

TSI® FMS 5 SOFTWARE HOW TO CONFIGURE AEROTRAK®+ REMOTE PARTICLE COUNTERS

TECHNICAL BULLETIN-TCC-165 (US) (9/6/2019) Rev B

Contents

Description	2
Prerequisites	2
Assumptions	2
Configuration of All AeroTrak+ Remote Particle Counters in FMS	3
Adding Instrument with Multicast	
Adding Instrument without Multicast	
Creating a New Instrument with Templates and Multicast Disabled	
Creating a New Instrument with Templates with Multicast Enabled Creating a New FMS Device with a Template Exported from TSI Remote APP	23
How to Setup Alarms	
Alarm Properties	
SPC Properties	
Cubic Meter Sample Point	
Adding a Second Sample Point	
How to Use Recipe	
Alarm Group Messages	
How to Replace Instrument in FMS	
Replacing Instrument with Multicast Disabled	
Replacing Instrument with Multicast Enabled	
Replacing Instrument with FMS Template	
Security	
User Groups Level	
Files to Backup	
Troubleshooting	
References—Technical Bulletins	



Description

This procedure explains, with different scenarios, how to configure the AeroTrak®+ Remote Particle Counters [both with pump (6000 Series) and without pump (7000 Series)] in FMS 5.

Different scenarios include:

- Domain corporate or dedicated network allowing the use of multicast addressing.
- Domain corporate or dedicated network which do not allow multicast addressing.
- Configuring particle counter with pre-saved FMS templates, with or without multicast addressing.
- Configuring particle counter with pre-saved TSI Remote APP templates without multicast addressing.

The fast alarming feature (Instant Alarm or 1 second data) of all AeroTrak+ Remote Particle Counters are covered in Technical Bulletin TCC-174.

The instructions and examples explained herein are using the FMS pharmaceutical screen layout.

Prerequisites

- This procedure is only valid for FMS 5.5 or above with use of all AeroTrak+ Remote Particle Counters.
- Prior to configuring FMS for use with all AeroTrak+ Remote Particle Counters, instruments must be configured with the TSI Remote APP Software. The following technical bulletins are available for your reference.
 - TCC-167—How to Setup AeroTrak+ Remote Particle Counter (7000 Series).
 - TCC-166—How to Setup AeroTrak+ Remote Particle Counter with Pump (6000 Series).
- Windows[®] Firewall Inbound Rule is set to allow multicast on UDP port 5000 or any other port that has been assigned by network administrator.

Assumptions

- All AeroTrak+ Remote Particle Counters that will be configured in FMS have the following network setup when delivered.
 - ✓ **TCP/IP Address**..... 192.168.200.90
 - ✓ Gateway Address...... 192.168.200.1
 - ✓ Subnet Mask...... 255.255.255.0
 - ✓ Multicast Address 239.100.100.1
 - ✓ Multicast Port..... 5000
- Prior to configuring instruments in FMS, the instrument must first be setup with the following network settings with application software (see table below).

	Example 1	Example 3	Example 3	Example 4
TCP/IP Address	192.168.1.61	192.168.1.62	192.168.1.63	192.168.1.64
Gateway Address	192.168.1.1	192.168.1.1	192.168.1.1	192.168.1.1
Subnet Mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Location	ROOM_100	ROOM_200	ROOM_300	ROOM_400
FMS Unit Name	U_A_PLUS_RWP_6301	U_A_PLUS_RWP_6301_2	U_A_PLUS_RWP_6301_3	U_A_PLUS_RWP_6301_4
FMS Sample Point Name	A_PLUS_RWP_6301	A_PLUS_RWP_6301_2	A_PLUS_RWP_6301_3	A_PLUS_RWP_6301_4

- > Instruments will be configured as follows in FMS.
 - ✓ Start Delay Time 0 sec
 - ✓ Sample Time 60 sec
 - ✓ Hold Time...... 0 sec

Configuration of All AeroTrak+ Remote Particle Counters in FMS

Adding Instrument with Multicast

For this example, the following settings are assumed for all instruments. Gateway Address Subnet Mask

	Example 1
TCP/IP Address	192.168.1.61
Gateway Address	192.168.1.1
Subnet Mask	255.255.255.0
Location	ROOM_100
FMS Unit Name	U_A_PLUS_RWP_6301
FMS Sample Point Name	A_PLUS_RWP_6301

1. Start Guard Service.

2. Start FMS Client.

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Client Node V	Vindows Help							
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Configured							Units Status	6
AC189								
	H01			P01	T01			
							U_SIMUL_ADC	
🧭 Value :	2.0 %RH	Ø	Value : 38	0 Pa	🔗 Value : 52.0 °C	c		
-								
								_
							Alarm Group Status	8
							🐼 Database Status	
Messages							-	
Node	Date/Time 🔺	Source	Туре		Message			
AC189	04-10-2018 07:55:51	FMSOPCUA	Ok	OPC Server Ok				
AC189	04-10-2018 07:55:30	AC189	OK	Main Database Ok Monitor Has Connected At	180 from 102 168 1 25			
Local	04-10-2018 07:55:18	Local	Ok	Monitor Has Connected A	C189 from 192.168.1.25			
	1							
							04-10-2018 08:57:53	

- 3. Go to **Client** menu and select **Client Options.**
- 4. Verify that the following settings are set according to the instrument setup.

Multicast IP Address	Default Address is 239.100.100.1
Multicast Port	Default Value is 5000

- 5. If one of the above settings is changed, click **OK** and restart **FMS Client**.
- 6. If one of the multicast settings is changed, the corresponding settings will need to be changed on the instrument.
- 7. Go to **Configure Node**.
- 8. Expand Monitor Summary.
- 9. Expand **Configure Devices**.
- 10. Click **AeroTrak+ Devices**.



😨 FMS Client Client				
Client Node Windows Help				
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				Unite Statue
Configured				olina olalua
S AC189				
Configuration Serial Number	er IP / Port Sample Poir	nts Status LED	Configure	
Configure Devices 630103	192.168.1.61/502	NEW OFF	Create	
AeroTrak+ Devices			Disable	
Units			Enable	
Digital Outputs			LED	
Sample Points Recipes			ALL LED OFF	
Alarm Groups			Delete	
Actions System Settings				
Monitor Settings				
Buddy Settings				
Mirror Database Settings				U_SIMUL_ADC
Reporting Settings				
SecurityPage				
VOk XCancel			Refresh	
Messages				Alarm Group Status
Node Date/Time - Source	Туре	Message	A	
AC189 2018-11-24 10:28:16 AC189	Ok Main Database Ok			
AC189 2018-11-24 10:28:16 FMSOPCUA	Ok OPC Server Ok			
AC189 2018-11-24 10:28:16 AC189	Ok Main Database Ok			Detabase Status
Local 2018-11-24 10:28:06 Local	Ok Monitor Has Connects	ed AC189 from 192 168 1 25		Gatabase_Status
AC189 2018-11-24 10:27:56 AC189	Warning Monitoring Node Has	Stopped		
AC189 2018-11-24 10:20:06 FMSOPCUA	Ok OPC Server Ok		-	
				2018-11-24 10:33:28
[

11. When **Multicast Address** is enabled on the instrument, the instrument will automatically be listed in FMS to configure and **NEW** will display in the **Status** column.

🚯 FMS Client Clien	t								_ 🗆 🗙
Client Node V	Vindows Help								
		🌸 🚲 🗰 🖾		🙈 Actions 🛛 🖈 🚛	tet				
	> =	🖤 🤜 💶 LI			.1			11.2.0.1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Configured								Units Status	0
AC189									
Configuration		Serial Number	IP / P	Port Sample Points	Status	LED	Configure		
 Monitor Sum Configure 	mary Devices	630103	192.168.1.6	1/502	NEW	OFF	Create		
AeroT	rak+ Devices	U.					Disable		
Comn	nunications						Enable		
Digita	I Outputs						LIADIE		
Samp	le Points								
Alarm Gr	oups						Delete		
Actions							Delete		
Monitor Sett	settings								
Buddy Settin	igs								
Database Se Mirror Datab	ettings ase Settings							📀 U SIMUL ADC	
Reporting Se	ttings								
OPC UA Set	tings								
 Security-age 	6								
							Refresh		
₩ Ok	Cancel								
Messages								-	
Nodo	Data/Tima	A Source	Turne		Magaz			Alarm Group Status	C)
AC189	2018-11-24 10 1	28:16 AC189	Ok	Main Database Ok	Wess	190			
AC189	2018-11-24 10:	8:16 FMSOPCUA	Ok	OPC Server Ok					
AC189	2018-11-24 10:3	28:16 AC189	Ok	Main Database Ok					
AC189	2018-11-24 10:	8:16 FMSOPCUA	Ok	OPC Server Ok				Ø Database_Status	
Local	2018-11-24 10:2	8:06 Local	Ok	Monitor Has Connected AC	189 from 192.168.1.2	5			
AC189	2018-11-24 10:	7:56 AC189	Warning	Monitoring Node Has Stopp	bed				
AC 109	2010-11-24 10:4	0.00 FINSUPCUA	UK	OPC Server OK			v		
								2018.11.	24 10:45:40

12. The different **Status** levels of the instrument include:

NEW	New instrument needs to be configured.
PENDING	Instrument configured but waiting for FMS configuration to be saved. <i>or</i> Instrument modified but waiting for FMS configuration to be saved.
CONNECTED	Instrument and FMS have established a connection.
DISCONNECTED	Instrument is disconnected from the network.
SAMPLING	Instrument is configured, enabled, and sampling.
DISABLED	Instrument is set to disabled.

- 13. Select the instrument by clicking on the **Serial Number**.
- 14. Click **Configure**.

15. **Device Settings** tab will display.

At this time, FMS is loading the settings already set in the instrument during setup.

Device Settings Device Recipe				
Device Information		Channel Settings		
Serial Number * 630103		Channel List 0.3		•
Location ROOM_100				4
IP Address 192.168.1 .61			Name	•
Port 502		0.3		
	Using DHCP	0.5		
Unit Information		10.0		
		5.0		
Unit Name *		SerialNumber		
Additional Community		Volume		
	Hide Unit			
Nominal Flow Rate 0.1	v			-
Nominal Flow Rate 0.1	v	Sampling Settings		-
Nominal Flow Rate 0.1 Calibration Settings		Sampling Settings Start Delay Time (s)	0	-
Nominal Flow Rate 0.1 Calibration Settings Calibration Alarm Enabled 2019-01-01 Buffer Settings	, 1	Sampling Settings Start Delay Time (s) Samole Time (s)	0 60	
Nominal Flow Rate 0.1 Calibration Settings Calibration Alarm Enabled 2019-01-01 Buffer Settings Enable Buffer Download Buffer Size	1440 2	Sampling Settings Start Delay Time (s) Sample Time (s) Hold Time (s)	0 60 0	• •

DEVICE INFORMATIO	N N
Serial Number	When instrument is listed from the multicast network, the serial number is automatically read from the instrument.
Location	Location name can be changed and will be retained in instrument after saving the configuration.
IP Address	The IP address of the instrument. This is used by FMS to configure the instrument and collect data from it.
Port	Modbus port number to communicate with instrument. Default value is 502.
Using DHCP	Enabling DHCP mode will automatically disable IP address selection.
	NOTE: When using DHCP mode, be sure the DHCP server will always assign the same IP address when lease time expires.
UNIT INFORMATION	
Unit Name	Enter the name for the instrument.
Comments	Enter comments about the instrument.
Additional Comments	Enter additional comments about the instrument.
Hide Unit	Enabling Hide Unit will hide the instrument from the unit status window on the main screen.
Nominal Flow Rate	Nominal flow rate of the instrument.
CALIBRATION SETTIN	NGS
Calibration Alarm Enabled	According to the date entered, FMS 5 will start generating warnings that the calibration date for the instrument is approaching.

BUFFER SETTINGS	
Enable Buffer Download	If checked, FMS will download, from the device buffer, the number of samples entered in Buffer Size after recovering from a communication issue.
	Default selection is disabled.
Buffer Size	Number of samples to be downloaded when Enable Buffer Download is enabled.
	Default Value 1440
	Max Value 256000
CHANNEL SETTINGS	
Channel List	List of all possible channels. This is only used when Create is selected.
	By default, both icons are grayed out when the channel name list is automatically populated when multicast address is used.
Name	List of channels that are available on instrument. This list will be populated when multicast address is used. This is only editable when Create is selected.
	This list MUST contain all instrument channels as it is used to build the database sample point table.
SAMPLING SETTINGS	
Start Delay Time	Delay before instrument starts to sample.
Sample Time	Sampling time.
Hold Time	Time between each sample.

16. Enter the following settings to configure the instrument.

Serial Number	DO NOT change as it is read direct from the instrument.
Location	Enter the location where instrument is installed. ROOM_100
IP Address	DO NOT change as it is read direct from the instrument.
Using DHCP	Ensure Using DHCP is unchecked.
Unit Name	U_A_PLUS_RWP_6301
Comments	Enter comments about the instrument.
Additional Comments	Enter additional comments about the instrument.
Hide Unit	Unchecked.
Enable Buffer Download	Checked.
Buffer Size	For purposes of this document, either disable buffer download or select a buffer size >1.
Channel Settings	Verify that all instrument channels are listed.
Start Delay Time	0
Sample Time	60
Hold Time	0

17. Click **Device Recipe** tab.

Device	Sample Point		
Device Settings	Device Recipe		
roperties			
Recipe List Default			•
			Enabled 🗸
Instrument Relay Pr	operties		
0.3		Flow	
0.5		Laser Alert	
5.0		Laser Scatter	
10.0		Calibration Corrupt	
		Instrument Error	
		Ambient Condition	
FMS Watchdo	g		
evice's Recipe List			
			a +
		Name	•
Default			

Desire List	I ist of an air on another d in the maximum care Groundtion
Recipe List	List of recipes created in the recipe configuration.
	To setup recipes, refer to section <u>How To Use Recipes</u> included later in this document.
Enable	When checked, the instrument is enabled for the recipe selected in the recipe list .
Instrument Relay	List of triggers used by the instrument to trigger internal relay.
Properties	NOTE: If the FMS watchdog is checked, all other alarm selections will be grayed out.
Device Recipe List	List of recipes created for this instrument.
+	Click to add a new recipe.
	Click to save recipe settings.
	Click to delete a selected recipe.

18. After changes are made, click **Save**.

19. Click **Sample Point** tab.

Sample Point Settings Sample Point Re	ecipe		
Sample Point List		Sample Point Informat	tion
	8 +	Sample Point Name *	
Name		Data Type	Counts •
		Input Index	Counts •
		Display Settings	
		Display Units	C/cuft 🔹
		Decimal Places	0
		Comments	
		Additional Comments	
		Graph Settings	
		Use Logarithmic So	cales
		Report Settings	
		Calculate MKT	
		Alarm Settings	
		Send Upper Alarm	properties to the device
		C Receive Instant Ala	rm from the device Buffer Size 60 📮

SAMPLE POINT INFORMA	TION
Sample Point Name	Name must start with letter A to Z and may not contain spaces. Underline character is allowed.
	NOTE: Maximum of 32 characters allowed.
Data Type	Selections include:
	• Counts
	CountsPerFt3
	CountsPerM3
	ScaledCountsPerM3
	InstantAlarm(Counts)
Input Index	Select:
	• Counts
DISPLAY SETTINGS	
Display Units	Select the display unit to be associated with this sample point.
Decimal Places	Select the desired number of decimal places.
Comments	Enter comments to describe this sample point.
Additional Comments	Enter any additional comments to describe this sample point.
GRAPH SETTINGS	
Use Logarithmic Scale	Enable/disable Logarithmic Scale for use on the inspect windows graph tab.
REPORT SETTINGS	
Calculate MKT	Enable/disable Mean Kinetic Temperature (MKT) calculation.
	Calculating MKT is a way of expressing the overall effect of temperature fluctuations during storage or transit of perishable goods.

ALARM SETTINGS	
Send Upper Alarm	When checked, the value of the upper alarm level set on the Sample Point Recipe tab will be stored in the instrument.
	When used in conjunction with channels that are enabled in the Instrument Relay Properties on the Device Recipe tab, you can setup the instrument to enter its own alarm mode and trigger its relay.
Receive Instant Alarm	When used in conjunction with Upper Alarm settings on the Sample Point Recipe tab, you can setup the instrument to generate Instant Alarm data and send it to FMS.
Buffer Size	This is the size of the Rolling Buffer used by the instrument to generate an Instant Alarm.
Sample Point List	List of sample points created for the instrument.
+	Click to add a new sample point.
3	Click to save the sample point modifications.
	Click to delete a sample point associated to the instrument.

20. Enter the following information to configure the instrument.

Sample Point Name	A_PLUS_RWP_6301
Data Type	CountsPerFt3
Input Index	Counts
Display Units	C/cuft
Decimal Places	0
Use Logarithmic Scale	Enabled
Calculate MKT	Disabled

21. Click + icon to add sample point.



22. Click **Sample Point Recipe** tab.

Device Sample Point					
Sample Point Settings Sample Point Recipe					
Properties	Alarm Properties				
Sample Point A_PLUS_RWP_6301					
Recipe List Default -	Alarm Delay				
Preferred Tag 0.3 *	þ 🗘	Out of 0	Samples	Retriggerable A	larms
Additional Tag None *	Warning Delay	_			
Disable Acknowledge Hide	0 🗘	Out of 0	Samples	Retriggerable V	Varnings
✓ Enabled ✓ Fileable		0.3	0.5	10.0	5.
Sample Doint's Decine List	Upper Alarm	0	0	0	0
	Upper Warning	0	0	0	0
1 +	Lower Warning	0	0	0	0 🗆
Name	Lower Alarm	0	0	0	0
	4				Þ
	Set Point	and Deviation		Class/Standard	
	Classification				
	SPC Properties				
		0.3	0.5	10.0	5
	Mean Crowding	0	0	0	0
	Alarm Limit	0	0	0	0
	Trend Limit	0	0	0	0
	Lower Control	0	0	0	0
	Upper Control	0	0	0	0
-	4				•

PROPERTIES	
Sample Point	Name created on the Sample Point tab.
Recipe List	List of recipes created in the recipe configuration.
	To setup recipes, refer to section <u>How to Use Recipes</u> included later in this document.
Preferred Tag	Preferred tag to show values on the main screen.
Additional tag	A second tag can be shown simultaneously with the preferred tag on the main screen.
Disable Acknowledge	Enable/disable alarm acknowledgement.
Enabled	Enable/disable sample point .
Hide	Hide/unhide the sample point from the main screen.
Fileable	Enable/disable data storage for the sample point .
ALARM PROPERTIES	

Refer to section <u>How to Setup Alarms</u> included later in this document for a detailed description on

Refer to section <u>How to Setup Alarms</u> included later in this document for a detailed description of how to setup alarms.

SPC PROPERTIES

Statistical Process Control (SPC) is used for environmental sensors. Limits can be configured to provide more sophisticated warning and control strategies.

Refer to section <u>SPC Properties</u> included later in this document for a detailed description on how to setup SPC.

23. Enter the following information to configure the instrument.

Recipe List	A_PLUS_RWP_6301
Prefer Tag	0.5
Additional Tag	5.0
Disable Acknowledge	Checked
Enabled	Checked
Hide	Unchecked
Fileable	Checked

- 24. Click 🗐 icon to save.
- 25. Click **OK** to exit **AeroTrak+ Devices** configuration screen.
- 26. Newly configured instrument is now listed in **PENDING**, waiting for settings to be applied to the instrument.
- 27. Click OK.
- 28. Click **Save** to save FMS configuration.
- 29. Click **Yes** to reboot the monitor.

Device Sample Point					
Sample Point Settings Sample Point Recipe					
Properties	Alarm Properties				
Sample Point A_PLUS_RWP_6301					
Recipe List Default	- Alarm Delay				
Preferred Tag 0.5	- 0 ¢	Out of 0	Samples	Retriggerable A	Jarms
Additional Tag 5.0	 Warning Dela 	y			
✓ Disable Acknowledge Hide	0	Out of 0	Samples	Retriggerable V	Varnings
✓ Enabled ✓ Fileable		0.3	0.5	10.0	5.
Sample Point's Recipe List	Upper Alarm	0	0	0	0
Γ	Upper Warning	0	0	0	0
Name	Lower Warning	0	0	0	0
Default	Lower Alarm	0	0	0	0
	4			01 101 1	•
	Set Poir	it and Deviation		Class/Standard	
	Classification				
	SPC Properties				
		0.3	0.5	10.0	5
	Mean Crowding	0	0	0	0
	Alarm Limit	0	0	0	0
	Trend Limit	0	0	0	0
	Lower Control	0	0	0	0
	Upper Control	0	0	0	0
					Þ

30. After monitoring node is restarted, the sample point displays on the screen and the instrument will start sampling.

🔞 FMS Clie	ent Client						_	• x
Client N	ode Windows Help							
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							Units Status	Ø
Configured	3							_
AC	189							
	A_P	2US_RWP_6301			HU1			
	0.5 184920							
							Q II A PLUS RWP 6301	
9		C/cuft	9	Value : 2.0		%RH		
	5.0 50							
		P01			T01			
0	Malua - 0.0	D-	0	V/-h		*0	📀 U SIMUL ADC	
■	value : 9.0	Ра	· · · · · · · · · · · · · · · · · · ·	value : 65.0				
Massager								
messages							Alarm Group Status	Ø
N AC190	ode Date/Time	Source Type	Main Database Ok	Mess	age	<u> </u>		
AC169 AC189	2018-11-24 12:56:5	9 FMSOPCUA Ok	OPC Server Ok					
AC189	2018-11-24 12:56:5	9 AC189 Ok	Main Database Ok					
AC189	2018-11-24 12:56:5	9 FMSOPCUA Ok	OPC Server Ok				Ø Database_Status	
Local	2018-11-24 12:56:4	9 Local Ok	Monitor Has Connected A	C189 from 192.168.1.25				
AC189	2018-11-24 12:56:3	6 AC189 Ok	Main Database Ok	ped				
							2018-11-24	12:58:02

- 31. When finished creating the new instrument and sample point, it is possible to save the different settings used and create a template for future use when adding new instruments and sample points.
- 32. To do this, go to **Configure Node**.
- 33. Expand Monitor Summary.
- 34. Expand **Configure Devices**.
- 35. Click **AeroTrak+ Devices**.
- 36. Select the instrument from which to save the settings as a template.
- 37. Click Configure.
- 38. Click Save to Template.
- 39. When the **Save File** dialog screen opens, enter a valid name to reference this template (i.e., **RWP_6301)**.
- 40. Click Save.
- 41. When template is saved, click **Cancel** to exit configuration screen.

	Sample Point			
Device Settings	Device Recipe			
Device Informati	on	Channel Settings		
Serial Number *	630103	Channel List 0.2		*
Location	ROOM_100			+
IP Address	192.168.1 .61		Name	Ψ.
Port	502	0.3		
		Using DHCP 0.5		
Unit Information		10.0		
Unit Mana A		5.0		
Commonte		SerialNumber		
Comments		Volume		
Nominal Flow Rat	01	•		-
Nominal Flow Rat Calibration Setting	so 1	Sampling Settings		-
Nominal Flow Rat Calibration Setting	0 1 s arm Enables 2015-01-01	Sampling Settings Start Delay Time (s)	0	-
Nominal Flow Rat Calibration Setting Calibration A Buffer Settings	0 1 5 Jam Enables (2019-01-01	Sampling Settings Start Delay Time (s) Sample Time (s)	0 60	•
Nominal Flow Rat Calibration Setting Calibration A Buffer Settings I Enable Buffe	o 1 s arm Enabled (2019-01-01 v Download Bufler Size 3000	Sampling Settings Start Delay Time (s) Sample Time (s) Heid Time (s)	0 60 0	

Adding Instrument without Multicast

A company IT Administrator may communicate that multicasting is not allowed on their network. If this should happen during instrument setup, the multicast capability will need to be set to disabled.

In this instance, the following settings are assumed for the instrument.

	Example 2
Instrument Serial Number	123456
TCP/IP Address	192.168.1.62
Gateway Address	192.168.1.1
Subnet Mask	255.255.255.0
Multicast	Disabled
Location	ROOM_200
FMS Unit Name	U_A_PLUS_RWP_6301_2
FMS Sample Point Name	A_PLUS_RWP_6301_2

The following steps describe how to add a new instrument when broadcasting multicast address is denied or UDP port has been blocked by IT Department.

- 1. Go to **Configure Node**.
- 2. Expand Monitor Summary.
- 3. Expand **Configure Devices**.
- 4. Click **AeroTrak+ Devices**.
- 5. Click Create.

6. Enter the following settings.

Serial Number	123456
Location	ROOM_200
IP Address	192.168.1.62
Unit Name	U_A_PLUS_RWP_6301_2
Nominal Flow Rate	Select Device Flow Rate
Enable Buffer Download	Checked
Buffer Size	3000
Start delay Time	0
Sample Time	60
Hold Time	0

- 7. From the drop-down **channel list**, select the size for the first channel corresponding to the instrument you want to add (i.e., **0.3**) and click **+** icon.
- 8. Repeat previous step for all the other sizes (i.e., **0.5**, **5.0**, **10.0**).

IMPORTANT NOTE

Ensure all the channels available on the instrument are correctly added during this step as they will not be changeable after saving the device configuration.

	Sample Point				
Device Settings	Device Recipe				
Device Informatio	n		Channel Settings		
Serial Number	123456		Channel List 10.0		•
Location	ROOM_200				+
IP Address	192.168.1 .62			Name	•
Port	502		0.3		
		Using DHCP	0.5		
Init Information			10.0		
mit mormation		_	5.0		
Unit Name *	U_A_PLUS_RWP_63	01_2	SerialNumber		
Comments			Volume		
Additional Comm	ients				
		Hide Unit			
	_				
Vominal Flow Rate	0.1		•		
Nominal Flow Rate Calibration Settings	0.1		• Sampling Settings		-
Vominal Flow Rate Calibration Settings	0.1 srm Enabled 01-01-2000		 ✓ Sampling Settings Start Delay Time (s) 		-
Vominal Flow Rate Calibration Settings Calibration Al Juffer Settings	0.1 arm Enabled 01-01-2000		Sampling Settings Start Delay Time (s) Sangle Time (s)	0 60	-
Vominal Flow Rate Calibration Settings Calibration Al 3uffer Settings	0.1 arm Enabled 01-01-2000 Download Buffer Size	3000	Sampling Settings Start Delay Time (s) Sample Time (s) Hold Time (s)	0 60 0	

- 9. Click **Device Recipe** tab.
- 10. Verify **Enabled** is checked.
- 11. Click **Sample Point** tab and then **Sample Point Settings**.

12. Enter the following settings.

Sample Point Name	A_PLUS_RWP_6301_2
Data Type	CountsPerFt3
Display Units	C/cuft
Decimal Places	0
Use Logarithmic Scale	Enabled

- 13. Click icon to add this sample point name to the **sample point list**.
- 14. Click icon to save if any changes are made in **sample point settings** after adding it.
- 15. Click **Sample Point Recipe**.

Device Sample	Point		
Sample Point Settings Sample F	Point Recipe		
Sample Point List		Sample Point Information	
	8 +	Sample Point Name A_PLUS_RWP_6301	_2
	Name	Data Type CountsPerFt3	
A_PLUS_RWP_6301_2		Input Index Counts	·
		Display Settings	
		Display Units C/cuft	•
		Decimal Places 0	*
		Comments	
		Additional Comments	
		Graph Settings	
		Use Logarithmic Scales	
		Report Settings	
		Calculate MKT	
		Alarm Settings	
		Use Upper Alarm properties for the device	alarm
	-		
Load from Template	Save to Template	ОК	Cancel
Load nom remplate	Sample Delet A. DLUS	WP 6301 2 has been added	Calicer

16. Enter the following information.

Prefer Tag	0.5
Additional Tag	5.0
Disable Acknowledge	Checked
Enabled	Checked
Fileable	Checked

- 17. Click 📋 icon to save.
- 18. To setup alarms properties and SPC properties, refer to <u>How to</u> <u>Setup Alarms</u> included later in this document.
- 19. Click **OK**.

Device	Sample Point	
Sample Point Settings	Sample Point Recipe	
Properties		Alarm Properties
Sample Point A_PLU	S_RWP_6301_2	
Recipe List Default		✓ Alarm Delay
Preferred Tag 0.5		 Out of Out of Samples Retriggerable Alarms
Additional Tag 5.0		Warning Delay
✓ Disable Acknowled	lge Hide	0 Out of 0 Samples Retriggerable Warnings
 Enabled 	Fileable	0.3
Cample Boint's Booing	- List	Upper Alarm 0
ample Follt's Recipe	r List	Upper Warning 0
		Lower Warning 0
	Name	Lower Alarm 0
		Set Point and Deviation Class/Standard Class/Standard
		SPC Properties
		0.3
		Mean Crowding 0
		Alarm Limit 0
		Trend Limit 0
		Lower Control 0
		Upper Control 0

20. New instrument is now appended to the **AeroTrak+ Devices** list.

FMS Client Client		i .					
Client Node Windows Help							
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							Unite Statue
Contigured							
S AC189							
Configuration	Serial Number	IP / Port	Sample Points	Status	LED	Configure	
 Monitor Summary Configure Devices 	123456	192.168.1.62/502	A_PLUS_RWP_6301_2	PENDING	OFF	Create	
AeroTrak+ Devices	630103	192.168.1.61/502	A_PLUS_RWP_6301	DISABLED	OFF	Disable	
Communications						Enablo	
Digital Outputs						LED	U_A_PLUS_RWP_6301
Sample Points							
Alarm Groups						ALL LED OFF	
Actions						Delete	
System Settings							
Buddy Settings							
Database Settings							
Mirror Database Settings							
OPC UA Settings							
SecurityPage							
, ,							
							A
							O U_SIMUL_ADC
✓Ok ¥Cancel						Refresh	
- on							
Vessages							Alarm Group Status
Aessages Node Date/Time	 Source 	Туре		Message			Alarm Group Status
Actage 2018-11-24 13	Source 02:13 AC189 0k	Type Main Da	labase Ok	Message			Alarm Group Status
Actas 2018-11-24 13 Actas 2018-11-24 13 Actas 2018-11-24 13	▲ Source 02:13 AC189 Ok 02:13 FMSOPCUA Ok	Type Main Da OPC Se	tabase Ok ver Ok	Message			Alarm Group Status
Actas 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13	 Source 02:13 AC189 Ok 02:13 FMSOPCUA Ok 02:13 AC189 Ok 	Type Main Da OPC Se Main Da	tabase Ok wer Ok labase Ok	Message		<u>^</u>	Alarm Group Status
Node Date/Time AC189 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13	 Source 2:13 AC189 Ok Ok MSOPCUA Ok 02:13 FMSOPCUA Ok 	Type Main Da OPC Se Main Da OPC Se	tabase Ok rver Ok tabase Ok rver Ok	Message		^	Alarm Group Status
Acta9 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13 AC189 2018-11-24 13 Local 2018-11-24 13	Source Source Ok O2:13 AC189 Ok O2:13 FMSOPCUA Ok O2:13 AC189 Ok O2:13 ISOPCUA Ok O2:13 Local Ok	Type Main Da OPC Se Main Da OPC Se Monitor H	tabase Ok rver Ok tabase Ok ver Ok as Connected AC189 from 1	Message 192.168.1.25		A	Alarm Group Status
Node Date/Time AC189 2018-11-24 13 AC189 2018-11-24 13	Source Source Oz.13 AC189 Ok Oz.13 FMSOPCUA Ok Oz.13 FMSOPCUA Ok Oz.13 FMSOPCUA Ok Oz.03 Local Ok Ot.52 AC189 W Eco AC189 Ob	Type Main Da COPC Se Main Da COPC Se Monitor H aming Monitorin Main Da	tabase Ok wer Ok tabase Ok wer Ok tas Connected AC189 from g Node Has Stopped tabase Ok	Message 192.168.1.25		A	Alarm Group Status 6
Node Date/Time AC189 2018-11-24 13 AC189 2018-11-24 12	▲ Source 02:13 AC189 0k 02:13 FMSOPCUA 0k 02:13 FMSOPCUA 0k 02:13 AC189 0k 02:13 AC189 0k 02:03 Local 0k 01:52 AC189 0k	Type Main Da OPC Se Main Da OPC Se Monitori aming Monitorin Main Da	tabase Ok over Ok tabase Ok over Ok tas Connected AC189 from 1 g Node Has Stopped tabase Ok	Message 192 168.1.25		×	Alarm Group Status (
Node Date/Time AC189 2018-11-24 13 AC189 2018-11-24 12	Source Source	Type Main Da COPC Se COPC S	tabase Ok rver Ok tabase Ok rver Ok fas Connected AC189 from ' g Node Has Stopped tabase Ok	Message		A.	Alarm Group Status €

21. Click **OK** to save your configuration and to send the configuration to the instrument.

22. After monitoring node restarts, the sample point will display on the screen and the instrument will start sampling.

FMS Client Clie	ent						_ - ×
Client Node	Windows Help						
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Configured							Units Status (
AC189							-
	A_PLUS_RWP_630)1			A_PLUS_I	RWP_6301_2	U_A_PLUS_RWP_6301
	0.6 -				0.6 - 192770		
	0.5 .				0.5 . 152770		
l X		C/cuft		0		C/cuft	0_A_PLUS_RWP_6301_2
	5.0 :				5.0 : 60		
	104					244	
	H01	_	-			101	
							Alarm Group Status
Ø	Value : 2.0	%RH			Value : 19.0	Pa	
Ŭ							
	T01						Database_Status
۲	Value : 44.0	°C					Statistics
							Sample Status Tag Status Alarm L 4
							Name Value
Messages							
Node	Date/Time Source	Туре			Message		
AC189	2018-11-24 14:10:40 FMSOPCUA	Ok	OPC Server Ok				
AC189	2018-11-24 14:10:19 AC189	Ok	Main Database Ok	<			
Local	2018-11-24 14:10:09 Local	Ok	Monitor Has Conne	ected AC189 fr	om 192.168.1.25		
Local	2018-11-24 14:10:07 Local	Ok	Monitor Has Conne	ected AC189 fr	om 192.168.1.25		
							2018-11-24 14:11:19

Creating a New Instrument with Templates and Multicast Disabled

When broadcasting multicast address is not allowed, the following steps outline how to add a new instrument in FMS using a prefilled **template**. The **template** used is the one created in section <u>Configuration of New AeroTrak+ Remote Particle Counter in FMS</u>.

For this example, the following settings are assumed for the instru	nent.
---	-------

	Example 3
Instrument Serial Number	654321
TCP/IP Address	192.168.1.63
Gateway Address	192.168.1.1
Subnet Mask	255.255.255.0
Location	ROOM_300
FMS Unit Name	U_A_PLUS_RWP_6301_3
FMS Sample Point Name	A_PLUS_RWP_6301_3

- 1. Go to **Configure Node**.
- 2. Expand Monitor Summary.
- 3. Expand **Configure Devices**.
- 4. Click **AeroTrak+ Devices**.
- 5. Click Create.
- 6. Click Load from Template.

- 7. Select **Template file** created in step <u>Configuration of All AeroTrak+ Remote Particle Counters</u> <u>in FMS.</u>
- 8. Click **Open**.

Create	x	
Device Sample Point		
Device Settings Device Recipe		Units Status Ø
Device Information	Channel Cattlene	
Device miormation	Channel Settings	☑ U_A_PLUS_RWP_6301
Serial Number	Channel List 0.2	
Location	+	
IP Address	Open File	
Port 502	Computer > Windows (C:) > FMS5 > Template	- 4- Search Template
Using DHCP	Organize New folder	II • 🔟 🔞
Unit Information	Name	Date modified Type Size
	Desktop	03-10-2018 18:51 XML File
Unit Name -	Downloads RWP_6301.xml	24-11-2018 13:00 XML File
Comments	2 Recent Places	
Hide Unt	Importantes ■ Importantes → Music ■ Importantes ■	
	🛫 alain.nezer (\\TSI\Users) (M:)	
Nominal Flow Rate 0.1		, []
Calibration Settings	File name: RWP 6301.xml	Extensible Markup Language (*
Calibration Alarm Enabled 01-01-2000		Open V Cancel
Buffer Settings	Sample Time (s) 60	
Enable Buffer Download Buffer Size	Hold Time (s)	
Load from Template Save to Template	OK Cancel	
		2018-11-24 14:19:14

9. The Device Settings tab is now prefilled with settings that were saved in the **template**.

	Sample Point			
Device Settings	Device Recipe			
Device Informat	ion	Channel Settings		
Serial Number		Channel List 0.2		,
Location	ROOM_100			4
IP Address	192.168.1 .61		Name	
Port	502	0.3		
	Using	DHCP 0.5		
Unit Information		10.0		
		5.0		
Unit Name *	U_A_PLUS_RWP_6301	SerialNumber		
Comments		Volume		
Nominal Flow Rat	e 10	•		-
Nominal Flow Rat Calibration Settin	e [1.0 29	▼ Sampling Settings		-
Nominal Flow Rat Calibration Settin Calibration J	e [10	Sampling Settings Statt Delay Time (s)	0	-
Nominal Flow Rat Calibration Settiny Calibration J Buffer Settings	e [10 gs Nam Enabled [2000.01.01	Sampling Settings Start Delay Time (s) Samde Time (a)	0 60	-
Nominal Flow Rat Calibration Setting Calibration J Calibration J Buffer Settings Imable Buff	e 1.0 ps Nam Enabled 2000-01-01 rr Download Buffer Size 3000	Sampling Settings Start Delay Time (s) Sample Time (s) Hold Time (s)	0 60 0	

10. It is very important to enter the correct values for the following fields as FMS **DOES NOT** change these settings in the instrument except for **Location**.

Instrument Serial Number	654321
TCP/IP Address	192.168.1.63
Location	ROOM_300
FMS Unit Name	U_A_PLUS_RWP_6301_3
FMS Sample Point Name	A_PLUS_RWP_6301_3
Nominal Flow Rate	Select Device Flow Rate
Enable Buffer Download	Checked
Buffer Size	3000

- 11. The **Unit Name** must be changed and be unique in FMS to avoid any conflict.
- 12. Change all other settings as needed like **Location**, **Comments**, etc.
- 13. Verify the correct list of **Channel Settings**. If needed, sizes can be removed from the **name** list and new sizes can be added to reflect the correct sizes of the instrument you want to add.
- 14. Click **Device Recipe** tab.
- 15. Set all the properties for the device recipe based on the recipe selected from recipe list. REMEMBER to click the
 icon to save any changes.
- 16. For information on instrument relay properties, refer to <u>How to Setup Alarms</u>.

	Sample Point	
Device Settings	Device Recipe	
Device Informati	on	Channel Settings
Serial Number	654321	Channel List 0.2 *
Location	ROOM_300	+
IP Address	192.168.1 .63	Name *
Port	502	0.3
	Using	DHCP 0.5
Unit Information		10.0
		5.0
Unit Name	U_A_PLUS_RWP_6301_3	SerialNumber
Comments		Volume
Additional Com	nents	
	Hic	le Unit
Nominal Flow Rate	0.1	-
Nominal Flow Rate	0.1 s	Sanolio Sation
Nominal Flow Rate Calibration Setting	9 0.1 9 Jam Enabled 2000-01-01	Sampling Settings
Nominal Flow Rate Calibration Setting Calibration A	5 0.1 5 Jarm Enabled (2000-01-01	Sampling Settings Start Delay Time (s)
Nominal Flow Rate Calibration Setting Calibration A Buffer Settings	9 0.1 8 Jarm Enabled [2000-01-01	Sampling Settings Stat Delay Time (s) Sample Time (s)
Nominal Flow Rate Calibration Setting Calibration A Buffer Settings I Enable Buffe	0.1 s tarm Enabled 2000-01-01 r Download Buffer Size 2000	Sampling Settings Sample Time (s) 0 Sample Time (s) 60 Hold Time (s) 0

Device	Sample Point	
Device Settings	Device Recipe	
Properties		
Recipe List Defaul		•
		Enabled 🗸
Instrument Relay P	operties	
0.3		Flow
0.5		Laser Alert
5.0		Laser Scatter
10.0		Calibration Corrupt
		Instrument Error
		Ambient Condition
FMS Watchd	g	
Device's Recipe List		
		a +
	Name	•
Default		
		_

- 17. Click **Sample Point** tab.
- 18. Select the **sample point name** that was saved in the **template** and click icon to remove it from the **sample point list** associated with the instrument being created.
- 19. A confirmation popup to delete the selected **Sample Point Name** will display. To confirm deletion, click **Yes**.
- 20. Change the **sample point name** to be unique in FMS, and change any other settings for this sample point.
- 21. When changes are complete, click icon to add the new sample point name. The new sample point is now added.
- 22. Click **Sample Point Recipe** tab.
- 23. Set all the **properties** for the **sample point recipe** based on the **recipe** selected from **Recipe List**.

Refer to section <u>How to Setup</u> <u>Alarms</u> included in this document for information regarding **Alarm and SPC Properties**.

24. When finished setting up the new instrument and **sample point name,** click **OK**.

Device	Sample Point				
Sample Point Settings	Sample Point Recipe				
Sample Point List		Sample Point Informat	tion		
	a +	Sample Point Name *	A_PLUS_RWP_6301		
	Name	Data Type	CountsPerFt3	•	
A_PLUS_RWP_6301		Input Index	Counts	¥	
		Display Settings			
		Display Units	C/cuft	¥	
		Decimal Places	0	٢	
		Comments			
Ves No Port seurage Calculate MCT Alarm Settings Use Upper Alarm properties for the device alarm					
		Yes Calculate MKT Alarm Settings Use Upper Alarm p	No voperiles for the device alarm		
		Yes Porr Journage Calculate MkT Alarm Settings Use Upper Alarm p	No voperties for the device alarm		

Device	Sample Point			
Sample Point Settings	Sample Point Recipe			
Sample Point List		Sample Point Inf	formation	
		Sample Point N	ame A_PLUS_RWP_6301_3	
	Name	Data Type	CountsPerFt3	•
A_PLUS_RWP_6301_	_3	Input Index	Counts	•
		Display Settings		
		Display Units	C/cuft	•
		Decimal Places	0	
		Comments		
		Additional Com	ments	
		Graph Settings		
		✔ Use Logarith	mic Scales	
		Report Settings		
		Calculate Mł	κτ	
		Alarm Settings		
		Use Upper A	larm properties for the device alarm	
	\			
	\			
		-		
Load from Templa	ite Save to	o Template	ок	Cancel

25. The new instrument is now listed in the instrument window as **PENDING**.

B FMS Client Client							
Client Node W	indows Help						
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Configured							Units Status @
AC189							
Configuration							U A PLUS RWP 6301
 Monitor Sumi 	mary Serial Numbe	er IP / Port	Sample Points	Status	LED	Configure	
 Configure 	Devices 654321	192.168.1.63/502	A_PLUS_RWP_6301_3	PENDING	OFF	Create	
AeroTi	ak+ Devices	192.168.1.62/502	A PLUS_RWP_6301_2	DISABLED	OFF	Disable	
Units	000103	152.100.1.01/502	K_FL03_KWF_0301	DISADLED	OFF	Enable	U_A_PLUS_RWP_6301_2
Digital	Outputs					LED	
Sampi Recipes	e Points					ALL LED OFF	
Alarm Gro	ups					Delete	
Actions	attingo					Delete	☑ U_SIMUL_ADC
Monitor Setti	igs						
Buddy Settin	gs						Alarm Craws Status
Database Set Mirror Databa	tings se Settings						Alarm Group Status
Reporting Set	tings						
OPC UA Sett	ings						
 SecurityPage 							
							Oatabase_Status
							Statistics (2)
							Sample Status Tax Status Alarm I 4
							Sample Status Tag Status Alarmit 1
VOk	XCancel					Refresh	Name Value
Massages							
Wessayes							
Node AC189	Date/Time Source	Type Mai	a Databasa Ok	Message		^	
AC189	2018-11-24 14:13:18 FMSOPCUA	Ok OP(C Server Ok				
AC189	2018-11-24 14:13:18 AC189	Ok Mai	n Database Ok				
AC189	2018-11-24 14:13:18 FMSOPCUA	Ok OP	C Server Ok				
Local	2018-11-24 14:13:08 Local	Ok Moni	itor Has Connected AC189 from 1	92.168.1.25			
AC189	2018-11-24 14:12:58 AC189	Warning Moni	itoring Node Has Stopped				
AC189	2018-11-24 14:10:19 AC189	Ok OPC	n Database Ok				
Local	2018-11-24 14:10:09 Local	Ok Moni	itor Has Connected AC189 from 1	92.168.1.25			
		1.1.1					
							2018-11-24 14:40:28
							2010-11-24 14:40:20

- 26. Click **OK** to **save** and **exit** your configuration.
- 27. Click **Yes** to reboot monitor.
- 28. Refresh the main FMS Screen to show new **sample point.**

B FMS Client Clien	t				
Client Node V	Vindows Help				
	🧔 💿 🍙 💐 🚲 🎫 🖂	Actions 🕫 🦉	a 🗼 🚛 👥		
	🎐 🔍 🚽 🔶 🏧 🖽			\	
Configured					Units Status
AC189					
	A PLUS RWP 6301		PLUS RWP 6301 2	A PLUS RWP 6301 3	I U_A_PLUS_RWP_6301
			0 0 0		
0.5.		0.5.		0.5 - 157740	▲ 0_A_PLUS_RWP_6301_2
0.5 .		0.5 .		0.5 . 157740	
7	C/cuft	7	C/cuft	C/cuft	0_A_PL05_RWP_6301_3
-		-		.	
5.0 :		5.0 :		5.0 : 60	U_SIMUL_ADC
					Alarm Group Status
	H01		P01	T01	
	101				
					Uatabase_Status
🔗 Valua	· 60 %DH	🔗 Value :	16.0 Po		
Unde		Unde .	10.0		
					Chatiatian
					Sample Status Tag Status Alarm L *
					Name Value
Messages					
Node	Date/Time A Source	Type		Messare	A
AC189	2018-11-24 14:41:57 AC189	Ok Main Da	tabase Ok	Message	
AC189	2018-11-24 14:41:57 FMSOPCUA	Ok OPC Se	rver Ok		
AC189	2018-11-24 14:41:57 AC189	Ok Main Da	tabase Ok		
AC189	2018-11-24 14:41:57 FMSOPCUA	Ok OPC Se	rver Ok		
Local AC190	2018-11-24 14:41:47 Local	Ok Monitor	Has Connected AC189 from 192.168.1.	25	
AC189	2010-11-24 14:41:37 AC109 2018-11-24 14:13:18 AC189	Vvarning wonitorii Ok Main Ds	tabase Ok		
AC189	2018-11-24 14:13:18 FMSOPCUA	Ok OPC Se	rver Ok		
AC189	2018-11-24 14:13:18 AC189	Ok Main Da	tabase Ok		The second se
					2018.11.24 14:45:15
					2010-11-24 14:43:13

Creating a New Instrument with Templates with Multicast Enabled

When broadcasting multicast address is allowed, the following steps outline how to add a new instrument in FMS with a prefilled template. The **template** used is the one created in step <u>Configuration of All AeroTrak+ Remote Particle Counters in FMS</u>.

	Example 4
Instrument Serial Number	6301033
TCP/IP Address	192.168.1.64
Gateway Address	192.168.1.1
Subnet Mask	255.255.255.0
Location	ROOM_400
FMS Unit Name	U_A_PLUS_RWP_6301_4
FMS Sample Point Name	A_PLUS_RWP_6301_4

For this example, the following settings are assumed for the instrument.

- 1. Go to **Configure Node**.
- 2. Expand Monitor Summary.
- 3. Expand **Configure Devices**.
- 4. Click **AeroTrak+ Devices**.
- 5. The new instrument will automatically populate the list as shown below. If not, click **Refresh** and select the new instrument.

B FMS Client Client							
Client Node Windows Help							
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) 🐠 🤏 🎫 LEJ	Actions 4	2 m 1 m				
Configured							Units Status
AC189							VII & PLUS PWP 6301
Configuration	Carial Number	ID / Dect	Comple Deinte	Status	1.50	Carflering	
 Monitor Summary 	987654	192.168.1.64/502	Sample Follits	NEW	OFF	Configure	
 Configure Devices AeroTrak+ Devices 	654321	192.168.1.63/502	A PLUS RWP 6301 3	DISABLED	OFF	Create	☑ U A PLUS RWP 6301 2
Communications	123456	192.168.1.62/502	A_PLUS_RWP_6301_2	DISABLED	OFF	Disable	
Units Digital Outputs	630103	192.168.1.61/502	A_PLUS_RWP_6301	DISABLED	OFF	Enable	
Sample Points						LED	U_A_PLUS_RWP_6301_3
Recipes						ALL LED OFF	
Alarm Groups Actions						Delete	
System Settings							U_SIMUL_ADC
Monitor Settings							
Database Settings							Alarm Group Status
Mirror Database Settings							
Reporting Settings							
 SecurityPage 							
, ,							Detekara Status
							Oatabase_Status
							Statistics
							Sample Status Tag Status Alarm I ()
							Name otatus rag Status Plaint (
VOk XCancel						Refresh	Name Value
							_
Messages							
Node Date/Time	 Source 	Type		Message	•		
AC189 2018-11-24 14	41:57 AC189	Ok Main	Database Ok				
AC189 2018-11-24 14	41:57 FMSOPCUA	Ok OPC	Server Ok				
AC189 2018-11-24 14: AC189 2018 11 24 14:	41:57 AU189 41:67 EMSORCUA	Ok Main	Jatabase OK Sonior Ok				
Local 2018-11-24 14	41:47 Local	Ok Monito	r Has Connected AC189 from	192.168.1.25			
AC189 2018-11-24 14	41:37 AC189	Warning Monito	ring Node Has Stopped				
AC189 2018-11-24 14	13:18 AC189	Ok Main	Database Ok				
AC189 2018-11-24 14:	13:18 FMSOPCUA	Ok OPC	Server Ok				
AC189 2018-11-24 14:	13:18 AC189	OK Main	Jatabase OK				
							2018-11-24 14:56:51

- 6. Click **Configure**.
- 7. Click Load from Template.
- 8. From this point forward, **ALL** the configuration steps are the same as explained in <u>Creating a</u> <u>New Device with Templates and Multicast Disabled</u>.

9. After exiting and saving configuration, the new instrument **sample point name** will be shown on the FMS main screen.

Bart Mode Windows Help: Image: Status Image: Status Image: Status Image: Status Image: Status Image: Status Image: Status	FMS Client Clie	ient									_ 0	X
Image: A plus RWP_S301_4 H01 Image: A plus RWP_S301_4 Image: A plus RWP_S301_4 Image: A plus RWP_S301_4 </th <th>Client Node</th> <th>Windows Help</th> <th></th>	Client Node	Windows Help										
ordganed A.PLUS_RWP_6301_4 H01 0.5. 199570 Clout Value: 2.0 NRH 0.5. 199570 Clout Value: 2.0 NRH 5.0: 110 T01 U.J., PLUS_RWP_6301_4 U.J., PLUS_RWP_6301_4 Value: 45.0 Pa Value: 2.0 NRH value: 45.0 Pa Value: 2.0 'C Mode Data/Time + Source Typ Man Database 0.k AC189 20181124 1522.0 AC189 Ok OPC Sever 0.k AC189 20181124 1522.0 Local OK OPC Sever 0.k <th></th> <th>) 🧔 😋 🔊 🐐 🔜 🖗</th> <th>· 사 🕰</th> <th>Actions 🗞 🗼 📊</th> <th>191</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>) 🧔 😋 🔊 🐐 🔜 🖗	· 사 🕰	Actions 🗞 🗼 📊	191							
A PLUS_RWP_6301_4 H01 0.5: 190670 Value: 2.0 SRH 5.0: 110 C(cut Value: 2.0 SRH • U_A_PLUS_RWP_6301_4 U_A_PLUS_RWP_6301_4 U_A_PLUS_RWP_6301_4 • U_SINUL_ADC U_SINUL_ADC U_SINUL_ADC • Value: 45.0 Pa Value: 22.0 'C *estages Value: 22.0 'C Aam Group Status *estages Monormal tables 0 (k Op Casees 0 (k Op Casees 0 (k AC163 2018-1124 15 22.0 AC189 Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Iocial Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Iocial Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Iocial Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Iocial Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Iocial Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Iocial Ok Op Casees 0 (k Op Casees 0 (k AC183 2018-1124 15 22.0 Io											Units Status	
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Date/Time & Source Type Message Colspan="2">Colspan="2">Database_Status AC189 2018-11-24 15 22:30 AC189 Ok Message Colspan="2">Colspan="2">Colspan="2">Database_Status AC189 2018-11-24 15 22:30 AC189 Ok OPC Sener Ok Colspan="2">Colspan="2">Colspan="2">Database_Status AC189 2018-11-24 15 22:30 AC189 Ok OPC Sener Ok Colspan="2">Colspan="2"Colspa=""2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspa=												
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AC189 2018-11-21 15 22:30 AC189 Ok Man Database Ok AC189 2018-11-21 15 22:30 AC189 Ok Man Database Ok AC189 2018-11-21 15 22:50 AC189 Ok Man Database Ok AC189 2018-11-21 15 22:30 AC189 Ok Man Database Ok AC189 2018-11-21 15 22:30 AC189 Ok OPC Server Ok Local 2018-11-24 15 22:20 Local Ok Monitor Has Commercied AC189 from 192.168 1.25 AC189 2018-11-24 15 22:10 AC189 Warning Monitoring Node Has Stopped	Node	Date/Time Source	Type				Message			^		
AC189 2018-11-28 152.23 PMOCRAE. OK Main Database Ok AC189 2018-11-28 152.23 DAC189 OK Main Database Ok AC189 2018-11-28 152.23 Dacal OK Montor Has Connected AC189 from 192.168 1.25 AC189 2018-11-24 152.22 10 AC189 Warning Montoring Node Has Stopped	AC189	2018-11-24 15:22:30 AC189	Ok	Main Database Ok								
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Local 2018-11-24 15 22:20 Local Ok Monitor Has Connected AC189 from 192.158.1.25 AC189 2018-11-24 15 22:10 AC189 Warning Monitoring Node Has Stopped	AC189	2018-11-24 15:22:30 FMSOPCUA	Ok	OPC Server Ok								
AC189 2018-11-24 15:22:10 AC189 Warning Monitoring Node Has Stopped	Local	2018-11-24 15:22:20 Local	Ok	Monitor Has Connected	AC189 fr	om 192.168.	1.25					
2018-11-24 15 23 25	AC189	2018-11-24 15:22:10 AC189	Warning	Monitoring Node Has Sto	opped					Ŧ		
2018-11-24 15 23:25												
											2018-11-24 15:23	3:25

Creating a New FMS Device with a Template Exported from TSI Remote APP

To configure FMS faster, it is possible to import settings saved in an XML configuration file, which is exported with the TSI remote APP, in order to create a new FMS AeroTrak+ Remote Particle Counter.

For this example, the following settings are assumed for the instrument.

	Example 5
Instrument Serial Number	11223377
TCP/IP Address	192.168.1.93
Gateway Address	192.168.1.1
Subnet Mask	255.255.255.0
Location	IMPORTINGINFMS
FMS Unit Name	APP_Imported_6301
FMS Sample Point Name	APP_6301

- 1. Go to **Configure Node**.
- 2. Expand Monitor Summary.
- 3. Expand **Configure Devices**.
- 4. Click **AeroTrak+ Devices**.
- 5. Click **Create**.
- 6. Click Load from Template.

7. Locate the file that has been exported with the TSI Remote APP. Click **Open.**

Device Informa	tion					
Sorial Number	uon		c	hannel Settings		
Senar Number				Channel List 0.2		•
Location						+
IP Address					Name	*
Port	502			SerialNumber		
		Using DH0	CP 🗌	Volume		
Unit Information	n					
Unit Name *						
Comments						
Additional Cor	nments					
		Hida II	Init 🗌			
		Enable Debug Outr	put			
		Enable Debug Outp	put 🗌			
		Enable Debug Outp	put 🗌			
		Enable Debug Outp	put			
		Enable Debug Outp	put			
Newigal Flow Da		Enable Debug Outp	put 🗌			
Nominal Flow Ra	ite 0.1	Enable Debug Outp	put			
Nominal Flow Ra Calibration Settir	Me [0.1	Enable Debug Outp	put _	ampling Settings		-
Nominal Flow Ra Calibration Settir Calibration	tte 0.1 1993 Alarm Enabled 01-01-2000	Enable Debug Outp	v S	ampling Settings Start Delay Time (s)	5	-
Nominal Flow Ra Calibration Settir Calibration Buffer Settings	ite 0.1 rgs Alarm Enabled 01-01-2000	Enable Debug Outp	put	ampling Settings Start Delay Time (s) Sample Time (s)	5	
		Enable Debug Outp	put			
Nominal Flow Ra Calibration Settir Calibration	ite 0.1 gs Alarm Enabled 01-01-2000	Enable Debug Outp	putS	ampling Settings	3	
Nominal Flow Ra Calibration Settin Calibration Buffer Settings	He 0.1 gs Alarm Enabled 01-01-2000	Enable Debug Out	put	ampling Settings Start Delay Time (s)	5	-

Device Information				Channel Settings			
Serial Number				Channel List 0.2			*
Location	Dpen File						T
IP Address		🎉 🕨 Computer 🕨 Windo	ows (C:) 🕨 temp	D b	 ✓ ✓ 	temp	
Port	502 Organize	 New folder 					
	Travor	ites	<u></u>	Name	Date modified	Туре	
Unit Information	Des	iktop		🕌 Bin	07-11-2018 18:17	File folder	
	Dov	wnloads		Config	07-11-2018 18:18	File folder	
Unit Name *	S Rec	ent Places		de_2	03-10-2018 13:56	File folder	
Comments				🗼 de 3	03-10-2018 13:55	File folder	
	🔚 🔚 Librar	ries	E	de 4	03-10-2018 13:55	File folder	
Additional Comme	nts 📄 Doo	cuments		New folder - Copy	07-11-2018 18:17	File folder	
	a) Mu	sic		New folder - Copy (2)	07-11-2018 18:17	File folder	
	Pict	tures		Node	07-11-2018 18:18	File folder	
				ExportConfig.xml	20-12-2018 08:33	XML File	
	(Com	puter		ExportConfigForFMS.xml	27-12-2018 10:25	XML File	
	😪 Offi	ice (\\BA-3688EE) (B:)					
	🚢 Wir	ndows (C:)					
	🖵 alai	n.nezer (\\TSI\Users) (M:)					
	🖵 SAL	ES (\\TSI\FILES) (N:)					
	😠 gue	est (\\Tsisvfp01) (P:)	+ e		m		
Nominal Flow Pate	0.1	City and a local state			(Care a)	In Manhood Laws	
Nonina Piow Rate	0.1	rile name: Expo	rtConfigForFMS.	xmi	• Extensio	ie Markup Lang	uage (
Calibration Settings					Oper	n 🔽 🤇	Cancel
Calibration Alar	m Enable		191			_	
\				Start Delay Time (s)	5		×.
Buffer Settings				Sample Time (s)	60		\$
				· · · · · · · · · · · · · · · · · · ·			

- 8. New instrument screen will be filled with settings from the imported XML file.
- 9. Click **Device Settings** tab, enter the **serial number** of the instrument you are adding to FMS.
- 10. Enter **Unit Name**.
- 11. Verify all other settings.

12. Click **Device Recipe** tab and verify imported settings are correct.

Device Informati	on				
Serial Number			Channel Settings		
	11223377		Channel List 0.2		
Location	IMPORTINGINFMS				
IP Address	192.168.1 .93			Name	
Port	502		0.3		
		Using DHCP	0.5		
Unit Information			10		
			5		
Unit Name "	APP_imported_6301		SerialNumber		
Comments					
A 1 100 1 0			Volume		
Additional Com	ments		Volume		
Additional Com	ments	Hide Unit	Volume		
Additional Com	ments	Hide Unit	Volume		
Additional Com	ments	Hide Unit Finable Debug Output	Volume		
Additional Com	ments	Hide Unit _ Enable Debug Output _	Volume		
Additional Com	ments	Hide Unit	Volume		
Additional Com	ments	Hide Unit _ Enable Debug Output _	Volume		
Additional Com	nents	Hide Unit _ Enable Debug Output _	Volume		
Additional Com	p [10	Hide Unit Enable Debug Output	Volume		-
Additional Com	b [10] g ExaMpril (2010-11-11)	Hide Unit - Enable Debug Output -	Volume Sampling Settings		-
Additional Com	e 10 s Jam Enabled 2019-11-11	Hide Unit - Enable Debug Output -	Volume Sampling Settings Start Delay Time (s)	10	-
Additional Com Nominal Flow Rat Calibration Setting Calibration A Buffer Settings	e [1.0 (3) Jam Enabled [2019-11-11]	Hide Unit - Enable Debug Output -	Volume Sampling Settings Start Delay Time (s) Sample Time (s)	0 40	-

evice Sample Point		
Device Settings Device Recipe		
Properties		
Recipe List Default		•
		Enabled V
Instrument Relay Properties		
0.3	✓ Flow	
✔ 0.5	Laser Alert	
✓ 5	Laser Scatter	
10	Calibration Corrupt	
	Instrument Error	
	Ambient Condition	
T MO Waterwog		
Device's Recipe List		
	Name	•
Default	TO THE REAL PROPERTY OF THE RO	
		_
		-

- 13. Click **Sample Point Settings** tab and enter the **sample point name**.
- 14. Verify all other settings and make changes if needed.
- 15. Click **+** icon to save your changes.
- 16. Click **Sample Point Recipe** tab and make any changes if required.
 - **NOTE:** Any alarm values saved in the instrument with the TSI Remote APP are not imported and FMS can override those settings.
- 17. After changes are made, click **Save**.
- 18. Click **OK**.

wice Sample Point		
Sample Point Settings Sample Point Recipe		
Sample Point List	Sample Point Information	
	APP_6301	
Name	Data Type CountsPerFt3	•
APP_6301	Input Index Counts	*
	Display Settings	
	Display Units C/cuft	•
	Decimal Places 0	\$
	Comments	
	Additional Comments	
	Graph Settings	
	Jse Logarithmic Scales	
	Report Settings	
	Calculate MKT	
	Alarm Settings	
	Use Upper Alarm properties for the device alarm	
Load from Template Save to Template	ок	Cancel

Sample Point Settings Sample Point Recipe					
Properties		Alarm Properties			
Sample Point APP_6301					
Recipe List Default	•	Alarm Delay			
Preferred Tag 0.5	*	1	Out of 0	Samples	Retriggerable Alarms
Additional Tag None	•	Warning Delay			
Disable Acknowledge Hide		0 \$	Out of 0	Samples	Retriggerable Warnings
✓ Enabled ✓ Fileable			10	5	
Sampla Point's Pacina List		Upper Alarm	0	0	
Sumple Forma Recipe List		Upper Warning	0	0	
		Lower Warning	0	0	_
Dafault		Lower Alarm	0	0	_
		Set Point	and Deviation		Class/Standard
		Set Point Classification	and Deviation		Class/Standard
		Set Point Classification SPC Properties	and Deviation	5	Class/Standard
		Set Point Classification	and Deviation	5	Class/Standard
		Set Point Classification	10 0 0	5	Class/Standard
		Set Point Classification SPC Properties Mean Crowding Alarm Limit Trend Limit	10 0 0 0 0	5	Class/Standard
		Set Point Classification SPC Properties Mean Crowding Alarm Limit Trend Limit Lower Control	10 0 0 0 0	5 0 0 0 0 0	Class/Standard
		Set Point Classification SPC Properties Mean Crowding Alarm Limit Trend Limit Lower Control Upper Control	10 0 0 0 0 0	5 0 0 0 0 0 0	Class/Standard

19. The new instrument is now listed as **PENDING** mode.

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nfigured							Units Status	
AC189								
onfiguration	Serial	Number IP / Port	Sample Points	Status	LED	Configure		
 Monitor Sum Configure 	mary Devices 1122337	192.168.1.93/5	02 APP_6301	PENDING	OFF	Create	U_A_PLUS_7510	
AeroT	Trak+ Devices 987654	192.168.1.61/5	02 A_PLUS_RWP	DISABLED	OFF	Disable		
Units	nunications 751002	192.168.1.60/5	02 A_PLUS_7510	DISABLED	OFF	Enable		
Digita	I Outputs					LED	1 I I	
Recipes	ne Points					ALL LED OFF		
Alarm Gr	oups					Delete		
Database Se	ettings							
Database Si Mirror Datab Reporting Se OPC UA Set SecurityPag	rus attings ase Settings attings ttings e							
Database Si Mirror Datab Reporting Se OPC UA Set SecurityPag	rys ase Settings attings titings e					Refresh	U_SIMUL_ADC	
Database Si Mirror Datab Reporting Si OPC UA Set SecurityPag	iyo sate Settings ttings e & Cancel					Refresh	U_SIMUL_ADC	
Database Si Mirror Datab Reporting Si OPC UA Set SecurityPag	yan ses Gettings titings e	Source Type			Message	Refresh	U_SIMUL_ADC	
Database Si Mirror Datab Reporting Si OPC UA Set SecurityPag	yy sae Settings titings e	Source Type IOPCUA Ok	OPC Server Ok		Message	Refresh	U_SIMUL_ADC	
Database Si Mirror Datab Reporting Si OPC UA Sel SecurityPag	19- 19- 19- 19- 19- 2016:15:20 Cancel	Source Type OPCUA Ok 89 Ok	OPC Server Ok Main Database C	ĸ	Message	Refresh	U_SIMUL_ADC	
Database SA Mirror Datab Reporting Si OPC UA Set SecurityPag	"y- strings ase Settings titings e	Source Type IOPCUA Ok 89 Ok II Ok	OPC Server Ok Main Database O Monitor Has Conn	k ected AC189 from	Message n 192 168 1 23	Refresh	 U_SIMUL_ADC Alarm Group Status Database_Status 	

- 20. Click **OK.**
- 21. Click **Save** to save configuration changes.

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nfigured							Units Status	
AC189								
onfiguration	Serial Number	IP / Port	Sample Points	Status	LED	Configure		
 Monitor Summary Configure Devices 	11223377	192.168.1.93/502	APP_6301	PENDING	OFF	Create	U_A_PLUS_7510	
AeroTrak+ Devices	987654	192.168.1.61/502	A_PLUS_RWP	DISABLED	OFF	Disable	-	
Communications Units	751002	192.168.1.60/502	A PLUS 7510	DISABLED	OFF	Enable		
Digital Outputs						LED		
Sample Points Recipes						ALL LED OFF	-	
Alarm Groups							4	
						Delete		
Actions System Settings						Delete	IL PLUS PWP 6301	
System Settings Monitor Settings		1	Configuration		22	Delete	U_PLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings		18	Configuration			Delete	U_PLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings		12	Configuration	tion will be modified	ed.	Delete	U_PLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings			Configuration	tion will be modified	ed. s or Cancel to quit	Delete	☑ U_PLUS_RWP_6301	
Actions System Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings OPC UA Settings SecurityPage			Configuration	tion will be modifive to save	ed. is or Cancel to quit Cancel	Delete	J	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings OPC UA Settings SecurityPage			Configuration	tion will be modifive to save change	ed. es or Cancel to quit Cancel	Delete	U_PLUS_RWP_6301	
Actions System Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings OPC UA Settings SecurityPage			Configuration Configurat Press Sav	tion will be modifive to save	ed. es or Cancel to quit Cancel	Delete	U_PLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings OPC UA Settings SecurityPage			Configuration Configurat Press Sav	tion will be modifi ve to save change Save	ed. es or Cancel to quit Cancel	Refresh	UPLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings OPC UA Settings SecurityPage			Configuration	tion will be modifi- ve to save change Save	ed. Is or Cancel to quit	Refresh	UPLUS_RWP_6301	
Actions System Settings Montor Settings Buddy Settings Database Settings Mirror Database Settings OPC UA Settings OPC UA Settings SecurityPage	a + Source	Type	Configuration	tion will be modifier ve to save change	ed. s or Cancel to quit Cancel	Refresh	U_PLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings OPC UA Settings SecurityPage VOk & Cancel ssages Node Date/Tim Act89 2018-12-27 *	e ▲ Source 0.28.08 FMSOPCUA.	Type Ok	Configuration Configuration Configuration Press Sav OPC Server Ok	tion will be modifive to save change	SX ed. s or Cancel to quit Cancel	Refresh	U_PLUS_RWP_6301	
Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings OPC UA Settings SecurityPage VOk KCancel ssages Node Date/Tin Acta9 2018-12-27 Acta9 2018-12-27	e Source 2 28 08 FMSOPCUA 27 48 AC189	Type Ok	Configuration Configuration Configurat Press Sav OPC Server Ok Main Database O	tion will be modified with the modified of the save change Save	ed. s or Cancel to quit Cancel	Refresh	U_PLUS_RWP_6301 ♥ U_SIMUL_ADC Alarm Group Status	
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22. When prompted, click **Yes** to immediately apply changes.

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		C189										
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Me	ssage	RS									· ·	
	ooug											_
		Node	Date/Ti	me 🔺	Source		Туре		Message	<u> </u>	Alarm Group Status	6
	AC18	9 0	2018-12-27	11:34:51	AC189 EMSORCUA	Ok		Main Database Ok				
	AC18	9 9	2018-12-27	11:34:51	AC189	Ok		Main Database Ok				
	AC18	9	2018-12-27	11:34:51	FMSOPCUA	Ok		OPC Server Ok				
ι	Local		2018-12-27	11:34:41	Local	Ok		Monitor Has Connected AC189	from 192.168.1.23		Oatabase Status	
1	AC18	9	2018-12-27	11:34:31	AC189	Warr	ning	Monitoring Node Has Stopped				
	AC18	9	2018-12-27	10:28:08	FMSOPCUA	Ok		OPC Server Ök				
	4018	9	2018-12-27	10:27:48	AC 189	Ok		Wain Database Ok	400 400 4 00			
											2018-1	12-27 11:35:33

How to Setup Alarms

Alarm Properties

A sample point can have alarm limits configured to enable alarms to be activated whenever its value falls outside configured values.

Lower and upper alarm limits are critical parameters and often used via alarm groups to trigger alarm beacons, sounders, SMS, and email. They will also trigger a visual change of state on the FMS 5 client to indicate a value trending out of specification.

> Alarm Delay X of Y Samples

The number of consecutive values that are outside the alarm limits that must be measured before the sample point goes into alarm (red). Until the alarm threshold is

Device Sample Point					
ample Point Settings Sample Point Recipe					
roperties	Alarm Properties				
Sample Point A_PLUS_RWP_6301_4	□				
Recipe List Default	 Alarm Delay 				
Preferred Tag 0.5	▼ 0 ‡	Out of 0	Samples	Retriggerable A	Varms
Additional Tag 5.0	▼ Warning Delay				
✓ Disable Acknowledge Hide	0 0	Out of 0	Samples	Retriggerable \	Varnings
Enabled Fileable		0.3	0.5	10.0	5.
ample Point's Recipe List	Upper Alarm	0	0	0	0
	Upper Warning	0	0	0	0
	Lower Warning	0	0	0	0
Default	Lower Alarm	0	0	0	0
	4				Þ
	Set Point	and Deviation		Class/Standard	1
	Classification				
	SPC Properties				
		0.3	0.5	10.0	5
	Mean Crowding	0	0	0	0
	Alarm Limit	0	0	0	0
	Trend Limit	0	0	0	0
	Lower Control	0	0	0	0
	Upper Control	0	0	0	0
	•				

exceeded, the sample point is put into a warning state (yellow). This feature is useful for measurements which can have brief periods of alarm state during normal use (such as differential pressure sensors), allowing nuisance alarms to be suppressed. The consecutive values are measured using the current sample time.

> Retriggerable Alarms

An alarm event is generated for each measurement that is in an alarm state. When retriggerable alarms is not set, an alarm event is generated only when a sample point enters an alarm state. If the alarm is acknowledged but the sample point remains in the alarm state, no further acknowledgements will be required for this alarm occurrence.

At the same time, FMS will trigger an output if configured the same way as for the acknowledgement.

> Warning Delay X of Y Samples

The number of consecutive values that are outside the warning limits that must be measured before the sample point goes into warning (yellow). Until the warning threshold is exceeded, the sample point remains in ok state (green).

> Retriggerable Warnings

A warning event is generated for each measurement that is in warning state. When retriggerable warnings is not set, a warning event is generated only when a sample point enters the warning state. If the warning is acknowledged but the sample point remains in a warning state, no further acknowledgements will be required for this warning occurrence.

At the same time, FMS will trigger an output if configured. The same way as for the acknowledgements.

> Upper Alarm

Required alarm value to trigger alarm. Select the check box to enable the limit.

Upper Warning

Required warning value to trigger warning. Select the check box to enable the limit.

* Lower Warning

Required warning value to trigger warning. Select the check box to enable the limit.

Lower Alarm

Required alarm value to trigger alarm. Select the check box to enable the limit.

NOTE

Sample points such as an environmental sample point will not have additional columns for size channel.

> Class/Standard

The Class/Standard button enables single click selection for alarm/warning limits required by a number of common regulatory standards. This function only supports two channel sizes (0.5 and $5.0 \mu m$). To use this function, select the required standard from the drop-down list.

SPC Properties

SPC (Statistical Process Control) is used for environmental sensors. Limits can be configured to provide more sophisticated warning and control strategies.

Whenever the sample point has reached the user defined mean crowding, alarm limit, or trend limit values, the sample point will go into failure.

- Lower Control The lower bound used for SPC.
- Upper Control The upper bound used for SPC.
- > Mean Crowding

Only has effect if valid control limits are defined. Mean crowding is the number of



consecutive readings that are between the lower and upper control limits, exclusive i.e. lower control < x < upper control.

Example:

- Lower control 2
- Upper control 8
- Mean crowding 3

Time	8:00	8:01	8:02	8:03	8:04	8:05	8:06	8:07	8:08	8:09
Value	1	2	3	4	10	3	3	6	5	8
State	Ok, mean crowding number is 0	Ok, mean crowding number is 0	Ok, mean crowding number is 1	Ok, mean crowding number is 2	Ok, mean crowding number is 0	Ok, mean crowding number is 1	Ok, mean crowding number is 2	Alarm, mean crowding number is 3	Alarm, mean crowding number is 4	Ok, mean crowding number is 0

> Alarm Limit

Only has effect if valid control limits are defined. Alarm limit is the number of consecutive readings that lie outside the control limits, inclusive i.e. $x \le 1$ lower control or $x \ge 1$ upper control.

Example:

- Lower control 2
- Upper control 8
- Alarm Limit 2

Time	8:00	8:01	8:02	8:03	8:04	8:05	8:06	8:07	8:08	8:09
Value	1	2	3	4	10	8	8	15	5	2
State	Ok,	Ok,	Ok,	Ok,	Ok,	Ok,	Alarm,	Alarm,	Ok,	Ok,
	alarm									
	limit									
	nbr is 1	nbr is 2	nbr is 0	nbr is 0	nbr is 1	nbr is 2	nbr is 3	nbr is 4	nbr is 0	nbr is 1

> Trend Limit

Trend Limit is the number of consecutive readings that are increasing or decreasing. This is independent of the lower or upper control limits.

Example:

Time	8:00	8:01	8:02	8:03	8:04	8:05	8:06	8:07	8:08	8:09
Value	1	2	3	4	10	3	3	20	19	18
State	Ok, trend nbr is 0	Ok, trend nbr is 1	Ok, trend nbr is 2	Alarm, trend nbr is 3	Alarm, trend nbr is 4	Alarm, trend nbr is 3	Alarm, trend nbr is 3	Alarm, trend nbr is 4	Alarm, trend nbr is 3	Ok, trend nbr is 2

• Trend Limit 3

Time 8:10 8:11 8:12 8:13 8:14 8:15 8:16 8:17 8:19 8:18 Value 17 15 14 13 12 20 21 25 16 16 Ok, Ok, State 0k, 0k, Alarm, Alarm, Alarm, Ok, 0k, 0k, trend nbr is 1 nbr is 0 nbr is -3 nbr is 1 nbr is 0 nbr nbr nbr nbr nbr is -1 is -2 is -3 is -4 is -2

Cubic Meter Sample Point

The counts per cubic meter data type on a TSI particle counter's driver in FMS is a real-time rolling counts per cubic meter calculation (c/m^3). This means the driver is only capable of calculating c/m^3 in real-time—any non-real-time data will not be calculated. Prior to FMS 5.2.0 this is fine. However, with the introduction of buffer download, FMS 5.2.0 and newer, any buffered data that is downloaded from the instrument will not have c/m^3 calculated. Historic driver will enable buffered data to be presented as c/m^3 .

The historic driver calculates the c/m³ of air based off of another (associated) sample point's database table. This new driver will be able to calculate c/m³ of air in real-time as well as non-real-time information. Because the historic driver does the calculations based on the associated sample point's database table, the historic driver will not be able to perform calculations if there is not a valid main database connection. If there is a main database connection error, once FMS re-establishes connection to the main database and the spooled information is inserted into the database, the historic driver will check and attempt to make calculations based on the information that was back-inserted into the database.

International regulations for the life science industry *requires* that the counts per cubic meter be monitored.

Creating M³ sample point for all AeroTrak+ Remote Particle Counters is the same as explained in technical bulletin TCC-121: FMS 520 Historic Driver Setup Configuration.

Adding a Second Sample Point

The AeroTrak+ Remote Particle Counter driver allows creation of an additional **sample point(s)** associated to the same instrument. For example, a second **sample point name** needs to show the 0.5 and 5.0 µm channels in RAW counts for the **sample point** name **A_PLUS_RWP_6301**.

Configure

- 1. Go to **Configure Node.**
- 2. Expand Monitor Summary.
- 3. Expand Configure Devices.
- 4. Click AeroTrak+ Devices.
- 5. Select the instrument to create an additional **Sample Point.**
- 6. Click Configure.
- 7. Click **Sample Point** tab.
- 8. Modify the **sample point name** accordingly (i.e., **A_PLUS_RWP_6301_3_RAW.**
- 9. Modify the other settings for the **sample point information**.
- 10. Click + icon to add new **sample point name**.

Device Sample Point	
Sample Point Settings Sample Point Recipe	
Sample Point List	Sample Point Information
	Sample Point Name * A_PLUS_RWP_6301
Name	Data Type CountsPerFt3
A_PLUS_RWP_6301	Input Index Counts
	Display Settings
	Display Units C/cuft
	Decimal Places 0
	Comments
	Additional Comments
	Graph Settings
	✓ Use Logarithmic Scales
	Report Settings
	Calculate MKT
	Alarm Settings
	Use Upper Alarm properties for the device alarm

Sample Point Settings Sample Point Recipe		
Sample Point Settings Sample Point Recipe	Sample Point Information Sample Point Information Data Type Counts Display Settings Display Lints Creat Comments Comments Comments Comments Comments Comments Calculate MKT Alarm Settings Use Upper Alarm properties for the device alarm	•

×

- 11. Click **Sample Point Recipe**. Modify the properties of the sample point recipe such as below:
 - Prefer Tag **0.3**
 - Additional Tag 10.0
 - Change any properties wanted.
- 12. Click Save.
- 13. Click **OK**.

Device Sample Point					
Sample Point Settings Sample Point Recipe					
roperties	Alarm Properties				
Sample Point A_PLUS_RWP_6301_RAW					
cipe List Default	Alarm Delay				
erred Tag 0.3	-	Out of 0	Samples	Retriggerable A	larms
tional Tag 10.0	Warning Delay				
Disable Acknowledge Hide	0 \$	Out of 0	Samples	Retriggerable V	Varnings
Enabled 🗸 Fileable		0.3	0.5	10.0	
nalo Doint's Posino List	Upper Alarm	0	0	0	0 🗌
The Point's Recipe List	Upper Warning	0	0	0	0 🗌
	Lower Warning	0	0	0	0 🗌
Name	Lower Alarm	0	0	0	0
	Classification	and Deviation		Class/Standard	1
	SPC Properties				
		0.3	0.5	10.0	
	Mean Crowding	0	0	0	
	Alarm Limit				0
	Trend Limit	0	0	0	0
	Lower Control	0	0	0	0
	Upper Control	U	U	U	0
		OK		Ca	ncel

14. The instrument associated with the new sample point name displays as **PENDING**, waiting for the configuration to be saved.

Both sample point names associated with the instrument listed for the associated serial number.

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Client Node Windows Help					
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Configured					Units Status
ΔC189					
Configuration					
 Monitor Summary 	Serial Number	IP / Port	Sample Pointe Status LED	Configure	
 Configure Devices AeroTrack+ Devices 	630103		A_PLUS_RWP_6301_RAW	Create	
Communications	L			Disable	
Units Digital Outputs				Enable	Q U PLUS RWP 6301
Sample Points				LED	0.17.11.2111
Recipes Alarm Groups				ALL LED OFF	
Actions				Delete	
Miror Databas Settings Reporting Settings OPC UA Settings > SecuntyPage				Refresh	⊘ U_SIMUL_ADC
Messages					
Node Date/Tim	Source	Туре	Message		Alarm Group Status
AC189 2018-11-24 1	:12:23 FMSOPCUA	Ok	OPC Server Ok		
AC189 2018-11-24 1	:12:02 AC189	Ok	Main Database Ok		Oatabase_Status
Local 2018-11-24 1	:11:53 Local	Ok	Monitor Has Connected AC189 from 192.168.1.25		

- 15. Click **OK**.
- 16. Click Save.
- 17. Click **Yes** to reboot the monitor.

18. Refresh FMS main screen to see **sample point name**.

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ent Node	Windows Help					
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						Units Status
infigured						
AC189						
	A_PLU	JS_RWP_6301		A_PLUS_F	RWP_6301_RAW	
	0.5 : 133230			0.3 : 392810		
9		C/cuft	Sector 1		C/cuft	Q IL PLUS RWP 6301
	5.0 : 30			10.0 : 1		
		H01			P01	
S	Value : 2.0	%RH		Value : 22.0	Pa	
		101				
						O_SIMUL_ADC
v	value : 13.0	-C				
essages						
Node	Date/Time 🔺	Source Type		Message		Alarm Group Status
AC189	2018-11-24 17:21:42 AC	C189 Ok	Main Database Ok			
AC189	2018-11-24 17:21:42 FM	ISOPCUA Ok	OPC Server Ok			
AC189	2018-11-24 17:21:42 AC	C189 Ok	Main Database Ok			
AC189	2018-11-24 17:21:42 FN	ISOPCUA Ok	OPC Server Ok	400 400 4 05		Oatabase_Status
LOCAL AC199	2018-11-24 17:21:32 Lo	Cal UK	Monitor Has Connected AC189 fr	Jm 192.168.1.25		
AC189	2018-11-24 17:12:23 EN	ASOPCUA Ok	OPC Server Ok			
AC180	2018 11 24 17-12-02 AC	C180 OF	Main Databasa Ok			

How to Use Recipe

No Change

U		ws, four standard recipes are available by default.
	Default	Applies configuration parameters from the base configuration settings
	Disable	Stops a unit or sample point from gathering data.
	Enable	Starts a unit or sample point from gathering data.

From control windows, four standard recipes are available by default.

Custom recipes can be created to enable closer control of sampling parameters, for example alarm limits.

Retains the selected recipe for an item.

Creating and using **recipes** with all AeroTrak+ Remote Particle Counters is nearly the same as outlined in technical bulletin TCC-123: How to Configure Cleaning in Operation Recipe.

Following TCC-123, there are three additional recipes listed in the **recipe list** drop-down for which different **Sample Point Parameters** and **Device Properties** based on the **Recipe** selected can be applied.

1. **Device Recipe** Properties:

Select from the recipe dropdown list a **recipe** that the instrument is be configured for. Click is icon.

When settings for a **recipe** are changed, click icon to save.

Device	Sample Point			
Device Settings	Device Recipe			
Properties				
Recipe List Cleani	ng_Cycle			•
				Enabled V
Instrument Relay P	roperties			
0.3		Elow	v	
0.5		Lase	er Alert	
5.0		Lase	er Scatter	
10.0		Cali	bration Corrupt	
		Instr	rument Error	
		Amt	pient Condition	
FMS Watchde	og			
Device's Recipe List				
				a +
	-	Name		*
At_Rest				
Cleaning_Cycle				
Default				
In Operation				

Enabled	Enable/disable device unit.
Channel 1 to 6	Size channel 1 to 6.
Flow	Isokinetic probe may be capped or blower is unable to deliver the required flow (0.1 cfm).
Laser Alert	Laser diode defect (i.e., laser current drastically increased).
Laser Scatter	Too much light scatter in the chamber caused by contamination in the optics chamber or excessive exposure to cleaning fluids or vaporized hydrogen peroxide.
Ambient Condition	Device temperature is exceeded.
Calibration Corrupt	Calibration data corrupted.
Instrument Error	If one of the above alarms occurs, an instrument error will be triggered.
FMS Watchdog	When enabled, FMS will close the relay for 1 second every 60 seconds.
	If enabled all other instrument relay properties will be grayed out and only FMS watchdog will be in control of the relay.

2. Sample Point Recipe Properties:

> Click **Sample Point Settings** tab, select sample point wanting to configure a recipe for.

- 3. Click **Sample Point Recipe** tab, select recipe wanting the sample point configured for.
- 4. Click 🕂 icon to add.
- 5. Select each recipe one by one and change the different associated settings.
- 6. Click 📋 icon to save.
- 7. Proceed with all other recipes.
- 8. If other **sample points** are associated with this instrument, continue by selecting another **sample point** name from <u>step 2</u> <u>above.</u>
- 9. Click **OK** and **Save** configuration.





Alarm Group Messages

Technical bulletin **TCC-137: FMS 530 Alarm Group with Messages Setup Configuration** explains how to setup alarm group messaging to be able to alarm on specific messages generated by FMS.

By introducing AeroTrak+ Remote Particle Counter driver **TSINextGenerationModbus2X**, the following messages can be selected in alarm group.

- Communication problem: timeout getting sample record
- Instrument alert was triggered externally
- Communication problem: invalid sample record data from buffer
- Ambient condition alert
- Cal. corrupt alert
- Communication problem: timeout during initializing
- Communication problem: timeout getting sample index
- Flow alert
- Index sequence error: record(s) possibility lost
- Instrument error
- Instrument not ready alert
- Laser error
- Laser scatter alert
- Optics dirty alert
- Resetting com channel
- Service alert
- Stale data: reinitializing counter
- Unit working
- Wrong driver selected for this device. This driver for TSI map revision 2.xx only

How to Replace Instrument in FMS

When an instrument needs to be returned for calibration or service, it is necessary that it needs to be replaced by another instrument to keep production ongoing. In this event, all AeroTrak+ Remote Particle Counters, no matter what model, need to be replaced by another model of the same type. It must be programmed with the same IP address as the one being replaced but will have a different **serial number** and **location name**.

Replacing Instrument with Multicast Disabled

The following steps outline how to replace an instrument with IP address 192.168.1.61 and serial number 987654 by serial number 123456 when instrument multicast is **disabled**.

1. Disable instrument from the **control** screen.

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Client Node Windows Help					
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					Units Status
Contigured					
AC189					
Alarm Group Recipe Unit Recipe	Sample Point I	Recipe Portable Downlo	ad Config Control Current	Node	¥ U_A_PLUS_7510
			•		
Unit	Recipe List	Current Recipe		Current State	
0_A_PLOS_7510	No Change 💌	Default Disable	20		
U_PLUS_RWP_6301 N	No Change 🔻	Disable Disable	ed		U_PLUS_RWP_6301
U_SIMUL_ADC N	No Change 💌	Default Enable	d		
					U_SIMUL_ADC
					Alarm Group Status
Apply Se	elected Recipe			Apply All Recipes	
					C Database Status
Messages					
Nodo Dato/Timo a	A Source	Tuno		Maccaga	
Node Date/Time	- Source	Type		message	
Local 2018-12-11 07:57:16	6 Local	Ok Mor	nitor Has Connected AC189	from 192.168.1.23	
					2018-12-11 07:58:4
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FMS Client Client Client Node Windows Help					
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FMS Client Client Client Node Windows Help Configured A C189 A PLUS 7510) 🐟 🎫 (Actions 🗸	3 % 🔺 🌆 🤫	A PLUS RWP 6301 R/	Units Status
FMS Client Client Client Node Windows Help Root & Soc &	I 🕸 🎫 E	Actions Z	3 🗞 🗼 🖍 🔹	A_PLUS_RWP_6301_R4	Units Status
FMS Client Client Cient Node Windows Help Configured A PLUS_7510	€ ak 5 5 E	Actions 🖉	3 🗞 🗼 航 🤧	A_PLUS_RWP_6301_R4	Units Status
FMS Client Client Client Node Windows Help Configured A C189 A_PLUS_7510 0.5:	€ ak 5 5 E	Actions 4 A_PLUS_ 0.5 : 78600	9 🗞 🗼 🗽 <section-header></section-header>	A_PLUS_RWP_6301_R4 0.3: 158169	Units Status
MS Client Client Client Node Windows Help R Configured A PLUS_7510 0.5:	¢ s ∎ E	Actions A A_PLUS_ 0.5 : 78600	3 🗞 🗼 🏨 🗺 RWP_6301	A_PLUS_RWP_6301_R4 0.3: 158169	Units Status
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FMS Client Client Client Node Windows Help Configured CaC189 A_C189 0.5: CCC	uft	Actions A A.PLUS 0.5: 78600	B 🗞 🗼 🗽 🧐 RWP_6301 C/cuft	A_PLUS_RWP_6301_R4 0.3: 158169 ≅ C.	Units Status
MS Client Client Client Node Windows Help Other Client Onfigured A PLUS 7610 0.5: Configured Configured O.5: Configured Configured O.5:	uft	 ▲ Actions ▲ ▲ PLUS_ 0.5 : 78600 ▲ 5.0 : 390 	3 % 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A_PLUS_RWP_6301_R4 0.3 : 158169 ⊒ C. 10.0 : 19	Units Status Units Status U.A. PLUS_7510 U.PLUS_RWP_6301
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- 2. Connect instrument serial number 123456 on the network.
- 3. Go to FMS configuration screen.

- 4. Expand Monitor Summary.
- 5. Expand **Configure Devices**.
- 6. Click **AeroTrak+ Devices**.
- 7. Select Serial Number 987654.

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Client Node Windows Help	
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Configured Units Status	٥
O AC189	
Configuration	7510
Monitor Summary Serial Number IP / Port Sample Points Status IED Configure	
A configure Devices OFF Create	
Communications 1251002 192.188.1.80/502 A_PLUS_7510 DISABLED OFF Disable	
Dioial Outputs	/P 6301
Sample Points	_0001
Alartic Groups ALL LED OFF	
Actions	
System Settings	
Buddy Settings	
Database Settings Mirror Database Settings	
Reporting Settings Alarm Group Sta	tus Ø
OPC UA Settings	
Vok XCancel Remesh	
Messages 🖉 Database_St	atus
Node Date/Time - Source Type Message	
Local 2018-12-11 07-57-16 Local Ok Monitor Has Connected AC189 from 192-158-1-23	
	2018-12-11 08:04:54

- 8. Click **Configure**.
- 9. Replace serial number **987654** by **123456**.
- 10. Modify **location** if required.
- 11. Click **OK**.

evice Settings				
	levice Recipe			
Device Informa	tion		Channel Settings	
Serial Number	* 123456		Channel List 0.2	Ŧ
Location	ROOM_100			+
IP Address	192.168.1 .61		Name	Ŧ
Port	502		0.3	
		Using DHCP	0.5	
Unit Informatio			10.0	
			5.0	
Unit Name *	U_PLUS_RWP_6301		SerialNumber	
Comments			Volume	
Additional Cor	nments			
		Hide Unit		
		Enable Debug Output		
Nominal Flow Ra	te 0.1		•	
Nominal Flow Ra Calibration Settin	ae 0.1.		Samula Sariar	-
Nominal Flow Ra Calibration Settin Calibration	te 0.1 gs Alarm Enabled 2019-01-01		Sampling Settings	
Nominal Flow Ra Calibration Settin Calibration	te 0.1 gs Alarm Enabled 2019-01-01		Sampling Settings Start Delay Time (s) 0	
Nominal Flow Ra Calibration Settin Calibration Suffer Settings	te 0.1 gs Alarm Enabled 2019-01-01		Sampling Settings Start Delay Time (s) 0 Sample Time (s) 60	

12. The replacement instrument displays in **PENDING** mode.

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onfigured							Units Status
AC189							
Configuration							R U A PLUS 7510
Monitor Summary	Serial Number	IP / Port	Sample Points	Status	LED	Configure	A 0_1() L00_1010
Configure Devices	987654	192.168.1.61/502	A_PLUS_RWP	DISABLED	OFF	Create	
Communications	123456	192.168.1.61/502	A_PLUS_RWP	PENDING	OFF	Disable	
Units	754000	100 400 4 00/500	A DUUD 7540		011	Enable	
Digital Outputs	151002	192.100.1.00/902	A_PL03_7910	DISADLED	UFF	LED	U_PLUS_RWP_6301
Recipes						ALL LED OFF	
Alarm Groups						Delete	
System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings							🖉 U_SIMUL_ADC
Reporting Settings OPC UA Settings SecurityPage						Refresh	Alarm Group Status
VOk XCancel						Reiresii	
essages							Vatabase_Status
Node Date/Time	 Source 	Туре			Message		
Local 2018-12-11 07:	57:16 Local	Ok	Monitor Has Conne	cted AC189 from	192.168.1.23		
							2018-12-11 08:08:

13. Click **Refresh.** The old serial number instrument is now removed from the FMS configuration.

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Client Node Windows Help					
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Configured				Units Status	Ø
AC189					
Configuration Social Number	ID / Dort Sample Pointe	Statue LED	Configure	☑ U_A_PLUS_7510	
Monitor Summary Configure Devices	192.168.1.61/502 A_PLUS_RWP	DISABLED	Create		
AeroTrak+ Devices	192 168 1 60/502 A PLUS 7510	DISABLED	Disable		
Communications Units	132.100.1.00/302 A_1 203_1310		Enable		
Digital Outputs			LED	U_PLUS_RWP_6301	
Recipes			ALL LED OFF		
Alarm Groups			Delete		
System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings				U_SIMUL_ADC	
Reporting Settings OPC UA Settings				Alarm Group Status	Ø
▶ SecuntyPage ✔ Ok ★Cancel Messages Node Date/Time ▲ Source	Туре	Message	Refresh	Database_Status	
Local 2018-12-11 07:57:16 Local	Ok Monitor Has Connec	ted AC189 from 192.168.1.23			
				2018-12-11 (8:11:29

- 14. Click **OK**.
- 15. Click **Save** to save your configuration.
- 16. Click **Yes** to apply changes.

17. After monitor restart, wait approximately one minute to get first sample in.

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Client Node V	Vindows Help							
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	y v a v	••					Units Status	
Configured								_
S AC189					-			
	A_PLUS_7510		A_	PLUS_RWP_6301	A_PLUS_RWP_	_6301_RAW	📓 U_A_PLUS_7510	
0.5 -			0.5 - 63	1610	0.3 - 153172			-
0.5 .			0.5. 0	510	0.5. 155172			
-			-				🛇 U PLUS RWP 6301	
×.	C/cu	ft 🛛	S	C/cuft	S	C/cuft		
5.0 :			5.0 :	130	10.0 : 8			
							U_SIMUL_ADC	
	H01			P01	T01			
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							Alaim Group Status	
Nelve i	4.0 % DL		🔗 Value i	20.0 D-	Nolum 1 61.0	**		
Value :	4.0 %KF	1	Value :	29.0 Pa	Value : 61.0	-U		
							Database Status	
essages							0 00000_0000	
Node	Date/Time	Source	Type		Messane			
AC189	2018-12-11 08:13:52	FMSOPCUA.	. Ok	OPC Server Ok	message			
AC189	2018-12-11 08:13:52	AC189	Ok	Main Database Ok				
AC189	2018-12-11 08:13:52	FMSOPCUA	. Ok	OPC Server Ok				
Local	2018-12-11 08:13:42	Local AC189	Ok	Monitor Has Connected AC18	9 from 192.168.1.23			
AC 103	2010-12-11 00.13:31	AC 103	warning	womonitoring wode mas Stopped		•		
							2018-12-11 08	16
							2010-12-11 00.	10.

Replacing Instrument with Multicast Enabled

The following steps outline how to replace instrument with IP address 192.168.1.61 and serial number 123456 by serial number 987654 when instrument multicast is **enabled**.

1. Disable instrument from the **control** screen X.

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Client Node Windows Help	
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Configured	Units Status 💿
⊘ AC189	
Alarm Group Recipe Unit Recipe Sample Point Recipe Portable Download Config Control Current Node	☑ U_A_PLUS_7510
Unit Recipe List Current Recipe Current State	
U_A_PLUS_7510 No Change - Default Disabled	
U_PLUS_RWP_6301 No Change Disable Disabled	U_PLUS_RWP_6301
U_SIMUL_ADC No Change V Default Enabled	
	Alarm Group Status
Apply Selected Recipe Apply All Recipes	2) Database Status
Messages	Oatabase_Status
Node Date/Time A Source Type Message	
Local 2018-12-11 07:57:16 Local Ok Monitor Has Connected AC189 from 192.168.1.23	
	2018-12-11 07:58:49

FMS Client Client			
Client Node Windows Help			
Configured			Units Status
AC189 A_PLUS_7510	A_PLUS_RWP_6301	A_PLUS_RWP_6301_RAW	☑ U_A_PLUS_7510
0.5 : ☑ C/cuft	0.5 : 78600	0.3 : 158169	☑ U_PLUS_RWP_6301
5.0 : H01	5.0: 390 P01	10.0 : 19 T01	☑ U_SIMUL_ADC
			Alarm Group Status
Value: 18.0 %RH	Value: 17.0 Pa	Value: 59.0 *C	
Messages			☑ Database_Status
Node Date/Time Source	Type Ok Monitor Has Connected AC189 f	Message rom 192.168.1.23	
			2018-12-11 07:59:53

- 2. Connect instrument serial number 987654 on the network.
- 3. Go to FMS configuration screen.
- 4. Expand **Monitor Summary**.
- 5. Expand **Configure Devices**.
- 6. Click **AeroTrak+ Devices**.
- 7. The replacement instrument with serial number 987654 displays **NEW** mode.
- 8. Select **serial number** 123456 and click **Configure**.
- 9. Replace serial number 123456 with 987654.
- 10. Click **OK**. Replacement instrument displays in **PENDING** mode.
- 11. Modify **location** if required.

wice Settings [Device Recipe				
Device Informa	tion		Channel Settings		
Serial Number	* 987654		Channel List 0.2		•
Location	ROOM 100				+
IP Address	192.168.1 .61			Name	•
Port	502		0.3		
		Using DHCP	0.5		
Init Informatio	n		10.0		
			5.0		
Unit Name *	U_PLUS_RWP_6301		SerialNumber		
Comments			Volume		
Nominal Flow R	ate 0.1 ngs Alarm Enabled 2019-01-01		Sampling Settings		-
Calibration Setti			Start Delay Time (s)	0	•
Calibration Setti			Comple Time (a)	60	
Calibration Setti Calibration Calibration Buffer Settings			Sample Time (s)	00	v



12. Click **Refresh** and then **OK**.

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	s 🔍 🚽	* 🔷 💴 🖬	Actions	دراء کہ جب	111 [919]			Units Status
AC189								
onfiguration		Sorial Number	ID / Port	Sample Pointe	Statue	LED	Configura	U_A_PLUS_7510
Monitor Summa	ary	987654	192.168.1.61/502	A PLUS RWP	DISABLED	OFF	Conligure	
 Configure Do AeroTrak 	evices + Devices						Create	
Commun	nications	751002	192.168.1.60/502	A_PLUS_7510	DISABLED	OFF	Disable	
Units Digital O	utputo						Enable	
Sample	Points						LED	2 0_PL05_RVVP_6301
Recipes							ALL LED OFF	
Alarm Group	os						Delete	
Buddy Settings Database Settin Mirror Database Reporting Settin	s ngs 9 Settings							☑ U_SIMUL_ADC
SecurityPage	12							
∀ Ok ssages	Cancel						Refresh	Otabase_Status
Node	Date/Time	 Source 	Туре		Ν	Message		
AC189	2018-12-11 08:13	:52 FMSOPCUA	. Ok	OPC Server Ok				
AC 189	2010-12-11 08:13 2018-12-11 08:13	52 AC189	Ok	OPC Server Ok				
local	2018-12-11 08:13	:42 Local	Ok	Monitor Has Conne	cted AC189 from	192.168.1.23	_	
	0040 40 44 00.40	-21 AC199	Mamina	Manitasing Nada Ha	e Stoppod			

- 13. Instrument to be replaced with serial number is now removed from the list of instruments.
- 14. Click **OK**.
- 15. Click **Save** to save configuration.
- 16. Click **Yes** to apply changes.
- 17. After monitor restart, wait about one minute to get first sample in.

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Client Node W	indows Help			
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	· · · · · · · · · · · · · · · · · · ·			Units Status
Configured				
S AC189				
	A_PLUS_7510	A_PLUS_RWP_6301	A_PLUS_RWP_6301_RAW	
0.5 :		0.5 : 58500	0.3 : 147817	
X	C/cuft	C/cuft	C/cuft	O_U_PLUS_RWP_6301
-				
5.0 :		5.0: 40	10.0 - 2	
				OU_SIMUL_ADC
	H01	PU1	T01	
				Alaura Orana Olatina
				Alarm Group Status
🔗 Value -	2.0 %RH	🔗 Value: 48.0 Pa	✓ Value · 3.0 °C	
Value .	2.0 /01/11	Value: 40.0 Ta	Value : 0.0 C	
Masagas				Oatabase_Status
wessages				
Node	Date/Time Source	Туре	Message	
AC189	2018-12-11 08:33:04 AC189	Ok Main Database Ok		
AC189	2018-12-11 08:33:04 AC189	Ok Main Database Ok		
AC189	2018-12-11 08:33:04 FMSOPCUA	Ok OPC Server Ok		
Local	2018-12-11 08:32:54 Local	Ok Monitor Has Connected AC189	from 192.168.1.23	
				2018-12-11 08:34:23

Replacing Instrument with FMS Template

- 1. Prior to beginning this process, the instrument is required to be setup with the same IP address as the one that needs replacement. To do this, use the TSI Remote APP to setup instrument.
- 2. From the **AeroTrak+ Devices** screen, select the instrument to be replaced.
 - Click **Configure**.
 - Save settings as a template.
 - Close **Configure** window.
 - Select instrument to be replaced and delete it.
 - Connect new instrument to the network.
 - When it appears in the list, it will display in **NEW** mode.
 - Select new instrument and click **Configure**.
 - Load settings from template.
 - Confirm settings are correct and click **OK**.
 - Click Save.
 - Click **Yes** to reboot.
- 3. FMS will automatically reprogram the instrument with all settings (device unit) associated with the instrument IP address.

Security

With introduction of the AeroTrak+ Remote Particle Counter driver, the following security rights can be assigned.

User Groups Level

Configure Node:

• TSI Next Gen

Files to Backup

With the introduction of the AeroTrak+ Remote Particle Counters, new files are required to be added to the configuration backup.

Listed below are **ALL** the folders and files required to be included in the FMS 5 configuration backup.

- ➢ C:\FMS5\Config\Actions*.*
- ➢ C:\FMS5\Bin\Guard.ini
- C:\FMS5\Config\NodeLocal.xml
- C:\FMS5\Config\NodePassword.xml
- C:\FMS5\Config\ServerOptions.xml (Only if FMS OPC UA SVR option is installed)
- C:\FMS\Maps\NodeName.jpg
- C:\FMS\Maps\NodeName.xml
- C:\FMS5\Node\NodeName.xml
- C:\FMS5\Node\AlarmGroups*.* (And Sub folders)
- C:\FMS5\Template*.* (AeroTrak+ instrument Template files)
- C:\FMS5\PKI*.* (And Sub folders, only if FMS OPC UA SVR option is installed)
- > C:\FMS5\Translations*.* (And Sub folders, only for Non English FMS5 Interface)

Troubleshooting

- 1. Some Windows[®] 7 Operating Systems will mysteriously refuse sending multicast messages. You may have to add the **Reliable Multicast Protocol** in the protocol list used by the network card.
- 2. Multicasting **DOES NOT** work on an Ethernet network where multicast addresses are blocked.

You may have to edit the Windows registry to add the IGMP protocol values as outlined below.

- Open the Registry Editor , then navigate to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\
- In the right pane, right-click and select New DWORD (32-bit value) and set name as IGMPVersion, set it with the value to 4.

A value of 4 means support IGMP version 3.

In the right pane, right-click and select New – DWORD (32-bit value) and set name as IGMPLevel and set it with the value to 2.

IGMP level 2 means it supports sending and receiving multicast packets.

Restart computer to take the new settings into account.

IMPORTANT NOTE

To edit the Windows registry, you must be logged in with an account having local administrative rights.

- 3. You may also need to verify the availability of the default port 5000. Follow the process below to do so.
 - > Open **Resource Monitor**.
 - Select **Network** tab.

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- 4. If the port 5000 is used by other programs, re-assign a new multicast port for both instrument and FMS.
- 5. Verify instrument is set to use TSI Modbus map version 2.x by following the process outlined below.
 - If the configuration of multicasting instrument serial number or location fields does not match the expected values, fields will be blank or contain garbage.
 - Use the TSI Remote APP to verify the use of the correct Modbus Map Version 2.x.

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Device Information	on		(Channel Settings		
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Location	< /					+
IP Address	192.168.200.68				Name	-
Port	502			SerialNumber		
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References—Technical Bulletins

- TCC-121—FMS 520 Historic Driver Setup Configuration
- TCC-123—Configure Operation Cleaning Cycle Recipe
- TCC-137—FMS 530 FMS Alarm Group with Messages Setup Configuration
- TCC-166—How to Setup AeroTrak+ Remote Particle Counter with Pump (6000 Series)
- TCC-167—How to Setup AeroTrak+ Remote Particle Counter (7000 Series)
- TCC-174 How to Configure AeroTrak+ Remote Particle Counter Instant Alarm

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