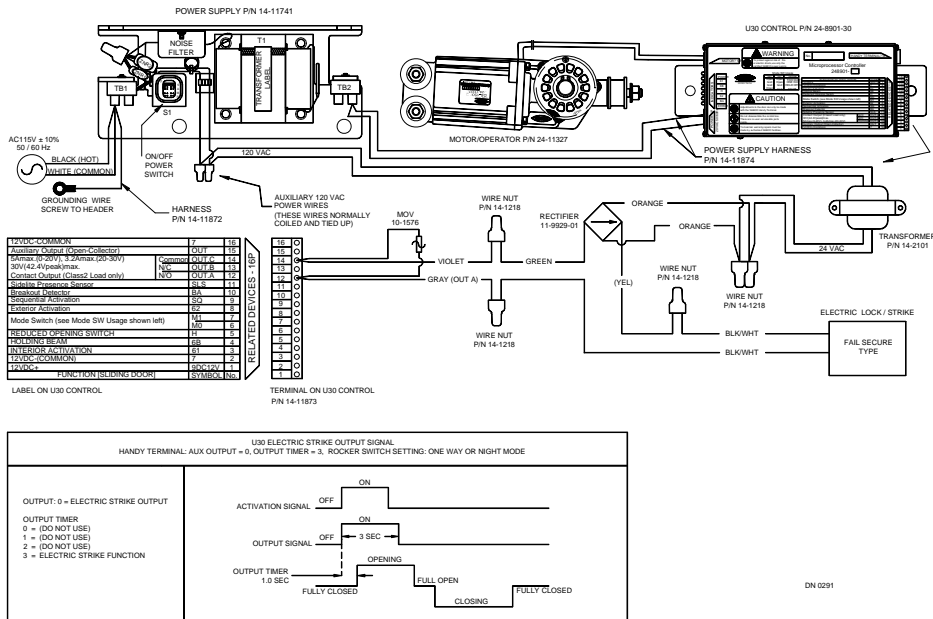


GT-1175 SLIDING DOOR ELECTRICAL INSTALLATION MANUAL

** with U30 Control **



WARNING

Do not install or service this product unless you have read and understood the Safety Practices, Warnings, Installation and Operating Instructions contained in this manual.

Failure to do so may result in property damage or bodily injury.

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A. GENERAL INFORMATION

WARNING

Disconnect all power to the junction box prior to making any electrical connections. Failure to do so may result in serious personal or fatal injury.
Wiring must meet all local, state, federal or other governing agency codes.

A.1. Electrical Information

Note: Since the Model 1175 Slider is predominantly wired at the factory, the site installer/electrician has a relatively simple task.

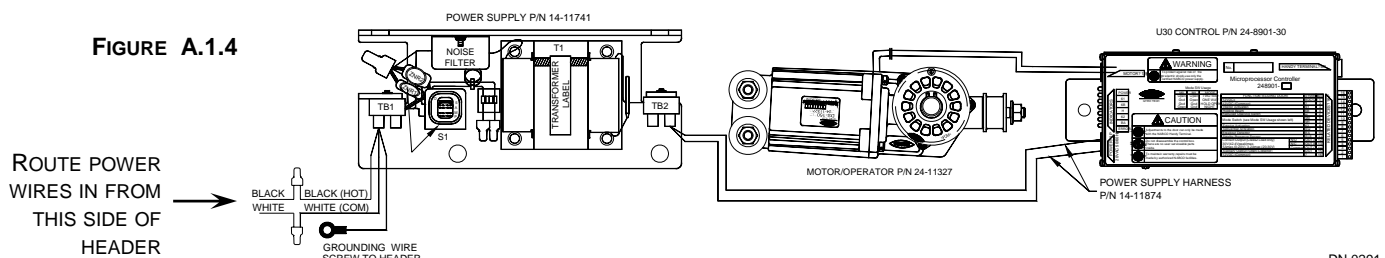
A.1.1 Convenient electric service access holes have been provided in the slide header end caps and jamb tubes. The installer/electrician should route 120 VAC, single phase, 5 amp (MINIMUM) to terminal TB1 on the U30 power supply (see Figure A.1.4 below).

TO PREVENT ELECTRICAL INTERFERENCE FOR THE 120 VAC LINE, ALWAYS ROUTE 120 VAC POWER IN FROM THE END OF THE HEADER THAT IS OPPOSITE TO THE CONTROLLER AND MOTOR/OPERATOR. SEE FIGURE A.1.4 BELOW. DO NOT ROUTE 120 VAC LINE NEAR CONTROLLER OR MOTOR/OPERATOR.

The ground wire should be connected to the ground screw located inside the aluminum header.

A.1.2 Wiring diagrams are included in this manual, which reflect the typical primary and secondary circuits installed at the factory. The low voltage (12 VDC) Reed switch (panic break away) and Acusensors are easily connected on site using factory installed connector housings. The factory uses Underwriters Laboratories' (UL) recognized component wire, terminals and connector housings to manufacture the slider.

A.1.3 The Microprocessor controller has been designed to control the numerous operating characteristics of the slide door system including opening and closing speeds, recycling and door opening widths. It will need to be programmed after the installation is complete. (See the Microprocessor Programming Manual P/N 15-9000 for more details).



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CAUTION

Read and understand the "U30 Controller Setup and Programming Manual" P/N 15-9000 before attempting to power-up the door.
Failure to do so may result in damage to the door and/or injury to the installer and will nullify all warranties.

A.1.5 U30 Power Output Guidelines

When choosing sensors or auxiliary equipment such as modules that will be powered by the U30 control, use the following rule of thumb: The TOTAL current draw from the U30 for all accessories including sensors and modules must not exceed 350 mA (0.35 amps) otherwise an auxiliary power supply must be used.

The Nabco power supply module P/N 14-11741 can be used as a 20 VAC auxiliary power supply provided the TOTAL power drawn for accessories does not exceed 8 Watts.

NOTE: The U30 and/or the Nabco power supply must not be used to power electric strikes or magnetic locks.

Current consumption of Various Sensors and Modules					
	Acusensor 1B	Acuvision	Acumotion A	Optex Beam Module	CP/RX Radio Control Receiver
Part number	14-8902-B	14-10823-01	14-10364-A	14-9710-01	24-11467
Function	Infrared Sensor	Infrared Sensor	Infrared/ Microwave Sensor	Module	Module
Power source	12 to 24 AC or DC	12 to 24 AC or DC	12 to 24VDC or 24 VAC	12 to 24 AC or 12 to 30VDC	12 to 24 AC or DC
Current consumption (ea. unit) at 12 VDC	70mA	80mA	160mA	160 mA	290 mA

To determine if an auxiliary power supply must be used, simply add up the total current draw of the devices.

Example if a slider is to be fitted with the following devices:

$$\begin{aligned}
 2 \times \text{Acumotion Sensors} &= 320 \text{ mA} \\
 1 \times \text{Optex Beam Module} &= \underline{160 \text{ mA}} \\
 \text{Total} &= 480 \text{ mA}
 \end{aligned}$$

As seen above, this exceeds the total current output of 350 mA of the U30 control and therefore the Optex Beam Module must be powered separately. This scenario is illustrated in drawing D.1.2 in this manual.

In general the U30 Control supplies power for two sensors. The holding beams are powered from the Nabco power supply. See wiring diagrams for details.

B. Terminal Block Assignments

16 Pin Controller Terminal Block Assignments (All wires are identified by color)

No.	Symbol	Color*	Description
1	9DC12V	Brown	This output terminal is a sensor power source. The output is 12 VDC with a maximum capacity of 0.35 amps.
2	7	Red	This output terminal provides common ground for the 12 VDC power and signal source.
3	61	Black	This terminal is an activation signal input and will open the door based on a signal from the sensor that is active in one way mode.
4	6B	White	This terminal is the holding beam input, it will open or re-open a door when the holding beam signal is activated.
5	H	Green	This terminal is the reduced opening input. It enables reduced door opening when switched to Red (7).
6	M0	Orange	This terminal is the mode input switch one (SW1). It is used to achieve special functions (Refer to section C on page 6).
7	M1	Orange/ White	This terminal is the mode input for switch two (SW2). It is used to achieve special functions. If an electric lock is used, the wire will show the lock's status. (Refer to section C on page 6)
8	62	Black/ Red	This input terminal receives the signal from the sensor that is switched out in ONE WAY mode.
9	SQ	Yellow	This input terminal allows a sequence of signals to open and close the door.
10	BA	Blue	This input terminal connects directly to Red (7) during normal operation. When the rocker switch is turned OFF or if the door is panicked open, it is disconnected from Red. It then stops door operation.
11	SLS	Green/ White	This terminal is the sidelite protection sensor input. At the fully closed position, this input will prevent the door from opening.
12	OUT A	Gray	This terminal is connected to the Normally Open contact on an internal relay. It is referred to as the "auxiliary relay output" elsewhere in this manual. It is used as a switch to sequence an electric strike, control other doors in an airlock situation or signal a remote computer on the door operation.
13	OUT B	Gray	This terminal is connected to the Normally Closed contact on an internal relay.
14	OUT C	Violet	This terminal is the common for output wire OUT A or OUT B.
15	OUT	Brown/ Yellow	This terminal is connected to an internal transistor with open collector in the Controller.
16	7	Red	This terminal provides common ground for the 12 VDC power and signal source.

* Color1/Color2 denotes a base wiring Color1 with a stripe Color2. For instance Black/Red indicates a Black wire with a Red stripe.

NOTE: All references to the signals are made in connection with Common (red).

NOTE: Use a flat-blade screwdriver to remove the terminal connector from the control. Be careful to ensure all wires are matched to the appropriate terminals. Each terminal is numbered with corresponding information on the face plate of the control.

C. Rocker Switch Settings

Rocker Switch Settings (when wires M0 & M1 are switched to Red 7 the state is indicated by “ON”)

Mode	Wire M0	Wire M1	Wire H	Description
Two Way mode	OFF	OFF	-	In this mode, both sensors on terminals 3 and 8 will receive signals while the door is closed or cycling.
Hold-open mode	ON	ON	-	No activation is needed when this selection is made. Door is held open.
Reduced-open mode	-	-	ON	The door will go to the reduced opening position upon activation.
One-way traffic mode	ON	OFF	-	In this mode, only the sensor on terminal 3 (usually the interior sensor) will receive signals while the door is closed or cycling. The sensor on terminal 8 (usually the exterior sensor) will be ignored while the door is closed. Activation on the secure side is only accomplished by switching M1 to Red (7). The electric lock will be active to prevent exterior entry. Refer to diagram D.4.1
Night traffic mode	OFF	ON	-	No sensor on terminals 3 or 8 will receive signals while the door is closed. Activation from either side is only accomplished by switching M0 to Red (7). During the door cycle both sensors will receive signals. The electric lock remains locked except for activations from wall plates or card readers. Refer to diagram D.4.2

How Door Function Modes are Achieved via the Rocker Switches

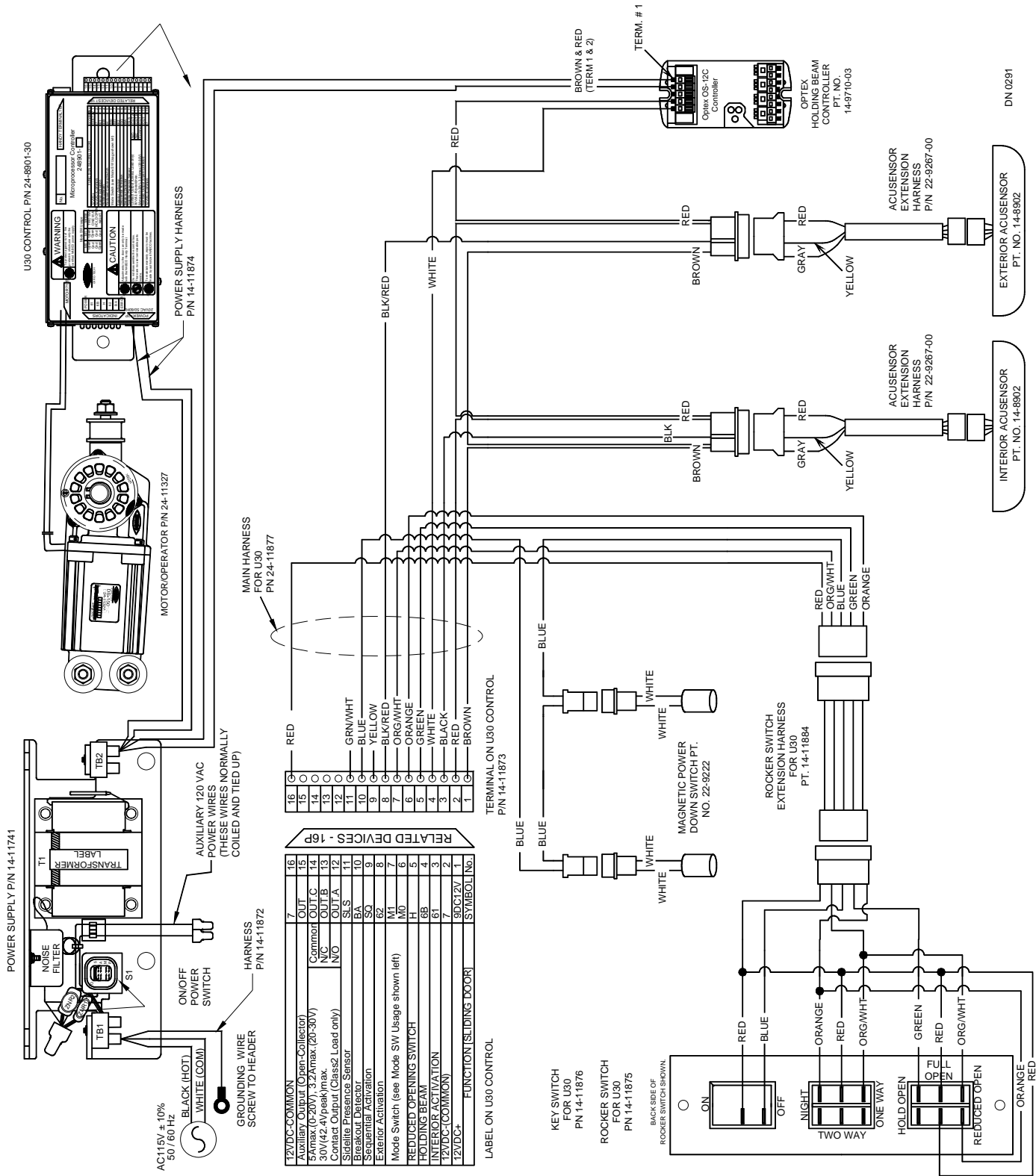
Refer to the tables below. (Off = not switched to common On = switched to common)

Wire M0	Wire M1	Results
OFF	OFF	Two Way Mode: Both sensor signals are available Electric Lock is always unlocked.
OFF	ON	Night Mode: None of the sensor signals will be accepted. Sensors will provide threshold safety and electric lock is always locked. Activation must occur by means of an exterior activation device such as a card reader or key switch.
ON	ON	Hold Open Mode: The door keeps the full open point, not affected by sensors. Electric Lock is always unlocked.
ON	OFF	One Way Mode: The interior sensor activates the door; the exterior sensor provides threshold safety. Electric Lock is locked until an interior activation is received.

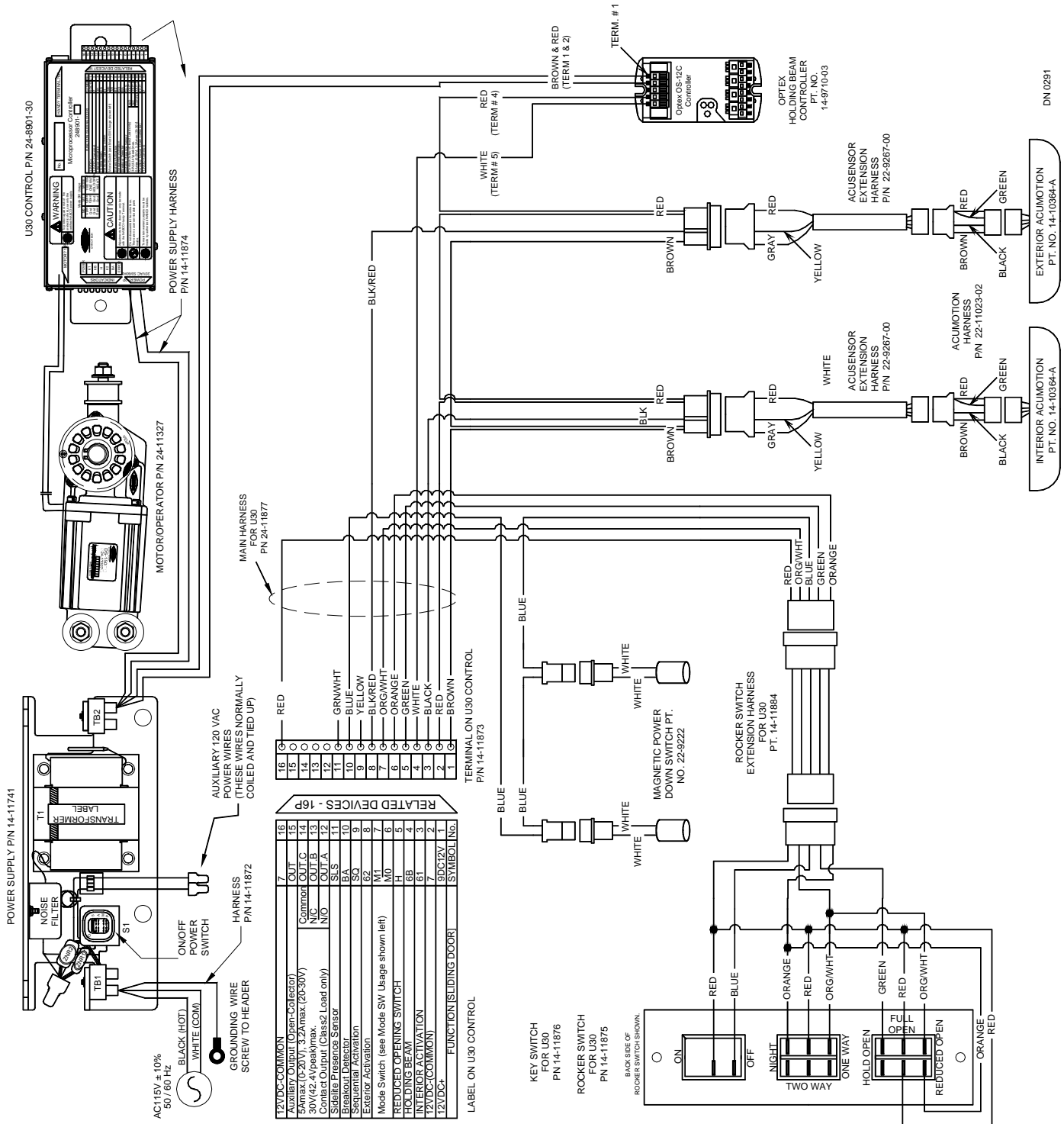
D. Wiring Diagrams

D.1 Standard Wiring

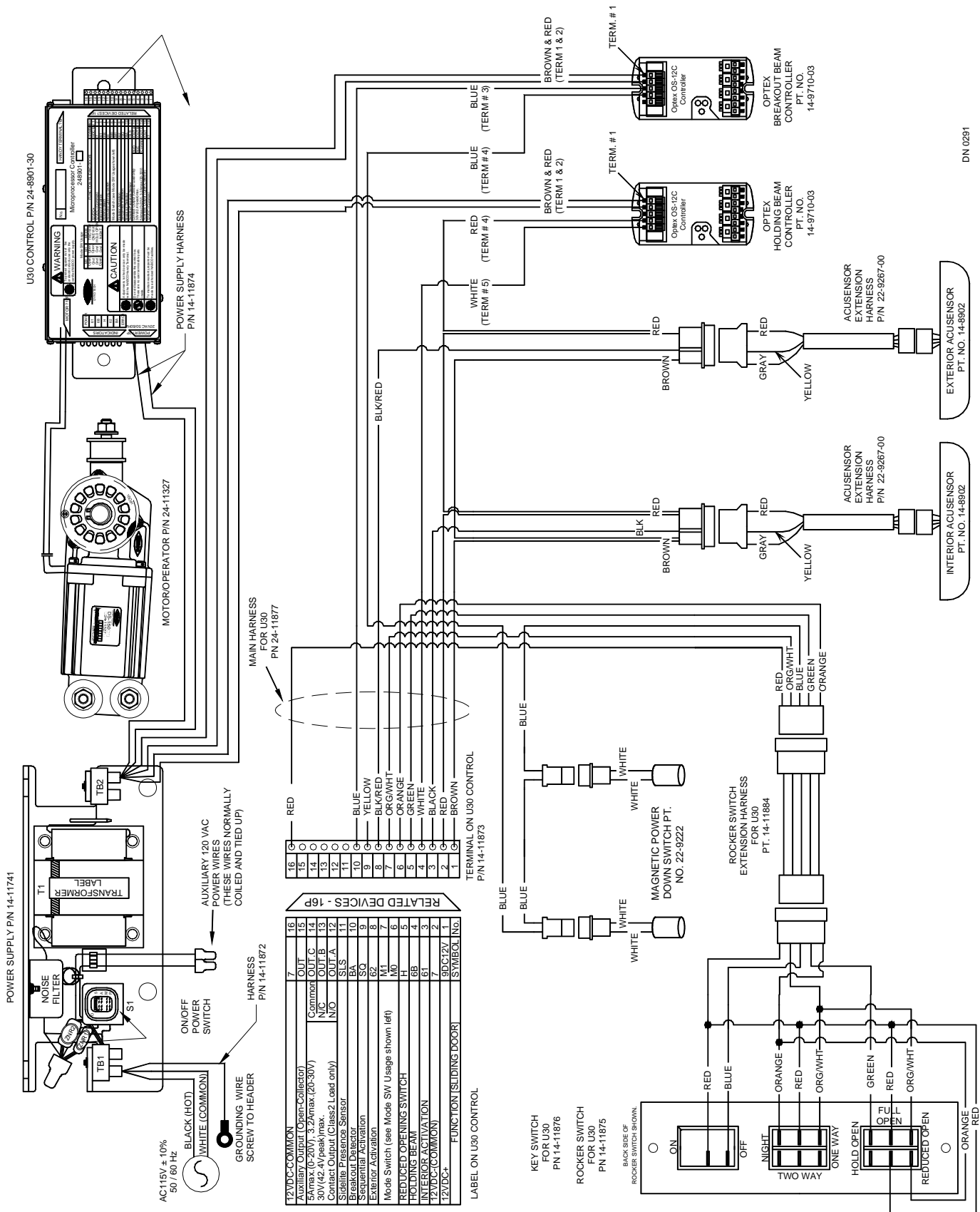
D.1.1 Wiring Diagram with two Acusensors and Holding Beam



D.1.2 Wiring Diagram with two Acumotions and Holding Beam

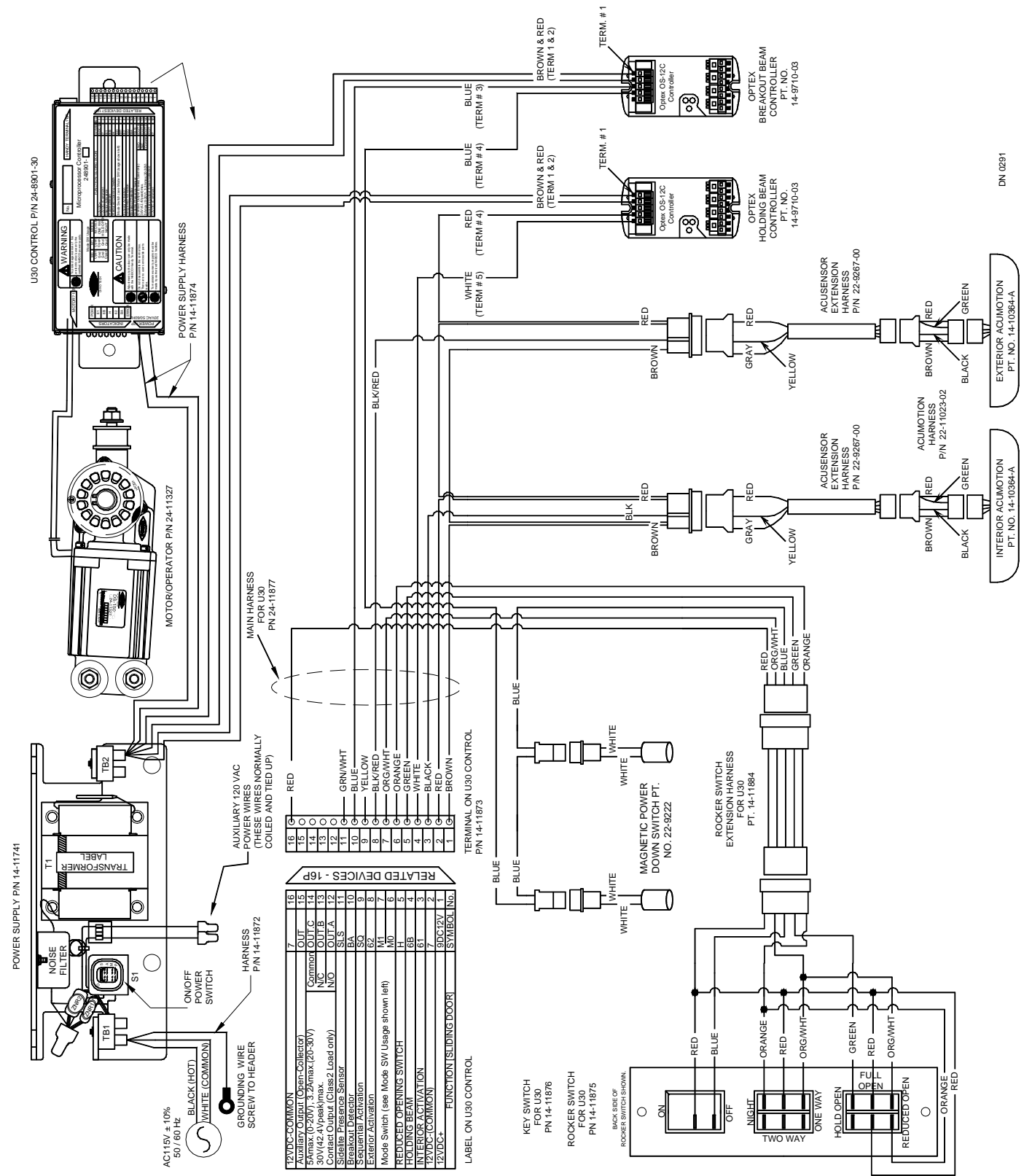


D.1.3 Wiring Diagram for Surface Applied Sliders with two Acusensors, Holding Beam and Breakout Beam Control



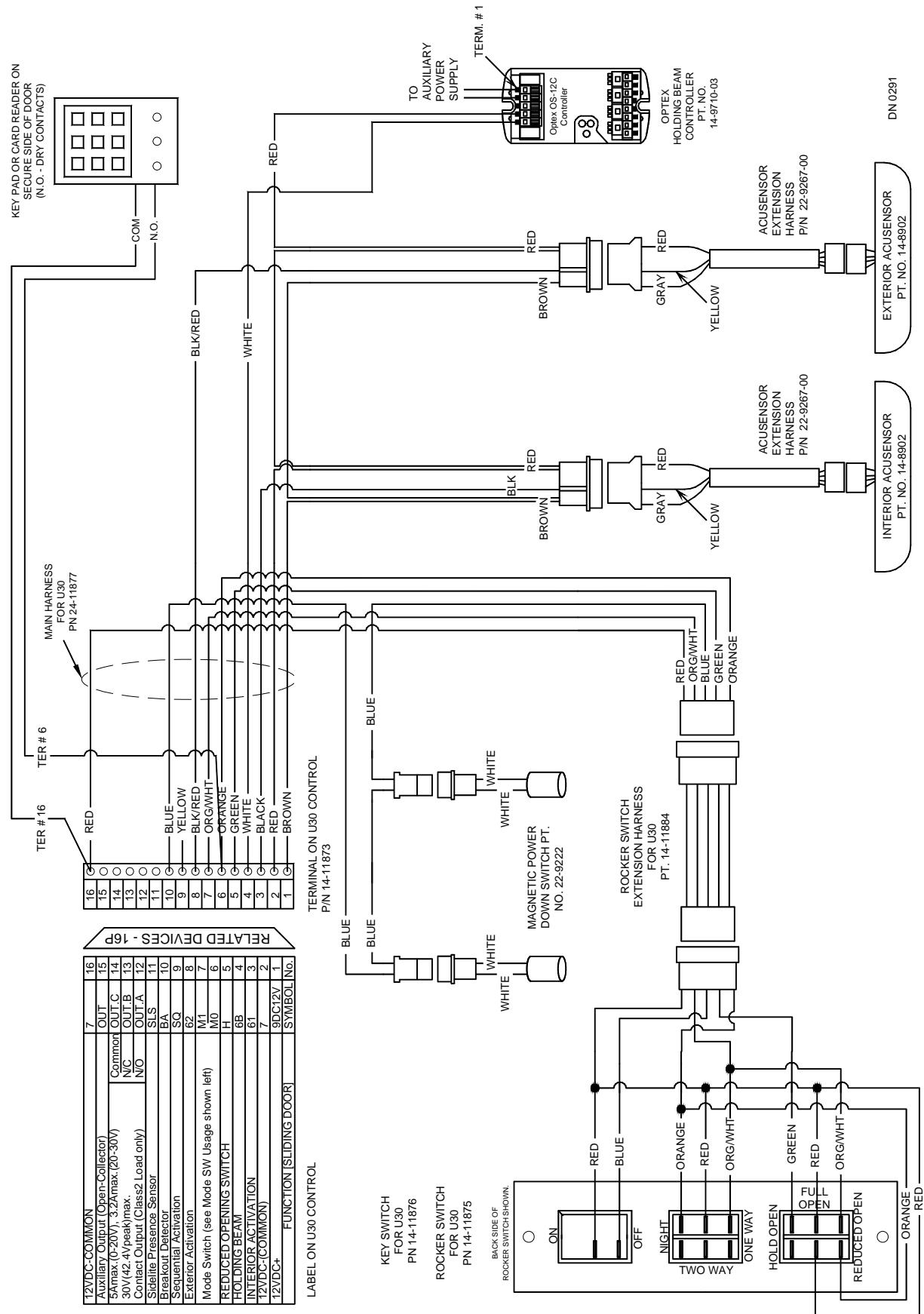
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D.1.4 Wiring Diagram with two Acumotions, Holding Beam and Breakout Beam Control for Surface Applied Sliders



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D.1.5 Wiring Diagram for connecting push plates and or card readers for use in Night mode. Attach the normally open contacts across terminals 16 & 6 on controller terminal block.



FUNCTION [SLIDING DOOR]	SYMBOL NO.
12VDC-COMMON	7
Auxiliary Output (Open-Collector)	15
5Amax. (0-20V), 3.2Amax. (20-30V)	14
Common	13
N/C	12
Contact Output (Class 2 Load only)	11
SLS	10
Sidelite Presence Sensor	9
Breakout Detector	8
Sequential Activation	7
Exterior Activation	6
Mode Switch (see Mode SW Usage shown left)	5
REDUCED OPENING SWITCH	4
HOLDING BEAM	3
INTERIOR ACTIVATION	2
12VDC-(COMMON)	1

RELATED DEVICES - 16P	SYMBOL NO.
16	16
15	15
14	14
13	13
12	12
11	11
10	10
9	9
8	8
7	7
6	6
5	5
4	4
3	3
2	2
1	1

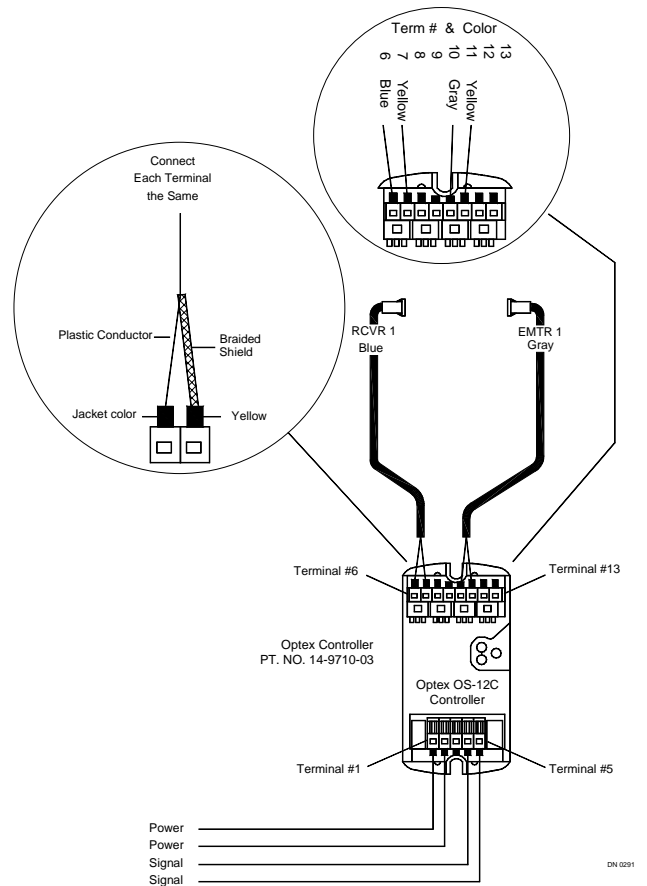
D.2 Infrared Beam Wiring

D.2.1 Wiring Diagram of Optex OS-12C Module for One

Wiring Diagram for One Holding Beam using Optex OS-12C Controller on a GT-1175 with U30 control.

Infrared Beam (Activation-Hold Open)

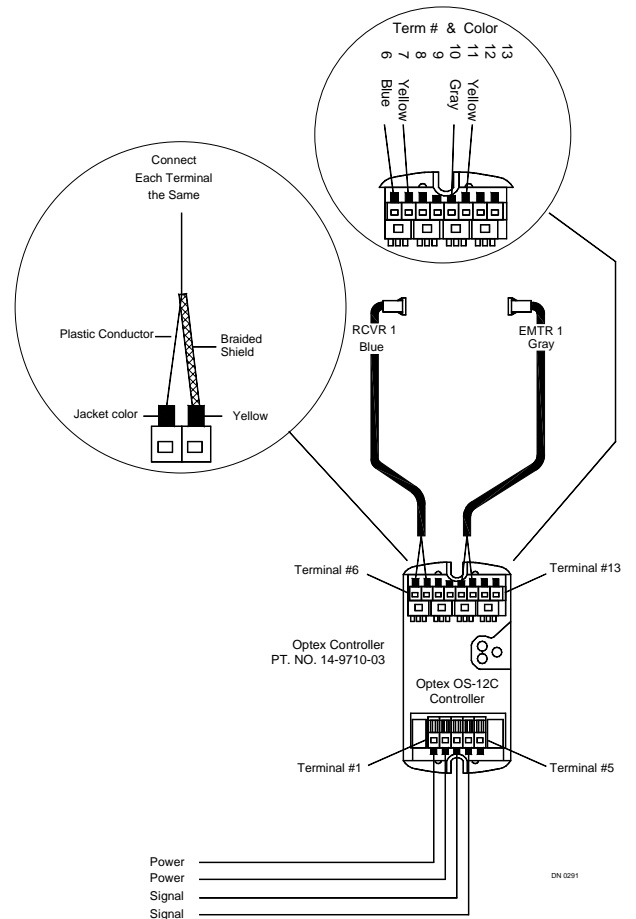
The infrared beam assembly is a factory-installed unit consisting of an emitter, detector and control box. They are flush mounted in door frames and/or jamb tubes, facing each other along the threshold. A pulsed, infrared light beam is continuously transmitted across the door opening. Interruption of the beam will switch the White holding beam input wire to Red (Common). This will cause the system to re-activate and hold open until the interruption is cleared.



Wiring Diagram for One Breakout Beam using Optex OS-12C Controller on a GT-1175 with U30 control.

Infrared Beam (Breakout—Power Interrupt)

The infrared beam assembly is a factory-installed unit consisting of an emitter, detector and control box. The emitter and detector are flush mounted in door frames and/or jamb tubes, facing each other. A pulsed, infrared light beam is continuously transmitted across the door opening. Interruption of the beam by breaking out a door panel will interrupt the Blue (BA) wire power down loop. This will cause the system to stop operating until the door panel is repositioned and latched.

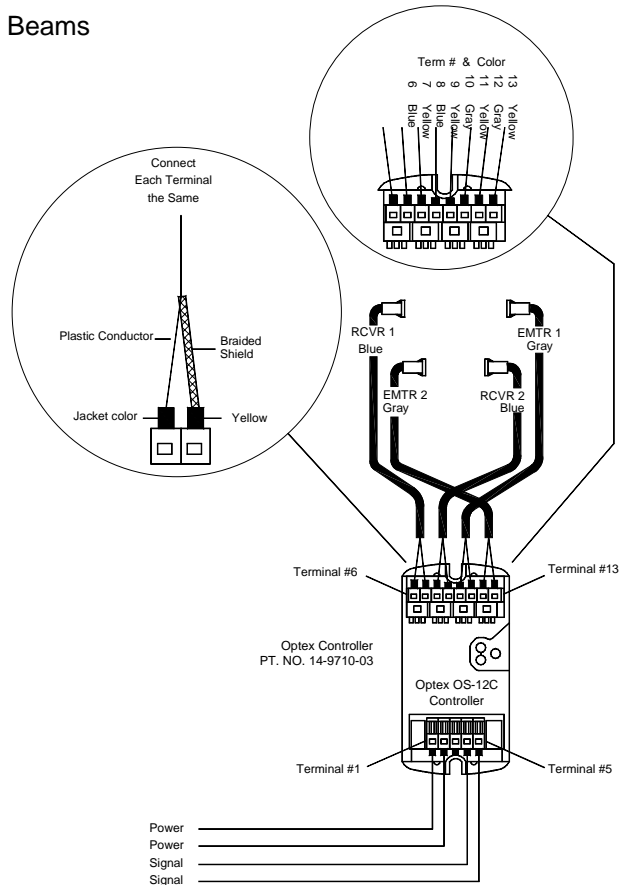


D.2.2 Wiring Diagram of Optex OS-12C Module for Two Infrared Beams

Wiring Diagram for Two Holding Beams using Optex OS-12C Controller on a GT-1175 with U30 control.

Infrared Beams (Activation-Hold Open)

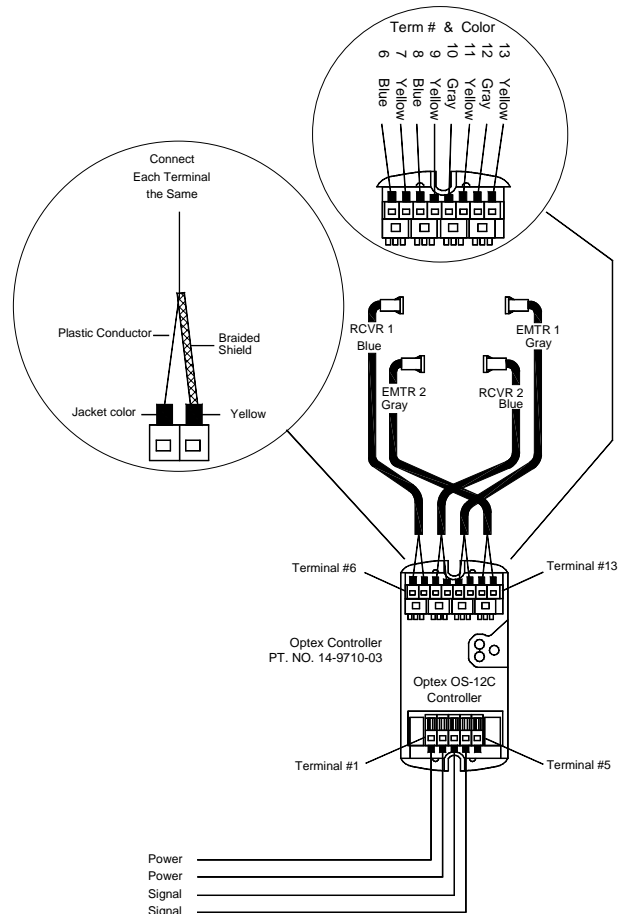
The infrared beam assembly is a factory-installed unit consisting of an emitter, detector and control box. They are flush mounted in door frames and/or jamb tubes, facing each other along the threshold. A pulsed, infrared light beam is continuously transmitted across the door opening. Interruption of the beam will switch the White holding beam input wire to Red (Common). This will cause the system to re-activate and hold open until the interruption is cleared.



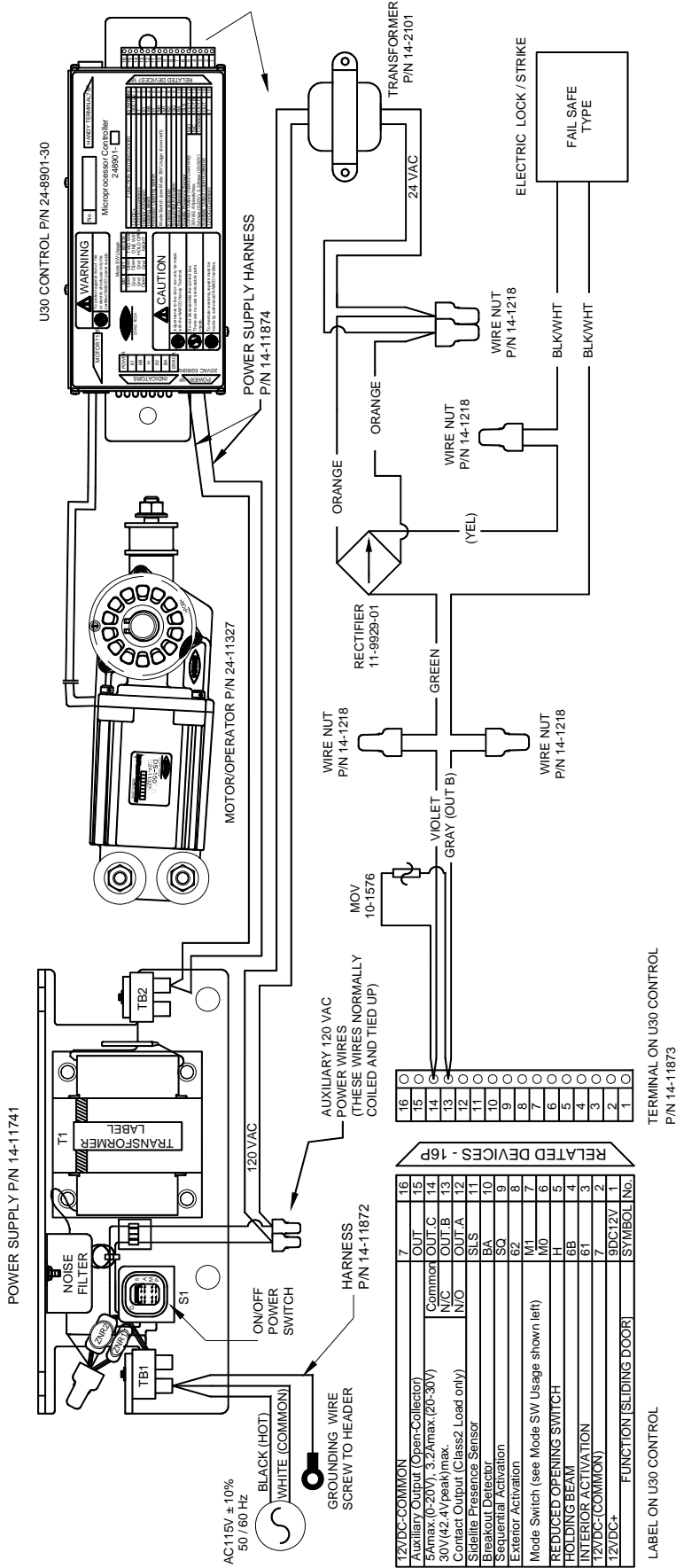
Wiring Diagram for Two Breakout Beams using Optex OS-12C Beams on a GT-1175 with U30 control.

Infrared Beam (Breakout—Power Interrupt)

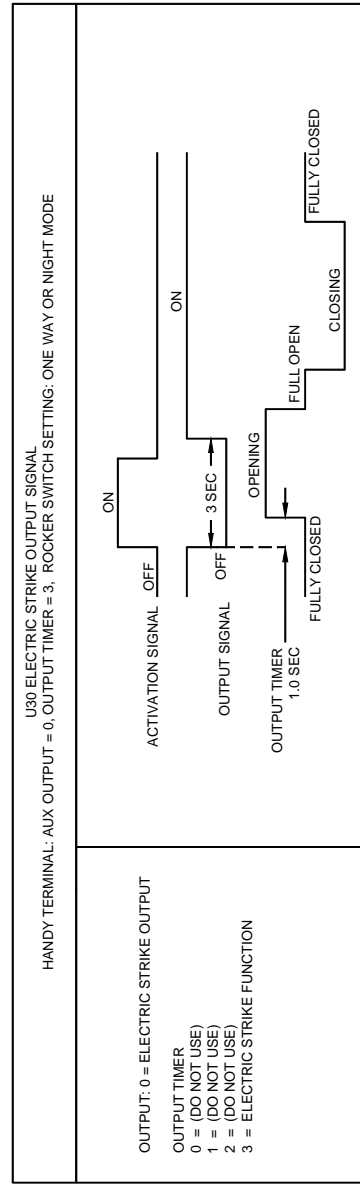
The infrared beam assembly is a factory-installed unit consisting of an emitter, detector and control box. The emitter and detector are flush mounted in door frames and/or jamb tubes, facing each other. A pulsed, infrared light beam is continuously transmitted across the door opening. Interruption of the beam by breaking out a door panel will interrupt the Blue wire power down loop. This will cause the system to stop operating until the door panel is repositioned and latched.



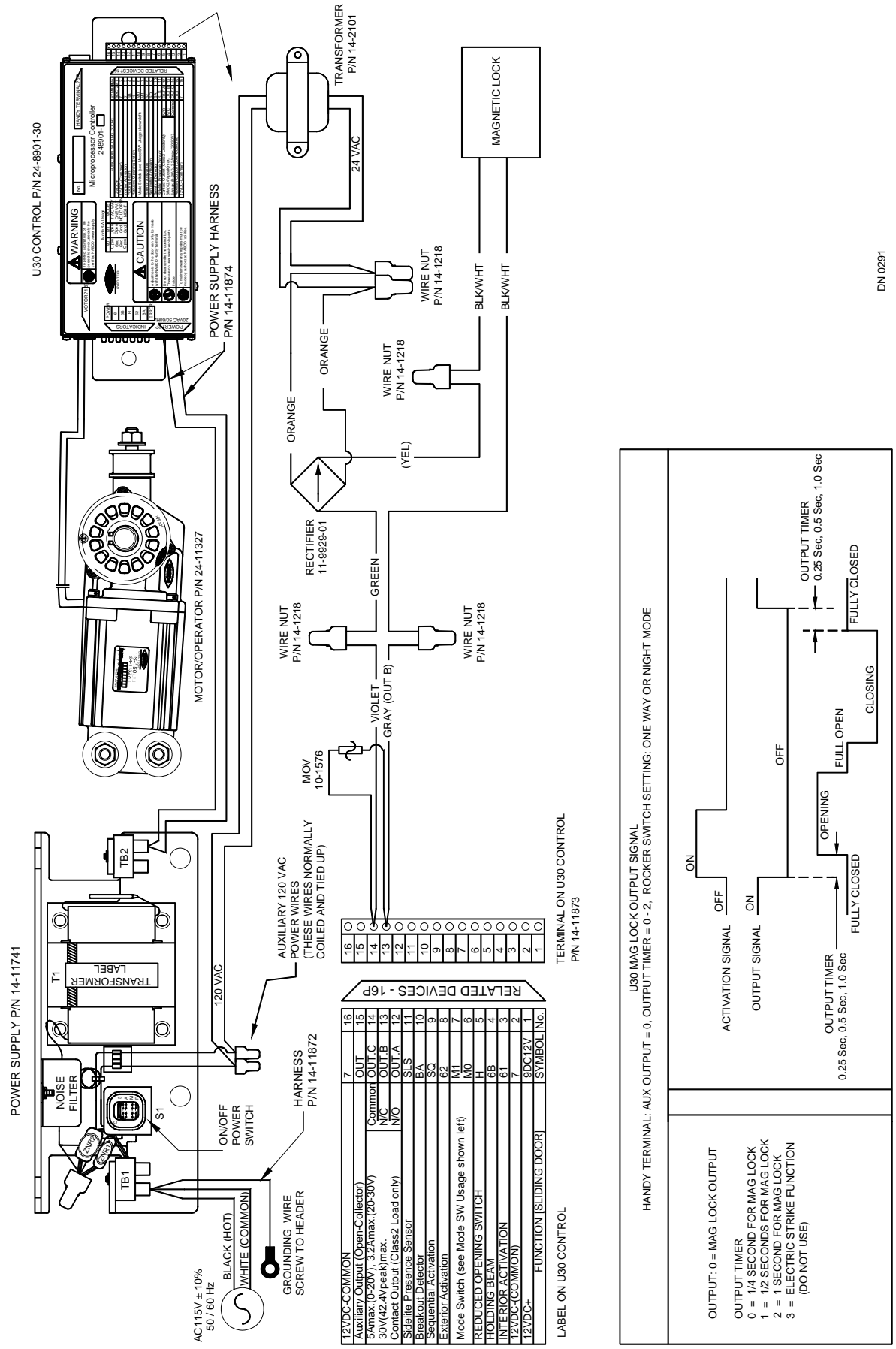
D.3.2 Wiring diagram for U30 with Fail Safe Electric Lock. Note: lock works only in Night & One Way Modes



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D.3.3 Wiring diagram for U30 with Fail Safe Magnetic Lock Note. Lock works only in Night & One Way Modes

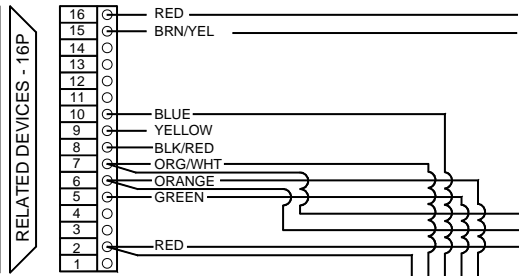


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D.4 Custom Wiring

D.4.1 Wiring diagram for U30 configured for remote control - TWO WAY and ONE WAY mode. Internal transistor for signal at fully open or fully closed position.

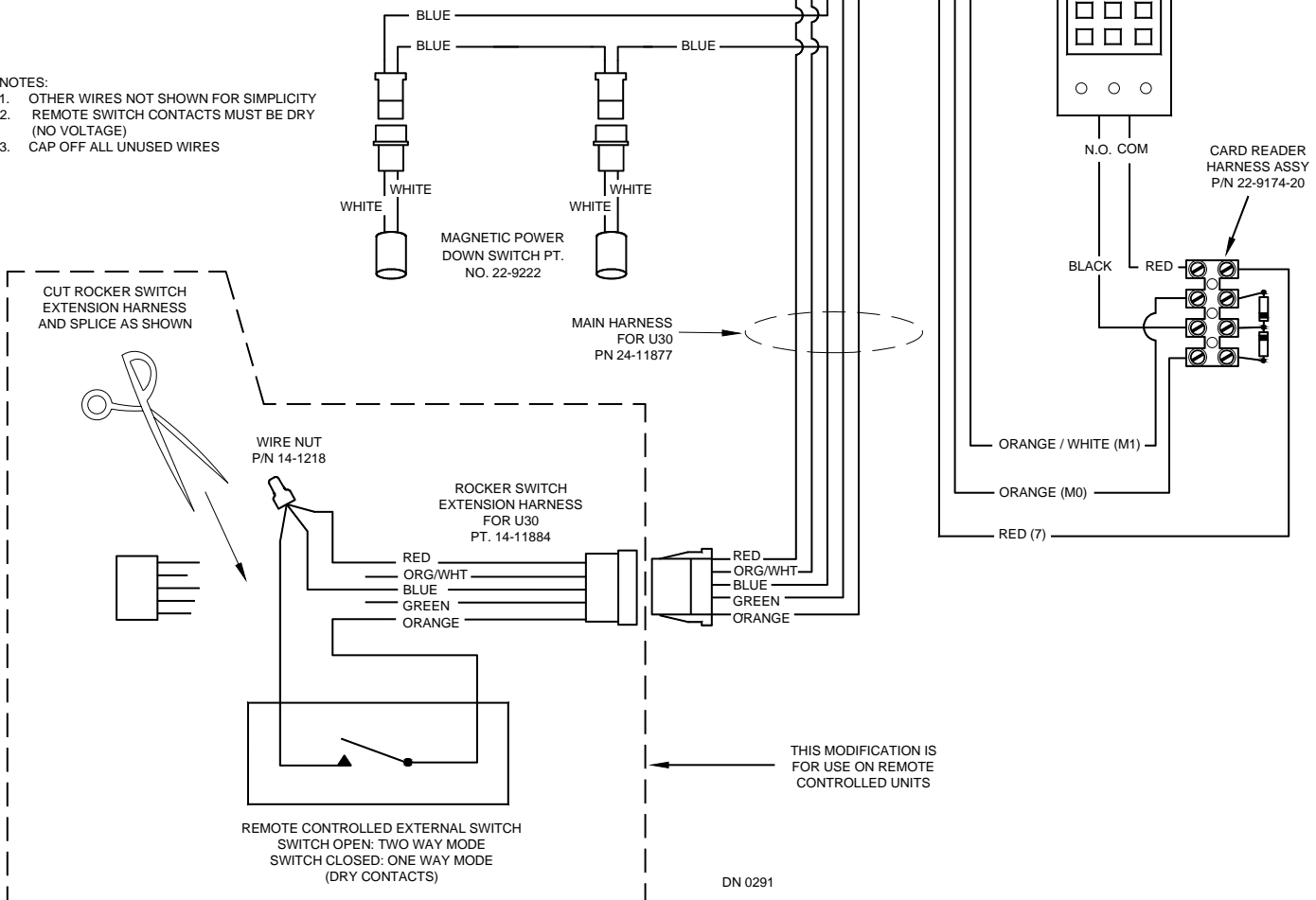
12VDC-COMMON		7	16
Auxiliary Output (Open-Collector)		OUT	15
5Amax.(0-20V), 3.2Amax.(20-30V)	Common	OUT.C	14
30V(42.4Vpeak)max.	N/C	OUT.B	13
Contact Output (Class2 Load only)	N/O	OUT.A	12
Sidelite Presence Sensor		SLS	11
Breakout Detector		BA	10
Sequential Activation		SQ	9
Exterior Activation		62	8
Mode Switch (see Mode SW Usage shown left)		M1	7
		M0	6
REDUCED OPENING SWITCH		H	5
HOLDING BEAM		6B	4
INTERIOR ACTIVATION		61	3
12VDC-(COMMON)		7	2
12VDC+		9DC12V	1
FUNCTION [SLIDING DOOR]		SYMBOL	No.



INTERNAL TRANSISTOR FOR SIGNAL AT THE FULLY OPEN OR FULLY CLOSED POSITION. REFER TO AUXILIARY OUTPUT 2 SETTING IN PROGRAMMING MANUAL
 NOTE:
 1. MAXIMUM 50 mA
 2. IF USING AN EXTERNAL 12 VDC RELAY, INTERNAL RESISTANCE OF COIL MUST BE 240 OHMS OR GREATER.

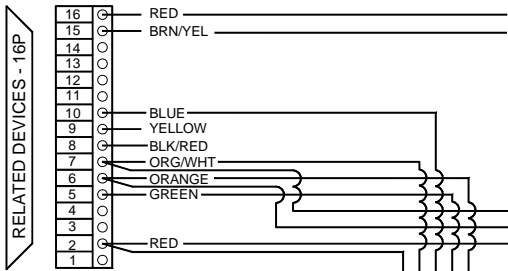
LABEL ON U30 CONTROL

- NOTES:
 1. OTHER WIRES NOT SHOWN FOR SIMPLICITY
 2. REMOTE SWITCH CONTACTS MUST BE DRY (NO VOLTAGE)
 3. CAP OFF ALL UNUSED WIRES



D.4.2 Wiring diagram for U30 configured for remote control - TWO WAY and NIGHT mode. Internal transistor for signal at fully open or fully closed position.

12VDC-COMMON	7	16
Auxiliary Output (Open-Collector)	OUT	15
5Amax.(0-20V), 3.2Amax.(20-30V)	Common	OUT C
30V(42.4Vpeak)max.	N/C	OUT B
Contact Output (Class2 Load only)	N/O	OUT A
Sidelite Presence Sensor	SLS	11
Breakout Detector	BA	10
Sequential Activation	SO	9
Exterior Activation	62	8
Mode Switch (see Mode SW Usage shown left)	M1	7
	M0	6
REDUCED OPENING SWITCH	H	5
HOLDING BEAM	6B	4
INTERIOR ACTIVATION	61	3
12VDC-(COMMON)	7	2
12VDC+	9DC12V	1
FUNCTION [SLIDING DOOR]	SYMBOL	No.

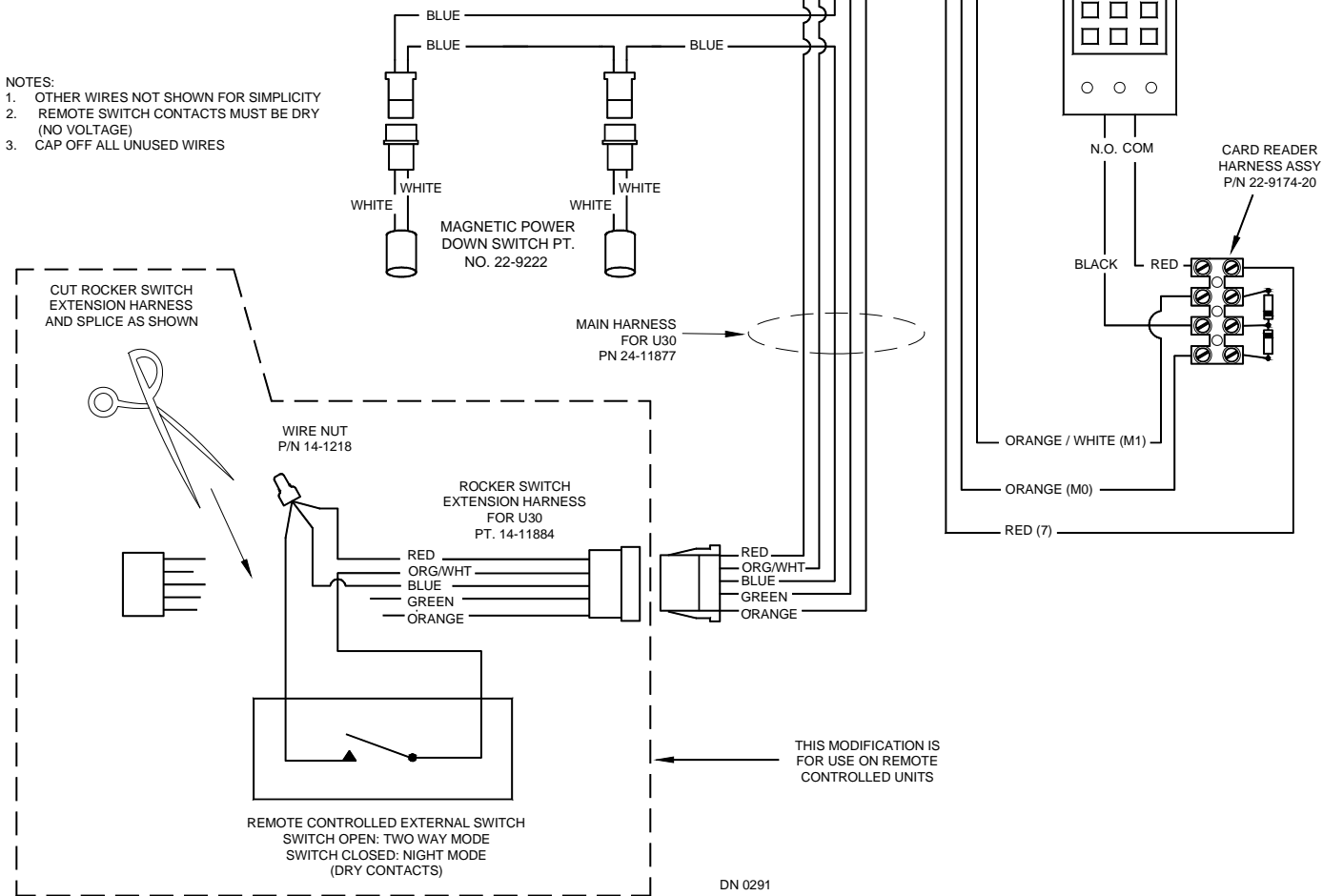


INTERNAL TRANSISTOR FOR SIGNAL AT THE FULLY OPEN OR FULLY CLOSED POSITION. REFER TO AUXILIARY OUTPUT 2 SETTING IN PROGRAMMING MANUAL

- NOTE:
1. MAXIMUM 50 mA
 2. IF USING AN EXTERNAL 12 VDC RELAY, INTERNAL RESISTANCE OF COIL MUST BE 240 OHMS OR GREATER.

LABEL ON U30 CONTROL

- NOTES:
1. OTHER WIRES NOT SHOWN FOR SIMPLICITY
 2. REMOTE SWITCH CONTACTS MUST BE DRY (NO VOLTAGE)
 3. CAP OFF ALL UNUSED WIRES



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THIS MODIFICATION IS FOR USE ON REMOTE CONTROLLED UNITS

D.4.3 Wiring diagram for U30 configured for remote control - ONE WAY and NIGHT mode. Internal transistor for signal at fully open or fully closed position.

12VDC-COMMON	7	16
Auxiliary Output (Open-Collector)	OUT	15
5Amax.(0-20V), 3.2Amax.(20-30V)	Common	OUT_C
30V(42.4Vpeak)max.	N/C	OUT_B
Contact Output (Class2 Load only)	N/O	OUT_A
Sidelite Presence Sensor	SLS	11
Breakout Detector	BA	10
Sequential Activation	SQ	9
Exterior Activation	62	8
Mode Switch (see Mode SW Usage shown left)	M1	7
	M0	6
REDUCED OPENING SWITCH	H	5
HOLDING BEAM	6B	4
INTERIOR ACTIVATION	61	3
12VDC-(COMMON)	7	2
12VDC+	3DC12V	1
FUNCTION [SLIDING DOOR]	SYMBOL	No.

16	G	RED
15	G	BRN/YEL
14	G	VIOLET
13	G	GRAY
12	G	GRAY
11	G	GRN/WHT
10	G	BLUE
9	G	YELLOW
8	G	BLK/RED
7	G	ORG/WHT
6	G	ORANGE
5	G	GREEN
4	G	WHITE
3	G	BLACK
2	G	RED
1	G	BROWN

INTERNAL TRANSISTOR FOR SIGNAL AT THE FULLY OPEN OR FULLY CLOSED POSITION. REFER TO AUXILIARY OUTPUT 2 SETTING IN PROGRAMMING MANUAL

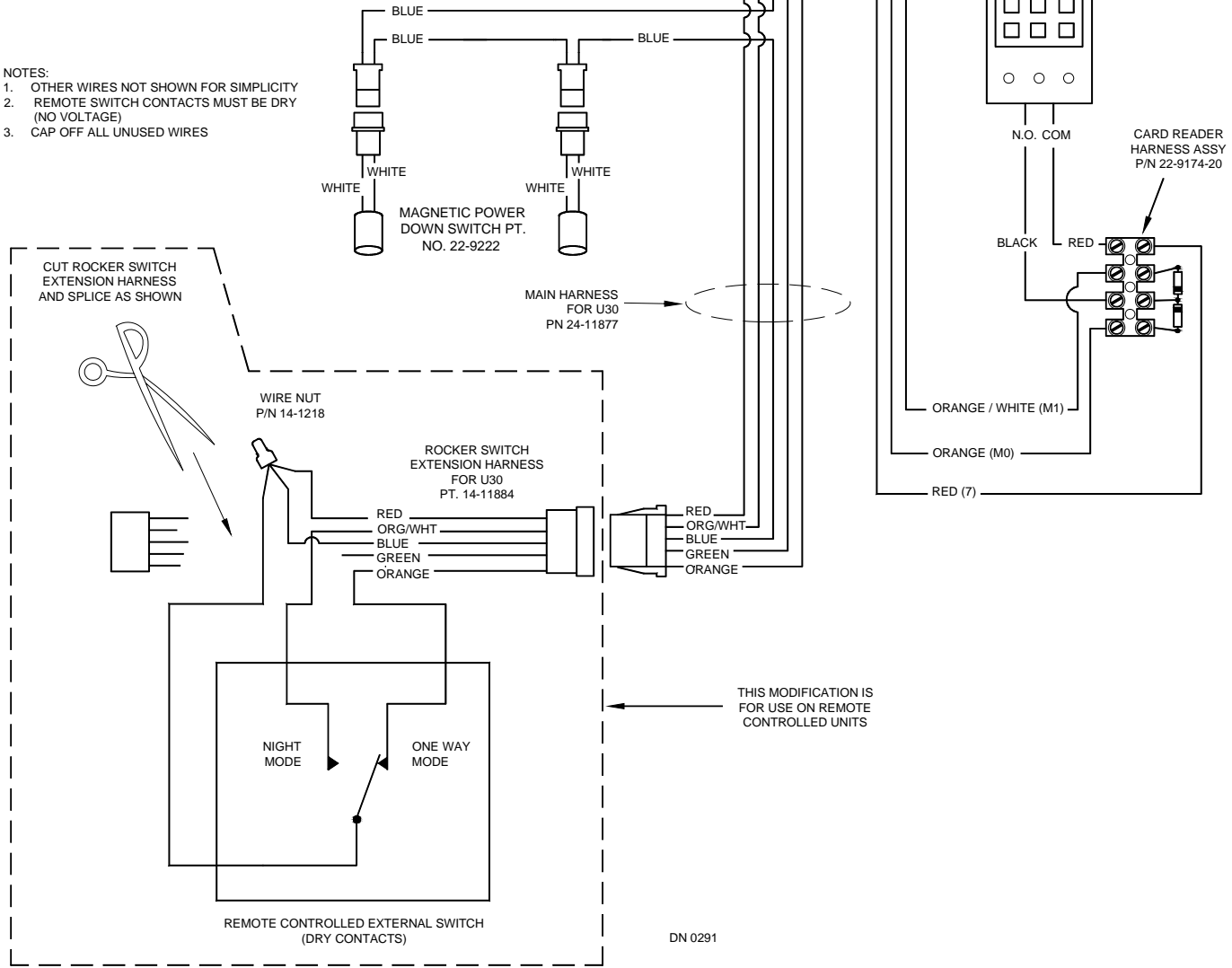
NOTE:

1. MAXIMUM 50 mA
2. IF USING AN EXTERNAL 12 VDC RELAY, INTERNAL RESISTANCE OF COIL MUST BE 240 OHMS OR GREATER.

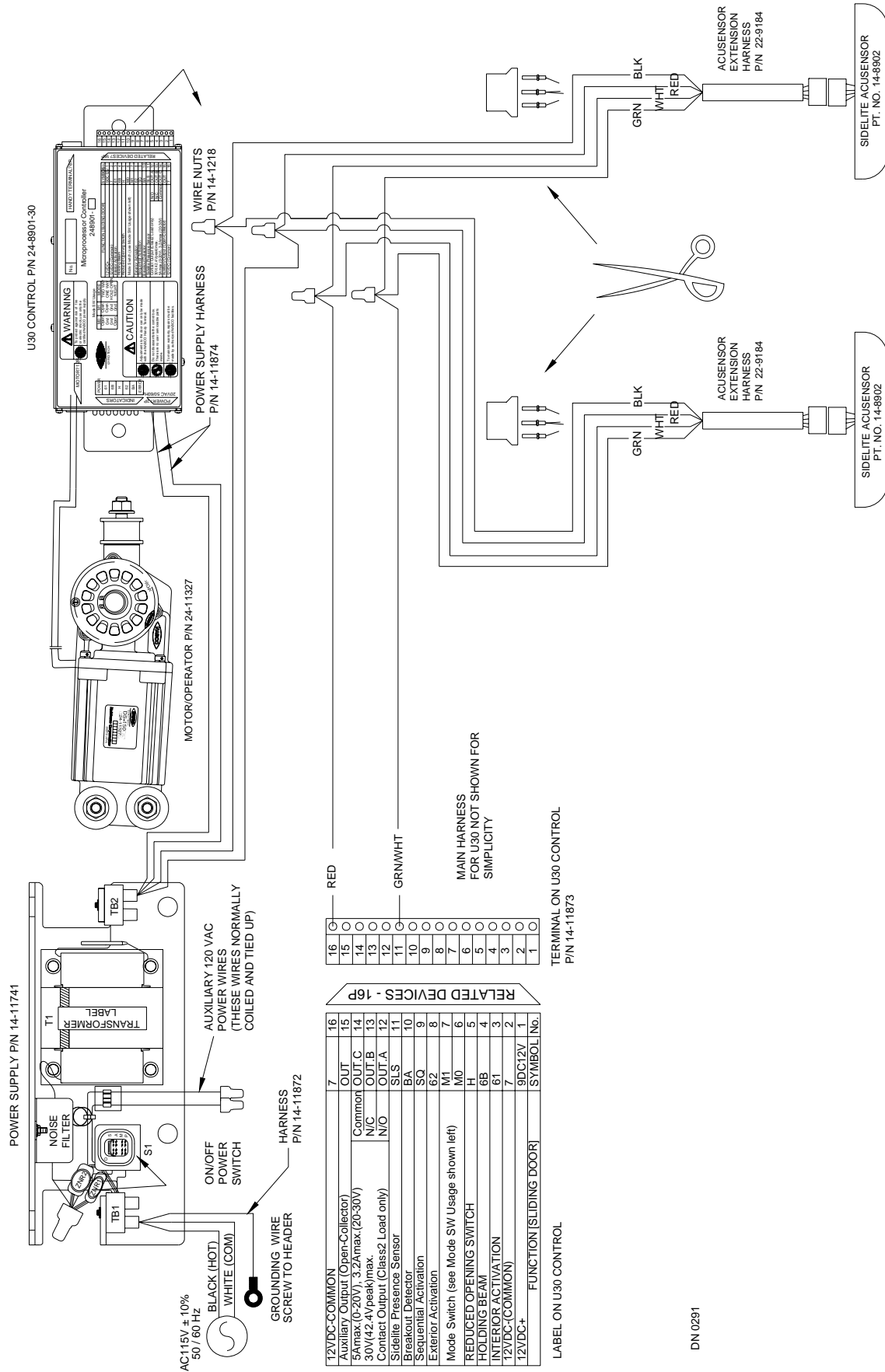
LABEL ON U30 CONTROL

TERMINAL ON U30 CONTROL P/N 14-11873

- NOTES:
1. OTHER WIRES NOT SHOWN FOR SIMPLICITY
 2. REMOTE SWITCH CONTACTS MUST BE DRY (NO VOLTAGE)
 3. CAP OFF ALL UNUSED WIRES



D.4.4 Wiring diagram for U30 with sidelite sensors.



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E. Troubleshooting

E.1 When the doors are panicked open, the system does not shut down.

- E.1.1 Check the wiring of the magnetic power down switches. Blue (BA) circuit must go open for system to shut down.

E.2 Doors do not move when power is applied or Handy Terminal screen does not change.

- E.2.1 Confirm the swing panel/s is closed completely.
- E.2.2 Confirm Blue (BA) circuit is not open. This can be verified by observing the Green “BA” status LED on the controller. If this LED is ON, the circuit is open, and the unit will not operate.
- E.2.3 Check that the power down magnet in the top rail of the swing panel is installed and aligned with the magnetic power down switch in the bottom of the header.
- E.2.4 Confirm rocker switch is set to ON not OFF.

E.3 Doors move very slowly when the Handy Terminal is connected. (Only happens after “Stroke Cycle” initiated.)

- E.3.1 This is normal. It is “learning” the door stroke.
- E.3.2 After learning the stroke, the Handy Terminal will prompt you with options

E.4 The doors do not open completely.

- E.4.1 Look for obstructions in the track as well as inside the header. Check to make sure that the belt clips are not hitting something.
- E.4.2 Check that the mode switch on the panel is not in “Reduced Opening” mode. Also verify that the Green “H” status LED on the controller is not lit. If this LED is ON, it indicates that there is a signal on the reduced opening circuit (Green “H” is being shorted to Red 7).
- E.4.3 Use the Handy Terminal and reinitialize the system.

E.5 I want to reset the system back to the factory settings.

- E.5.1 Plug in Handy Terminal and wait for the door to close.
 - E.5.1.1 At “Swing/Slide Stroke?” enter YES.
 - E.5.1.2 At “Swing Door Y or N?” enter YES (even though you have a slide door).
 - E.5.1.3 Door will try to initialize as a sliding door and reset the settings.
 - E.5.1.4 The system will now initialize as a slide door to the factory settings.
 - E.5.1.5 You must set the door stroke from the Handy Terminal from the prompts at this point.

For technical assistance call:
1-877-622-2694 or
1-866-622-8325

F. Return Policy

NABCO ENTRANCES Return Policy

If it is necessary to return a malfunctioning unit to NABCO, please use the following guidelines.

Return Material Tags (RMT) are to be used for in and out of warranty materials. The RMT is also used for repair and return as well as return for credit transactions. An RMT must accompany all returned items.

Complete one RMT for each item that will be returned. The following information should be recorded on the tag:

- **Serial No. or Part No.** – Serial numbers for electronic components are stamped, engraved or printed on stickers and located on the component. Non-electrical parts usually do not have serial numbers.
- **Part Name (description)**
- **Exp. Date** – Expiration dates for electronic components are stamped, engraved or printed on stickers and located on the component. Non-electrical parts usually do not have expiration dates. For “Warranty claims of non-electrical parts”, please include a photocopy of the original NABCO invoice the part was purchased on.
- **Date Returned** – The date that the part is returned to NABCO Entrances INC.
- **Requested Repair and Return Action** – Specify in/out warranty for R&R, Exchange, or in warranty for credit. For requests for credits, please write the number of the invoice you want credited.
- **Distributor Name**
- **Date of Installation**
- **Installed at Job**
- **Describe part problem**

The RMT tag is printed in triplicate. Please keep the top copy of the tag for your returns. Send the remaining two copies along with the part to the attention of the Repair and Return Department at NABCO ENTRANCES. Please remember to package the parts properly. Ship the parts freight prepaid. Collect shipments will be refused. If inquiring on the returned part, please use the RMT number associated with that part.

NABCO ENTRANCES Standard Term & Conditions and Warranty govern all returned items. These are provided in detail in the Terms & Conditions section of NABCO ENTRANCES Price Book. If you have any questions on warranty or the use of the RMT tags, please call NABCO’s Customer Service Department toll free at 1-877-NABCO WI (1-877-622-2694).