEAT/ 1 STAGE COOL) WITH 2 SPEED FAN
- 2 PIPE WITH 3 SPEED FAN
- 4 PIPE WITH 3 SPEED FAN

NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL
   OMNISTAT 3 (RC500), HARD-WIRED KEYCARD SWITCH (HK3WP)
NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
   OMNISTAT 3 (RC500), HARD-WIRED KEYCARD SWITCH (KSWP)
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER WITH DIMMING—
LUMINA RF AND HARDWIRED MAIN DOOR CONTACT (OPTION 1)

RESTRICTIONS: SYSTEMS THAT WILL NOT WORK WHEN HVAC TERMINAL 1 USED:
• TWO SPEED HEAT PUMP (3 STAGE HEAT / 2 STAGE COOL)
• SINGLE STAGE CONVENTIONAL (1 STAGE HEAT / 1 STAGE COOL)
  WITH 3 SPEED FAN
• TWO STAGE CONVENTIONAL (2 STAGE HEAT / 2 STAGE COOL)
• SINGLE SPEED HEAT PUMP (2 STAGE HEAT / 1 STAGE COOL)
  WITH 2 SPEED FAN
• 2 PIPE WITH 3 SPEED FAN
• 4 PIPE WITH 3 SPEED FAN

NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
   GMH2-1AT (RC500), HARDWIRED MAIN ENTRANCE DOOR SENSOR/SWITCH
NOTES:
1. WIRING SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL
   CONNECT TO 3 (RC300), HARD-WIRED MAIN ENTRANCE DOOR SENSOR/SWITCH.
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER WITH DIMMING—LEVNET RF 902 MHz

NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
   OMNISTAT 3 (RC500), HARD-WIRED KEYCARD SWITCH (HKSWP)
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER—
LUMINA RF AND KEY CARD SWITCH (WITH ADDITIONAL BATTERY POWERED LUMINA RF SENSORS)

NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
   OMNISTAT 3 (RC500), HARD-WIRED KEYCARD SWITCH (HKSWP)
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER—
LUMINA RF AND KEY CARD SWITCH WITH HARDWIRED BALCONY DOOR CONTACT

RESTRICTIONS: SYSTEMS THAT WILL NOT WORK WHEN HVAC TERMINAL 1 USED:
- TWO SPEED HEAT PUMP (3 STAGE HEAT / 2 STAGE COOL)
- SINGLE STAGE CONVENTIONAL (1 STAGE HEAT / 1 STAGE COOL) WITH 3 SPEED FAN
- TWO STAGE CONVENTIONAL (2 STAGE HEAT / 2 STAGE COOL)
- SINGLE SPEED HEAT PUMP (2 STAGE HEAT / 1 STAGE COOL) WITH 2 SPEED FAN
- 2 PIPE WITH 3 SPEED FAN
- 4 PIPE WITH 3 SPEED FAN

LOW VOLTAGE
24VAC

NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
OMNISTAT 3 (RC500), HARDCORE KEY CARD SWITCH (HR45P)

LEVITON
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER—
LUMINA RF AND HARDWIRED MAIN DOOR CONTACT (OPTION 1)

1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
OMNISTAT 3 (RC500), HARD-WIRED MAIN ENTRANCE SENSOR/SWITCH.

NOTES:
LOW VOLTAGE 24VAC
RC500 HOSPITALITY THERMOSTAT & GUESTROOM MASTER CONTROLLER—LUMINA RF AND HARDWIRED MAIN DOOR CONTACT (OPTION 2)

1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
   OMNISTAT 3 (RC500), HARD-WIRED MAIN ENTRANCE SENSOR/SWITCH.

RESTRICTIONS: SYSTEMS THAT WILL NOT WORK WHEN HVAC TERMINAL 1 USED:
• TWO SPEED HEAT PUMP (3 STAGE HEAT / 2 STAGE COOL)
• SINGLE STAGE CONVENTIONAL (1 STAGE HEAT / 1 STAGE COOL) WITH 3 SPEED FAN
• TWO STAGE CONVENTIONAL (2 STAGE HEAT / 2 STAGE COOL)
• SINGLE SPEED HEAT PUMP (2 STAGE HEAT / 1 STAGE COOL) WITH 2 SPEED FAN
• 2 PIPE WITH 3 SPEED FAN
• 4 PIPE WITH 3 SPEED FAN

NOTES:
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL:
   OMNISTAT 3 (RC500), HARD-WIRED MAIN ENTRANCE SENSOR/SWITCH.
1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL: OMNISTAT 3 (RC500), HARD-WIRED MAIN ENTRANCE SENSOR/SWITCH.
1. Minimum system requirements for automated occupancy/vacancy room control:
OMNISTAT 3 (RC500), hard-wired main entrance sensor/switch.
1. Minimum system requirements for automated occupancy/vacancy room control:
   OMNISTAT 3 (RC500), hard-wired main entrance sensor/switch.

Restrictions: Systems that will not work when HVAC terminal 1 used:
- Two speed heat pump (3 stage heat / 2 stage cool)
- Single stage conventional (1 stage heat / 1 stage cool) with 3 speed fan
- Two stage conventional (2 stage heat / 2 stage cool)
- Single speed heat pump (2 stage heat / 1 stage cool) with 2 speed fan
- 2 pipe with 3 speed fan
- 4 pipe with 3 speed fan

Notes:
- DO NOT INSTALL ON WALL.
- INSTALL IN TV/PHONE CLOSET.