Part #: | Date: | Project:

R SERIES
RELAY PANEL

OVERVIEW

The NexLight™ R Series relay control panel provides ON/OFF control of lighting and/or receptacle loads using world class 20A mechanically latching relays. These lighting control panels come in a NEMA/Type 1 enclosure (3R available) and are factory wired in NexLight's UL508A shop. NexLight panel mounted system components are controlled via a dual processor CPU with an astronomical timeclock function. The easy-to-use Graphic User Interface (GUI) may be accessed through a Personal Computer (PC) for real-time programming, monitoring, and override of controlled loads on the NexLight system. The scheduling function is also accessed through the GUI and provides the end user with full control of the system whether on-site or from a remote location. Networking multiple panels together using the global addressing feature provides seamless control from a single platform.

FEATURES

- **20A Mechanically Latching Relays**
- **Graphic User Interface through a PC**
- **Networkable via Ethernet**
- **BACnet connectivity for BMS available via NXL-BMS accessory panel**
- **Built-in Real-Time-Clock (RTC) for scheduling**

SPECIFICATIONS

Physical

NEMA/Type:	1 (3R available, add -3R to part number)
Mounting:	Surface Mount (suitable for Plenum Mount)
Operating Temperature:	14° to 122°F (-10°C to 55°C)

Electrical (Control Wiring)

Output Signal:	±24VAC, 500mA
Input Signal:	24VAC, Class II
Ethernet:	10/100 Ethernet TCP/IP Modbus TCP (BACnet via NXL-BMS) Requires UPT Cable Category 5 or greater Connection via PoE Port not Allowed
Max # of units:	250 (Ethernet)

Relays

UL/cUL Listed:	20A 300 VAC Ballast 20A 300/347 VAC General Use 16A 300 VAC Electronic Ballast ½ HP 110-125 VAC Motor 1½ HP 220-277 VAC Motor

ADDITIONAL ACCESSORIES

NXL-OPC:	Outdoor Photocell Integration Panel, Remote Mounting (8"H x 8"W x 4"D)
NXL-00P5:	Dimming Expansion, (8) Channels of 0-10 Dimming (100mA Sinking per Channel) (8"H x 8"W x 4"D)
NXL-AVI:	A/V Integration, (8) Dry Contact Inputs (8"H x 8"W x 4"D)
NXL-BMS:	BACnet Protocol Conversion Panel for Building Management System (BMS) Integration (12"H x 12"W x 6"D)
NXL-AMP:	Amplifier Panel for NexLight Data Bus, Supports an additional 485 mA of system devices (12"H x 12"W x 6"D)

**See individual accessory specification sheet for more information

NexLight, Inc. | 7877 College Road, Suite 105, Baxter, MN 56425
218-828-3700 | www.nexlight.com

NXL-R8i

Alternate Available Part Numbers:
NXL-R8a

Included Components

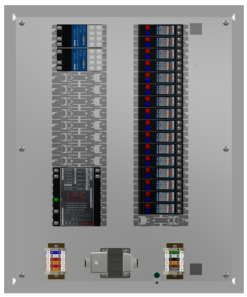
8	CRC7000 20 Amp Relays
1	CRC1201 IPC$_1$
1	CRC2180 Relay Controller
1	TR-5024 Transformer
1	TB-2-6-6 Terminal Block Assembly
1	PA-240-1 Panel Assembly

Physical Specifications

NEMA/Type:	1 (3R available, add -3R to part number)
Mounting:	Surface Mount
Dimensions:	24.00"H x 20.00"W x 6.00"D
Weight:	54 lbs 11 oz
Addresses Available:	256
Addresses Used:	8
mA Available:	450
mA Draw:	2
Operating Temperature:	14° to 122°F (-10°C to 55°C)

1 Alternate System Devices Available;
Reference Part Number Information Table

NXL-R16i



Alternate Available Part Numbers:
NXL-R16a

Included Components

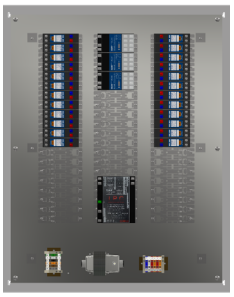
16	CRC7000 20 Amp Relays
1	CRC1201 IPC$_1$
2	CRC2180 Relay Controller
1	TR-5024 Transformer
1	TB-2-6-6 Terminal Block Assembly
1	PA-240-1 Panel Assembly

Physical Specifications

NEMA/Type:	1 (3R available, add -3R to part number)
Mounting:	Surface Mount
Dimensions:	24.00"H x 20.00"W x 6.00"D
Weight:	58 lbs 2 0z
Addresses Available:	256
Addresses Used:	16
mA Available:	450
mA Draw:	4
Operating Temperature:	14° to 122°F (-10°C to 55°C)

1 Alternate System Devices Available;
Reference Part Number Information Table

NXL-R24i



Alternate Available Part Numbers:
NXL-R24a

Included Components

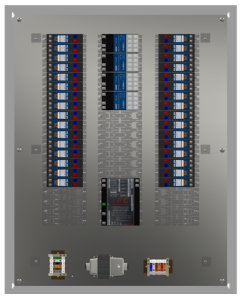
24	CRC7000 20 Amp Relays
1	CRC1201 SPC$_1$
3	CRC2180 Relay Controller
1	TR-5024 Transformer
1	TB-2-6-6 Terminal Block Assembly
1	PA-300-1 Panel Assembly

Physical Specifications

NEMA/Type:	1 (3R available, add -3R to part number)
Mounting:	Surface Mount
Dimensions:	30.00"H x 24.00"W x 6.00"D
Weight:	86 lbs 3 oz
Addresses Available:	256
Addresses Used:	24
mA Available:	450
mA Draw:	6
Operating Temperature:	14° to 122°F (-10°C to 55°C)

1 Alternate System Devices Available;
Reference Part Number Information Table

NXL-R32i



Alternate Available Part Numbers:
NXL-R32a

Included Components

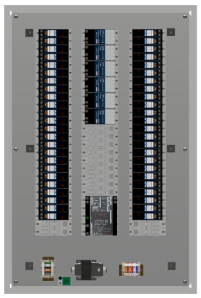
32	CRC7000 20 Amp Relays
1	CRC1301 SPC$_1$
4	CRC2180 Relay Controller
1	TR-5024 Transformer
1	TB-2-6-6 Terminal Block Assembly
1	PA-300-1 Panel Assembly

Physical Specifications

NEMA/Type:	1 (3R available, add -3R to part number)
Mounting:	Surface Mount
Dimensions:	30.00"H x 24.00"W x 6.00"D
Weight:	89 lbs 10 oz
Addresses Available:	256
Addresses Used:	32
mA Available:	450
mA Draw:	8
Operating Temperature:	14° to 122°F (-10°C to 55°C)

1 Alternate System Devices Available;
Reference Part Number Information Table

NXL-R48i



Alternate Available Part Numbers:
NXL-R48a

Included Components

48	CRC7000 20 Amp Relays
1	CRC1201 SPC[1]
6	CRC2180 Relay Controller
1	TR-5024 Transformer
1	TB-2-6-6 Terminal Block Assembly
1	PA-360-1 Panel Assembly

Physical Specifications

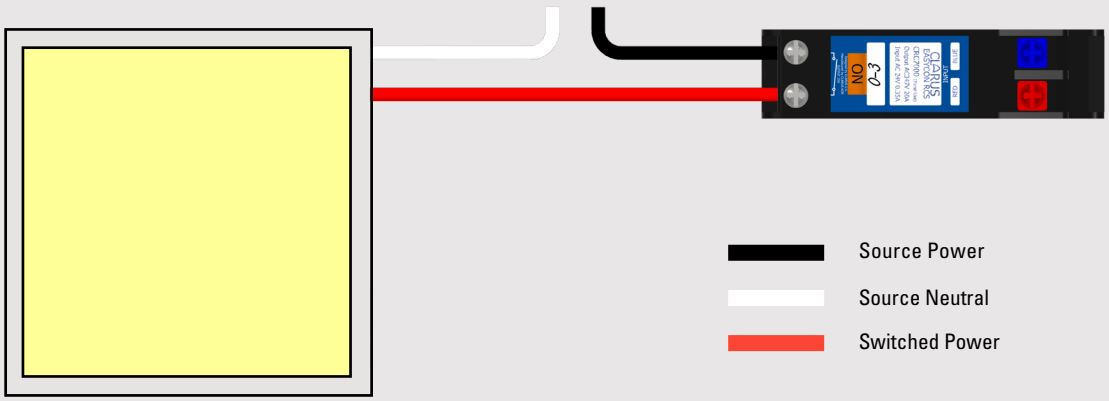
NEMA/Type:	1 (3R available, add -3R to part number)
Mounting:	Surface Mount
Dimensions:	36.00"H x 24.00"W x 6.00"D
Weight:	99 lbs 2 oz
Addresses Available:	256
Addresses Used:	48
mA Available:	450
mA Draw:	12
Operating Temperature:	14° to 122°F (-10°C to 55°C)

1 Alternate System Devices Available;
Reference Part Number Information Table

PART NUMBER INFORMATION TABLE

Part Number Information		
Example Used:	NXL-R8i	
(R) R Series Panel	(8) 20A Relays	(i) System Device CRC1301
Available Relay Quantities for the R Series Panels: 8, 16, 24, 32, 48		
Available System Devices for the R Series Panels: (i) CRC1201, (a) CRC6001*		
Component P/N	Description	Addresses Available
CRC1201	Large Capacity CPU	256
CRC6001	Data Bus Amplifier	0
*Use of the CRC6001 makes the R Series Panel an Auxiliary Panel		

WIRING DIAGRAM



**All wiring colors are for illustrative purposes only. Please adhere to local code and ordinance when selecting appropriate wire insulation colors.

PANEL SELECTION TABLE

PANEL SELECTED	PART #	DESCRIPTION	SYSTEM DEVICE USED	ADDRESSES AVAILABLE
☐	NXL-R8i	8 Relay Panel, Astronomic Timeclock (IPC) (24"H x 20"W x 6"D)	CRC1201	248
☐	NXL-R8a	8 Relay Panel, Astronomic Timeclock (AUX) (24"H x 20"W x 6"D)	CRC6001	0
☐	NXL-R16i	16 Relay Panel, Astronomic Timeclock (IPC) (24"H x 20"W x 6"D)	CRC1201	240
☐	NXL-R16a	16 Relay Panel, Astronomic Timeclock (AUX) (24"H x 20"W x 6"D)	CRC6001	0
☐	NXL-R24i	24 Relay Panel, Astronomic Timeclock (IPC) (30"H x 24"W x 6"D)	CRC1201	232
☐	NXL-R24a	24 Relay Panel, Astronomic Timeclock (AUX) (30"H x 24"W x 6"D)	CRC6001	0
☐	NXL-R32i	32 Relay Panel, Astronomic Timeclock (IPC) (30"H x 24"W x 6"D)	CRC1201	224
☐	NXL-R32a	32 Relay Panel, Astronomic Timeclock (AUX) (30"H x 24"W x 6"D)	CRC6001	0
☐	NXL-R48i	48 Relay Panel, Astronomic Timeclock (IPC) (36"H x 24"W x 6"D)	CRC1201	208
☐	NXL-R48a	48 Relay Panel, Astronomic Timeclock (AUX) (36"H x 24"W x 6"D)	CRC6001	0

PANEL NAME:		IP ADDRESS:	
MOUNTING LOCATION:		SUBNET MASK:	
TRANSFORMER FEED:		DEFAULT GATEWAY:	
PANEL TYPE:	NXL-R8i	PANEL DIMENSIONS:	24.00"H x 20.00"W x 6.00"D

NEXLIGHT

LEFT SIDE				RIGHT SIDE			
LOAD DESCRIPTION	SOURCE	ADDRESS	DEVICE	DEVICE	ADDRESS	SOURCE	LOAD DESCRIPTION
CRC2180 RELAY CONTROLLER				CRC7000	0-1		
				CRC7000	0-2		
CRC2180 RELAY CONTROLLER				CRC7000	0-3		
				CRC7000	0-4		
SPACE				CRC7000	1-1		
SPACE				CRC7000	1-2		
SPACE				CRC7000	1-3		
SPACE				CRC7000	1-4		
SPACE				SPACE			
SPACE				SPACE			
SPACE				SPACE			
SPACE				SPACE			
CRC1201 (IPC) SPACE FOR CPU				SPACE			
				SPACE			
				SPACE			
				SPACE			
				SPACE			

INSTALLING CONTRACTOR TO USE: 16 AWG, BELDEN 6200 UE OR EQUAL; REFERENCE 2-WIRE DATA BUS WIRING DETAIL

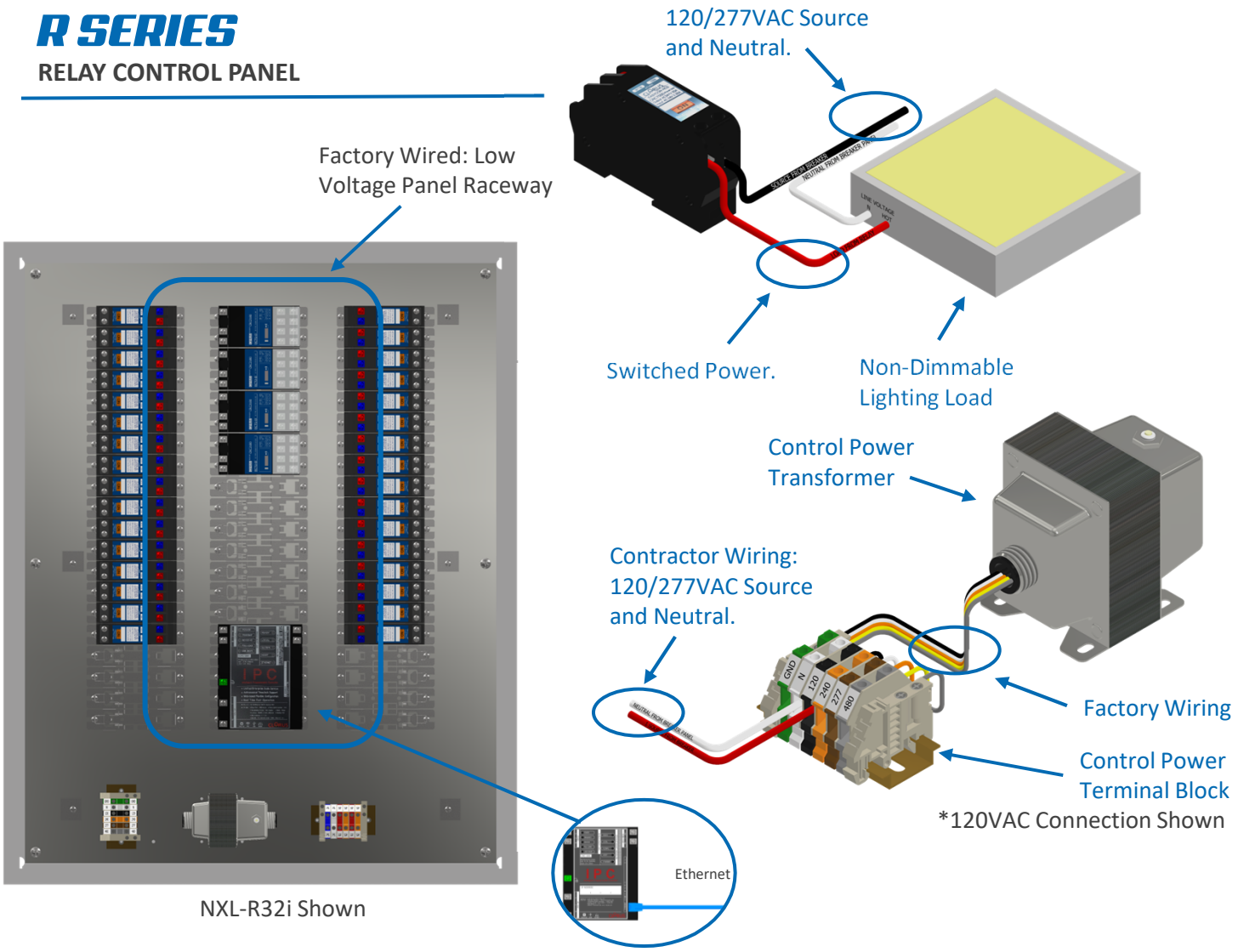
PANEL NAME:		IP ADDRESS:	N/A
MOUNTING LOCATION:		SUBNET MASK:	N/A
TRANSFORMER FEED:		DEFAULT GATEWAY:	N/A
PANEL TYPE:	NXL-R8i	PANEL DIMENSIONS:	24.00"H x 20.00"W x 6.00"D

LEFT SIDE				RIGHT SIDE			
LOAD DESCRIPTION	SOURCE	ADDRESS	DEVICE	DEVICE	ADDRESS	SOURCE	LOAD DESCRIPTION
CRC2180 RELAY CONTROLLER				CRC7000	-1		
				CRC7000	-2		
CRC2180 RELAY CONTROLLER				CRC7000	-3		
				CRC7000	-4		
SPACE				CRC7000	-1		
SPACE				CRC7000	-2		
SPACE				CRC7000	-3		
SPACE				CRC7000	-4		
SPACE				SPACE			
SPACE				SPACE			
SPACE				SPACE			
SPACE				SPACE			
CRC6001 (AMP) SPACE FOR AMPLIFIER				SPACE			
				SPACE			
				SPACE			
				SPACE			
				SPACE			

INSTALLING CONTRACTOR TO USE: 16 AWG, BELDEN 6200 UE OR EQUAL; REFERENCE 2-WIRE DATA BUS WIRING DETAIL

R SERIES

RELAY CONTROL PANEL



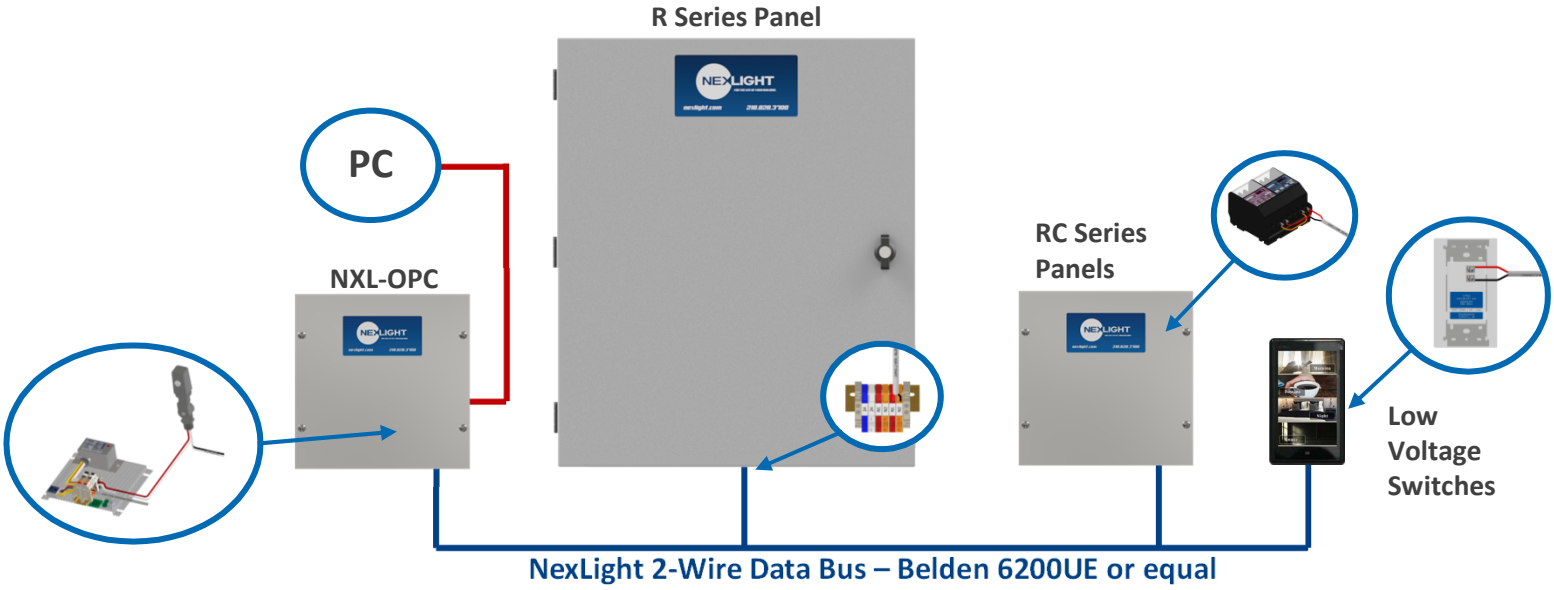
APPLICATION OVERVIEW

The R Series Panels are stand-alone relay panels that serve as the primary point of connection in the 2-Wire NexLight Lighting Control System. Utilizing the CRC1201, the R Series panels provide a Graphic User Interface for monitoring and control of all addresses on your lighting control system. Networking multiple (up to 250) standard panels (R Series and/or D Series) is easily done through a standard Ethernet (CAT5E or greater) Local Area Network. This networking approach allows for a truly segmented network design, while retaining the advantage of leveraging the reliability and simplicity of the NexLight 2-Wire Data Bus.

APPLICATION HIGHLIGHTS

- **Networkable via Ethernet.**
- **Programming, Monitoring and Remote Override available through Graphic User Interface (GUI).**
- **Utilizes the CRC7000 Mechanically Latching Relay backed by NexLight's 20-Year Relay Warranty.**

TYPICAL RISER



PANEL SCHEDULE

Information supplied by building IT Department

Record the control circuit wired to the terminal block

Record the Lighting Load Description

Record the source circuit breaker

PANEL NAME:		IP ADDRESS:	
MOUNTING LOCATION:		SUBNET MASK:	
TRANSFORMER FEED:		DEFAULT GATEWAY:	
PANEL TYPE:	NXL-R32	PANEL DIMENSIONS:	30.00"H x 24.00"W x 6.00"D

LEFT SIDE				RIGHT SIDE			
LOAD DESCRIPTION	SOURCE	ADDRESS	DEVICE	DEVICE	ADDRESS	SOURCE	LOAD DESCRIPTION
		0-1	CRC7000	CRC7000	0-2		
		0-3	CRC7000	CRC7000	0-4		
		1-1	CRC7000	CRC7000	1-2		
		1-3	CRC7000	CRC7000	1-4		
		2-1	CRC7000	CRC7000	2-2		
		2-3	CRC7000	CRC7000	2-4		
		3-1	CRC7000	CRC7000	3-2		
		3-3	CRC7000	CRC7000	3-4		
		4-1	CRC7000	CRC7000	4-2		

STEPS TO INSTALLATION

1. **Mount the R Series Panel in the desired location.**
2. **Wire the CRC7000 Relay to the Source and Lighting Load.**
   - **Record the Source and Lighting Load Description on the part number specific Panel Schedule.**
3. **Connect Line Voltage to the Control Power Terminal Blocks.**
   - **Record the circuit breaker designation in the appropriate field at the top of the Panel Schedule.**
4. **Proceed with wiring the NexLight 2-Wire Data Bus; Reference the Table of Contents for specific applications.**