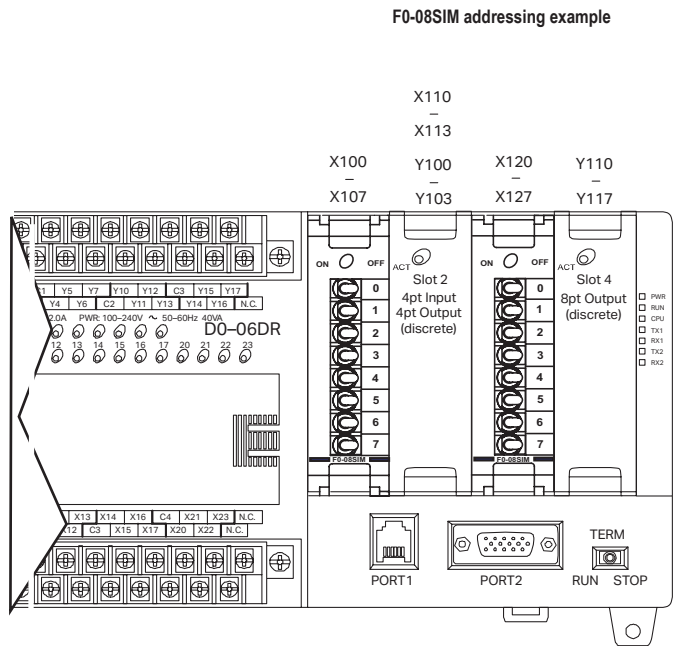
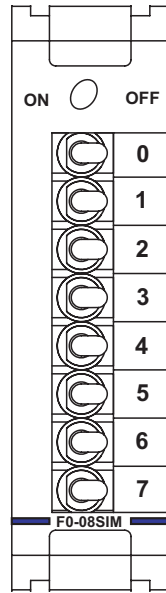


# DL05/06 I/O Option Modules

## F0-08SIM \$69.00

8-input simulator module

F0-08SIM Input Specifications	
Number of Inputs	8
Base Power Required (5 VDC)	1 mA
Terminal Type	None
Status Indicator	None
Weight	1.6 oz. (45.36 g)

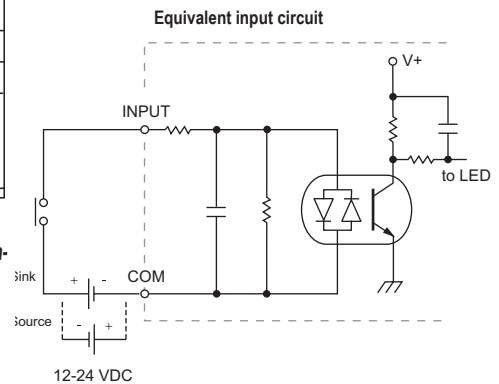
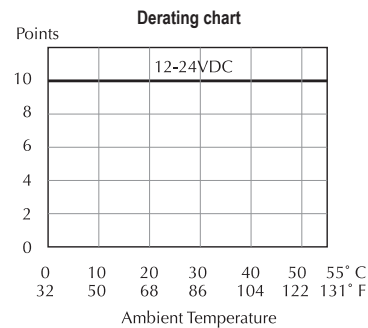
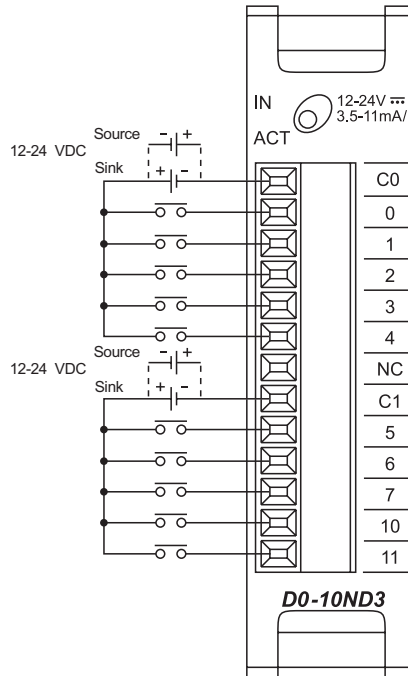


CPU	Firmware Required	DirectSOFT Required
DL05	Version 4.90 or later	Version 3.0c or later
DL06	Version 1.80 or later	Version 4.0, Build 16 or later

## D0-10ND3 \$98.00

10-point DC input module

D0-10ND3 Input Specifications	
Number of Inputs	10 (sink/source)
Input Voltage Range	10.8-26.4 VDC
Peak Voltage	30.0 VDC
Input Current	Typical: 4.0 mA @ 12 VDC 8.5 mA @ 24 VDC
Maximum Input Current	11 mA @ 26.4 VDC
Input Impedance	2.8 kΩ @ 12-24 VDC
On Voltage Level	> 10.0 VDC
Off Voltage Level	< 2.0 VDC
Minimum ON Current	3.5 mA
Minimum OFF Current	0.5 mA
Off to On Response	2-8 ms, Typ. 4 ms
On to Off Response	2-8 ms, Typ. 4 ms
Status Indicators	Module activity: one green LED
Commons	2 (5 pts/common) isolated
Fuse	No fuse
Terminal Type (Included)	Removable: D0-ACC-4
Base Power Required (5 V)	Typical. 35 mA (all pts. ON)



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

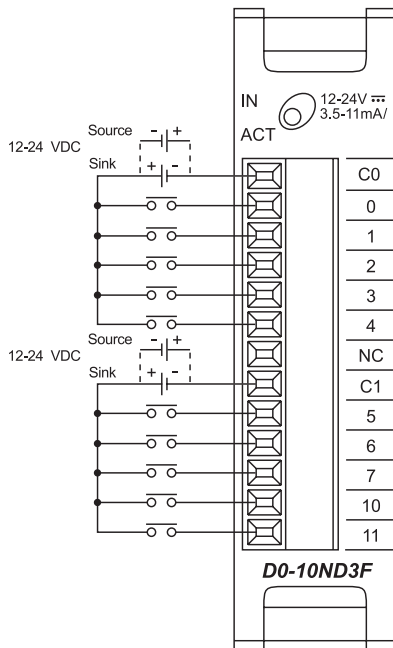
For "Sinking and Sourcing Concepts", see the Appendix section in this catalog.

# DL05/06 I/O Option Modules

## D0-10ND3F \$110.00

10-point DC fast input module

D0-10ND3F Input Specifications	
Number of Inputs	10 (sink/source)
Input Voltage Range	10.8– 26.4 VDC
Peak Voltage	30.0 VDC
Input Current	Typical: 4.0 mA @ 12 VDC 8.5 mA @ 24 VDC
Maximum Input Current	11 mA @ 26.4 VDC
Input Impedance	2.8 kΩ @ 12-24 VDC
On Voltage Level	> 10.0 VDC
Off Voltage Level	< 2.0 VDC
Minimum ON Current	3.5 mA
Minimum OFF Current	0.5 mA
Off to On Response	2 ms, Typ. 1 ms
On to Off Response	2 ms, Typ. 1 ms
Status Indicators	Module activity: one green LED
Commons	2 (5 pts/common) isolated
Fuse	No fuse
Terminal Type (Included)	Removable: D0-ACC-4
Base Power Required (5 V)	Typical 35 mA (all pts. ON)

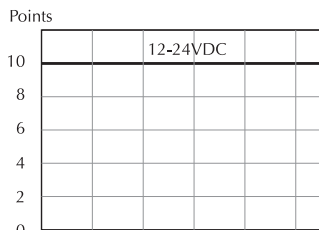


CPU	Firmware Required	DirectSOFT Required
DL05	Version 4.70 or later	Version 3.0c or later
DL06	Version 1.50 or later	Version 4.0, Build 16 or later

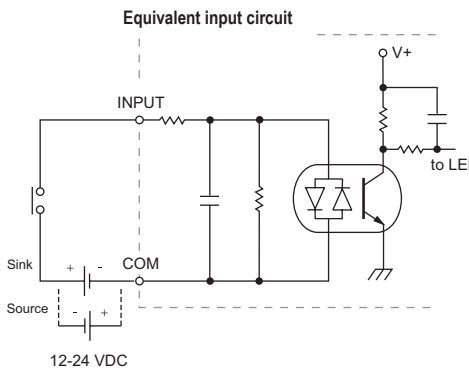


See *Wiring Solutions* for part numbers of ZIPLink cables and connection modules compatible with this I/O module.

Derating chart



0 10 20 30 40 50 55° C  
32 50 68 86 104 122 131° F  
Ambient Temperature



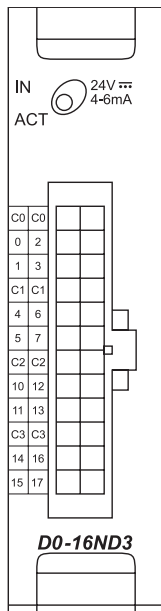
For “Sinking and Sourcing Concepts”, see the Appendix section in this catalog.

# DL05/06 I/O Option Modules

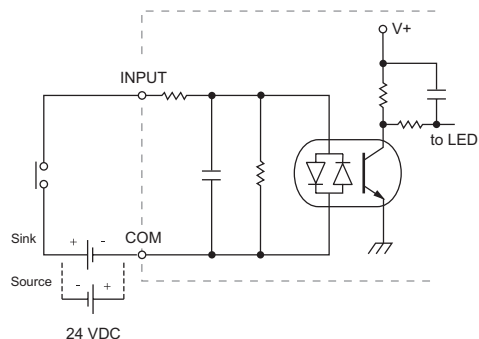
**D0-16ND3**      **\$100.00**

**16-point DC input module**

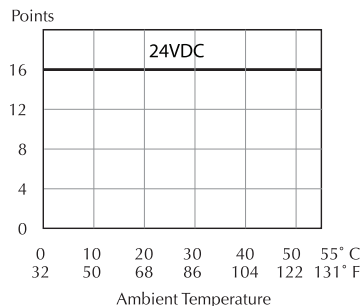
D0-16ND3 Input Specifications	
<b>Number of Inputs</b>	16 (sink/source)
<b>Input Voltage Range</b>	20–28 VDC
<b>Peak Voltage</b>	30.0 VDC
<b>Input Current</b>	Typical: 4.0 mA @ 24 VDC
<b>Maximum Input Current</b>	6 mA @ 28 VDC
<b>Input Impedance</b>	4.7 kΩ @ 24 VDC
<b>On Voltage Level</b>	> 19.0 VDC
<b>Off Voltage Level</b>	< 7.0 VDC
<b>Minimum ON Current</b>	3.5 mA
<b>Minimum OFF Current</b>	1.5 mA
<b>Off to On Response</b>	2-8 ms, Typ. 4 ms
<b>On to Off Response</b>	2-8 ms, Typ. 4 ms
<b>Status Indicators</b>	Module activity: one green LED
<b>Commons</b>	4 (4pts/common) isolated
<b>Fuse</b>	No fuse
<b>Connector Type</b>	24-pin Molex 43025-2400 (See <b>ZIPLinks</b> for wiring options)
<b>Base Power Required</b>	Typical. 35 mA (all pts. ON)



Equivalent input circuit

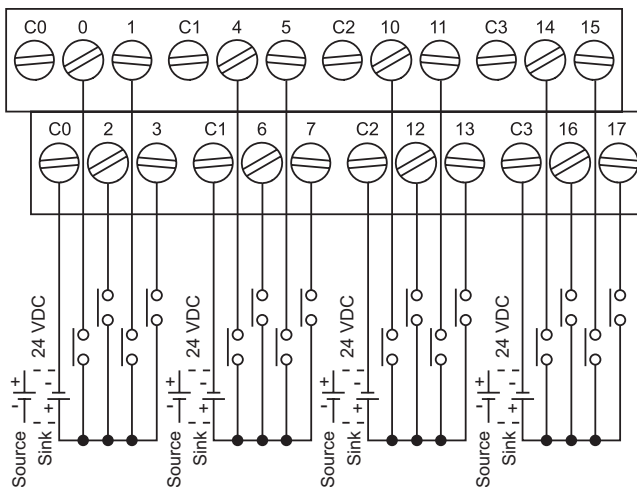


Derating chart



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

Typical Wiring Example



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



# Wiring Solutions

## Wiring Solutions using the ZIPLink Wiring System

**ZIPLink**s 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, and specialty 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: DirectLOGIC I/O Modules to ZIPLink Connector Modules**

When looking for quick and easy I/O-to-field termination, a **ZIPLink** connector module used in conjunction with a prewired **ZIPLink** 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 **ZIPLink** Connector Modules selector tables located in this section,

1. Locate your I/O module/PLC.
2. Select a **ZIPLink** module.
3. Select a corresponding **ZIPLink** 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 **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 **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?

**ZIPLink** cables are available in a wide range of configurations for connecting to PLCs and SureServo, SureStep, Stellar soft starters and AC drives. Add a **ZIPLink** 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 **ZIPLink** cable and other associated hardware.





# Wiring Solutions

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

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

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

1. Locate the type of application.
2. Select a **ZIPLink** 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 **ZIPLink** 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 - DL05/06

DL05/06 PLC Input Module ZIPLink Selector				
PLC		ZIPLink		
Input Module	# of Terms	Component	Module Part No.	Cable Part No.
<a href="#">D0-10ND3</a>	13	Feedthrough	ZL-RTB20	<a href="#">ZL-D0-CBL13</a>
<a href="#">D0-10ND3F</a>	13	Feedthrough		<a href="#">ZL-D0-CBL24-L</a>
<a href="#">D0-16ND3</a>	24	Feedthrough	ZL-LTB16-24-1	<a href="#">ZL-D0-CBL24-1L</a>
		Sensor		<a href="#">ZL-D0-CBL24-2L</a>
<a href="#">F0-08NA-1</a>	10	See Note 2		

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

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

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

DL05/06 PLC Analog Module ZIPLink Selector				
PLC		ZIPLink		
Analog Module	# of Terms	Component	Module	Cable
<a href="#">F0-04AD-1</a>	8	See Note 2		
<a href="#">F0-04AD-2</a>	8			
<a href="#">F0-08ADH-1</a>	13	Feedthrough	ZL-RTB20	<a href="#">ZL-D0-CBL13</a>
<a href="#">F0-08ADH-2</a>	13			
<a href="#">F0-04DAH-1</a>	13			
<a href="#">F0-08DAH-1</a>	13			
<a href="#">F0-04DAH-2</a>	13			
<a href="#">F0-08DAH-2</a>	13			
<a href="#">F0-2AD2DA-2</a>	8			
<a href="#">F0-4AD2DA-1</a>	8			
<a href="#">F0-4AD2DA-2</a>	8			
<a href="#">F0-04RTD</a>	Matched Only			
<a href="#">F0-04THM</a>	Matched Only			

\* Select the cable length by replacing the \* with: Blank = 0.5m, -1 = 1.0m, or -2 = 2.0m.  
<sup>1</sup> Caution: The F0-04TRS relay outputs are derated not to exceed 2A per point when used with the ZIPLink wiring system.  
<sup>2</sup> These modules are not supported by the ZIPLink wiring system.  
<sup>3</sup> Note: Fuses (5 x 20mm) are not included. See Edison Electronic Fuse section for (5 x 20mm) 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 = 400 mA per circuit.



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



# 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 24 VDC power. The 24 VDC 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 5 VDC power. Only the AC units offer 24 VDC auxiliary power.

Be aware of the trade-off between 5 VDC power and 24 VDC power. The amount of 5 VDC power available depends on the amount of 24 VDC power being used, and the amount of 24 VDC power available depends on the amount of 5 VDC 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 5 VDC and 24 VDC 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 5 VDC and 24 VDC.

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)
D0-06xx	1500 mA	300 mA
	2000 mA	200 mA
D0-06xx-D	1500 mA	none

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

\* Only if auxiliary 24 VDC power is connected to V+ terminal.

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

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

\* 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.

DL05/06 Power Consumed by Option Modules		
Part Number	5 VDC (mA)	24 VDC (mA)
D0-07CDR	130 mA	none
D0-08CDD1	100 mA	none
D0-08TR	280 mA	none
D0-10ND3	35 mA	none
D0-10ND3F	35 mA	none
D0-10TD1	150 mA	none
D0-10TD2	150 mA	none
D0-16ND3	35 mA	none
D0-16TD1	200 mA	none
D0-16TD2	200 mA	none
F0-04TRS	250 mA	none
F0-08NA-1	5 mA	none
F0-04AD-1	50 mA	none
F0-04AD-2	75 mA	none
F0-08ADH-1	25 mA	25 mA
F0-08ADH-2	25 mA	25 mA
F0-04DAH-1	25 mA	150 mA
F0-08DAH-1	25 mA	220 mA
F0-04DAH-2	25 mA	30 mA
F0-08DAH-2	25 mA	30 mA
F0-2AD2DA-2	50 mA	30 mA
F0-4AD2DA-1	100 mA	40 mA
F0-4AD2DA-2	100 mA	none
F0-04RTD	70 mA	none
F0-04THM	30 mA	none
D0-DEVNETS	45 mA	none
H0-CTRIO2	250 mA	none
H0-ECOM100	300 mA	none
F0-08SIM	1 mA	none
D0-DCM	250 mA	none
F0-CP128	150 mA	none
F0-08SIM	1 mA	none