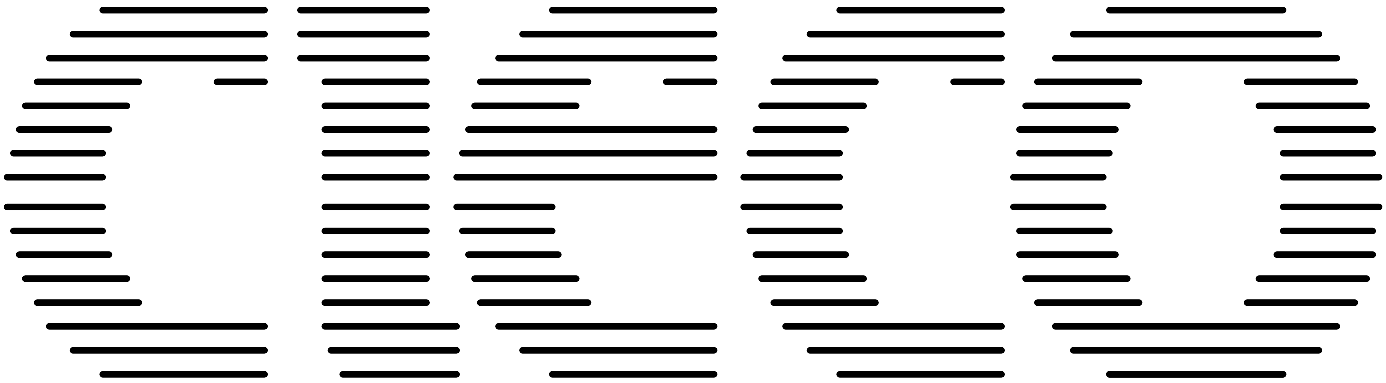


PCI-100DP DIE PROTECTION CONTROL

PROGRAMMING AND INSTALLATION

MANUAL V2.3

INTRODUCTION

The Model PCI-100DP is one of the most versatile and advanced die protection controls on the market. With this control you will be able to monitor critical events during the cycle of the press. If a monitored event does not match the programmed configuration logic, the fault output will de-energize. The inputs can be programmed to either Top Stop or E-Stop when faulted. The die protection inputs are always monitored regardless of what function the control is in. *(unless the inputs are disabled)*

The die protection inputs can be disabled by entering a code. When disabled, the inputs are ignored and a fault will not occur until the control is enabled. Use this only during setup to avoid nuisance faults.

The status of each of the 8 inputs can be monitored. This is useful during setup and trouble shooting to see if the sensors are turning on and off at the appropriate times.

The optional high speed parts counter is useful to keep track of the good parts being made. When the parts counter reaches the programmable Batch count, the T-Stop output de-energizes. Use the programmable debounce to avoid multiple counts when sensing irregular parts or using a mechanical switch to count strokes.

TECH SUPPORT

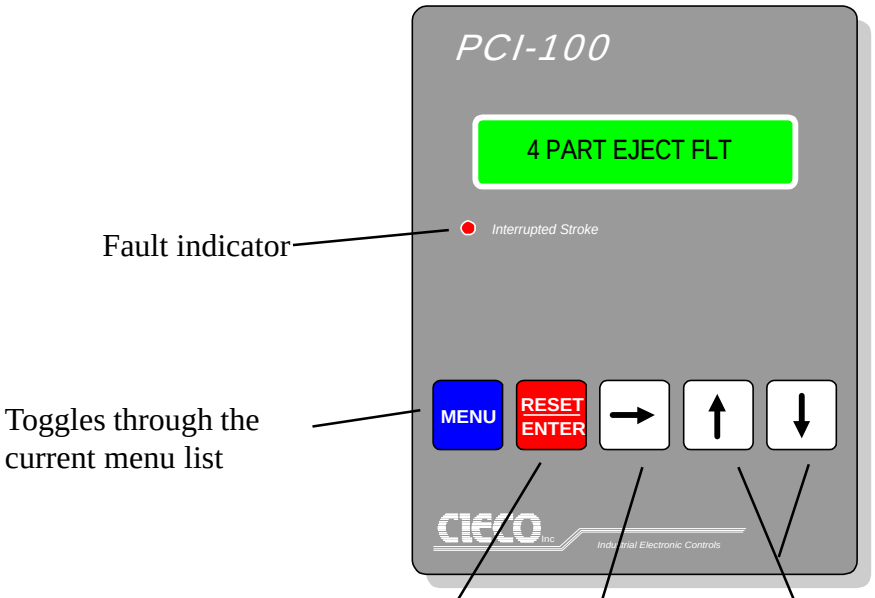
If you need assistance programming your PCI-100DP take the following steps:

Fill out the configuration sheet on the last page of this manual! *(only if your finished programming and the control isn't reacting the way you expected)*

Fax the configuration sheet to CIECO tech support @ 412-264-9272 or have it with you when you call.

Call CIECO tech support at 412-262-5581

PCI-100DP SYSTEM



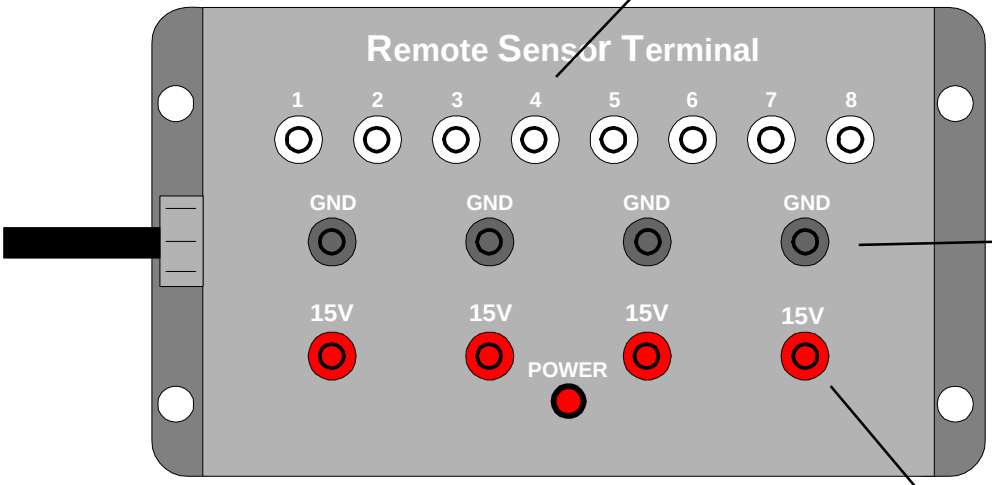
Fault indicator

Toggles through the current menu list

Dual function key Saves data and Resets faults

Moves the curser

Toggles data or numbers to be programmed



Inputs 1-8

Sensor Ground

Sensor power 15VDC @ 800mA

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INPUTS

Cyclical or Static *refers to how the signal from the sensor is treated.*

Cyclical - the sensor signal must happen within a limit switch window every stroke of the press.
(requires two inputs, one limit switch and one die protection sensor)

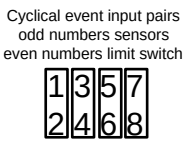
Static - the sensor signal must stay the same always.
(requires one input from the sensor only)

Available inputs
How many actual die protection inputs are available depend on how the configuration is programmed. There are 8 configurable inputs:

Inputs 1, 3, 5, 7 can be configured for either *cyclical or static* events.

Inputs 2, 4, 6, 8 are *static only* inputs and can only be used as die protection if the previos number is static. For example:

- If #1 is configured to be *cyclical* then #2 is used for the limit switch input for #1.
- If #1 is configured to be *static* then #2 can be used as an independant configurable static input.



Types of Cyclical events

M Momentary event must have a momentary signal from the sensor within the limit switch window.

M-O Momentary-Open event must have a momentary signal from the sensor within the limit switch window and then must stay in its "normal" state outside the window.

CW Continuous-Window event must have a continuous signal from the sensor within the entire limit switch window. *(this type is also called a constant cyclical)*

NOTE: *each cyclical event above can also be configured for either normally open (NO) or normally closed (NC).*

Types of Static events **(STAT)**

NO sensor input must stay open at all times

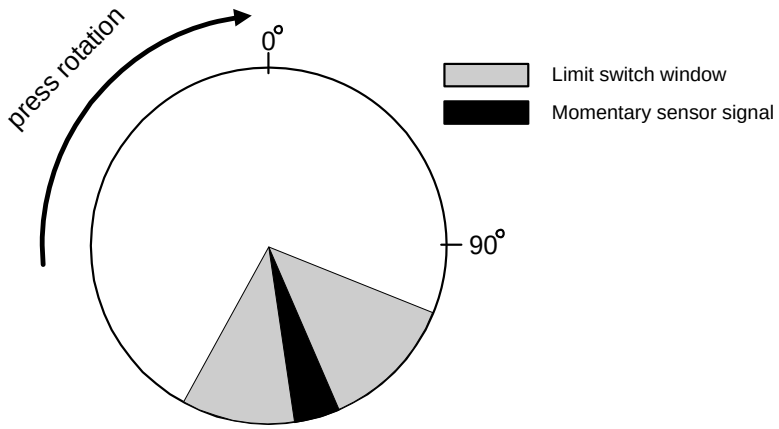
NC sensor input must stay closed at all times

INPUTS continued.

Momentary type cyclical event

The sensor must give a momentary signal within the limit switch window.

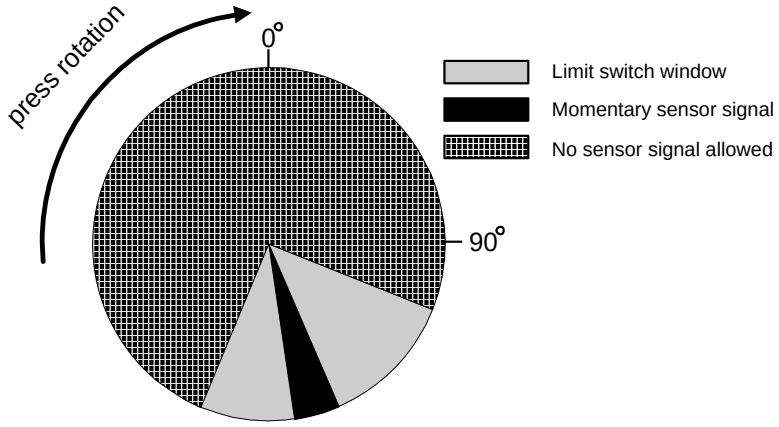
eg. #1, M, if configured for NO, the sensor at input 1 must close then open within the limit switch window at input 2. Any transition outside the window has no effect.



Momentary-Open cyclical event

The sensor must give a momentary signal within the limit switch window. Then the sensor must stay in its normal condition outside the window or a fault will occur.

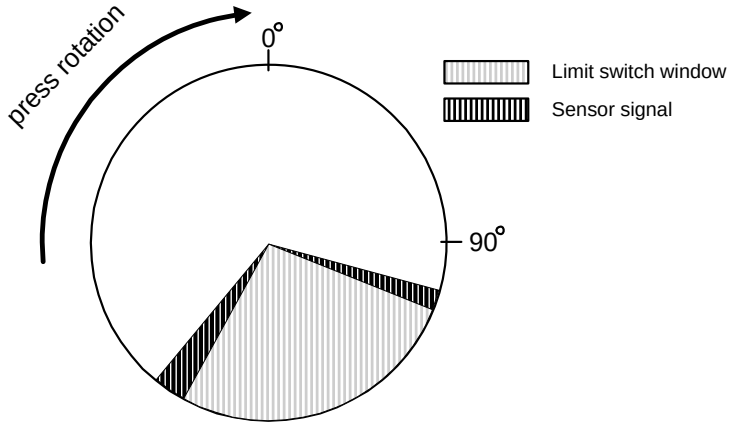
eg. #3, M-O, if configured for NC, the sensor at input 3 must stay closed outside of the limit switch window at input 4 then momentarily open then close within the window.



Continuous-Window

The sensor must stay constant durring the entire durration of the window. Outside the window the sensor has no effect.

eg. #5, CW, if configured for NC, the sensor at input 5 must be closed durring the limit switch window at input 6..



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FUNCTIONS

There are only 4 main menus/functions as shown below.

STATUS
Displays the status of the inputs. (ON or OFF)

DIE PROTECTION
View and configure the die protection inputs.

-INPUTS 1,3,5,7 are configurable for the following
- •Name
- •Type
  - M, M-O, CW, STAT
- •Snsr (sensor)
  - NO, NC
- •Out (fault output)
  - E-Stop, T-Stop

-INPUTS 2,4,6,8 are configurable for the following
- •Name
- •Type
  - STAT (static only)
- •Snsr (sensor)
  - NO, NC
- •Out (fault output)
  - E-Stop, T-Stop

NAMES:
- NC
- NO
- PARTEJECT
- BUCKLE
- SHORTFEED
- STOCKLUBE
- END of STK
- SHUT HT
- THICKNESS
- STCKWIDTH
- PILOTHOLE
- PartTrans
- MIS FEED
- OVERLOAD
- MATL ADV
- CYCLICAL

COUNTER option only
View and configure the parts counter (monitors input 3 for the count)

PARTS= 0000000	view the actual count
BATCH= 0000000	view and program the batch count
ZERO COUNT?	zeros the parts counter
DEBOUNCEx40	programmable debounce

ENABLED/DISABLED
Enables or Disables the die protection fault outputs.

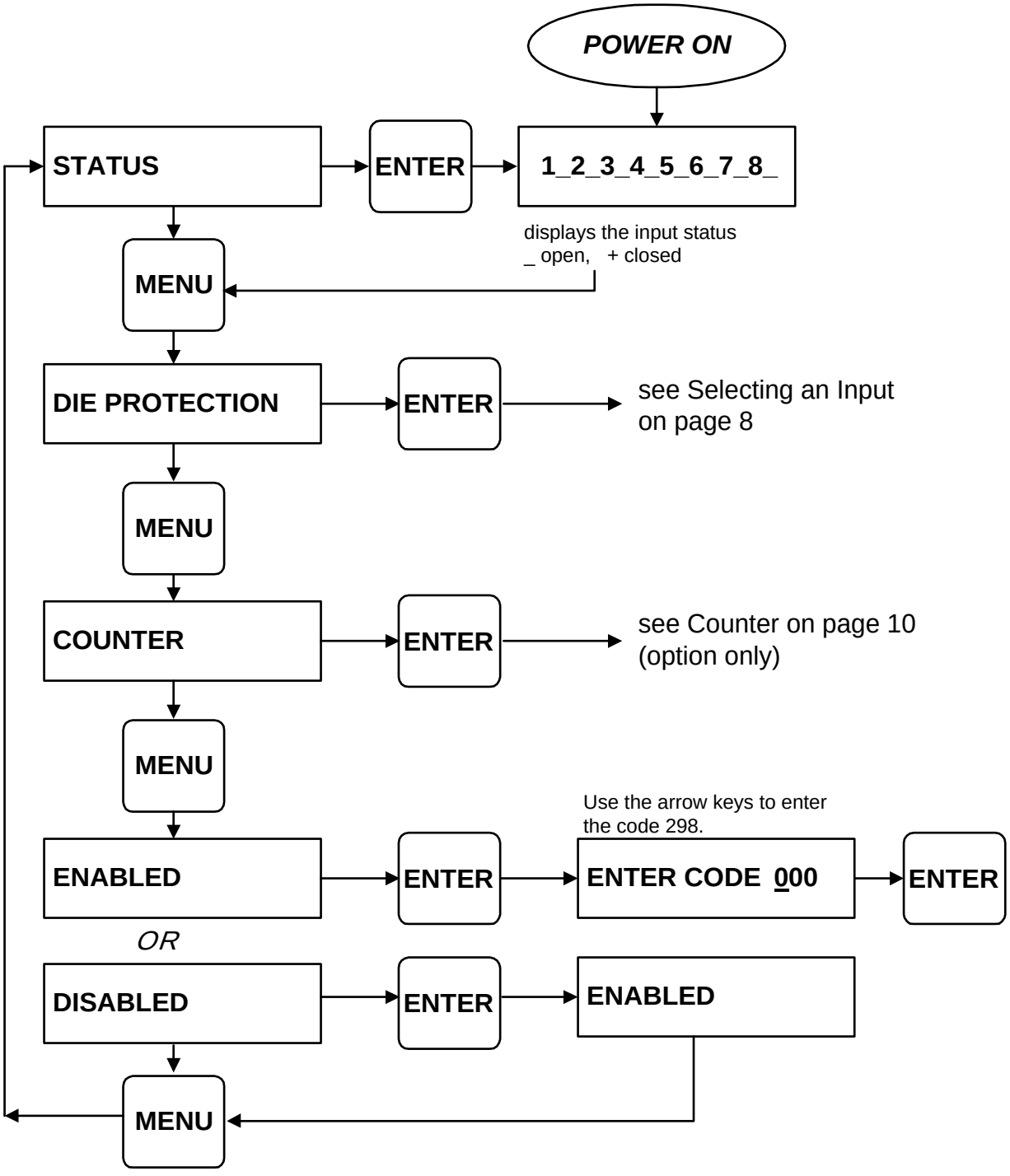
Enabled - the die protection inputs are continuously monitored

Disabled - the die protection inputs are ignored. (fault LED flashing)
Use disable only when setting up to avoid nuisance faults.

PROGRAMMING

There are only 4 MENUS to choose from.
(3 if the counter is not ordered)

4 MAIN MENUS
•STATUS
•DIE PROTECTION
•COUNTER *optional*
•ENABLE/DISABLE



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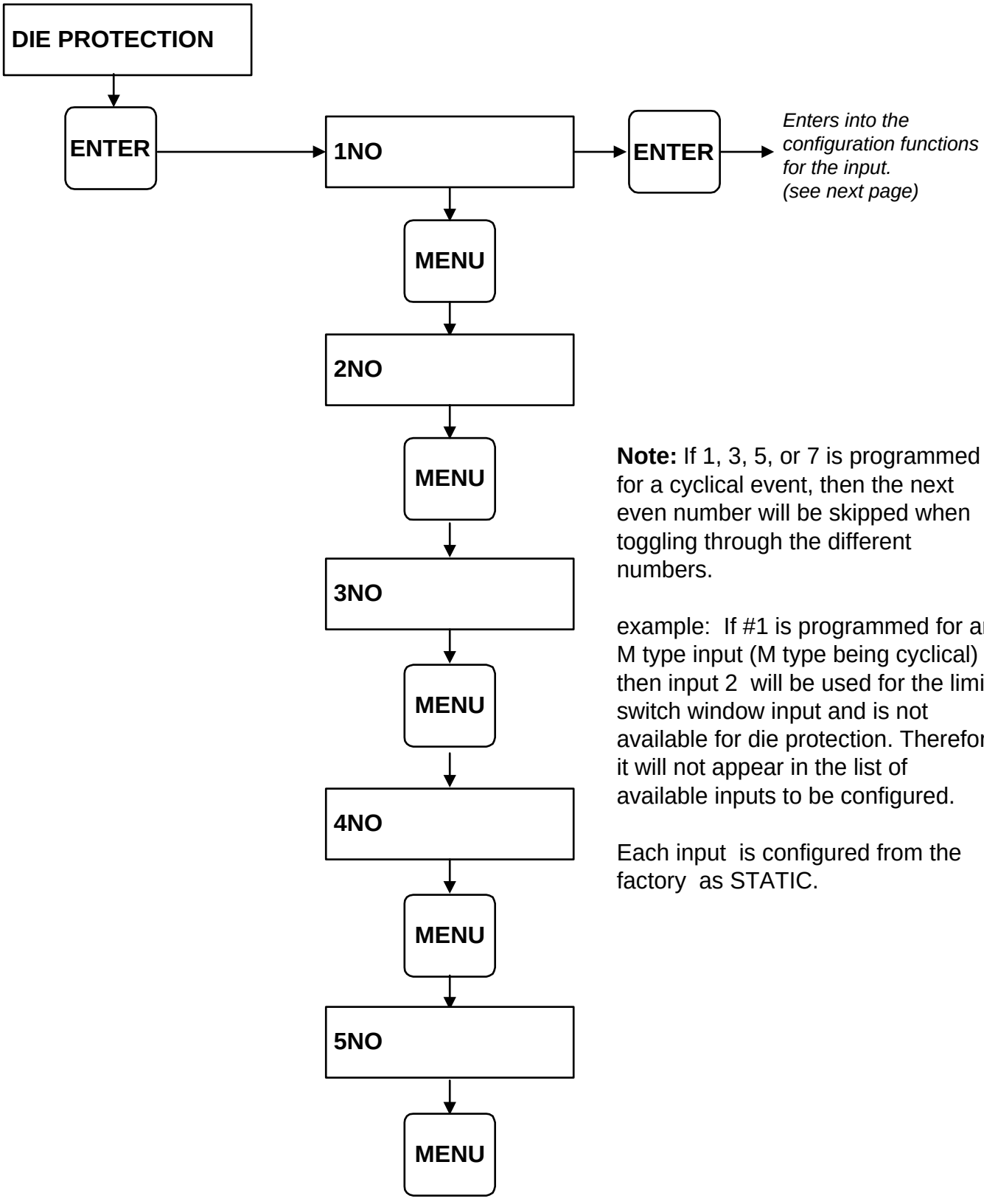
SELECTING AN INPUT



Toggles through each die protection input

Note: If 1, 3, 5, or 7 is programmed for a cyclical event, then the next even number will be skipped when toggling through the different numbers.

example: If #1 is programmed for an M type input (M type being cyclical) then input 2 will be used for the limit switch window input and is not available for die protection. Therefore it will not appear in the list of available inputs to be configured.

Each input is configured from the factory as STATIC.

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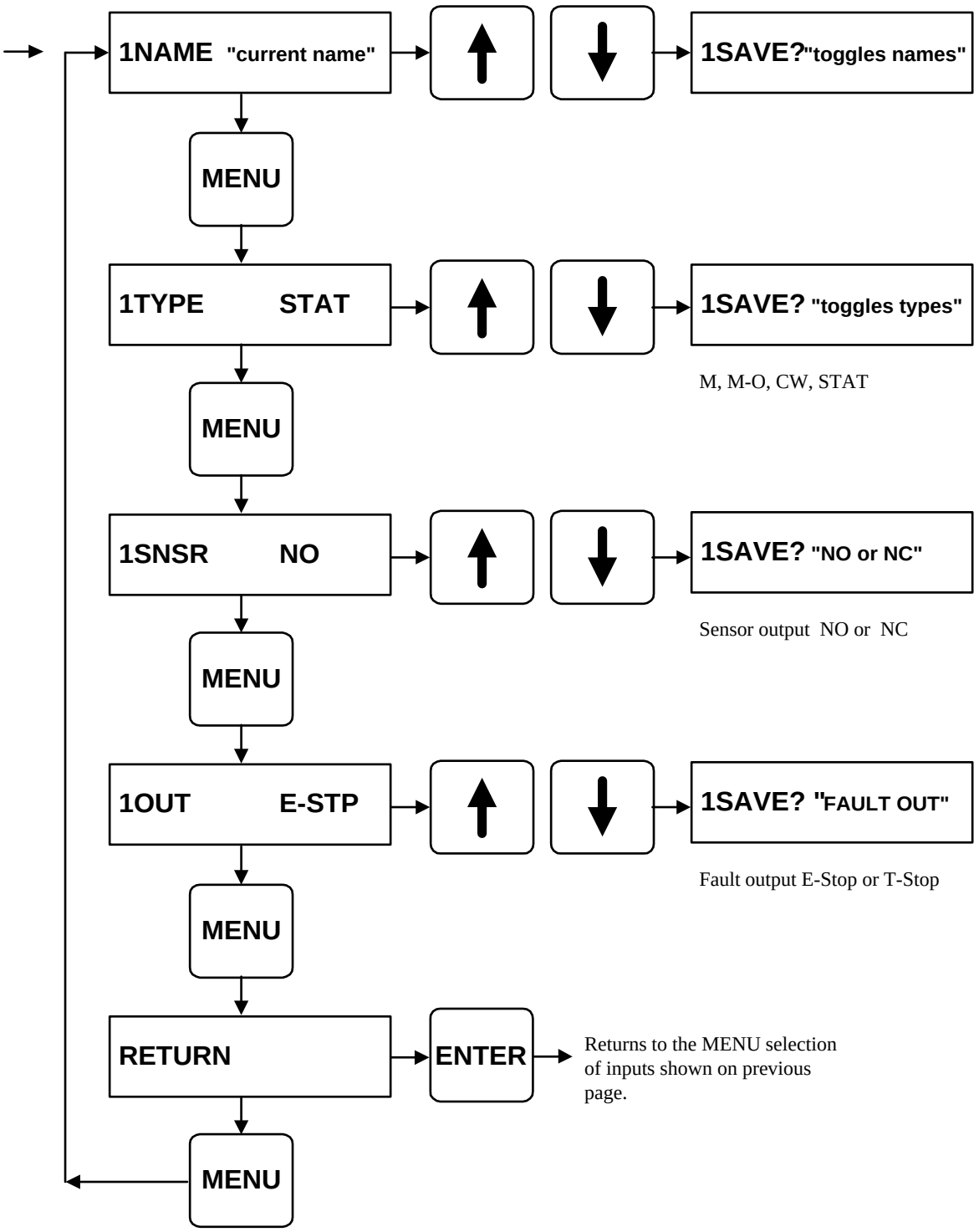
CONFIGURING AN INPUT



Use the arrow keys to toggle through the list of names. Press enter to save the name showing as the current inputs name.

Use the arrow keys to toggle through the list of types. Press enter to save the type showing as the current inputs type. Remember that inputs 2,4,6,8 are static only (STAT). You will not be able to toggle these input types.

Use the arrow keys to select sensor type.
NO(normally open)
or
NC (normally closed

Use the arrow keys to select the fault output. E-Stop or T-Stop

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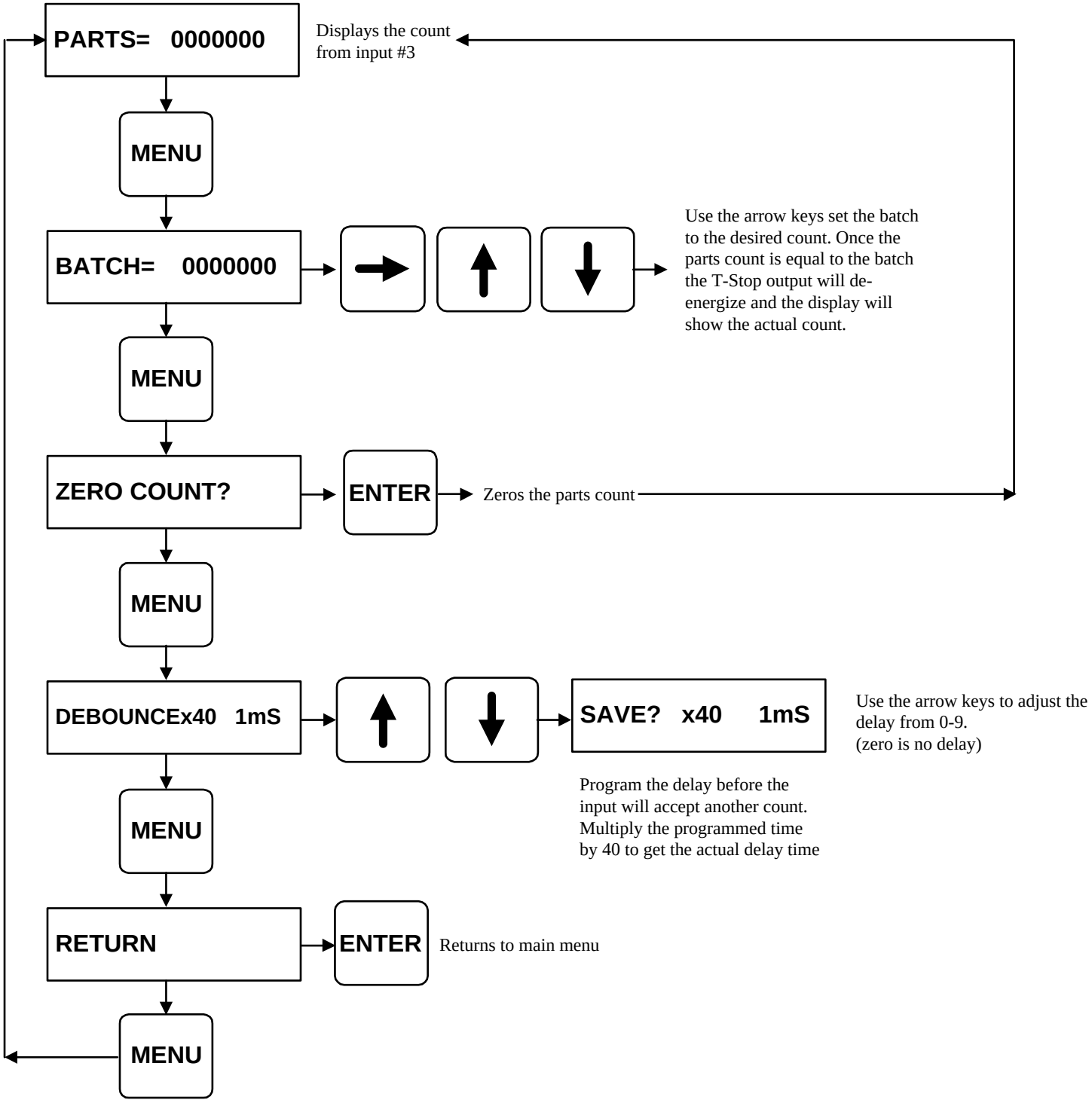
VIEWING AND CONFIGURING THE COUNTER



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PROGRAMMING TIPS

DIE PROTECTION INPUTS

•Configuration

The changes that are made take effect immediately when saved. A fault may occur as soon as you press enter to save a configuration. To avoid this, *DISABLE* the die protection before you begin to configure it.

•Fault Bypass

Fault bypass: If a fault occurs and you need to change the configuration, press MENU and RESET at the same time. The interrupted stroke LED will begin to flash, this indicates the die protection is disabled or in this case bypassed. This will allow the fault to be bypassed so the input can be reprogrammed if needed. This is not the same as disabling the die protection. The fault bypass will not reset the outputs. In order to reset the bypass go to the DISABLE menu and press ENTER. The fault will reappear. Press RESET to clear the fault.

•Status Screen

The STATUS screen is an excellent tool for trouble shooting and input diagnostics. The statusscreen shows the status of the inputs in real time.

•Die Protection Names

Try to name the inputs appropriately. When a fault on any input occurs the input number and the name will be displayed. A properly named input will help the operator remedy die protection faults quickly and efficiently.

COUNTER

•Batch Count

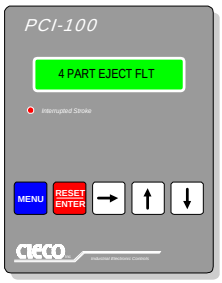
The batch count will de-energize the T-Stop output when the batch is equal to the parts count. To disable the batch, program it to zero.

•Debounce

Use the debounce if multiple counts occur when only one is intended. Some possible causes of this would be from sensing irregular parts or mechanical bounce from a micro-switch. The delay takes effect after the input has sensed a signal from the sensor. Once this occurs it will not count again until the debounce delay times out. The debounce has no effect on how fast one part can pass through the sensor. It will effect how fast consecutive parts pass through the sensor.

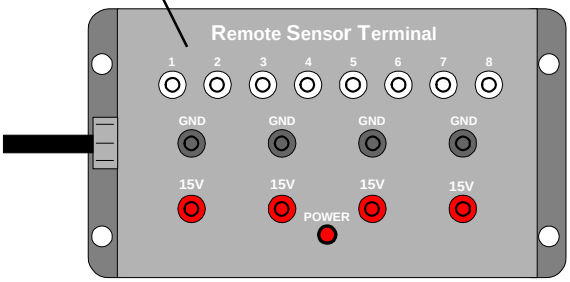
PCI Main terminal wiring

PCI



Plug the die protection sensor outputs into the white plugs. Each white plug number matches the INPUT numbers. Remember that if 1,3,5 or 7 are cyclical that the input after is the limit switch input. Do not use these inputs for sensors.

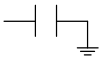
RST



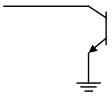
Note: The PCI terminal and the RST should be EARTH GROUNDED!
Machine ground is not sufficient.
If both are not at earth ground, noise problems may occur!

Each input 1-8 requires a signal to ground.

Relay PCI input



NPN sensor PCI input



PCI terminal	NAME	FUNCTION	RST Cable color code
1	15VDC	power	red
2	Ground	Earth Ground	black
3	input 8	sensor or limit switch 7	gray
4	input 7	sensor input	white
5	input 6	sensor or limit switch 5	green
6	input 5	sensor input	orange
7	input 4	sensor or limit switch 3	blue
8	input 3	sensor input (counter)	brown
9	input 2	sensor or limit switch 1	yellow
10	input 1	sensor input	violet

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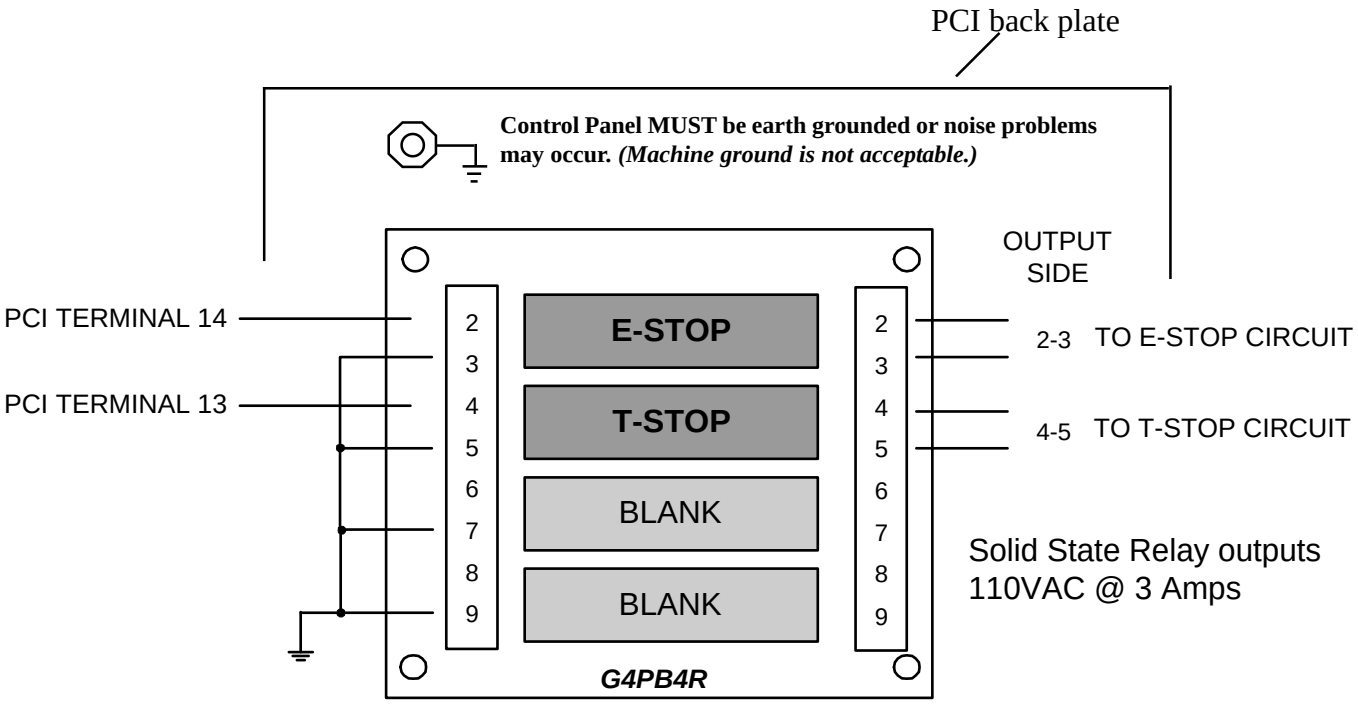
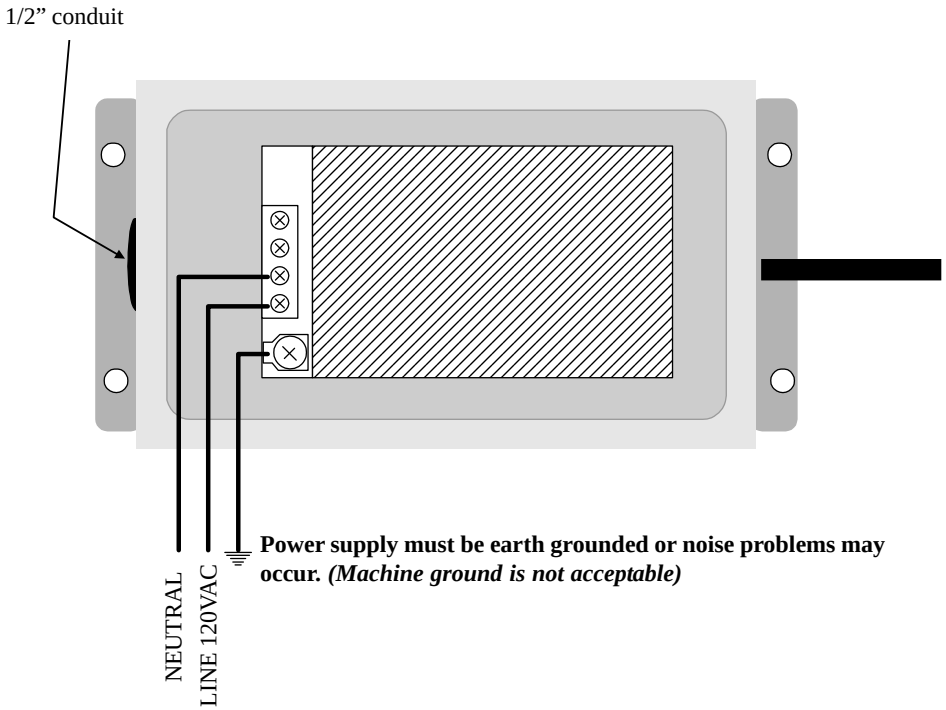
Solid state relay output option



RST POWER SUPPLY



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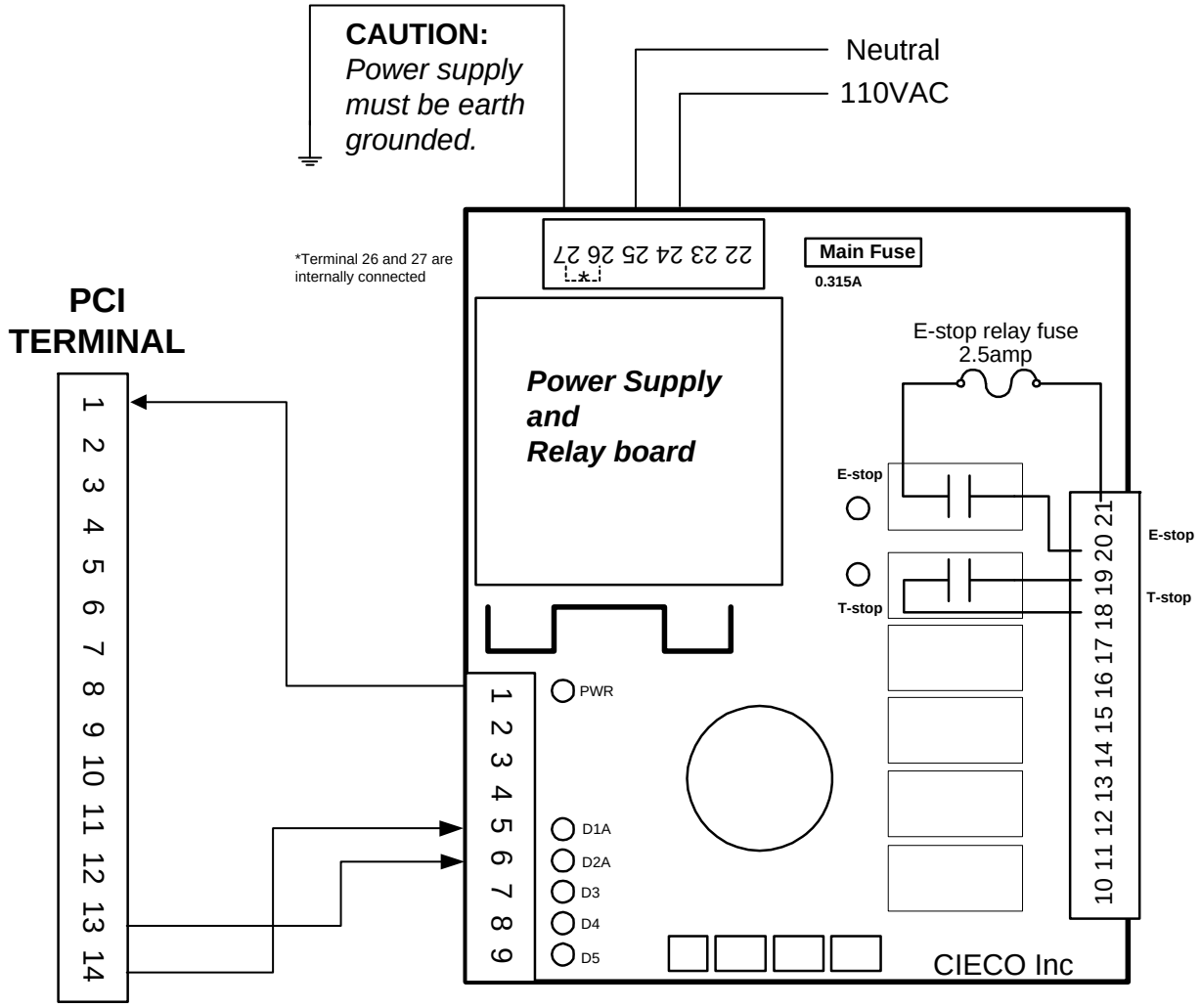
PCI-100DP internal power supply with relays
Model PCI-100DP-P only

V2.0



POWER SUPPLY TERMINALS AND LEDs	
Terminal connections 1 15VDC power output 5 E-stop input 6 T-stop input 24 110VAC 25 Neutral 27 Earth ground	**LED indicators** PWR Red Power D1A Green E-stop *(On when no faults are present)* D2A Green T-stop *(On when no faults are present)* **Relays** *2*A @ 110VAC max

SPECIFICATIONS

Solid State Relays

Black	110VAC @ 3Amps	(AC voltages only)
Red	60VDC @ 3Amps	(DC voltages only)

Inputs

8 optically isolated inputs 4.7k ohms pulled up to supply votage.
Inputs require signal to ground. Dry contact or Sensor with NPN transistor output signal to ground.

RST power supply option

120VAC IN @ 0.1Amp
15VDC OUT @ 1 Amp

Internal Power supply option

7.5 watts
15VDC@500mA
Power available for sensors 400mA

Scan Time

PCI-100DP software is able to scan 8 inputs within 220 uSeconds *(.000220 seconds)*
Care should be taken in high speed applications that the sensors are able to switch fast enough for proper operation. Also note that the counter debounce setting should be programmed to zero in high speed applications.

Each input 1-8 requires a signal to ground.

Dry contact PCI input

OR

NPN sensor PCI input