

Product Data Sheet

PA4500E Series – Pump Assembly for Ethernet Counters

The PA4500E next generation pump assembly permits rapid deployment of Ethernet based particle counting systems. Available in versions supporting from one to five particle counters, the PA4500E includes a power supply, an Ethernet switch and an intelligent control module plus individual contactors and overloads to drive pumps. For ultimate flexibility, the PA4500E offers up to four individually controlled contactor/overload pairs supporting multiple pumps*, so that particle counters can be driven uniquely or in groups. Where multiple counters are switched on and off in unison, for example, in an isolator, a single larger pump can be used. Extending this example, a single small pump may be added to drive an independently controlled background particle counter. A five channel Power-over-Ethernet (PoE) merge module allows 24V power and Ethernet to be fed to each particle counter via a single CAT5 cable.

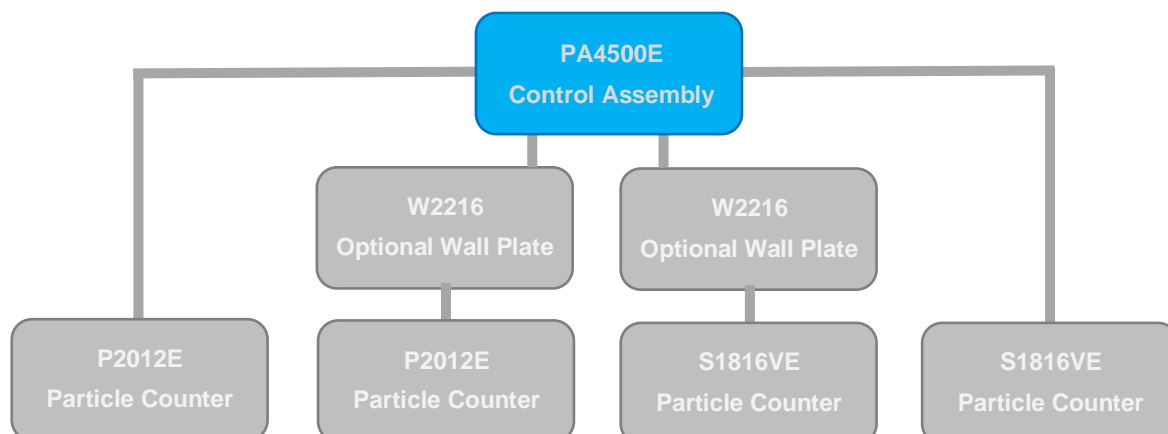
The base of the PA4500E houses the vacuum pumps on anti-vibration mounts. The pumps plug directly into the enclosure and allow for rapid replacement during servicing or in the event of mechanical failure. Each pump is fitted with a Festo 16mm quick release vacuum fitting and a relief valve. A five way manifold block is automatically included where a larger pump needed to drive multiple counters is specified**.

The PA4500E incorporates an MX6001 multifunction controller offering six serial interfaces plus isolated digital inputs and outputs. The digital outputs directly drive an alarm beacon and a digital input reads a 'Mute' button for the alarm sounder. It houses a CC2044 module connected to one of the MX6001 serial interfaces to drive the contactors for pumps. The remaining five RS485 serial interfaces are available to drive remote alarm message displays and a system watchdog module, for example.



PA4500E Specification

- Passivated steel frame (to be anchored to floor using M8 bolts)
 - Width 800mm
 - Depth 600mm
 - Height 1050mm
 - Weight 41kg plus pumps
- Communications
 - 100Mbps Ethernet from host PC to MX6001
 - 6 off RS485 serial interfaces:
 - 1 drives internal CC2044 module
 - 5 available for system watchdog module, remote alarm message displays or viable monitoring
 - 5 off PoE outputs provide Ethernet and 24Vdc via CAT5 to each particle counter
- Electrical supply
 - 230Vac 25A max with 4 pumps (~6A per pump)
- Digital Outputs: 24Vdc, current limited to 500mA
 - 4 outputs to drive alarm beacon with sounder
- Digital Input: opto-isolated to 200V
 - 1 input to act as 'Mute' for alarm sounder



PHG_PA4500E_DS: Rev 2.0 Date: 8th October 2020

Supported Particle Counters

- S1816VE Ethernet interface particle counter (stainless steel enclosure)
- P2012E Ethernet interface particle counter (ABS plastic enclosure)
- W2216 Optional wall plate with quick connectors for Ethernet and vacuum

Ordering Information

Item	Description
PA4500E-XXXX	Pump assembly for up to 4 pumps, each individually controlled, driving up to 5 ethernet particle counters
The suffix 'XXXX' must be added to specify the pump combinations to be fitted on the base plate using the configurations below:	
0	No pump in this position
1	VT4.4 single-phase pump capable of driving 1 particle counter
3	VT4.16 single-phase pump capable of driving up to 3 particle counters**
5	VT4.25 single-phase pump capable of driving up to 5 particle counters**

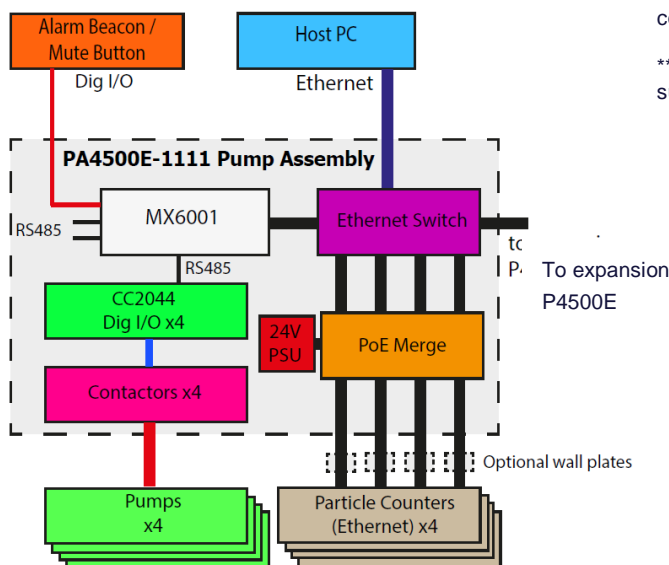
For individually controlled pumps/particle counters, available in two versions:

Item	Description
PA4500E-1100	To drive two VT4.4 pumps
PA4500E-1111	To drive four VT4.4 pumps

Examples for grouped control of pumps/particle counters:

Item	Description
PA4500E-1130	Two VT4.4 pumps for individually controlled counters plus one VT4.16 for a group of up to 3 counters
PA4500E-1150	Two VT4.4 pumps for individually controlled counters plus one VT4.25 for a group of up to 3/4 counters with a maximum of 5 particle counters per pump skid
PA4500E-3300	Two VT4.16 pumps for two groups totalling 5 counters, i.e. one group of 2 counters plus one group of 3 counters
PA4500E-5000	Single VT4.25 pump for a group of up to 5 counters

Example: Four individually controlled Ethernet counters



* Pumps must be ordered separately using the above configurations. Consult the sales office if in doubt.

** A five-way manifold block with 16mm quick-fit connectors will be supplied.