

# UPS CATALOGUE



**2018**

# PRODUCT LINE



## ETT-Q&D1/1 Series



**Mono Phase**

**1-15 kVA**

## ETT-Q&D3/1 Series



**3P Input / 1P Output**

**10-30 kVA**

## ETT-Q&D3/3 Series



**3P Input / 3P Output**

**10-650 kVA**

## ETT-T1/1 Series



**Mono Phase**

**5-15 kVA**

## ETT-T3/1 Series



**3P Input / 1P Output**

**6-40 kVA**

## ETT-T3/3 Series

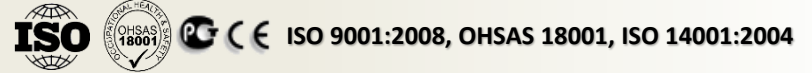


**3P Input / 3P Output**

**10-300 kVA**

# ETT-Q1/1

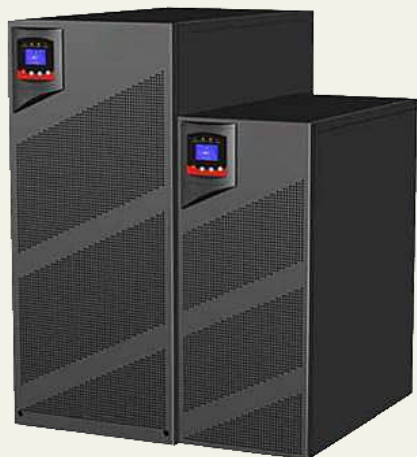
## Transformerless UPS



MODEL	ETT-1Q1/1	ETT-2Q1/1	ETT-3Q1/1
Power (kVA / kW)	1 / 0,9	2 / 1,8	3 / 2,7
<b>INPUT</b>			
Voltage	110-300 VAC		
Power factor	≥ 0.98 @ full RCD load		
Frequency range	40-70Hz		
Generator Set	2.2 x UPS Rating Power		
<b>OUTPUT</b>			
Power factor	0,9		
Waveform	Pure sine wave		
Nominal voltage	200/208/220/230/240 VAC		
Voltage regulation	± 1%		
Voltage THD	< 4% @ linear load < 7% @ non-linear load		
Frequency (sync. range)	46 - 54Hz / 56 - 64Hz		
Frequency (battery mode)	50 ± 0.05Hz / 60 ± 0.05Hz		
Overload capability	105% - 150% : 47s ~ 25s, 150% - 200% : 25s ~ 300ms, > 200% : 200ms		
Load crest ratio	3:1		
<b>TRANSFER TIME</b>			
LINE «BAT	0 ms		
BYPASS LINE	< 4 ms		
<b>EFFICIENCY</b>			
Line mode	> 89%	> 90%	> 90%
Battery mode		> 83%	
<b>BATTERIES</b>			
Type	12VDC/45W		
Number of batteries	2	4	6
Back-up time	4,5 min		
Charging time	< 7 hours to 90% capacity		
<b>INDICATOR &amp; ALARM</b>			
Display	LCD Display		
Audible alarm	Battery mode / Battery low / Overload / Fault		
<b>INTERFACE</b>			
RS232	Standard		
Intelligent slot	USB/SNMP/RS485/AS400 Card		
<b>DIMENSIONS</b>			
Dimensions (mm) HxWxD	229x144x345 mm	328x190x393 mm	
Net weight (kg)	9,2 kg	17,4 kg	22,7 kg
<b>ENVIRONMENT</b>			
Operating temperature	0°C ~ 40 °C		
Audible Noise	49 dBA @ 1 meter		

### SPECIFICATIONS

- \* Most cost-effective solution & high performance
- \* Ready for most challenging power conditions
- \* On-line topology
- \* Pure sinewave output
- \* Graphic LCD display
- \* CE Compliant
- \* True double-conversion design with high adaptability to harsh mains conditions
- \* DSP design enables precise & reliable control
- \* High efficiency results in energy saving
- \* Output power factor 0.9
- \* Wide AC input range (110-300VAC)
- \* Automatic switching between 50/60Hz system
- \* Automatic boost/buck
- \* ±1% output voltage regulation
- \* Supports AC generator
- \* Supports DC start-up and auto restart
- \* Supports SNMP/RS485/AS400 communication card



### SPECIFICATIONS

- \* High performance
- \* True double conversion
- \* On-line topology
- \* DSP control
- \* 0,9 Output power factor
- \* Wide input range
- \* High Efficiency mode (ECO)
- \* Frequency converter mode
- \* Input THDI < 5%
- \* Output voltage regulation < 1%
- \* Output THDv < 2%
- \* Fan speed control
- \* Extendable run time
- \* Dual input ( for 3/1 10kVA/20kVA )
- \* N + X parallel redundancy
- \* Power management software
- \* Multiple communication ports
- \* Optional SNMP & relay cards
- \* Maintenance bypass
- \* Dot matrix LCD display

MODEL	ETT-6Q1/1	ETT-10Q1/1
Power (kVA / kW)	6 / 5,4	10 / 9
<b>INPUT</b>		
Acceptable input voltage	110- 276VAC	
Adjustable bypass voltage	110 - 276VAC	
Frequency range	45Hz- 55Hz/ 54Hz 66Hz	
Phase	Single phase with ground	
THDI	< 5% with R Full load	
Power factor	> 0,99 @ R Full Load	
<b>OUTPUT</b>		
Voltage	208/220/230/240VAC	
Voltage regulation	< 1%	
Frequency (Sync. range)	45Hz 55Hz / 54Hz 66Hz	
Frequency (Battery mode)	50/60 ± 0.05 Hz	
Current crest factor	3:1	
Harmonic Distortion	< 2% (linear load) < 5% (non-linear load)	
Output Waveform	Pure Sine Wave	
Overload Line Mode	2 min @105% - 125% load	
Capacity BAT Mode	30 sec @105% - 125% load, 1 sec > 150 % load,	
Parallel	Up to 4	
<b>EFFICIENCY</b>		
Line Mode	>92% @ Full Load and Battery Fully Charged	
BAT Mode	>92% @ Full Load and 12Vdc/Battery	
ECO Mode	>96% @ Full Load and Battery Fully Charged	
<b>BATTERIES</b>		
Number of batteries	20	20
Battery type	12V/7Ah	12V/9Ah
Backup time (full load)	> 5 minutes	
Recharge time	5 hours to 90%	
Charging current (max)	1.2 A	
Rated battery voltage	240VDC	
<b>TRANSFER TIME</b>		
BAT LINE	0 ms	
INV BYPASS	0 ms	
ECO -9 INV	< 10 ms	
<b>INDICATOR</b>		
LCD	Load Level / Battery Level / Battery Mode / AC Mode / Bypass Mode / Fault	
<b>AUDIBLE ALARM</b>		
Battery mode	Sounding every 4 seconds	
Low battery	Sounding every second	
Fault	Continuously Sounding	
Overload	Sounding twice every second	
<b>DIMENSIONS</b>		
Tower Case (mm) HxWxD	260x708x550 mm	
Net weight (kg)	72 kg	82 kg
<b>ENVOIREMENT</b>		
Operating environment	0-45 C	
Relative humidity	0-95% (non-condensing)	
Noise level	<50dB @ 1 Meter	
<b>INTERFACE</b>		
RS232/USB	Software supports Windows Family, Linux, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, HP-UX, and MAC	
External slot	SNM PIAS400/Relay Card	
EPO	Emergency Power Off	



# ETT-Q1/1XL

## X Large Transformerless UPS



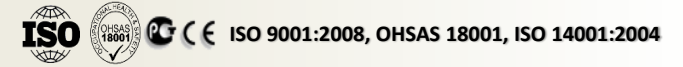
### SPECIFICATIONS

- \* High power density rack-tower 2-in-1 true online double conversion UPS
- \* DSP Control
- \* 0.9 Output power factor
- \* Wide input range
- \* High efficiency mode (ECO)
- \* Frequency converter mode
- \* Input THDi < 5%
- \* Output voltage regulation < 1%
- \* Output THDv < 2%
- \* Fan speed control
- \* Compact design
- \* Extendable run time
- \* Power management software
- \* Multiple communication ports
- \* Optional SNMP & Relay Cards
- \* Compact design

MODEL	ETT-1Q1/1RT	ETT-2Q1/1RT	ETT-3Q1/1RT
Power (kVA / kW)	1 / 0,9	2 / 1,8	3 / 2,7
<b>INPUT</b>			
Voltage range	110~300VAC depends on load level		
Frequency range	45-55Hz / 54-66Hz		
Phase	Single phase with ground		
THDI	< 5% with full load		
Power factor	≥ 0.99		
<b>OUTPUT</b>			
Voltage	200/208/220/230/240VAC		
Voltage regulation	± 2%		
Frequency	45-55Hz / 54-66Hz (synchronized range)		
Frequency (bat mode)	50Hz / 60Hz ± 0.2Hz		
Current crest ratio	3:1		
Harmonic distortion	≤ 2% @ Linear Load, ≤ 5% Non-Linear Load		
Output waveform	Pure Sine Wave		
Overload capacity	Line mode	1min @ 105% - 110% load	30s@ 110% - 120% load
Overload capacity	BAT mode	10s@ 125% - 150%	1s@ > 150% load
<b>EFFICIENCY</b>			
Line mode	> 87%		> 88%
BAT mode		> 85%	
Eco mode		> 94%	
<b>BATTERIES</b>			
Number of batteries	Depending on the capacity of external batteries		
Battery type			
Backup time			
Recharge time			
Charging current	8A	8A / Adjustable or optional (optional: +4A = 12A)	
<b>TRANSFER TIME</b>			
LINE ↔ BAT	0 ms		
INV ↔ BYPASS	< 4 ms		
INV → ECO	< 4 ms		
ECO → INV	< 10 ms		
<b>INDICATOR</b>			
LCD	Load Level / Battery Voltage / Battery Mode / AC Mode / Bypass Mode Information		
<b>AUDIBLE ALARM</b>			
BAT mode	Sounding every 4 seconds		
Battery low	Sounding every second		
Fault	Continuously sounding		
Overload capacity	Sounding twice every second		
<b>GENERAL</b>			
Operation environment	0 - 45°C		
Relative humidity	20 - 90% (non-condensing)		
Acoustic noise	< 50dB @ front 1 meter		
Tower case (HxWxD)	220x145x400	347x192x460	
<b>INTERFACE</b>			
RS232 / USB	Software supports Windows Family, Linux, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, HP-UX, MAC		
Intelligent slot	SNMP/AS400/Relay Card		
EPO	Emergency Power Off		

# ETT-Q1/1RT

## Rack Type Transformerless UPS



### SPECIFICATIONS

- \* High power density rack-tower 2-in-1 true online double conversion UPS
- \* DSP Control
- \* 0.9 Output power factor
- \* Wide input range
- \* High efficiency mode (ECO)
- \* Frequency converter mode
- \* Input THDi < 5%
- \* Output voltage regulation < 1%
- \* Output THDv < 2%
- \* Fan speed control
- \* Compact design
- \* Extendable run time
- \* Power management software
- \* Multiple communication ports
- \* Optional SNMP & Relay Cards
- \* Temperature compensation

MODEL	ETT-1Q1/1RT	ETT-2Q1/1RT	ETT-3Q1/1RT
Power (kVA / kW)	1 / 0,9	2 / 1,8	3 / 2,7
<b>INPUT</b>			
Voltage range	120~276VAC depends on load level		
Frequency range	45-55Hz / 54-66Hz		
Phase	Single phase with ground		
THDI	< 5% with full load		
Power factor	≥ 0.99@R full load		
<b>OUTPUT</b>			
Voltage	208/220/230/240VAC		
Voltage regulation	± 1%		
Frequency	45-55Hz / 54-66Hz (synchronized range)		
Frequency (bat mode)	50Hz / 60Hz ± 0.2Hz		
Current crest ratio	3:1		
Harmonic distortion	≤ 2% @ Linear Load, ≤ 5% Non-Linear Load		
Output waveform	Pure Sine Wave		
Overload capacity	Line mode	12s @ 102% - 130% load, 1.5s @ 130% - 150% load	
Overload capacity	BAT mode	100ms @ > 150%	
<b>EFFICIENCY</b>			
Line mode	> 88%	> 89%	> 92%
BAT mode	> 83%	> 95%	> 86%
Eco mode			
<b>BATTERIES</b>			
Number of batteries	3	4	6
Battery type	12V/7Ah	12V/9Ah	
Backup time	> 5 minutes		
Recharge time	3 hours to 90%		
Charging current	1.5A		
<b>TRANSFER TIME</b>			
LINE ↔ BAT	0 ms		
INV ↔ BYPASS	0 ms		
INV → ECO	1 ms		
ECO → INV	< 10 ms		
<b>INDICATOR</b>			
LCD	Load Level / Battery Voltage / Battery Mode / AC Mode / Bypass Mode Information		
<b>AUDIBLE ALARM</b>			
BAT mode	Sounding every 4 seconds		
Battery low	Sounding every second		
Fault	Continuously sounding		
Overload capacity	Sounding twice every second		
<b>GENERAL</b>			
Operation environment	0 - 40°C		
Relative humidity	0 - 95% (non-condensing)		
Acoustic noise	< 45dB @ front 1 meter		< 50dB @ front 1 meter
Rack case (HxWxD)	86.5x438x436		86.5x438x608
Net weight (kg)	16,2 kg	19,7 kg	27,8 kg
<b>INTERFACE</b>			
RS232 / USB	Software supports Windows Family, Linux, Sun Solaris, IBM Aix, Compaq True64, SGI IRIX, FreeBSD, HP-UX, MAC		
Intelligent slot	SNMP/AS400/Relay Card		
EPO	Emergency Power Off		



### SPECIFICATIONS

- \* True double-conversion
- \* DSP technology guarantees high performance
- \* Output power factor 0.8
- \* Wide input voltage range
- \* Active power factor correction in all phases
- \* 50Hz/60Hz frequency converter mode
- \* Eco mode operation for energy saving (ECO)
- \* Programmable power management outlets (only available for 10K-20K models)
- \* Emergency power off function (EPO)
- \* Generator compatible
- \* SNMP+USB+RS-232 multiple communications
- \* 3-stage extendable charging design for optimized battery performance
- \* Adjustable battery numbers
- \* Maintenance bypass available
- \* Optional N+X parallel redundancy
- \* Optional isolation transformer offers full isolation and complete common mode noise rejection

MODEL	ETT-10Q3/1	ETT-15Q3/1	ETT-20Q3/1	ETT-30Q3/1
Power (kVA / kW)	10 / 8	15 / 12	20 / 16	30 / 24
<b>INPUT</b>				
Nominal voltage	3 x 400 VAC (3Ph+N)			
Input voltage range	190-520 VAC (3-phase) @ 50% load, 305-478 VAC (3-phase) @ 100% load			
Frequency range	46~54 Hz or 56~64Hz			
Power factor	≥ 0.99 @ 100% load			
THDI	< 6% @ 100% load			
<b>OUTPUT</b>				
Output voltage	208/220/230/240VAC			
AC voltage regulation	( batt. mode )	± 1%		
Frequency range (batt. (synchronized range )	46~54Hz or 56~64Hz			
Frequency range (batt. ( batt. mode )	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz			
Current crest ratio	3:1 (max)			
Harmonic distortion	2 % THD (Linear Load); ≤ 5 % THD (Non-linear Load)			
Transfer time	( AC mode to battery mode )	Zero		
	( Inverter to bypass )	Zero		
Waveform ( batt. mode )	Pure sine wave			
<b>EFFICIENCY</b>				
AC mode	90,5%	91%	91%	91,3%
Eco mode			96%	
Battery mode	86%	88%	87%	88%4
<b>BATTERIES</b>				
<u>Standard model</u>				
Battery type	12V / 9AH			
Numbers	20 pcs (18 - 20 pcs adjustable)**	20 pcs (18 - 20 pcs adjustable)** x 2 strings		20pcs(18-20pcs
Typical recharge time	9 hours recover to 90% capacity			
Charging current (max.)	1 A	2 A	2 A	4 A
Charging voltage	273 VDC ± 1% (Based on 20pcs bateries)			
<u>Long run model</u>				
Battery type	Depending on the capacity of external batterie			
Numbers	9 hours recover to 90% capacity			
Typical recharge time	9 hours recover to 90% capacity			
Charging current (max.)	4 A	8 A	8 A	12 A
Charging voltage	273 VDC ± 1% (Based on 20pcs bateries)			
<b>INDICATOR</b>				
LCD panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions			
<b>ALARM</b>				
Battery mode	Sounding every 4 seconds			
Low battery	Sounding every second			
Overload	Sounding twice every second			
Fault	Continuously sounding			
<b>PHYSICAL</b>				
<u>Standard model</u>				
Dimensions (mm) HxWxD	592 x 250 x 576	815 x 250 x 826		815 x 300 x 1000
Net weight (kg)	83	164		234
<u>Long run model</u>				
Dimensions (mm) HxWxD	592 X 250 X 576		815 x 250 x 826	
Net weight (kg)	28	40		64
<b>ENVIRONMENT</b>				
Operating humidity	0-95 % RH @ 0- 40°C (non-condensing)			
Noise Level	Less than 58dBA @ 1 Meter dBA @	Less than 60dBA @ 1 Meter		Less than 65dBA @ 1 Meter
<b>MANAGEMENT</b>				
Smart RS-232/US	Supports Windows® 2000/2003/XP/Vista/2008, 7/8, Linux and MAC			
Optional SNM	Power management from SNMP manager and web browser			



### SPECIFICATIONS

- \* Online-Double conversion
- \* Output transfer time is 0ms
- \* PFC technology
- \* Full digital control (DSP)
- \* Output power factor 0.9
- \* Input current harmonic:  $\leq 3\%$
- \* Eco Mode function
- \* Charging/Rectifier/Inverter/ fully digital control technology
- \* Optimization battery group, the quantity of battery: 10~30k (16/18/20 pcs optional)
- \* Wide input voltage range: 208~478VAC
- \* Wide input frequency range: 40~70Hz
- \* DC start
- \* Communication port: USB/RS232/RS485/ parallel port/dry contact
- \* Options: SNMP card / relay card
- \* LCD / LED double display
- \* Intelligent charging management
- \* EPO function
- \* Common battery group
- \* The output can meet 100% unbalanced load

MODEL	ETT-10Q3/3	ETT-15Q3/3
Power (kVA / kW)	10 / 9,0	15 / 13,5
<b>INPUT</b>		
Nominal voltage	380/400/415VAC, (3P+N+PE)	
Operating voltage range	208 ~ 478VAC	
Operating freq. range	45~55Hz at 50Hz / 54~66Hz at 60Hz (auto sensing)	
Power factor	$\geq 0.99$	
Bypass voltage range	380VAC max. voltage: +25% (optional +10%, +15%, +20%) , 400VAC max. voltage: +20% (optional +10%, +15%), 415VAC max. voltage: +15% (optional + 10%), Min. voltage: - 45% (optional -20%, -30%)	
Bypass frequency range	Frequency synchronize tracing range: $\pm 10\%$	
ECO range	Same as by-pass	
THDi	$\leq 3\%$ (100% non-linear load)	
<b>OUTPUT</b>		
Output voltage	380/400/415VAC (3P+N+PE)	
Power factor	0.9	
Voltage regulation	$\pm 1\%$	
Frequency Line mode	$\pm 1\% / \pm 2\% / \pm 4\% / \pm 5\% / \pm 10\%$ of the rated frequency (optional)	
Frequency Bat. Mode	50/60 ( $\pm 0.1$ Hz)	
Crest factor	3:1	
THD	$\leq 2\%$ with linear load, $\leq 5\%$ with non-linear load	
Efficiency	93.50%	
<b>BATTERY</b>		
Battery voltage	Standard unit: $\pm 120$ VDC (20pcs12V/9Ah), Long run unit: $\pm 96$ V/ $\pm 108$ V/ $\pm 120$ Vdc (16/18/20pcs optional)	Standard unit: $\pm 120$ VDC (2x20pcs12V/9Ah), Long run unit: $\pm 96$ V/ $\pm 108$ V/ $\pm 120$ Vdc (16/18/20pcs optional)
Charge current	Standard unit 1.35A, Long run unit: max current 10A	Standard unit 2.7A, Long run unit: max current 10A
<b>SYSTEM FEATURES</b>		
Transfer time	Utility to battery: 0ms; Utility to by-pass: 0ms	
Overload	Load $\leq 110\%$ ; last 60min, $\leq 125\%$ : last 10min, $\leq 150\%$ : last 1min, $\geq 150\%$ change to by-pass	
Short circuit	Hold Whole System	
Communication	USB, RS232, RS485, Parallel port, REPO port, Coupler dry contact, Intelligent slot, SNMP card (optional), Relay card (optional). LBS port (only 60~80kVA)	
<b>ENVIRONMENTAL</b>		
Operating temperature	0 - 40°C	
Storage temperature	-25 ~ 55°C (no battery)	
Humidity range	0 - 95% (non-condensing)	
Altitude	$< 1500$ m. When $> 150$ m, lower the rated power for use	
Noise level	$< 55$ dB	$< 58$ dB
<b>PHYSICAL</b>		
Dimensions HxWxD(mm)	868x258x828 mm	
Net weight (kg)	115/57	170/63
<b>STANDARDS</b>		
Safety	IEC/EN62040-1, IEC/EN60950-1	
EMC	IEC/EN62040-2, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8,	





### SPECIFICATIONS

- \* IGBT RECTIFIER
- \* DSP CONTROL
- \* Transformerless UPS topology
- \* IPM power module
- \* High input power factor > 0,98
- \* Full digital control system
- \* Tower and rack type options
- \* PID control system
- \* Low input current value (THDI < 5%)
- \* High efficiency (up to 93%)
- \* Cold start function
- \* Static by-pass system
- \* Optional maintenance by-pass switch
- \* Optional split by-pass system
- \* VAT transfer (voltage adaptive transfer)
- \* Output overload & short circuit protection
- \* External REPO input
- \* 128 events (5000 alarms) memory
- \* Clock, calender and operating hourmeter
- \* Advanced automatic battery test
- \* Boost charge system
- \* Temperature compensated charge sys.
- \* RS232 port and dry contact relays
- \* Easy output voltage and frequency sel.
- \* Optional SNMP adaptor
- \* Manufactured acc.to EC: EN62040
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-6D1/1	ETT-10D1/1	ETT-15D1/1
Power (kVA / kW)	6	10	15
<b>INPUT</b>			
Voltage	220/230 VAC 1P + N + G		
Input voltage range	170 - 275 VAC		
Frequency	50Hz / 60Hz		
Frequency range	40Hz - 65Hz		
Power factor	≥ 0,99 (at 100% load)		
THDI (*)	<5% (at 100% load)		
By-pass voltage	220/230 VAC ± 10% , 50Hz / 60Hz		
By-pass frequency	Adjustable (for synchronization)		
Split by-pass connection	Optional		
<b>OUTPUT</b>			
Power (kW)	4,2	7	10,5
Power factor	0,7		
Voltage	220/230 VAC 1P + N , ± %		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: ± 1% / Free running: ± 0,1%		
Efficiency	Up to 92%		
Crest factor	3:1		
Voltage THD	< 3% (linear load) < 5% (non-linear load)		
Overload protection	100% - 125% load 10 min, 126%-150% load 1 min, >150% load: by pass		
Connections	Hardwired + 2 x IEC sockets on the rear (Optional)		
<b>BATTERIES</b>			
Type	Sealed Lead Acid-Maintenance free		
Number of batteries	20x12V 5Ah	20x12V 7Ah	-
Float charging	270 VDC (20x12V for battery)		
End of discharge	200 VDC (20x12V for battery)		
Battery housing	Internal		External Cabinet
Battery ambient	25°C		
Boost charge	Available		
Battery test	Automatic or Manual, available		
<b>GENERAL</b>			
Standards	EN62040-1, EN62040-2		
Communication	RS232 standart-RS485 optional		
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)		
Alarm relays	3 standard (+2 programmable optional)		
Remote EPO input	Available as standard		
Operating temperature	0°C - 40°C		
Storage temperature	-10°C to 50°C		
Protection degree	IP20		
Relative humidity	< 90% (non-condensing)		
Altitude	< 2000m. above sea level		
Acoustic noise	< 50 dBA		
Weight without batteries	23 kg.	39 kg	47 kg
Dimensions (mm) HxWxD	430x215x600 mm	590x215x780 mm	
<b>OPTIONS</b>			
Different input / output volt.	Please ask		
Transformer	Galvanic isolation transformer		
Adaptors	SNMP, RS485, Remote panel, MODBUS (RS485 veya TCP/IP)		
Parallel operation	Upon request		

(\*) Depending on power and input/output conditions



### SPECIFICATIONS

- \* IGBT RECTIFIER
- \* DSP CONTROL
- \* Transformerless UPS topology
- \* Low input current total harmonic distortion (THD)
- \* High input power factor
- \* High efficiency up to 94%
- \* Cold start function
- \* Static and maintenance by-pass switch
- \* Output short circuit & overload protection
- \* External REPO switch input
- \* 192 events memory, 14,400 alarms
- \* Clock and calendar (battery supported)
- \* Battery test ,remaining time indicator
- \* Temperature compensated charge system (opt.)
- \* 1 RS232 serial port and 3 dry contact outputs
- \* 3 DSP controlled modular structure
- \* Optional SNMP and MODBUS adaptors
- \* Optional graphical panel
- \* Optional usb flash memory
- \* Full digital structure
- \* Small footprint
- \* Ecomode operation (optional)
- \* Fewer electronic components
- \* Output current limiting
- \* Advanced diagnostics for the input
- \* Selectable input/output voltage/frequency range
- \* Split by-pass input (second input)
- \* Output DC leakage protection
- \* Seperate DSP for PFC, inverter control
- \* Charge / discharge current indicator
- \* Advanced remote control features
- \* Manufactured under CE, ISO9001, ISO14001,
- \* TSE and GOST international standards
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-10D3/1	ETT-15D3/1	ETT-20D3/1
Power (kVA)	10	15	20
<b>INPUT</b>			
Voltage	380/400 VAC 3P + N + G ± 20% (415VAC +15%, -25% optional)		
Frequency	50Hz / 60Hz, ± 5%		
Power factor	≥ 0,98		
THDI (*)	< %10-12		
By-pass voltage	220/230 VAC 1P + N, ± 10%		
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequence indicator, Input breaker contactor		
<b>OUTPUT</b>			
Power (kW)	9	13,5	18
Power factor	0,9		
Voltage	220/230 VAC 1P + N, ± 1% (240 VAC optional)		
Frequency	50Hz / 60Hz adjustable		
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0,1% (adjustable)		
Efficiency (at %100 load)	Up to 92%		
Crest factor	3:1		
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass		
Protection	Fuses, Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting		
Voltage THD	< 3% (at 100% linear load)		
<b>BATTERIES</b>			
Type	Maintenance free VRLA AGM / GEL / NiCd		
Number of batteries	2 x 30 (± 30): 60 batteries		
Float charging voltage	2x405 VDC		
End of discharge voltage	2x300 VDC		
Battery cabinet	Internal		
Battery ambient temp.	25°C		
Battery protection	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)		
Automatic battery test	Standard: every 72 hours (adjustable)		
<b>GENERAL</b>			
Standards	EN62040-1, EN62040-2, EN62040-3		
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, buzzer		
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time		
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter		
Communication	RS232 serial port, 4 standard DRY contact alarm relays		
Inputs	EPO input, Interactive battery panel input, Genset input		
Genset kit	Standard (programmable)		
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)		
Alarm logging	Standard: with time & date 512 events		
Protection	Power module over temperature, Over current, Temperature high alarms		
Operating temperature	0°C - 40°C		
Protection degree	IP20		
Relative humidity	90% max. (non-condensing)		
Altitude	< 1000m. above sea level		
Acoustic noise	< 57 dBA		< 62 dBA
Weight without batteries	87 kg		91 kg
Dimensions (mm) HxWxD	1040x400x815 mm		
<b>OPTIONS</b>			
Different input / output volt.	Please ask		
Transformer	Galvanic isolation transformer at the input & output		
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients		
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), USB alarm logger, TCP/IP, GSM GPRS Modem, Comport multiplexe		
Parallel operation	Up to 8		

(\*) Depending on power and input/output conditions



### SPECIFICATIONS

- \* IGBT RECTIFIER
- \* DSP CONTROL
- \* Smaller footprint
- \* 3 Level topology
- \* Transformerless UPS topology
- \* Low input current total harmonic distortion (THD)
- \* High input power factor
- \* High efficiency up to 94%
- \* Cold start function
- \* Static and maintenance by-pass switch
- \* Output short circuit & overload protection
- \* External REPO switch input
- \* 192 events memory, 14.400 alarms
- \* Clock and calendar (battery supported)
- \* Battery test ,remaining time indicator
- \* Temperature compensated charge system (opt.)
- \* 1 RS232 serial port and 3 dry contact outputs
- \* 3 DSP controlled modular structure
- \* Optional SNMP and MODBUS adaptors
- \* Full digital structure
- \* Fewer electronic components
- \* Output current limiting
- \* Advanced diagnostics for the input
- \* Selectable input/output voltage/frequency range
- \* Output DC leakage protection
- \* Separate DSP for PFC 3 level battery protection
- \* Charge / discharge current indicator
- \* Advanced remote control features
- \* Manufactured under CE, ISO9001, ISO14001,
- \* TSE and GOST international standards
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-10D3/3SH	ETT-15D3/3SH	ETT-20D3/3SH
Power (kVA)	10	15	20
<b>INPUT</b>			
Voltage	380/400 VAC 3P + N + G ± 20% (415VAC +15%, -25% optional)		
Frequency	50Hz / 60Hz, ± 5%		
Power factor	≥ 0,99 (at 100% load)		
THDI (*)	≤ 4% (depends on mains input conditions)		
By-pass voltage	380/400 VAC 3P + N , 4 Wires, ± 10%		
Voltage distortion	≤ 10%		
Protection	Fuses, Voltage & Frequency Tolerance		
<b>OUTPUT</b>			
Power (kW)	9	13,5	18
Power factor	0,9		
Voltage	380/400 VAC 3P + N , ± 1% (415 VAC optional)		
Frequency	50Hz / 60Hz		
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0,1%		
Efficiency	94,50%	94%	93%
Crest factor	3:1		
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass		
Protection	Fuses, Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting		
Voltage THD	< 2% (at 100% linear load)		
<b>BATTERIES</b>			
Type	VRLA AGM / GEL / NiCd		
Number of batteries	60 (± 30) batteries		
Float charging voltage	± 405 VDC (adjustable)		
End of discharge voltage	± 300 VDC (adjustable)		
Battery cabinet	External (attached cabinet at the bottom of UPS)		
Battery ambient temp.	25°C		
Battery protection	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)		
Automatic battery test	Standard: every 72 hours (adjustable)		
<b>GENERAL</b>			
Standards	EN62040-1, EN62040-2, EN62040-3		
User interface	4 lines LCD panel, Mimic leds, 5 vector buttons, buzzer		
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time		
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232, operating hour meter		
Communication	RS232 serial port, 4 standard DRY contact alarm relays		
Inputs	EPO input		
Genset kit	Standard (programmable)		
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)		
Alarm logging	Standard: with time & date 512 events		
Protection	Power module over temperature, Over current, Temperature high alarms		
Operating temperature	0°C - 40°C		
Protection degree	IP20		
Relative humidity	90% max. (non-condensing)		
Altitude	< 1000m. above sea level		
Acoustic noise	< 55 dBA	< 57 dBA	< 61 dBA
Weight without batteries	47.5 kg	49.5 kg	51 kg
Dimensions (mm) HxWxD	700x300x770 (without batt.) / 1000x300x800 (with 5ah batt.) / 1170x300x800 (with 7-9ah batt.) mm		
<b>OPTIONS</b>			
Different input / output volt.	Please ask		
Adaptors	SNMP, MODBUS, RS485, Remote panel		
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients		
Parallel operation	Not Available		

(\*) Depending on power and input/output conditions



### SPECIFICATIONS

- \* IGBT RECTIFIER
- \* DSP CONTROL
- \* Transformerless UPS topology
- \* Low input current total harmonic distortion(THD)
- \* High input power factor
- \* High efficiency up to 94%
- \* Cold start function
- \* Static and maintenance by-pass switch
- \* Output short circuit & overload protection
- \* External REPO switch input
- \* 192 events memory,14.400 alarms
- \* Clock and calender (battery supported)
- \* Battery test ,remaining time indicator
- \* Temperature compensated charge system (opt.)
- \* 2 RS232 serial port and 3 dry contact outputs
- \* 3 DSP controlled modular structure
- \* Optional SNMP and MODBUS adaptors
- \* Optional graphical panel
- \* Optional usb flash memory
- \* Full digital structure
- \* Small footprint
- \* Ecomode operation (optional)
- \* Fewer electronic components
- \* Output current limiting
- \* Advanced diagnostics for the input
- \* Selectable input/output voltage/frequency range
- \* Split by-pass input (second input)
- \* Output DC leakage protection
- \* Separate DSP for inverter control
- \* Separate DSP for PFC
- \* 3 level battery protection
- \* High charge current capacity
- \* Charge / discharge current indicator
- \* Advanced remote control features
- \* Manufactured under CE,ISO9001,ISO14001, TSE and GOST international standards
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-10D3/3	ETT-15D3/3	ETT-20D3/3	ETT-30D3/3	ETT-40D3/3	ETT-60D3/3	ETT-80D3/3	ETT-100D3/3	ETT-120D3/3	ETT-160D3/3
Power (kVA)	10	15	20	30	40	60	80	100	120	160
<b>INPUT</b>										
Voltage	380/400 VAC 3P + N + G ± 20% (415 VAC +15%, - 25% optional)									
Frequency	50Hz / 60Hz , ± 5%									
Power factor	≥ 0,99 (at 100% load)									
THDI (*)	≤3%									
By-pass voltage	380/400 VAC 3 Phase + N , 4 Wires, ± 10%									
Voltage distortion	≤10%									
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator									
<b>OUTPUT</b>										
Power (kW)	9	13,5	18	27	36	54	72	90	108	144
Power factor	0,9									
Voltage	380/400 VAC 3P + N , ± 1% (415 VAC optional)									
Frequency	50Hz / 60Hz									
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0,1%									
Efficiency	Up to 94%									
Crest factor	3:1									
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass									
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting									
Voltage THD	< 3% (at 100% linear load)									
<b>BATTERIES</b>										
Type	VRLA AGM / GEL / NiCd									
Nominal voltage	± 360 VDC									
Float / End of discharge	± 405 VDC / ± 300 VDC									
Battery cabinet	Internal					External				
Battery ambient	25°C									
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)									
Automatic testing	Standard every 72 hours (adjustable)									
<b>GENERAL</b>										
Standards	EN62040-1, EN62040-2, EN62040-3									
User interface	4 lines LCD panel, 5 vector buttons, Buzzer, Optional TFT panel									
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time									
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter									
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays									
Inputs	EPO input, Interactive battery panel input, Genset input									
Genset kit	Standard (programmable)									
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)									
Alarm logging	Standard: with time & date 512 events									
Protections	Power module over-temperature, Over current, Temperature high alarm									
Temperature range	0°C - 40°C									
Protection degree	IP20									
Relative humidity	90% max. (non-condensing)									
Altitude	< 1000m above sea level									
Acoustic noise	< 57dBA		< 62 Dba		< 64 dBA		< 68 dBA			
Weight without batteries	87	87	91	100	173	197	209	220	232	265
Dimensions (mm) HxWxD	1040 x 400 x 815						1440 x 515 x 855			
<b>OPTIONS</b>										
Different input / output volt.	Please ask									
Transformer	Galvanic isolation transformer at the input & output									
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients									
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), USB Alarm Logger, TCP/IP, GSM/GPRS Modem, Comport multiplexer up to 8									
Parallel operation										

(\*) Depending on power and input/output conditions



### SPECIFICATIONS

- \* IGBT RECTIFIER
- \* DSP CONTROL
- \* Transformerless UPS topology
- \* Low input current total harmonic distortion(THD)
- \* High input power factor
- \* High efficiency up to 94%
- \* Cold start function
- \* Static and maintenance by-pass switch
- \* Output short circuit & overload protection
- \* External REPO switch input
- \* 512 events memory,45.000 alarms
- \* Clock and calender (battery supported)
- \* Battery test ,remaining time indicator
- \* Temperature compensated charge system (opt.)
- \* 2 RS232 serial port and 12 dry contact outputs
- \* 3 DSP controlled modular structure
- \* Optional SNMP and MODBUS adaptors
- \* Optional graphical panel
- \* Optional usb flash memory
- \* Fulldigital structure
- \* Small footprint
- \* Ecomode operation (optional)
- \* Fewer electronic components
- \* Output current limiting
- \* Advanced diagnostics for the input
- \* Selectable input/output voltage/frequency range
- \* Split by-pass input (second input)
- \* Output DC leakage protection
- \* Seperate DSP for inverter control
- \* Seperate DSP for PFC
- \* 3 level battery protection
- \* High charge current capacity
- \* Charge / discharge current indicator
- \* Advanced remote control features
- \* Manufactured under CE,ISO9001,ISO14001, TSE and GOST international standards
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-200D3/3	ETT-250D3/3	ETT-300D3/3	ETT-400D3/3	ETT-500D3/3	ETT-550D3/3	ETT-650D3/3
Power (kVA)	200	250	300	400	500	550	650
<b>INPUT</b>							
Voltage	380/400 VAC 3P + N + G ± 20% (415 VAC +15%, - 25% optional)						
Frequency	50Hz / 60Hz , ± 5%						
Power factor	≥ 0,99 (at 100% load)						
THDI (*)	≤3%						
By-pass voltage	380/400 VAC 3 Phase + N , 4 Wires, ± 10%						
Voltage distortion	≤10%						
Protection	Fuses, Voltage & Frequency tolerance, Input power limit, Phase sequency indicator						
<b>OUTPUT</b>							
Power (kW)	180	225	270	360	400	495	585
Power factor	0,9				0,8		0,9
Voltage	380/400 VAC 3P + N , ± 1% (415 VAC optional)						
Frequency	50Hz / 60Hz						
Frequency tolerance	Line synchronized: ± 2% / Free running: ± 0,1%						
Efficiency	Up to 95%						
Crest factor	3:1						
Overload protection	100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass						
Other protections	Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting						
Voltage THD	< 3% (at 100% linear load)						
<b>BATTERIES</b>							
Type	VRLA AGM / GEL / NiCd						
Nominal voltage	± 360 VDC						
Float / End of discharge	± 405 VDC / ± 300 VDC						
Battery cabinet	External						
Battery ambient	25°C						
Protections	3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional)						
Automatic testing	Standard every 72 hours (adjustable)						
<b>GENERAL</b>							
Standards	EN62040-1, EN62040-2, EN62040-3						
User interface	TFT panel, 5 vector buttons, Buzzer						
Indicators	P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time						
Advanced	Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter						
Communication	2xRS232 serial ports, 4 standard and 8 optional DRY contact alarm relays						
Inputs	EPO input, Interactive battery panel input, Genset input						
Genset kit	Standard (programmable)						
Software	Standard T-Mon UPS Management Software (3 clients + 1 server management)						
Alarm logging	Standard: with time & date 512 events						
Protections	Power module over-temperature, Over current, Temperature high alarm						
Temperature range	0°C - 40°C						
Protection degree	IP20						
Relative humidity	90% max. (non-condensing)						
Altitude	< 1000m above sea level						
Acoustic noise	< 68dBA				< 72 Dba		
Weight without batteries	482	550	638	737	780	1452	
Dimensions (mm) HxWxD	1900x880x775		1900x1250x775		2040x1250x840		1940x1610x1050
<b>OPTIONS</b>							
Different input / output volt.	Please ask						
Transformer	Galvanic isolation transformer at the input & output						
Software	T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients						
Adaptors	SNMP, RS485, Remote monitoring panel, MODBUS (RS485 or TCP/IP), USB Alarm Logger, TCP/IP, GSM/GPRS Modem, Comport multiplexer up to 8						
Parallel operation							

(\*) Depending on power and input/output conditions



# ETT-T1/1

## UPS with Transformer



### SPECIFICATIONS

- \* True online, Double conversion UPS Systems
- \* PWM and IGBT technology
- \* Microprocessor controlled pure sinewave output to critical loads
- \* Output isolation transformer
- \* Up to 91% efficiency
- \* Static by-pass
- \* LCD front panel
- \* 64 events memory
- \* RS232 and relay contacts
- \* Custom input and output voltage ranges
- \* SNMP compatible communication
- \* T-MON remote monitoring software
- \* Parallel operation
- \* Manufactured according to EC Directive; EN62040
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-5T1/1	ETT-7T1/1	ETT-10T1/1	ETT-15T1/1
Power (kVA)	5	7	10	15
<b>INPUT</b>				
Voltage	220/230 VAC P + N + G ± 15%			
By-pass voltage	220/230 VAC P + N ± 10%			
Frequency	50Hz / 60Hz ± 5%			
<b>OUTPUT</b>				
Power (kW)	3,25	4,55	7	10,5
Power factor	0,65			0,7
Voltage	220/230 VAC P+ N ± 1%			
Frequency	50Hz (60Hz on request)			
Frequency tolerance	Line synchronized: ± 2% , free running: ± 0,2%			
Efficiency	Up to 90%			Up to 91%
Crest factor	3:1			
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., > 150% load: by pass			
Short circuit protection	Electronic short circuit protection			
Voltage THD	< 3% (at 100% linear load)			
<b>BATTERIES</b>				
Type	Sealed Lead Acid - Maintenance Free			
Number of batteries	16	18		20
Float charging voltage	216 VDC	243 VDC		270 VDC
End of discharge voltage	160 VDC	180 VDC		200 VDC
Battery cabinet		Internal		External
Battery ambient	25°C			
Battery protection	Automatic circuit breaker			
Battery test	Optional			
<b>GENERAL</b>				
Standards	EN 62040-1, EN 62040-2			
Serial communication	Dry contacts & RS232			
Software	T-Mon UPS Management Software (3 clients, +1 server management std.)			
Temperature range	0°C - 40°C			
Ventilation	Forced air cooling			
Relative humidity	< 90% (non-condensing)			
Protection degree	IP20			
Altitude	< 2000m			
Acoustic noise	< 45 dBA			
Weight without batteries	60	75	82	107
Dimensions (mm) HxWxD	595x265x600	645x265x670	720x265x740	775x300x800
<b>OPTIONS</b>				
Different input / output volt.	Please ask			
Input transformer	Galvanic isolation transformer at the input (in external cabinet)			
6kVA & 7KVA	Previous, output PF:0.7 versions (4200W - 4900W) available on request			
MBS	Maintenance Bypass Switch for complete isolation			
Adaptors	SNMP, MODBUS, Remote Mon. Panel, RS485			
Parallel operation	N+1 (up to 4 units)			

(\*) Depending on power and input/output conditions

# ETT-T3/1

## UPS with Transformer



### SPECIFICATIONS

- \* True online, Double conversion UPS Systems
- \* PWM and IGBT technology
- \* Microprocessor controlled pure sinewave output to critical loads
- \* Output isolation transformer
- \* Up to 91% efficiency
- \* Static by-pass
- \* LCD front panel
- \* 64 events memory
- \* RS232 and relay contacts
- \* Custom input and output voltage ranges
- \* SNMP compatible communication
- \* T-MON remote monitoring software
- \* Parallel operation
- \* Manufactured according to EC Directive; EN62040
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-6T3/1	ETT-7,5T3/1	ETT-10T3/1	ETT-15T3/1	ETT-20T3/1	ETT-30T3/1	ETT-40T3/1
Power (kVA)	6	7,5	10	15	20	30	40
<b>INPUT</b>							
Voltage	220/380 VAC (230/400VAC) 3P + N + G ± 15%						
By-pass voltage	220/230 VAC P + N ± 10%						
Frequency	50Hz / 60Hz ± 5%						
<b>OUTPUT</b>							
Power (kW)	4,2	5,25	7	10,5	14	21	28
Power factor	0,7						
Voltage	220/230 VAC P + N ± %1						
Frequency	50Hz (60Hz on request)						
Frequency tolerance	Line synchronized: ± 2% , free running: ± 0,2%						
Efficiency	Up to 90%						
Crest factor	3:1						
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., > 150% load: by pass						
Short circuit protection	Electronic short circuit protection						
Voltage THD	Linear load: < 3%, Non linear load: < 5%						
<b>BATTERIES</b>							
Type	Sealed Lead Acid - Maintenance Free						
Number of batteries	20			30			
Float charging voltage	270 VDC			405 VDC			
End of discharge voltage	200 VDC			300 VDC			
Battery cabinet	Internal for standard time						
Battery ambient	25°C						
Battery protection	Automatic circuit breaker						
Battery test	Optional			Standard			
<b>GENERAL</b>							
Standards	EN 62040-1, EN 62040-2EN						
Maintenance bypass switch	Optional			Standard			
Serial communication	Dry contacts & RS232						
Software	T-Mon UPS Management Software (3 clients, +1 server management std.)						
Temperature range	0°C - 40°C						
Ventilation	Forced air cooling						
Relative humidity	< 90% (non-condensing)						
Protection degree	IP20						
Altitude	< 2000m						
Acoustic noise	< 50 dBA			< 55 dBA			
Weight without batteries	106	110	125	130	195	217	335
Dimensions (mm) HxWxD	950x265x740			1240x500x650			1390x575x820
<b>OPTIONS</b>							
Different input / output volt.	Please ask						
Input transformer	Galvanic isolation transformer at the input (in external cabinet)						
Input power factor	Input power factor corrector (> 0.97)						
Adaptors	SNMP, MODBUS, Remote Mon. Panel, RS485						
Parallel operation	N+1 (up to 4 units)						

(\*) Depending on power and input/output conditions

# ETT-T3/3

## UPS with Transformer



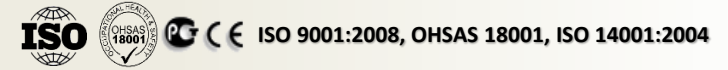
### SPECIFICATIONS

- \* True online, Double conversion UPS Systems
- \* PWM and IGBT technology
- \* Microprocessor controlled pure sinewave output to critical loads
- \* Output isolation transformer
- \* Up to 91% efficiency
- \* Static by-pass
- \* LCD front panel
- \* 128 events alarm memory (4000 alarms)
- \* RS232 and relay contacts
- \* Custom input and output voltage ranges
- \* SNMP compatible communication
- \* T-MON remote monitoring software
- \* Parallel operation
- \* High performance at nonlinear loads
- \* Custom input voltage & frequency ranges
- \* Manufactured according to EC Directive; EN62040
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-10T3/3	ETT-15T3/3	ETT-20T3/3	ETT-30T3/3	ETT-40T3/3	ETT-60T3/3	ETT-80T3/3
Power (kVA)	10	15	20	30	40	60	80
<b>INPUT</b>							
Voltage	220/380 VAC (230/400 VAC) 3P + N + G ± 15%						
By-pass voltage	220/380 VAC (230/400 VAC) 3P + N ± 10%						
Frequency	50Hz / 60Hz ± 5%						
<b>OUTPUT</b>							
Power (kW)	8	12	16	24	32	48	64
Power factor	0,8						
Voltage	380/400 VAC 3P + N						
Voltage stability	Balanced load: ± 1%, Unbalanced load: ± 2%, Step load: ± 5%						
Voltage recovery time	After step load: max. 25ms						
Frequency	50Hz (60Hz on request)						
Frequency tolerance	Line synchronized: ± 2% , free running: ± 0,2%						
Efficiency	89-91%			90-92%			
Crest factor	3:1						
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., >150% load: by pass						
Short circuit protection	Electronic short circuit protection						
Voltage THD	Linear load: < 3%, Non linear load: < 5%						
<b>BATTERIES</b>							
Type	Sealed Lead Acid - Maintenance Free						
Number of batteries	30						
Float charging voltage	405 VDC						
End of discharge voltage	300 VDC						
Battery ambient	25°C						
Battery protection	Automatic circuit breaker						
Battery test	Automatic every 72 hours						
<b>GENERAL</b>							
Standards	EN 62040-1, EN 62040-2EN						
Serial communication	Dry contacts & RS232						
Software	T-Mon UPS Management Software (3 clients, +1 server management std.)						
Temperature range	0°C - 40°C						
Ventilation	Forced air cooling						
Relative humidity	< 90% (non-condensing)						
Protection degree	IP20						
Altitude	< 2000m						
Acoustic noise	< 56 dBA			< 60 dBA			
Weight without batteries	220	260	284	305	404	496	580
Dimensions (mm) HxWxD	1150x505x655			1390x575x820			1450x720x820
<b>OPTIONS</b>							
Different input / output volt.	Please ask						
Input transformer	Galvanic isolation transformer at the input (in external cabinet)						
Input THD	10% (with 12 pulse or 18 pulse rectifier, according to UPS range), 5% (with 18 pulse rectifier, + filter), up to 100kVA						
Input power factor	0.95 - 0.98 (with 18 pulse rectifier)						
Adaptors	SNMP, MODBUS, Remote Mon. Panel, RS485						
Parallel operation	N+1 (up to 4 units)						
(*)	In 18Pulse & 12Pulse applications, the standard chassis dimensions may change						

# ETT-T3/3

## UPS with Transformer



### SPECIFICATIONS

- \* True online, Double conversion UPS Systems
- \* PWM and IGBT technology
- \* Microprocessor controlled pure sinewave output to critical loads
- \* Output isolation transformer
- \* Up to 91% efficiency
- \* Static by-pass
- \* LCD front panel
- \* 128 events alarm memory (4000 alarms)
- \* RS232 and relay contacts
- \* Custom input and output voltage ranges
- \* SNMP compatible communication
- \* T-MON remote monitoring software
- \* Parallel operation
- \* High performance at nonlinear loads
- \* Custom input voltage and frequency ranges
- \* Manufactured according to EC Directive; EN62040
- \* 10 years spare parts support
- \* 2 years warranty

MODEL	ETT-100T3/3	ETT-120T3/3	ETT-160T3/3	ETT-200T3/3	ETT-250T3/3	ETT-300T3/3
Power (kVA)	100	120	160	200	250	300
<b>INPUT</b>						
Voltage	380/400 VAC 3P + N + G ± 15%					
By-pass voltage	380/400 VAC 3P + N ± 1%					
Input frequency	50Hz (60Hz on request) ± 5%					
<b>OUTPUT</b>						
Power (kW)	80	96	128	160	200	240
Power factor	0,8					
Voltage	380/400 VAC 3P + N					
Voltage stability	Balanced load: ± 1%, Unbalanced load: ± 2%, Step load: ± 5%					
Voltage recovery time	After step load: max. 25ms					
Frequency	50Hz (60Hz on request)					
Frequency tolerance	Line synchronized: ± 2% , free running: ± 0,2%					
Efficiency	90-92%					
Crest factor	3:1					
Overload protection	100%-125% load: 10 min., 125%-150% load: 1 min., >150% load: by pass					
Short circuit protection	Electronic short circuit protection					
Voltage THD	Linear load: < 3%, Non linear load: < 5%					
<b>BATTERIES</b>						
Type	Sealed Lead Acid - Maintenance Free					
Number of batteries	30			32		
Float charging voltage	405 VDC			432 VDC		
End of discharge voltage	300 VDC			320 VDC		
Battery ambient	25°C					
Battery protection	Automatic circuit breaker					
Battery test	Automatic every 72 hours					
<b>GENERAL</b>						
Standards	EN 62040-1, EN 62040-2EN					
Serial communication	Dry contacts & RS232					
Software	T-Mon UPS Management Software (3 clients, +1 server management std.)					
Temperature range	0°C - 40°C					
Ventilation	Forced air cooling					
Relative humidity	< 90% (non-condensing)					
Protection degree	IP20					
Altitude	< 2000m					
Acoustic noise	< 65 dBA		< 70 dBA			
Weight without batteries	750	765	802	970	1328	1370
Dimensions (mm) HxWxD	1650x1110x810		1730x1195x870		1880x1565x925	
<b>OPTIONS</b>						
Different input / output volt.	Please ask					
Input transformer	Galvanic isolation transformer at the input (in external cabinet)					
Input THD	10% (with 12 pulse or 18 pulse rectifier, according to UPS range), 5% (with 18 pulse rectifier, + filter), up to 100kVA					
Input power factor	0.95 - 0.98 (with 18 pulse rectifier)					
Adaptors	SNMP, MODBUS, Remote Mon. Panel, RS485					
Parallel operation	N+1 (up to 4 units)					
(*)	In 18Pulse & 12Pulse applications, the standard chassis dimensions may change					