Digital Lighting Systems

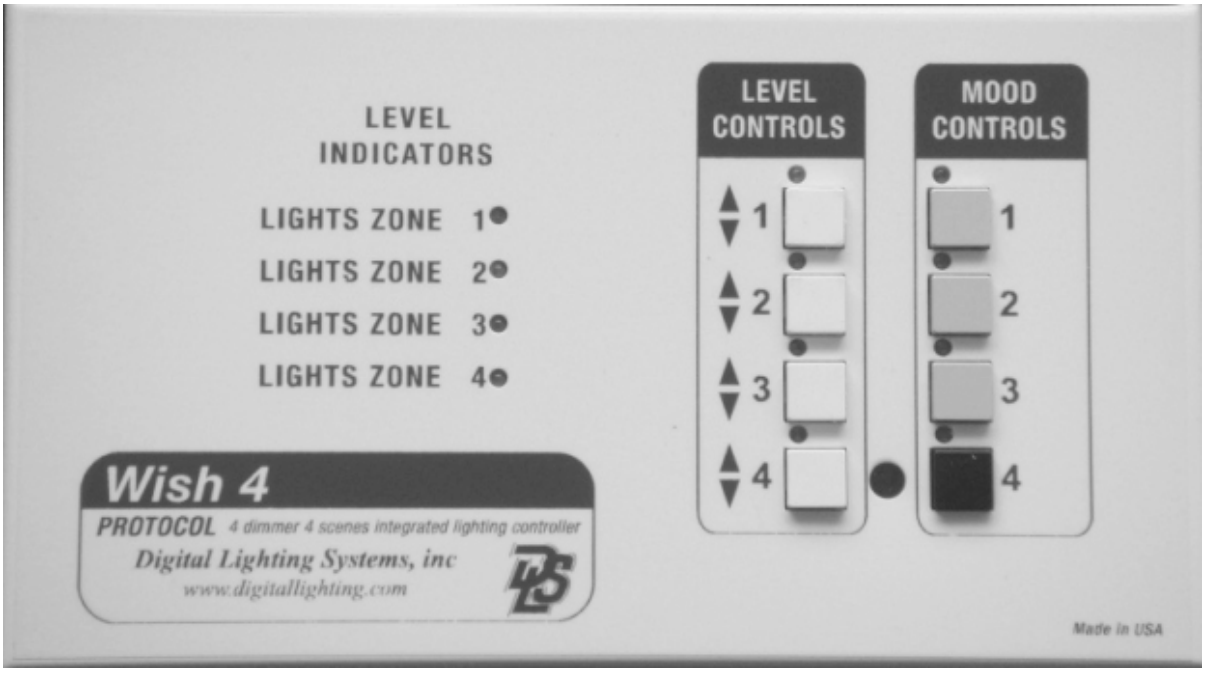
www.digitallighting.com

PROTOCOL

WISH4 & WISH4-RP

Integrated 4 Channel Dimming system

WISH4 **4 Triac dimmers x 4 Amps.**
WISH4-RP **4 Reverse Phase dimmers x 2.5 Amps.**



USER'S MANUAL

WISH4-UM
01/18

GENERAL DESCRIPTION

The **WISH4** is a self contained lighting controller with **4 x 4 Amp DIMMERS/ SWITCHES.** It is a stand-alone unit or may be part of a larger **PROTOCOL** lighting control system. The **WISH4** dimmer pack contains 4 solid-state dimmers. Power is fed to the **WISH4** from a single ***20 Amp. breaker***. Each dimmer is rated for a maximum output current of 4 amperes (**480 Watts at 120 VAC)**.

The **WISH4** is an integration of an eight button **PS Series** station and a **PD404** four circuit dimmer. It contains 2 printed circuit boards, the load driver module (**LDM**)and the combined **INT04** control module, the **PSC08-IR** control station . The dimmers on the **LDM** are triggered by the firing board (**INT04**).

With a built in control station, the WISH4 has no need for any other system components. The **WISH4** ships ready to dim/switch 4 circuits and has 4 PRESET buttons to allow the user to store 4 different lighting SCENES. The **WISH4** comes standard with a UNIVERSAL INFRARED REMOTE receiver and a Universal Infrared Remote control (**UIR**). The **WISH4** may be a stand-alone unit, or may be connected to a larger PROTOCOL system as both a dimmer node and station node. The Station has all the same features as a **PSC08-IR**. Please see **PS Series** and **UIR** specifications/manuals for more information.

STAND ALONE OPTION:

The **WISH 4** is ready to operate and does not need any programming when used as a stand- alone unit. It mounts on a 4 Gang wall box and can use existing wiring to replace regular 4 dimmer configurations requires (neutral feed for Logic).

The WISH4 usually ships with a standard program and faceplate labeling.

Button operation - Default As Shipped

ZONES 1,2,3,4 (buttons 1 through 4)

Dimmer/Dimmer Preset On / Off
*Push & release alternates relevant dimmers from ON at a preset level to OFF.
*Push and Hold cycles dimmer Up and Down until released.

SCENES 1,2,3,4 (buttons 5 though 8)

Memory programmable Preset levels for all 4 Circuits.
Push and release and all circuits will change to preset Levels. Scenes are easily Programmable by operator. After unlocking the PSC08 station(page 7) Simply push and hold MOOD scene button for four seconds to store lighting scene. Station must be unlocked to store scenes. Please see Appendix F of the PROTOCOL Hardware and Software Manuals for more details on locking and un-locking stations.

Infrared Controller:

From any universal infrared controller (set to control RCA brand VCR) you can control lights individually and recall scenes.

PART OF LARGER PROTOCOL SYSTEM OPTION:

The **WISH 4** may be used as two Nodes on the **PROTOCOL** dimming and control system DATA BUS (a dimming node and a control node). It can be programmed as a regular **PS** station. The dimmer part of the unit may be regarded as another 4 circuit dimmer module on the system and may be controlled from any other control node. The **PROTOCOL** System has distributed intelligence (no central controller) and operates over a 4-wire (2 twisted pairs) network bus thus increasing the reliability and the versatility of the system.

As stated above, the WISH4 components may be reprogrammed to any configuration possible like other PROTOCOL components as described in the PROTOCOL Software Programming Manual. Button functions and control channel assignment are programmed and loaded into the **PS** station by means of our "**SOFTPRO"** programming software. These can be assigned at the factory and easily reprogrammed in the field whenever necessary to accommodate the changing needs of the application. Protocol control stations offer the flexibility to **change function**, **zone assignment**, **quantity and location of buttons** on the station.

WISH4 - Load Driver Module Information

Figure 1 - WISH4 Block diagram

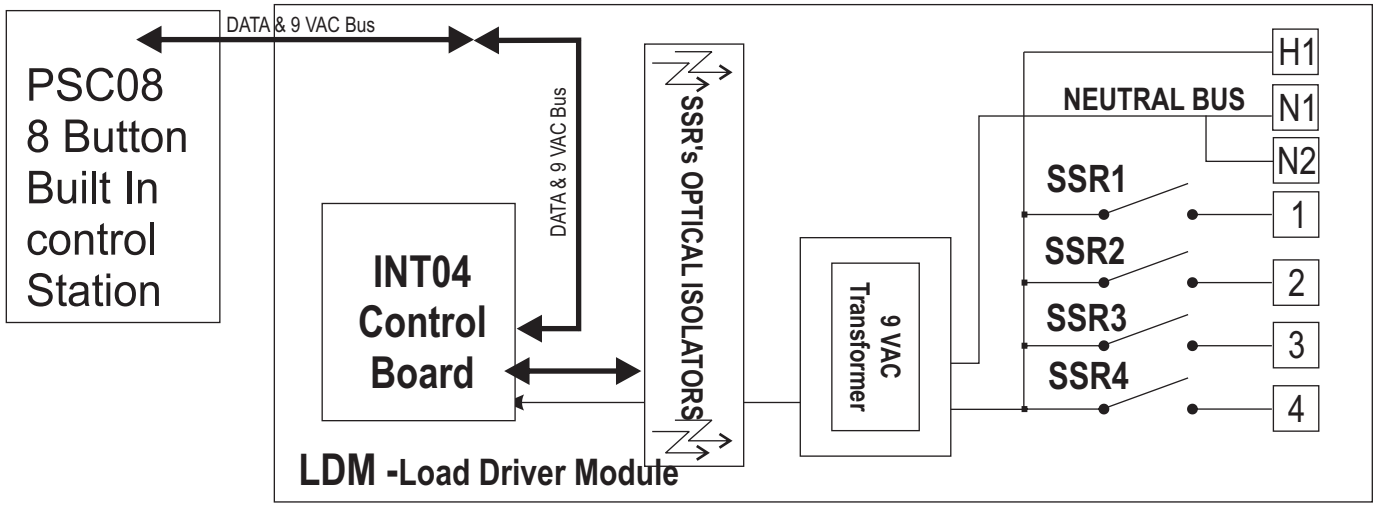
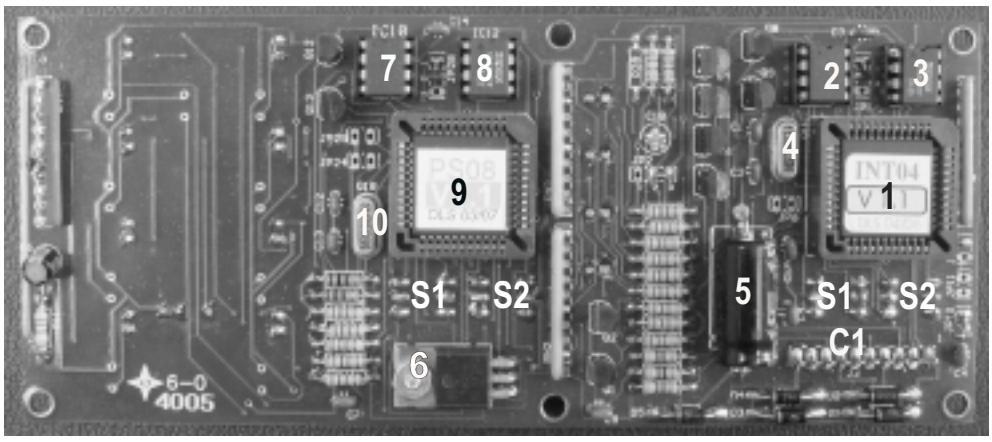


Table 1 - Terminals definitions

NAME	DESCRIPTION	NAME	DESCRIPTION
H1	Hot Line Feed For Relays 1, 2, 3 & 4	**1**	Output Of Solid-State Relay #1
N1-N2	Neutral and commons	**2**	Output Of Solid-State Relay #2
	Connections.	**3**	Output Of Solid-State Relay #3
		4	Output Of Solid-State Relay #4

Table 2 - Absolute Maximum Electrical Ratings

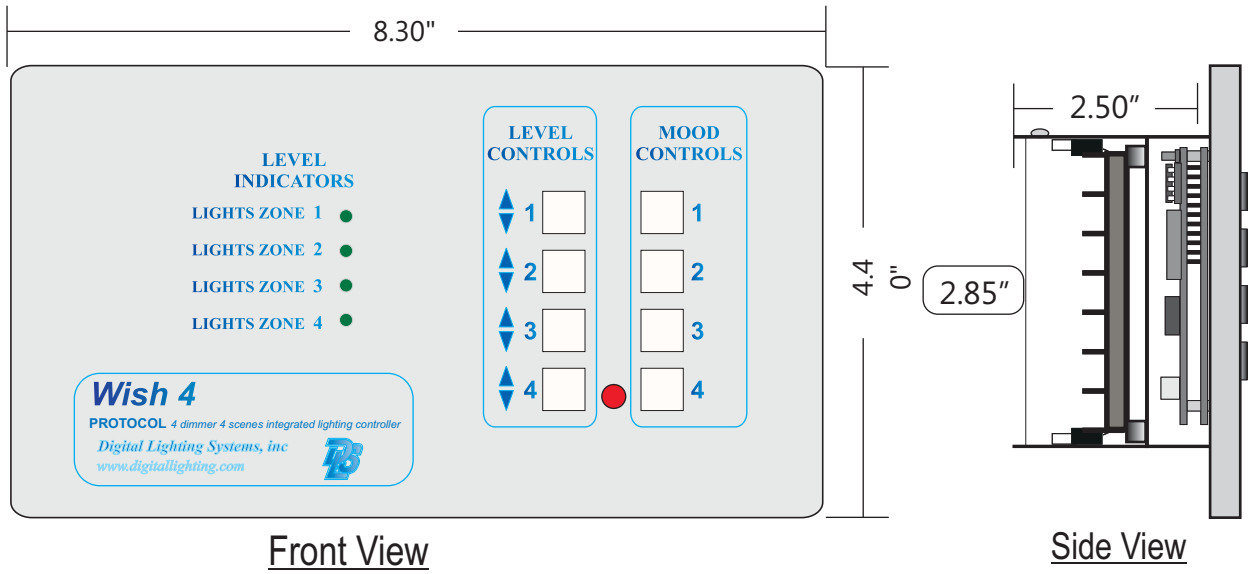
Electrical Characteristic	Terminal	Maximum
Output Load Current	1 to 4	4Amps. WISH4
Output Load Current	1 to 4	2.5Amps. WISH4-RP
Input Current For Relays1 to4	H	20 Amps.
Input Voltage	H	120 VAC



1 Microprocessor Dimmers
2 Dimmers Memory
3 Dimmers transceiver
4 Dimmers Crystal
5 Power Capacitor
6 5 Volts regulator
7 Control memory
8 Control transceiver
9 Microprocessor Control
C1Data and 9 VAC connector

Enclosure Installation

Recess mount the Wish4 in a deep 4 gang wall 4 Gang box with a minimum of 3" cavity depth from dry wall surface. Installation must be performed by a qualified electrician and must meet local and/or NEC code requirements. Refer to the drawings below (FIGURE 3) for the correct dimensions.



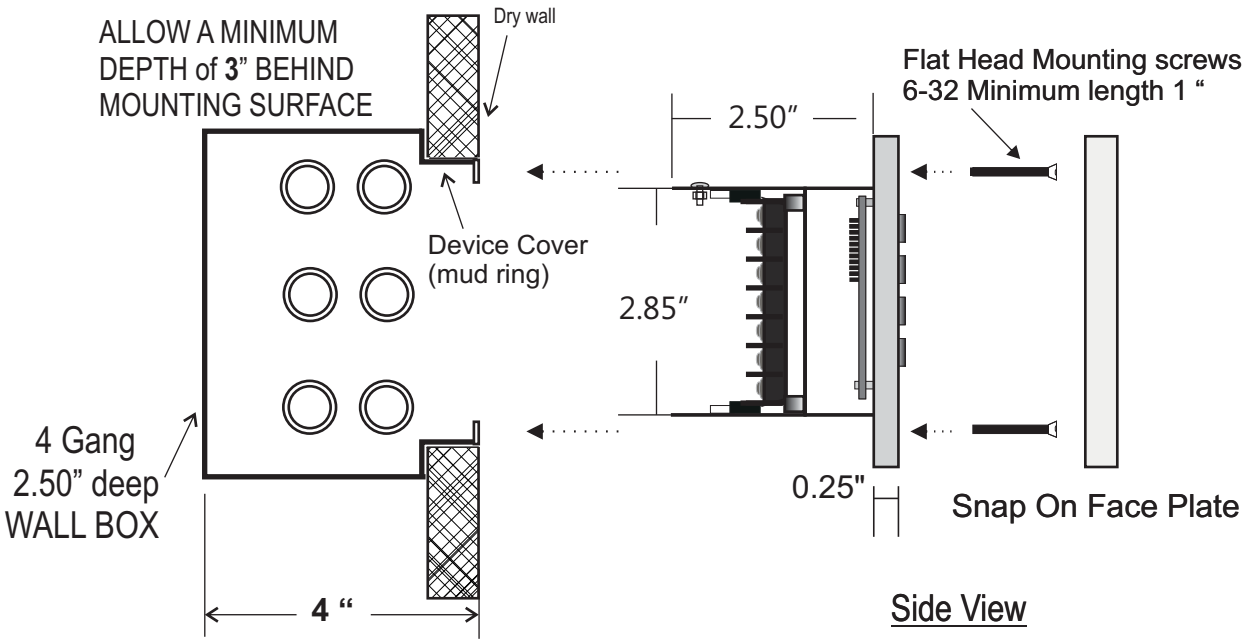


Figure 3 - WISH4 Dimensional Diagram

Wish4 Low Voltage Wiring Methods

☐ W1-W2 (Jumpers to power additional PSCxx Control Stations)

A Protocol system can consist of One WISH4 and 2 (**PS Series** stationswithout requiring require an external 9 VAC power supply transformer. Power for these components can be supplied byof the **WISH4** . *Figure 4* shows the **WISH4's** network ports with its pin assignments. Installing W3 and W4 jumpers will connect the 9 VAC transformer output to the network bus via J3. *Figure 5* shows a typical small system with one WISH4 supplying power to the network. *Figure 6* shows a typical system with an external transformer. System accessories such as extension cables and jumper boards are available from DLS and can simplify network bus connections.

TO AVOID PARALLELING THE OUTPUTS OF SEVERAL TRANSFORMERS IN A PROTOCOL SYSTEM:

(Do not install the jumpers when a DB44 panel with an external transformer is used in a system.

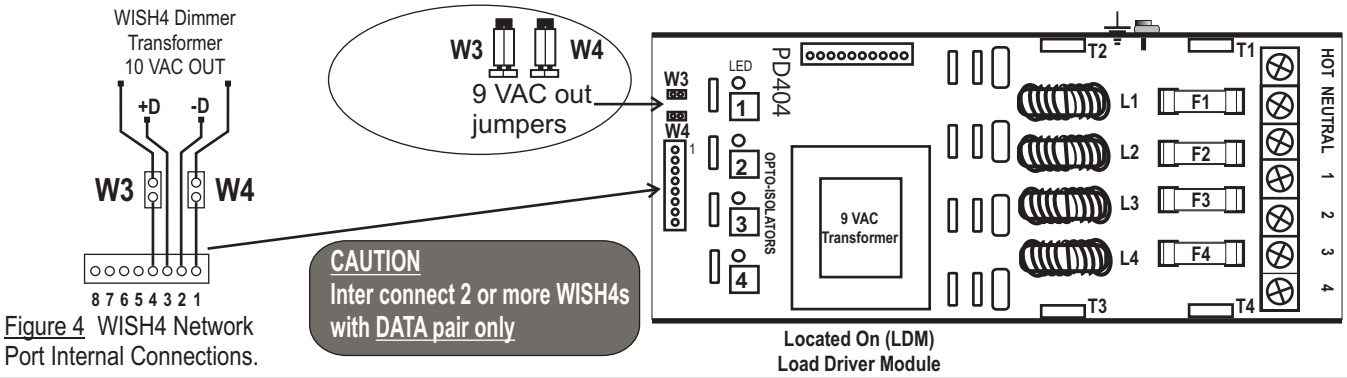


Figure 4 WISH4 Network Port Internal Connections.

Figure 5 - Typical System Powered By a WISH4

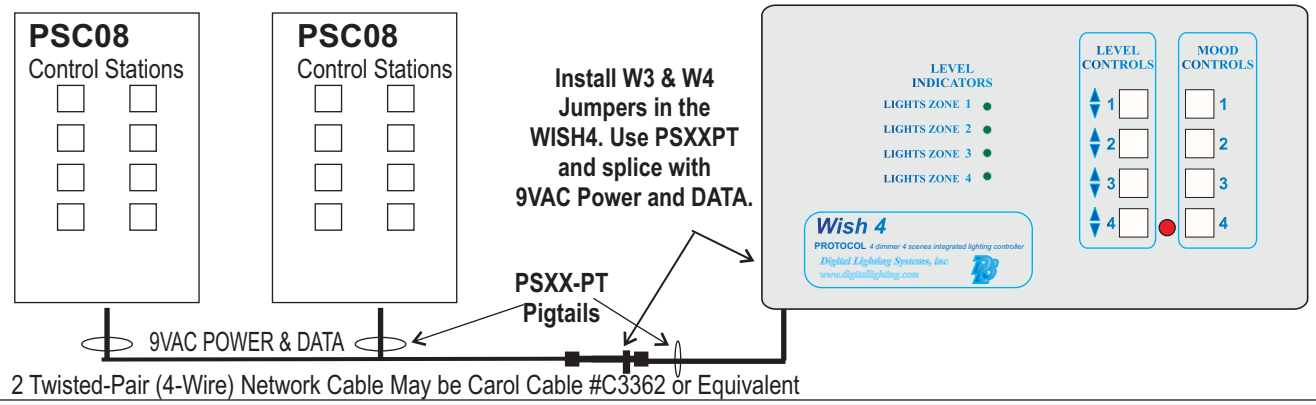
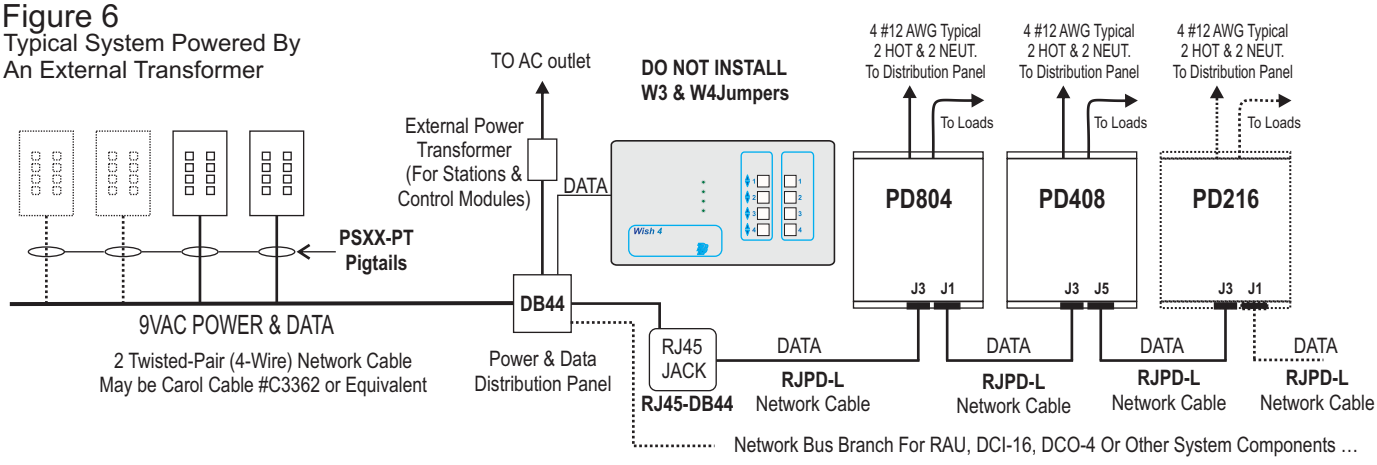


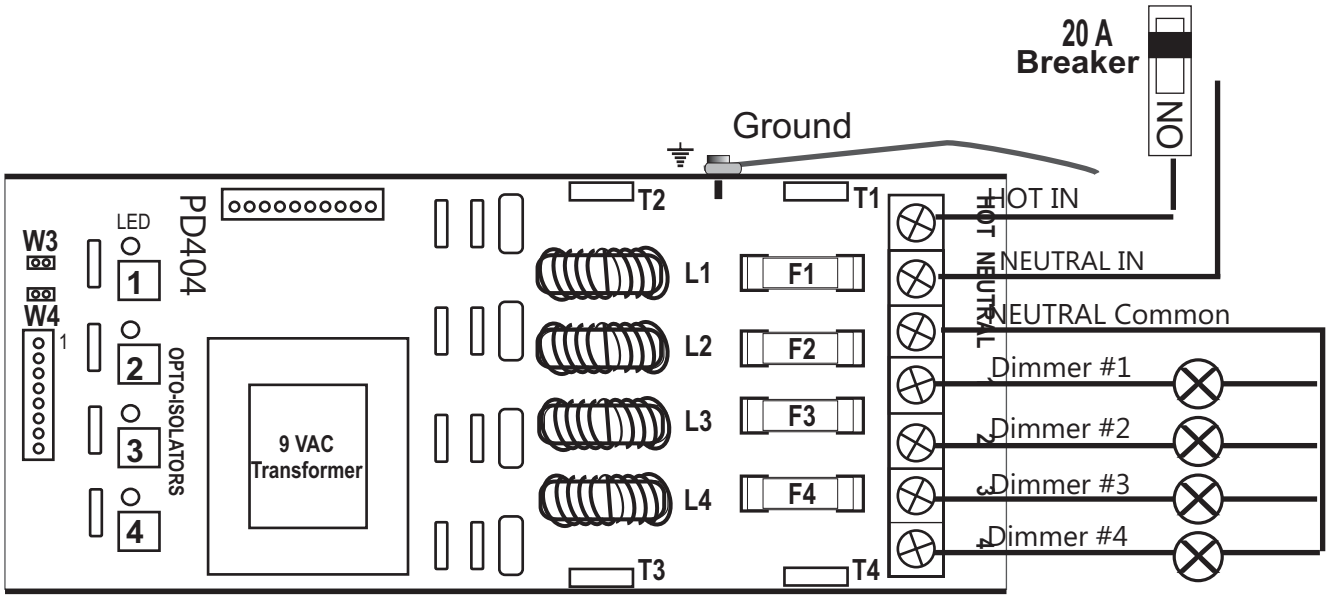
Figure 6
Typical System Powered By
An External Transformer



Wiring Notes

- **DO NOT EXCEED** 480 W (4 Amps.) per dimmer output @ 120VAC. 1920 Watts total load for **WISH4**
- **DO NOT EXCEED** 300 W (2.5 Amps.) per dimmer output @ 120VAC. 1200 Watts total load for **WISH4-RP**
- All wiring between the control stations, dimmers, and other system controllers (network bus) is low voltage (NEMA Class 2) and may be run with two, twisted pair, shielded #18 AWG wire. Control network bus may be Carol Cable #C3362 unless otherwise required. Consult the PROTOCOL Hardware Installation Manual, Appendix E, for maximum wire length.
- **CAUTION: DO NOT** attempt to parallel outputs to increase capacity.
- Installations must conform to local and/or NEC code requirements.
- Each load must have its own Neutral wire for full load operation.
- All line voltage wires must have copper conductors of adequate Gauge with 90° C wire insulation.
- **Prior to Connecting the Loads to the WISH4 check for short circuits.**

Figure 7 - WISH4 Typical 120 VAC Wiring.



The output section of the **WISH4** does not contain any user serviceable parts
Fuses are for Triacs protection and should be replaced by a qualified electrician.

LINE INPUT: # 12 Gauge Hot and Neutral from 20 Amps Breaker in service panel. **4 OUTPUTS**: 25 AMPS/600V optically isolated Triacs; rated at 4 AMPS per output; 16 Amps Total.

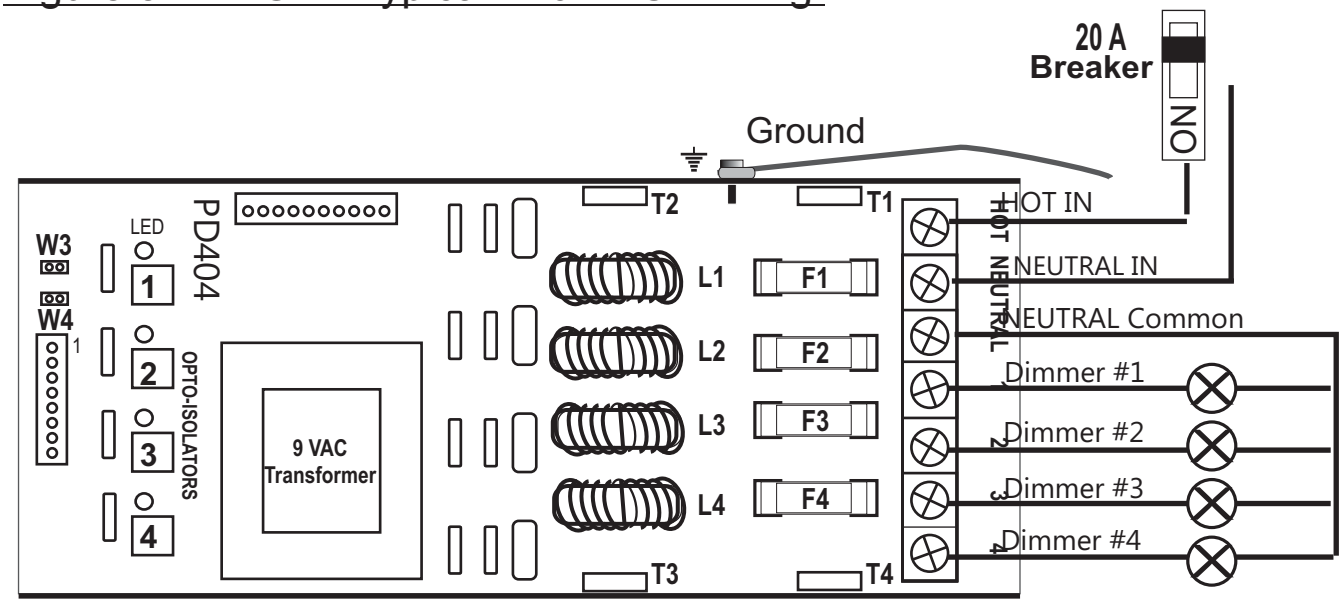
WISH4-240 General Wiring Instructions

Wiring Notes

- **DO NOT EXCEED** 960 W (4 Amps.) per dimmer output @ 240 VAC. 3840 Watts total load.
- All wiring between the control stations, dimmers, and other system controllers (network bus) is low voltage (NEMA Class 2) and may be run with two, twisted pair, shielded #18 AWG wire. Control network bus may be Carol Cable #C3362 unless otherwise required. Consult the PROTOCOL Hardware Installation Manual, Appendix E, for maximum wire length.
- **CAUTION: DO NOT** attempt to parallel outputs to increase capacity.
- Installations must conform to local and/or NEC code requirements.
- Each load must have its own Neutral wire for full load operation.
- All line voltage wires must have copper conductors of adequate Gauge with 90° C wire insulation.
- **Prior to Connecting the Loads to the WISH4 check for short circuits.**

CAUTION
WISH4-220/240 VAC
Models ONLY

Figure 8 - WISH4 Typical 240 VAC Wiring.



LINE INPUT: # 12 Gauge Hot and Neutral from 20 Amps Breaker in service panel.
4 OUTPUTS: 25 AMPS/600V optically isolated Triacs; rated at 4 AMPS per output; 16 Amps Total.

Preset Scene UnLock and Lock Procedure

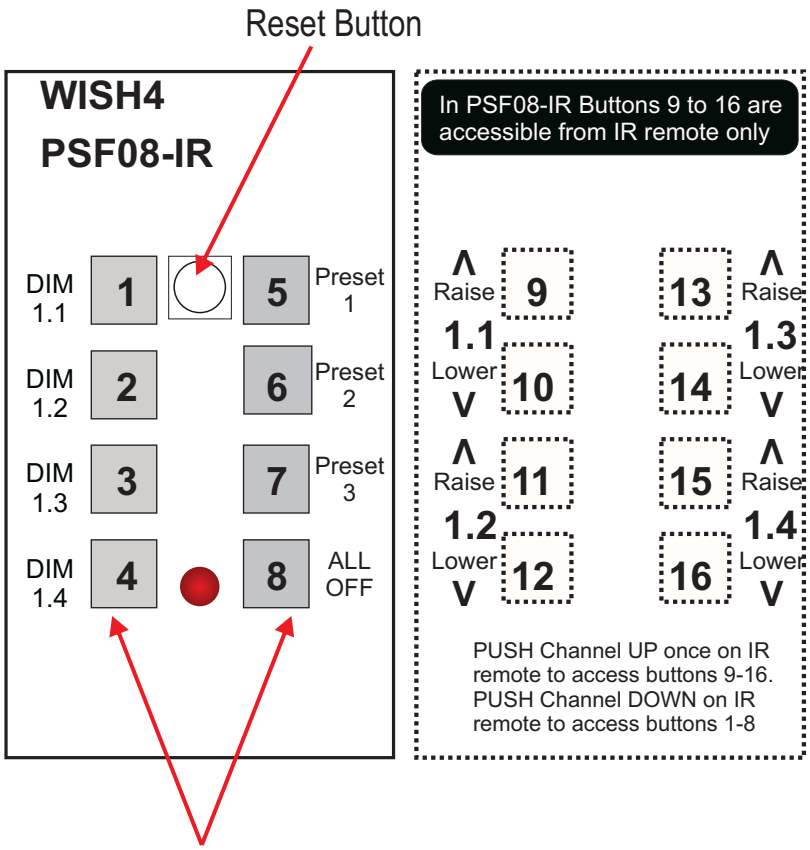
All **PROTOCOL** Control Stations have a Preset (scene) lock feature to prevent accidental programming of wrong lighting levels in the scene buttons.

To "unlock " the presets in order to be able to set a lighting scene, the station will need to be reset. The station is by either unplugging it from its power supply or pressing the reset button located under the faceplate between 1 and 5.

As the station is reseting (all LED's on station will be flashing), buttons 4 and 8 must be pressed simultaneously will cease to flash). The presets are nowunlocked . Scenes can now be set by the usual method (adjusting light and then pressing and holding a preset button for 4 seconds until all LED's flash).

Once all scenes have been stored, the station may now be locked. Locking the station is done by resetting the station by using the reset button or unplugging the station from its power supply The station is now locked

Individual light levels may still be changed whether station islocked or unlocked . Only presets buttons are affected by this procedure.



After resetting the station and while the LEDs are Flashing:
Press Buttons 4 (level control 4) and 8 (mood control 4) simultaneously and release ,
LEDs should stop flashing , Scene Presets are unlocked .

WISH4 Address Setting

Up to 63 uniquely addressed INT04 boards (One in each **WISH4**, one in each **PD408** and **PD216,** Two in each **PD804**) may be installed in any one PROTOCOL system. Each **INT04** must be set to a unique decimal address between 1 and 63. **INT04** #63 output 4 is not available for use. Total number of zones ((63 x 4) -1 = 251). Refer to ***TABLE 4*** On ***Page 9*** of this manual for proper setting of the address selectors S1 and S2 on the **WISH4**.

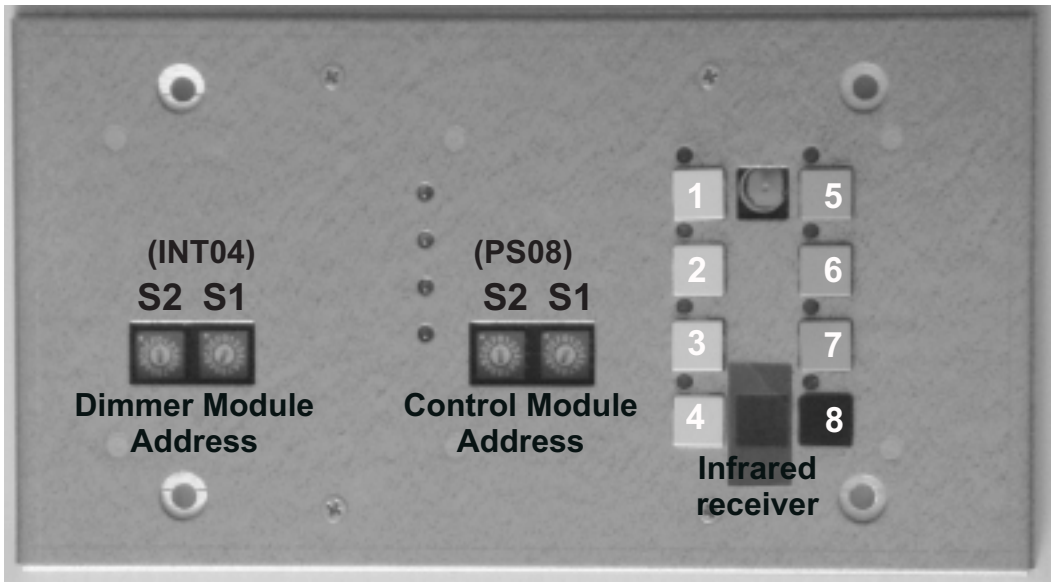
Example:

S2 & S1 should be set respectively to **1 & A** if the desired address is 26 (1 x 16 + A = 26, A =10). In this example, outputs 1 through 4 of **WISH4 INT04** # 1 are referred to as 26.1, 26.2, 26.3 and 26.4 when configuring buttons on PROTOCOL stations, using the PROTOCOL "**SOFTPRO**" programming software. Outputs 1 through 4 of **INT04** # 2 are addressed in the same manner using a different address (may be a consecutive address, i.e. 27 but may be any address not yet used in the system).

NOTE:

It is also possible to quadruple the maximum number of outputs on a system up to 1004 circuits. An **INT04** may have a decimal address of up to, and including, 252. Please contact factory for more details. For a complete Decimal to Hexadecimal conversion chart, please refer to Pages 9 and 10

WISH4 Control Section *Factory address settings : INT04 S2=0, S1=1 ; PSC08 S2=0; S1=1*



WISH4 Installation Check List

BEFORE ENERGIZING THE WISH4 MAKE SURE:

- ☐ Loads are tested before connecting to dimmers.
- ☐ **WISH4** has been properly grounded.
- ☐ All line voltage screw terminals are properly tightened to prevent hot spots.
- ☐ Low voltage data lines connections are properly insulated.
- ☐ Low voltage data lines polarity is observed throughout the system.
- ☐ The **WISH4** INT04 and PSC08 are set to the right addresses.(factory preset at 0,1)

Dimmer Module S2,S1 address settings (INT04)

00 INVALID ADDRESS
01 set S2,S1 to **0,1**
02 set S2,S1 to **0,2**
03 set S2,S1 to **0,3**
04 set S2,S1 to **0,4**
05 set S2,S1 to **0,5**
06 set S2,S1 to **0,6**
07 set S2,S1 to **0,7**
08 set S2,S1 to **0,8**
09 set S2,S1 to **0,9**
10 set S2,S1 to **0,A**
11 set S2,S1 to **0,B**
12 set S2,S1 to **0,C**
13 set S2,S1 to **0,D**
14 set S2,S1 to **0,E**
15 set S2,S1 to **0,F**
16 set S2,S1 to **1,0**
17 set S2,S1 to **1,1**
18 set S2,S1 to **1,2**
19 set S2,S1 to **1,3**
20 set S2,S1 to **1,4**
21 set S2,S1 to **1,5**
22 set S2,S1 to **1,6**
23 set S2,S1 to **1,7**
24 set S2,S1 to **1,8**
25 set S2,S1 to **1,9**
26 set S2,S1 to **1,A**
27 set S2,S1 to **1,B**
28 set S2,S1 to **1,C**
29 set S2,S1 to **1,D**
30 set S2,S1 to **1,E**
31 set S2,S1 to **1,F**
32 set S2,S1 to **2,0**
33 set S2,S1 to **2,1**
34 set S2,S1 to **2,2**
35 set S2,S1 to **2,3**
36 set S2,S1 to **2,4**
37 set S2,S1 to **2,5**
38 set S2,S1 to **2,6**
39 set S2,S1 to **2,7**
40 set S2,S1 to **2,8**
41 set S2,S1 to **2,9**
42 set S2,S1 to **2,A**
43 set S2,S1 to **2,B**
44 set S2,S1 to **2,C**
45 set S2,S1 to **2,D**
46 set S2 S1 to **2,E**
47 set S2,S1 to **2,F**
48 set S2,S1 to **3,0**
49 set S2,S1 to **3,1**
50 set S2,S1 to **3,2**
51 set S2,S1 to **3,3**
52 set S2,S1 to **3,4**
53 set S2,S1 to **3,5**
54 set S2,S1 to **3,6**
55 set S2,S1 to **3,7**
56 set S2,S1 to **3,8**
57 set S2,S1 to **3,9**
58 set S2,S1 to **3,A**
59 set S2,S1 to **3,B**
60 set S2,S1 to **3,C**
61 set S2,S1 to **3,D**
62 set S2,S1 to **3,E**
63 set S2,S1 to **3,F**

NOTES:
00 Decimal (S2,SI = 0,0) is not allowed on any device.
Max **INT04** Independant Address: 63 Decimal (S2,S1 = 3,F)
INT04 could be slaved to any other unit by setting S2 selector 4 numbers higher than the master.

Keypad control S2,S1 address settings (PSCxx)

	S2	S1		S2	S1		S2	S1
1	0	1	34	2	2	67	4	3
2	0	2	35	2	3	68	4	4
3	0	3	36	2	4	69	4	5
4	0	4	37	2	5	70	4	6
5	0	5	38	2	6	71	4	7
6	0	6	39	2	7	72	4	8
7	0	7	40	2	8	73	4	9
8	0	8	41	2	9	74	4	A
9	0	9	42	2	A	75	4	B
10	0	A	43	2	B	76	4	C
11	0	B	44	2	C	77	4	D
12	0	C	45	2	D	78	4	E
13	0	D	46	2	E	79	4	F
14	0	E	47	2	F	80	5	0
15	0	F	48	3	0	81	5	1
16	1	0	49	3	1	82	5	2
17	1	1	50	3	2	83	5	3
18	1	2	51	3	3	84	5	4
19	1	3	52	3	4	85	5	5
20	1	4	53	3	5	86	5	6
21	1	5	54	3	6	87	5	7
22	1	6	55	3	7	88	5	8
23	1	7	56	3	8	89	5	9
24	1	8	57	3	9	90	5	A
25	1	9	58	3	A	91	5	B
26	1	A	59	3	B	92	5	C
27	1	B	60	3	C	93	5	D
28	1	C	61	3	D	94	5	E
29	1	D	62	3	E	95	5	F
30	1	E	63	3	F	96	6	0
31	2	F	64	4	0	97	6	1
32	2	0	65	4	1	98	6	2
33	2	1	66	4	2	99	6	3

NOTES:
00 Decimal (S2,SI = 0,0) is not allowed on any device.
Max PSCxx Independant Address: 63 Decimal (S2,S1 = 3,F)

LIMITED WARRANTY

Digital Lighting Systems, warrants to the purchaser that its products have been carefully manufactured and inspected and are warranted to be free from defects of workmanship and materials when used as intended. Any abuse or misuse contrary to normal operation shall void this warranty.

Digital Lighting Systems' obligation under this warranty shall be limited to replacement or repair of any units as shall within two years of date of invoice from **Digital Lighting Systems**, prove defective; and **Digital Lighting Systems** shall not be liable for any other damages, whether direct or consequential. **The implied warranties of merchantability and fitness for a particular purpose are limited to the duration of the expressed warranty**. Some states do not allow the exclusion of the limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, you may also have other legal rights which vary from state to state.

Defective merchandise may be returned to **Digital Lighting Systems**, prepaid, after prior notification has been given and approval obtained for the return. To obtain prior approval for the return of the defective items, contact your local Digital Lighting Systems distributor, representative, or:

Digital Lighting Systems, Inc.
Attn: Customer Service Department
12302 SW 128th court # 105
Miami, FL 33186
(305) 969-8442

Upon request, replacement unit(s) will be shipped as soon as available. Unless immediate shipment of replacement merchandise is requested, **Digital Lighting Systems** will not ship replacement merchandise until defective merchandise is received, inspected, and determined to be defective.

No labor charges in connection with warranty problems will be reimbursed by Digital Lighting Systems without prior written approval from the factory.

Digital Lighting Systems distributors and representatives have no authority to change this warranty without written permission.

Digital Lighting Systems reserves the right to determine the best method of correcting warranty problems.

Digital Lighting Systems, Inc.
12302 SW 128th ct , #105
Miami, FL 33186
www.digitallighting.com

Tel 305-969-8442
Fax 305-969-8675
e-m info@digitallighting.com

Printed in U.S.A.
January 2018