# ECO-BLOCK...electrical switchboard system

*not all switchboards are the same*

We Create
The Edge In Switchboard
Power Distribution
And Control Technology

WINTRAD
industries sdn bhd (40300-U)

No. 8, Jalan Kinrara 2, Taman Perindustrian Bandar Kinrara, Puchong,
58200 Kuala Lumpur. Malaysia.
Tel: (603) 8076 4008 Fax: (603) 8076 4007
http://www.wintrad.com.my e-mail: contact@wintrad.com.my

# ECO-BLOCK

ECO-BLOCK Modular System Switchboard is designed to provide flexibility.
Simple combination of various module size to accommodate various range, rating or size of switching parts to form a complete switchboard is easy.

The switchboard can be assembled to provide various form of internal separation from Form 1 to Form 4 with front or rear connection features.

The normal standard form for switching parts mounting is the fixed panel type.

With ECO-BLOCK Line Plug-in type panel or demountable type panel, it provides the flexibility to conduct service, repair, maintenance or modification of individual panel without the need to switch off the supply of the whole switchboard.

This is a vital and advantages feature for any Industries that cannot afford to have interrupted supply.

*L.V. Main Distribution Switchboard*

## MAIN BUSBAR SYSTEM

The main busbar system is located at the top of the switchboard.

At each shipping split, there is a split joint on the main busbar.

The main busbar is fully covered with ventilated metal covers through out the whole length of the switchboard.

Bolting holes are provided at both end of the busbar for future extension of the switchboard.

## VERTICAL DROPPER BUSBAR

All vertical dropper busbars are connected from the main busbar.

The vertical dropper busbars are fixed in a chamber located at the rear part of the front compartment.

It is fully covered by transparent covers to provide easy visual inspection and protection against accidental touch.

## PLUG-IN / DEMOUNTABLE FUNCTIONAL UNIT

Plug-in or in another term demountable functional unit consist of a set of main connection plug and a feeder unit mounted on base panel.

It is connected by either copper basbars or power cables.
Plug-in / demountable functional unit can be plugged into the vertical dropper busbar with ease.

The advantage of using the plug-in / demountable functional unit is that it enables disconnection of the unit without interruption of the supply.

It too enables modification of the switchboard feeders without the requirement of shutting down the incoming supply.

*3 pole Plug-In / Demountable Type Circuit Breaker Feeder.*

## MAIN CONNECTION PLUG

The main connection plug is designed for mounting on to a base panel where feeder unit is to be fixed to form a plug-in / demountable unit.

*Form 4b Construction*

*3 pole Plug-In / Demountable Type Circuit Breaker Feeder.*

## CONSTRUCTION

| | |
|---|---|
| Degree of protection | IP 30 to 43 |
| Pollution degree | Pollution degree 3 |
| Frame | 2.5mm Thk. Steel Plate |
| Door / Cover | 2.0mm Thk. Steel Plate |
| Base Channel | 40x75x6mm steel Channel |
| Paint colour / Code | Electrostatic powder Coating RAL7032, Wrinkle light grey (60 - 80 Micron) |
| Clearance distance | 20mm Minimum |
| Creepage distance | 29mm Minimum |

## ELECTRICAL CHARACTERISTIC

| | | |
|---|---|---|
| Rated Operational voltage (Ue) | | 415V |
| Rated insulation voltage (Ui) | | 690V |
| Rated frequency | | 50Hz |
| Rated impulse withstand voltage (Uimp) | | 8kv |
| Rated current – | phase bars | Up to 3200A |
| | Neutral bar | 60% of the rating of the phase bar |

Rated short-time withstand current (Icw)

| | |
|---|---|
| Phase bars | 50kA rms / 3sec. (peak current of 105kA) |
| | 65kA rms / 1sec (peak current of 143kA) |
| | 65kA rms / 3sec. (peak current of 143kA) |
| | 80kA rms / 1sec. (peak current of 176kA) |
| Neutral | No less than 60% of the short circuit rating of the phase bar. |
| Earth | 39kA rms at 240V |

## STANDARDS OF COMPLIANCE

IEC 60439-1 : 2004 & BSEN 60439-1 : 1999 with amendment 1 corrigenda 1 & 2

BS EN 60439-1 : 1999 with Amenment 1:2004 and Corrigenda 1 and 2

## ASTA CERTIFIED & TYPE TESTED in accordance with

IEC 60439-1 : 2004 Edition 4.1 with Corrigendum 1

BS EN 60439-1 : 1999 with Amenment 1:2004 and Corrigenda 1 and 2

Clauses 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.6, 8.2.7, 8.2.8 and 8.2.9

- Temperature-rise limits (Clause 8.2.1)
- Dielectric properties (Clause 8.2.2)
- Short-circuit withstand strength (Clause 8.2.3)
- Rated conditional short circuit current (Clause 8.2.3.2.3 a & b)
- Rated peak and short-time withstand current (Clause 8.2.3.2.3 b)
- Rated peak and short-time withstand current (Clause 8.2.3.2.3 d)
- Effectiveness of the protective circuit (Clause 8.2.4)
- Rated conditional short-circuit current (Clause 8.2.4.2)
- Clearance and creepage distances (Clause 8.2.5)
- Mechanical Operation ( Clause 8.2.6)
- Degree of protection (Clause 8.2.7)
- Electromagnetic compatibility (EMC) test (Clause 8.2.8)
- Verification of the resistance of insulating material to abnormal heat and fire (Clause 8.2.9)