Voltronic Power
Advancing Power

# Giant iND

## Robust Industry Online UPS

3-phase in/single phase out 10kVA-120kVA
3-phase in/3-phase out (384VDC) 10kVA-200kVA
3-phase in/3-phase out (480VDC) 100kVA-600kVA

- Robust Industry Online UPS
- True online double conversion with DSP control
- Robust electrical performance to prevent damage from top and bottom connections
- Screwless cabinet design and fully coating PCBAs to withstand harsh environment
- Unique ventilation design for effective heat dissipation
- Front access makes maintenance and replacement easily
- Flexible battery configuration adapts different applications
- Accepts dual-mains inputs
- High short-circuit and overload capabilities
- Easy integration into existing electrical networks or generator
- Parallel capability up to 4 units

## • True online double conversion with DSP control

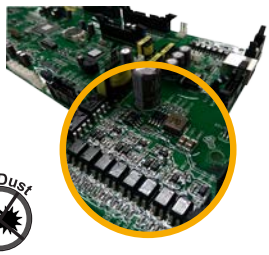
Double isolation between input/output, battery and bypass is applied to totally isolate power line noise, spikes and transients. A Digital Signal Processor (DSP) control provides an improved solution with high performance.

## • Robust electrical performance to prevent damage from top and bottom connections

This UPS is designed to accept wide input voltage and frequency range to cope with the worst utility conditions. It can eliminates harmful distortion from utility power and withstand all kinds of severe impacts from various loads. It's capable to support heavy duty equipment, production equipment and DCS (Distributed Control System) system..

## • Screwless cabinet design and fully coating PCBAs to withstand harsh environment

The outside cabinet is designed only with locks without any screws and all PCBAs are coated for anti-moisture, anti-electric leakage, anti-dust and anti-corrosion. Its robust design is suitable for high temperature, high humidity, dusty, salty and vibrated of harsh environment




## • Unique ventilation design for effective heat dissipation

Unique ventilation design allows heat flowing to top as natural convection. Therefore, the UPS cabinets can be added in parallel side by side for space-saving.

## • Flexible battery configuration adapts different applications

Battery numbers can be adjusted flexibly according to different power demands.

## • Accepts dual-mains inputs

Giant iND series is allowed to connect two separate power inputs to increase operation reliability.

## • Front access makes maintenance and replacement easily

An important consideration has been given to allow generous access to the unit's electronic cards and power components. All the boards are accessible by front panel for easily maintenance and replacement.

## • High short-circuit and overload capabilities

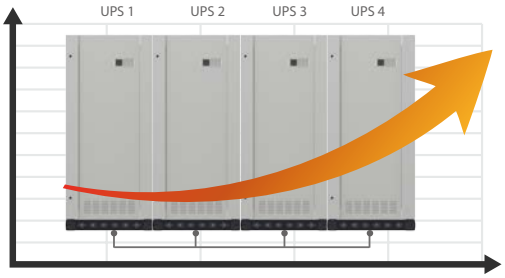
This UPS is built-in high short-circuit protection. Once short circuit occurs, this protection device will be activated. The load will stay protected and the UPS will remain intact. High overload protection supports 110% for 60 minutes and 125% for 10 minutes.

## • Easy integration into existing electrical networks or generator

Giant iND series is allowed for either top or bottom wiring connection depending on various environment condition. Besides, this UPS is fully compatible with generator.

## • Parallel capability up to 4 units

Up to 4 units in parallel can be operated without adding additional hardware, increasing system capacity as well as operation reliability for power redundancy.




## Applications:

Giant iND is suitable for industrial and facilities applications.

. Industrial process ( and control system, industrial machinery, instrument and measurement, process monitoring and control, security and transport systems….)

. Infrastructures (Hospital, airport, semiconductor, water treatment, metallurgy)

. Energy industry (gas and oil, nuclear power)

. Military application

# Giant iND 3P/1P 220VDC Online UPS Selection Guide

| MODEL | | Giant iND 31-10K | Giant iND 31-20K | Giant iND 31-30K | Giant iND 31-40K | Giant iND 31-60K | Giant iND 31-80K | Giant iND 31-100K | Giant iND 31-120K |
|---|---|---|---|---|---|---|---|---|---|
| CAPACITY | | 10KVA/8KW | 20KVA/16KW | 30KVA/24KW | 40KVA/32KW | 60KVA/48KW | 80KVA/64KW | 100KVA/80KW | 120KVA/96KW |
| **INPUT** | | | | | | | | | |
| Nominal Voltage | | 3 x 380VAC (3Ph + G or 3Ph + N + G) | | | | | | | |
| Acceptable Voltage Range | | 304VAC ~ 456VAC | | | | | | | |
| Frequency | | 50Hz ±5 Hz (±10%) | | | | | | | |
| **INVERTER** | | | | | | | | | |
| Nominal Voltage | | 220VAC/230VAC/240VAC (Selectable) | | | | | | | |
| Connection Type | | Hardwire 3-wire (1Ph+N+G) | | | | | | | |
| Waveform | | Pure Sinewave | | | | | | | |
| Output Voltage Stability | Steady state | ±1% | | | | | | | |
| | Transient state | ±5% | | | | | | | |
| Frequency | | 50 Hz | | | | | | | |
| Frequency Stability | | ± 1% | | | | | | | |
| Frequency Synchronisation Range | | ± 5Hz (Equal to bypass working range) | | | | | | | |
| Frequency Synchronisation Speed | | 1~2 Hz/s | | | | | | | |
| Power Factor | | 0.8 | | | | | | | |
| Crest Factor | | 3:1 | | | | | | | |
| Total Harmonic Distortion (THDv) | | <2% (Linear Load)<br><4% (Non-linear Load) | | | | | | | |
| Dynamic in-rush Voltage Range | | 0%->100%->0% (R Load) <±5% : 20%->100%->20% (R Load) ±3% | | | | | | | |
| Dynamic Recovery Time (III Grade) | | 0%~100% RCD load : <60 ms recover to 90% of nominal voltage | | | | | | | |
| Phase Displacement | | 120° ±1% (balanced load)<br>120° ±2% (imbalances 50% of the load) | | | | | | | |
| Transfer Time | | 0 ms | | | | | | | |
| Overload Capability | | 0% ~ 110% continuous running; 110% ~ 150% for 10 min~1 min; >160% for 200ms | | | | | | | |
| Short-circuit Capability | | 60~100ms | | | | | | | |
| Transient Response Time | | < 5ms | | | | | | | |
| **BYPASS** | | | | | | | | | |
| Connection Type | | Hardwire 3-wire (1Ph+N+G) | | | | | | | |
| Input Voltage Range | | 220VAC ± 25% | | | | | | | |
| Overload Capability | | 1.5 In~1.8 In 1h~30s | | | | | | | |
| Short-circuit Capability | | 1.8 In ~ >2.0 In 30s~200ms | | | | | | | |
| **SYSTEM** | | | | | | | | | |
| Efficiency (At Linear Load and 270VDC) | | 90% | 91% | 91% | 91% | 91% | 92% | 92% | 92% |
| ECO Mode (Non-parallel models) | | Yes | | | | | | | |
| EPO Function | | Yes | | | | | | | |
| Standard | | IEC 61000-4-5 Protection surge, IEC 62040-2 EMC/EMI, IEC62040-1 Safety | | | | | | | |
| **BATTERY & CHARGER** | | | | | | | | | |
| Rectifier | Type | 6 pulse | | | 12 pulse | | | | |
| | Rated output voltage | 220 VDC | | | | | | | |
| | Charger voltage | 220VDC ~ 270VDC (Adjustable) | | | | | | | |
| | Charging current(max) | 20A | 40A | 40A | 40A | 40A | 40A | 40A | 40A |
| Battery | Type | Support VRLA Battery | | | | | | | |
| | Numbers | 18 Pcs | | | | | | | |
| | Reverse Diode | Yes | | | | | | | |
| | Cold Start | Yes | | | | | | | |
| **PHYSICAL** | | | | | | | | | |
| IP Protection | | IP20 (Default), IP21/IP31 (Option) | | | | | | | |
| Dimensions, D x W x H(mm) | | 800 x 800 x 1800 | | | | 800 x 1200 x 1800 | | 800 x 1600 x 1800 | |
| Net Weight (Kgs) | | 370 | 460 | 650 | 680 | 1000 | 1260 | 1360 | 1620 |
| **ENVIRONMENT** | | | | | | | | | |
| Operating Temperature | | 0~ 40°C continuous running, 45°C derating to 85% with linear load | | | | | | | |
| Humidity | | 0~90% (non-condensing) | | | | | | | |
| Noise Level | | Less than 70dB @ 1 Meter | | | | | | | |
| **MANAGEMENT** | | | | | | | | | |
| Modbus RS-232/RS485 | | Supports Windows® 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC | | | | | | | |
| Dry Contacts | | 6 outputs and 2 inputs | | | | | | | |
| Optional SNMP | | Power management from SNMP manager and web browser | | | | | | | |

Product specifications are subject to change without further notice

# Giant iND 3P/1P 384VDC Online UPS Selection Guide

| MODEL | | Giant iND 31-10K | Giant iND 31-20K | Giant iND 31-30K | Giant iND 31-40K | Giant iND 31-60K | Giant iND 31-80K | Giant iND 31-100K | Giant iND 31-120K |
|---|---|---|---|---|---|---|---|---|---|
| CAPACITY | | 10KVA/8KW | 20KVA/16KW | 30KVA/24KW | 40KVA/32KW | 60KVA/48KW | 80KVA/64KW | 100KVA/80KW | 120KVA/96KW |
| **INPUT** | | | | | | | | | |
| Nominal Voltage | | 3 x 380VAC (3Ph + G or 3Ph + N + G) | | | | | | | |
| Acceptable Voltage Range | | 304VAC ~ 456VAC | | | | | | | |
| Frequency | | 50Hz ±5 Hz (±10%) | | | | | | | |
| **INVERTER** | | | | | | | | | |
| Nominal Voltage | | 220VAC/230VAC/240VAC (Selectable) | | | | | | | |
| Connection Type | | Hardwire 3-wire (1Ph+N+G) | | | | | | | |
| Waveform | | Pure Sinewave | | | | | | | |
| Output Voltage Stability | Steady state | ±1% | | | | | | | |
| | Transient state | ±5% | | | | | | | |
| Frequency | | 50 Hz | | | | | | | |
| Frequency Stability | | ± 1% | | | | | | | |
| Frequency Synchronisation Range | | ± 5Hz (Equal to bypass working range) | | | | | | | |
| Frequency Synchronisation Speed | | 1~2 Hz/s | | | | | | | |
| Power Factor | | 0.8 | | | | | | | |
| Crest Factor | | 3:1 | | | | | | | |
| Total Harmonic Distortion (THDv) | | <2% (Linear Load)<br><4% (Non-linear Load) | | | | | | | |
| Dynamic in-rush Voltage Range | | 0%->100%->0% (R Load) <±5% : 20%->100%->20% (R Load) ±3% | | | | | | | |
| Dynamic Recovery Time (III Grade) | | 0%~100% RCD load : <60 ms recover to 90% of nominal voltage | | | | | | | |
| Phase Displacement | | 120° ±1% (balanced load)<br>120° ±2% (imbalances 50% of the load) | | | | | | | |
| Transfer Time | | 0 ms | | | | | | | |
| Overload Capability | | 0% ~ 110% continuous running; 110% ~ 150% for 10 min~1 min; >160% for 200ms | | | | | | | |
| Short-circuit Capability | | 60~100ms | | | | | | | |
| Transient Response Time | | < 5ms | | | | | | | |
| **BYPASS** | | | | | | | | | |
| Connection Type | | Hardwire 3-wire (1Ph+N+G) | | | | | | | |
| Input Voltage Range | | 220VAC ± 25% | | | | | | | |
| Overload Capability | | 1.5 In~1.8 In 1h~30s | | | | | | | |
| Short-circuit Capability | | 1.8 In ~ >2.0 In 30s~200ms | | | | | | | |
| **SYSTEM** | | | | | | | | | |
| Efficiency (At Linear Load) | | ≧ 90% | | | | | | | |
| ECO Mode (Non-parallel models) | | Yes | | | | | | | |
| EPO Function | | Yes | | | | | | | |
| Standard | | IEC 61000-4-5 Protection surge, IEC 62040-2 EMC/EMI, IEC62040-1 Safety | | | | | | | |
| **BATTERY & CHARGER** | | | | | | | | | |
| Rectifier | Type | 6 pulse | | | | | | | |
| | Rated output voltage | 384 VDC | | | | | | | |
| | Charger voltage | 290VDC ~ 435VDC (Adjustable) | | | | | | | |
| | Charging current(max) | 20A | 40A | 40A | 40A | 40A | 40A | 40A | 40A |
| Battery | Type | Support VRLA Battery | | | | | | | |
| | Numbers | 32 Pcs (29 ~ 32 adjustable) | | | | | | | |
| | Reverse Diode | Yes | | | | | | | |
| | Cold Start | Yes | | | | | | | |
| **PHYSICAL** | | | | | | | | | |
| IP Protection | | IP20 (Default), IP21/IP31 (Option) | | | | | | | |
| Dimensions, D x W x H(mm) | | 800 x 800 x 1800 | | | | | | 800 x 1200 x 1800 | |
| Net Weight (Kgs) | | 360 | 400 | 430 | 490 | 610 | 680 | 900 | 920 |
| **ENVIRONMENT** | | | | | | | | | |
| Operating Temperature | | 0~ 40°C continuous running, 45°C derating to 85% with linear load | | | | | | | |
| Humidity | | 0~90% (non-condensing) | | | | | | | |
| Noise Level | | Less than 70dB @ 1 Meter | | | | | | | |
| **MANAGEMENT** | | | | | | | | | |
| Modbus RS-232/RS485 | | Supports Windows® 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC | | | | | | | |
| Dry Contacts | | 6 outputs and 2 inputs | | | | | | | |
| Optional SNMP | | Power management from SNMP manager and web browser | | | | | | | |

Product specifications are subject to change without further notice

# Giant iND 3P/3P 384VDC Online UPS Selection Guide

| MODEL | | Giant iND 33-10K | Giant iND 33-20K | Giant iND 33-30K | Giant iND 33-40K | Giant iND 33-60K | Giant iND 33-80K | Giant iND 33-100K | Giant iND 33-120K | Giant iND 33-160K | Giant iND 33-200K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CAPACITY | | 10KVA/8KW | 20KVA/16KW | 30KVA/24KW | 40KVA/32KW | 60KVA/48KW | 80KVA/64KW | 100KVA/80KW | 120KVA/96KW | 160KVA/128KW | 200KVA/160KW |
| **INPUT** | | | | | | | | | | | |
| Nominal Voltage | | 3 x 380VAC (3Ph + N or 3Ph + N + G) | | | | | | | | | |
| Acceptable Voltage Range | | 304VAC ~ 456VAC | | | | | | | | | |
| Frequency | | 50Hz ±5 Hz (±10%) | | | | | | | | | |
| **INVERTER** | | | | | | | | | | | |
| Nominal Voltage | | 220VAC/230VAC/240VAC (Selectable) | | | | | | | | | |
| Connection Type | | Hardwire 5-wire (3Ph+N+G) | | | | | | | | | |
| Waveform | | Pure Sinewave | | | | | | | | | |
| Output Voltage Stability | Steady state | ±1% | | | | | | | | | |
| | Transient state | ±5% | | | | | | | | | |
| Frequency | | 50 Hz | | | | | | | | | |
| Frequency Stability | | ± 1% | | | | | | | | | |
| Frequency Synchronisation Range | | ± 5Hz (Equal to bypass working range) | | | | | | | | | |
| Frequency Synchronisation Speed | | 1~2 Hz/s | | | | | | | | | |
| Power Factor | | 0.8 | | | | | | | | | |
| Crest Factor | | 3:1 | | | | | | | | | |
| Total Harmonic Distortion (THDv) | | <2% (Linear Load)<br><4% (Non-linear Load) | | | | | | | | | |
| Dynamic in-rush Voltage Range | | 0%->100%->0% (R Load) <±5% : 20%->100%->20% (R Load) ±3% | | | | | | | | | |
| Dynamic Recovery Time (III Grade) | | 0%~100% RCD load : <60 ms recover to 90% of nominal voltage | | | | | | | | | |
| Phase Displacement | | 120º ±1% (balanced load)<br>120º ±2% (imbalances 50% of the load) | | | | | | | | | |
| Transfer Time | | 0 ms | | | | | | | | | |
| Overload Capability | | 0% ~ 110% continuous running; 110% ~ 150% for 10 min~1 min; >160% for 200ms | | | | | | | | | |
| Short-circuit Capability | | 60~100ms | | | | | | | | | |
| Transient Response Time | | < 5ms | | | | | | | | | |
| **BYPASS** | | | | | | | | | | | |
| Connection Type | | Hardwire 5-wire (3Ph+N+G) | | | | | | | | | |
| Input Voltage Range | | 220VAC ± 25% | | | | | | | | | |
| Overload Capability | | 1.5 In~1.8 In 1h~30s | | | | | | | | | |
| Short-circuit Capability | | 1.8 In ~ >2.0 In 30s~200ms | | | | | | | | | |
| **SYSTEM** | | | | | | | | | | | |
| Efficiency (At Linear Load) | | 90% | 91% | 91% | 91% | 91% | 92% | 92% | 92% | 88% | 88% |
| ECO Mode (Non-parallel models) | | Yes | | | | | | | | | |
| EPO Function | | Yes | | | | | | | | | |
| Standard | | IEC 61000-4-5 Protection surge, IEC 62040-2 EMC/EMI, IEC62040-1 Safety | | | | | | | | | |
| **BATTERY & CHARGER** | | | | | | | | | | | |
| Rectifier | Type | 6 pulse | | | | | | 12 pulse | | | |
| | Rated output voltage | 384 VDC | | | | | | | | | |
| | Charger voltage | 395VDC ~ 435VDC (Adjustable) | | | | | | | | | |
| | Charging current(max) | 20A | 40A | 40A | 40A | 40A | 40A | 40A | 40A | 50A | 50A |
| Battery | Type | Support VRLA Battery | | | | | | | | | |
| | Numbers | 32 Pcs (29 ~ 32 adjustable) | | | | | | | | | |
| | Reverse Diode | Yes | | | | | | | | | |
| | Cold Start | Yes | | | | | | | | | |
| **PHYSICAL** | | | | | | | | | | | |
| IP Protection | | IP20 (Default), IP21/IP31 (Option) | | | | | | | | | |
| Dimensions, D x W x H(mm) | | 800 x 800 x 1800 | | | | | | 800 x 1200 x 1800 | | 800 x 1600 x 1800 | |
| Net Weight (Kgs) | | 350 | 420 | 450 | 480 | 730 | 790 | 1000 | 1300 | 1400 | 1700 |
| **ENVIRONMENT** | | | | | | | | | | | |
| Operating Temperature | | 0~ 40°C continuous running, 45°C derating to 85% with linear load | | | | | | | | | |
| Humidity | | 0~90% (non-condensing) | | | | | | | | | |
| Noise Level | | Less than 70dB @ 1 Meter | | | | | | | | | |
| **MANAGEMENT** | | | | | | | | | | | |
| Modbus RS-232/RS485 | | Supports Windows® 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC | | | | | | | | | |
| Dry Contacts | | 6 outputs and 2 inputs | | | | | | | | | |
| Optional SNMP | | Power management from SNMP manager and web browser | | | | | | | | | |

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# Giant iND 3P/3P 480VDC Online UPS Selection Guide

| MODEL | | Giant iND 33-100K | Giant iND 33-120K | Giant iND 33-160K | Giant iND 33-200K | Giant iND 33-250K | Giant iND 33-300K | Giant iND 33-400K | Giant iND 33-500K | Giant iND 33-600K |
|---|---|---|---|---|---|---|---|---|---|---|
| CAPACITY | | 100KVA/90KW | 120KVA/108KW | 160KVA/144KW | 200KVA/180KW | 250KVA/225KW | 300KVA/270KW | 400KVA/360KW | 500KVA/450KW | 600KVA/540KW |
| **INPUT** | | | | | | | | | | |
| Nominal Voltage | | 3 x 380VAC/400VAC/415VAC (3Ph + G) | | | | | | | | |
| Acceptable Voltage Range | | 304VAC ~ 456VAC | | | | | | | | |
| Frequency | | 45Hz ~ 65Hz | | | | | | | | |
| **INVERTER** | | | | | | | | | | |
| Nominal Voltage | | 380VAC/400VAC/415VAC (Selectable) | | | | | | | | |
| Connection Type | | Hardwire 5-wire (3Ph+N+G) | | | | | | | | |
| Waveform | | Pure Sinewave | | | | | | | | |
| Output Voltage Stability | Steady state | ±1% | | | | | | | | |
| | Transient state | ± 5% | | | | | | | | |
| Frequency | | 50 Hz or 60 Hz (Selectable) | | | | | | | | |
| Frequency Stability | | ± 0.05% | | | | | | | | |
| Frequency Synchronisation Range | | ± 5Hz (Equal to bypass working range) | | | | | | | | |
| Frequency Synchronisation Speed | | 1~2 Hz/s | | | | | | | | |
| Power Factor | | 0.9 | | | | | | | | |
| Crest Factor | | 3:1 | | | | | | | | |
| Total Harmonic Distortion (THDv) | | < 1% (Linear Load)<br>< 3% (Non-linear Load) | | | | | | | | |
| Dynamic in-rush Voltage Range | | 0%->100%->0% load : ≤1% | | | | | | | | |
| Dynamic Recovery Time (III Grade) | | 0%~100% RCD load : <20 ms recover to 90% of nominal voltage | | | | | | | | |
| Phase Displacement | | 120º ±1% | | | | | | | | |
| Transfer Time | | 0 ms | | | | | | | | |
| Overload Capability | | 110% for 60 minutes, 125% for 10 minutes, 150% for 1 minute, 200% for 7 seconds | | | | | | | | |
| Short-circuit Capability | | 180% for 1 second | | | | | | | | |
| Transient Response Time | | < 10ms | | | | | | | | |
| **BYPASS** | | | | | | | | | | |
| Connection Type | | Hardwire 5-wire (3Ph+N+G) | | | | | | | | |
| Input Voltage Range | | 220VAC ± 15% (setting range ±10% ~ ±25%) | | | | | | | | |
| Overload Capability | | 110% for 60 minutes, 125% for 10 minutes, 150% for 1 minute | | | | | | | | |
| Short-circuit Capability | | 1 second (Rated x 7 ), 500 ms (Rated x 8 ), 200 ms (Rated x 9 ), 100 ms (Rated x 10 ), 100 ms (Rated x 14) | | | | | | | | |
| **SYSTEM** | | | | | | | | | | |
| Efficiency (At Linear Load) | | 93% | 93% | 93.5% | 93.5% | 93.5% | 93% | 93% | 93% | 93% |
| ECO Mode (Non-parallel models) | | Yes | | | | | | | | |
| EPO Function | | Yes | | | | | | | | |
| Standard | | IEC 60529, IEC 60664, IEC 60755 | | | | | | | | |
| **BATTERY & CHARGER** | | | | | | | | | | |
| Rectifier | Type | IGBT | | | | | | | | |
| | Rated output voltage | 480 VDC | | | | | | | | |
| | Charger voltage | 524VDC ~ 576VDC (Adjustable) | | | | | 542VDC ~ 576VDC (Adjustable) | | | |
| | Charging current(max) | 20A | 24A | 32A | 40A | 50A | 50A | 70A | 70A | 70A |
| Battery | Type | Support VRLA Battery | | | | | | | | |
| | Numbers | 40 Pcs (40 ~ 43 adjustable) | | | | | | | | |
| | Reverse Diode | No | | | | | | | | |
| | Cold Start | Yes | | | | | | | | |
| **PHYSICAL** | | | | | | | | | | |
| IP Protection | | IP20 (Default) | | | | | | | | |
| Dimensions, D x W x H(mm) | | 850 x 800 x 1900 | | 850 x 1000 x 1900 | | | 1000 x 1500 x 1900 | | 1000 x 2100 x 1900 | |
| Net Weight (Kgs) | | 656 | 700 | 800 | 910 | 1000 | 1400 | 1700 | 2100 | 2400 |
| **ENVIRONMENT** | | | | | | | | | | |
| Operating Temperature | | 0~ 40°C continuous running, 45°C derating to 85% with linear load | | | | | | | | |
| Humidity | | 0~90% (non-condensing) | | | | | | | | |
| Noise Level | | Less than 65~70dB @ 1 Meter | | | | | | | | |
| **MANAGEMENT** | | | | | | | | | | |
| Modbus RS-232/RS485 | | Supports Windows® 2000/2003/XP/Vista/2008/7/8, Linux, Unix, and MAC | | | | | | | | |
| Dry Contacts | | 3 outputs and 2 inputs | | | | | | | | |
| Optional SNMP | | Power management from SNMP manager and web browser | | | | | | | | |

Product specifications are subject to change without further notice