

Power Budgeting

Power Budgeting

There are two areas to be considered when determining the power required to operate a CLICK PLC system. The first area is the power required by the CLICK CPU, along with the internal logic side power that the CPU provides to its own I/O and any connected I/O modules that are powered through the CPU's expansion port; plus any device, such as a C-more Micro-Graphic panel, that is powered through one of the CPU's communication ports.

The second area is the power required by all externally connected I/O devices. This should be viewed as the field side power required. The field side power is dependent on the voltage used for a particular input or output device as it relates to the wired I/O point, and the calculated load rating of the connected device.

It is strongly recommended that the power source for the logic side be separate from the power source for the field side to help eliminate possible electrical noise.

Power budgeting requires the calculation of the total current that the 24 VDC power source needs to provide to CLICK's logic side, and also a separate calculation of the total current required for all devices operating from the field side of the PLC system.

See the Power Budgeting Example shown to the right. The table shows current requirements for a CLICK CPU, two I/O modules, and a C-more Micro. Use the total amperage values to select a proper sized power supply.

Power Budgeting Using the CLICK Programming Software

The following example shows the logic side current consumption as calculated in the CLICK Programming software. Based on the amperage rating of the power supply selected in the first column, your power budget is calculated by subtracting each consecutive module's power consumption from the total available power budget. If you exceed the maximum allowable power consumption the power budget row is highlighted in red.

Power budget row turns red if maximum allowable power consumption is exceeded for the power supply selected.



CLICK 24 VDC Power Supply
CO-00AC or CO-01AC



Other 24 VDC Power Supply
Example: PSP24-60S

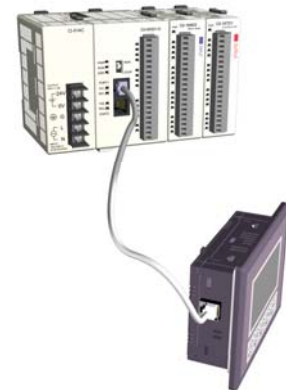
| Current Consumption (mA) | | |
|---------------------------|----------------------------------|------------------------------|
| Part Number | Power Budget 24 VDC (logic side) | External 24 VDC (field side) |
| Basic CPU Modules | | |
| CO-00DD1-D | 120 | 60 |
| CO-00DD2-D | 120 | 0 |
| CO-00DR-D | 120 | 0 |
| CO-00AR-D | 120 | 0 |
| Analog CPU Modules | | |
| CO-02DD1-D | 120 | 60 |
| CO-02DD2-D | 120 | 0 |
| CO-02DR-D | 120 | 0 |
| Input Modules | | |
| CO-08ND3 | 30 | 0 |
| CO-08ND3-1 | 30 | 0 |
| CO-16ND3 | 40 | 0 |
| CO-08NA | 30 | 0 |

| Current Consumption (mA) | | |
|-----------------------------------|----------------------------------|------------------------------|
| Part Number | Power Budget 24 VDC (logic side) | External 24 VDC (field side) |
| Output Modules | | |
| CO-08TD1 | 50 | 15 |
| CO-08TD2 | 50 | 0 |
| CO-16TD1 | 80 | 100 |
| CO-16TD2 | 80 | 0 |
| CO-08TA | 80 | 0 |
| CO-04TRS | 100 | 0 |
| CO-08TR | 100 | 0 |
| C-more Micro-Graphic Panel | | |
| All p/n | 90 | 0 |

Power Budgeting Example

| Current Consumption (mA) Example | | |
|----------------------------------|----------------------------------|------------------------------|
| Part Number | Power Budget 24 VDC (logic side) | External 24 VDC (field side) |
| CO-00DD1-D | 120 | 60 |
| CO-16ND3 | 40 | 0 |
| CO-16TD1 | 80 | 100 |
| C-more Micro | 90 | 0 |
| Total: | 330 | 160* |

* Plus calculated load of connected I/O devices.



System Configuration Setup

Start-up I/O Config Check:

| Name | P/S | CPU | I/O 1 | I/O 2 | I/O 3 | I/O 4 | I/O 5 | I/O 6 | I/O 7 | I/O 8 |
|---------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------|-------|
| Module Type | CO-00AC | CO-00DR-D | CO-16ID3 | CO-08ND3 | CO-08NA | CO-16TD1 | CO-04TRS | CO-08TR | | |
| Input | | X001-X008 | X101-X116 | X201-X208 | X301-X308 | | | | | |
| Output | | Y001-Y006 | | | | Y401-Y416 | Y501-Y504 | Y601-Y608 | | |
| PwrBudget(mA) | 520 | 120 | 15 | 30 | 30 | 80 | 100 | 100 | | |

Input Total(pt)= 40 Output Total(pt)= 34 Power Budget(mA)= 520(-20)

Buttons: Change..., Remove, Select..., OK, Cancel, Help



Wiring System for CLICK PLCs

Cut your PLC wiring time down to minutes instead of hours

The ZIPLink wiring system eliminates the normally tedious process of wiring PLC I/O to terminal blocks. Simply plug one end of a ZIPLink pre-wired terminal block cable into your CLICK module and the other end into a ZIPLink connector module. It's that easy. ZIPLinks use half the space, at a fraction of the total cost of terminal blocks.

ZIPLinks are available in a variety of styles to suit your needs, including feedthrough connector module. ZIPLinks are available for all basic CLICK CPU modules and all discrete input and output modules.

Specify your ZIPLink system

Use the Compatibility Matrix table below:



NOTE: ZIPLINKS ARE ONLY AVAILABLE FOR BASIC CPU MODULES; THEY ARE NOT AVAILABLE FOR ANALOG CPU MODULES.



| | |
|---------------|--|
| Step 1 | Locate the CLICK CPU module or I/O module part number. |
| Step 2 | Locate compatible connector module type. |
| Step 3 | Select the cable length by replacing the # symbol with: Blank = 0.5m, -1 = 1.0m, -2 = 2.0m |

| ZIPLink Wiring System Compatibility Matrix for CLICK PLCs | | | | | | |
|---|---------------------|--------------------|--------------|---------------|---------------------|--------------|
| Step 2: Connector Module Type | | Feedthrough Module | Fuse Module | Relay Modules | Sensor Input Module | |
| Step 1: I/O unit | Number of Terminals | ZL-RTB20 | ZL-RFU20 | ZL-RRL16-24 | ZL-LTB16-24 | |
| | | Step 3: Cables | | | | |
| CPU Module | CO-00DD1-D | 20 | ZL-CO-CBL20# | | | |
| | CO-00DD2-D | 20 | ZL-CO-CBL20# | | | |
| | CO-00DR-D | 20 | ZL-CO-CBL20# | | | |
| | CO-00AR-D | 20 | ZL-CO-CBL20# | | | |
| I/O Module | Inputs | | | | | |
| | CO-08ND3 | 11 | ZL-CO-CBL11# | | | |
| | CO-08ND3-1 | 11 | ZL-CO-CBL11# | | | |
| | CO-08NA | 11 | ZL-CO-CBL11# | | | |
| | CO-16ND3 | 20 | ZL-CO-CBL20# | | | ZL-CO-CBL20# |
| | Outputs | | | | | |
| | CO-08TD1 | 11 | ZL-CO-CBL11# | | | |
| | CO-08TD2 | 11 | ZL-CO-CBL11# | | | |
| | CO-08TR | 11 | ZL-CO-CBL11# | | | |
| | CO-08TA | 11 | ZL-CO-CBL11# | | | |
| | CO-16TD1 | 20 | ZL-CO-CBL20# | ZL-CO-CBL20# | ZL-CO-CBL20# | |
| | CO-16TD2 | 20 | ZL-CO-CBL20# | ZL-CO-CBL20# | | |
| | CO-04TRS* | 20 | ZL-CO-CBL20# | | | |

*Note: The CO-04TRS relay output is derated not to exceed 2 Amps per point max. when used with the ZIPLink wiring system

ZIPLink Connector Modules specifications begin on page 26-56

ZIPLink Cables specifications begin on page 26-74