Sample Datasheet Package

To Accompany Sample Engineering Package

PREPARED BY

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

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BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

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BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Modular Control

Project		Part Number		Ref.	

Open standards-based lighting control delivered as a unified solution through the building automation system.

is a highly distributed native BACnet control platform that maximizes energy efficiency, productivity, and occupant comfort. M3 provides scalability and flexibility of application, I/O, and packaging for all project types. Solutions are supported by our free Essentials Tools. Solutions scale from control of a single room to an entire campus. M3 is designed to leverage the network infrastructure, programing and user interface of your preferred building automation system delivering superior interoperability.

Features

Communication	BACnet, CANbus, DMX 512
Code Compliance	CEC Title 24, IECC 2015, ASHRAE 90.1, LEED
Certifications	BTL, UL916, UL924, 2012 ICC-ES AC 156
Compatibility	Full Support Aperio Product Line
Warranty	Relays: 10-Years, General: 5-Years

Solutions

Control Panels (CP): Designed to distribute control in the amount and location that your application requires for both new and existing buildings. CP scales from one to thirty-two I/O modules, supports standalone control and I/O expansion with our Satellite solutions. CP includes ordering options for UL924 Emergency Lighting and UL508A custom applications.

Satellite Panels (SP): Expands, extends, and distributes I/O beyond the CP to minimize wiring costs. SP includes ordering options for UL924 Emergency Lighting and UL508A custom applications.

Zone Control (ZC): Provides highly distributed compact I/O for standalone control applications in rooms and area zones. ZC supports I/O expansion with our SC solutions and includes ordering options for UL924 Emergency Lighting.

Satellite Control (SC): Expands, extends, and distributes I/O beyond the ZC. SC includes ordering options for UL924 Emergency Lighting.

Retrofit Interiors (RI): Replace existing relay panel electronics and relays with a single back plate mounted assembly. RI retains the original line voltage wire, conduit, and enclosure reducing labor as well as material cost.

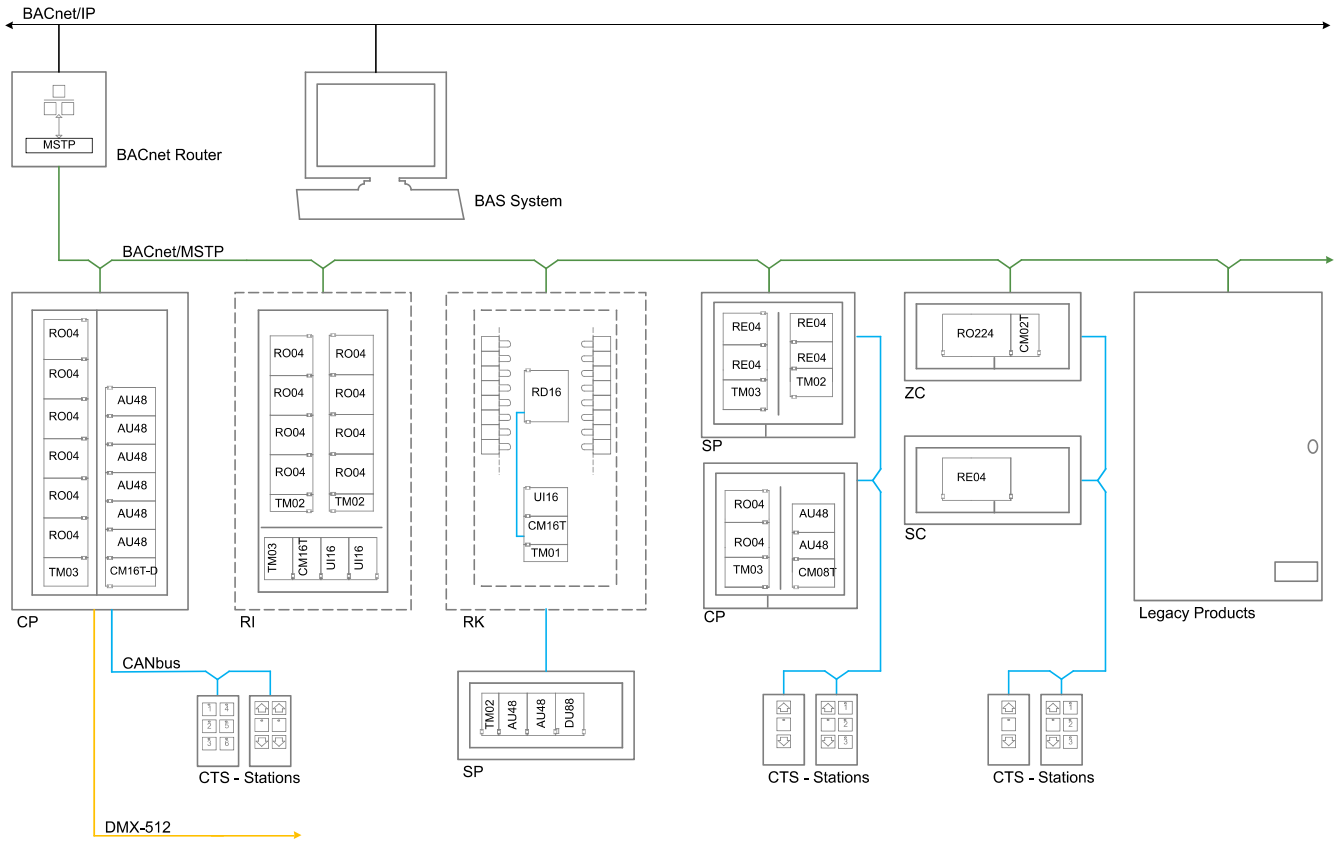
Retrofit Kits (RK): Replace the electronics of existing lighting control panels and facilitate unification with the building automation system. RK features a universal relay driver module for control of common 2-wire, 3-wire, or 5-wire relays.

Control Kits (CK): Expand and extend your system by employing our convenient collections of pluggable I/O and termination modules.

Capacitive Touch Stations (CTS): Provides the occupant a local interface for on/off, dimming, and preset applications physically or virtually. CTS are highly configurable, eliminate home run wiring, and utilize capacitive touch technology. CTS are available in multiple button arrangements and colors.

Sensors: We offer an extensive line of Occupancy and Light Level sensing solutions that utilize our universal inputs maximizing choice of sensor and eliminating the high risk of being locked into proprietary devices.

Architecture



Applications

- Time Switch
- Manual On/Off
- Continuous Dimming
- Step Dimming
- Lumen Maintenance
- Automatic Daylighting, Open and Closed Loop
- Automatic Demand Response
- Shutoff Controls, Vacancy, Partial On, and Early Off
- Color Tuning and Sequencing
- Initial Default Configuration
- Scheduling
- BACnet Time Sync
- Occupancy Based Temperature Strategies
- Occupant Interface Via Virtual Stations
- Remotely Configurable User Settings
- Remotely Downloadable Firmware
- Full Point/Object Read/Write Access Via BACnet
- Multimode Sequencing
- Integrated Plug Load Control
- Shade Control

Support

Delivery	Factory certified local control experts
Technical Support	Award winning, free to all
Features/Firmware	Free Downloadable Upgrades
Tools	Free Essentials Software
Training	Free at the factory
Licensing	None

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Control Panel - CP

Project		Part Number		Ref.	

The Control Panel (CP) utilizes our BACnet native platform, modular electronics suite, and DIN rail-based enclosure packaging to offer maximum flexibility in design and implementation of your lighting control application. CP is suited for new or existing building applications. CP scales from a single zone to an entire floor or large public area. CP communication type, size, and I/O capacity are fully configurable based on your specific project requirements.

General

	Dimensions
A	07.125 x 11.75 x 4.75
B	07.125 x 14.25 x 4.75
C	11.750 x 14.25 x 4.75
D	18.750 x 14.25 x 4.75
E	25.750 x 14.25 x 4.75
F	32.750 x 14.25 x 4.75

Construction:	Type-1 Indoor-Dry, 18ga With Powder Coat Finish
Mounting:	Surface
Weight:	Configuration Dependent

Control Module

CP Includes (1) Control Module, See Individual Data Sheets For Communication Options

Code	Model	I/O	DMX	Code	Model	I/O	DMX
01	CM01T	1	0				
02	CM02T	2	0	22	CM02T-D	2	16
03	CM04T	4	0	23	CM04T-D	4	32
04	CM08T	8	0	24	CM08T-D	8	64
05	CM16T	16	0	25	CM16T-D	16	128
06	CM32T	32	0	26	CM32T-D	32	512

Capacities

Size A, B Include (1) DIN Rail, Size C - F Include (2) DIN Rails With Barriers For Voltage And Class Separation.

I/O Modules	0-32
Zones / Schedules / Channels	64
Capacitive Touch Stations (CTS)	64

Size	Class-I Slots	Class-II Slots	Third Party Slots
A			
B	1	1	1
C	2	2	2
D	4	4	4
E	6	6	6
F	8	8	8

Power

CP Includes (1) TM03 Module or Integral Power Supply

30	Integral Power Supply	120/277 VAC, 2.5A	Output	24 VDC 2500 mA
31		120/277 VAC, 2.5A	Output	24 VDC 2500 mA

Compatibility

Class-I Modules, 3.5" Slot Size		Max
TM03		2
RO224	* Integral PS	1
RE224	* Integral PS, Includes Voltage Divider	1
RO04		15
RE04	* Includes Voltage Divider	15
Contactor	* 4-Pole 30A UL508A Option	8

Class-II Modules, 2.5" Slot Size		Max
TM02		2
RD16	* 5.5" Slot Size	10
DU88		15
AO08		15
AU48		15
UI16		15

Special Options

Code		Code	
D	Dead Fronts Class-I Section	L	Keyed Lock Available Size C - F
V	Extra Voltage Divider	Z	Dead Fronts & Lock

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	5 - 95%
Plennum Rated	Yes

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Warranty

Five (5) Years From Date of Shipment

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Control Panel - CP

Ordering Information

C P [ ][ ][ ][ ][ ][ ] - [ ][ ][ ][ ][ ][ ] - [ ][ ][ ][ ][ ]
A B C D E F G H I J K L M N

Selections

A	Control Module	
	CANbus	00
	MSTP	01 - 06
	DMX	22 -26
B	Power Supply	
	Integral	30
	TM03	31 - 32
	Options	
C	Packaging	A - F
D	Specials	D, L, V, Z
	Class I Modules	(15-Modules Total Max)
E	RO224	0 - 1 * Integral PS
F	RE224	0 - 1 * Integral PS
G	RO04	0 - 15
H	RE04	0 - 15
I	Contactors	0 - 8
	Class II Modules	(15-Modules Total Max)
J	RD16	0 - 10
K	DU88	0 - 15
L	AO08	0 - 15
M	AU48	0 - 15
N	UI16	0 - 15

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Satellite Panel - SP

Project		Part Number		Ref.	

Satellite Panels (SP) utilize our modular electronics suite, and DIN rail-based enclosure packaging to expand I/O capacities of Control Panels (CP) in distributed lighting control applications. SP is suited for new or existing buildings, is compatible with all low voltage switches, occupancy sensors, and light level sensors.

General

	Dimensions
A	07.125 x 11.75 x 4.75
B	07.125 x 14.25 x 4.75
C	11.750 x 14.25 x 4.75
D	18.750 x 14.25 x 4.75
E	25.750 x 14.25 x 4.75
F	32.750 x 14.25 x 4.75

Construction:	Type-1 Indoor-Dry, 18ga With Powder Coat Finish
Mounting:	Surface
Weight:	Configuration Dependent

Capacities

Size A, B Include (1) DIN Rail, Size C - F Include (2) DIN Rails With Barriers For Voltage And Class Separation.

I/O Modules	0-32

Size	Class-I Slots	Class-II Slots
A	3	3
B	3	4
C	4	5
D	8	9
E	12	13
F	16	17

Power

SP Includes (1) TM03 Module

30	Integral Power Supply	120/277 VAC, 2.5A	Output	24 VDC 2500 mA
31		120/277 VAC, 2.5A	Output	24 VDC 2500 mA

Compatibility

Class-I Modules, 3.5" Slot Size		Max
TM03		2
RO224	* Integral PS	1
RE224	* Integral PS, Includes Voltage Divider	1
RO04		16
RE04	* Includes Voltage Divider	16
Contractor	* 4-Pole 30A UL508A Option	8

Class-II Modules, 2.5" Slot Size		Max
TM02		2
RD16	* 5.5" Slot Size	10
DU88		17
AO08		17
AU48		17
UI16		17

Special Options

Code		Code	
D	Dead Fronts Class-I Section	L	Keyed Lock Available Size C - F
V	Extra Voltage Divider	Z	Dead Fronts & Lock

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	5 - 95%
Plennum Rated	Yes

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Warranty

Five (5) Years From Date of Shipment

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Satellite Panel - SP

Ordering Information

S P 0 0 [ ][ ][ ][ ] - [ ][ ][ ][ ][ ] - [ ][ ][ ][ ][ ]
A B C D E F G H I J K L M

Selections

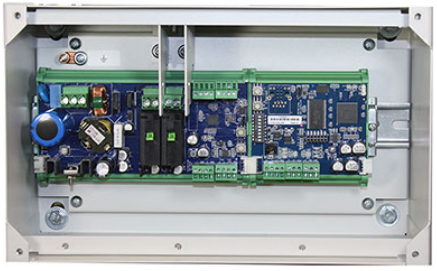
A	Power Supply	
	Integral	30
	TM03	31 - 32
	Options	
B	Packaging	A - F
C	Specials	D, L, V, Z
	Class I Modules	(16-Modules Total Max)
D	RO224	0 - 1 * Integral PS
E	RE224	0 - 1 * Integral PS
F	RO04	0 - 16
G	RE04	0 - 16
H	Contactors	0 - 8
	Class II Modules	(17-Modules Total Max)
I	RD16	0 - 10
J	DU88	0 - 17
K	AO08	0 - 17
L	AU48	0 - 17
M	UI16	0 - 17

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Zone Control - ZC

Project		Part Number		Ref.	

Zone Controls (ZC) utilize our native BACnet platform, modular electronics suite, and DIN rail-based enclosure packaging to offer a highly distributed lighting control solution. ZC is suited for new or existing buildings, is compatible with all low voltage switches, occupancy sensors, and light level sensors.



General

	Dimensions
A	07.125 x 11.75 x 4.75
B	07.125 x 14.25 x 4.75

Construction:	Type-1 Indoor-Dry, 18ga With Powder Coat Finish
Mounting:	Surface
Weight:	Configuration Dependent

Control Module

ZC Includes (1) Control Module, See Individual Data Sheets For Communication Options

Code	Model	I/O	DMX	Code	Model	I/O	DMX
01	CM01T	1	0				
02	CM02T	2	0	22	CM02T-D	2	16
03	CM04T	4	0	23	CM04T-D	4	32

Capacities

Size A, B Include (1) DIN Rail, With Barriers For Voltage And Class Separation.

		Size	Class-I Slots	Class-II Slots	Third Party Slots
I/O Modules	0-04	A	1		
Zones / Schedules / Channels	64	B	1	1	1
Capacitive Touch Stations (CTS)	64				

Power

ZC Includes an Integral Power Supply

30	120/277 VAC, 2.5A	Output	24 VDC 2500 mA

Compatibility

Class-I Modules		Max
RO224	* Integral PS	1
RE224	* Integral PS, Includes Voltage Divider	1

Special Options

Code	
V	Extra Voltage Divider

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	5 - 95%
Plennum Rated	Yes

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Warranty

Five (5) Years From Date of Shipment

Ordering Information

Z C [ ][ ] 3 0 [ ][ ] - [ ][ ]
A B C D E

Selections

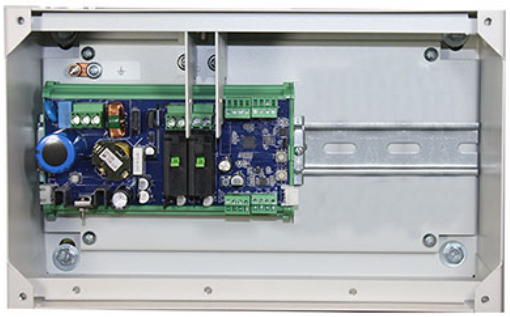
A	Control Module	
	MSTP	01 - 03
	DMX	22 - 23
	Options	
B	Packaging	A - B
C	Specials	V
	I/O Modules	
D	RO224	0 - 1 * Integral PS
E	RE224	0 - 1 * Integral PS

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Satellite Control - SC

Project		Part Number		Ref.	

Satellite Controls (SC) utilizes our modular electronics suite, and DIN rail-based enclosure packaging to expand I/O capacities of Zone Controls in highly distributed lighting control applications. SC is suited for new or existing buildings, is compatible with all low voltage switches, occupancy sensors, and light level sensors.



General

	Dimensions
A	07.125 x 11.75 x 4.75
B	07.125 x 14.25 x 4.75

Construction:	Type-1 Indoor-Dry, 18ga With Powder Coat Finish
Mounting:	Surface
Weight:	Configuration Dependent

Power

SC Includes an Integral Power Supply

30	120/277 VAC, 2.5A	Output: 24 VDC 2500 mA

Compatibility

Class-I Modules		Max
RO224	* Integral PS	1
RE224	* Integral PS, Includes Voltage Divider	1

Special Options

Code	
V	Extra Voltage Divider

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	5 - 95%
Plennum Rated	Yes

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Warranty

Five (5) Years From Date of Shipment

Ordering Information

S C 0 0 3 0 [A][B] - [C][D]

Selections

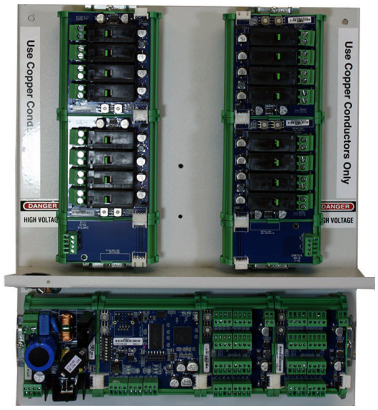
	Options	
A	Packaging	A - B
B	Specials	V
	I/O Modules	
C	RO224	0 - 1 * Integral PS
D	RE224	0 - 1 * Integral PS

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Retrofit Interior - RI

Project		Part Number		Ref.	

Retrofit Interiors (RI) utilize our native BACnet platform, modular electronics suite, and DIN rail-based packaging on a single back plate to replace existing relay panel electronics and relays. RI retains the original line voltage wire, conduit, and enclosure reducing labor as well as material cost. RI is compatible with most low voltage switches, occupancy sensors, and light level sensors.



General

	Dimensions
C	10.750 x 12.00
D	14.250 x 12.00
E	17.750 x 12.00
F	21.250 x 12.00
G	28.250 x 12.00

Construction:	Type-1 Indoor-Dry, 18ga With Powder Coat Finish
Mounting:	Surface
Weight:	Configuration Dependent

Control Module

CP Includes (1) Control Module, See Individual Data Sheets For Communication Options

Code	Model	I/O	DMX	Code	Model	I/O	DMX
00	CANbus	-	-				
04	CM08T	8	0	24	CM08T-D	8	64
05	CM16T	16	0	25	CM16T-D	16	128
06	CM32T	32	0	26	CM32T-D	32	512

Capacities

Size C Includes (2) DIN Rails, Size D - G Includes (3) DIN Rails With Barriers For Voltage And Class Separation.

I/O Modules	8-32
Zones / Schedules / Channels	64
Capacitive Touch Stations (CTS)	64

Size	Class-I Slots	Class-II Slots
C	2	2
D	4	2
E	6	2
F	8	2
G	12	2

Power

RI Includes (1) TM03 Module or Integral Power Supply

31	120/277 VAC, 2.5A	Output	24 VDC 2500 mA

Compatibility

Class-I Modules, 3.5" Slot Size		Max	Class-II Modules, 2.5" Slot Size	Max
TM03		1	TM02	2
RO04		12	DU88	2
RE04	* Includes Voltage Divider	12	AO08	2
Contactor	* 4-Pole 30A UL508A Option	8	AU48	2
			UI16	2

Special Options

Code		Code	
D	Dead Fronts Class-I Section	V	Extra Voltage Divider

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	5 - 95%
Plennum Rated	Yes

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Warranty

Five (5) Years From Date of Shipment

Ordering Information

R I [ ][ ] 3 1 [ ][ ] - 0 0 [ ][ ][ ] - 0 [ ][ ][ ][ ]
A B C D E F G H I J

Selections

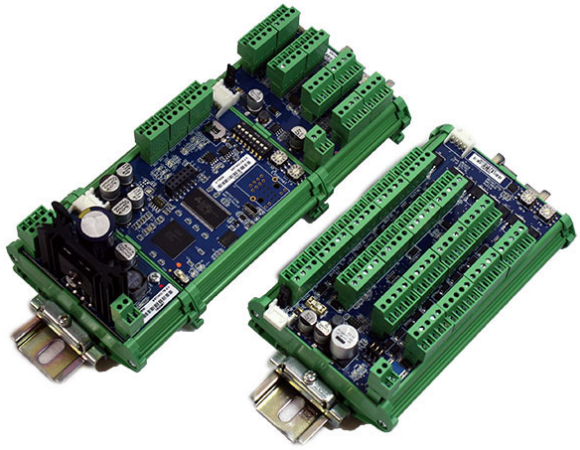
A	Control Module	
	CANbus	00
	MSTP	04 - 06
	DMX	24 - 26
	Options	
B	Packaging	C - G
C	Specials	D, V
	Class I Modules	(12-Modules Total Max)
D	RO04	0 - 12
E	RE04	0 - 12
F	Contactors	0 - 8
	Class II Modules	(2-Modules Total Max)
G	DU88	0 - 2
H	AO08	0 - 2
I	AU48	0 - 2
J	UI16	0 - 2

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Retrofit Kit

Project		Part Number		Ref.	

Retrofit Kits (RK) utilize our BACnet native Control and I/O Modules to replace multiple manufacturers lighting controls with flexible intelligence to exceed today's demanding application requirements. RK is designed around our universal relay driver module RD16 to leverage the existing infrastructure by retaining the relays, line voltage wire, and conduit to reduce replacement costs.



- Multi Manufacturer Relay Compatibility
- Modules can be combined via pluggable CANbus or remotely located
- Termination Modules and DIN Rail included
- I/O Expansion with Control Kits (CK)

General

See Module Data Sheets for Individual Dimensions and Weights

Device Type	Class II	Mounting	DIN Rail
Dimensions	Rail Maximum 14.50 x 3.50 x 3.00	Weight	Configuration Dependent

Control Module

Control Modules are Optional, See Individual Data Sheets For Communication Options

Code		Modules	DMX	Code		Modules	DMX
02	CM04T	4	0	22	CM04T-D	4	32
03	CM08T	8	0	23	CM08T-D	8	64
04	CM16T	16	0	24	CM16T-D	16	128
05	CM32T	32	0	25	CM32T-D	32	512

Capacities

Kits are Configured in Rails of (5) modules Maximum and Grouped by I/O Module Type.

I/O Modules	4-32	DU88	8 Digital Outputs 24V/1A, 8 Universal Outputs, Each
Zones / Schedules	64	RD16	16 Relay Drivers, 16 Status Inputs Each
Capacitive Touch Stations (CTS)	64	UI16	16 Universal Ouputs, Each

Power

Termination Module (TM01) Quantity is Determined By Total Rail/Module Requirements

Input	24VAC/24 VA	Output	24VDC 1000mA

Compatibility

Blue Ridge Technologies	and Aperio Platforms	Douglas	WR-6221, 6161, 6162, 6172, 6321
General Electric	RR7, RR8, RR9	Horton Controls	RR7, RR9
ILC	2R7, 2R9, 2PC	Lithonia	RR7, RR9
TriaTek	L2600, L2500, RR9	Watt Stopper	RR7, RR9, HDR5P

Special Options

Contact Factory for Custom Requirements

Environmental

Ambient Temperature	0 - 130 °F	Plenum Rated	Yes, if installed in UL Listed Enclosure
Relative Humidity (non-condensing)	5 - 95%		

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Ordering Information

R K [A][A] 1 [B] 0 0 - 0 - [C][D] 0 0 [E]

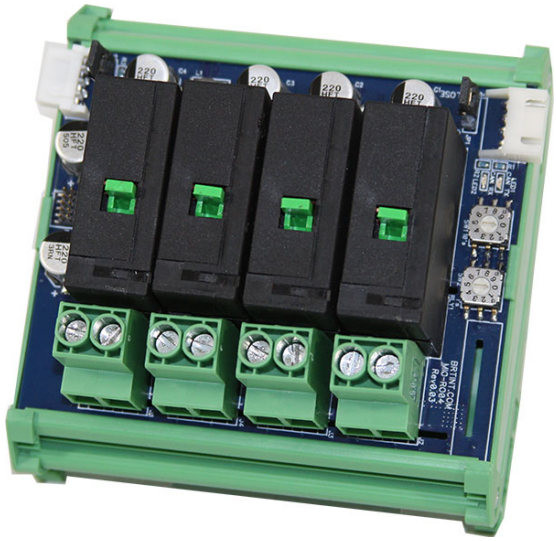
A	Control Module	
	MSTP	02 - 05
	DMX	22 - 25
B	Termination Module	
	TM01	1 - 4
	I/O Modules	
C	RD16	0 - 5
D	DU88	0 - 5
E	UI16	0 - 5

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

RO04

Project		Part Number		Ref.	

RO04 is a Line Voltage Relay Output module with built in Load Status that can control up to four independent circuits. RO04 is a standard I/O module option for all Panel products. RO04 is combined with other I/O modules via a pluggable CANbus to address specific application requirements.



- Standard Panel Option
- DIN Rail Mounted
- Resides on CANbus Network
- 4 Relay Outputs
- Rotary Dial Addressing
- Remote Configuration

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 3.50"	Weight	8.7 oz
Wire Requirement	See Cabling Data Sheet		

Capacities

Relay Outputs	4 120-277VAC, 50/60hz Magnetic Ballast 20A Electronic Ballast 16A Tungsten Ballast 20A Resistive 20A 1.5HP @ 120 VAC	Load Status	4 Minimum Load 40 Watts

Power

Input	24VDC, 165mA	Output	N/A

Communication

CANbus		Topology	Daisy Chain
Baud Rate	125kbps		
Address	Rotary, Range 1 - 16		

Environmental

Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	10 - 90%		

Certification and Listings

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

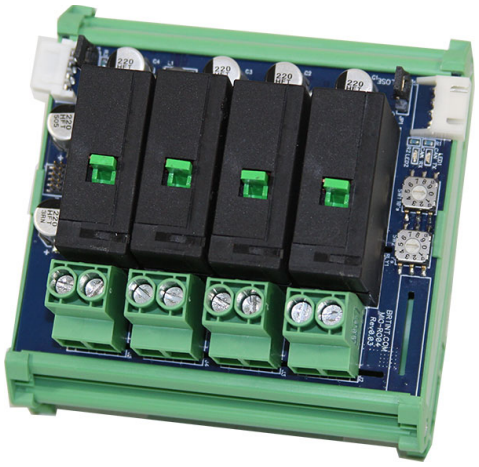
RO04	Relay Output Module w/Load Status

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

RE04

Project		Part Number		Ref.	

RE04 is a Line Voltage Relay Output module with built in Load Status, and UL924 Emergency Power Sequence. RE04 can control up to four independent emergency 120VAC/277VAC 20A single phase circuits. RE04 is a standard I/O module option for all Panel products. RE04 is combined with other I/O modules via a pluggable CANbus to address specific application requirements. TM03 Termination Module is required for UL924 Sequences. See page-2 for emergency sequence and testing procedure.



- Factory or Remote Mounting
- DIN Rail Mounted
- Resides on CANbus Network
- 4 Relay Outputs w/UL924
- Rotary Dial Addressing
- Remote Configuration

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 3.50"	Weight	8.7 oz
Wire Requirement	See Cabling Data Sheet		

Capacities

Relay Outputs	4 120-277VAC, 50/60hz Magnetic Ballast 20A Electronic Ballast 16A Tungsten Ballast 20A Resistive 20A 1.5HP @ 120 VAC	Load Status	4 Minimum Load 40 Watts

Power

Input	24VDC, 165mA	Output	N/A

Communication

CANbus		Topology	Daisy Chain
Baud Rate	125kbps		
Address	Rotary, Range 1 - 32		

Environmental

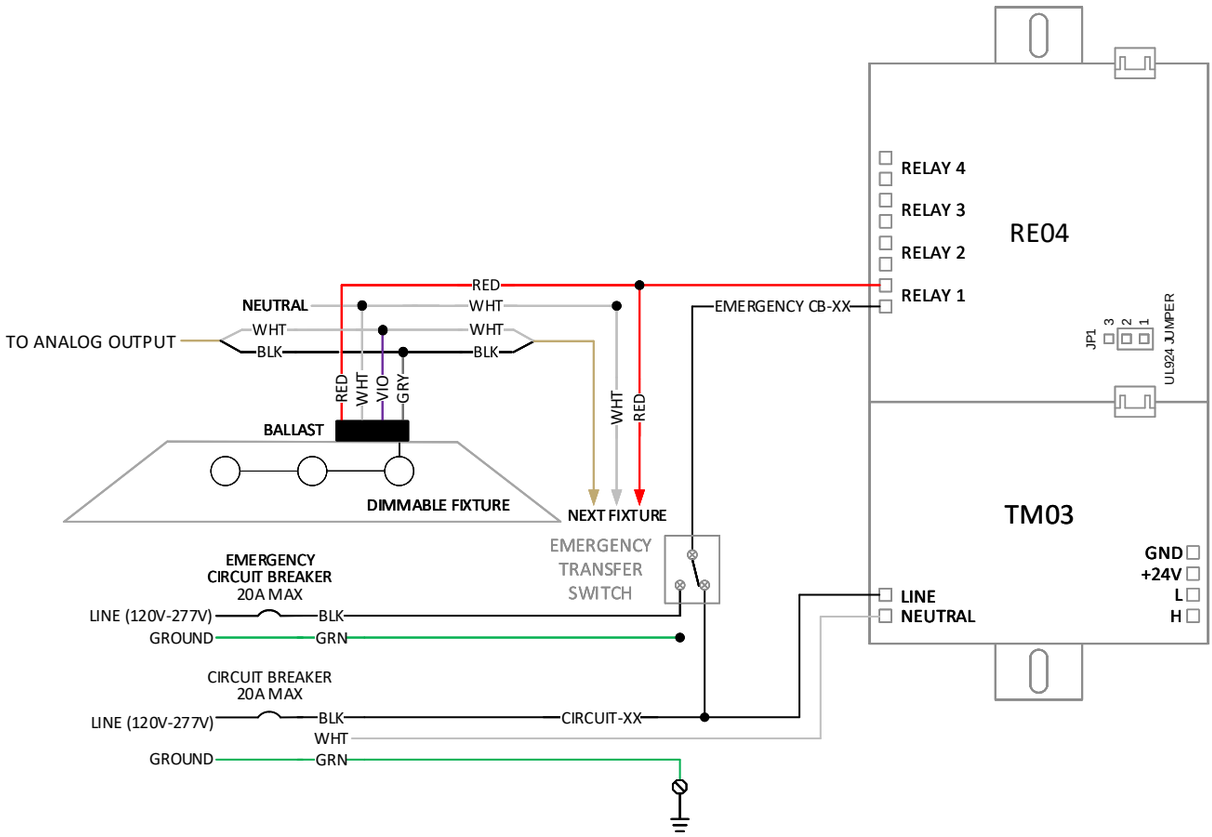
Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	10 - 90%		

Certifications and Listings

U/CL	UL 916, UL 924, 508A	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

RE04	Relay Output Module w/Load Status and UL924 on all relays



SEQUENCE OF OPERATIONS

1. Emergency circuits are controlled from the RE04 module for UL924 Emergency Bypass. The UL924 configuration jumper is set for "Emergency action Close all relays".
2. Power loss is detected by the RE04.
3. All relays connected to the RE04 are forced ON. UL924 capacitors power emergency relay function. No external power source or input is required for UL924 operation.
4. Relays not connected to the RE04 remain in their present state (On/Off). Lighting Tough Relays (LTR) are mechanical latching type.
5. Generator transfer switch (not located in the relay panel) reacts and allows generator to feed dedicated emergency circuits previously fed by normal (utility) power.
   The relays connected to the RE04 are already ON, so the only possible source of delay in emergency lighting is the generator or emergency transfer switch.
6. Dedicated emergency lighting circuits will remain On while emergency power source is applied.
7. Normal power is restored and the emergency transfer switch returns all circuits to normal power.
8. Relays connected to the RE04 will remain On during and after normal power restoration.
9. Relays not connected to the RE04 remain in their present state (On/Off).
10. Normal control of all relays, including relays connected to the RE04, is restored.

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

All Service should be performed by qualified service personnel.

Do not mount near gas or electric heaters.

Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.

Do not use this equipment for other than intended use.

SAVE THESE INSTRUCTIONS

Additional installation and application details may found at www.brtint.com, please reference: Control Panel Detail Sheet CPDTL_01.20 and Module Details CL1DTL_01.00

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

RO224

Project		Part Number		Ref.	

RO224 is a combination module that provides an integral power supply and compact I/O for highly distributed applications. RO224 includes Line Voltage Relay Outputs, Load Status, and 0-10v Analog Outputs. RO224 is a standard I/O module option for all CP, SP, ZC, and SC Products.

- Factory or Remote Mounting
- DIN Rail Mounted
- Resides on CANbus Network
- Rotary Dial Addressing
- Remote Configuration

General

Device Type	Class I, Class II	Mounting	DIN Rail
Dimensions	3.50" x 6.50"	Weight	14.2 oz
Wire	See Cabling Data Sheet		

Capacities

Relay Outputs	2 120-277VAC, 50/60hz Magnetic Ballast 20A Electronic Ballast 16A Tungsten Ballast 20A Resistive 20A 1.5HP @ 120 VAC Terminals (2) 14-10 AWG, (1) 8 AWG	Load Status	2 Minimum Load 40 Watts
Analog Outputs 0-10 Vdc	2 Terminals 30 AWG Min, 16 AWG Max	Universal Inputs	4 Terminals 30 AWG Min, 16 AWG Max

Power

Input	120-277VAC, 50/60hz, +/-10% single phase Module Load 360 mA	Output	24VDC, 2.5A, 2500 mA

Communication

CANbus		Topology	Daisy Chain
Baud Rate	125kbps		
Address	Rotary, Range 1-32		

Compatibility

Digital Input	24 Vdc Wet	Analog Input	0-10 Vdc, 4-20 mA

Environmental

Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	10 - 90%		

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Ordering Information

RO224	Combination I/O Module

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

RE224

Project		Part Number		Ref.	

RE224 is a combination module that provides an integral power supply and compact I/O for highly distributed applications that require UL924 Emergency control. RE224 includes Line Voltage Relay Outputs, Load Status, and 0-10v Analog Outputs. RE224 is a standard I/O module option for all CP, SP, ZC, and SC Products.

- Factory or Remote Mounting
- DIN Rail Mounted
- Resides on CANbus Network
- Rotary Dial Addressing
- Remote Configuration
- UL924 Emergency Control

General

Device Type	Class I, Class II	Mounting	DIN Rail
Dimensions	3.50" x 6.50"	Weight	14.2 oz
Wire	See Cabling Data Sheet		

Capacities

Relay Outputs	2 120-277VAC, 50/60hz Magnetic Ballast 20A Electronic Ballast 16A Tungsten Ballast 20A Resistive 20A 1.5HP @ 120 VAC Terminals (2) 14-10 AWG, (1) 8 AWG	Load Status	2 Minimum Load 40 Watts
Analog Outputs 0-10 Vdc	2 Terminals 30 AWG Min, 16 AWG Max	Universal Inputs	4 Terminals 30 AWG Min, 16 AWG Max

Power

Input	120-277VAC, 50/60hz, +/-10% single phase Module Load 360 mA	Output	24VDC, 2.5A, 2500 mA

Communication

CANbus		Topology	Daisy Chain
Baud Rate	125kbps		
Address	Rotary, Range 1-32		

Compatibility

Digital Input	24 Vdc Wet	Analog Input	0-10 Vdc, 4-20 mA

Environmental

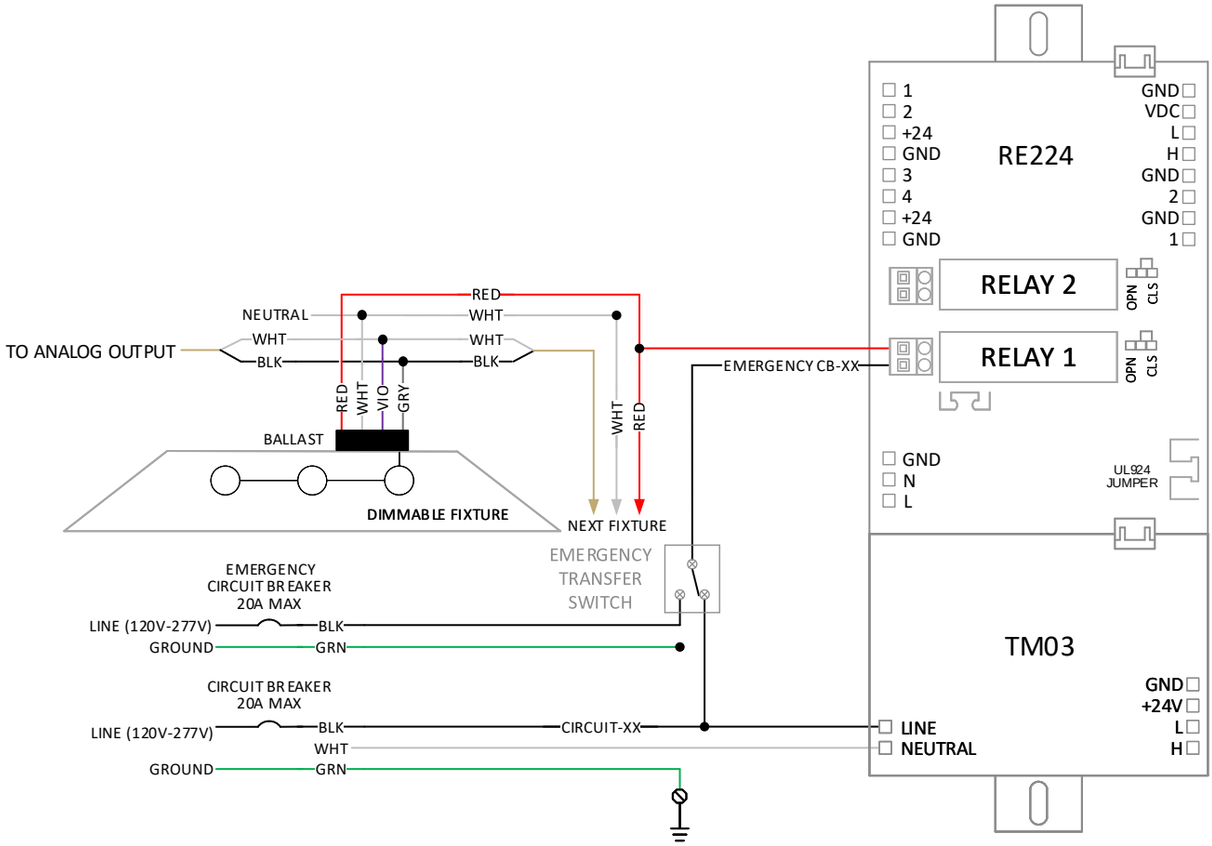
Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	10 - 90%		

Certifications

UL	UL916, UL508A Listed US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

Ordering Information

RE224	UL924 Combination I/O Module



SEQUENCE OF OPERATIONS

1. Emergency circuits are controlled from the RE224 module for UL924 Emergency Bypass. The UL924 configuration jumper is set for "Emergency action Close all relays".
2. Power loss is detected by the RE224 .
3. All relays connected to the RE224 are forced ON. UL924 capacitors power emergency relay function. No external power source or input is required for UL924 operation.
4. Relays not connected to the RE224 remain in their present state (On/Off). Lighting Tough Relays (LTR) are mechanical latching type.
5. Generator transfer switch (not located in the relay panel) reacts and allows generator to feed dedicated emergency circuits previously fed by normal (utility) power. The relays connected to the RE224 are already ON, so the only possible source of delay in emergency lighting is the generator or emergency transfer switch.
6. Dedicated emergency lighting circuits will remain On while emergency power source is applied.
7. Normal power is restored and the emergency transfer switch returns all circuits to normal power.
8. Relays connected to the RE224 will remain On during and after normal power restoration.
9. Relays not connected to the RE224 remain in their present state (On/Off).
10. Normal control of all relays, including relays connected to the RE224, is restored.

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

All Service should be performed by qualified service personnel.

Do not mount near gas or electric heaters.

Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.

Do not use this equipment for other than intended use.

SAVE THESE INSTRUCTIONS

Additional installation and application details may found at www.brtint.com, please reference: Control Panel Detail Sheet CPDTL_01.20 and Module Details CL1DTL_01.00

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Modular Controller - CM

Project		Part Number		Ref.	

CM is a BACnet Application Specific Controller that contains the control application engine, capacitive touch station (CTS) support, and network communications. CM is available in multiple configurations. Configuration is determined by I/O capacity requirements, primary network communication type, and optional protocol support. CM is a standard option for all control products. CM is combined with other modules via a pluggable CANbus to address specific application requirements.

- BACnet Communication
- Real-Time Clock with Battery Backup
- Battery Life of 10 Years
- Rotary Dial Addressing
- Remote Configuration
- Time Sync
- Field Replaceable Firmware
- CANbus Communication
- DMX Communication

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 3.50"	Weight	2.07 oz.
Wire Requirement	See Cabling Data Sheet		

Capacities

I/O Modules	32	Capacitive Touch Stations (CTS)	64
Zones / Schedules	64	DMX Channels	512 Slave or Master

Note: Capacities shown are maximums, actual controller capacities vary depending on model and selected options, see table for specifics.

Power

Input	24VDC, 210mA
Output	N/A

Communication

BACnet MS/TP		CANbus	
Profile	Application Specific Controller (ASC)	Baud Rate	125 kbps
Load	1/8 Unit	I/O Module Addresses	Rotary, Range 1 - 32
Baud Rate	9.6 kbps - 115.2 kbps	Station	DIP, Range 0 - 63
Address	Rotary, Range 1 - 99	Topology	Daisy Chain
Topology	RS-485, Half Duplex, Daisy Chain	DMX	
		Baud Rate	125 kbps
		Address	1 - 512
		Topology	EIA-485-A

Environmental

Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	5 - 95%		

Certifications

UL	UL916 Recognized US/Canada	Seismic	2012 ICC-ES AC156, Importance Factor 1.5
BTL	Listed		

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

Modular Controller - CM

Ordering Information

C M [ ][ ] [ ] - [ ]
A B C

Selections

A	Capacity: (01), (02), (04), (08), (16), (32)
B	Communication: (T) BACnet MS/TP, (I) BACnet/IP (Future)
C	Options: (D) DMX

Capacities Table

Capacity	I/O Modules	(D) DMX Channels
01	1	0
02	2 - *1	16
04	4	32
08	8	64
16	16	128
32	32	512

*1 Note - First Slot limited to RO04 or RE04

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

AU48

Project		Part Number		Ref.	

AU48 is a combination module that includes both Analog Outputs for 10VDC dimming and Universal Inputs for sensors and low voltage switches. All inputs and types include a corresponding BACnet point. AU48 is a standard I/O module option for all control products. AU48 is combined with other I/O modules via a pluggable CANbus to address specific application requirements. Remote mounting applications require a Termination Module (TM). AU48 requires external 24VDC sub buss power. Digital Input option is wet type and requires 24VDC.

- Factory or Remote Mounting
- DIN Rail Mounted
- Resides on CANbus Network
- 4 Analog Outputs, 8 Universal Inputs
- Rotary Dial Addressing
- Remote Configuration

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 2.50"	Weight	3.7 oz
Wire Requirement	See Cabling Data Sheet		

Capacities

Analog Outouts 0-10v	4	Universal Inputs	8

Power

Input	24VDC, 50mA	Output	4 Analog Outputs 8 UI – 350mA max load

Communication

CANbus		Topology	Daisy Chain
Baud Rate	125kbps		
Address	Rotary, Range 1 - 16		

Compatibility

Digital Input	24VDC Wet	Analog Input	4-20mA
		Analog Input	0-10V

Environmental

Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	10 - 90%		

Certifications and Listinngs

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

AU48	Combination Module with (4) AO and (8) UI Each, 0-10VDC

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

UI16

Project		Part Number		Ref.	

UI16 is a Universal Input module for sensors and low voltage switches. All inputs and types include a corresponding BACnet point. UI16 is a standard I/O module option for all control products. UI16 is combined with other I/O modules via a pluggable CANbus to address specific application requirements. Remote mounting applications require a Termination Module (TM). UI16 requires external 24VDC sub buss power. Digital Input option is wet type and requires 24VDC.

- Standard RP Option or Remote Mounting
- DIN Rail Mounted
- Resides on CANbus Network
- 16 Universal Inputs Configurable
  - Digital Input (DI): 24VDC
  - Analog Input (AI): 0-5VDC, 0-10VDC, or 4-20mA

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 2.50"	Weight	2.7 oz
Wire Requirement	See Cabling Data Sheet		

Power

Input	24VDC, 15mA Requires TM01 or TM03 Requires 24VDC External Power	Output	350mA max load

Communication

CANbus	
Baud Rate	125kbps
Address	Rotary, Range 1 - 16
Topology	Daisy Chain

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	10 - 90%
Plennum Rated	Yes

Certification and Listings

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

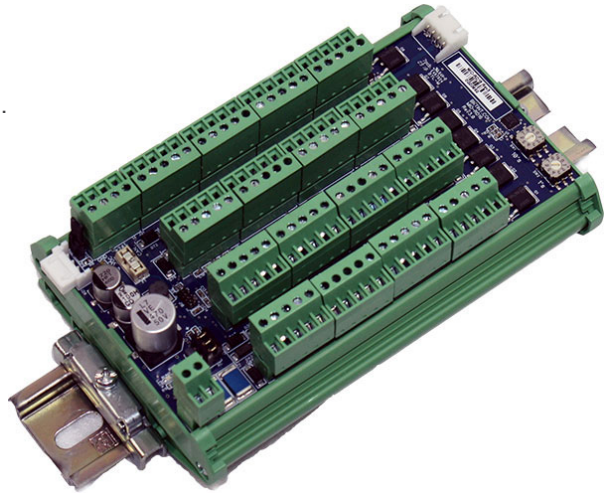
UI16	Universal Input Module (16) Inputs, 24VDC, 0-10VDC, 4-20mA

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

RD16

Project		Part Number		Ref.	

RD16 is a Universal Relay Driver module that includes both 24VAC/VDC Relay Output Drivers and Low Voltage Status Inputs and is used to drive and monitor multiple OEM lighting control relays. RD16 is a standard I/O module option for Kits. RD16 is combined with other I/O modules via a pluggable CANbus to address specific application requirements. Remote mounting applications require a Termination Module (TM). RD16 requires external 24VAC/24VDC sub buss power.



- Standard RP Option or Remote Mounting
- DIN Rail Mounted
- Resides on CANbus Network
- 16 Relay Drivers and 16 Load Status Inputs per module
- Multi manufacturer relay compatibility

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 5.50"	Weight	8.9 oz
Wire Requirement	See Cabling Data Sheet		

Power

Input	24 AC/DC @ 450mA max each module Requires TM01 or TM03 Requires 24VDC External Power	Output	450mA Max each module

Communication

CANbus	
Baud Rate	125kbps
Address	Rotary, Range 1 - 32
Topology	Daisy Chain

Compatibility

Douglas	WR-6221, 6161, 6162, 6172,6321	Lithonia	RR7, RR9
General Electric	RR7, RR8, RR9	Triatek	L2600, L3500, RR9
Horton Controls Panels	RR7, RR9	Watt Stopper	RR7, RR9, HDR5P
ILC	2R7, 2R9, 2PC	Other	Call for Details

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	10 - 90%
Plennum Rated	Yes

Certification and Listings

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

RD16	Universal Relay Driver Module (16) Outputs Each, 24VAC/24VDC

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

TM01

Project		Part Number		Ref.	

TM01 is a low voltage power supply and physical termination module. TM01 is a standard option for all control products. TM01 is combined with other modules via a pluggable CANbus to address specific application requirements. TM01 provides 24VDC power and terminals for CANbus access and extension in remote mounting application.

- Standard RP Option or Remote Mounting
- DIN Rail Mounted
- Provides Physical Termination Point for CANbus Network and Expander module power

General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 1.50"	Weight	3.52 oz
Wire Requirement	See Cabling Data Sheet		

Power

Input	24VAC 1000mA/24VA	Output	24VDC 1000mA

Communication

CANbus	
Baud Rate	125kbps
Address	N/A
Topology	Daisy Chain Wiring only

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	10 - 90%
Plennum Rated	Yes

Certification and Listings

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

TM01	Termination and Power Module, 24VAC - 24VDC, 1.0A

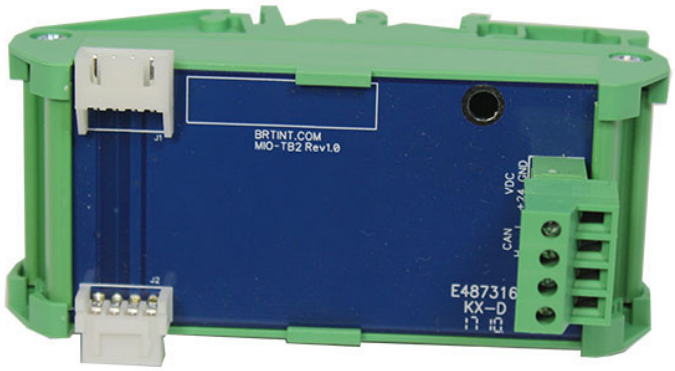
BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

TM02

Project		Part Number		Ref.	

TM02 is a physical termination module. TM02 is a standard option for all control products. TM02 is combined with other modules via a pluggable CANbus to address specific application requirements. TM02 provides screw terminals for CANbus access and extension in remote mounting applications.

- Standard RP Option or Remote Mounting
- DIN Rail Mounted
- Provides Physical Termination Point for CANbus Network



General

Device Type	Class II	Mounting	DIN Rail
Dimensions	3.50" x 1.50"	Weight	1.28 oz
Wire Requirement	See Cabling Data Sheet		

Communication

CANbus	
Baud Rate	125kbps
Address	N/A
Topology	Daisy Chain Wiring only

Environmental

Ambient Temperature	0 - 130 °F
Relative Humidity (non-condensing)	10 - 90%
Plennum Rated	Yes

Certification and Listings

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

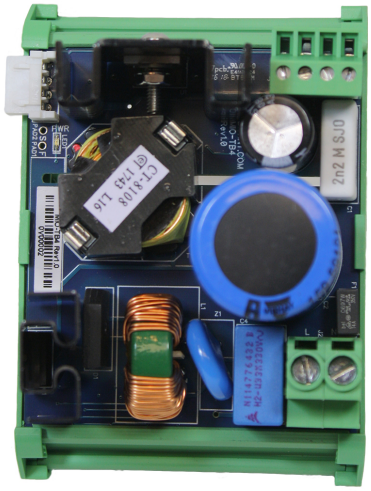
TM02	Termination Module, CANbus, 24VDC

BLUE RIDGE TECHNOLOGIES™
UNIFIED LIGHTING CONTROL

TM03

Project		Part Number		Ref.	

TM03 is a 120/277V line voltage switching power supply and physical termination module. TM03 is a standard option for Panel products. TM03 is combined with other modules via a pluggable CANbus to address specific application requirements. TM03 provides 24VDC power and screw terminals for CANbus access and extension in remote mounting applications.



- Standard Panel Option
- DIN Rail Mounted
- Resides on CANbus Network
- Class 1 Power Supply
- Provides Physical Termination Point for CANbus Network and Expander module power

General

Device Type	Class I	Mounting	DIN Rail
Dimensions	3.50" x 2.50"	Weight	5.9 oz
Wire Requirement	See Cabling Data Sheet		

Power

Input	120-277VAC, 50/60hz, +/-10% single phase	Output	24VDC, 2.5A, 2500mA

Communication

CANbus		Topology	Daisy Chain Wiring only
Baud Rate	125kbps		
Address	N/A		

Environmental

Ambient Temperature	0 - 130 °F	Plennum Rated	Yes
Relative Humidity (non-condensing)	10 - 90%		

Certifications and Listings

UL/CL	UL916	Seismic	2012 ICC-ES AC156, Importance Factor 1.5

Ordering Information

TM03	120/277VAC - 24VDC 2.5A Power Supply