



## FORTE

3 Phase In – 3 Phase Out / 10kVA – 250kVA  
 3 Phase In – 1 Phase Out / 10kVA – 40kVA

- 3 Level IGBT Rectifier & Inverter Technology
- Real Digital Signal Processor (DSP) controlled transformerless design
- High Output Power Factor (PF:1, kVA=kW)
- Increased AC-AC Efficiency (up to 96.5%)
- Unity Input Power Factor (PF: > 0.99)
- Low Input Current THD (<3%)
- Low Output Voltage THD (<2%)
- Wide input voltage range
- Built-in Static & Manual Bypass
- Soft Start Feature
- Parallel connection availability up to 8 units
- Adjustable Battery Qty with optional DC-DC Charger/Booster at 10-15-20kVA Compact version
- Intelligent battery management system extends the life time of batteries
- Colorful Graphical Multi-Functional TouchScreen LCD Panel
- Event Log Display up to 500 Events
- Advanced communication possibility via RS232
- MODBUS connection through RS 485
- Generator Port for Generator Friendly Operation
- EPO Port for Emergency Power Off
- 50/60Hz Frequency Converter Operation Mode (Adjustable from LCD Panel)
- Management and monitoring software available for all operating systems
- Communication with computers and network systems through Optional SNMP
- Optional Programmable 4pcs Relays for dry contact signals
- Compact dimension



### High Efficiency, Real Economy

- High efficiency of up to 96.5%, reduces the operational cost and provides significant energy saving.
- Continuous Operation, Unique Operational Efficiency, Minimized occupied Installation Area, Maximum Power Delivery, Reduced Infrastructure Material Cost (cable, transformer, generator), Low Cooling Expenses, Optimized TCO (Total Cost of Ownership) features of FORTE guarantees fast return of your investment.



10-20kVA COMPACT

10-30kVA

40-60kVA

80-100kVA

120-250kVA

# FORTE

## TECHNICAL SPECIFICATIONS

| MODEL<br>(380-400-415V 3ph version)  | FORTE<br>33010   | FORTE<br>33015           | FORTE<br>33020           | FORTE<br>33030           | FORTE<br>33040           | FORTE<br>33060           | FORTE<br>33080           | FORTE<br>33100           | FORTE<br>33120           | FORTE<br>33160           | FORTE<br>33200           | FORTE<br>33250           |
|--|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Power (kVA)  | 10   | 15                       | 20                       | 30                       | 40                       | 60                       | 80                       | 100                      | 120                      | 160                      | 200                      | 250                      |
| Active Power (kW)  | 10   | 15                       | 20                       | 30                       | 40                       | 60                       | 80                       | 100                      | 120                      | 160                      | 200                      | 250                      |
| MODEL<br>(200-208-220V 3Ph version)  | FORTE<br>U33005  | FORTE<br>U33007          | FORTE<br>U33010          | FORTE<br>U33015          | FORTE<br>U33020          | FORTE<br>U33030          | FORTE<br>U33040          | FORTE<br>U33050          | FORTE<br>U33060          | FORTE<br>U33080          | FORTE<br>U33100          | FORTE<br>U33125          |
| Power (kVA)  | 5  | 7.5                      | 10                       | 15                       | 20                       | 30                       | 40                       | 50                       | 60                       | 80                       | 100                      | 125                      |
| Active Power (kW)  | 5  | 7.5                      | 10                       | 15                       | 20                       | 30                       | 40                       | 50                       | 60                       | 80                       | 100                      | 125                      |
| INPUT  |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Phase  | 3Ph+N+PE   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Nominal Voltage  | 380V / 400V / 415V   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Voltage Range (100% Load)  | (-15%) (+20%)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Voltage Range (50% Load)   | (-45%) (+20%)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Nominal Frequency (Hz)   | 50 or 60   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Frequency Range (Online Mode)  | 45-65Hz  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Input Current Harmonics (THDi) *   | <3%  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Input Power Factor   | > 0.99   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| OUTPUT   |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Output Power Factor  | 1  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Phase  | 3Ph+N+PE   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Nominal Voltage  | 380V / 400V / 415V (adjustable via display)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Static Voltage Regulation @100% Linear Load  | <1%  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Output Voltage Harmonics (THDv) *  | < 2% (Linear Load)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Crest Factor   | 3:1  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Frequency (Hz)   | 50 Hz / 60 Hz  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Frequency Range  | ± 0.01% (Battery Mode)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Overload   | Online – Battery Mode: <125% Load 10 min, <150% Load 1 min<br>BypassMode: <200% continuous   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Efficiency*  | up to 96.5% (Online) , 98.5% (ECO MODE)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| STATIC BYPASS LINE   |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Phase  | 3Ph+N+PE   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Bypass Voltage Range   | 380V / 400V / 415V (adjustable via display: -15% +12%)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Bypass Frequency Range   | 47 Hz - 53 Hz (adjustable)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| BATTERY  |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Type   | Maintenance-Free Lead Acid Batteries   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Charge Current (A)   | Nominal Charge Current x 0.1 (adjustable via display)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Battery QTY STANDARD   | 60   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Battery QTY for FORTE-U version  | 34   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Internal Battery QTY STANDARD  | 60pcs 12V 7-9Ah  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Battery QTY COMPACT  | 20 - 52  | 30 - 52                  | 36 - 52                  |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Battery Protection   | Deep Discharge Protection, Temperature-compensated Battery Charging  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Battery Test   | Standard (Automatic & Manual)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| FRONT DISPLAY PANEL  |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Display  | 3.5" TFT Touch Screen with UPS Operation Modes & Energy Flow Diagram   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Color Graphic Touch Screen TFT   | Load %, Input / Output / Bypass Voltage, Output Power (W & VA), Output Current, Output Power Factor, Battery ± Voltage, Input / Output Frequency, DC Bus ± Voltage, Back-up Time, Internal Temperature |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Event Log  | 500pcs (details can be checked via display)  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| COMMUNICATION  |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Interface (Communication Port)   | RS232 & RS485 MODBUS & SNMP (optional)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Dry Contact Signals (Optional)   | 4pcs Relays configurable to ; " General Alarm", "Input Failure", "Battery Failure", "Output Failure", "Bypass Active", "Output Overload",  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Others as standard   | High Temperature" Dry contact signals  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| ENVIRONMENT  |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Storage Temperature (°C)   | -25°C - +70°C (15 - 40°C recommended for longer battery life time)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Operating Temperature (°C)   | 0 - 40°C (20 - 25 °C recommended for longer battery life time)   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Relative Humidity  | 0 - 95% ( non-condensing )   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Operating Altitude (maximum m.)  | 1000 m   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Protection Class   | IP20   |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Standards  | EN 62040-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance), EN 60950  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| PHYSICAL SPECIFICATIONS  | FORTE<br>33010<br>U33005   | FORTE<br>33015<br>U33007 | FORTE<br>33020<br>U33010 | FORTE<br>33030<br>U33015 | FORTE<br>33040<br>U33020 | FORTE<br>33060<br>U33030 | FORTE<br>33080<br>U33040 | FORTE<br>33100<br>U33050 | FORTE<br>33120<br>U33060 | FORTE<br>33160<br>U33080 | FORTE<br>33200<br>U33100 | FORTE<br>33250<br>U33125 |
| Dimensions (WxDxH) (cm) - STANDARD   | 40 x 75 x 110  |                          |                          |                          | 52 x 89 x 131            |                          | 67x77x165                |                          |                          | 85 x 80 x 185            |                          |                          |
| Weight (w/o battery) kg - STANDARD   | 100  | 114                      | 116                      | 122                      | 180                      | 202                      | 253                      | 285                      | 405                      | 522                      | 570                      | 600                      |
| Dimensions (WxDxH) (cm) - COMPACT  | 27 x 80 x 103  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Weight (w/o battery) kg - COMPACT  | 75   | 79                       | 81                       |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| OPTIONS  |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
| Parallel Kit, Internal/External SNMP, Split Bypass, Remote Monitoring Panel, Isolation Transformer, Battery Cabinet, Backfeed Protection |  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |

\* May vary depending on UPS power & Load & Environmental Conditions.