

par SYNC[®] FLEX[®]

pollutant activity relay synchronization

R-28

Utilizing the ModuleX™ System



Flexible iPEMS: Design The Best Solution For YOU

The 3DATX parSYNC[®] iPEMS (integrated Portable Emissions Measurement System) provides gaseous AND nanoparticle measurements with a proprietary cartridge system. The “hot-swap” capability delivers emissions acquisition of 4-Gas measurement, NO_x measurement and Nanoparticle measurement.

The 3DATX patented multi-plex basic particle sensor system provides the ability to capture multiple, dissimilar “images” of particles using Ionization, Scattering, and Opacity sensors in addition to outputs for Particle Number (PN) and Particulate Mass (PM).

FLEX CARTRIDGE CONFIGURATION OPTIONS:

	GasMOD™	PARTICULATES
TIER 1	NO/NO ₂ (preloaded cartridges)	PN/PM (preloaded cartridges)
TIER 2	CO/CO ₂ /HC/O ₂	---
CUSTOM	CALL US!	CALL US!



New! Further customize your parSYNC[®] FLEX to allow for real-time acquisition of:

- Wireless OBD Data Logger: User-defined ECU Data for LD and HD
- Real-time GPS and Ambient Meteorology Data (pressure, temperature, humidity)
- Ports for Additional Measurements (ie - exhaust flow rate, after-treatment temperature)

The parSYNC[®] Series of devices are powered by a common software interface, either directly on the imbedded LCD screen or from a linked laptop or smartphone, which provides a familiar and adaptable platform to each unique transportation challenge presented.

The software and hardware embedded in parSYNC[®] is completely customizable and extremely valuable for the 3DATX user community. This broad spectrum and flexibility of analytical and reporting functions for fleet managers, manufacturers, consultants and regulatory compliance specialists is particularly useful as national and international Governments and Authorities ramp up new emissions standards.



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Features and Benefits of the 3DATX parSYNC® FLEX iPEMS Unit

- Small Size/Lightweight = Easily transported to job site
 - Dimensions: 42cm x 15.5cm x 29.5cm (W x H x D)/ Weight: 6.2 kg (13.7 lb)
 - Battery Life: 2 hours typically (20 °C ambient, warm-up using wall-power). Extended operation possible when connected to CUBE™.
- Operation via interactive LCD display or from linked laptop or smartphone
- Built-in WiFi Access-point to transmit data in real-time to laptop or smartphone
- Fully Automated Software (customizable for specific requirements)
- Simple and Quick Calibration Process (BAR97 Hi/Lo, etc)
- Internal Power Supply: 18V Standard Lithium-Ion Battery Pack (same model as CUBE™ FLEX)
- Low Power Consumption: 2A, 38W typically (5A, 100W during warm-up)
- Measurement Cartridges with Monitored and Stabilized Temperatures
- Hot-Swap Replaceable Sensor Cartridges (4-Gas, NO_x and PN/PM) eliminates downtime in the field
- Rugged and Weather Resistant
- Easy to Maintain and Operate

CUBE™ FLEX (Conditioning Unit for Batch Emissions)

Support unit connected to the parSYNC® for sample conditioning and extended power supply:

- Exhaust Sample Condensate Removal
- Volatile Particle Reduction
- Extended Power Supply: Triple, Hot-Swappable 18V Standard Lithium-Ion Battery Packs
- Small Size/Lightweight = Easily transported to job site
 - Dimensions: 35cm x 14.5cm x 29.5cm (W x H x D)/ Weight (with one battery): 3.8 kg (8.4 lb)
 - Battery Life: 2 hours typically, hot-swappable for extended operation

Tier 1 GasMOD™ Cartridge	3 Electrode Electro-Chemical	
	Nitric Oxide (NO)	Nitrogen Dioxide (NO ₂)
Linear Measurement Range	0-5000ppm	0-300ppm
T ₉₀ Response Time	< 5 seconds	< 35 seconds
Resolution	1-2ppm	0.1ppm
Repeatability	2% of signal	2% of signal

Tier 2 GasMOD™ Cartridge	Non-Dispersive Infrared Spectrometer (NDIR)			Electro-galvanic
	Carbon Dioxide (CO ₂)	Carbon Monoxide (CO)	Hydrocarbon (HC)	Oxygen (O ₂)
Measurement Range	0-20%	0-15%	0-4000ppm (extended range up to 30,000ppm)	0-100%
T ₉₀ Response Time	< 3.5 seconds	< 3.5 seconds	< 3.5 seconds	< 6 seconds
Accuracy	±0.3% absolute or ±3% relative	±0.02% absolute or ±3% relative	±8ppm absolute or 3% relative	±0.1% absolute or 2% relative
Repeatability	±0.1% absolute or ±2% relative	±0.02% absolute or ±2% relative	±6ppm absolute or 2% relative	±0.1% absolute or 2% relative

Tier 1 Particulates Cartridge	
Details	Data
Particle Size Range	10 to 10,000nm = 0.01 to 10µm
Ionization Sensor	Ultra-Fine: 10 to 250nm / peak@ <80nm
Opacity Sensor	Medium: 80 to 7,000nm / peak@ ~800nm
Scattering Sensor	Coarse: 250 to 10,000nm / peak@ ~2,500nm