



SM ENTERPRISES



Company Profile

... **ABOUT SM ENTERPRISES** ...

SM ENTERPRISES was established in 2009 primarily to serve the cleanroom requirements for customers, which were until then serviced through imports. As pioneers in this field, the solutions from SM ENTERPRISES were readily accepted by the customers. Since then SM ENTERPRISES with its unflinching focus on customer requirements evolved into the largest clean room partition manufacturers in India.



SM Enterprises is committed to make difference by helping companies build cost-effective, energy-efficient, long lasting and environmental-friendly HVAC solutions conforming to global standards.

We deal with supply, Installation, Testing, Commissioning, Validation and maintenance of HVAC, Electrical, IBMS, Modular Partitions, Plumbing and Firefighting, Laboratory Furniture and Clean Room Solutions.

... **Our core strengths** ...

- ❖ A team with rich pharmaceutical experience
- ❖ Ability to understand customer requirements
- ❖ Detailed drawing creation
- ❖ Timely delivery
- ❖ Compliance with the regulatory requirements
- ❖ Dedicated Team

... **VISION, MISSION & VALUES** ...

➤ **VISION**

To positively influence society through sound, most innovative and most valuable engineering products and services company.

➤ **MISSION**

SM Enterprises mission is to build a healthy and hygiene environment for you with our advanced equipment and new technologies in pharmaceutical and cleanroom services.

➤ **VALUES**

Customer Centricity
Safety
Freedom to make decisions
Team work
Responsibility

Company Infra & Facility



We have manufacturing facilities at our locations in Bangalore, Karnataka. Our state of the art manufacturing facilities are equipped with CNC machines, Automation and we believe in delivering the best in class products through these facilities to our customers.

Our Clients

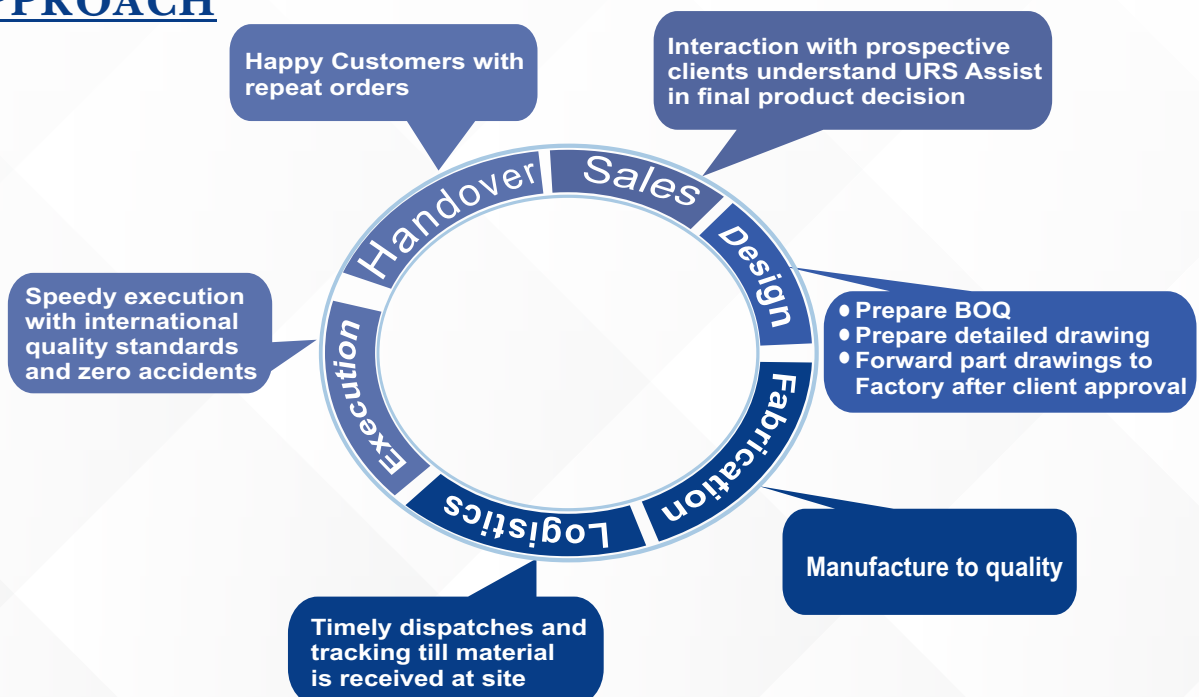
Pharma Companies



Hospital's and University



OUR APPROACH



➤ HVAC - Heating, Ventilating & Air-conditioning



SM Enterprises turnkey clean room offering design, supply, installation, validate controlled environment HVAC system. Heating, ventilation, and air conditioning (HVAC) are interrelated, especially with the need to provide thermal comfort and acceptable indoor air quality within reasonable installation, operation, and maintenance costs. HVAC systems can be used in both domestic and commercial environments. HVAC systems can provide ventilation, and maintain pressure relationships between the spaces.

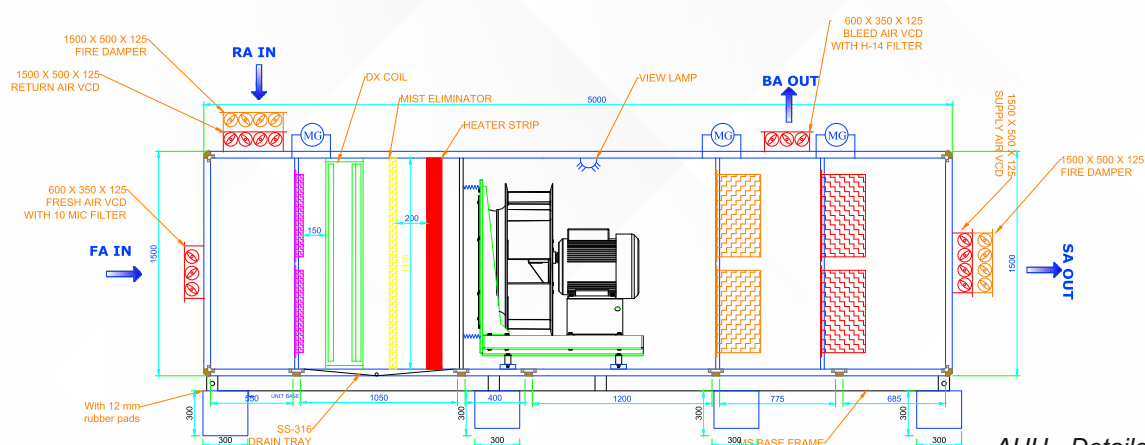
Providing HVAC solutions to cleanroom facilities has been our core competency. We have extensive expertise in providing HVAC for pharmaceutical, biotechnology, semiconductor cleanrooms.

SM Enterprises providing HVAC Solution like – Air Handling Unit, Comfort Air-conditioning, Piping system, DX system, VRF system, Ducting with insulation, Chilled and Hot water system, Dehumidifier system, Automation of HVAC system etc.,

HVAC systems includes air conditioners, Motor blower assembly, an evaporative coil, a compressor and compressor coil, thermostats, ductwork, Modules, filters, Grilles, diffusers and dampers which help to distribute the conditioned air within a building. At SM ENTERPRISES we follow a very stringent quality control systems and up to date guide lines, where we ensure every raw material received and every manufactured item is tested and approved as per the set quality norms. This ensures optimum performance of the equipment's.

SM Enterprises is a prominent service provider in the global market offering Cleanroom Validation Services.

- Supply, Installation, Testing and Commissioning of Air Handling Units
- Supply, Installation, Testing and Commissioning of Duct Network
- Airborne Particle Counting of the Clean rooms from ISO 5, ISO 8 Class
- HEPA Filter integrity test by using PAO method
- Pressure balancing of the Clean Rooms
- Documentation like DQ, IQ, OQ and Test Reports as per ISO guidelines



AHU - Detailed Diagram

➤ CLEAN ROOMS



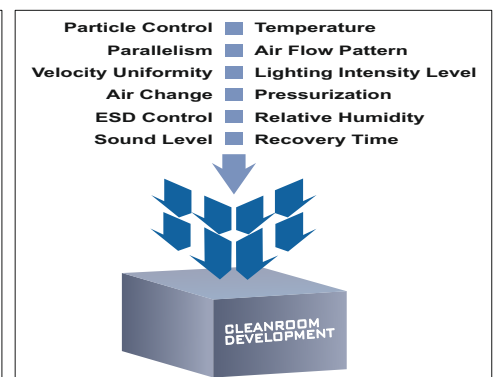
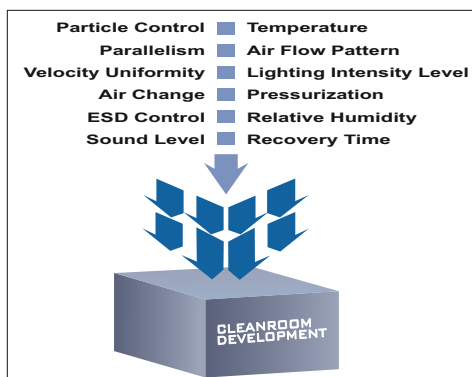
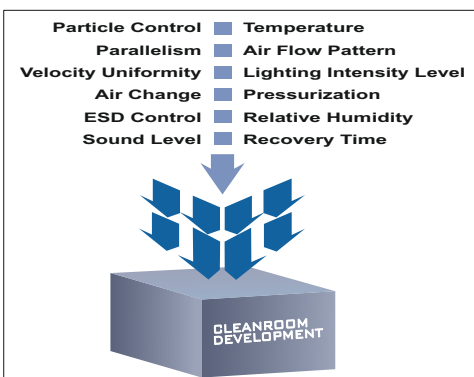
Cleanroom is an environment, typically used in manufacturing or scientific research that has a low level of environmental pollutants such as dust, airborne microbes, aerosol particles and chemical vapours.

A cleanroom has a controlled level of contamination that is specified by the number of particles/m³ and by maximum particle size. To give a perspective, external environment would be considered about a 5,000,000 class cleanroom.

Cleanrooms can be small or very large. Entire manufacturing facilities can be contained within a cleanroom with factory floors covering thousands of square meters. They are used extensively in Semiconductor manufacturing, Biotechnology, Life sciences and other fields that are very sensitive to environmental contamination.

The air entering a cleanroom from outside is filtered to exclude dust and the air inside is constantly recirculates through High Efficiency Particulate Air (HEPA) and Ultra Low Penetration Air (ULPA) filters to remove internally generated contaminants.

Cleanroom HVAC systems often control the humidity to low levels, such that extra precautions are necessary to prevent electrostatic discharges. Entering a cleanroom usually requires wearing a cleanroom suit. Cleanrooms can be very large. Entire manufacturing facilities can be contained within a cleanroom with factory floors covering



MODULAR PARTITIONS



SME Modular partition panels are extremely critical for Cleanrooms and are hence a core component of our product offerings. Standard specifications are given below, but panels can also be customized as per the requirement.

We deal with below modular panel with specifications:

- Wall Panel
- Ceiling Panel
- Tongue and groove Panel
- Raiser panel

Specification:

- ◆ Infill material : PUF, Rockwool (PUR/PAR) and EPS.
- ◆ Thickness : 30/50/60/80/100/150 mm
- ◆ Walkable and non-Walkable panels.
- ◆ MOC: GI powder coated and SS.
- ◆ MOC Thickness: 0.6mm, 0.8 mm, 1.0 mm & 1.2mm.

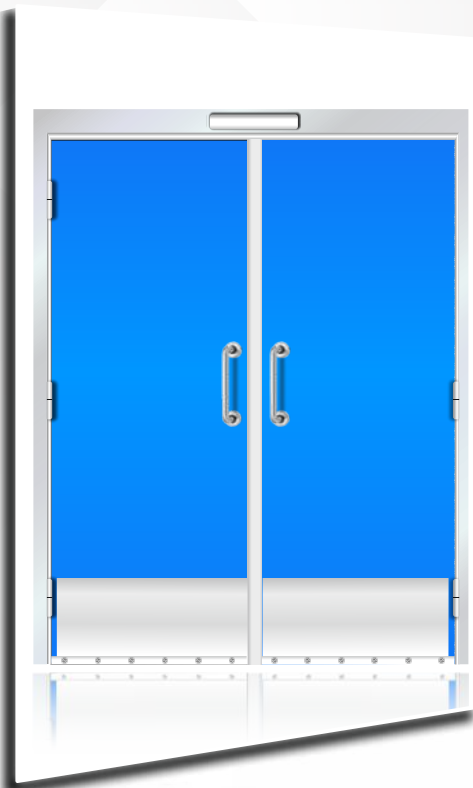


Clean Room Door



SM ENTERPRISES provide wide range of Clean Room compatible Doors. These are basically meant for air ingress in the room. The door has mechanically interlocked vertical edges that add strength and rigidity, which makes them appropriate for light and heavy use. Clean room doors are available with interfacing profile for a flush and easy installation on existing walls.

- Fire rated Doors
- Metal Doors
- Emergency Exit Doors
- Shaft Doors
- Scientific Doors
- Automatic / Manual Sliding Doors
- Industrial Doors
- Pharmaceutical Doors
- Digital access doors
- Roll Up doors
- Swing doors



Fire Rated Doors



FHC Doors



SS Doors



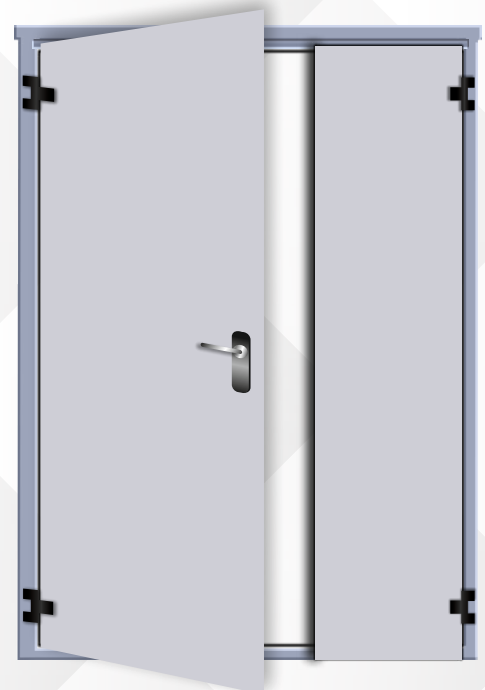
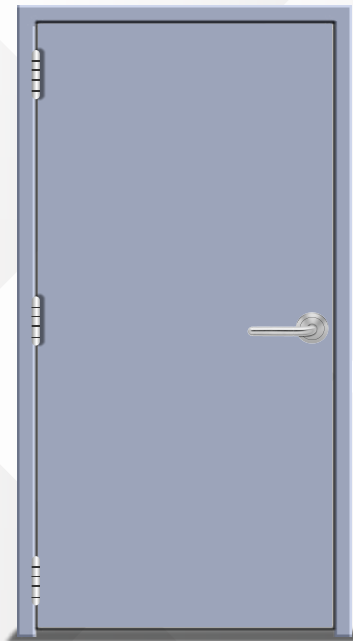
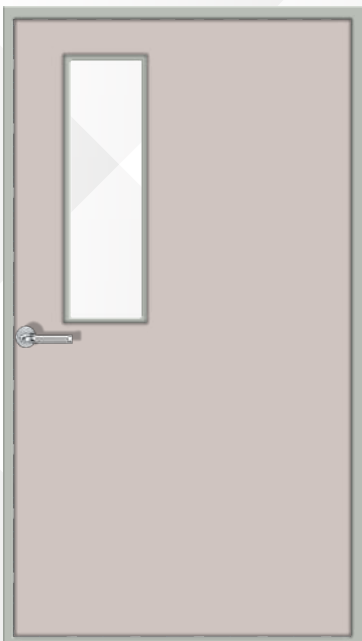
Sliding Doors



GI Doors



General Doors



➤ Clean Room Equipments

We are one of the leading manufacturers of a quality range of clean room equipment. Designed as per high quality standards, this clean room equipment are basically used for cleaning the incoming air within an interior. The clean room equipment is installed either within a chamber or just at the entrance, which ensures a surrounding, which is free from contaminants and particulates. Besides, these are utilized in Chemical industry, wherein, our range of equipment is used for eradicating hazardous chemical powders from the environment. This ensures safe workplace for labour's working in the factory.

- | | | | |
|-------------------------------|-----------------------|----------------------|-----------------------------|
| ➤ AHU'S | ➤ Ducting | ➤ Dehumidifiers | ➤ Pass Box (Dynamic/Static) |
| ➤ Laminar Air Flows | ➤ Air Showers | ➤ Cross Over Benches | ➤ SS - Trolley |
| ➤ Dispensing & Sampling Booth | ➤ Bio-Safety Cabinets | ➤ Fume Hoods | |

Air Handling Unit (AHU):



AHUs are encased assembly consisting of sections containing a fan or fans and other necessary equipment to perform air supply, air exhaust, filtration, heat recovery.

An Air Handler, or Air Handling Unit (often abbreviated to AHU), is a device used to condition and circulate air as part of a heating, ventilating and air-conditioning system. An air handler is usually a large insulated metal box containing a blower, heating or cooling coils, filters, sound attenuators and dampers. Air handlers usually connect to ductworks that distribute the conditioned air through the building and return it to the AHU. Sometimes AHUs discharge (supply) and admit (return) air directly to and from the space served without ductwork.

Our AHUs are designed for lower foot prints, higher energy efficiency, modularity and a host of other features like thermal braking and other custom designed features.



DUCTING



Ducting plays a crucial role in Air distribution contributing to the functioning of the entire HVAC system. Efficient manufacturing dramatically reduces fabrication and therefore job completion time. Air flow problems have plagued the HVAC industry for years. No matter how much money you spend on a high-quality HVAC system, the equipment won't work at its best without properly designed and installed duct work. Ducts that are not well designed result in discomfort, high energy costs, bad air quality, and increased noise levels. A well-designed duct work system should deliver maximum interior comfort at the lowest operating cost while also preserving indoor air quality.





Dehumidifier



Pass Box – Dyanamic/Static



Laminar Air Flows



Cross Over Benches



Air Showers



SS - Trolley



Dispensing & Sampling Booth



Bio-Safety Cabinets



Fume Hoods

➤ LABORATORY FURNITURE

Our range of Laboratory Furniture's are designed impeccably after studying the usage patterns of the users over a period of time. All our products in this range are engrained with our philosophy of seamlessly integrating utilitarian functionality, user friendliness and eye catching aesthetics. All these are accomplished with durability as the core design criteria. We ensure that all these products seamlessly blend and effortlessly integrate with our other Cleanroom products & panels.



Work table is used for performing various tests by scientist/chemists.
SM Enterprises Provide Wide Range of Clean room Laboratory Furniture's.

Our Work Tables are manufactured in various designs and shapes, custom made to suit customers' requirements. The construction material is epoxy coated galvanized iron with suitable thickness. The systems are designed to be fitted with pedestal system and as per client's specifications. Provision for reagent racks, valves for water and gas along with required electrical connections and any other provisions as required. The system is designed and available with various knee gap models or continuous modular styles.

☞ **Island Modular laboratory Table**

☞ **Modular Lab table**

☞ **Sink Unit**

☞ **Chemical Resistant Cabinet**

☞ **Storage Cabinet**

☞ **Garment cubical**

- High quality GI powder / epoxy coated
- Various sizes and shapes and colours
- Custom designed as per requirement
- Shutters and drawers as required
- Special hinges and electrical points
- Leg space as per requirement

➤ Modular Operation theatre & ICU facility.



Modular Operation Theatre focuses on achieving safety, precision, and efficiency for the entire operating team. It is designed to streamline the workflow and deliver better patient outcomes by eliminating wasted time and resources. Modular operating theatre drives consistency and smooth flow during operations, reducing the risk while carrying out surgical procedures.

Modular operation theatre manufacturers design innovative Modular OTs that can ensure patient safety and improve the treatment outcome.

The some of the benefits of a modular operation theatre, the essential elements of Modular OTs, and provide an overall better understanding of the workplace.

Modular OT Specifications:

- Absolute flatness
- Vertical level adjustment of sub frame
- Hermetic sealing
- Sound insulation
- Non-flammable materials
- Ease of disassembly – individuality of panels



Advantages Of Modular OT

- Dust-free Installation meeting EU/Indian Norms.
- Smooth-surface, easy to clean and disinfect.
- Safety during the installation
- Accuracy of individual parts of the system.
- Easy upgrade in future.
- No Sharp edges, No Manual Cutting .

Modular OT Equipments

DOCTOR STOOL



SS-304

Z Type Trolley



SS-304

LAMINAR FLOW
SS-304 (8'x4')



AIR CURTAIN



**Cupboard /
JENITOR BOX**



SS-304 (8'x3'x1.5')

CROSS OVER BENCH



SS-304 (1800x600x450mm)

SS - Trolley



SS-304 (4'x3')

OT LIGHT SYSTEM



PENDANT



**PRESSURE
RELIEF DAMPERS**



Stool



SS-304

DYANMIC PASS BOX



SS-304 (900x600x600mm)

SCRUB STATION



SS-304

SCRUB STATION



SS-304

OPERATING LIST BOARD



**VACUUM PACKAGING
MACHINE**



SS-304

**Bio-Safety
CABINETS**



SS-304

TOUCH SCREEN CONTROL PANEL



GI (Powder Coting)

➤ FLOORING

SM Enterprises supplies a range of flooring options to suit different user and industry requirements. The type of flooring and its application is often a critical parameter of a cleanroom environment. It must be hygienic, easy to clean and selected in-line with the processes of the rooms.

➤ Epoxy Flooring

➤ Vinyl Flooring



➤ **Electricals:**

Design and execution of electrical systems has been one of our core competences since inception. We ensure optimum design of electrical systems keeping in mind the requirement for uninterrupted power supply, which in turn affects the productivity of the plant and machinery.

S M ENTERPRISES, with its highly experienced and qualified electrical teams, addresses the above issues by adopting step by step approach right from identifying power source, detailed load analysis and calculations to detailed engineering and effective execution of the project.

Internal Electrification

External Electrification

HT & LT Panels

Distribution Panels

UPS Systems

Transformers

Cleanroom lighting

Cabling works

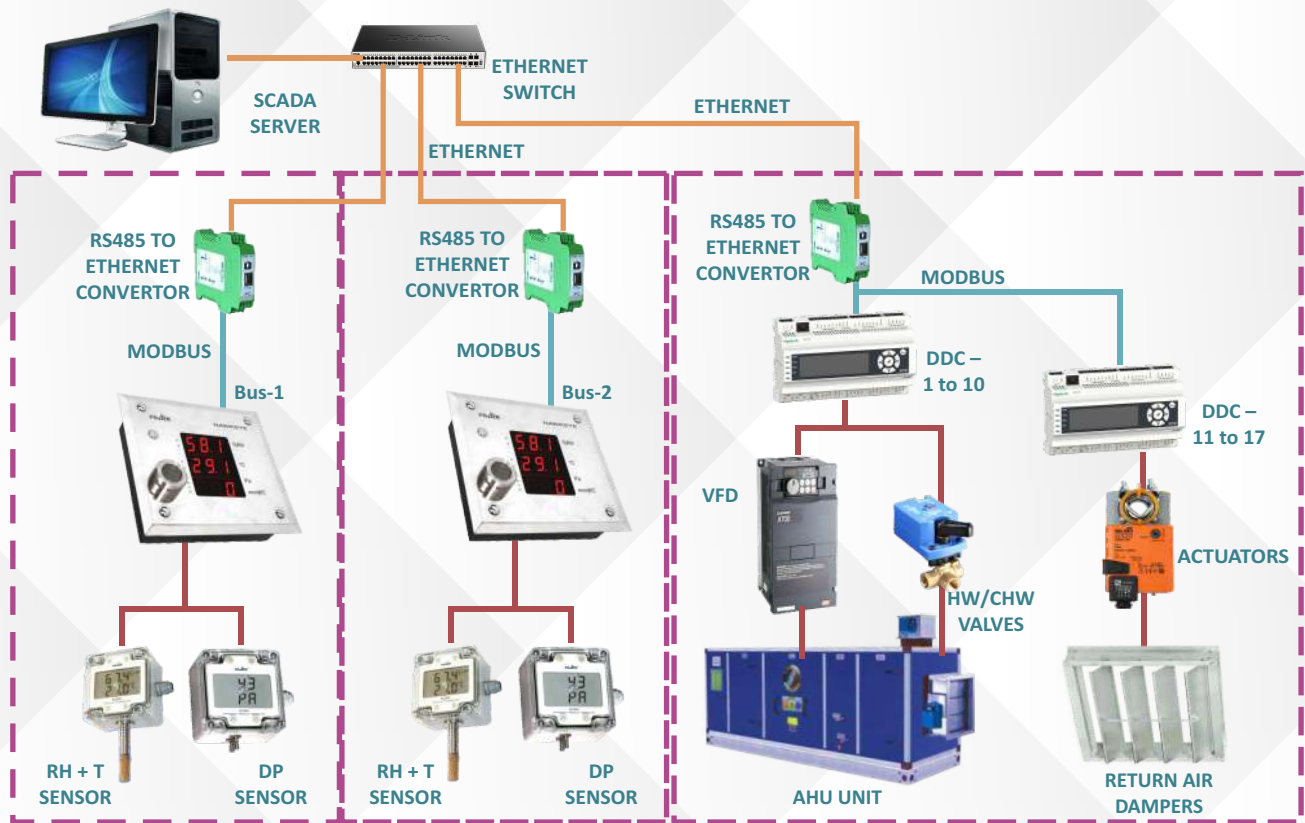
VFD Panel

The VFD Panel (Variable Frequency drive panel) also known as VFD Control Panel are designed to control the speed of electric motor and feed pump. They are widely used in drilling, pumping and other large machine applications. The VFD panels are widely used in extruder plants, rolling Mills, tube mills, paper mills, cable industry and CTLLines.

Adjustment of the speed of the motor is the application, which is required in all the process industries & machinery Mfg.'s. Variable Frequency drive is used as energy saving device for some of the machines to save power during no load or it is used as final control element of the closed loop control application where the speed of the motor is changed to control one parameter. Some of the application is provided with manual speed control of the motors. These are the open loop control applications.



INTEGRATED BUILDING MANAGEMENT SYSTEM (IBMS)



Organisations across the world are under tremendous pressure from the stakeholders to keep the costs under control. They are exploring innovative ways to utilise the resources better and keep the costs of overheads optimal. Automation can help in reducing the manpower, cost of production, manual intervention in controlling & monitoring and other variable overheads such as electricity.

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All these can be monitored and controlled from a central or a remote computer. Moreover, all these can be recorded into a computer system for further data analysis as well. The BMS is heavily customisable as per the clients' requirement that varies from one to another.

SME helps you to achieve the maximum productivity at a minimum cost of operations. We have experience in design and executing BMS with a seamless integration across all the components of the facility.

➤ We offer organisations the below BMS with seamless integration of all systems

- HVAC: Filter choking, controlling Temp, RH, CO2 level, Pump speed, flow modulation, ADP sensing
- Electrical: monitoring lighting, UPS, panel breaker, quality of power
- Third party integration of utilities such as compressors, vacuum pumps, boilers, etc.
- Fire detection & alarm
- CCTV
- Public Announcement (PA) System
- Access control & Intruder alarm
- Parking management
- Rodent control
- Water leak detection

BARREL HEATER



Industrial barrel heater - is used to reduce viscosity of liquids and gels by heating in order to fill, pump or bottle the respective liquid or to prevent liquids from freezing inside the drum.

Technical Specification

- ▶ Design : Batch Type
- ▶ Dimensions :
- ▶ Sealing : Fiber Glass Rope 50mm
- ▶ Object Placement : Drum Place Vertically
- ▶ Inner Chamber : Build 1.2mm thick MS Sheet
- ▶ No of Blowers : 1.5kw, FLP Motor 1440RPM Ip55
- ▶ Interlock System : Door interlock with blower & heater
- ▶ Maximum Temperature : 120°C
- ▶ Input Power : 415V/50Hz
- ▶ Model : SME- IBHC8
- ▶ Door : Hinge Type with locking & Sealing
- ▶ Capacity : 8 Barrels
- ▶ Insulation : 100mm thick 96Kg/ m3 Rockwool
- ▶ Outer Chamber : Build 1.2mm thick MS Sheet
- ▶ Air Circulation :
- ▶ Total Electrical Load : 12kw Heater & 1.5kw blower
- ▶ Working Temperature : 40°C -60°C
- ▶ Temperature Controller : PID Type

Testing and Validation of Cleanroom Systems

SM Enterprises offers validation of HVAC Systems as per ISO Standard.

- Duct leak test
- Air Balancing
- Air velocity test
- HEPA Filter integrity test
- Room pressurisation test
- Room Non viable particle count
- Room recovery test
- Air flow visualisation test
- Temperature testing
- Humidity testing
- Noise Level Test



SM ENTERPRISES

📍 Registered Office Address:

No-15, Sri Sumukha Nivas, APC Circle, Jigini Industrial Area, Anekal(Taluk), Bangalore - 560105.

📍 Factory address:

Sy No-66/3, Bommandahalli, Indlavadi(Post), Jigini(Hobli), Anekal(Taluk), Bangalore-562106.



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+91 8904450199



www.smentindia.com



info@smentindia.com



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