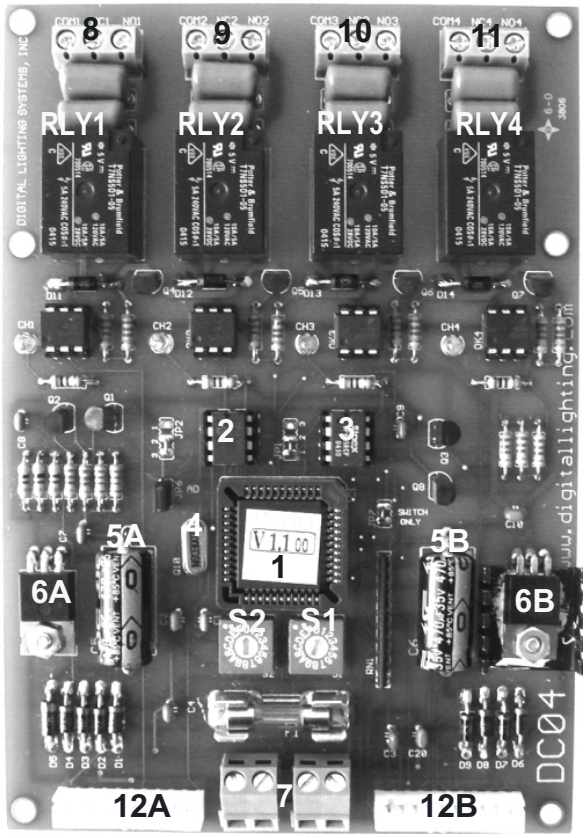

DCO-4 dimensions:
6.25”x 4.25” x 1.00”

DCO-4 Circuit Legend

1	Microprocessor.
2	Nonvolatile Memory.
3	Communications Chip.
4	Quartz Crystal.
5A,5B	Power Supply filter Capacitors.
6A	Voltage Regulator for logic.
6B	Voltage Regulator for Relays.
7	Network Port.
8	Dry Contact Relay Output 1.
9	Dry Contact Relay Output 2.
10	Dry Contact Relay Output 3.
11	Dry Contact Relay Output 4.
12A,12B	DATA&ogic power Bus for INT04
S1-S2	Address Selectors.
RLY1-4	Dry Contact Relays.

General Description

The Protocol dimming and control systems offer microprocessor based control stations, load drivers, input and output interface modules, with distributed intelligence (no central controller) over the 4-wire (2 twisted pairs) network bus, increasing the reliability and versatility of the system. The **DCO-4** is a dry contact output interface module that **can be used to link the Protocol to other systems, such as A/V, alarm, etc...**
The **DCO-4** may be viewed as a **PD408** dimmer module with "ON/OFF" dry contact outputs. Combining the **DCI-16** input interface module and the **DCO-4** output interface module **can provide a simple closed loop communication scheme between the Protocol and other systems**. For example, **a DCO-4 relay closure can trigger the alarm system** or provide a positive feedback to an external system that initiated a preset recall through the **DCI-16** input interface module.

The **DCO-4** comes in an open-frame circuit module that **can be integrated into existing system cabinets**. It is also available with a 12" x 8" x 4" NEMA enclosure.

General Features

- Distributed Intelligence.
- Modular and Compact Design.
- Twisted-pair Balanced Line Communications.
- Daisy Chain, T-tap, or Star Low Voltage Wiring Configurations.
- Software Configurable.
- Automatic 50/60 Hz Detection.
- Heavy Duty Relay .
- 252 Preset Memory.
- Powerful Built-in Diagnostics.

Control & Diagnostics Functions

- Close Individual Relay
- Open Individual Relay.
- Send Output Status.
- Save Presets.
- Recall Presets.
- Automatic Relay Blinking.
- Send ID and Code Version.
- Default to Factory settings.
- Save Settings in memory.
- Receive Configuration File.

Physical and Electrical Specifications

Design:	Open-frame circuit module.
Dimensions:	See Drawing On Page 1.
Power:	Max. 350 mA, 10 VAC-50/60 Hz.
Data Input/Output:	RS485 Compliant.
Data Format:	Proprietary.
Data Retention:	10 years, no batteries required.
ESD Protection:	15 KV on data input and output.
Network Port:	4-Position screw terminal.
DC Contact Rating:	Max. 2 Amps. at 48 VDC.
AC Contact Rating:	Max. 5 Amps. at 125 VAC.
Contact Bounce Time:	Max. 10 milliseconds.
Contact Output Port:	4 x 3-Position screw terminals.

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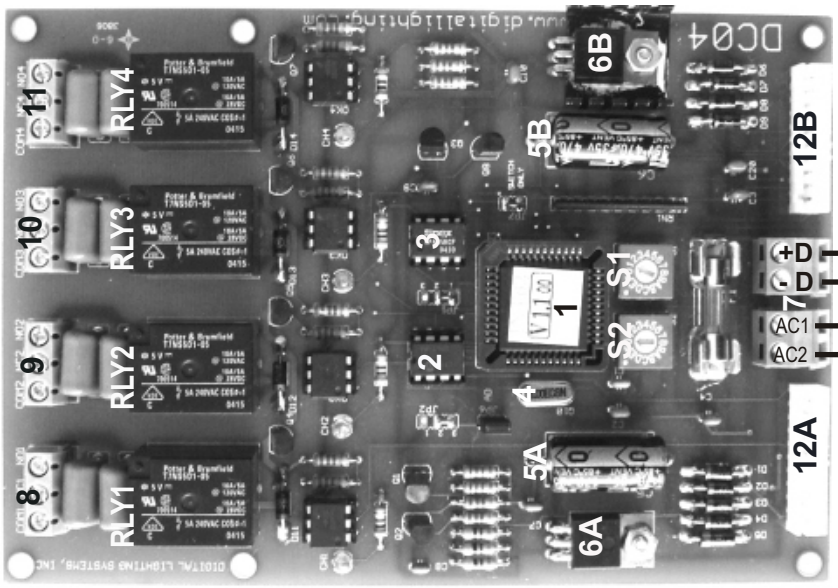
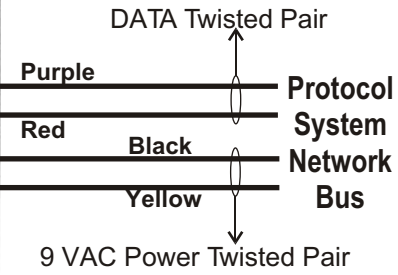
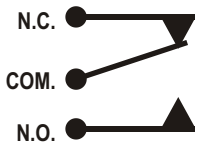




TYPICAL RELAY OUTPUT



Mounting requirements

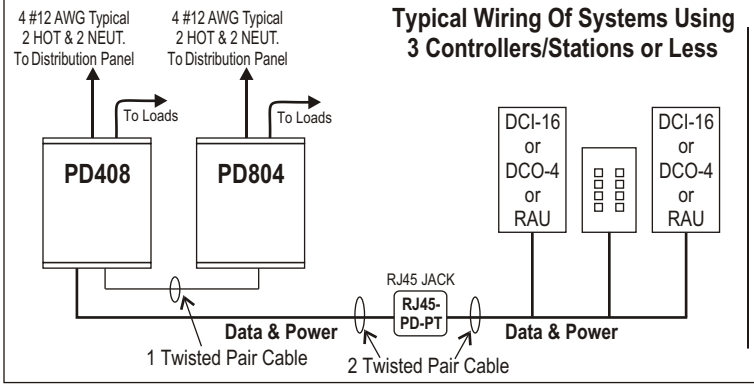
- The DCO-4 open-frame circuit module may be installed inside existing enclosures using metal spacers and mounting hardware.
- The DCO-4NE comes inside an 8" x 12" x 4" NEMA enclosure.
- Use Grounded metal enclosures only.
- Refer to the Protocol Hardware Installation Manual or consult factory for more details.

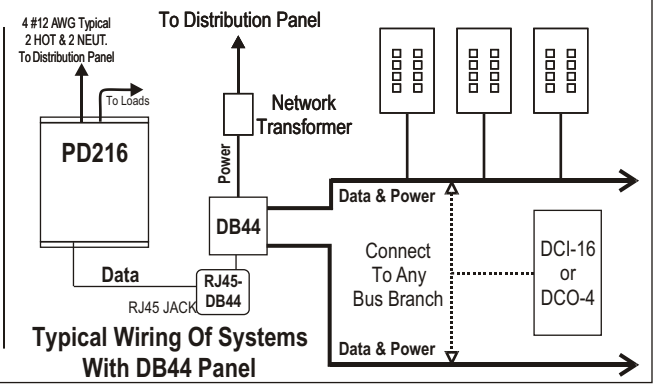
Ordering Information

- **DCO-4**: Open-frame circuit module.
- **DCO-4NE**: DCO-4 module inside an 8" x12" x

Wiring Notes

1. All wiring between the control stations, load drivers, and other system accessories (network bus) is low voltage (NEMA Class 2) and may be run with two twisted pair # 18 AWG wire. Refer to Protocol Installation Manual, Appendix E, for maximum wire length.
   Network Bus may be Carol Cable #C3362 unless otherwise required.
2. Do not run Network Bus cable in the same conduit with non-class 2 circuits.
3. Network Bus wire may be run in any combination of daisy chain (T-tap), home run, star, and/or branch.
4. Power for all stations of a system must be on the same power phase.
5. Installation must conform to local and/or NEC code requirements.





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DCO-4 Address Selection Information

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 Independent **DCO-4** Address: 63 Decimal (S2,S1 = 3,F)
Additional units could be slaved to existing addresses by adding 4 to the S2 address Example : S2,S1 = 55 will be slaved to 15

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