PARTICLE MEASURING SYSTEMS®
a spectris company

Without measurement there is no control

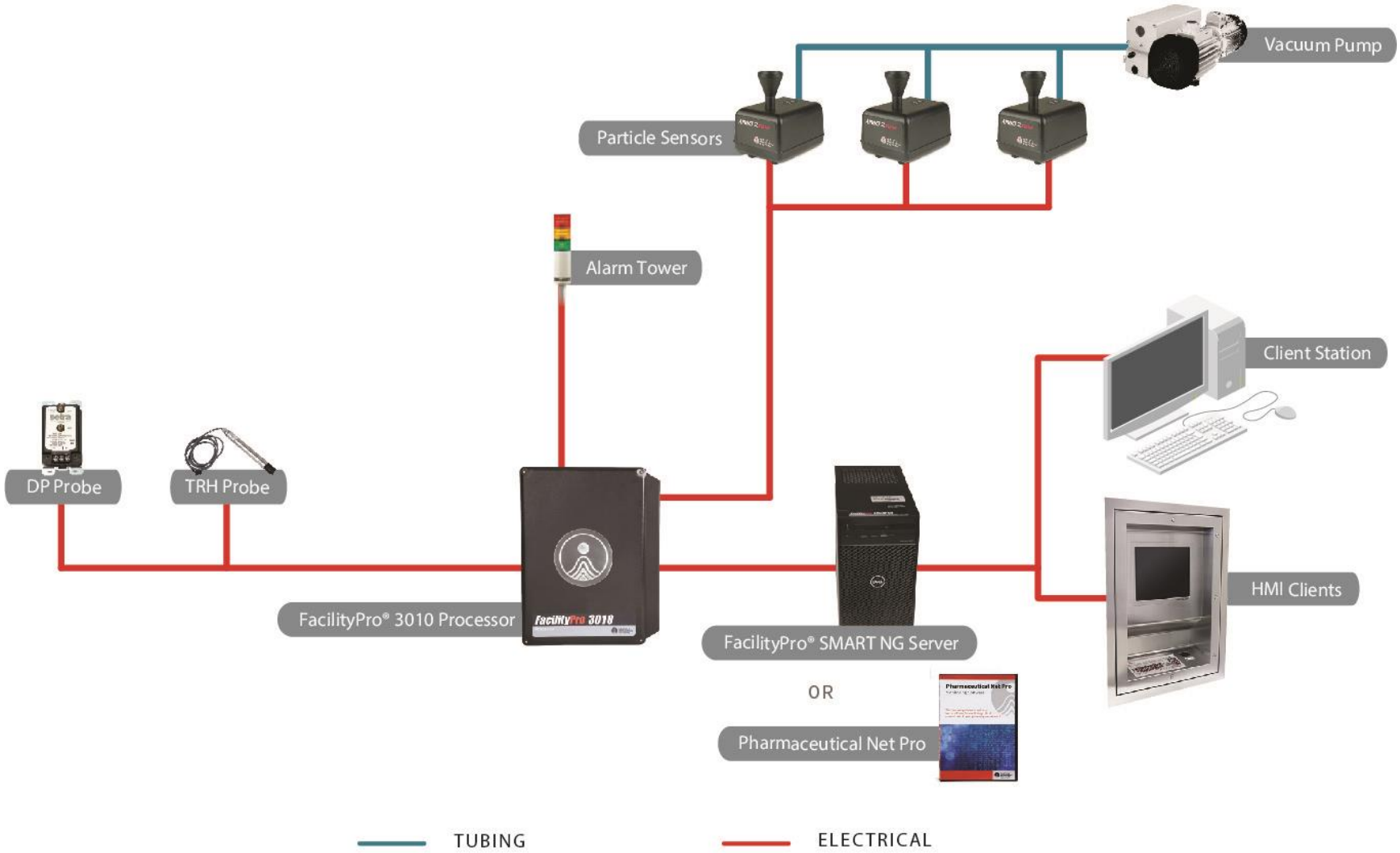
FacilityPro®

Environmental Monitoring Systems

Typical System Configurations

FACILITYPRO® 3010 **SYSTEM 1**

Particle Monitoring Central Vacuum



Components
FacilityPro 3010 Processor
FacilityPro SMART NG Software, Optional client station
Single Vacuum Pump with Manifold
Airnet® II 510 Particle Sensor
Single Light Tower
Optional Analog TRH and DP

NOTES: This system consists of a FacilityPro 3010 processor, SMART NG software, optional Client station for remote viewing or an HMI client for operators to interface with the software while in the cleanroom. There is the capability of up to 16 particle counters to be connected into the system. The vacuum pumps are a central vacuum either continuously on or can be controlled by the digital outputs from the processor to turn the pumps on or off. The pumps and vacuum of the system are not independently monitored for operation and rely upon the Airnet II for the flow control and any alarming for flow. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity sensor.

Positive aspects of this system:

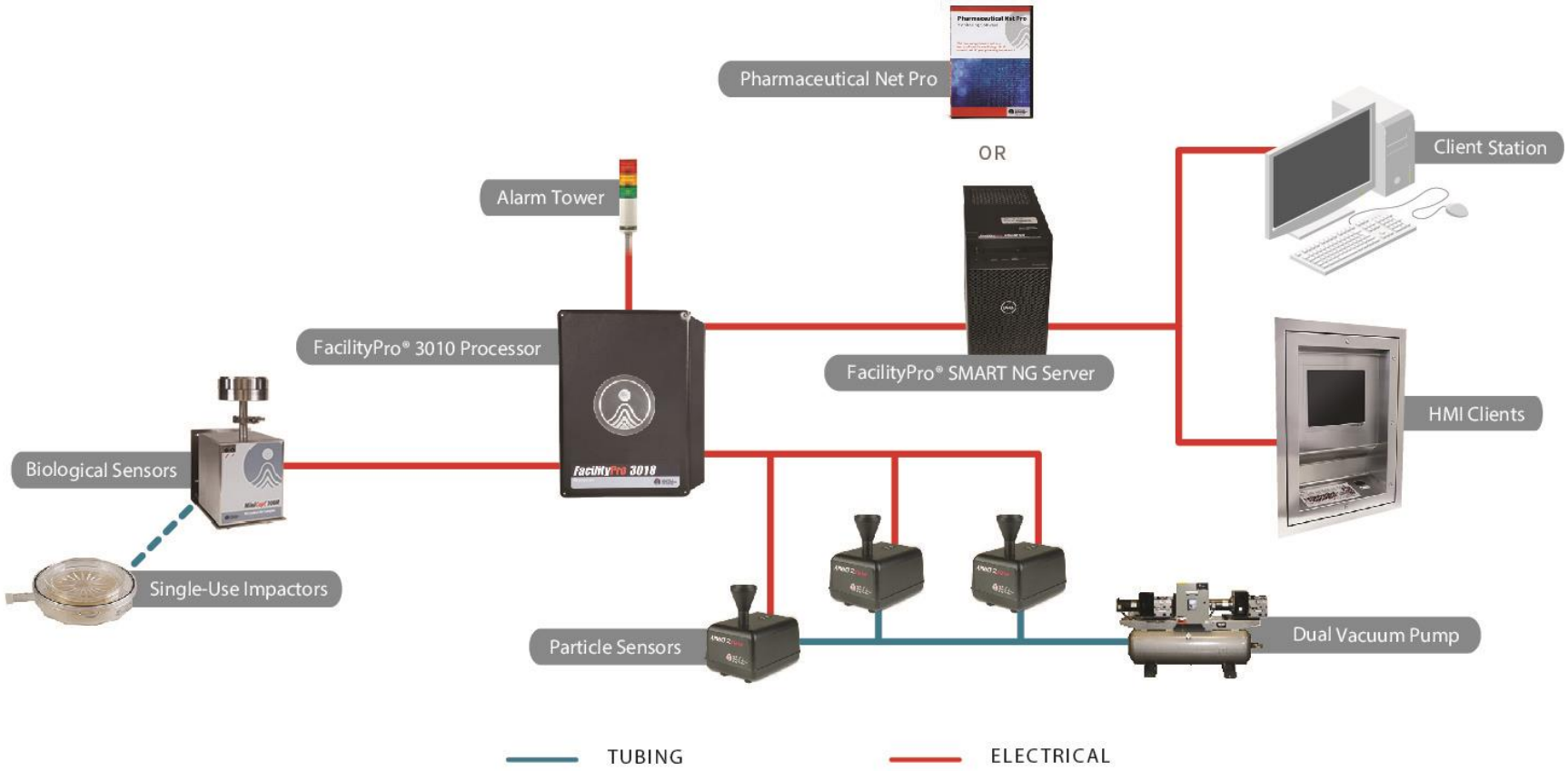
- Ideal for smaller system
- Uses Central Vacuum
- Analog inputs capabilities
- Digital output capabilities
- Preinstalled software on a Server grade PC
- Allows for Client access
- Up to 16 Particle counters

Items to consider:

- Does not control the Vacuum
- Limited to 16 points of measurement
- Digital Input and output limited to 8 DI and 16 DO when used with Analog inputs
- Analog Inputs limited to 8 Analog inputs
- Limited number of clients available

FACILITYPRO® 3010 **SYSTEM 2**

Particle Monitoring Central Vacuum and Built-In Pump Microbial Samplers



Components
FacilityPro 3010 Processor
FacilityPro SMART NG Software, Optional client station
Dual Vacuum Pump
Airnet® II 510 Particle Sensor
MiniCapt® Remote with BioCapt® Stainless Steel
Single Light Tower (multiple)
Optional Analog TRH and DP

NOTES: This system consists of a FacilityPro 3010 processor, SMART NG software, optional Client station for remote viewing or an HMI client for operators to interface with the software while in the cleanroom. There is the capability of up to 16 particle and/or microbial samplers. The particle counters are connected to a central vacuum system whereas the microbial sensors are utilizing the built-in pump sensors. The particle counters vacuum pumps are a central vacuum either continuously on or can be controlled by the digital outputs from the processor to turn the pumps on or off. The pumps and vacuum of the system are not independently monitored for operation and rely upon the Airnet II for the flow control and any alarming for flow. The processor controls the light tower with digital outputs.

Positive aspects of this system:

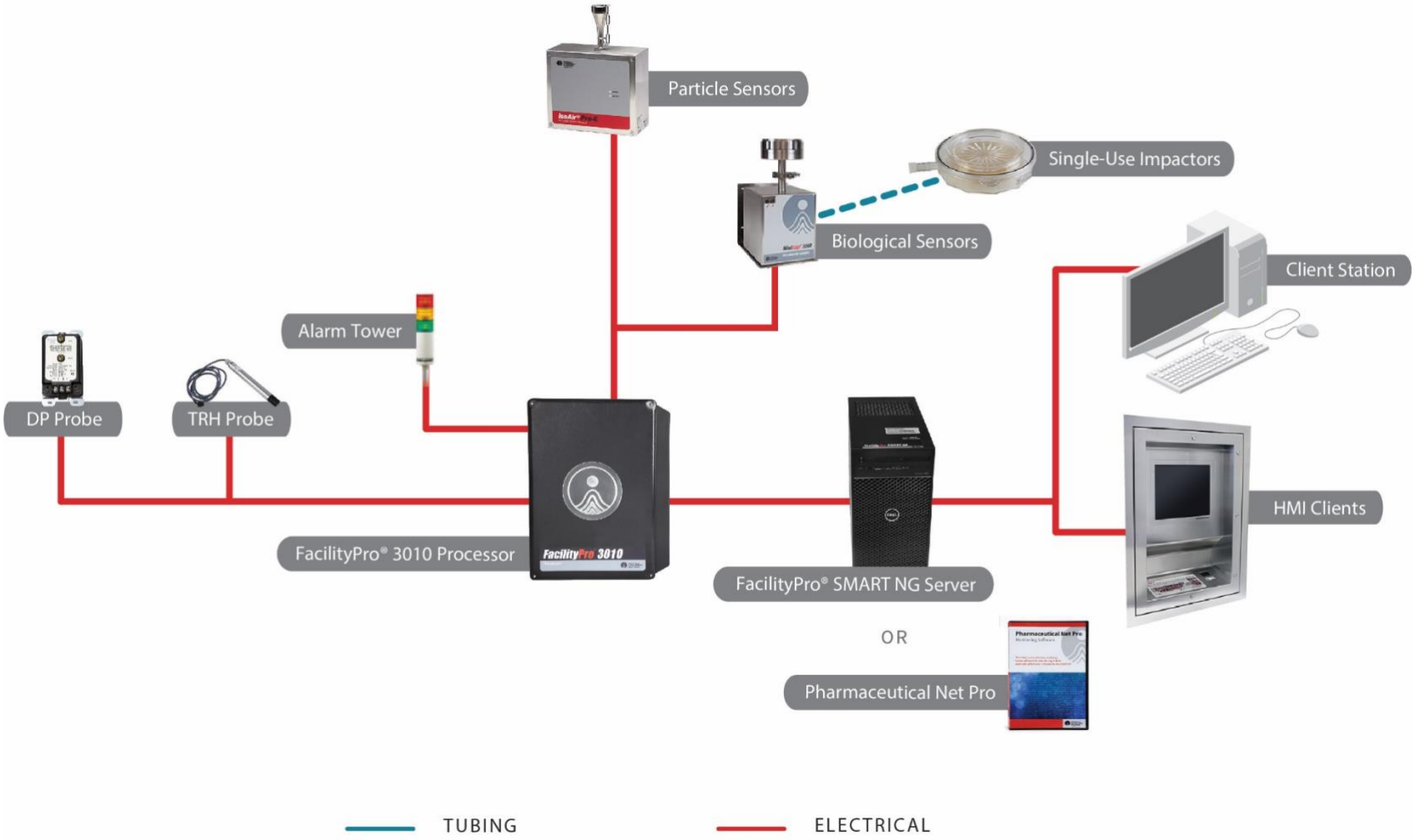
- Ideal for smaller system
- Ideal where customer has particle counters already installed and would like to update the software and add microbial without changing the existing particle counter infrastructure
- Uses central vacuum for the particle counters or may be reusing an older systems infrastructure
- Digital output capabilities
- Preinstalled software on a Server grade PC (Or Pharmaceutical Net Pro)
- Allows for Client access
- Up to 16 particle or microbial sensors can be connected to this system

Items to consider:

- Does not control the vacuum
- Limited to 16 points of measurement
- Digital Input and output limited to 8 DI and 16 DO
- Limited number of clients available
- No processor redundancy

FACILITYPRO® 3010 **SYSTEM 3**

Particle Monitoring and Microbial Samplers both with Built-In Pumps



Components
FacilityPro 3010 Processor
FacilityPro SMART NG Software, Optional client station
IsoAir® Pro-E Particle Sensor
MiniCapt® Remote with BioCapt® Single-Use or BCSS
Dual Light Tower
Optional Analog TRH and DP

NOTES: This system consists of a FacilityPro 3010 processor, SMART NG software, optional Client station for remote viewing or an HMI client for operators to interface with the software while in the cleanroom. There is the capability of up to 16 particle and/or microbial samplers. The particle counters and microbial samplers both use built-in pumps. The microbial sampler in this case uses the BioCapt Single Use or the BioCapt Stainless-steel Sampling head. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and/or Temperature and Humidity sensors.

Positive aspects of this system:

- Ideal for smaller system
- Allows for installation without installing a central vacuum system
- The microbial sampler in this case can use the BioCapt single use or BCSS
- Digital output capabilities
- Analog input capabilities up to 8 sensors
- Preinstalled software on a Server grade PC or Pharmaceutical Net
- Allows for Client access
- Up to 16 particle or microbial sensors can be connected to this system

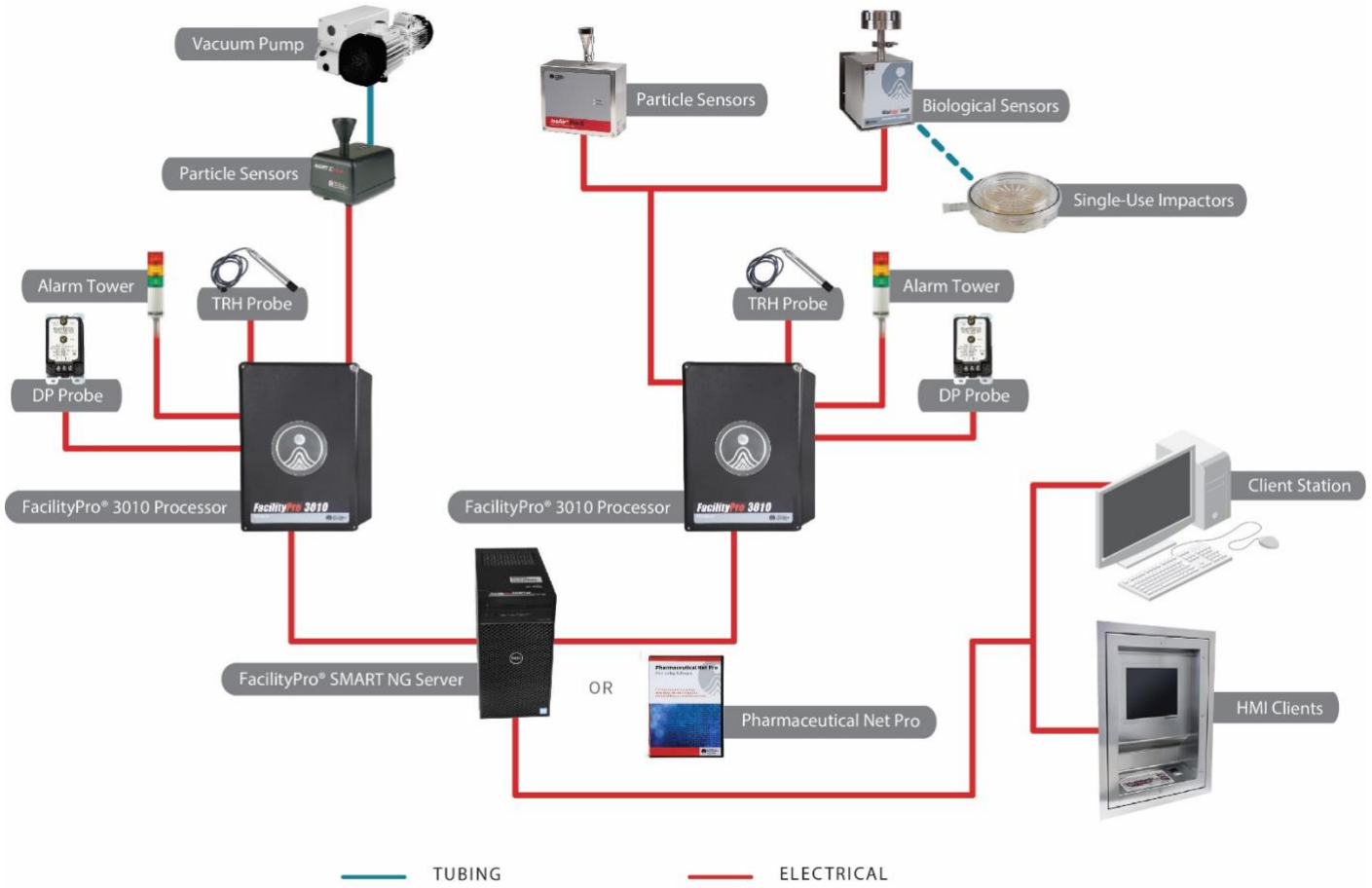
Items to consider:

- Does not have redundant vacuum control
- Limited to 16 points of measurement
- Digital Input and output limited to 8 DI and 16 DO
- Analog inputs limited to 8 points.
- Limited number of clients available
- No processor redundancy

FACILITYPRO® 3010 **SYSTEM 4**

Particle Monitoring and Microbial Samplers with Built-In Pumps and Particle Monitoring Using a Vacuum System

TWO PROCESSORS



Components
FacilityPro 3010 Processor (2)
FacilityPro SMART NG Software, Shared, Optional client station
Single Vacuum Pump
Airnet® II 510 Particle Sensor
IsoAir® Pro-E Particle Sensor
MiniCapt® Remote with BioCapt® Single-Use or BioCapt Stainless Steel
Single Light Tower and Dual Light Tower
Optional Analog TRH and DP

NOTES: This system consists of two FacilityPro 3010 processor, SMART NG software, optional Client station for remote viewing or an HMI client for operators to interface with the software while in the cleanroom. There is the capability of up to 16 particle and/or microbial samplers. The particle counters and microbial samplers both use built-in pumps. The microbial sampler in this case uses the BioCapt Single Use or the Stainless-steel Sampling head. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity Sensor.

Positive aspects of this system:

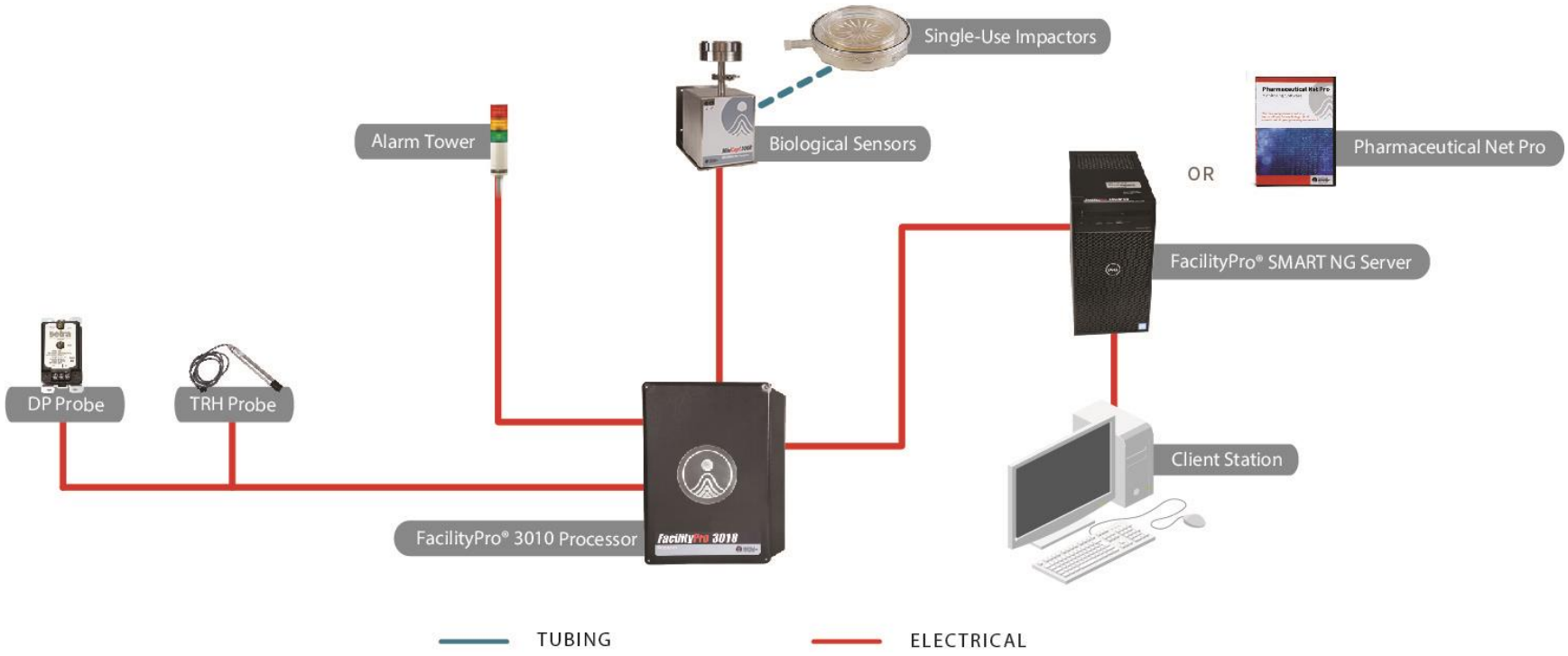
- Ideal for medium sized system
- Ideal for two filling rooms where you want to keep it logically separated by the processor or the Grade A areas from other lower classified areas.
- The SMART NG Software can control two processors for reduced installation costs
- Allows for installation in locations that need or don't need a central vacuum system
- The microbial sampler in this case uses the BioCapt stainless steel mounted to the MiniCapt Remote via a mushroom tri-clamp mount or BioCapt Single Use
- Digital output capabilities 8 Digital inputs 16 Digital outputs
- Analog input capabilities up to 8 sensors
- Preinstalled software on a Server grade PC or Pharmaceutical Net Pro
- Up to 16 particle or microbial sensors can be connected to each processor for a total of 32 sensors

Items to consider:

- Does not have redundant vacuum control
- Limited to 16 points of measurement
- Digital Input and output limited to 8 DI and 16 DO
- Analog inputs limited to 8 points
- No processor redundancy

FACILITYPRO® 3010 **SYSTEM 5**

MICROBIAL ONLY



Components
FacilityPro 3010 Processor
FacilityPro SMART NG Software, Optional client station
MiniCapt® Remote (multiple) BioCapt® SS or SU impactors
Single Light Tower
Optional Analog TRH and DP (multiple)

NOTES: This system consists of a FacilityPro 3010 processor, SMART NG software, optional Client station for remote viewing or an HMI client for operators to interface with the software while in the cleanroom. There is the capability of up to 16 microbial samplers connected to the software. The samplers use built in pump and are connected to stainless steel sampling heads or they could be connected to BioCapt Single Use as well. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity sensor.

Positive aspects of this system:

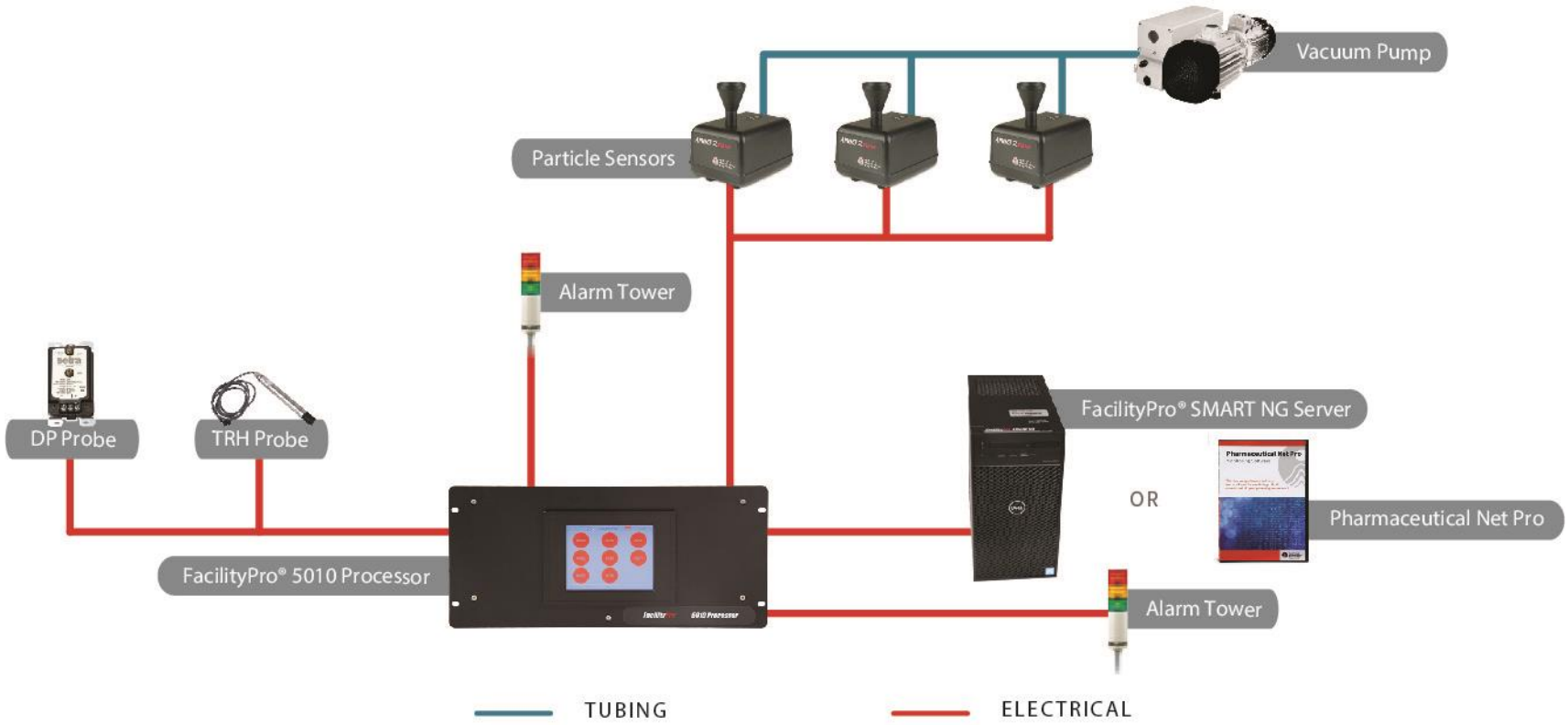
- Ideal for smaller system
- Ideal for customers who already have a particle monitoring system and want to expand to microbial sampling with minimal infrastructure changes. This also allows future integration of the particle counters possibly into the SMART NG software, if desired.
- Analog inputs capabilities
- Digital output capabilities
- Preinstalled software on a Server grade PC or Pharmaceutical net Pro
- Allows for Client access
- Up to 16 Microbial Sampling points

Items to consider:

- Limited to 16 points of measurement
- Digital Input and output limited to 8 DI and 16 DO when used with Analog inputs
- Analog Inputs limited to 8 Analog inputs
- Limited number of clients available

FACILITYPRO® 5010 **SYSTEM 1**

Particle Monitoring Central Vacuum



Components
FacilityPro 5010 Processor
FacilityPro SMART NG Software, Optional client station
Single Vacuum Pump
Virtual Module
Airnet® II 510 Particle Sensor
Multiple Light Towers
Optional Analog TRH and DP (multiple)

NOTES: This system consists of a FacilityPro 5010 processor, SMART NG software. There is the capability of up to 64 particle counters to be connected into the system. The vacuum pumps are a central vacuum either continuously on or can be controlled by the digital outputs from the processor to turn the pumps on or off. The pumps and vacuum of the system are not independently monitored for operation and rely upon the Airnet II for the flow control and any alarming for flow. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity Probe.

Positive aspects of this system:

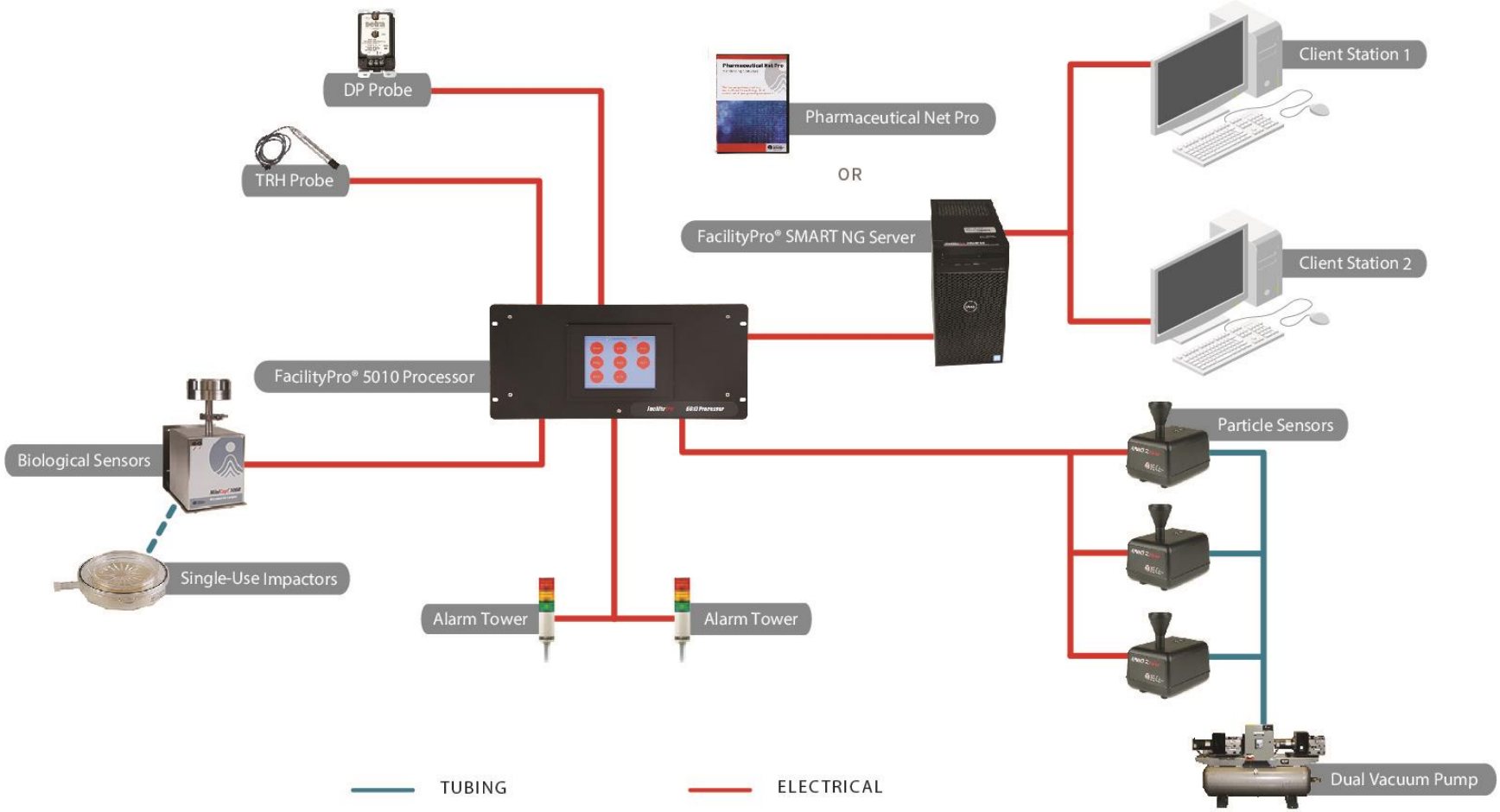
- Ideal for larger systems
- Uses Central Vacuum not monitored by the processor
- Analog inputs capabilities up to 192 sensors
- Digital output capabilities 128
- Digital input capabilities up to 64
- Preinstalled software on a Server grade PC
- Up to 64 Particle counters on a single processor

Items to consider:

- Does not control the Vacuum for redundancy
- Need to turn on vacuum pumps either manually or with digital outputs.
- Limited to 64 points of measurement per processor
- No clients on this configuration

FACILITYPRO® 5010 **SYSTEM 2**

Particle Monitoring with Central Vacuum and Microbial Sampling with Built-In Pump



Components
FacilityPro 5010 Processor
FacilityPro SMART NG Software, Optional client station (multiple)
Dual VAC Pump
Virtual Module
Airnet® II 510 Particle Sensor (multiple)
MiniCapt Remote, BioCapt® Stainless Steel or Single-Use
Multiple Light Towers
Optional Analog TRH and DP (multiple)

NOTES: This system consists of a FacilityPro 5010 processor, SMART NG software, optional multiple Client station for remote viewing. There has the capability of up to 64 particle or microbial samplers connected to the software. The vacuum pumps are a central vacuum either continuously on or can be controlled by the digital outputs from the processor to turn the pumps on or off. The pumps and vacuum of the system are not independently monitored for operation and rely upon the Airnet II for the flow control and any alarming for flow. The microbial samplers use a built-in pump and are not on the central vacuum system. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity sensors. The particle counters use a central vacuum system. The microbial samplers use built in pump and are connected to stainless steel sampling heads, Optional they could be connected to BioCapt Single Use as well. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity sensors.

Positive aspects of this system:

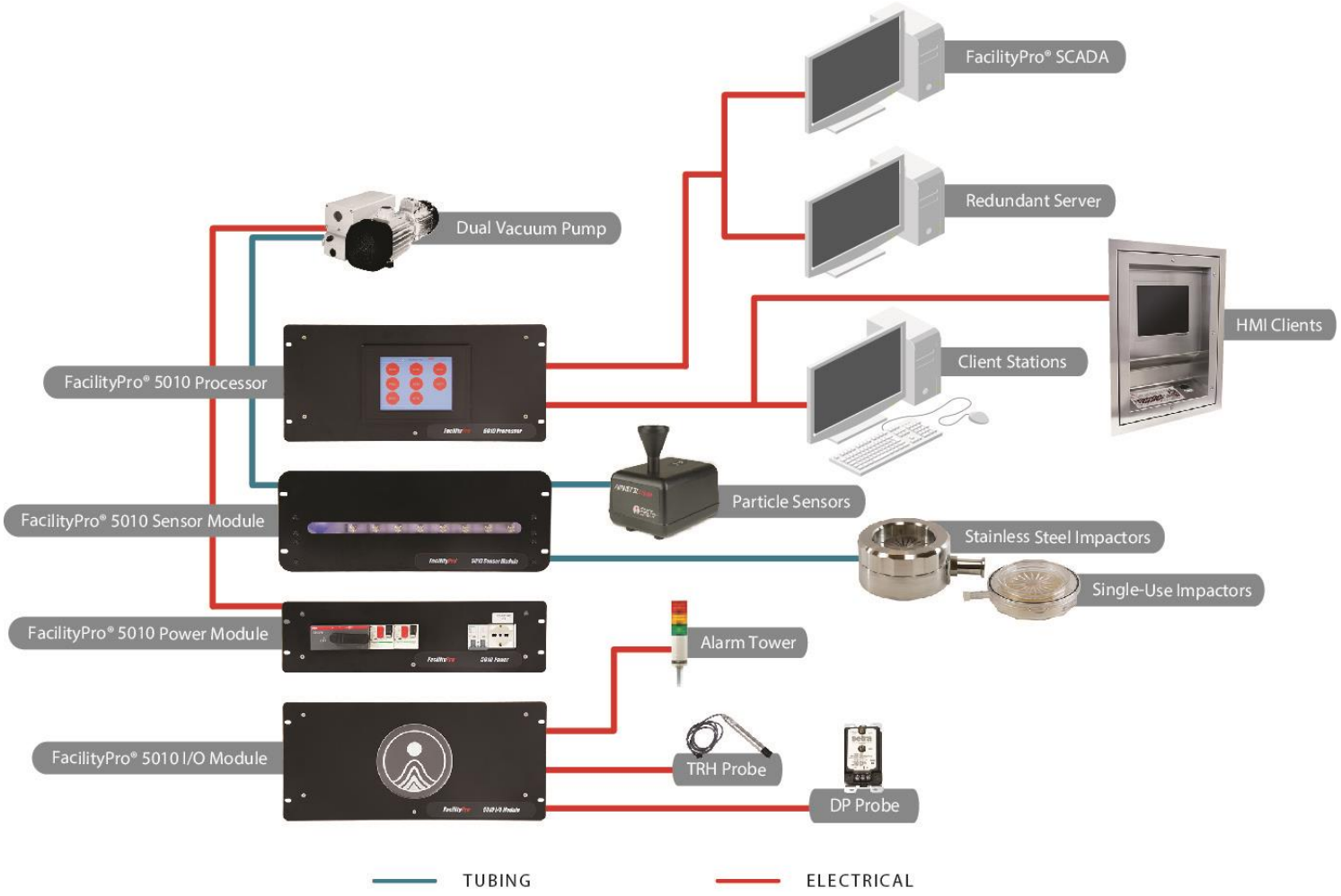
- Ideal for larger systems
- Ideal for customers who have a large number of sampling points to measure, multiple light towers and many analog inputs,
- Analog inputs capabilities up to 192 sensors
- Digital output capabilities 128
- Preinstalled software on a Server grade PC or Pharmaceutical Net Pro
- Allows for multiple Client access
- Up to 64 particle or microbial sampling points
- Particle counters are connected with virtual module not the Sensor module.

Items to consider:

- Limited to 64 points of measurement with one processor
- Vacuum system is not controlled by the processor. The Airnet II control the flow and provide any flow alarms

FACILITYPRO® 5010 **SYSTEM 3**

Particle Monitoring with Central Vacuum and Microbial Sampling



Components
FacilityPro 5010 Processor
FacilityPro SCADA NG Software, Optional client station, dual servers (redundancy)
Dual Vacuum Pumps
Sensor Module
Power Module
Airnet® II 510 Particle Sensor (multiple)
BioCapt® SS or SU (multiple)
Single Light Tower
Optional Analog TRH and DP (multiple)

NOTES: This system consists of a FacilityPro 5010 processor, SCADA NG software with redundant servers for assured continuous operations, optional multiple Client station for remote viewing and HMI stations within the cleanroom. There is the capability of up to 64 Particle or Microbial Samplers connected to the software. The control of the vacuum for the particle counter and the biological sampling heads is done through the Sensor Module of the FacilityPro system. The vacuum pumps are set up with possible redundancy and hot swap capability using the FacilityPro Power module for vacuum pump management along with additional flow control and monitoring in addition to the Airnet II flow control. The microbial samplers are either stainless steel or BioCapt Single Use sampling heads. The processor controls multiple light towers with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity sensors.

Positive aspects of this system:

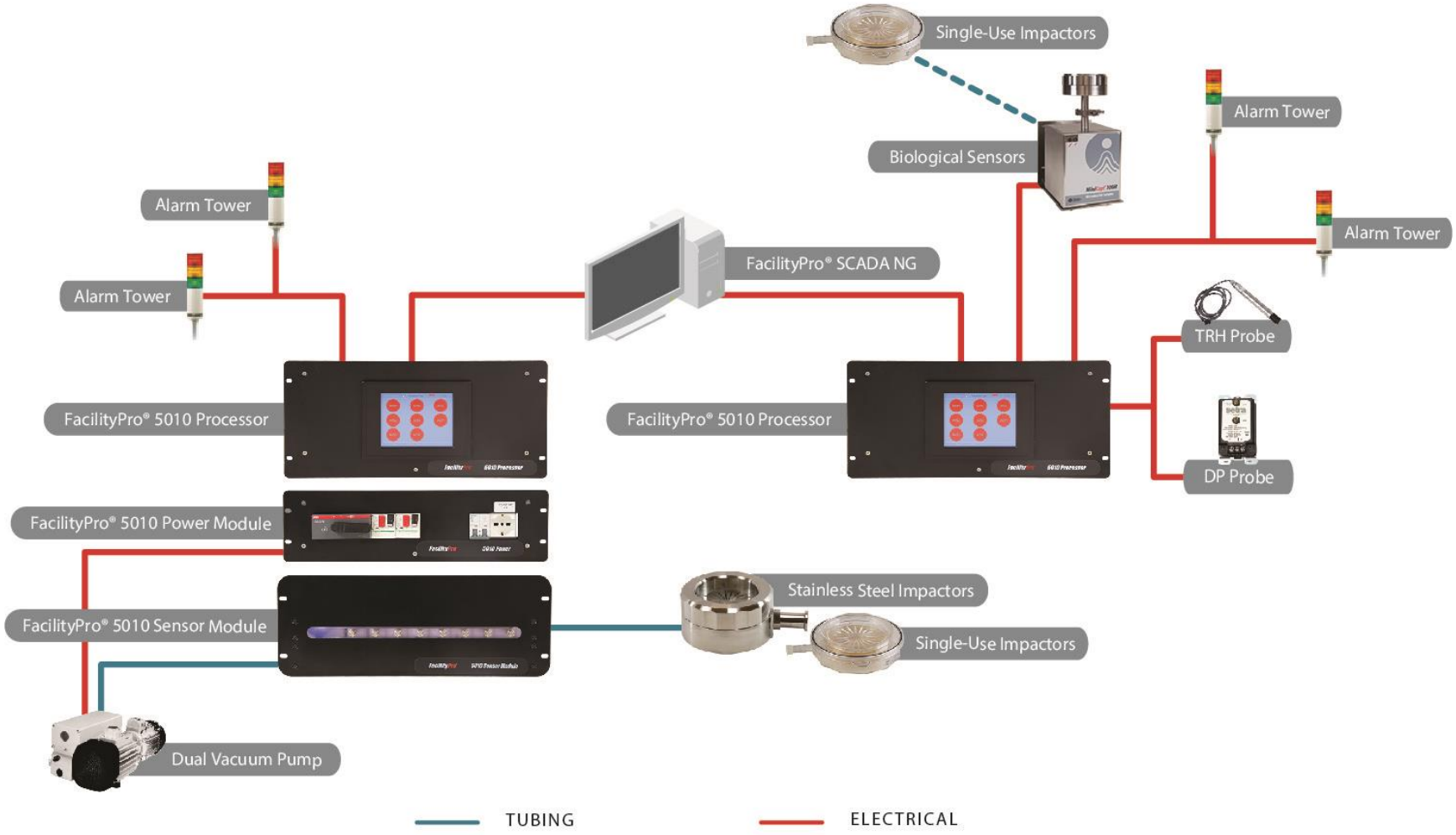
- The premier system with full control capabilities for vacuum system
- Ideal for customers who have a large number of sampling points to measure, multiple light towers and many analog inputs,
- Analog inputs capabilities up to 192 sensors
- Digital output capabilities 128
- Software is built on a SCADA based platform
- Allows for multiple Client access
- Up to 64 particle or microbial sampling points
- Particle counters are connected with the Sensor module
- Redundant software back up
- Redundant vacuum system and control

Items to consider:

- Limited to 64 points of measurement with one processor
- Redundancy requires additional SCADA software keys
- Pump redundancy requires multiple pumps for assured back up of vacuum system

FACILITYPRO® 5010 **SYSTEM 4**

MICROBIAL ONLY



Components
FacilityPro 5010 Processor (2)
FacilityPro SCADA NG Software, Optional client stations
Dual Vacuum Pumps
Sensor Module
Power Module
BioCapt® SS or SU (multiple)
MiniCapt Remote, BioCapt® Stainless Steel or Single-Use (multiple)
Multiple Light Towers
Optional Analog TRH and DP (multiple)

NOTES: This system consists of two FacilityPro 5010 processors, SCADA NG software. There is the capability of up to 64 locations per processor to be connected into the system. For part of the system she pumps and vacuum of the system are controlled by power module and monitored flow by sensor module. The other Processor uses built-in pump units vs the centralized vacuum system. The processor controls the light tower with digital outputs and has the optional Analog card installed allowing connection of the Differential Pressure sensor and Temperature and Humidity sensors.

Positive aspects of this system:

- Ideal for larger systems
- Vacuum monitored and controlled by the sensor module for part of the system, the other uses built-in pump units
- Analog inputs capabilities up to 192 sensors
- Digital output capabilities 128
- Digital input capabilities up to 64
- SCADA control software
- Operation of two processors from a single SCADA software
- Up to 64 Particle counters on a single processor

Items to consider:

- Limited to 64 points of measurement per processor
- No clients on this configuration
- Microbial only, easy to add particle sensors at a later time

Project Summary Details

Facility Summary	
Total # areas to be monitored	
Total # particle counters required	
Total # microbial samplers required	
Total # light towers required	
Total # HMIs	
Total # Analog Inputs	
Total # Servers	
Total # Other Clients	

Services Summary		
Design Docs	□PMS/Dist	□Customer
Validation Docs	□PMS/Dist	□Customer
Installation	□PMS/Dist	□Customer
Commissioning	□PMS/Dist	□Customer
FAT required?	□Yes	□No
SAT	□PMS/Dist	□Customer
Validation	□PMS/Dist	□Customer
Training	□Operation	□Maintenance

Additional Services		
Risk Assessment	□Yes	□No
User Requirements Specification	□Yes	□No
Standard Operating Procedures	□Yes	□No
FacilityPro Custom Screens	□Yes	□No
BMS/LIMS Integration Support	□Yes	□No
PLC Required (consult PMS Factory)	□Yes	□No

Estimated Project Schedule			
Quote/Bid Due		Order Awarded	
Kickoff Meeting		Installation	
Commissioning		FAT	
SAT		Validation	
Training		System Handoff	

Installation Details	
System cabinet location	
System cabinet max distance from sensors	
Vacuum pumps location	
Vacuum Pumps #	
Vacuum pumps distance from cabinet	
Vacuum max distance from sensors	
Vacuum Pumps Location	

Additional Notes

Room/Area Details (Complete one for each room or area)			
Name			
Size		Grade/ISO Class	
Gowning required during project?		New Construction?	

Room/Area Equipment				
Equipment	#	Vendor	Existing ISPs?	Replacing Existing Sensors?
Isolators				
Bio Safety Cabinets				
Fill Lines				
HEPA-filtered Carts				

Sample Points			
Particle Counters		**Microbial Sampling**	
Total # Points		Fixed – side hose barb	
VHP Compatible #		Fixed – side tri-clamp	
SS Enclosures #		Fixed – bottom tri-clamp	
Type □Built-in Pump □Central Vacuum		Portable Units	
Portable #		Remote/Isolator kits	
Download Ports #		Real-time Microbial	

Environmental Sensors			
Existing/Provided by Customer		**New/Provided by PMS or Distributor**	
Temperature		Temperature	
T/RH		T/RH	
DAP		DAP	
Air Flow Velocity		Air Flow Velocity	

Room/Area Name	

Room/Area Drawing

Room/Area Additional Notes

Customer Details					
Name					
Address					
Address					
City		State		Post Code	
Contact Name					
Phone		Fax			
E-Mail					
Project Name					