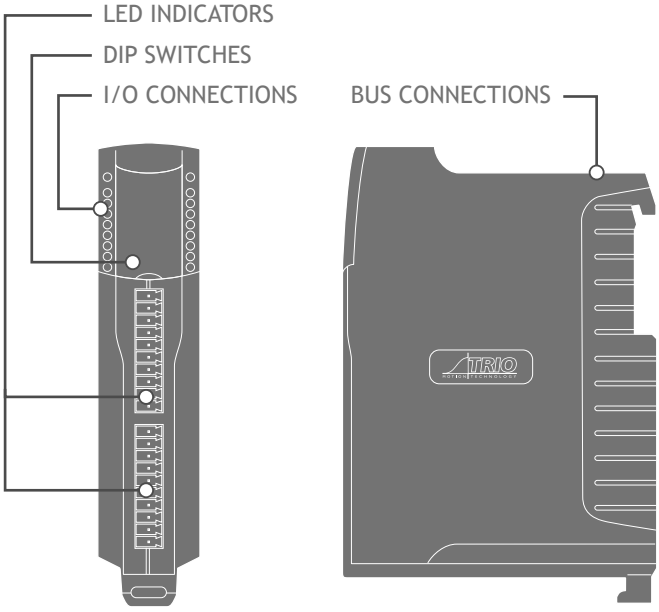
TRIO MOTION TECHNOLOGY

A MEMBER OF THE ESTUN GROUP




# QUICK START GUIDE
# **CAN I/O MODULES**

P317 | P318 | P319 | P326 | P327 | P329

## SAFETY WARNING

During the installation or use of control systems, users of Trio products must ensure that there is no possibility of injury to any person or damage to machinery.

Control systems, especially during installation, can malfunction or behave unexpectedly. Bearing this in mind, users must ensure that even in the event of a malfunction or unexpected behaviour, the safety of an operator or programmer is never compromised.

### DESCRIPTION

Trio CAN Input and CAN Output modules allow I/O expansion for the MC4xx, MC5xx range and for most of the range of MC2xx and MC3xx *Motion Coordinators*. The number of CAN Input and CAN Output modules that can be connected to a single network depends on which master is used.

### MC6XX, MC5XX MC4XX MASTER

Up to 16 CAN 16-Output modules and up to 16 CAN 16-Input modules may be connected allowing 512 channels in addition to the internal channels built-in to the *Motion Coordinator*.

**The P329 and P319 modules each count as 1 Input module + 1 Output Module.**

**P327 8 Relay Module counts as 1 Output Module.**

**The Controller requires the latest system software.**

### MC2XX / MC3XX MASTER OR MC664 / MC464 WITH P315/P316 ON THE CANBUS

CAN 16-Output modules and CAN 16-Input modules may be mixed with CAN 16-I/O Modules and CAN 16-IN 16-OUT modules, up to a total of 16 modules allowing up to 256 input/output channels in addition to th e internal channels built-in to the *Motion Coordinator*.

Up to 4 CAN Analogue I/O modules may be connected, allowing up to 32 analogue input channels and up to 16 analogue output channels.

Analogue output channels can be used via the AOUT(n) command or CAN command depending on the *Motion Coordinator* and system software version.

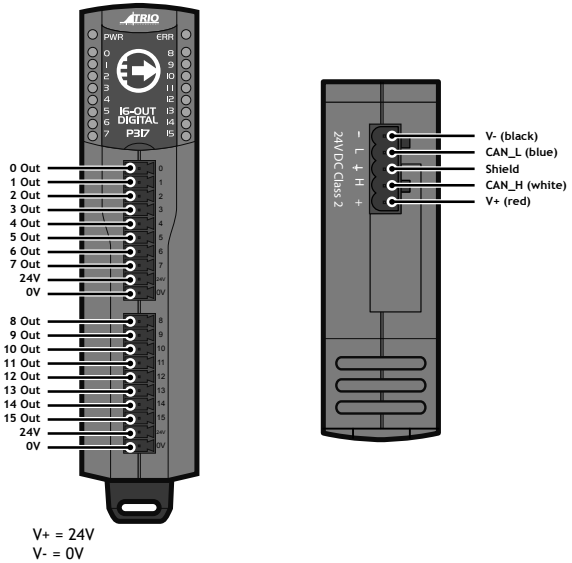
**UPON DELIVERY, ALL CAN MODULES ARE SET IN TRIO MODE. TO SWITCH TO CANOPEN MODE SEE THE DIP SWITCH SETTINGS SECTION.**



## CAN 16-OUTPUT MODULE (P317)

### CONNECTIONS

| | |
|---|---|
| Power supply: | 24V dc Class 2 transformer or power supply. +/-20% |
| Output bank 1: | 8 x 24V dc 250 mA outputs. 24V supply |
| Output bank 2: | 8 x 24V dc 250 mA outputs. 24V supply |
| Max current per output bank: | 1A |
| Isolation between output banks: | 1,500V dc |
| Isolation between outputs/CAN: | 1,500V dc |

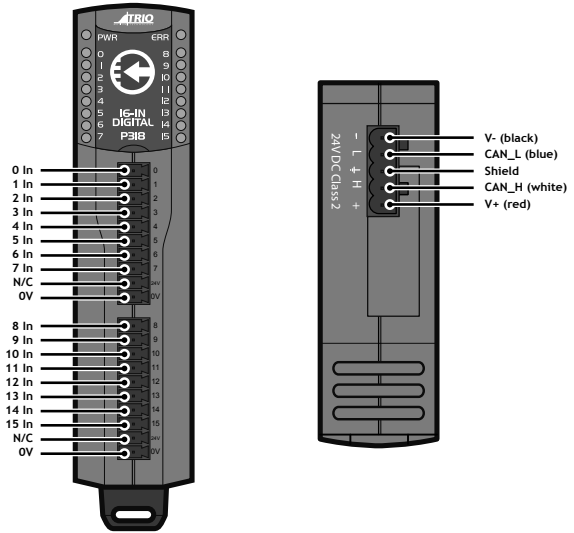



V+ = 24V
V- = 0V

## CAN 16-INPUT MODULE (P318)

### CONNECTIONS

| | |
|---|---|
| Power supply: | 24V dc Class 2 transformer or power supply. +/-20% |
| Input bank 1: | 8 x 24V dc inputs. 0V common |
| Input bank 2: | 8 x 24V dc inputs. 0V common |
| Isolation between input banks: | 1,500V dc |
| Isolation between inputs/CAN: | 1,500V dc |



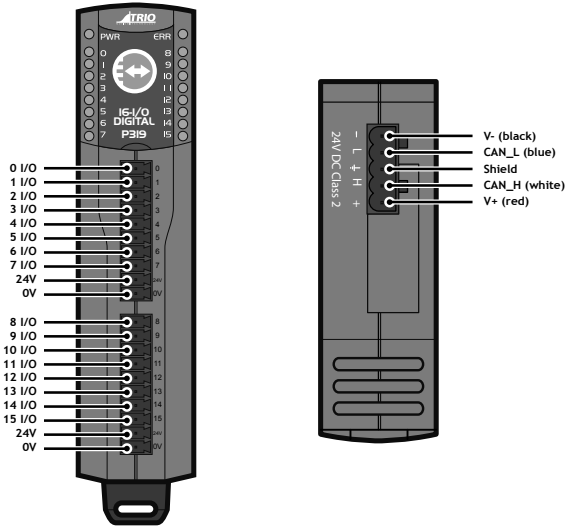

V+ = 24V
V- = 0V



## CAN 16-INPUT / OUTPUT MODULE (P319 )

### CONNECTIONS

| | |
|---|---|
| Power supply: | 24V dc Class 2 transformer or power supply. +/-20% |
| Bank 1: | 8 x 24V dc inputs / 250mA outputs |
| Bank 2: | 8 x 24V dc inputs / 250mA outputs |
| Max current per output bank: | 1 Amp |
| Isolation between I/O banks: | 1,500V dc |
| Isolation between inputs/CAN: | 1,500V dc |



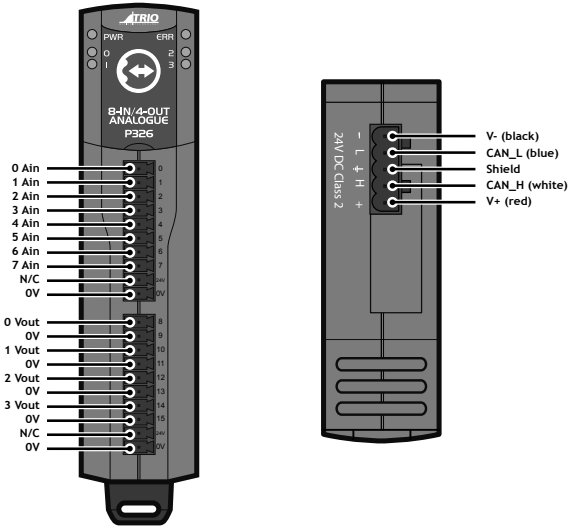

**V+ = 24V**
**V- = 0V**

## CAN ANALOGUE I/O MODULE (P326)

### CONNECTIONS

| | |
|---|---|
| Power supply: | 24V dc Class 2 transformer or power supply. +/-20% |
| Analogue inputs: | 8 x 12 bit, +/-10V, single ended, 0V common |
| Analogue outputs: | 4 x 12 bit, +/-10V, single ended, 0V common |

I/O is isolated from CANbus.



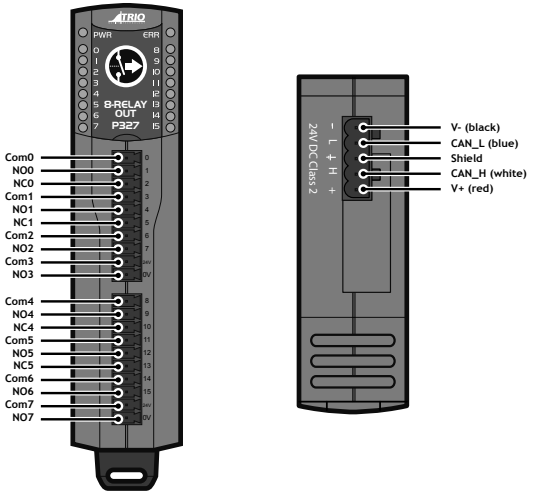

V+ = 24V
V- = 0V



## CAN 8-RELAY OUT MODULE (P327)

### CONNECTIONS

| | |
|---|---|
| Power supply: | 24V dc Class 2 transformer or power supply. +/-20% |
| Max switching voltage: | 30V dc, 49V ac |
| Absolute Max current: | 1Amp |
| Max switching power: | 62.5 VA, 24W (dc) |
| Isolation outputs / CAN: | 1,500V dc |

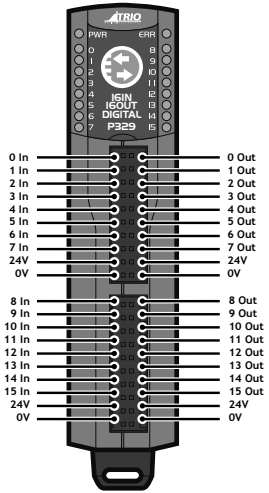


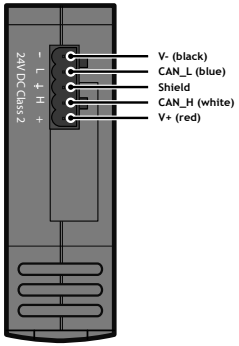

V+ = 24V
V- = 0V

## CAN 16-IN / 16-OUT DIGITAL MODULE (P329)

### CONNECTIONS

| | |
|---|---|
| Power supply: | 24V dc Class 2 transformer or power supply. +/-20% |
| Bank 1: | 8 x 24V dc inputs and 8x 250mA outputs |
| Bank 2: | 8 x 24V dc inputs and 8x 250mA outputs |
| Max current per output bank: | 1 Amp |
| Isolation between I/O banks: | 1,500V dc |
| Isolation between inputs/CAN: | 1,500V dc |




V+ = 24V
V- = 0V

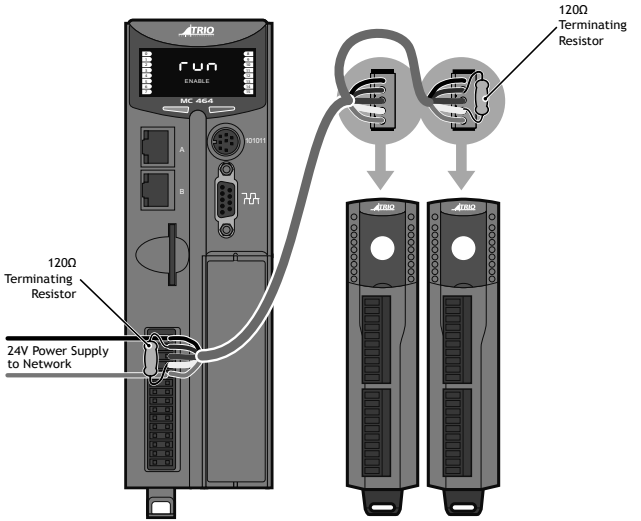


### BUS WIRING

The CAN I/O modules and the *Motion Coordinator* are connected together on a CAN network. Terminate both ends of the network with 120Ω, 1/4W, 1% metal film resistors between CAN_H and CAN_L.

The CAN I/O modules are powered from the network. The 24V supply for the network must be externally connected. The *Motion Coordinator* does NOT provide the network power.

Use recommended CANbus specification cables.

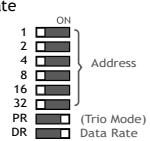


## DIP SWITCH SETTINGS P317, P318, P319, P327, P329

Trio mode module addresses must be set in sequence with no gaps starting at address 0.

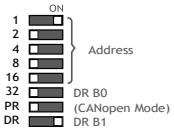
Trio mode Data Rate

| DR | Data Rate Bit/s |
|---|---|
| 0 | 1M |
| 1 | 500K |




CANopen Data Rate

| DR B1 | DR B0 | Data Rate Bit/s |
|---|---|---|
| 0 | 0 | 125K |
| 0 | 1 | 250K |
| 1 | 0 | 500K |
| 1 | 1 | 1M |




## DIP SWITCH SETTINGS P326

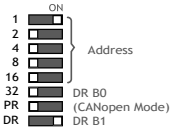
Trio mode module addresses must be set to 16...19.

Trio mode Data Rate

| DR | Data Rate Bit/s |
|---|---|
| 0 | 1M |
| 1 | 500K |


CANopen Data Rate

| DR B1 | DR B0 | Data Rate Bit/s |
|---|---|---|
| 0 | 0 | 125K |
| 0 | 1 | 250K |
| 1 | 0 | 500K |
| 1 | 1 | 1M |

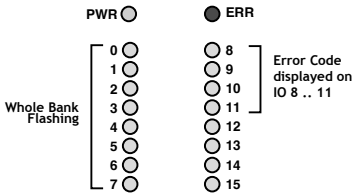


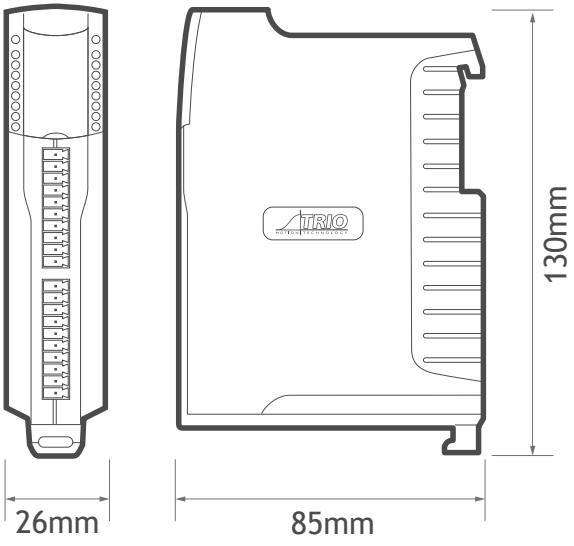



## LED ERROR CODES

When an error occurs on a CAN I/O module, the ERR LED will be lit and the whole left hand bank of LEDs will flash. The fault code is represented by a binary number displayed on the output LED's.

| Code | Error Description |
|---|---|
| 1 | Invalid Protocol |
| 2 | Invalid Module Address |
| 3 | Invalid Data Rate |
| 4 | Uninitialised |
| 5 | Duplicate Address |
| 6 | Start Pending |
| 7 | System Shutdown |
| 8 | Unknown Poll |
| 9 | Poll Not Implemented |
| 10 | CAN Error |
| 11 | Receive Data Timeout |



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CAD data Drawings to aid packaging and mounting are available in various formats from the Trio web site. Products should be wired by qualified persons.
Specifications may change without notice. E & OE

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