TSI® FMS 5 SOFTWARE HOW TO CONFIGURE IN OPERATION AND CLEANING CYCLE RECIPES

TECHNICAL BULLETIN TCC-123 (US) (8/31/2015) Rev A

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Description

The purpose of this document is to provide instructions on how to setup a Recipe to change a specified Sample Point's "**Cleaning Cycle**" and "**In Operation**" alarm limits.

To eliminate particle alarms during the cleaning cycle of a Grade A room (ISO 5), we want to simply turn off the alarm parameters without having to reconfigure the sample points when the cleaning cycle starts. In this technical note we will explain how to create two sample points, one for CF and one for m³. For each we will set the "**In Operation**" alarm limits per EU GMP Annex 1, and no limits when "**Cleaning Cycle**" is run.





Note

If you want to create a Recipe for "In Operation/At Rest" the same configuration method applies.

Requirements

• FMS 5.0.7 or later must be installed.

Assumptions

We will assume that the Communication Channel and the Unit are already configured within FMS 5. The configuration example shown in this note will use the following consideration:

•	Room Classification:	ISO 5
•	Communication Channel for a 7510:	TCP_192_168_251_139
•	Unit Name:	Room28
•	Sample Point Name for CF:	Room_28_Cf
•	Alarm Limits for CF "In Operation":	
	 Upper Alarm Limit > 0,5μm: 	100
	 Upper Alarm Limit > 5,0µm: 	1
	• Sample Point Name for m ³ :	Room_28_m3
•	Alarm Limits for m ³ "In Operation":	
	 Upper Alarm Limit > 0,5μm: 	3520
	 Upper warning > 0,5µm: 	2000
	 Upper Alarm Limit > 5,0µm: 	20
	 Upper Warning Limit > 5, 0μm: 	10
•	Alarm Limits for CF & m ³ "Cleaning Cycle":	None
•	Recipe Name for Cleaning:	Cleaning_Cycle
•	Alarm Group:	CleaningRoom_28

Configuration Instructions

A. Configuring Sample Points and Alarms Limits for "In Operation"

1. Within FMS 5 Configuration create a Recipe called "Cleaning_Cycle".



- 2. Add a comment or description for this recipe followed by "**Ok**".
- 3. Within FMS 5 Configuration, create a Sample Point Name called "Room_28_Cf" followed by "**Ok**".

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Client Node Windows Help							
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Configured							
S FMS-DEMO							
Configuration	Name	▲ Unit	Turne	Input	Display Unite	Comment	Comment?
 Monitor Summary 	T 028	SENSORSIM	Random	Δ	°C	Comment	Commentz
Alarm Groups	T 027	SENSORSIM	Ramp	A	°Č		
Communications	T 026	SENSORSIM	Random	B	°Č		
Digital Outputs	T 025	SENSORSIM	Ramp	B	°Č		
Sample Points	T 024	SENSORSIM	Random	c	°C		
Units	T_004	SENSORSIM	Ramp	G	°C		
Recipes	T_003	SENSORSIM	Ramp	F	°C		
Actions	T_002	SENSORSIM	Random	G	°C		
System Settings	T 001 Enter New	Name		X	°C		
Wonitor Settings	Room_027_C				C/cuft		
Duddy Settings	Room_026_C New Name	Room 28 CE		-	C/cuft		
Mirror Database Settings	Room_025_C	[recont_re_ort			C/cuft		
Poporting Settings	Room_024_C				C/cuft		
SecurityPage	Room_019_C				C/cuft		
, occurry age	P_028				Pa		
	P_027		Ok	Cancel	Pa		
	P_026			Cancer	Pa		
	P_025	0510000011	-	-	Pa		
	P_024	SENSORSIM	Ramp	E	Ра		
	LAF_028_CF	OPCSIMULA	Counts	G	C/cuft		
	LAF_027_CF	OPCSIMULA	Counts	н	C/cutt		
	LAF_026_CF	OPCSIMULA	Counts	1	C/cuft		
	LAF_025_CF	OPCSIMULA	Counts	J	C/cutt		
		OPCSIMULA	Counts	n.	C/cuit		
VOk XCancel	LAF_019_CF	OPCSIMULA	Counts	L	C/Cuit		
Messages							
Node Date/Time	 Source Typ 	e			Message		
FMS-DEMO 17-08-2015 08:56	:21 Room_019_CF Ok	2015-08-17	08:50:10 - Roor	n_019_CF Stopped	d Alarming Time i	in Alarm:0:06:11;	; [0.3] Mean: 357 Min: 89 Max: 739
FMS-DEMO 17-08-2015 08:56	21 Room_025_CF Alarm	2015-08-17	08:56:21 + Roo	m_025_CF Has St	arted Alarming.0.	.3 UpperAlarm 8	2;
FMS-DEMO 17-08-2015 08:55	:20 Room_026_CF Ok	2015-08-17	08:25:26 - Roor	n_026_CF Stopped	d Alarming Time i	in Alarm:0:29:53	; [0.3] Mean: 395.727 Min: 83 M
FMS-DEMO 17-08-2015 08:54	:18 LAF_024_CF Alarm	2015-08-17	08:54:18 + LAF	024_CF Has Star	ted Alarming.0.1	UpperAlarm 100);0.3 UpperAlarm 1;0.5 UpperAla
FMS-DEMO 17-08-2015 08:53	:16 Room_028_CF Alarm	2015-08-17	08:53:16 + Roo	m_028_CF Has St	arted Alarming.0.	3 UpperAlarm 8	2;
EMS_DEMO 17_08_2015_08:51	12 LAE 024 CE Ok	2015-08-17	08-22-20 - LAF	024 CE Stonned 4	Alarming Time in	Alarm:0:28:51: [0 31 Mean: 306 333 Min: 25 May 🏾 🎽
Node: FMS-DEMO is in ALARM STAT	E						17-08-2015 08:56:54

 Set "Unit", "Data Type", "Input Index"...as shown followed by "Ok".



5. Edit the new sample point's properties and go to the "Recipe" tab.

For "Preferred Tag" select "0.5".



6. Go to the "Alarms" tab.

Click on the "Class/Standard" button.

Ê,	iample P	oint: Ro	oom_	28_C	F	Classification Properties	×
1	General	SPC	Rec	cipe	Alarms	Classification/Standard	
	Default	Recipe	Prop	ertie	s	0.5u	
					0.5	5.0u	
	Uppe	Alarm)	None	
	Uppe	r Warni	ng)		
	Lowe	Warni	ng)		
	Lowe	Alarm			1		
						OK Cancel	
			Set I	Point	and Devia	ation Class/Standard	
	Class	fication	:	_			
			_				
						VOK XCancel	

 From the drop-down list select "EU GMP Grade A In Operation/at rest(ft3)" followed by "Ok".



ecipe Alarms	Classification/Standard
perties	0.5u 100
0.5	5.00 1
0	Eu GMP Grade A In operation/at rest(ft3)
0	
0	
0	
	OK Cancel
Point and Dev	iation Class/Standard
	Alarms operties 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

General	SPC	Recipe	Alarms	Driver	Driver Recip	be		
Default	Recipe	Propertie	s				S	elect the alarm limi
			0.5		5.0	Volume		
Upper	r Alarm	v	100	√ 1		0		
Upper	r Warni	ng 🗌	D	0 🗆)	0		
Lower	r Warni	ng 🗌	D	0 🗆)	0		
Lower	r Alarm		0	0 🗌)	0		
					1		1	
		Set Poin	t and Devia	ation		(Class/Standard	
Classification: Eu GMP Grade A In oper					ration/at rest	(#3)		

9. Go to the "General" tab.

Select "**Cleaning_Cycle**" from the "Recipe" drop-down list.

Sample Point: Ro	m_28_CF	
General SPC	Recipe Alarms Driver Driver Recipe	
Sample Point Na	me Room_28_CF	
Unit	Room_028	-
Data Type	Counts	•
Input Index	Counts	•
Display Units	C/cuft	-
Decimal Places	0	
Recipe	Default	
Comments	Ceaning_Cycle	
Additional Comn	ents	
Calculate MK	v Use logarithmic graph scales	
	ГУОК 🔀	Cancel

10. Go to the "Alarms" tab.

Click the "Class/Standard" button.



11. From the drop-down list select "None" followed by "**0**k".

Classification Prop	erties		?	×		
Classification/Stand	lard					
0.5						
5.00						
None						
- None						
		ОК	Cancel			
10	Sample Point: Room	_28_CF				X
	General SPC Re	cipe Alarms (Driver Driver Rec	ipe		
	Ceaning_Cycle Re	cipe Properties				
		0.5	5.0	Volume		
	Upper Alarm	✓ 100	√ 1	0		
	Upper Warning	0	0	0		
	Lower Warning	0	0	0		
	Lower Alarm	0	0	0		
	Set	Point and Deviat	ion		Class/Standard	
	Classification: N	one				
					∕ ОК	Cancel

12. Deselect "Upper Alarm" for "0.5" & "5.0".

Replace both values by "0" (zero) followed by "**Ok**".



13. Create a "Sample Point Name" called "Room_28_m3".

Set "Unit", "Data Type", "Input Index"...as shown followed by "**Ok**".

Sample Point: Room_2	8_m3	
General SPC Reci	pe Alarms Driver	Driver Recipe
Sample Point Name	Room_28_m3	
Unit	Room_028	•
Data Type	CountsPerM3	•
Input Index	Counts	•
Display Units	C/m3	•
Decimal Places	0	\$
Recipe	Default	•
Comments		
Additional Comments		
Calculate MKT	🕖 se logarithmic	graph scales
	-	
		Cancel

14. Edit the new sample point's properties and go to the "Recipe" tab.

For "Preferred Tag" select "0.5".

Sample Point: Room_28_n	13			×
General SPC Recipe	Alarms Driver Drive	r Recipe		
Default Recipe Propertie	s			
 Enabled Retriggerable Alarm 	IS	✓ Fileable		
Hide				
Disable Acknowled	je			
Alarm Threshold		0		
Sample Period		0	▲ ▼	
Preferred Tag		0.5	•	
Enable Buffer Dowr	load	Buffer Size 1	•	
	Only available in Fl	MS 5.2 or above		
			✓OK XCance	

15. Go to the "Alarms" tab.

Click on the "Class	/Standard"	button.
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16. From the drop-down list select "EU GMP Grade A In Operation/at rest(m3)" followed by "Ok". This will set the Upper Warning and Upper Alarm limits value.

0

0

Set Point and Deviation
Classification: Eu GMP Grade A In operation/at rest(m3)

Lower Warning

Lower Alarm

0

0 🗌

0 🗌

0 🗆

Class/Standard

VOK XCancel

17. Go to the "General" tab.

Select "**Cleaning_Cycle**" from the "Recipe" drop-down list.



18. Go to the "Alarms" tab.

19. Click the "Class/Standard" button.

Sample Point: Room_28_m3	Classification Properties	× ×
General SPC Recipe Alarr	Classification/Standard	
Ceaning_Cycle Recipe Proper	0.5u 3520	
0.5	5.0u 20	
Upper Alarm 🗹 3520	Fu GMP Grade A In operation/at rest(m3)	5
Upper Warning 🔽 2000		
Lower Warning 0		
Lower Alarm 0		
	OK Canc	*
Set Point and I		
Classification: Eu GMP Gra	de A In operation/at rest(m3)	57
	ГОК ХС	ancel

20. From the drop down list select "**None**" followed by "**Ok**".



21. Deselect "Upper Alarm" for "0.5" & "5.0".

Replace both values by "0" (zero) followed by "**Ok**".

22. Click **OK**.

Sample Point: Room	_28_m3				×
General SPC Re	ecipe Alarms	Driver Driver R	ecipe		
Ceaning_Cycle Re	cipe Properties				
	0.5	5.0	Volume		
Upper Alarm	0	0 🗌	0		
Upper Warning	0	0	0		
Lower Warning	0	0	0		
Lower Alarm	0	0 🗌	0		
Set Point and Deviation Class/Standard					
Classification: None					
				VOK XCance	

23. Two new sample points for Room_28 are now created with alarm limits for "In Operation" and "Cleaning_Cycle".

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Configured								
S FMS-DEMO								
Configuration	Name		Type	Input	Display Units	Comment	Comment?	
 Monitor Summary 	T 028	SENSORSIM	Random	Δ	°C	oominent	Commente	
Alarm Groups	T 027	SENSORSIM	Ramn	2	°C			
Communications	T 026	SENSORSIM	Random	B	ŝ			
Digital Outputs	T 025	SENSORSIM	Ramn	B	°Č			
Sample Points	T 024	SENSORSIM	Random	č	°Č			
Units	T_004	SENSORSIM	Ramo	Ğ	°C			
Recipes	T_003	SENSORSIM	Ramp	F	°C			
Actions	T 002	SENSORSIM	Random	G	°C			
System Settings	T 001	SENSORSIM	Random	F				
Monitor Settings	Room 28 m3	Room 028	CountsPerM3	Counts	C/m3			
Buddy Settings	Room 28 CE	Room 028	Counts	Counts	C/cuft			
Database Settings	Room 027 CF	OPCSIVIULA	Counts	8	C/cuit			
Mirror Database Settings	Room 026 CF	OPCSIMULA	Counts	C	C/cuft			
Reporting Settings	Room 025 CF	OPCSIMULA	Counts	D	C/cuft			
 SecurityPage 	Room 024 CF	OPCSIMULA	Counts	E	C/cuft			
	Room 019 CF	OPCSIMULA	Counts	F	C/cuft			
	P 028	SENSORSIM	Ramp	С	Pa			
	P 027	SENSORSIM	Random	D	Pa			
	P 026	SENSORSIM	Random	E	Pa			
	P 025	SENSORSIM	Ramp	D	Pa			
	P 024	SENSORSIM	Ramp	E	Pa			
	LAF 028 CF	OPCSIMULA	Counts	G	C/cuft			
	LAF 027 CF	OPCSIMULA	Counts	н	C/cuft			_
	LAF 026 CF	OPCSIMULA	Counts	1	C/cuft			
VOk XCancel	LAF_025_CF	OPCSIMULA	Counts	J	C/cuft			•
Messages								
Node Date/Time	 Source Tv 	pe			Message			
EMS-DEMO 17-08-2015 09:4	0:41 Room 027 CF Alarm	2015-08-17	09:40:41 + Roor	n 027 CE Has	s Started Alarming 0.3	UpperAlarm 8	2:5 0 UpperAlarm 82:	
EMS DEMO 17.08 2015 09:3	9:39 Poom 028 CE Alarm	2015 08 17	09:39:39 + Door	028 CE Had	Started Alarming 0.3	Upper Alarm 8	2.	
THO-DEMO 17-00-2015 09.3	0.20 Deers 024 OF Alarm	2015-00-17	00-20-20 + Deer	- 024_CF Has	Stated Alarming.0.3		2, 0.5 0 Hanna Alanna 00;	
TWS-DEWO 17-08-2015 09:3	0.30 Room_024_CF Alarm	2015-08-17	09.30.30 + Roon	n_024_CF Has	s Started Alarming.U.3	OpperAlarm 8	2,5.0 OpperAlarm 82;	
FMS-DEMO 17-08-2015 09:3	7:36 Room_027_CF Ok	2015-08-17	09:35:32 - Room	_027_CF Stop	pped Alarming Time in	Alarm:0:02:03	; [0.3] Mean: 480.75 Min: 1	152 M
FMS-DEMO 17-08-2015 09:3	6:34 Room_026_CF Alarm	2015-08-17	09:36:34 + Roor	n_026_CF Has	s Started Alarming.0.3	8 UpperAlarm 8	2;	
Node: FMS-DEMO is in ALARM STA	πE						17-08-20	15 09:40:48

24. Create a new Alarm Group called "CleaningRoom_28" followed by "**Ok**".

🚯 Enter New	Name X
New Name	CleaningRoom_28
	Ok Cancel

25. Edit the new alarm group and enter a comment describing the use of this alarm group.

🔞 Alarm Group	:CleaningRoor	n_28			×
Name	CleaningRoot	m_28			
Comments	Group used t	o switch Off ALL alarm lin	nits for the particle	e counters located in Room 28	
Sample Point	t	Comments	Alarm Group	Comments	
Room	_28_CF _28_m3				
Alarm Group	Properties				
Enable	d	Visible			
				VOK XCance	

- 26. Select both sample points for Room 28 and select "**Enabled**".
- 27. Click "Ok".



28. Click "**Ok**" to restart the Monitor.



B. How to Run the Recipe "Cleaning Cycle"

1. Go to the "Control" page.



2. Select the Alarm Group Recipe named "CleaningRoom_28".

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Configured			Units Status			Ø
FMS-DEMO	la Daint Danina - Cantal Cur			ION		
Alarm Group Recipe Onit Recipe Samp	pie Point Recipe Control Curr	ent Node				
Alarm Group	Recipe		Room 028			
CleaningRoom 28 No Change		•	<u>.</u> ((0011_020			
			-			
			SENSORSIMI	ULATION		
			Statistics			Ø
			Sample Status	Tag Status	Alarm Limits	SPC Stat 4
			Name	Value		_
Apply Selected Recipe Apply All Recip	pes Restart Selected Alarm	Group(s) Restart All Alarm Groups	 ▶ 0.1 ▶ 0.3 ▼ 0.5 Upper Alar Upper War 	m 100		
Messages			Lower War	ning None		
Node Date/Time A	Source Type	Message	Lower Alar	m None		
FMS-DEMO 19-08-2015 08:51:12 192.	.168.251 Failure	Connection timed out	▶ 1.0			
FMS-DEMO 19-08-2015 08:51:12 192.	.168.251 Alarm	Started Failing:Connection time	▼ 5.0			
FMS-DEMO 19-08-2015 08:51:12 192.	.168.251 Failure	Connection timed out	Upper Alar	m 1		
FMS-DEMO 19-08-2015 08:51:12 192.	.168.251 Alarm	Started Failing:Connection time	Lower War	ning None		
			Lower Alar	m None		-
					19-08-201	5 08:51:36

3. Select "**Cleaning_Cycle**" from the "Recipe List" drop-down list.

FMS Client Client					
Cirent Node Vindows Help	Actions 🔥 📊 🗺				
Configured	Units Status @				
FMS-DEMO					
Alarm Group Recipe Disable					
Alarm Group Enable	☑ Room_028				
Ceaning_Cycle					
	Statistics				
	Sample Status Tag Status Alarm Limits SPC Stat				
Apply Selected Recipe Apply All Recipes Restart Selected Alarm	Group(s) Restart All Alarm Groups				
Node Data Time - Course Tree	Lower Alarm None				
EMS-DEMO 19-08-2015 08:52:24 192 168 251 Eailure	Connection timed out				
FMS-DEMO 19-08-2015 08:52:24 192.168.251 Alarm	Started Failing:Connection time				
FMS-DEMO 19-08-2015 08:52:24 192.168.251 Failure	Connection timed out Upper Alarm 1				
FMS-DEMO 19-08-2015 08:52:24 192.168.251 Alarm	Started Failing Connection time Cover Warning None Lower Warning None				
	19-08-2015 08:53:12				

4. Click "**Apply Selected Recipe**" and you will see the alarm value in the statistics windows change per the configuration.

Note
You may click "Apply All Recipes" if you have more than one group for which you want to run a recipe.

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Configured		Units Status	Ø
FMS-DEMO			
Alarm Group Recipe Unit Recipe Sample Point Recipe	e Control Current Node		
Alarm Group	Recipe	📓 Room_028	
		Statistics	Ø
		Sample Status Tag Status	Alarm Limits SPC Stat 4
		Name Value	A
Apply Selected Recipe Apply All Recipes Restart	Selected Alarm Group(s) Restart All Alarm Groups	 0.1 0.3 0.5 Upper Alarm 100 Upper Warning None Lower Warning None 	
	-	Lower Alarm None	
Node Date/Time Source	Iype Message	► 0.7	
EMS-DEMO 19-08-2015 08:54:08 192 168 251 A	larm Started Failing Connection time	▼ 5.0	
FMS-DEMO 19-08-2015 08:54:08 192.168.251 F	ailure Connection timed out	Upper Alarm 1	
FMS-DEMO 19-08-2015 08:54:08 192.168.251 A	larm Started Failing:Connection time	Upper Warning None Lower Warning None	
		Lower Alarm None	19-08-2015 08:54:45

5. Alarm levels for each sample point have now been changed as shown below.

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Configured			Units Sta	atus Ø	
S FMS-DEMO			📀 орс	SIMULATION	
			🗟 Roon	n_028	
Room_28_CF 0.5 : 0 C/cuft	Room_2 0.5 :	<u>≩</u> Room_28_m3 0.5 : 0 C/m3		SORSIMULATION	
			Statistic: Sample Name ▶ 0.1 ▶ 0.3 ▼ 0.5	s Status Tag Status Alarm Limits SPC Stat Value Value None	
Messages Node Date/Time FMS-DEMO 19-08-2015 08:56:5 FMS-DEMO 19-08-2015 08:56:5 FMS-DEMO 19-08-2015 08:54:0 FMS-DEMO 19-08-2015 08:54:0	Source Type 6 192 168 251 Failure 6 192 168 251 Alam 8 192 168 251 Failure 8 192 168 251 Failure	Message Connection timed out Started Failing Connection Connection timed out Started Failing:Connection	1 time ▼ UL	pper Warning None ower Warning None ower Alarm None pper Alarm None ower Warning None ower Warning None	
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Configured				Units Status	
FMS-DEMO					
				☑ Room_028	
Room_28_CF 0.5 : 1 C/cuft		Room_28_m3 0.5 : 0 C/m3			
				Statistics Sample Status Tag Status Alarm Limits SPC Name Value V0.5 Upper Alarm None Upper Varine None Lower Warning None	Stat◀
Messages				Lower Alarm None	
Node FMS-DEMO 19-0 FMS-DEMO 19-0 FMS-DEMO 19-0 FMS-DEMO 19-0 FMS-DEMO 19-0	Date/Time Source 8-2015 08:56:56 192.168.251 8-2015 08:56:56 192.168.251 8-2015 08:54:08 192.168.251 8-2015 08:54:08 192.168.251	Type Failure Connection Alarm Started Fa Failure Connection Alarm Started Fa	Message timed out ling Connection time timed out ling Connection time	Upper Alarm None Upper Warning None Lower Warning None Lower Alarm None Volume	
				19-08-2015 09	:00:11

6. After the cleaning cycle is finished you may want to set back the alarm levels by repeating from <u>step B-2</u> above and selecting "**Default**" for the recipe.

7. Alarm levels will be set back for both sample points per the configuration.

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Configured			Units Status	Ø
S FMS-DEMO				
			Koom_028	
Room_28_CF 0.5 : 0 C/cuft	<mark>⊠ Room_2</mark> 0.5 :	8_m3 0 C/m3		
			Statistics Sample Status Tag Status Alarr Name Value > 0.1 > 0.3 Upper Alarm 100	n Limits SPC Stat
Messages Node Date/Time FMS-DEMO 19-08-2015 09 FMS-DEMO 19-08-2015 09 FMS-DEMO 19-08-2015 09 FMS-DEMO 19-08-2015 09	▲ Source Type 01:52 192.168.251 Failure 01:52 192.168.251 Alarm 01:52 192.168.251 Failure 01:52 192.168.251 Alarm	Message Connection timed out Started Failing:Connection time Connection timed out Started Failing:Connection time	Upper Varning None Lower Alarm None 0.7 1.0 5.0 Upper Alarm 1 Upper Warning None Lower Varning None	-
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Configured				e N
			료 Room_028	
	suft	⊒ Room_28_m3 ■ 0.5 : 0 C/m3	SENSORSIMU	LATION
			Statistics Sample Status Name 0.5 Upper Alarn Upper Wam Lower Wam	Tag Status Alarm Limits SPC Stat Value
Messages			▼ 5.0	
Node FMS-DEMO FMS-DEMO FMS-DEMO FMS-DEMO	Date/Time Source 19-08-2015 192.168.251. 19-08-2015 192.168.251. 19-08-2015 192.168.251. 19-08-2015 192.168.251. 19-08-2015 192.168.251. 19-08-2015 192.168.251.	Type Messa Failure Connection timed ou Aarm Started Failing:Conr Failure Connection timed ou Alarm Started Failing:Conr	ye Upper Alam Upper Vam Lower Wam Lower Alam t to the to the top of top of the top of top o	ng 10 ing None None
				19-08-2015 09:04:29

Note

If you installed a switch within the cleanroom to switch from "In Operation" to "Cleaning Cycle", you can use the "Recipe Switch" functionality to run the recipe automatically by triggering an Event on one digital input.

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UNDERSTANDING, ACCELERATED

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