

Amphenol

Advanced Sensors

(Amphenol Thermometrics, Inc.)

Advanced Validation System

Explanation / Description

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1. Introduction

Advanced Validation system is used in Pharmaceutical Industries to validate the process and generate a suitable report based on the qualification study performed.

2. System Perspective

System contains 4 SIMs (Sensor input modules) with 12 channels of thermo couples or 12 Channels of 4-20 or 12 channels of Voltage inputs or 6 Channels of 4-wire RTDs can be connected.

SIMs are just an interface for the input sensors to be connected and varies accordingly with the sensors to be connected and used.

SIM is connected to a data acquisition system as in picture and then connected to an SBC to process the data and then to an HMI to display the same for the users.

2.1. Functional Description

2.1.1. SMPS

Two SMPSs are being used in the whole AVS system. One of this power supply which is 140W supports the complete I/O BOX power and the second SMPS supports the Motion tablet power and charging.

2.1.2. Battery

A smart battery is used to back up the complete AVS system. Smart battery will take care of the charging requirements for self, considering the whole safety of the device.

2.1.3. Power Control Board.

Power control board basically controls the input supply and charging along with fan control. This board acts as a basic pathway for the power and routes it as needed.

2.1.4. LED board

LED board is associated with the front panel which gives the indication on the operation of the AVS. Interface for this board is basically from the power control board, but driven by SBC based on different conditions.

2.1.5. DAQ board

A data acquisition system which captures all the data and transfers it to the SBC for processing is the heart of the system. This comprises of Analog front end and few filters along with ADC and a digital circuit to communicate with SBC

2.1.6. MUX board

A simple multiplexing circuit to select the sensors based on the types of sensors connected to the input

2.1.7. SIM board

Sensor input module where the user interfaces the sensors to the system. Different types of sensors are connected to different input modules and then interfaced with the AVS.

2.1.8. SBC board

A single board computer and the interfacing circuit takes care of all the processing and communication with the outer world. The Wifi module is interfaced with the SBC and then data is transmitted over wifi to the router. Also there are different other communication methods like Ethernet and USB through which the system communicates to the Tablet.

