RCM Room Command Module – New Style

The newly styled RCM Room Command Module is designed for use with LONMARK® compliant space comfort controllers such as the TCU fan coil unit and VMA variable air volume box controllers from Johnson Controls. An LCD display, dial and pushbutton on the front of the module allow the room occupant to view and adjust the space temperature and fan speed. The module will automatically request the temporary occupied (bypass) mode when the dial or pushbutton is moved during unoccupied or standby periods.

The RCM connects directly to the LONWORKS® network and complies with the LONMARK interoperability guidelines for sharing data with other LONMARK compliant network devices. It is available with FTT-10 free topology transceivers or LPT11 link power transceivers, for a twisted-pair physical network configuration.
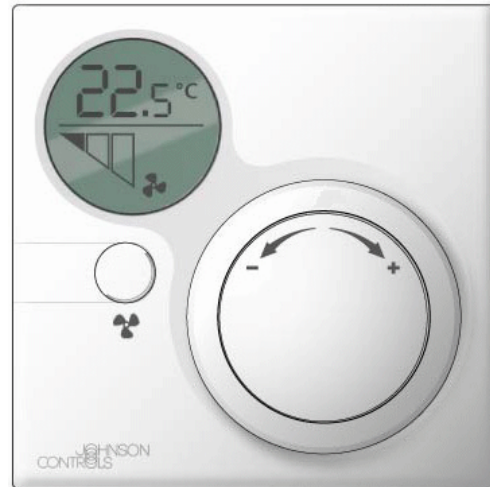

Figure 1: RCM Room Command Module

Features and Benefits	
❑ **Compact display for space comfort data using standard symbols**	Easy to read and understand -- independent of user language.
❑ **One dial and one button for all parameter changes**	Simple and intuitive to use.
❑ **Multiple configuration options to enable or disable display and override functions**	Can be customized for different applications – office areas, hotel rooms, for example.
❑ **Override functions can be reset and disabled from the network**	Remote override of user access from a central control station.
❑ **All options set by LONMARK configuration properties**	Configured with any LONWORKS compatible network tool.
❑ **LONMARK Space Comfort Controller Command Module Profile**	Interoperates with other LONMARK certified devices.
❑ **Option for LPT11 LONWORKS network transceiver**	Ease of installation -- only two wires to connect for network and power.
❑ **Display is back lighted with time out**	Suitable for dimly lit locations.

*E*nvironmental and Comfort Data for the Occupant

The room command module can be configured to normally display one of the following values:

- **Space temperature**

- **Space temperature setpoint**

When the occupant is adjusting the set point dial, the setpoint is always displayed.

If the connected controller controls a fan, the occupant can also view:

- **Fan speed (off, low, medium. high)**

- **Fan mode (AUTO or manual OFF)**

When the controller is in OFF mode, because a window is open for example, the temperature display area will show **OFF**.

The maintenance symbol on the display can be configured to indicate one of the following:

- **Alarm condition from the controller**

- **Condensation on chilled ceiling pipes**

- **Temperature sensor failure**

When the controller is not in occupied mode, the display can be set to a slow blink cycle. Moving the dial or pushbutton will set the controller into **temporary occupied** mode and the display will go steady.

*C*ontrolling Comfort and the Environment

The room command module can also be configured to allow the occupant to adjust or override operating parameters of the connected controller.

Set point adjust

The set point of the controller can be adjusted for a warmer or cooler temperature within the range of ± 3°C (± 5.4°F) or to a specific temperature within a range of values such as 12 to 28°C or 54 to 82°F, as specified in the configuration properties, using the dial on the face of the module.

Fan speed manual override

The user can press the fan pushbutton to change the fan speed. The actual fan status is shown by the speed bars and the **AUTO** symbol disappears to confirm a manual override condition. When the fan is stopped in the manual mode, the **OFF** symbol appears.

Pressing the pushbutton until the **AUTO** symbol appears cancels a manual override and restores automatic fan speed control according to the room temperature and setpoint.

Temporary occupancy button

Outside of the normal occupancy periods, in the evening or on the weekend for example, one touch on the dial or pushbutton will give the occupant comfort conditions for a set period of time. If desired, the display can be configured to slowly blink when the controller is not in occupied or temporary occupied mode.

Centralized lock-out and reset

With a command over the network from a central control station, all user override functions can be locked out and manual overrides reset.

Configuration Options for Customized Control

Depending on the use of the room or the type of building, the requirements for display and override will vary. The RCM has the following configuration options for these different applications.

- **Enable space temperature display**

- **Set point as absolute or warmer/cooler**

- **Enable fan speed display and override**

- **Enable unoccupied display blink**

- **Adjust temporary occupancy period**

- **Select temperature units (°C or °F)**

- **Adjust back light time out**

- **Enable maintenance symbol**

In a standalone application, a user-owned apartment, for example, all features might be enabled. In an office environment with centralized monitoring and control, only the display options may be enabled. In a hotel room functions may be limited to temperature set point and fan speed adjust with an automatic return to default settings when the room is vacated.
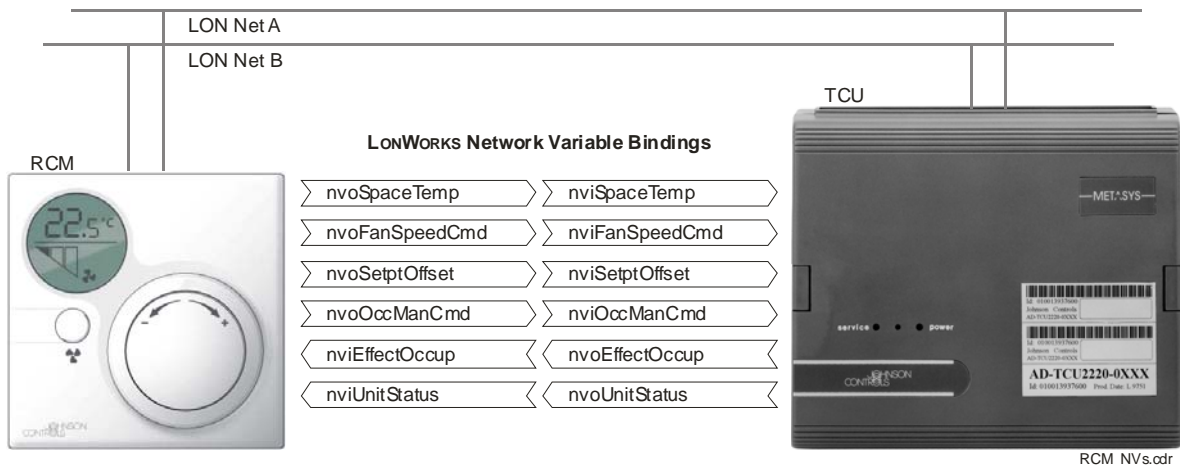

Figure 2: Typical Network Bindings between RCM and TCU controller

Convenient Setup and Commissioning

All setup parameters are available as LONMARK configuration properties and can be set by any LONWORKS compatible network tool. With the CommPro tool from Johnson Controls a record of all parameter changes can be stored in memory or on diskette and can be downloaded to multiple room command modules in one operation.

As the controller is fully LONMARK compliant, it may be connected to any LONWORKS network segment using FTT10 or LPT11 transceivers and configured to communicate with a compatible space comfort controller on the network using any LONWORKS compliant network management tool.

Once configured, commissioned, and connected to a network, the network inputs and outputs may be monitored and the inputs commanded from a Metasys operator workstation or other LONWORKS compatible supervisory device.

The control variables and configuration parameters that are available for interoperability with other LONWORKS compatible devices on the network are listed in tables 1, 2 and 3.

The typical network bindings between the RCM and a TCU controller are shown in Figure 2.

Table 1: RCM Network Variable Inputs

Description	SNVT Name	SNVT Type
Space Temperature Input	nviSpaceTemp	SNVT_temp_p
Restricted Access	nviUserLockout	SNVT_switch
Space Temperature Set Point Input	nviSetpoint	SNVT_temp_p
Effective Occupancy Mode	nviEffectOccup	SNVT_occupancy
Unit Status	nviUnitStatus	SNVT_hvac_status
Condensation Sensor	nviCondensation	SNVT_switch
General Alarm	nviGeneralStatus	SNVT_switch

Table 2: RCM Network Variable Outputs

Description	SNVT Name	SNVT Type
Set Point Output (absolute)	nvoSetpoint	SNVT_temp_p
Space Temperature Output (sends displayed temperature: either valid input from external sensor or value of internal sensor)	nvoSpaceTemp	SNVT_temp_p
Fan Speed Command (auto, off, 1, 2, 3, or variable)	nvoFanSpeedCmd	SNVT_switch
Set Point Offset	nvoSetptOffset	SNVT_temp_p
Manual Occupancy Mode Request	nvoOccManCmd	SNVT_occupancy

SNVT: Standard Network Variable Type

Refer to *LONMARK Interoperability Guidelines* for further details.

Table 3: RCM Configuration Properties

Description	SCPT Name	SNVT Type
Send Heartbeat	cpSndHrtBt	SNVT_time_sec
Minimum Send Time	cpMinOutTm	SNVT_time_sec
Receive Heartbeat	cpRcvHrtBt	SNVT_time_sec
Temperature Sensor Offset	cpOffsetTemp	SNVT_temp_p
Location Label	cpLocation	SNVT_str_asc
Space Temperature Set Point High Limit	cpSetpointHigh	SNVT_temp_p
Space Temperature Set Point Low Limit	cpSetpointLow	SNVT_temp_p
Temporary Occupied Time	cpBypassTime	SNVT_time_min
Fan Configuration	cpFanConfig	UCPT
Set Point Configuration (space temperature set point as absolute or offset [± 3°C])	cpSetptConfig	UCPT
Enable Space Temperature Display (defines if space temperature is shown)	cpSpTempDisplay	UCPT
Temperature Units (temperature display and set point units °C/°F)	cpTempUnits	UCPT
Enable Unoccupied Mode Blink (defines if display blinks in unoccupied and standby modes)	cpUnoccBlink	UCPT
Default Absolute Set Point (on start-up)	cpDefaultSetpt	SNVT_temp_p
Default Restricted Access Status (on start-up)	cpDefLockout	SNVT switch
Enable Lockout All (defines if Restricted Access also clears and locks out bypass mode)	cpLockoutAll	UCPT
Back Light Time Out	cpBackLightTime	SNVT_time_sec
Enable Maintenance Symbol	cpMaintenance	UCPT

SNVT: Standard Network Variable Type

SCPT: Standard Configuration Property Type

UCPT: User Configuration Property Type

Refer to *LONMARK Interoperability Guidelines* for further details.

*O*pen Communications and Interoperability with LONWORKS

The LONWORKS communication capability of the room command module means that it can be used with a LONWORKS compatible controller and integrated into a LONWORKS network in your facility. LONWORKS is an open standard for field communications, and interoperability with other

LONWORKS compatible devices is assured by the LONMARK Interoperability Guidelines. Using the LONWORKS technology in the Johnson Controls Metasys system allows you to integrate third party controllers and devices into a facility-wide management system.

*E*ase of Installation

The room command module has a separable base with wiring terminals. The base is installed first and the power and network wiring can be completed and checked before installing the electronic circuits that are located in the room module cover. This procedure provides the

easiest and safest way to install the control system and avoids accidental damage to the electronic circuits when being mounted in the room on the construction site.

A full range of wall and panel mounting kits are available for the room command module.

Specifications

RCM Room Command Module – New Style

Product Codes	**AD-RCM3205-0**	Room Command Module with FTT-10 Transceiver, 24VAC
	AD-RCM4205-0	Room Command Module with LPT11 Link Power Transceiver
	AD-RCM1200-8900	RCM Service Cable
Power Supply	24VAC or link power from LONWORKS network (see *Product Codes* above).	
	24VAC power (FTT-10): 24VAC ±15%, 50/60 Hz at 40 mA	
	Link power (LPT11) requires 50 mA application current at +5 VDC.	
Ambient Operating Conditions	0 to 50°C / 32 to 122°F	
	10 to 90% RH noncondensing (and max. 30°C / 86°F dew point)	
Ambient Storage Conditions	-20 to 70°C / 0 to 160°F	
	10 to 90% RH noncondensing (and max. 30°C / 86°F dew point)	
Terminations	Terminal block with screw terminals in base for 1.5 mm^2 / 14 AWG (max.) wires.	
Temperature Sensor	NTC Thermistor 0 to 50°C / 32 to 122°F; 10 Kohms at 25°C / 77°F; Accuracy better than ± 0.5°C / ± 0.9°F with a resolution of 0.1°C / 0.2°F.	
	Suitable for residential and commercial office environments only.	
Display and Controls	LCD display with 3 digits and 6 symbols. Dial and pushbutton.	
Communications Interface	FTT-10 (Free Topology) or LPT11 (Link Power) Transceiver for LONWORKS network (see *Product Codes* above).	
Network Variable Interface	LONMARK Space Comfort Control Command Module Profile (Reference 80.90)	
Mounting	Direct surface mount. Plastic base for surface mount with wiring conduits, recessed wall box and panel mounting kits available on request.	
Housing	Material: ABS + polycarbonate, self-extinguishing VO UL94. Protection: IP30 (IEC529)	
Dimensions (H x W x D)	80 mm x 80 mm x 35 mm / 3.15 x 3.15 x 1.4 inches	
Shipping Weight	0.2 kg / 7 oz.	
Standards Compliance	CE Directive 89/336/EEC: EN 50081-1/EN61000-6-3, EN 50082-2/EN61000-6-2, FCC Class A LONMARK Certification	
Agency Listings	UL916 and CUL Listed	

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products, and reserves the right to change or supplement the contents of this publication.

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