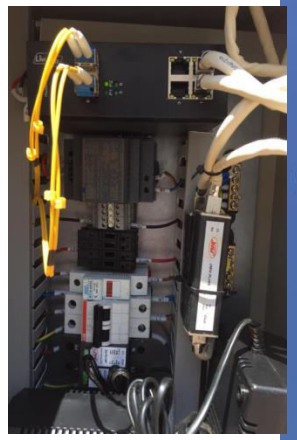
Building Automation ,Networking & Communication

We are Interested to visit and meet Electrical , MEP Consultants Building Infra Developers, Solar Power Developers and Solar Project Handling EPC Companies .

Link Vue System is Known Professional Team of Technical believes on Offering Genuine and Right Products.(www.linkvuesystem.com)

We Offer Design Engineering Supply and Installation Supports by Professionals

Scope Of Products



Earthing for DC Arrays

Surge Protection Devices

MC 4 Connectors with and Without Fuses

Networking LAN Fiber , Wireless and GSM Solutions, Liu's Patch Cord

Smart Data Loggers , Protocol Converters , Protocol to FO Converters

Lithium Battery Package for High Energy Storage System

Weather Monitoring Stations

DRONE Survey for Project and Maintenance of Panel Health

CCTV ,Fire Alarm ,Access Controls , Security Systems, PIDS Fencing ,Smart Parking Management Solution.

AMC for Above

Special Project for Electric Vehicles

Connectors CCS ,GBT and CHAdeMO ,

Cables for Electric Vehicles

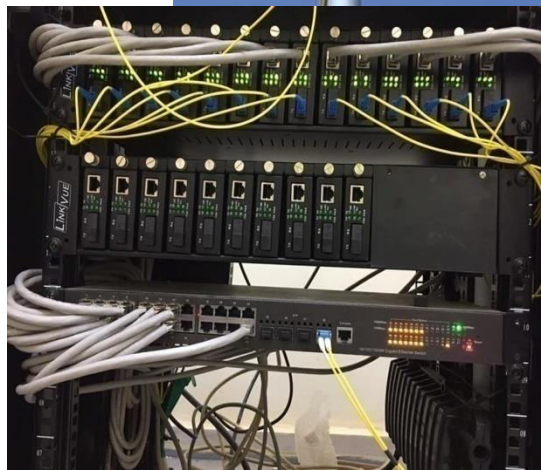
Cable Harness for Electric Vehicle's and Charging UNIT.

Electric Vehicle Charger 3KW -250KW AC Charging , DC Charging

CAE Power Connectors 16Amps -400 Amps

Free Dom Connectors for Low Voltage Cables

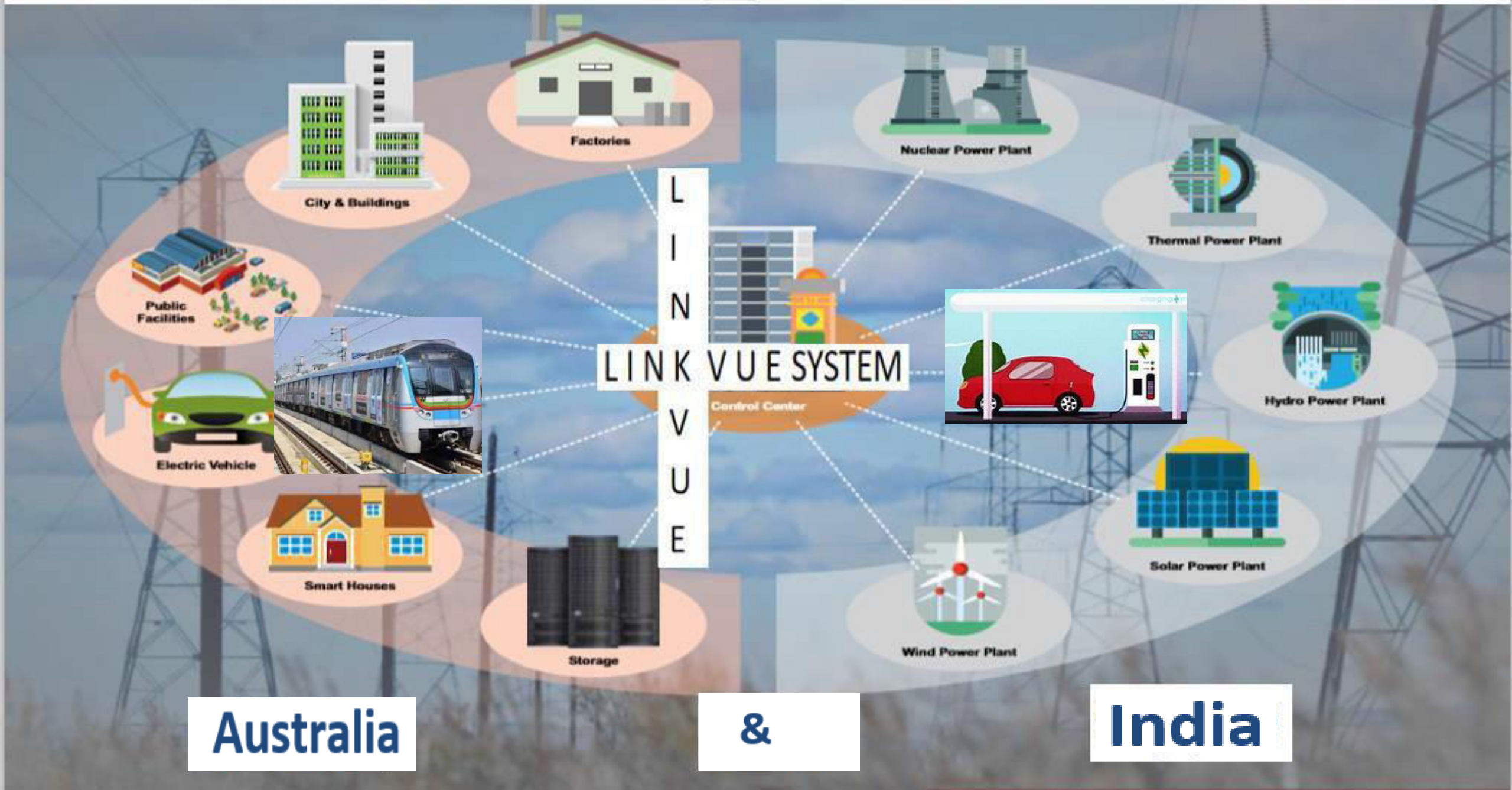
Plz Confirm your Availability and Place for meeting in Advance



Mail : manav.chandra@linkvuesystem.com , manish@linkvuesystem.com

Sydney Australia

Right Solution Partner for your Problems LINK VUE A Genuine Approach Latest Technolgies Adoption



Australia & India

LINK VUE

Link Vue System Pvt Ltd

INDIA

AUSTRALIA

Electrical Safety

Earthing, Lightning & Surge Protection

Net Working Product Supply & Installation

Ethernet SW, Fiber Optics & Wire Less

Automation Products
Data Logger, RTU's Digital & Analog 1/0's
Protocol Converter, Media Converter,
Cables Connectors & LIU's
Perimeter Intrusion Detection System CCTV,
Fire Alarm, Access Controls & Security System
Cable & Connectors, Plug & Sockets for
Electrical Vehicles, Solar PV, Building Wiring

Our Mission

To provide finest security services and customized innovative solutions through our extensive complement of high quality products and services, we will enable our clients to run their operations with minimal effort and concern for their safety and security.

Our Vision

To be the best in class by creating long-term strategic relationship with our clients and leveraging our technological acumen and industry expertise to provide innovative , quality and cost effective solutions. To attract, engage, develop and retain the best talent and to create an environment in which our employees grow personally and professionally"

Our Goal

To become a leader in the technological edge to improve organizational security, profitability & Reliability through intelligent office automations, quality control automations, biometrics and security solutions!

Dedication: We are continuously committed towards serving our customers. All our employees have full allegiance towards our motto ‘customer comes first’

Performance: We believe in continuously raising the bar of performance, allowing us to meet and exceed client expectations every time.

Integrity: We walk the talk, delivering what we promise. We stand by our commitments providing our customers utmost satisfaction.

Teamwork: We believe in working together, staying together. We encourage open and effective communication and interaction. Our organizational culture patronizes unfettered and integrated teamwork among different departments allowing seamless, fruitful operations.

Transparency: We work with lucid thoughts and actions, ensuring equality among our employees, customers and suppliers.

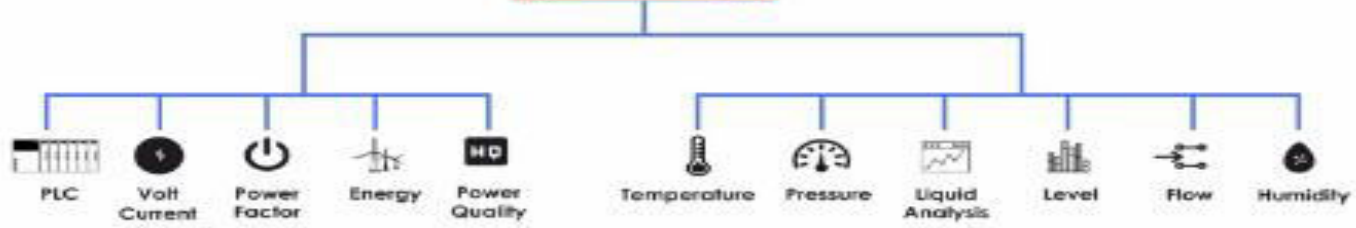
Accountability: We take responsibilities for our decisions and actions. We allow our empowered employees to honour their commitments and do what is necessary to gratify our clients and meet the organizational goals and objectives

Power Supply is very Important for all Infrastructure

Electrical Safety ,Metering Infrastructure, Smart Grid Distribution Management, Smart Grid Network Management, Grid Asset Management, Substation Automation, Smart Grid Security, High Energy Battery Power Storage Energy Efficiency , Electric Vehicle Charging Infrastructure ,Building Automation, Security Systems, Access Controls, CCTV & Smart Parking Management Systems, Networking Solutions


GLASS BREAK SENSOR
YARD SIGN
STOP
ENTRY SENSOR
MOTION SENSOR
PANIC BUTTON
SECURITY CAMERA
KEYPAD
SIREN
SMOKE DETECTOR
KEY FOB

With Link-Vue Freedom to Monitor ,Access and Control Remotely



Supported Protocols - Modbus TCP/IP, Modbus RTU, MQTT, Https

Applications

Energy & Utility
- Energy Management
- Transformer Monitoring
- Industrial Motor
- HVAC Monitoring
- Solar Energy

Audit
- Energy Audit
- Water Management
- Water Audit

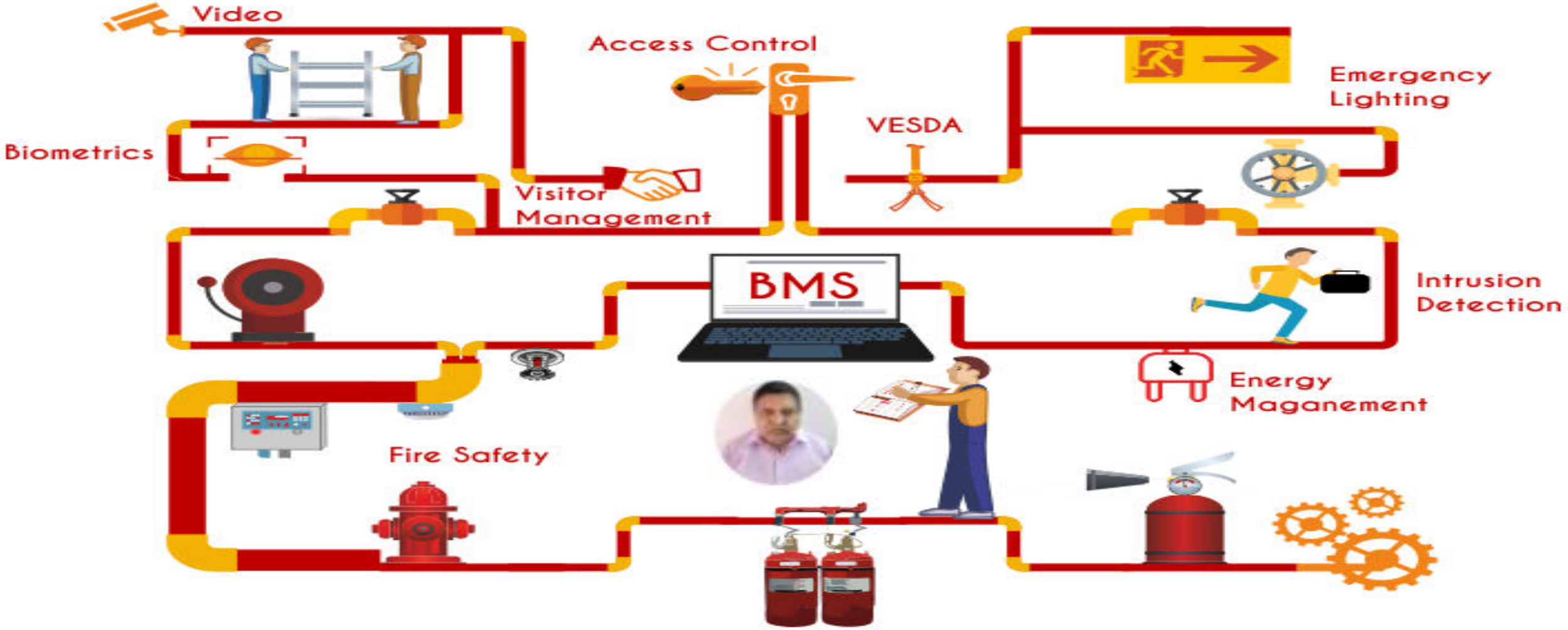
Plant & Process
- Equipment or Asset Monitoring
- Process Monitoring
- Machine Monitoring
- OEE

Other
- Agriculture, Vehicle
- Weather
- Smart City
- Custom Application evelopment

Why IIoT?

- Efficiency
- Uptime
- Productivity
- Availability
- Service
- Condition
- Alert
- Prevention
- Prediction

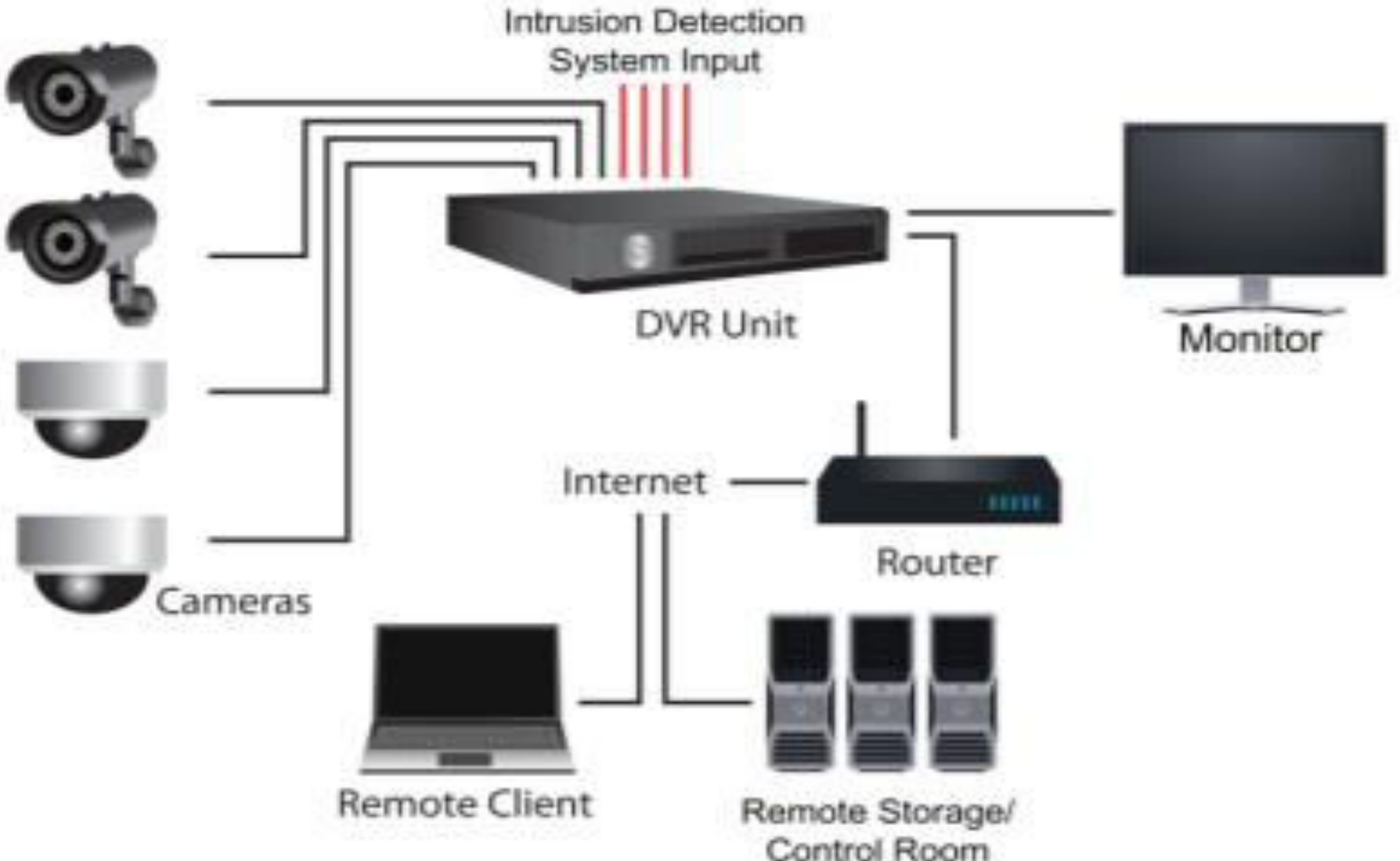
Link Vue System Offer Safety for Human and Assets (ALERT 24X7)



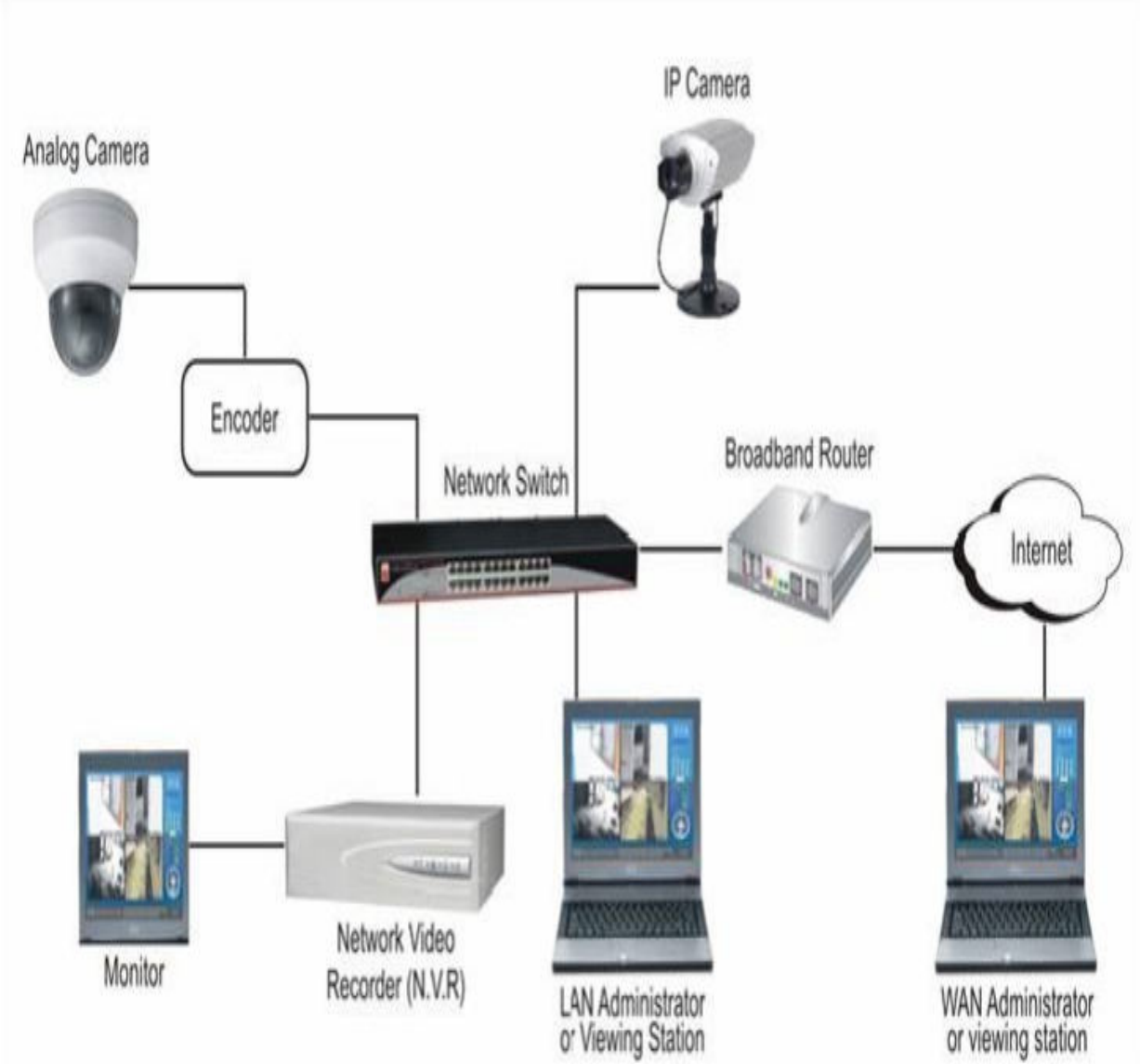
One Stop Solution for

FIRE SAFETY, SECURITY & IBMS

DAY NIGHT 24X7Monitor Solar PV Plant Through CCTV Network



CCTV Installation for Indoor &outdoor

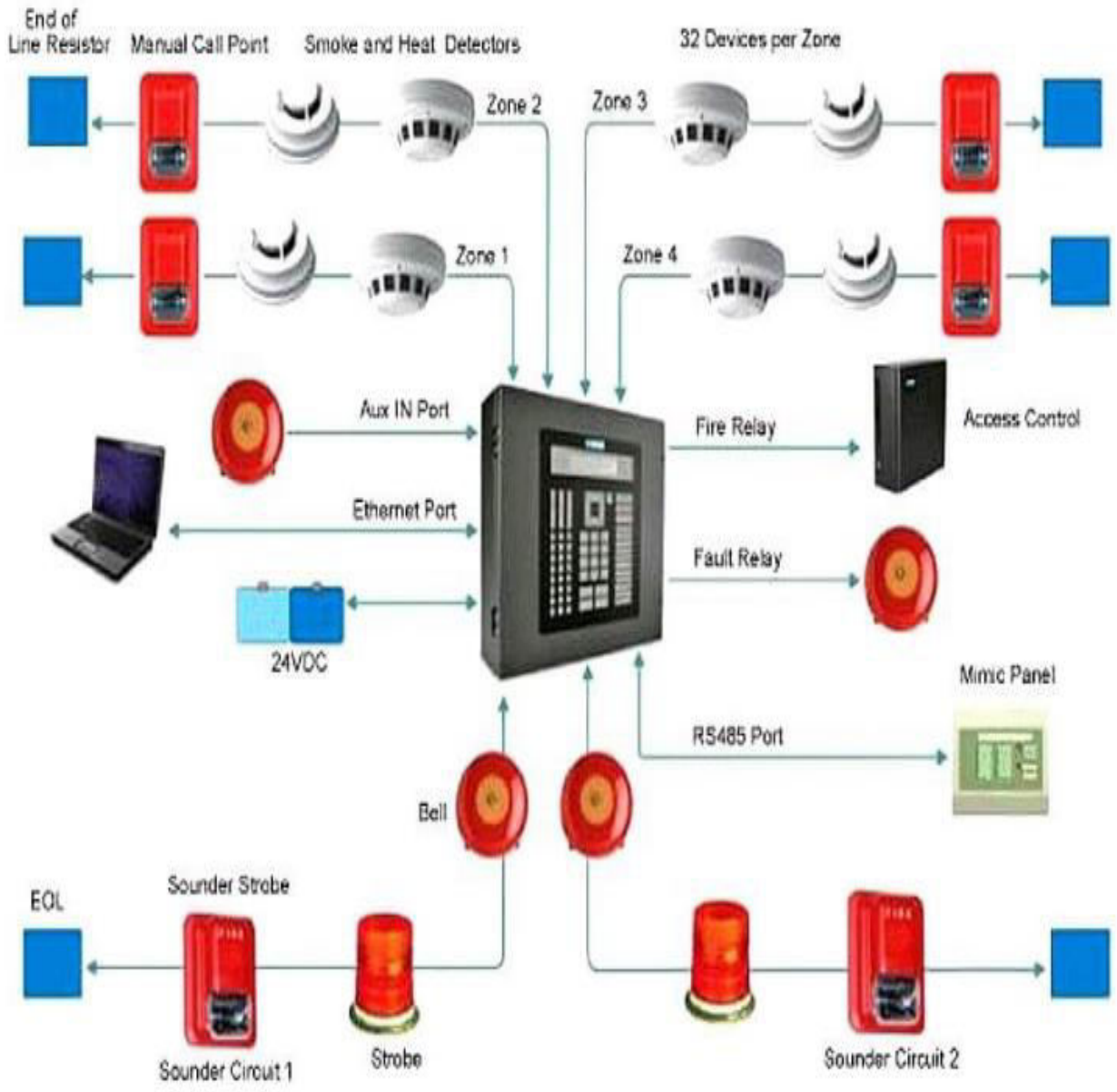


IP Based Surveillance Camera Systems

Surveillance is the monitoring of behaviour, many activities, or information for the purpose of information gathering, influencing, managing or directing. This can include observation from a distance by means of electronic equipment, such as closed-circuit television (CCTV), or interception of electronically transmitted information like Internet traffic. It can also include simple technical methods, such as human intelligence gathering and postal interception.

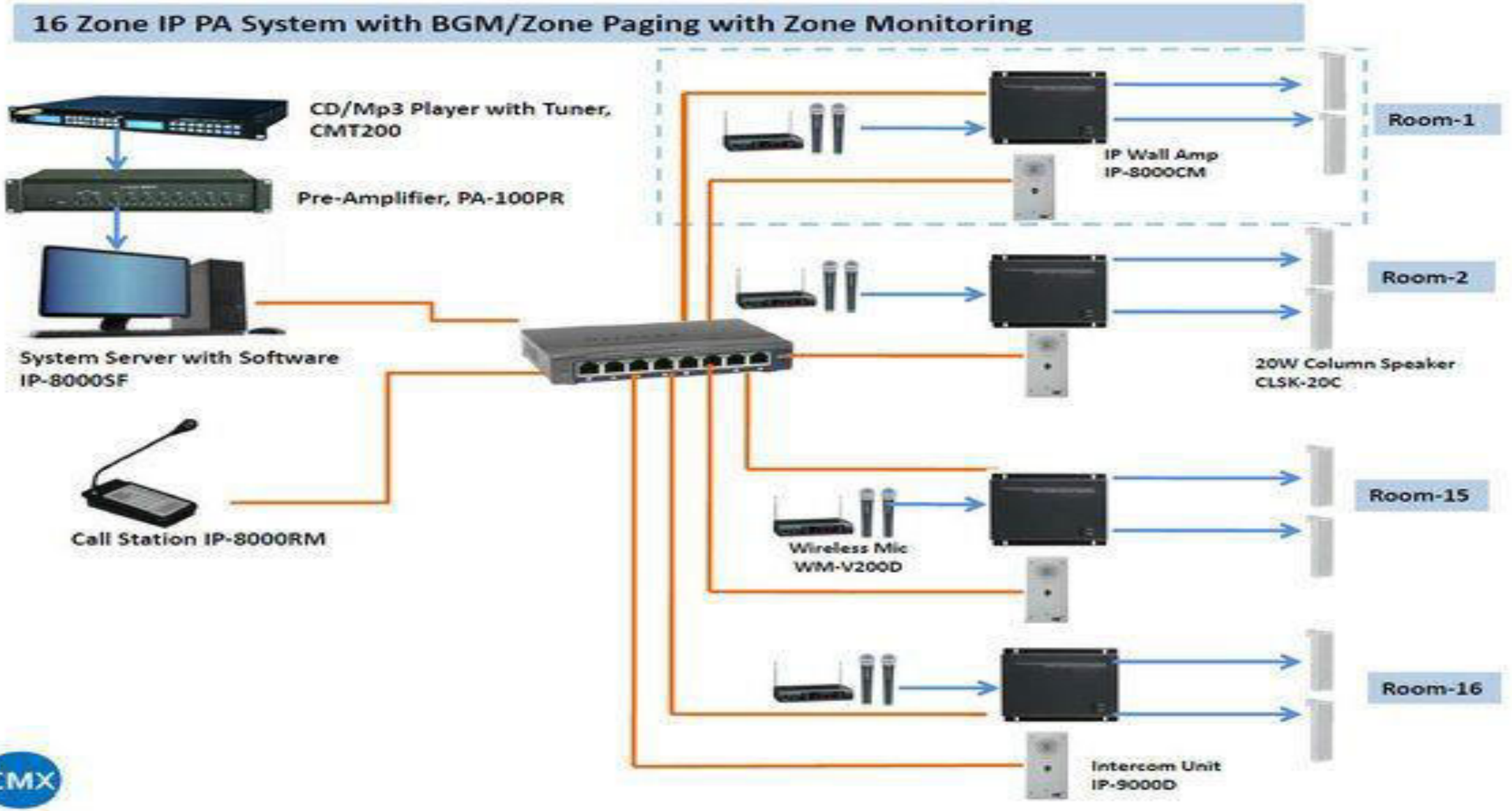
Surveillance is used by citizens for protecting their neighbourhoods. And by governments for intelligence gathering – including espionage, prevention of crime, the protection of a process, person, group or object, or the investigation of crime. It is also used by criminal organizations to plan and commit crimes, and by businesses to gather intelligence on criminals, their competitors, suppliers or customers.

Addressable Fire Alarm System



Provides Conventional and Addressable Fire Alarm and Detection system to warns and help people when smoke , fire, carbon monoxide or other fire-related emergencies are detected. These alarms may be activated automatically from smoke detectors, and heat detectors or may also be activated via manual fire alarm activation devices such as manual call points or pull stations. Alarms can be either motorized bells or wall mountable sounders or horns. They can also be speaker strobes which sound an alarm, followed by a voice evacuation message which warns people inside the building not to use the elevators. Fire alarm sounders can be set to certain frequencies and different tones including low, medium and high, depending on the country and manufacturer of the device. Most fire alarm systems in Europe sound like a siren with alternating frequencies. Fire alarm electronic devices are known as horns in the United States and Canada, and can be either continuous or set to different codes.

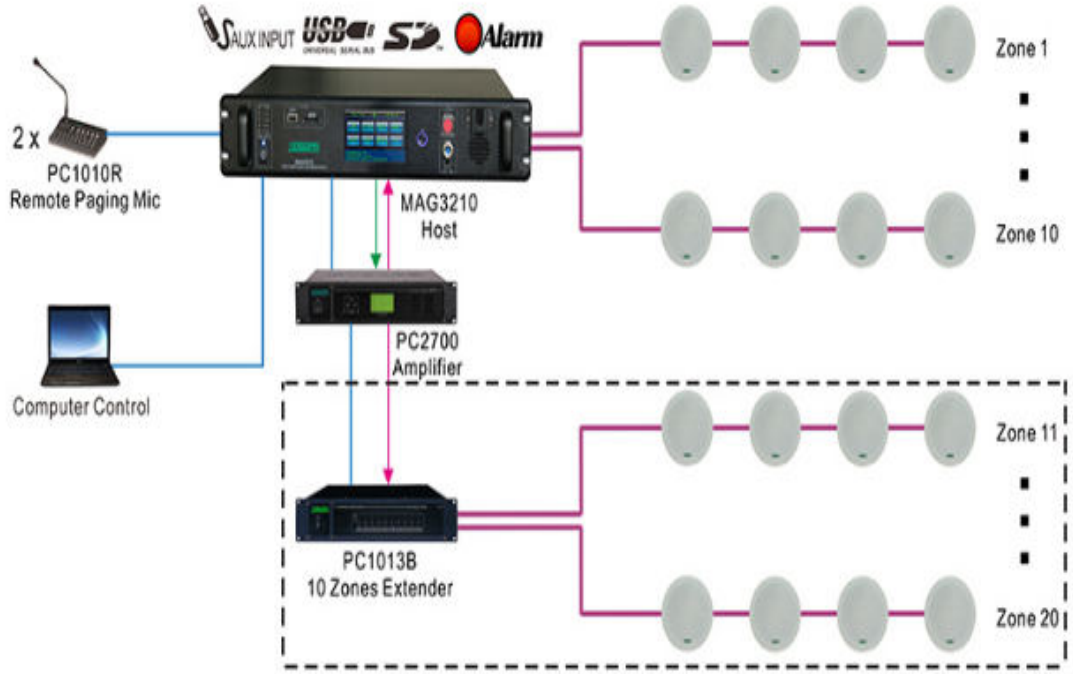
Public Address Systems for Intelligent Buildings Management



Public Address Systems

PA system is an electronic system comprising microphones, amplifiers, loudspeakers, and related equipment. It increases the apparent volume (loudness) of a human voice, musical instrument, or other acoustic sound source or recorded sound or music. PA systems are used in any public venue that requires that an announcer, performer, etc. be sufficiently audible at a distance or over a large area. Typical applications include sports stadiums, public transportation vehicles and facilities, and live or recorded music venues and events. A PA system may include multiple microphones or other sound sources, a mixing console to combine and modify multiple sources, and multiple amplifiers and loudspeakers for louder volume or wider distribution.

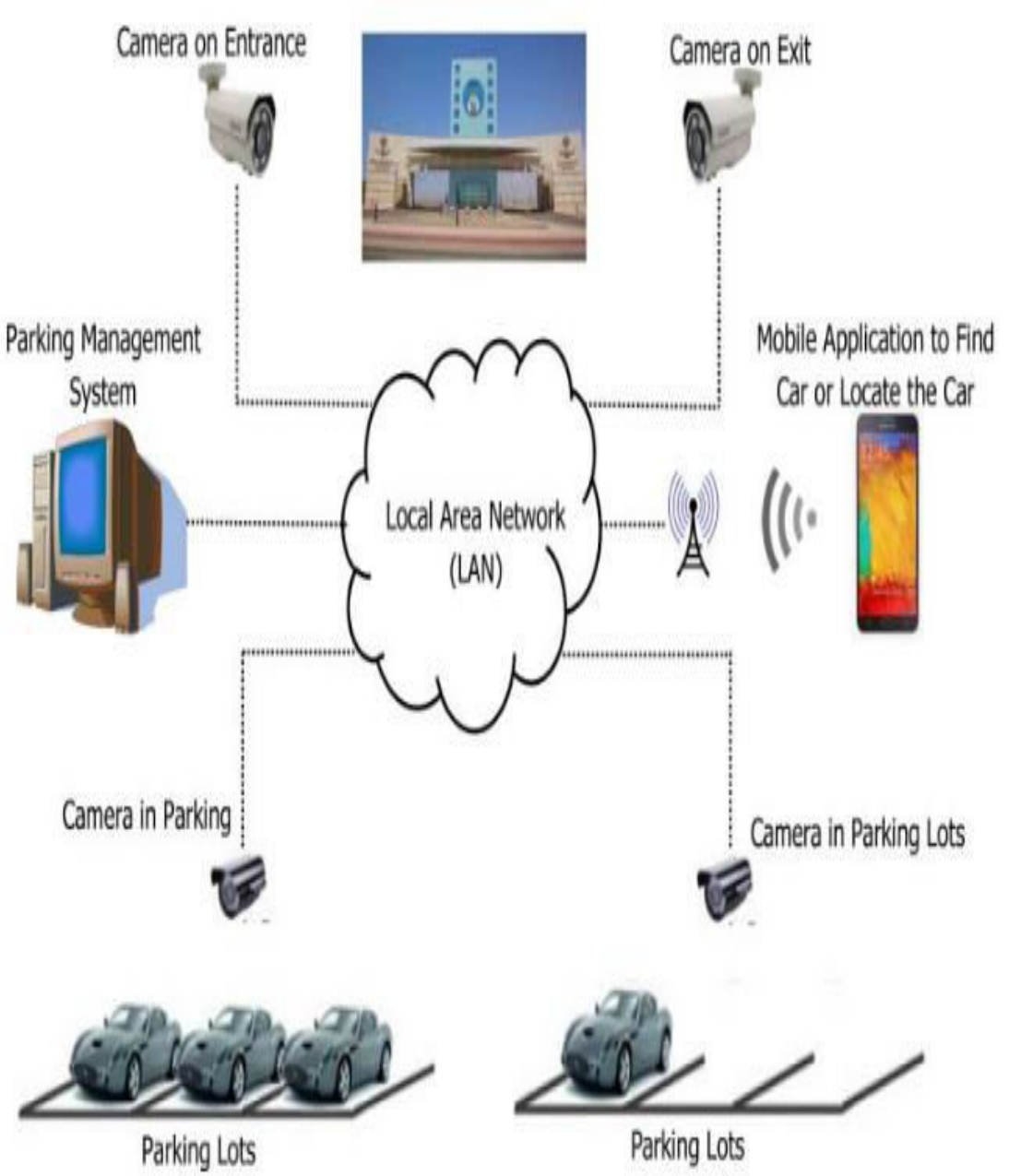
Simple PA systems are often used in small venues such as school auditoriums, churches, and small bars. PA systems with many speakers are widely used to make announcements in public, institutional and commercial buildings and locations—such as schools, stadiums, and passenger vessels and aircraft.



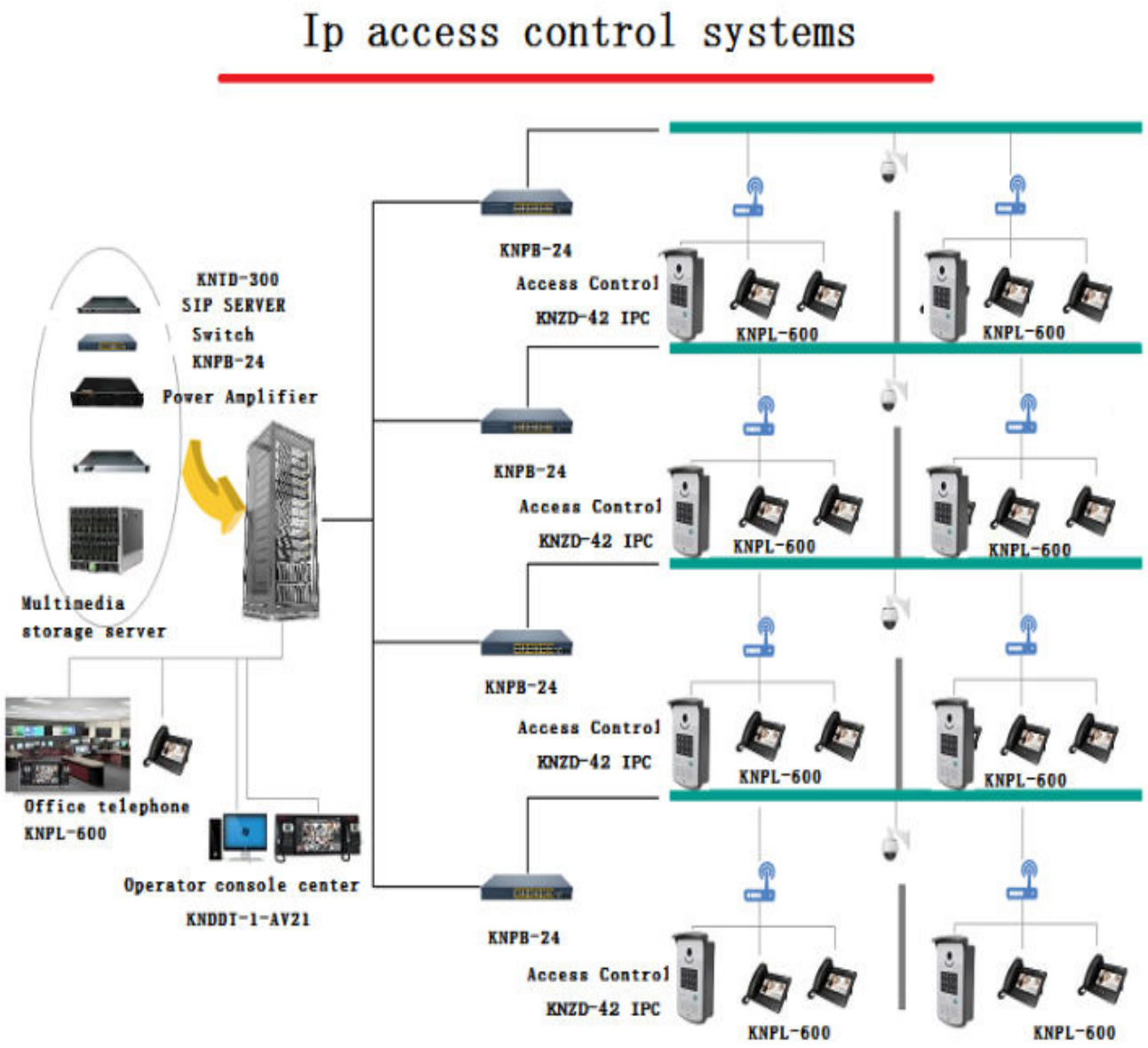
Parking Management Systems

Parking Management System

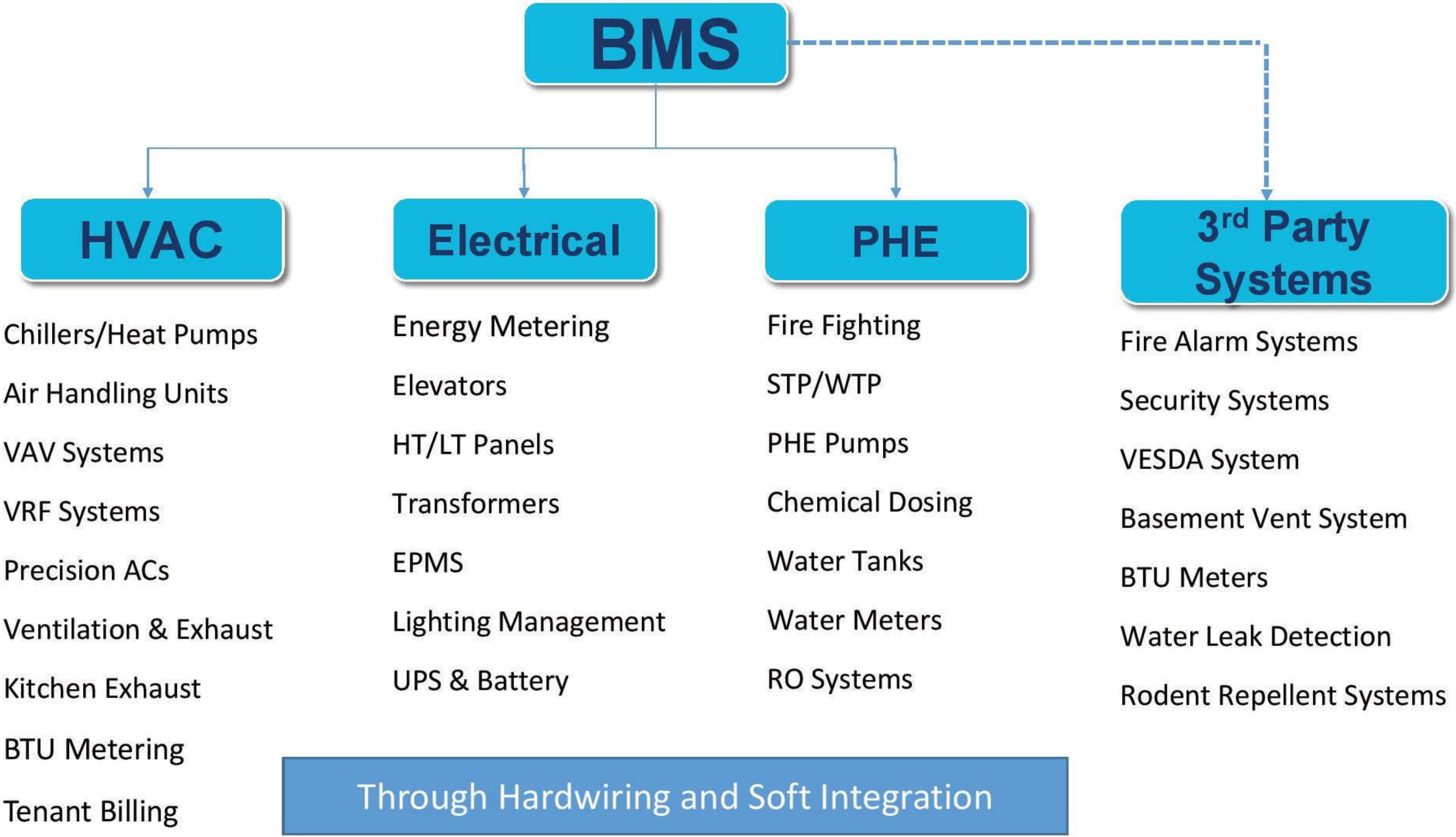
Brothers Secure Provides a parking management system **automates a car parking system**. It optimizes parking space and make processes efficient. It gives real-time car parking information such as vehicle & slot counts, available slots display, reserved parking, pay-and-park options, easy payments, reports, and a host of other features.



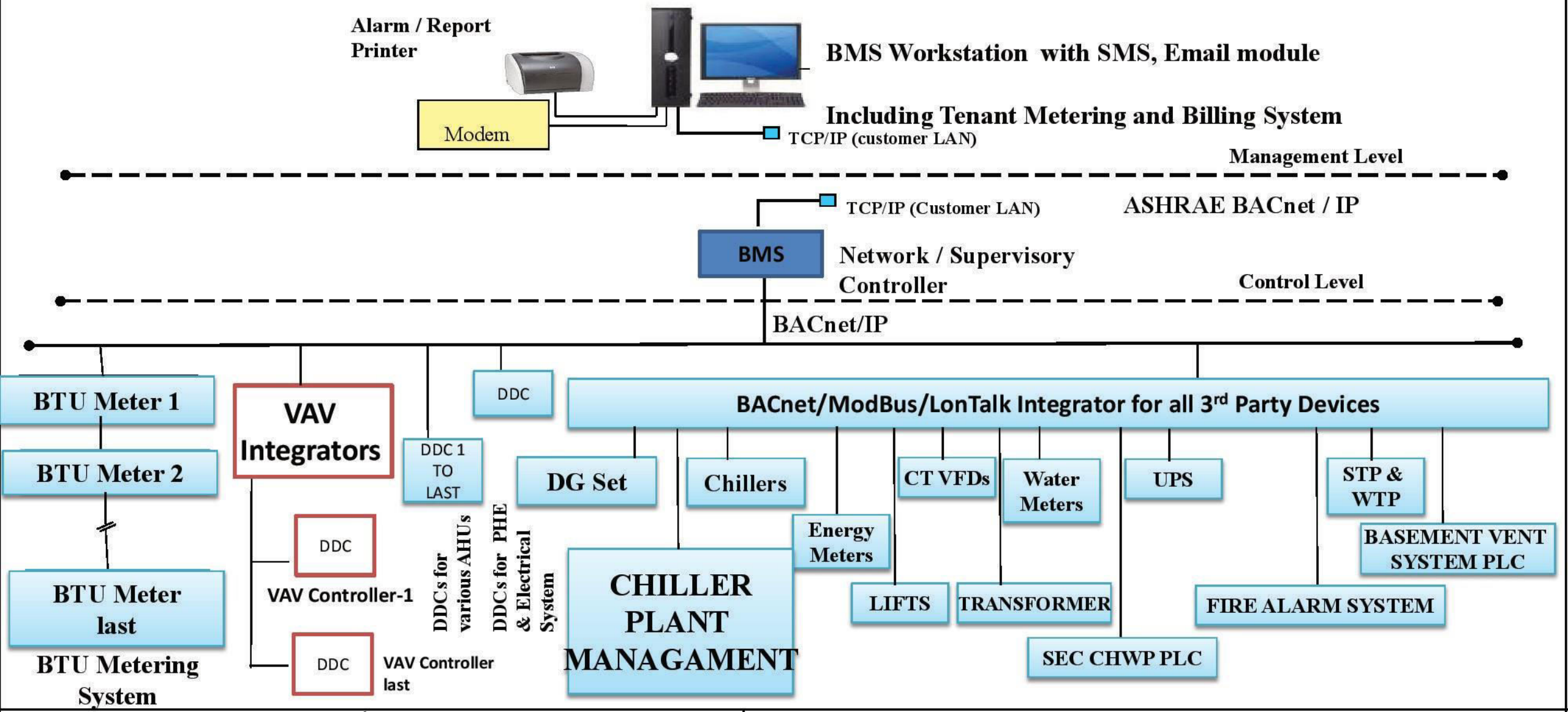
Access Control Systems



Access control systems which is electronic systems that facilitate automated approval for authorized personnel to enter through a security portal without the need for a security officer to review and validate the authorization of the person entering the portal, typically by using a credential to present to the system to verify their authorization. A security portal is a door or passageway that creates an entry point in a security boundary. Access control systems are based on the premise that issuing keys to all employees who need them is generally not cost-effective. Another premise of an access control system is that it would be cost prohibitive to rekey the facility should a key be lost. Finally, an access control system can limit employee access; allowing them entry only to areas in which they are authorized, or granting entry during certain times of day. An access control system uses a means of verification, known as a credential, to allow a person to enter an area. The credential can be something that is known, generally a personal identification number; something that is carried, such as a card or token; or something that the authorized person has, such as a fingerprint or iris (the coloured part of the eye). The credential is entered, swiped, presented, or scanned, and, after some level of verification, access is granted or denied.


BMS
HVAC
Chillers/Heat Pumps
Air Handling Units
VAV Systems
VRF Systems
Precision ACs
Ventilation & Exhaust
Kitchen Exhaust
BTU Metering
Tenant Billing
Electrical
Energy Metering
Elevators
HT/LT Panels
Transformers
EPMS
Lighting Management
UPS & Battery
PHE
Fire Fighting
STP/WTP
PHE Pumps
Chemical Dosing
Water Tanks
Water Meters
RO Systems
3rd Party Systems
Fire Alarm Systems
Security Systems
VESDA System
Basement Vent System
BTU Meters
Water Leak Detection
Rodent Repellent Systems
Through Hardwiring and Soft Integration

ARCHITECTURE FOR BUILDING MANAGEMENT SYSTEM

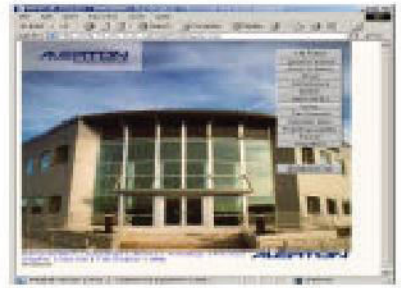


DRAWING: BMS Architecture

DATE: REV : 0

- Centralized WorkStation Computer

- With powerful user-friendly software.
- Used for everyday building operation.



- DDC Controllers

- Micro-processor based
- Pre-configured / Freely programmable
- Controls the HVAC equipment of the building

  and other electromechanical equipment

- Field devices

- Temperature, Humidity, Pressure sensors
- Valves, Actuators

Building the DDC Controllers with Input / Output Points

AI (analog input)	• Inputs to the DDC; For Monitoring purpose • Inputs from Temperature/Pressure Sensor/ Analog Devices • Signal:- 0-10 V or 4-20mA
DI (digital input)	• Inputs to the DDC; For Monitoring Purpose • Inputs from Switches/ Digital devices/ Starter Panels
AO (analog output)	• For Control purpose • Outputs to Actuating devices like Valves, VFDs etc., • Signal:- 0-10 Vdc or 4-20mA
DO (digital input)	• For Control Purpose • Outputs to MCC Panels/ Isolation Valves, Fans, pumps etc to start/stop or open/close

Cabling and Communication

Signal Cable

- For Monitoring and Controlling
- 0-10 Vdc or 4-20mA
- Usually 2C x 1 Sqmm Shielded Cable

Power Cable

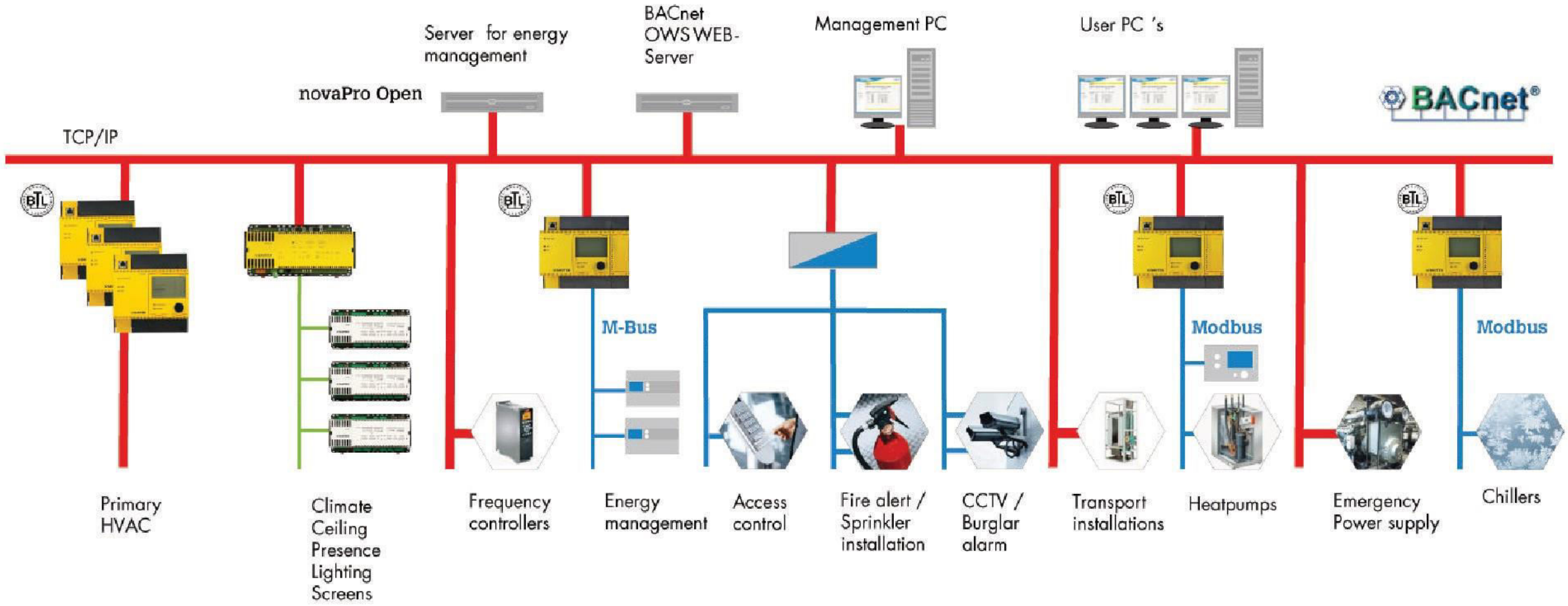
- To provide power to Sensors
- Usually 3C x 1.5 Sqmm Cable

Communication Cable

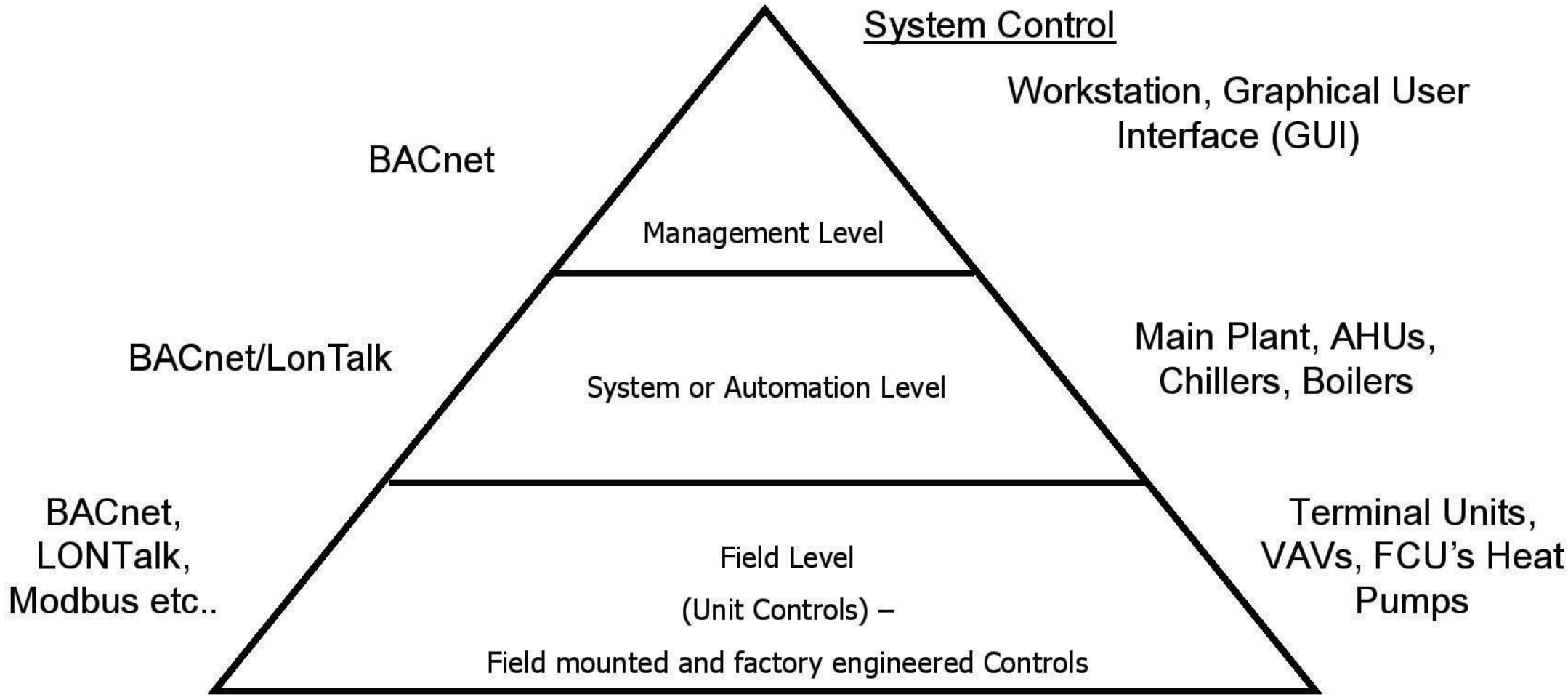
- Communication between DDC and Supervisory Controllers
- Depends on System to System

BMS Wiring

BMS Integration - Typical



System Architecture for a generic BMS



ModBus

Industrial “defacto” standard

Developed originally by Modicon

Allows data exchange

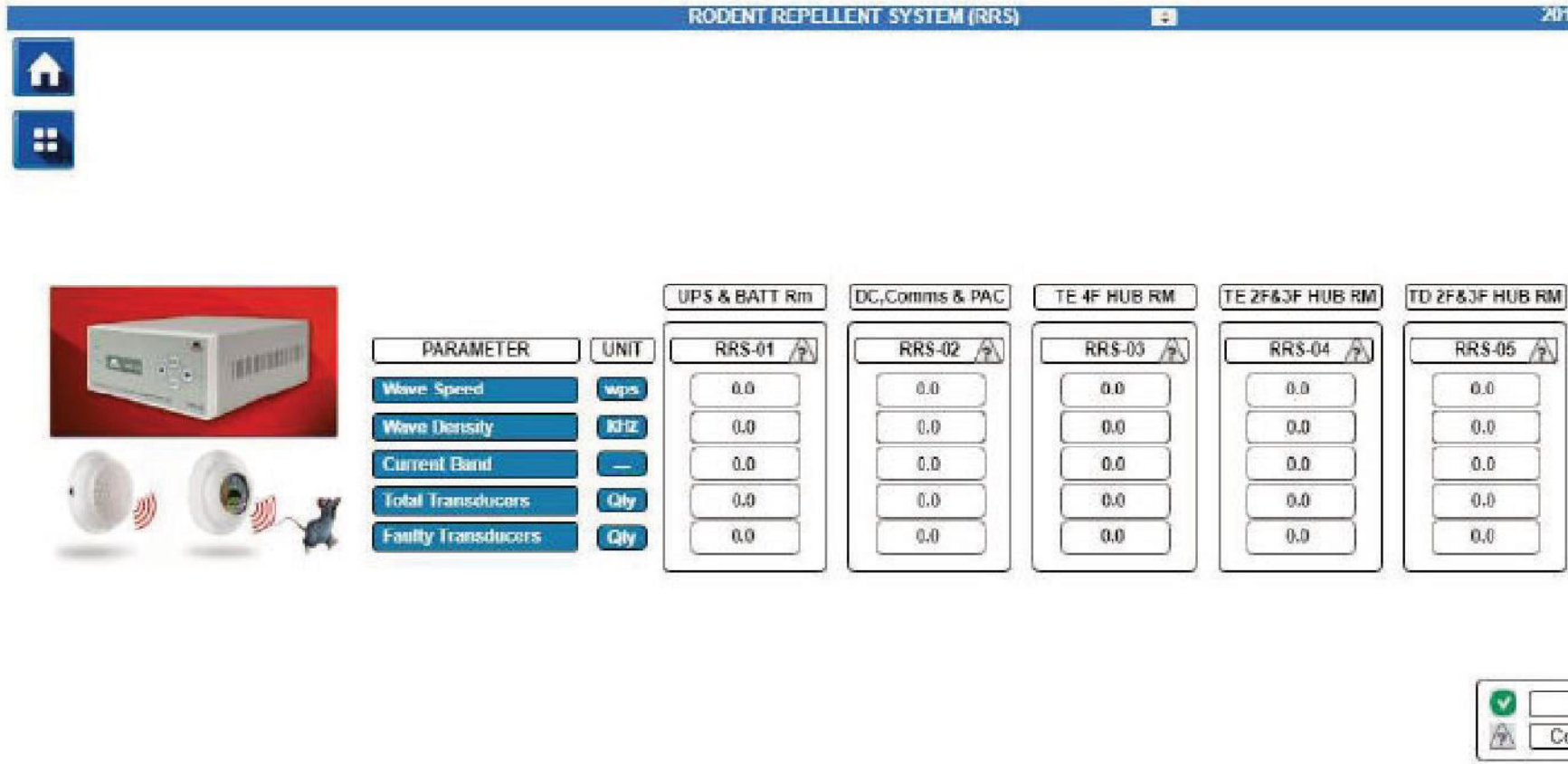
Many variations exist – Modbus RTU (remote terminal unit) is most common

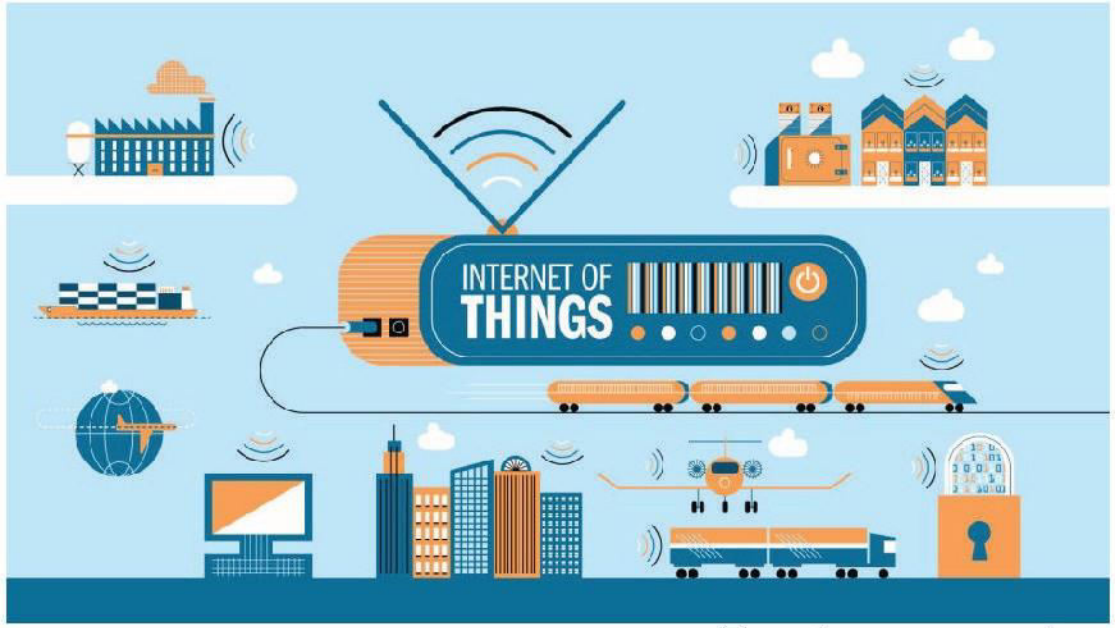
Implemented in a variety of HVAC and industrial equipment

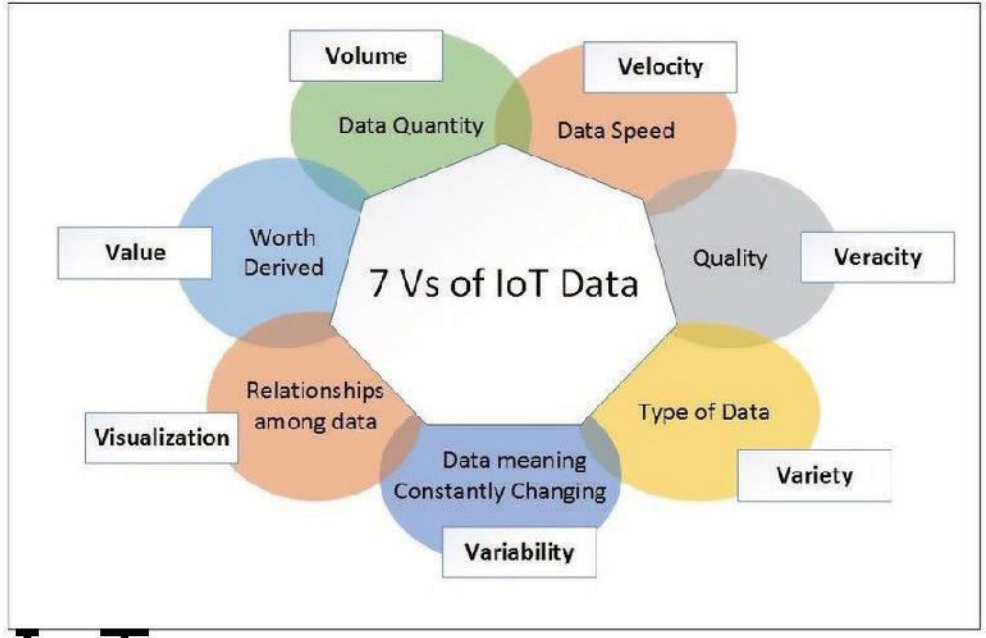
- VFDs
- fume hood controllers
- **power monitoring equipment**
- lighting control panels
- DG Sets
- UPS
- Precision Air Conditioners

Rodent System Integration

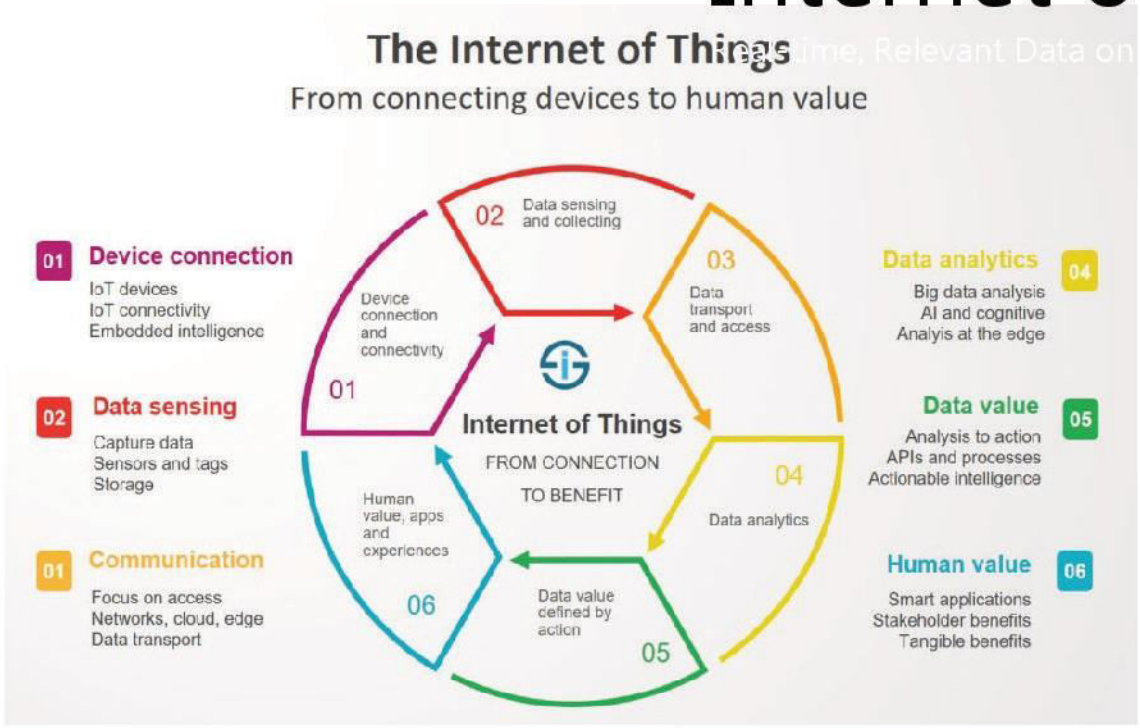
RRS





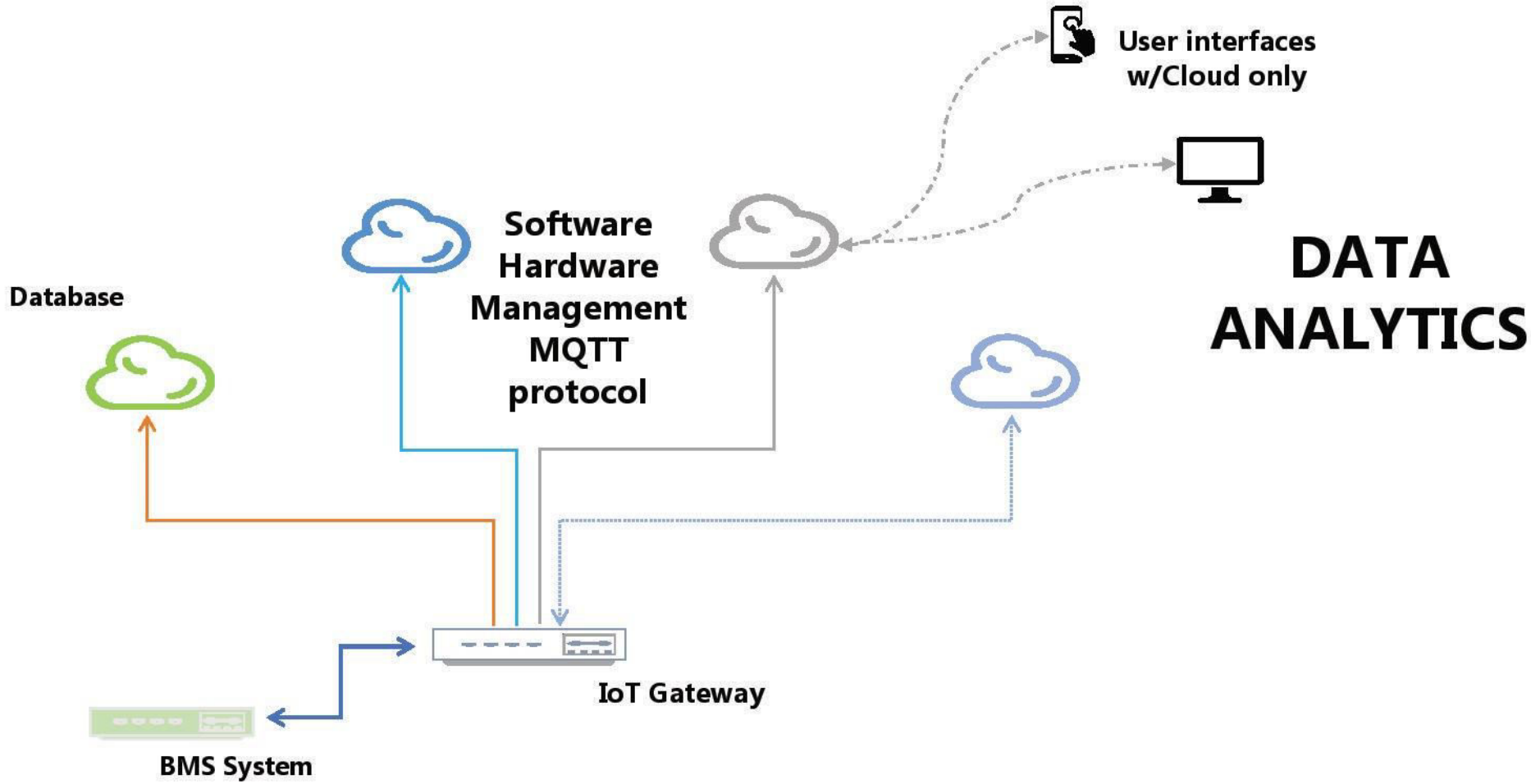


Internet of Things - IoT



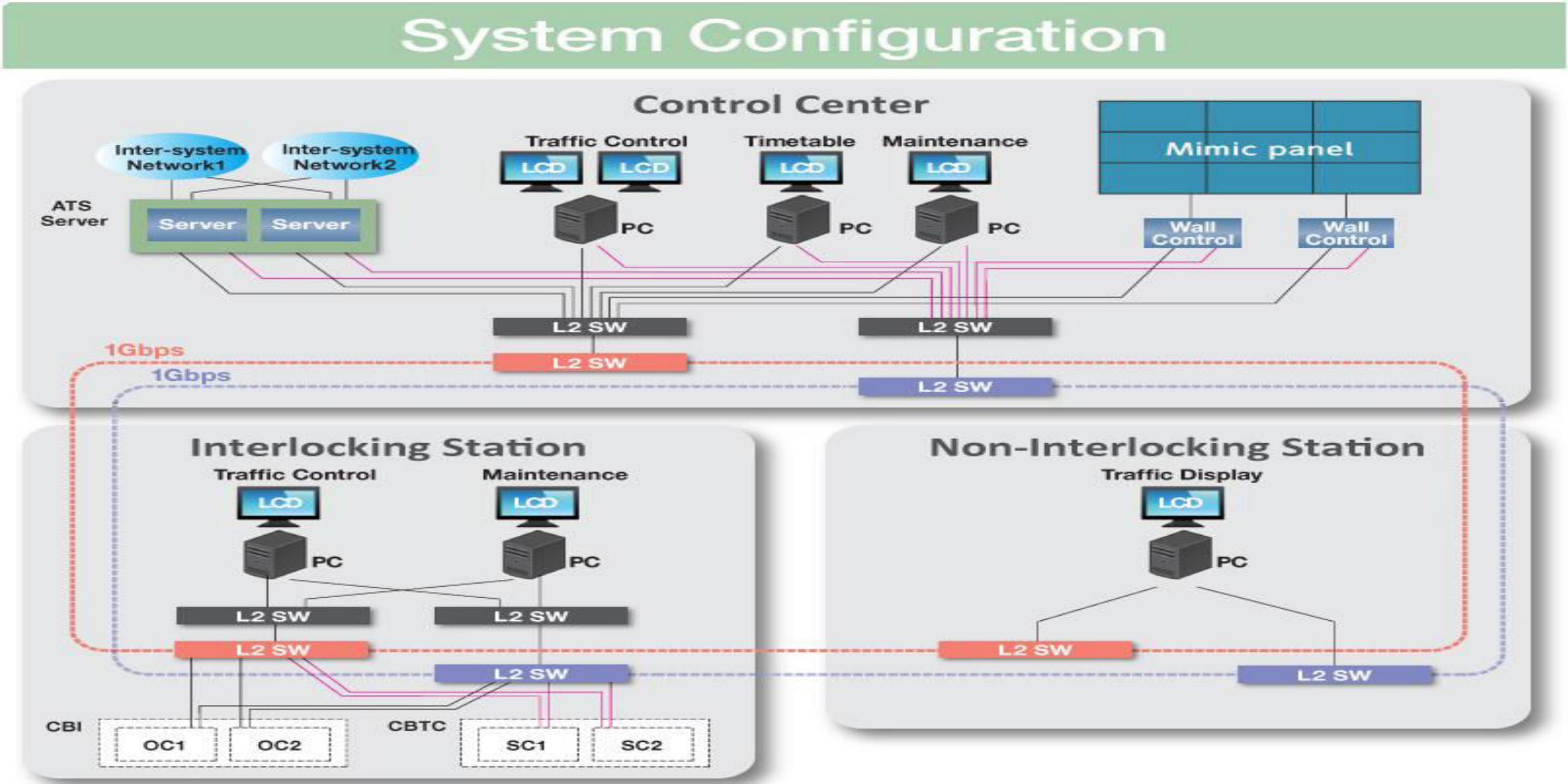
The **Internet of Things**, or **IoT**, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

System Architecture for IoT

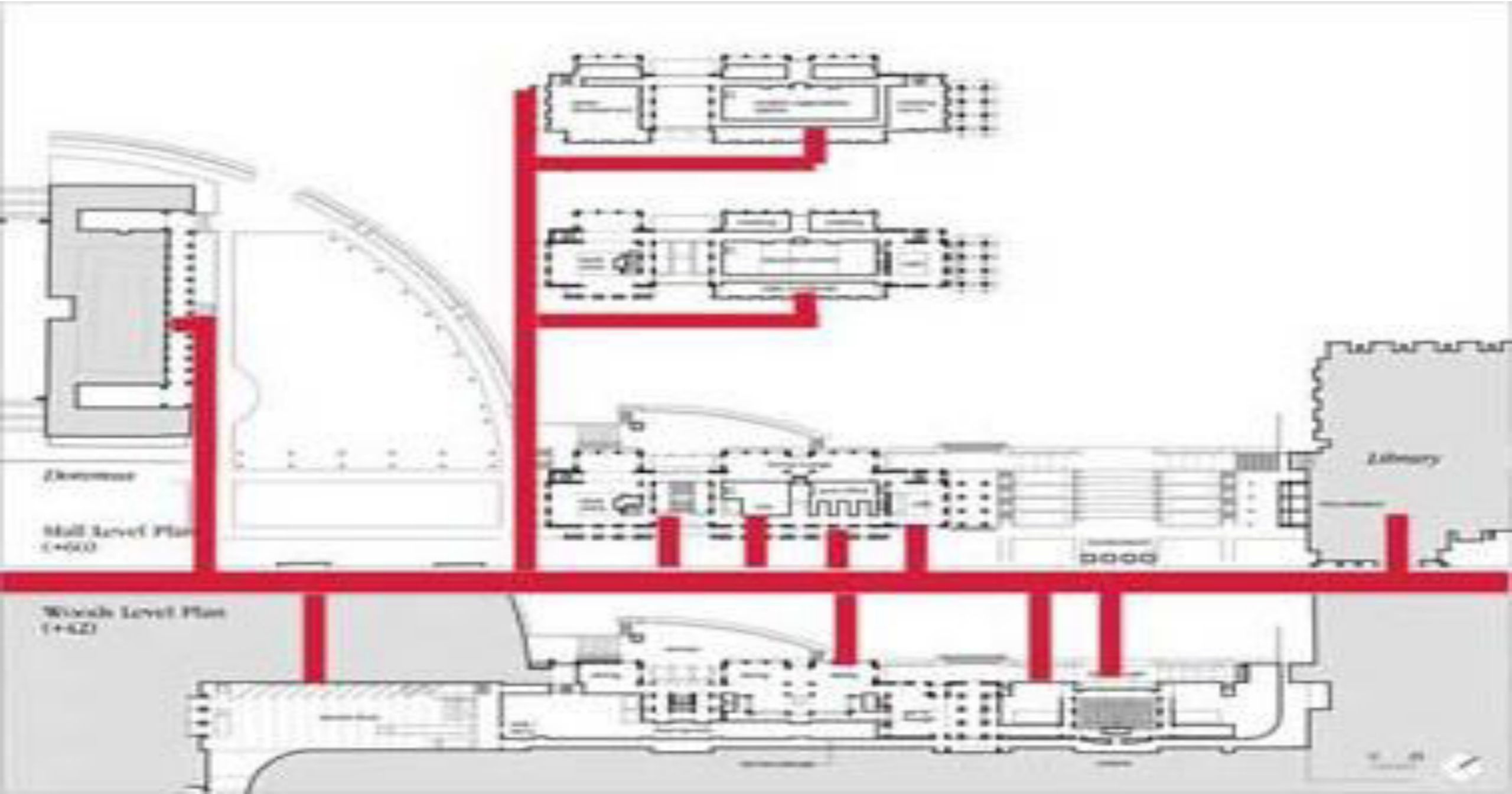


Drone is next generation SPY and Remotely Monitoring&Action

LAN Networking Infrastructure



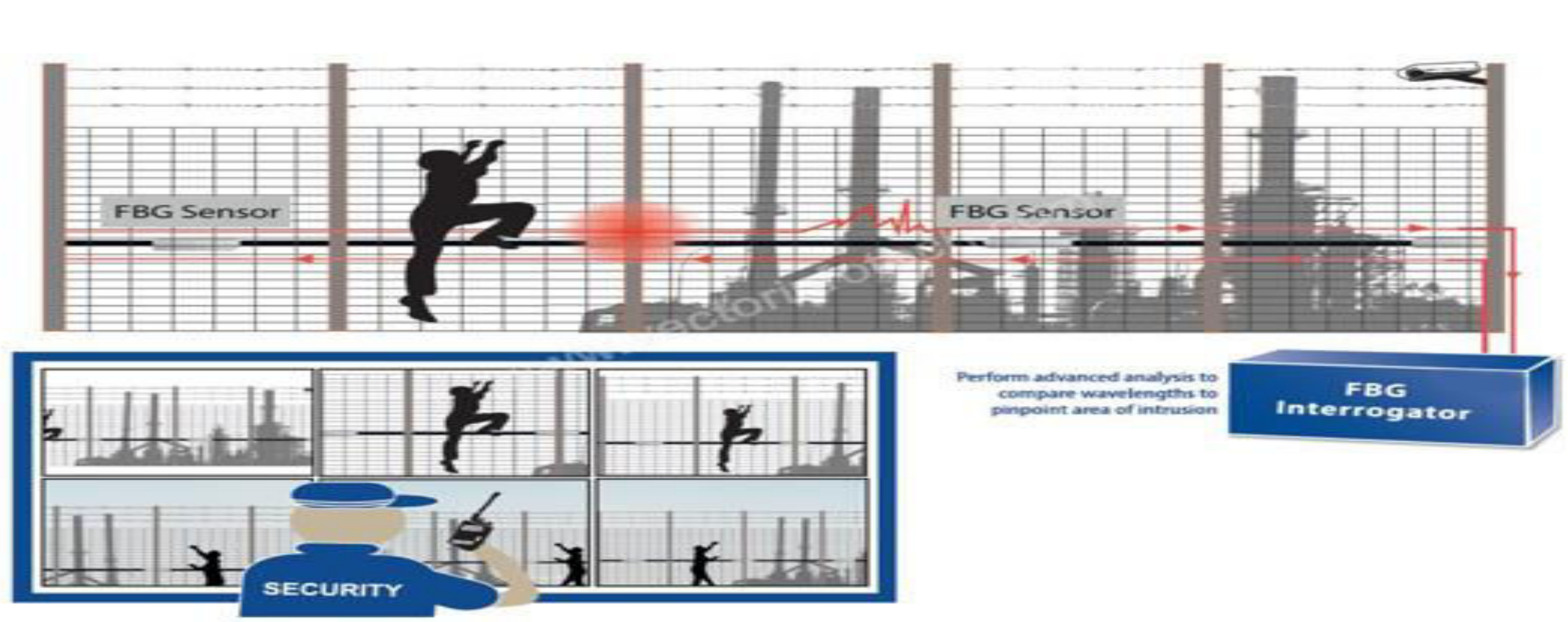
Fiber Optic Cable Network Architecture



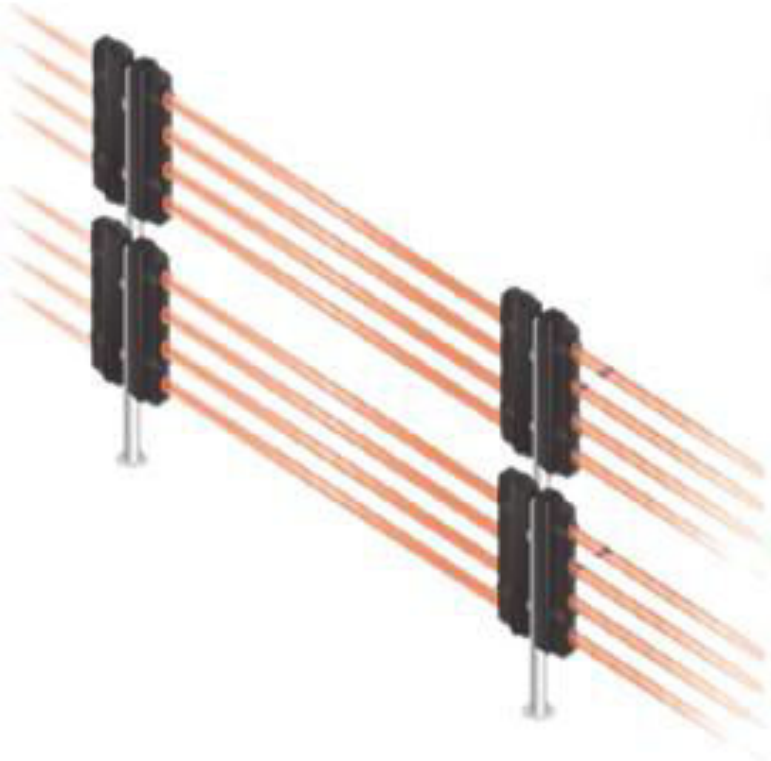
PERIMETER INTRUSION DETECTION SYSTEM

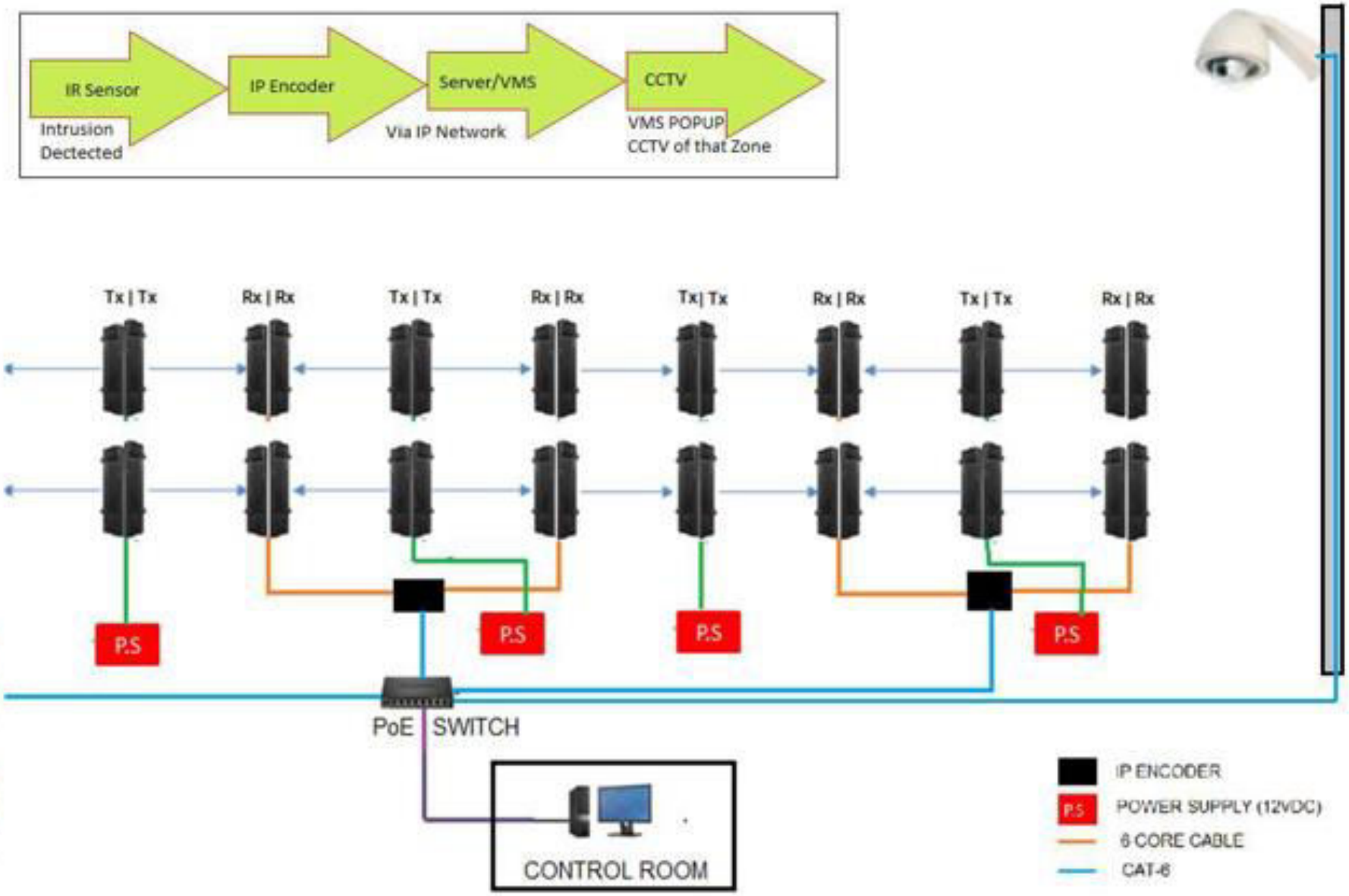
Perimeter·Intrusion·Detection·System·(PIDS)·is·designed·to·protect·assets·within·a·perimeter·by·detecting·intruders·attempting·to·gain·access·and·blocking·such·access·using·the·control·station.°Blue·Star·E&E·offers·robust·and·reliable·solutions·for·accurate·detection·of·such·unauthorised·entry·and·protection·of·assets·against·these·threats.·The·company's·turnkey·solutions·can·detect·any·unauthorised·physical·intrusions·across·the·perimeter,·assess·the·situation·and·track·intruders·for·future·actions.·Features·such·as·instant·alarm·generation·and·control·by·reporting·to·central·monitoring·station·make·it·easier·to·manage·such·situations.¶

PIDS·solutions·from°Link·vue·Systems·Pvt·Ltd···are·based·on·microwave·technology,·Optical·Fibre·Cable·(OFC)·or·video·cameras.·These·can·be·fence·mounted,·buried·underground·or·can·be·tailored·for·specific·needs,·based·on·customer·requirements.·Seamless·integration·of·PIDS·with·other·security·systems·adds·one·more·layer·of·comfort·for·the·customer.·This·security·system·is·well·suited·for·military·bases,·government·facilities,·oil·refineries,·petrochemical·plants,·power·plants,·sea·ports,·airports,·VIP·residences,·storage·yards·and·so·on.¶



Safe Guard Your Solar Plant from Un Authorized Trespass





Motion Sensor with Alarm Management

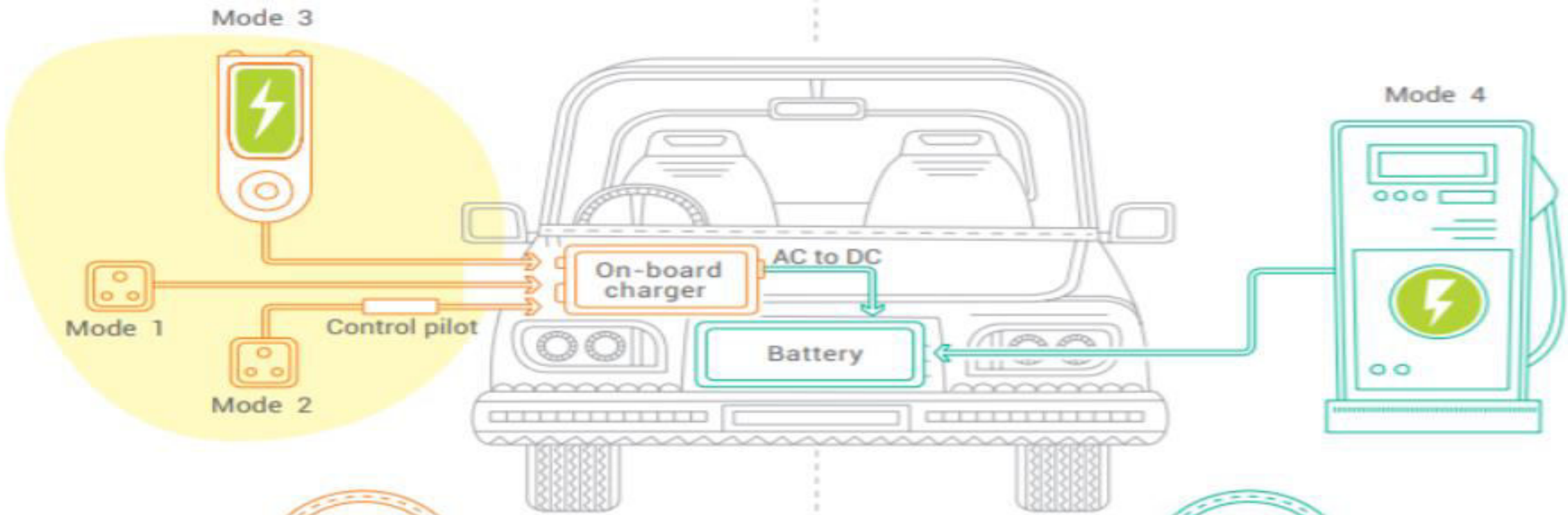
•Beam detectors com e in a pair of t ransm it ter and receiver. Each t ransm it ter sends four I R beam s and is received at the receiver.

•When all four beam s are blocked by an intruder, then an alarm is com m unicated to the control panel / sounder.

•SL series quad beam detectors have dry contacts available for connection to all kind of alarm panels.

•Easy to install system , com es with autom atic beam alignm ent unit. Rem oves hum an error elem ent with 5 Year Warranty.

•Effective and efficient in securing m edium threat locations like office buildings, warehouses, solar farm s etc.



AC

(2kW TO 22kW)

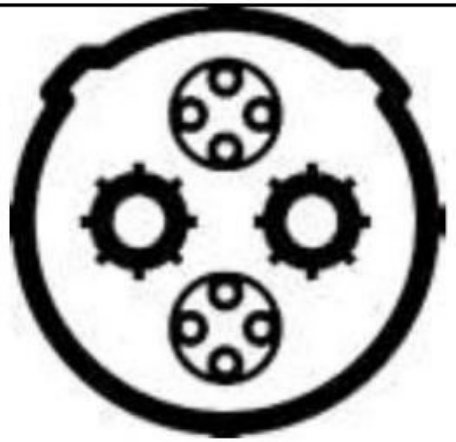
DC

(2kW TO 200kW +) DC

3 PIN Type 1 Type 2

CHAdeMo Combo 2 Type 2

Electrical Vehicle Connectors for ON Board & Charging Unit

Standard	CHAdeMO IEEE 2030.1.1 IEC 62196-3 (Configuration AA)	GB/T GB/T 20234.3 IEC 2196-3 (Configuration BB)	CCS Type 1 SAE J1772 IEC 62196-3 (Configuration EE)	CCS Type 2 IEC 62196-3 (Configuration FF)	Tesla
Coupler Inlet					
Maximum Voltage	1000 V	1000 V	600 V	1000 V	410 V
Maximum Current	400 A	250 A	200 A	200 A	330 A
Available Power	400 kW	120 kW	150 kW	175 kW	135 kW

Electric Vehicle AC & DC Charging Unit for All Vehicles 3KW-360KW

Electrical properties

1.Rated working current :10A/16A/32A/63A

2.Working voltage: 250/440V, preferred value 750V

3.Insulation resistance :>1000MΩ(DC500V)

4.Terminal temperature rise :<50K

5.Seal: rubber or silicone ｉ Pressure :2000V

6.Vibration resistance: meet the requirements of JDQ53.36.1.1-53.36.1.2

7.Contact impedance: 0.5MΩMAX

8.Contact number:5

Material application

1.Shell material: Thermoplastic, flame retardant grade UL94V-O

2.Pin: copper alloy, silver plated surface + thermoplastic top

3.Seal: rubber or silica gel

Work environment

1.Working environment temperature :-40℃~+105℃

Mechanical property

1.Mechanical life: no load >10000 times

2.When coupling, plug and pull force :<100N

Level of protection

1.Product protection level :IP55

3.5KW / 7KW Portable AC Charging Box

Product Name	3.5KW / 7KW Portable AC Charging Box
Rated current	16A/32A
Power	3.5KW / 7KW
Operation voltage	250V
Insulation resistance	> 500MΩ(DC500V)
Contact Resistance	0.5mΩ Max
Terminal temperature rise	< 50K
Withstand voltage	1500V
Mechanical life	no-load plug in/out > 10000 times
Coupled insertion force	45N < F < 100N
Impat of external force	can afford 1M drop
Operating temperature	-30℃-+50℃
Case material	thermoplastic,flame retardant grade UL94 V-0
Terminal	Copper alloy,silver plating
Leakage protection	Overvoltage under-voltage protection/Over load protection/Lightningprotection

7KW Easy-use Charging Box

Product Name	7KW Easy-use Charging Box
Type	KY-AC-7KW
Dimension(mm)	180*130*120mm
AC Power	220Vac±20% ; 50Hz±10% ; L+N+PE
Rated Current	32A
Output Power	7kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;
Charging Mode	Plug and Charge
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.
Executive Standard	IEC 62196, SAE J1772
Cable Length	5m (optional)
Protection Level	Ip54

7KW Easy-use Charging Box

Product Name	7KW Easy-use Charging Box
Type	SE-AC-7KW
Dimension(mm)	150*150*60
AC Power	220Vac±20% ; 50Hz±10% ; L+N+PE
Rated Current	32A
Output Power	7kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;
Charging Mode	Plug and Charge
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.
Executive Standard	IEC 62196, SAE J1772
Cable Length	5m (optional)
Protection Level	Ip54

AC 7KW Wall-mounted,Column-type AC Charging Station

Product Name	AC 7kw Charging Station
Type	SE-AC-7KW Plastic version (Commercial Using)
Dimension(mm)	450*130*305
User Interface	4.3 inch highlight display
AC Power	220Vac±20% ; 50Hz±10% ; L+N+PE
Rated Current	32A
Output Power	7kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;
Charging Mode	swipe card, scan code
Networking Mode	2G, 4G, wifi
Operation Mode	Offline no billing, offline billing, online billing
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.
Executive Standard	IEC 62196, SAE J1772
Cable Length	5m (optional)
Protection Level	Ip54
Installation	Wall-mounted or floor-mounted installation

7KW Wall-mounted Column-type AC Charging Station

Product Name	7KW AC Charging Station (Real-estate type)
Type	SE-AC-7KW (Home using, Commercial Using)
Dimension(mm)	370*255*85
User Interface	4.3 inch screen
AC Power	220Vac±20% ; 50Hz±10% ; L+N+PE
Rated Current	32A
Output Power	7kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;
Charging Mode	swipe card, scan code
Networking Mode	2G, 4G, wifi
Operation Mode	Offline no billing, offline billing, online billing
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.
Executive Standard	IEC 62196, SAE J1772
Cable Length	5m (optional)
Protection Level	Ip54
Installation	Wall-mounted or floor-mounted installation

AC 14 KW Double plugs AC Charging Station

Product Name	AC 14kw Charging Station
Type	SE-AC-14KW
Dimension(mm)	480*350*120
User Interface	4.3 inch highlight display
AC Power	220Vac±20% ; 50Hz±10% ; L+N+PE
Rated Current	32A
Output Power	14kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;
Charging Mode	Swipe card, scan code
Networking Mode	Ethernet,. 4G, wifi
Operation Mode	Offline no billing, offline billing, online billing
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.
Executive Standard	IEC 62196, SAE J1772
'able Length	5m (optional)
'rotection Level	Ip54
ICD	Type B
nstallation	Wall-mounted or floor-mounted installation

SE-AC-22/44KW double Plugs Floor standing type AC Charging Station

Product Name	AC 22/44 kw Charging Station	
Type	SE-AC-22/44KW	
Dimension(mm)	500*350*130	500*350*130
User Interface	4.3 inch highlight display	
AC Power	380Vac±20% ; 50Hz±10% ; L+N+PE	
Rated Current	32A	
Output Power	22kW	44kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;	
Charging Mode	swipe card, scan code	
Networking Mode	Ethernet, 4G, wifi	
Operation Mode	Offline no billing, offline billing, online billing	
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.	
Executive Standard	IEC 62196, SAE J1772	
Cable Length	3.5m (optional)	
Protection Level	Ip54, Type B RCCB	
Installation	Wall-mounted or floor-mounted installation	

SE-DC-240/360KW Charging Station

Product Name	Integrated DC Charging Station	
Type	SE-DC-240KW	SE-DC-360KW
Dimension(mm)	720*557*1600(mm)	
User Interface	7 inch touch screen	
Input voltage	AC380V±20%	
Rated Current	400-630A	
Output Power	240kW	360kW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;	
Charging Mode	swipe card, scan code	
Networking Mode	Ethernet 4G, wifi	
Input frequency	45-65Hz	
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.	
Executive Standard	IEC 62196, SAE J1772	
Cable Length	5m (optional)	
Protection Level	Ip54	

SE-DC-30/40KW Charging Station

Product Name	Integrated DC Charging Station	
Type	SE-DC-30KW	SE-DC-40KW
Dimension(mm)	550*200*1620 (mm)	
User Interface	4.3 inch touch screen	
Input voltage	AC380V±20%	
Rated Current	67-70A	
Output Power	30KW	40KW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;	
Charging Mode	swipe card, scan code	
Networking Mode	Ethernet, 4G, wifi	
Input frequency	45-65Hz	
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, e	
Executive Standard	IEC 62196, SAE J1772	
Cable Length	5m (optional)	
Protection Level	Ip54	

SE-DC-60KW/80KW Charging Station

Product Name	Integrated DC Charging Station	
Type	SE-DC-60KW	SE-DC-80KW
Dimension(mm)	720*557*1700(mm)	
User Interface	7 inch LCD color display touch screen	
Input voltage	AC380V±20%	
Rated Current	100-180A	
Output Power	60KW	80KW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;	
Charging Mode	swipe card, scan code	
Networking Mode	Ethernet, 4G, wifi	
Input frequency	45-65Hz	
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.	
Executive Standard	IEC 62196, SAE J1772	
Cable Length	5m (optional)	
Protection Level	Ip54	

SE-DC-120/180KW Charging Station

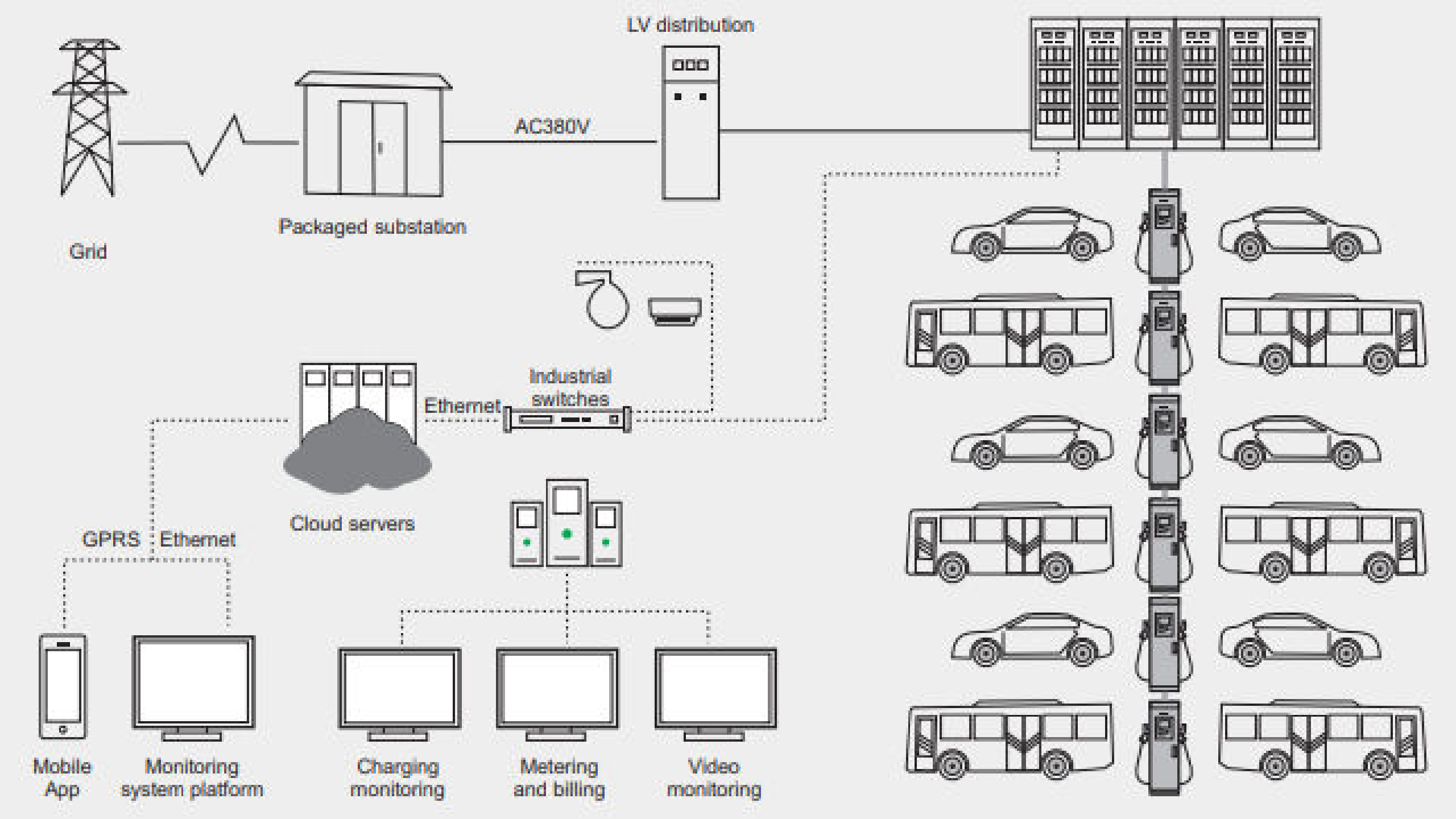
Product Name	Integrated DC Charging Station	
Type	SE-DC-120KW	SE-DC-180KW
Dimension(mm)	720*557*1700 (mm)	
User Interface	7 inch touch screen	
Input voltage	AC380V±20%	
Rated Current	250-280A	
Output Power	120KW	180KW
Working Condition	Elevation : ≤2000m; Temperature : -20℃~+50℃ ;	
Charging Mode	swipe card, scan code	
Networking Mode	Ethernet,, 4G, wifi	
Input frequency	45-65Hz	
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.	
Executive Standard	IEC 62196, SAE J1772	
Cable Length	5m (optional)	
Protection Level	Ip54	

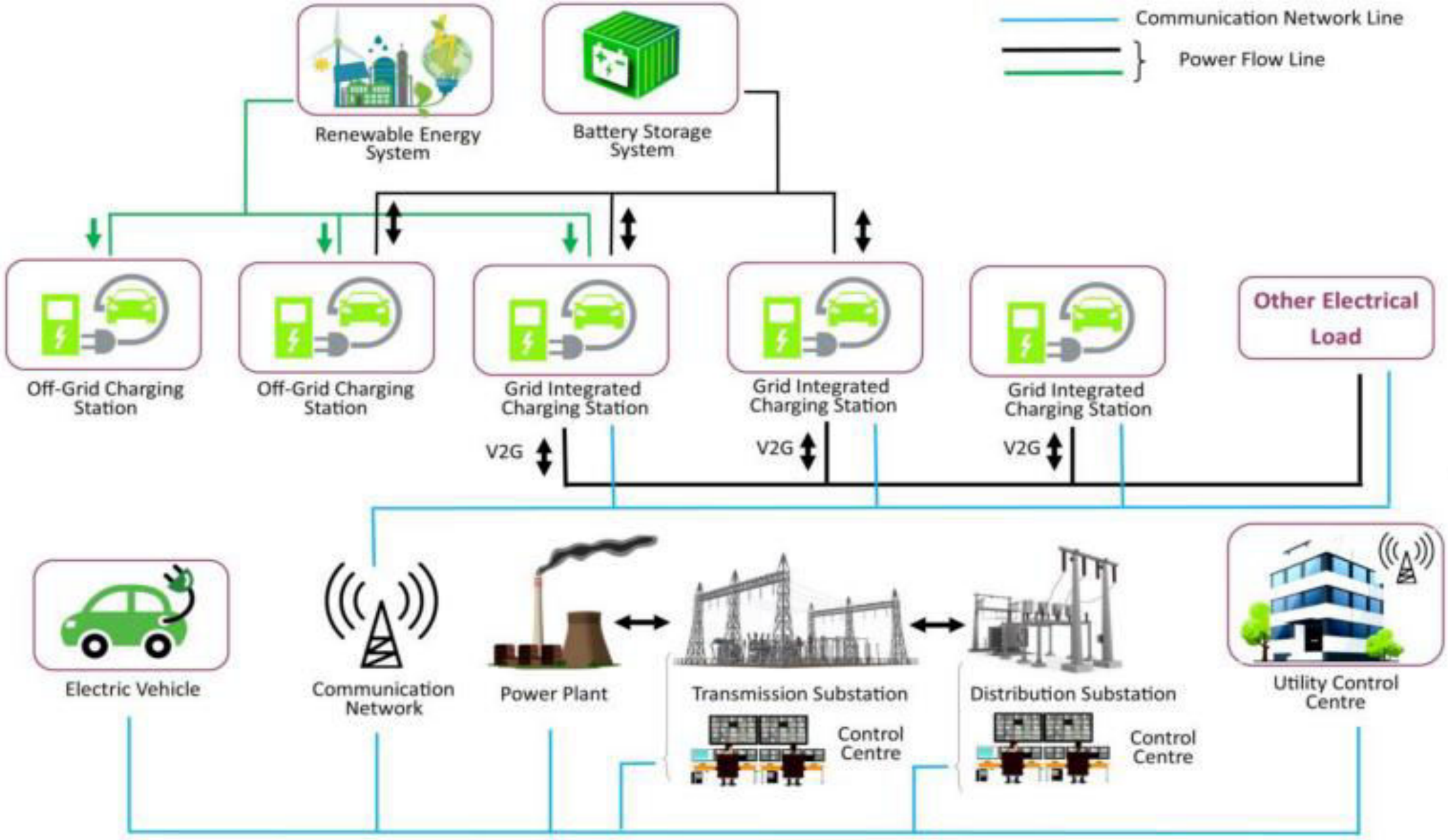
DC Portable Charging Station

Product Name	Portable DC 3.5kw Charging Box			
Type	SE-DC-7KW	SE-DC-15KW	SE-DC-20KW	SE-DC-30
Dimension(mm)	345*175*265	540*375*195	540*375*195	540*375*1
User Interface	Digital tube, LED			
Output Voltage	200V-750V	200V-750V	200V-750V	200V-750
Power factor	≥0.99 (above 50% load)			
HMI	LED			
Working Condition	Elevation : ≤3000m; Temperature : -20℃~+50℃ ;			
Charging Mode	Switch Start			
Output Frequency	45-65 Hz			
Protection Function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.			
Executive Standard	IEC 62196, SAE J1772			
Cable Length	5m (optional)			
Protection Level	Ip54			

SE-DC-120KW Charging Station

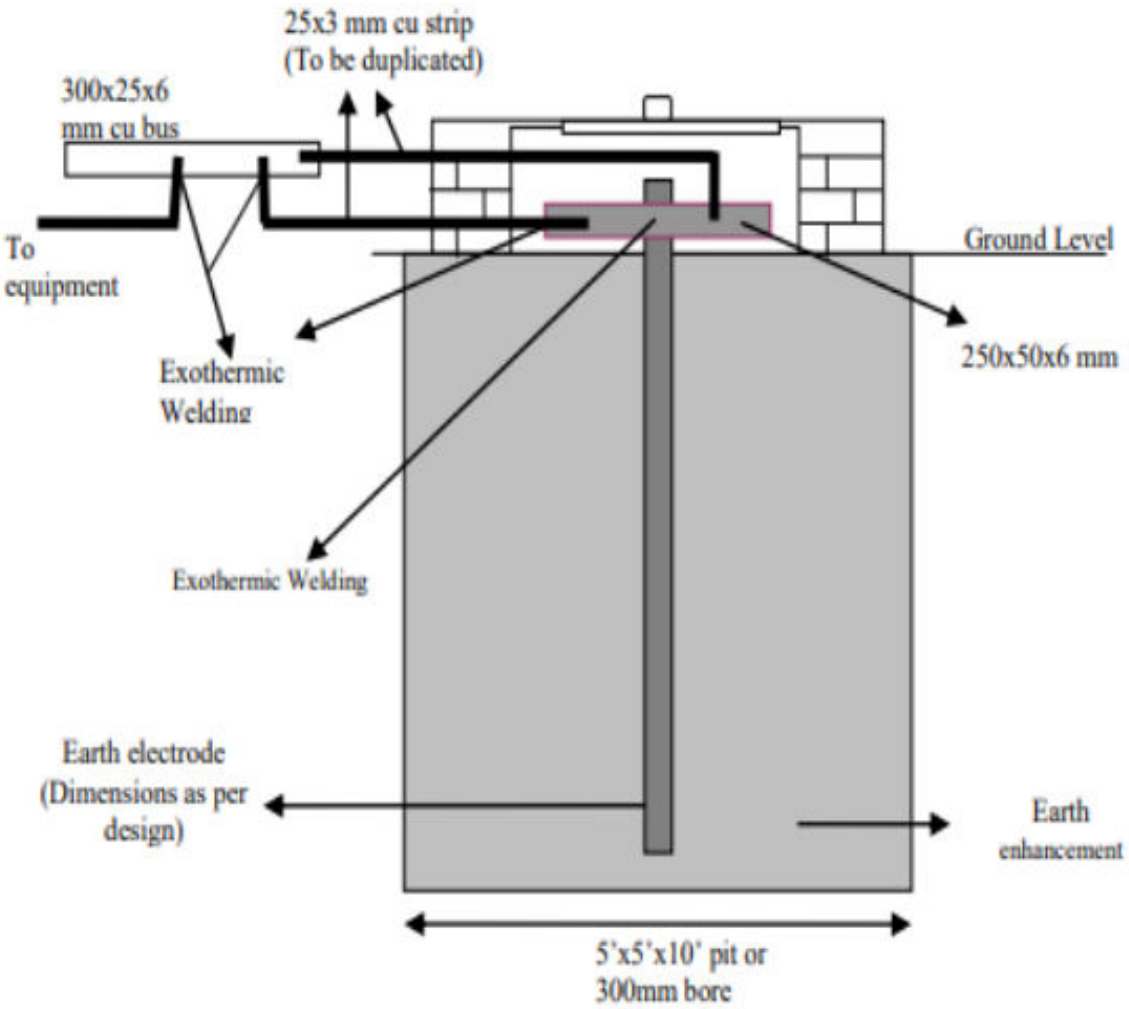
Product Name		SE-DC-120A/B		
Detailed specifications Dimension(mm)	Rated Power	120KW		
	User Interface	7 inch LCD color display touch screen		
	output method	CCS/CHAdeMO	CCS/CHAdeMO	Type2
	Output Power	60kw	60kw	22kw
	Installation method	Floor-standing		
	Route way	Down in and Down out		
Charging Equipment	Equipment size	(700) * (500) * (1672) mm		
	Input voltage	AC380V±20%		
	Input frequency	45~65Hz		
	The output voltage	200-750V		
	Single gun output current range	0-160A		
	Protocol	OCPP 1.6		
	Cable length	5m		
	Measurement accuracy	0.5Level		
Electrical index	Current limit protection value	≥110%		
	Regulation accuracy	≤±0.5%		
	Steady current accuracy	≤±1%		
	Ripple coefficient	≤±0.5%		
	effectiveness	≥94.5%		
	Power factor	≥0.99 (Above 50% load)		
	Harmonic content THD	≤5% (Above 50% load)		
Feature Design	HDMI	7 inch LCD color display touch screen, LED indicator		
	Charging mode	Automatic charging / fixed power / fixed amount / fixed time		
	Security Function	Charge gun temperature detection, overvoltage protection, undervoltage protection, overload protection, short circuit protection, grounding protection, overtemperature protection, low temperature protection, insulation monitoring protection, reverse polarity protection, lightningprotection, emergency stop protection, leakage protection		
Environmental Indicators	Operating temperature	-25℃~+50℃		
	Working humidity	5% ~ 95% non-condensing		
	Working altitude	≤3000m		
	Protection class	IP54		
	cooling method	Forced air cooling		
	Noise control	≤60dB		
	MTBF	100,000hours		


LV distribution
AC380V
Grid
Packaged substation
Industrial switches
Ethernet
Cloud servers
GPRS
Ethernet
Mobile App
Monitoring system platform
Charging monitoring
Metering and billing
Video monitoring


Communication Network Line
Power Flow Line
Renewable Energy System
Battery Storage System
Off-Grid Charging Station
Off-Grid Charging Station
Grid Integrated Charging Station
Grid Integrated Charging Station
Grid Integrated Charging Station
Other Electrical Load
V2G
V2G
V2G
Electric Vehicle
Communication Network
Power Plant
Transmission Substation
Control Centre
Distribution Substation
Control Centre
Utility Control Centre

Maintenance Free Earthing installation as per IS3043(2018)

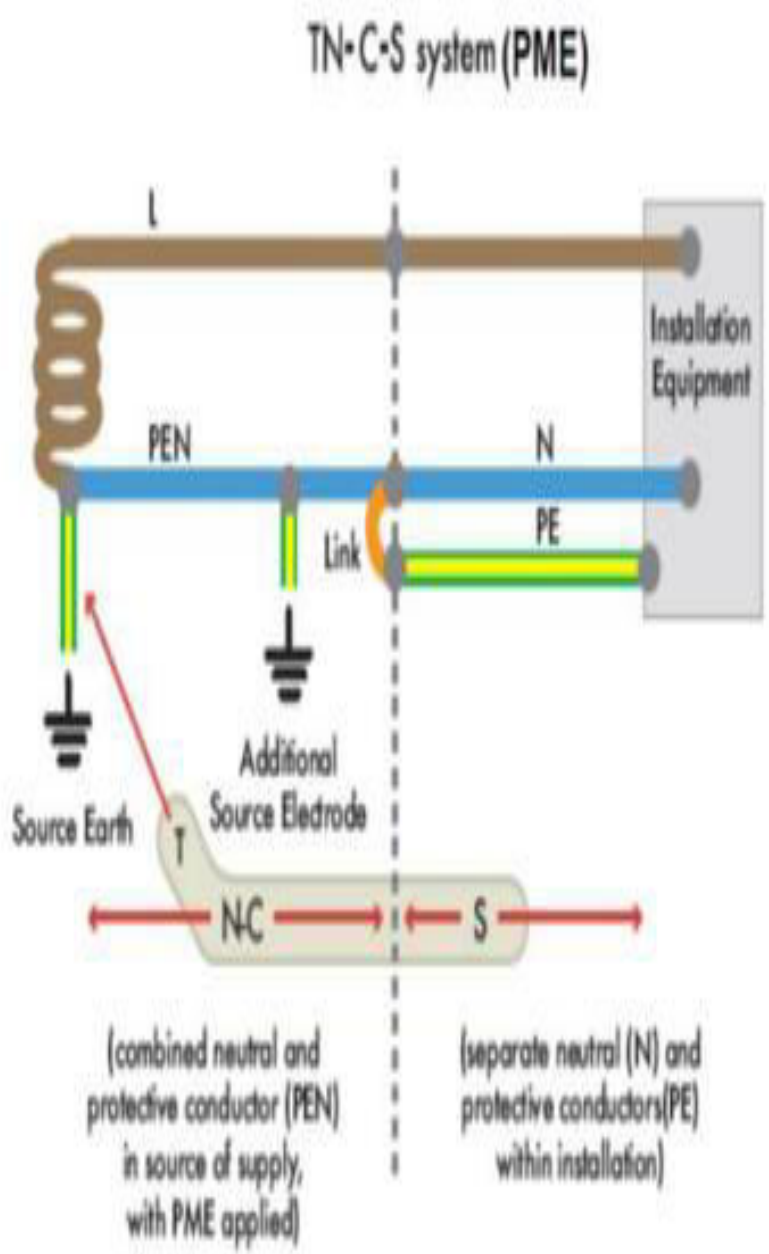
General Arrangements for Earth System

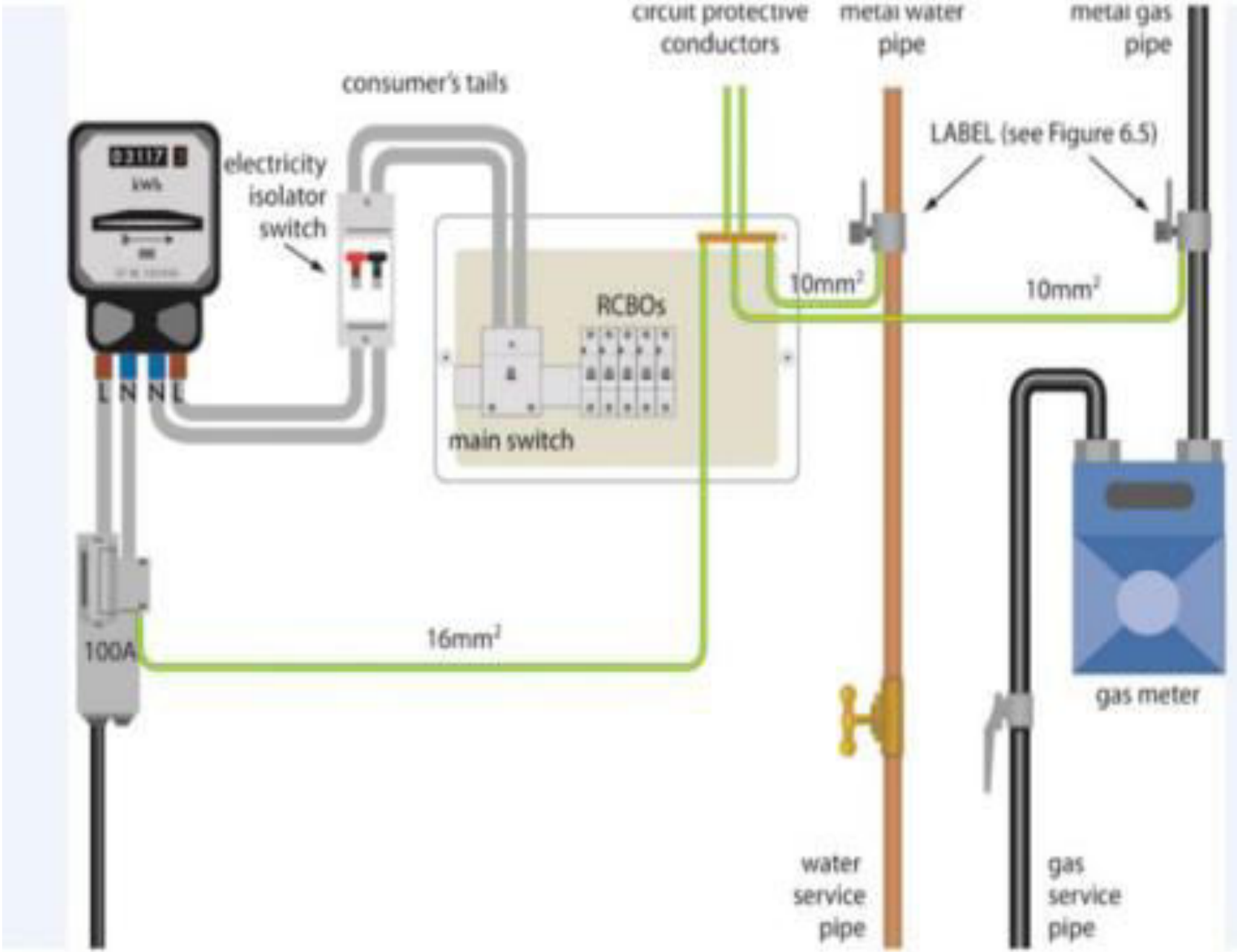


Earth electrode Installation

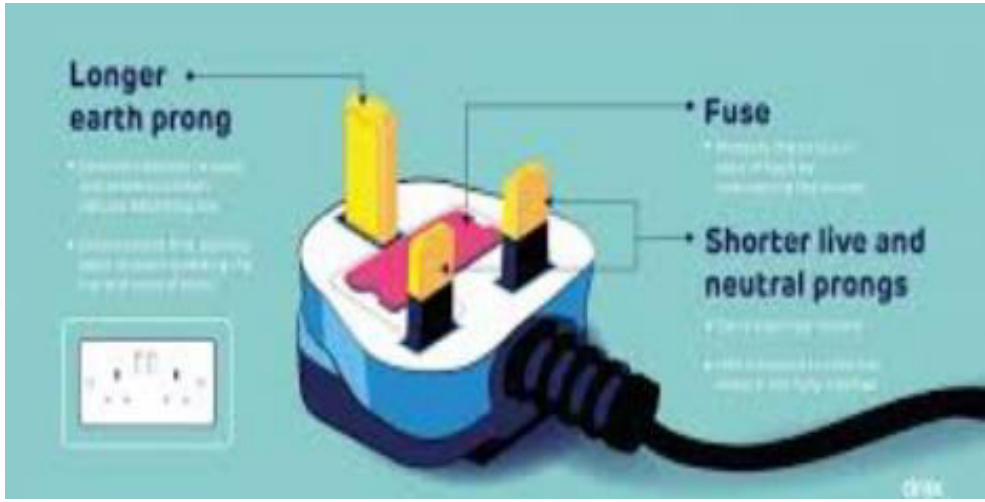
S.N.	Installations/ Current Capacity	IR Value Required	Soil Type/ Resistivity	Earth System
1.	House hold earthing/ 3kA	8 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ between 50 to 2000 ohm-mtr	Single Electrode
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes
2.	Commercial premises Office buildings/ 5kA	2 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ upto 2000 ohm-mtr	Multiple Electrodes
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes
3	Transformers, substation earthing, LT line equipment/ 15kA	1 - 2 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ upto 2000 ohm-mtr	Multiple Electrodes
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes
4	Transformers, substation earthing, HT line equipment/ 40kA	less than 1 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ upto 2000 ohm-mtr	Multiple Electrodes
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes
5	Lightning arresters, extra high current applications etc./ 50kA	less than 1 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ upto 2000 ohm-mtr	Multiple Electrodes
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes
6	PRS, UTS, RTUs,FOIS, COIS, ATMs and data processing centre etc./5KA	less than 0.5 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ upto 2000 ohm-mtr	Multiple Electrodes
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes

Earthing as per IS3043 and IEEE 80





I am Power Plug I will be Marry with only My Right Partner Make you Safety and Comfort



MC 4 Solar PV DC Connector Family 1800V 30Amps

Solar PV and EV Connectors /Harness

MC 4 Connectors DC Voltage 1500 V-1800V 30Amps

Electric Vehicle and ElectricVehicle ChargingConnectors, Cable Harness

AC EV Charger Connector

AC EV Charger Socket

DC EV Charger Connector

DC EV Charger Socket

(EVFM – European Standards Female to Male EV Plug / Type 2 to Type 2 EV Charging Cable)

(EVAE – American Standards to European Standards EV Plug / Type 1 to Type 2 EV Charging Cable)

Out DooR IP 68 CEE Compliance Plug &Socket forSpecial Electrical Equipment's

2.7 CEE Plug,Socket & Coupler

2.7.1 Panel Mounted CEE Socket


3 pole


4 pole


5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1331	SF1431	SF1531
	IP67	SF1332	SF1432	SF1532
32A	IP44	SF3331	SF3431	SF3531
	IP67	SF3332	SF3432	SF3532
63A	IP44	SF6331	SF6431	SF6531
	IP67	SF6332	SF6432	SF6532
125A	IP67	SF5332	SF5432	SF5532

2.7.2 Panel side-mounted CEE Socket


3 pole


4 pole


5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1341	SF1441	SF1541
	IP67	SF1342	SF1442	SF1542
32A	IP44	SF3341	SF3441	SF3541
	IP67	SF3342	SF3442	SF3542
63A	IP44	SF6341	SF6441	SF6541
	IP67	SF6342	SF6442	SF6542
125A	IP67	SF5342	SF5442	SF5542

2.7.3 Wall mounted CEE Socket


3 pole


4 pole


5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1311	SF1411	SF1511
	IP67	SF1312	SF1412	SF1512
32A	IP44	SF3311	SF3411	SF3511
	IP67	SF3312	SF3412	SF3512
63A	IP44	SF6311	SF6411	SF6511
	IP67	SF6312	SF6412	SF6512
125A	IP67	SF5312	SF5412	SF5512

2.7.4 CEE Interlock Switch Socket


3 pole


4 pole


5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP67	SF1372	SF1472	SF1572
32A	IP67	SF3372	SF3472	SF3572
63A	IP67	SF6372	SF6472	SF6572

Out DooR IP 68 CEE Compliance Plug &Socket forSpecial Electrical Equipment's

Cable 2 Cable Plug &Sockets

2.7.5 CEE Coupler



3 pole 4 pole 5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1321	SF1421	SF1521
	IP67	SF1322	SF1422	SF1522
32A	IP44	SF3321	SF3421	SF3521
	IP67	SF3322	SF3422	SF3522
63A	IP44	SF6321	SF6421	SF6521
	IP67	SF6322	SF6422	SF6522
125A	IP67	SF5322	SF5422	SF5522

2.7.6 CEE plug



3 pole 4 pole 5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1301	SF1401	SF1501
	IP67	SF1302	SF1402	SF1502
32A	IP44	SF3301	SF3401	SF3501
	IP67	SF3302	SF3402	SF3502
63A	IP44	SF6301	SF6401	SF6501
	IP67	SF6302	SF6402	SF6502
125A	IP67	SF5302	SF5402	SF5502

2.7.7 CEE Concealed plug



3 pole 4 pole 5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1351	SF1451	SF1551
	IP67	SF1352	SF1452	SF1552
32A	IP44	SF3351	SF3451	SF3551
	IP67	SF3352	SF3452	SF3552
63A	IP44	SF6351	SF6451	SF6551
	IP67	SF6352	SF6452	SF6552
125A	IP67	SF5352	SF5452	SF5552

2.7.8 CEE Wall mounted plug



3 pole 4 pole 5 pole

Ampere		3 pole	4 pole	5 pole
16A	IP44	SF1361	SF1461	SF1561
	IP67	SF1362	SF1462	SF1562
32A	IP44	SF3361	SF3461	SF3561
	IP67	SF3362	SF3462	SF3562
63A	IP44	SF6361	SF6461	SF6561
	IP67	SF6362	SF6462	SF6562

Electric Vehicle and Out Door Safety Connectivity

1.3.2 CEE Distribution Box

SF-NP282815-1
Size:280*270*155

SF-NP282815-2
Size:280*270*155

SF-NP335317
Size:530*320*175

SF-NP334317-1
Size:430*320*175

SF-NP334317-2
Size:430*320*175

SF-NP334318-1
Size: 800*600*220

SF-NP334318-2
Size:800*600*220

1.3.3 Portable Socket Distribution

SF-1805
Size:490*140*95

SF-1805C
Size:430*120*70

SF-1801
Size:240*120*120

SF-1801
Size:240*120*120

SF-1803
Size:215*200*200

SF-1804
Size:260*245*260

SF-1806B
Size:308*277*238

SF-1807-A

SF-1807-D

SF-1086A

SF-1086-E

I am Customize and I am Answer For All Our Door Electrical

SF-1808
Size:478*340*330

SF-1808
Size:478*340*330

SF-NP1901
Size:480*480*480

SF-NP1902
Size:588*480*480

SF-NP1903
Size:460*430*380

SF-NP1904
Size:530*460*380

SF-NP1905
Size:680*630*430

SF-NP1906
Size:900*630*430

1.3.4 Electric Vehicle Distribution

SF-202001
Size:290*210*120

1.4 waterproof switch socket

1.4.1 IP66 Waterproof Box for 45*45mm modules

1) A Verison

SF66-SR
Size:100*100*73
one Eu socket
waterproof box

SF66-SRS
Size:100*200*73
one Eu socket with
switch waterproof box

SF66-2SR
Size:200*100*73
2*Eu socket
waterproof box

SF66-S2SR
Size:300*100*73
2*Eu socket with
switch waterproof box

SF66-S3SR
Size:400*100*73
3*Eu socket
with switch
waterproof box

SF66-U
Size:100*100*73
one Universal socket
waterproof box

SF66-US
Size:100*200*73
one Universal
socket with switch
waterproof box

SF66-2U
Size:200*100*73
2*Universal socket
waterproof box

SF66-S2U
Size:300*100*73
2*Universal
socket with switch
waterproof box

SF66-S3U
Size:400*100*73
3*Universal
socket with switch
waterproof box

SF66-S
Size:100*100*73
one UK socket
waterproof box

SF66-SS
Size:100*200*73
one UK socket with
switch waterproof box

SF66-2S
Size:200*100*73
2*UK socket
waterproof box

SF66-S2S
Size:300*100*73
2*UK socket with
switch waterproof box

SF66-S3S
Size:400*100*73
3*UK socket
with switch
waterproof box

SF66-FR
Size:100*100*73
one French socket
waterproof box

SF66-FRS
Size:100*200*73
one French socket
with switch waterproof

SF66-2FR
Size:200*100*73
2*French socket
waterproof box

SF66-S2FR
Size:300*100*73
2*French socket
with switch
waterproof box

SF66-S3FR
Size:400*100*73
3*French socket
with switch
waterproof box

IP 68 Out doorPlug&Sockets/Building Internal Electrical Cable Freedom

1.4.1 IP66 Waterproof Box for 45*45mm modules

2) B Verison

SA66-S | SA66-2S | SA66-SS | SA66-S2S | SA66-S3S

1.4.2 IP55 Waterproof Box

S/N	Picture	Item & Feature	S/N	Picture	Item & Feature
1		SF-QB-200 IP55 1 way 45*45mm modules switch control IP55 waterproof box,dimension of 85*70mm;	2		SF-QB-201 IP55 3 way 45*45mm modules one switch and one socket outlet IP55 waterproof box,dimension of 85*95mm;
3		SF-QB-202 IP55 4 way 45*45mm modules of 2* socket outlet IP55 waterproof box, dimension of 85*120mm;	4		SF-QB-41 3 ways VIMAR modules flush-mounting IP55 waterproof box
5		SF-QB-42 4 ways VIMAR modules flush-mounting IP55 waterproof box			

1.4.3 BS standard one gang/two gang waterproof box

S/N	Picture	Item & Feature	S/N	Picture	Item & Feature
1		913SPF 1 Gang 13A waterproof switch socket	2		923SPF 2 Gang 13A waterproof switch socket
3		901ALF 1 gang switch waterproof box	4		902ALF 2 gang switch waterproof box
5		WP14 BS EN 60669-1 single pole 20A,250V			

2.4 Wiring Connectors

2.4.1 Quick Wire Connectors

FC-222-412
2 digits plug-in

FC222-413
3 digits, plug-in

FC222-414
4 digits, plug-in

FC222-415
5 digits, plug-in

FC-222-418
8 digits plug-in

FC-221
1 Line plug-in

FC-212
2 Lines plug-in

FC-313
3 Lines plug-in

FC121
1 bit, plug-in

FC-223-2P
2 Lines plug-in

FC-223-3P
3 lines, plug-in

FC-223-4P
4 Lines plug-in

FC-223-5P
5 Lines plug-in

FC-223-6P
6 Lines plug-in

FC-223-8P
8 Lines plug-in

FC-223-10P
10 Lines plug-in

FC-223-12P
12 lines, plug-in

FC-424
2into and 4 out plug-in

Special Connectors for Low Voltage Electrical Cable FreeDOM

FC426
2 into 6 out, plug-in

FC436
3 into 6 out, plug-in

FC439
3 into 9 out, plug-in

FC-224-101
plug-in

FC773-102
2 Lines Direct insertion

FC-773-104
4 Lines Direct insert

FC773-106
6 Lines Direct insert

FC773-108
8 Lines Direct insert

FC-773-173
3 Lines Direct insert

FC-773-174
4 digits insert directly

FC-773-252
2 lines pluggable

FC773-253
3 Lines, pluggable

FC773-254
4 Lines, pluggable

FC773-255
5 Lines, pluggable

FC773-202
2 digits, insert directly

FC-773-203
3 digits insert directly

FC-773-204
4 digits, insert directly

FC-773-205
5 digits insert directly

FC773-206
6 digits, insert directly

FC-773-208
8 digits insert directly

FC-221-412
2 Lines plug-in

FC-221-413
3 Lines plug-in

FC-221-414
4 Lines plug-in

FC-221-415
5 Lines plug-in

IP68 Waterproof connector

2.4.2 IP68 connector & block

SF-XY22-W01
No.:3P; OD6.5mm,OD9mm,OD11mm

Wire to Wire: No.2P & 3P; OD<=7 & OD<=8; Wire dia:0.5-1.5mm²

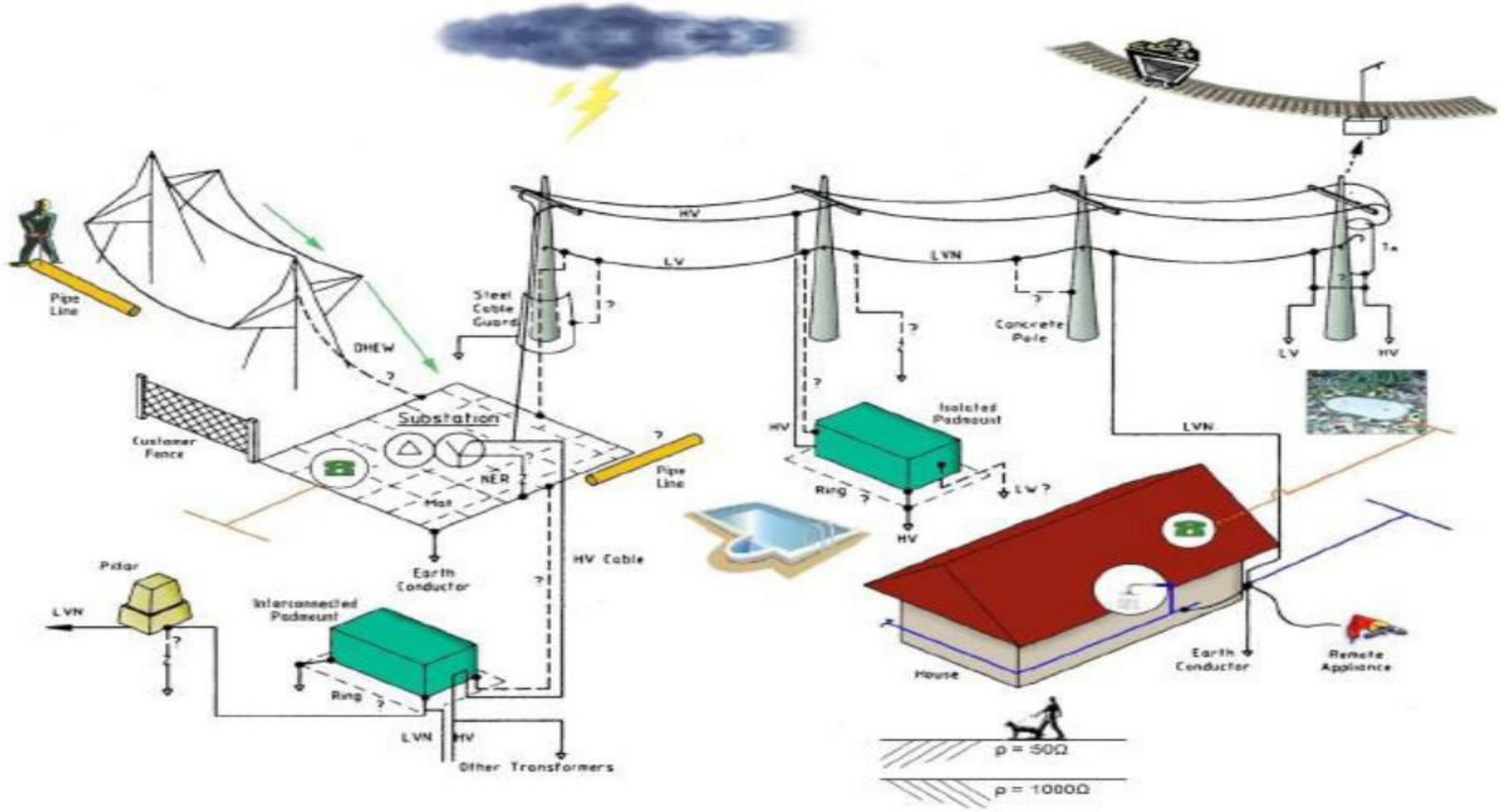
SF-XY12-W01

Wire to wire; wire dia:0.5-1.5mm; current:16/24A

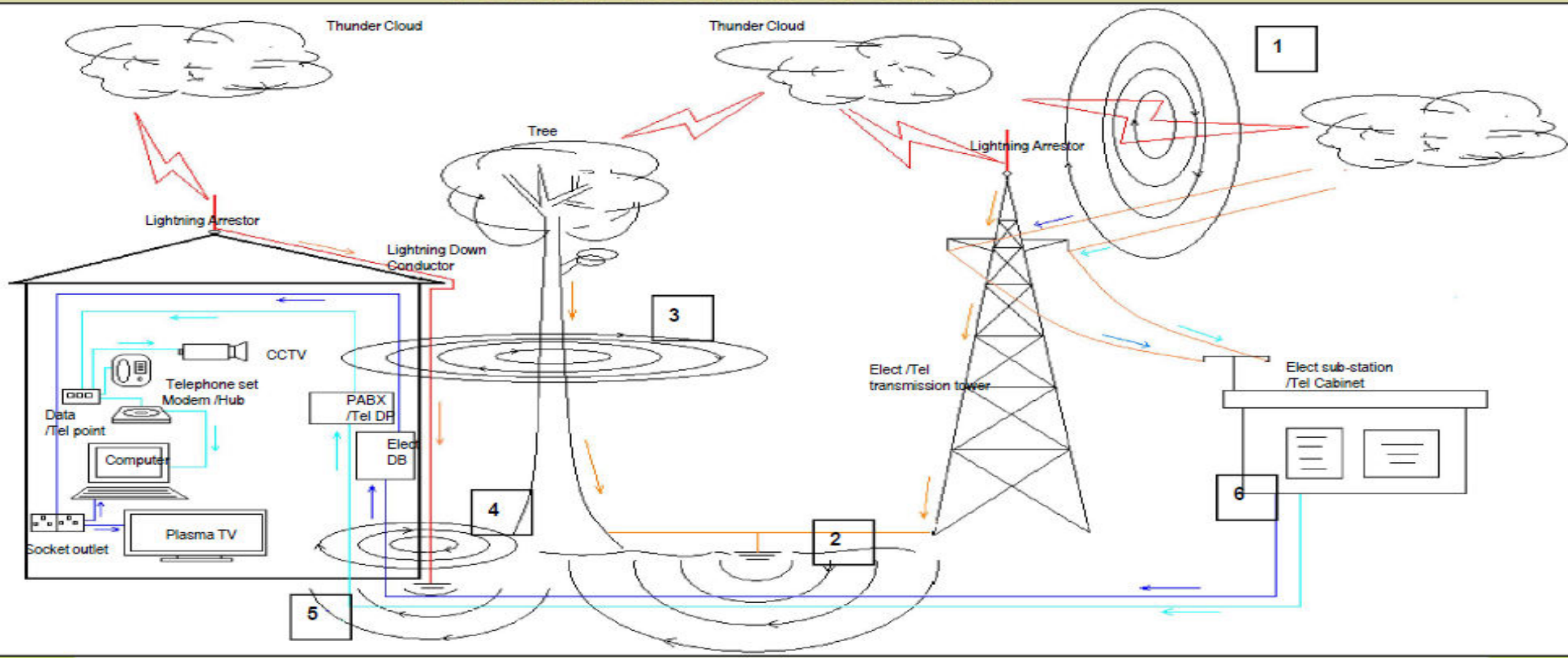
SF-XY16-W01
OD<=9 & OD<=11

SF-XYT21-W01
OD<=9 & OD<=11

Lightning Charges Travel in KM & Enter (Systems) from many medium



POSSIBLE SOURCES OF SURGES



Lightning Strike

Lightning Current

Telephone/Data Line

Power Line

Surge Current in Telephone/Data Line

Surge Current In Power LIne

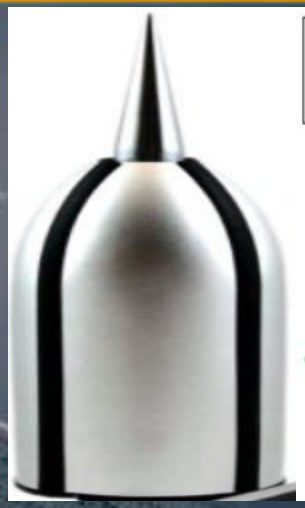
Ground Potential

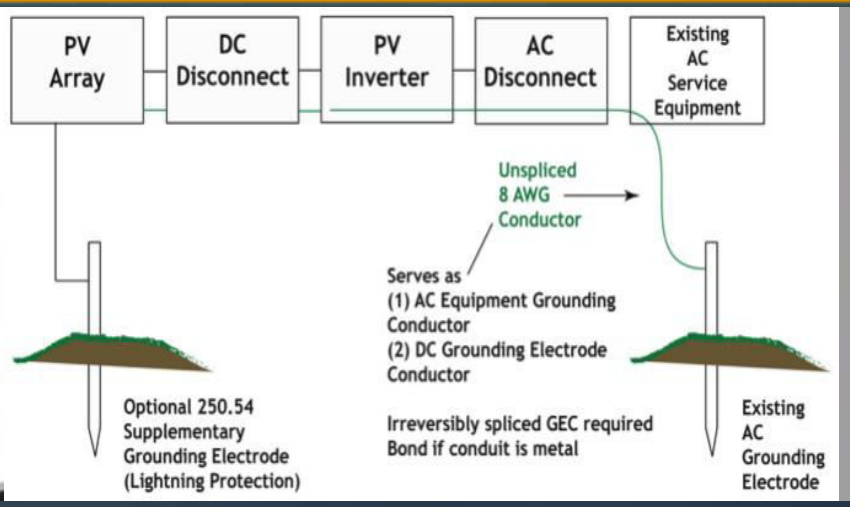
Inductive Coupling

VLP ENGINEERING SDN BHD

DC Power Plant we Ensure Safety

LIGHTNING PROTECTION SYSTEMS IN PHOTOVOLTAIC POWER PLANTS





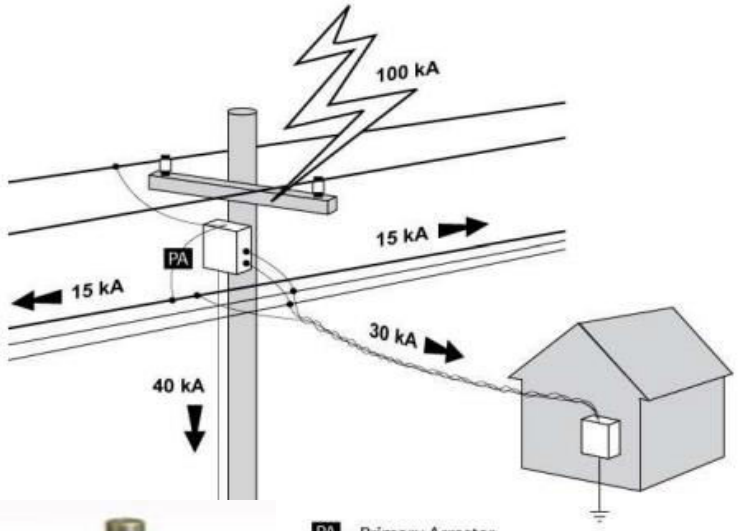
LOCAL STORM DETECTION

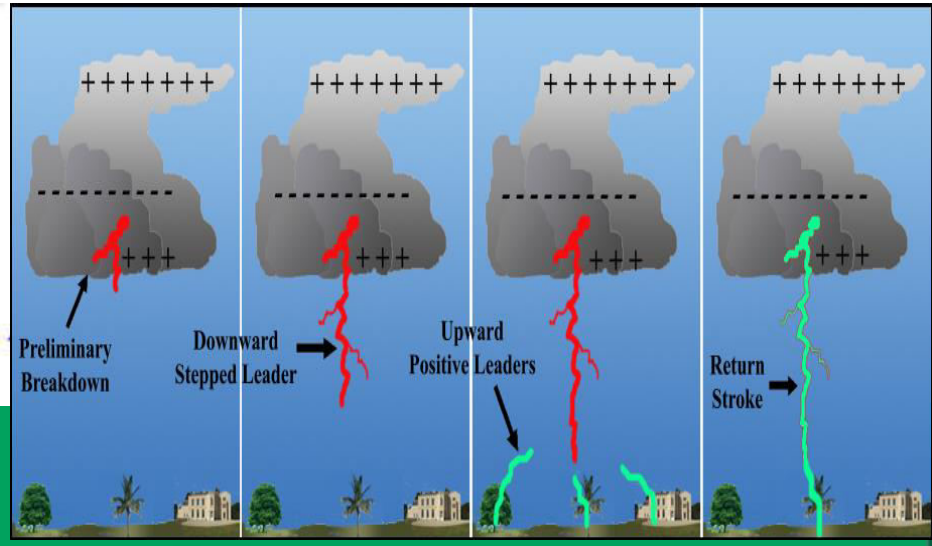
AIR TERMINALS AND ACCESSORIES

EARTHING

OVERVOLTAGES

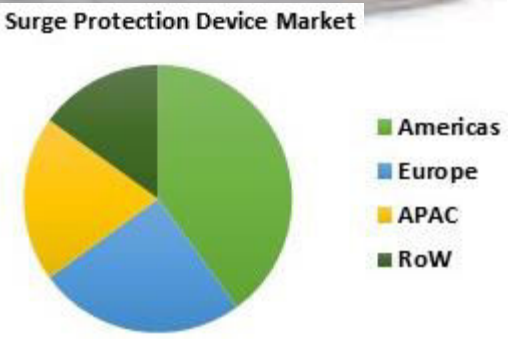
Link Vue System Electrical Safety (SurgeProtection,Lightning Protection& Earthing)

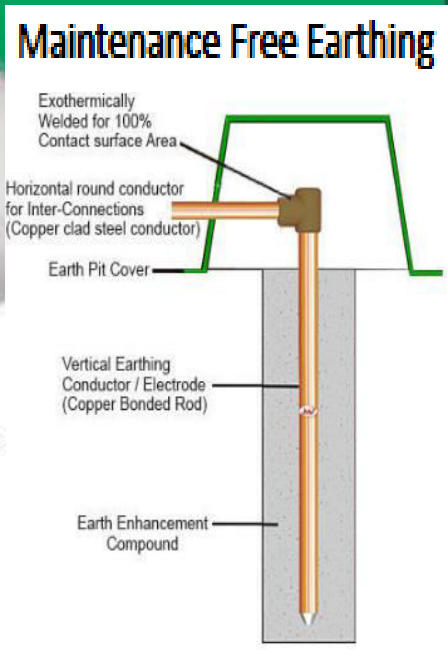




Lightning Equipotential Bonding Isolating Spark Gaps

Surge protection devices (SPDs) shall be provided for the main electrical distribution system including sub-switch boards and distribution boards, computers, electronic equipment, fire alarm panel, PABX equipment, UPS equipment, CCTV equipment, MATV equipment, card access equipment etc which are susceptible to lightning and switching surges.





Products

Surge Protector

Type 1 SPD-lightning current arresters

Combined, spark gap and MOV
Iimp 25 kA / 100 kA Up ≤ 1.5 kV
No follow current, zero leakage current
Full coordination with Type 2 SPD

Type 2 SPD – surge arresters

Combined, spark gap and MOV
U c 75 to 760 V AC
In 20 kA / Imax 40 kA
Up ≤ 1.35 kV

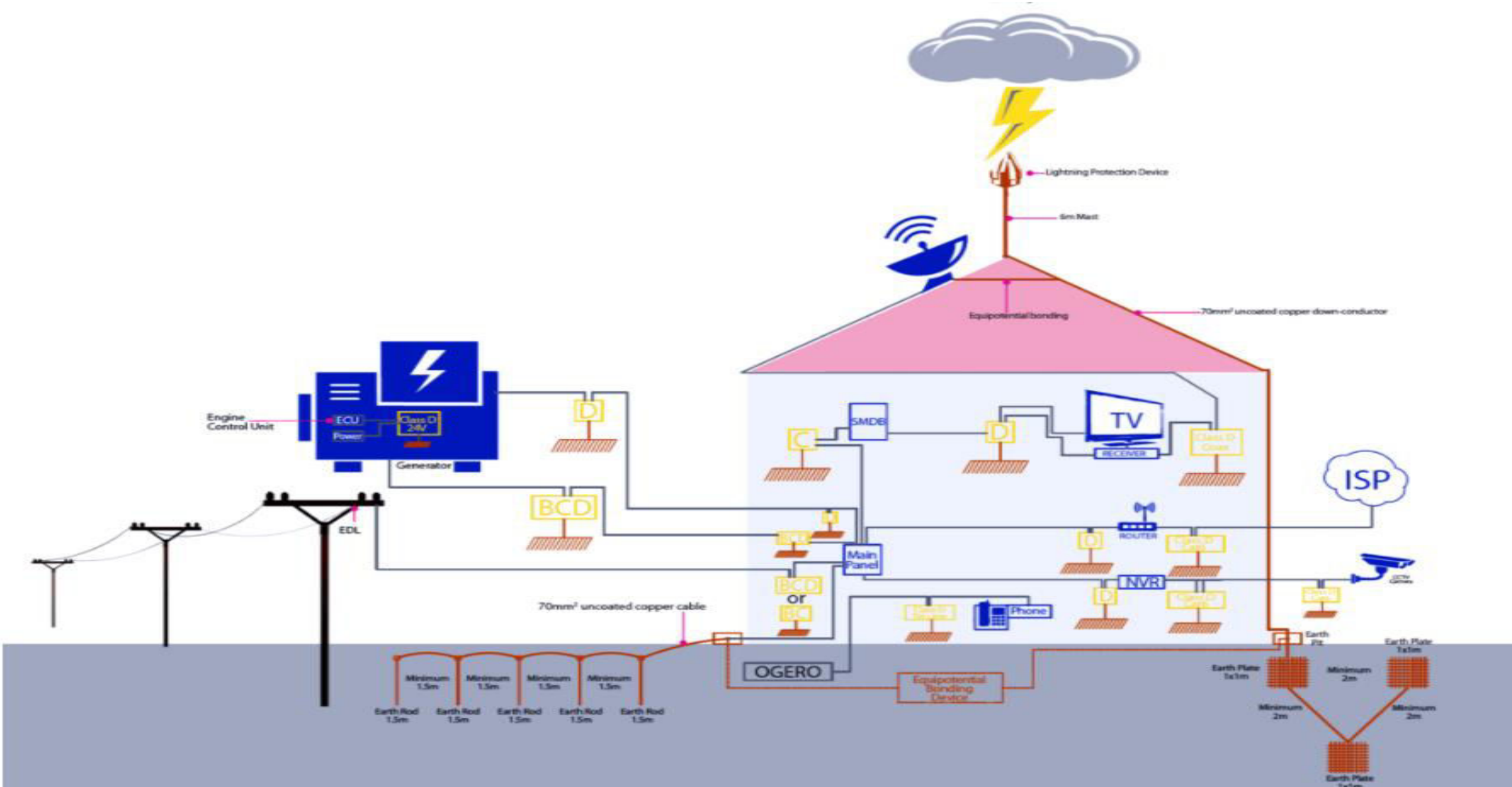
Type 1 and 2 SPD -combined arresters B+C

Combined, spark gap and MOV
Iimp 12.5 kA / 50 kA
Up ≤ 1.5 kV
No follow current, zero leakage current

SPD PV - surge arrester

Combination of MOV and spark gap
PV Type 2 SPD
MOV surge arrester
UCPV 170 to 1500 V DC
In 15 to 20 kA
Imax 40 kA

Surge Protection Class B C and D as per Equipment Category



Surge Protection Installation Guide Line

SPD for power lines

7 module full mode protection

Monoblock type

Not interrupt the system

kA rating determine by the weakest link

Enclosed in rugged,safe, all metal enclosure

Provided with solid state indicators (LED)

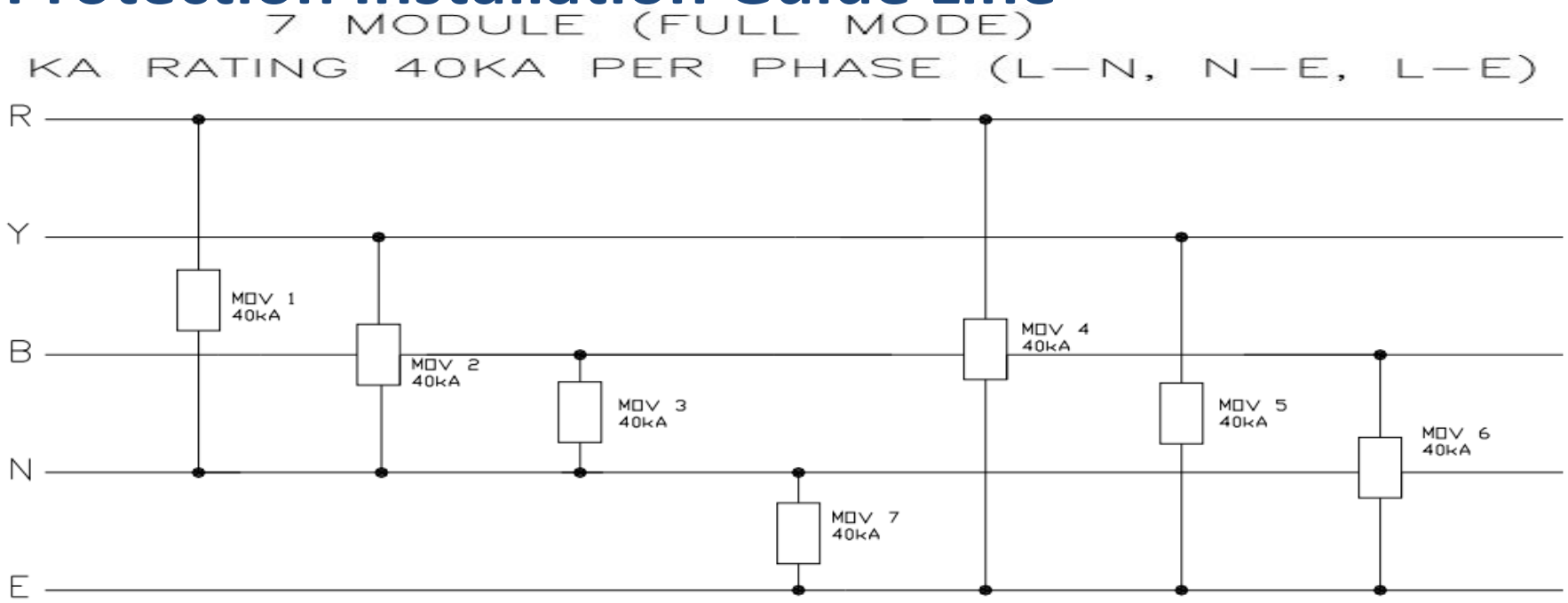
Installed in parallel

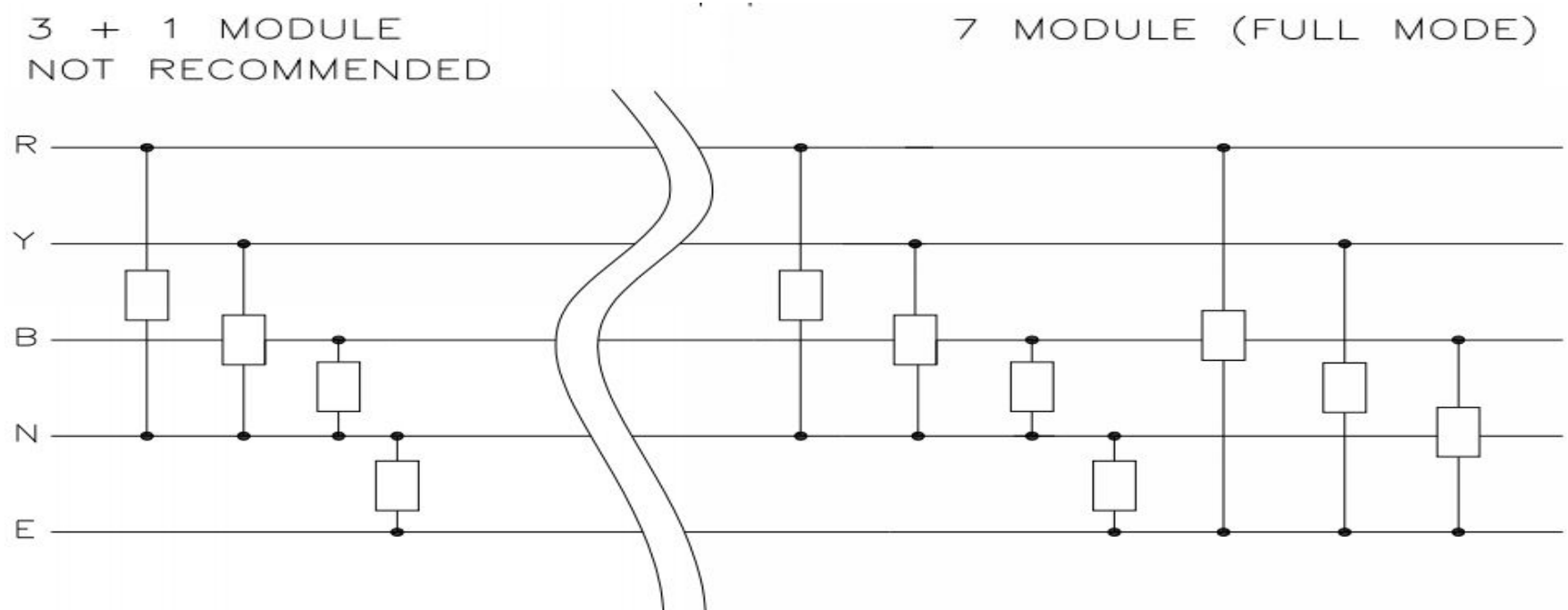
Design to withstand multiple strikes

SPD for data/signal

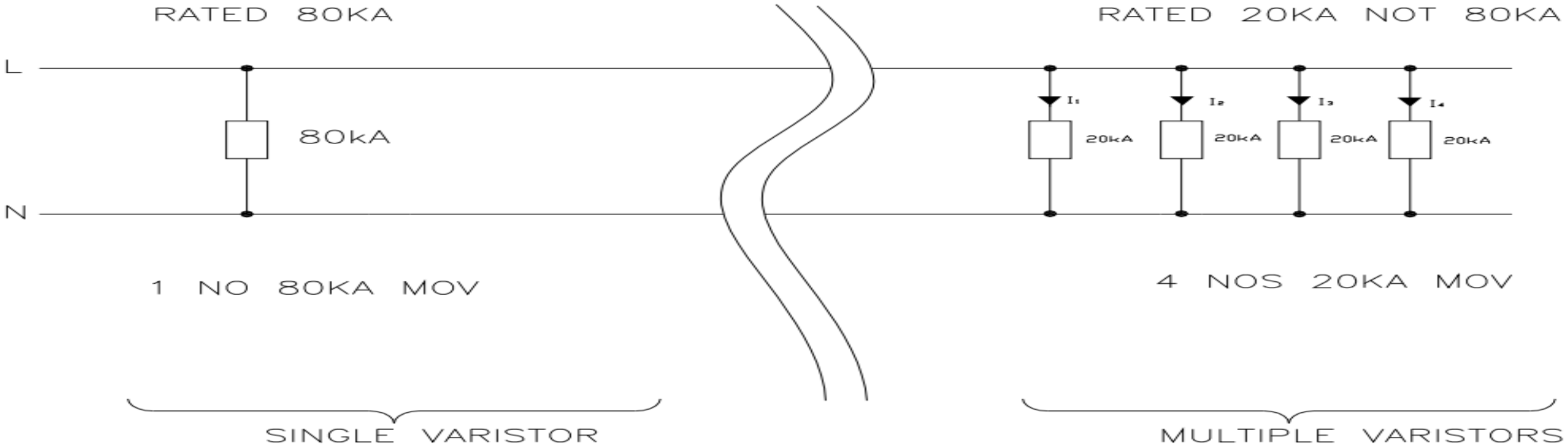
Compatible & transparent to existing system

Not interrupt operation system

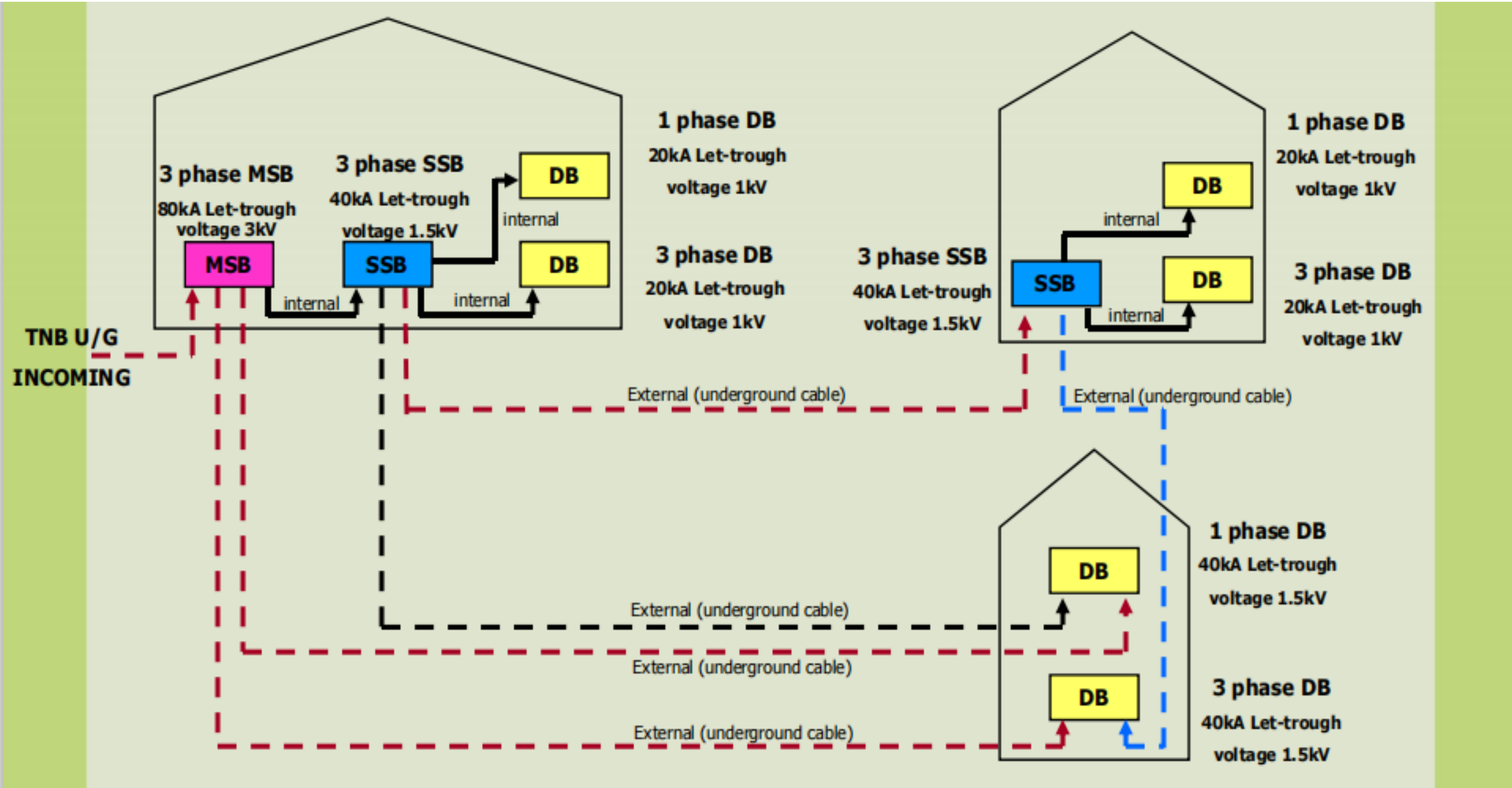




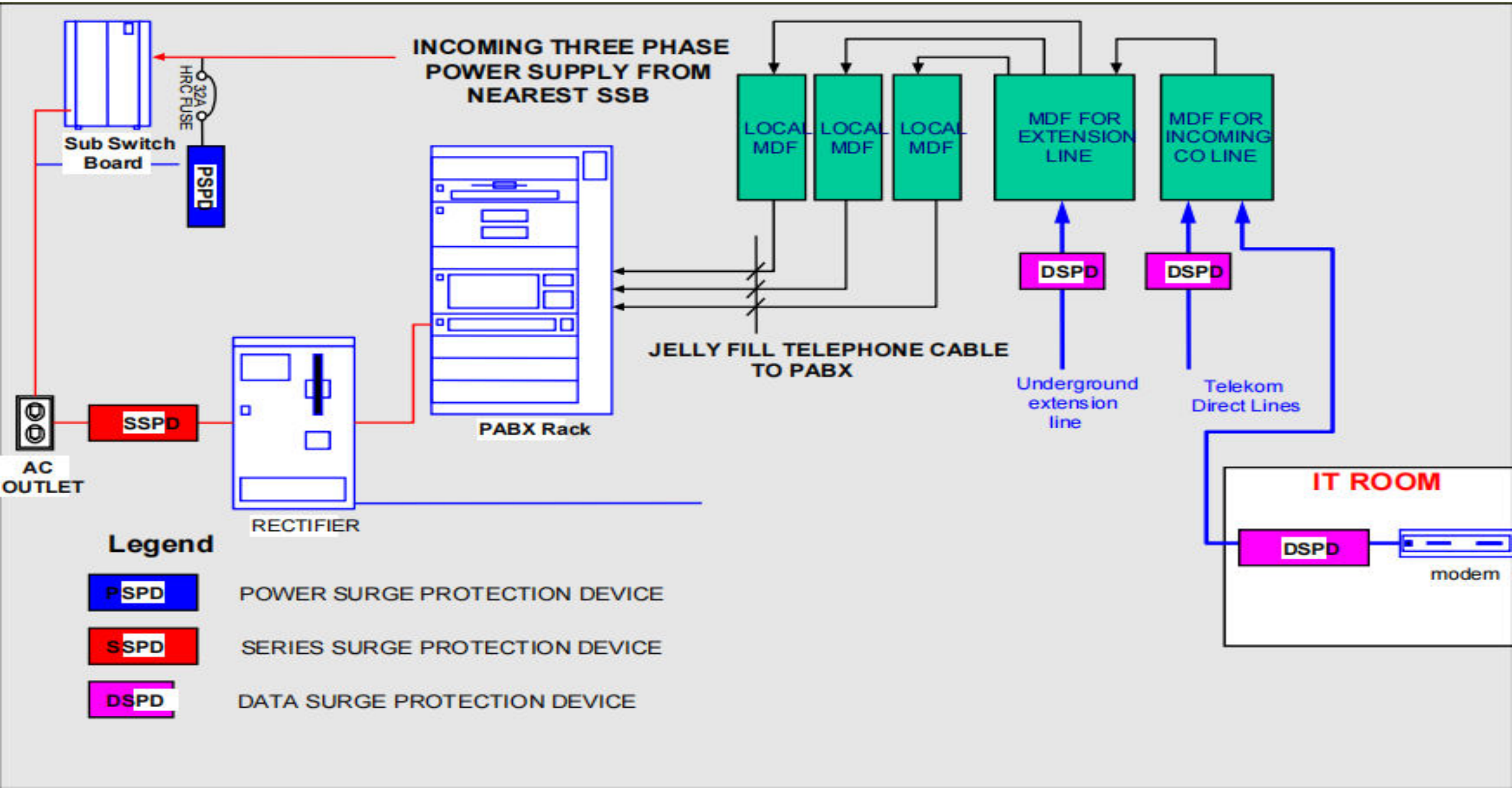
7 Modules		3 + 1 Modules	
1)	Protection between Live - Neutral, Live – Earth & Neutral – Earth	1)	Protection only between Live – Neutral & Neutral – Earth Only
2)	All MOV operates on its own rating	2)	The neutral to earth protection have more burden as all current will pass through this MOV irrespective of surge entrance and may damage faster
3)	Longer life cycle since more path for surge to travel to earth	3)	Less path for discharge current and weakest point at Neutral to Earth makes it life cycle shorter



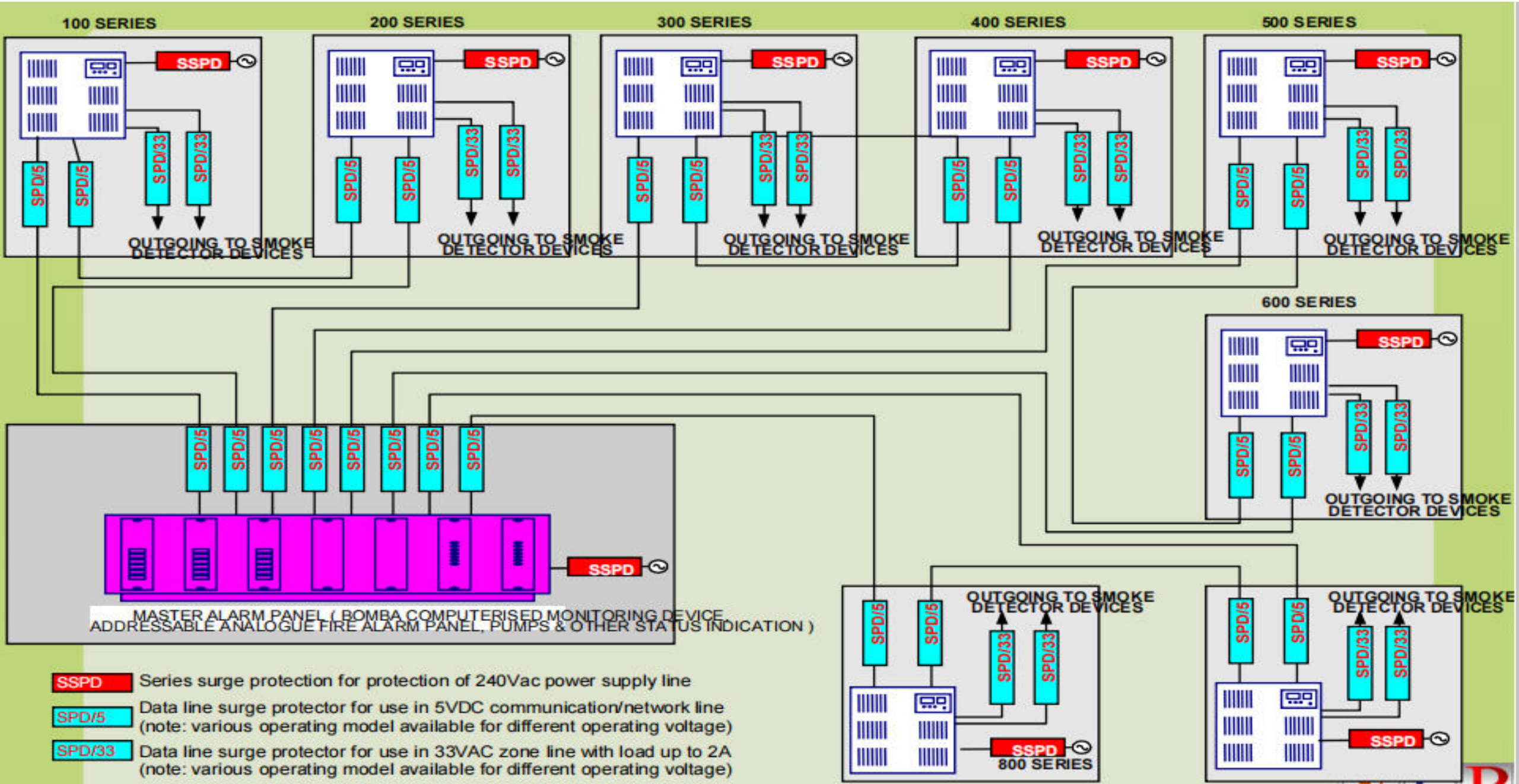
SURGE PROTECTION SELECTION FOR POWER SYSTEM



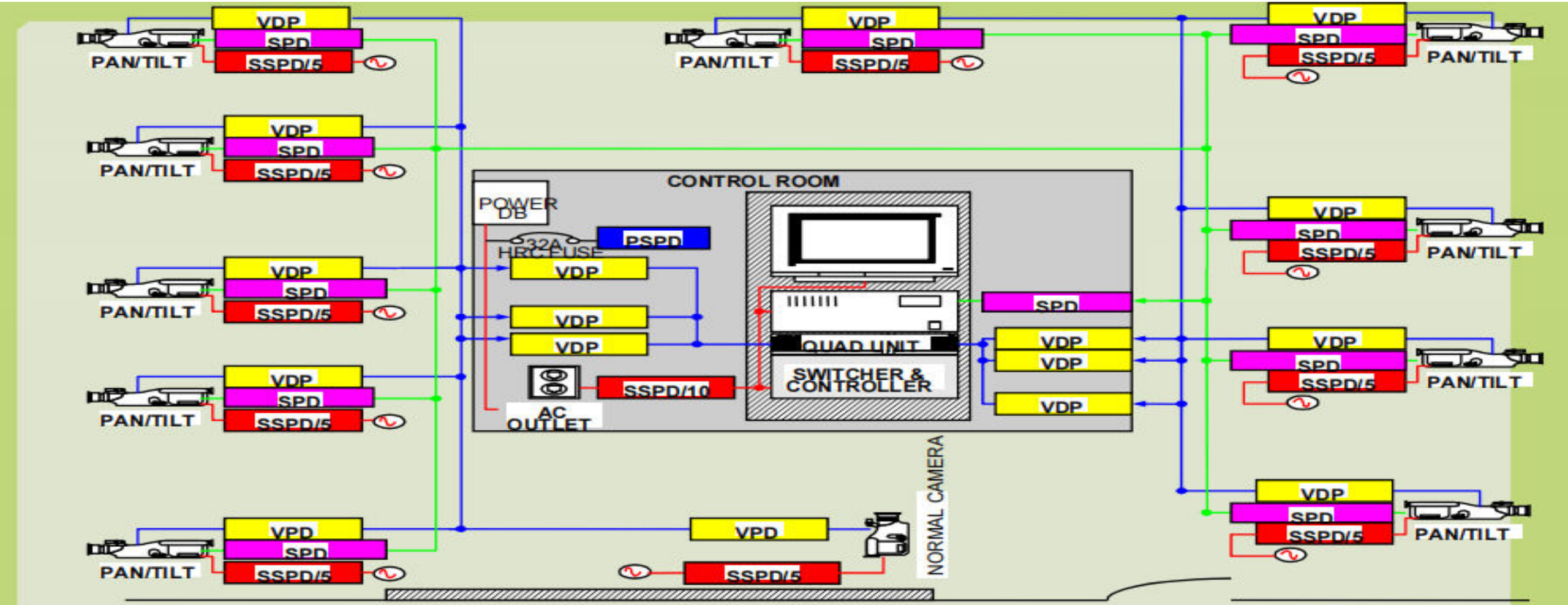
SURGE PROTECTION SELECTION FOR PABX SYSTEM



SURGE PROTECTION SELECTION FOR FIRE ALARM SYSTEM



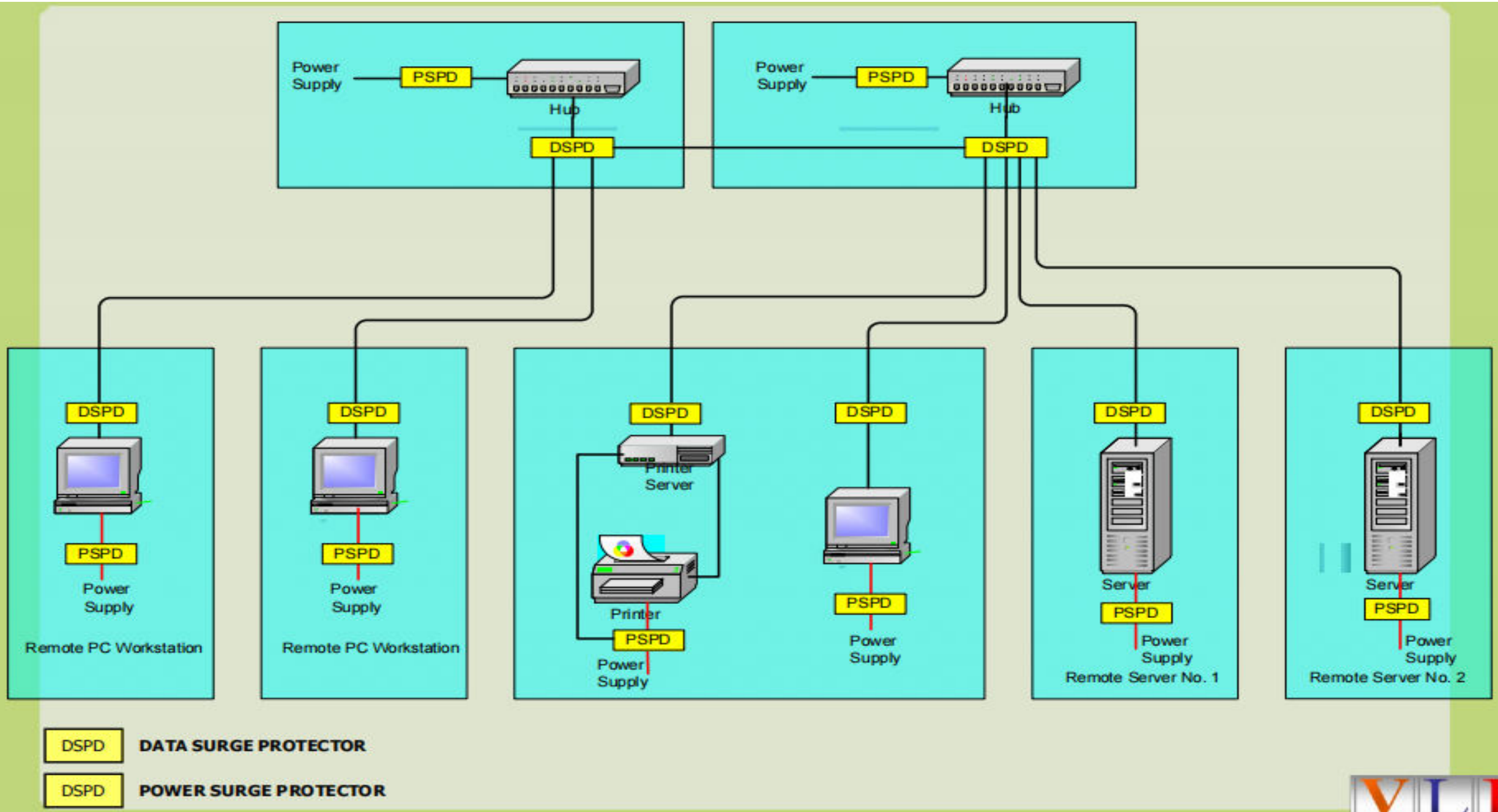
SURGE PROTECTION SELECTION FOR CCTV SYSTEM



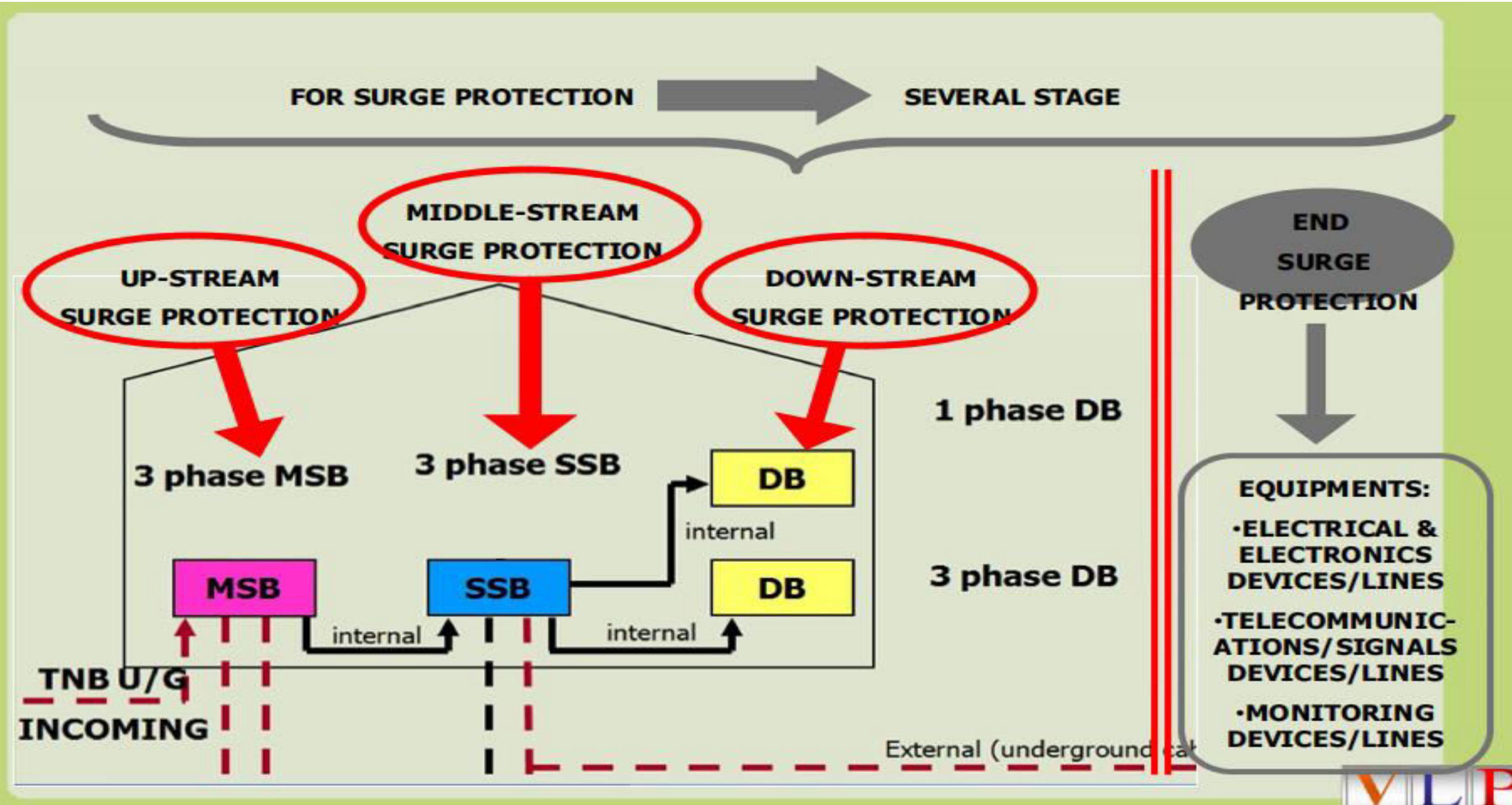
Legend

PSPD	POWER SURGE PROTECTION DEVICE
SSPD/10	SERIES SURGE PROTECTION DEVICE FOR LOAD RATED 10A,
SSPD/5	SERIES SURGE PROTECTION DEVICE LOAD RATED 5A,
VDP	VIDEO LINE SURGE PROTECTOR,
SPD	SIGNAL LINE PROTECTOR

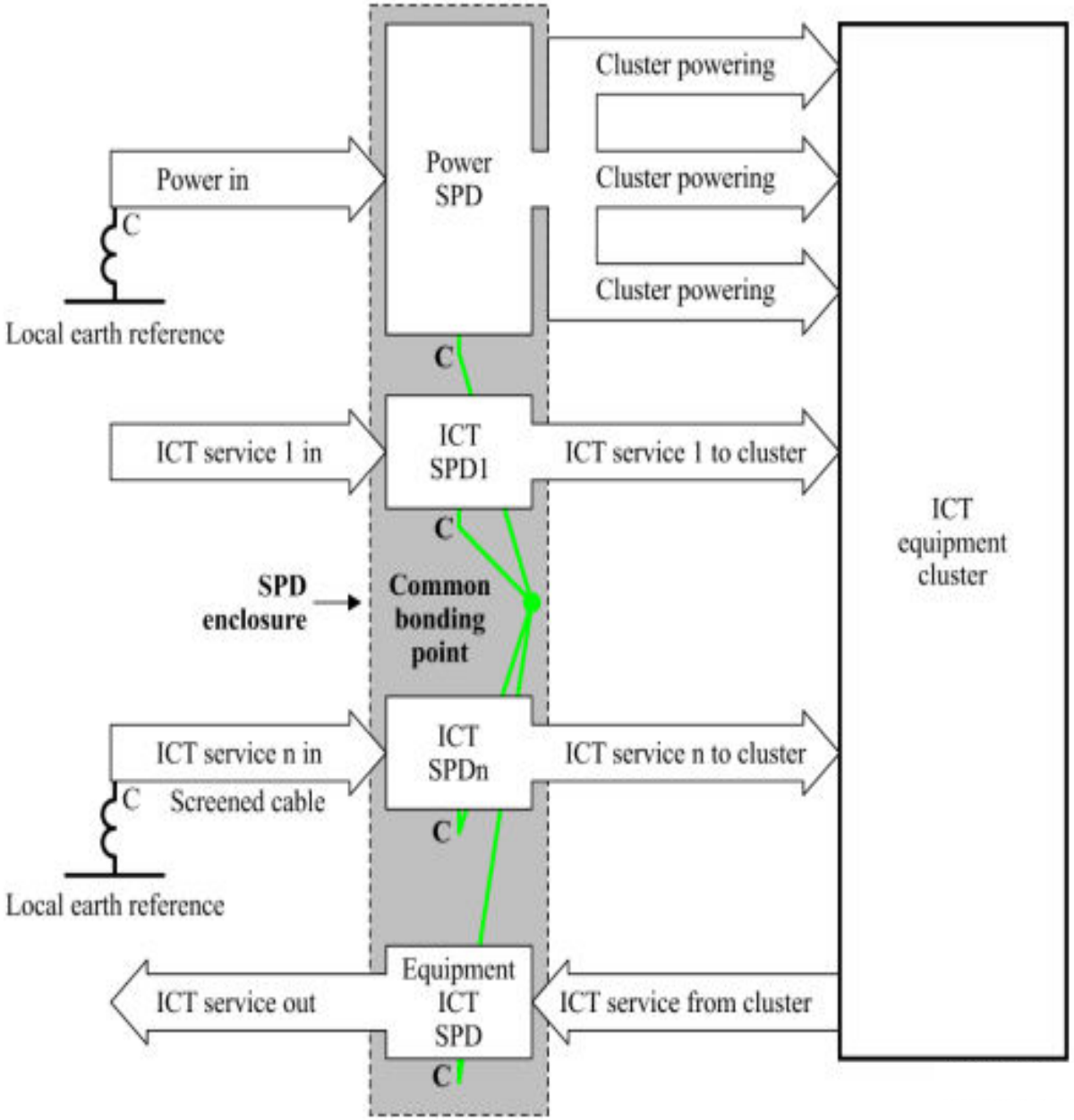
SURGE PROTECTION SELECTION FOR NETWORKING SYSTEM



SURGE PROTECTION SELECTION



Surge Protection Installation for Multiple Equipments Safety



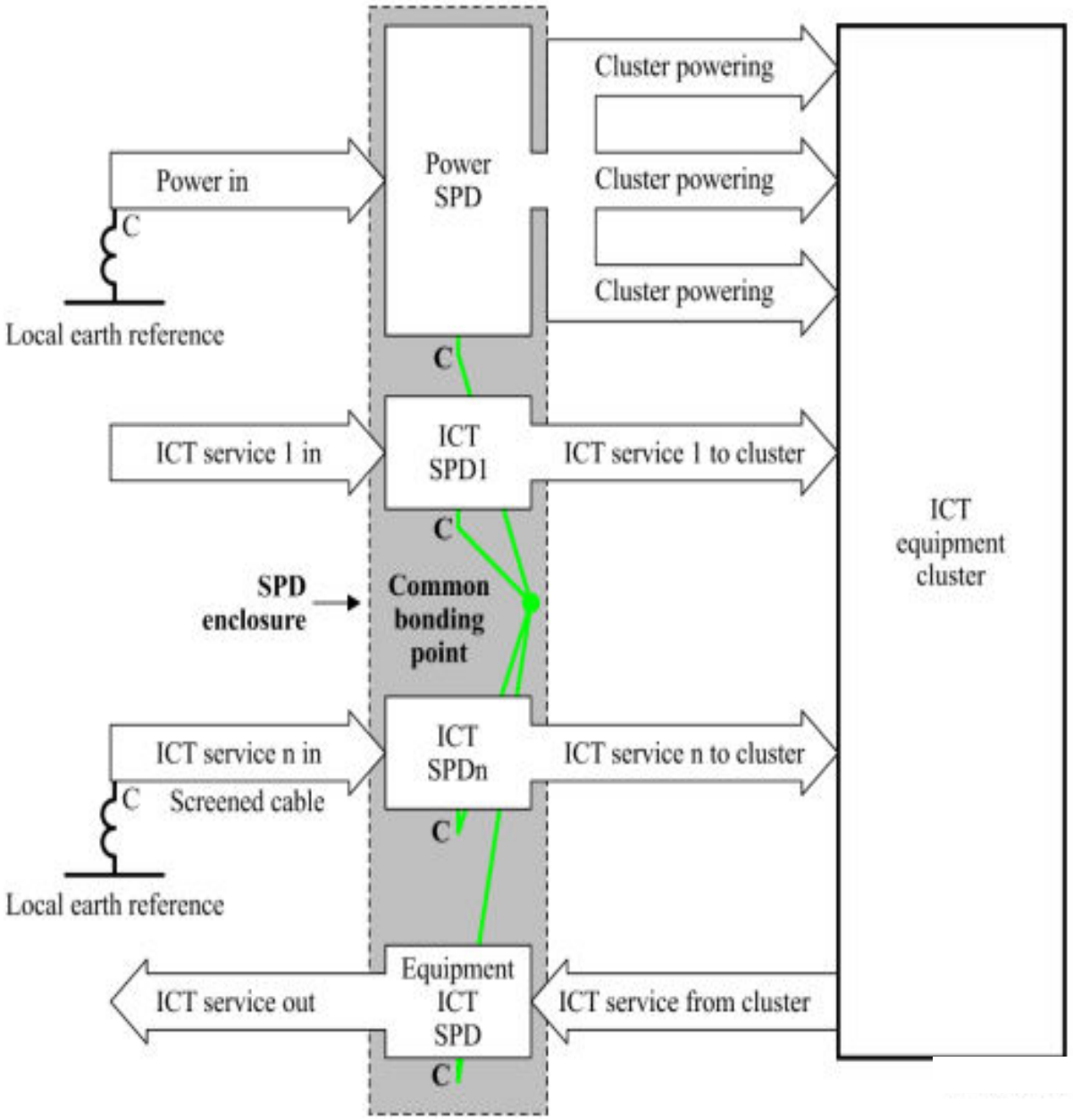
A surge reference equaliser does two things; it brings together all the service SPDs by locating themin a single enclosure and provides a local earth reference for all the SPD "C" terminals to directly connect the common bonding point, or "star" connection has two external earth reference

One from the power SPD mains plug/socket local earth reference and the other from the screened cable remote earth reference. This means that the diverted surge current can split between the power and screened cable earth references.to avoid earth loops in normal operation, one SPDn option is to make the screened cable C"connection to the common bonding point via an SPD with a switching function, which maintains isolation during normal conditions but provides a bond during the occurrence of a surge.

The surge reference equaliser is now called an MSPD, although there may not be any SPDs in it,only SPCs giving the equivalent surge functionality of the replaced SPDs.

MSPD for protecting power, antenna, telephone and Ethernet services with warning lights for protection failure and missing earth connection.

Surge Protection Installation for Multiple Equipments Safety



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MSPD for protecting power, antenna, telephone and Ethernet services with warning lights for protection failure and missing earth connection.

Surge Protection for Serial and Co-Axial Communication Port

All data, control and telephone cables entering and leaving the communications building require protection. The protection must be placed at the protection boundary and the protective earth connected to station earth. The aim is to divert energy at the boundary.

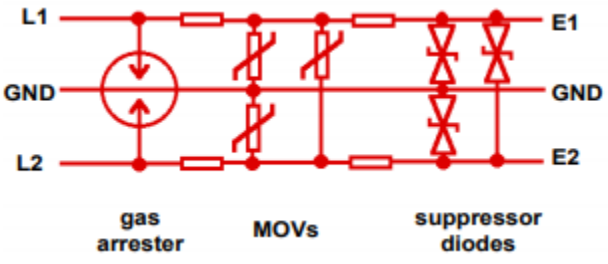
Data circuits require protection dependent upon their operating voltages and currents. Multistage series connected transient barriers should be employed. Figure 21 shows a typical schematic of Surge rating should be 20KA for an 8/20us impulse and the clamping voltage greater than the peak operating voltage.

Telephone lines require protection at the MDF. The protection should be multistage, when used with digital solid state telephone switches. Configuration will depend upon the termination method, eg KRONE®*, ADC, Reiche etc. Protect all incoming lines and external extensions. Generally internal extensions require no protection.

LAN systems require specialised protection specific to the LAN configuration. LAN line cards are particularly sensitive to transient overvoltage's and MUST be protected. Specialised protectors are available for the following protocols:

- RS232 in both DB9 and DB25 connector types
- RS485 and RS422 in DIN rail and DB9 configuration
- Thin Ethernet with in line and protected T BNC configuration
- Thick Ethernet with in line N type and DB15 AUI configuration
- RJ45 for UTP with hub protectors and individual terminal protectors

Ensure all LAN type protectors do not inhibit LAN performance. Only choose CAT5 UTP protectors.



As well as the outer conductors of coaxial feeders the inner conductors must also have protection applied to divert energy on the inner conductor to ground. The application of surge protection to UHF and microwave circuits is limited by frequency, return loss and insertion loss considerations. Typical coaxial surge protectors consist of a fast acting gas filled arrester connected between line and ground. Figure 19 shows a typical coaxial surge protector for type N connectors. This is a bulkhead mounting type.

Arrester flashover voltage should equal twice the peak line voltage. Example in a 50 ohm line with 50W transmitter, peak voltage = 70.7V. Minimum recommended gas arrester BV = 140V. Nearest value = 230V. Surge rating should be 20KA for an 8/20us impulse.

Gas filled arresters are unsuitable for high power HF and VHF transmitters (>= 1KW) unless the transmitters incorporate return power shutdown circuitry. A gas filled arrester once fired will remain in the conducting state by the presence of RF energy. This will destroy the arrester unless the transmitter has shutdown circuitry which detects the impedance discontinuity.

Alternatively utilise spark gap arresters with arc detection and shutdown circuitry.

For microwave link equipment an alternative and more effective solution is the quarter wave stub protector. These units must be tuned to the frequency in use but are capable of reasonably large bandwidth. For example a quarter wave stub protector centred on 2.4GHz has a usable bandwidth of +-100MHz. Figure 20 shows a typical unit.

Let's STUDY Jointly reason of Surge and use of Surge Protection including Installation GuideLine with Wiring Rules

UL SPD Types - Per 1449 4th Edition

Type 1- One port. permanently connected SPDs, except for watt- hour meter socket enclosure, intended for installation between the secondary of the service transformer and the line side of the service equpment overcurrent device, as well as the load side, including watt-hour meter socket enclosures and Molded Case SPDs intended to be installed without an extemal overcurrent protective device. Type 1 SPDs for use in PV systems can be connected between the PV aarry and the main service disconnect.

DIN-RAIL SPDs are open Type 1.

Type 2- Permanently connected SPDs intended for installation on the load side of the service equipment overcurrent device, including SPDs located at the branch panel and Model Case SPDs.

Type 3 - Point of utilization SPDs, installed at a minimum conductor length of 10 meters (30 feet) from the electrical service panel to the point of utilization, for example cord connected, direct plug-in receptacle type and SPDs installed at the utilization equipment being protected. See marking in 80.3. The distance (10 meters) is exclusive of conductors provided with or used to attach SPDs.

Note: type 2 and 3 SPDs ware previously known as TVSSs,

Type 4 - Component Assemblies - Component assembly consisting of one or more Type 5 components together with a disconnect (integral or external) or a means of complying with the limited current tests in 44.4.

Type 1, 2, 3 Component Assemblies - Consists of a Type 4 component assembly with internal or external short circuitprotection.

Type 5 - Discrete component surge suppressors such as MOVS that may be mounted on a PVVB connected by its leads or provided within an enciosure with mounting means and wiring terminations. V/Uπ----nominal system voltage.

A nominal value assigned to designate a system of a given voltage class in accordance w ANSI CB4,1. Typical voltages include 120 208, 240, 277, 347, 480,600O Vac.

V --- Voltage Protection RatingA ring selected from a list of preferred values as given inToble 63. 1 of UL 1449 4th Edition andassigned to each mode of protection. The value of V is determined as the nearest highest value taken from Table 63.1 to the measured limiting voltage determined during the surge test using the compination wave generator at a setting of 6 kV, 3kA. It is also known as let-through voltage.

Guide to Surge Protection Devices (SPDs): selection, application and theory

The following common terminologies, as recognised by BS EN 61643/IEC 62305 are used throughout SPD specifications in order to aid correct selection and aredefined as follows:

Nominal Voltage UO is the line voltage to Earth a.c. voltage of the mains system (derived from the nominal system voltage) for which the SPD is designed to is the voltage by which the power system is designated -e g. 230V.

Maximum Continuous Operating Voltage Uc is the maximum RMS voltage that may be continuously applied to the SPD's mode of protection e.g. phase to neutralmode. This is equivalent to the SPD's rated peak voltage.

Temporary Overvoltage UT is the stated test value of momentary voltage increaseor overvoltage that the power SPD must withstand safely for a defined time.Temporary overvoltages, typically lasting up to several seconds, usually originate from switching operations or wiring faults (for example, sudden load rejection, single phase faults) as well as mains abnormalities such as ferro-resonance effects and harmonics.

Impulse Current Amp is defined by three parameters, a current peak with a chargeand a specific energy typically simulated with the 10/350us waveform to represent partial lightning currents. This waveform is used with peak Imp current value stated. for the mains Type 1 SPD Class I test and typically for data telecom SPD TestCategory D.

Nominal Discharge Current /nspdis a defined nominal peak current value through the SPD, with an 8/20µs current waveshape. This is used for classification of mains SPDs(Class Il test) and also for preconditioning of SPDs In Class I and Class IItests.

Maximum Discharge Current /maxis the peak current value through the SPD, with an B/20us waveshape. Imax is declared for mains Type 2 SPDs in accordance to the test sequence of the Class Il operating duty test. In general, max is greater than /nspd.

Surge protective devices (SPDs)Surge protective devices mainly consist of voltage-dependent resistors (varistors, suppressor diodes) and / or spark gaps (discharge paths). Surge protective devices are used to protect other electrical equipment and installations against inadmissibly high surges and / or to establish equipotential bonding. Surge protective devices are categorised:

Surge protective devices for power supply installations and devices
for nominal voltage ranges up to 1000 V
– according to EN 61643-11:2012 into type 1 / 2 / 3 SPDs
– according to IEC 61643-11:2011 into class I / II / III SPDs

Surge protective devices for information technology installations and devices
for protecting modern electronic equipment in telecommunications and signalling networks with nominal voltages up to 1000 V AC effective value) and 1500 V DC. against the indirect and direct effects of lightning strikes and other transients.
– according to IEC 61643-21:2009 and EN 61643-21: 2010.

Isolating spark gaps for earth-termination systems or equipotential bonding

Surge protective devices for use in photovoltaic systems
for nominal voltage ranges up to 1500 V
– according to EN 50539-11:2013 into type 1 / 2 SPDs

impulse current discharge capacity and protective effect into:

Lightning current arresters / coordinated lightning current arresters
for protecting installations and equipment against interference resulting from direct or nearby lightning strikes

Surge arresters
for protecting installations, equipment and terminal devices against remote lightning strikes, switching over-voltages as well as electrostatic discharges (installed at the boundaries downstream .

Combined arresters

for protecting installations, equipment and terminal devices against interference resulting from direct or nearby lightning strikes (installed at the boundaries between LPZ 0A and 1 as well as 0A and 2).

Technical data of surge protective devices

The technical data of surge protective devices include information on their conditions of use according to their:

Application (e.g. installation, mains conditions, temperature)

Performance in case of interference (e.g. impulse current discharge capacity, follow current extinguishing capability, voltage protection level, response time)

Performance during operation (e.g. nominal current, attenuation, insulation resistance)

Performance in case of failure (e.g. backup fuse, disconnector, failsafe, remote signalling option)

Short-circuit withstand capability

The short-circuit withstand capability is the value of the prospective power-frequency short-circuit current handled by the surge protective device when the relevant maximum backup fuse is connected upstream.

Short-circuit rating ISCPV of an SPD in a photovoltaic (PV) system

Maximum uninfluenced short-circuit current which the SPD, alone or in conjunction with its disconnection devices, is able to withstand.

Temporary overvoltage (TOV)

Temporary overvoltage may be present at the surge protective device for a short period of time due to a fault in the high-voltage system. This must be clearly distinguished from a transient caused by a lightning strike or a switching operation, which last no longer than about 1 ms. The amplitude UT and the duration of this temporary overvoltage are specified in EN 61643-11 (200 ms, 5 s or 120 min.) and are individually tested for the relevant SPDs according to the system configuration (TN, TT, etc.). The SPD can either a) reliably fail (TOV safety) or b) be TOV-resistant (TOV withstand), meaning that it is completely operational during and following

temporary over-voltages.

Sparkgap Protection

Spark gaps are intend to provide galvanic isolation between electrical installation parts where direct connections are not permitted. The galvanic isolation prevents not only electrochemical corrosion but provides also a connection capable of carrying lightning current.For connecting different earthing systems, the aim being to make optimum use of all earthers for lightning protection equipotential bonding.

Earthing Distance Maximum 500mtr allowed for Electrical and

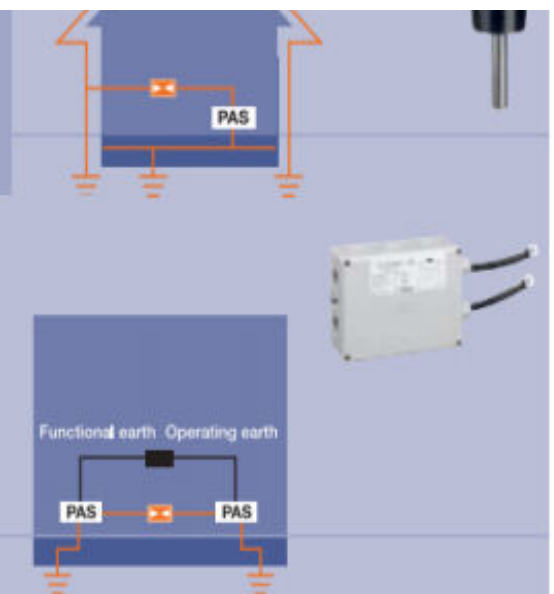
300mtrs allowed for Low Voltage Equipment's.

Shortest Discharge Path , Less Joints No Sharp Bend ,Round Conductor for routing Earthing up to Equipment's, all buried Joint should be Exothermic Weld

chemical corrosion of the earther. Furthermore, the entire earther surface is effective in the event of a direct lightning strike.

Coupling of earthing systems (several earthing systems on one building)

If it is necessary to fit a separate earthing system (functional earthing) to operate special electronic equipment, the ideal solution is a lightning current carrying connection to this earthing system. This can prevent dangerously high voltage differences occurring between the different earthing systems. An additional throttle is fitted to keep high-frequency voltages away from the functional earthing.



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