

# Do more!

## T1H Series Programmable Logic Controller (PLC)



Do more!  
DRIVEN

Up-to-date price list:  
[www.automationdirect.com/pricelist](http://www.automationdirect.com/pricelist)

FREE Technical Support:  
[www.automationdirect.com/support](http://www.automationdirect.com/support)

FREE Videos:  
[www.automationdirect.com/videos](http://www.automationdirect.com/videos)

FREE Documentation:  
[www.automationdirect.com/documentation](http://www.automationdirect.com/documentation)

FREE CAD drawings:  
[www.automationdirect.com/cad](http://www.automationdirect.com/cad)





# Do-more with Terminator I/O Modules!



The Do-more T1H series CPUs are the new “brains” for the time-tested Terminator Field I/O hardware. The chip set inside includes the exact same processor as is used in the Do-more H2 series. The feature set for these CPUs is identical. Your ladder code is even portable between the two hardware platforms.

There are two T1H CPU options:

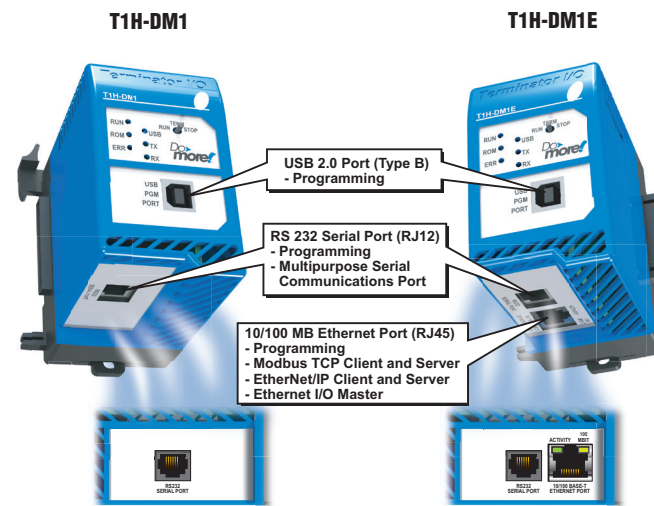
- |          |          |  |
|----------|----------|--|
| T1H-DM1  | \$494.00 | (1) USB port, (1) full-duplex serial port                    |
| T1H-DM1E | \$646.00 | (1) USB port, (1) full-duplex serial port, (1) Ethernet port |

- Over 1M bytes total memory (includes program, data and documentation)
- Program/monitor/debug over any embedded communication port.
- Power supply modules are available for AC or DC power input. Add additional power supplies in-line with Terminator I/O modules as needed to power the modules AND to supply isolated 24 VDC power for field devices.
- 29 Terminator I/O modules are available, from discrete and analog to high-speed counting

*Note: Do-more CPUs are programmed with the Do-more Designer software. DirectSOFT is not compatible with these CPUs. However, a conversion utility is available for ladder programs developed with DirectSOFT.*

## Compatible products include:

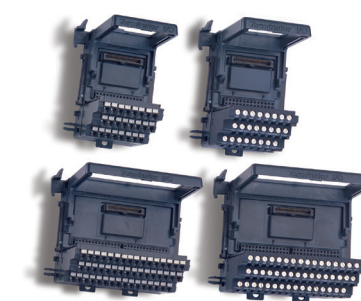
- C-more and C-more Micro HMI products
- Stride® Ethernet switches
- Connectivity to SureServo® and SureStep® motion products
- Variable frequency drives and AC motors
- Discrete and process sensors



## FREE ONLINE PLC TRAINING

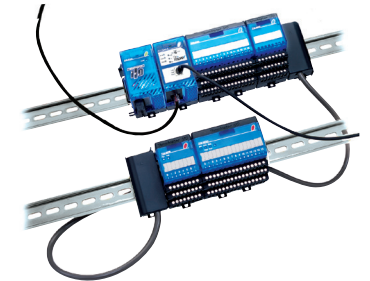
Get absolutely free online PLC training through our training partner Interconnecting Automation at [www.automationdirect.com/plc-training](http://www.automationdirect.com/plc-training). This free training encompasses basic PLC fundamentals as well as Do-more Designer specific topics.

# Pick Your Pieces and Drop 'em In



## Two sizes of terminal bases accommodate all I/O modules

- Half-size bases for modules with up to 8 points for only \$155.00 (T1K-08B, T1K-08B-1)
- Full size bases for modules with up to 16 points for only \$192.00 (T1K-16B, T1K-16B-1)
- Triple-stack terminal blocks standard, easy to connect multi-wire devices
- Same bases for all I/O modules - AC, DC, and analog
- Screw and spring clamp terminals



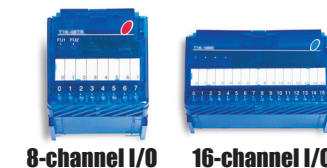
## Local expansion - up to two additional rows

- Full backplane expansion through cables
- Connect up to 16 modules across three total rows by plugging expansion cables from the side of one module to the side of the next. The system automatically recognizes the I/O.
- Optional cable that includes 24 VDC pins maximizes your power supply capability.



## Power supplies - freedom of choice, freedom to expand

- DC power supplies for \$208.00 (T1K-01DC), AC versions only \$176.00 (T1K-01AC)
- AC supplies include 24 VDC auxiliary supply for convenient field device wiring
- Need more power for high current devices or modules? Just add another power supply before the next modules in the system!



**8-channel I/O**    **16-channel I/O**  
**Four types of 8-channel I/O**  
**Four types of 16-channel I/O**  
**Two types of combination I/O**  
**Thermocouple, Thermistor, and RTD modules**

## Analog modules at a super low price per channel

- 8-channel input modules starting at \$503.00
- 16-channel output modules starting at \$708.00
- 0-20mA/4-20 mA and unipolar/bipolar voltage models available
- 14-channel thermocouple module only \$915.00 (T1F-14THM)
- 16-channel thermistor module only \$629.00 (T1F-16TMST)

## Specialty module

- **Counter** module with pulse out, \$576.00 (T1H-CTRIO)

## DL205 I/O

- Connect DL205 Ethernet-based remote I/O drops to the optional Ethernet port on the -T1H-DM1E CPU
- Dozens of I/O option modules supported, including high-density discrete modules



## Discrete I/O with the features you need

- 8-point I/O modules starting at only \$157.00
- 16-point I/O starting at only \$217.00
- All DC input modules are sink/source jumper configurable
- Diagnostic LEDs for blown fuse and 24 VDC power on applicable modules



# Do-more with High-speed I/O!

## High-speed operations

The T1H-CTRIO module is capable of a wide variety of high-speed input and output operations. Many of these operations take place on board the module, and are independent of the scan time of your PLC. With flexible 4-channel input and separate output channel design, these modules can satisfy high-speed counting, timing, and pulse catch operations, along with high-speed discrete output or several profile choices of pulse output operations. Not all combinations of input functions and output functions are possible within the resources of the module, but these examples are typical of the applications for these modules.

**\$576.00**

## High Speed Counter Module

Counting & timing up to 100 kHz:

T1H-CTRIO \$576.00

Four 100 kHz inputs, and two 20-25 kHz pulse train outputs



### Inputs Supported:

- Counter
- Quad Counter
- Pulse Catch
- Edge Timer
- Dual Edge Timer

### Outputs Supported:

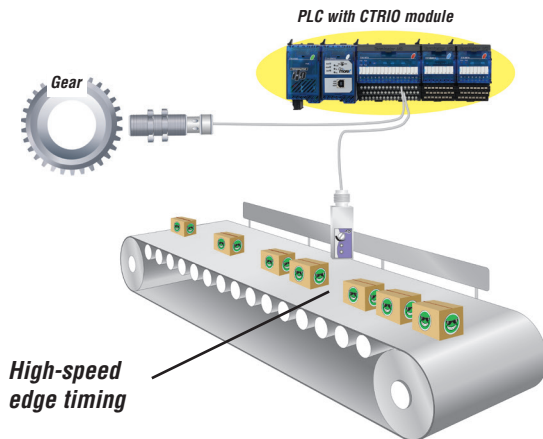
- Pulse train - used for servo/stepper motor control. Configurable for CW/CCW or step and direction.
- Discrete outputs - assigned to Counter/Timer input functions
- Raw output - outputs controlled directly from the CPU interface program

## Improved to Do-more!

All your CTRIO configuration is done through the Do-more Designer Software - no more separate software "workbench". And if you should need to replace a high-speed module, all the setup parameters and profiles are stored in the CPU and are automatically loaded and ready to go when the system powers up.

## High-speed timing

The T1H-CTRIO module can be configured for timing functions based on both count or rate. Using a common configuration of a proximity switch sensing the teeth on a gear, the module is able to calculate the velocity of the gear based on the rate at which it receives counts. This value can be scaled within the module to the engineering units required for the application.



## High-speed counting

The T1H-CTRIO module can be configured for counting functions via the use of an encoder input. Up to two quadrature encoders per CTRIO module are available with connections for external reset, capture and inhibit signals. In a simple cut-to-length application as shown below, the encoder provides an input position reference for the material to the module. The module's high-speed outputs are wired to the cutting device and to the clutch and/or braking device. When the count from the encoder is equal to a pre-programmed setpoint within the module, the high-speed outputs are activated to stop and cut the material to a repeatable fixed length. Additionally, the clutch/brake signal can be used as an inhibit signal so counts are not accumulated while the material is being cut.

