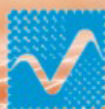


LOW VOLTAGE SWITCHBOARD
AND
MOTOR CONTROL CENTRE
低压开关柜及马达控制中心



Testing &
Certification
Australia



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Product List

产品类别

Low Voltage Switchboard/ Distribution Board

- Main Power Supply
- Data Centre UPS & Battery System
- Sub Main Distribution
- Genset Power Distribution



低压开关柜/配电屏

- 主要供电系统
- 数据中心不间断电源及蓄电池系统
- 分路配电系统
- 发电机组配电系统

Motor Control Centre(MCC)/ Motor Control Panel(MCP)

- MVAC System
- Fire Services System
- Plumbing & Drainage System



马达控制中心/控制屏

- 空调系统
- 消防系统
- 给排水系统

Local Control Panel (LCP)

- Genset Synchronizing
- Mimic & Supervisory
- Process & PLC Control



就地控制屏

- 发电机同步
- 模拟及监控
- 程式控制

Power Quality Equipment

- Real Time Power Factor Correction Cubicle
- Tuned or Detuned Capacitor Bank Cubicle
- Active Harmonic Filter Panel
- Passive Harmonic Filter Panel
- Zero Sequence Transformer Panel



电源质量设备

- 即时功率因数补偿柜
- 电容补偿柜
- 主动谐波过滤屏
- 被动谐波过滤屏
- 零序变压器屏



Technical Specification 技术规范

MEA's low voltage switchboard and motor control centre have been fully type tested by ASTA accredited independent laboratories and meets the latest international standards as listed below:

MEA的低压柜及马达控制中心已通过由ASTA认可的独立试验所的一系列型式试验且符合下列最新国际标准。

- ※ BS EN 60439-1
- ※ BS EN 60529
- ※ IEC 60439-1
- ※ IEC 60529

Rated insulation voltage 额定绝缘电压	1000VAC
Rated impulse withstand voltage 额定脉冲耐受电压	8000VAC
Rated current 额定电流	Main busbars up to 6300A 主母线电流达6300A
Rated operational voltage 额定工作电压	415V 50 Hz / 60Hz
Rated short time withstand 额定短路耐受电流	50KA rms for 3 seconds and 105KA Peak
Degree of protection 外壳防护等级	IP31 / IP42 / IP44 / IP54
Form of segregation 内部分隔等级	Form 4b
Enclosure material / Finish 柜体柜架材料 / 表面处理	2mm electro galvanized steel / powder coated 2毫米厚电解铁板 / 粉末喷涂
Temperature rise test 温升测试	Complied 合格
Clearance and creepage distance test 间距及爬距测试	Complied 合格
Mechanical operational test 机械动作测试	Complied 合格
Electromagnetic compatibility test 电磁干扰测试	Complied 合格

Switchboard Highlight

开关柜亮点

MEA low voltage switchboards/ motor control cubicles are of modular design. The basic frames, panel doors and covers are designed in Europe. The cubicles are very compact and flexible with dimensions from 200mm up to about 2000mm in 100mm or 200mm increment.

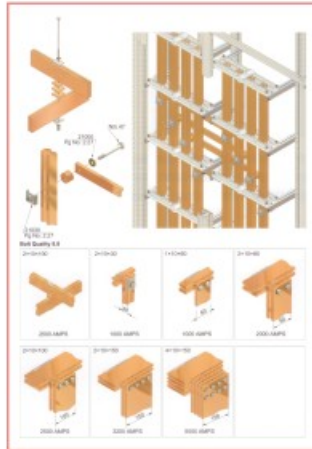
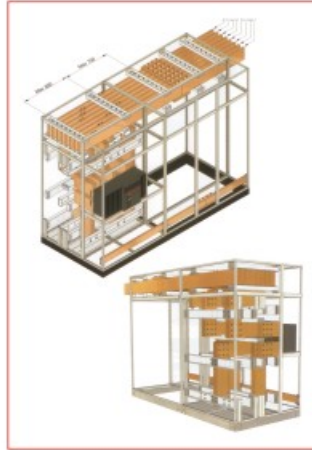
•Enclosure height:
1900mm standard (other dimensions are also available)

•Enclosure depth:
200mm to 1200mm

•Ingress protection:
IP44 ventilated type
(ASTA certified)
IP54 non-ventilated type
(ASTA certified)

•Enclosure thickness:
2mm

•External Finish:
Epoxy power coating to RAL 7032 light grey, other alternative colour upon request.



MEA 低压柜/马达控制中心是组合式设计。基本柜架，面板门及盖皆由欧洲公司设计，柜体小巧灵活。

•外壳高度：
标准1900mm

•外壳深度：
200-1200mm

•防护等级：
IP44通风型(ASTA验证)
IP54不通风型(ASTA验证)

•外壳板厚：
2mm

•外壳表面处理：
粉末喷涂以浅灰色RAL 7032，
其他颜色可按要求提供。

Framework

The framework system is modular in steps of 200mm in all three directions. The framework is made from 2mm electro galvanized powder coated steel profile. It forms a 25mm grid and can be arranged in an unlimited number of ways.

The basic frame is formed by joining various length of corner bar in the X, Y & Z axis to the die cast aluminum corner. A switchboard/MCC comprising of a suite of cubicles is formed by joining the required number of basic frames of same height and depth side by side. Compartments for individual switchgear are made by placing cross bars at the appropriate location with separation plates; a door or cover with gasket is fitted to the front of the compartment with a set of die cast aluminum concealed hinge affording ingress protection up to IP54.

A steel plinth is provided for the floor standing cubicle and a set of mounting bracket is provided for the wall mounting cubicle.



柜架

柜架系统是组合式，模组由200mm组合，柜架由2mm厚电解铁板制造，组成一个25mm模组的网络，开关柜可按用户要求扩展。

基本柜架由不同长度的C型槽组合而成，每个开关柜/马达控制中心由一套同样高度和深度的基本柜架按要求连接而成。

将横槽置于适当位置：加分隔板形成分隔仓，以内藏式铰链接上门或盖板，防护等级达IP54。

座地式柜配槽钢底架，挂墙式柜配挂墙码。

Switchboard design

The design of our switchboard/MCC not only complies with the latest international standards, the local Government/Power Utilities regulations and code of practices; it also takes into account the common specification of major Consultants.

Our prime design aim is to stride a perfect balance of flexibility, small foot print, high ingress protection and high cost/performance ratio.

MEA adopted the Type Test Assembly (TTA) philosophy. All type tests (clause 8.2.1 to 8.2.9) required for each particular design and rating in accordance with the latest BS EN 60439-1:1999 with amendment A1:2004 were carried out on the same assembly successfully and they have all been attested with the certificates of type tests.



开关柜设计

低压柜按最新国际标准设计，符合当地政府及电力公司有关规定，并采纳了当地知名顾问公司的有关规定。

主要设计目的是在灵活性、小体积、高防护等级、高性能/价格比中取得最佳平衡。

MEA 采取了TTA的设计方式，在 BSEN 60439-1:1999及 修订 A1:2004标准内 8.2.1至 8.2.9项的型式测试，皆在同一样机内进行，并已获得ASTA发给的型式测试证书。

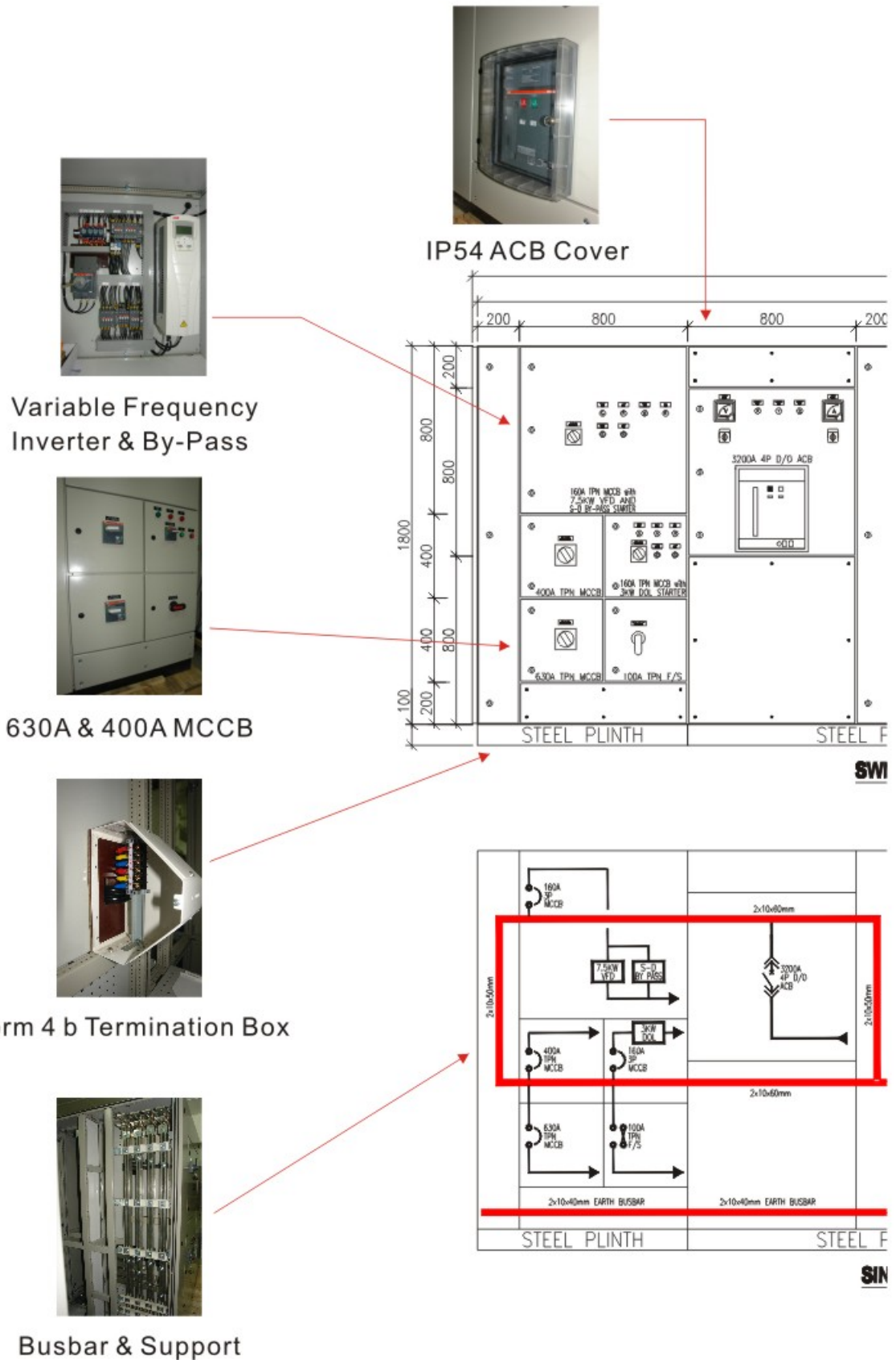
Switchboard Components 开关柜组件

Here below are the major components for our ASTA type tested switchboard/ motor control centre. All components would be assessed and reviewed periodically by our technical and service teams to ensure their compliance with standards and price competitiveness.

下列是我公司已通过ASTA型式测试的开关柜/马达控制中心所使用的主要组件，我公司工程技术人员也会定期检测使用组件，确保它们符合规范要求，并具有价格竞争性。

Enclosure	外壳	: Imported
Air circuit breaker	空气断路器	: ABB
MCCB	塑壳开关	: ABB
Fuse switch	熔断开关	: ABB
Isolator/switch-disconnector	隔离开关	: ABB
Power contactor & overload	接触器/热过载	: ABB
Pilot device	指示元件	: ABB
Soft- starter	软启动	: ABB
Variable frequency inverter	变频器	: ABB
Current transformer	电流互感器	: Nitech
Metering	测量仪表	: Relvaco
Ampere/voltage selector	电流/电压选择开关	: Baco
Timer/control relay	时间/控制继电器	: Omron





Switchboard Typical Layout

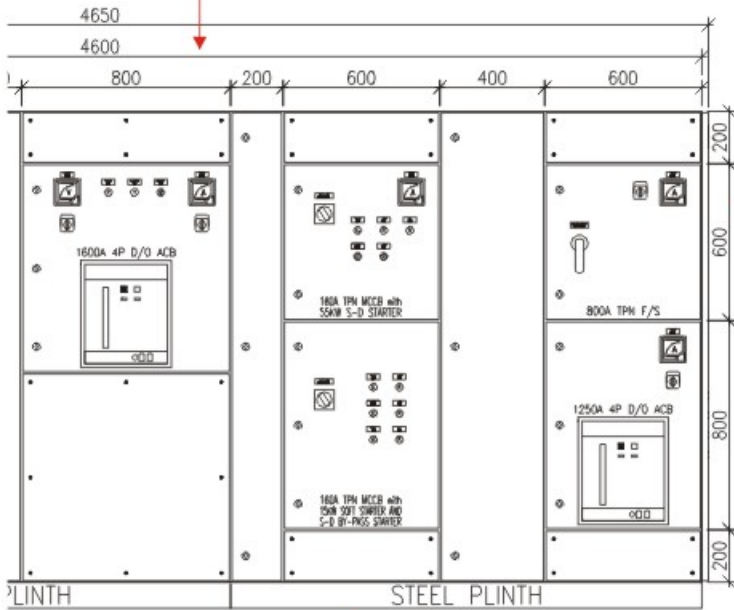
开关柜典型排佈



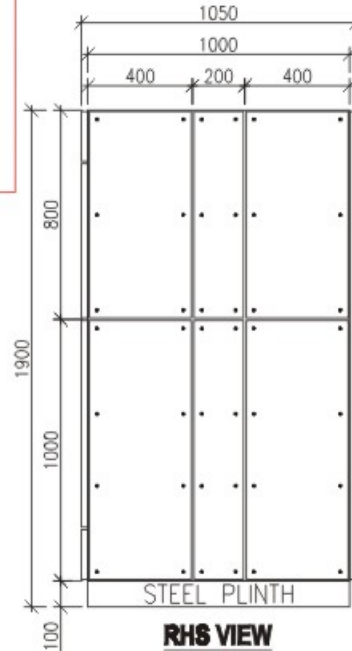
1600A 4 Pole Air Circuit Breaker



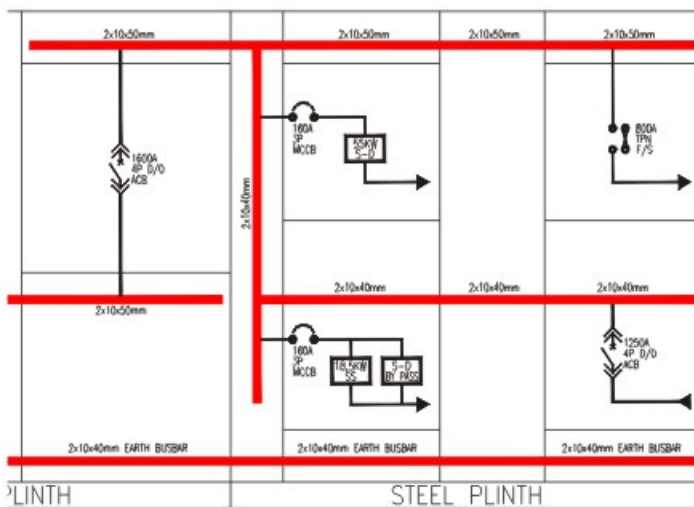
800A TPN Fuse Switch



FRONT VIEW



RHS VIEW



SINGLE LINE DIAGRAM

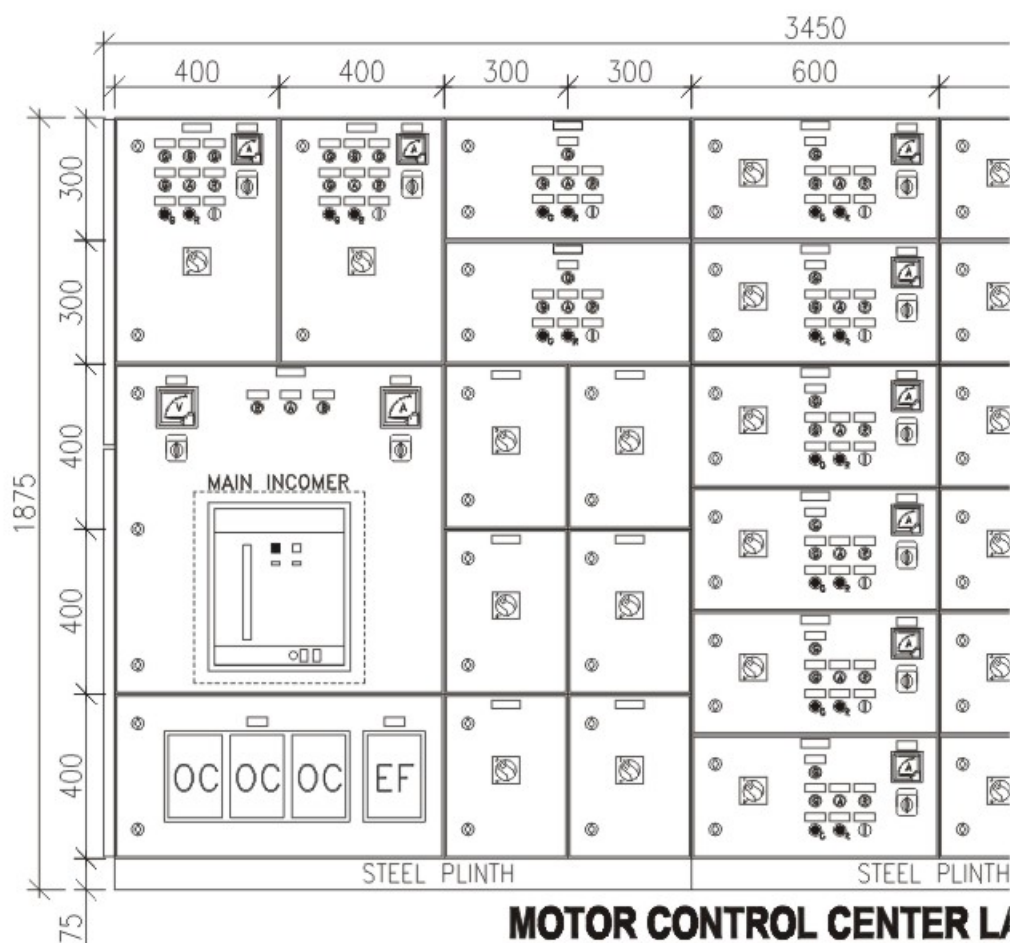


Inside Compartment

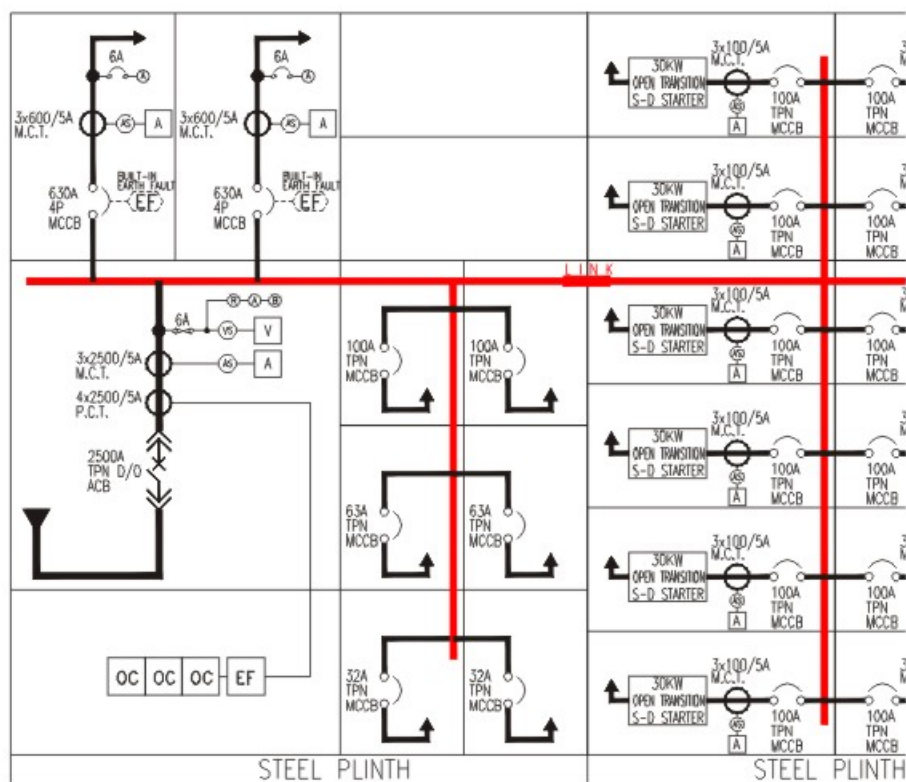


Soft Starter & By-Pass

Motor Control Centre Typical Layout 马达控制中心典型排佈

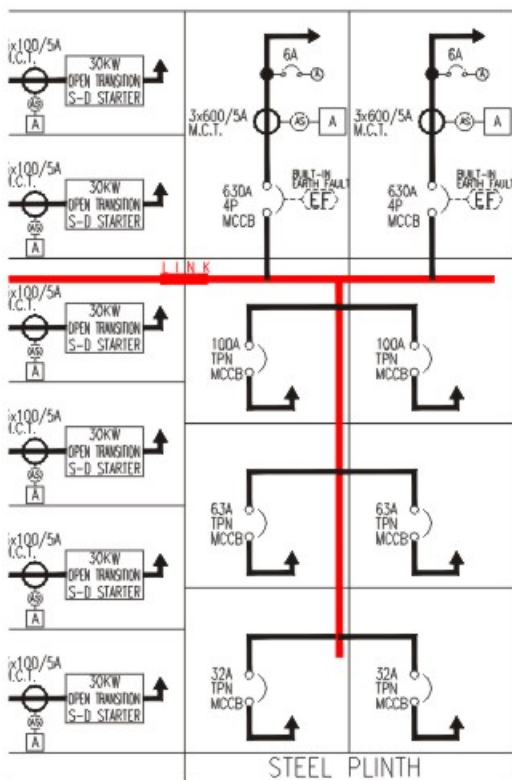
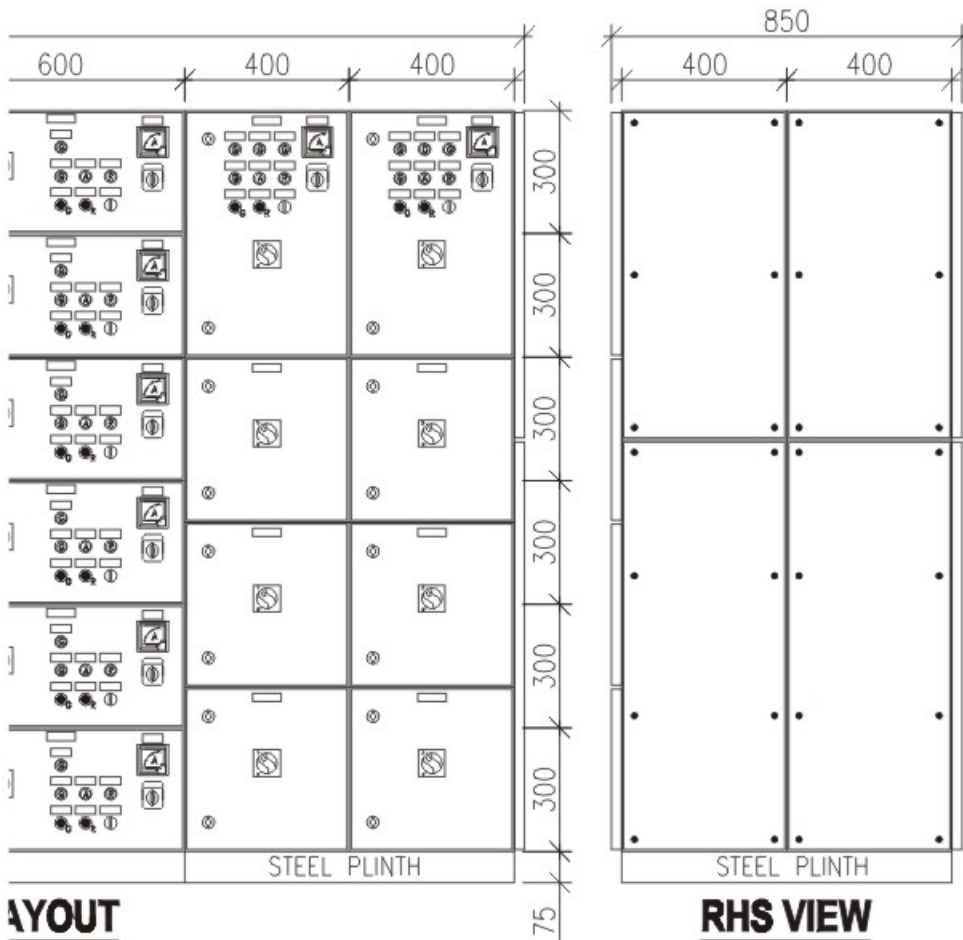


MOTOR CONTROL CENTER L/A



SINGLE LINE DIAGRAM

Motor Control Centre Typical Layout 马达控制中心典型排佈



ASTA Type Test

MEA Switchboard is fully tested and certified by ASTA accredited third party testing laboratory and meets the latest IEC 60439-1:2004 edition 4.1 with corrigendum 1 and BS EN 60439:1999 with amendment 1:2004 and corrigenda 1 and 2 clauses 8.2.1 to 8.2.9.

ASTA型式测试

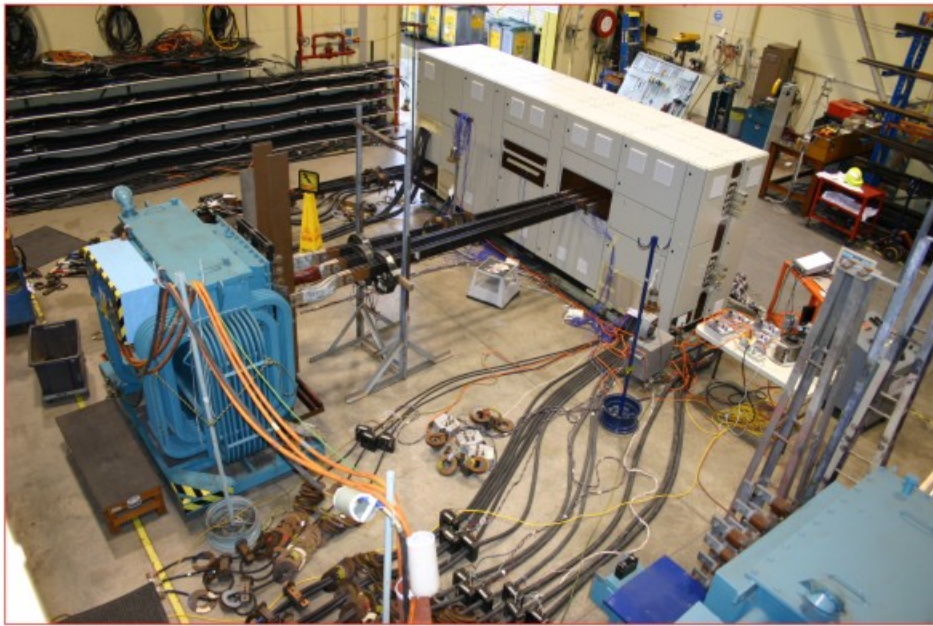
MEA 低压控制柜符合最新国际标准 IEC 60439-1:2004 版本 4.1 修订 1 及 BS EN60439-1:1999 连 2004 年修订 1 及 2 并已通过 ASTA 认可试验所测试符合规范及获发 ASTA 型式试验证书。



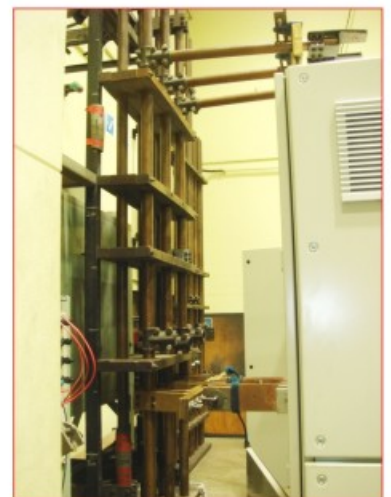
The photos show parts of the type test procedures:



Ingress Protection Test / 防护测试



Temperature Rise Test / 温升测试



Short Circuit Test / 短路测试

CCC Switchboard-GCK

3C开关柜-GCK

To cope with the rapid development of the Mainland China market, MEA adopt the GCK framework and manufacture a wide range of drawout and fixed type low-voltage switchboards, distribution boards and local motor control panels.

All switchboards, distribution boards and local motor control panels are tested in accordance with GB7251.1-2005 and are certified by CQC. CCC certificates have also been obtained.

Quality system to ISO 9001:2008.

Technical Data:

Switchboard

- Main busbar : 1600 - 3150A
- Riser busbar : 630 - 1000A
- Icw : 65kA
- Ue : 380V
- Ui : 660V
- Frequency : 50 Hz
- IP : 40

Distribution Board & Local Motor Control Panel

- Main busbar : 100 - 630A
- Icw : 20kA
- Ue : 380V
- Ui : 660V
- Frequency : 50 Hz
- IP : 42



为能在迅速发展的中国大陆市场中具有强大的竞争力，MEA 采用 GCK 构架并制造一系列低压抽出式开关柜、配电屏和就地马达控制屏成套开关设备。

所有开关柜，配电屏和就地马达控制屏都已通过 GB7251.1-2005 标准测试，并已取得 3C 和 CQC 认证。

质量管理体系按 ISO 9001: 2008 执行。

技术参数:

开关柜

- 主母线 : 1600-3150A
- 配电母线 : 630-1000A
- Icw : 65kA
- Ue : 380V
- Ui : 660V
- 频率 : 50Hz
- IP : 40

配电屏及就地马达控制屏:

- 主母线 : 100-630A
- Icw : 20kA
- Ue : 380V
- Ui : 660V
- 频率 : 50Hz
- IP : 42

Local Motor Control Panel (LMCP) 就地控制屏

1. Local Motor Control Panel

MEA also supplies a wide range of local motor control panel, design & build to individual customer's specification. Over the years, high reputation on our engineering competence, good workmanship, timely delivery and swift response to after sales service call and on site modification has been established.

These panels are mostly custom built to specific requirement and specification. In general, the metal housings are manufactured from heavy gauge galvanized sheet steel with ingress protection to IP54 in accordance with BSEN / IEC 60529 and finished with light grey epoxy powder coating to RAL 7032, other colours are also available.

Standard features include:

- Neoprene rubber gaskets
- Easy operable door lock
- Panel opening angle exceeds 110 degree

Standard dimension ranging from:

- Height: 250mm up to 1800mm
- Width: 200mm up to 1500mm
- Depth: 50mm up to 450mm

2. Stainless Steel Enclosure

MEA also supplies stainless steel enclosures which are built in accordance with EN10083.

For maximum protection in an adverse environment such as outdoor, highly corrosive, chemical and petrochemical process plant, where coated steel is inappropriate, an austenitic stainless steel grade 304/316 can be adopted.



1.就地控制屏

MEA同时提供一系列的符合客户规范要求设计构造的就地控制屏，多年来，我的工程技术能力，及时交货及迅速的售后服务皆得到客户的认同。

大部分此类就地控制屏皆应客户要求生产，基本上以1.5mm厚的钢板生产，符合BSEN / IEC 60529 的防护等级为IP54，颜色为浅灰色RAL 7032，其他颜色也可按客户要求提供。

标准特性包括:

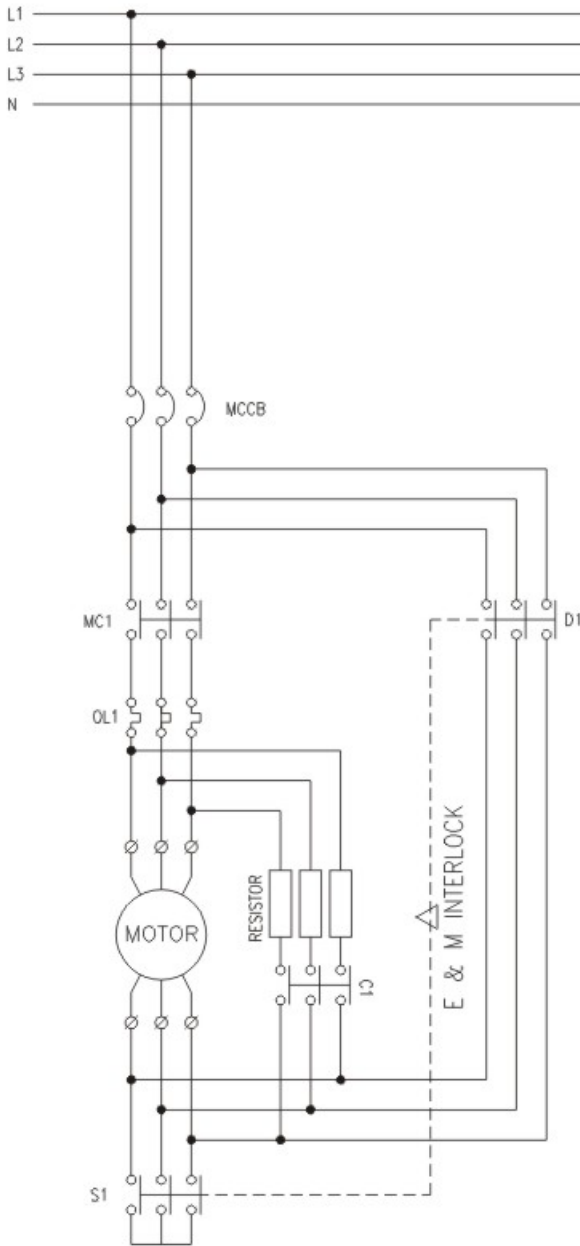
- 防水胶边
- 简易操作门锁
- 柜门开展超过110度

标准尺寸:

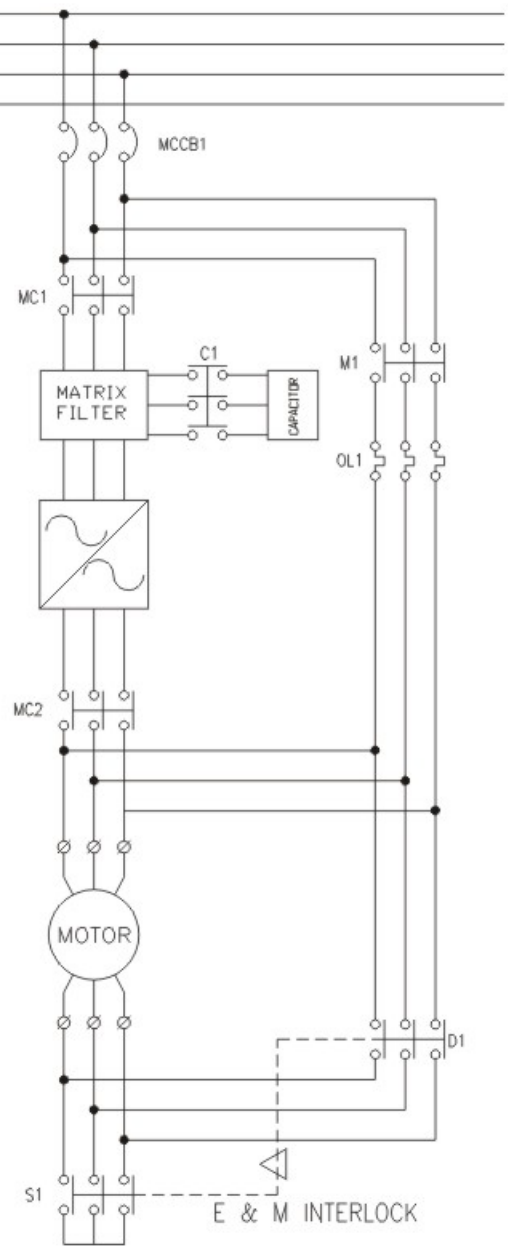
- 高: 250-1800mm
- 宽: 200-1500mm
- 深: 150-450mm

2.不锈钢箱

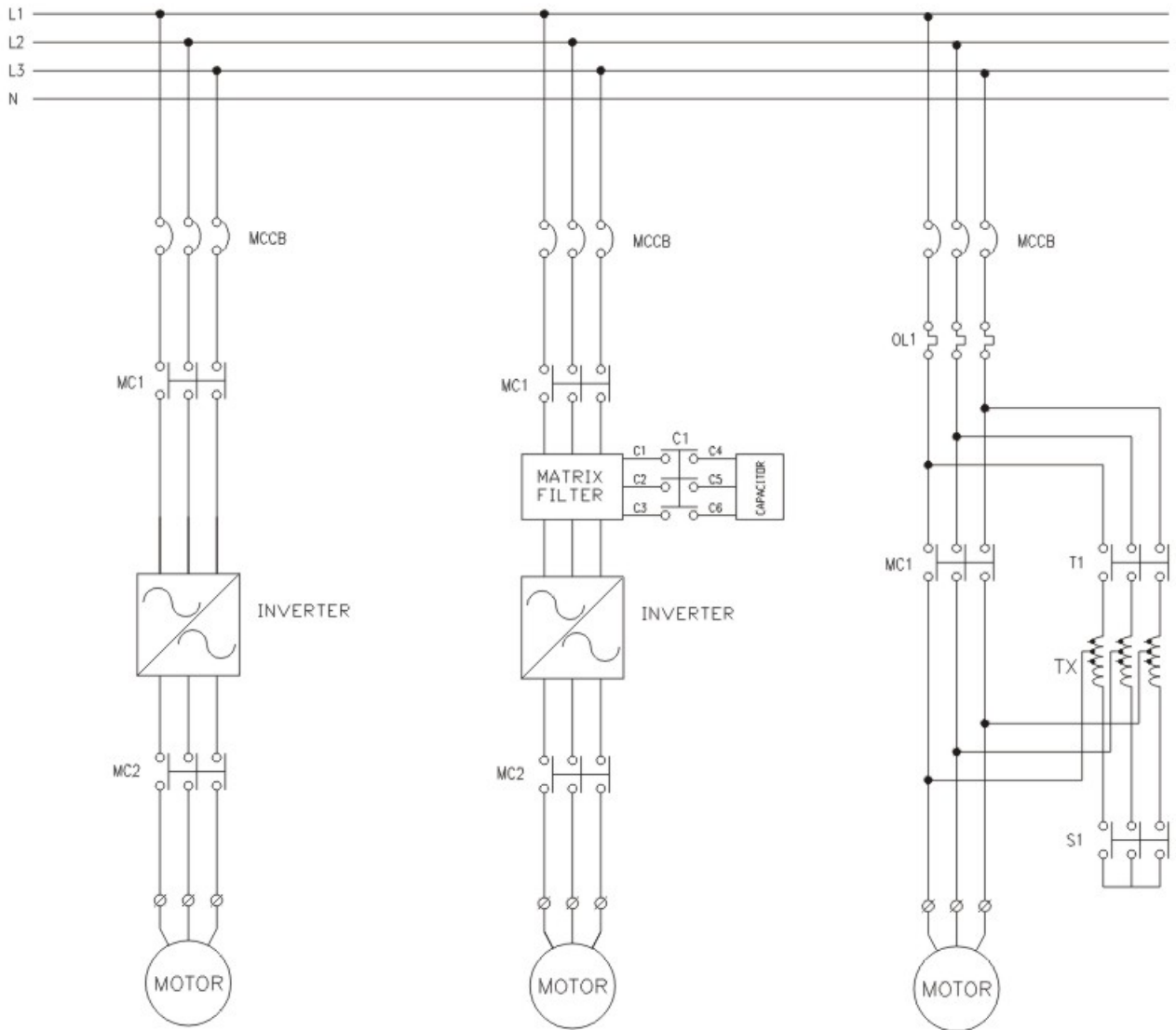
MEA亦提供按EN10083生产的不锈钢控制屏，在高度恶劣环境情况下，采用304/316等级不锈钢箱能提供更好的防锈保护。



Closed Transition Star-Delta
电阻星角（闭合转换星角）起动



Inverter & Star-Delta By-Pass Starter
变频带谐波过滤及星角旁通起动



Inverter
变频启动

Inverter & Matrix filter
变频带谐波过滤启动

Autotransformer
自耦式启动

1. Harmonic Filter Panel / 滤波屏



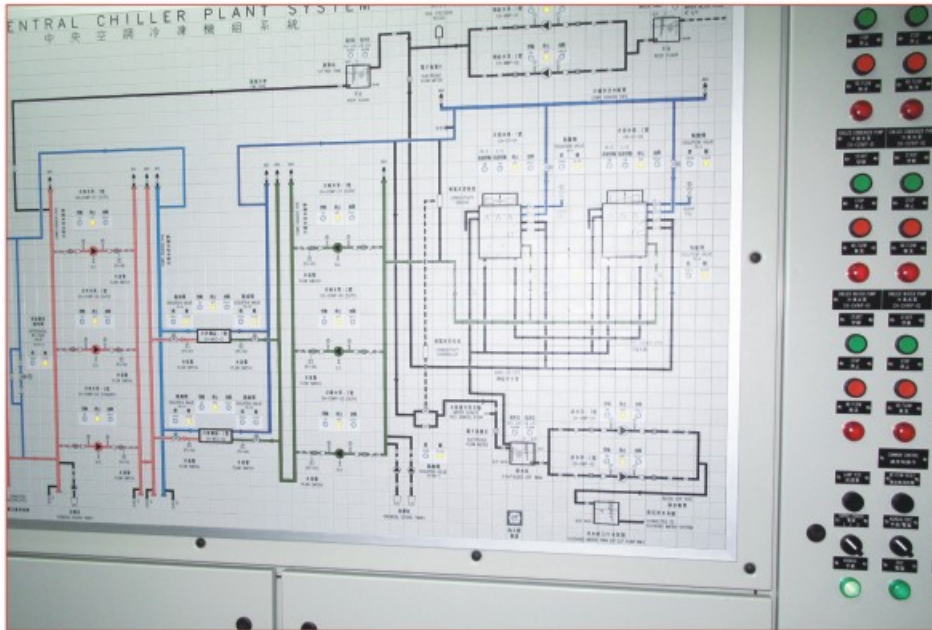
2. AHU Control Panel With Filter / 带滤波器空调控制屏



3. ATS Panel / 自动切换屏



4. Mosaic Panel / 莫薩克模拟屏



5. Water Scrubber Panel / 水濺控制屏



6. PLC Panel / 可編程控制屏



Sales and After Sales Service

销售及售后服务

Through close liaison with our customers and aided by an advanced computer system, our experienced engineers would design the switchboard, motor control centre, and local control panel meeting all aspects of our customer's design intent and the specific site condition; may it be our standard panel or purpose built panel; configure for front or rear access, floor standing or wall mounting.

To provide our customer continued security and peace of mind, all equipment of our supply are subjected to factory routine tests prior to delivery to ensure their compliance to the contractual requirements.

After sales service is an area that MEA has always take pride on, our after sales service team is only a phone call away and they would assist our customer in alteration and addition works for equipments of our supply as well as existing equipments on site.



通过与用户紧密沟通，及以先进计算机辅助，我公司经验丰富的工程师将按客户的需求及现场环境作出适当的开关柜及马达控制中心的设计。

为使客户放心及获得保障，我公司所有产品在出厂前都会在厂房作出一系列的出厂前试验以保证产品符合合同要求。

售后服务是MEA引以为傲的一环，我公司售后服务队伍与客户只是一个电话之隔，他们会全力辅助客户解决在我公司供应设备或现场已装的设备的加改工作。



MEA



Maxwell Electrical Asia Limited

Unit A1,2/F., Kin Hing Industrial Building,
Nos. 17-23, Shek Kin Street, Kwai Chung,
N.T., Hong Kong
Tel: (852)3583 5088 Fax: (852)3583 5089
Email: sales@maxwell-asia.com
web-site: www.maxwell-asia.com

美基电器亚洲有限公司

香港新界葵涌石建街17-23号建兴工业大厦2楼A1室
电话:(852)3583 5088
传真:(852)3583 5089
电邮: sales@maxwell-asia.com
网址:www.maxwell-asia.com

The design, specifications and components stated in this brochure are subject to change without prior notice.

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