## DL05/06 I/O Option Modules

#### **D0-07CDR**

\$96.00

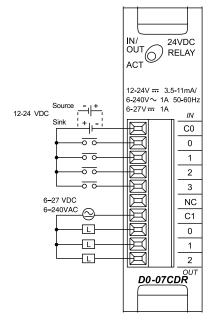
4-point DC input and 3-point relay output module

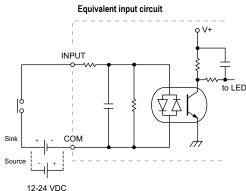
<b>D0-07CDR Input Specifications</b>			
Number of Inputs	4 (sink/source)		
Input Voltage Range 10.8–26.4 VDC			
Peak Voltage	30VDC		
Maximum Input Current	11mA @ 26.4 VDC		
Input Current	Typical: 4mA @ 12VDC 8.5 mA @ 24VDC		
Input Impedance	2.8 kq @ 12–24 VDC		
ON Voltage Level	> 10.0 VDC		
OFF Voltage Level	< 2.0 VDC		
Minimum ON Current	3.5 ms		
Maximum OFF Current	0.5 ms		
ON to OFF Response	2–8 ms, Typical 4ms		
OFF to ON Response	2-8 ms, Typical 4ms		
Commons	1 (4 points/common)		

D0-07CDR Output Sp	pecifications
Number of Outputs	3
Output Voltage Range	6–27 VDC/6–240 VAC
Output Type	Relay, form A (SPST)
Peak Voltage	30.0 VDC/ 264VAC
Maximum Current (resist.)	1A/point, 4A/ common
Minimum Load Current	5mA @ 5VDC
Maximum Leakage Current	0.1 mA @ 264VAC
On Voltage Drop	N/A
Maximum Inrush Current	Output: 3A for 10ms Common: 10A for 10ms
Off to On Response	< 15ms
On to Off Response	< 10ms
Status Indicators	Module activity: one green LED
Commons	1 (3 points/common)
Fuse	No fuse
Terminal Type (Included)	Removable: D0- ACC-4
Base Power Required (5V)	Max. 200mA (all pts. ON)



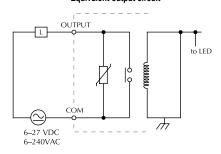
See Wiring Solutions for part numbers of ZIPLink cables and connection modules compatible with this I/O module.





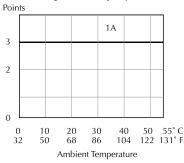
For "Sinking and Sourcing Concepts", see the Appendix section in this catalog.

#### Equivalent output circuit



#### Derating chart for DC inputs

#### Derating chart for relay outputs





### Wiring Solutions

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

**ZIP**Links 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 **ZIP**Link System ranging from

PLC I/O-to-**ZIP**Link Connector Modules that are ready for field termination, options for connecting to third party devices, GS, DuraPulse and SureServo Drives, and specialty relay, transorb and communications modules. Pre-printed I/O-specific adhesive label strips for quick marking of **ZIP**Link modules are provided with **ZIP**Link cables. See the following solutions to help determine the best **ZIP**Link system for your application.

### Solution 1: DirectLOGIC 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 multi-pin connector at the other end, is the best solution.

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

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



### Solution 2: DirectLOGIC I/O Modules to 3rd Party Devices

For connecting I/O to another device within close proximity of the I/O modules, no extra terminal blocks are necessary when using the **ZIP**Link Pigtail Cables. **ZIP**Link 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.
- Select a ZIPLink 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 starters 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.





## **Wiring Solutions**

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

**ZIP**Link offers communications cables for use with DirectLOGIC, CLICK, and Productivity3000 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 and RJ12 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.



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DL05 / DL06 PLCs tDL5-50



## PLC I/O Modules to ZIPLink Connector Modules - DL05/06

DL05/06 PLC Input Module <i>ZIP</i> Link Selector						
Pl	LC	<i>ZIP</i> Link				
Input Module	# of Terms	Component Module Part No. Cable Part No.				
<u>D0-10ND3</u>	13	Feedthrough		ZL-D0-CBL13		
D0-10ND3F	13	Feedthrough	ZL-RTB20			
		Feedthrough		ZL-D0-CBL24-L ZL-D0-CBL24-1L ZL-D0-CBL24-2L		
<u>D0-16ND3</u>	24	Sensor	ZL-LTB16-24-1			
F0-08NA-1	10	See Note 2				

DL05/06 PLC Combo In/Out Module ZIPLink Selector					
P	PLC ZIPLink				
Combo Module	# of Terms	Component Module Part No. Cable Part No.			
D0-07CDR	10	See Note 2			
D0-08CDD1	13	Feedthrough ZL-RTB20 ZL-D0-CBL13			

DLO	DL05/06 PLC Analog Module <i>ZIP</i> Link Selector				
PLC		<i>ZIP</i> Link			
Analog Module	# of Terms	Component Module Cab		Cable	
F0-04AD-1	8	See Note 2			
F0-04AD-2	8	See Note 2			
F0-08ADH-1	13				
F0-08ADH-2	13			ZL-D0-CBL13	
F0-04DAH-1	13	Feedthrough	ZL-RTB20		
F0-08DAH-1	13				
F0-04DAH-2	13				
F0-08DAH-2	13				
F0-2AD2DA-2	8				
F0-4AD2DA-1	8				
F0-4AD2DA-2	8				
<u>F0-04RTD</u>	Matched Only	See Note 2			
F0-04THM	Matched Only				

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Note: ZIPLink Connector Modules and ZIPLink Cables specifications are in the **ZIP**Link catalog section.

	DL05/06 PLC Output Module <i>ZIP</i> Link Selector			
PLC		<i>ZIP</i> Link		
Output Module	# of Terms	Component	Module Part No.	Cable Part No.
<u>D0-10TD1</u>	13	Feedthrough	ZL-RTB20	ZL-D0-CBL13
		Feedthrough	ZL-RTB20	ZL-D0-CBL24 *
<u>D0-16TD1</u>	24	Fuse	ZL-RFU20 <sup>3</sup>	ZL-D0-CBL24 *
		Relay (sinking)	ZL-RRL16-24-1	ZL-D0-CBL24 *
D0-10TD2	13	Feedthrough	ZL-RTB20	ZL-D0-CBL13
		Feedthrough	ZL-RTB20	ZL-D0-CBL24 *
D0-16TD2	24	Fuse	ZL-RFU20 <sup>3</sup>	ZL-D0-CBL24 *
<u> </u>	27	Relay (sourcing)	ZL-RRL16-24-2	ZL-D0-CBL24 *
D0-08TR	10	See Note 2		
F0-04TRS <sup>1</sup>	13	Feedthrough	ZL-RTB20	ZL-D0-CBL13

	DL05/06 PLC Fixed I/O <i>ZIP</i> Link Selector				
	PLC ZIPLink				
PLC	# of Terms	Component Module Part No. Cable Part No.			
DL05	18	See Note 2			
	20 (Input side only)	Feedthrough ZL-RTB20 ZL-D06X-CBL20			
DL06	20 (Output side only)	Feedthrough ZL-RTB20 ZL-D06Y-CBL20			

<sup>\*</sup> Select the cable length by replacing the \* with: Blank = 0.5 m, -1 = 1.0 m,

when used with the ZIPLink wiring system.

These modules are not supported by the ZIPLink wiring system.

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.



or -2 = 2.0 m.

Caution: The F0-04TRS relay outputs are derated not to exceed 2A per point

Note: 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.

### Power Budgeting for the DL06

The DL06 has four option module slots. To determine whether the combination of modules you select will have sufficient power, you will need to perform a power budget calculation.

### **Power supplied**

Power is supplied from two sources: the internal base unit power supply and, if required, an external supply (customer furnished). The D0-06xx (AC powered) PLCs supply a limited amount of 24VDC power. The 24VDC output can be used to power external devices.

For power budgeting, start by considering the power supplied by the base unit. All DL06 PLCs supply the same amount of 5VDC power. Only the AC units offer 24VDC auxiliary power.

Be aware of the trade-off between 5VDC power and 24VDC power. The amount of 5 VDC power available depends on the amount of 24VDC power being used, and the amount of 24VDC power available depends on the amount of 5VDC power consumed. Determine the amount of internally supplied power from the table to the right.

## Power required by base unit

Because of the different I/O configurations available in the DL06 family, the power consumed by the base unit itself varies from model to model. Subtract the amount of power required by the base unit from the amount of power supplied by the base unit. Be sure to subtract 5VDC and 24VDC amounts.

# Power required by option modules

Next, subtract the amount of power required by the option modules you are planning to use. Again, remember to subtract both 5VDC and 24VDC.

If your power budget analysis shows surplus power available, you should have a workable configuration.

DL06 Power Supplied by Base Units				
Part Number	5 VDC (mA)	24 VDC (mA)		
DO 00	1500mA	300mA		
D0-06xx	2000mA	200mA		
D0-06xx-D	1500mA	none		

DL06 Base Unit Power Required				
Part Number	5 VDC (mA)	24 VDC (mA)		
D0-06AA	800mA	none		
D0-06AR	900mA	none		
D0-06DA	800mA	none		
D0-06DD1	600mA	280mA*		
D0-06DD2	600mA	none		
D0-06DR	950mA	none		
D0-06DD1-D	600mA	none		
D0-06DD2-D	600mA	none		
D0-06DR-D	950mA	none		

<sup>\*</sup> Only if auxiliary 24VDC power is connected to V+ terminal.

DL06 Power Consumed by Other Devices				
Part Number 5 VDC (mA) 24 VDC (mA)				
<u>D0-06LCD</u>	50mA	none		
D2-HPP	200mA	none		
<b>DV-1000</b> 150mA none				
C-more Micro-Graphic	210mA	none		

Power Budgeting Example				
Power Source		5VDC power (mA)	24VDC power (mA)	
D0-06DD1	Α	1500mA	300mA	
(select row A or B)	В	2000mA	200mA	
Current Required		5VDC power (mA)	24VDC power (mA)	
D0-06DD1		600mA	280mA*	
D0-16ND3		35mA	0	
D0-10TD1		150mA	0	
D0-08TR		280mA	0	
F0-4AD2DA-1		100mA	0	
DO-06LCD		50mA	0	
Total Used		1215mA	280mA	
Domoining	Α	285mA	20mA	
Remaining	В	785mA	note 1	

<sup>\*</sup> Auxiliary 24 VDC used to power V+ terminal of D0-06DD1 sinking outputs.

Note 1: If the PLC's auxiliary 24 VDC power source is used to power the sinking outputs, use power choice A, above.

by Option Modules           Part Number         5 VDC (mA)         24 VDC (mA)           D0-07CDR         130mA         none           D0-08CDD1         100mA         none           D0-08TR         280mA         none           D0-10ND3         35mA         none           D0-10ND3F         35mA         none           D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-04DH-1         25mA         25mA           F0-04DH-1         25mA         150mA	
D0-07CDR         130mA         none           D0-08CDD1         100mA         none           D0-08TR         280mA         none           D0-10ND3         35mA         none           D0-10ND3F         35mA         none           D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA	
D0-08CDD1         100mA         none           D0-08TR         280mA         none           D0-10ND3         35mA         none           D0-10ND3F         35mA         none           D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-08TR         280mA         none           D0-10ND3         35mA         none           D0-10ND3F         35mA         none           D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-10ND3         35mA         none           D0-10ND3F         35mA         none           D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-10ND3F         35mA         none           D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-10TD1         150mA         none           D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-10TD2         150mA         none           D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-16ND3         35mA         none           D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-16TD1         200mA         none           D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
D0-16TD2         200mA         none           F0-04TRS         250mA         none           F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
FO-04TRS         250mA         none           FO-08NA-1         5mA         none           FO-04AD-1         50mA         none           FO-04AD-2         75mA         none           FO-08ADH-1         25mA         25mA           FO-08ADH-2         25mA         25mA	
F0-08NA-1         5mA         none           F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
F0-04AD-1         50mA         none           F0-04AD-2         75mA         none           F0-08ADH-1         25mA         25mA           F0-08ADH-2         25mA         25mA	
FO-04AD-2         75mA         none           FO-08ADH-1         25mA         25mA           FO-08ADH-2         25mA         25mA	
FO-08ADH-1         25mA         25mA           FO-08ADH-2         25mA         25mA	
<b>F0-08ADH-2</b> 25mA 25mA	
<b>F0-04DAH-1</b> 25mA 150mA	
<b>F0-08DAH-1</b> 25mA 220mA	
<b>F0-04DAH-2</b> 25mA 30mA	
<b><u>F0-08DAH-2</u></b> 25mA 30mA	
<b>F0-2AD2DA-2</b> 50mA 30mA	
<b>F0-4AD2DA-1</b> 100mA 40mA	
<b>F0-4AD2DA-2</b> 100mA none	
<b>F0-04RTD</b> 70mA none	
<b>F0-04THM</b> 30mA none	
<b>DO-DEVNETS</b> 45mA none	
<b>H0-CTRI02</b> 250mA none	
<b>H0-ECOM100</b> 300mA none	
F0-08SIM 1mA none	
<b>D0-DCM</b> 250 mA none	
<b>F0-CP128</b> 150 mA none	
<b>F0-08SIM</b> 1 mA none	