

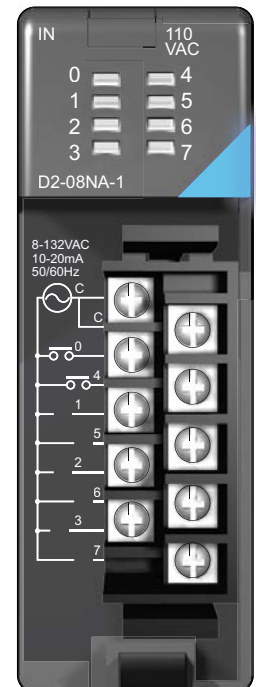
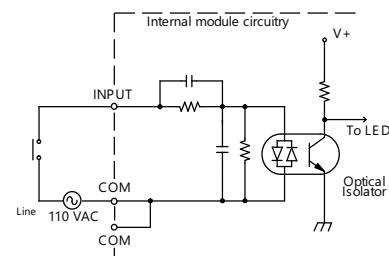
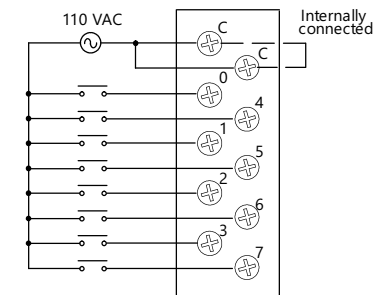
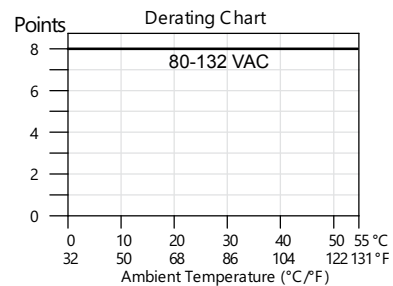
# Simulator/AC Input Modules

| F2-08SIM Input Simulator \$107.00 |                |
|-----------------------------------|----------------|
| <b>Inputs per Module</b>          | 8              |
| <b>Base Power Required 5VDC</b>   | 50mA           |
| <b>Terminal Type</b>              | None           |
| <b>Status Indicator</b>           | Switch side    |
| <b>Weight</b>                     | 2.65 oz. (75g) |



| D2-08NA-1 AC Input \$116.00     |                                            |
|---------------------------------|--------------------------------------------|
| <b>Inputs per Module</b>        | 8                                          |
| <b>Commons per Module</b>       | 1 (2 I/O terminal points)                  |
| <b>Input Voltage Range</b>      | 80-132 VAC                                 |
| <b>Peak Voltage</b>             | 132 VAC                                    |
| <b>ON Voltage Level</b>         | 75VAC minimum                              |
| <b>OFF Voltage Level</b>        | 20VAC maximum                              |
| <b>AC Frequency</b>             | 47-63 Hz                                   |
| <b>Input Impedance</b>          | 12kΩ @ 60Hz                                |
| <b>Input Current</b>            | 13mA @ 100VAC, 60Hz<br>11mA @ 100VAC, 50Hz |
| <b>Minimum ON Current</b>       | 5mA                                        |
| <b>Maximum OFF Current</b>      | 2mA                                        |
| <b>Base Power Required 5VDC</b> | 50mA                                       |
| <b>OFF to ON Response</b>       | 5 to 30 ms                                 |
| <b>ON to OFF Response</b>       | 10 to 50 ms                                |
| <b>Terminal Type (included)</b> | Removable; <a href="#">D2-8IOCON</a>       |
| <b>Status Indicator</b>         | Logic side                                 |
| <b>Weight</b>                   | 2.5 oz. (70g)                              |

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



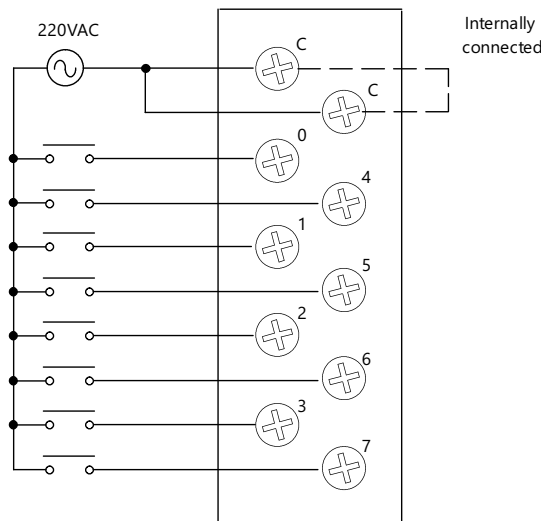
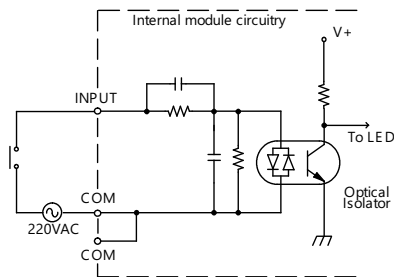
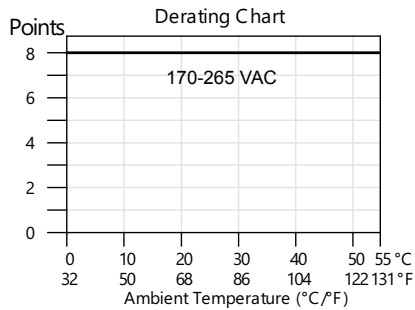
# AC Input Modules

| D2-08NA-2 AC Input \$148.00     |                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------|
| <b>Inputs per Module</b>        | 8                                                                                       |
| <b>Commons per Module</b>       | 1 (2 I/O terminal points)                                                               |
| <b>Input Voltage Range</b>      | 170-265 VAC                                                                             |
| <b>Peak Voltage</b>             | 265VAC                                                                                  |
| <b>ON Voltage Level</b>         | 150VAC minimum                                                                          |
| <b>OFF Voltage Level</b>        | 40VAC maximum                                                                           |
| <b>AC Frequency</b>             | 47-63 Hz                                                                                |
| <b>Input Impedance</b>          | 18k $\Omega$ @ 60Hz                                                                     |
| <b>Input Current</b>            | 9mA @ 220VAC, 50Hz<br>11mA @ 265VAC, 50Hz<br>10mA @ 220VAC, 60Hz<br>12mA @ 265VAC, 60Hz |
| <b>Minimum ON Current</b>       | 10mA                                                                                    |
| <b>Maximum OFF Current</b>      | 2mA                                                                                     |
| <b>Base Power Required 5VDC</b> | 100mA                                                                                   |
| <b>OFF to ON Response</b>       | 5 to 30 ms                                                                              |
| <b>ON to OFF Response</b>       | 10 to 50 ms                                                                             |
| <b>Terminal Type (included)</b> | Removable; D2-8IOCON                                                                    |
| <b>Status Indicator</b>         | Logic side                                                                              |
| <b>Weight</b>                   | 2.5 oz. (70g)                                                                           |

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| <b>Operating Temperature</b>        | 32°F to 131°F (0° to 55°C)                    |
| <b>Storage Temperature</b>          | -4°F to 158°F (-20°C to 70°C)                 |
| <b>Humidity</b>                     | 35% to 95% (non-condensing)                   |
| <b>Atmosphere</b>                   | No corrosive gases permitted                  |
| <b>Vibration</b>                    | MIL STD 810C 514.2                            |
| <b>Shock</b>                        | MIL STD 810C 516.2                            |
| <b>Insulation Withstand Voltage</b> | 1,500VAC 1 minute (COM-GND)                   |
| <b>Insulation Resistance</b>        | 10M $\approx$ @ 500VDC                        |
| <b>Noise Immunity</b>               | NEMA 1,500V 1 minute<br>SANKI 1,000V 1 minute |
| <b>RFI</b>                          | 150MHz, 430MHz                                |

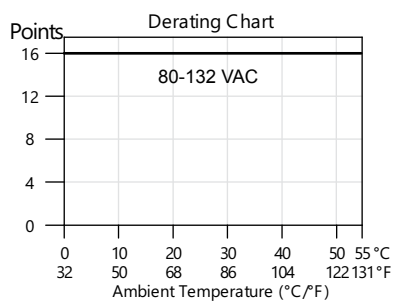


See Wiring Solutions for part numbers of **ZIPLink** cables and connection modules compatible with this I/O module.



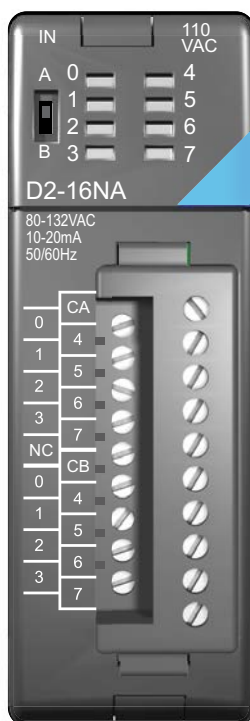
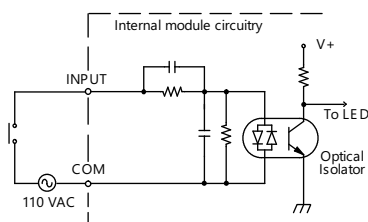
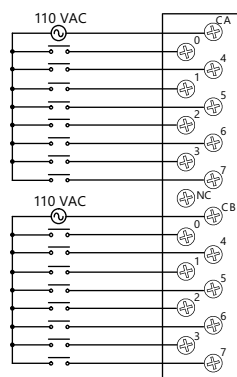
# AC Input Modules

| D2-16NA AC Input \$204.00       |                                                                   |
|---------------------------------|-------------------------------------------------------------------|
| <b>Inputs per Module</b>        | 16                                                                |
| <b>Commons per Module</b>       | 2 (isolated)                                                      |
| <b>Input Voltage Range</b>      | 80-132 VAC                                                        |
| <b>Peak Voltage</b>             | 132VAC                                                            |
| <b>ON Voltage Level</b>         | 70VAC minimum                                                     |
| <b>OFF Voltage Level</b>        | 20VAC maximum                                                     |
| <b>AC Frequency</b>             | 47-63 Hz                                                          |
| <b>Input Impedance</b>          | 12 k $\Omega$ @ 60 Hz                                             |
| <b>Input Current</b>            | 11mA @ 100VAC, 50Hz<br>13mA @ 100VAC, 60Hz<br>15mA @ 132VAC, 60Hz |
| <b>Minimum ON Current</b>       | 5mA                                                               |
| <b>Maximum OFF Current</b>      | 2mA                                                               |
| <b>Base Power Required 5VDC</b> | 100mA                                                             |
| <b>OFF to ON Response</b>       | 5 to 30 ms                                                        |
| <b>ON to OFF Response</b>       | 10 to 50 ms                                                       |
| <b>Terminal Type (included)</b> | Removable; <a href="#">D2-16IOCON</a>                             |
| <b>Status Indicator</b>         | Logic side                                                        |
| <b>Weight</b>                   | 2.4 oz. (68g)                                                     |



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

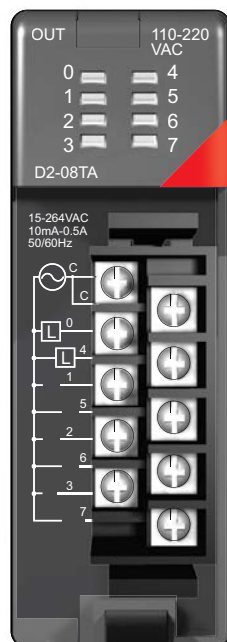
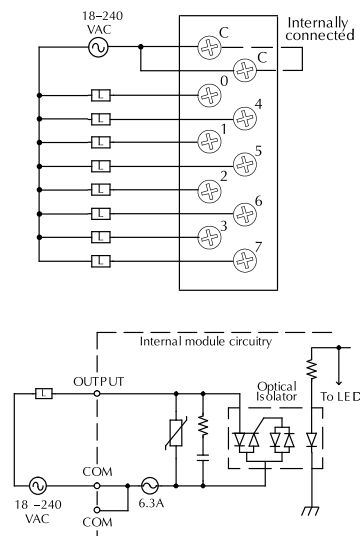
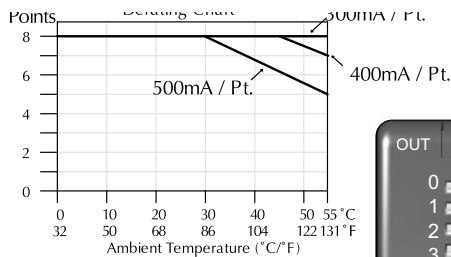
*Note: When used with the ZIPLink wiring system, relay outputs are derated not to exceed 2 Amps per point max.*



# AC Output Modules

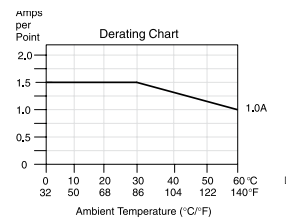
| D2-08TA AC Output \$165.00      |                                                                      |
|---------------------------------|----------------------------------------------------------------------|
| <b>Outputs per Module</b>       | 8                                                                    |
| <b>Commons per Module</b>       | 1 (2 I/O terminal points)                                            |
| <b>Output Type</b>              | SSR (Triac)                                                          |
| <b>Operating Voltage</b>        | 15-264 VAC                                                           |
| <b>Peak Voltage</b>             | 264VAC                                                               |
| <b>ON Voltage Drop</b>          | < 1.5 VAC (>0.1 A)<br>< 3.0 VAC (<0.1 A)                             |
| <b>AC Frequency</b>             | 47 to 63 Hz                                                          |
| <b>Minimum Load Current</b>     | 10mA                                                                 |
| <b>Max Load Current</b>         | 0.5 A/point; 4A/common                                               |
| <b>Max Leakage Current</b>      | 4mA (264VAC, 60Hz)<br>1.2 mA (100VAC, 60Hz)<br>0.9 mA (100VAC, 50Hz) |
| <b>Max Inrush Current</b>       | 10A for 10ms                                                         |
| <b>Base Power Required 5VDC</b> | 250mA                                                                |
| <b>OFF to ON Response</b>       | 1ms                                                                  |
| <b>ON to OFF Response</b>       | 1ms + 1/2 cycle                                                      |
| <b>Terminal Type (included)</b> | Removable; D2-8IOCON                                                 |
| <b>Status Indicator</b>         | Logic side                                                           |
| <b>Weight</b>                   | 2.8 oz. (80g)                                                        |
| <b>Fuses</b>                    | 1 per common, 6.3 A slow blow, non-replaceable                       |

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

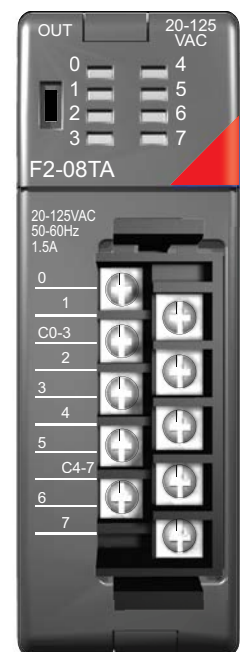
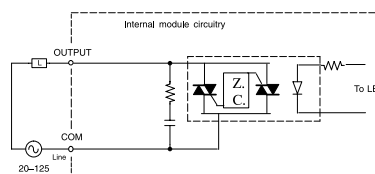
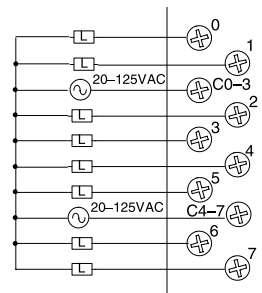


| F2-08TA AC Output \$208.00          |                                                                                 |
|-------------------------------------|---------------------------------------------------------------------------------|
| <b>Outputs per Module</b>           | 8                                                                               |
| <b>Commons per Module</b>           | 2 (Isolated)                                                                    |
| <b>Output Type</b>                  | SSR (Triac with zero crossover)                                                 |
| <b>Operating Voltage</b>            | 24-140 VAC                                                                      |
| <b>Peak Voltage</b>                 | 140VAC                                                                          |
| <b>ON Voltage Drop</b>              | 1.6 V(rms) @ 1.5 A                                                              |
| <b>AC Frequency</b>                 | 47 to 63 Hz                                                                     |
| <b>Minimum Load Current</b>         | 50mA                                                                            |
| <b>Max Load Current</b>             | 1.5 A / pt @ 30°C<br>1.0 A / pt @ 60°C<br>4.0 A / common; 8.0 A / module @ 60°C |
| <b>Max Leakage Current</b>          | 0.7 mA(rms)                                                                     |
| <b>Peak One Cycle Surge Current</b> | 15A                                                                             |
| <b>Base Power Required 5VDC</b>     | 250mA                                                                           |
| <b>OFF to ON Response</b>           | 0.5 ms - 1/2 cycle                                                              |
| <b>ON to OFF Response</b>           | 0.5 ms - 1/2 cycle                                                              |
| <b>Terminal Type (included)</b>     | Removable; D2-8IOCON                                                            |
| <b>Status Indicator</b>             | Logic side                                                                      |
| <b>Weight</b>                       | 3.5 oz. (99g)                                                                   |
| <b>Fuses</b>                        | None                                                                            |

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



Derating Note: All outputs can be run at the current per point shown.

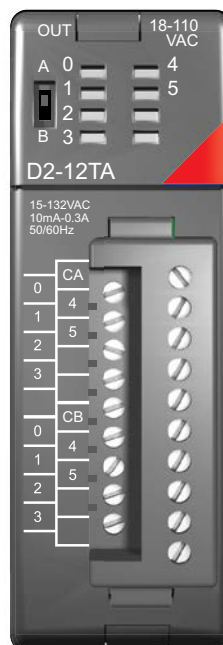
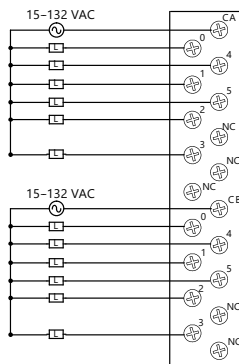
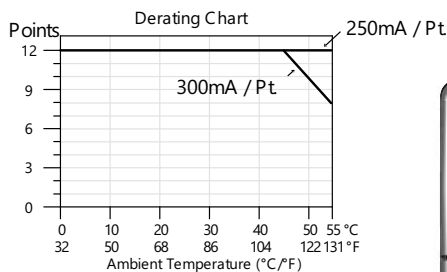


# AC Output Modules

| D2-12TA AC Output \$204.00      |                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Outputs per Module</b>       | 12                                                                                                |
| <b>Outputs Points Consumed</b>  | 16 (four unused, see chart below)                                                                 |
| <b>Commons per Module</b>       | 2 (isolated)                                                                                      |
| <b>Output Type</b>              | SSR (Triac)                                                                                       |
| <b>Operating Voltage</b>        | 15-132 VAC                                                                                        |
| <b>Peak Voltage</b>             | 132 VAC                                                                                           |
| <b>ON Voltage Drop</b>          | < 1.5VAC (>50mA)<br>< 4.0VAC (<50mA)                                                              |
| <b>AC Frequency</b>             | 47 to 63 Hz                                                                                       |
| <b>Minimum Load Current</b>     | 10mA                                                                                              |
| <b>Max Load Current</b>         | 0.3 A/point; 1.8 A/common                                                                         |
| <b>Max Leakage Current</b>      | 2mA (132VAC, 60Hz)                                                                                |
| <b>Max Inrush Current</b>       | 10A for 10ms                                                                                      |
| <b>Base Power Required 5VDC</b> | 350mA                                                                                             |
| <b>OFF to ON Response</b>       | 1ms                                                                                               |
| <b>ON to OFF Response</b>       | 1ms + 1/2 cycle                                                                                   |
| <b>Terminal Type (included)</b> | Removable; <a href="#">D2-16IOCON</a>                                                             |
| <b>Status Indicator</b>         | Logic side                                                                                        |
| <b>Weight</b>                   | 2.8 oz. (80g)                                                                                     |
| <b>Fuses</b>                    | (2) 1 per common<br>3.15 A slow blow, replaceable<br>Order <a href="#">D2-FUSE-1</a> (5 per pack) |

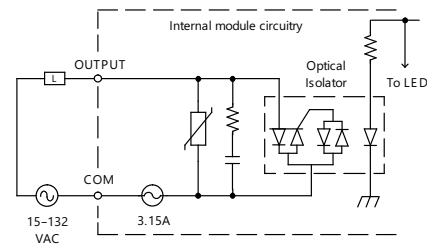
See Wiring Solutions for part numbers of **ZIPLink** cables and connection modules compatible with this I/O module.

**Note:** When used with the **ZIPLink** wiring system, relay outputs are derated not to exceed 2 Amps per point max.



| Addresses Used |       |        |       |
|----------------|-------|--------|-------|
| Points         | Used? | Points | Used? |
| Yn+0           | Yes   | Yn+10  | Yes   |
| Yn+1           | Yes   | Yn+11  | Yes   |
| Yn+2           | Yes   | Yn+12  | Yes   |
| Yn+3           | Yes   | Yn+13  | Yes   |
| Yn+4           | Yes   | Yn+14  | Yes   |
| Yn+5           | Yes   | Yn+15  | Yes   |
| Yn+6           | No    | Yn+16  | No    |
| Yn+7           | No    | Yn+17  | No    |

n is the starting address





# Power Requirements

## These charts help determine your power requirements

This section shows the amount of power supplied by each of the base power supplies and the amount of power consumed by each DL205 device. The Power Consumed charts list how much INTERNAL power from each power source is required for the DL205 devices. Use this information when calculating the power budget for your system.

In addition to the internal power sources, the DL205 bases offer a 24 VDC auxiliary power supply with external power connections. This auxiliary power supply can power external devices.

## Use ZIPLinks to reduce power requirements

If your application requires a lot of relay outputs, consider using the ZIPLink AC or DC relay output modules. These modules can switch high current (10A) loads without putting a load on your base power budget. Refer to the Terminal Blocks and Wiring Solutions section in this catalog for more information.

This logo is placed next to the I/O modules that are supported by the ZIPLink connection systems. See the I/O module specifications at the end of this section.



| Power Consumed            |        |               |
|---------------------------|--------|---------------|
| Device                    | 5V(mA) | 24V Auxiliary |
| <b>Operator Interface</b> |        |               |
| C-more Micro-Graphic      | 210    | 0             |

| Power Supplied |          |        |               |
|----------------|----------|--------|---------------|
| Device         | Price    | 5V(mA) | 24V Auxiliary |
| <b>Bases</b>   |          |        |               |
| D2-03B-1       | \$200.00 | 2600   | 300           |
| D2-03BDC1-1    | \$249.00 | 2600   | None          |
| D2-04B-1       | \$217.00 | 2600   | 300           |
| D2-04BDC1-1    | \$274.00 | 2600   | None          |
| D2-06B-1       | \$268.00 | 2600   | 300           |

| Power Consumed                   |        |               |
|----------------------------------|--------|---------------|
| Device                           | 5V(mA) | 24V Auxiliary |
| <b>CPUs</b>                      |        |               |
| D2-262                           | 336    | 0             |
| <b>DC Input Modules</b>          |        |               |
| D2-08ND3                         | 50     | 0             |
| D2-16ND3-2                       | 100    | 0             |
| D2-32ND3                         | 25     | 0             |
| D2-32ND3-2                       | 25     | 0             |
| <b>AC Input Modules</b>          |        |               |
| D2-08NA-1                        | 50     | 0             |
| D2-08NA-2                        | 100    | 0             |
| D2-16NA                          | 100    | 0             |
| <b>Input Simulator Module</b>    |        |               |
| F2-08SIM                         | 50     | 0             |
| <b>DC Output Modules</b>         |        |               |
| D2-04TD1                         | 60     | 20            |
| D2-08TD1                         | 100    | 0             |
| D2-08TD2                         | 100    | 0             |
| D2-16TD1-2                       | 200    | 80            |
| D2-16TD2-2                       | 200    | 0             |
| F2-16TD1P                        | 70     | 50            |
| F2-16TD2P                        | 70     | 50            |
| D2-32TD1                         | 350    | 0             |
| D2-32TD2                         | 350    | 0             |
| <b>AC Output Modules</b>         |        |               |
| D2-08TA                          | 250    | 0             |
| F2-08TA                          | 250    | 0             |
| D2-12TA                          | 350    | 0             |
| <b>Relay Output Modules</b>      |        |               |
| D2-04TRS                         | 250    | 0             |
| D2-08TR                          | 250    | 0             |
| F2-08TR(S)                       | 670    | 0             |
| D2-12TR                          | 450    | 0             |
| <b>Combination In/Out Module</b> |        |               |
| D2-08CDR                         | 200    | 0             |

| Power Supplied |          |        |               |
|----------------|----------|--------|---------------|
| Device         | Price    | 5V(mA) | 24V Auxiliary |
| <b>Bases</b>   |          |        |               |
| D2-06BDC1-1    | \$304.00 | 2600   | None          |
| D2-06BDC2-1    | \$279.00 | 2600   | 300           |
| D2-09B-1       | \$333.00 | 2600   | 300           |
| D2-09BDC1-1    | \$360.00 | 2600   | None          |
| D2-09BDC2-1    | \$359.00 | 2600   | 300           |

| Power Consumed                                   |                |               |
|--------------------------------------------------|----------------|---------------|
| Device                                           | 5V(mA)         | 24V Auxiliary |
| <b>Analog Modules</b>                            |                |               |
| F2-04AD-1                                        | 100            | 5             |
| F2-04AD-2                                        | 110            | 5             |
| F2-08AD-1                                        | 100            | 5             |
| F2-08AD-2                                        | 100            | 5             |
| F2-02DA-1                                        | 40             | 60 (note 1)   |
| F2-02DA-2                                        | 40             | 60            |
| F2-02DAS-1                                       | 100            | 50 / channel  |
| F2-02DAS-2                                       | 100            | 60 / channel  |
| F2-08DA-1                                        | 30             | 50 (note 1)   |
| F2-08DA-2                                        | 60             | 140           |
| F2-4AD2DA                                        | 60             | 80 (note 1)   |
| F2-8AD4DA-1                                      | 35             | 100 (note 1)  |
| F2-8AD4DA-2                                      | 35             | 80 (note 1)   |
| F2-04RTD                                         | 90             | 0             |
| F2-04THM                                         | 110            | 60            |
| <b>Specialty Modules</b>                         |                |               |
| D2-CTRINT                                        | 50*            | 0             |
| D2-CM / D2-EM                                    | 100/130        | 0             |
| H2-CTRIO2                                        | 275            | 0             |
| D2-DCM                                           | 300            | 0             |
| H2-EBC100                                        | 300            | 0             |
| H2-ECOM100                                       | 300            | 0             |
| F2-CP128                                         | 235            | 0             |
| <b>Remote I/O</b>                                |                |               |
| H2-ERM100, (-F)                                  | 300, (-F: 450) | 0             |
| <b>Programming Devices</b>                       |                |               |
| D2-HPP                                           | 200            | 0             |
| * Requires external 5VDC for outputs             |                |               |
| Note 1: Add an additional 20 mA per output loop. |                |               |



# 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

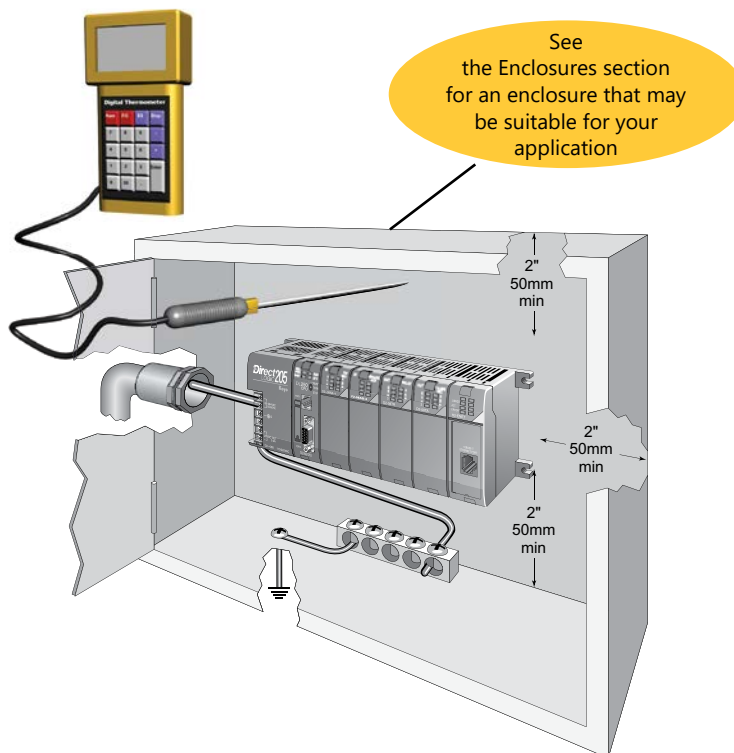
This catalog should never be used as a replacement for the user manual. The user manual, D2-USER-M (downloadable online), contains important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

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

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

