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## Serial-based communication/control for ISPM

### PM-250E/PM-255E Vacuum Particle Controllers

#### FEATURES

- Data buffering and support of real-time tasks simplify integration into host systems
- Eight independent opto-isolated Machine Trigger inputs allow data collection during key steps of the process cycle
- Sensor response is user-programmable to optimize sensor performance for each process step



The HYT controllers from Pacific Scientific Instruments provide an intelligent interface between any HYT *in situ* vacuum particle sensor and your data acquisition system. Complete *in situ* particle monitoring (ISPM) systems for vacuum process environments include the particle sensor; PM-250E or PM-255E controller; and a PC with Particle Vision® software for data acquisition and statistical process control.

HYT controllers support all real-time particle monitoring tasks. The proprietary Machine Trigger™ capability enables you to synchronize particle data collection with the process cycle of your semiconductor production equipment. Particle level thresholds and sensor setup parameters are fully programmable using the HYT letter command set. A large 256-point data buffer allows HYT controllers to be used with non-real-time operating systems.





# Model PM-250E/PM-255E Particle Controllers

## MODEL PM-250E

The PM-250E controller is a stand-alone controller which communicates over a serial interface, supporting RS232, RS422, and RS485. A fiber optic connector is available as an option. A PM-250E supports one HYT sensor; up to 15 controllers can be daisy-chained together and monitored by a single PC. The PM-250E can be mounted to any surface using the provided threaded inserts.

## MODEL PM-255E

The PM-255E controller is comprised of five independent sensor controllers in a compact, self-contained module. It communicates to the host computer over a serial interface which supports RS232 and RS485. An optional fiber optic connection is available. Each sensor controller is fully programmable for particle sizes and contains the proprietary HYT Machine Trigger system for synchronizing particle counts to process events.

## SPECIFICATIONS

Sensitivity	Determined by sensor	
Count Rate	Maximum 1000 per second	
Diagnostics	Continuous sensor and controller diagnostics with alarms	
Processor	16-bit CMOS 80C196 @ 12.8 MHz, monitored w/ watchdog timer	
Machine Trigger Inputs	8 independent opto-isolated inputs 4-30 VDC or AC 4 kohm input resistance, typical 3 V activation threshold, typical	
Alarm Relays	2: one set by Particle Vision® software when particle count exceeds the threshold, one set by the controller to indicate sensor or controller diagnostic failure	
Data Buffer	256 points	
Operating Temperature	PM-250E	50 to 122°F (10 to 50°C)
	PM-255E	50 to 104°F (10 to 40°C)
Power	PM-250E	90-240 VAC, 50-60 Hz, 0.1 A @ 120 VAC
	PM-255E	90-240 VAC, 50-60 Hz, 0.2 A @ 120 VAC
Number of Sensors	PM-250E	1
	PM-255E	5
Communication to Host	PM-250E	RS232, RS422, RS485, fiber optic (optional)
	PM-255E	RS232, RS485, fiber optic (optional)
Dimensions	PM-250E	4.15" w x 3.35" h x 12" d (10.54 x 8.5 x 30.48 cm)
	PM-255E	6.5" w x 4.5" h x 12" d (16.5 x 11.43 x 30.48 cm) plus 1.4" (3.56 cm) for Heat Sink



The Model PM-250E and Model PM-255E are certified for use in environments classified as heavy industrial. Complies with EN50082-2 condition "A" (immunity test). Do not use it in residential, commercial, or light industrial areas.

Specifications are at reference conditions, and may change without notice. All trademarks are property of their respective owners. PN705076-1/00



### UNITED STATES

481 California Avenue  
Grants Pass, Oregon 97526  
United States  
Tel 1 541 479 1248  
Fax 1 541 479 3057  
Toll Free 1 800 866 7889

### ENGLAND

Pegasus House  
Haddenham Business Park  
Haddenham  
Bucks HP17 8LL  
England, United Kingdom  
Tel 44 (0) 1844 299 336  
Fax 44 (0) 1844 299 379

### FRANCE

100 rue Blaise Pascal  
ZI les Mardelles  
93605 Aulnay-sous-Bois Cedex  
France  
Tel 33 (0) 1 58 03 05 00  
Fax 33 (0) 1 48 66 46 66

### GERMANY

Ostwall 30  
Lüdinghausen D-59348  
Germany  
Tel 49 (0) 25 91 30 91  
Fax 49 (0) 25 91 50 14

### SCOTLAND

CEL Enterprise Centre  
58 Cornton Road  
Stirling FK9 5AT  
Scotland, United Kingdom  
Tel 44 (0) 1786 448 338  
Fax 44 (0) 1786 448 711

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