

Rank

Discom PPA projects

1 ReNew Power
2 Avaada
3 Adani
4 Azure
5 Mahindra Susten
6 Ayana Renewables
7 NTPC Limited
8 Eden
9 GSECL
10 Tata Power

Corporate offsite PPA projects

Fourth Partner Energy
Cleantech Solar
Hinduja Group
Continum Wind
Vibrant Energy
Amp Energy
Amplus
Mothi Spinner
Oriano Clean Energy
Sakthi Muragan Group

Corporate rooftop/ onsite PPA projects

Fourth Partner Energy
Amplus
Tata Power
Mahindra Solarize
Amp Energy
HFM Solar
Roofsol
U Solar

EPC Contractors (Utility Scale)

Mahindra Susten
Sterling & Wilson
Tata Power
B-Electric
Vikram Solar
Siemens Gamesa
BHEL
Jakson
Waaree
L&T

Link Vue System Pvt Ltd India/Australia

Capable to offer our Professional Support

System Integration

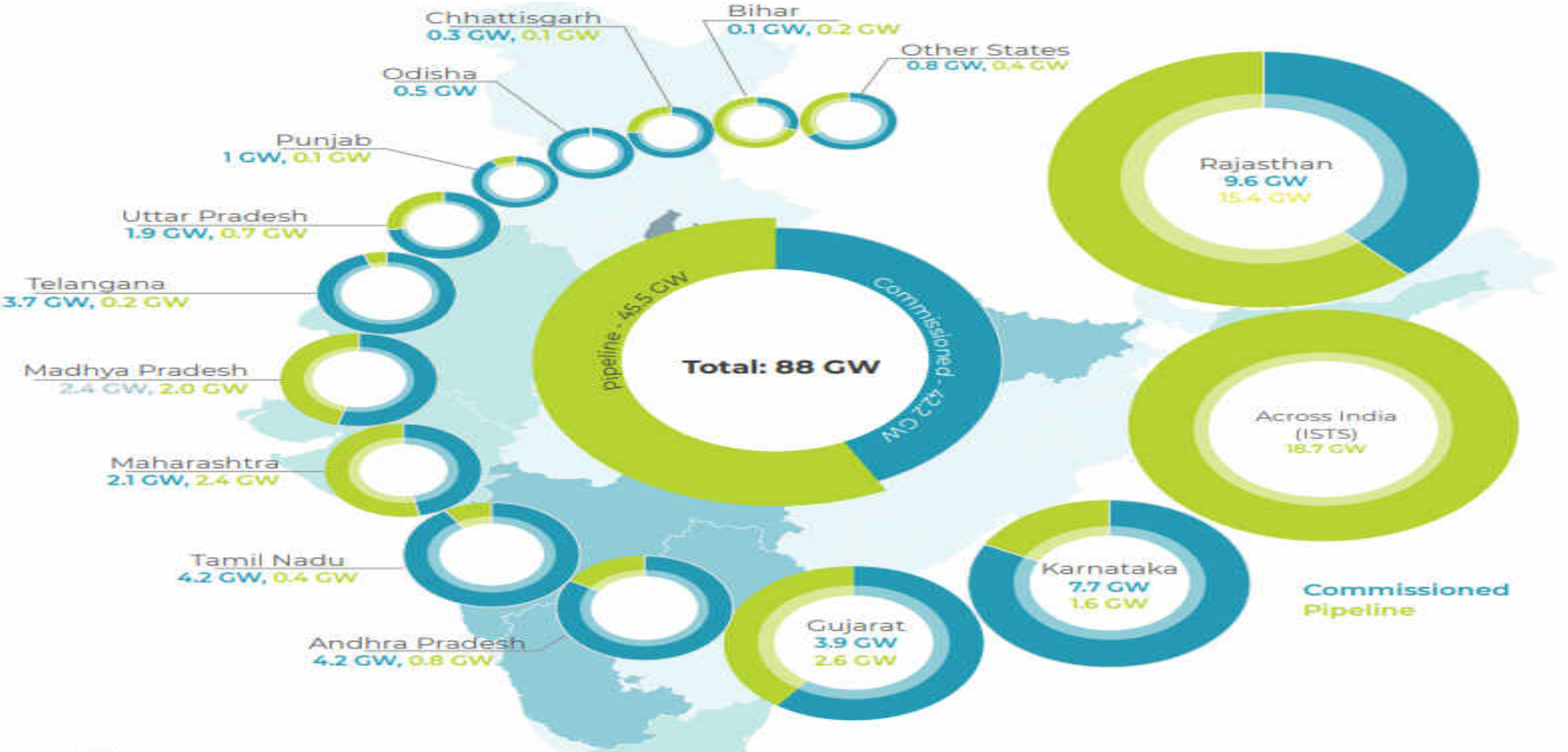
LAN Network , OFC Network, Wireless Network and GSM Solutions
CCTV ,Fire Alarm ,Access Controls, Security Systems and PIDS Fencing

Trading Activities

LIU's and Patch Cords
Maintenance Free Earthing (IS3043)
Surge Protection for Power, Data and Communication Ports
Smart Intelligent Data Loggers
Protocol Convertors, Protocol to FO Convertors
MC 4 Connectors with and Without Fuse
Outdoor Electrical PLUG-Socket IP65
16 Amps-450Amps
Ethernet and Media Convertors

India Green Energy Mission Solar Power 2021 (GWAC)

A Real Carbon Foot Initiative



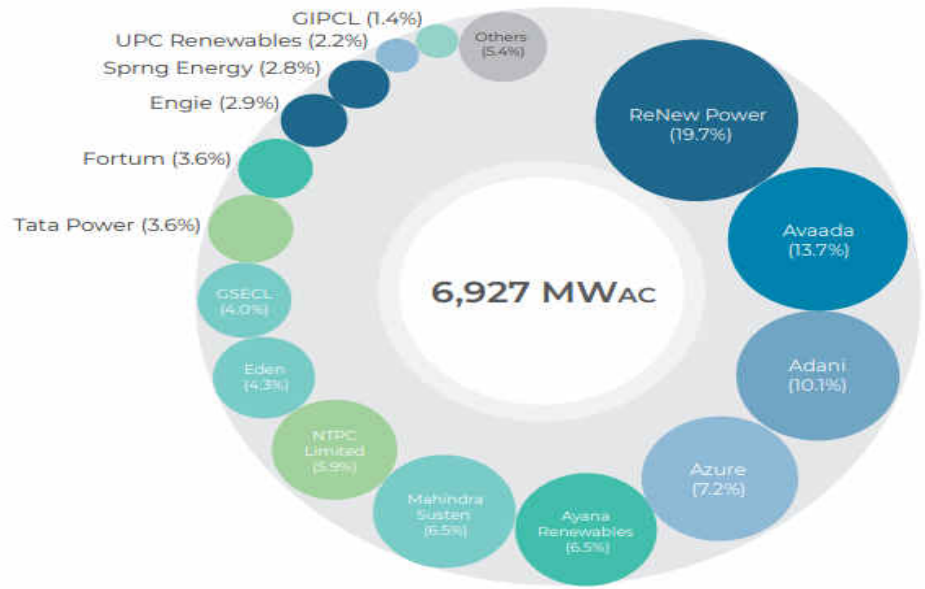
Note:

- State wise installation trends are for utility scale solar projects above 1 MW only. State wise rooftop solar projects are not available.
- Projects are split between Central /State based on tendering authority that allots projects. 'Others' include third party/open access projects.
- Pipeline includes projects allotted to developers under various central/ state tenders but not yet commissioned.
- All installation capacity numbers mentioned in this report are AC capacity numbers unless otherwise mentioned.

Say No to Fossil Fuel Why Worry Price Hike Environment Green Step

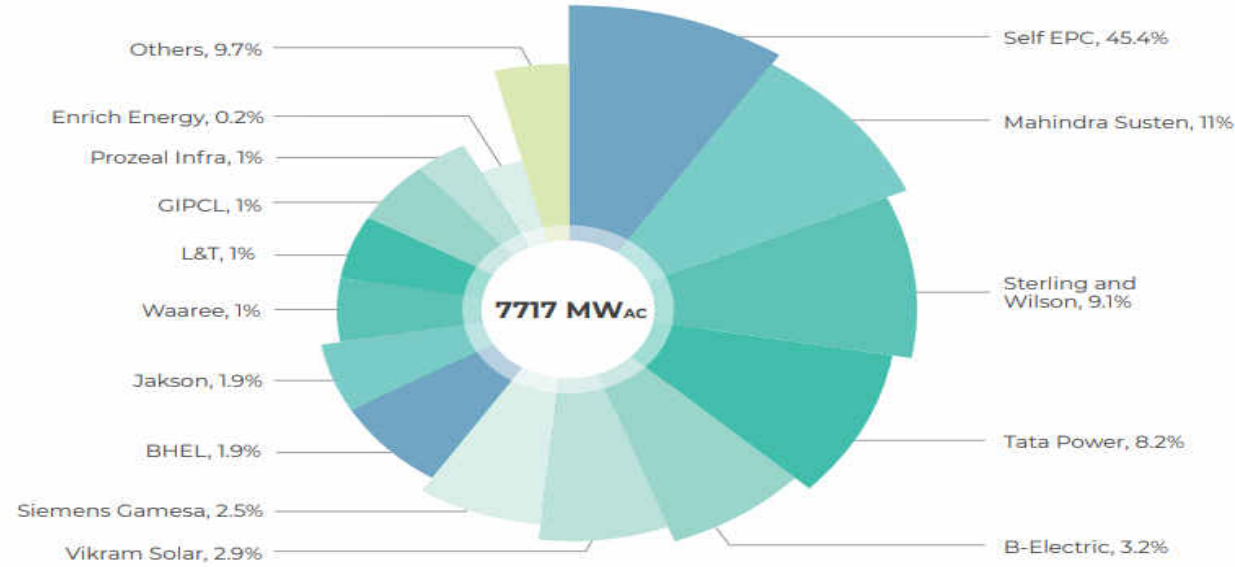


DISCOM PPA



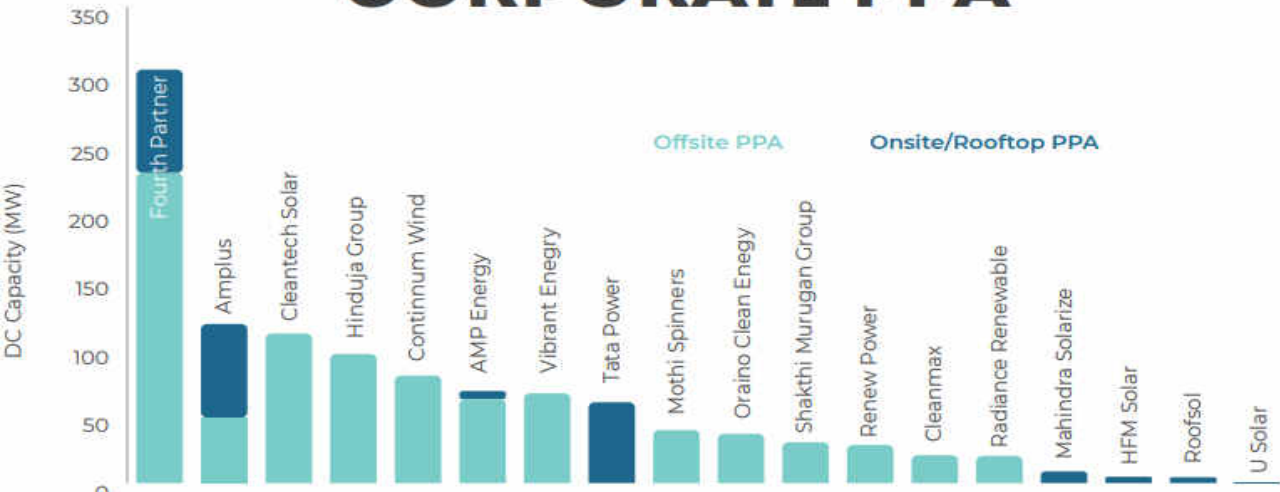
Note:
DISCOM PPA projects are utility scale projects allotted by central and state agency tenders, where end power offtake is by State DISCOMs. Market share of the leading players are based on AC commissioned capacity in CY2021

UTILITY SCALE EPC



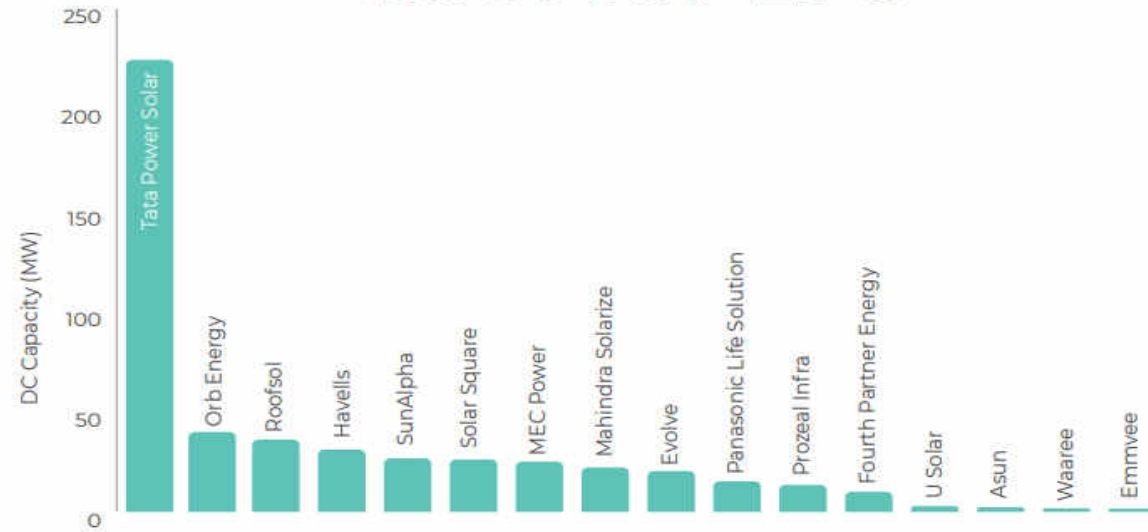
Note:
Prozeal Infra, Siemens Gamesa and GIPCL have not confirmed their numbers.

CORPORATE PPA



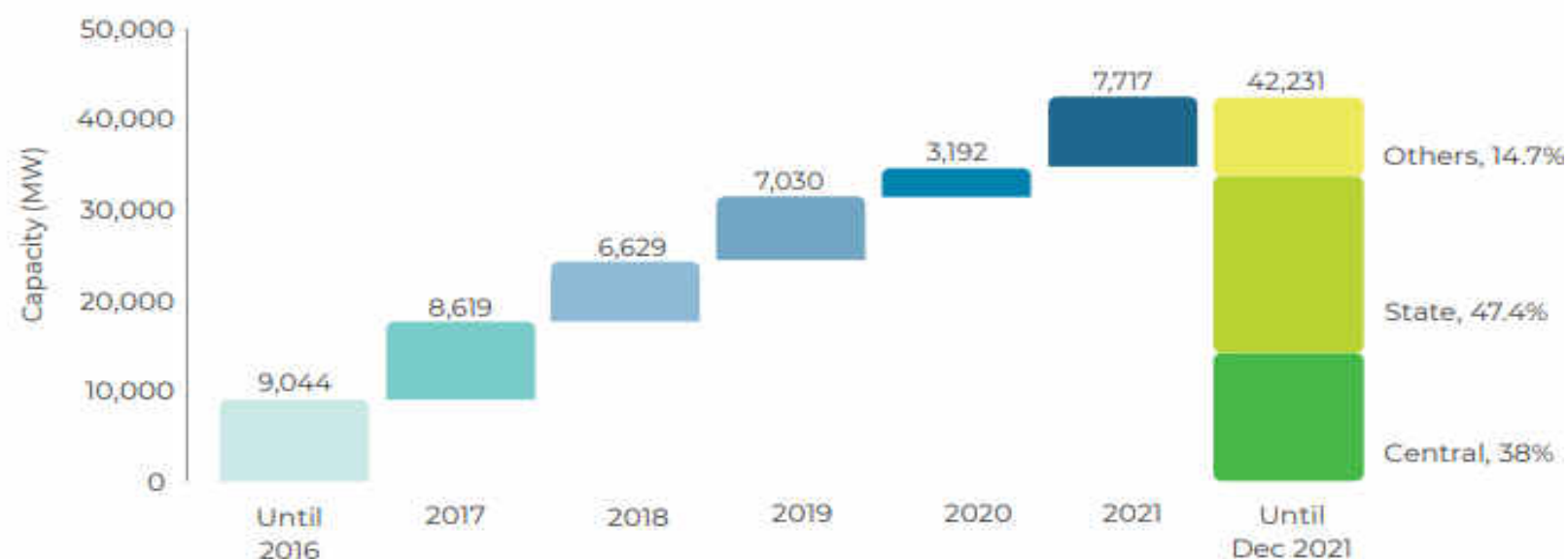
Note:
Corporate PPA projects are private PPA projects where power offtaker is a private player. Onsite PPA are rooftop/ onsite projects setup under OPEX model. Offsite PPA are open access private solar parks projects. Project Capacities for Offsite and Onsite/Rooftop PPA are mentioned in DC while AC capacity of Mothi Spinner, Sakthi Murugan group and Continuum Wind are mentioned in the above chart because DC capacity for these projects was not available.

ROOFTOP EPC

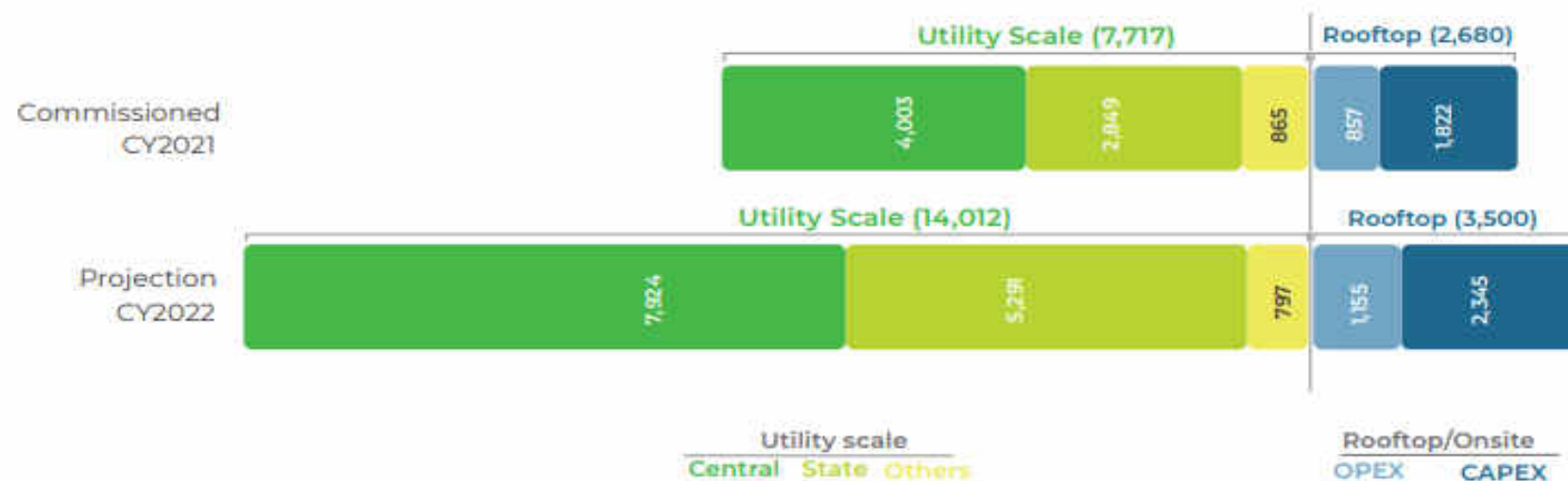


Note:
Rooftop solar includes all installations on open ground spaces, roof, parking lot or any other area within the premises.

Annual Utility Scale Solar Installations (MWac)



Annual Installations (MWac)



Power Generation & Power Utility is all about Demand & Smart Supply



High Energy Battery Storage System is Life Line for Power Storage, Transmission & Distribution

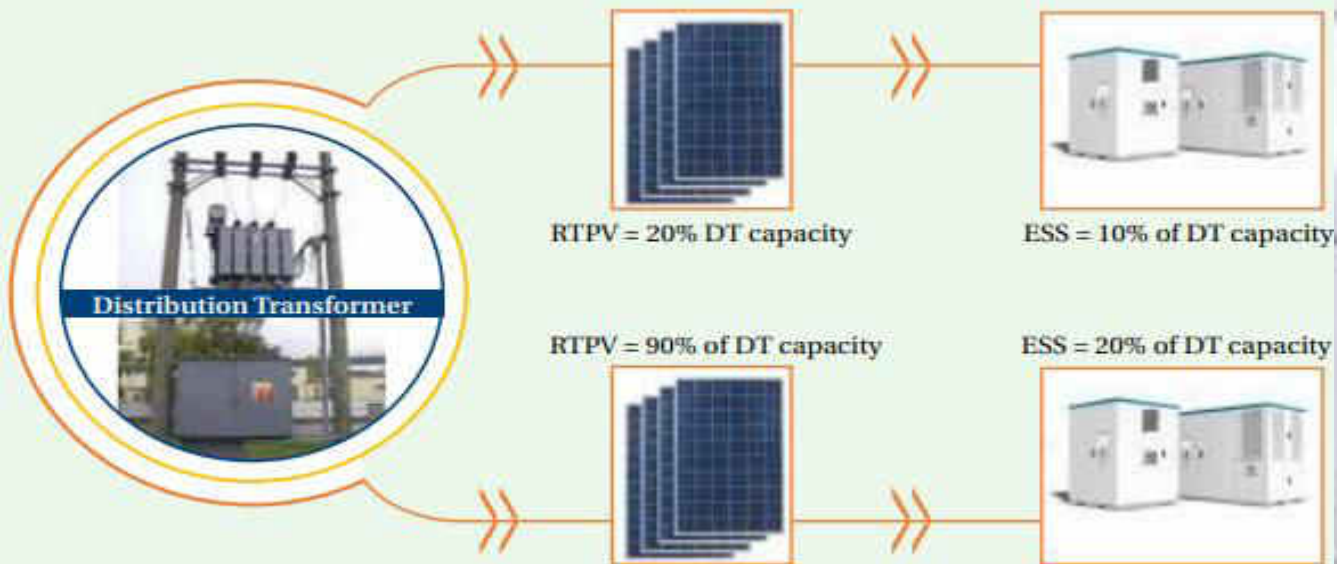
The government will float tenders for sourcing 4000 MWh battery storage, “We are working on storage. We intend to come out with bids for 4,000 MWh of storage as ancillary so at four RLDCs (regional load dispatch centres) we will have 1000 MWh of storage (each) that will act as instant intervention mechanism wherever and whenever there is any sharp fluctuation because of renewables. Part of it will work as ancillary to the grid controller and part will be made available to the developers for use on a commercial basis.



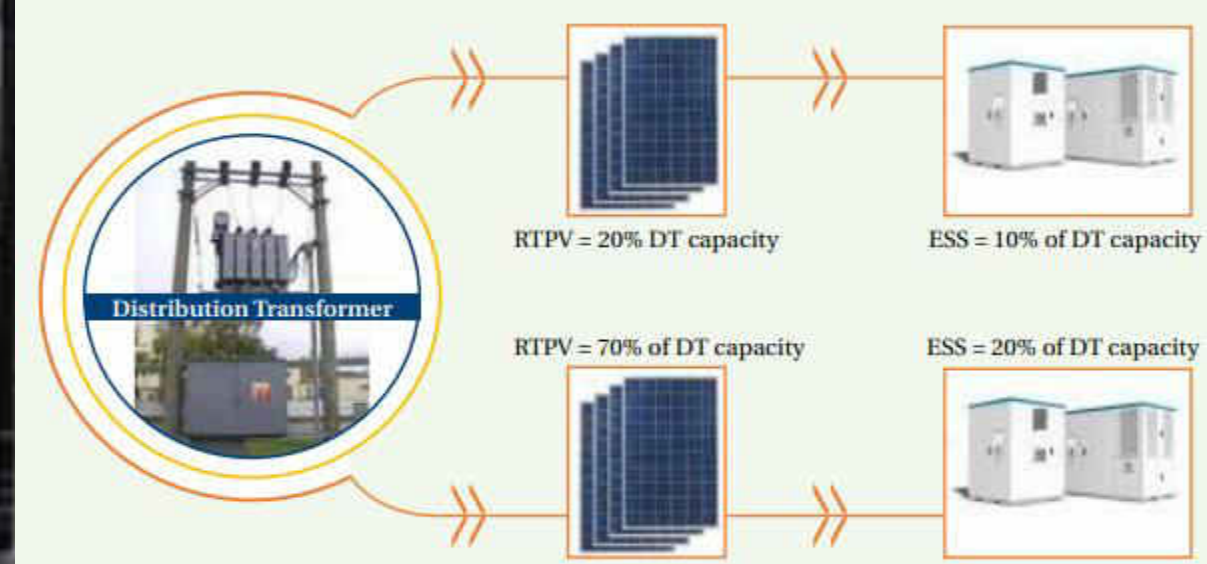
High Energy Storage Battery Offer Long Duration Power Supply(DEMAND)



ESS requirement (as percentage of DT capacity) in Metro Growing Scenario with different solar PV penetration (IESA Analysis)



ESS requirement (as percentage of DT capacity) in Metro Saturated Scenario with different solar PV penetration (IESA Analysis)³³



Global Green Infra Project Solar and EV Rd Transportation

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.

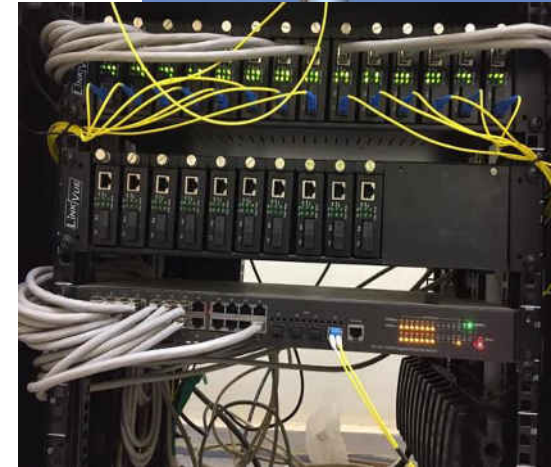
Electric Vehicle Charger 3KW -250KW AC Charging , DC Charging

CAE Power Connectors 16Amps -400 Amps

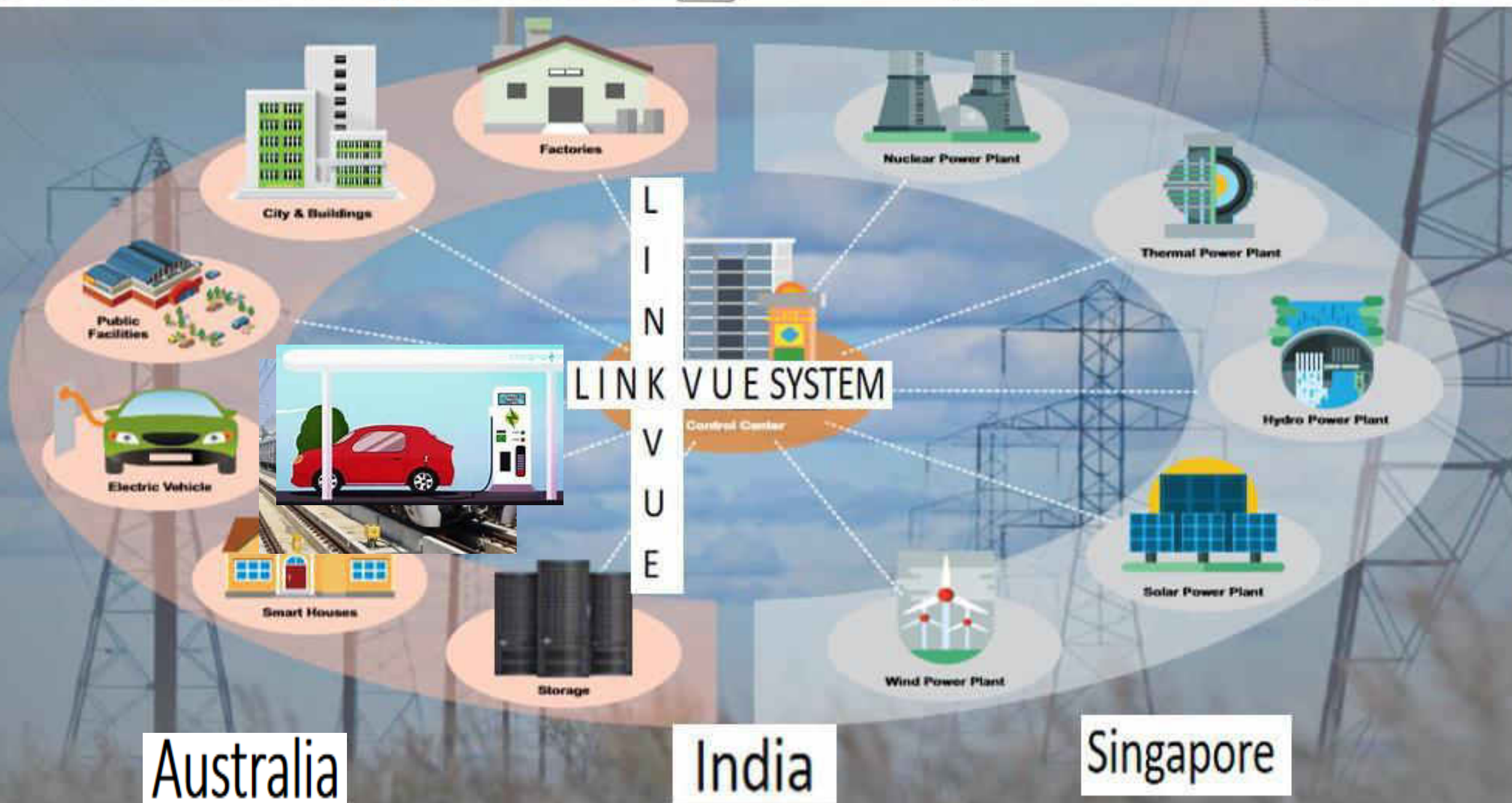
Free Dom Connectors for Low Voltage Cables

Plz Confirm your Availability and Place for meeting in Advance we will be in Dubai /Sharjah from 7th-13th Feb2022

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



Right Solution Partner for your Problems A Genuine Approach Latest Technologies Adoption





Link Vue System Pvt Ltd

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 I/O's

Protocol Converter, Media Converter,

Cables Connectors & LIU's

Perimeter Intrusion Detection System CCTV,

Fire Alarm, Access Controls & Security System

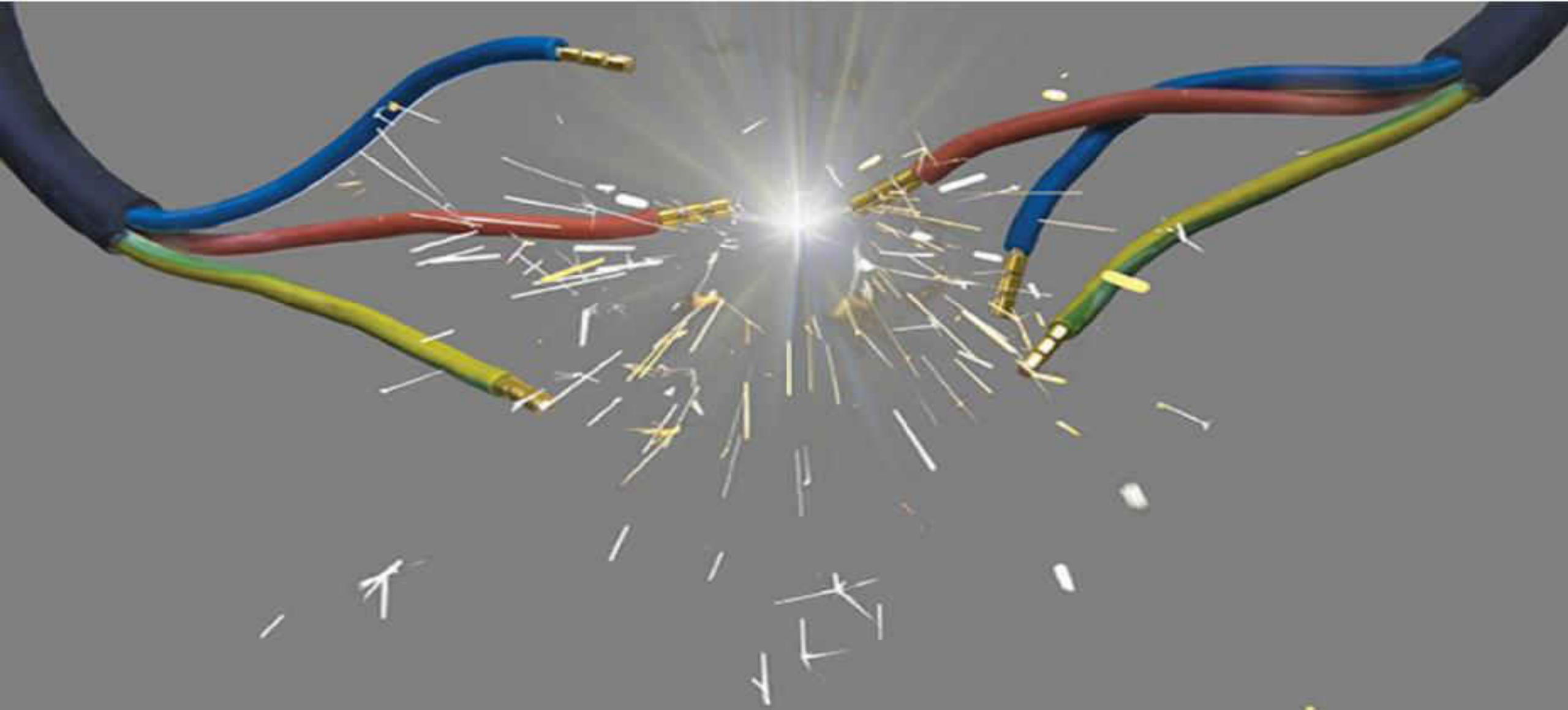
Cable & Connectors, Plug & Sockets for

Electrical Vehicles, Solar PV, Building Wiring

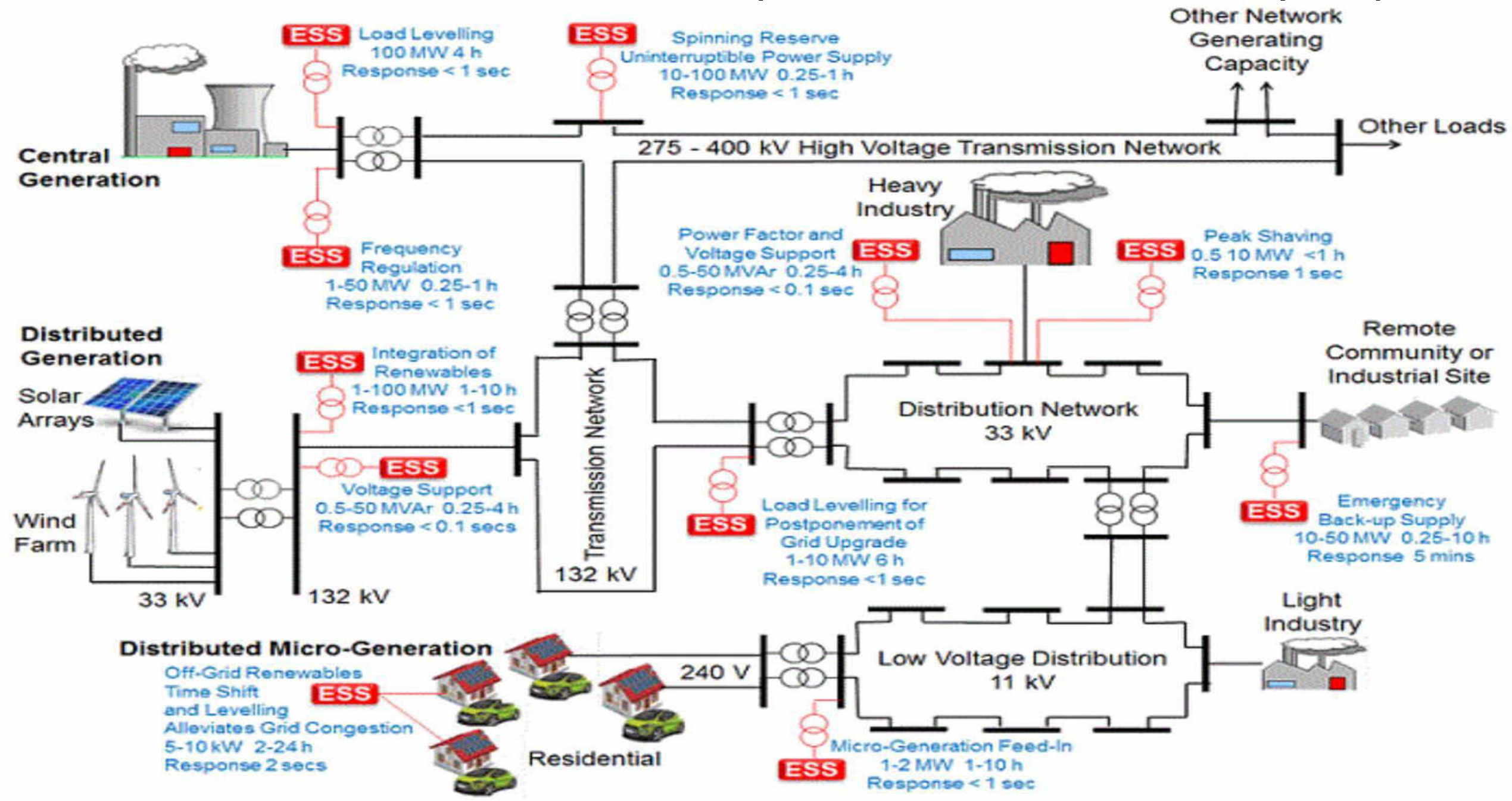
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Stay Ahead Of The Spark Handle Cables-Wires with Professional Connectors for Building Wiring, Industrial, Solar and Electrical Vehicles by Link Vue System



Power Generation and Utilities(Industries + Domestic Purpose)

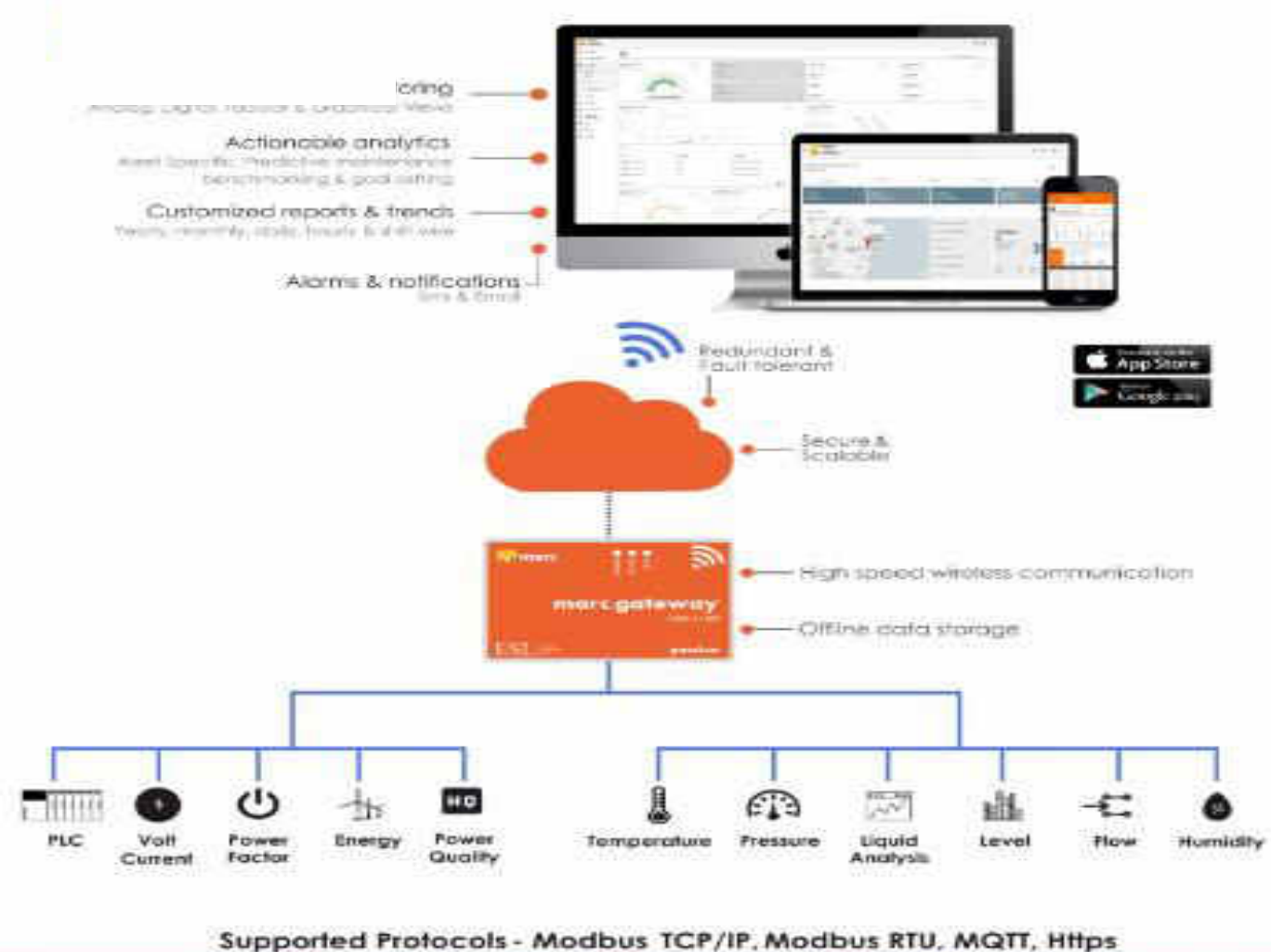


With Link-vue Freedom to Monitor ,Access and Control Remotely

Take your equipments online

The next generation IIoT platform

marc is our next generation GSM/LAN based IIoT platform with built in apps for **assets and equipment** for managing efficiency, uptime, productivity, condition monitoring, control, preventive & predictive maintenance.



Applications

Energy & Utility

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

Audit

- Energy Audit
- Water Management
- Water Audit

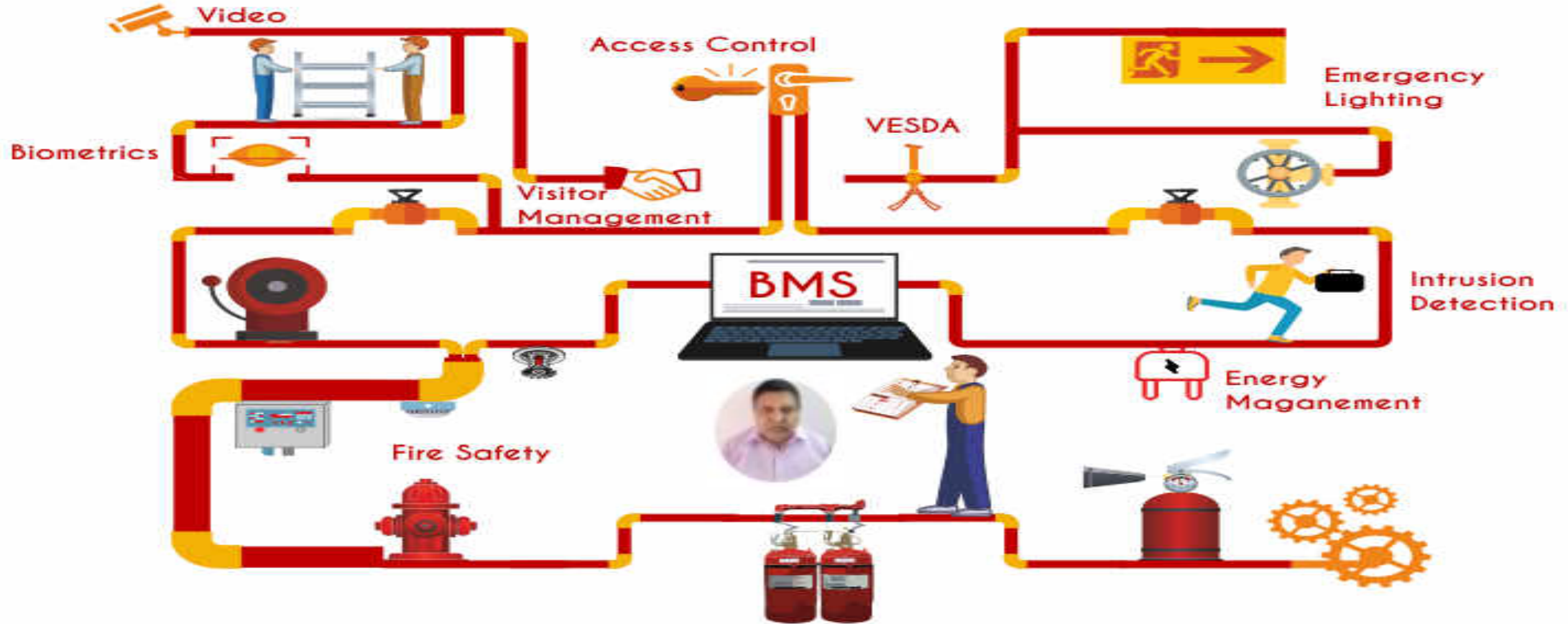
Plant & Process

- Equipment or Asset Monitoring
- Process Monitoring
- Machine Monitoring
- OEE
- Other
- Agriculture, Vehicle
- Weather
- Smart City
- Custom Application development

Why IIoT?

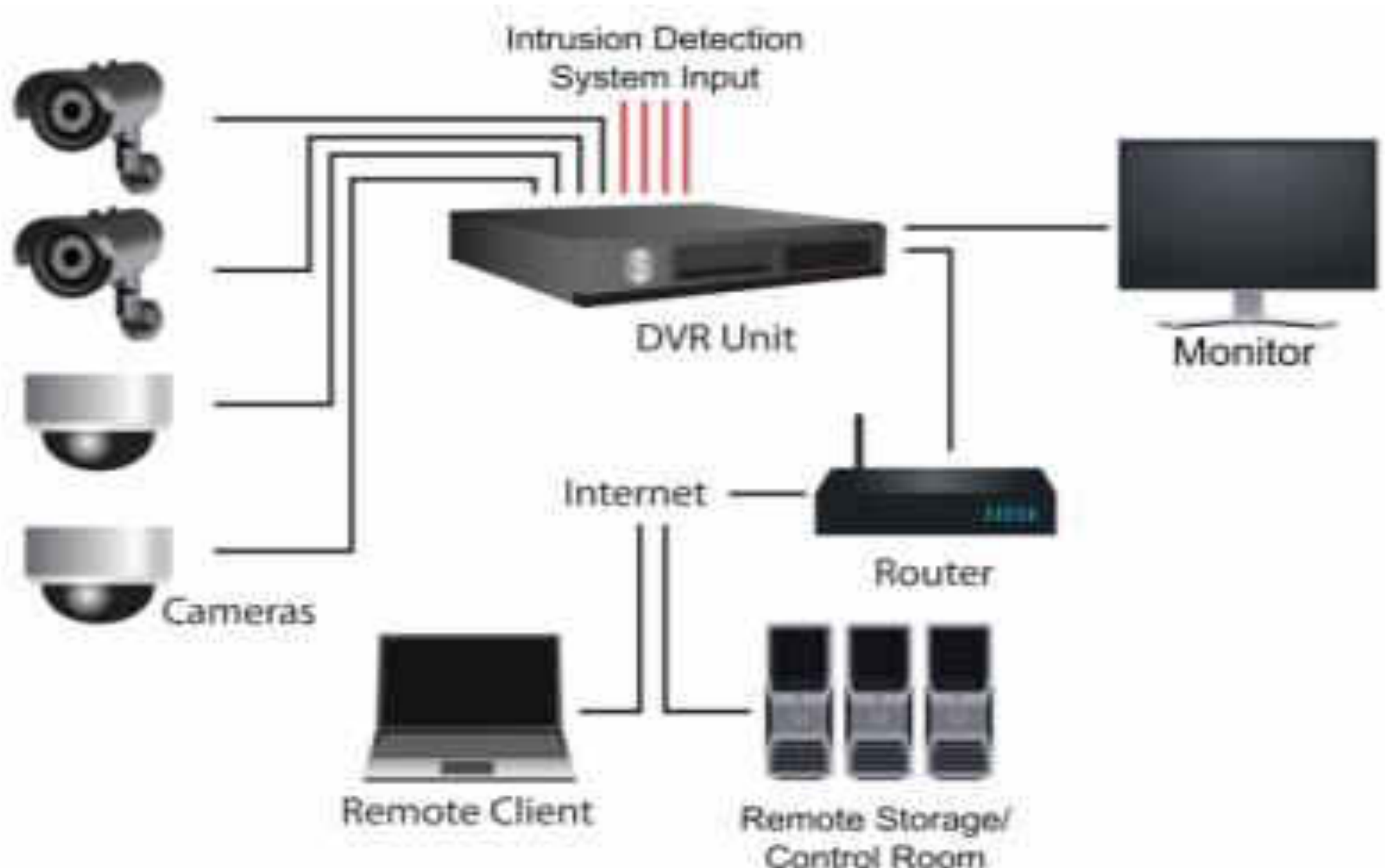
- Efficiency
- Uptime
- Productivity
- Availability
- Service
- Condition
- Alert
- Prevention
- Prediction

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

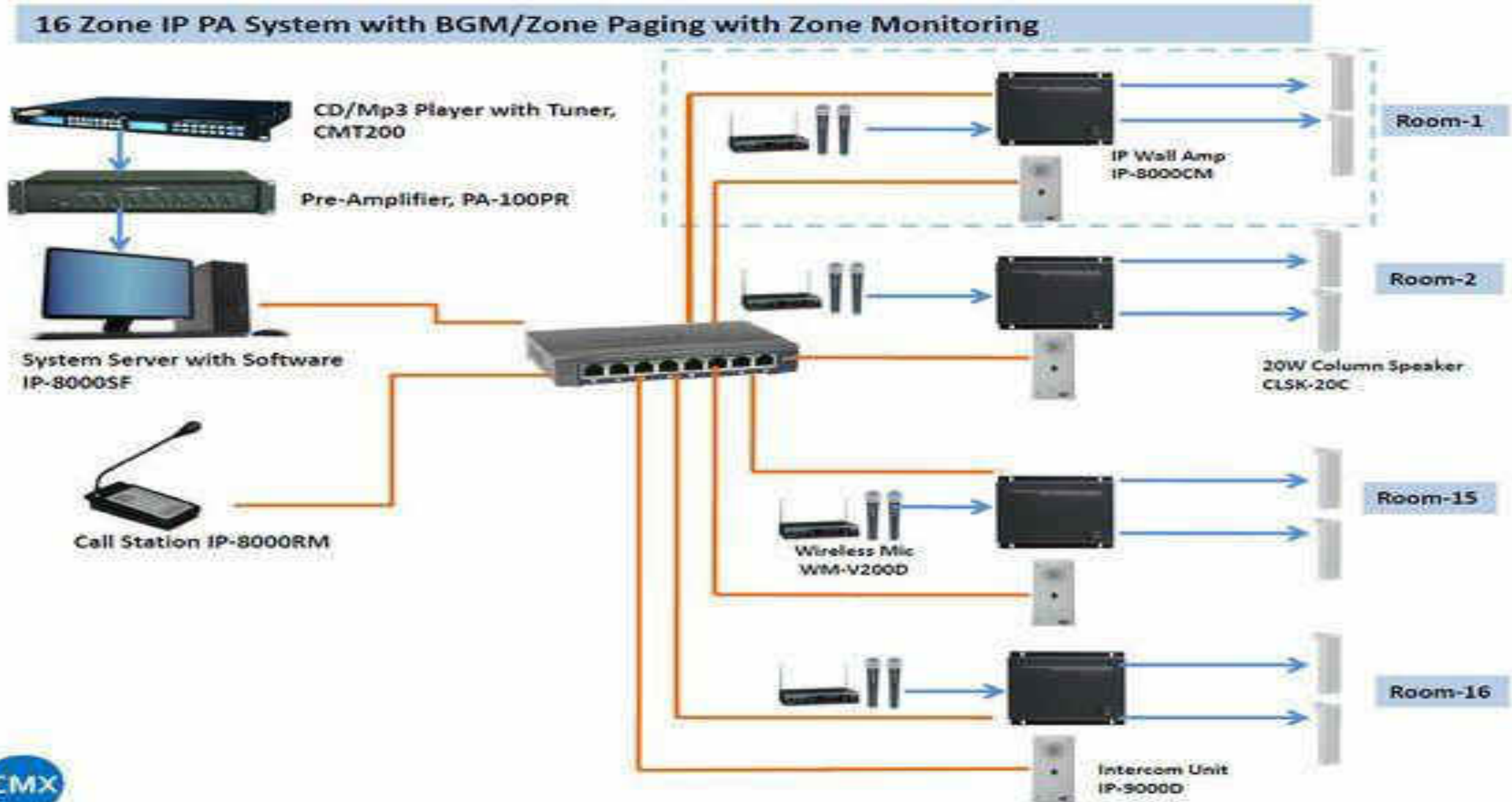


One Stop Solution for
FIRE SAFETY, SECURITY & IBMS

DAY NIGHT 24X7Monitor Solar PV Plant Through CCTV Network



Public Address Systems for Intelligent Buildings Management



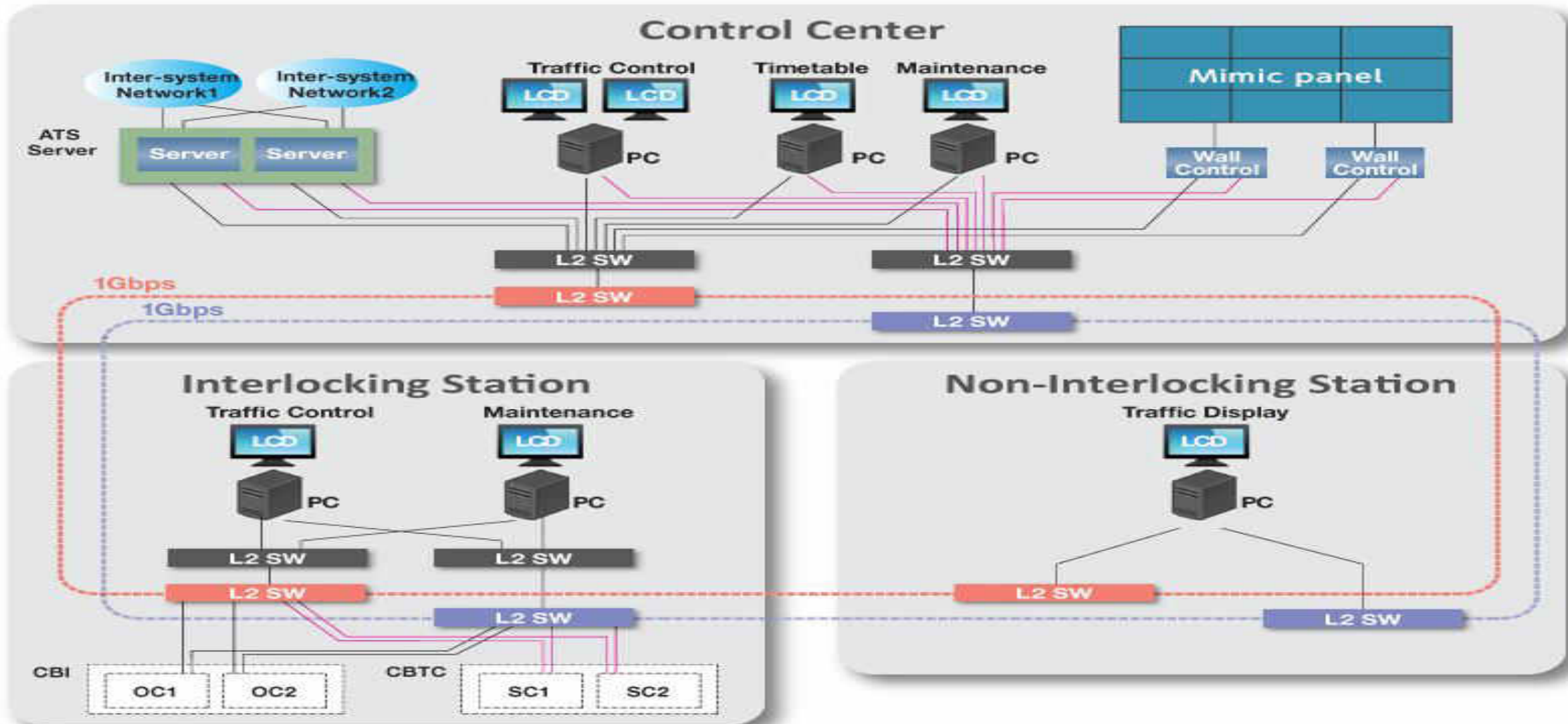
Drone is next generation SPY and Remotely Monitoring&Action Machine

Drone Service Provider

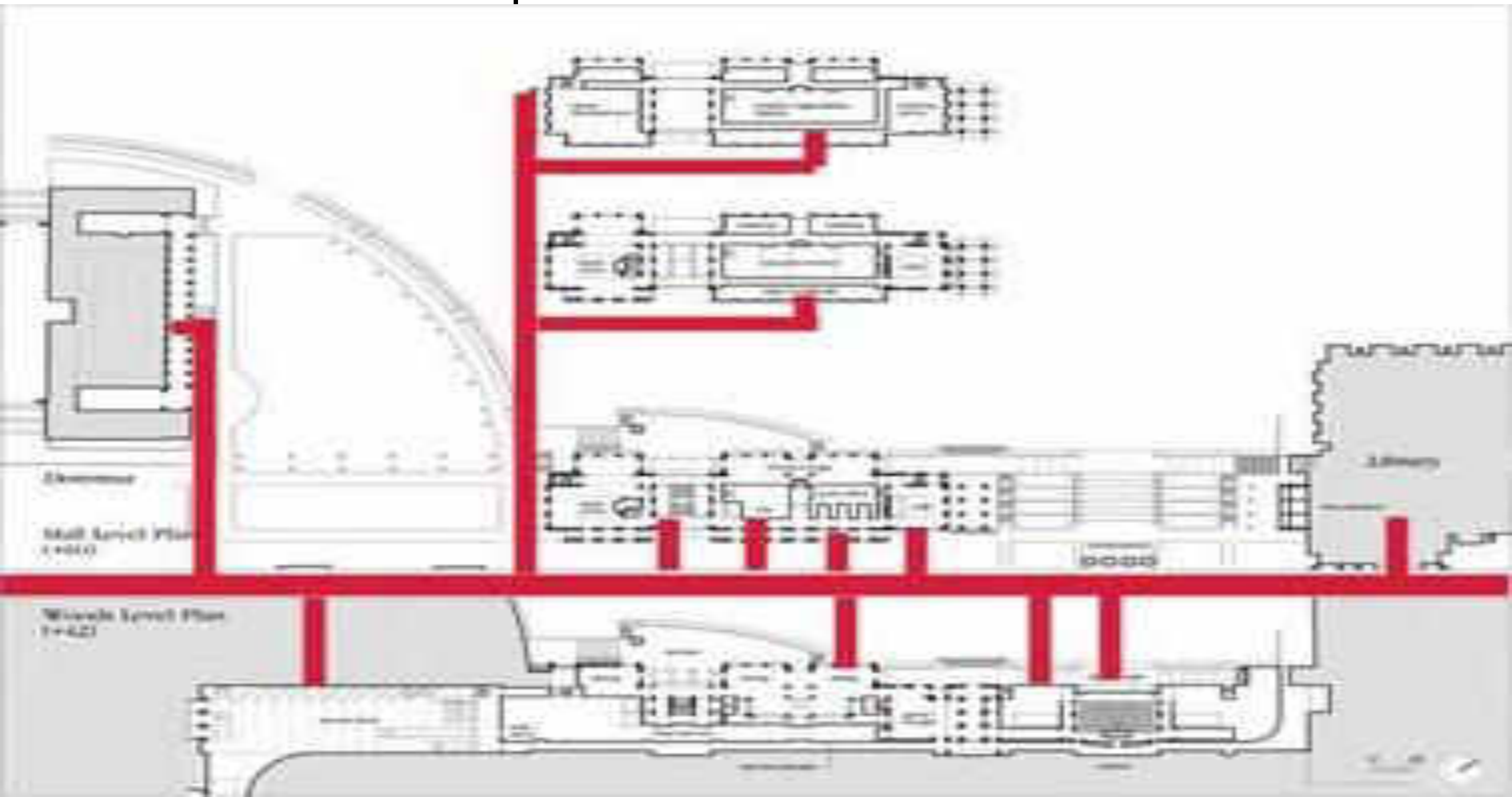


Lan Networking Infrastructure

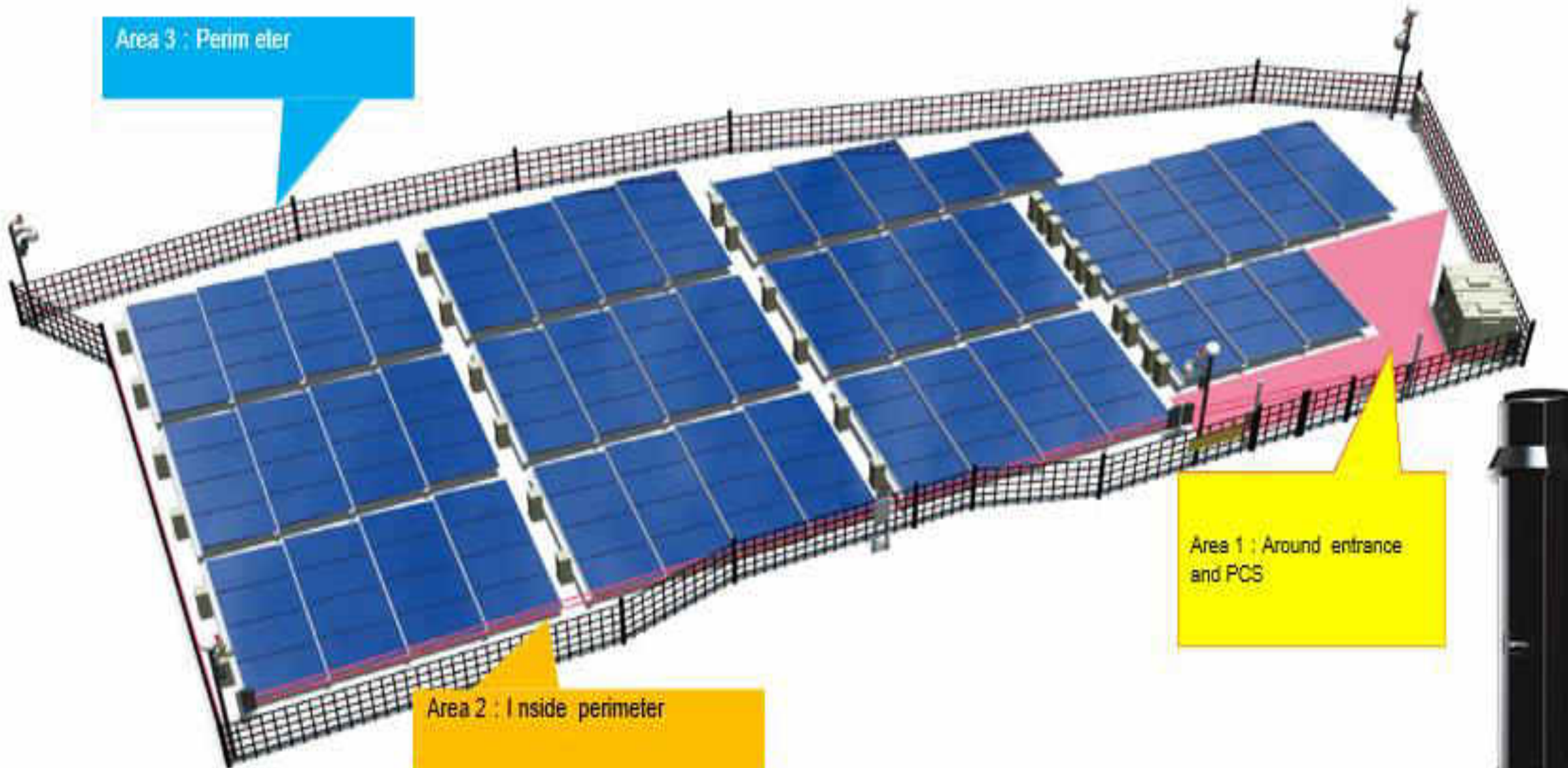
System Configuration



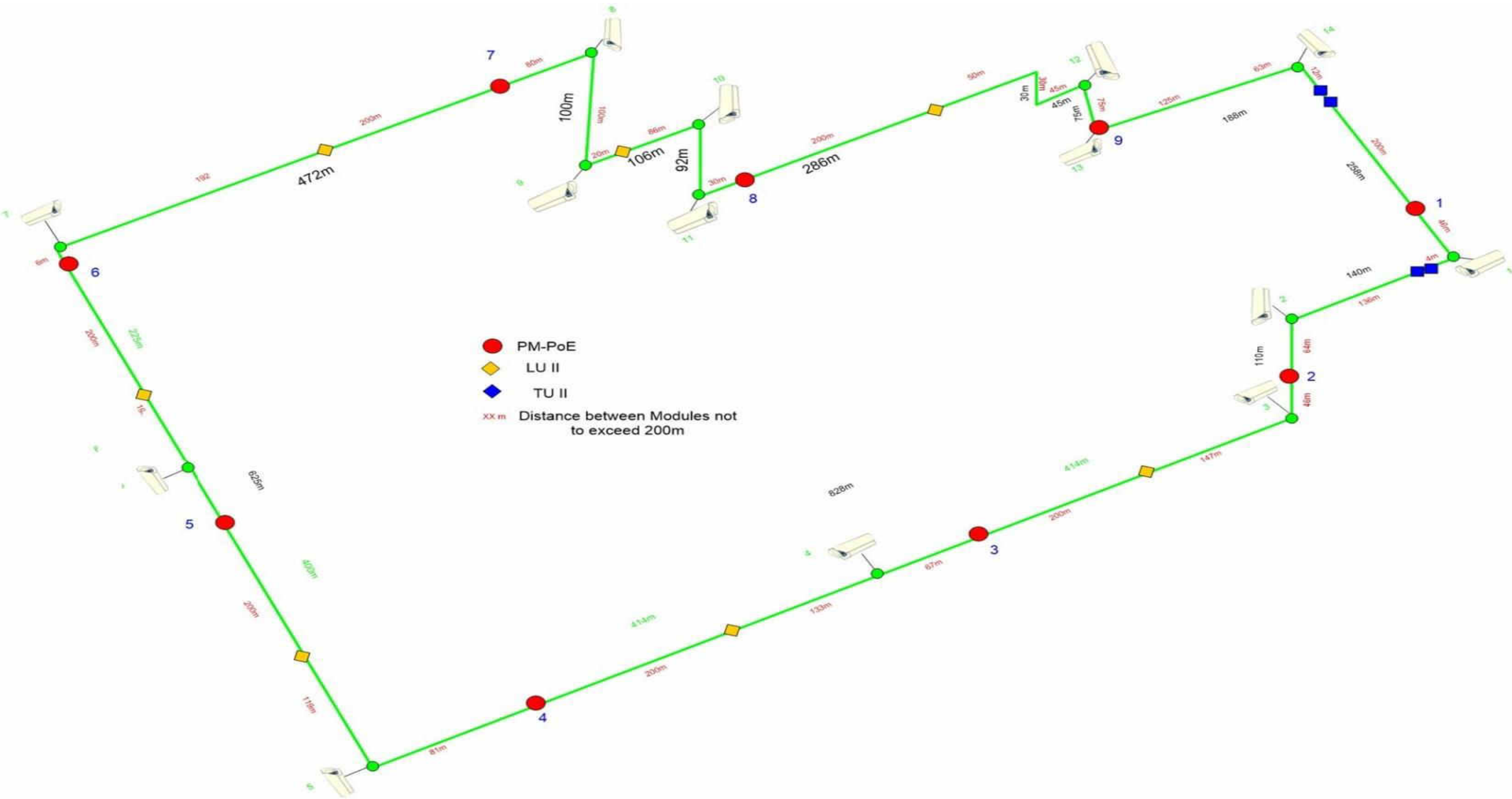
Fiber Optic Cable Network Architecture



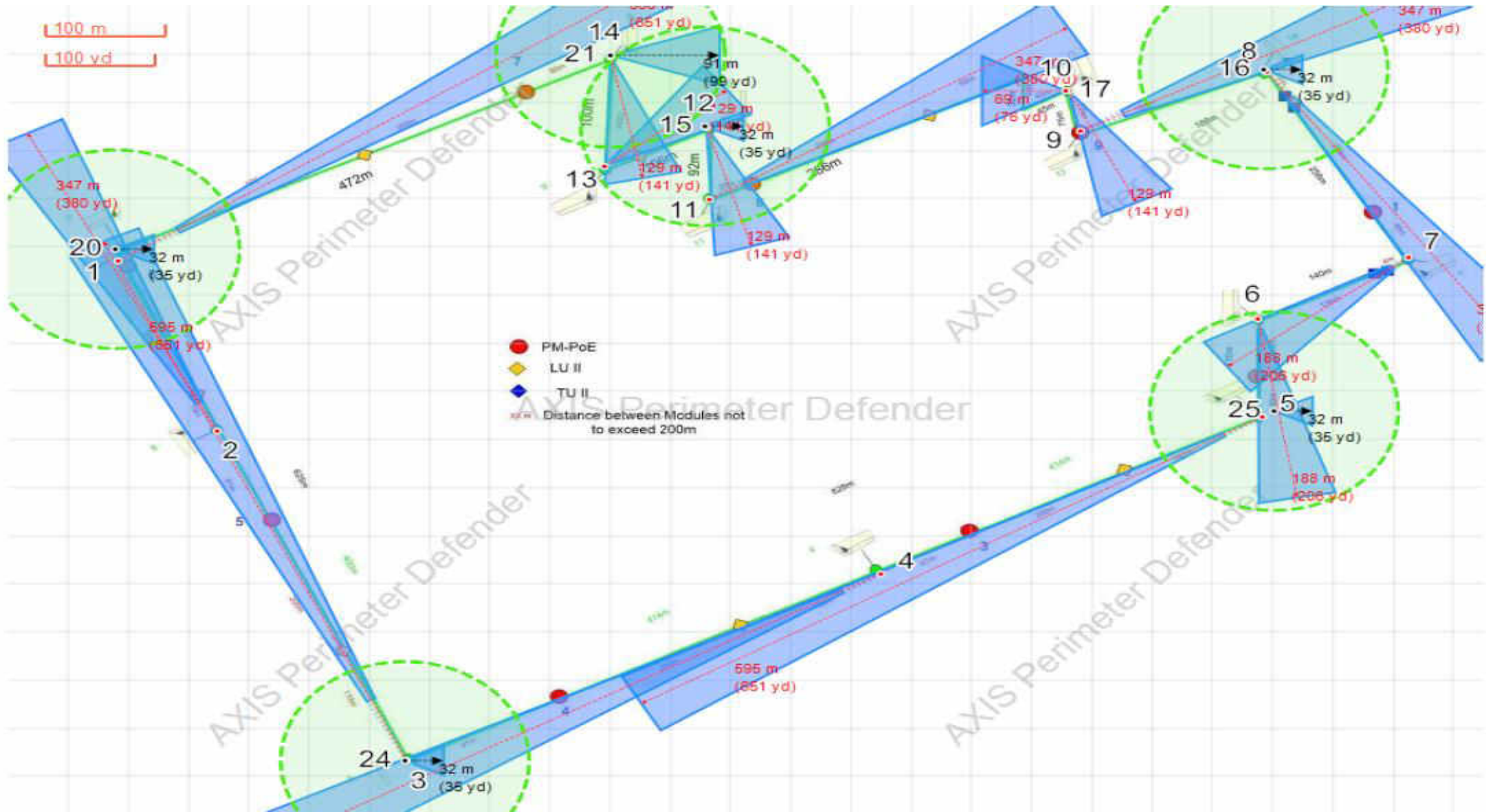
Solar PV Power Plant Keep Fence all Boundaries with Gadgets



PIDS Plant Area 3.5 KM



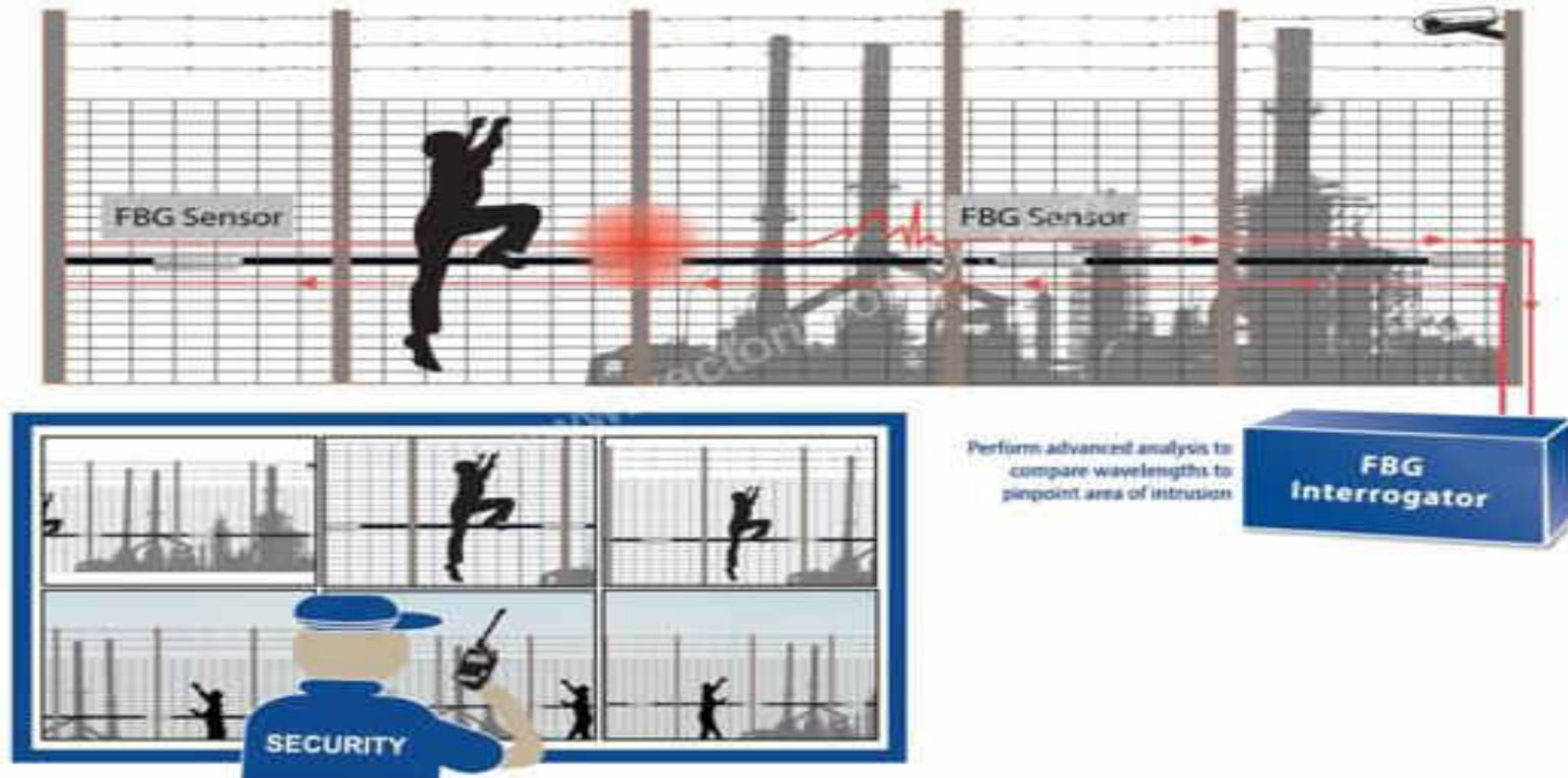
Thermal bullet + Optical PTZ camera layout



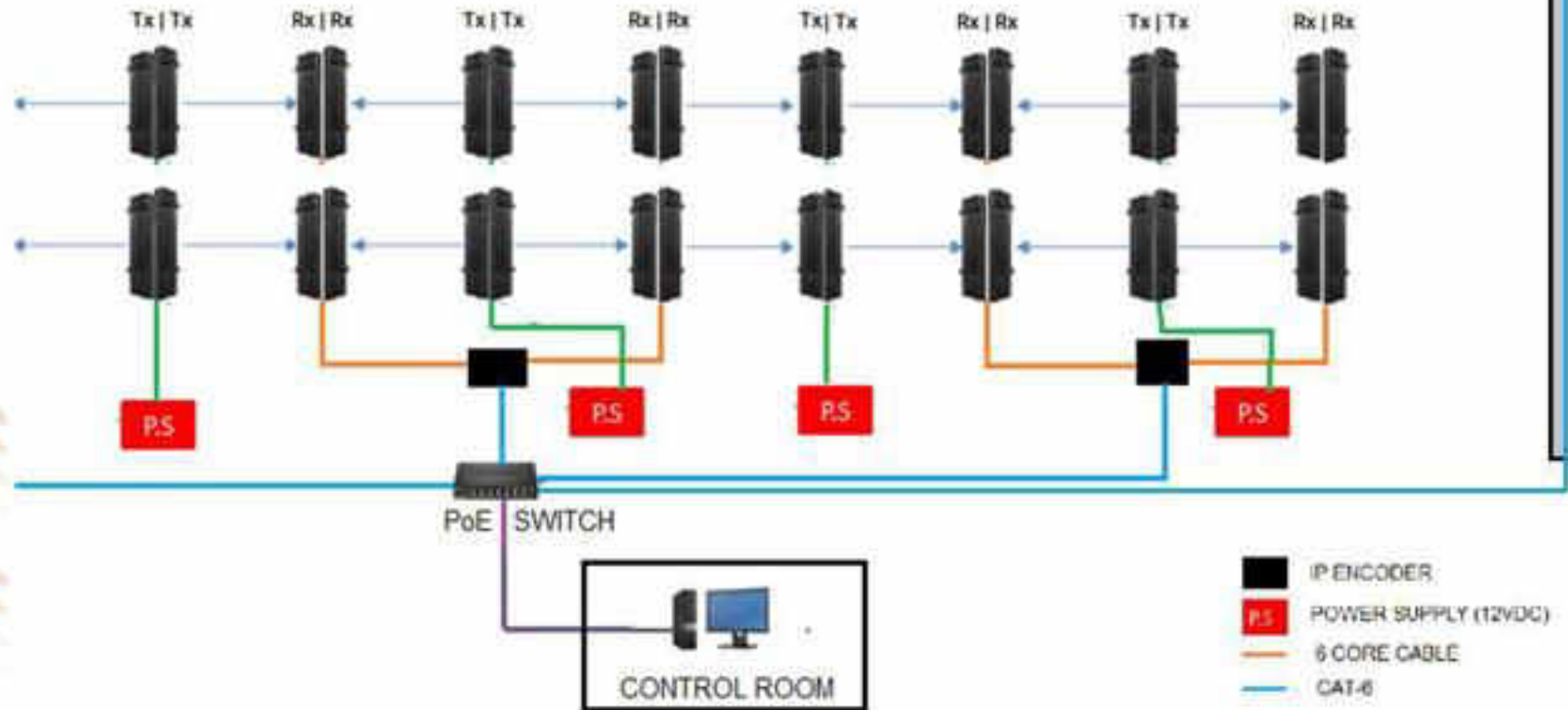
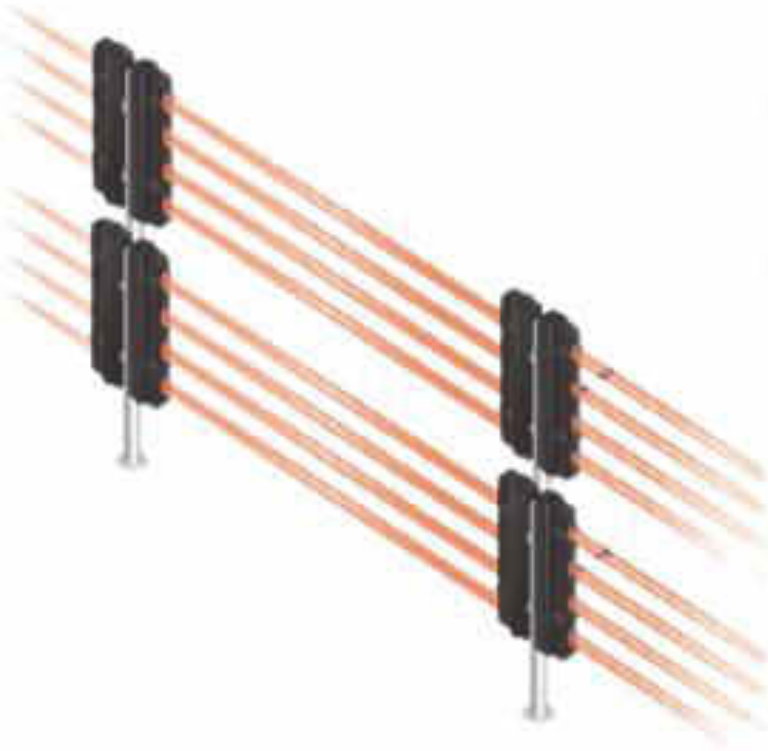
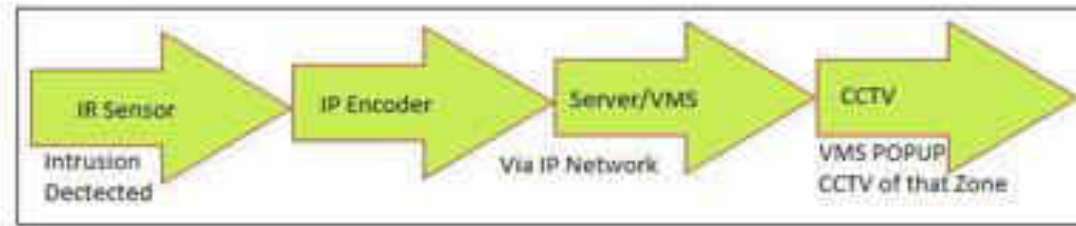
PERIMETER INTRUSION DETECTION SYSTEM

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 Linkvue 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



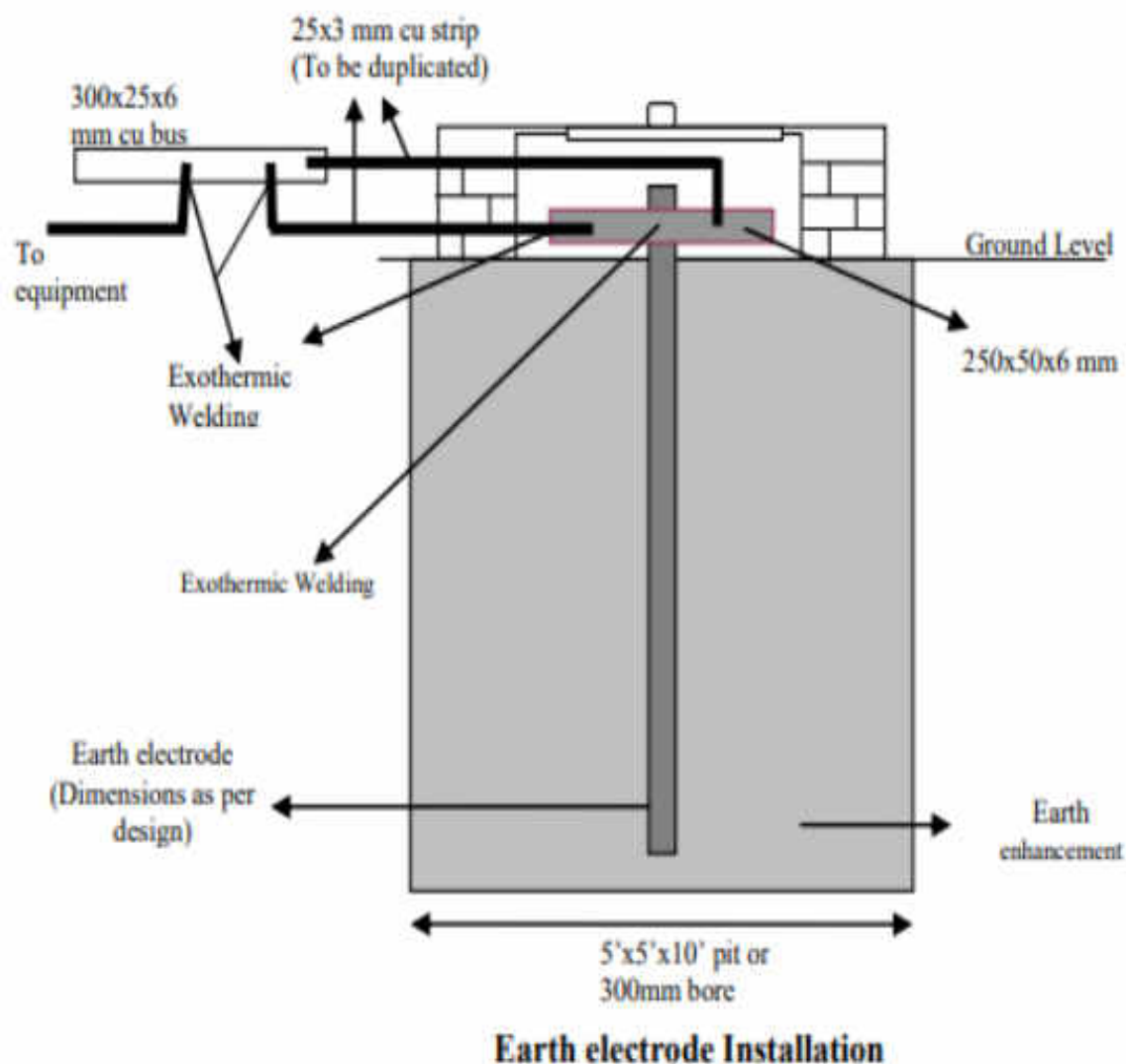
Motion Sensor with Alarm Management

- Beam detectors come in a pair of transmitter and receiver. Each transmitter sends four IR beams and is received at the receiver.
- When all four beams are blocked by an intruder, then an alarm is communicated 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, comes with automatic beam alignment unit. Removes human error element with 5 Year Warranty.
- Effective and efficient in securing medium threat locations like office buildings, warehouses, solar farms etc.



Maintenance Free Earthing installation as per IS3043(2018)

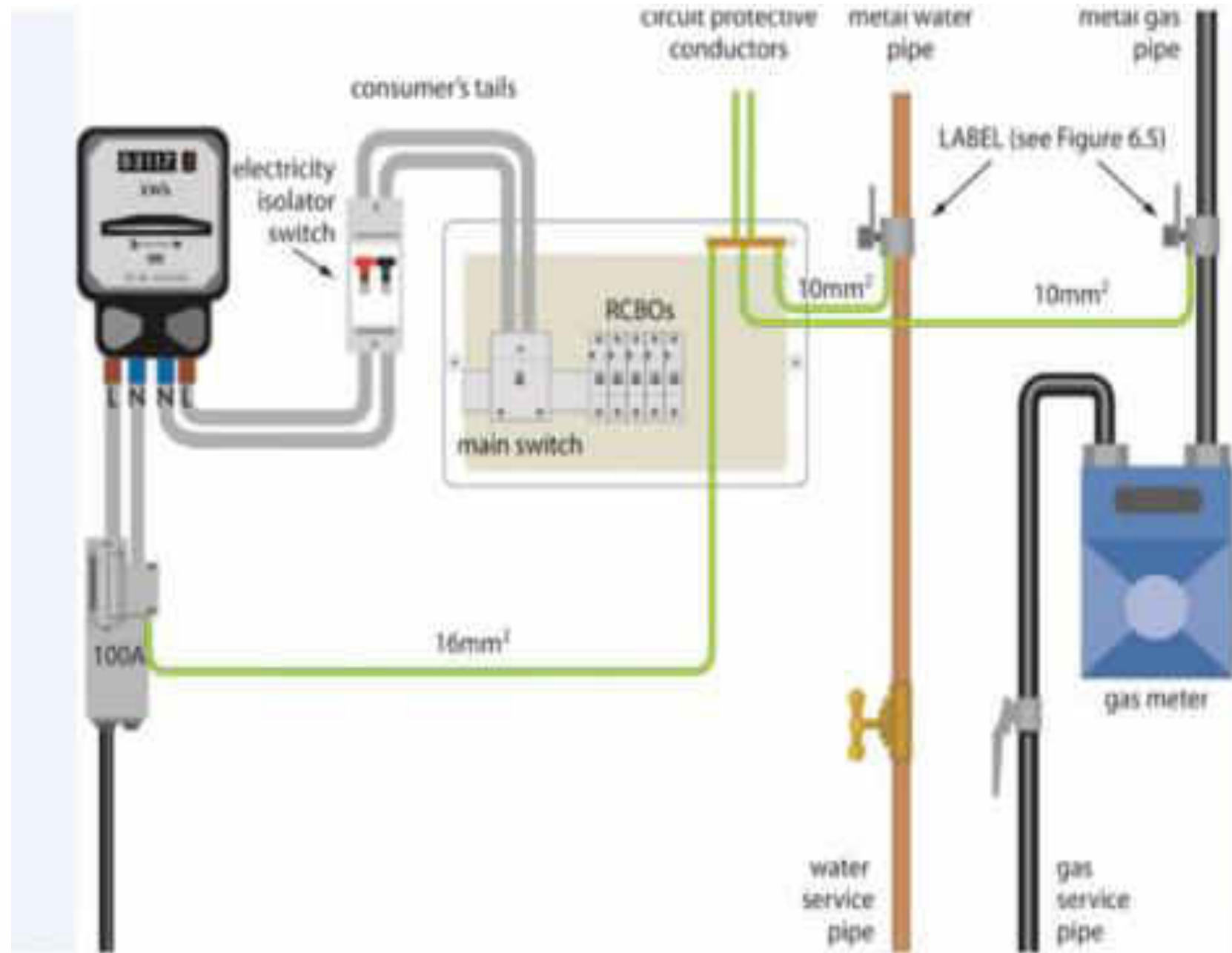
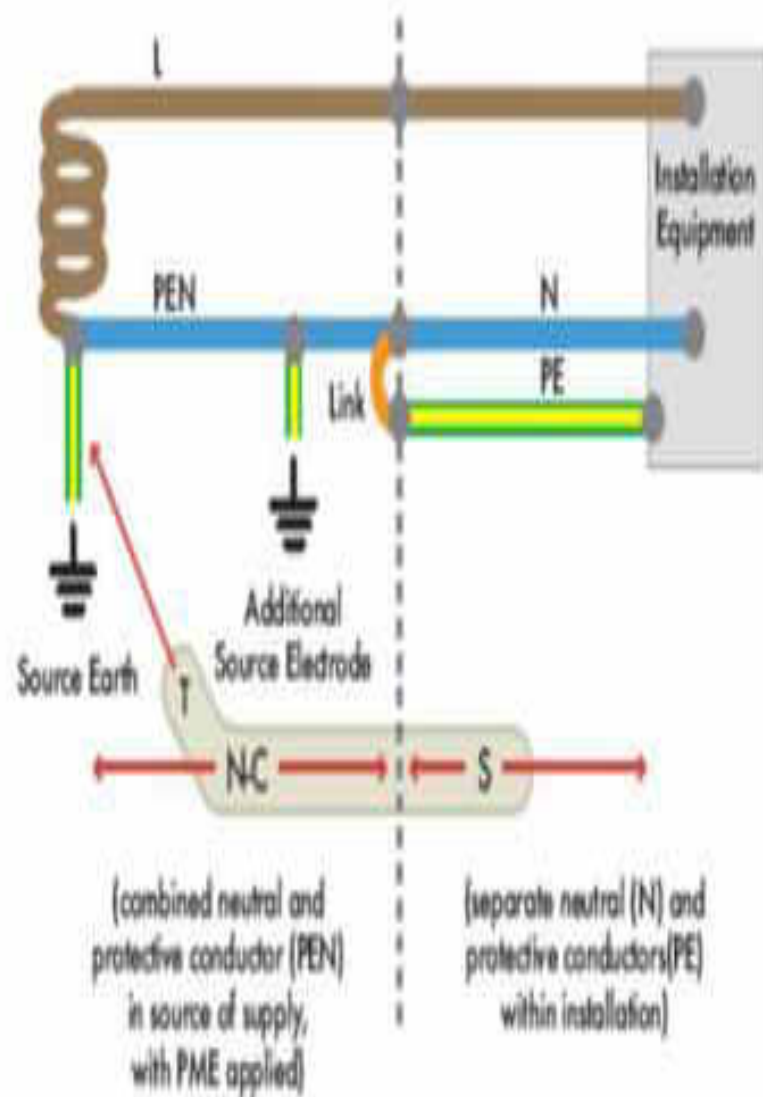
General Arrangements for Earth System



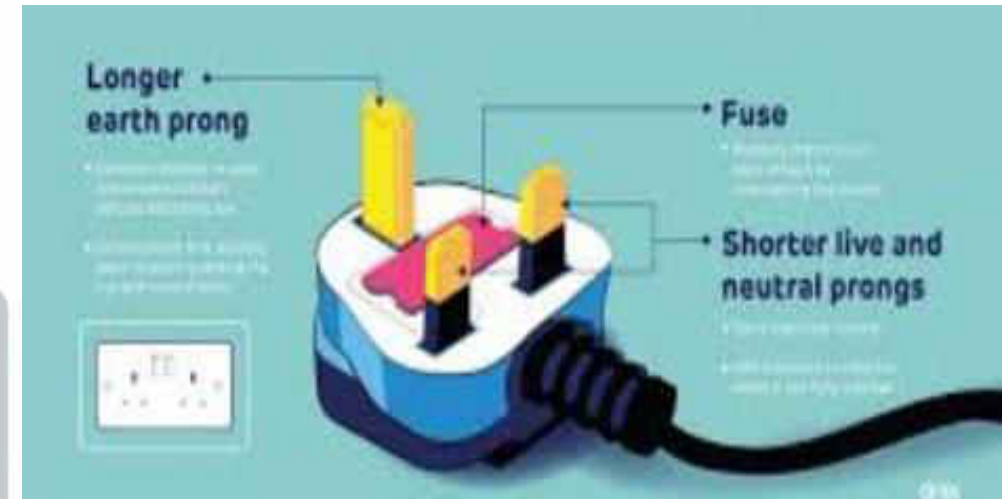
S.N.	Installations/ Current Capacity	IR Value Required	Soil Type/ Resistivity	Earth System
1.	House hold earthing/ 3kA	8 ohm	Normal Soil/ upto 50 ohm-mtr	Single Electrode
			Sandy Soil/ between 50 to 2000 ohm-mtr	Single Electrode
			Rocky Soil/ More than 2000 ohm-mtr	Multiple Electrodes
2.	Commercial 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

TN-C-S system (PME)



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



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-1801
Size:240*120*120



SF-1801
Size:240*120*120



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



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



SF-1803
Size:215*200*200



SF-1804
Size:260*245*260



SF-1806B
Size:308*277*238



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



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



SF-1807-A



SF-1807-D

1.3.3 Portable Socket Distribution



SF-1805
Size:490*140*95



SF-1805C
Size:430*120*70



SF-1086A



SF-1086-E

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



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



SF66-6R

Size:100*100*73
one Eu socket
waterproof box



SF66-SR5

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-U6

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-S6

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-FR5

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 door Plug&Sockets/Building Internal Electrical Cable Freedom Connectorts

1.4.1 IP66 Waterproof Box for 45*45mm modules

2) B Verison



1.4.2 IP55 Waterproof Box

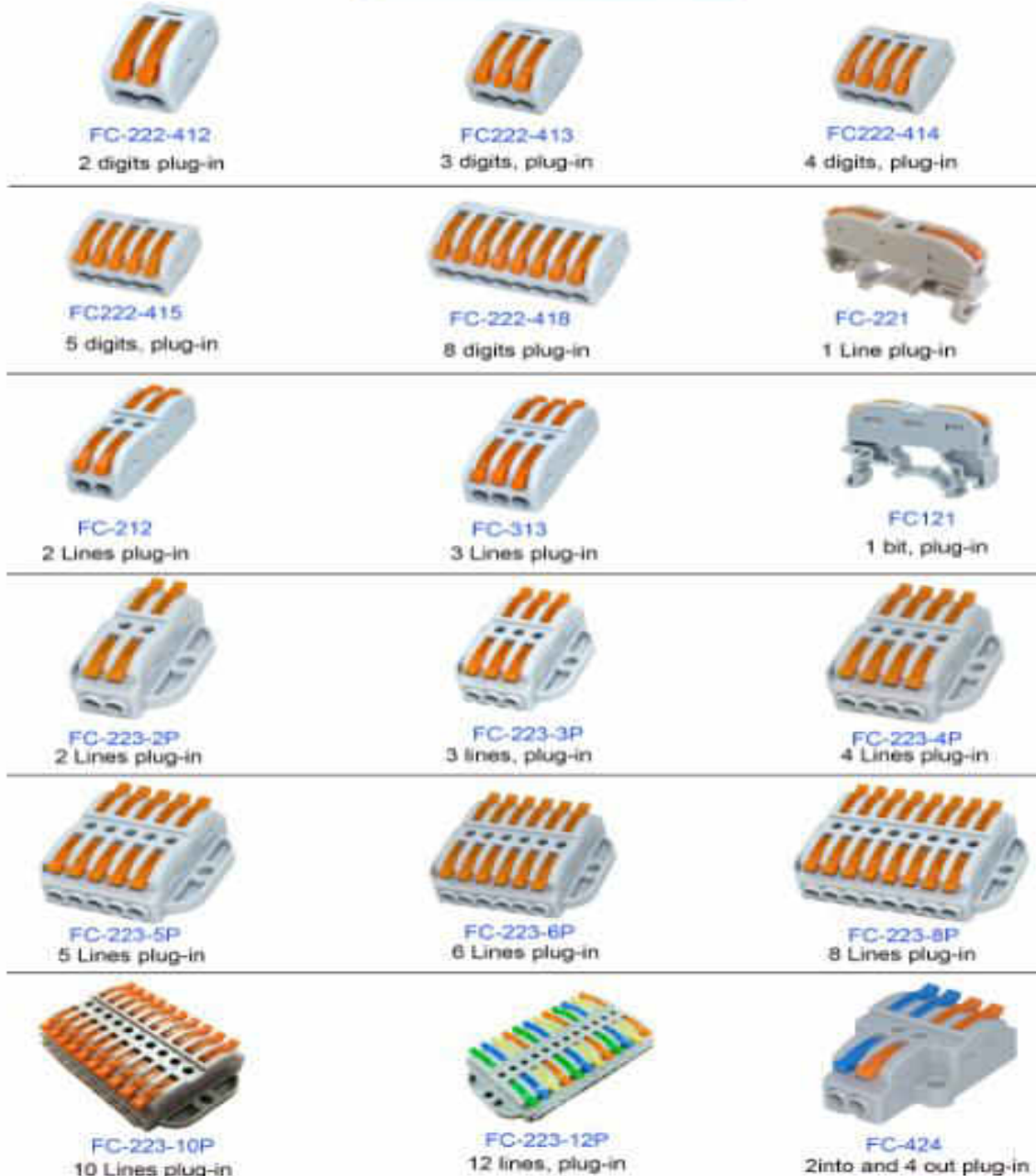
S/N	Picture	Item & Feature	S/N	Picture	Item & Feature
1		SF-QB-200 IP55 1 way 45*45mm modules switch control IP55 waterproof box, dimension of 85*70mm;	2		SF-QB-201 IP55 3 way 45*45mm modules one switch and one socket outlet IP55 waterproof box, dimension of 85*95mm;
3		SF-QB-202 IP55 4 way 45*45mm modules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



Special Connectors for Low Voltage Electrical Cable FreeDOM Connection



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

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



SF-XY22-W01

No.: 3P; OD 6.5mm, OD 9mm, OD 11mm



SF-XY12-W01

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



SF-XY16-W01

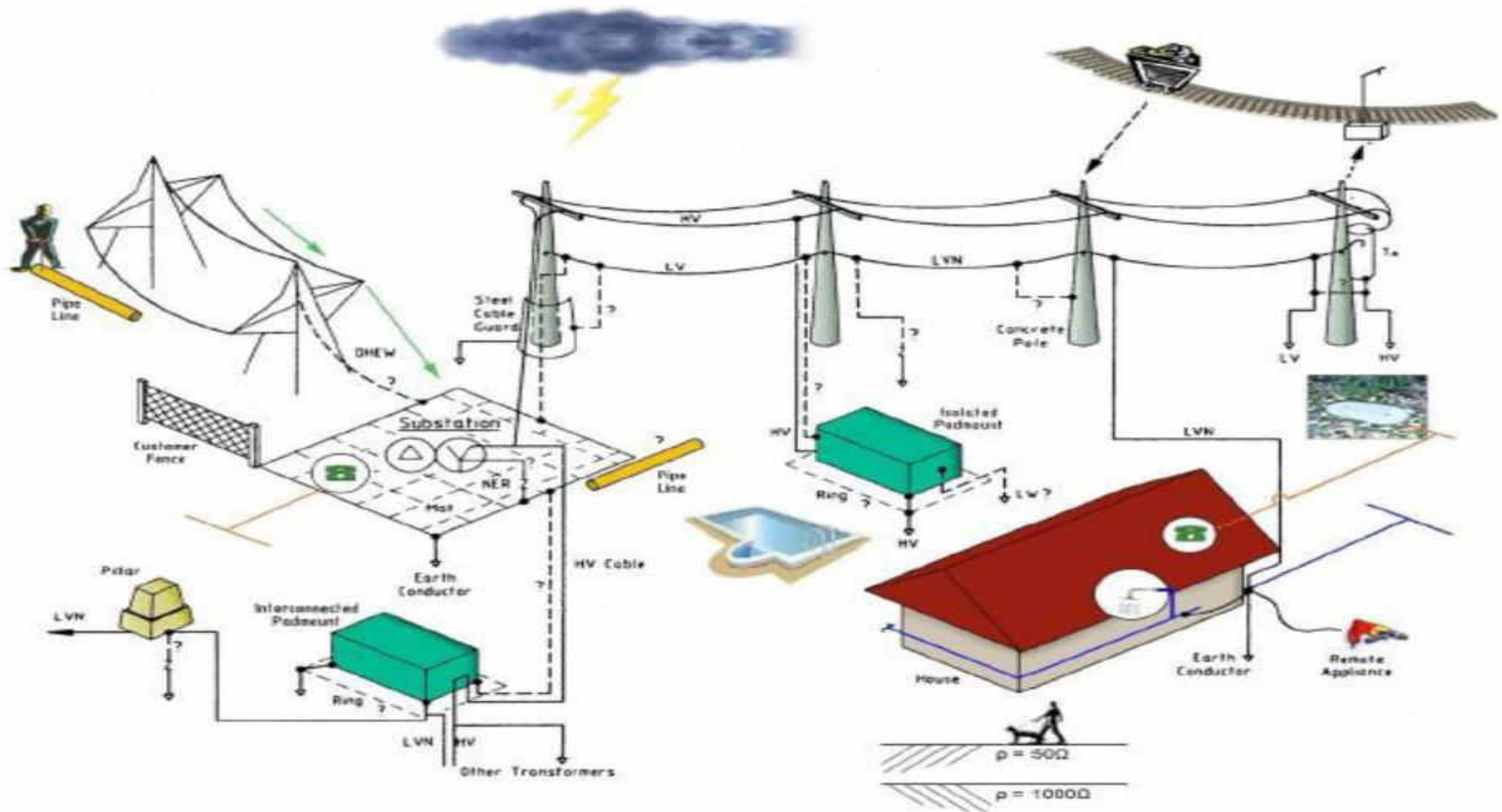
OD <= 9 & OD <= 11



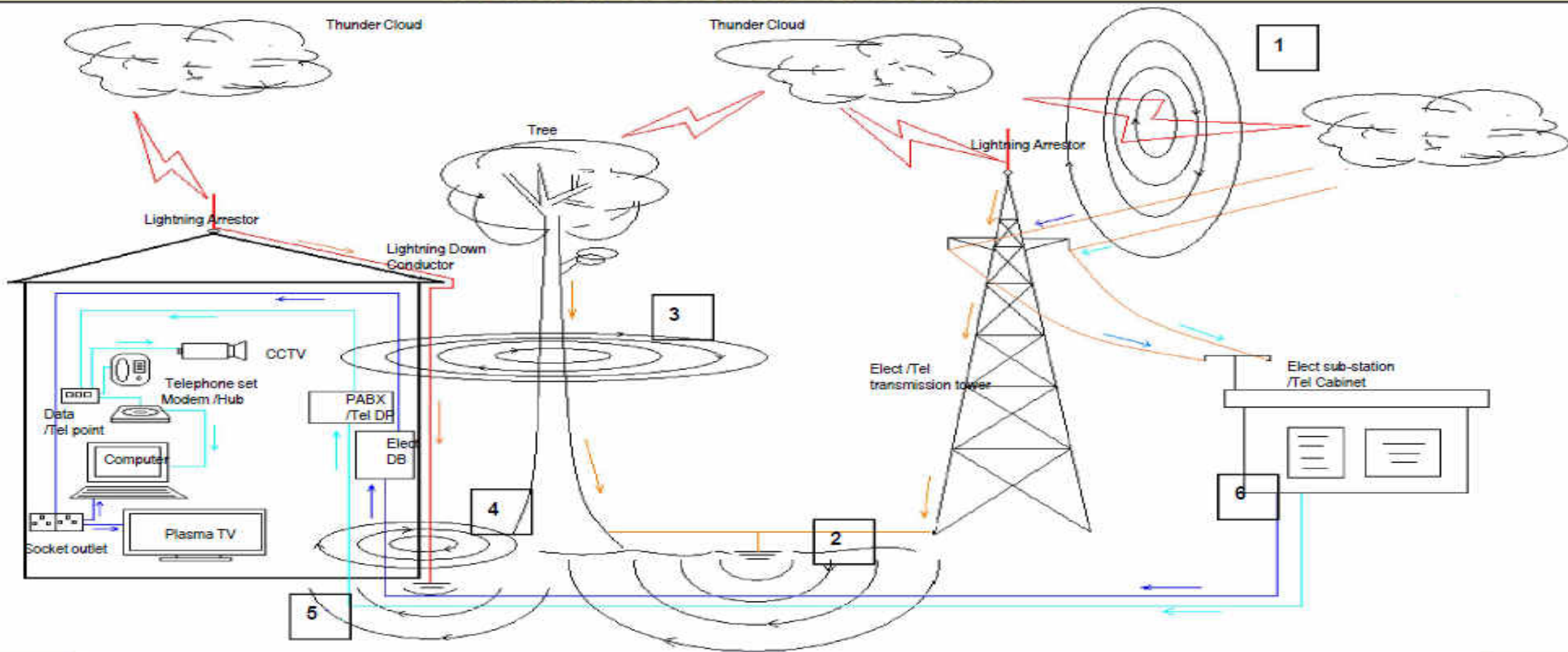
SF-XYT21-W01

OD <= 9 & OD <= 11

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



POSSIBLE SOURCES OF SURGES



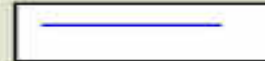
Lightning Strike



Lightning Current



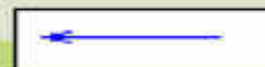
Telephone/Data Line



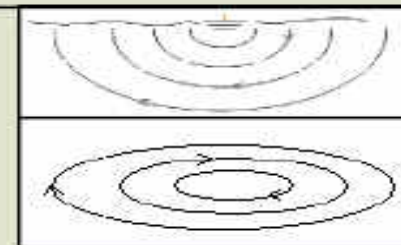
Power Line



Surge Current in Telephone/Data Line



Surge Current In Power Line

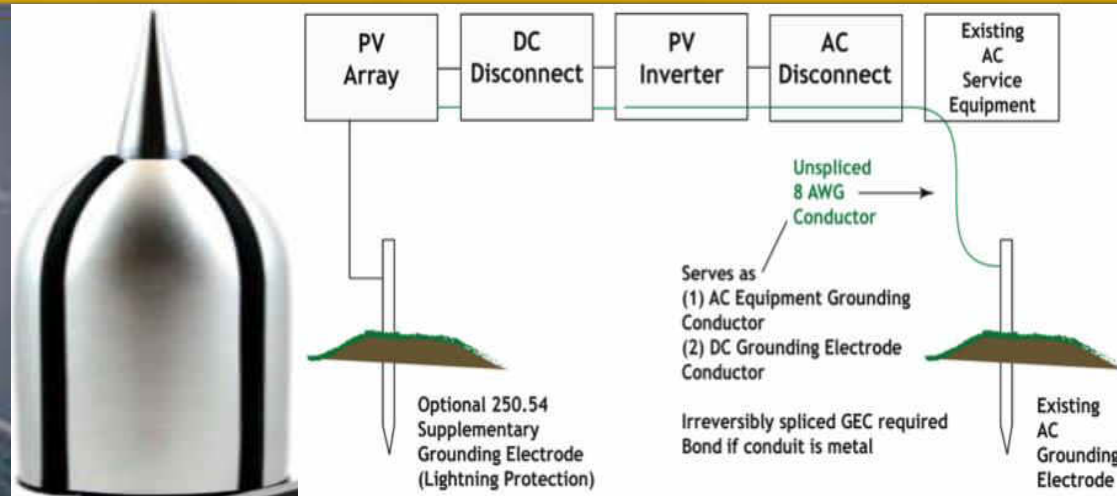


Ground Potential

Inductive Coupling

DC Power Plant we Ensure Safety

LIGHTNING PROTECTION SYSTEMS IN PHOTOVOLTAIC POWER PLANTS



LOCAL STORM
DETECTION



AIR TERMINALS
AND ACCESSORIES



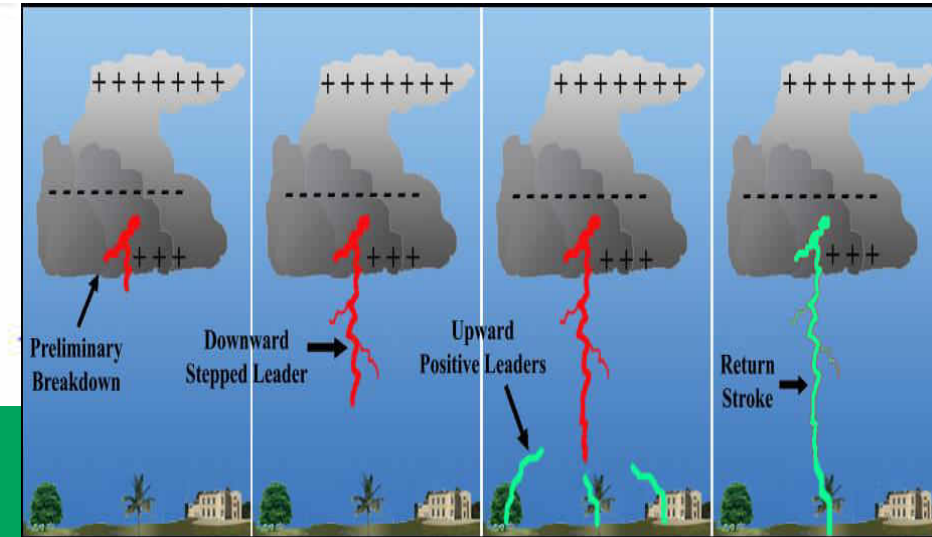
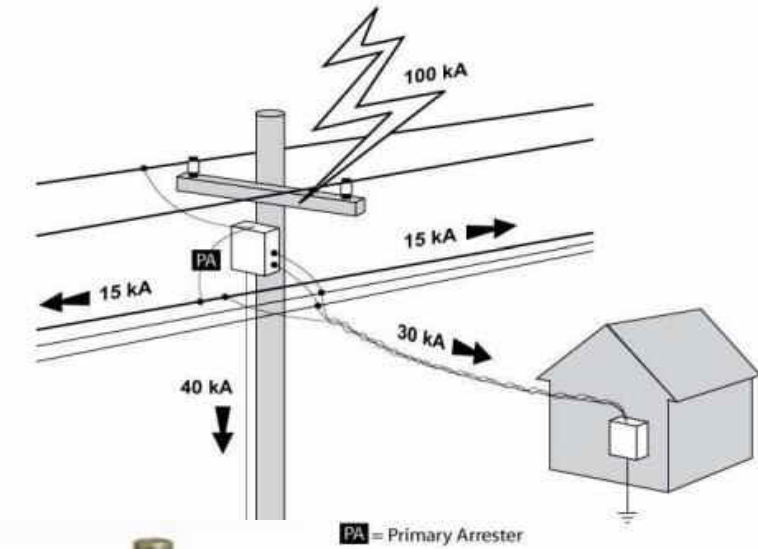
EARTHING



OVERVOLTAGES



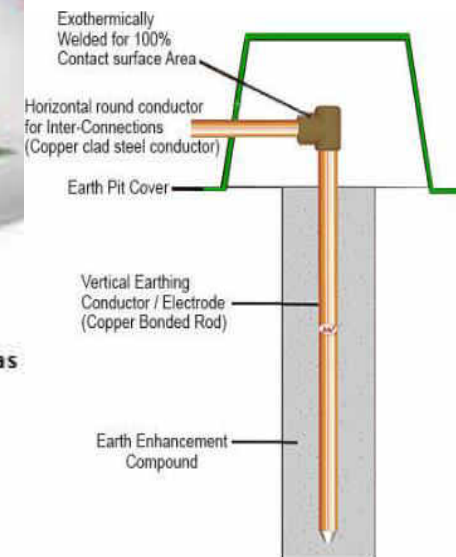
Link Vue System Electrical Safety (Surge Protection, Lightning Protection & Earthing)



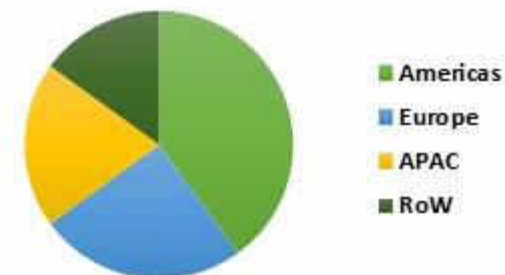
Surge protection devices (SPDs) shall be provided for the main electrical distribution system including sub-switch boards and distribution boards, computers, electronic equipment, fire alarm panel, PABX equipment, UPS equipment, CCTV equipment, MATV equipment, card access equipment etc which are susceptible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



Maintenance Free Earthing



Surge Protection Device Market





Products

Surge Protector



Type 1 SPD-lightning current arresters

Combined, spark gap and MOV
I_{imp} 25 kA / 100 kA U_p ≤ 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
I_n 20 kA / I_{max} 40 kA
U_p ≤ 1.35 kV



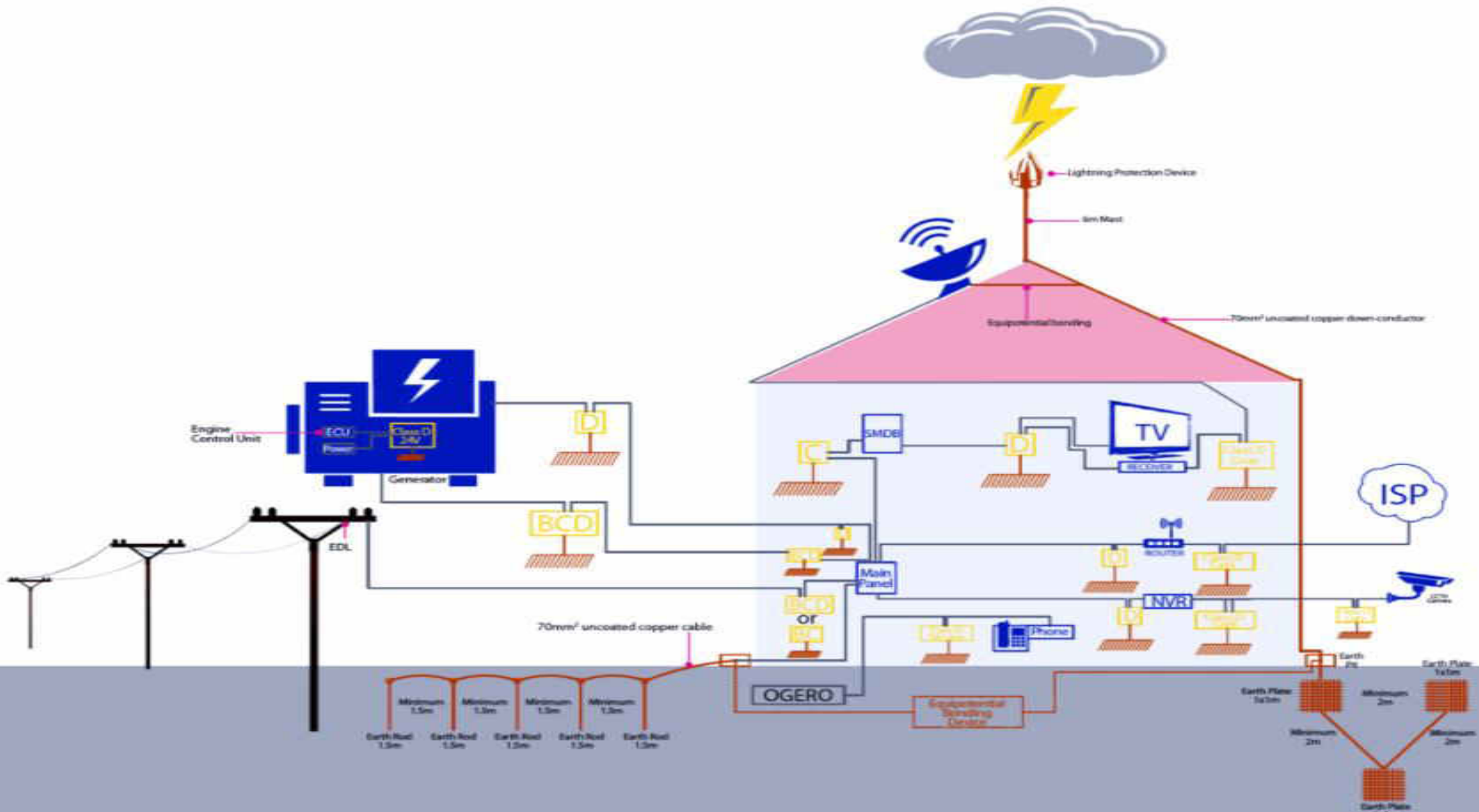
Type 1 and 2 SPD -combined arresters B+C

Combined, spark gap and MOV
I_{imp} 12.5 kA / 50 kA
U_p ≤ 1.5 kV
No follow current, zero leakage current

SPD PV - surge arrester

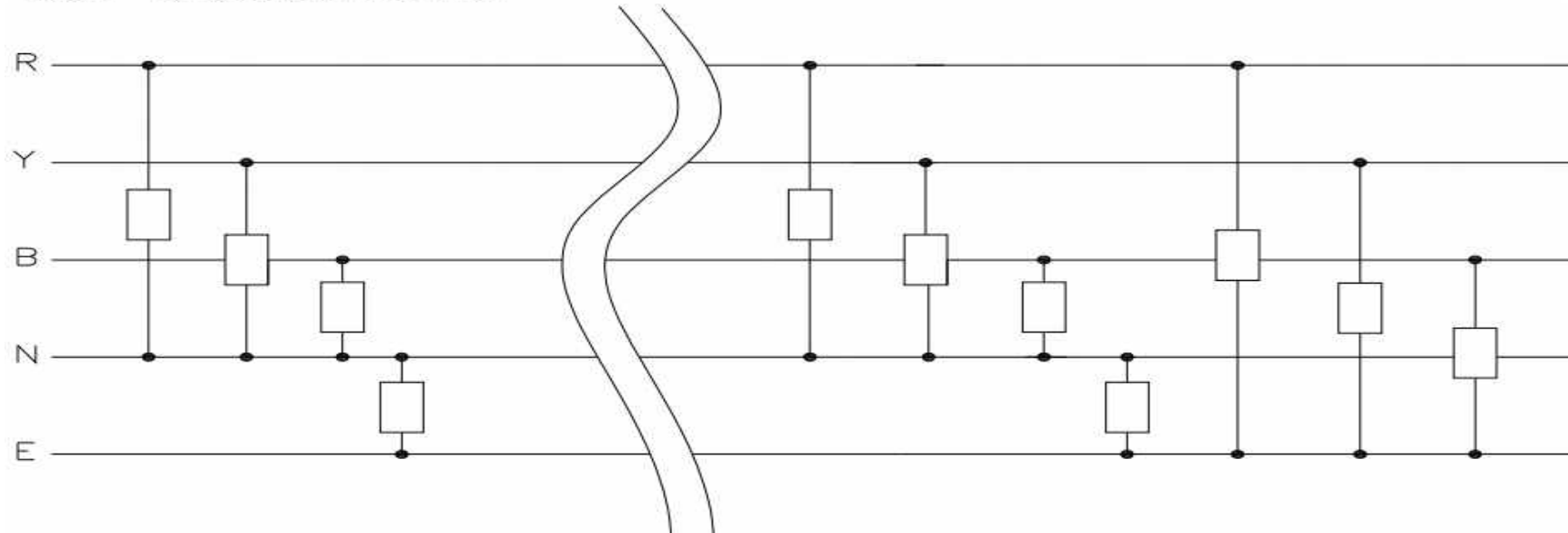
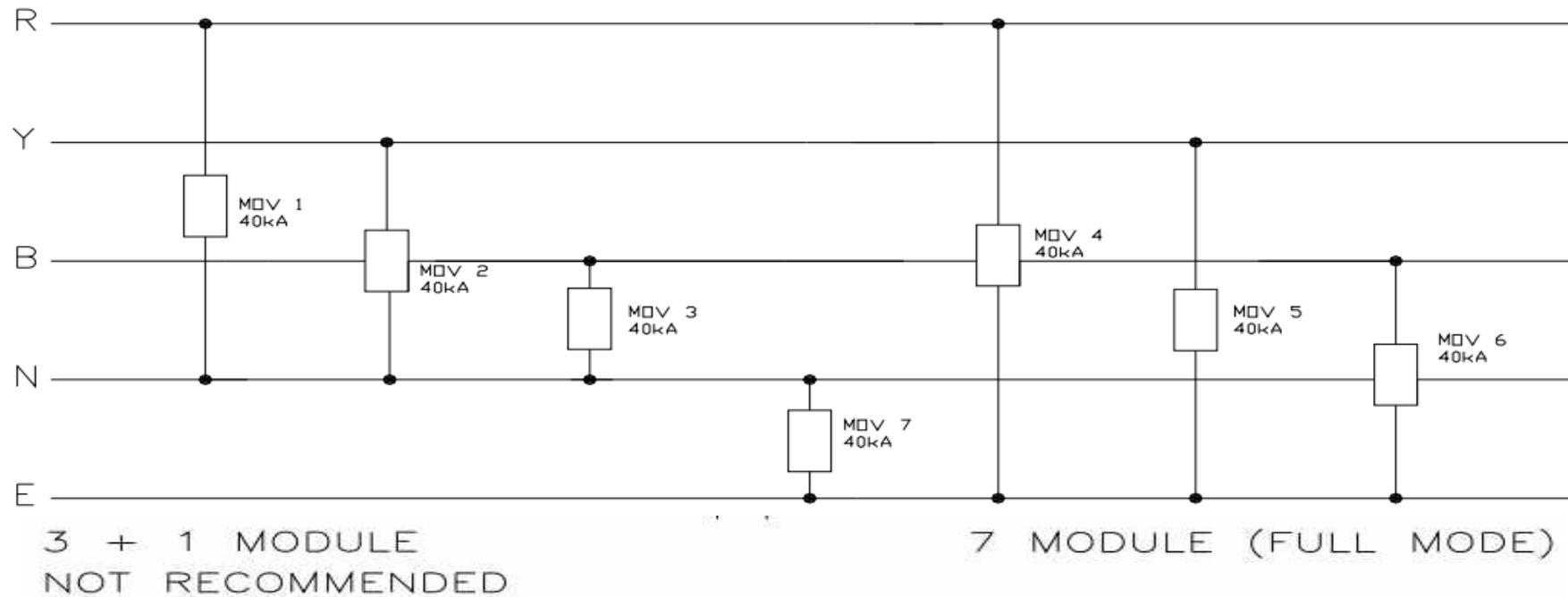
Combination of MOV and spark gap
PV Type 2 SPD
MOV surge arrester
UCPV 170 to 1500 V DC
I_n 15 to 20 kA
I_{max} 40 kA

Surge Protection Class B C and D as per Equipment Category



Surge Protection Installation Guide Line

7 MODULE (FULL MODE)
KA RATING 40KA PER PHASE (L-N, N-E, L-E)



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

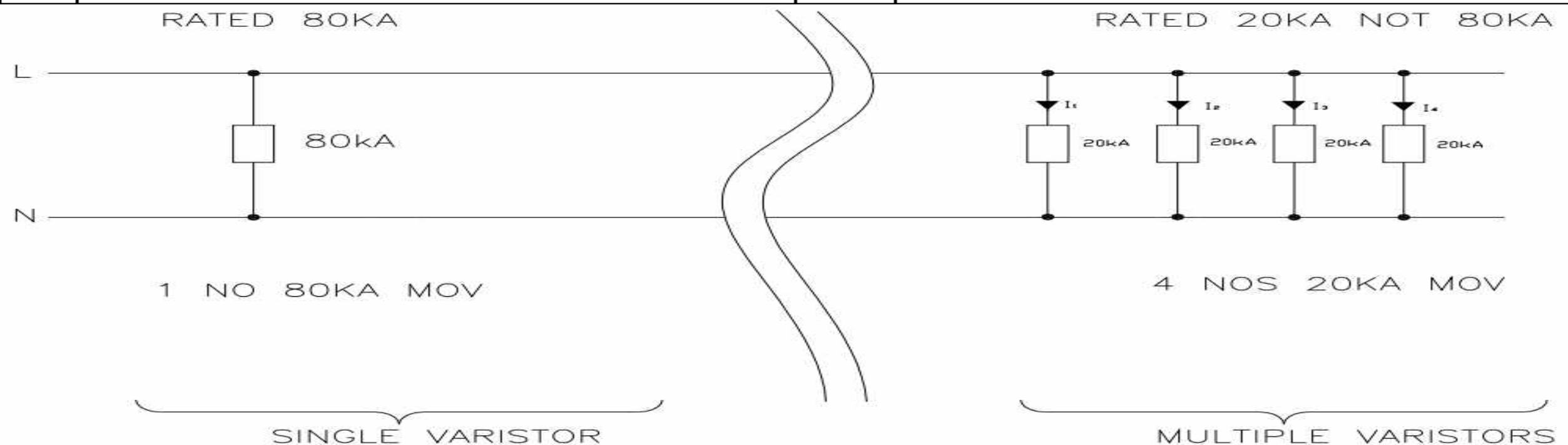
Design to withstand multiple strikes

SPD for data/signal

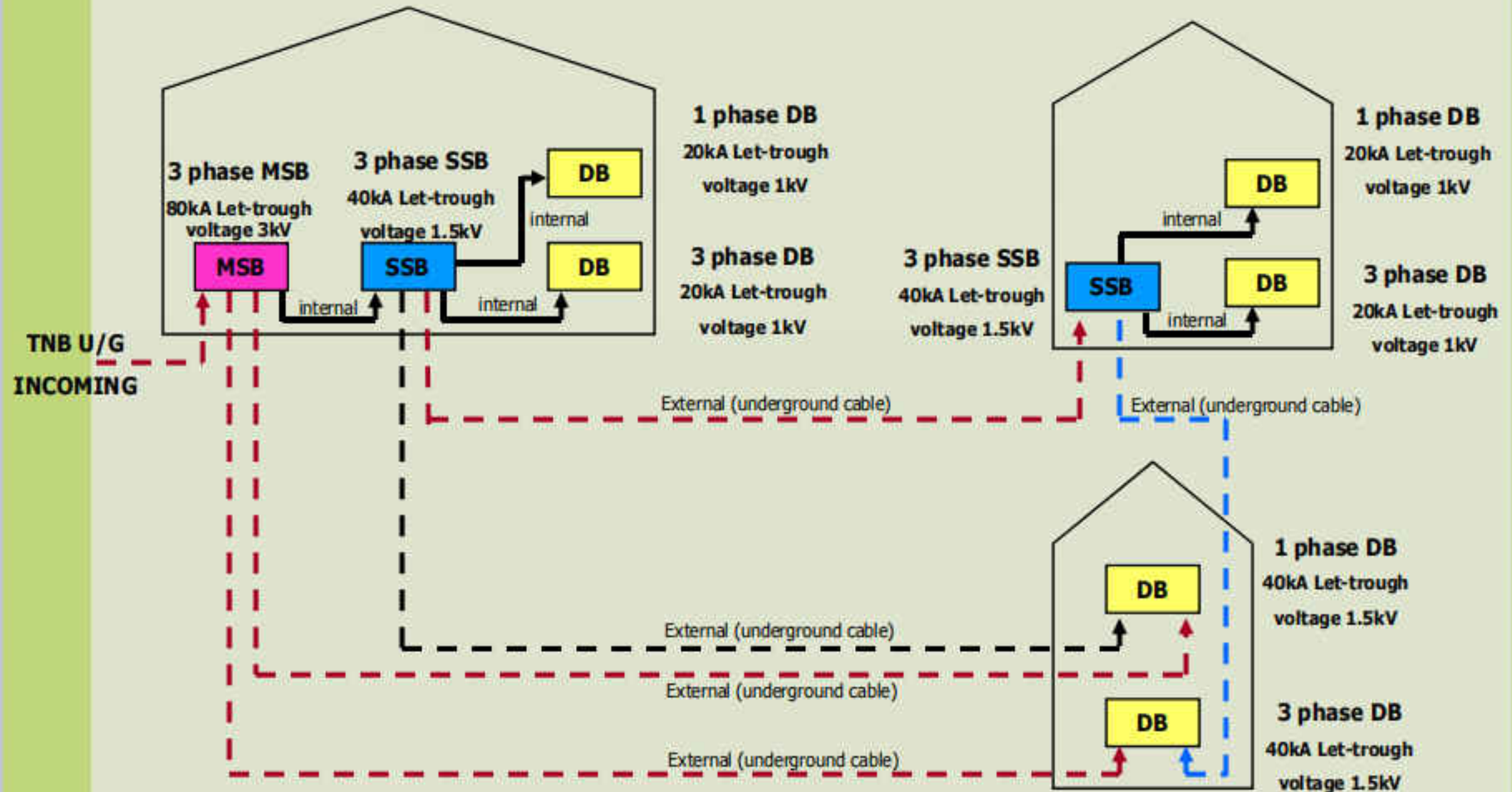
Compatible & transparent to existing system

Not interrupt operation system

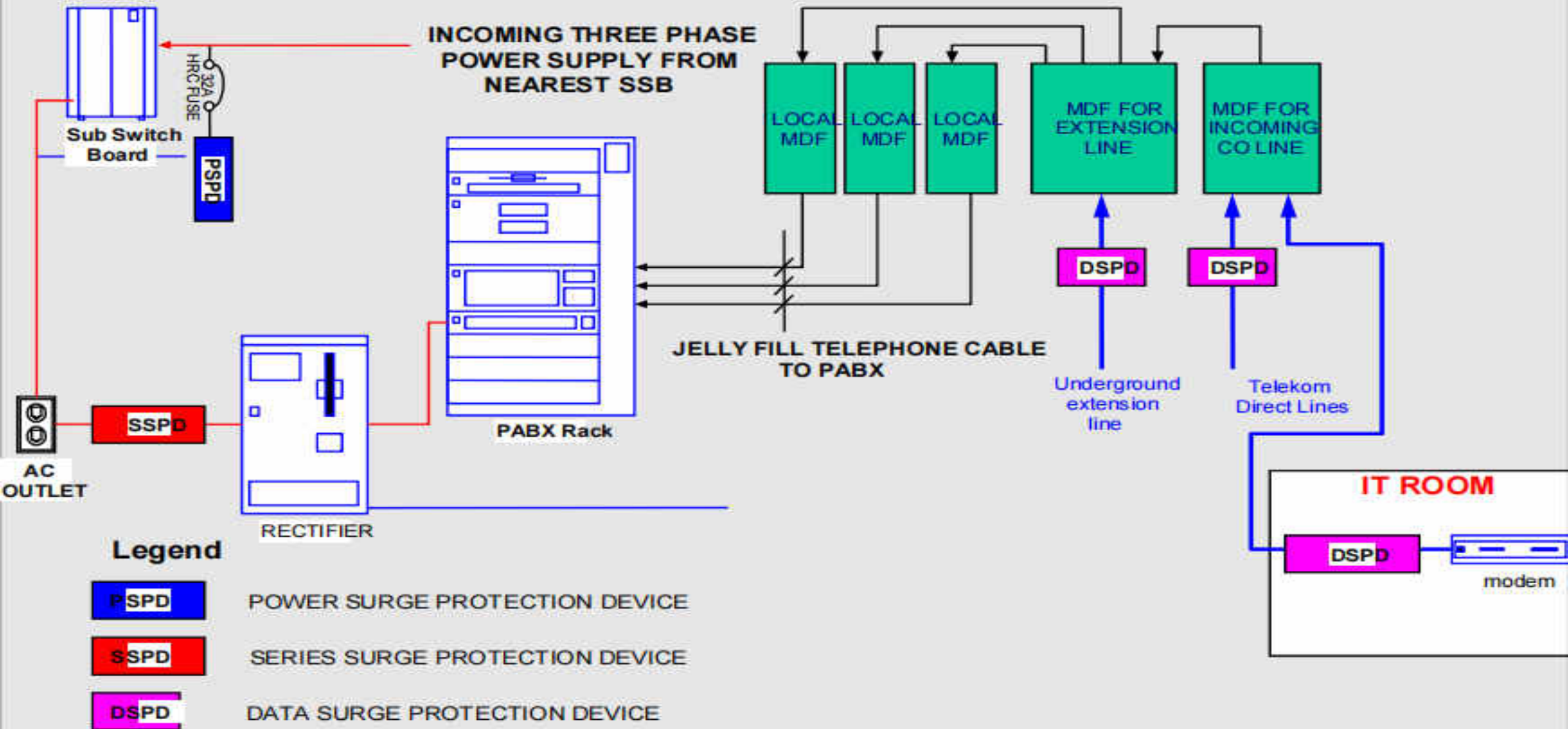
7 Modules			3 + 1 Modules		
1)	Protection between Live - Neutral, Live - Earth & Neutral - Earth		1)	Protection only between Live - Neutral & Neutral - Earth Only	
2)	All MOV operates on its own rating		2)	The neutral to earth protection have more burden as all current will pass through this MOV irrespective 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	



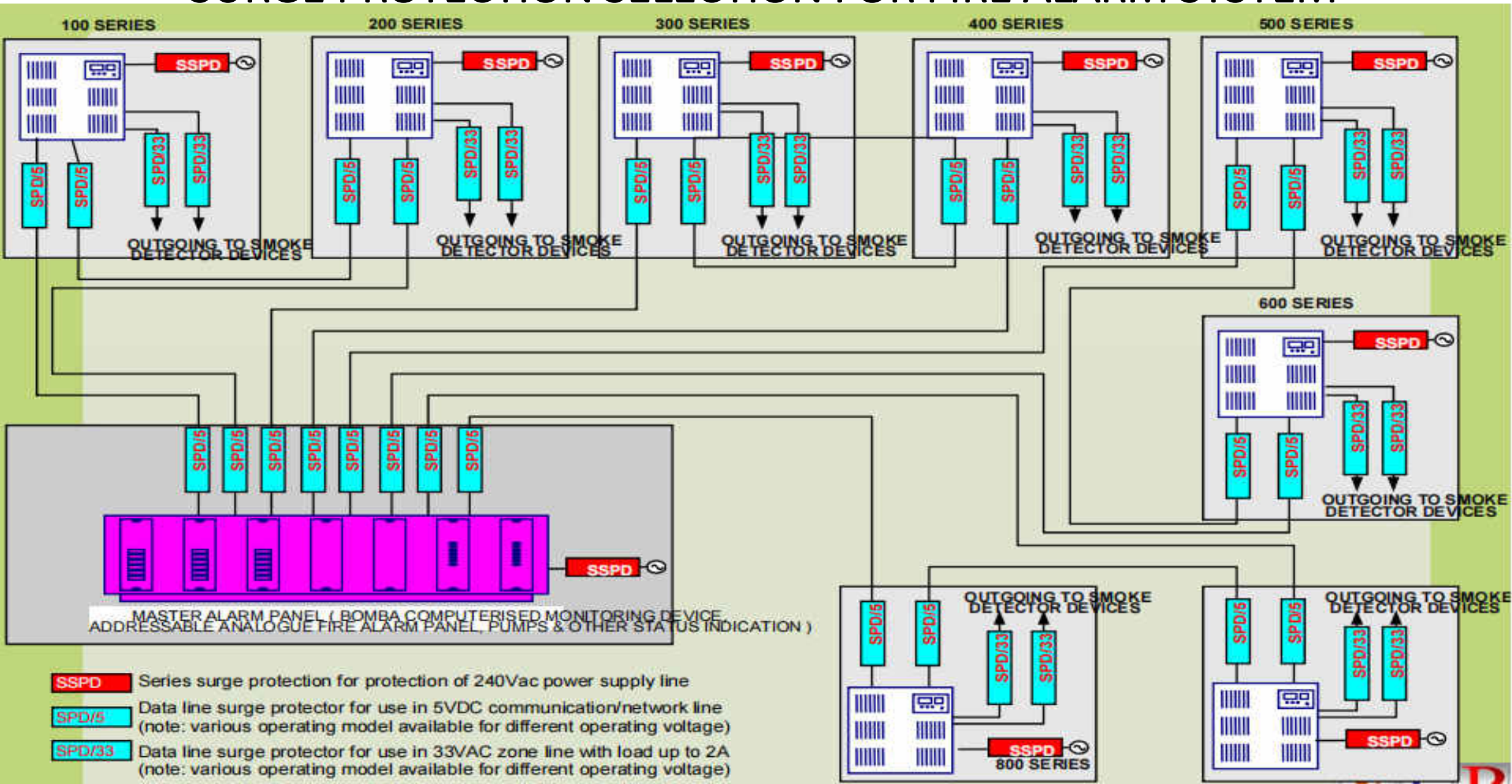
SURGE PROTECTION SELECTION FOR POWER SYSTEM



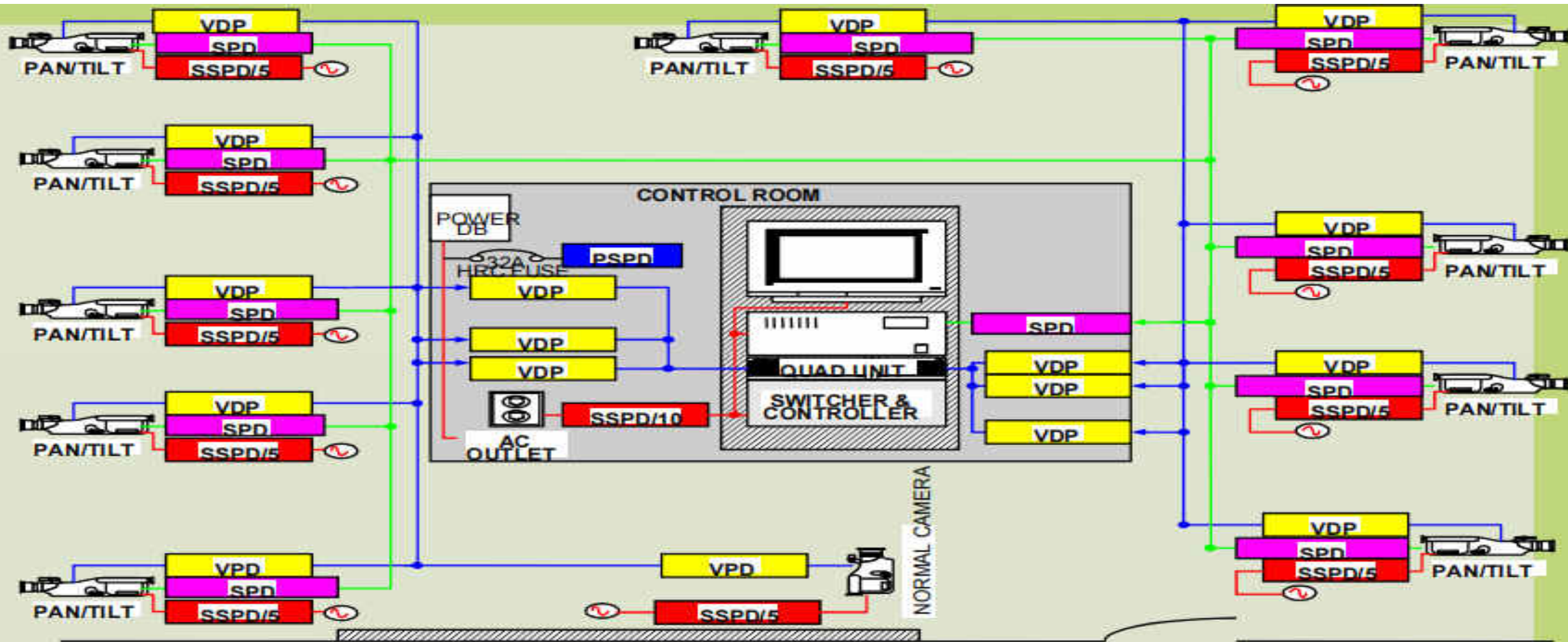
SURGE PROTECTION SELECTION FOR PABX SYSTEM



SURGE PROTECTION SELECTION FOR FIRE ALARM SYSTEM



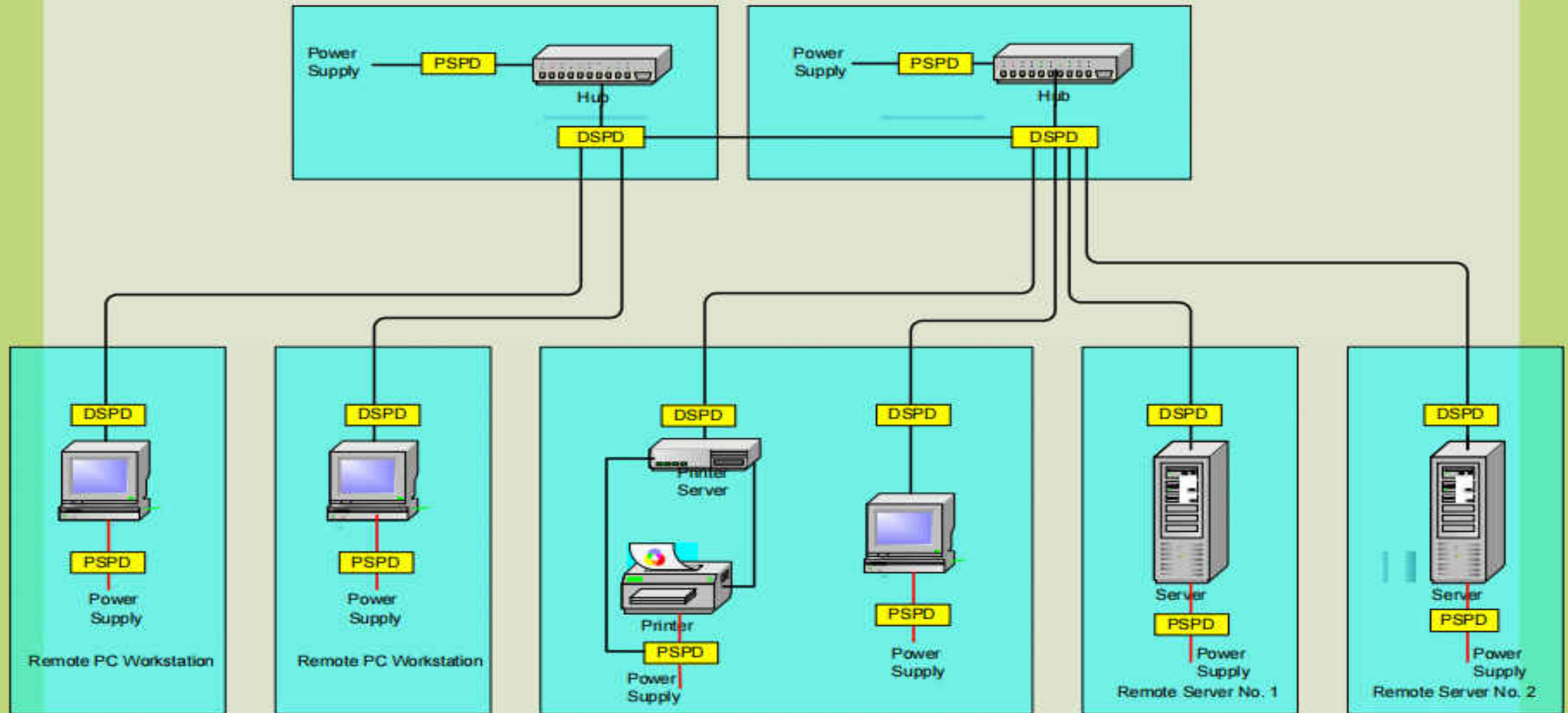
SURGE PROTECTION SELECTION FOR CCTV SYSTEM



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

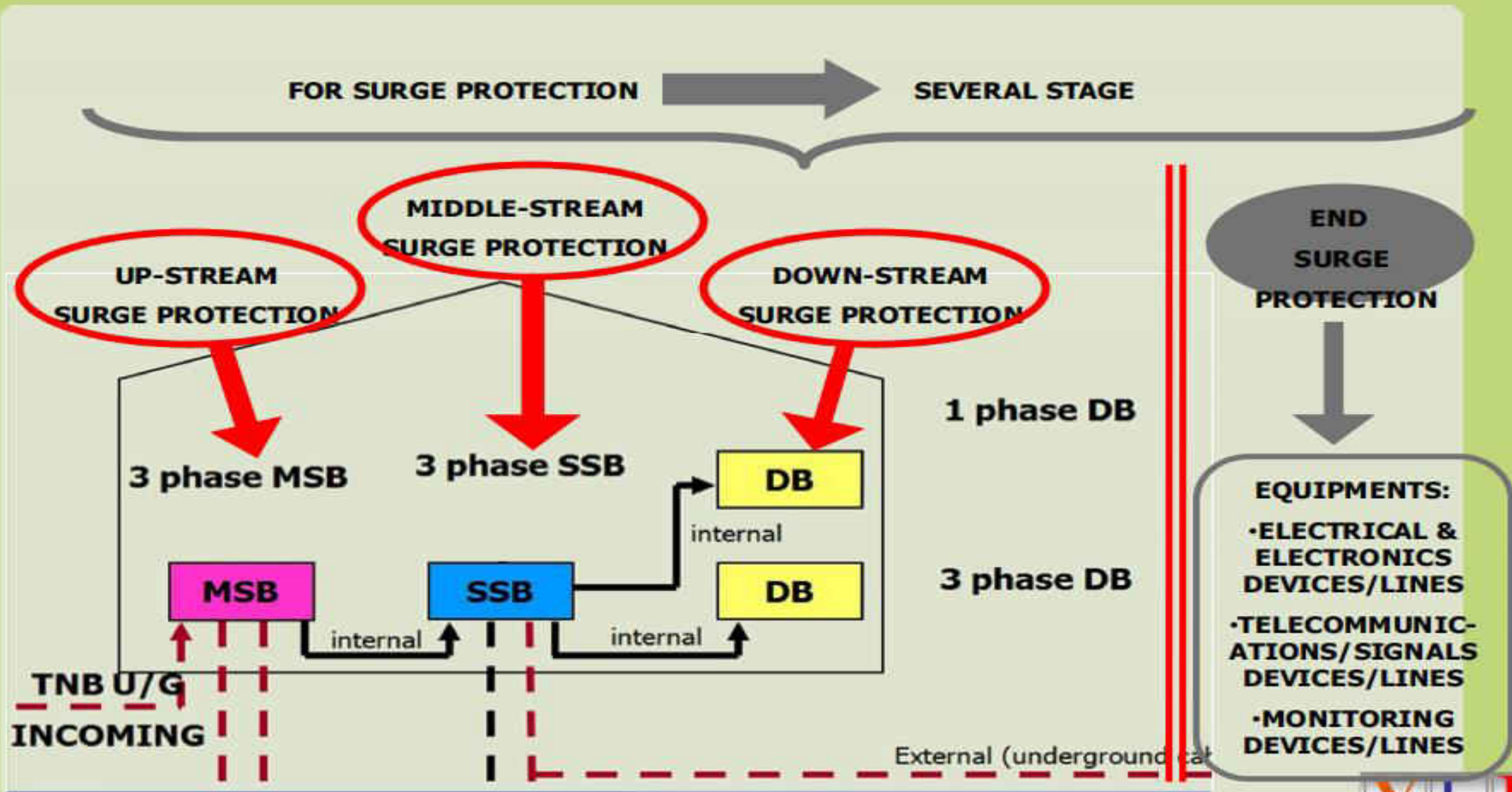
SURGE PROTECTION SELECTION FOR NETWORKING SYSTEM



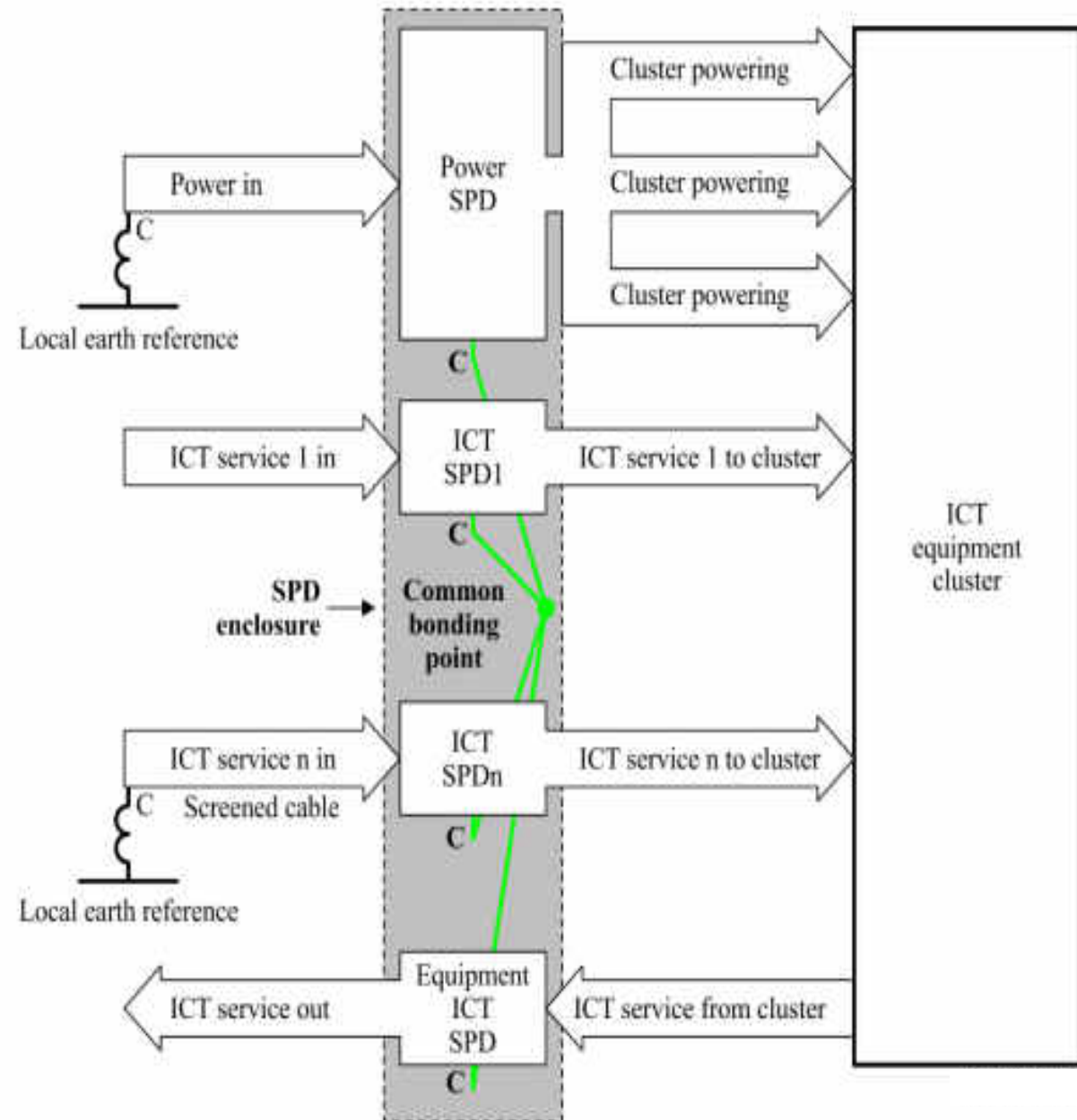
DSPD DATA SURGE PROTECTOR

DSPD POWER SURGE PROTECTOR

SURGE PROTECTION SELECTION



Surge Protection Installation for Multiple Equipments Safety



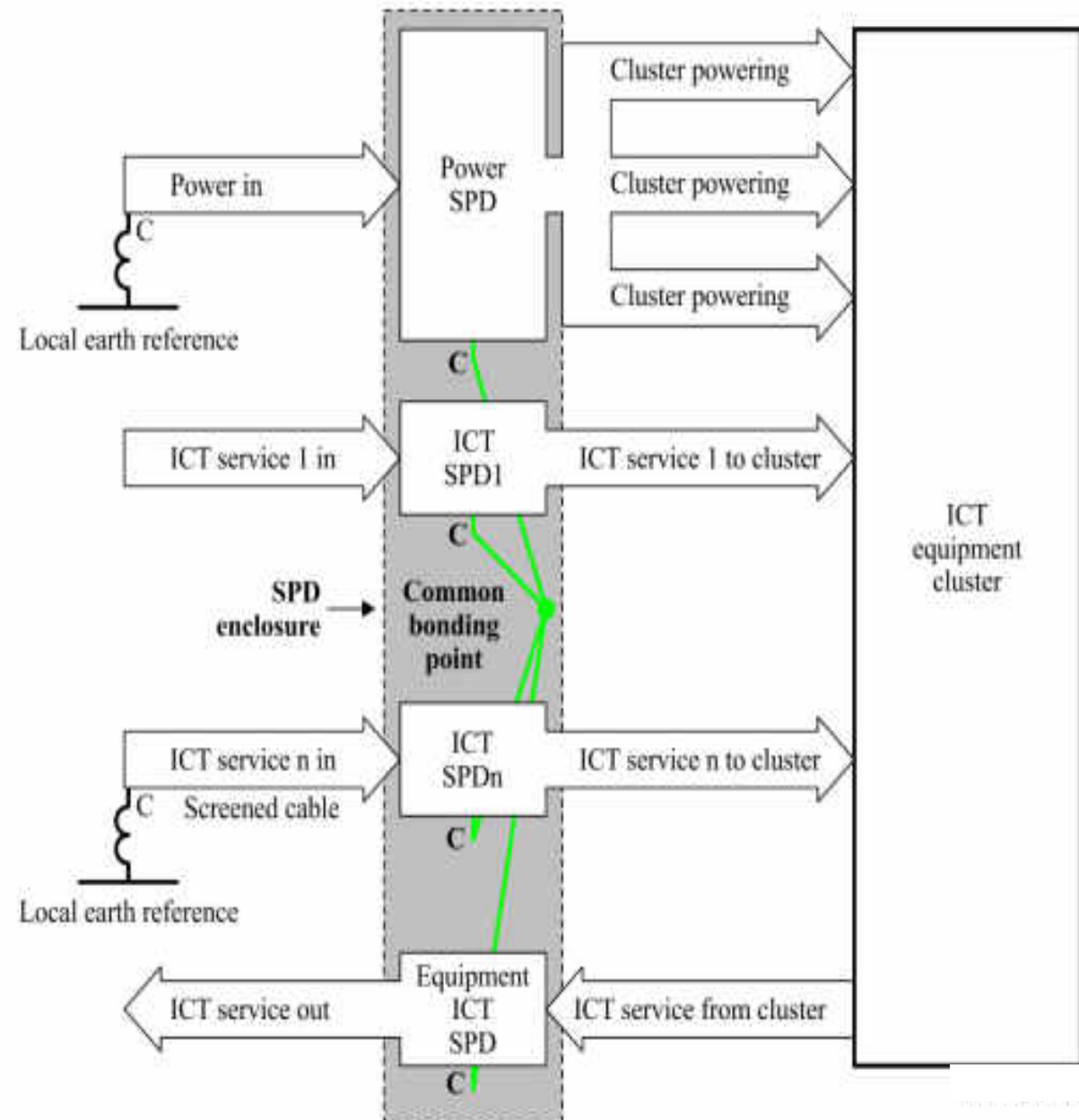
A surge reference equaliser does two things; it brings together all the service SPDs by locating them in a single enclosure and provides a local earth reference for all the SPD "C" terminals to directly connect the common bonding point, or "star" connection has two external earth reference

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



A surge reference equaliser does two things; it brings together all the service SPDs by locating them in 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

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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.

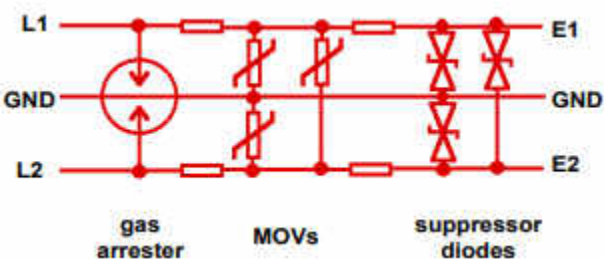
Data circuits require protection dependent upon their operating voltages and currents. Multistage series connected transient barriers should be employed. Figure 21 shows a typical schematic of Surge rating should be 20KA for an 8/20us impulse and the clamping voltage greater than the peak operating voltage.

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 ($\geq 1\text{KW}$) 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 $\pm 100\text{MHz}$. 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 equipment overcurrent device, as well as the load side, including watt-hour meter socket enclosures and Molded Case SPDs intended to be installed without an external overcurrent protective device. Type 1 SPDs for use in PV systems can be connected between the PV array 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 Molded 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 were 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 circuit protection.

Type 5 - Discrete component surge suppressors such as MOVs that may be mounted on a PVVB connected by its leads or provided within an enclosure with mounting means and wiring terminations. V/U_n -----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, 6000 Vac.

V --- Voltage Protection Rating A ring selected from a list of preferred values as given in Table 63.1 of UL 1449 4th Edition and assigned 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 combination 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 are defined as follows:

Nominal Voltage U_0 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 U_c is the maximum RMS voltage that may be continuously applied to the SPD's mode of protection e.g. phase to neutral mode. This is equivalent to the SPD's rated peak voltage.

Temporary Overvoltage U_T is the stated test value of momentary voltage increase or 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 I_{imp} is defined by three parameters, a current peak with a charge and a specific energy typically simulated with the 10/350 μ s waveform to represent partial lightning currents. This waveform is used with peak I_{imp} current value stated. for the mains Type 1 SPD Class I test and typically for data telecom SPD Test Category D.

Nominal Discharge Current I_{nspd} is a defined nominal peak current value through the SPD, with an 8/20 μ s current waveshape. This is used for classification of mains SPDs (Class II test) and also for preconditioning of SPDs in Class I and Class II tests.

Maximum Discharge Current I_{max} is the peak current value through the SPD, with an 8/20 μ s waveshape. I_{max} is declared for mains Type 2 SPDs in accordance to the test sequence of the Class II operating duty test. In general, I_{max} is greater than I_{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, disconnecter, 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)

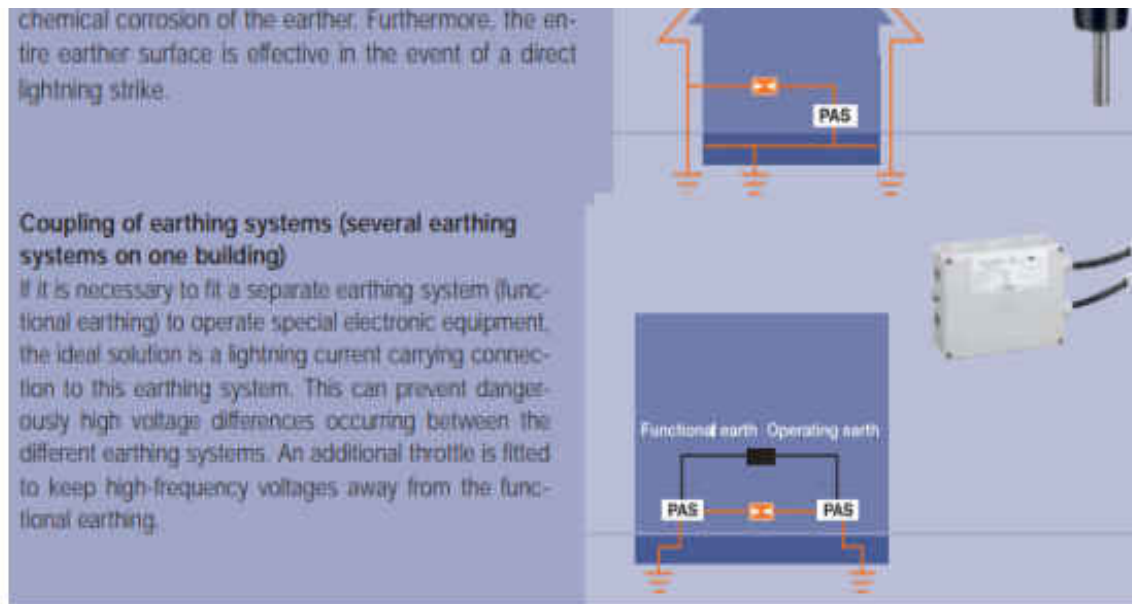
Temporary overvoltage may be present at the surge protective device for a short period of time due to a fault in the high-voltage system. This must be clearly distinguished from a transient caused by a lightning strike or a switching operation, which last no longer than about 1 ms. The amplitude U_T 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 intended 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





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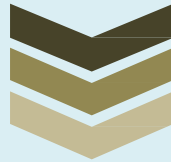
[Email:manav.chandra@linkvuesystem.com](mailto:manav.chandra@linkvuesystem.com)

visit webpage www.linkvuesystem.com

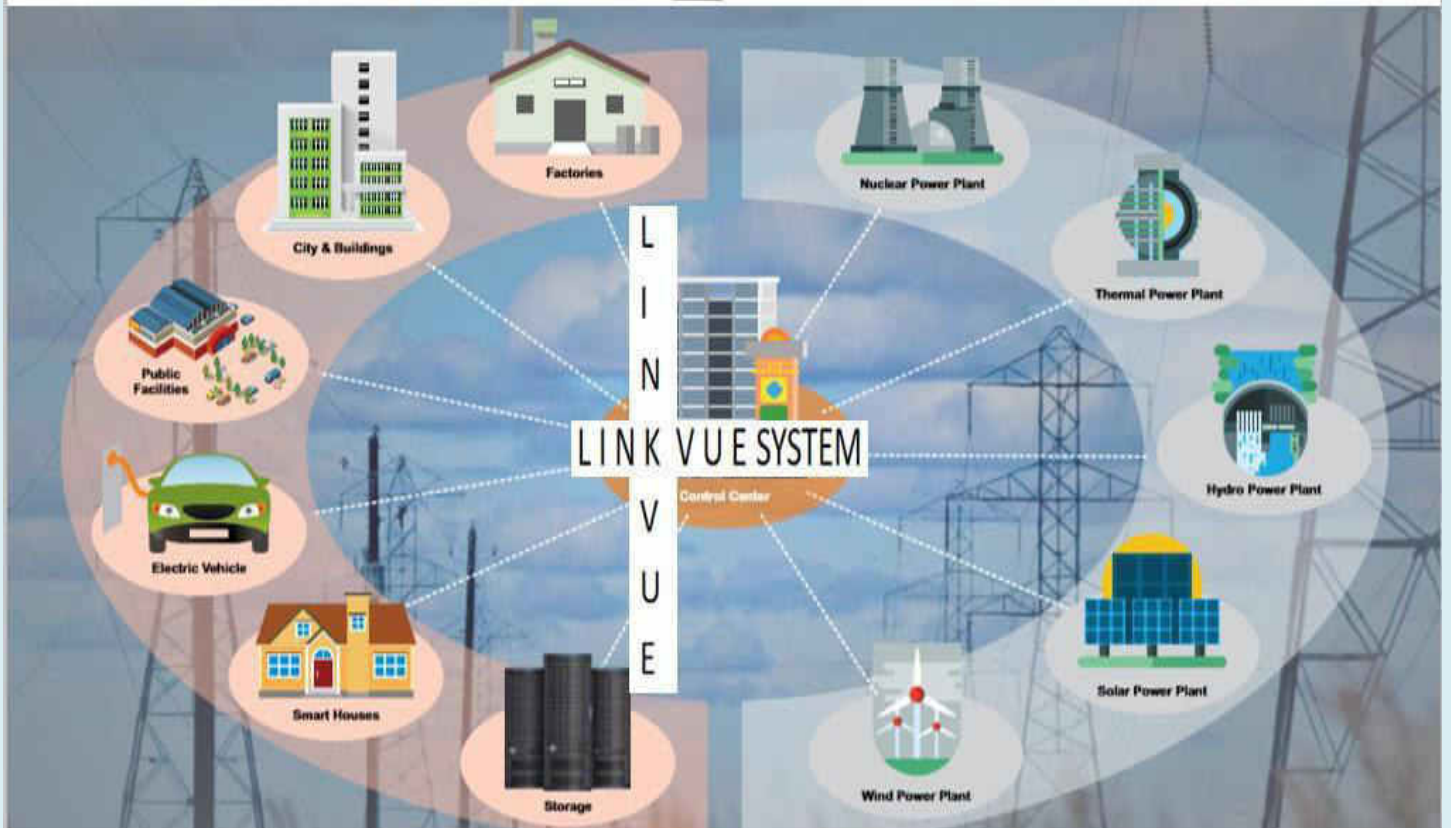


Link Vue

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Solution Partner for your every Customers
with Technolgy and Genuine Products



We offer end to end engineering solutions from project conceptualization, engineering design, Constancy with incorporates our own In-house Singapore brand of Ethernet M2M connectivity wide range of products with International industries approvals of CE, FCC & ROHS standards, Moreover We are the strategic partners, sole distributors for world' leading Enterprise ICT & Industrial class Surveillances security products from products selection to project commissioning services for industries assisted with onshore & offshore 24X7 service support Link Vue System Private Limited - India established to provide premier Integrated solutions for Industrial & Enterprise Grade Ethernet Connectivity / Wireless WLAN, GSM Technology incorporates value added supply services & End to End support for Govt.& small to large businesses to plan, build deploy & manage their Industrial Automation SCADA communication control, Ethernet LAN/WAN networks System infrastructure, CCTV Surveillances, Access Control as per their standards - all within their stipulated budget and cost effective solution.

With our extensive knowledge & rich industry hands-on experience in the Networks communication & Industrial Automation arena, we continuously innovate and upgrade our products range aimed the varied applications needs of our customers, we maintain high quality standards for our offering products which we have received many quality and testing certifications from industries internationalcertifications bodies.

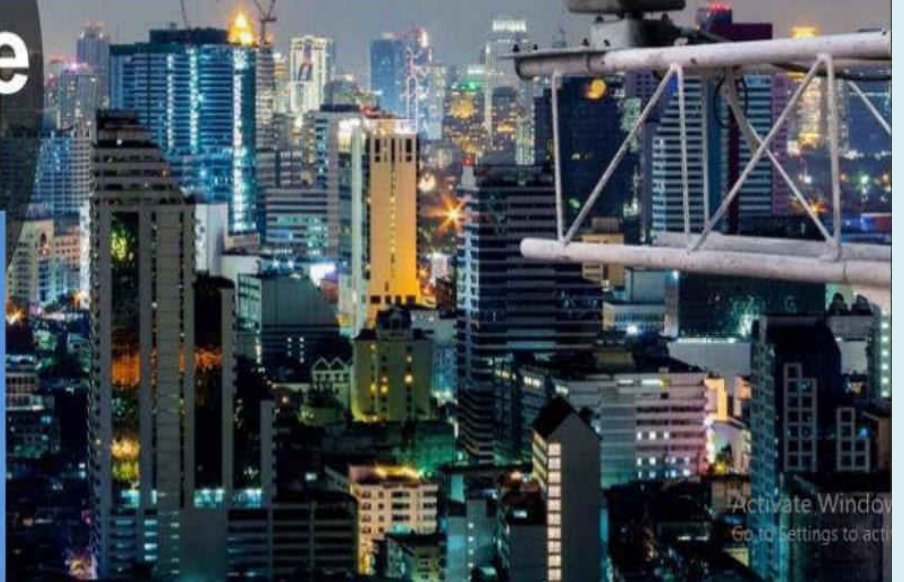
VIRTUALIZATION Centralization. Consolidation. You've got a long list of what ifs" and "must haves." We'll sit down with you and really listen to your needs, then design systems that perform optimally, increase productivity and reduce costs. IT & INDUSTRIAL COMMUNICATION BRAINS Our clients are supported by our staff of experts plus a resource network of Level 1 to Level 3 engineers. We'll make sure we address your problems economically and strategically We perfect your systems before you even see them. IMPLEMENTATION AND SUPPORT We don't drop off the parts and walk out the back door We manage the project through implementation and then follow up to make sure everything is working correctly. We see value when it's built into long-term success. Who is Link-Vue? We are, of course It's our passion to deliver peace of mind. Learn more about Link-Vue integrated IT products and solutions	Services & Supports • AMC / CAMC • IT Technical Support Help Desk • Server Implementation • Hardware Repair Services • Software Configuration • Architecture & Implementation • Problem Remediation& Rectification •Hardware Repair Services • Project design & consultancy • Asset Management • Warranty Services
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Performance Enabling Solutions

- Advanced CCTV Surveillances & Access control Security on Ethernet Platform
- Industrial & Enterprise Networking LAN/WAN, Wireless WLAN & GSM Data Loggers.
- IP Security Collaboration I Messaging Mission Critical Data Storages NAS /GRID
- Industrial Automation DCS I PLC I SCADA HMI I Industrial Computers Products & Implementations
- Consultancy in Enterprise and Industrial Automation Networks Design
- Sourcing of best Components Supply from in-house brand/ customized based on the project requirements for industrial and enterprise connectivity and automation verticals.
- IT Data Centre and ICT Products Infrastructure Management.

City Surveillance

Empowering Vigilance



Activate Windows
Go to settings to activate Windows.





Take your equipments online

The next generation IIoT platform

marc is our next generation GSM/LAN based IIoT platform with built in apps for **assets and equipment** for managing efficiency, uptime, productivity, condition monitoring, control, preventive & predictive maintenance.

marc.gateway
Improved wireless communication with offline storage

marc
Actionable analytics
Real-time Monitoring
Customized reports & trends

marc
Secure & Scalable

marc.gateway
High speed wireless communication
Offline data storage

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

Applications	Why IIoT?
Energy & Utility - Energy Management - Transformers Monitoring - Industrial Motor - HVAC Monitoring - Smart Energy Audit - Energy Audit - Water Management - Water Audit	Plant & Process - Equipment or Asset Monitoring - Process Monitoring - Machine Monitoring - OEE - Other - Agriculture, Vehicle - Smart City - Custom Application development
	- Efficiency - Uptime - Productivity - Availability - Service - Condition - Alert - Prevention - Prediction

marc
Actionable analytics
Real-time Monitoring
Customized reports & trends

marc
Secure & Scalable

**Design for harsh industrial environments
stable and reliable**

- ✓ Industrial Level 4
- ✓ IP40 protection
- ✓ CE, FCC certified
- ✓ Anti-EMI



LINK VUE

MANAGED - UNMANAGED



Industrial & Commercial Managed Gigabit POE / Unmanaged Switches & Media Convertors Models Series

More than 100 different RJ45 Copper & LC/ST/SC Fiber ports models available.

Physical Characteristics

Housing: Aluminum Alloy material with IP40 Protection
Very light weight
Rack mount, wall mount & Din Rail

Interfaces

Console Port: rs-232(RJ45 connector)
Web GUI Interfaces
Alarm Contact: 1 replay outputs, supports IP/MAC conflict



Power

Input Voltage: 220V AC (110-240V AC)@2A / (12-24) VDC Redundant dual inputs
Plug-In Terminals: 5 Cores 5.08mm Terminals
Overload Current Protection: Present
Reverse Polarity Protection: Present
Redundant Protection: Present
Connection: 1 removable 8-pin terminal blocks

Environmental Limits

Operating Temperature: -40 + 85 degree C
Storage Temperature: -40 + 85 degree C
Ambient Relative Humidity: 5%-95% (non-condensing)

EMS

EN61000-4-2 (ESD) Level 3
EN61000-4-3 (RS) Level 3
EN61000-4-4 (EFT) Level 3
EN61000-4-5 (Surge) Level 3
EN61000-4-6 (CS) Level 3
EN61000-4-16(Common-mode Conduction) Level 3
Shock: IEC 60068-2-27
Free Fall: IEC 60068-2-32
Vibration: IEC 60068-2-6
EMI: FCC CFR47 Part 15, EN55022/CISPR22, Class A
Industry: IEC60068-2-6, IEC60068-2-27, IEC60068-2-32
Rail: EN501 55, EN501 21 -4
Traffic: NEMA TS-2



**5 Years
International Warranty**

BMS Network Infrastructure System



- Backbone Routing & switching
- LAN & WAN Controllers to PLC connectivity.
- CCTV Surveillances, Access control temaserver:
- & Fire Alarm connectivity.
- Servers & Workstation implementations:
- IT Data Center management & control monitoring
- Network Monitoring Systems (NMS) Implementation.

Oil, Gas & Process Industries



- CCTV Surveillances security incorporates.
- Ethernet LAN Networks infrastructure parameter boundary for Refinery division.
- CCTV Solution for Explosion & hazardous zone areas.
- Explosion Proof (ATEX) approved CCTV for pipeline automation.

Solar Surveillances Scada Network Systems



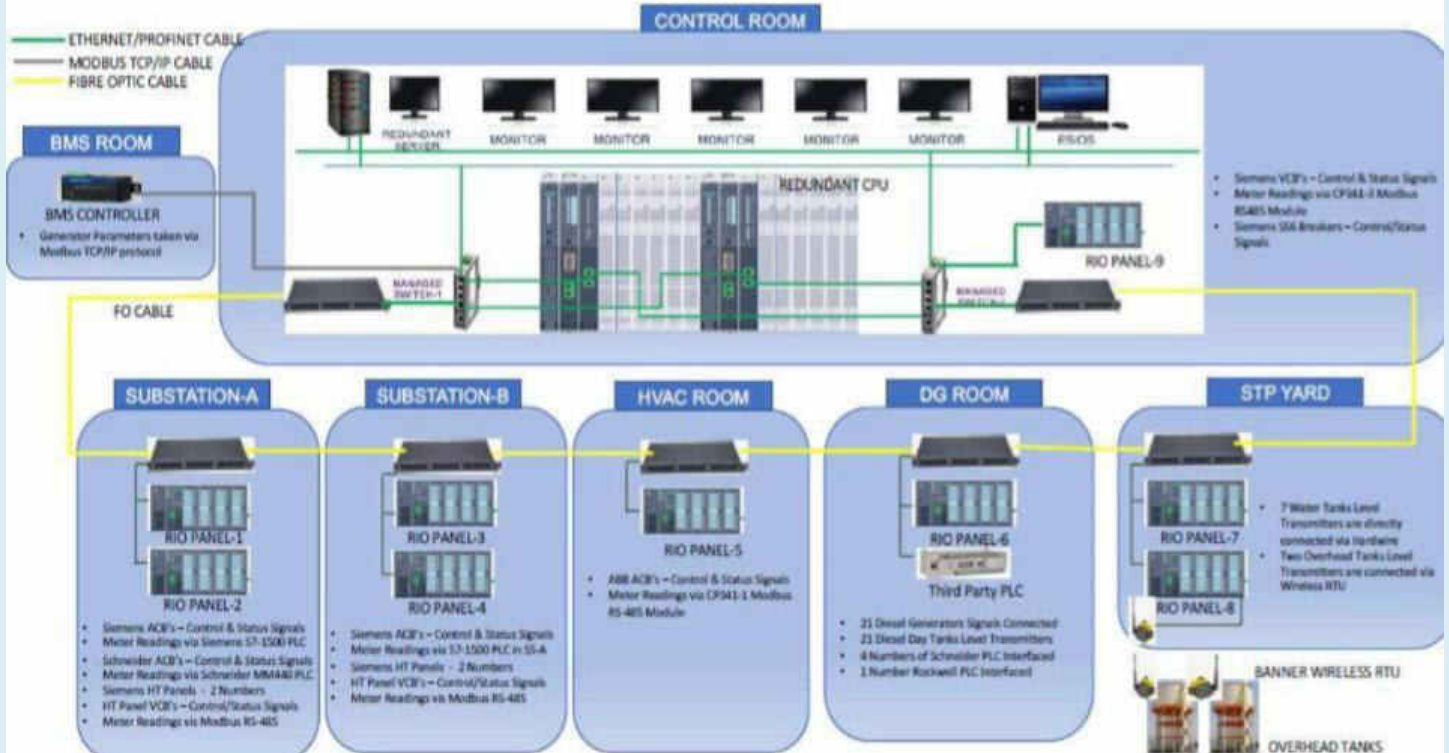
- CCTV Surveillances Plant field Area.
- SCADA Control room implementation.
- Ethernet Communication, Fiber optics splicing
- All Kind of LAN / WAN Implementations.
- GSM Data Loggers & RTU Communication.
- GSM celluiler, Serial, Ethernet Data logger for solar power application.
- Progameble using IEC 61131-3 languages.

Power Networks Infrastructure

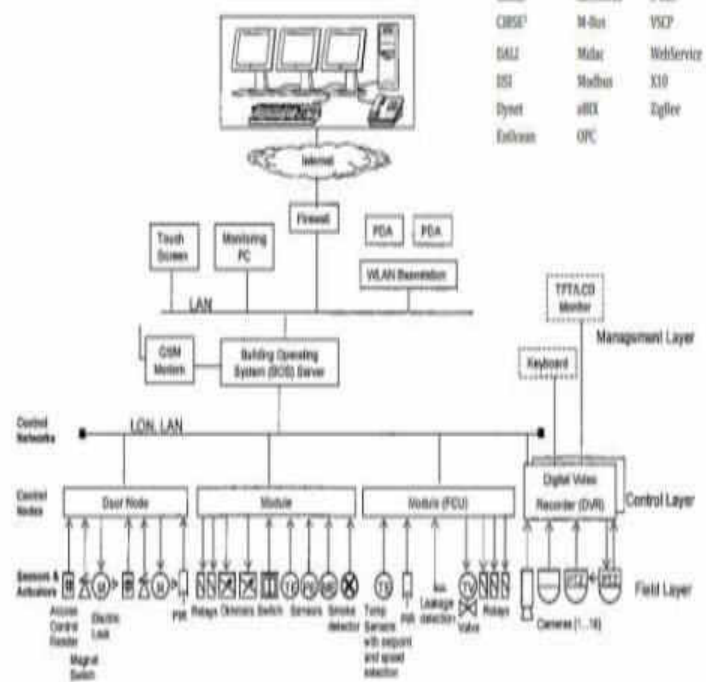
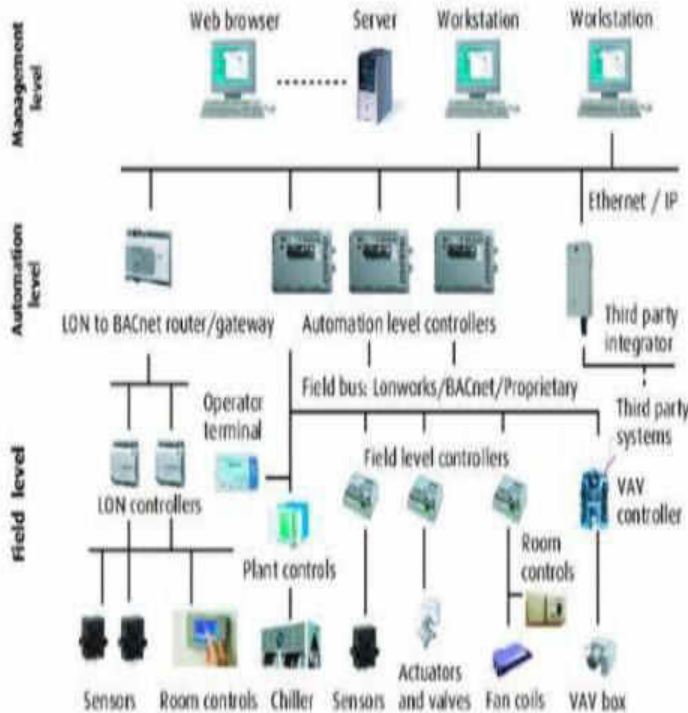


- Real IT & Industrial connectivity people with hands-on live experience.
- Custom solutions built around your systems and processes.
- End-to-end application support.
- Ongoing client support & One team of experts for all IT needs.
- Same engineers work with you before and after the sale.
- Documentation of delivered solutions.
- Networking LAN & WAN, Security, Collaboration, Messaging Backup, Archiving, Disaster Recovery/Business Data storages NAS /GRID.

BMS-DCS-PLC and Field Device

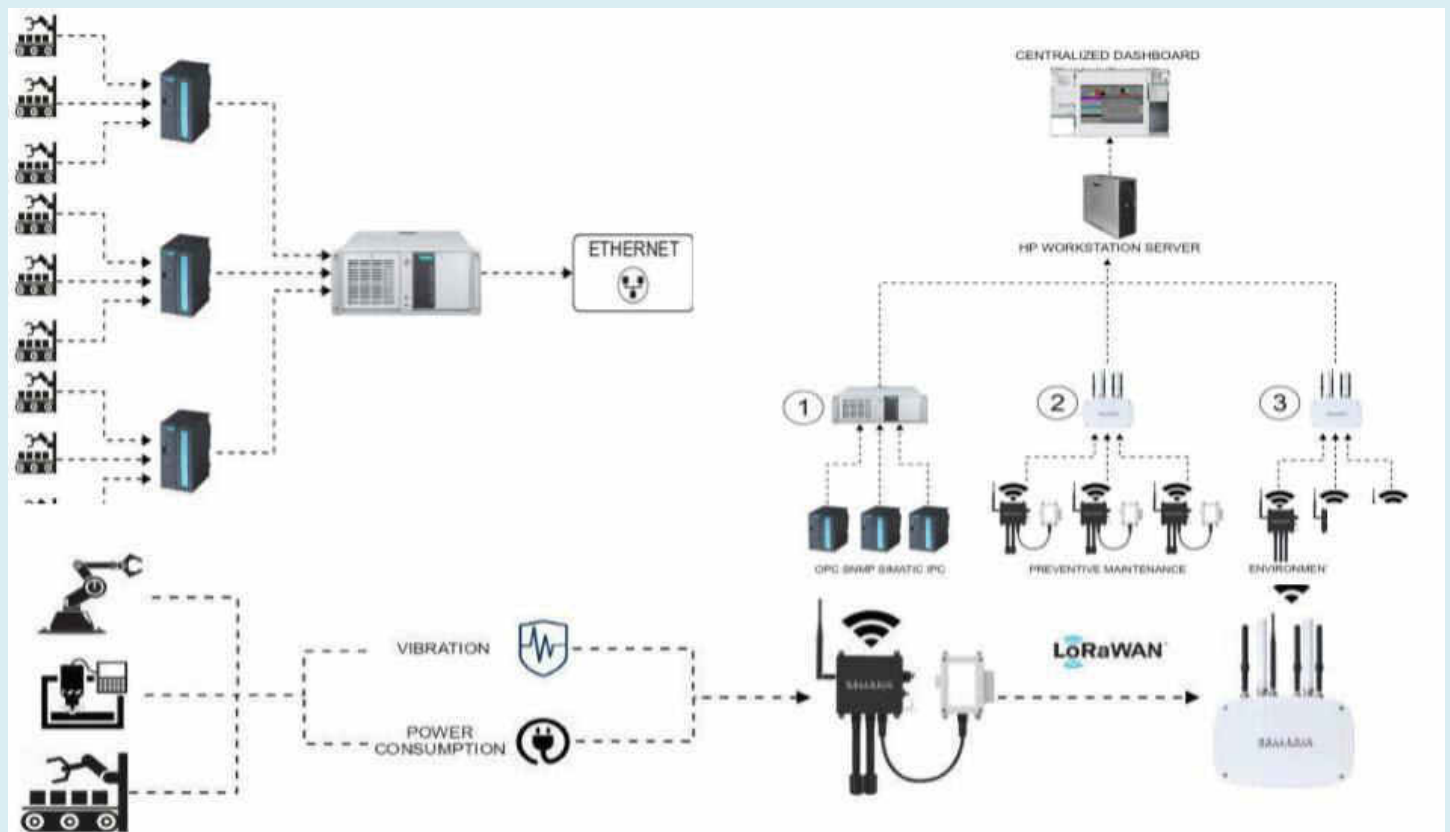
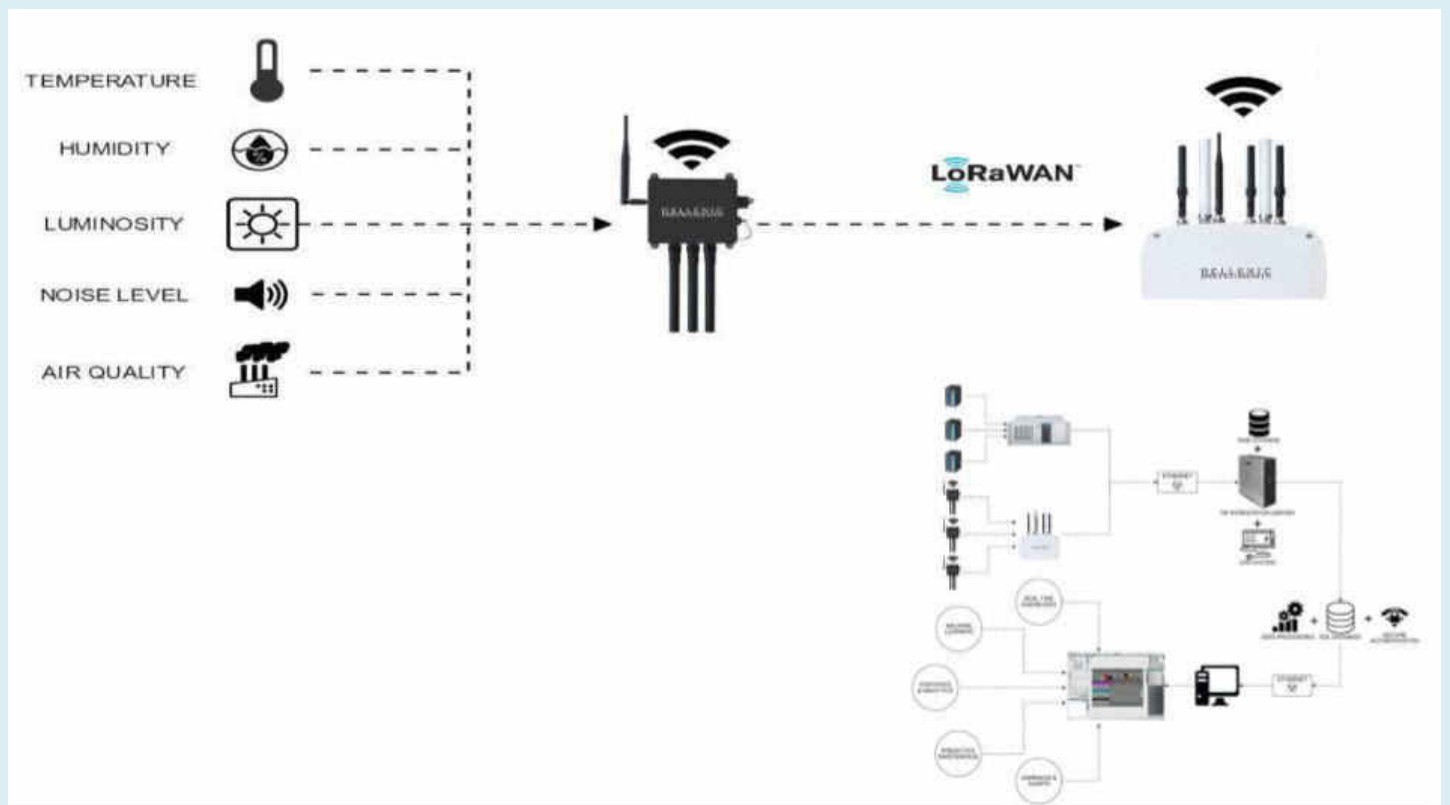


Building Automation and Control Systems



Standards and Protocols

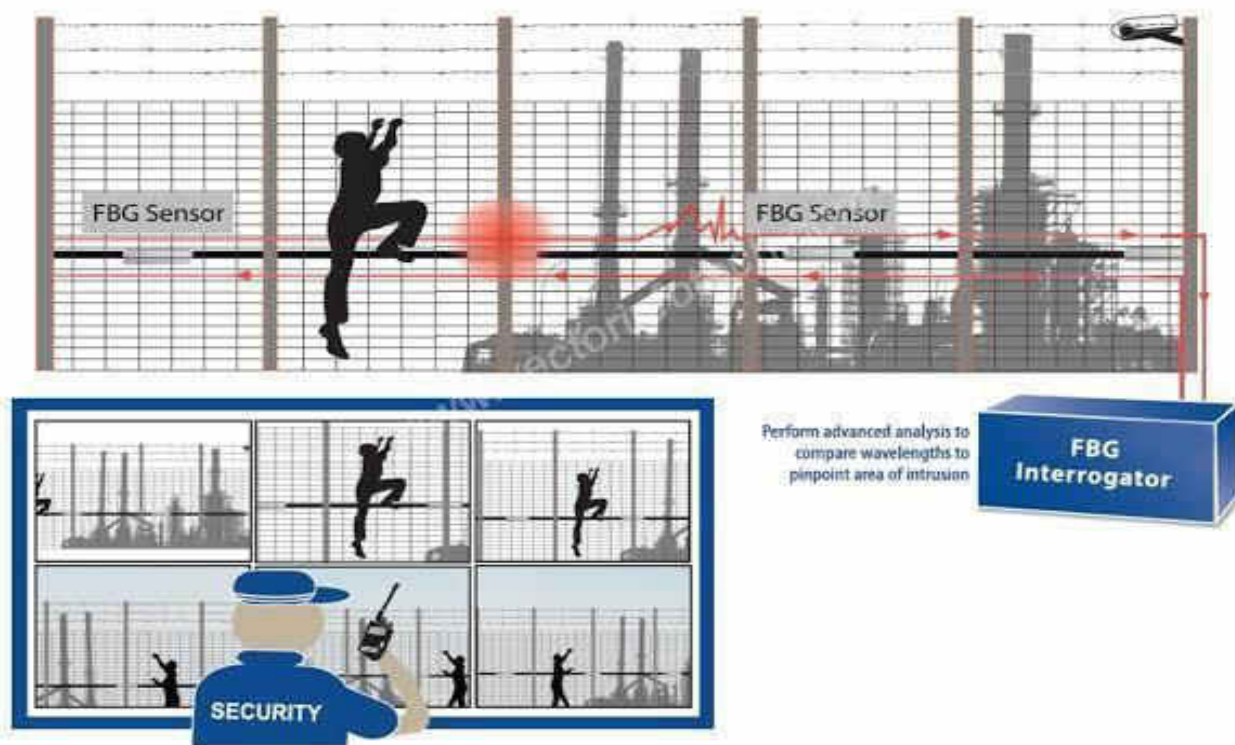
BACnet	XXX	OpenTherm
C-Bus	LonTalk	OpenWebNet
CEBus	LonWorks	S-Bus
CRSE	M-Bus	VSCP
DALI	Midi	WebService
DSI	Modbus	X10
Dynet	xBUS	ZigBee
Echelon	OPC	



PERIMETER INTRUSION DETECTION SYSTEM (PIDS) SECURE YOUR PREMISES

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 R&R offers robust and reliable solutions for accurate detection of such unauthorized entry and protection of assets against these threats. The company's turnkey solutions can detect any unauthorized 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 Fiber 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.



Link Vue System Trading Products Portfolio



www.linkvuesystem.com

Protocon-P7M: Modbus RTU to Modbus TCP/IP



Protocon-P7M

A gateway for your Building Automation solution



Protocon-P7M is a cost effective solutions to connect equipment's with similar communication Protocols and physical Media.

Protocon-P7M is a product from Sunlux that allows users to integrate new and existing Modbus/RTU serial devices to TCP/IP network-based devices. The gateway server allows MODBUS/TCP based Controllers and applications to communicate and interoperate with serial MODBUS RTUs.

Supporting

- RJ45

nodes



Ethernet port

- 2 x RS485, 1 x RS232 port supports upto 30 nodes.

Protocols supported

- Modbus RTU, Modbus TCP/IP

Mapping data points Supported

- Maximum 500 data points

Applications

- Energy Management with Building Automation Systems
- Integrated metering of HVAC systems and chillers

PRODUCT ORDERING INFORMATION:

MODEL	INTE	ORDER CODE
Protocon-P7M: Modbus RTU to Modbus TCP/IP	1 x RS485	P7M-P1
	2 x RS485	P7M-P2
	2xRS485, 1 x RS232	P7M-P3

TECHNICAL SPECIFICATIONS	
Input power	Input Voltage 12V DC, 300 mA, 11W
Environmental	Operating Temperature 0 ° C to 55 ° C (Standard); Humidity 10-90% non-condensing
Processor	CPU Fan less - Cortex Controller Software malfunction protection Watchdog timer
Interfaces	Modbus Slave Choice of 2 - RS485 ports, 1 x RS232. 1 PFC input . RJ45-Ethernet (Modbus TCP/IP)
Communication	1x RS-485 (Screw-terminal) 10/100 Mbps Ethernet with auto-negotiation Serial port supports either 2-wire or 3-wire EIA-485 Baud rates from 2.4 to 115.2 kbps. The baud rate can be set with Web based Configuration Configuration software for data points mappings
Software	
Data points	Maximum 500 data points
Enclosure type	Sheet metal
Weight	225 Grams approximately
Dimension:	90MM (L) X 82MM (H) x 20mm (D)

Note: Mapping configuration Supported per unit ranges from min 1 to max 500 points.

TeleMON™ - Telemetric Monitoring System

Key Features

- ✓ MQTT support over 10/100 fast Ethernet (RJ45) or over built in 3G/4G Modem. Data encrypted with TLS
- ✓ Modbus RTU support on 2 x RS485 ports
- ✓ Modbus TCP support on 10/100 Fast Ethernet (RJ45)
- ✓ Device level security with TPM 2.0, Secure Boot
- ✓ Ruggedized (shock and vibration resistant) for challenging mobile and manufacturing environments
- ✓ Can be powered by 24V DC
- ✓ Provision for onboard data logging with real time stamp with configurable periodicity
- ✓ Configuration available through integrated web server



General Description

TeleMON™ is an industrial grade x86 based gateways. Telemon gateway provides two RS485 serial interface for Modbus RTU protocol, an ethernet interface for Modbus TCP and transfers the data to the cloud using MQTT (SSL/TLS) over 3G or 4G cellular modem or ethernet Interface. TeleMON gateway acquires data from legacy devices and modern sensors analyzes and make the data available at the cloud which would provide a platform for various applications like remote asset management, centralized monitoring etc.

TeleMON is specifically designed to implement data collection systems which operate according to the Internet of Things (IoT) paradigms; It allows bidirectional communication between field equipment and the Cloud software platform. All the data transferred to the cloud are encrypted with Transport Layer Security (TLS). It is possible to configure the MQTT message structure in order to better adapt to the different MQTT Brokers available (Amazon AWS, Mosquito etc.)

Typical Network Diagram



Protocol Specifications

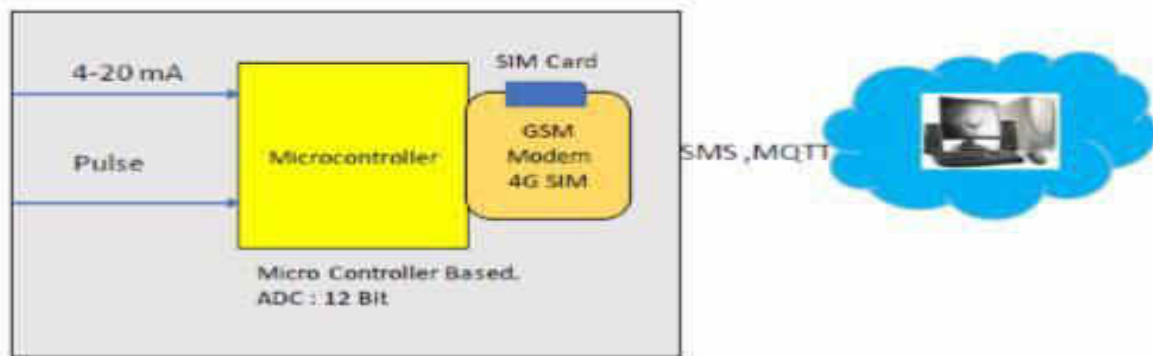
Modbus

- ✓ TCP / RTU Support
- ✓ Holding Register, Input Register, Discrete Inputs, Coils supported
- ✓ Support for function code FC 0x01, 0x02, 0x03, 0x04
- ✓ Serial Baud rate support from 9600 -115200

MQTT

- ✓ TLS 1.2 Certification supported
- ✓ MQTT using OpenSSL
- ✓ Connection and reconnection with configurable QOS level (0,1,2), DUP and Keep Alive Timer supported
- ✓ Publish and Subscribe support with configurable QOS levels (0,1,2)

Ultra Sonic Sensor DASq and GSM Communication



Supply Voltage: 24 VDC
Dimension : 75 x 75x 30 mm
Communication 4G
Protocol : MQTT to MCC room.

Communication Cables



Fiber Optics

- ☐ Armored Fiber Optic Cable
- ☐ LIU Box
 - ☐ Din Rail type
 - ☐ Wall Mount
- ☐ Patch Cords
 - ☐ Ruggedized Patch Cord
 - ☐ Armored Patch Cord
- ☐ Onsite FO Splicing Service



Serial Device Servers



USB To RS-232/485/422



1-Port RS-232/485/422 to Ethernet



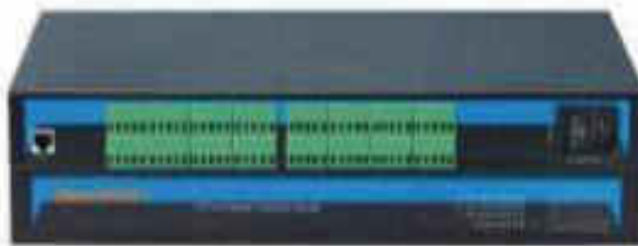
2-Port RS-232/485/422 to Ethernet



Ethernet-Modbus Gateway to 4-Port RS-485/422



8 Port 232/485/422 to Ethernet



16 Port 232/485/422 to Ethernet

Protocol Converters

Protocol	CAN Open	CC Link	DeviceNet	Ethernet IP	Modbus RTU	Modbus TCP	Profibus	Profinet
CAN open	✓	✓	✓	✓	✓	✓	✓	✓
DeviceNet	✓	✓	✓	✓	✓	✓	✓	✓
Ethernet IP	✓	✓	✓	✓	✓	✓	✓	✓
Modbus RTU	✓	✓	✓	✓	✓	✓	✓	✓
Modbus TCP	✓	✓	✓	✓	✓	✓	✓	✓
Profibus	✓	✓	✓	✓	✓	✓	✓	✓
Profinet	✓	✓	✓	✓	✓	✓	✓	✓
M-Bus	-	-	-	-	✓	-	-	-



CANopen

M-Bus

CC-Link

DeviceNet

Modbus

Modbus

Ethernet/IP

Profinet

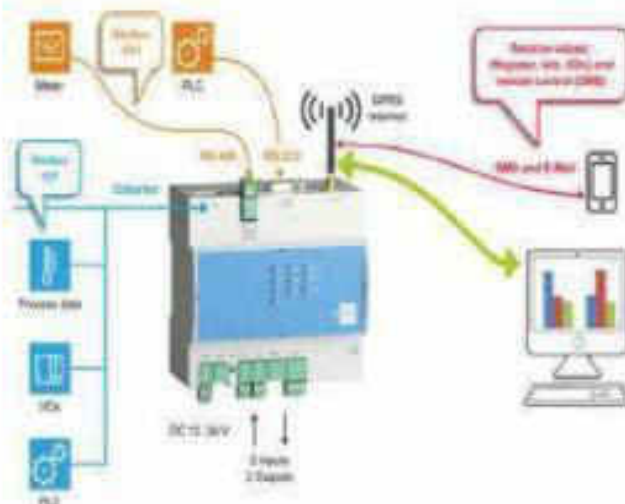
I-IOT Products



GSM Modems



I-IoT Router



Profibus Products

The **PROFIBUS Tester 5** BC-700-PB is a powerful diagnostic and troubleshooting tool for testing the cables, measuring the signals and analysing the communication of PROFIBUS networks.

Combination of signal tester, storage oscilloscope, protocol analyzer, master simulator and cable tester functionality in a single diagnostics tool



Profibus HUB



Profibus Terminator



Profibus Repeater



Profibus Cable Stripper



Profibus Connector



Profibus Tester

EKS Engel; Germany	- Fiber Optic Media Converter's - DIN rail mounted MINI Patch panels
Elesta GmbH, Switzerland	Relays with Forcibly Guided Contacts
Fint, Norway	- Gateway for HART/ FF/ PROFIBUS PA / MODBUS - Wireless HART - Embedded Gateways for HART/ FF/ PROFIBUS PA / MODBUS
Helmholz, Germany	- Profibus Connectors with & w/o LED/ PG Port - Profinet RJ45 Connector - Profibus DP-DP Coupler - Profibus 2/4/6 way repeaters - MPI Module - CAN Bus Module - REX 100/ REX 200/REX 250 – Remote Access & Maintenance solutions - Profinet Switches - PN-PN Couplers

Smart Grid & Smart City Solution

Our Product based on Industrial Protocol Development, Application Programming Interface and Software Platforms for Data Acquisition, Data Analysis and Data Monitoring for Numerous Industrial Applications. We always touch to Help Industries to Implement Concepts With Workable Solutions For Efficiency Improvement, Application Monitoring And Effective Control Processes, Systems And Machines. Our Product not only limited with Protocol Gateways, RTUs & SCADA we have recognized Products in the domain of Energy Management System as well as Power Factor Control prepared product list with our strong basket.

Smart Grid & Smart City Solution



Smart cities depend on a smart grid to ensure reliable energy efficient and quality power Distribution System. Smart Grid is Digitalization of Power Transmission and Distribution System.

Major areas of concern in the power distribution sector are high AT&C loss and poor power distribution reliability. To address these problems accurate measurement, diagnosis and Local remedial action is essential.

The reliability of power is measured in the terms of SAIFI and SAIDI which requires solution based on real time monitoring and Control.

The Feeder Remote Terminal Unit (FRTU) for SAIFA /SAIDI measurement is required at primary substation to our data from status Input devices of breakers or protection relay viz O/C & E/F, CMRs, Multifunction Transducers (MFTs), discrete transducers for analogdata The FRTUs shall be interfaced with the substation equipment, communication equipment, power supply distribution boards;

Along with effective Monitoring, FRTU should also incorporate self-healing and logic for taster restoration of supply even in the absence of control Centre SCADAIntelligent Protocol Gateways in Smart Grid combine the Functionality of Traditional Protocol Converters and IoT Gateways, TheseGateways not only help in interoperability between various equipment supporting difforart Protocols as per Functional requirements.But also support clustering data processing. Processing, network security and Many connectivity Options

RS Consultancy is Pioneer in Engineering and Development of Smart Grid Solutions in Partnership with Global Market Leader in IoT Hardware Advantech Co. Ltd, we Offer indigenized Solutions with.

- Intelligent FRTU
- Smart Grid IoT Gateway
- RSK PGA Smart Utilities

Architecture

Autobahn-AS-50

REC-3000

REC-3000

MODBUS RTU

MODBUS TCP/IP

SMP-5.0

REC-3000

REC-A-5000

REC-A-5000

RSK-PCA Smart Grid Edge Gateway is the Combination of Highly Plugged and Best in Market Hardware from: Advantech Taiwan and Our RSK-PCA API, our configuration utility is User Friendly and User can easily configure protocols mapping through interface software for all supported protocols like IEC-104, DNP 3.0, IEC-103, DLMS etc. It also uses IED configuration files to import complex IEC 61850 data structures and same for other intelligent device libraries....

Configuration software for .NET	• Mapping is available at product's own setup interface • Many-to-Many, Many-to-One, One-to-Many product relationships supported
Diagnoses	• Diagnostics for Windows XP/SP1, Windows XP/SP2, Vista, Win 7/SP1, Win 8/SP1, Win 10/SP1 and Win 10/SP2 available via the configuration .dll
Support Certified Web Sites	• All .NET 3.0+ editions are available for download, mapping to other product editions
Windows XP/SP1 Client/Server support	• Includes multiple Windows XP/SP1 editions or Windows XP/SP1 editions in combination with .NET 3.0+ editions available manually
Windows Client/Server support	• Includes multiple .NET editions or Windows XP/SP1 editions with different editions of Windows XP/SP1 available manually
Win 7/SP1 Client/Server support	• Includes multiple .NET 3.0+ editions or Windows XP/SP1 editions in combination with .NET 3.0+ editions available manually
Win 8/SP1 Client/Server support	• Includes multiple .NET 3.0+ editions or Windows XP/SP1 editions in combination with different editions of Windows XP/SP1 available manually

- BIC ARDRE
- BIC ARDRE A-10A
- BIC ARDRE H&T
- BIC ARDRE P&A
- D&M LUX
- HANDBLANK REPLANTCHER
- J&P LUX
- J&P LUX
- L&N
- M&T

- **ABC 570000** vs **Abundant**
- **Abundant** vs **ABC**
- **Abundant** vs **ABC 500**
- **Abundant** vs **ABC 100**
- **ABC 500** vs **ABC 100**
- **ABC 570000** vs **ABC 100**
- **ABC 570000** vs **ABC 100**
- **ABC 100** vs **ABC 100**
- **ABC 100** vs **ABC 100**
- **ABC 100** vs **Abundant**

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Hardware Details

1040-2775/96/0006-0434\$05.00/0

- 600W output @ 90% efficiency
- European Power Supply
- 80+ Gold energy certified
- 2 x DVI-D 20/24D double ended ports
- 4 x DVI-I 20/24D single ended ports
- 1 x DisplayPort 1.2a (dedicated/HDMI)
- Video Configuration: max@max=1080p@60Hz



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- [illegible]



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Specifications – IEC 103 Client

- **Free consultation**

- Time-sliced messages
- Time-sliced messages with session data
- Messages in 1
- Time-sliced messages with session data
- Messages in 2
- Correlated messages
- Custom Prot., Custom Data, Custom Data ID
- Custom Data ID
- Custom Data ID

Specifications – IEC 101 Client/Server

- [University of Illinois](#)
- [University of Virginia](#)
- [University of Wisconsin](#)

- Single-point information (M, SP, TA, 1)
 - Single-point information with time lag (M, SP, TA, 1)
 - Double-point information (M, SP, TA, 1)
 - Double-point information with time lag (M, SP, TA, 1)
 - Absorber/Source, Normalized value (M, ME, TA, 1)
 - Absorber/Source, Normalized value with time lag (M, ME, TA, 1)
 - Absorber/Source, Normalized value (M, ME, ME, 1)
 - Absorber/Source, Normalized value with time lag (M, ME, ME, 1)
 - Absorber/Source, Short-Running-point value (M, ME, TA, 1)
 - Absorber/Source, Short-Running-point value with time lag (M, ME, TA, 1)
 - Single-point information with time lag (SP, Source, M, SP, TA, 1)
 - Double-point information with time lag (SP, Source, M, SP, TA, 1)
 - Absorber/Source, Normalized value with time lag (SP, Source, M, SP, TA, 1)
 - Absorber/Source, Normalized value with time lag (SP, Source, M, ME, TA, 1)
 - Absorber/Source, Short-Running-point value with time lag (SP, Source, M, ME, TA, 1)
 - Single-Source with time lag (1, ME, TA, 1)
 - Double-Source with time lag (2, ME, TA, 1)
 - Chain graph structure: combined (1, 2, 3, ME, 1)
 - Graph graph structure: combined (1, 2, ME, 1)
- (Short-Running-point, value and absolute, combined for double-point information)
- (Short-Running-point, value and absolute)
- IP Address
 - Port No.
 - MAC Address
 - Category of Threat Source (1/2)
 - Cycle of Threat Source
 - IP Address (Source)
 - Port No. (Source)
 - MAC Address (Source)
 - Category of Threat Source

Specifications – DNP 3.0 Client/Server

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- RF Receiver
- Fluid No.
- Gasoline Addition
- Diesel/Gasoline Addition
- Digital Input
- Digital Binary Output
- Analog Input
- Heating (KJ/d)
- Cooling Input
- Heating (Adjusted from model)
- Digital Output (on command)
- Drive for control system (on command)

Specifications - SNTP/NTP Client

The gateway supports a Simple Network Time Protocol (SNTP/NTP) client service that can synchronize the gateway's time by periodic update requests to a Coordinated Universal Time (UTC) system.

Specifications – IEC 104 Client/Server

- Multiple Master Support
- Response of Slaves
- Time synchronization

Process Information All Master addresses	• Single Point Information (SP_DP, PA, 1)
	• Double-point Information with time tag (M_DP, PA, 1)
	• Double-point Information (M_DP, PA, 1)
	• Double-point Information with time tag (M_DP, PA, 1)
	• Measurement Value, Normalized Value (M_VA, 1)
	• Measurement Value, Normalized Value with time tag (M_VA, 1, 1)
	• Measurement Value, Raw Data (M_VA, 1)
	• Measurement Value, Raw Data with time tag (M_VA, 1, 1)
	• Measurement Value, Standardized Value with time tag (M_VA, 1, 1)
	• Measurement Value, Standardized Value (M_VA, 1, 1)
Process Information All Control addresses	• Single-point Information with time tag (SP_DP, PA, 1)
	• Double-point Information with time tag (DP_DP, PA, 1)
	• Double-point Information with time tag (DP_DP, PA, 1)
	• Single-point Information with time tag (SP_DP, PA, 1)
	• Double-point Information with time tag (DP_DP, PA, 1)
	• Measurement Value, Normalized Value with time tag (M_VA, 1, 1)
	• Measurement Value, Raw Data with time tag (M_VA, 1, 1)
	• Measurement Value, Standardized Value with time tag (M_VA, 1, 1)
	• Single Command with time tag (SC, PC, PA, 1)
	• Double Command with time tag (DC, PC, PA, 1)
Configuration Parameters Clients and servers	• Clock synchronization command (C_SYNC, PA, 1)
	• Forward Information command (F_FORWARD, PA, 1)
	• Reset before master, which is master's position in a sequence command
	• Reset before master, which is master's position in a sequence command
	• P Address
	• Q Address
	• AREA Address
	• Status of Transmission (SCT)
	• Data Message Format
	• Information Object Address

Modbus TCP/IP-Client/Server

The Modbus TCP/IP driver allows multiple independent, concurrent Ethernet connections. The connections may be Clients, servers, or a combination of both Clients and servers.

Process Information All Master addresses	• Slave Address/Response
	• Power Word Multiple Reading/Response
	• Gateway P Address
	• Read from Register
	• Write to Register (WRITE)
	• Gateway Multiple Read/Write Address
	• Gateway Multiple Write/Write Address
	• Maximum Command Delay
	• Response Timeout
	• Reply Count
Configuration Parameters Clients and servers	• Command/Write Timeout
	• Error codes, Response individually for each command
	• High level slave data available from Address 1024
	• Read through device
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
Status Word	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
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	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
Command and Response	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available
	• Data command, which is individually enabled or disabled, with only on-line change is available

Specifications – IEC 61850 Client

- Supports up to 32 GIDs
- Read commands from the PLC to the IED using Control Types
 - Read with Normal Security
 - Read with Normal Security with Normal Security
 - Read with Enhanced Security
 - Read with Enhanced Security with Enhanced Security

Specifications – DLMS Client

- DLMS version 1.0 and 1.1

Configuration Parameters Clients and servers	• Client Address
	• Server Address
	• Password
	• Physical Group Address
	• Substation Address
	• Substation Address
	• Substation Address
	• Substation Address
	• Substation Address
	• Substation Address

SCADA supported	IEC 61850-5 (MMS)
Security	• Read-only Report Control Block (RCB)
	• Read-only Report Control Block (RCB)
	• Read-only Report Control Block (RCB)
	• Read-only Report Control Block (RCB)
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Control	• Read-only Report Control Block (RCB)
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Logical Nodes	• Read-only Report Control Block (RCB)
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Configuration Parameters	• Read-only Report Control Block (RCB)
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	• Read-only Report Control Block (RCB)
Status Word	• Read-only Report Control Block (RCB)
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	• Read-only Report Control Block (RCB)
	• Read-only Report Control Block (RCB)

Battery Chargers for Grid TIE and OffGrid with Solar Panels

4KW Battery With Inverter



Solar Panel



Canapoy



Descriptions	Specifications
Battery configuration	51.2V -80 Ah
Capacity of Individual Cell	3.2 V - 80 Ah
Type of Cell	Prismatic
Cell Chemistry	LFP
Nominal Capacity	80 Ah
Nominal Voltage	51.2 V
Voltage Range	40.8 V ~ 58.4V
Total Energy	4096Wh
Configuration	16S 1P
Charging Current	Recommended 0.3C , .5C Maximum (40Amp)
Discharging Current	0.5C standard, 0.95C Max. Discharging(76Amp)
Recommended Discharging Cut-off Voltage	43.2 V
Charging Time	Around 2~3 hours (@0.5C)
Maximum Pulse Discharge Current	350 A (for 2 Sec.)
Cycle Life @ DOD 80%	≥ 2000 Cycles @25°C
Self Discharge rate	< 3% / 30 Days (standard charge 100% SOC & store at 25°C)
Working Temperature Range	-20°C~65°C; humidity ≤ 85% (Discharging) 0°C~50°C; humidity ≤ 85% (Charging)
Storage Temperature Range	-20°C~45°C
Battery Case Material	Metal
Battery Pack Weight	Net Wt. – 40 Kg (Approx)
Battery Pack Dimensions	400x360x250mm (LXWXH)

Descriptions	Specifications
With Packing Dimensions	TBD*
Battery Link	16S
Output Discharging Voltage Nominal	51.2V
Operating Humidity	0% - 90%
Storage Temperature	-20~45°C
Storage Humidity	0% - 90%
Protection Parameters	
Over Charge cut off Voltage	58.4 V
Deep Discharge cut off Voltage	40 V
Short Circuit Protection	Yes
Over Charge Protection	Yes
Cell Balancing	Passive Balancing/Active Balanceing
Communication	As per customer requirement
Degree of Protection	IP 66

Parameter	5KVA/48VDC
Grid Charger	
Grid Voltage Sync Range	170V-260V(±5V)
Grid Frequency Sync Range	50Hz±6%
Charger Peak Efficiency	Higher than 90%
Max Grid Import Power Capacity	Double of Inveter capacity dependent on battery charging current
Max Battery Amp(Charging)	5A to 20A selectable
Self Consumption	Lower than 4%
Recommended DG/GRID Capacity	Double of Inverter Capacity
SOLAR CHARGE CONTROLLER	
Controller Type	DSP
Charge Controller Type	MPPT
Charger Topology	BUCK
MAX PV Connection Capacity	5 KWP
No of MPPT Channels	1
Per Channel PV Capacity (Nominal/ Peak)	5 KWP
Max. Open Circuit PV Volts (Voc)	150 V
MPPT Voltage Range	65-130V
Minimum PV Voltage	65 V
Max I/P Amps per channel	104 A

Max Battery Amps during PV charging	Full Capacity in Boost Mode / Current Control in Float Mode as per Battery AH
Max Battery Amps during PV charging	LMLA, VRLA, SMF, Ni-Cd,Lifepo4: Charging Profile can be configured as per the battery requirement
Peak Charging Efficiency	Higher than 94% Upto 98%

Parameter	5KVA/48VDC
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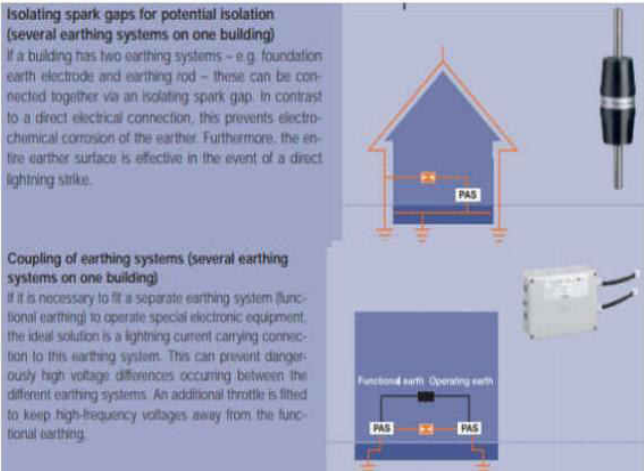
Inverter

Controller Type	DSP
Switching Element	IGBT
Nominal Battery Voltage VDC	48
No of Phases/Connection Type	1Ph , 3 Wire- LNE
Nominal Output Voltage	230V AC $\pm 2\%$
Output Frequency	50Hz $\pm 0.5\%$
Continues Output Power	4000 WP
Out put Amp	17A
Voltage Regulation (Stand Alone)	$\pm 2\%$
Frequency regulation (Stand Alone)	$\pm 0.5\text{Hz}$
THD	THD less than 4%
Out Put Waveform	Pure Sine Wave
Galvanic Isolation	In built Isolation Transformer at Inverter Output
Output Power Factor	0.8 Lagging
Peak Efficiency (Full Load)	Higher than 85%
Overload capacity	125% FOR 60 SEC, 150% FOR 5 SEC / Can be customized
DG Compatibility	Available
Auto Bypass feature	Available
Grid Export Mode	Available, Enable/Disable Options available
Anti Islanding Function	Available, In Compliance with IEC 62116
Compatible IEC standards	IEC -61683:1999- As per MNRE Requirement

Parameter		5KVA/48VDC
Configuration		
Modes Available		3: Hybrid , Grid Export, Stand Alone
Battery Buffer Setting		Selectable from 25%,50%,75%
MPPT Modes		2
Indications		
LED		Grid On, PV On, Grid Charger On,, Load On Grid, Load On Battery , Fault
LCD Display Parameters		
Load Status		Load on,Batt Grid CHRG Grid Sharing
INPUT GRP		Voltage/Current frequency
Inverter GRP		Voltage/current
O/P GRP		Voltage/Current frequency
Solar GRP		PV Vol, Curr PV Power, PV Energy
Battery GRP		Voltage Status Current CH, Current DISC
Dash board		Input KW Output, KW,Solar KW
Faults		Recent 6 fault since last, reset
Alarm		Audible For Fault And Warnings
PROTECTIONS		
PV		Reverse Polarity Indication, optional- Surge Protection
Battery		Over/ Under Voltage, Over Charge , Optional - Reverse Polarity ,Over Temp
Grid		Over/ under Voltage, Over/ Under Frequency, Optional - Surge Protection
Load		Overloads, Short circuit
Circuit Breakers		Grid Input MCB, Battery Input MCB, PV Input MCB, Load Rotary Switch
Temperature		Inverter Over Temperature (optional)

Parameter	5KVA/48VDC
Enclosure	
Degree of Protection	IP 66
Cooling	Forced Fan Cooling
Noise	<50dB
Color	SLATE 7015
Termination	Bottom
Weight	115 KGS
Dimension	W : 345 mm D: 650 mm : H: 740 mm
Environmental	
Temperature Range (Operating)	0 to 50°C
Temperature Range (Storage)	-10 to 50°C
Altitude (max)	1000 m
Humidity	0-95% NON Condensing
Compatible IEC standards	IEC- 60068-2-1, IEC-60068-2-2, IEC-60068-2-14, IEC-60068-2-30- As per MNRE Requirement
Connectivity	RS-232/GSM

Spark gaps are intended 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.



Activate Window
Go to Settings to activate Windows

Surge and Protect

Power Surges and How to Protect Yourself

The Issue

WHAT IS A "POWER SURGE"?

A power surge, or transient voltage, is a sudden and unwanted increase in voltage that can damage, degrade or destroy the sensitive electronic equipment in your home or business.

CAUSES

The National Electrical Manufacturers Association (NEMA) estimates that 60-80% of surges are created within a facility, such as when large appliances, like air conditioners, turn on and off. Surges can also originate from the electric utility company during power grid switching. Lastly, the most powerful surges can be caused by lightning.

IMPACT

A spike in voltage can be harmful to electrical devices in your home if the increase is above the device's intended operating voltage. This excess voltage can cause an arc of electrical current resulting in heat that damages the electrical components. Repeated small-scale surges may slowly damage your electronic equipment and shorten the life of appliances and electronics involved.

The Solutions

POINT-OF-USE SURGE PROTECTION DEVICES

Protect only the items that are directly plugged into the device from most electrical surges. It does not suppress or arrest a surge but diverts the surge to ground. Use point-of-use surge protectors that have an indicating light and/or audible alarm that alert when it needs replacement.

SERVICE ENTRANCE SURGE PROTECTION DEVICES

Mounted in or on your main electrical panel or at the base of the electric meter, this device provides protection for your entire electrical system. This device covers components that cannot be connected to a point-of-use device, such as outlets and light switches.

REMINDERS

- No surge protection device can handle a direct lightning strike. The best surge protection is to unplug devices from the wall if you suspect a surge might be coming.
- Power strips do NOT provide surge protection. Be sure you are relying on the appropriate device for protection.
- Power strips and surge suppressors don't provide more power to a location, only more access to the same limited capacity of the circuit into which it is connected.

Activate Window
Go to Settings to activate Windows

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 equipment overcurrent device, as well as the load side, including watt-hour meter socket enclosures and Molded Case SPDs intended to be installed without an external overcurrent protective device. Type 1 SPDs for use in PV systems can be connected between the PV array 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 Molded 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 were 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 circuit protection.

Type 5 - Discrete component surge suppressors such as MOVs that may be mounted on a PVVB connected by its leads or provided within an enclosure with mounting means and wiring terminations. V/U_n ----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, 6000 Vac.

V --- Voltage Protection Rating

A rating selected from a list of preferred values as given in Table 63.1 of UL 1449 4th Edition and assigned 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 combination 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 are defined as follows:

Nominal Voltage U_n 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 U_c is the maximum RMS voltage that may be continuously applied to the SPD's mode of protection e.g. phase to neutral mode. This is equivalent to the SPD's rated peak voltage.

Temporary Overvoltage U_T is the stated test value of momentary voltage increase or 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 I_{imp} is defined by three parameters, a current peak with a charge and a specific energy typically simulated with the 10/350 μ s waveform to represent partial lightning currents. This waveform is used with peak I_{imp} current value stated. for the mains Type 1 SPD Class I test and typically for data telecom SPD Test Category D.

Nominal Discharge Current I_{nspd} is a defined nominal peak current value through the SPD, with an 8/20 μ s current wave shape. This is used for classification of mains SPDs (Class II test) and also for preconditioning of SPDs in Class I and Class II tests.

Maximum Discharge Current I_{max} is the peak current value through the SPD, with an 8/20 μ s wave shape. I_{max} is declared for mains Type 2 SPDs in accordance to the test sequence of the Class II operating duty test. In general, I_{max} is greater than I_{nspd} .

Combined Impulse Test with Open Circuit Voltage U_{oc} is a hybrid 1.2/50 μ s voltage test combined with an 8/20 μ s current. The test is performed using a combination wave generator where its open circuit voltage is defined as U_{oc} , typically 6kV 1.2/50 μ s for the mains Class III test and up to 4kV 12/50 μ s for signal/telecom Test Category C. With an

value of U_{oc} (3kA 8/20µs for the mains Class I test and up to 2kA 8/20µs for signal telecom Test Category C). With both voltage and current test waveforms, the combined impulse test is designed to stress all technologies used within SPDS

Voltage Protection Level Up is the key parameter that characterises the performance of the SPD in limiting the transient overvoltage across its terminals. Allow protection level value (also known as let-through voltage) is therefore particularly critical for the effective protection and continued operation of electronic equipment. The peak voltage protection level U_p is declared when the SPD is tested with its stated nominal discharge current in for the peak current peak of imp) and is also declared when the SPD is subject to combined impulse test mains Class test for Type 3 SPDS) as well as data telecom Test Categories C and B. **Modes'** refer to tie combinations of conductors in which transient overvoltage can occur (e.g. as a result of flashover). Hence transients can exist simultaneously between any combinations of conductors. Electronic systems now pervade almost every aspect of our lives, from the work environment, through filling the car and even shopping at the local supermarket. As a society, we are now heavily reliant on the continuous and efficient running of such systems. The use of computers, electronic process controls and telecommunications has 'increased exponentially' during the last two decades. Not only are there more systems in existence the physical size of the electronics involved has reduced considerably. This reduction in size means less energy is required to damage components.

The operation of electronic systems can be severely affected by lightning activity during thunderstorms or electrical switching events. Both can cause very short duration increases in voltage on mains power and/or data

Communication/signal/telephone lines, with potentially devastating consequences. These increases in voltages are called surges or transient over voltages, all sorts of electronic equipment are at risk such as

- Computers
- Building management systems
- PABX telephone exchanges • CCTV equipment
- Fire and burglar alarms
- Uninterruptible power supplies • programmable logic controllers (PLCS)
- Plant sensors, telemetry and data acquisition equipment
- Weighbridge installations

A lightning surge is severe enough to present a risk of loss of life through fire and/or electric shock hazards through a dangerous flashover. This can occur when the surge voltage exceeds the withstand rating of the cable insulation or equipment. The home environment has also evolved everyday activities rely on electronic equipment. Products such as plasma televisions home theatre equipment alarms. microwaves and washing machines are all vulnerable to voltage surges. Protecting all home electronic equipment is simple with the qualified installation of a surge protection device. Products such as LCD screens. computer networks. data servers and industrial equipment including PLCs provide essential services now crucial to business operational productivity. Protection against the effects of voltage surges in business today is no longer an option, it has become a necessity.

Circuit breakers/fuses are not designed to provide overvoltage protection

Fuses and circuit breakers (aka Overcurrent Protective Devices (OCPDs) are designed to protect your home business equipment and possibly even your life from an event such as a short circuit or overload,

The Surge Protective Device (hereafter referred to as an SPD) is specifically designed to protect equipment from events such as extremely short duration high voltage spikes. These voltage spikes or transients are everyday occurrences and can be caused by anything from switching on a lamp to lightning storm. Most spikes are of low energy. Some spikes



Monoblock Single-Pole SPD

SPT25-XXX/1(S)

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S, TN-C, TT
Mode of Protection: L-PE / N-PE
Surge Ratings: $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$
 $I_n = 25 \text{ kA (8/20 } \mu\text{s)}$
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: High Energy MOV
Housing: Monoblock Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012



Monoblock Multi-Pole SPD

SPT25-XXX/2(S)

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE / L'-PE, N-PE / N'-PE
Surge Ratings: $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$
 $I_n = 25 \text{ kA (8/20 } \mu\text{s)}$
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: High Energy MOV
Housing: Monoblock Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012



Monoblock Multi-Pole SPD

SPT25-XXX/3(S)

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L-PE / L'-PE
Surge Ratings: $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$
 $I_n = 25 \text{ kA (8/20 } \mu\text{s)}$
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: High Energy MOV
Housing: Monoblock Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012



Monoblock Multi-Pole SPD

SPT25-XXX/4(S)

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
 Network Systems: TN-S
 Mode of Protection: L-PE / L'-PE, NPE / N'-PE
 Surge Ratings: $I_{imp} = 25 \text{ kA} (10/350 \mu\text{s})$
 $I_n = 25 \text{ kA} (8/20 \mu\text{s})$
 IEC/EN Category: Class I+II / Type 1+2
 Protective Elements: High Energy MOV
 Housing: Monoblock Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012



Monoblock Multi-Pole SPD

SPT25-XXX/1(S)+1

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N / L'-N, N-PE
 Surge Ratings: $I_{imp} = 25 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$
 $I_n = 25 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$
 IEC/EN Category: Class I+II / Type 1+2
 Protective Elements: High Energy MOV and GDT
 Housing: Monoblock Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012



Monoblock Multi-Pole SPD

SPT25-XXX/3(S)+1

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
 Network Systems: TT, TN-S
 Mode of Protection: L-N / L'-N, N-PE
 Surge Ratings: $I_{imp} = 25 \text{ kA} / 100 \text{ kA} (10/350 \mu\text{s})$
 $I_n = 25 \text{ kA} / 100 \text{ kA} (8/20 \mu\text{s})$
 IEC/EN Category: Class I+II / Type 1+2
 Protective Elements: High Energy MOV and GDT
 Housing: Monoblock Design
 Compliance: IEC 61643-11:2011
 EN 61643-11:2012



New Modular Single Pole & Multi-pole Surge Protective Devices

New Housing Design Features

- Contemporary design
- Low residual protection level
- Lifetime indicators
- Redesigned thermal disconnection
- Patented protection technologies
- No external back-up fuse required up to 315 A
- Vibration and shock withstand capability
- Space-saving design
- Easy replacement
- Patented module locking mechanism
- Meets IEC/EN and UL 1449 4th Edition



Type 1/Type 2 SPD



SPT12.5-XXX/1(S)



SPT12.5-XXX/2(S)



SPT12.5-XXX/3(S)



SPT12.5-XXX/4(S)



SPT12.5-XXX/1(S)+1



SPT12.5-XXX/3(S)+1



SPT12.5-PVXXX-(S)

Type 2 SPD



SPT40-XXX/1(S)



SPT40-XXX/2(S)



SPT40-XXX/3(S)



SPT40-XXX/4(S)



SPT40-XXX/1(S)+1



SPT40-XXX/3(S)+1



SPT40-PVXXX-(S)

Pluggable Multi-Pole SPD for Photovoltaic Systems

SPT40-PVXXX-(S)

Class II • Type 2 • Type 1CA

Location of Use: String box, Inverter

Mode of Protection: (DC+)-PE, (DC-)-PE, (DC+)-(DC-)

Surge Ratings: $I_n = 20kA$ (8/20 μs)

$I_{max} = \text{up to } 40kA$ (8/20 μs)

IEC/EN/UL Category: Class II/Type 2/Type 1CA

Protective Elements: High Energy MOV

Housing: Pluggable Design

Compliance: IEC 61643-31:2018

EN 50539-11:2013+A1:2014

UL 1449 4th Edition



In-line SPD for Coaxial & RF Systems

SPT CP BNC

C1 • C2 • C3

IEC/EN Category: C1/C2/C3

Protection: Impedance Matched

Maximum Operating:

Voltage: 70, 150, 280 V

Maximum Peak Power: 40, 125, 300 W

Frequency Range: DC – 2.6 GHz

Surge Discharge Ratings: I_n : 10 kA, I_{max} : 20 kA

Impedance: 50 Ω

Insertion Loss: < 0.4 dB

Return Loss: > 20 dB

Termination: BNC Type (F-F, M-F)

Housing: In-line Installation, Shielded Enclosure

Compliance: IEC/EN 61643-21



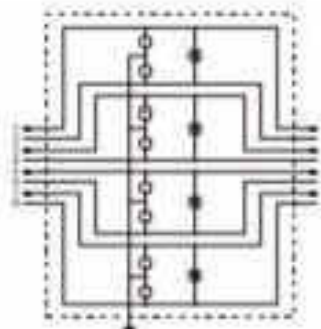
SPTs for Telecommunication and Data Networks

The "PoE Surge Protector" permits the use of Power over Ethernet with nominal currents of up to 1 A. It can be snapped directly onto the hot rail and uses it to create the necessary equipotential bonding. Alternatively, terminal protection using a separately connectable

- Support for Power over Ethernet • up to 1 A (PoE+ according to IEEE 802.3at)
- CAT 6A in the channel according to ANSI/TIA/EIA-568
- For installation in conformity with the lightning protection zone concept at the boundaries from 0 -2 and higher



Dimensions



Basic circuit diagram

Modular SPD for Single Pair

SPT-DC Series

D1 • C1 • C2 • C3

IEC/EN Category: D1/C1/C2/C3

Mode of Protection: Longitudinal, Transverse

Coarse Protection: 3 Terminal GDT

Voltages: 5, 12, 15, 24, 30*, 48, 60, 110 V DC

Frequency Range: 30 MHz

Surge Discharge Ratings: I_{sc} 10 kA, I_{max} 20 kA, I_{imp} 2.5 kA

Series Load Current: 1 A

Enclosure: DIN 43880 2/3 TE, DIN Rail Mount

Terminals: Stranded to 4 mm²

Housing: Modular Design

Compliance: IEC/EN 61643-21

UL 497B 4th Edition



LED Light for Outdoor Conditions

SHV LED GLOWING THE FUTURE

LED FLOOD LIGHTS

Designed to deliver high efficiency and reduced wattages, LED Flood Lights deliver bright, efficient, long-lasting, and even lighting for a variety of outdoor applications, from security, sports lighting, to a variety of retail and commercial applications, long-lasting, efficient, and reliable.

Details	SHV-FL100	SHV-FL150	SHV-FL180
Input Power	30W	45W	60W
Input Voltage	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz
Color Temperature	3000K-6500K	3000K-6500K	3000K-6500K
CRI	More than 80	More than 80	More than 80
Beam Angle	15°-60°	15°-60°	15°-60°
Lumens	3000	4500	6000
Operating Temperature	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade

Uses : Handicrafts, Shopping Malls, Showrooms, Hotel, Gardens.

LED PANEL LIGHTS

LED panel lights provide uniform and uniform light for a variety of indoor applications. These are commonly used in many indoor lighting applications.

Details	SHV-PL100	SHV-PL150	SHV-PL180
Input Power	30W	45W	60W
Input Voltage	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz
Color Temperature	3000K-6500K	3000K-6500K	3000K-6500K
CRI	More than 80	More than 80	More than 80
Beam Angle	15°-60°	15°-60°	15°-60°
Lumens	3000	4500	6000
Operating Temperature	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade

Uses : Residential, Showrooms, Offices, Hotels.

SHV LED GLOWING THE FUTURE

LED TUBE LIGHTS - T5 & T8

LED tube lights are a reliable, energy-efficient, long-lasting lighting solution. They are commonly used in many indoor lighting applications.

Details	SHV-T505	SHV-T508	SHV-T510	SHV-T508	SHV-T510
Input Power	5W	8W	10W	8W	10W
Input Voltage	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz
Size (Ft.)	2	4	2	4	2
Color Temperature	3000K-6500K	3000K-6500K	3000K-6500K	3000K-6500K	3000K-6500K
CRI	More than 80	More than 80	More than 80	More than 80	More than 80
Beam Angle	120°	120°	120°	120°	120°
Lumens	510	1020	1000	1000	2000
Operating Temperature	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade

LED STREET LIGHTS

LED street lights are a reliable, energy-efficient, long-lasting lighting solution. They are commonly used in many outdoor lighting applications.

Details	SHV-SL100	SHV-SL150	SHV-SL180
Input Power	30W	45W	60W
Input Voltage	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz
Color Temperature	3000K-6500K	3000K-6500K	3000K-6500K
CRI	More than 80	More than 80	More than 80
Beam Angle	15°-60°	15°-60°	15°-60°
Lumens	3000	4500	6000
Operating Temperature	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade

Uses : Residential, Showrooms, Offices, Hotels.

SHV LED GLOWING THE FUTURE

LED BULBS

Every Light fixture benefits from a well-chosen light bulb. Improvements over the years have made LED light bulbs a very good choice. LED bulbs offer both practical and aesthetic advantages over other light sources. They are energy efficient, long lived, and give clear, consistent light.

Details	SHV-B01	SHV-B02	SHV-B03	SHV-B04	SHV-B05
Input Power	5W	10W	15W	20W	25W
Input Voltage	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz	AC100-240V/50Hz
Color Temperature	3000K-6500K	3000K-6500K	3000K-6500K	3000K-6500K	3000K-6500K
CRI	More than 80	More than 80	More than 80	More than 80	More than 80
Beam Angle	15°-60°	15°-60°	15°-60°	15°-60°	15°-60°
Lumens	3000	4500	6000	7500	9000
Operating Temperature	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade	-20 deg to 60 deg centigrade

Uses : Residential, Showrooms, Offices, Hotels.

Solar Street Lights

Solar street lights are a reliable, energy-efficient, long-lasting lighting solution. They are commonly used in many outdoor lighting applications.

Details	SHV-SL100	SHV-SL150	SHV-SL180
LED Light Wattage	10	15	20
Solar Panel (W)	40	60	80
Battery (Ah)	40	60	80
Life Time (hrs)	5	5	5
Autonomy (days)	12	12	12
Warranty (Years)	2	2	2
Warranty (Months)	2	2	2

SHV LED GLOWING THE FUTURE

SHV LED GLOWING THE FUTURE

AN ISO CERTIFIED COMPANY

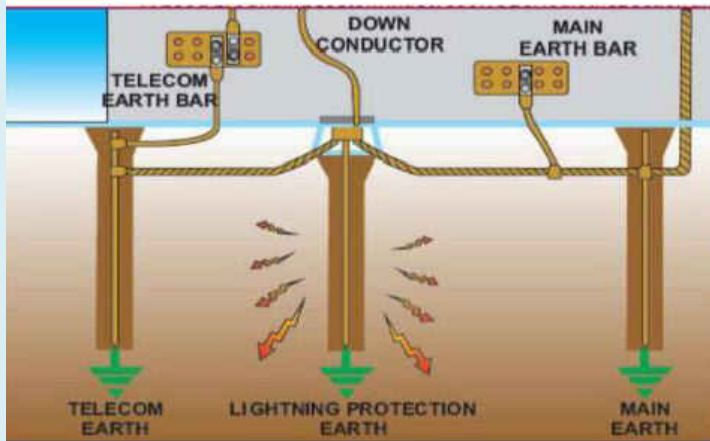
SHV LED GLOWING THE FUTURE

Save Energy Save Earth

Regd. Office:
SHV LED ENTERPRISES
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CHAZHANGAD - 600110
Mumbai, India
20/203, VADAPADANA Industrial Area,
New TV Chazhangad U.P.

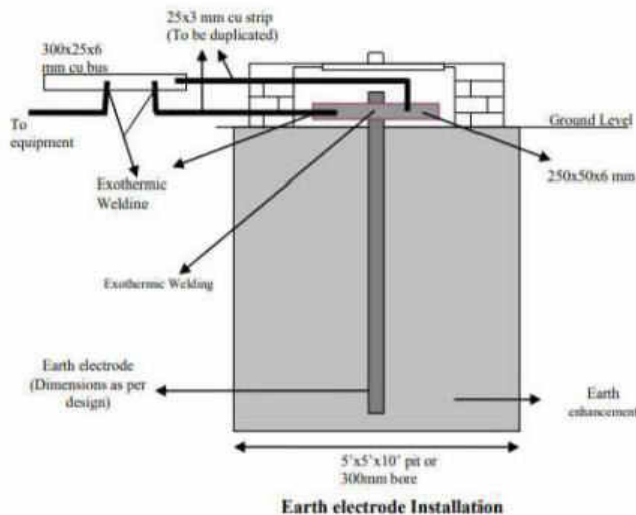
Email : shvled.com@gmail.com
Website : www.shvled.com
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+91-9880037801
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Earthing is Nothing less than Engineering



Maintenance Free Earthing installation as per IS3043(2018)

General Arrangements for Earth System



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

Maintenance Free Earthing Value Calculation & Costing Per PIT

Thumb Rule for Calculate Number of Earthing Rod

The approximate earth resistance of the Rod/Pipe electrodes can be calculated by:

Earth Resistance of the Rod/Pipe electrodes:

$$R = K \times \rho / L$$

Where:

ρ = Resistivity of earth in Ohm-Meter

L = Length of the electrode in Meter.

d = Diameter of the electrode in Meter.

$K = 0.75$ if $25 < L/d < 100$

$K = 1$ if $100 < L/d < 600$

$K = 1.2$ if $600 < L/d < 300$

Number of Electrode if find out by Equation of $R(d) = (1.5/N) \times R$

Where:

$R(d)$ = Desired earth resistance

R = Resistance of single electrode

N = No. of electrodes installed in parallel at a distance of 3 to 4 Meter interval.

Example: Calculate Earthing Pipe Resistance and Number of Electrode for getting Earthing Resistance of 1 Ω . Soil Resistivity of $\rho=40$, Length=2.5 Meter, Diameter of Pipe = 38 mm.

Here:

$$L/d = 2.5/0.038=65.78 \text{ so } K = 0.75$$

• The Earth Resistance of the Pipe electrodes $R = K \times \rho / L = 0.75 \times 65.78 = 12 \Omega$

• One electrode the earth resistance is 12 Ω .

• To get Earth resistance of 1 Ω the total Number of electrodes required = $(1.5 \times 12) / 1 = 18 \text{ No}$

- BOQ Per Earthing PIT
- 17.2mm Copper Bonded 3 Mtr ROD=1
- Earth Enhance Compound(Value 0.012 Ohm) Qty -30 KG
- Earthing Clamp Connector for Connecting FLAT STRIP/Conductor - 01
- Earthing Strip /Conductor as per Equipment Load /Fault Current -10 Mtrs
- High Quality Industrial Plastic PIT Cover

KORS BRAND ADVANCED SOLUTIONS FOR ELECTRICAL SAFETY EARTHING LIGHTNING ARRESTERSURGE PROTECTION



Conventional LA as per standard
IS 2309, IEC 62305, NBC 2016



Copper Bonded Rod
Inbuilt Customized
Connector



Lattice Copper Mat



Copper Plate



Copper Flexible Jumper



Copper Bonded Rod
4Q Pattern



Copper Bonded Rod
With or Without Clamp



Cast Iron Pit Cover



FRP Pit Cover



PVC Pit Covers



PVC Pit Covers



PVC Pit Covers



HDPE FRP Pit Cover



DMC and PVC Insulator



Receptacle



Nut Bolt and Bimetallic Washer



Earthing Cable



Conventional Insulator



Test Link



Conduit Pipe



Mast

Graphite Mould



Mould Handle Clamp



Gloves

Exothermic Weld Powder & Steel Metal Desk



Flint Gun



Brush Soft & Hard



Slag Removal Tool



Flame Torch

File Card



**YOUR TRUST
OUR PROTECTION**



Early Streamer Emission
Lightning **Protection** System

PARATONEX LIGHTNING PROTECTION SYSTEMS

PARATONEX a pioneer in the design and manufacture of Lightning Rods, Surge Protection Device and Grounding Products, PARATONEX product ranges are of External protection (ESE Lightning rod and Faradisation), Internal protection (Surge protection device) and grounding/earthing products. With years of experience in the sector of lightning protection systems and after thoroughly studying the problems associated with lightning overtime, our company was established with modern lightning protection technologies. PARATONEX Lightning Protection products are available at the affordable cost and at the same time it offers higher quality than most other companies.



5 POINT PLAN OF PROTECTION

CAPTURE
THE DIRECT
LIGHTNING
STRIKE

DISSIPATE
ENERGY INTO
THE
GROUNDING
SYSTEM

CREATION
OF A
BONDED
EARTHING
SYSTEM

PROTECTION
OF INCOMING
AC POWER
FEEDERS

PROTECTION
OF SIGNAL
DATA AND
COMMUNICATION
LINES

RESEARCH & DEVELOPMENT

As one of the leading companies in the field of lightning protection, PARATONEX has invested heavily in field and laboratory testing as part of its ongoing commitment to research and development.

Throughout the product development of the PARATONEX, the proto-type models were subjected to intense testing under high voltage conditions. Following further refinements, the PARATONEX ESE air terminals were subjected to final testing by an independently accredited test laboratory which completed testing in full compliance with the French National standard NF C 17-102: 2011. The final testing of PARATONEX ESE terminals showed effective performance as defined in the standard.

PARATONEX 5 POINT PLAN OF PROTECTION

PARATONEX is trusted world leader for providing high quality direct strike lightning protection, surge protection and grounding solutions. By recognizing the importance of an integrated lightning protection strategy, PARATONEX has incorporated several major concepts into a Five point plan of protection:

1. Capture the direct lightning strike
2. Dissipate energy into the grounding system
3. Creation of a bonded earthing system
4. Protection of incoming AC power feeders
5. Protection of signal, data, telecommunication & communication lines

PARATONEX operates in every region of the world and supports the global market with an extensive distribution network, helping to ensure that PARATONEX products are available for any project, regardless of size or location.

Freedom Wire Connectors and Industrial Plug and Socket for High Power Equipment's

We are offering Advance and Allegiance Type Plug and Socket for Power ,Data and Communication Port this is very important and useful for Office,Conference Hall ,Data Centers ,Large Customer Handling Places like Hotels, Shopping Mall , Hospitals , Railway Station, Airports and other public places .

Indoor and out door purpose from 5Amps up to Max 400Amps Plug and Socket.

We are also offering Connectors for Power Cables wire Cable 1.5Sqmm to 6.00Sqmm Cable to Cable Free ,hanging, and Fixed Type Connections

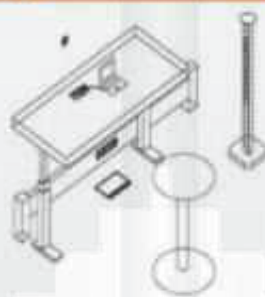
Application scene graph



bank front desk



hospital



office liftable table



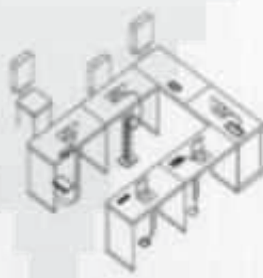
raised floor



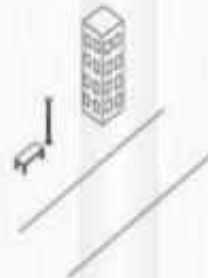
family living room



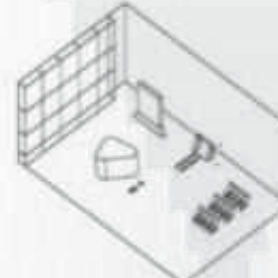
airport waiting room



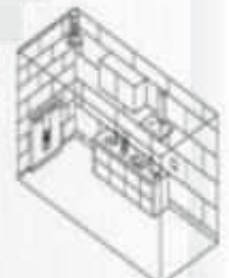
meeting room



outdoor



airport



kitchen



PUD: Pop up socket



FZ-517B(Black color)



FZ-517W(whiter color)



FZ-517S(silver color)

FZ-517(B/W/S/G/H):Pop up ,3 socket with 2 damping;

FMD: Flush Mount Desktop



FZ-507S

Alu. Profile for under table



FZ-507B

Plastic Profile for under table



FZ-536

Hidden coverplate with outlets

Industrial socket



HTD-140-1

dia:140mm; Stainless steel



FZ-S66-1

IP68 power painted stainless steel stand pole



HTD-146K/KP-1

*lid:146*146mm square brass*

1.8 Industrial socket IP44 & IP67

IP67 Interlock switch socket



SF1372-4



SF1372

IP44 couper



IP44 Panel mounted socket



SF1431



SF1331



SF1531

IP44 Panel Angle mounted socket



IP44 Wall mounted socket



SF1311



SF1411



SF1411

IP67 couper



SF3322-9



SF3422



SF3522

IP67 Panel mounted socket



SF1332-9



SF1432



SF1532

IP67 Panel Angle mounted socket



SF5332-9



SF5432



SF5532

IP67 Wall mounted socket



SF1312



SF1412



SF1512

IP44 socket



SFS123



SFS123



SFS123

IP67 420A Large current sockets



SF4432

IP67 250A Large current sockets



SF2432

IP44 Low pressure sockets



SFD3231



SFD3331



SFD3232



SFD3332

2.6 Industrial plug

IP44 Plugs



SF1301



SF1401



SF1501

IP44 Wall mounted plug



SF1361



SF1461



SF1561

IP44 Concealed Plug



SF1351



SF1451



SF1551

IP67 Plugs



SF1302



SF1402



SF1502

IP67 Wall mounted plug



SF1362



SF1462



SF1562

IP67 Panel mounted plug



SF1352



SF1452



SF1552

IP44 Plugs



SFS120

IP67 250A Large current plug



SF2402

IP67 420A Large current plug



SF4402

IP44 Low pressure plugs



SFD1301



SFD1201



SFD1302



SFD1202

3.3 Quick connectors

Quick wire connectors

Electrical parameters: 400V/24A & 600V/20A ; Material: PC &PA66



FC773-102



FC773-106



FC773-108



FC773-253



FC773-255

Electrical parameters: 400V/32A; Material : PA66



FC221-414



FC221-415



FC222-413



FC222-414



FC222-415

Electrical parameters: 600V/32A;Material:PA66



FC223-3P



FC223-12P



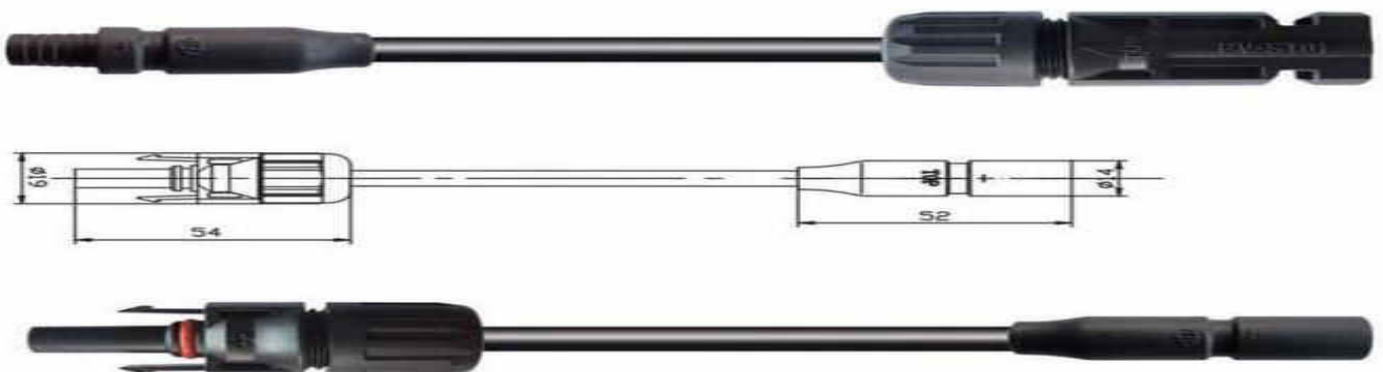
FC121



FC426



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



Electric Vehicle and Electric Vehicle Charging Connectors, Cable Harness

AC EV Charger Connector



Type 1 EV Plug (SAE J1772)



Type 2 Female EV Plug



Type 2 Male EV Plug

AC EV Charger Socket



Type 1 EV Socket



Type 2 Female EV Socket



Type 2 Male EV Socket

DC EV Charger Connector



CCS Combo 1 EV Plug



CCS Combo 2 EV Plug



CHAdeMO EV Plug

DC EV Charger Socket



CCS Combo 1 Inlet Socket



CCS Combo 2 Inlet Socket



CHAdeMO Inlet Socket



(EVA-American Standards EV Plug / Type 1 EV Plug With EV Cable)



(EVP-European Standards Female EV Plug / Type 2 Female EV Plug With EV Cable)



(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)



GB/T DC Charger Connector



GB/T DC Charger Socket

Product Introduction:

EV cable is a kind of flexible cable to connect electric vehicle with charging pile or power socket, high quality oxygen-free copper conductor ensures excellent conductive effect; TPE insulation material is soft and high strength; cable sheath is made from high-performance TPE, which possesses characteristic as weatherability, high/low temperature resistance, rub resistance, ect. The cable is soft, elastic, flex index and won't thicken in low temperature. EV Cables for Electric vehicle conductive charging system are fit for Battery Electric Vehicle, Fuel Cell Vehicle(FV) & Hybrid Electric Vehicle(HEV). They are widely used in charging connection between electric vehicle and power supply, or used in Electric Vehicle charging facility & Charge interface.



AC EV Charging Cable



DC Fast Charger Cable

AC Single Phase (TUV)					
	3x2.5mm ² + 2x0.5mm ²	16Amp	450V/750V	Black Orange Green	
	3x6.0mm ² + 2x0.5mm ²	32Amp			
	3x8.0mm ² + 2x0.5mm ²	40Amp			
	3x10mm ² + 2x0.5mm ²	63Amp			
AC Single Phase (IEC)					
	3x14AWG + 1x18AWG	16Amp	600V	Black Orange Green	
	3x10AWG + 1x18AWG	32Amp			
	2x8AWG + 1x10AWG + 1x16AWG	40Amp			
	2x8AWG + 1x10AWG + 1x16AWG	50Amp			
AC Three Phase (TUV)					
	5x2.5mm ² + 2x0.5mm ²	16Amp	450/750V	Black Orange Green	
	5x6.0mm ² + 2x0.5mm ²	32Amp			
	5x10mm ² + 2x0.5mm ²	63Amp			
	5x13.3mm ² + 2x0.5mm ²	70Amp			
DC Fast Charger (TUV)					
	2x16mm ² + 1x25mm ² + 6x0.75mm ²	80Amp	750V/1000V	Black Orange Green	
	2x35mm ² + 1x25mm ² + 6x0.75mm ²	135Amp			
	2x35mm ² + 3x6.0mm ² + 8x0.75mm ²				
	2x50mm ² + 1x25mm ² + 6x0.75mm ²				
	2x50mm ² + 3x6.0mm ² + 8x0.75mm ²	16Amp			
	2x70mm ² + 1x25mm ² + 6x0.75mm ²				
	2x70mm ² + 3x6.0mm ² + 8x0.75mm ²	32Amp			

Product Description:

- Conductor: Soft annealed stranded Bare Copper
- Insulation: 125°C halogen free TPE or TPU
- Filler: Cotton thread
- Cover: Non-woven fabrics
- Sheath: 125°C halogen free TPE or TPU
- Color: Black, Orange, Green

- Rated Voltage: AC 450/750V, DC 1000V
- Rated temperature: -25°C upto +125°C
- Voltage Test: 2.5KV AC /15min. No Breakdown
- Short circuit using temperature: +200°C 5s
- Crush Resistance: 5kN, 8kN/h, 220KPa, No Breakdown
- Flame Test: VW-1 test method comply with UL 2556



Type 1 Inlet Socket With Cable



Type 2 Male Inlet Socket With Cable



CHAdeMO Inlet Socket with Cable



Type 2 to Type 1 EV Socket EV Converter Cable



Type 1 to Type 2 Male Socket EV Converter Cable



Type 1 to Type 1 EV Socket EV Adapter Cable



CCS Combo 2 Plug With Cable



Type 1 to Type 2 EV Adapter Connector



CCS 1 to CCS2 EV Plug EV Adapter Cable



J1772 Type 1 Plug Dummy Holder



Type 2 Female Plug Dummy Holder



CHAdeMO Plug Dummy Holder

You are in Right Hand We are Right Partner For You
Genuine and Professional DEAL





Director:- Mr. Manish Khatri

Head Marketing & Sales:- Mr. Mahesh Chandra Manav

•India

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