



CAM Modules used with the M1250 and M1450 Mini•PLS Instruction & Operation Manual

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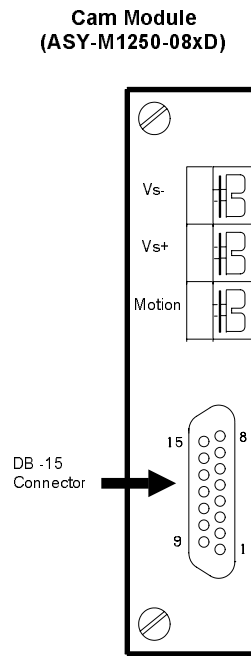
CAM Modules used with the M1250/1450 Mini PLS

Two types of CAM Modules are offered with the M1250/M1450 Mini•PLS:

- CAM Modules with a DB-15 Connector (ASY-M1250-08xD). THESE MODULES ARE RECOMMENDED FOR ALL NEW APPLICATIONS FOR CONVENIENT WIRING.
- CAM Modules with a 15 position terminal block (ASY-M1250-08TI, -08PI, -08NI). These modules are replacement parts for ASY-M1240-08T, -08P, -08N, -08AC, 08DC parts.

1. Wiring CAM Modules with DP-15 (ASY-M1250-08xD)

With a DB 15 connector on the CAM Modules, the wiring is very simple. Use a prewired cable with a mating DB 15 plug for wiring the modules. The user must provide a DC power supply for use with CAM modules. The 3 terminals on the terminal block are internally connected to 3 similarly labelled pins on the DB 15 connector. These are provided for wiring convenience. For example, you may provide customer DC power remotely through DB15 cable, and connect power to the main terminal block or other modules using a terminal block. The motion output from the main terminal block may be wired to the motion terminal and taken to remote locations through the cable. These terminals are also used when a remote power relay chassis is used.



Connect terminals to Main terminal block when required. ONLY one CAM module may be connected.

* Terminals internally connected to the similarly labelled pins of DB-15 connector.

Pin Definitions for DB-15 Connector on CAM Modules (Cable CBL-15S22-DAxxx)

Pin #	Cable Color	Function
1	Black	NC
2	White	Vs- (Sig. Ref. or Com)
3	Red	Vs+ (12-28 VDC for P & N, 5 VDC max for T)
4	Green	Motion
5	Orange	Channel 7
6	Blue	Channel 5
7	White/Black	Channel 3
8	Red/Black	Channel 1
9	Green/Black	Vs-
10	Orange/Black	Vs+
11	Blue/Black	Output Enable (See multiple program selection)
12	Black/White	Channel 8
13	Red/White	Channel 6
14	Green/White	Channel 4
15	Blue/White	Channel 2

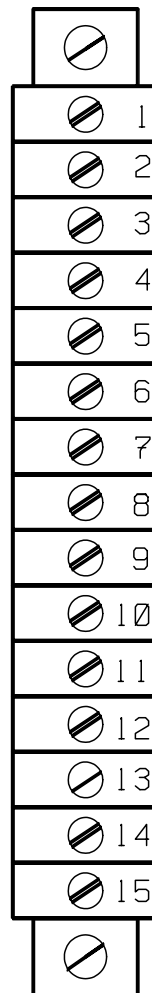
NC: Not connected

White/Black: White wire with black stripes

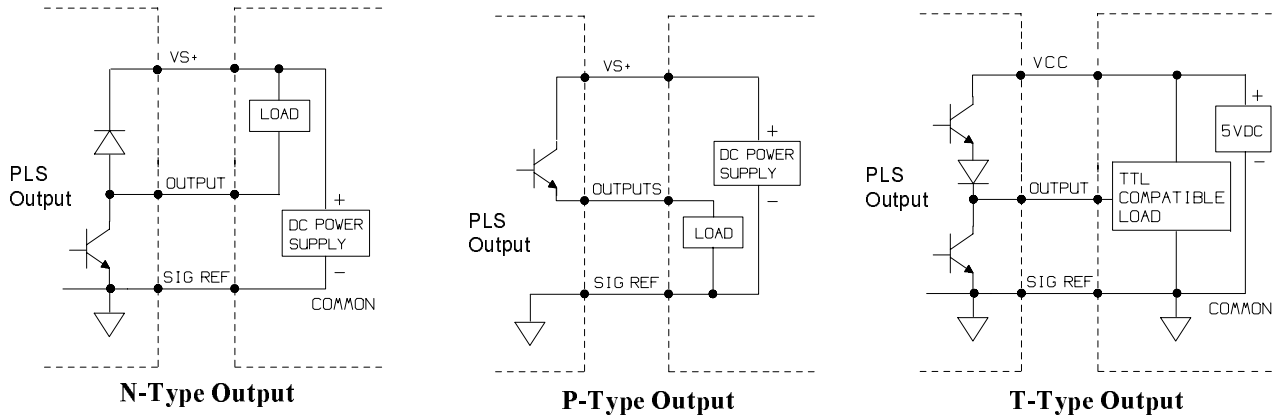
2. Wiring CAM Modules with Terminal Block (ASY-M1250-08xI)

These CAM Modules come with a quick disconnect terminal block. The function of each is provided in the table below. Note that these modules are optically isolated, so power and signal reference must be connected on all modules.

Terminal Designations for CAM Modules with a Terminal Block (ASY-M1250-08xI)	
Pin#	Function
1	NC
2	NC
3	P & N option only — See multiple program selection
4	T option only Tristate Input
5	Channel 1
6	Channel 2
7	Channel 3
8	Channel 4
9	Channel 5
10	Channel 6
11	Channel 7
12	Channel 8
13	T option only Vcc (5 VDC max)
14	Sig Ref (Common) Connect on all modules
15	P & N option only Vs+ (12-28 VDC)
<i>NC: Not connected</i>	



3. Output Configurations and Load Wiring



Multiple Program Selection/Output Enable

The storage of programmed setpoints in the individual CAM Modules in EEROM memory allows reprogramming of various CAM Modules for different jobs. Selection of the appropriate program CAM for the current job might be done with the use of an external selector switch or PLCs, output enable input (pin 11 on DB-15). The output enable pin does not affect CAM outputs when jumper J1 is installed on the CAM module (see figure below). When J1 is cut this pin may be used as follows:

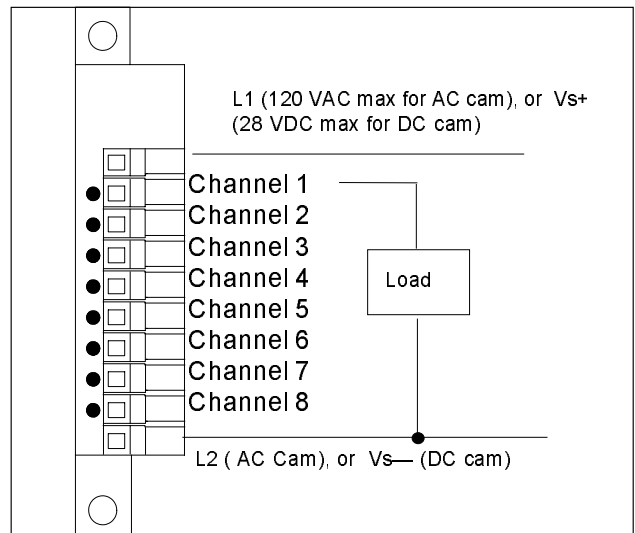
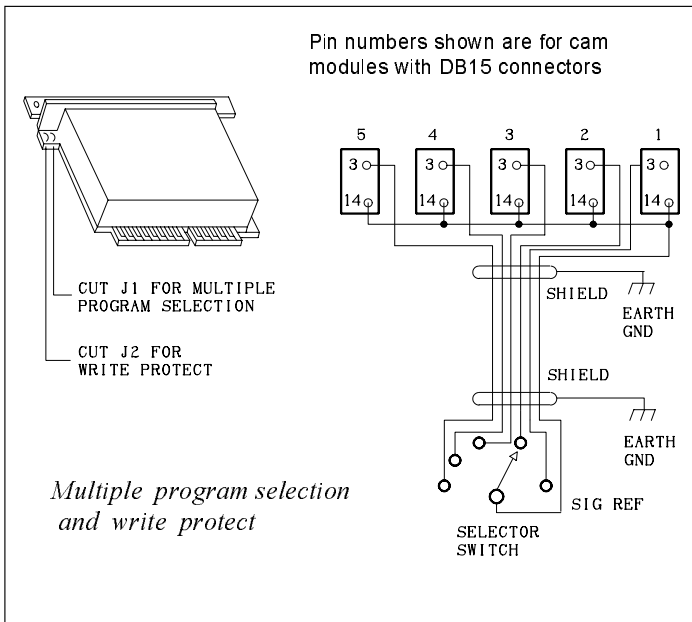
- TTL CAM Modules: For multiple program selection use a multiplexing/tristating input at pin 11 of the CAM Modules. Outputs are high impedance (tri-stated) when pulled low.
- PNP and NPN CAM Modules: For multiple program selection, wire pin 11 to Signal Ref. through the selector switch as shown in the figure below, right.

Write Protect

As shown in the figure (below, left) the PNP and NPN type of CAM Modules are shipped with factory wired jumper J2, which enables the modules to receive any program. If “Write Protection” of the program is required after the machine is adequately set up, cut the Jumper J2. This will disable module programming. This feature is especially useful when the CAM settings are not to be accessed by unauthorized personnel, and once adjusted, need not be changed frequently. Reinstalling the jumper will enable the module for programming changes, if so required.

AC Power CAM Wiring

AC and DC power CAM modules use a quick disconnect terminal block for wiring to the module. The diagram below identifies the terminal on the AC and DC power CAMS, and shows typical output wiring.



4. How to Order

CAM Modules

Select type and number of logic level output CAM modules:

NOTE: Modules with sub D connector are recommended for new designs.

ASY-M1250-08TI:	8 TTL output, CAM module with terminal block (replacement for ASY-M1250-08T)
ASY-M1250-08TD:	8 TTL output, CAM module with 15 pin sub “D” connector
ASY-M1250-08PI:	8 PNP output, CAM module with terminal block (replacement for ASY-M1250-08P)
ASY-M1250-08PD:	8 PNP output, CAM module with 15 pin sub “D” connector
ASY-M1250 NI:	8 NPN output, CAM module with terminal block (replacement for ASY-M1250-08N)
ASY-M1250-08ND:	8 NPN output, CAM module with 15 pin sub “D” connector <i>(Required with remote output chassis)</i>

Select type and number of power output CAM modules:

ASY-M1250-08AC:	8 output, 120 VAC @ 1 Amp each output, 4 Amps max. per module
ASY-M1250-08DC:	8 output, 10-28 VDC @ 1 Amp each output, 4 Amps max. per module

Table 1. Cam Output Modules					
Output Type	Logic Level			Power	
	TTL*	PNP Source Transistor	NPN Sink Transistor	AC	DC
Part Number	ASY-M1250-08Tx	ASY-M1250-08Px	ASY-M1250-08Nx	ASY-M1250-08AC	ASY-M1250-08DC
Number of Outputs per Module	8	8	8	8	8
Logic True	2 VDC @ 15 mA 2.4 V @ 3 mA (20 μ A leakage when Tristated)	Transistor ON 1.7 V drop @ 100 mA	Transistor ON 1.1 V drop @ 100 mA	1 Amp max. per channel, max. 4 A per module	1 Amp max. per channel, max. 4 A per module
Logic False	0.35 VDC @ 24 mA (0.4 mA max. leakage when Tristated)	Transistor OFF 0.2 mA leakage @ 50 VDC	Transistor OFF 0.1 mA leakage @ 50 VDC	3.0 mA max. per output	0.1 mA max. per output
Rated Voltage	5 VDC	50 VDC	50 VDC	105–135 VAC, 60 Hz	10–28 VDC
Response Time	Less than 1 μ s	12 μ s	12 μ s	Turn "ON" 12 ms Turn "OFF" 25 ms	Turn "ON" 30-50 μ s Turn "OFF" 15-40 μ s
Electrical Isolation	2500 V between control circuit and output circuit				
*Note: Mux or Tristating input = Low active (outputs disabled) TTL level (i.e., Logic True: 0–0.8 V; Logic False: 2–5 VDC)					

Position Transducers		
PLS Model	Transducers	Cable
M1250-010 M1450-XXXX	Single turn resolver, such as; Autotech's RL100, E6R, E7R, E8R, RL101, or equivalent. Maximum tracking speed, 1800 RPM.	Overall foil shielded cable, such as; Autotech's CBL-10T22-xxxxx or equivalent. Maximum 2500 feet.

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