Installation and Specifications

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Specifications

Labeling the Pushbuttons

Labeling the Pushbuttons

In any manufacturing environment it is important to have legible labels on the pushbuttons. Labeling the OP-420 panel is a relatively simple process that involves removing the bezel and sliding a label transparency into a pocket in the panel overlay. The transparent film can be purchased from almost any office supply store in standard 8-1/2″ x 11″ sheets. It is designed to run through a copy machine or laser printer.
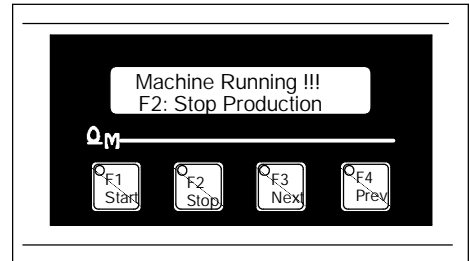
Creating the Labels

The easiest way to create labels is to use the built-in label making function of the OP-WINEDIT configuration software. This is the preferred method and is shown below. The labels can also be created manually using the template shown in the next section to help layout the transparency film. Here are some ways of manually creating labels:

S Use a computer graphics program and a laser printer to create the transparency directly, or print the labels on paper and photocopy them to a transparency sheet.

S Use press-on letters on a transparency sheet.

S Use a typewriter or lettering machine, or use press-on letters to create labels on a paper sheet, then photocopy the paper sheet onto a transparency sheet.

Creating Labels Using OP-WINEDIT

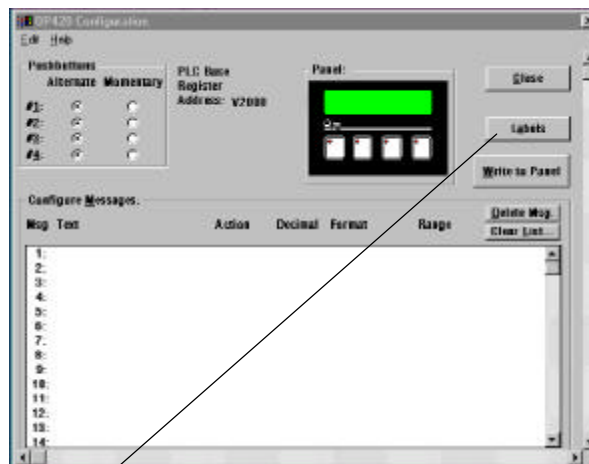Making labels using the OP-WINEDIT configuration software is easy (see Chapter 4 for information on loading and using OP-WINEDIT). After loading OP-WINEDIT, follow these steps:
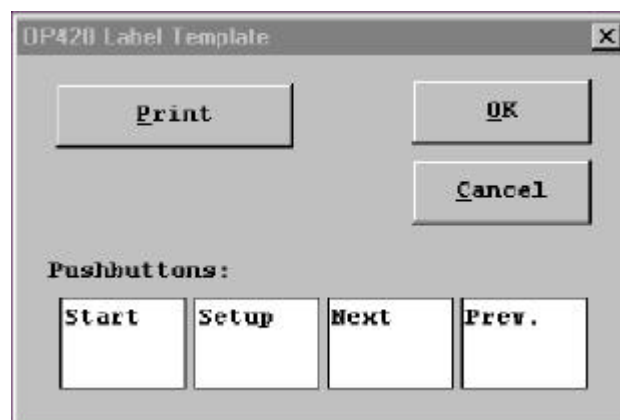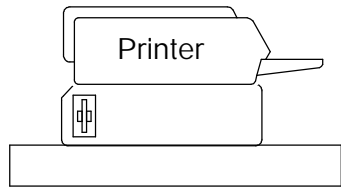

1. Open OP-WINEDIT and select **New System.**
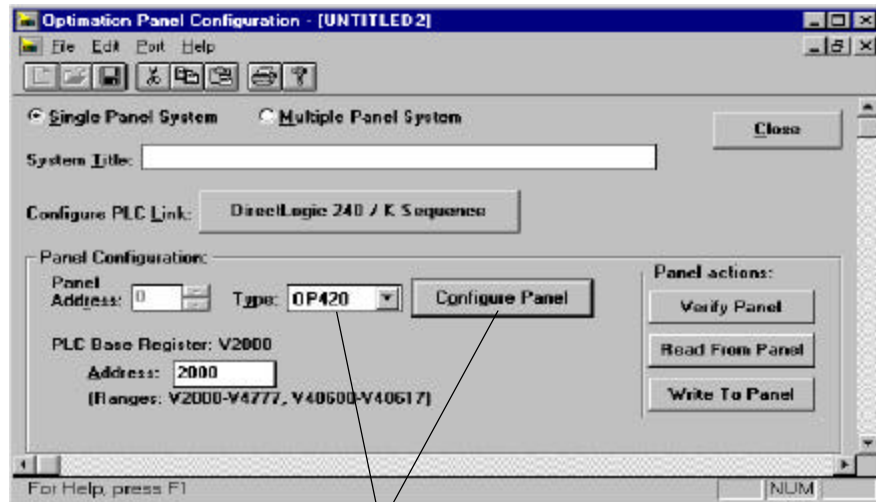
2. Select **OP-420**, and **Configure Panel.**

3. Select **Labels.**

4. The OP-420 Label Template appears. Type in the label text for all four pushbuttons. Press **OK** to save the labels.

Printer

OM420 Label TEMPLATES

Pushbutton Template:

Start Setup Next Prev.

5. **Print** label on transparent film.

Transparent
Sheet
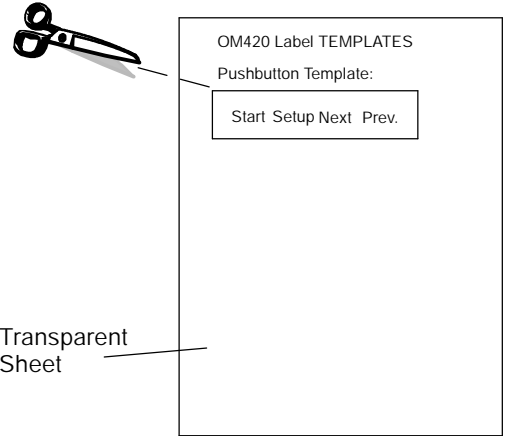
6. Cut out the block of labels and
   insert them in the panel.

Bezel

Pocket

Opti Mate

Start Setup Next Prev.
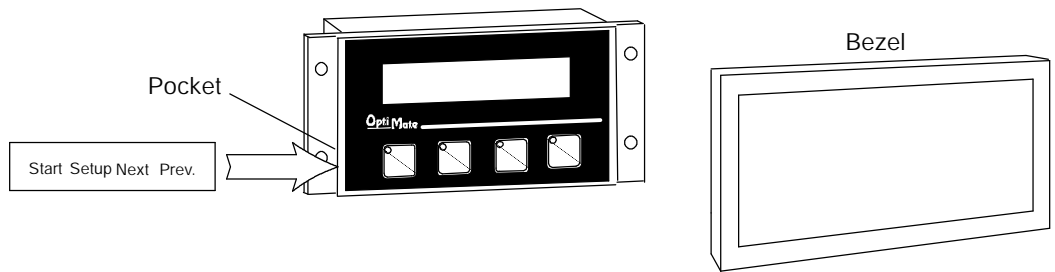
Remove the bezel from the module by unsnapping the four plastic tabs which
hold the bezel to the module frame. Locate the pocket, and carefully slide the
labels into place. Re-attach the bezel by snapping the bezel onto the case.

Template for Manually Creating Labels

0.60″

0.69″ 1.00″ 1.00″ 1.00″

0.225″

0.60″ 0.925″

4.425″

0.60″

0.60″
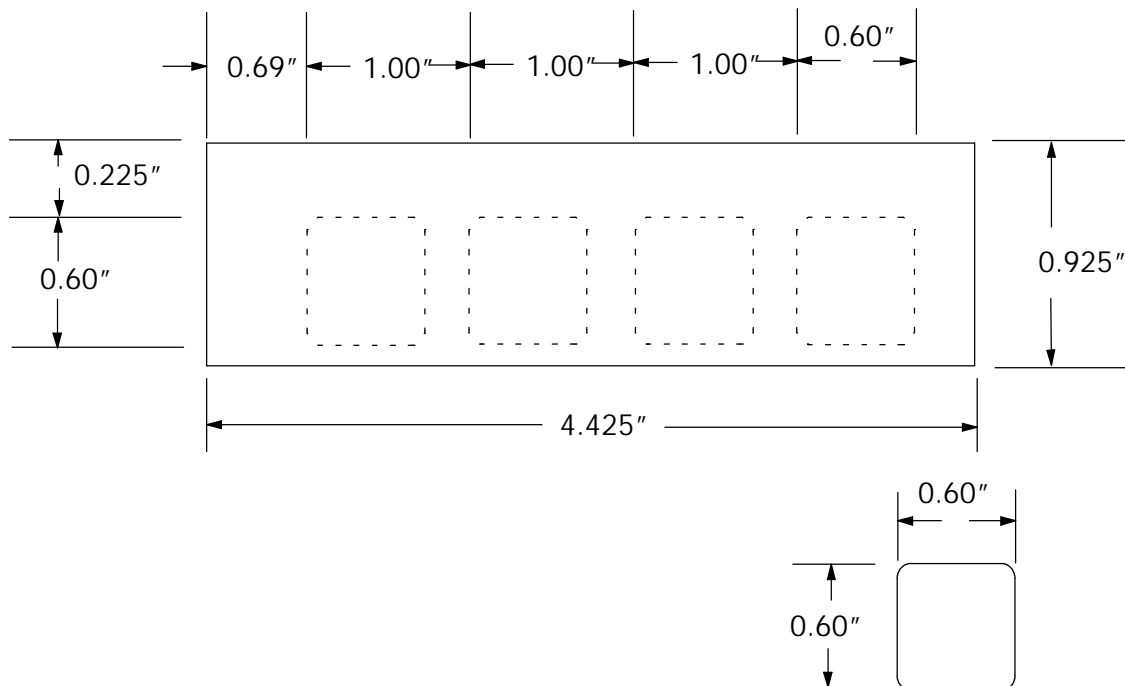
Dimensions for Mounting

Cutout Area

Example panel mounting

5.40″

5.00″

0.20″

0.50″

0.60″

2.00″

3.10″

3.00″

0.16″ DIA,
four places

Dimensions in Inches

1.00″
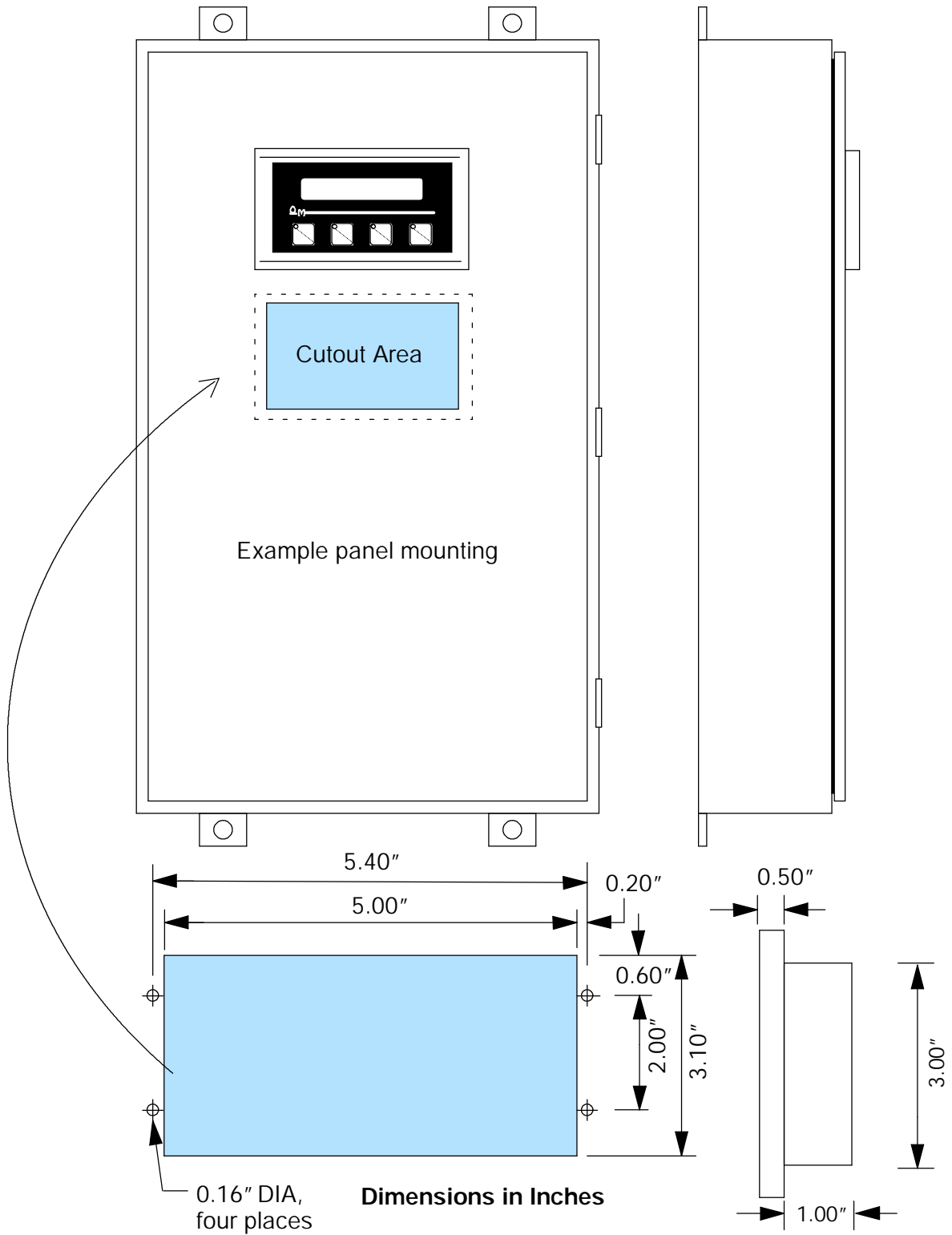
Specifications

Panel Specifications

Physical Specifications

Weight	8 ounces
Panel Fasteners	Four 6x32 threaded studs
Pushbutton Life	1,000,000 switch cycles
LED Display	2 line x 20 character STN with LED backlight; 5.5mm high x 3.2mm wide character size
NEMA Rating	NEMA 4 (when properly installed)

Environmental Specifications

Operating Temperature	0° to 50° C
Storage Temperature	−20° to 70° C
Operating Humidity	95% (non-condensing)
Air Composition	No corrosive gases permitted

Operating Specifications

|	
Power Consumption	0.85W @ 5 VDC
	(Power On surge of 0.44A for 1 ms)
Power Connector	Three terminal DC power plug, center negative
Power Supply	+5 VDC external power supply required for configuration on all panels; required for operation on all PLCs **except** DL105, DL205 and DL405.
Minimum/Maximum Supply Voltage	+5 VDC only
Diagnostics	LED Status
Communication Link	RS-232 4800 to19200 baud 6-pin RJ12 phone jack type connector

Power Supply Connections

OP400 series panels require +5 VDC input power. An optional 5 VDC external power supply that plugs into a standard 120 VAC receptacle is available (part no. OP--PS400). This power supply (or equivalent) is required for configuring your panel. It is also required for operation **unless** you are using a DL105, DL205 or DL405 PLC; these products supply 5VDC through the communications cable. All other PLCs, including D3--340/350 and Allen-Bradley 5/03, 5/04 and Micrologix, require the use of an external 5VDC power supply during operation.
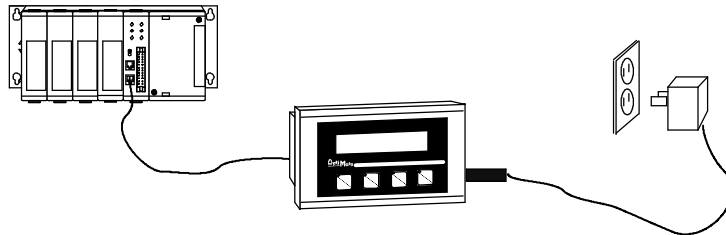
NOTE: Only use a 5 VDC power supply that has a **center negative** DC power jack.

Configuration: 5 VDC Power Supply Required For Configuring **All** CPUs

5 VDC Power Supply
(Part No. OP--PS400)

OP--CCBL Configuration
Cable
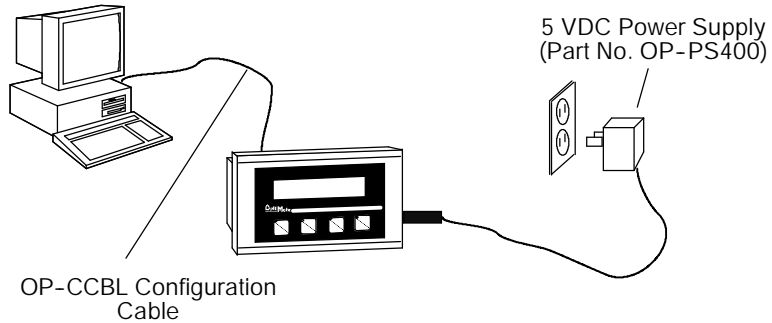
Operation Using a D3--340, D3--350, D3--350 w/DCU, Bottom Port of DL405 or Allen-Bradley CPU: 5 VDC Power Supply Required

Operation Using a DL105, DL205, or Top Port of DL405 CPU: 5 VDC Power Supply Not Required
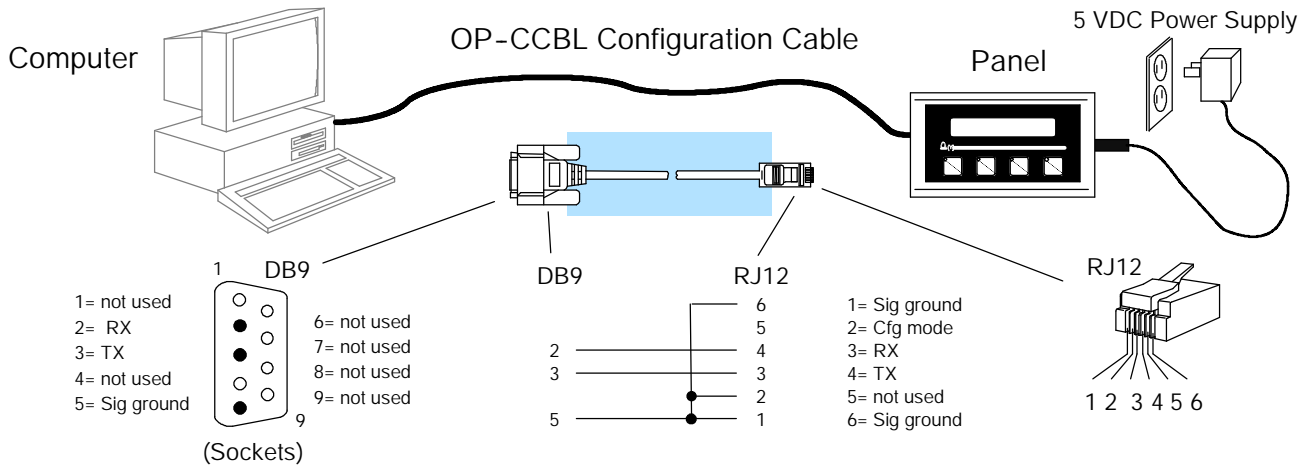

Communications Cable
Supplies 5 VDC Input Power

Specifications

**Power Supply
Connections**

**OP-PS400
Power Supply**

5 VDC (+)

0 VDC (−)
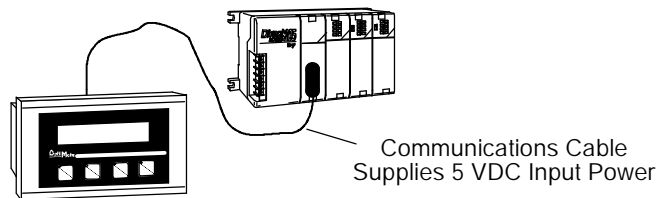
Insert power supply connector
into receptacle

Serial Port Receptacle

Connecting the Configuration Cable

**Configuration
Cable**

You will need two cables to use your OP-panel: A configuration cable (part number OP–CCBL) and a communications cable. Connect the configuration cable between the serial port on the rear of the OP-panel and the serial port of the personal computer. The panel may then be configured using the OP–WINEDIT configuration software. The figure below shows configuration cable connectors and wiring specifications. The wiring diagram refers to the cable connectors, *not* the communication ports. This cable is disconnected after configuration.

Computer

OP–CCBL Configuration Cable

Panel

5 VDC Power Supply

DB9

DB9

RJ12

RJ12

1

9

(Sockets)

1= not used
2= RX
3= TX
4= not used
5= Sig ground

6= not used
7= not used
8= not used
9= not used

	6
	5
2	4
3	3
	2
5	1

1= Sig ground
2= Cfg mode
3= RX
4= TX
5= not used
6= Sig ground

1 2 3 4 5 6

Selecting a Communications Cable

After configuration, connect the communications cable between the OP-panel and the PLC. Use the following table to select the proper communications cable.

Cables for OP400 Series OptiMate Panel-to-PLC Connections			
Family	**CPU (or other device)**	**Port**	**Cable**
*Direct*LOGIC t DL105	F1-130	Only one	OP-2CBL-2
*Direct*LOGIC t DL205	D2-230	Only one	OP-2CBL-2
	D2-240	Top port	OP-2CBL-2
		Bottom port	OP-2CBL-2
	D2-250	Top port	OP-2CBL-2
		Bottom port	* (see note below)
	D2-DCM (module)	Only port	* (see note below)
*Direct*LOGIC t DL305	D3-330	Requires DCU	* (see note below)
	D3-330P	Requires DCU	* (see note below)
	D3-340	Top port	OP-3CBL-1
		Bottom port	OP-3CBL-1
	D3-350	Top port	OP-2CBL-2
		Bottom port	* (see note below)
*Direct*LOGIC t DL405	D4-430	Top port (15-pin)	OP-4CBL-3
		Bottom port (25-pin)	* (see note below)
	D4-440	Top port	OP-4CBL-3
		Bottom port	* (see note below)
	D4-450	Phone Jack	OP-2CBL-2
		Top port (15-pin)	OP-4CBL-3
		Bottom port (25-pin)	* (see note below)
	D4-DCM (module)	Only port	* (see note below)
	Slice I/O panels	Only one	OP-4CBL-3
TI305 t / SIMATIC ä TI305 t	325-07, PPX:325-07	Requires DCU	* (see note below)
	330-37, PPX:330-37	Requires DCU	* (see note below)
	325S-07 (or 325 w/ Stage Kt)	Requires DCU	* (see note below)
	330S-37, PPX:330S-37	Requires DCU	* (see note below)
	335-37, PPX:335-37	Phone Jacks	OP-3CBL-1
		If DCU is used	* (see note below)
TI405 t / SIMATIC ä TI405 t	425-CPU, PPX:425-CPU	Only one	OP-4CBL-3
	PPX:430-CPU	Top port (15-pin)	OP-4CBL-3
		Bottom port (25-pin)	* (see note below)
	435-CPU, PPX:435-CPU	Top port (15-pin)	OP-4CBL-3
		Bottom port (25-pin)	* (see note below)
	Smart Slice t I/O panels	Only one	OP-4CBL-3
Allen-Bradley t SLC 500	5/03 5/04	Bottom port	OP-ACBL-3
Allen-Bradley	MicroLogix	Only one	OP-ACBL-4

* **Note:** Pre-assembled cables for connecting to these ports are not supplied by **PLC**Direct; however, you can use the cable pinout diagrams in the following section to make your own cables.

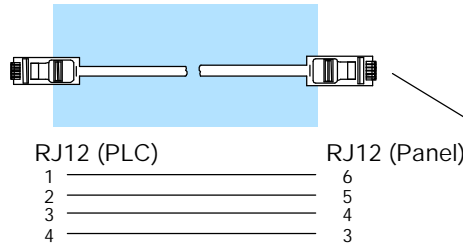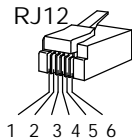Specifications

Specifications

Communications Cable Details

The drawings on this page are for cables which **are** supplied by **PLC**Direct. Use this page if you need to make your own cables. We recommend using 22 AWG shielded cable.

OP400 Series Communications Cables

PLC   Panel
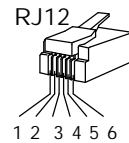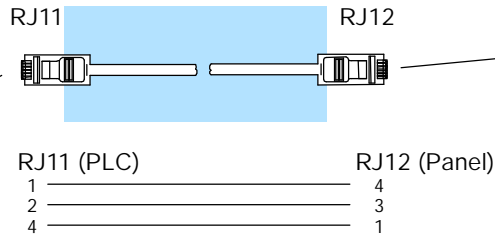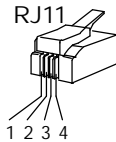
OP-2CBL-2 (DL105, DL205, D3-350, D4-450)

1= Sig ground
2= 5 VDC
3= RX
4= TX
5= not used
6= Sig ground

RJ12

1 2 3 4 5 6

RJ12 (PLC)	RJ12 (Panel)
1	6
2	5
3	4
4	3

Panel Connection

RJ12

1 2 3 4 5 6

1= Sig ground
2= not used
3= RX
4= TX
5= 5 VDC
6= Sig ground

OP-3CBL-1 (D3-340)

RJ11   RJ12

RJ11

1 2 3 4

1= RX
2= TX
3= not used
4= Sig ground

RJ11 (PLC)	RJ12 (Panel)
1	4
2	3
4	1

OP-4CBL-3 (DL405)

DB15

8= not used
7= not used
6= not used
5= not used
4= Sig ground
3= RX
2= TX
1= not used
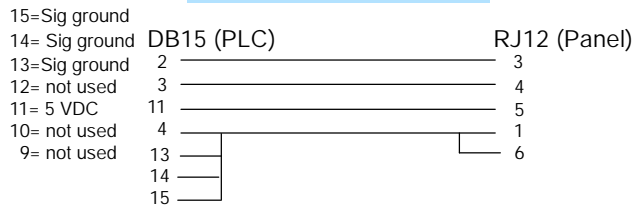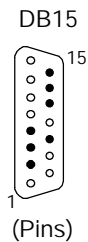
15=Sig ground
14= Sig ground
13=Sig ground
12= not used
11= 5 VDC
10= not used
9= not used

15

1

(Pins)

DB15 (PLC)	RJ12 (Panel)
2	3
3	4
11	5
4	1
13	6
14	
15	

OP-ACBL-3 (Allen-Bradley)

DB9

1= not used
2= RX
3= TX
4= not used
5= Sig ground

6= not used
7= RTS
8= CTS
9= not used

1

9

(Sockets)

DB9 (PLC)	RJ12 (Panel)
2	4
3	3
5	1
7	6
8	
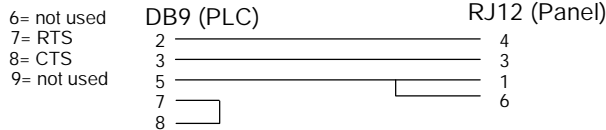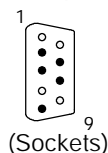
The drawings on this page are for cables which **are not** supplied by **PLC***Direct*. Use the drawings to make your own cable. We recommend using a 22 AWG or larger shielded cable.

OP400 Series Communications Cables (continued)

PLC

Panel

Make this cable for use with D2–250 15-pin bottom port.
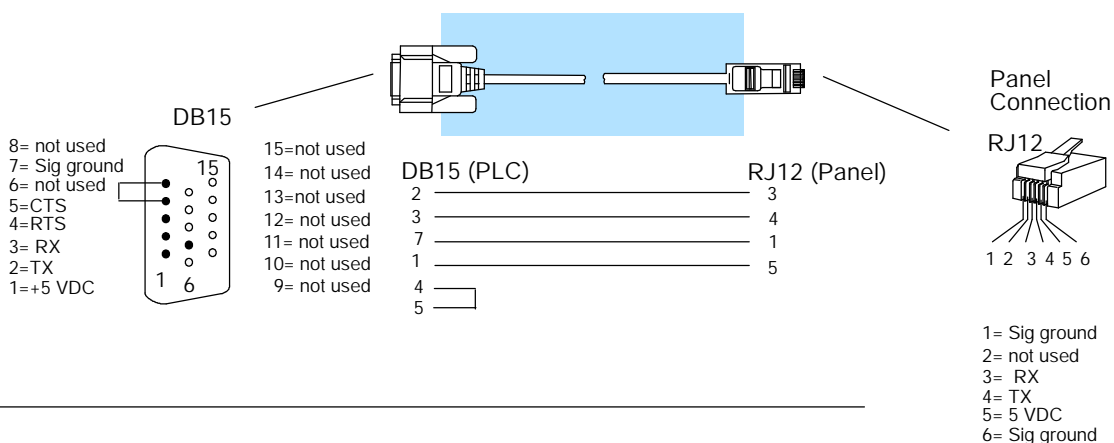
Panel Connection

RJ12

1 2 3 4 5 6

DB15

8= not used
7= Sig ground
6= not used
5=CTS
4=RTS
3= RX
2=TX
1=+5 VDC

15

1 6

15=not used
14= not used
13=not used
12= not used
11= not used
10= not used
9= not used

DB15 (PLC)   RJ12 (Panel)

2 ——————————— 3
3 ——————————— 4
7 ——————————— 1
1 ——————————— 5
4 ⌐
5 ⌐

1= Sig ground
2= not used
3= RX
4= TX
5= 5 VDC
6= Sig ground

Make this cable for use with D3–330 w/DCU, D3–350, DL405 and DCMS 25-pin ports

DB25

13= not used
12= not used
11= not used
10= not used
9= not used
8= not used
7= Sig ground
6= not used
5= CTS
4= RTS
3= RX
2= TX
1= not used

25

1

25= not used
24= not used
23= not used
22= not used
21= not used
20= not used
19= not used
18= not used
17= not used
16= not used
15= not used
14= not used

DB9 (PLC)   RJ12 (Panel)

2 ——————————— 3
3 ——————————— 4
7 ——————————— 1
4 ⌐
5 ⌐