Lauritz Knudsen
Electrical & Automation



CERTIFIED BY IEC 61439-1&2 ASTA & DEKRA

OFF-THE-SHELF SOLUTION
FOR POWER DISTRIBUTION

# SUB-MAIN DISTRIBUTION BOARD

ENERSYS-S

# ABOUT US

Lauritz Knudsen Electrical & Automation, formerly known as L&T Switchgear, is a leading player in the electrical industry owing to its 70+ years of strong legacy and commitment to the nation's growth. The brand is dedicated to providing a wide range of electrical and automation products and solutions to vital sectors of the economy, including industries, utilities, infrastructure, buildings, and agriculture. Our extensive portfolio includes low-voltage and medium-voltage switchgear, automation solutions, tailored software, and services.

With manufacturing operations in Ahmednagar, Vadodara, and Coimbatore, we adhere to global standards of excellence. Our operations are supported by well-equipped, in-house design and development centers, as well as tooling facilities, ensuring precision in manufacturing.

We proudly operate six Switchgear Training Centers (STCs) across Pune, Lucknow, Coonoor, Vadodara, Delhi, and Kolkata. These centers offer tailor-made classroom courses and lab learning experiences for technicians, customers, engineers, professionals, and students.

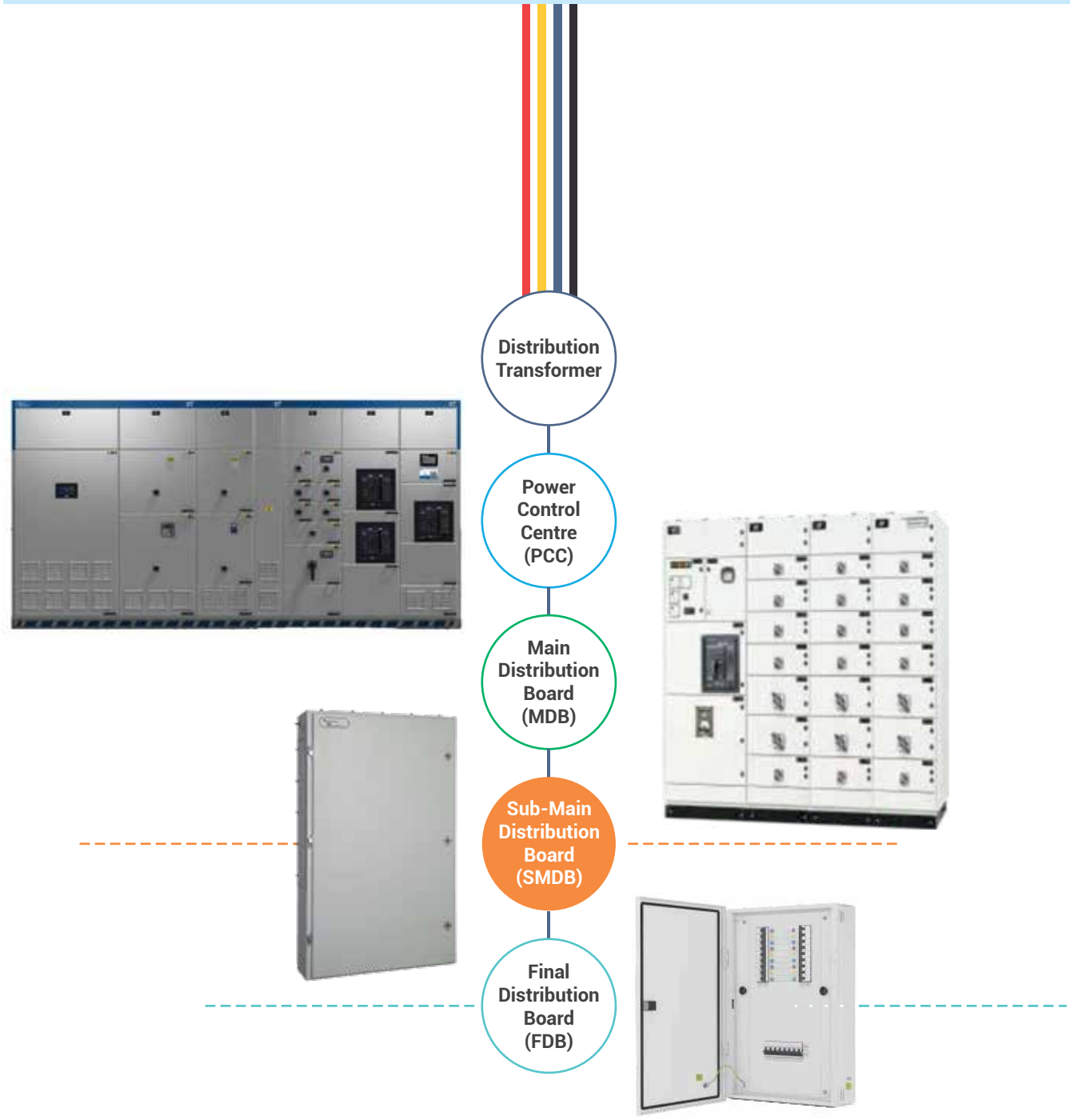
With a deep national presence and one of the largest electrical distribution networks, comprising over 1500 partners across the country, we are committed to driving excellence and delivering superior products and solutions that power India's growth journey.

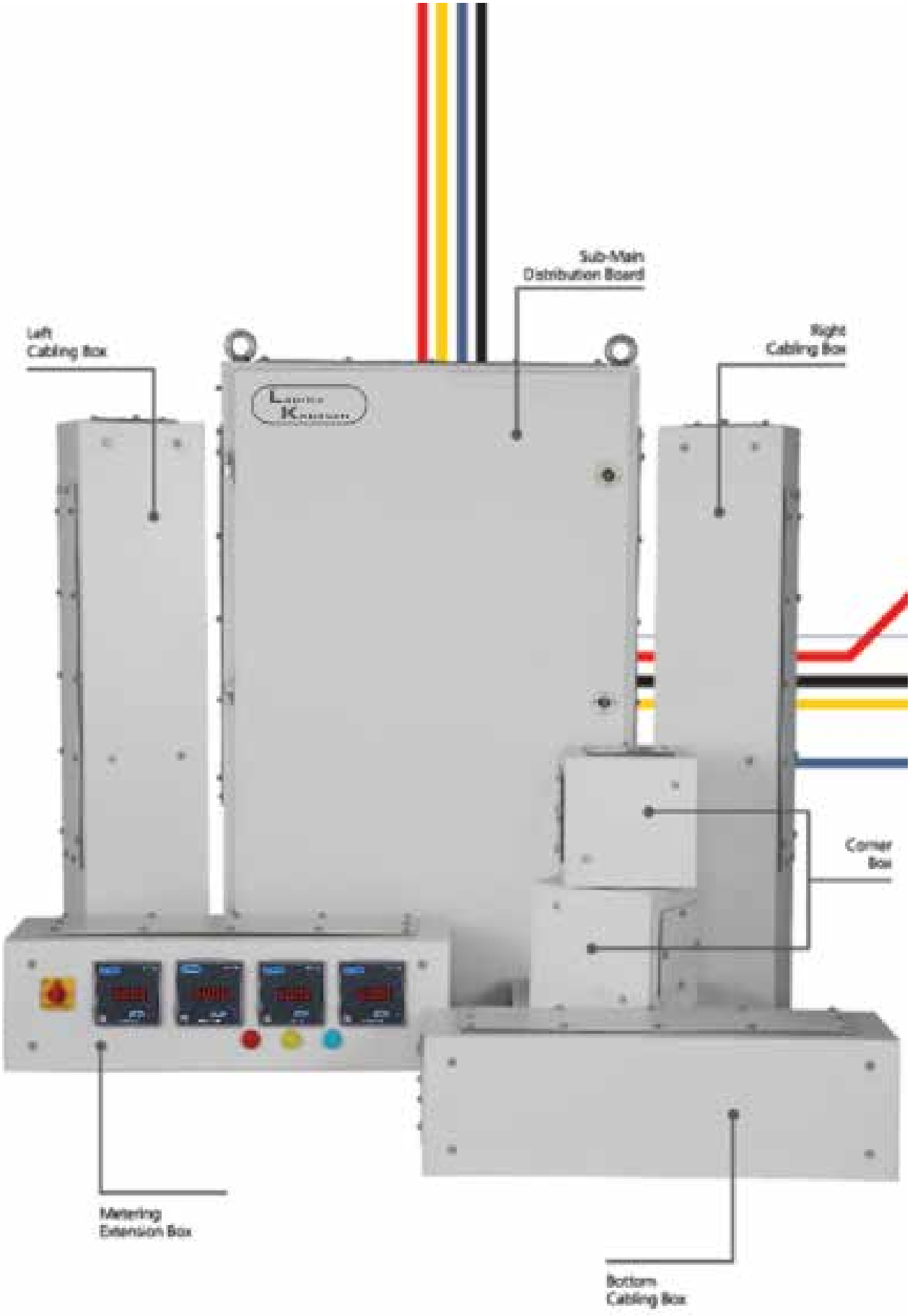

SMDB with all accessories

Double Door Construction with Protective Shield

400A Incomer MCCB & 100A outgoing MCCBs (8 nos.)

**Lauritz Knudsen Electrical and automation** (E&A) is a market leader for electrical distribution, monitoring and control solutions in the low voltage category. Popular among customers as **Lauritz Knudsen Electrical and automation** Switchgear, E&A offers a wide range of low and medium voltage switchgear, motor starters, electrical systems, industrial automation, building electrical solutions, energy management solutions, electrical modernization solutions and metering solutions. It products and solutions cater to key sectors of economy like industries, utilities, infrastructure, building and agriculture.E&A's manufacturing operations at Navi Mumbai, Ahmednagar, Vadodara, Coimbatore and Mysuru in India adhere to global practices of excellence and receive support from wellequipped in-house design and development centres as well as tooling facilities that contribute to precision in manufacturing. Discover how E&A's range of Sub-Main Distribution Boards and accessories can add value to your facility or enterprise.




Sub-Main
Distribution Board
Left
Cabling Box
Right
Cabling Box
Corner
Box
Metering
Extension Box
Bottom
Cabling Box

SMDBs finds its applications in various segments with its distinct advantages like redy to use, compact in size and reliability.

Hospitals

Commercial Complexes

Shopping Malls

Educational Institutes

Hotels

| Incomer MCCB rating | Outgoing MCCBs rating |
|---|---|
| 250A | upto 100A |
| 400A | upto 250A Combination of 100A & 250A |
| 630A | upto 250A Combination of 100A & 250A |
| 1000A | Combination of 100A, 250A & 400A |

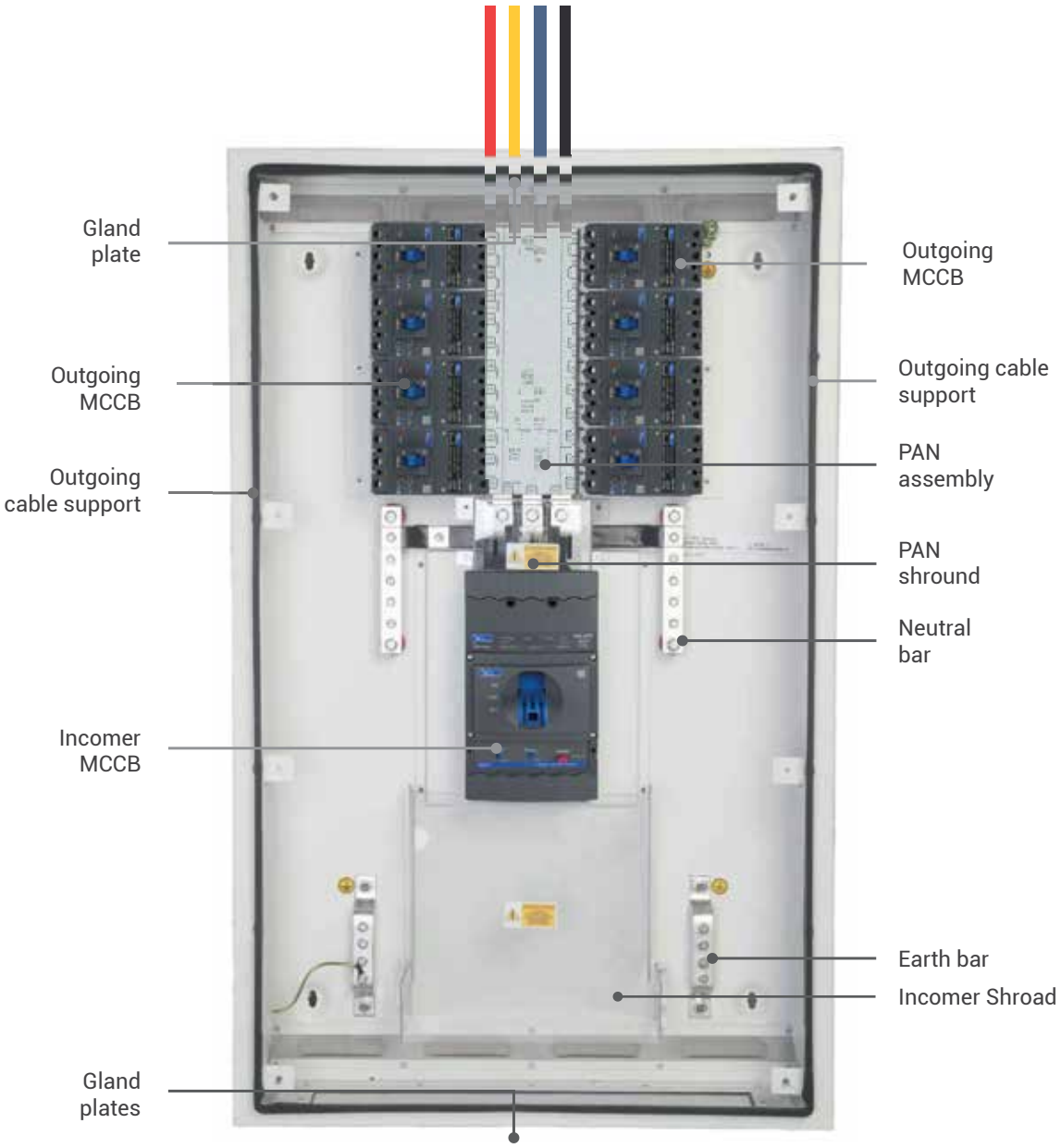
# ENERSYS-S
## Sub-Main Distribution Board

Enersys-S Power Distribution Boards from E&A meet the demands of commercial buildings, educational establishments, hospitals, government buildings, manufacturing facilities and other applications that require safe, reliable and high performance protection of their electrical sub-distribution systems.

Enersys-S is a NABL tested Sub-Main Distribution Board (also known as MCCB panel board) used for power distribution. It has MCCBs as incoming and outgoing switching-cum-protection devices.

It complies with IEC61439-2 and has been designed for easy handling and quick, simple installation. Compact MCCB design ensures maximum cabling area within the enclosures.

Removable top and bottom gland plates are provided for ease of installation and cabling. Removable gland plates allow fitting of additional items such as bottom cabling boxes and metering extension boxes.




SMDB after removing shield

## Total Safety

### Moulded busbar housing

The busbar assembly is fully enclosed behind the moulded busbar housing, providing increased safety. A shroud at the incoming side prevents accidental contact with live parts.

### Protection from risk of shock

Separate earthing for enclosure ensures operator safety

### IP 20 protection

The unique construction of the enclosure offers IP 20 protection even after opening the door. This prevents accidental contact with the live parts.

## Convenience

### Off-the-shelf assembly

Enersys-S is a ready-to-use solution for any power distribution need.

### Ease of termination

Enersys-S facilitates separate earth and neutral bars on both the sides with the required number of cable termination points.

### Range of accessories

A range of accessories, such as metering and cabling boxes can be offered separately providing flexibility to customers.

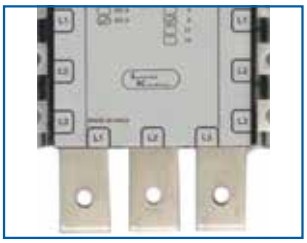
## Enhanced Reliability

### Higher ingress protection

Enersys-S is designed with Ingress protection of IP 43 which ensures protection against dust, water and pollution.


### Higher conductivity

Tin-plated electrolytic grade copper busbars not only ensure better conductivity but also improve corrosion resistance.



### Higher withstand capacity

The robust design of PAN system assures reliable performance even at 36 kA 1s and 20kA 3s fault condition.

## Smart Space Management

### In-built outgoing support

Provision for in-built cable support ensures clutter-free wiring. A cabling box can be added separately, if required.

### Compact solution

Enersys-S saves almost 30% of floor space over conventional panels due to its compact PAN system and MCCBs.

## Global Validation

Our Enersys-S low voltage switchgear system is subjected to extensive design verifications in compliance with IEC 61439, at reputed international third-party laboratories to assure you best-in-class products.


| Constructional characteristics | Enersys-S Verified |
|---|---|
| **Strength of material and parts** | |
| › Resistance to corrosion | ✓ |
| › Thermal stability of enclosures | ✓ |
| › Glow wire test | ✓ |
| › Lifting | ✓ |
| › Marking | ✓ |
| **Degree of protection of assemblies** | ✓ |
| **Clearance and creepage distances** | ✓ |

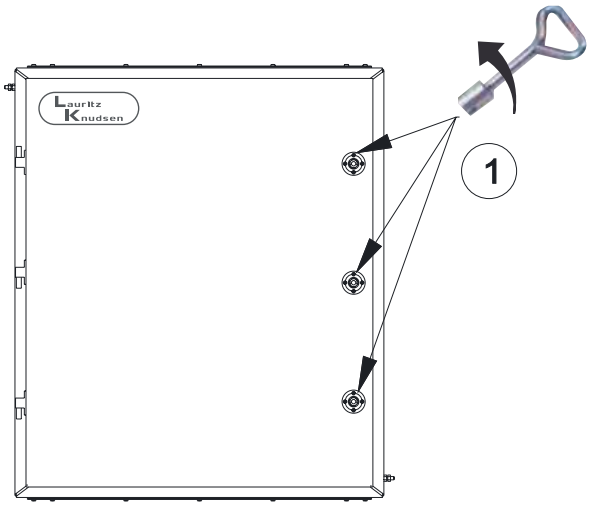
| Performance characteristics | Enersys-S Verified |
|---|---|
| Verification of temperature rise | ✓ |
| **Short circuit withstand test** | |
| › Test at rated short time withstand current (Icw) | ✓ |
| › Test at rated conditional short circuit current (Icc) | ✓ |
| **Dielectric properties** | |
| › Impulse withstand voltage | ✓ |
| › Power frequency withstand voltage | ✓ |

## Technical Details

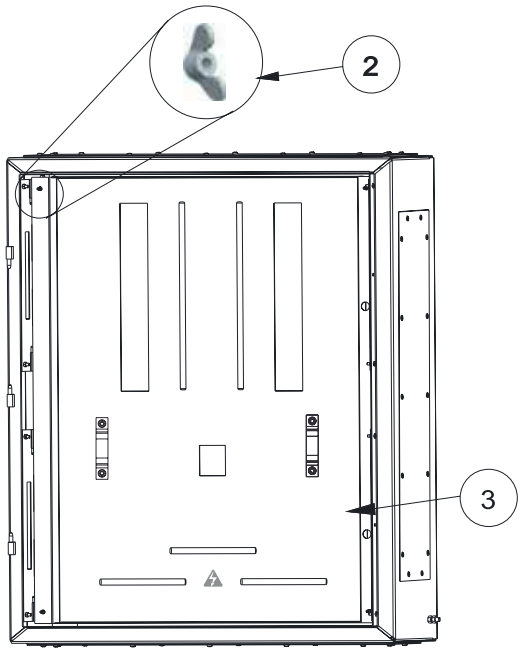
| Attributes | | Specifications |
|---|---|---|
| Busbar ratings (In) | A | 250, 400, 630 |
| Rated operational voltage (Ue) | (Vac | 415 |
| Rated frequency (fn) | (Hz.) | 50 |
| Reference temperature | (°C) | 40 |
| Rated insulated voltage (Ui) | (Vac) | 830 |
| Rated impulse voltage (Uimp) | (kV) | 8 |
| Busbar short circuit withstand strength (Icw) | (kA) | 250A & 400A SMDB-36 KA 1s<br>630A SMDB-50 kA 1s |
| Busbar conditional short circuit rating (Icc) | (kA) | 36 |
| Neutral & earth bar rating | | N: 100% of Ph. |
| Busbar material | | E: 50% of Ph. |
| Type of construction | | Tinned Copper |
| Type of connection | | Form 2 |
| Incomer (IC) & Outgoing (OG) Device | | 3-phase 4-wire with Earthing |
| Incomer MCCB Ratings | (A) | disine MCCB |
| Incomer breaking capacity (Icu) | (kA) | 250A, 400A, 630A |
| | | 36 KA-250A, 400A |
| IC & OG feeder no. of poles | | 36 KA-630A |
| Outgoing feeder - No. of ways | | 3 |
| Applicable standard | | 4, 8, 12 & 16 |
| Application | | IEC 61439-2 |
| Ingress protection rating | | Indoor |
| Mounting | | Wall mounting - Up to 630A |

* Alternative thickness 2mm available on request. ** Other Paint Shade available on request.

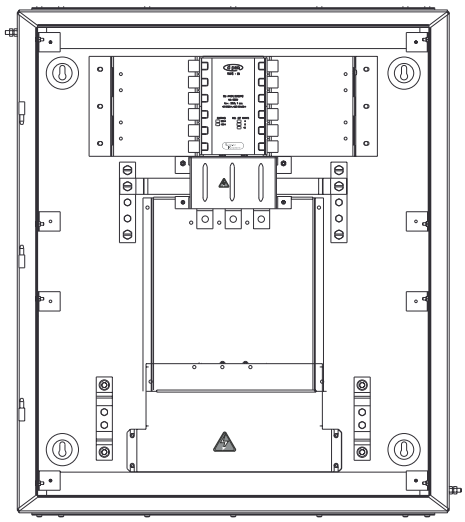
## Installation guidelines for Enersys-S SMDB



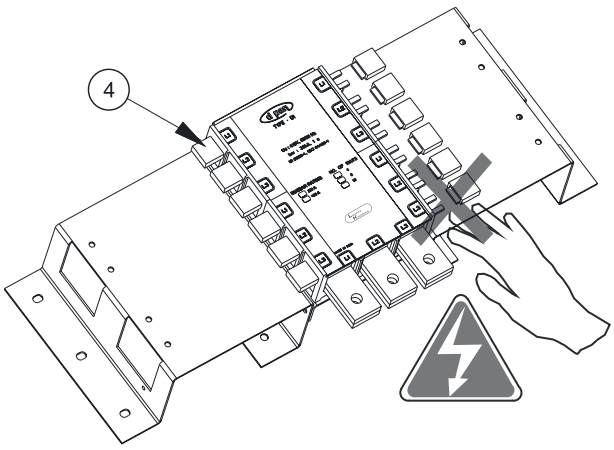

1. Open door lock using lock key




2. Remove wing nut at 4 places
3. Remove cover using handle with care

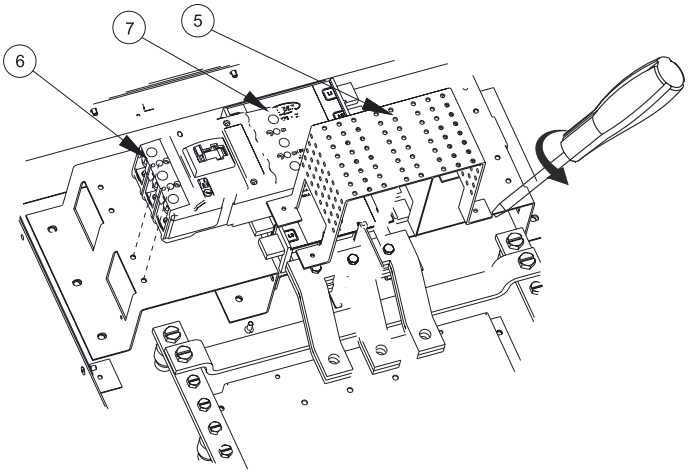


Basic assembly of SMDB

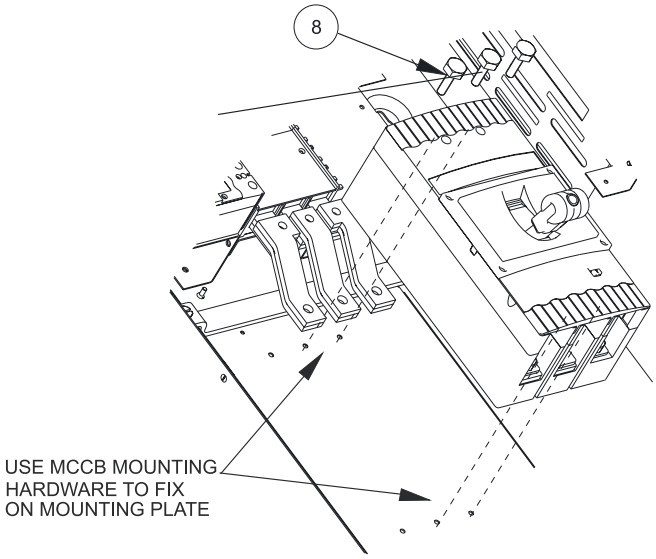



4.Remove terminal caps for mounting MCCBS
(Don't remove terminal caps on unused phase bars)
Do not leave it exposed

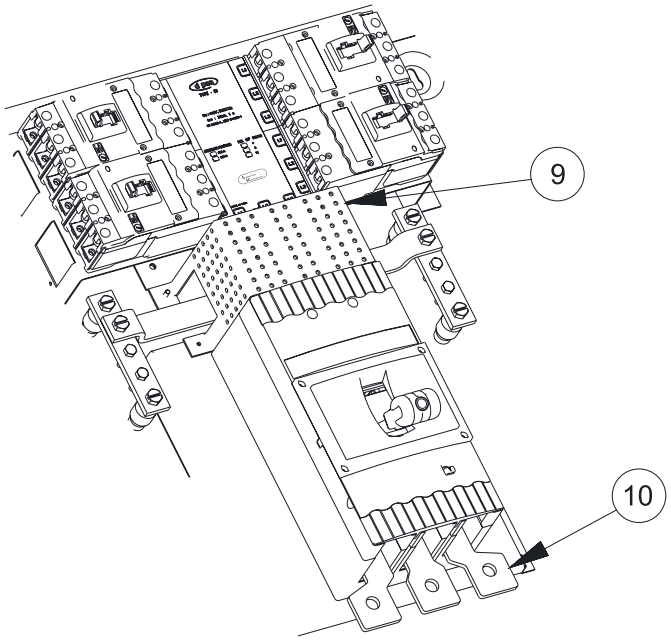
Keep fingers away from moving mechanical parts of the mechanism as this may cause serious injury



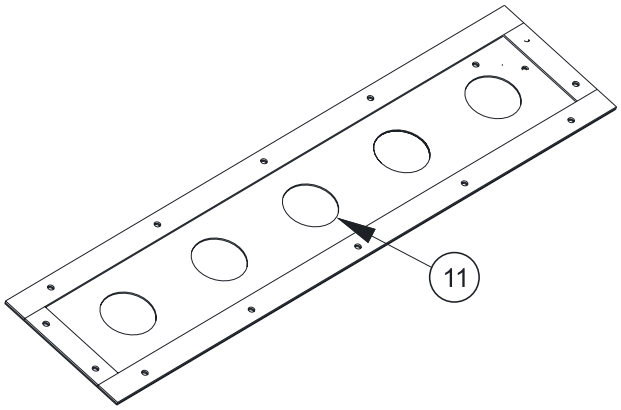

5. Remove both shrouds
6. Mount outgoing MCCB using captive hardware as shown
7. Assemble the outgoing MCCBs




8. Fix Incomer MCCB on mounting plate

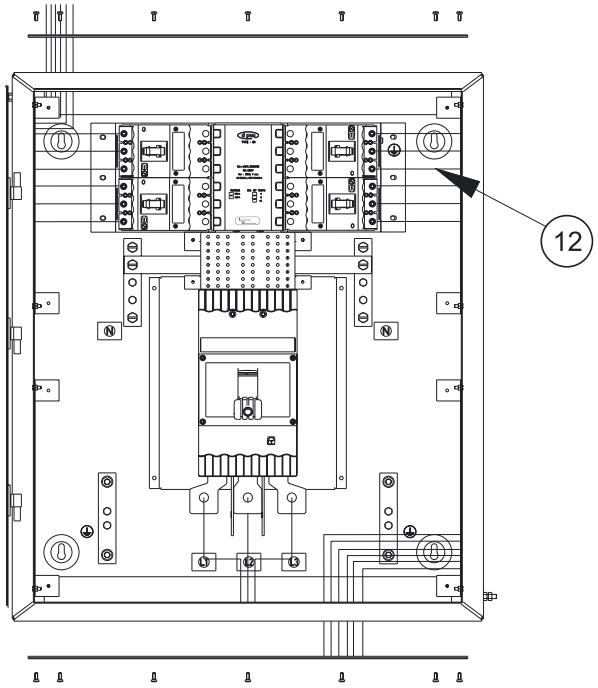



9. Assemble the safety shroud again
10. Assemble the incomer MCCB spreader link for cable termination




11. Punch holes only of required sizes and Numbers on the gland plate for cable entry

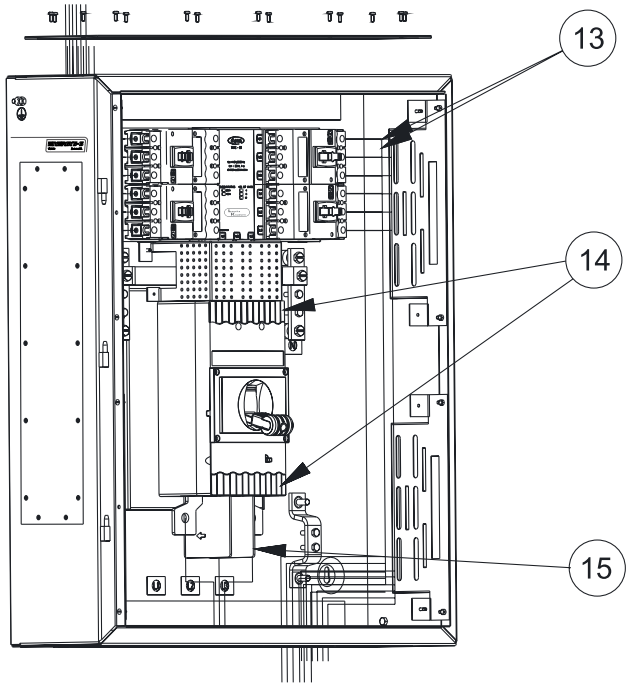
**NOTE:** tightening torques of all mounting MCCB hardware must be as per the MCCB installation kit.



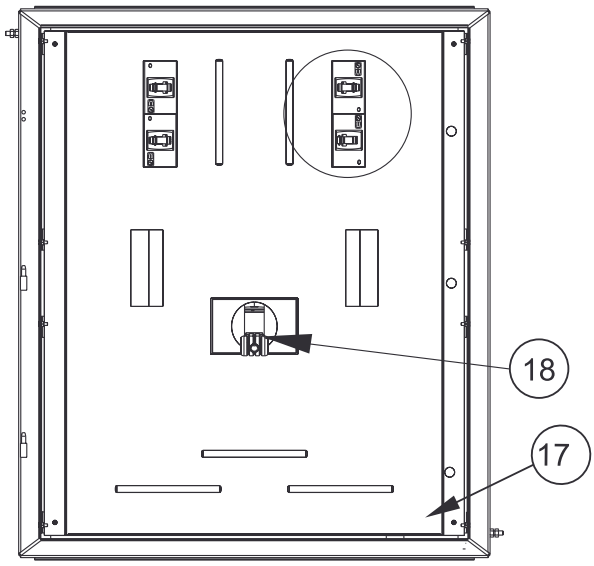

12.Choose cable cross section as per current ratings of MCCBs

**NOTE:** Close the top & bottom ends of enclosure by gland plate if external accessory is not connected

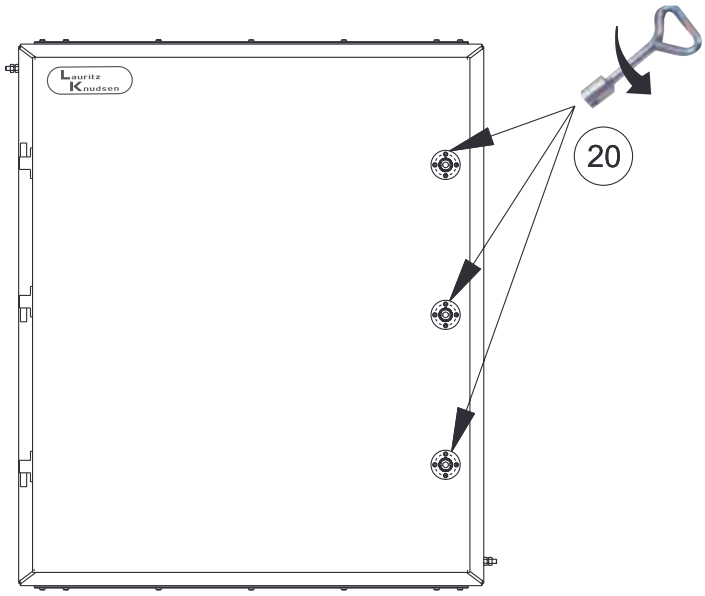
**NOTE:** For higher size cable termination, appropriate narrow palm width lugs should be used




13. Route cables along the length of the side channels (Use tie knot to tie cables to side channels)
14. Assemble phase barriers
15. Put incomer termination shroud again
16. For earthing connection use earth conductor



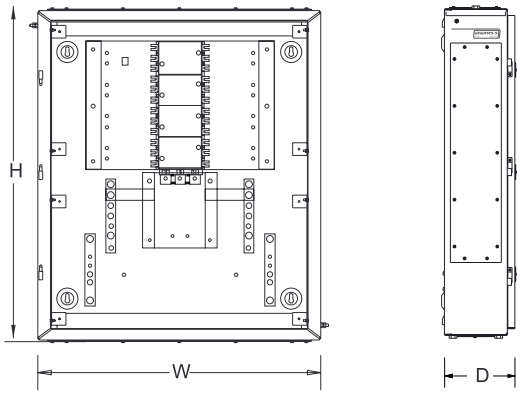

17. Mount the cover again on the enclosure and fix wing nut at four corners
18. Switch on the incomer MCCB
19. Switch on the required number of outgoing MCCBs




20. Close the door of SMDB

**NOTE:** Incase of Aluminum termination, it is recommended to use cabling boxes which will provide additional cable bending space

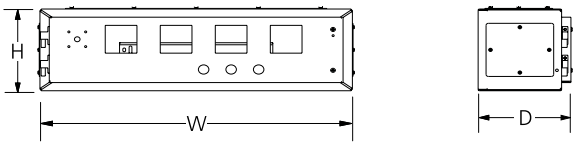
## Dimensional Details

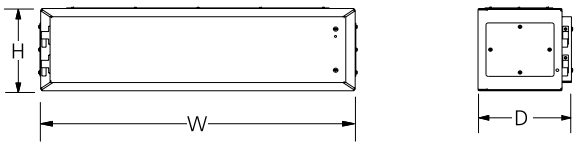



### Enersys - S SMDB

| Cat. No. | Dimensions (mm) | | |
|---|---|---|---|
| | Height (H) | Width (W) | Depth (D) |
| DA20D1044CZZO | 637 | 670 | 208.5 |
| DA20D1084CZZO | 787 | 670 | 208.5 |
| DA20D1124CZZO | 937 | 670 | 208.5 |
| DA20D1164CZZO | 1087 | 670 | 208.5 |
| DA40D1044CZZO | 937 | 670 | 208.5 |
| DA40D1084CZZO | 1087 | 670 | 208.5 |
| DA40D1124CZZO | 1237 | 670 | 208.5 |
| DA40D1164CZZO | 1387 | 670 | 208.5 |
| DA60D1084CZZO | 1287 | 870 | 208.5 |
| DA60D1124CZZO | 1507 | 870 | 208.5 |
| DA60D1164CZZO | 1507 | 870 | 208.5 |
| DA62D1044CZZO | 1067 | 870 | 208.5 |
| DA62D1084CZZO | 1287 | 870 | 208.5 |
| DA62D1124CZZO | 1507 | 870 | 208.5 |
| DA62D1164CZZO | 1727 | 870 | 208.5 |
| DA6AD1044CZZO | 1067 | 870 | 208.5 |
| DA6AD1084CZZO | 1287 | 870 | 208.5 |
| DA6AD1124CZZO | 1507 | 870 | 208.5 |
| DA6AD1164CZZO | 1507 | 870 | 208.5 |

## Accessories



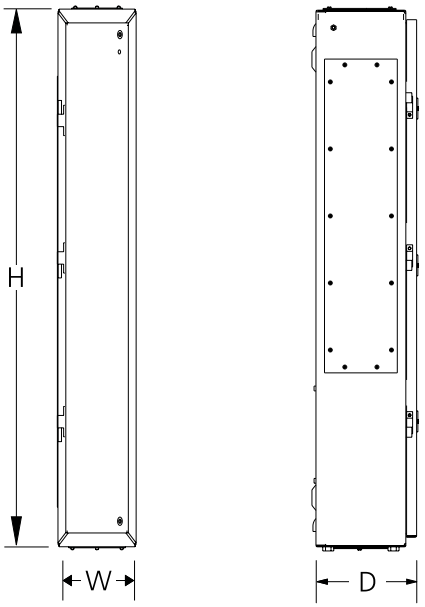




( Metering Extension Box )

| Cat. No. | Dimensions (mm) | | |
|---|---|---|---|
| | Height (H) | Width (W) | Depth (D) |
| CM9043900PO | 200 | 670 | 208.5 |
| CM910640OTO | 200 | 870 | 208.5 |

( Bottom Cabling Box )

| Cat. No. | Dimensions (mm) | | |
|---|---|---|---|
| | Height (H) | Width (W) | Depth (D) |
| CM904370000 | 200 | 670 | 208.5 |
| CM910620000 | 200 | 870 | 208.5 |




| Side Cabling Box | | | | |
|---|---|---|---|---|
| Cat. No. | | Dimensions (mm) | | |
| Left | Right | Height (H) | Width (W) | Depth (D) |
| CM910850DOO | CM910860DOO | 637 | 670 | 208.5 |
| CM910850FOO | CM910860FOO | 787 | 670 | 208.5 |
| CM91085OHOO | CM91086OHOO | 937 | 670 | 208.5 |
| CM910850KOO | CM910860KOO | 1087 | 670 | 208.5 |
| CM910870DOO | CM910880DOO | 937 | 670 | 208.5 |
| CM910870FOO | CM91088OFOO | 1087 | 670 | 208.5 |
| CM91087OHOO | CM91088OHOO | 1237 | 670 | 208.5 |
| CM910870KOO | CM910880KOO | 1387 | 670 | 208.5 |
| CM9112000DO | CM911210ODO | 1067 | 870 | 208.5 |
| CM9112000FO | CM911210OFO | 1287 | 870 | 208.5 |
| CM911200OHO | CM9112100HO | 1507 | 870 | 208.5 |
| CM9112000KO | CM911210OKO | 1727 | 870 | 208.5 |

# Ordering Details

| Enersys-S SMDBs<br>› Comprises of enclosures & PAN assembly<br>› Supplied without incoming and outgoing MCCBs | | | | |
|---|---|---|---|---|
| SMDB Type | Incomer Rating | No. of outgoing ways | | Cat. No. |
| | | 250A | 100A | |
| TN250D | 250 | - | 4 | DA20D1044CZZO |
| | | - | 8 | DA20D1084CZZO |
| | | - | 12 | DA20D1124CZZO |
| | | - | 16 | DA20D1164CZZO |
| TN400D | 400A | - | 4 | DA40D1044CZZO |
| | | - | 8 | DA40D1084CZZO |
| | | - | 12 | DA40D1124CZZO |
| | | - | 16 | DA40D1164CZZO |
| TN630D | 630A | - | 8 | DA60D1084CZZO |
| | | - | 12 | DA60D1124CZZO |
| | | - | 16 | DA60D1164CZZO |
| | | 4 | - | DA62D1044CZZO |
| | | 8 | - | DA62D1084CZZO |
| | | 12 | - | DA62D1124CZZO |
| | | 16 | - | DA62D1164CZZO |
| | | - | 2 | DA6AD1044CZZO |
| | | - | 6 | DA6AD1084CZZO |
| | | - | 10 | DA6AD1124CZZO |
| | | - | 12 | DA6AD1164CZZO |

| Incomer MCCB<br>› Select appropriate Incomer MCCB device from table below | | |
|---|---|---|
| SMDB Type | Description | Cat. No. |
| TN250D | DN1-250N 3 Pole MCCB - 160A | CM9860800MO |
| | DN1-250N 3 Pole MCCB-200A | CM9860800NO |
| | DN1-250N 3 Pole MCCB - 250A | CM9860800PO |
| TN400D | DN3-400D 3 Pole MCCB - 320A | CM9400500Q10G |
| | DN3-400D 3 Pole MCCB - 400A | CM9400500R10G |
| TN630D | DN3-630D 3 Pole MCCB-500A | CM9400600S1OG |
| | DN3-630D 3 Pole MCCB - 630A | CM9400600T10G |

| Outgoing MCCB<br>› Selection of MCCBs to be done in accordance with ICE61439 | | |
|---|---|---|
| SMDB Type | Description | Cat. No. |
| TN250D TN400D & TN630D | DN0-100D 3 Pole MCCB - 20A | CM9789300C20G |
| | DN0-100D 3 Pole MCCB - 25A | CM9789300D20G |
| | DN0-100D 3 Pole MCCB - 32A | CM9789300E20G |
| | DN0-100D 3 Pole MCCB - 40A | CM9789300F20G |
| | DN0-100D 3 Pole MCCB - 50A | CM9789300G2OG |
| | DN0-100D 3 Pole MCCB - 63A | CM9789300H2OG |
| | DN0-100D 3 Pole MCCB - 80A | CM9789300J20G |
| | DN0-100D 3 Pole MCCB-100A | CM9789300K20G |
| TN630D | DN1-250N 3 Pole MCCB - 160A | CM9860800MO |
| | DN1-250N 3 Pole MCCB - 200A | CM9860800NO |
| | DN1-250N 3 Pole MCCB - 250A | CM9860800PO |

| SMDB Accessories | | |
|---|---|---|
| Metering, Bottom Cabling and Corner Box<br>› Metering extension box comprises enclosure with provision for mounting ammeter, voltmeter, selector switch and indicating lamps<br>› Bottom cabling box comprises bare enclosure | | |
| SMDB Type | Description | Cat. No. |
| TN250D & TN400D | Metering extension Box<br>Bottom Cabling Box | CM9043900PO<br>CM904370000 |
| TN630D | Metering extension Box<br>Bottom Cabling Box | CM9106400TO<br>CM910620000 |
| TN250D, TN400D & TN630D | Corner Box<br>Mounting base | CM910890000<br>CM702600000 |

NOTE: Mounting base to be used without bottom cabling box

| Side Cabling box | | | | |
|---|---|---|---|---|
| › For extra cable bending space side wise | | | | |
| SMDB Type | No. of ways | | Left Side Extension Cat. No. | Right Side Extension Cat. No. |
| | 250A | 100A | | |
| TN250D | | 4 | CM910850D00 | CM910860DOO |
| | | 8 | CM910850FOO | CM910860FOO |
| | | 12 | CM910850HOO | CM910860HOO |
| | | 16 | CM910850K00 | CM910860K00 |
| TN400D | | 4 | CM910870DOO | CM910880DOO |
| | | 8 | CM910870FOO | CM910880FOO |
| | | 12 | CM910870HOO | CM910880HOO |
| | | 16 | CM910870KOO | CM910880KOO |
| TN630D | | 8 | CM9112000FO | CM9112100FO |
| | | 12 | | |
| | | 16 | CM9112000HO | CM9112100HO |
| | 4 | | CM9112000DO | CM9112100DO |
| | 8 | | CM9112000FO | CM9112100FO |
| | 12 | | CM9112000HO | CM9112100HO |
| | 16 | | CM9112000KO | CM9112100KO |
| | 2 | 2 | CM9112000DO | CM9112100DO |
| | 2 | 6 | CM9112000FO | CM9112100FO |
| | 2 | 10 | | |
| | 2 | 14 | CM9112000HO | CM9112100HO |


| Metering Extension accessories | |
|---|---|
| Digital meters | Cat. No. |
| 1Ph LED Ammeter Cl 1 | WL1110100000 |
| 1Ph LED Voltmeter Cl 1 | WL1120100000 |
| 3Ph LED Ammeter Cl 1 | WL1310100000 |
| 3Ph LED Voltmeter Cl 1 | WL1320100000 |

| Indicating lamps | Cat. No. |
|---|---|
| Indicating lamps 22.5 mm Red | EPLR240A |
| Indicating lamps 22.5 mm Yellow | EPLY240A |
| Indicating lamps 22.5 mm Green | EPLG240A |
| Indicating lamps 22.5 mm White | EPLW240A |

| Selector Switch | Cat. No. |
|---|---|
| Voltage between Phases & Individual Phases to Neutral with OFF(6 A) | 61313SAB13TDYR. |
| Voltage between Phases & Individual Phases to Neutral with OFF(10 A) | 61313SBB13TDYR |
| Voltage between Phases to Neutral(6 A) | 61311SAB13TDYR. |
| Voltage between Phases to Neutral(10 A) | 61311SBB13TDYR |

| MCBs | Cat. No. |
|---|---|
| 10 A MCB B curve single pole | BB10100B |
| 10 A MCB C curve single pole | BB10100C |
| 10 A MCB D curve single pole | BB10100D |