

# AETES

AC CONVERTER 3PH 400Hz

*Internal Isolation Transformer*  
*Industrial-Grade Enclosure*  
*Advanced User Panel*



*"...power alliance..."*

## DESCRIPTION

AETES AC to AC 400Hz Converter is a high technology equipment, including all protection and control systems, which is designed and manufactured to convert an AC voltage to another pure sinus and regulated AC voltage with 400Hz frequency. It provides AC power, which is especially important for Industry, Marine, Naval and Defence applications. This equipment contains an output isolation transformer, it provides full electrical isolation between AC input supply and AC output, and uses all advantages of Digital Signal Processor control. It provides handy user interface and advanced communication features.

## FEATURES

- Internal Isolation Transformer at output
- Full Digital Controlled conventional rectifier and IGBT inverter
- Soft start, smart control and high reliability with digital signal processor
- User language selection from front panel (DE, EN, ES, NL, PT, TR etc.)
- Low output voltage ripple and high reliability
- User panel with LCD display, showing measurements, status and alarm messages
- Audible alarm and led indicators for easy observation of status
- Calibration of measurements from front panel
- DC Low, DC High, Line Failure, Over Temperature, Short Circuit protections
- Ability to program all operation parameters (Password Protected)
- Programmable alarm relay contact outputs (4 standard, up to 16 relays as option)
- Voltage Vector Control technology
- Modbus RS232 communication, standard
- Log records with date and time stamp up the 200 events

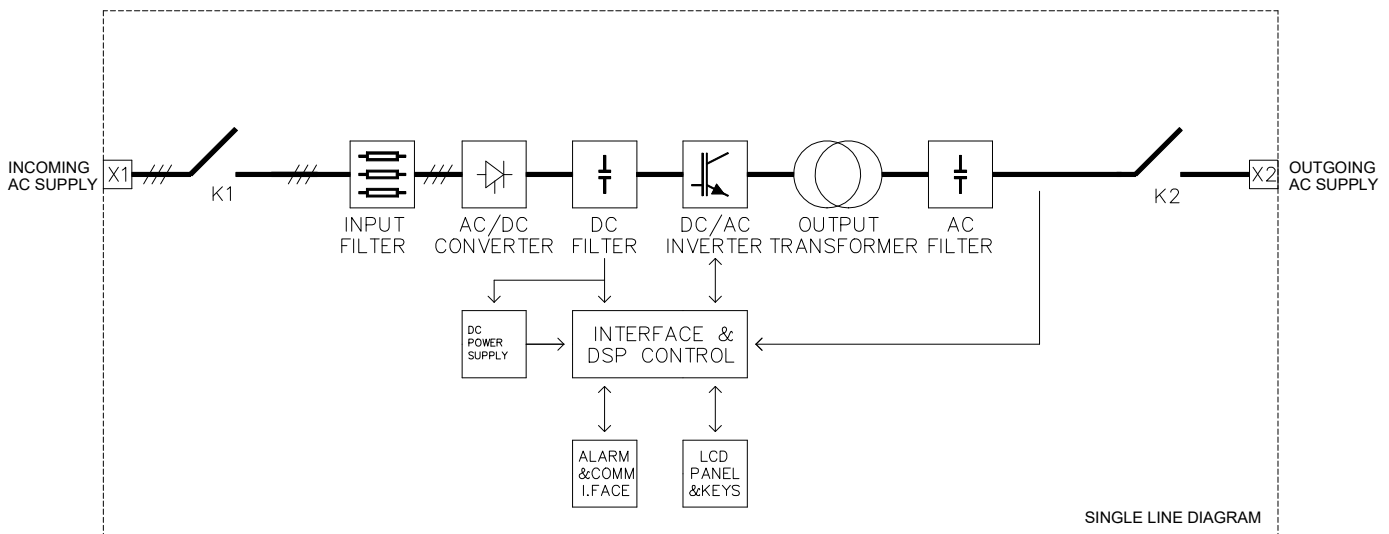
# GENERAL SPECIFICATION

| MODEL : FTM 3P3-400-D                                                                                                                                                                                                    | /10K                                                                                                     | /20K   | /30K               | /40K   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------|--------------------|--------|
| <b>INPUT</b>                                                                                                                                                                                                             |                                                                                                          |        |                    |        |
| Nominal Voltage                                                                                                                                                                                                          | Options: 3P4W or 3P3W AC 380V; 400V; 415V; 440V; 460V; 480V ( $\pm 15\%$ )                               |        |                    |        |
| Nominal Frequency                                                                                                                                                                                                        | 50Hz/60Hz ( $\pm 10\%$ )                                                                                 |        |                    |        |
| Power Factor (Nominal)                                                                                                                                                                                                   | 0.80 (<0.90 at 12 Pulse Optional)                                                                        |        |                    |        |
| ITHD                                                                                                                                                                                                                     | <30-35% standard (<12% at 12 pulse Optional)                                                             |        |                    |        |
| <b>OUTPUT</b>                                                                                                                                                                                                            |                                                                                                          |        |                    |        |
| Nominal Voltage                                                                                                                                                                                                          | Options: 3P4W or 3P3W AC 110/190V; 115/200V; 120/208V ( $\pm 1\%$ )                                      |        |                    |        |
| Nominal Frequency                                                                                                                                                                                                        | 400Hz                                                                                                    |        |                    |        |
| Output Voltage Adjustment                                                                                                                                                                                                | Optional                                                                                                 |        |                    |        |
| Crest Factor                                                                                                                                                                                                             | 3:1                                                                                                      |        |                    |        |
| THD                                                                                                                                                                                                                      | <3% at Linear Load                                                                                       |        |                    |        |
| Power Rating (kVA)                                                                                                                                                                                                       | 10 kVA                                                                                                   | 20 kVA | 30 kVA             | 40 kVA |
| Power Rating (kW)                                                                                                                                                                                                        | 8 kW                                                                                                     | 16 kW  | 24 kW              | 32 kW  |
| <b>GENERAL PROPERTIES</b>                                                                                                                                                                                                |                                                                                                          |        |                    |        |
| Circuit Breakers                                                                                                                                                                                                         | Thermic-magnetic circuit breakers for input                                                              |        |                    |        |
| Cooling                                                                                                                                                                                                                  | Fan Forced Cooling (Standard), Natural Cooling (Optional)                                                |        |                    |        |
| Isolation Voltage                                                                                                                                                                                                        | 1500 or 3000VAC input/chassis and output/chassis                                                         |        |                    |        |
| Efficiency at full load                                                                                                                                                                                                  | >88%                                                                                                     |        |                    |        |
| Protection level                                                                                                                                                                                                         | IP21 (Standard) IP31, IP41, IP54 (Optional)                                                              |        |                    |        |
| Cable Entry                                                                                                                                                                                                              | Front Bottom (Option: Top or Rear or Side)                                                               |        |                    |        |
| <b>ENVIRONMENTAL</b>                                                                                                                                                                                                     |                                                                                                          |        |                    |        |
| Acoustic Noise                                                                                                                                                                                                           | 65 dB                                                                                                    |        |                    |        |
| Storage Temperature                                                                                                                                                                                                      | (-20 °C) – (+70 °C)                                                                                      |        |                    |        |
| Operating Temperature                                                                                                                                                                                                    | (-5°C) - (+50°C)                                                                                         |        |                    |        |
| Relative Humidity                                                                                                                                                                                                        | 0 - 90% Non-condensing                                                                                   |        |                    |        |
| Max Altitude                                                                                                                                                                                                             | 2000m                                                                                                    |        |                    |        |
| <b>COMMUNICATION</b>                                                                                                                                                                                                     |                                                                                                          |        |                    |        |
| Communication                                                                                                                                                                                                            | ModBus RS232 (Standard), 4 Dry Contacts (Standard), RS485 (Optional), TCP IP (Optional), MQTT (Optional) |        |                    |        |
| <b>COMPATIBILITY</b>                                                                                                                                                                                                     |                                                                                                          |        |                    |        |
| Design Criteria                                                                                                                                                                                                          | IEC62040-1, IEC62040-2                                                                                   |        |                    |        |
| <b>MECHANICAL</b>                                                                                                                                                                                                        |                                                                                                          |        |                    |        |
| Color                                                                                                                                                                                                                    | RAL7035 (Standard), others (Optional)                                                                    |        |                    |        |
| Dimensions (mm)                                                                                                                                                                                                          | A:600 B:600 C:1300                                                                                       |        | A:800 B:800 C:1600 |        |
| NOTE: All specifications subject to change without notice. Consult AETES's Technical Support Department for special applications.<br>All terms or names used above are registered trademarks of their respective owners. |                                                                                                          |        |                    |        |

# OPTIONS

- 12 Pulse option to limit input current distortion
- Active Parallel Current Sharing operation up to 4 devices
- Surge Suppression Device and Input Snubber modules
- Analog Gauges (Input / Output Voltages and Currents)
- Transducers for Input / Output Voltage / Current (4-20mA and 0-10V)
- Internal Auxiliary 28VDC Output. (100A, 200A, 400A)
- Wide Screen HMI Touch Panel and Mimic Diagram
- Powermeter for Input Power Factor / kVA / kW measurement
- Additional Dry Contact Relay boards (Max. 3 pcs, 12 relays)
- Internal cabinet heating, lighting
- Enclosure paint and IP change (IP31, IP41, IP54)
- Specified DC bus voltage with battery input and battery breaker
- Additional communication ports; RS485/ TCP IP/ MQTT

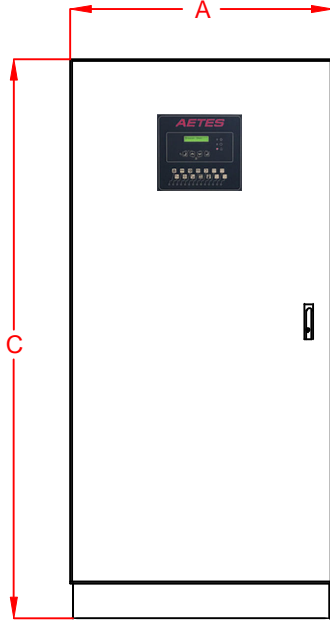
# BLOCK DIAGRAM



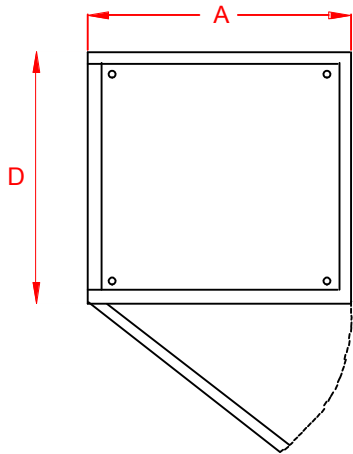
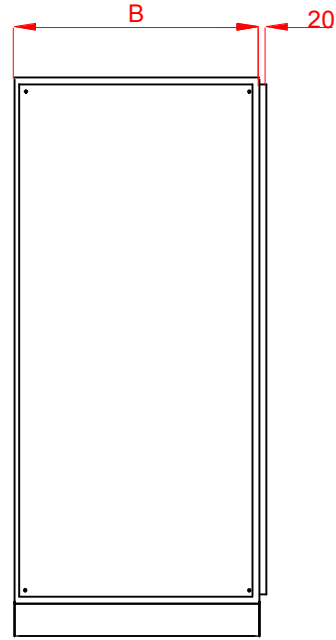
AETES AC-AC 400Hz Converter 3PH Block Diagram

# DRAWING

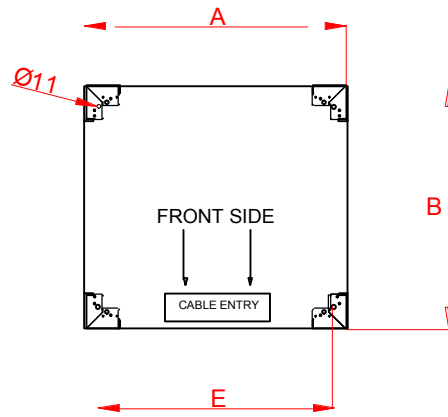
FRONT



LEFT

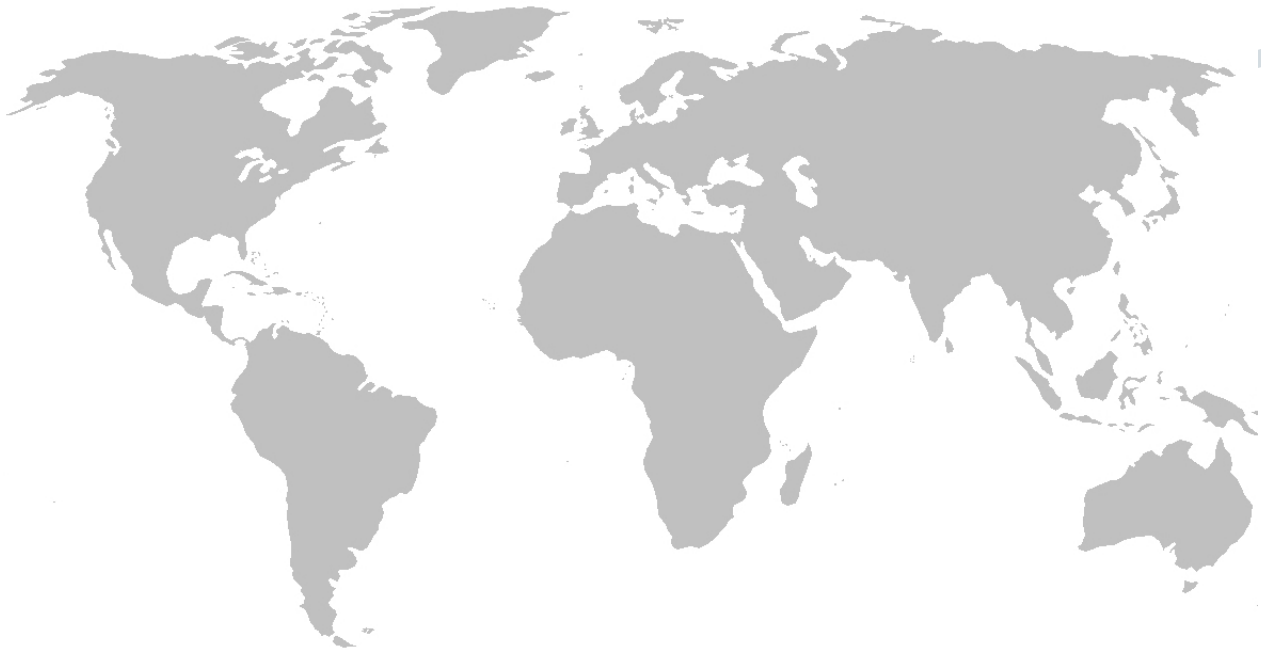


TOP



BOTTOM

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