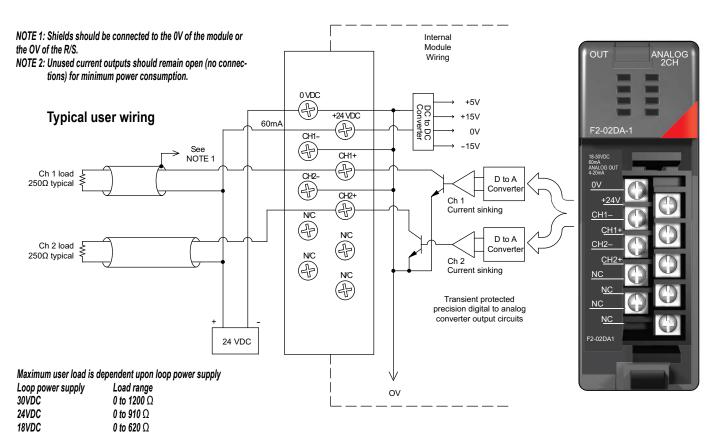
# **Analog Current Output Modules**

F2-02DA-1 2-Channel 4-20mA Analog Output \$282.00					
This module requires a 24VDC user po	ower supply for operation.				
Number of Channels	2				
Output Ranges	4 to 20 mA				
Resolution	12-bit (1 in 4096)				
Output Type	Single ended, one common				
Digital Output Points Required	16 (Y) output points (12 binary data bits, 2 channel ID bits)				
Maximum Loop Supply	30VDC				
Peak Output Voltage	40VDC (clamped by transient voltage suppressor)				
Load Impedance	Zero Ω minimum				
Maximum Load/Power Supply	620Ω/18V, 910Ω/24V, 1200Ω/ 30V				
PLC Update Rate	2 channels per scan maximum (D2-262 CPU)				
Linearity Error (end to end)	±1 count (±0.025% of full scale) maximum				
Conversion Settling Time	100µs maximum (full scale change)				
Full Scale Calibration Error (offset error included)	± 5 counts max., 20mA @77°F (25°C)				
Offset Calibration Error	± 3 counts max., 4mA @ 77°F (25C°)				

Accuracy vs. Temperature	±50 ppm/°C full scale calibration change (including maximum offset change of 2
	counts)
Maximum Inaccuracy	0.1% @ 77°F (25°C) 0.3% @ 32° to 140°F (0° to 60°C)
Base Power Required 5VDC	40mA
External Power Supply	24VDC, 60mA. (add 20mA for each current loop used)
Operating Temperature	32° to 140°F (0° to 60°C)
Storage Temperature	-4 to 158°F(-20 to 70°C)
Relative Humidity	5% to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	MIL STD 810C 514.2
Shock	MIL STD 810C 516.2
Noise Immunity	NEMA ICS3-304
Terminal Type (included)	Removable; <u>D2-8IOCON</u>

See Wiring Solutions for part numbers of **ZIP**Link cables and connection modules compatible with this I/O module.





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## Wiring Solutions using the **ZIP**Link Wiring System

ZIPLinks eliminate the normally tedious process of wiring between devices by utilizing prewired cables and DIN rail mount connector modules. It's as simple as plugging in a cable connector at either end or terminating wires at only one end. Prewired cables keep

installation clean and efficient, using half the space at a fraction of the cost of standard terminal blocks. There are several wiring

solutions available when using the ZIPLink System ranging from PLC I/O-to-ZIPLink Connector Modules that are ready for field

termination, options for connecting to third party devices, GS, DuraPulse and SureServo Drives, as well as special relay, transorb and communications modules. Pre-printed I/O-specific adhesive label strips for quick marking of ZIPLink modules are provided with ZIPLink cables. See the following solutions to help determine the best ZIPLink system for your application.

#### Solution 1: Do-more, DirectLOGIC, CLICK and Productivity Series I/O Modules to ZIPLink Connector Modules

When looking for quick and easy I/O-to-field termination, a **ZIP**Link connector module used in conjunction with a prewired **ZIP**Link

cable, consisting of an I/O terminal block at one end and a multipin connector at the other end, is the best solution.

Using the PLC I/O Modules to ZIPLink Connector Modules selector tables located in this section,

- 1. Locate your I/O module/PLC
- 2. Select a **ZIP**Link Module
- 3. Select a corresponding **ZIP**Link Cable.



# Solution 2: Do-more, DirectLOGIC, CLICK and Productivity Series I/O Modules to 3rd Party Devices

When wanting to connect I/O to another device within proximity of the I/O modules, no extra terminal blocks are necessary when using the ZIPLink Pigtail Cables. ZIPLink Pigtail Cables are prewired to an I/O terminal block with color-coded pigtail with soldered-tip wires on the other end.

Using the I/O Modules to 3rd Party Devices selector tables located in this section,

- 1. Locate your PLC I/O module
- 2. Select a **ZIP**Link Pigtail Cable that is compatible with your 3rd party device.



## Solution 3: GS Series and DuraPulse Drives Communication Cables

Need to communicate via Modbus RTU to a drive or a network of drives?

**ZIP**Link cables are available in a wide range of configurations for connecting to PLCs and SureServo, SureStep, Stellar Soft Starter and AC drives. Add a **ZIP**Link communications module to quickly and easily set up a multi-device network.

Using the Drives Communication selector tables located in this section,

- 1. Locate your Drive and type of communications
- 2. Select a **ZIP**Link cable and other associated hardware.





#### **Solution 4: Serial Communications Cables**

**ZIP**Link offers communications cables for use with **Direct**LOGIC, CLICK, and Productivity CPUs, that can also be used with other communications devices. Connections include a 6-pin RJ12 or 9-pin, 15-pin and 25-pin D-sub connectors which can be used in conjunction with the RJ12 or D-Sub feedthrough modules.

Using the Serial Communications Cables selector table located in this section,

- 1. Locate your connector type
- 2. Select a cable.



#### Solution 5: Specialty ZIPLink Modules

For additional application solutions, *ZIP*Link modules are available in a variety of configurations including stand-alone relays, 24VDC and 120VAC transorb modules, D-sub, RJ12 and RJ45 feedthrough modules, communication port adapter and distribution modules, and SureServo 50-pin I/O interface connection.

Using the **ZIP**Link Specialty Modules selector table located in this section,

- 1. Locate the type of application
- 2. Select a **ZIP**Link module.



#### Solution 6: ZIPLink Connector Modules to 3rd Party Devices

If you need a way to connect your device to terminal blocks without all that wiring time, then our pigtail cables with color-coded soldered-tip wires are a good solution. Used in conjunction with any compatible **ZIP**Link Connector Modules, a pigtail cable keeps wiring clean and easy and reduces troubleshooting time.

Using the Universal Connector Modules and Pigtail Cables table located in this section,

- 1. Select module type
- 2. Select the number of pins
- 3. Select cable.





# PLC I/O Modules to ZIPLink Connector Modules – Do-more!/DL205

Do-more / DL205 PLC Input Module <i>ZIP</i> Link Selector								
PLC	<i>ZIP</i> Link							
Input Module	# of Terms	Component	Module Part No.	Cable Part No. †				
D2-08ND3	10	Feedthrough	7L DTD20 ( 1)	ZL-D2-CBL10 *				
DO 1011DO 0	40	Feedthrough	ZL-RTB20 (-1)	ZL-D2-CBL19				
D2-16ND3-2	19	Sensor	ZL-LTB16-24-1	ZL-D2-CBL19-1 ZL-D2-CBL19-2				
D2-32ND3 <sup>1</sup>	40	Feedthrough	<u>ZL-RTB40</u> (-1)	180 deg conn: ZL-D24-CBL40				
		Sensor	ZL-LTB32-24-1	ZL-D24-CBL40-1				
		Feedthrough	ZL-RTB40(-1)	ZL-D24-CBL40-2 45 deg conn:				
D2-32ND3-2 <sup>1</sup>	40	Sensor	ZL-LTB32-24-1	ZL-D24-CBL40-X ZL-D24-CBL40-1X ZL-D24-CBL40-2X				
D2-08NA-1	10	F		ZL-D2-CBL10				
D2-08NA-2	10	Feedthrough	ZL-RTB20 (-1)	ZL-D2-CBL10-1 ZL-D2-CBL10-2				
D2-16NA	19	Feedthrough		ZL-D2-CBL19 *				

<sup>†</sup> X in the part number represents a 45° angle.

Do-more/DL205 PLC Combo In/Out Module ZIPLink Selector						
PLC ZIPLink						
Combo Module	# of Terms	" Component "" "		Cable Part No.		
D2-08CDR	10	Feedthrough	ZL-RTB20 (-1)	ZL-D2-CBL10 *		

Do-more/DL205 PLC Analog Module <i>ZIP</i> Link Selector						
PLC		<i>ZIP</i> Link				
Analog Module	# of Terms	Component	Module	Cable		
F2-04AD-1						
F2-08AD-1						
F2-04AD-2				ZL-D2-CBL10 ZL-D2-CBL10-1		
F2-08AD-2				ZL-D2-CBL10-1 ZL-D2-CBL10-2		
F2-02DA-1		Feedthrough				
F2-02DAS-1	10					
F2-08DA-1			Feedthrough ZL-R	<u>ZL-RTB20</u> (-1)	ZL-D2-CBL19 ZL-D2-CBL19-1	
F2-02DA-2				ZL-D2-CBL19-2		
F2-02DAS-2				ZL-D2-CBL10		
F2-08DA-2				ZL-D2-CBL10-1		
F2-4AD2DA				ZL-D2-CBL10-2		
F2-8AD4DA-1	19			ZL-D2-CBL19 ZL-D2-CBL19-1		
F2-8AD4DA-2	15			ZL-D2-CBL19-2		
F2-04RTD	Matched	These modules	are not supporte	d by the ZIPLink wiring		
F2-04THM	Only	system		-		



Do-more/ DL205 PLC Output Module ZIPLink Selector						
PLC ZIPLink						
Output Module	# of Terms	Component	Module Part No.	Cable Part No. †		
D2-04TD1 <sup>2</sup> D2-08TD1 D2-08TD2	10	Feedthrough	<u>ZL-RTB20</u> (-1)	ZL-D2-CBL10 ZL-D2-CBL10-1 ZL-D2-CBL10-2		
D2-16TD1-2		Feedthrough         ZL-RFU20 4           Fuse         ZL-RTB20 (-1)				
				_		
		Fuse	ZL-RFU20 <sup>4</sup>	ZL-D2-CBL19		
<u>D2-16TD2-2</u> 19		Relay	ZL-RRL16-24-2 ZL-RRL16W-24-2 ZL-RRL16F-24-2 ZL-RRL16HDF-24-2	ZL-D2-CBL19-1 ZL-D2-CBL19-2		
F2-16TD1P		Feedthrough ZL-RTB20 (-1)				
F2-16TD2P		i eediiiodgii	<u>ZL-K1B20</u> (-1)			
D2-32TD1 <sup>1</sup>		Feedthrough	<u>ZL-RTB40</u> (-1)	180 deg conn: ZL-D24-CBL40 ZL-D24-CBL40-1 ZL-D24-CBL40-2		
	40	Fuse	ZL-RFU40 <sup>4</sup>			
D2-32TD2 <sup>1</sup>		Feedthrough	<u>ZL-RTB40</u> (-1)	45 deg conn: <u>ZL-D24-CBL40-X</u> ZL-D24-CBL40-1X		
<u>DZ-3Z I DZ</u>		Fuse	ZL-RFU40 <sup>4</sup>	ZL-D24-CBL40-1X ZL-D24-CBL40-2X		
D2-08TA				ZL-D2-CBL10		
F2-08TA	10	Feedthrough	ZL-RTB20 (-1)	ZL-D2-CBL10-1 ZL-D2-CBL10-2		
		Feedthrough	,	ZL-D2-CBL19		
<u>D2-12TA</u>	19	Fuse	ZL-RFU20 <sup>4</sup>	ZL-D2-CBL19-1 ZL-D2-CBL19-2		
D2-04TRS <sup>2</sup>			ZL-D2-			
D2-08TR	10	Feedthrough		ZL-D2-CBL10-1 ZL-D2-CBL10-2		
F2-08TRS <sup>2</sup>	19	F 10	ZL-RTB20 (-1)	ZL-D2-CBL19 *		
F2-08TR <sup>3</sup>	10	Feedthrough		ZL-D2-CBL10 *		
D0 407D	40	Feedthrough		ZL-D2-CBL19		
<u>D2-12TR</u>	19	Fuse	ZL-RFU20 <sup>4</sup>	ZL-D2-CBL19-1 ZL-D2-CBL19-2		

- † X in the part number represents a 45° angle plug
- Select the cable length by replacing the \* with: Blank = 0.5 m, -1 = 1.0 m,
- 1 To make a custom cable for the 32-point modules, use: Solder-style 180° connector ZL-D24-CON or Solder-style 45° connector ZL-D24-CON-X
- 2 Caution: The D2-04TD1, D2-04TRS, and F2-08TRS outputs are derated not to exceed module specs 2A per point and 2A per common when used with the ZIPLink wiring system.
- 3 The F2-08TR outputs are derated not to exceed 2A per point and 4A per common when used with the ZIPLink wiring system.
- 4 Fuses (5 x 20 mm) are not included. See Edison Electronic Fuse section for (5 x 20 mm) fuse. S500 and GMA electronic circuit protection for fast-acting maximum protection. S506 and GMC electronic circuit protection for time-delay performance. Ideal for inductive circuits.

To ensure proper operation, do not exceed the voltage and current rating of ZIPLink module. ZL-RFU20 = 2A per circuit; ZL-RFU40 = 400mA per circuit.



Note: ZIPLink Connector Module specifications follow the Compatibility Matrix tables. **ZIP**Link Cables specifications are at the end of this ZIPLink section.











## Dimensions and Installation

Understanding the installation requirements for your DL205 system will help ensure that the DL205 products operate within their environmental and electrical limits.

## Plan for safety

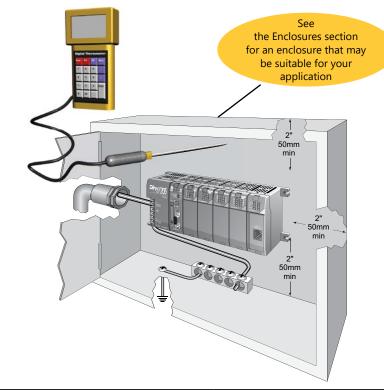
This catalog should never be used as a replacement for the user manual. The user manual, D2-USER-M (downloadable online), contains important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

# **Environmental** specifications

The Environmental Specifications table at the right lists specifications that apply globally to the DL205 system (CPUs, bases, and I/O modules). Be sure that the DL205 system is operated within these environmental specifications.

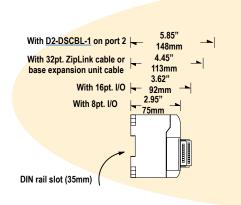
# Base dimensions and mounting

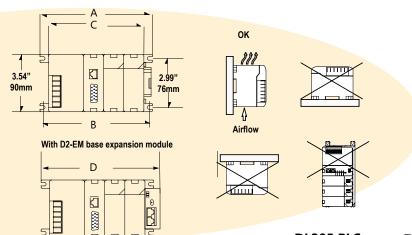
Use the diagrams below to make sure the DL205 system can be installed in your application. To ensure proper airflow for cooling purposes, DL205 bases must be mounted horizontally. It is important to check these dimensions against the conditions required for your application. For example, it is recommended that approximately 3" of space is left in front PLC surface for ease of access and cable clearances. Also, check the installation guidelines for recommended cabinet clearances.



Environmental Specification	Rating
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Ambient Operating Temperature	32°F to 131°F (0°C to 55°C)
Ambient Humidity	30% to 95% relative humidity (non-condensing)
Vibration Resistance	MIL STD 810C, Method 514.2
Shock Resistance	MIL STD 810C, Method 516.2
Noise Immunity	NEMA (ICS3-304)
Atmosphere	No corrosive gases

Base	A		В		C		D	
D2-03B-1, D2-03BDC1-1	6.77"	172mm	6.41"	163mm	5.8"	148mm	7.24"	184mm
D2-04B-1, D2-04BDC1-1	7.99"	203mm	7.63"	194mm	7.04"	179mm	8.46"	215mm
D2-06B-1, D2-06BDC1-1, D2-06BDC2-1	10.43"	265mm	10.07"	256mm	9.48"	241mm	10.90"	277mm
D2-09B-1, D2-09BDC1-1, D2-09BDC2-1	14.09"	358mm	13.74"	349mm	13.14"	334mm	14.56"	370mm





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