Long-lasting protection from electric shocks and hazards.

V-Guard MCBs & DBs

V-GUARD

DESIGNED FOR SAFETY

For over four decades V-Guard lived up to the reputation of making reliable products that were designed to work efficiently and last a lifetime. And now we are taking our next quantum leap. Harnessing the learnings, insights and experiences of four decades, it will be our endeavour to understand human lives and their relationship with the tools and appliances that they uses. And then to evolve a seamless experience with thoughtfully engineered products in our quest to enrich consumer lives.

V-Guard offers a wide range of products built for day-to-day modern living. Domestic Switchgears that ensure complete, foolproof safety is just another step towards this vision. V-Guard switchgears are available with more than 10000 authorized dealers and 250 distributors located across 19 states.

They are engineered to detect overcurrents due to overload and faulty power supply, and to interrupt the supply to prevent damage. Designed and developed by V-Guard's ISO 9001:2008 certified and DSIR recognized R&D, these domestic switchgears are made from high-quality components that are quality checked at all stages throughout the manufacturing process, equipped with latest technology and advanced features to deliver superior performance.

SALIENT FEATURES

RUGGED AND HIGHLY RELIABLE SWITCH MECHANISM FOR LONG SERVICE

STATE OF THE ART ARC RUNNER SYSTEM

DBs ARE SUITABLE FOR FLUSH AND SURFACE MOUNTING

RANGE AVAILABLE

MCB

Have a rocking life with V-Guard MCBs, a range of Miniature Circuit Breakers which will make sure that your home is not just sweet but a safe place to live in.

- High quality moulded casing
- Improved and rugged design of operating mechanism
- State of the art Arc Runner System

ISOLATOR

With V-Guard Isolator inside your home, you will be all smiles from the outside as it has the power to defeat the most shocking power threats by isolating the circuit when it is prone to it.

- Earth the isolated circuit
- Allows padlock when inadvertent operation is not possible

RCCB

V-Guard forays into Residual Current Circuit Breaker to withstand the threshold of current fluctuations and provide unimaginable safety to your household.

- High quality moulded casing
- Improved and rugged design of operating mechanism
- Improved sensitivity for quick operation

DISTRIBUTION BOARD

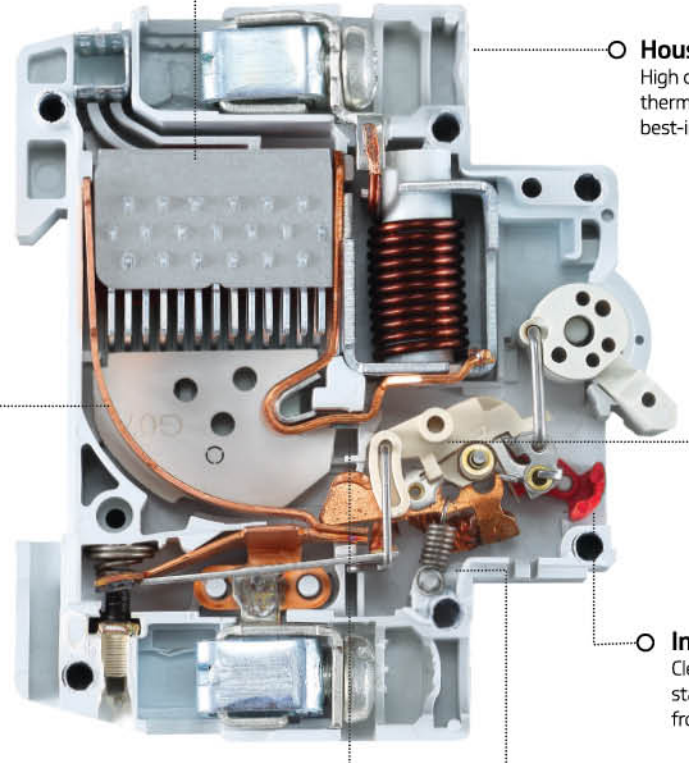
V-Guard Distribution Board is not just another electrical panel in your home. It is an innovative discovery from the R&D labs of V-Guard, the name you can count upon for your safety.

- Fabricated out of high quality CRCA steel sheet
- Provided with cement protection sheet
- Double keyhole makes mounting easy

MINIATURE CIRCUIT BREAKERS (MCBs)

KEY FEATURES

Design
Superior design of arc quenching unit and chamber with 13 arc plates and flash back arrester results in zero arc environment in the electrical system.



Housing
High quality moulded casing with superior thermal & dielectric strength provides best-in-class safety and durability.

State-of-the-art
Specially designed arc runner system delivers uniform performance during all weather conditions.

Operating Mechanism
Improved and rugged design of operating mechanism deliver outstanding performance as well as superior safety.

Indication
Clear & Visible indicator for Circuit ON/OFF status replicate the state of the circuit from a distance.

Life
Specially produced Silver Graphite tip delivers great anti-weld property during faults and delivers a long life product.

Safety
Best-in-class design provides optimum safety for customer even at faulty situations. If any one of the component fails, MCB breaks and circuit opens due to gravitational force.

APPLICATION GUIDE

INTRODUCTION

The circuit breaker is a protection device rather than a switch. It's an electromechanical switch which continuously measures and observe the circuit current flow, protects the circuitry and connected devices from overload as well as short circuit related damages (the breaker should be selected precisely as per circuit design standards & parameters). Its basic function is to detect fault condition, and to interrupt the electrical flow by breaking the continuity. Unlike a fuse, it can be reset (either manually or automatically) to resume normal operation.

PROTECTION

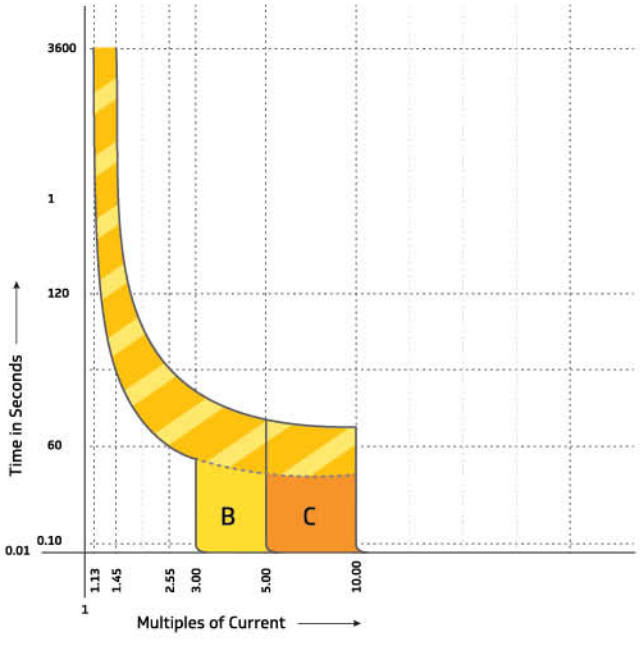
V Guard MCBs comes with confirmed IS/IEC 60898-1 standards and has a short circuit withstand capacity of 10kA, which ensures optimum safety. Miniature circuit breakers have precisely formed moulded housing of flame retardant high strength thermoplastic material having very high thermostatic parametric values, low water absorption and high dielectric strength. The switching mechanism is independent, manual and trip free, i.e. the breaker trips internally even if operating knob is held on ON position or struck due to physical conditions.

SWITCHING

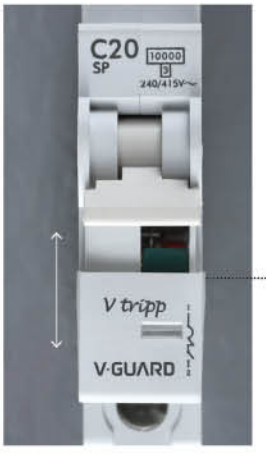
V Guard MCBs are designed with highly stable mechanical components and premium alloys like Silver Graphite/Silver Bromide used for contact tips, which deliver optimum performance and safety. V Guard MCBs are tested for 4000+ switching cycles which is 3 times more than a normal infrastructure life. Contact mechanism comprises of fixed & moving contacts designed for long life & reliability along with anti-weld properties.

MONITORING & MEASURING

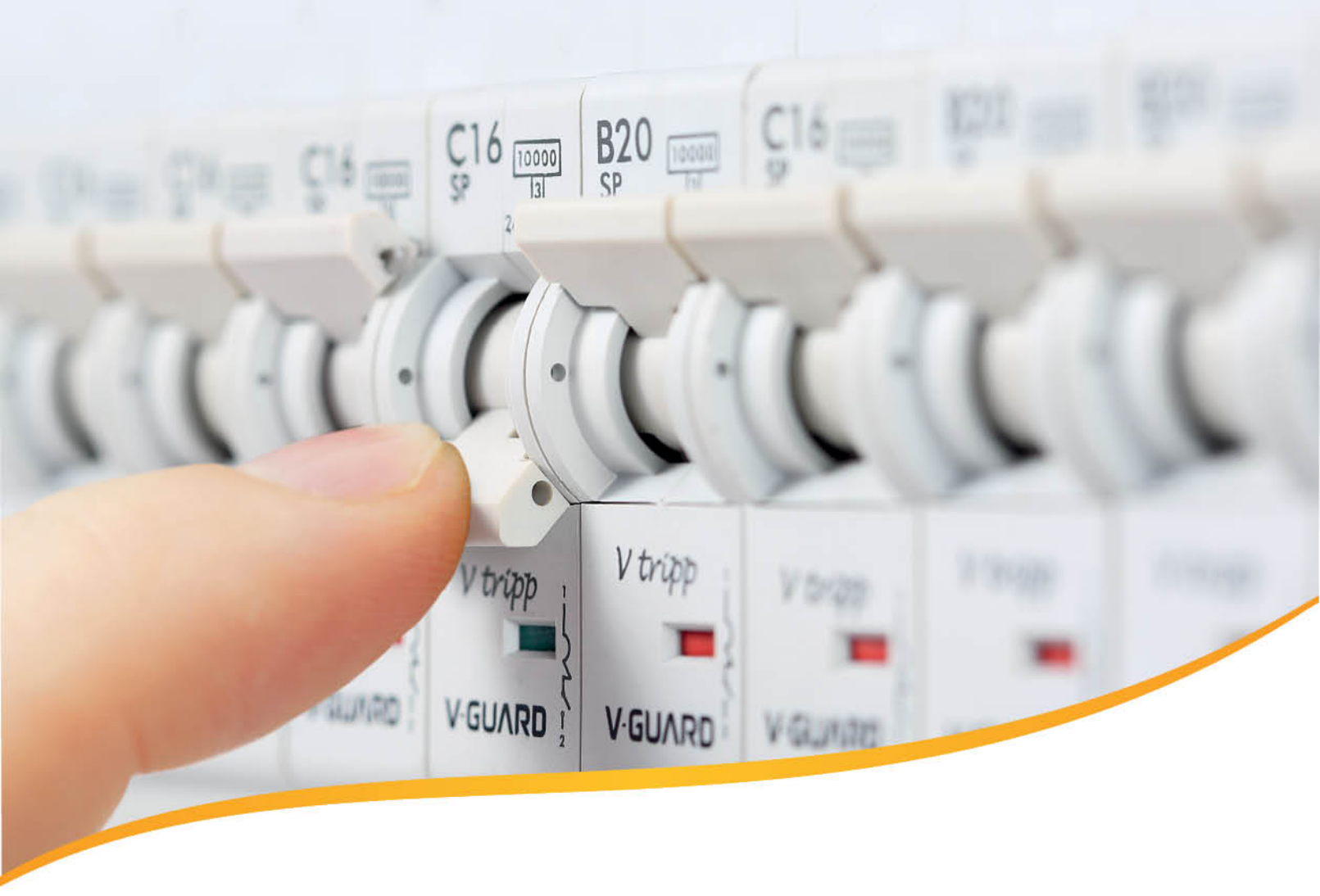
In an MCB, there is magnetic coil actuated tripping mechanism and bimetallic strip actuated tripping mechanism which together serves Overload & Short circuit protection. Both mechanisms continuously measure and monitor the current related parameters with some pre-set criteria sets as per IS/IEC 60898-1 and disconnect the continuity if it detect any faults.



MCB Tripping Characteristics Curves (B&C)



Removable Cap
Which allows user to clean dust from mechanism & indicator area



OVERLOAD PROTECTION (BIMETALLIC TRIPPING)

Overload protection is provided by a bimetallic strip mechanism where high quality bi-metal strip is used for precise action in which current passing through MCB is continuously monitored and associated mechanism will disconnect the connection between moving & fixed contacts, in case of an overload.

SHORT CIRCUIT PROTECTION (ELECTROMAGNETIC TRIPPING)

Short circuit protection is done by a solenoid like system, where an electromagnetic coil continuously monitors and measures the current passing through it and disconnects the connection if it detects short circuit fault.

MCB – Characteristics according to IS/IEC 60898-1

MCBs are intended for the protection of wiring installations against both overloads and short circuits. An overload condition can be defined as a slow and gradual increase in current consumption by a load which crosses the safe load limit. This continuous overload current starts to affect the circuitry. This gradual increase in current destroys the device/appliance/load connected through the circuitry by burnout.

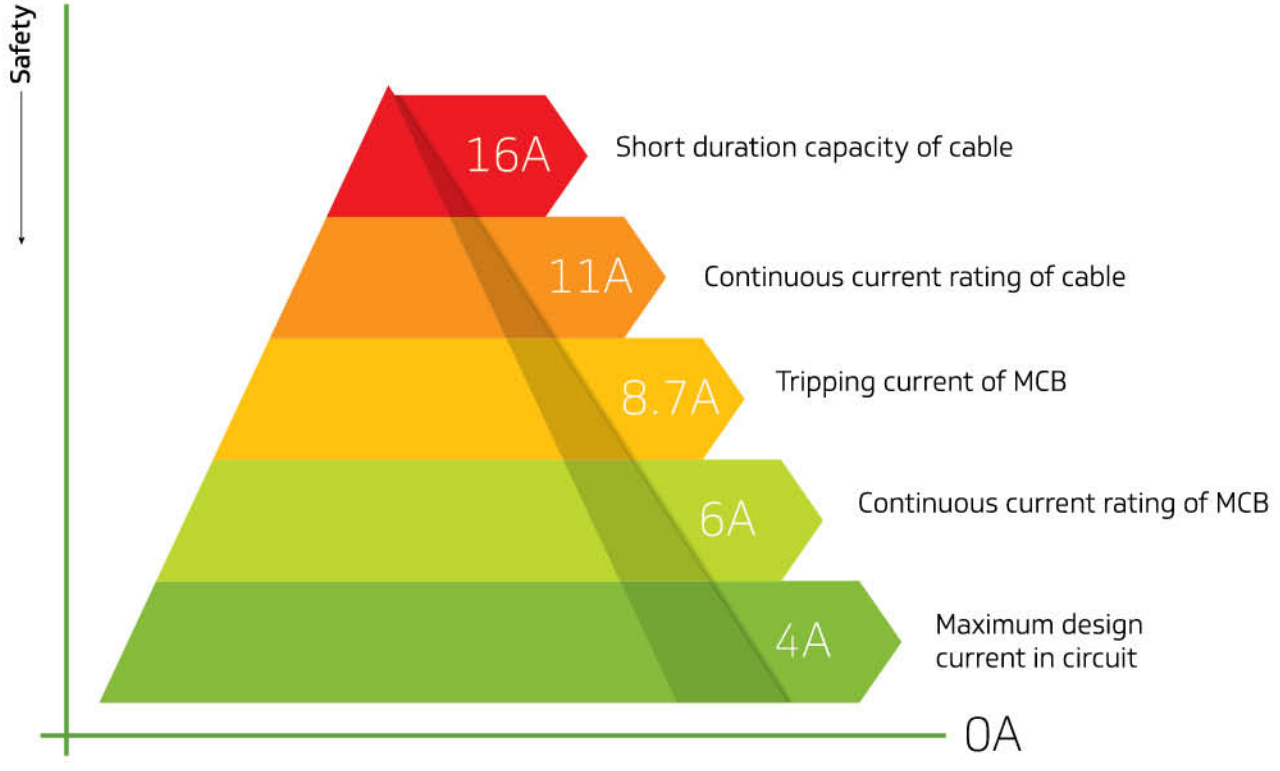
A short circuit is a rapid and intense over-current situation due to direct or indirect contact between live & neutral conductors or due to sudden imbalance or malfunction in connected loads.

Based on the tripping characteristics MCBs are available in B, C & D curve classes to suit several types of applications. V-Guard concentrated on residential applications, thus providing B & C curve MCBs (D Curves are strictly recommended for industrial applications only).

IS/IEC 60898-1	Thermal Tripping			Magnetic Tripping		
	No Tripping Current	Tripping Current	Limits	Hold Current	Trip Current	Limits
B Curve	1.13 x In		≥1h	3 x In		≥0.1s
		1.45 x In	<1h		5 x In	<0.1s
C Curve	1.13 x In		≥1h	5 x In		≥0.1s
		1.45 x In	<1h		10 x In	<0.1s
Thermal Calibration	2.55 x In	1s<t<60s for In (In≤32A)				
		1s<t<120s for In (In>32A)				

B Curve MCBs are recommended for protection of electrical circuits with equipment that does not generate inrush/switch-on surge currents like regular distribution circuits and lighting equipment/household appliances. Where the short circuit tripping range set within 3-5 times of rated current as per IS/IEC 60898-1 as shown in above table.

C Curve MCBs are recommended for the protection of electrical circuits with equipment that generates surge current like inductive loads and motor/pump-set circuits. Where the short circuit tripping range set within 5-10 times of rated current as per IS/IEC 60898-1 as shown in above table.



RESIDUAL CURRENT CIRCUIT BREAKERS (RCCBs)

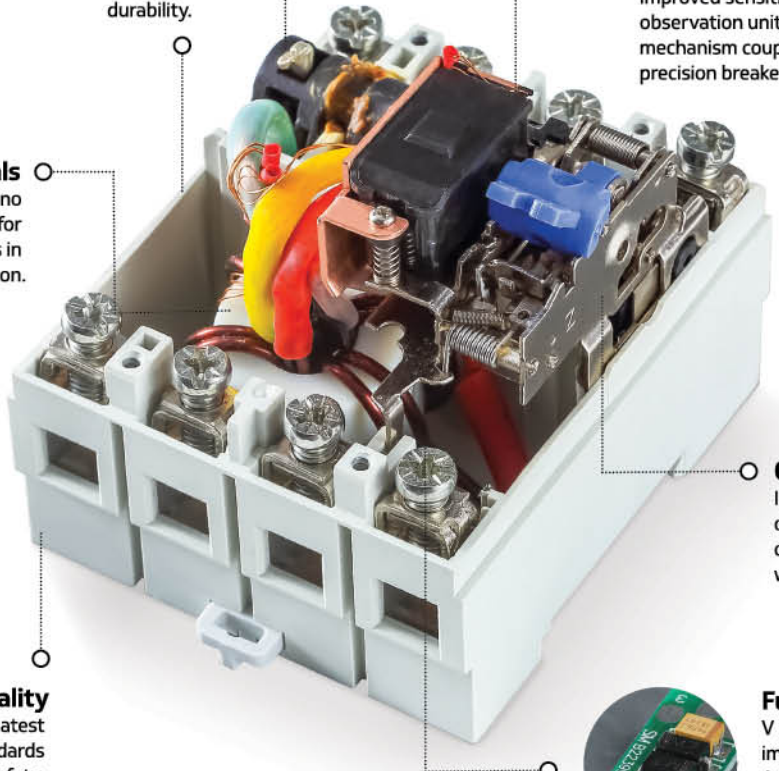
KEY FEATURES

Life
Unique construction of Silver Graphite/Bromide/Cadmium contact tips offers great anti-weld property during faults and fault withstanding capability ultimately results in long life of the product.

Housing
High quality moulded casing with superior thermal & dielectric strength provides best-in-class safety and durability.

Fault Detection
Improved sensitivity of circuit observation unit and actuating mechanism coupled with high precision breaker mechanism.

Premium Materials
High Permeability Nano Crystalline Materials used for fault sensing cores results in precise fault detection.



Operating Mechanism
Improved and Rugged design of operating mechanism deliver outstanding performance as well as superior safety.

Quality
Fully conforming to latest International Standards IS/IEC 61008-1 ensures safety, guarantee, durability and life.

Future Ready
V Guard RCCBs are about to implement Electronic Anti-Nuisance Tripping Circuit which ensures optimum safety and precise fault detection.

APPLICATION GUIDE

INTRODUCTION

The RCCB is a device which can continuously monitor the circuitry connected to its output and switch off the electric supply in a fraction of second once it detects electrocution or other earth faults through appliances, devices or by any other means.

ELECTROCUTION

Electrocution is defined as death or severe injury caused by electric current passing through the body.
In an electrical installation, the use of exposed, substandard, badly wired, wrongly connected or damaged equipment/appliances as well as frayed or badly repaired cables reduces the safety and increases the risk of person receiving an electric shock. The flow of electric current through body, which is dangerous and results in imbalances of vital functions such as breathing and heart functionality.

RCCB can detect small currents flowing to earth and reduces the risk of electrocution if correctly chosen. Below table gives you a brief idea about human body behaviours during electrocution.

500 mA	Immediate Cardiac arrest resulting in death.
70 - 100 mA	Cardiac fibrillation; the heart begins to vibrate and no longer beats at a steady rate. This situation is dangerous since it is irreversible.
20 - 30 mA	Muscle contraction can cause respiratory paralysis.
10 mA	Muscle contraction: the person remains 'stuck' to the conductor.
<10 mA	Prickling sensations.

WORKING

In a RCCB, a monitoring circuit which continuously monitor momentary values of all currents flowing through the active conductors to an electrical installation operated by a sufficiently earthed AC supply. As per Kirchhoff's first law, this total value must be zero. During an earth fault or electrocution, the current passes to earth due to defective insulation or by any other means by which it conducts. In such scenario, the current total will not be zero because current will not flow through active conductors but return to power source via earth, depending upon the fault resistance and ground circuit resistance. Once the RMS value of this residual current crosses pre-set value of RCCB, the monitoring cum sensing circuit actuates the tripping mechanism which results in disconnection of power supply.

CONSTRUCTION & THEORY

RCCBs continuously monitor the momentary values of incoming and outgoing currents and the specially constructed differential current transformer induces a current equivalent to difference between active conductors, the difference between active conductors (IL-In) generates current in third coil (as shown in the figure).

During an earth fault or electrocution, the current passes to earth due to defective insulation or by any other means which conducts. In such scenario, the current total will not be zero because current will not flow through active conductors but return to power source via earth, depending upon the fault resistance & ground circuit resistance.

In normal condition, the fault current passes to earth through earthing line connected with equipment because electricity always pass through the path which has least resistance. But in case of improper earthing, the electricity passes through the human body once a person gets in touch with such faulty equipment. During such situation the difference between active conductor become greater than pre-set value and the sensing unit actuates which breaks the supply.

SELECTION OF PROPER RCCB MODELS

30mA

Which is normally recommended for residential application, for all circuits which directly or indirectly dealt by human beings are recommended to connect with 30mA RCCBs. The current flowing through human body could be between 80 and 240 mA depending on the resistance of the human body and the voltage across it.

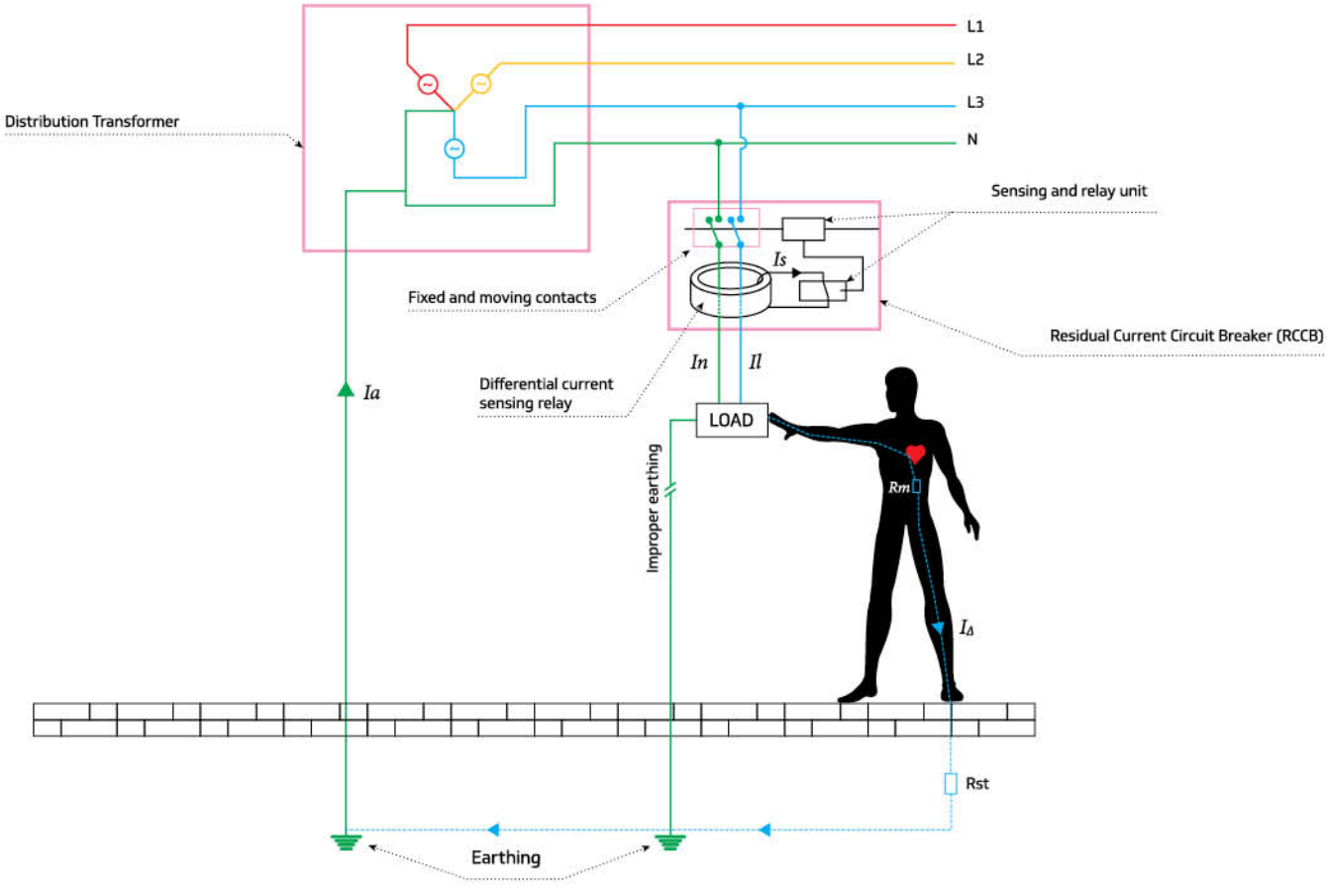
100mA

It is recommended for small industrial applications where humans working in professional dresses and safety aids.

300mA

It is recommended for installations where safety from fire hazards is the only requirement.

RCCB working while a human body touches a load with improper insulation

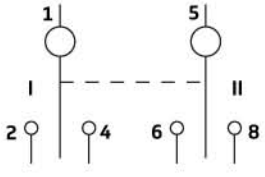


V TRIPP ISOLATORS &
MINIATURE CIRCUIT CHANGEOVER SWITCHES (MCOS)

KEY FEATURES

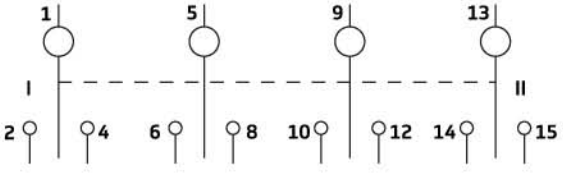
- **Housing** - High quality moulded casing with superior thermal & dielectric strength provides best-in-class safety and durability.
- **Operating Mechanism** - Improved and Rugged design of operating mechanism deliver outstanding performance as well as superior safety.
- **Quality** - Superior electrical grade copper moving contact and silver alloy fixed contact provide low contact resistance and reduced possibility for contact welding.
- **Indication** - Isolators equipped with clearly visible indicators.
- **Low Watt loss and Power consumption.**
- **Double Break Mechanism & Single Frame Construction for entire range (MCOS).**

Two Pole (DP)



"I"	Incoming terminals (main supply)	2 & 6
"II"	Incoming terminals (standby supply II)	4 & 8
	Outgoing terminals (to load)	1 & 5
0	No Load\Off position	

Four Pole (DP)



"I"	Incoming terminals (main supply)	2, 6, 10 & 14
"II"	Incoming terminals (standby supply II)	4, 8, 12 & 16
	Outgoing terminals (to load)	1, 5, 9 & 13
0	No Load\Off position	

AUTOMATIC CHANGEOVER WITH CURRENT LIMITER (ACCL)

A changeover device transfers the Load from Mains power supply to the Generator, automatically upon failure of Mains power supply. It also functions as a load limiter, by monitoring the generator supply it reduces stress on the generator.

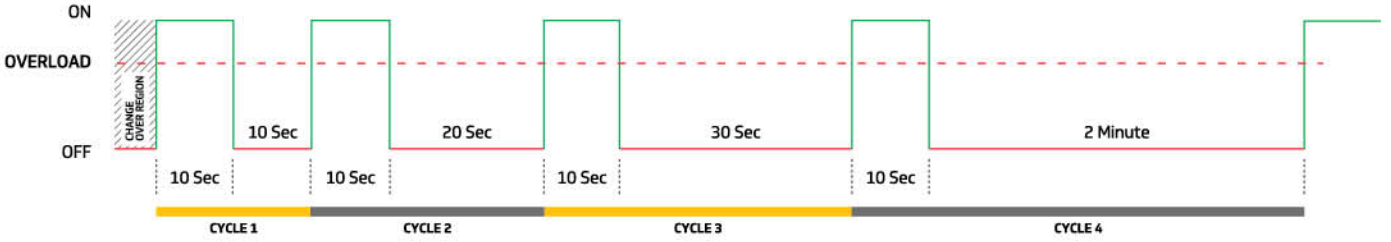
WORKING

Condition 1: When mains supply is available

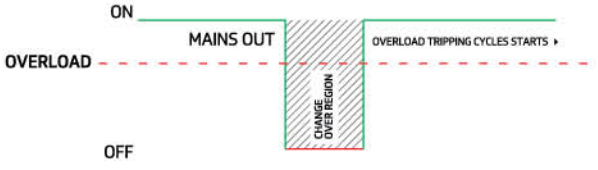
Corresponding LED switches ON. This time, the load will be directly connected to MAINS supply without any direct interruptions to the LOAD.

Condition 2: When mains supply fails & Generator supply is available

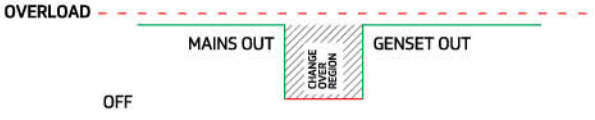
Corresponding LED switches ON. ACCL will connect the load to supply from the Generator after a small delay (approx. 3 seconds). After switching, the ACCL will monitor the current drawn by the load from Generator. If the value of current is within the preset rating marked on ACCL, current will be drawn from the Generator supply without any interruption. If the load current drawn from the Generator is greater than the preset rating marked on ACCL, warning signal will be generated from ACCL with blinking of the Oveload LED and buzzer beep. With this LED blinking, supply from the Generator to the connected load is switched Off for 10 seconds and then reconnected for 10 seconds.



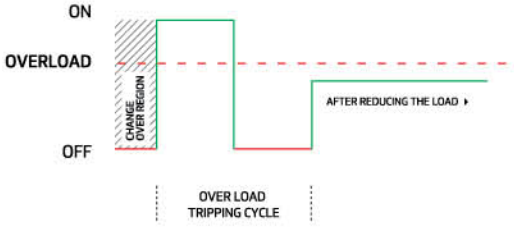
Overload tripping cycles



When load is beyond the limit



When load is within the limit



When load is reduced below limit

Caution

- It is advisable to connect V-Guard MCB at incoming mains as well as Genset supply.
- Mains supply Neutral & Generator Neutral should be separately grounded & not to be interconnected.

During this cycle, the load current should be reduced by the consumer to the preset generator rating marked on ACCL, by switching Off the heavy loads. This cycle of connection & disconnection lasts till the load is reduced to allowable limits of the generator. Once the load is reduced, to the marked generator rating of ACCL, load current will flow without any interruption.

KEY FEATURES

- **Technology** - Contactor based mechanism provides optimum life.
- **Operating Mechanism** - Break before make changeover contacts with higher air gap which is technically superior in segment.
- **Safety** - 5kA short circuit capacity.
- **Energy Efficient** - Low power consumption due to direct mains connection (Coils & Electronic parts operate only during generator supply).
- **Convenience** - Auto reset functionality delivers superior user experience.
- **Life** - Conforms to utilisation category AC32A (IEC 60947-6) and AC22A (IEC60947-3) with 25K+ operations.

MCCB

Feel safe and protected with the new range of Invidia MCCBs from V-Guard. Protect your Power distribution systems, motors and generators with our intelligent double break MCCBs with:

- Current limiting design for faster arc quenching.
- Positive isolation to ensure safety.
- Double insulation for enhanced safety.

APPLICATION GUIDE

INTRODUCTION

The Molded Case Circuit breaker (MCCB) provides enhanced protection for devices and power applications. MCCB continuously monitors the current flow through your system. Its unique mechanism protects your devices and power applications from over current as well as short circuit related damages. Our unit comes with an easy-to-use thermal setting where the user can set the over current tripping value within the range of 80% - 100% of the rated current value. The MCCB breaks the flow of electricity when it detects any fault, and the mechanism is designed to indicate the three stages of the working of MCCB.

- ON position where the MCCB carries the current and monitors the devices for fault currents.
- OFF position where the MCCB disconnects the devices from the mains power line.
- Trip position where the MCCB disconnects the devices from the mains power line automatically when it detects a fault.

The state-of-the-art design of Invidia MCCB offers you the following:

- Range from 63A to 160A (3P/4P).
- 4P with 100% neutral protection.
- Ics = 100% of Icu.
- Double break contact system for high breaking capacity till 25kA.
- Thermal magnetic release which provides:
  - Overload protection: Variable thermal setting (0.8 – 1 x rated current)
  - Short circuit protection: Fixed magnetic setting (10 x rated current)
- Current limiting design for faster arc quenching.
- Positive isolation to ensure safety.
- Double insulation for enhanced safety.
- Line-load reversibility.
- ON-OFF-TRIP Indication.

STANDARDS AND PROTECTION

Invidia MCCBs comply with the following standards:

- IS/IEC 60947-2: 2003
- IEC 60947-2: 2006 +A1:2009
- EN 60947-2: 2006 +A1:2009
- Low voltage directive-2006/95/EC

SPECIFICATIONS

Rated Current (A)	63	100	125	160
Number of Poles	3P,4P (Neutral pole on left)			
Utilization Category	A			
Rated Operational Voltage	690 V			
Rated Insulation Voltage	750 V			
Rated Impulse Withstand Voltage	8 kV			
Rated Frequency	50/60 Hz			

Rated Breaking Capacity (AC) : Ics = Icu = 100%			
63/100/125/160A			
IEC-60947-2	Ics=Icu (kA)	220/240 V	40
		380/415 V	25
		440/460 V	22
		480/500 V	20
		660/690 V	5

Performance Parameters	
Mechanical Life (Operating Cycles)	25,000
Electrical Life @415 V (Operating Cycles) @1.0 In	10,000
Weight: 3 Pole (630 A/ 800 A)	1.5 kg
Weight: 4 Pole (630 A/ 800 A)	1.8 kg
Total Operating Time	<10 ms
Load line Biasing	No Load line biasing
Ref. Ambience Temperature	40° C
Operating Temperature	-5° to 70°C (No de-rating till 55 °C)
Pollution Degree	III
Protection Degree (Front)	IP20

Termination			
Finger Proof Termination		Yes, from Front (IP 20)	
Terminal Capacity	Front Terminal	Max Link Width (mm)	20
		Link Thickness (mm)	3 to 10
	Spreader	Max Link Width (mm)	20
Clearances	Phase to Phase in mm	10 without spreader	
		20 with spreader	
	Phase to Ground in mm	20	
Phase barrier length (mm)		100	
Termination Hardware		Allen Head M6 class 8.8	
Tightening Torque (Nm)		6 Nm	

Trip Unit	
Release	Thermal magnetic trip unit
Thermal trip setting	0.8 - 1In
Magnetic trip setting	10In

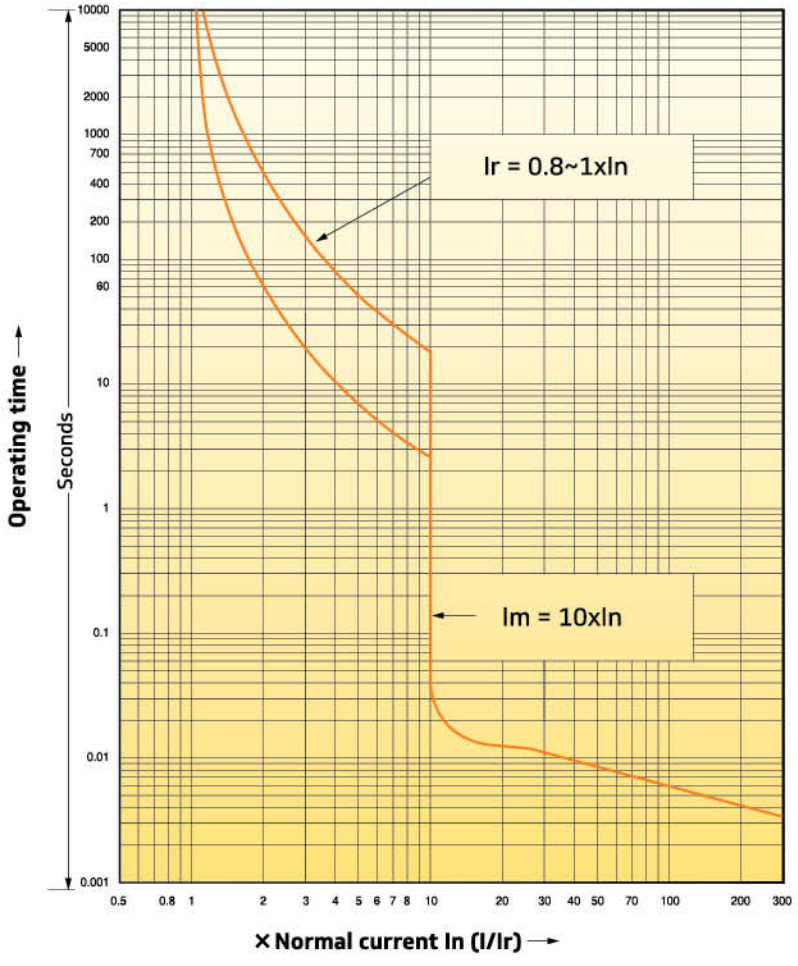
Dimensions & Mounting			
Mounting Position	Vertical & 90° (All four direction)		
Dimensions	W	H	D
3 Pole	90	140	86
4Pole	120	140	86

STRUCTURE

The MCCB has a double break contact system with a thermal and magnetic trip mechanism. The thermal trip has a knob that can be used to adjust the thermal tripping to 80-100% of the rated current. Magnetic tripping happens at a fixed setting of 10 times the rated current. It also has a push button mechanism to trip the system manually. The system consists of modular contact system with effective arc quenchers for smooth and safe isolation from the circuit by the MCCB to protect your system. The thermal magnetic release is also modular and provide high speed feedback to trip the system.

The knob mechanism is ergonomically designed to provide the users an effortless experience in turning ON and OFF the MCCB. At the same time, tripping force is much greater to provide a faster response during a fault.

TRIPPING CHARACTERISTICS



PHASE SELECTOR ROTARY SWITCH

It consists of three (single phase) change over switches, each connected to one of the three phases. The single phase loads are distributed over the three outgoing phase connections. It helps to fight the common problem of Phase Cut in a three phase connection having single phase loads.

KEY FEATURES

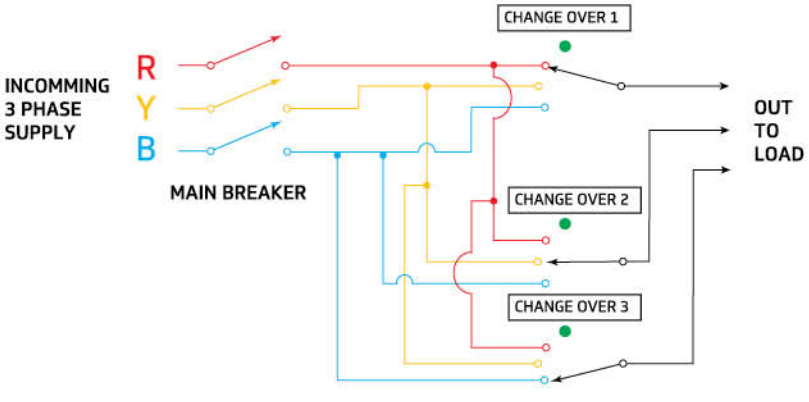
- Silver alloy contacts ensures high durability &endurance.
- Double break contact mechanism.
- Ability of positive making & breaking of contact.
- Superior insulating material for electrical & mechanical stability.
- Superior Aesthetic and Technologically updated.
- Attractive combination of colors for knob, Handle & Escutcheon plates.
- User friendly & mounting arrangements can be suitably custom made.

ELECTRICAL PARAMETERS

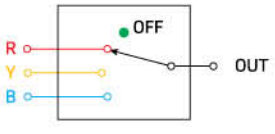
Standard Conformity	IEC 60947-3:2008+A2:2015			
Current rating	**25A**	**32A**	**40A**	**63A**
Operational Voltage	440 V	440 V	440 V	440 V
Operational Current a.c.	25A	32A	40A	63A
Utilization Category	AC-23	AC-23	AC-23	AC-23
Dielectric Strength	2 KV	2 KV	2 KV	2 KV
Insulation Resistance	>500 MK	>500 MK	500 MK	500 MK
Standard Mounting 4 Hole (mm)	M5-48.0 ctc	M5-48.0 ctc	M5-48.0 ctc	M5-68.0 ctc
Escutcheon plate	75 X 75 mm	75 X 75 mm	75 X 75 mm	90 X 90 mm
Mechanical Life (Operation)	1,00,000	1,00,000	1,00,000	1,00,000
Electrical Life (Operation)	30,000	30,000	30,000	30,000

CONNECTION DIAGRAM

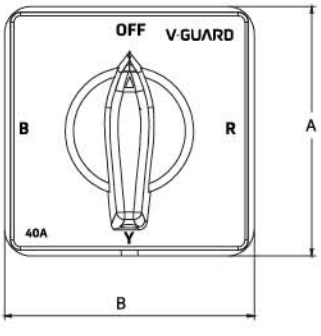
For Phase Selector Distribution Board

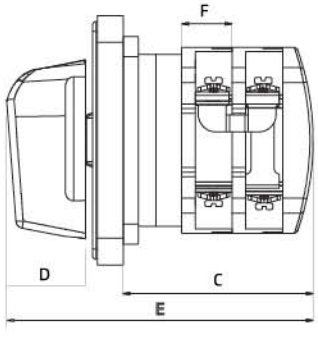


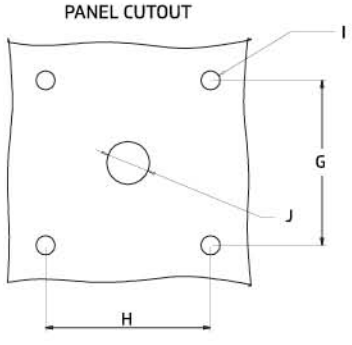
For Individual connection



DIMENTION CHART







	25A	32A	40A	63A
A	75	75	75	90
B	75	75	75	90
C	57	57	57	70
D	23.4	23.4	23.4	35.5
E	92	92	92	115
F	15	15	15	21
G	48	48	48	68
H	48	48	48	68
I	Ø12.5	Ø12.5	Ø12.5	Ø12.5
J	Ø5.5X4N	Ø5.5X4N	Ø5.5X4N	Ø5.5X4N

All dimentions are in mm

INDUSTRIAL PLUG & SOCKET

Industrial Plug & Socket is a product which is used for the distribution of power supply in such a safe manner. It is primarily intended for industrial use, either indoors or outdoors. Also we can use these accessories on building sites and for agricultural, commercial and domestic applications.

KEY FEATURES

- Housing fabricated out of flame retardant PA6 material.
- Nickel-plated brass pins & tubes for superior electrical contact.
- Safe and esay to lock base and cover. Saving time without fixing screws.
- Special type cable gland provides superior sealing.
- Contact screws are easily accessible in position.

SPECIFICATION

Rated operating temperature: -25°C to 40°C

Earthing-contact position: 6H (6 O' clock position)

Packing: Double packing

Reference: IS/IEC 60309-1/2

Blue color: Rated operating voltage 200-250V AC.

Red color: Rated operating voltage 380-480V AC.

IP44: Splash-proof protection.

IP67: Watertight protection.

SPNE: Single Pole, Neutral & Earth.

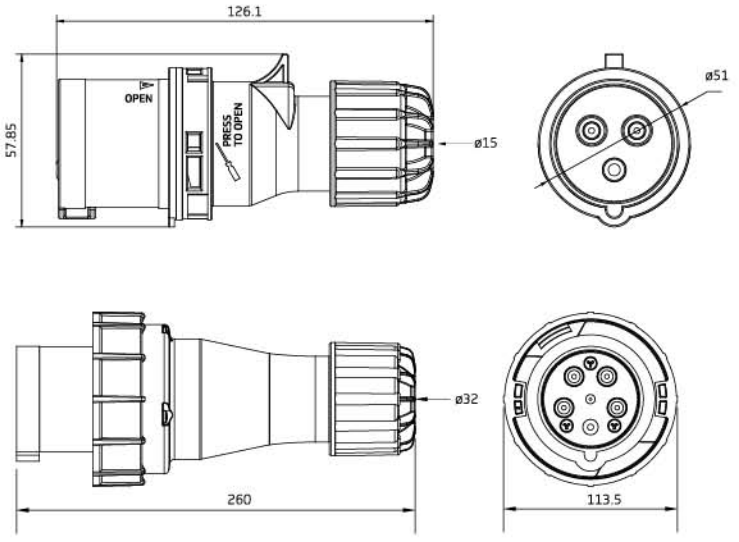
TPNE: Three Pole, Neutral & Earth.

Model Name	Rated Current	Rated Operating Voltage	No. of Poles	Degree of Protection	Color
PS SPNE 16A IP44 6H MP	16A	200-250V AC	2P+E	IP44	Blue
PS TPNE 63A IP67 6H MP	63A	380-480V AC	3P+N+E	IP67	Red
PS SPNE 16A IP44 6H MC	16A	200-250V AC	2P+E	IP44	Blue
PS TPNE 63A IP67 6H MC	63A	380-480V AC	3P+N+E	IP67	Red
PS SPNE 16A IP44 6H WMS	16A	200-250V AC	2P+E	IP44	Blue
PS TPNE 63A IP67 6H FPSI	63A	380-480V AC	3P+N+E	IP67	Red

MOBILE PLUG

Model : PS SPNE 16A IP44 6H MP

Model : PS TPNE 63A IP67 6H MP

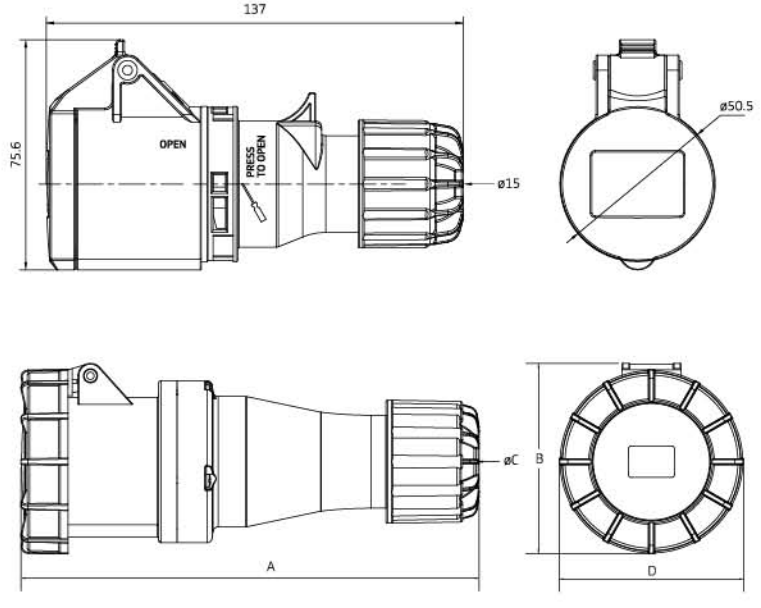


Rating	Poles	Model	Code
16A	2P+E	PS SPNE 16A IP44 6H MP	1505154
63A	3P+N+E	PS TPNE 63A IP67 6H MP	1505155

MOBILE CONNECTOR

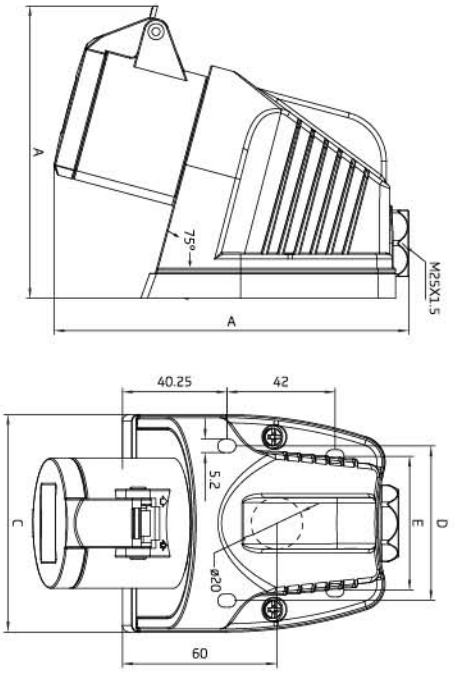
Model : PS SPNE 16A IP44 6H MC

Model : PS TPNE 63A IP67 6H MC



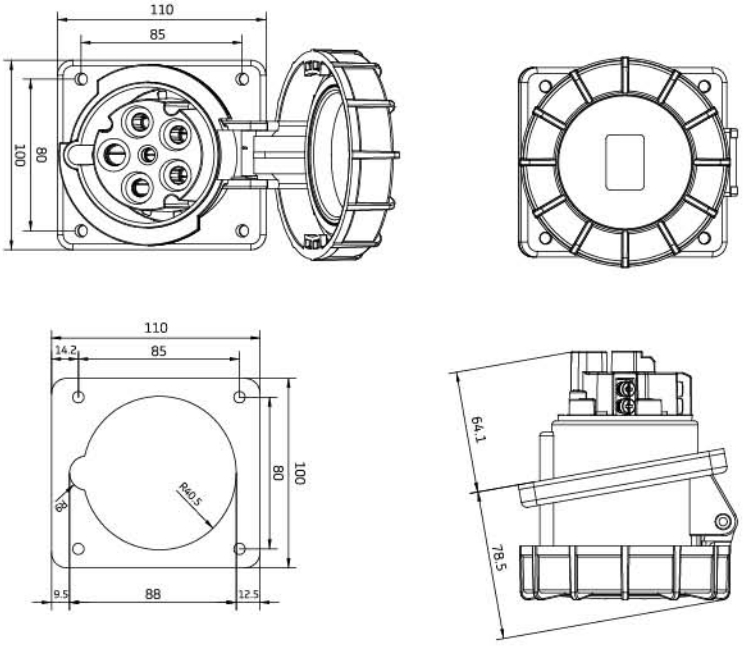
Rating	Poles	Model	Code
16A	2P+E	PS SPNE 16A IP44 6H MC	1505156
63A	3P+N+E	PS TPNE 63A IP67 6H MC	1505157

FLANGED PANEL SOCKET



Rating	Poles	Model	Code
16A	2P+E	PS SPNE 16A IP44 6H WMS	1505159

WALL MOUNTED SOCKET



Rating	Poles	Model	Code
63A	3P+N+E	PS TPNE 63A IP67 6H FPSI	1505158

MCB SELECTION CHART

APPLIANCES		LOAD-WATTAGE	MCB RATING	TYPE OF MCB	WIRE SIZE SQ.MM.
AIR CONDITIONER		1 Ton	10A	C	2.5
		1.5 Ton	16A	C	4.0
		2 Ton	20A	C	4.0
REFRIGERATOR	165 Ltrs	400W	3A	C	1.5
	285 Ltrs	600W	4A	C	1.5
	350 Ltrs	750W	6A	C	1.5
ROOM HEATER		1000W	6A	B	1.5
		2000W	10A	B	2.5
WATER HEATER	8 Ltrs	1200-2000W	12A	B	2.5
	15 Ltrs	3000W-4000W	20A	B	6.0
	60 Ltrs	4000W-6000W	32A	B	10
IRON		750W	5A	B	1.5
		1250W	7.5A	B	2.5
OVEN CUM GRILLER		1750W	10A	B	2.5
OVEN ONLY		750W	6A	B	1.5
HOT PLATE ONLY		2000W	10A	B	2.5
ELECTRIC KETTLE		1500W	7.5A	B	2.5
AUTO TOASTER (2 SLICES)		1200W	7A	B	1.5
WASHING MACHINE		300W	2A	C	1.0
		1300W	7.5A	C	1.5
		1800W	10A	C	2.5
		2200W	16A	C	4.0
MICROWAVE		800W	6A	B	1.5
HAIR DRYER		1000W	6A	B	1.5
WATER COOLER		700W	6A	B	1.5
TV		200W	1A	B	1.0
VACUUM CLEANER		400W	3A	B	1.0
FAN		60W	*	B	1.0
LAMP, TUBE LIGHT		40W	*	B	1.0
MIXER GRINDER		200W	1.5A	C	1.0
		400W	3A	C	1.0
WATER FILTER		500W	3A	C	1.0

Formula For Load Calculation:

- Incomer Rating: Single Phase* $= \frac{\text{Total Load in Watts}}{230 \text{ Volts}}$
- Incomer Rating: Three Phase* $= \frac{\text{Total Load in Watts}}{\sqrt{3} \times 415 \text{ Volts}}$

* The given data is only for guidance and may vary for different manufacturer

V-GUARD DISTRIBUTION BOARDS

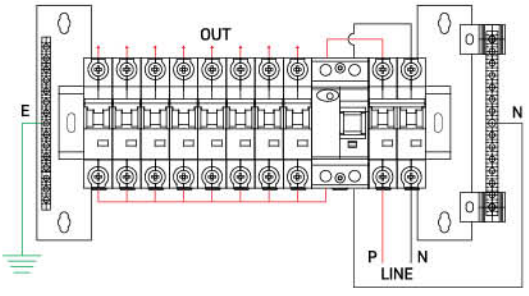
V-Guard Distribution Board is not just another electrical panel in home. It is an innovative discovery from the research and development labs of V-Guard, the name you can count upon for you and your loved one's safety. V-Guard distribution boards are fabricated out of high quality CRCA steel sheet with premium powder coating that helps to withstand optimum conditions and prevent rust formation. It is very compact in size and is manufactured through excellent precision. It is easy to remove the front door assembly which makes the inside wiring very easy. V-Guard Distribution Board is suitable for flush and surface mounting, i.e. it can have universal installation across locations. It comes with built-in high standard 100 A grade phase busbar, earth neutral linkage and inter-connectivity for wires as mains. V-Guard Distribution Board is provided with removable top and bottom gland plates with adequate knock out for easy wiring. The knock outs at appropriate positions make the DBs suitable for wider application, minimizing sharp bends of cable thus lesser operational hamperings. V-Guard Distribution Board is also provided with cement protection sheet and its fasteners are passed through blue passivation for better corrosion resistance. The double key mounting holes make the installation very easy and an optimum choice.

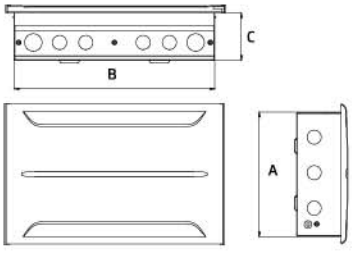
KEY FEATURES

- Fabricated out of high quality CRCA steel sheet
- Double key hole makes mounting easy
- DBs provided with high quality 100 A phase busbar, earth/neutral links and interconnecting wires as standard
- Knock outs at appropriate positions make the DBs suitable for wider application, minimizing sharp bends of cable
- Fasteners are passed through blue passivated for better corrosion resistance
- DBs are suitable for flush and surface mounting
- Provided with removable top and bottom gland plates with adequate knock out for easy wiring
- Front door assembly can be easily removed which makes the inside wiring easy
- High quality powder coating at optimum condition to prevent rust formation

INVIDIA

SPN-DOUBLE DOOR DBs

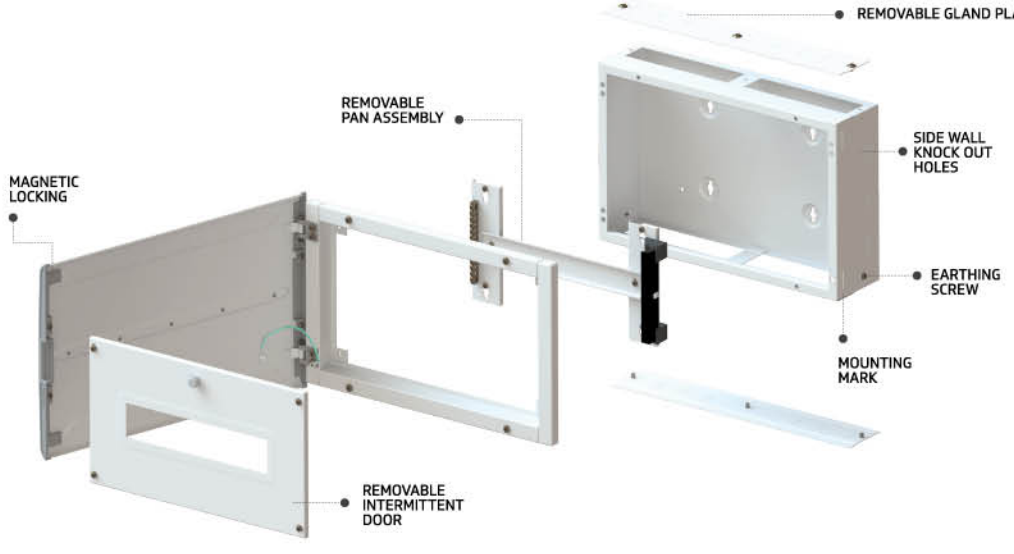




Specification

Variant	:	SPN
Available Ranges	:	8W, 10W, 12W,14W
Version	:	Double door
Available Colours	:	Ral 9016 Traffic White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade Frame/Door : 1.2mm Body : 0.8mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	Powder coated
Operating Temperature	:	-5 To 55°C
Packing	:	Double packing
Cement Protection Sheet	:	PP Sheet provided
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Magnetic
Din Rail Type	:	Pan Assembly
Removable Gland Plate	:	Top & Bottom

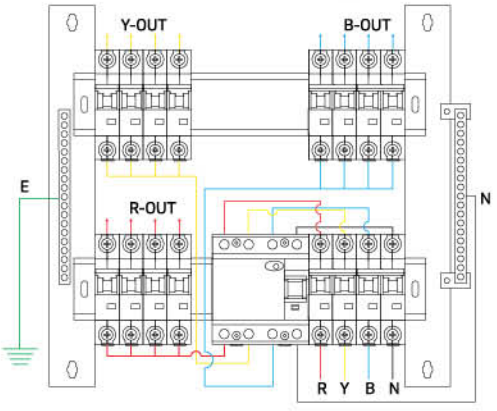
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
INVIDIA SPN DBs	TRAFFIC WHITE	8	DB SPN 8W HORI DD INVIDIA	1504573	22.8	29.5	8.3
		10	DB SPN 10W HORI DD INVIDIA	1504569	22.8	33.1	8.3
		12	DB SPN 12W HORI DD INVIDIA	1504570	22.8	36.7	8.3
		14	DB SPN 14W HORI DD INVIDIA	1504571	22.8	40.3	8.3

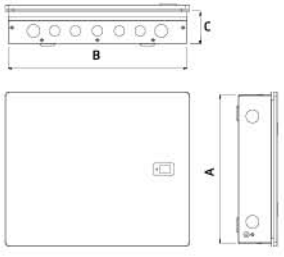


CABLE KIT

1. 6sq mm N-Cable
2. Dummy cap
3. 100A Busbar
4. MCB identification labels
5. Cable tie
6. Screws

TPN-DOUBLE DOOR DBs

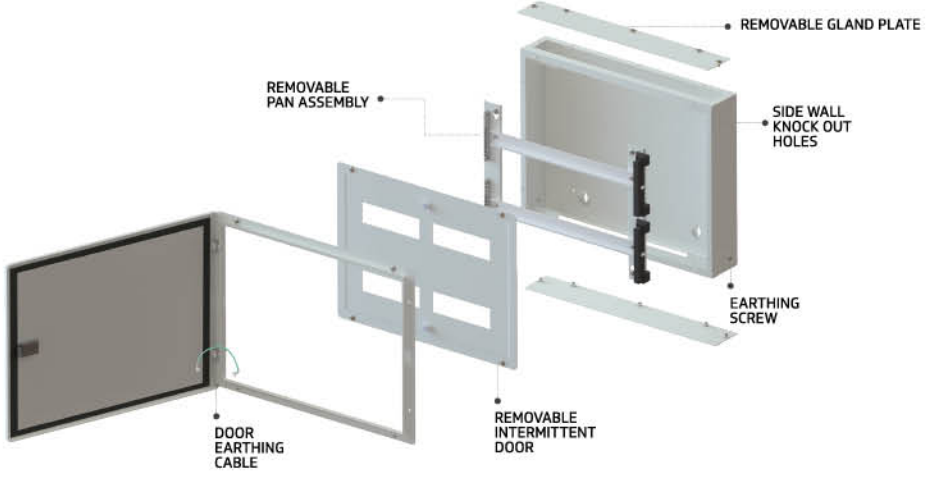


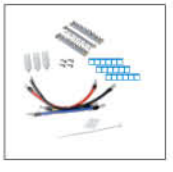


Specification

Variant	:	TPN
Available Ranges	:	4W, 6W, 8W
Version	:	Double door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	Powder coated
Operating Temperature	:	-5 To 55˚C
Packing	:	Double packing
Cement Protection Sheet	:	PP Sheet provided
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Pan Assembly
Removable Gland Plate	:	Top & Bottom

CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
INVIDIA TPN DBs	SIGNAL WHITE	4	DB TPN 4W HORI DD INVIDIA	1504654	37	41.1	8.3
		6	DB TPN 6W HORI DD INVIDIA	1504655	37	44.7	8.3
		8	DB TPN 8W HORI DD INVIDIA	1504656	37	48.3	8.3





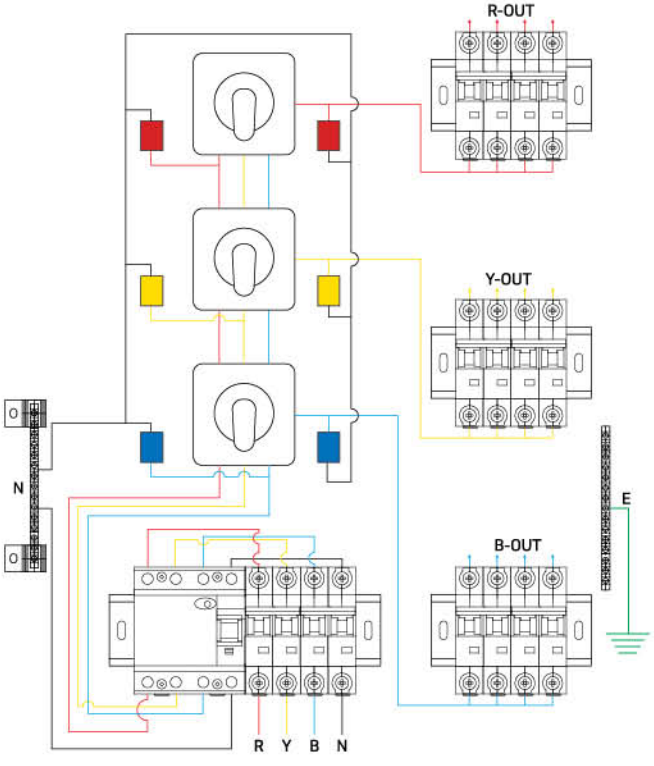
CABLE KIT

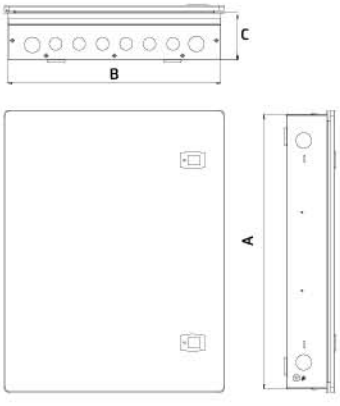
1. 10sq mm R,Y,B,N-Cable
2. Dummy cap
3. 100A Busbar
4. MCB identification labels
5. Cable tie
6. Screws

PHASE SELECTOR VERTICAL DBs

Specification

Variant	:	Phase Selector Vertical
Available Ranges	:	4W, 6W, 8W
Available Ratings	:	40A, 63A
Version	:	Double door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1.2mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	Powder coated
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	PP Sheet provided
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



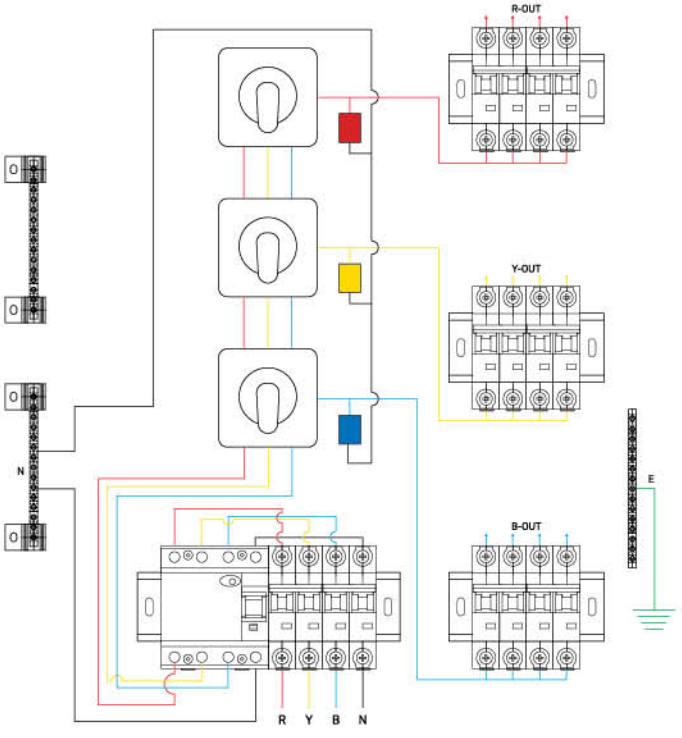


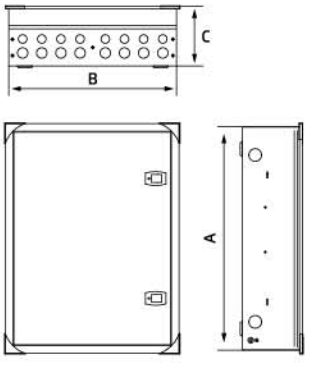
CATEGORY	COLOR	RATING	NO. OF WAYS /IC	MODEL	SAP CODE	DIMENSIONS IN CM		
						A (HEIGHT)	B (WIDTH)	C (DEPTH)
PHASE SELECTOR	SIGNAL WHITE	40A	4/8	DB PH SEL 4W 40A V DD INVIDIA	1504647	56	39.9	8.4
			6/8	DB PH SEL 6W 40A V DD INVIDIA	1504649	56	43.5	8.4
			8/8	DB PH SEL 8W 40A V DD INVIDIA	1504651	56	47.1	8.4
		63A	4/8	DB PH SEL 4W 63A V DD INVIDIA	1504648	56	39.9	9.7
			6/8	DB PH SEL 6W 63A V DD INVIDIA	1504650	56	43.5	9.7
			8/8	DB PH SEL 8W 63A V DD INVIDIA	1504652	56	47.1	9.7

PHASE SELECTOR VERTICAL DBs

Specification

Variant	:	Phase Selector Vertical
Available Ranges	:	4W, 6W, 8W, 12W
Available Ratings	:	40A, 63A
Version	:	Double door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1.2mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	Powder coated
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



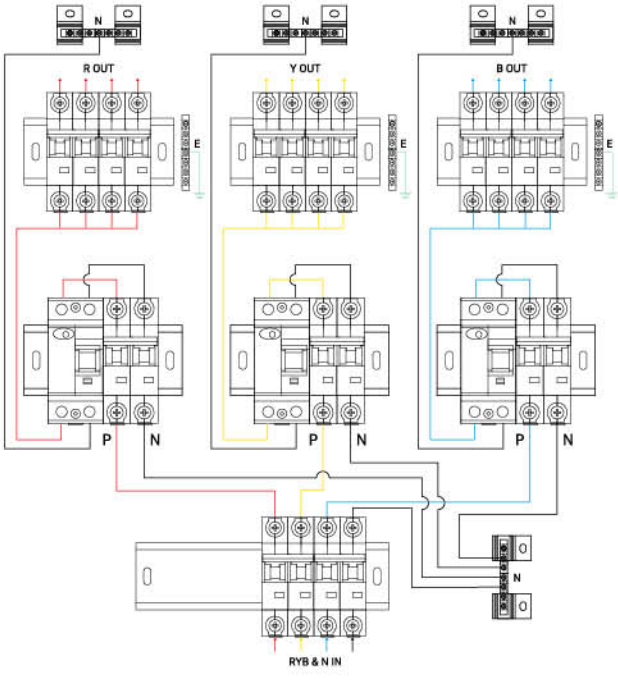


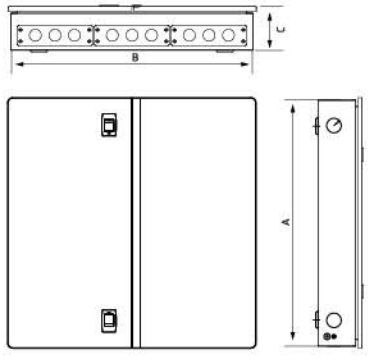
CATEGORY	COLOR	RATING	NO. OF WAYS /IC	MODEL	SAP CODE	DIMENSIONS IN CM		
						A (HEIGHT)	B (WIDTH)	C (DEPTH)
PHASE SELECTOR	SIGNAL WHITE	40A	4/8	DB PH SEL 4W 40A V DD GRPL03	1503789	56	42	15
			6/8	DB PH SEL 6W 40A V DD GRPL03	1503790	56	45.6	15
			8/8	DB PH SEL 8W 40A V DD GRPL03	1503791	56	49.2	15
		63A	4/8	DB PH SEL 4W 63A V DD GRPL03	1503792	56	42	15
			6/8	DB PH SEL 6W 63A V DD GRPL03	1503793	56	45.6	15
			8/8	DB PH SEL 8W 63A V DD GRPL03	1503794	56	49.2	15
			12/8	DB PH SEL 8W 63A V DD GRPL03	1503974	56	56.4	15

SEVEN SEGMENT DBs

Specification

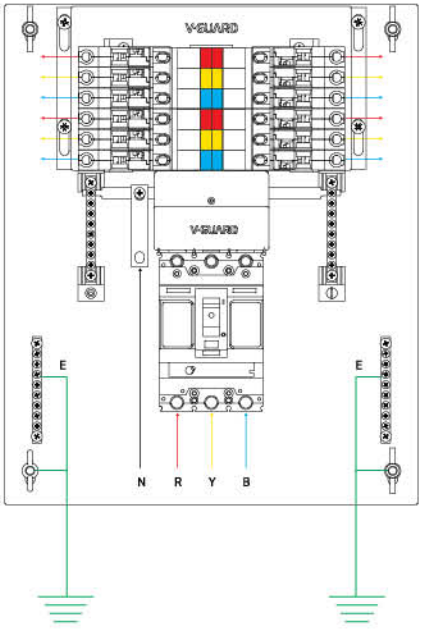
Variant	:	Seven Segment DBs
Available Ranges	:	4W, 6W, 8W
Version	:	Double door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2 mm
		Body : 1.2 mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	Powder coated
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	PP Sheet provided
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding Knob
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom





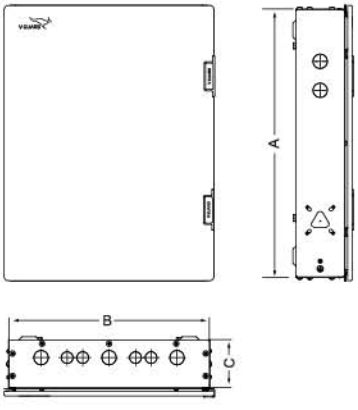
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
INVIDIA SEVEN SEGMENT DB	SIGNAL WHITE	4	DB 7 SEG 4W 4/8 V DD INVIDIA	1504904	54.2	42.5	8.5
		6	DB 7 SEG 6W 4/8 V DD INVIDIA	1504905	54.2	53.3	8.5
		8	DB 7 SEG 8W 4/8 V DD INVIDIA	1504906	54.2	64.1	8.5

VTPN-DOUBLE DOOR DBs (MCCB INCOMER 160A)

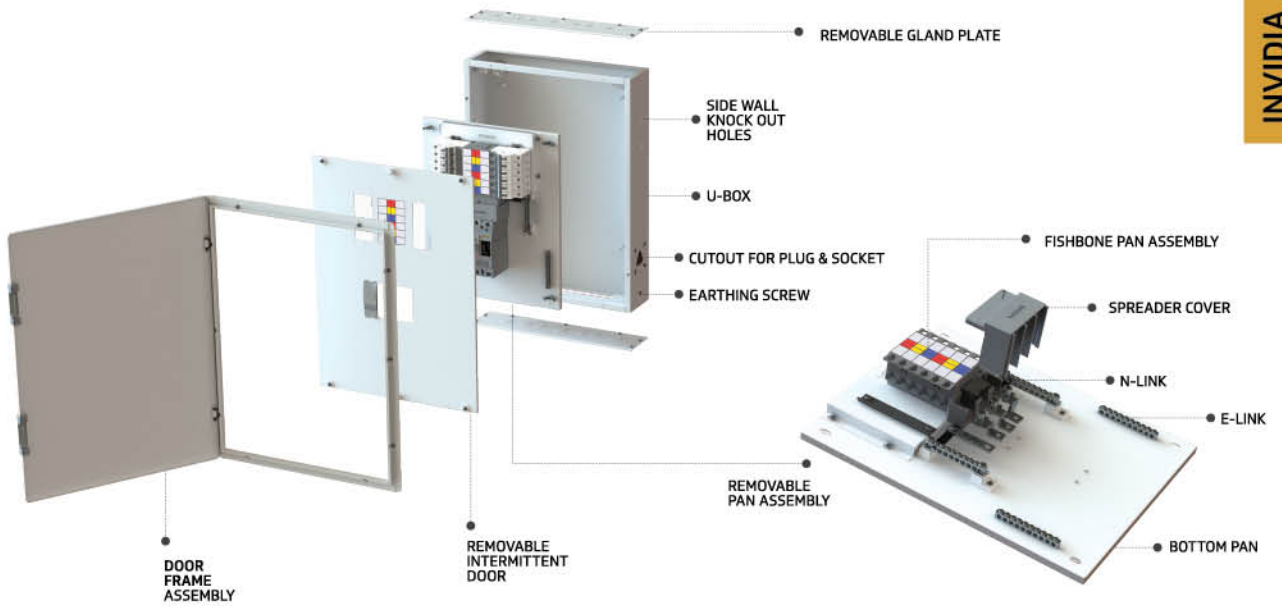


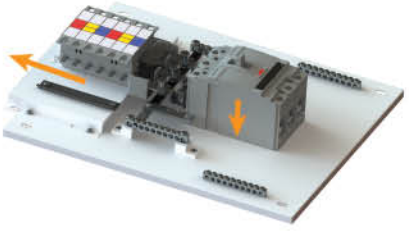
Specification

Variant	:	VTPN
Incomer	:	MCCB 3 pole/MCCB 4 pole
Rated Current	:	160A
Available Ranges	:	4W, 6W, 8W, 12W
Reference	:	IS 13032:1991 BS5486:1986
Version	:	Double door
Available Colours	:	Ral 9003 Signal White mat
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1.2mm
Busbar Rated Current	:	160A
Rated Voltage	:	240/415V -50 Hz
Degree of Protection	:	IP-43
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55°C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (10-12µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating (3-7µ)
Locking Type	:	Magnetic
Din Rail Type	:	Pan Assembly



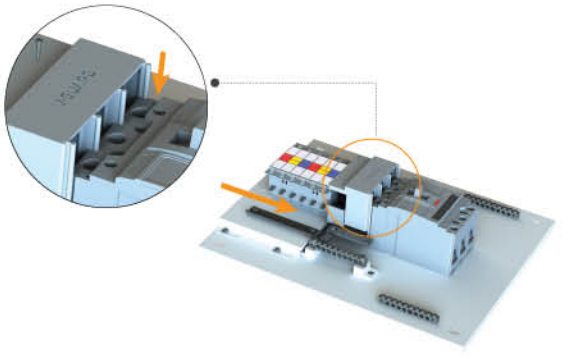
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
VTPN MCCB INCOMER DB	WHITE MAT	4	DB VTPN 4W 160A V DD MCCB IC INVIDIA	3000497	60	45	11
		6	DB VTPN 6W 160A V DD MCCB IC INVIDIA	3000495	65.4	45	11
		8	DB VTPN 8W 160A V DD MCCB IC INVIDIA	3000491	70.8	45	11
		12	DB VTPN 12W 160A V DD MCCB IC INVIDIA	3000650	81.6	45	11





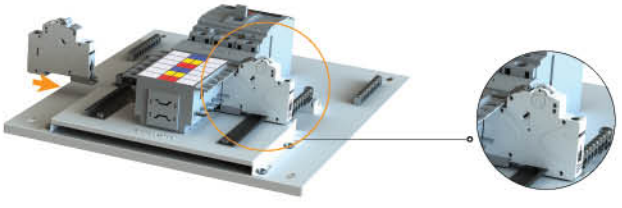
Take the pan Assembly, remove the spreader cover provided in "fish bone spreader link set". And loosen the screw of Fishbone spreader link pan assembly and sliding to the top side by without removing the screws and fix the same.

Fix the MCCB on the bottom pan, as the outgoing terminal facing the RYB spreader links.(four mounting screws are provided along with MCCB)



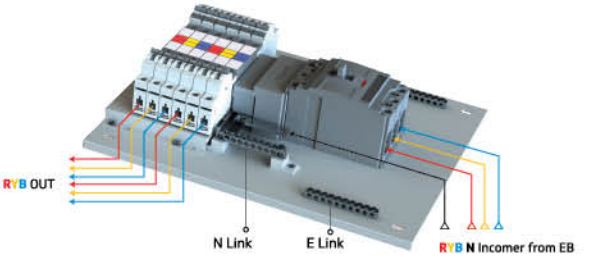
Slide down the Fish bone pan assembly by locating the Allen bolt that fixed previously (step 4) to the MCCB out going terminal slots. And tighten the screws properly to the MCCB.

Fix the spreader cover back to the position by locating the slot provided in MCCBs.



Fix the selected MCB to the Fishbone Spreader links by facing the incomer side of MCB(Terminal which holds Dinclip). And ensure the following points,

- MCB are properly align as per RYB indication given.
- MCB should be inserted to the spreader link terminals properly and covering the terminals maximum.
- Din rail should be properly engaged with the MCB. We can adjust the same by 2-4 mm if required.

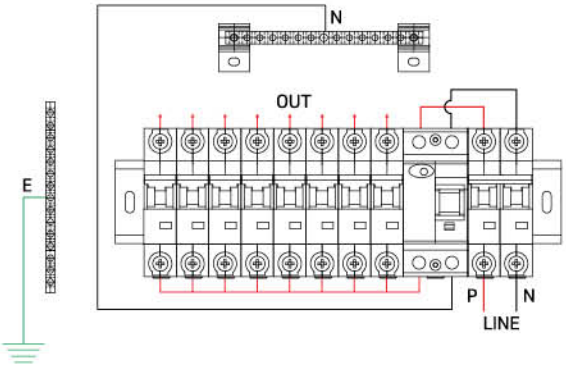


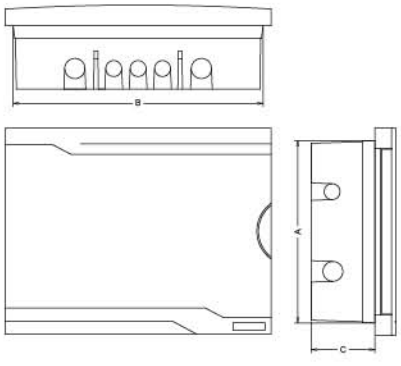
Complete the assembly as shown and connect the incoming and outgoing cables as required in convenient location (Either fixing the pan assembly back to the U box or outside the box)

SPN ACRYLIC DOOR DBs

Specification

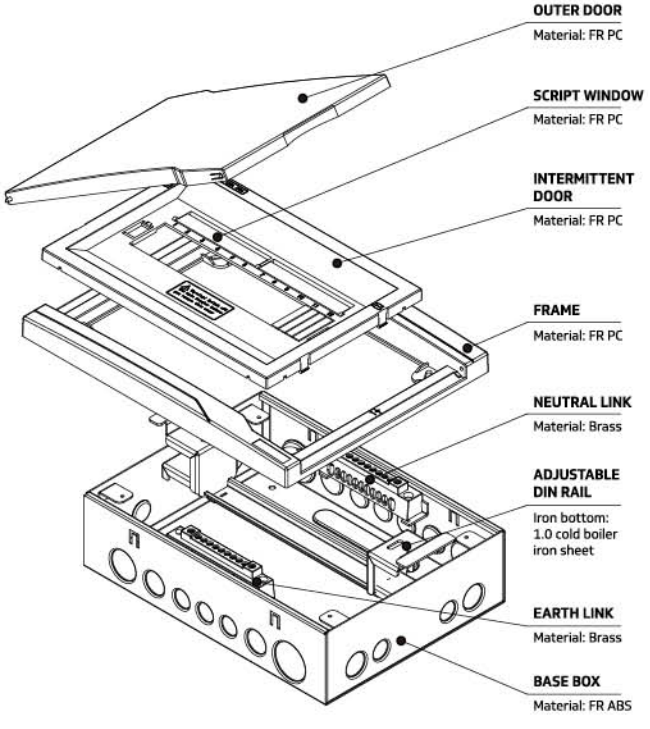
Variant	:	SPN
Available Ranges	:	4/6W, 7/9W, 10/12W, 14/16W & 17/19W
Version	:	Double door
Available Colours	:	White + Grey
Mounting	:	Flush and surface
Material	:	Base Box - ABS
		Frame - Polycarbonate
		Intermittent Door - Polycarbonate
		Transparent Door - Polycarbonate
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Nil
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Operating Temperature	:	-5 To 55˚C
Packing	:	Double packing
Din Rail	:	Powder coated
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Yellow passivation
N Bar & E Bar	:	Brass material
Locking Type	:	Self locking
Din Rail Type	:	Adjustable



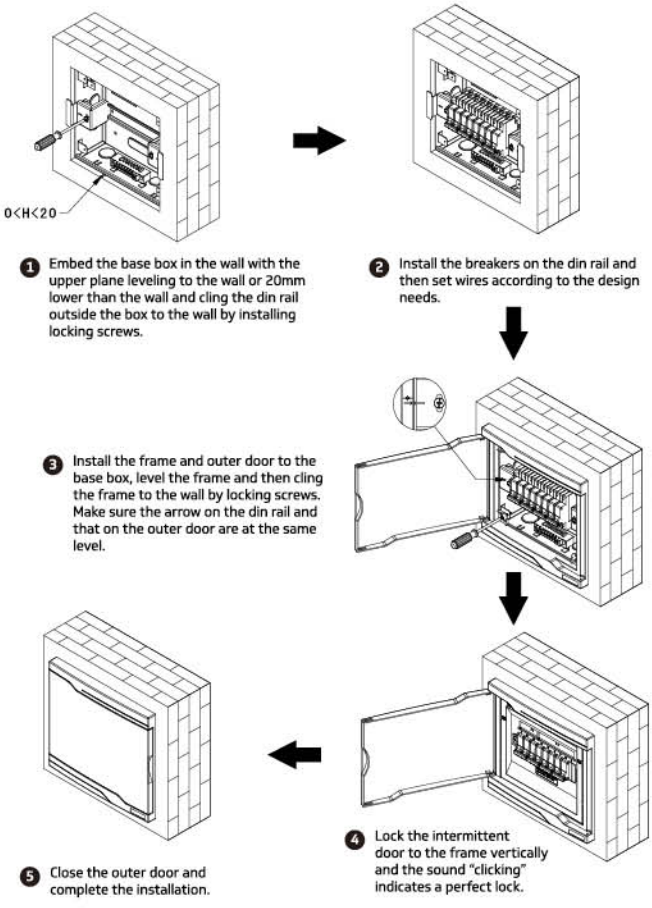


CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN INVIDIA FR AD DB	WHITE + GREY	4/6	DB SPN 4/6W HORI FR AD INVIDIA	1505220	23.0	20.6	8.0
		7/9	DB SPN 7/9W HORI FR AD INVIDIA	1505221	23.0	26.0	8.0
		10/12	DB SPN 10/12W HORI FR AD INVIDIA	1505222	23.0	31.4	8.0
		14/16	DB SPN 14/16W HORI FR AD INVIDIA	1505223	23.0	38.6	8.0
		17/19	DB SPN 17/19W HORI FR AD INVIDIA	1505224	23.0	44.0	8.0

Diagram of FR AD INVIDIA Series Distribution Boxes



FR AD INVIDIA Series Distribution Boxes Installation Instructions



1. Embed the base box in the wall with the upper plane leveling to the wall or 20mm lower than the wall and cling the din rail outside the box to the wall by installing locking screws.
2. Install the breakers on the din rail and then set wires according to the design needs.
3. Install the frame and outer door to the base box, level the frame and then cling the frame to the wall by locking screws. Make sure the arrow on the din rail and that on the outer door are at the same level.
4. Lock the intermittent door to the frame vertically and the sound "clicking" indicates a perfect lock.
5. Close the outer door and complete the installation.

SWITCH FUSE UNIT

V-guard Rewirable switch fuse units are fabricated out of high quality CRCA steel sheets with high quality powder coating at optimum condition to adhere to the defined safety standards and to prevent rust formation. Units are designed for the surface mounting and it offered the high conductivity and longer functional life. Rubber covered/Knock outs at appropriate positions make the units suitable for minimizing sharp bends of cables.

AVAILABLE MODELS

Category	Rating (A)	Model	Code
DP	16A	SFU 16A 240V DP INVIDIA	1505951
	32A	SFU 32A 240V DP INVIDIA	1505949
TPN	32A	SFU 32A 415V TPN INVIDIA	3001013
	63A	SFU 63A 415V TPN INVIDIA	3001012
	100A	SFU 100A 415V TPN INVIDIA	3001011

INSTALLATION

- Remove all the packing materials, if any.
- Select suitable size of Cu wires/cable /Busbar along with appropriate Cu lugs as per data given below.
- Ensure tightness of fasteners.
- Do not force handle to 'ON' when cover is open and do not open the cover when switch is 'ON'.

MAINTENANCE

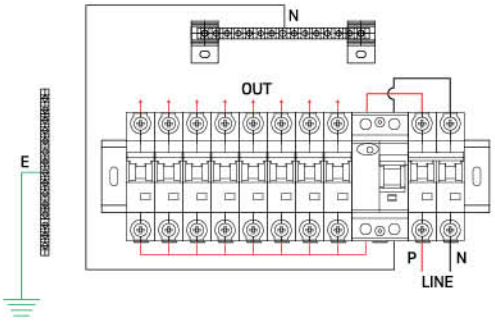
- Contact must be cleaned.
- Connections should be periodically checked for tightness.
- Moving parts should be lubricated at regular intervals.

WIRE SELECTION CHART

Selection of Copper Wire	
Current Rating (A)	Conductor Size in mm^2
16A	2.5
32A	6
63A	16
100A	25

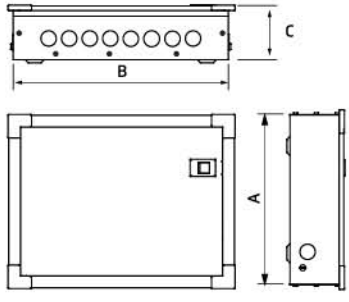
ELEGNA

SPN-DOUBLE DOOR DBs



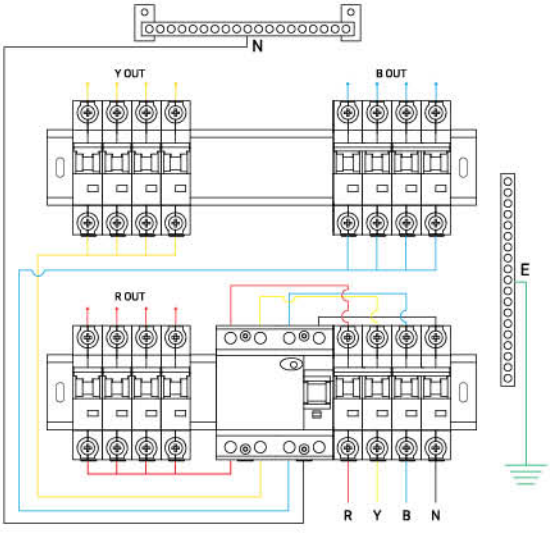
Specification

Variant	:	SPN
Available Ranges	:	4W, 6W, 8W, 10W, 12W, 16W
Version	:	Double door
Available Colours	:	Ivory & Grey
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Double packing
Cement Protection Sheet	:	PP Sheet provided
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



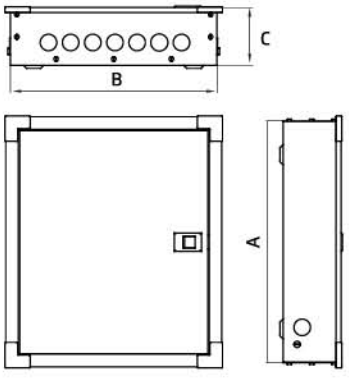
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN DOUBLE DOOR	GREY/ IVORY	4	DB SPN 4W HORI DD GRPL01 / IVPL01 / GRVE01	1501010 / 1501633 / 1503985	22.5	13.8	9
		6	DB SPN 6W HORI DD GRPL01 / IVPL01 / GRVE01	1501011 / 1501446 / 1503986	22.5	17.8	9
		8	DB SPN 8W HORI DD GRPL01 / IVPL01 / GRVE01	1500734 / 1500729 / 1503987	22.5	21.4	9
		10	DB SPN 10W HORI DD GRPL01 / IVPL01 / GRVE01	1504737 / 1504738 / 1505276	22.5	25	9
		12	DB SPN 12W HORI DD GRPL01 / IVPL01 / GRVE01	1500741 / 1500737 / 1503988	22.5	28.6	9
		16	DB SPN 16W HORI DD GRPL01 / IVPL01 / GRVE01	1500745 / 1501632 / 1503989	22.5	35.8	9

TPN-DOUBLE DOOR DBs



Specification

Variant	:	TPN
Available Ranges	:	4W, 6W, 8W, 12W
Version	:	Double door
Available Colours	:	Grey/Ivory
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Double packing
Cement Protection Sheet	:	PP Sheet provided
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding type
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom

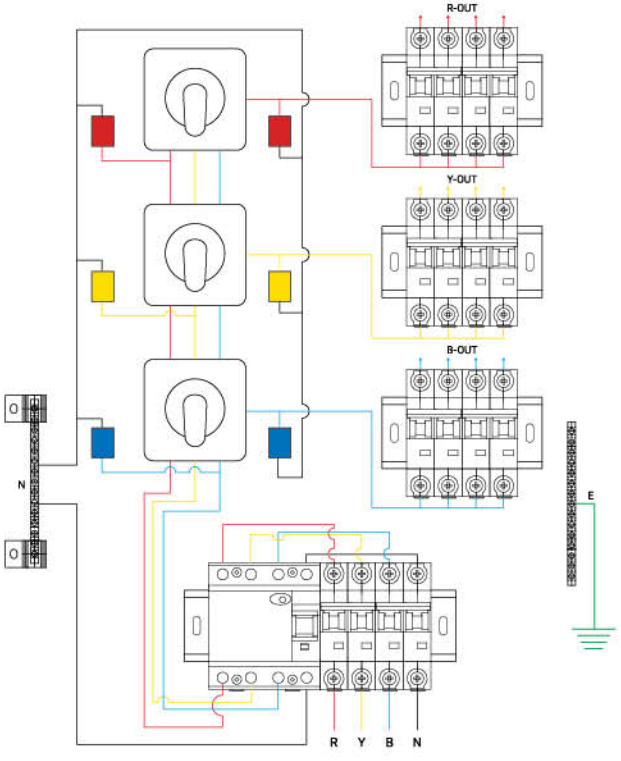


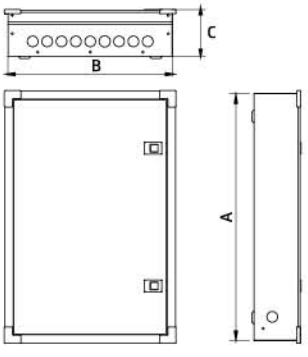
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
TPN DOUBLE DOOR	GREY/ IVORY	4	DB TPN 4W HORI DD GRPL01/ IVPL01	1500722/1500718	38.5	32.6	9
		6	DB TPN 6W HORI DD GRPL01/ IVPL01	1500728/1500724	38.5	36.2	9
		8	DB TPN 8W HORI DD GRPL01/ IVPL01	1500736/1500731	38.5	40	9
		12	DB TPN 12W HORI DD GRPL01/ IVPL01	1501012/1501634	44.5	65	9

PHASE SELECTOR VERTICAL DBs

Specification

Variant	:	Phase Selector Vertical
Available Ranges	:	4W, 6W, 8W
Available Ratings	:	40A, 63A
Version	:	Double door
Available Colours	:	Grey Matt
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1.2mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



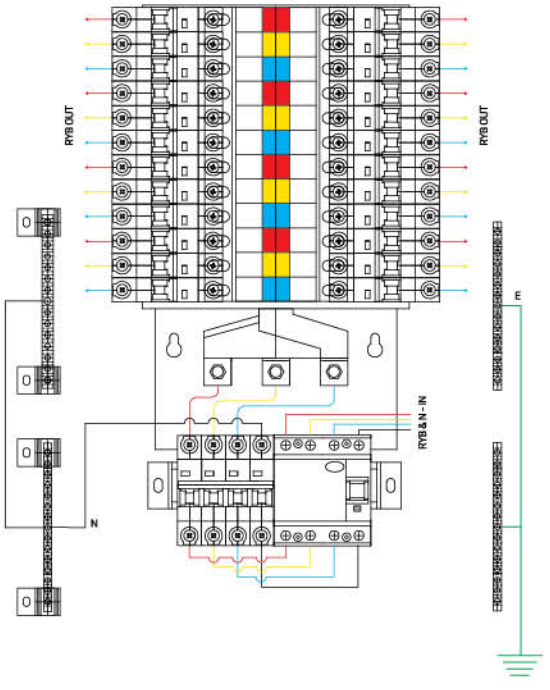


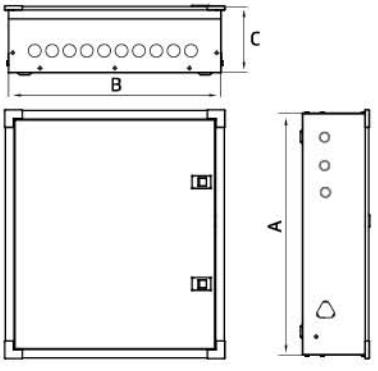
CATEGORY	COLOR	RATING	NO. OF WAYS /IC	MODEL	SAP CODE	DIMENSIONS IN CM		
						A (HEIGHT)	B (WIDTH)	C (DEPTH)
PHASE SELECTOR	GREY MATT	40A	4/8	DB PH SEL 4W 40A V DD GRVE01	1501996	60	40	11.5
			6/8	DB PH SEL 6W 40A V DD GRVE01	1501997	60	43.8	11.5
			8/8	DB PH SEL 8W 40A V DD GRVE01	1501998	60	47.4	11.5
		63A	4/8	DB PH SEL 4W 63A V DD GRVE01	1501999	62	42	13.5
			6/8	DB PH SEL 6W 63A V DD GRVE01	1502000	62	45.6	13.5
			8/8	DB PH SEL 8W 63A V DD GRVE01	1502001	62	49.2	13.5

VTPN-DOUBLE DOOR DBs (MCB/RCCB INCOMER)

Specification

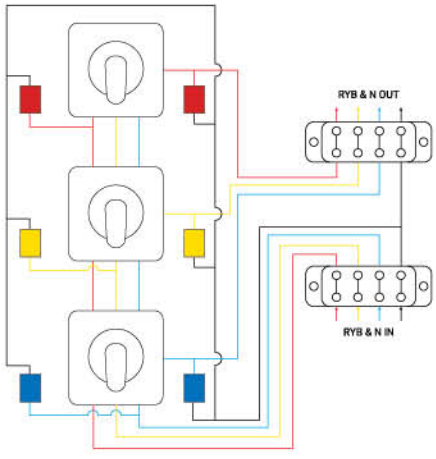
Variant	:	VTPN
Available Ranges	:	4W, 6W, 8W
Version	:	Double door
Available Colours	:	Grey Matt
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1.2mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Pan Assembly
Removable Gland Plate	:	Top & Bottom





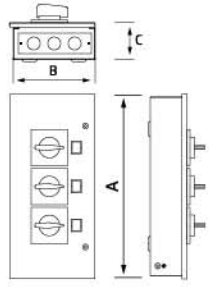
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
VERTICAL TPN	GREY MATT	4	DB TPN 4W V DD GRPL01	1502347	49.2	40	11.5
		6	DB TPN 6W V DD GRPL01	1502348	54.6	40	11.5
		8	DB TPN 8W V DD GRPL01	1502349	60	40	11.5

PHASE SELECTOR ENCLOSURE DBs



Specification

Variant	:	Phase Selector Enclosure
Available Ratings	:	40A, 63A
Version	:	Single door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1 mm
		Body : 1 mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-20
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Nil
Locking Type	:	Sliding /Thumb Screws
Din Rail Type	:	Nil
Removable Gland Plate	:	Top & Bottom



CATEGORY	COLOR	RATING	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
PH SEL ENCLOSURE	SIGNAL WHITE	40A	PH SEL ENCLOSURE 40A GRVE01	1503858	38.6	17.5	8.2
		63A	PH SEL ENCLOSURE 63A GRVE01	1503859	43.7	20	9

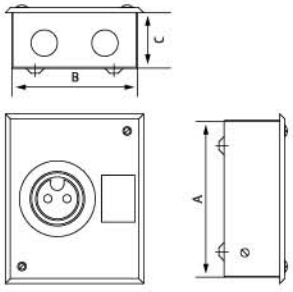
METAL CLAD PLUG & SOCKET

Specification

Variant	:	Metal Clad Plug & Socket
Available Ratings	:	20A, 30A
Version	:	SPN / TPN
Material-body	:	Aluminium
Reference	:	IS 13032:1991 BS5486:1986
Rated Voltage	:	240/415 -50 Hz
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Screws	:	Zinc iron coating/Blue passivation

Rating (A)	Model	Code
20	SPN 20A METAL CLAD PLUG	1503813
20	SPN 20A METAL CLAD SOCKET	1503817
30	TPN 30A METAL CLAD PLUG	1503816
30	TPN 30A METAL CLAD SOCKET	1503820

SPN AC PLUG & SOCKET

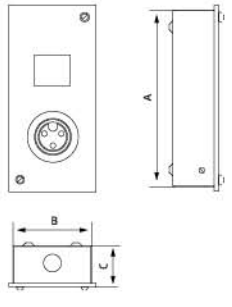


Specification

Variant	:	SPN AC Plug & Socket
Available Ranges	:	20A
Version	:	Single door
Available Colours	:	Grey Matt/ Ivory
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Door : 1mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986 & IS 8623
Wire Set	:	Provided
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-20
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Screws	:	Zinc iron coating/Blue passivation
Locking Type	:	Nil
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom

CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN PLUG & SOCKET	GREY / IVORY	20 A	DB SPN 20A PLUG SOCKET GRPL01 / IVPL01	1500753/ 1500751	15.5	12.4	6
		20 A	DB SPN 20A PLUG SOCKET GRVE01 / IVVE01	1504518 / 1504519	15.5	12.4	6

TPN AC PLUG & SOCKET

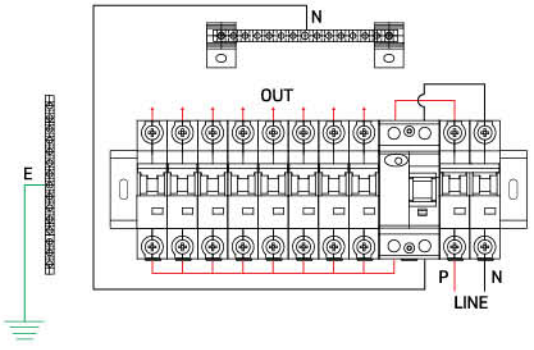


Specification

Variant	:	TPN AC Plug & Socket
Available Ranges	:	20A, 30A
Version	:	Single door
Available Colours	:	Grey Matt/ Ivory
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Door : 1mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986 & IS 8623
Wire Set	:	Provided
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI/Powder coated
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Screws	:	Zinc iron coating/Blue passivation
Locking Type	:	Nil
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom

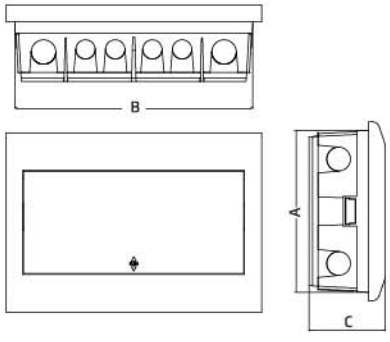
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
TPN PLUG & SOCKET	GREY / IVORY	20 A	DB TPN 20A PLUG SOCKET GRPL01 / IVPL01	1500752/ 1500750	26	11.5	6
		30 A	DB TPN 30A PLUG SOCKET GRVE01 / IVVE01	1500755 / 1500754	26	11.5	6

SPN ACRYLIC DOOR DBs



Specification

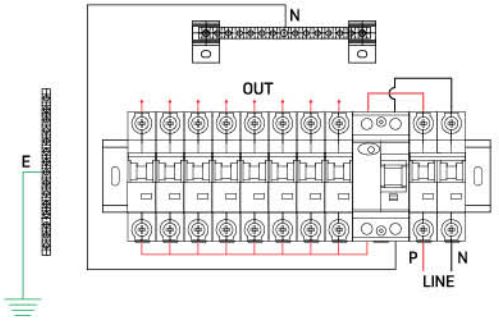
Variant	:	SPN
Available Ranges	:	4/7W, 8/10W, 11/13W, 14/16W & 17/20W
Version	:	Double door
Available Colours	:	White + Grey
Mounting	:	Flush and surface
Material	:	Base Box - ABS
		Frame - Polycarbonate
		Transparent Door - Polycarbonate
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Nil
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Operating Temperature	:	-5 To 55˚C
Packing	:	Double packing
Din Rail	:	Powder coated
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Yellow passivation
N Bar & E Bar	:	Brass material
Locking Type	:	Push locking
Din Rail Type	:	Adjustable



CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN ELEGNA FR AD DB	WHITE + GREY	4/7	DB SPN 4/7W HORI FR AD ELEGNA	1505417	22.0	21.4	8.0
		8/10	DB SPN 8/10W HORI FR AD ELEGNA	1505418	22.0	26.8	8.0
		11/13	DB SPN 11/13W HORI FR AD ELEGNA	1505419	22.0	32.2	8.0
		14/16	DB SPN 14/16W HORI FR AD ELEGNA	1505420	22.0	37.6	8.0
		17/20	DB SPN 17/20W HORI FR AD ELEGNA	1505421	22.0	44.8	8.0

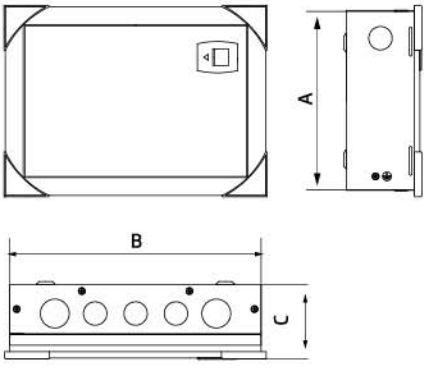
CLASSO

SPN-DOUBLE DOOR DBs



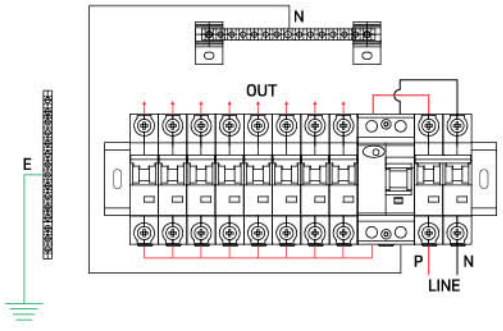
Specification

Variant	:	SPN
Available Ranges	:	4W, 6W, 8W, 10W, 12W, 16W
Version	:	Double door
Available Colours	:	RAL-9003 signal white
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 0.8mm
		Body : 0.8mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Nil
Busbar Rated Current	:	63A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI/Powder coated
Operating Temperature	:	-5 To 55°C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass/Aluminium
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



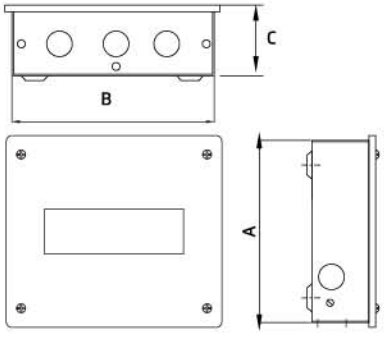
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN DOUBLE DOOR	RAL-9003 SIGNAL WHITE	4	DB SPN 4W HORI DD GRSE01	1505822	20	13.6	8.2
		6	DB SPN 6W HORI DD GRSE01	1505821	20	17.2	8.2
		8	DB SPN 8W HORI DD GRSE01	1505820	20	20.8	8.2
		10	DB SPN 10W HORI DD GRSE01	1505819	20	24.4	8.2
		12	DB SPN 12W HORI DD GRSE01	1505818	20	28	8.2
		16	DB SPN 16W HORI DD GRSE01	1505823	20	35.2	8.2

SPN-SINGLE DOOR DBs



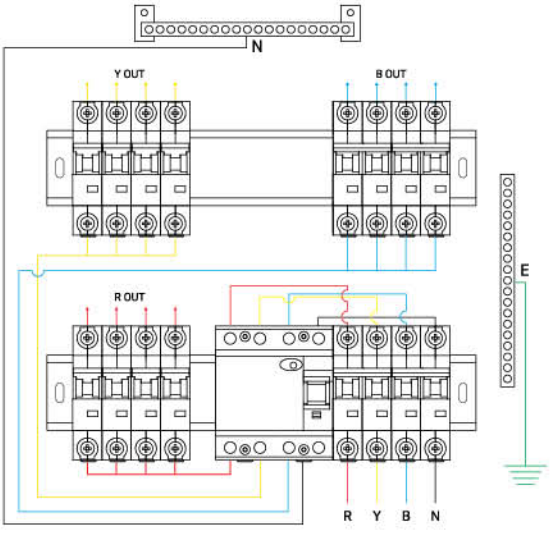
Specification

Variant	:	SPN
Available Ranges	:	4W, 6W, 8W, 12W, 16W
Version	:	Single door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Door : 1mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-20
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Nil
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



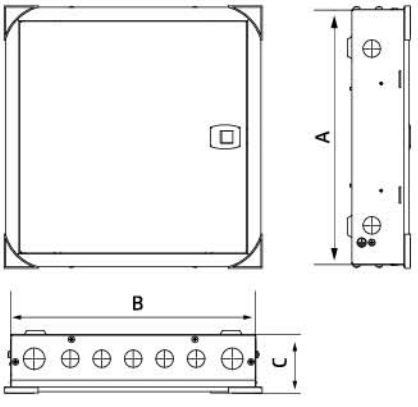
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN SINGLE DOOR	SIGNAL WHITE	4	DB SPN 4W HORI SD GRPL01 / IVPL01	1500720 / 1500717	18.3	13.7	6
		6	DB SPN 6W HORI SD GRPL01 / IVPL01	1500726 / 1500723	18.3	17.1	6
		8	DB SPN 8W HORI SD GRPL01 / IVPL01	1500733 / 1500730	18.3	20.9	6
		12	DB SPN 12W HORI SD GRPL01 / IVPL01	1500740 / 1500738	18.3	28.1	6
		16	DB SPN 16W HORI SD GRPL01 / IVPL01	1500744 / 1500743	18.3	35.3	6

TPN-DOUBLE DOOR DBs



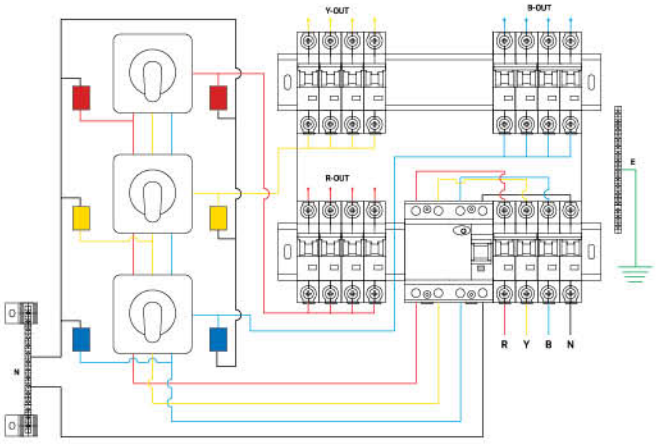
Specification

Variant	:	TPN
Available Ranges	:	4W, 6W, 8W
Version	:	Double door
Available Colours	:	RAL-9003 signal white
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
	Door :	1mm
	Frame :	0.8mm
	Body :	1mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Nil
Busbar Rated Current	:	63A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI/Powder coated
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass/Aluminium
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



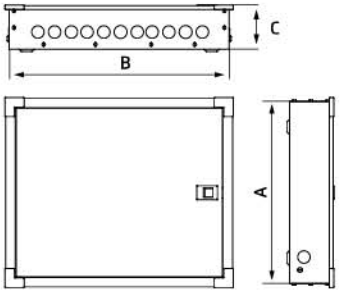
CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
TPN DOUBLE DOOR	RAL-9003 SIGNAL WHITE	4	DB TPN 4W HORI DD GRSE01	1506004	38	33	8.5
		6	DB TPN 6W HORI DD GRSE01	1506003	38	36.6	8.5
		8	DB TPN 8W HORI DD GRSE01	1506002	38	40.2	8.5

PHASE SELECTOR HORIZONTAL DBs



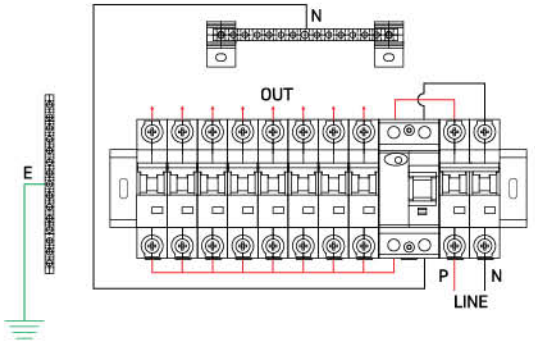
Specification

Variant	:	Phase Selector Horizontal
Available Ranges	:	4W, 6W, 8W
Available Ratings	:	40A, 63A
Version	:	Double door
Available Colours	:	Grey Matt
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Frame/Door : 1.2mm
		Body : 1.2mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Locking Type	:	Sliding
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom



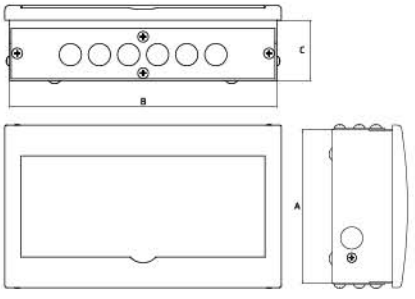
CATEGORY	COLOR	RATING	NO. OF WAYS /IC	MODEL	SAP CODE	DIMENSIONS IN CM		
						A (HEIGHT)	B (WIDTH)	C (DEPTH)
PHASE SELECTOR	GREY MATT	40A	4/8	DB PH SEL 4W 40A HORI DD GRVE01	1503860	42.4	47.8	11
			6/8	DB PH SEL 6W 40A HORI DD GRVE01	1503861	42.4	51.4	11
			8/8	DB PH SEL 8W 40A HORI DD GRVE01	1503862	42.4	55	11
		63A	4/8	DB PH SEL 4W 63A HORI DD GRVE01	1503863	42.4	47.8	13.5
			6/8	DB PH SEL 6W 63A HORI DD GRVE01	1503864	42.4	51.4	13.5
			8/8	DB PH SEL 8W 63A HORI DD GRVE01	1503865	42.4	55	13.5

SPN ACRYLIC DOOR DBs



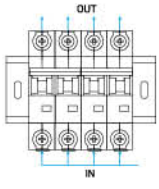
Specification

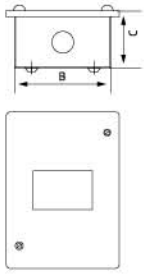
Variant	:	SPN
Available Ranges	:	2/4W, 6/8W, 12/14W, 16/18W
Version	:	Double door
Available Colours	:	Milky White
Mounting	:	Flush and surface
Material	:	Base Box - CRCA-IS 513-D Grade
		Frame - Polycarbonate
		Transparent Door - Polycarbonate
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Busbar Rated Current	:	100A
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-42
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Cement Protection Sheet	:	Nil
Busbar	:	Nickel plated and insulated (5-10µ)
Screws	:	Zinc iron coating/Blue passivation
N Bar & E Bar	:	Brass material- Composition: Cu- 60 To 63%, Zn-35 To 35.5%, Pb- 2.5 To 3.5%, Fe- 0.35 To 4% with nickel plating(5-10µ)
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom

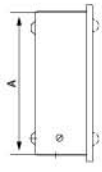


CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
SPN ACRYLIC DOOR DBs	MILKY WHITE	2/4	DB SPN 2/4W HORI AD GRPL01	1504516	18	13.4	7.1
		6/8	DB SPN 6/8W HORI AD GRPL01	1504527	18	20.6	7.1
		12/14	DB SPN 12/14W HORI AD GRPL01	1504525	18	31.2	7.1
		16/18	DB SPN 16/18W HORI AD GRPL01	1504514	18	38.6	7.1

MCB ENCLOSURES







Specification

Variant	:	MCB Enclosures
Available Ranges	:	2W, 4W
Version	:	Single door
Available Colours	:	Ral 9003 Signal White
Mounting	:	Flush and surface
Material-body	:	CRCA-IS 513-D Grade
		Door : 1mm
		Body : 1mm
Reference	:	IS 13032:1991 BS5486:1986
Wire Set	:	Provided
Rated Voltage	:	240/415 -50 Hz
Degree of Protection	:	IP-20
Dielectric Strength	:	2.50kv
Type of Coating	:	Powder coating (40-90µ)
Din Rail	:	GI
Operating Temperature	:	-5 To 55˚C
Packing	:	Single packing
Screws	:	Zinc iron coating/Blue passivation
Locking Type	:	Nil
Din Rail Type	:	Normal
Removable Gland Plate	:	Top & Bottom

CATEGORY	COLOR	NO. OF WAYS	MODEL	SAP CODE	DIMENSIONS IN CM		
					A (HEIGHT)	B (WIDTH)	C (DEPTH)
ENCLOSURE	SIGNAL WHITE	2	DB MCB ENCLOSURE 2W GRPL01 / IVPL01	1500758 / 1500759	17	8.3	6
		4	DB MCB ENCLOSURE 4W GRPL01 / IVPL01	1500756 / 1500757	17	12	6

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