MERLIN NX Room Controller

Product Data

CENTRA LINE
by Honeywell

Fig. 1. MERLIN (without optional covers)

GENERAL

The MERLIN NX (CLEM-RxxN) family of room controllers provide flexible, freely programmable, demand-led control that delivers tangible benefits to reduce energy spends and drives new levels of functionality and efficiency in today's buildings. With scalable and freely programmable BACnet MS/TP-based room controllers, smart engineering & commissioning tools, and SYLK technology, multiple and flexible configurations can be achieved to address specific applications.

NOTE: When operating MERLIN NX controllers in IP networks, either private (e.g., VPN) networks must be used or protection against the open Internet (e.g., with external firewalls) must be ensured. See "Network Security" on pg. 2.

FEATURES

- Designed to control terminal units such as 2- and 4-pipe fan coil units, chilled ceilings, hydronic, air quality control, and a mix of these applications.
- For complex applications requiring high I/O count.
- Support for 1-3 stage fans, variable fan speed drives (VSDs), thermal, floating, and proportional actuators.
- Dual-loop support allows for 2-room application as well as sunblind application. The controller can handle more than a single room (but the number of available I/Os limits the number of rooms).

Fast binary I/O points for lighting control applications.

  - Blind function block for operation of blinds, shutters, motorized drapes, and motorized windows either manually (pushbutton) or with manual override commands.
  - Light function block supporting ON/OFF, light dimming, ON/OFF with timer, etc.

- Auto Mac-addressing.
- BACnet BTL®-Listed as Advanced Application Controllers (B-ASC) rev 1.14.
- Two housing dimensions and several different I/O versions to match your individual needs.
- 24 VAC and 230 VAC versions.
- Universal mounting options, including terminal covers and color-coded terminals.
- The 230 VAC models feature 24 VAC aux. output voltage, allowing direct connection and powering of field devices.
- Two-wire polarity-insensitive bus interface to connect to Honeywell Sylk wall modules.
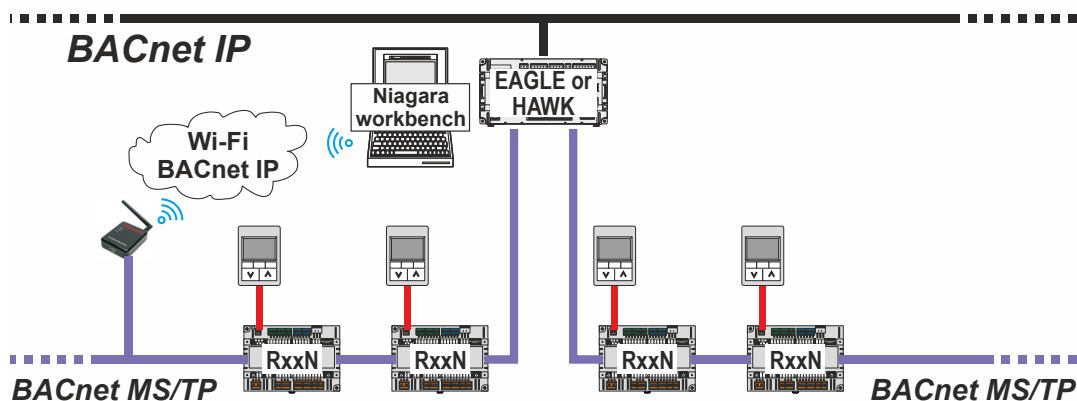- All models have a real-time clock and a supercapacitor for 24-hr data retention.

SYSTEM OVERVIEW

Fig. 2. System overview

EN0Z-1035GE51 R0319

Table 1. Overview of models

	OS no.: CLCM-…	power supply	AOs	UIs	BIs	relays[A]	triacs[B]	total no. of I/Os	remarks
large housing (198 x 110 x 57.5 mm)	RL4N	230 VAC	6	10	0	4	4	24	24-hr data retention
	RL6N	24 VAC	6	10	0	4	4	24	24-hr data retention
	RL8N	230 VAC	6	6[C]	4[D]	4	4	24	24-hr data retention; supports switch inputs with 24 V pull-up for connection of standard light switches; preferred model for light and blinds control
small housing (162 x 110 x 57.5 mm)	RS4N	230 VAC	4	4	0	4	2	14	24-hr data retention
	RS5N	24 VAC	4	4	0	4	2	14	24-hr data retention

[A] See also section "Relay Current Limitations" on pg. 9.
[B] See also section "Triac Current Limitations" on pg. 10.
[C] Of this model's six UIs, only two UIs support NTC; this model is thus not suitable for the hardwiring of wall modules requiring three UIs supporting NTC.
[D] This model's four binary-only inputs are labelled as UI1-UI4.

CPU: 32-bit MK24FN Freescale Kinetis Cortex M4

⚠ **WARNING**

NETWORK SECURITY

Honeywell hereby expressly states that the MERLIN NX controller is not inherently protected against cyber attacks from the Internet and that it is therefore intended solely for use in private, protected networks.

Unprotected Internet connections can expose the MERLIN NX controller to cyber attacks from third parties who can then damage it and connected facility components or cause them to malfunction, or who can misuse it for illegal purposes for which the operator may then be held liable. When directly connected to the Internet, the MERLIN NX controller automatically becomes a potential target for cyber attacks. Corresponding protective measures are therefore essential if safe and reliable operation is to be ensured.

If it is not necessary for the MERLIN NX controller to be accessible from the Internet, it should be isolated from the Internet via a suitable firewall.

If it is necessary for the MERLIN NX controller to be accessible from the Internet (e.g., in order to perform remote maintenance), the use of a coded VPN connection is indispensable. Suitable VPN routers are available from numerous third-party manufacturers in a wide variety of designs, for operation at 230 V or 24 V.

For details, see also MERLIN NX Networking Whitepaper (Product Literature No.: EN2z-1059GE51).

DIMENSIONS AND MOUNTING

Housings

The controller is available in two housing sizes, both conforming to IP20:

- RLxN (large housing):
  W x L x H = 110 x 198 x 59 mm and
- RSxN (small housing):
  W x L x H = 110 x 162 x 59 mm
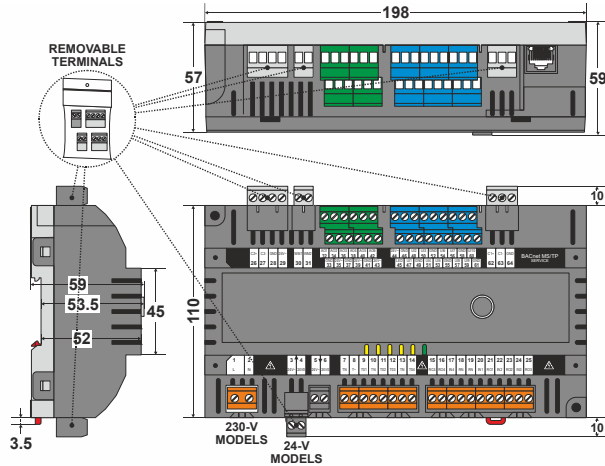
See also Fig. 3 and Fig. 4.
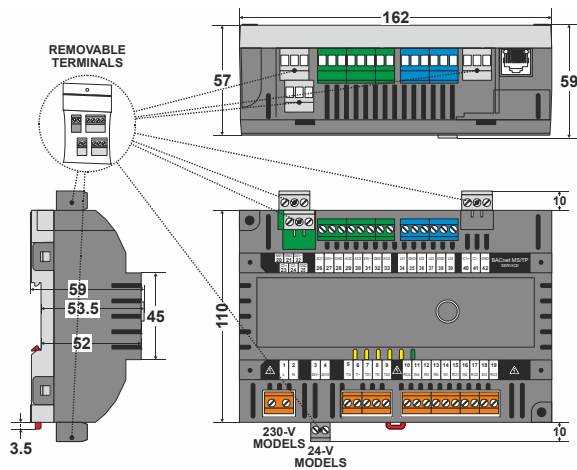

Fig. 3. RLxN dimensions (in mm)

Fig. 4. RSxN dimensions (in mm)

The unit is suitable for mounting on a standard rail, on walls, as well as in wiring cabinets or fuse boxes.

Terminal Protection Covers for IP30

In the case of controllers mounted outside of a cabinet, before applying power to the device, Terminal Protection Covers (10-pc. bulk packs, order no.: IRM-RLC for large housings and IRM-RSC for small housings) must be mounted so as to provide IP30.
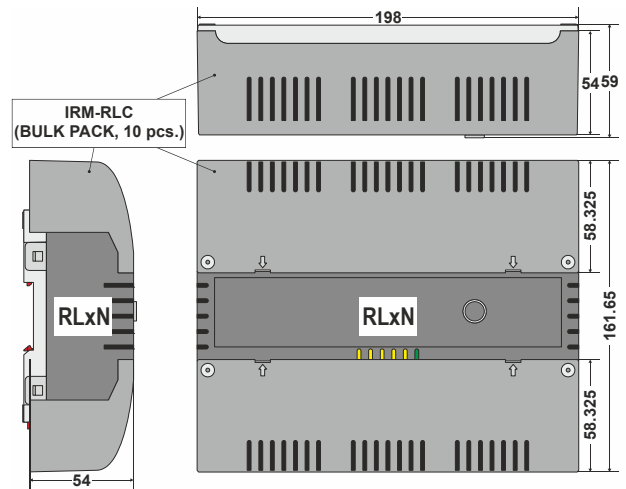

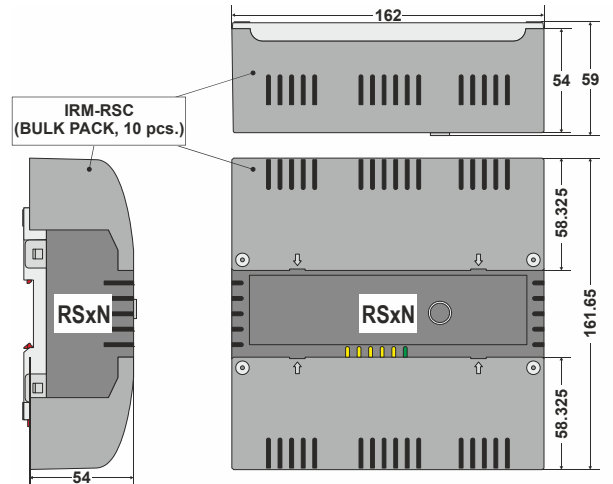**Fig. 5. Large housing, with terminal protection covers, dimensions (in mm)**

Fig. 6. Small housing, with terminal protection covers, dimensions (in mm)

TERMINAL ASSIGNMENT

General

For a complete list of all terminals and a description of their functions, see Table 2 and Table 6.

Communication Interfaces

All models of the controller feature the following communication interfaces:

- A Sylk Bus interface for connection to CLCMTR40x/42x Wall Modules;
- A BACnet MS/TP interface;
- A second RS485 interface for future use with Modbus;
- An RJ45 connector for connection of the BACnet WiFi Adapter.

Table 2. RSxN Room Controller: Overview of terminals and functions

term.	printing	function	RS4N	RS5N
1, 2	"L", "N"	230-V power supply	X	--
3, 4	"24V~", "24V0"	Removable 24-V power supply input and aux. output voltage (24 VAC) for all triacs	X	--
3, 4	"24V~", "24V0"	Aux. output voltage (24 VAC) for all triacs	--	X
5	"TN"	Aux. term. for triac neutral wiring (internally connected with terminal 8)	X	X
6	"T~"	Triac input voltage (24 VAC / 230 VAC) for all triacs; triac-switched	X	X
7	"T01"	Triac-switched output	X	X
8	"TN"	Aux. term. for triac neutral wiring (internally connected with terminal 5)	X	X
9	"T02"	Triac-switched output	X	X
10, 11	"RO4", "IN4"	Output of Relay 4, Input for Relay 4	type 2	type 2
12, 13	"RN", "RN"	Aux. terminals for relay neutral wiring	X	X
14, 15	"IN1", "RO1"	Input for Relay 1, Output of Relay 1	type 1	type 1
16, 17	"IN2", "RO2"	Input for Relay 2, Output of Relay 2	type 1	type 1
18, 19	"IN3", "RO3"	Input for Relay 3, Output of Relay 3	type 1	type 1
20, 21	"WM1", "WM2"	Removable interface for Sylk Bus	X	X
22, 23, 24, 25	"24V~", "C2+", "C2-", "24V0"	Aux. power (24 VAC ±20%, 50/60 Hz) + RS485 Modbus interface + corresp. GND	--	--
26	"AO1"	Analog Output 1	type 2	type 2
27	"24V~"	24 VAC power for field devices	X	X
28	"GND"	Ground for AOs	X	X
29	"AO2"	Analog Output 2	type 1	type 1
30	"AO3"	Analog Output 3	type 1	type 1
31	"24V~"	24 VAC power for field devices	X	X
32	"GND"	Ground for AOs	X	X
33	"AO4"	Analog Output 4	type 1	type 1
34	"UI1"	Universal Input 1	type 1	type 1
35	"GND"	Ground for UIs	X	X
36	"UI2"	Universal Input 2	type 1	type 1
37	"UI3"	Universal Input 3	type 1	type 1
38	"GND"	Ground for UIs	X	X
39	"UI4"	Universal Input 4	type 1	type 1
40, 41, 42	"C1+", "C1-", "GND"	Removable BACnet MS/TP interface and corresponding GND	X	X
Relay output types: See Table 3. Universal input types: See Table 3. Analog output types: See Table 4.				

Table 3. Relay output types and characteristics

	type 1 (standard)	type 2 (high in-rush current)
corresponding ROs of RSxN	RO1, RO2, RO3	RO4
corresponding ROs of RLxN	RO2, RO3	RO1, RO4
contact	N.-O.	N.-O.
min. load	5 VAC, 100 mA	24 VAC, 40 mA
switching voltage range	15 … 253 VAC	15 … 253 VAC
max. continuous load at 250 VAC (cos φ = 1)	4 A	10 A
max. continuous load at 250 VAC (cos φ = 0.6)	4 A	10 A
in-rush current (20 ms)	--	80 A
usage	fan motor	light switching and fan motor

NOTE: The max. sum load of all relay currents at the same time is 14 A.

Table 4. Universal input types and characteristics

	type 1	type 2	type 3
	UI1, UI2, UI3, UI4, UI5, UI6	UI7, UI8, UI9, UI10	UI1, UI2, UI3, UI4 (RL8N, only)
dry contact (closed: res. <10 kΩ; open: res. > 20 kΩ; max. 0.2 Hz; pull-up voltage: 10 V)	X	X	--
dry contact (closed: res. <10 kΩ; open: res. > 20 kΩ; max. 0.2 Hz; pull-up voltage: 24 V)	--	--	X
fast binary (=counter) input (max. 30 Hz; pulse ON = min. 16 ms; pulse OFF = min. 16 ms; closed: voltage < 1 V; open: voltage > 5 V; pull-up voltage: 10 V)	X	X	--
fast binary (=counter) input (max. 30 Hz; pulse ON = min. 16 ms; pulse OFF = min. 16 ms; closed: voltage < 1 V; open: voltage > 5 V; pull-up voltage: 24 V)	--	--	X
0(2) … 10 V	X	X	--
NTC20kΩ	X	--	--
SetPoint and FanSpdSW (from CLCM1T,2T,4T,5T,6T111)	X	--	--
NTC10kΩ	X	--	--
PT1000 + Ni1000TK5000	--	X	--

Table 5. Analog output types and characteristics

	type 1	type 2	type 3	type 4	type 5
output voltage	0…11 V				
output current	0…1 mA	0…5 mA	0…10 mA	0…20 mA	-1…+1 mA
min. accuracy	±150 mV				
max. ripple	±100 mV				
accuracy at zero point	0…200 mV				±150 mV

Table 6. RLxN Room Controllers: Overview of terminals and functions (by model)

term.	printing	function	RL4N	RL6N	RL8N
1, 2	"L", "N"	230-V power supply	X	--	X
3, 4	"24V~", "24V0"	Removable 24-V power supply input	--	--	--
3, 4	"24V~", "24V0"	Aux. output voltage (24 VAC) for all triacs	--	X	--
5, 6	"24V~", "24V0"	Aux. output voltage (24 VAC) for all triacs	X	X	X
7	"TN"	Aux. terminal for triac neutral wiring (internally connected with terminals 10 + 13)	X	X	X
8	"T~"	Triac input voltage (24 VAC / 230 VAC) for all triacs; triac-switched	X	X	X
9	"T01"	Triac-switched output	X	X	X
10	"TN"	Aux. terminal for triac neutral wiring (internally connected with terminals 7 + 13)	X	X	X
11	"T02"	Triac-switched output	X	X	X
12	"T03"	Triac-switched output	X	X	X
13	"TN"	Aux. terminal for triac neutral wiring (internally connected with terminals 7 + 10)	X	X	X
14	"T04"	Triac-switched output	X	X	X
15	"RC4"	Not used.	--	--	--
16, 17	"RO4", "IN4"	Output of Relay 4, Input for Relay 4	type 2	type 2	type 2
18	"RN"	Aux. terminal for relay neutral wiring	X	X	X
19	"RN"	Aux. terminal for relay neutral wiring	X	X	X
20, 21	"IN1", "RO1"	Input for Relay 1, Output of Relay 1	type 2	type 2	type 2
22, 23	"IN2", "RO2"	Input for Relay 2, Output of Relay 2	type 1	type 1	type 1
24, 25	"IN3", "RO3"	Input for Relay 3, Output of Relay 3	type 1	type 1	type 1
26, 27, 28, 29	"C2+", "C2-", "24V0", "24V~"	Not used.	--	--	--
30, 31	"WM1", "WM2"	Removable interface for Sylk Bus	X	X	X
32	"AO1"	Analog Output 1	type 3	type 3	type 4
33	"GND"	Ground for AOs	X	X	X
34	"AO2"	Analog Output 2	type 3	type 3	type 3
35	"24V~"	24 VAC power for field devices	X	X	X
36	"AO3"	Analog Output 3	--	type 1	type 5
37	"GND"	Ground for AOs	--	X	X
38	"AO4"	Analog Output 4	--	type 1	type 5
39	"24V~"	24 VAC power for field devices	--	X	X
40	"AO5"	Analog Output 5	--	type 1	type 1
41	"GND"	Ground for AOs	--	X	X
42	"AO6"	Analog Output 6	--	type 1	type 1
43	"24V~"	24 VAC power for field devices	--	X	X
44	"24V~"	24 VAC power for field devices	X	--	X
45	"LED"	Output to LED of CLCM4T,5T,6T111	X	--	X
46	"GND"	Ground for UIs	X	X	X
47	"UI1"	Universal Input 1	type 1	type 1	type 3 (BI)
48	"UI2"	Universal Input 2	type 1	type 1	type 3 (BI)
49	"GND"	Ground for UIs	X	X	X
50	"UI3"	Universal Input 3	type 1	type 1	type 3 (BI)
51	"UI4"	Universal Input 4	type 1	type 1	type 3 (BI)
52	"GND"	Ground for UIs	X	X	X
53	"UI5"	Universal Input 5	type 1	type 1	type 1
54	"UI6"	Universal Input 6	type 1	type 1	type 1
55	"GND"	Ground for UIs	X	X	X
56	"UI7"	Universal Input 7	--	type 2	type 2
57	"UI8"	Universal Input 8	--	type 2	type 2
58	"GND"	Ground for UIs	--	X	X
59	"UI9"	Universal Input 9	--	type 2	type 2
60	"UI10"	Universal Input 10	--	type 2	type 2
61	"GND"	Ground for UIs	--	X	X
62, 63, 64	"C1+", "C1-", "GND"	Removable BACnet MS/TP interface and corresponding GND	X	X	X
Relay output types: See Table 3. Universal input types: See Table 3. Analog output types: See Table 4.					
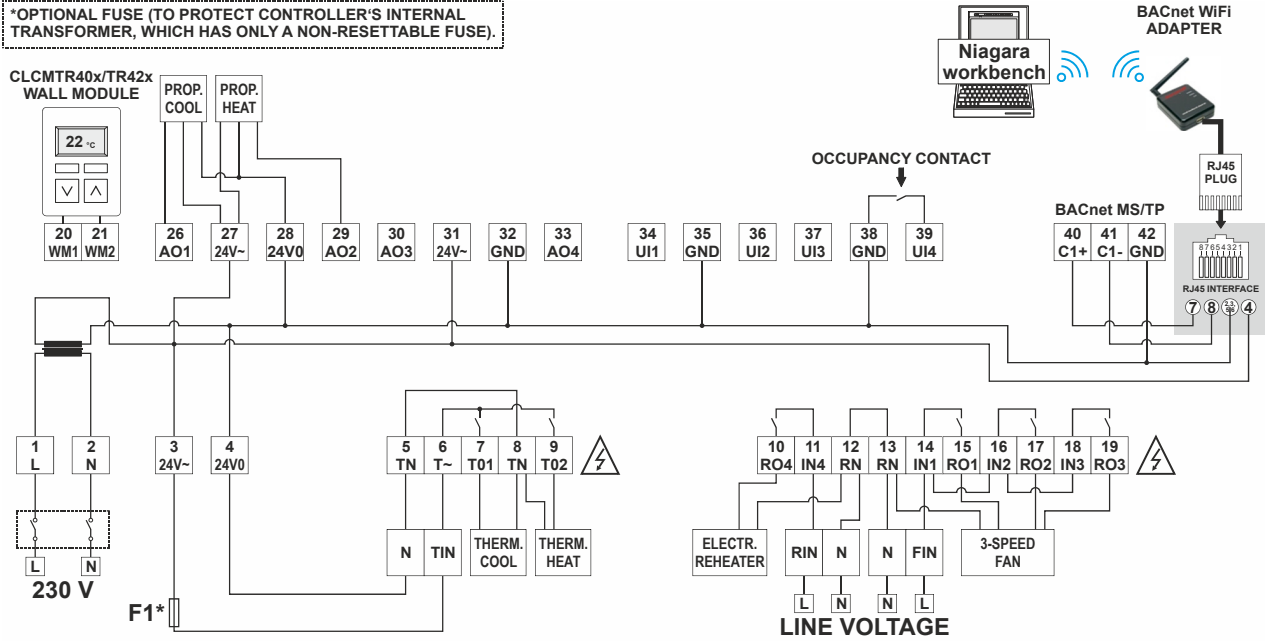
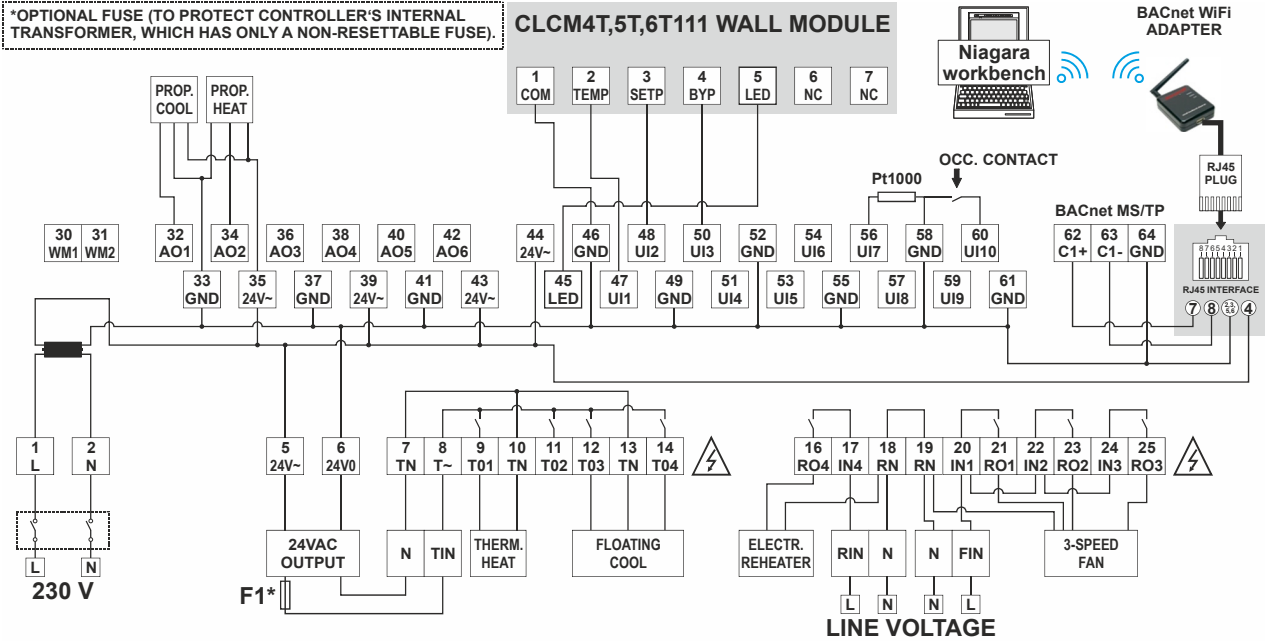**Fig. 7. RS4N example wiring (230-V model)**

Fig. 8. RL4N example wiring (230-V model)

ELECTRICAL DATA
RL4N, RL8N, RS4N (230 VAC)

Power via terminals 1 + 2: 230 VAC +10% / -15%, 50/60 Hz.

Max. power consumption (when unloaded): 8 W.

Max. power consumption (when loaded): 18 W.

The controller is "unloaded" when it has no external load. Thus, the only load on the controller is the inherent load (8 W) of the electronics, themselves. The heat dissipation then amounts to 8 W. The controller is "loaded" when – besides the inherent load – an additional sum load resulting from max. **300 mA** (irrespective as to whether it is supplied by the controller's internal transformer or by an external source) is applied to the 24 VAC output terminals. The max. unloaded output voltage at terminals 3 and 4 (RSxN) or terminals 5 and 6 (RLxN), respectively, is 33 VAC (typically: 29.5 VAC).

RL6N, RS5N (24 VAC)

Power via terminals 3+4: 24 VAC ±20%, 50/60 Hz.

Max. current consumption (when unloaded): 300 mA.

Max. current consumption (when loaded): 900 mA.

The controller is "loaded" when – besides the inherent load (300 mA) – an additional sum load resulting from max. **600 mA** is applied to the 24 VAC output terminals. The max. unloaded output voltage at terminals 3 and 4 (RSxN) or terminals 5 and 6 (RLxN), respectively, is identical with the output voltage of the external supplying transformer.

FREELY PROGRAMMABLE APPLICATIONS

All models can be used with applications which the application engineer can freely program for each controller. This process is performed on a PC on which the Niagara software program has been installed.

Supported Actuators

The application supports a variety of actuators.

- Analog 0(2)…10 V
- Floating
- PWM
- Staged actuators
- 6-way valve actuators

Supported Sensors

A variety of sensors (e.g., room temperature sensors, supply temperature sensors, condensation switch, window sensors, occupancy sensors, card readers, etc.) may be used to optimize control quality.

Applications

Applications (e.g., light and blind control) requiring a fast (20 ms) reaction time can be implemented as event-based applications.

Automatic MAC Addressing

In contrast to many other MS/TP controllers, the MERLIN NX controller features automatic MAC addressing. There is thus no need to manually set the MAC address.

OPERATOR INTERFACES
LEDs

The controller features the following LEDs:

Fig. 9. Controller LEDs

Table 7. Description of LED behaviors

symbol	color	function, description
T2	yellow	Not used
R2	yellow	Not used
T1	yellow	LED indicating transmission of communication signals via the BACnet MS/TP interface
R1	yellow	LED indicating reception of communication signals via the BACnet MS/TP interface.
⚠	yellow	Status LED indicating firmware problems, hardware problems, etc.
⏻	green	Power LED indicating firmware problems, hardware problems, etc.

Service Button

The controller's Service Button is used to trigger dedicated events.

COMMUNICATION INTERFACES
BACnet MS/TP Interface

The controller features an RS485 interface (RLxN: terminals 62, 63, and 64; RSxN: terminals 40, 41, and 42) suitable for BACnet MS/TP communication. The terminal block containing it is black. The cable length affects the baud rate. See Table 8.

Table 8. Baud rate vs. max. cable length

baud rate	max. cable length (L)
9.6, 19.2, 38.4, 57.6, and 76.8 kbps	1200 m
115.2 kbps	800 m

For information on wire gauge, max. permissible cable length, possible shielding and grounding requirements, and the max. number of devices which can be connected to a bus, refer to standard EIA-485.

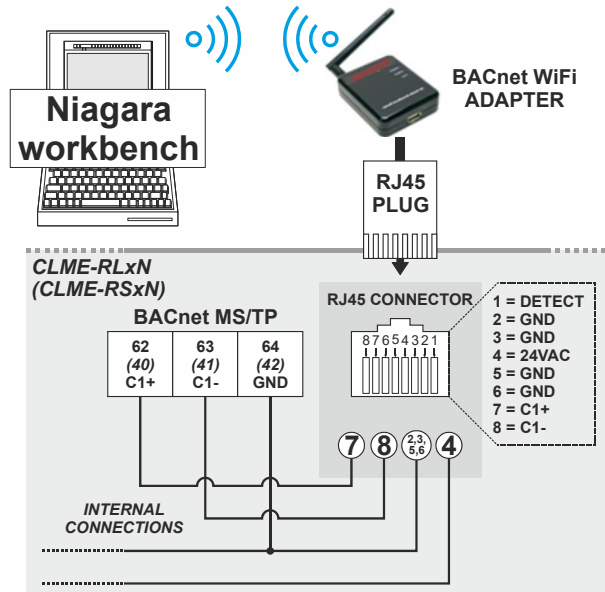## RJ45 Connector for BACnet WiFi Adapter

Fig. 10. RJ45 interface and BACnet WiFi Adapter

⚠ CAUTION

It is permitted to connect *only* the BACnet WiFi Adapter to this RJ45 connector. Do *not* connect IP!

A BACnet WiFi Adapter can be connected to the controller's RJ45 connector in order to establish wireless communication with a PC with Niagara workbench so that the application engineer can commission the controller.

NOTE: When the BACnet WiFi Adapter is connected to the controller's RJ45 connection, it is powered by the controller. It is then prohibited to simultaneously power the BACnet WiFi Adapter via a wall adapter. When, on the other hand, the BACnet WiFi Adapter is instead connected to the controller's BACnet MS/TP interface, it is prohibited to simultaneously use an RJ45 plug; instead, the BACnet WiFi Adapter must then be powered by a wall adapter (standard 5-V USB wall adapter with micro USB connector).

Wall Modules

The CLCMTR40x / TR42x Wall Modules can be used in conjunction with the controller to perform room temperature sensing, setpoint adjustment, fan speed manual override, and occupancy override.

I/O TERMINALS

⚠ CAUTION

Failure to observe the following max. permissible current outputs of the power output terminals will result in damage to the device.

Max. Current Output of Power Output Terminals of 230 VAC Controllers

The 24 VAC power output terminals of the 230 VAC RLxN controllers are terminals 5, 6, 35, 39, 43, and 44 plus pin 4 of the controller's RJ45 interface. Two of these terminals (typically: 5 and 6) will be used to supply the triacs.

The 24 VAC power output terminals of the 230 VAC RSxN controllers are terminals 3, 4, 27, and 31 plus pin 4 of the controller's RJ45 interface. Two of these terminals (typically: 3 and 4) will be used to supply the triacs.

Regardless of whether the triacs are supplied by the controller's internal transformer or by an external source, the max. permissible combined current output of the aforementioned 24 VAC power output terminals is 300 mA (or 320 mA for max. 2 minutes).

Consequently, if only those two 24 VAC power output terminals used to supply the triacs already have the max. permissible combined current output of 300 mA (or 320 mA for max. 2 minutes), then the current output of the remaining 24 VAC power output terminals must, of course, equal zero.

Max. Current Output of Power Output Terminals of 24 VAC Controllers

The 24 VAC power output terminals of the 24 VAC RLxN controllers are terminals 5, 6, 35, 39, 43, and 44 plus pin 4 of the controller's RJ45 interface.

The 24 VAC power output terminals of the 24 VAC RSxN controllers are terminals 3, 4, 22, 23, 24, 25, 27, and 31 plus pin 4 of the controller's RJ45 interface.

The max. permissible combined current output of these 24 VAC power output terminals is 300 mA.

Relay Outputs

⚠ CAUTION

Mixing of different voltages (e.g., 24 V and 230 V) within the relay block is not allowed.

The terminal blocks containing the controller's relay outputs are orange. Relay output types: See Table 3.

NOTE: If inductive components are to be connected to the relays and if these relays switch more often than once every two minutes, these components must be prevented from causing harmful interference to radio or television reception (conformance with EN 45014).

Relay Current Limitations

If the triacs are supplied with current from an external source, then a maximum of two relays may be loaded with a max. of 4 A per relay – even if two triacs are each simultaneously loaded with max. 300 mA.

If the triacs are supplied with current from an internal source, a maximum of two relays may be loaded as follows: a max. load of 4 A for a relay serving a fan and a max. load of 10 A for a relay serving a reheat – even if one triac is simultaneously loaded with 300 mA.

Triac Outputs

NOTE: Recommended fuse (F1): 1.25 A time-lag fuse (IEC). User must consider the correct voltage and max. breaking capacity / interrupting rate (line voltage urgently requires high breaking capacity / interrupting rate).

The terminal blocks containing the controller's triac outputs are orange.

These triac outputs can be used for a variety of different functions, e.g., for connection to either a floating drive or to a thermal actuator. Once the triac outputs have been programmed, the corresponding devices can then be connected to them directly.

NOTE: The VC6983 actuator is intended for use at relay outputs, only and must not be used at the controller's triac outputs.

Triac Current Limitations

The max. allowed current with which the ensemble of a controller's triacs may be loaded is dependent upon whether the given model is powered with 24 VAC or with 230 VAC (and, in the case of models powered with 230 VAC, upon whether the outputs are supplied by the controller's internal transformer or by an external current supply). Specifically:

▪ In the case of 24 VAC models, the ensemble of a controller's triacs may be loaded with 600 mA.

▪ In the case of the 230 VAC models, if the triacs are supplied with 24 VAC current by the controller's internal transformer, the ensemble of a controller's triacs may be loaded with 300 mA (or 320 mA for a max. of 2 minutes); when supplied by an external source, this value is doubled.

However, regardless of whether the triacs are supplied internally or externally, a single triac must never be loaded with a current of more than 300 mA (320 mA for max. 2 minutes).

Nevertheless, the ensemble of triacs can be loaded for very short periods of time (on the order of milliseconds) with a current on the order of 2500 mA typically encountered when switching on multiple thermal actuators.

Universal Inputs

The terminal blocks containing the controller's universal inputs are blue. Universal input types: See Table 4.

The universal inputs are protected against voltages of max. 29 VAC and 30 VDC (due to, e.g., miswiring).

Bias Resistors

Each universal input is equipped with one bias resistor.

Analog Outputs

The terminal blocks containing the controller's analog outputs are green. Analog output types: See Table 5.

The analog outputs of the RLxN controllers (large housing) are protected against voltages of max. 29 VAC and 30 VDC (due to, e.g., miswiring).

NOTE: Connecting 24 VAC to any analog output of the RSxN controller (small housing) will damage the hardware.

Free I/O Option

The limitations – including model-dependent limitations – apply.

TROUBLESHOOTING

All units feature a Status LED, Power LED, and Service Button for commissioning and troubleshooting. See also sections "LEDs", and "Service Button".

Check if the Status LED's behavior is changed if you switch the power OFF/ON. Please contact Honeywell if this does not solve the problem.

ACCESSORIES

Terminal Protection Cover

Required for wall mounting. Bulk pack, set of ten covers.

- For LARGE controllers, order no.: **IRM-RLC**

- For SMALL controller, order no.: **IRM-RSC**

APPROVALS, CERTIFICATIONS, AND STANDARDS

Approvals and Certifications

- UL 60730-1, Standard for Automatic Electric Controls for Household and Similar Use, Part 1: General Requirements;
- CAN/CSA-E60730-1:02, Standard for Automatic Electrical Controls for Household and Similar Use, Part 1: General Requirements;
- Complementary listing for UL916, CSA C22.2 No. 205;
- BTL-listed, BACnet ASC profile;
- SASO-approved;
- CE-approved;
- FCC part 15B-compliant.

Classification according to EN 60730-1

EN 60730 sub part:	EN 60730-2-9
Environmental conditions:	For use in home (residential, commercial, and light-industrial) environments
Construction:	Independently mounted electronic control unit with fixed wiring; panel-mounted on DIN rail
Action:	type 1.C
Rated impulse voltage:	230 V circuits: 2500 V 24 V circuits: 500 V
Pollution degree:	2
Protection against shock:	Class 0 (without terminal cover) Class II (with terminal cover)
Software class:	A

Classification according to EN 60529

(Degree of protection provided by enclosures)

IP20. In the case of controllers mounted outside of a cabinet, before applying power to the device, Terminal Protection Covers (10-pc. bulk packs, order no.: IRM-RLC for large housings and IRM-RSC for small housings) must be mounted so as to provide IP30.

Ambient Environmental Limits

5…95% r.H., non-condensing

Operating temperature (floor/ceiling mounting):	0 … +40 °C
Operating temperature (wall/rail mounting):	0 … +50 °C
Storage temperature:	-20 … +70 °C

Trademark Information

BACnet™ is a trademark of ASHRAE Inc.