

## **Element 33 Series**

### **15KVA-200KVA**

The Maruson Element 33 Online UPS Series offers DSP double-conversion technology with state of the art PWM transformerless technology with forth generation IGBT transistor. Advanced AFC technology provides very low harmonic distortion and flexibility in single-phase or three-phase setup to withstand all kinds of diverse loads.

**Applications:** Best Solution for Data Centers, Telecom & Networking, Industrial, and Medical Applications.

#### **Features:**

- Online double conversion technology with DSP control
- AFC technology for very low harmonic distortion
- Input current distortion THDi <1%
- Input power factor 0.99 at 10% load
- Output efficiency up to 95%
- Space-saving compact design
- Front access makes maintenance and replacement easy
- High flexibility in single-phase and three-phase setups
- Control designed to withstand all kinds of loads
- Variety of communication options available
- Over 60% of materials recyclable
- Remaining backup time calculation
- Parallel redundancy operation with up to 4 units
- Touch screen LCD display panel (Optional)



- **Online double conversion technology with DSP control**

Element 33 applies online double conversion technology to effectively insulate against network disturbances and enables higher load uptime. DSP control provides an improved solution with high performance.

- **AFC technology for very low harmonic distortion**

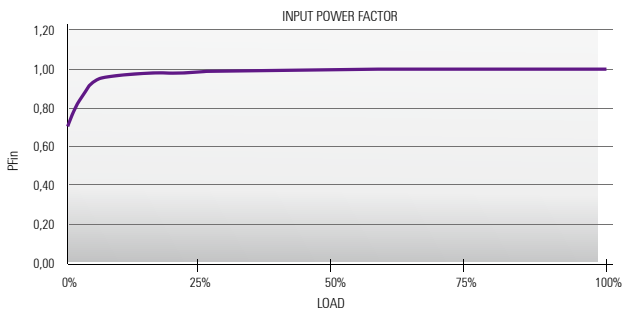
By cancelling input current and output voltage harmonics, the harmful effects of harmonic injection into the power network is eliminated and it will enhance load integrity.

- **Input current distortion THDi <1%**

AFC cells are used to achieve extremely low distortion values. Low input current distortion at THDi <1% at full load and is also THDi <5% with small load. This will avoid the distortion of the electrical network upstream of the UPS, resulting in savings from the optimal use of the cables and protection devices in the electrical network.

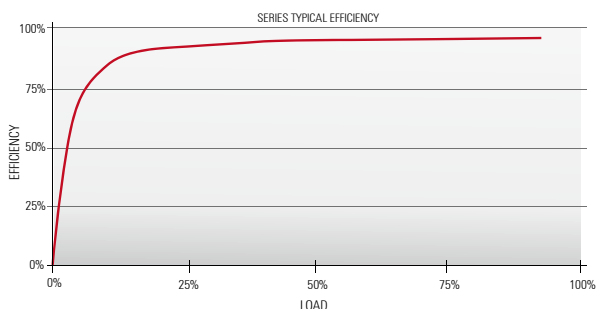
- **Input power factor 0.99 at 10% load**

Lower power losses would result in reduced consumption and lower operation and maintenance costs.



- **Output efficiency up to 95%**

DSP controlled and forth generation IGBT transistors help the UPS achieve high efficiency of up to 95% and in the process will save energy through lower heat losses and extend the lifespan of the critical components in the unit.



- **Space-saving compact design**

Transformerless technology allows considerable reduction of the weight and volume of the units.

- **Front access makes maintenance and replacement easy**

All the boards are accessible through the front panel for easy maintenance and replacement.



- **High flexibility in single phase and three-phase setups**

AC input adjustable to four options:

- Three-phase input / three phase output (3/3)
- Three-phase input / single phase output (3/1)
- Single phase input / single phase output (1/1)
- Single phase input / three-phase output (1/3)

- **Control designed to withstand all kinds of loads**

The series is designed to withstand all kinds of loads: resistive, capacitive, non-linear, discharge lamps, induction motors, speed drivers, etc. This allows the UPS to be exceptionally versatile and flexible to adapt to different environments with the ability for the large number of parameters to be conveniently programmed locally or remotely.

- **Variety of communication options available**

Available communication protocols include:

- Relay interface
- RS-232/485 port
- SNMP slot
- Modbus RTU/SEC protocol
- 2 x Connectors for parallel redundancy

- **Over 60% of materials recyclable**

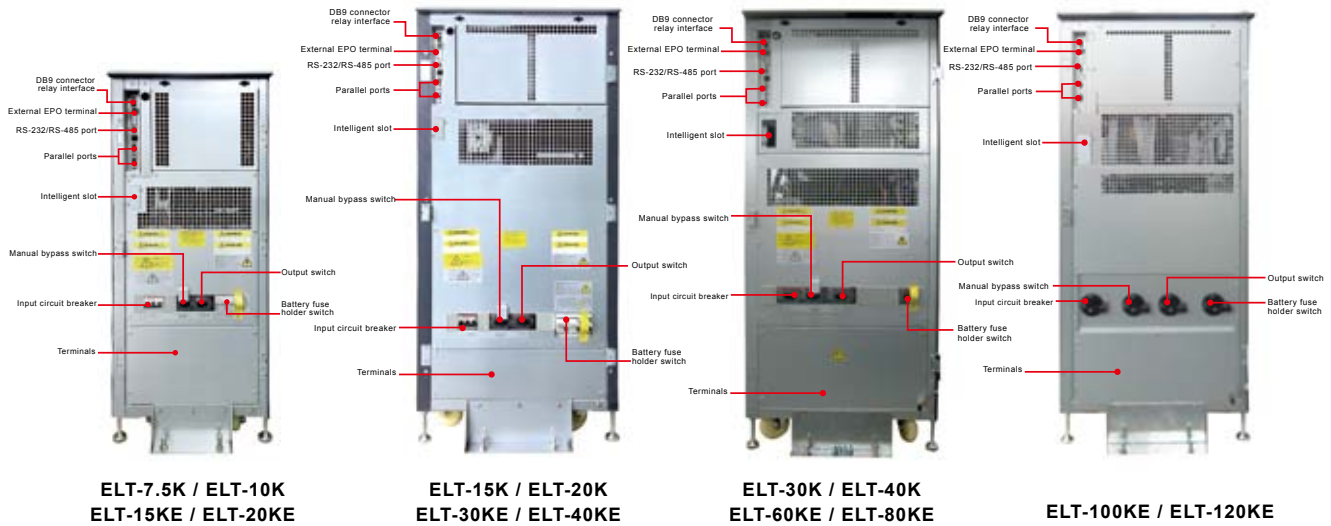
Keeping the environment in mind, over 60% of the materials used in the units are recyclable.

- **Remaining backup time calculation**

The estimated remaining backup time can be calculated in the event of prolonged power outage to help users determine if further arrangements are needed.

- **Parallel redundancy operation with up to 4 units**

This UPS system can be parallel operated with maximum 4 units.



**ELT-7.5K / ELT-10K  
ELT-15KE / ELT-20KE**

**ELT-15K / ELT-20K  
ELT-30KE / ELT-40KE**

**ELT-30K / ELT-40K  
ELT-60KE / ELT-80KE**

**ELT-100KE / ELT-120KE**

## 208V ELEMENT 33 SPECIFICATION

MODEL	ELT-7.5K	ELT-10K	ELT-15K	ELT-20K	ELT-30K	ELT-40K
<b>Nominal Power (kVA)</b>	<b>7.5K</b>	<b>10K</b>	<b>15K</b>	<b>20K</b>	<b>30K</b>	<b>40K</b>
<b>Capacity</b>	7.5KVA/6KW	10KVA/8KW	15KVA/12KW	20KVA/16KW	30KVA/24KW	40KVA/32KW
<b>INPUT</b>						
Nominal Voltage	3 X 208V (3PH + N)					
Acceptable Voltage Range	+15% OR -20%					
Frequency	50 / 60 Hz ±5 %					
Total Harmonic Distortion (THDi)	< 1.5% @ 100% load < 2.5% @ 50% load < 6.0% @ 10% load		< 1.0% @ 100% load < 2.0% @ 50% load < 5.0% @ 10% load			
Current Limitation	High Overload: PFC Limit (Discharging Batteries)					
Power Factor	1.0					
<b>INVERTER</b>						
Nominal Voltage	3 x 208V (3Ph + N)					
Precision	Stationary: ±1% ; Transitory: ±2% (load variations 100-0-100%)					
Frequency	50/60 Hz synchronised ± 4 % ; With mains absent ±0.05%					
Max. Synchronization Speed	±1 Hz/s					
Waveform	Pure Sinewave					
Total Harmonic Distortion (THDv)	<0.5% (Linear Load) < 1.5% (Non-linear Load)					
Phase Displacement	120° ±1% (balanced load) 120° ±2% (imbalance 50% of the load)					
Dynamic Recovery Time	10 ms. at 98 % of the static value					
Admissible Overload	125% for 10 min., 150% for 60 s					
Admissible Crest Factor	3.4 : 1				3.2 : 1	2.8:1
Admissible Power Factor	0.7 inductive to 0.7 capacitive					
Imbalance Output Voltage @ 100% Unbalanced Load	<1%					
Current Limit	High overload, short-circuit: RMS Voltage Limit High Crest-Factor current: Peak Voltage Limit					
<b>STATIC BYPASS</b>						
Type	Solid state					
Voltage	3 x 208 V (3Ph + N)					
Frequency	50/60 Hz					
Activation Criterion	Microprocessor control					
Transfer Time	Zero					
Admissible Overload	400% for 10 sec.					
Transfer to Bypass	Immediate, for overloads above 150%					
Retransfer	Automatic after alarm clear					
<b>MANUAL BYPASS (MAINTENANCE)</b>						
Type	Without interruption					
Voltage	3 x 208V (3Ph + N)					
Frequency	50/60 Hz					
Overall Efficiency (Line mode)	90.5%	91.0%	92.0%	92.5 %	93.0 %	94.0 %
<b>PHYSICAL</b>						
Dimensions, D x W x H(mm)	700 x 450 x 1100			805 x 590 x 1320		
Net Weight (without batteries) (Kg)	120			190	200	300
Built-in Batteries Type (2 x 19)	12V 7Ah	12V 9Ah	12V 12Ah	12V 18Ah	-	-
Net Weight (w/built-in batteries) (Kg)	240	260	350	430	-	-
<b>EXTERNAL BATTERY CABINET 1</b>						
Dimensions, D x W x H (mm)	700 x 450 x 1100			805 x 590 x 1320		
Built-in Battery Type (2x19)	12V 26Ah			12V 40Ah		
Net Weight (Kg)	380			610		

\* Product specifications are subject to change without further notice

## 400V ELEMENT 33 SPECIFICATION

MODEL	ELT-15KE	ELT-20KE	ELT-30KE	ELT-40KE	ELT-60KE	ELT-80KE	ELT-100KE	ELT-120KE	ELT-160KE	ELT-200KE	
<b>PHASE</b>	3-phase in / 3-phase out										
<b>CAPACITY</b>	15KVA/12KW	20KVA/16KW	30KVA/24KW	40KVA/32KW	60KVA/48KW	80KVA/64KW	100K/80KW	120KVA/96KW	160K/128KW	200K/160KW	
<b>INPUT</b>											
Nominal Voltage	3 x 400V (3Ph + N)										
Acceptable Voltage Range	+15% or -20%										
Frequency	50 / 60 Hz ±5 %										
Total Harmonic Distortion (THDi)	< 1.5% @ 100% load < 2.5% @ 50% load < 6.0% @ 10% load			< 1.0% @ 100% load < 2.0% @ 50% load < 5.0% @ 10% load			< 1.5% @ 100% load < 2.0% @ 50% load < 6.0% @ 10% load				
Current Limitation	High overload: PFC Limit (discharging batteries)										
Power Factor	1.0										
<b>INVERTER</b>											
Nominal Voltage	3 x 400V (3Ph + N)										
Precision	Stationary: ±1% ; Transitory: ±2% (load variations 100-0-100%)										
Frequency	50/60 Hz synchronised ±4 % With mains absent ±0.05%										
Max. Synchronisation Speed	±10 Hz/s										
Waveform	Pure Sinewave										
Total Harmonic Distortion (THDv)	< 0.5% (Linear Load) ; < 1.5% (Non-linear Load)										
Phase Displacement	120° ±1% (balanced load) ; 120° ±2% (imbalances 50% of the load)										
Dynamic Recovery Time	10 ms. at 98 % of the static value										
Admissible Overload	125% for 10 min., 150% for 60 s										
Admissible Crest Factor	3.4 : 1				3.2 : 1	2.8 : 1	3.2 : 1			3.0 : 1	
Admissible Power Factor	0.7 inductive to 0.7 capacitive										
Imbalance Output Voltage @ 100% Unbalanced Load	<1%										
Current Limit	High overload, short-circuit: RMS Voltage Limit ; High Crest-Factor current: Peak Voltage Limit										
<b>STATIC BYPASS</b>											
Type	Solid state										
Voltage	3x400V (3Ph + N)										
Frequency	50/60 Hz										
Activation Criterion	Microprocessor control										
Transfer Time	Zero										
Admissible Overload	400% for 10 sec.										
Transfer to Bypass	Immediate, for overloads above 150%										
Retransfer	Automatic after alarm clear										
<b>MAINTENANCE BYPASS</b>											
Type	Without interruption										
Voltage	3 x 400V (3Ph + N)										
Frequency	50/60 Hz										
Overall Efficiency (Line mode)	90.5%	91.0%	92.0%	92.5%	93.0%	94.0%	93.0%	93.3%	92.8%	92.6%	
<b>PHYSICAL</b>											
Dimension, D x W x H(mm)	700 x 450 x 1100			805 x 590 x 1320				850 x 900 x 1500			
Net Weight (kgs)	110		180		210	230	255	255	550	550	
Built-in Battery Type (2x31)	12V 7Ah	12V 9Ah	12V 12Ah	12V 18Ah	-						
Back-up Time (minutes)	10	9	8	7	-						
Net Weight (kgs) (w/built-in batteries)	-										
	<b>BATTERY-12Ah</b>	<b>BATTERY-18Ah</b>	<b>BATTERY-26Ah</b>	<b>BATTERY-40Ah</b>	<b>C16</b>	<b>C32-17Ah</b>	<b>C32-26Ah</b>	<b>C32-40Ah</b>	<b>C65</b>	<b>CH64-100</b>	
Dimension, D x W x H(mm)	700 x 450 x 1100		805 x 590 x 1320	980 x 650 x 1320	780 x 470 x 1190	780 x 880 x 1190			1500 x 860 x 1370	1600 x 970 x 1480	
Built-in Battery Type (2x31)	12V 12Ah	12V 18Ah	12V 26Ah	12V 40Ah	12V 12Ah	12V 17Ah	12V 26Ah	12V 40Ah	12V65Ah	12V100Ah	
Net Weight (kgs)	250	410	710	1020	45	45	95	95	150	180	

\* Product specifications are subject to change without further notice  
 • Battery cabinet types of C16 to CH64-100 are DIY-made battery cabinets.



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