

AUTHORIZED COMPONENTS FOR TSI® FMS 5.1 AND NEWER SOFTWARE

APPLICATION NOTE CC-112 (US)

Introduction

This Application Note details the authorized hardware and software components that TSI supports for use with FMS Software. Hardware includes particle counters, analog inputs, digital inputs, and digital output devices. FMS Software drivers are written for these devices. TSI cannot support devices that are unlisted in this document, because there are no drivers. Please contact TSI for assistance and questions regarding alternate hardware, interfacing components, and system topology.

Particle Counters

In general, TSI supports TSI Particle Counters. However, not all TSI particle counters have drivers in FMS. Only the particle counters listed below are supported.

Model Number and Description	FMS Driver Name
AeroTrak® Remote Particle Counters – Models 7201/7301/7501/7310/7510 series	TSIRemoteTCP
	TSIRemote485
AeroTrak Remote Particle Counters with special size channels via RS485	TSIRemote7000SP
AeroTrak Remote Particle Counter with Integrated Pump – Models 6510 and 6310	TSIRemoteWithPump485
	TSIRemoteWithPumpTCP
AeroTrak Portable Particle Counters – Models 9310-02, 9510-02, 9350-01, 9550-02, 9500-01	TSIAeroPlate6TCP (for interrupted monitoring)
	TSIAPC
AeroTrak Handheld Particle Counters – Models 9306-XX	TSIAPC
AeroTrak Remote Particle Counter – Model 7110 (both RS485 and TCP/IP)	
AeroTrak Portable Particle Counter – Model 9110 (both RS485 and TCP/IP)	TSIAPC

TSI, TSI logo, BioTrak, and AeroTrak are registered trademarks of TSI Incorporated.



Model Number and Description	FMS Driver Name
TSI M-32 Manifold (for use with AeroTrak Portable Particle Counters and Remote Particle Counter with Integrated Pump)	TSIAPC_Manifold
BioTrak® Real-Time Viable Particle Counter – Model 9510-BD	TSIAPC_BioTrak
AeroTrak Phase 1 Portable Particle Counters – Models 9310-01, 9510-01, 9350-01, 9550-01	TSIAeroTrack6TCP
Lighthouse Remote 5104 (consult with TSI prior to integration)	GenericSolair
PMS IsoAir 310P (0.3, 0.5, 1.0, 5.0 µm – 1.0 cfm)	PMSAirnetTCP
PMS Airnet II 201-4 (0.2, 0.3, 0.5, 1.0 µm – 0.1 cfm)	
PMS Airnet II 301-2 (0.3, 0.5 µm – 0.1 cfm)	
PMS Airnet II 301-4 (0.3, 0.5, 1.0, 5.0 µm – 0.1 cfm)	
PMS Airnet II 310-4 (0.3, 0.5, 1.0, 5.0 µm – 0.1 cfm)	
PMS Airnet II 501-2 (0.5, 5.0 µm – 0.1 cfm)	
PMS Airnet II 501A-2 (0.5, 1.0 µm – 0.1 cfm)	
PMS Airnet II 501-4 (0.5, 1.0, 5.0, 10.0 µm – 0.1 cfm)	
PMS Airnet II 510-2 (0.5, 5.0 µm – 1.0 cfm)	
PMS Airnet II 510XR-2 (0.5, 5.0 µm – 1.0 cfm)	
PMS Airnet II 510-4 (0.5, 1.0, 5.0, 10.0 µm – 1.0 cfm)	

Phoenix Contact I/O Devices

FMS Software is configured to accept many Analog and Digital Input/Output (I/O) devices. Drivers are written for Phoenix Contact products to convert I/O devices into a communication protocol that FMS can read. For this, there is an FMS driver called PhoenixContact. ***This driver does not support all commercially available modules sold by Phoenix Contact—only the modules detailed below are authorized and supported.*** When interfacing Phoenix Contact devices with FMS Software, the Modbus/TCP Bus Coupler is always needed. The other modules are then added to the coupler device. The order number is shown to help when sourcing these components directly from the Phoenix Contact supplier.

Phoenix Model Number	Phoenix Order Number	Description	Hardware version	Firmware version compatible with FMS	FMS Driver Name
IL ETH BK DI8 DO4 2TX-PAC	2703981	Modbus/TCP Bus Coupler—4-Channel Digital Output and 8-Channel Digital Input	03	1.21, 1.3	Phoenix Contact
IB IL AI 2/SF-PAC	2861302	2-Channel Analog Input Module	02, 03	1.21, 1.3	
IB IL AI 8/SF-PAC	2861412	8-Channel Analog Input Module	02, 03	1.21, 1.3	
IB IL 24 DO 4-PAC	2861276	4-Channel Digital Output Module	02, 03	1.21, 1.3	
IB IL 24 DO 32/HD-PAC	2862822	32-Channel Digital Output Module	02, 03	1.21, 1.3	
IB IL 24 DI 32/HD-PAC	2862835	32-Channel Digital Input Module	02, 03	1.21, 1.3	

Other I/O Devices

TSI FMS Software supports additional I/O devices as detailed below. ***Not all components from these brands are supported—only those listed below are authorized.*** Please note that these I/O devices require integration with a Serial to Ethernet Converter, such as a Moxa device (used on numerous FMS projects). Please contact TSI for technical support regarding these devices and drivers.

Description	FMS Driver Name
Adam Model 4015, 3-Wire 6-Channel RTD	Adam4015
Adam Model 4017+, 8-Channel, only 4-20 mA A/D	Adam4017p
Adam Model 4052, 8-Channel Digital Input (6 channels fully isolated, 2 share common ground)	Adam4052
Adam Model 4068, 8-Channel Relay Output	Adam4068
ICP CON Model 7017C, 8-Channel 4-20 mA A/D	Solo7017
ICP CON Model 7067, 7-Channel Relay Out	Solo7067
ICP CON Model 7067D, 7-Channel Relay Out with LED's	
Wireless Temperature System	Eltek
Adam 4571, 1-Port RS-232/422/485 Serial Device Server	No Driver needed
MOXA N-port 5232, RS-485 to TCP (2 channels)	
MOXA N-port 5230, RS-232 to TCP and RS-485 to TCP	

Databases

Current FMS Software comes with a copy of PostgreSQL, which is authorized and supported by TSI. Databases used previously in conjunction with FMS Software include MySQL and MSSQL. While FMS can interface with a “standard” SQL databases, there are many issues impacting the performance of FMS and data base administration of other SQL databases. ***Prior to committing to or implementing FMS with any other database than the supported PostgreSQL shipped with FMS, contact TSI to discuss commercial and technical feasibility.***

Database Name	Version	Description
PostgreSQL	8.4 (32-bit)	SQL Data Base (Current supported Data Base—works with all versions of FMS 5.0.7 and older)
PostgreSQL	9.X (32-bit)	SQL Data Base (Used with FMS 5.1 and newer)

Conclusion

FMS is a flexible software package that can provide unique data management strategies to assist with risk reduction. Proper design and implementation of FMS and associated hardware is vital in realizing these strategies. System integrators and end customers must use standard, authorized components presented in this Application Note to ensure performance. Additional information on recommended FMS designs are detailed in TSI Application Note entitled, “*Facility Monitoring System Design Recommendations.*” Contact TSI prior to implementing any design or integrating any hardware not authorized by TSI.



UNDERSTANDING, ACCELERATED

TSI Incorporated – Visit our website www.tsi.com for more information.

USA Tel: +1 800 874 2811 India Tel: +91 80 67877200
UK Tel: +44 149 4 459200 China Tel: +86 10 8219 7688
France Tel: +33 1 41 19 21 99 Singapore Tel: +65 6595 6388
Germany Tel: +49 241 523030