

FLOW-SET

hi-vol



**TSP
with Wind Speed
and Wind Direction
sensors**

**a Hi-Vol that is:
quiet
accurate
efficient**

**Programmable Controller
(available as an option)
with Data Logging and Interface
for Remote Control,
Meteorological Instruments**



PM 10 or PM2.5



TSP

Lear Siegler Australasia 
environment and process solutions

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FLOW-SET

The Challenge:

- Clients needed a high volume air sampler which would:
- take accurate samples, whatever the wind direction
 - simplify sample collection
 - operate quietly
 - use less power

The Solution:

Lear Siegler Australasia designed and produced the HVS Flow-Set. A special feature of all models is the unique, variable speed pump controlled by true mass-flow sensing.

This design provides many significant advantages over previous units including:

- Constant air flow - maintained well within 1% of the preset flow rate in normal operating conditions.
- True mass-flow sensor - no need for temperature and pressure corrections.
- Low energy consumption - because motor load is determined by the filter load and not by mechanical restrictions.
- Low wear and long life because of low load - the vacuum pump has been proven in power stations at full load around the clock for many years. The absence of other mechanical or moving parts eliminates problems found in some products.
- Low noise, quiet running - does not attract attention or annoy neighbours.
- Soft start drives - ensuring the start current demand is kept at a very low level.
- User-friendly filter collection and replacement - no more struggling with fragile tissue on-site in bad weather. The unique removable filter support and transport cover allows filter loading and recovery in a protected laboratory environment without risk of losing the sample.
- Secure casing - preventing dust and rain ingress while permitting easy access for service.
- The flow set incorporates well-proven PM10 and PM2.5 Heads allowing it to sample a variety of particle sizes. The heads have been wind tunnel tested to ensure accurate cut points.

Flowset High Volume Air Samplers

SPECIFICATIONS (BOTH MODELS)

Air Intake:	Uniform, 58,000mm ² nominal air intake
Power Input:	240V, 50Hz
Nominal Current:	4 A (at 70n.m.c Air Flow and Clean Filter)
Start Current:	Switching Transient up to 5.0 A. Ramp up current 4 A
Vacuum Pump / Motor:	Three Phase, 50Hz, 1.3 kW
Motor Drive:	Variable Frequency, Soft Start
Flow Control:	Mass Flow Sensor and PID Controller (Unaffected by variation in the ambient air temperature and pressure)
Flow Control Precision:	Better than 1 SCMH
Noise Profile (when running at 70 SCMH with clean filter and silencer):	At 1 meter = 50dba At 2 meters = 44dba At 4 meters = 38dba At 6 meters = 35dba At 8 meters = 32dba
Filter Support:	230 x 280mm (removable) (2 off, one with transport cover supplied as standard)
Filter Size:	20.3 x 25.4cm (8 x 10 inch) (Nominal)
Cabinet Dimensions:	400 x 340 x 1050mm High
TSP Head Dimensions:	450 x 450mm square
PM10 Head Dimensions:	710mm Diameter + 500mm Height Increase to overall height
Overall Height:	1140mm Nominal
Weight:	47 kg
Temp Range:	-10°C to +40°C
Flow Setting Range:	20-100 SCMH
Flow Indication Range:	20-100SCMH
Complies with:	TSP: AS/NZS 3580.9.3:2003 Section 5 PM10: AS/NZS 3580.9.6:2003 Section 5

STANDARD MODEL CONTROL

Event Timer:	7 Day, Programmable
Hour Run Clock:	240V, Synchronous

OPTIONAL CONTROL:	■ Programmable Controller with Data Logging and Interface Control, Meteorological Instruments ■ Volumetric Control with Pressure and Temperature Inputs
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OPTIONAL EQUIPMENT:	■ Silencer, ■ Calibration Kit consisting of: Calibration Head with connecting tube, Calibration Head Certificate, Manometer, Kit housing box
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OPTIONAL PK2100 CONTROL

Programmable Controller with Data Logging and Interface for Remote Control and Meteorological Instruments.

The PK2100 is a general-purpose single board computer housed in an industrial enclosure with liquid crystal display and 12 key keypad. The PK2100 is configured with an assortment of inputs and outputs both analog and digital for monitoring and control of the system. The LCD and keypad provides an easy to use method to view and change system parameters, change operating modes and calibrating the unit. RS232 communications channel is used for data logging, remote monitoring.

System real-time inputs connect directly via screw terminals. Inputs such as wind speed, wind direction, mass flow, temperature and air pressure can be monitored.

Four types of control are selectable via the keypad. Manual control provides a facility to operate the fan constantly. Time control allows the operator to specify specific times and duration of operation and vector control that monitors wind speed and wind direction to operate the fan. Standby mode allows the change of parameters with the fan off.

Many system variables may be logged using the data logging facility.

All values with system date and time are stored for later retrieval via the RS232 port.