Product Data Sheet

S1816 Series Continuous Monitoring Particle Counter

Description

The S1816 Series continuous monitoring particle counter has been designed from the ground up to meet the requirements of the pharmaceutical industry. Housed in an IP65 sealed stainless steel enclosure, the instrument is ideal for use in clean rooms and within equipment such as isolators or filling machines. Quick release connectors for vacuum and power/communications allow the unit to be quickly removed for service or calibration. The particle counter sensor itself features a 10-year MTBF laser diode and has integral flow measurement to ensure that you get reliable counts or a clear indication of flow failure if a cap is left on following sanitisation. The S1816 series supports both Ethernet (Modbus TCP) and RS485 serial (Modbus RTU) communications.
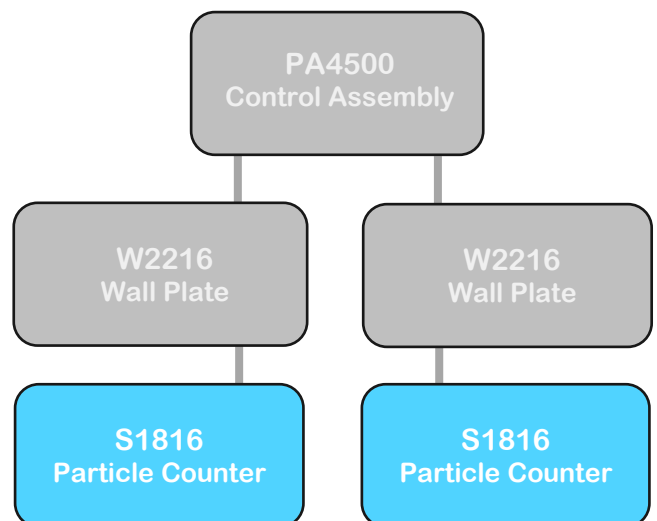
The S1816VS uses Modbus RTU serial RS485 protocol using standard CAT5 cabling and accessories, with spare cores used to carry power to the counter. These units do not require to be re-programmed with an address when being swapped because the address is provided by the control assembly located outside of the clean room. This allows the particle counter to be changed by clean room staff, ensuring that production continues with the absolute minimum down time.

The PA4500S-xxxx Control Assembly houses a power supply, control electronics and vacuum pumps and can greatly simplify on-site installation. A single Ethernet cable runs from the PC to the Control Assembly that provides control and power for up to four particle counters. Between one and four vacuum pumps can be mounted on the base of the Control Assembly, which provides the address mapping for up to four S1816VS particle counters. The application requirements determine which pumps will be used. Smaller pumps will be installed for applications that require individual particle counter control and medium to larger pumps for groups of particle counters which are controlled together. The S1816VE model uses Modbus TCP protocol over CAT5 Ethernet cable with the power supplied through spare cores. This model is not directly swappable as it requires to be programmed with a unique IP address per location. This model requires the PA4500E-xxxx Control Assembly.

Optional wall plates and umbilicals with quick release connectors are also available.

S1816Vx Particle Counter Specification

- Met One 6015: 2 Channels, 0.5µ and 5.0µ with counts per cubic foot with 0.5µ and 5.0µ calculated counts per cubic metre, or 4 channels, 0.3µ, 0.5µ, 1.0µ and 5.0µ with counts per cubic foot with 0.5µ and 5.0µ calculated counts per cubic metre
- Flow rate: 1.0cfm or 0.1cfm with integral flow measurement
- Fully compliant with ISO21501-4
- Vapourised Hydrogen Peroxide tolerant sample path for routine disinfecting and cleaning
- False Count Rate: <1 per 5 minutes
- Counting Efficiency: 50%+/-20% @ 0.5µ. 100%+/-10% @5.0µ
- Coincidence Loss: 5% @ 14,000,000 particles per cubic metre (400,000 per cubic foot)

- Supports Isolator gassing operations using with VHP/HPV when used with optional Stainless-Steel ball valve and CC9058 controller module
- 304 Stainless Steel rated at IP65
  - Width 160mm
  - Height 130mm (excluding connectors on base and nozzle on top)
  - Depth 110mm @ base, 85mm @ top (excluding mounting pegs on rear)
  - Weight 2.45kg
- Power supply
  - 9 to 28VDC, 3.3W
- Vacuum supply
  - At least 40.6 cm (16 inches) Hg
- Interfaces
  - S1816VS: Serial RS485 Modbus RTU protocol
  - S1816VE: Ethernet Modbus TCP protocol
- Environmental
  - Operating temperature 10 to 32°C
  - Storage temperature -40 to 70°C

W2216 Wall Plate Specification

- 304 Stainless steel face plate
  - Width 148mm
  - Height 87mm
- Plastic back box
  - Width 135mm
  - Height 75mm
  - Depth 38mm

Ordering Information

Serial Particle Counter Options

Item	Description
S1816VS-10-2	Continuous Monitoring Particle Counter complete with Met One 6015 1cfm, 0.5μ and 5.0μ channels, with Modbus RTU serial RS485 interface
S1816VS-01-2	Modbus Serial, 0.1cfm, 2 channel variant
S1816VS-01-4	Modbus Serial, 0.1cfm, 4 channel variant (0.3μ, 0.5μ, 1μ and 5μ)
S1816FX-10-2	Continuous Monitoring Particle Counter complete with Met One 6015 1cfm, 0.5μ and 5.0μ channels, with FXB protocol serial RS485 interface
S1816NC01	Enclosure only (without particle counter) Includes 0.1cfm nozzle, internal fittings and connectors for serial particle counter
S1816NC10	Enclosure only (without particle counter) Includes 1.0cfm nozzle, internal fittings and connectors for serial particle counter

Ethernet Particle Counter Options

Item	Description
S1816VE-10-2	Continuous Monitoring Particle Counter complete with Met One 6015 1cfm, 0.5μ and 5.0μ channels, with Modbus TCP RS485 interface
S1816NE01	Enclosure only (without particle counter) Includes 0.1cfm nozzle, internal fittings and connectors for Ethernet particle counter
S1816NE10	Enclosure only (without particle counter) Includes 1.0cfm nozzle, internal fittings and connectors for Ethernet particle counter

For Power Vacuum Control Assembly and Optional Accessories refer to separate data sheets.