



Education Training System

AGENCY PRODUCT

AUTO TRANSFORMER STARTER (FORWARD/REVERSE)

AXIA-ATS-FR-TR01



TECHNICAL SPECIFICATION:

- 1 x 32 Amp, 3 Pole, Moulded Case Circuit Breaker for Power Circuit
- 1 x 6 Amp, 2 Pole, Miniature Circuit Breaker for Control Circuit
- 1 x Emergency Stop Button
- 3 x Push- Button Switch (Start/Stop/Start)
- 3 x LED Indicator Light (Green/Red/Green)
- 1 x Auto Transformer 3.75KW with 70% tapping
- 4 x Magnetic Contractor (30A)
- 1 x Thermal Overload Relay 4 Terminal (18 - 25A)
- 1 x Set of Timer Delay Relay (0-60s)
- 4 X 4.0 mm² PVC cable for main circuit
- External Stop-Start push button control
- External run and trip signal light
- *with out control cable looping
- PVC Wiring Duct Open Slot
- 2 x 32 Amp, 5 Pin Socket c/w 5 Pin Plug

AUTO/MANUAL TRANSFER SWITCH PANEL BOARD

ATS-100



****Pictures shown above as illustration purposes.
Actual design might differ due to upgrade / improvement****

Description:

It is a standard industrial panel Auto/manual transfer switch but specially adapted to function as a training unit

TECHNICAL SPECIFICATIONS

Educational System Provider

It have the following specification:

Main item including:

- 1 x 100A Auto Transfer switch
- 1 x 100Amp MCCB Incoming from TNB supply
- 1 x 100Amp MCCB Incoming from Generator set supply
- 1 x 100Amp MCCB for outgoing supply

Panel Outgoing Feeder:

- 1 x 40Amp Distribution Board (DB) c/w protection & outgoing MCB
- 2 x 32Amp MCCB
- 1 X 63Amp MCCB
- Protection
- 1 x ELR for outgoing MCCB 100A
- Indicator
- 1 x Digital Power meter (DPM)
- 9 X Pilot Lamp.

DC MOTOR

AXIA-DC-MTR-TR05



TECHNICAL SPECIFICATION:

Types	: DC Compound Wound motor
Power	: 240W
Rated Voltage	: 240 VDC
Rated Current	: 1A
Rated Speed	: 1500 rpm
Excitation Voltage	: 240 VDC
Excitation Current	: 0.5A
Rated Power	: 4 mm Connecting Leads set (50cm)
Accessories	: 4 mm Connecting Leads set (50cm)

ELECTRIC PANEL

EP-008



Features

Trainer system will be serves as a ready-to-teach package in the area of analog and digital modulations. It consists of teaching slides, training kits, lab sheets, and problem-based assignments.

Specifications

- ✓ Steel Pillar Size: approximate 2 x 2 inch.
- ✓ Steel Thickness: approximate 1.2mm (Black powder coating)
- ✓ Base plate: approximate 4inch x 4inch (4 hole) (Floor mounted)
- ✓ Dimension frame (LxH): approximate (1000+2000) mm x 2250mm
- ✓ Frame L / U bar: -
- ✓ Size: approximate 1 inch
- ✓ Steel Thickness: approximate 1.2mm (Black powder coating)
- ✓ Plywood thickness: 1 inch
- ✓ Plywood size: approximate 1500mm x 1000mm
- ✓ Plywood size: approximate 1500mm x 2000mm
- ✓ Base: Oil Paint Brown
- ✓ Malaysia Made.

FIRE ALARM SYSTEM TRAINING KIT

FAS-8800



TECHNICAL SPECIFICATION:

A. General:

The Fire Alarm System Training Kits have been created for learning alarm equipment in order to prevent an accident that may cause in the residence, building or factory. The equipment consist of sirens, bell, smoke detector, gas detector, temperature detector, motion detector, flood detector etc. It's design based on panel system. There is symbol or block diagram on each panel by silk screen method. All connecting point via safety socket.

B. Features:

1. Clearly labeled mimic block diagrams for each module
2. Robust and durable construction

C. Technical Specification:

1. Fire Alarm Main Unit
 - To connect with the detectors and switches
2. Magnetic Door
 - Contact: NC
3. Flush Magnetic Door
 - Contact: NC
4. Shutter Magnetic Door
 - Contact: NC
5. Dust Magnetic Door
 - Contact: NC
6. Electromagnetic Door
 - Input: 12 VDC
7. Emergency Stop Button
 - Contact: NO & NC



8. Bell Button
 - Contact: NO
9. Break Glass Fire Alarm
 - Contact: NO
10. Motion Detector
 - Input: 12VDC
11. Smoke Detector
 - Input: 12VDC
12. Gas Detector
 - Input: 12VDC
13. Temperature Detector
 - Input: 12VDC
14. Electromechanical Siren
 - Input: 12VDC
15. Alarm Bell
 - Input: 12VDC
16. Strobe Light
 - Input: 12VDC
17. Buzzer
 - Input: 12VDC
18. Incandescent Lamp
 - Input: 12VDC
19. Mains Power Supply
 - Input voltage: AC220-240V
 - FCCB 2 pole 16A
 - RCCB 2 pole 25A

D. Experiment Coverage:

1. Fire Alarm Main Unit
2. Magnetic Door
3. Flush Magnetic Door
4. Shutter Magnetic Door
5. Dust Magnetic Door
6. Electronic Controlled Magnetic Door
7. Emergency Stop Button
8. Bell Button
9. Break Glass Fire Alarm
10. Motion Detector

A. Accessories:

1. Safety connecting lead

- The set consist of 50 leads in 4 different coded colors and lengths chosen to allow the realization of all experiment.
- Lead are capable of 32A current safety plugs
- Safety terminal socket: 4mm.
- Red, 90cm (10 units)
- Yellow, 30cm (10 units)
- Blue, 60cm (20 units)
- Black, 90cm (10 units)

2. Vertical Frame

- High level: DIN standard A4 with two shelves
- Material: Aluminium
- Side Frame: T shape
- Size: 3-Layer 1450mm Length

3. Experiment Manuals: 2 sets

- Operation Manual (Hardcopy and Softcopy)
- All manuals are written in English
- Model Answer
- Teaching Manual

IOT ORCHID SYSTEM WITH SOLAR POWER

IOT-OSSP-005



Specification:

Solar System

- ✓ 330 Watt Solar Panel
- ✓ 1200Wh Solar Gel Battery
- ✓ Solar Charge Controller
- ✓ 20V – 30V High Surge Power Pure
- ✓ Solar Cable
- ✓ Solar Connector

NodeMCU ESP32

- ✓ Dual core 32-bit processor, built-in 2.4GHz Wi-Fi and Bluetooth
- ✓ 520 kbyte RAM
- ✓ 2.2 to 3.6V operating voltage
- ✓ USB cable for power and serial communication

Soil Moisture Sensor

- ✓ Working Voltage 3.3V – 5V
- ✓ Two-board interface (4-wire)



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Power Bank

- ✓ Capacity: 20000mAh
- ✓ Input Voltage: DC 5V 2.1A, Type-C / Micro USB
- ✓ Output Voltage 1: 5V 2.1A
- ✓ Output Voltage 2: 5V 2.1A

DHT11 Temperature and Humidity Sensor

- ✓ Working Voltage: 3.3V – 5.5V
- ✓ Temperature measurement range: 0 - 50°C

Due to products continuous development process, layout and specification may change without prior notices.

LV MAIN SWITCHBOARD ELECTRIC IDMT - CUBICLE TYPE C/W PERMANENT POWER SUPPLY INSTALLATION FROM MSB

LV-MSB-630A-001



TECHNICAL DATA - General Features

This is a typical electrical low voltage switchboard demonstrator (Compact power meter) but specially adapted for instructional purposes.

GENERAL SPECIFICATIONS Construction

The LV MSB is modular, contained, suitable for both front back access. The Switchboard Construction is fabricated and include heavy-duty castor wheel to easy movement.

Paint Work

The mill steel plate is treated with the trust inhibiting primer, following by coatings of top quality epoxy powder paint and oven bake to 200° to obtain good adhesive.

Technical Data

The LV MSB is suitable for 400V - 415V, 3 phase, 4 wire and 50 Hz system. It is designed to with stand a fault level.

Busbars

Busbars are of hard drawn high conductivity copper with current density of 400A per sq. In colour coating identification for the busbar are as below:



- i. Red - for red phase
- ii. Yellow - for yellow phase
- iii. Blue - for blue phase
- iv. Black - for neutral

All compartments and section doors/covers for both the front and back are hinged and provided with quick release fastener for easy access to the internal part. A high transparency window (thickness 3mm or better) is introduced at the back and side of the board for easy viewing to the internal components.

TECHNICAL SPECIFICATIONS

Input Rating : 3 phase, 400V AC 50Hz

1 no. Air Circuit Breaker 400-630 Amp, 25-50kA TPN, draw out type, manual spring charge, c/w Mechanical & Electrical Interlock.

Output :

- 2 x 32 A TPN Switch Fuse
- 2 x 30 / 32 A TPN MCCB
- 2 x 63 A Fuse Switch
- 1 x distribution board c/w
 - 4 x 6 A MCB
 - 2 x 20 A MCB
 - 2 x 32 A MCB
 - 1 x 40 A Main Switch SPN
 - 1 x 32/40 A RCCB DP(100 mA)
 - Spare Compartment

Instruments

- 2 x Digital Power Meter
 - Detection Method : True RMS
 - Display : LCD
- Detect Frequency (Hz) : 45 - 65
- Input Current Range , approx : 5mA - 10A
- Input Voltage Range, approx: : 0 - 300V AC
- Mounting : Panel / DIN Rail
- Communication: Modbus RTU/Modbus, TCP/IP/Built-in Webserver,
- 3 x 600/5A Class 3, 15VA C/T Coil (for Power Meter)

Analog (2 Unit)

- 1 x Ammeter c/w selector switch 0 - 500 A
- 1 x Voltmeter c/w selector switch 0 - 500 V
- 1 x Power Factor Meter
- 1 set x Indicating lights
- 1 x kWh meter 3 phase (induction type)
- 3 x 600/5A Class 3, 15VA C/T Coil (for Ammeter)
- 1 x 600/5A Class 3, 15VA C/T Coil (for Power Factor Meter)
- Protective Device
 - 1 x Earth Fault Relay
 - 1 Set x Protective Device IDMT O/C (Electronic Type)
 - 4 Nos 600/5A Class 10P10 C/T Coil (For IDMT, O/C & EFR)

Capacitor Bank, approx:

- 1 x Power Factor Regulator minimum 5 step c/w built in CT's (Current Transformer).
- 1 x 200A MCCB - for Capacitor Bank busbar:-
- 1 x 20A MCCB for: 1 x 5 kVAR Capacitor Bank
- 2 x 30A MCCB for: 2 x 10 kVAR Capacitor Bank
- 2 x 45A MCCB for: 2 x 15 kVAR Capacitor Bank

Safety Equipment

- 1 no. of Rubber Mate 1000V (Standard size - for MSB)
- 1 no. of Safety Helmet.
- 1 pair of Leather Glove 1000V

Caution notice (1 no. of “AWAS”, 3 no. of “DANGER”, 3 no. of “BAHAYA”, 3 no. of “ WORK IN PROGRESS “) refer to Electrical Regulation 1994 (Regulation 38)

Labelling - All Part Instrument Panel / equipment such as Breaker, Metering, Protection Devices, outgoing, Capacitor Bank and others.

Both feeder must be connected to four how artificial loading unit to show the increasing / decreasing the current only.

CPR chart refer to Electrical Regulation 1994 (Regulation 39) and Co2 fire extinguisher refer to Regulation

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* All relay or protection equipment must be calibrate at the site (SAT).

2 no. of Three-pole Earthing and Short-Circuiting Devices

- Clamping range 55 mm
- Cable cross-section 25/25 mm²
- Max. short-circuit current I_k 0.5s 7.0kA
- Max. short-circuit current I_k 1s 4.9kA
- Standard EN/IEC 61230 (DIN VDE 0683 Part 100)
- Temperature range - 25 °C + 55 °C
- Material (clamp body) MCI/gal Zn
- Material (pressure plates) Copper alloy
- Material (short-circuiting cables) Highly flexible copper

MAIN SWITCH BOARD 800 AMP (SINGLE FEEDER) AXIA-MSB-800AMP-SF-TR03



TECHNICAL SPECIFICATION:

Incomer - Input Rating : 400VAC, 3 Phase, 50Hz

- a. 1 x Air Circuit Breaker 800Amp TPN, 50kA c/w Shunt Trip Coil
- b. Instruments :
 - 1 x Amp meter, range 0 - 800A c/w Selector Switch
 - 1 X Voltmeter, range 0 - 500V c/w Selector Switch
 - 3 x 22mm LED Pilot Lamp (R/Y/B) - Phase Indicator Light
 - 1 x Power Factor Meter
 - 1 x Kilowatt Hour Meter
 - 1 x Digital Power Meter
 - 7 x MCB 6 Amp, 6kA - for instruments control supply
 - Heater c/w thermostat and switch (auto/manual regulator)
 - Surge Protection Device (SPD) 415V, 40kA c/w 63A TPN Switch Fuse
 - Tools compartment
 - Spare Compartment
- c. Protective Devices :
 - 1 No Combined IDMT Over Current & Earth Fault Relay
 - 4 x 800/5A Class 10P10 C/T Coil (For IDMT, O/C & EFR)

- d. Output :
- 2 x 63 Amp MCCB TPN, 25kA
 - 3 x 100 Amp MCCB TPN, 25kA
 - 1 x 150 Amp MCCB TPN, 50kA c/w Shunt Trip Coil and Earth Leakage Relay (ELR)
 - 1 X 200 Amp MCCB TPN, 25kA
 - 1 X 300 Amp MCCB TPN, 25kA
 - 1 X 400 Amp MCCB TPN, 50kA c/w Shunt Trip Coil and Earth Leakage Relay (ELR)
- e. Capacitor Bank :
- 1 x Power Factor Controller minimum 9 step c/w built in C/T
 - 9 x 30 Amp MCCB TP, 25kA
 - 9 x 30 Amp Magnatic Contractor
 - 3 x 5kVAR Capacitor Bank (3 phase)
 - 3 x 10kVAR Capacitor Bank (3 phase)
 - 3 x 15kVAR Capacitor Bank (3 phase)
 - 9 x 22mm LED Pilot Lamp - for Step Indicator Lamp

ACCESSORIES:

- Schematic Diagram of Switch Board
- Switch Board general arrangement testing & commissioning
- Demonstration to show how to function
- Include : manual operating, testing and warranty certificate
- Safety heavy duty rubber mate (size are suitable with the equipment) to put at front & back of the Main Switch Board
- Manual operating breathing Airway or CPR regulations

MOTOR STARTER CONTROL CENTER

AXIA-MSCC-TR08



TECHNICAL SPECIFICATION:

Incomer - Input Rating : 400VAC, 3 Phase, 50Hz

- a. 1 No Moulded Case Circuit Breaker 63 Amp TPN, 45kA c/w Shunt Trip Coil
- b. Output :
 - 4 Nos Busbar, Red, Yellow, Blue & Neutral (For distribution)
- c. Instruments :
 - 1 No Amp meter, range 0 - 63A c/w Selector Switch
 - 1 No Voltmeter, range 0 - 500V c/w Selector Switch
 - 1 No Power Factor Meter
 - 1 No 3 Phase Kilowatt Hour Meter
 - 3 Nos 22mm Pilot Lamp (R/Y/B) - Phase Indicator Light
- d. Protective Devices :
 - 1 No Earth Leakage Relay
 - 1 No Zero Phase C/T Coil
- e. Motor Control Starter :
 - 1 No Soft Starter
 - 1 No Direct On Line Starter
 - 1 No Direct On Line Starter (Forward / Reverse)
 - 1 No Star Delta Starter
 - 1 No Auto Transformer Starter
 - 1 No Rotor Resistance Starter



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- f. Motor :
 - 2 x Three Phase AC Induction Motor (5HP)
 - 1 x Three Phase AC Slip Ring Motor (5HP)

- g. Brake Horse Power Testing Kit :
 - Disc plate c/w Brake Pad & Dynamometer (10kg)

ACCESSORIES:

- Complete with lockable heavy duty Castor Wheel

ROTOR RESISTANCE STARTER

AXIA-RRS-TR10



TECHNICAL SPECIFICATION:

- Input : 415/240 VAC, 3 Phase suitable for starting up to 5HP Motor
- 1 x 30 Amp, 3 Pole, Moulded Case Circuit Breaker for Power Circuit
- 1 x 6 Amp, 2 Pole, Miniature Circuit Breaker for Control Circuit
- 1 x Emergency Stop Button
- 3 x Push-Button Switch (Start / Stop / Start)
- 3 x LED Indicator light (Green / Red / Green)
- 4 x Magnetic Contractor 20 Amp
- 1 x Thermal Overload Relay
- 3 x Single-Range Analogue Timer (240V AC, 50 HZ, 0-30s adjustable)
- 1 x Rotor Resistance Bobbin Type, 5 Horse Power 2 Step
- *with out control cable looping
- PVC Wiring Duct Open Slot

STREET LIGHTING LV OUTDOOR FEEDER PILLAR (DIN TYPE) 100-FPB



TECHNICAL DATA

- Certified to IP54 accordance to IEC 60529 standards
- Suitable for outdoor environment
- This panel is constructed from 3mm EG or GI sheet metals
- Secured by Padlockable System
- The flexible colour combination to suit its environment

TECHNICAL SPECIFICATION

- Input: 1 x 100A & output: 3 x 60A, 415 VAC 3 Phase 50Hz and consists of the following, approx:-
 - i. Rated Voltage & Frequency 415V@50Hz
 - ii. Rated Current 100A
 - iii. Number of Incoming 1x100A TPN F/SW
 - iv. Number of Outgoing 3 ways, 60Amps 415V
 - v. 1 x Neutral Link
 - vi. 3 x 60A TPN Contactor
 - vii. 1 x Selector Switch
 - viii. 1 x 24Hrs T/Switch
 - ix. 18 x 60A TPN Cutout Fuse
 - x. 3 x 5A, 3 x 15A, Control Fuse c/w link
 - xi. 3 x 60A Terminal Blocks
 - xii. 1 x 13A Switch Socket Outlet
 - xiii. 1 x 18W Flu. Fitting
 - xiv. 1 x Photo Cell



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EARTH (FEEDER PILLAR)

Supply and install earthing system using Exothermic Welding Connection, approx:

- a) 25mm x 3mm Copper Tape
- b) 16mm (D) x 1500mm (L) Copper Jacketed Steel Core Earth Electrode
- c) Precast Heavy Duty Concrete Earth Chamber complete with durable type cover xv.

SAFETY EQUIPMENT

- i. 1 no. of rubber mat (standard size feeder pillar)
- ii. 1 pair of leather glove
- iii. Caution notice (1no. of “DANGER” & 1 no. of “BAHAYA”)
- iv. Single line diagram and complete with frame
- v. Labelling - All part instrument panel / equipment

Due to products continuous development process, layout and specification may change without prior notices.

THREE PHASE AC INDUCTION MOTOR 3HP

AXIA-3P-ACIM-3HP-TR15



TECHNICAL SPECIFICATION:

- Rated Power : 2.2KW (3HP)
- Rated Voltage : 450V / 690V AC (Delta / Star)
- Rated Current : 15.3A (Delta / Star)
- Rated Speed : 1500 rpm
- Frequency : 50 Hz
- Pole : 4
- Cooling Method : TEFC
- Insulation : Class F
- Mounting : Floor Mounted B3

Due to products continuous development process, layout and specification may change without prior notices.

THREE PHASE AC SLIP RING MOTOR 2HP

AXIA-3P-ACSRM-2HP-TR20



TECHNICAL SPECIFICATION:

- Nominal Power : 2HP / 1.5KW
- Nominal Voltage : 240 / 415V (Delta/Star)
- Nominal Speed : 1500 rpm
- Pole : 4
- Frequency : 50 Hz
- Cooling Method : Self Cooling
- Material : Cast Iron
- Protection : IP55
- Terminals : 4mm Safety Socket
- Mounting : Foot Mounted
- Manual : Instruction, Maintenance Services & Experimental
- Weight : 45kg