

# ELEN

“Uninterruptible Power Supply”



HOSPITAL



AIRPORT



COMPLEX



DEFENSE



RAILWAYS



INDUSTRY



HOME



RENEWABLE ENERGY



DATACENTER





# About Us

Contemporary business conditions force companies to be more innovative, and ELEN solidly fulfills its share of duty in this challenging environment. Founded in 1988, ELEN is a fast growing Uninterruptible Power Supply (UPS) manufacturing company, focused on R&D and production of UPS Systems. For a large variety of utilization purposes, ELEN provides increased performance, reliability, and minimum total-life cost of UPS. Its unique solutions raise the bar and therefore, strengthen ELEN's consistency as a worldwide-known brand. Located in Istanbul, Turkey, ELEN manufactures UPS Systems for more than 50 countries covering 5 continents. ENEL is promoted under the name of ELEN in international market. For satisfaction at the highest degree, the Company provides versatile products tailored for customers by its 300 employees. Right along with the effort to understand the customer needs, ELEN shows its meticulousness also in the manufacturing process, and produces all the components including the metal parts. With the efforts of its R&D department of 30 researchers, ELEN strives to offer innovative solutions in energy sector to meet the global needs. Acknowledged for its continuous innovation, ELEN collects and combines the feedbacks in different utilization fields to improve its corporate culture. Pursuing this ambition, ELEN considers itself as the best candidate to be your partner in power protection.



## Certificates

<p>CE</p>	<p>EAC</p>	<p>EN ISO 9001:2008</p>	<p>EN ISO 14001:2004</p>	<p>BS OHSAS 18001:2007</p>	<p>TLC Certificates</p>





# ELEN



UNINTERRUPTIBLE POWER SUPPLIES						REGENERATIVE		EFFICIENCY	
SERIES	POWER	PHASE	RECTIFIER	INVERTER	COMMON BATTERY	OPERATION	LOAD	%50	%100
A1	1-3 kVA	Single Phase	PFC	2L	X	X	X	89	92
A2	6-10 kVA	Single Phase	PFC	3L	X	X	X	93	94
A3	10-20 kVA	Single Phase	PFC	3L	X	X	✓	93	94
A4	1-10 kVA	Single Phase	PFC	3L	X	X	X	93	94
B1	10 kVA	Three/Single Phase	PFC	3L	X	X	X	93	94
B2	10-20 kVA	Three/Single Phase	PFC	3L	X	X	✓	93	94
C1	10-120 kVA	Three Phase	2L	2L	X	✓	✓	91	92
D1	160-800 kVA	Three Phase	2L	2L	X	✓	✓	91	92
E1	10-20 kVA	Three Phase	PFC	3L	X	X	✓	94	94
E2	20-200 kVA	Three Phase	3L	3L	X	✓	✓	95	96
E3	10-800 kVA	Three Phase	3L	3L	X	✓	✓	95	96
E4	20-200 kVA	Three Phase	3L	3L	✓	✓	✓	95	96
E6	20-40 kVA	Three Phase	3L	3L	✓	✓	✓	95	95
FA2	3-5 kVA	Single Phase	PFC	3L	X	X	X	93	94
FC1	5-60 kVA	Three Phase	2L	2L	X	✓	✓	91	92
FD1	80-120 kVA	Three Phase	2L	2L	X	✓	✓	91	92
FE1	5-10 kVA	Three Phase	PFC	3L	X	✓	✓	94	94
FE3	5-120 kVA	Three Phase	3L	3L	X	✓	✓	95	96
L1	650-1250 VA	Line-Interactive	Line - Interactive Modified Sinewave						
L2	1-2-3 kVA	Line-Interactive	Line - Interactive Sinewave						

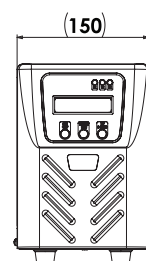
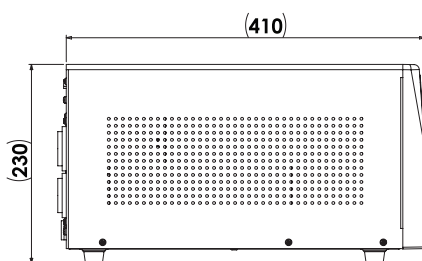
# UPS

# A1 Series 1-2-3 kVA | Single phase

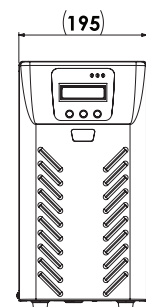
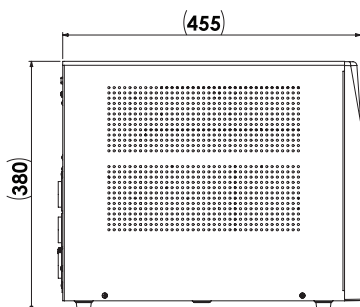


- ▶ **PFC & 2L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Low input current THDi**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **Silent operation**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (optional 0,9)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service



1 kVA



2-3 kVA



# A1

## Series UPS

### TECHNICAL SPECIFICATIONS

POWER (kVA)		1	2	3
INPUT	Voltage	220 / 230 / 240 Vac 1ph + N		
	Voltage tolerances	- 25%, +20% (without downgrading)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 10%		
	Power factor	≥ 0.99		
OUTPUT	Voltage	220 / 230 / 240 Vac 1ph + N		
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)		
	Power factor	0,8 (optional 0,9)		
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)		
	Crest factor	3:1		
OVERLOAD CAPACITY	≤ %110	30 min.		
	≤ %125	60 sec.		
	≤ %150	10 sec.		
EFFICIENCY	Online	92%		
GENERAL	Technology	True online-double conversion, PFC		
	Control	Microprocessor, SPWM		
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)		
	Communication	SNMP(optional), RS232		
	Remote monitoring	SNMPView, UPSilon, Remote monitoring panel(optional)		
	Dry contacts	Battery mode, Battery low		
	Cold start	Standard		
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)		
	Relative humidity	0% - 95% (without condensation)		
	Maximum altitude	≤ 2000 m		
	Noise level	< 45 dB (A)		
UPS CABINET	Dimensions (W x D x H) (mm)	150 x 410 x 230	195 x 455 x 380	
	Weight (kg)	7,5	14	15
	Degree of protection	IP20		
	Colour	RAL9005		
BATTERY	Internal battery quantity	3	6	8
	Internal battery capacity (Ah)	7-9		
	External battery socket	Optional	Standard	Standard
STANDARDS	Safety	EN 62040-1		
	EMC	EN 62040-2		
UPS LIFETIME		10 Years		

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# ELEN

# UPS

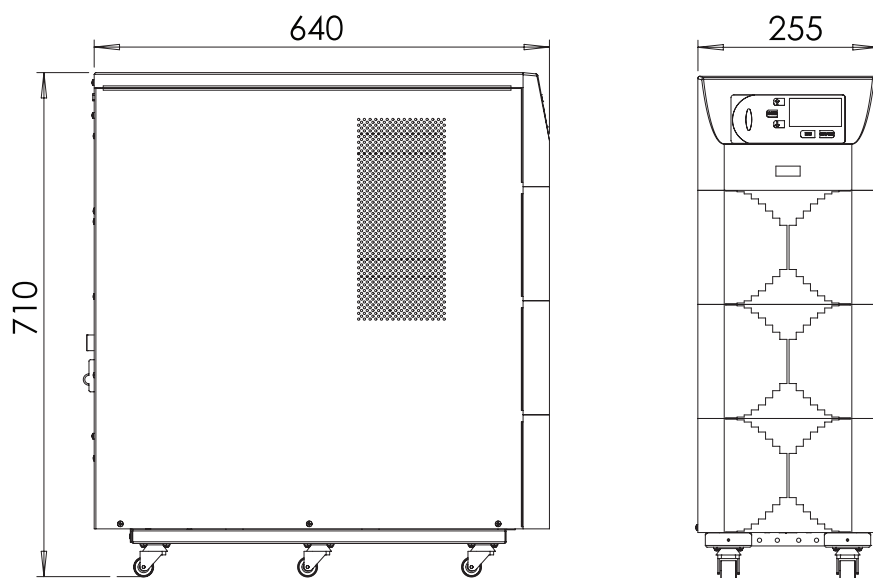
# A2 Series

6-10 kVA

Single phase

- ▶ **PFC & 3L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Low input current THDi**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (0,9 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service





# A2 Series UPS

## TECHNICAL SPECIFICATIONS

POWER (kVA)		6	10		
INPUT	Voltage	220 / 230 / 240 Vac 1ph + N			
	Voltage tolerances	-25%, +20% (without downgrading)			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± 10%			
	Power factor	≥ 0.99			
	THDi	< 5%			
OUTPUT	Voltage	220 / 230 / 240 Vac 1ph + N			
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load)			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)			
	Power factor	0,8 (0,9 optional)			
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)			
	Crest factor	3:1			
OVERLOAD CAPACITY	≤ %110	30 min.			
	≤ %125	60 sec.			
	≤ %150	10 sec.			
EFFICIENCY	Online	94%			
GENERAL	Technology	True online-double conversion, Three level inverter, PFC			
	Control	Microprocessor, SPWM			
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)			
	Communication	SNMP (optional), RS232			
	Remote monitoring	SNMPView, UPSilon, Remote monitoring panel (optional)			
	Dry contacts	Battery mode, Battery low			
	Custom inputs	Remote EPO			
	Cold start	Standard			
	Maintenance bypass	Standard			
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)			
	Relative humidity	0% - 95% (without condensation)			
	Maximum altitude	≤ 2000 m			
	Noise level	< 40dB (A)	< 45dB (A)		
UPS CABINET	Dimensions (W x D x H) (mm)	255x620x545	255x710x640		
	Weight (kg)	29	35		
	Degree of protection	IP20			
	Colour	RAL9005			
BATTERY	Internal battery quantity	14	20	20	30
	Internal battery capacity (Ah)	7-9			
	External battery socket	Standard			
STANDARDS	Safety	EN 62040-1			
	EMC	EN 62040-2			
UPS LIFETIME	10 Years				

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# UPS

## A3 Series

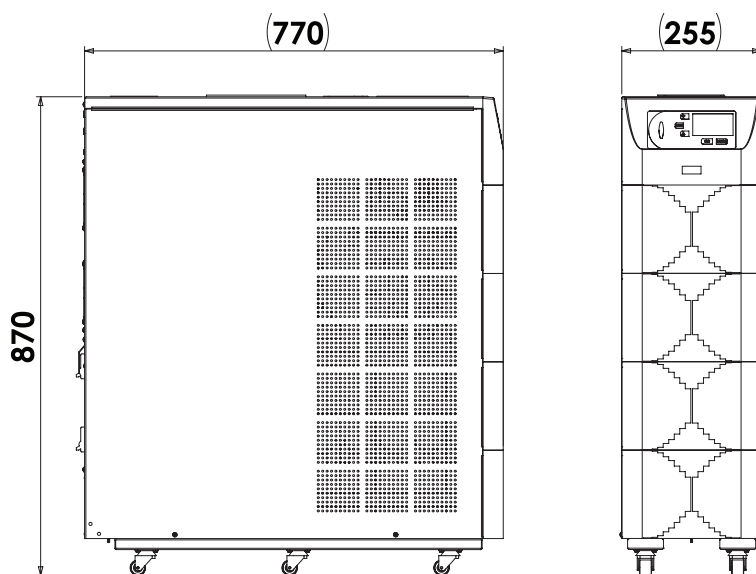
10-15-20 kVA

Singlephase



- ▶ **PFC & 3L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (0,9 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service





# A3 Series UPS

## TECHNICAL SPECIFICATIONS

POWER (kVA)		10	15	20
INPUT	Voltage	220 / 230 / 240 Vac 1- ph + N		
	Voltage tolerances	- %25, +%20 (without downgrading)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± %10		
	Power factor	≥ 0,99		
	THDi	< %5		
OUTPUT	Voltage	220 / 230 / 240 Vac 1ph + N		
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)		
	Power factor	0,8 (0,9 optional)		
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)		
	Crest factor	3:1		
OVERLOAD CAPACITY	≤ %110	30 min.		
	≤ %125	1 min.		
	≤ %150	10 sec.		
EFFICIENCY	Online	94%		
	Eco-mode	up to 98%		
GENERAL	Technology	Three Level Inverter, PFC		
	Control	Dual - DSP, SPWM		
	Classification in accordance with EN 62040-3	VFI - SS - 111 (Voltage Frequency Independent)		
	Communication	SNMP (optional), RS232		
	Remote monitoring	SNMPView, Remote monitoring panel (optional)		
	Dry contacts	Programmable 3 dry contact		
	Custom Inputs	Generator, Remote EPO, Remote Start/Stop		
	Maintenance bypass	Standard		
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)		
	Relative humidity	0% - 95% (without condensation)		
	Maximum altitude	≤ 2000 m		
	Noise level	< 55 dB (A)		
UPS CABINET	Dimensions (W x D x H) (mm)	255 x 770 x 870		
	Weight (kg)	51	51	51
	Degree of protection	IP20		
	Colour	RAL9005		
BATTERY	Internal battery quantity	30		
	Internal battery capacity (Ah)	7-9		
	External battery socket	Standard		
STANDARTS	Safety	EN 62040-1		
	EMC	EN 62040-2		
UPS LIFETIME	10 Years			

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# UPS

# A4 Series

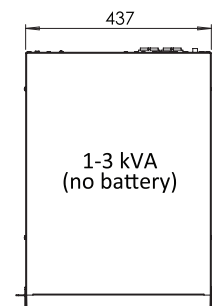
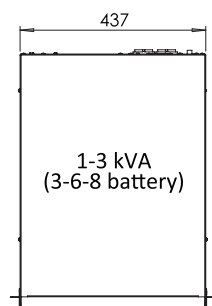
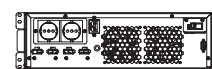
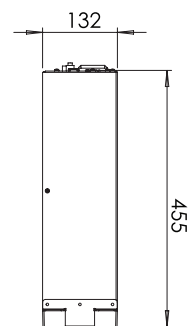
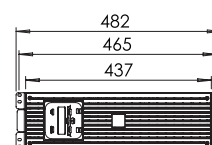
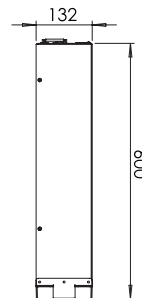
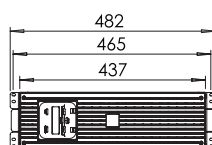
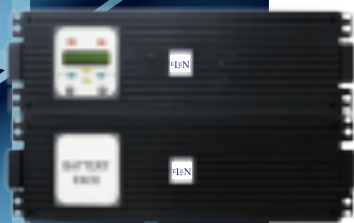
1-10 kVA

Singlephase



- ▶ **PFC & 3L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (0,9 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service





# A4 Series UPS

## TECHNICAL SPECIFICATIONS

POWER		1	2	3	6	10
INPUT	Voltage	220 / 230 / 240 Vac 1- ph + N				
	Voltage Tolerances	- %25, +%20 (without downgrading)				
	Frequency	50 / 60 Hz				
	Frequency Tolerances	± %10				
	Power Factor	≥ 0,99				
	THDi	< %5				
OUTPUT	Voltage	220 / 230 / 240 Vac 1-ph + N				
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load)				
	Frequency	50 / 60 Hz				
	Frequency Tolerances	± % 0,1 (self-synchronize), ± %1 (mains-synchronize)				
	Power Factor	0,8 (0,9 optional)				
	THDv	≤% 2 (linear load), ≤% 5 (non-linear load)				
	Crest Factor	3:1				
OVERLOAD CAPACITY	≤ %110	30 min.				
	≤ %125	1 min.				
	≤ %150	10 min.				
EFFICIENCY	Online	94%				
GENERAL	Technology	Three level inverter, PFC				
	Control	Microcontroller, SPWM				
	Communication	SNMP (optional), RS232				
	Remote Monitoring	SNMPView, UPSilon, Remote Panel (optional)				
	Dry Contacts	Battery mode, Battery low				
	Custom Inputs	Remote EPO				
	Cold Start	Standard				
	Maintenance Bypass	Standard				
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)				
	Relative humidity	% 0-95 (without condensation)				
	Maximum Altitude	≤ 2000 m				
	Noise Level	< 40 db (A)			< 45 db (A)	
UPS CABINET	Dimensions (WxDxH) (mm)	Tower	131 x 600 x 437			131 x 600 x 437
		Rack	482 (19") x 600 x 132 (3U)			482 (19") x 600 x 132 (3U)
	Weight (kg)		13,5	14	15	16
	Degree of Protection	IP20				
	Colour	RAL9005				
BATTERY	Internal Battery Quantity	3	6	8	-	-
	Internal Battery Capacity (Ah)	7-9				
	External Battery Cabinet Socket	Standard				
STANDARD	Safety	EN 62040-1				
	EMC	EN 62040-2				
UPS LIFETIME		10 Years				

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# UPS

# B1 Series

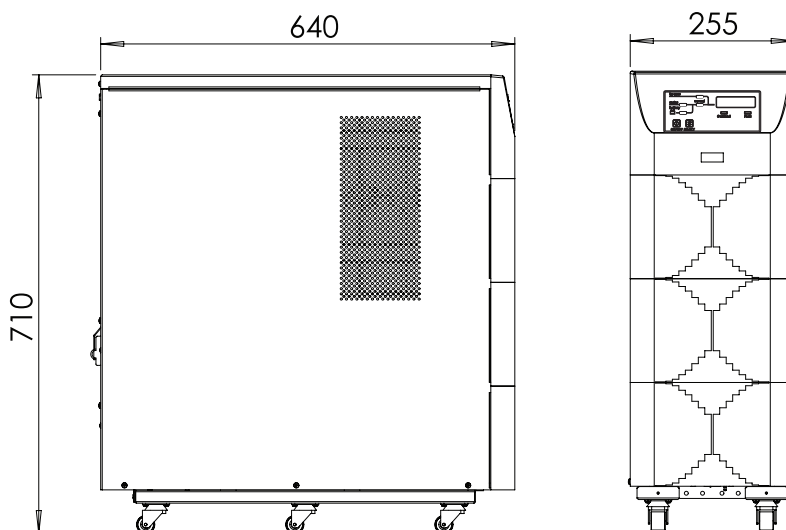
10 kVA

Three  
Singlephase



- ▶ **PFC technology**
- ▶ **3L Inverter**
- ▶ **High short circuit withstand capacity**
- ▶ **Internal battery**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,95 between 0%-100% load**

- ▶ High output power factor 0,8 (0,9 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service



# B1 Series UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>		10
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3ph + N
	Voltage tolerances	- 25%, +20% (without downgrading)
	Frequency	50 / 60 Hz
	Frequency tolerances	± 10%
	Power factor	≥ 0.95
<b>OUTPUT</b>	Voltage	220 / 230 / 240 Vac 1ph + N
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load in accordance with VFI-SS-11)
	Frequency	50 / 60 Hz
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)
	Power factor	0,8 (0,9 optional)
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)
	Crest factor	3:1
<b>OVERLOAD CAPACITY</b>	≤ %110	30 min.
	≤ %125	60 sec.
	≤ %150	10 sec.
<b>EFFICIENCY</b>	Online	up to %94
<b>GENERAL</b>	Technology	Three level inverter, PFC
	Control	Microprocessor, SPWM
	Communication	SNMP (optional), RS232
	Remote monitoring	SNMPView, Remote monitoring panel (optional)
	Dry contacts	Battery mode, Battery low
	Custom inputs	Remote EPO
	Cold Start	Standard
	Maintenance bypass	Standard
<b>ENVIRONMENT</b>	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)
	Relative humidity	0% - 95% (without condensation)
	Maximum altitude	≤2000 m
	Noise level	< 45 dB (A)
<b>UPS CABINET</b>	Dimensions (W x D x H) (mm)	255 x 660 x 710
	Weight (kg)	44
	Degree of protection	IP20
	Colour	RAL9005
<b>BATTERY</b>	Battery quantity	20
	Battery capacity (Ah)	7-9
	External Battery Cabinet Socket	Standard
<b>STANDARDS</b>	Safety	EN 62040-1
	EMC	EN 62040-2
<b>UPS LIFETIME</b>		10 Years

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# UPS

## B2 Series

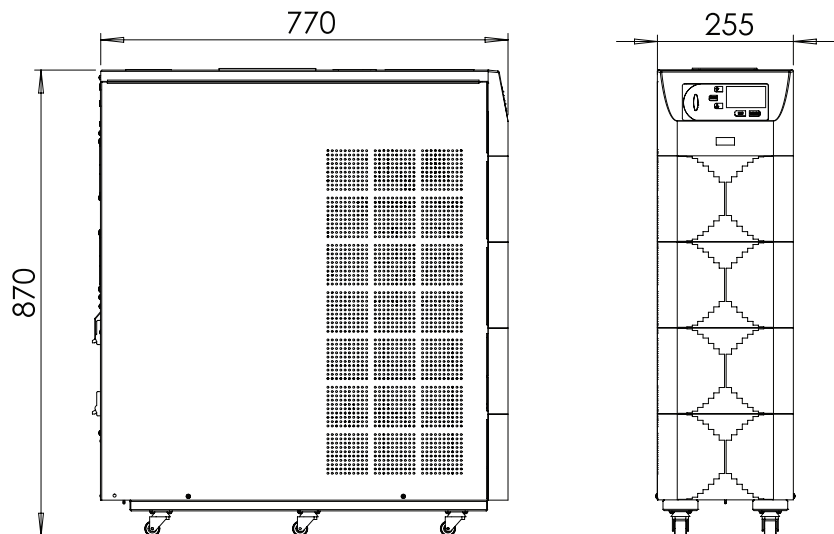
10-15-20 kVA

Three  
Singlephase



- ▶ **PFC & 3L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 5\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (0,9 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service





# B2 Series UPS

## TECHNICAL SPECIFICATIONS

POWER kVA		10	15	20
INPUT	Voltage	380 / 400 / 415 Vac 3ph + N		
	Voltage tolerances	-25%, +20% (without downgrading)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 10%		
	Power factor	≥ 0.99		
	THDi	≤ 5		
OUTPUT	Voltage	220 / 230 / 240 Vac 1ph + N		
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load in accordance with VFI-SS-11)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 0,1% (self-synchronize), ± 1% (mains-synchronize)		
	Power factor	0,8 (0,9 optional)		
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)		
	Crest factor	3:1		
OVERLOAD CAPACITY	≤ %110	30 min.		
	≤ %125	10 min.		
	≤ %150	1 min.		
EFFICIENCY	Online	up to 94%		
	Eco-mode	up to 98%		
GENERAL	Technology	Three level inverter, PFC		
	Control	Dual-DSP, SPWM		
	Communication	SNMP (optional), RS232, RS485, Modem, MODBUS		
	Remote monitoring	SNMPView, Remote monitoring panel (optional)		
	Dry contacts	Programmable 3 dry contact		
	Custom inputs	Generator, Remote EPO, Remote Start/Stop		
	Maintenance bypass	Standard		
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)		
	Relative humidity	0% - 95% (without condensation)		
	Maximum altitude	≤ 2000 m		
	Noise level	< 55 dB (A)		
UPS CABINET	Dimensions (W x D x H) (mm)	255 x 730 x 870		
	Weight (kg)	46	49	51
	Degree of protection	IP20		
	Colour	RAL9005		
BATTERY	Internal Battery quantity	30		
	Internal Battery capacity (Ah)	7-9		
	External Battery Cabinet Socket	Standard		
STANDARDS	Safety	EN 62040-1		
	EMC	EN 62040-2		
UPS LIFETIME		10 Years		

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# UPS

# C1 Series

10-120 kVA

Three phase



- ▶ **2L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains  $\leftrightarrow$  Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 4\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (optional 0,9)
- ▶ High input and output performance
- ▶ Remote emergency power off
- ▶ Short circuit protection
- ▶ Parallel operation
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Dual input (optional)
- ▶ Remote monitoring and management software



# C1 Series UPS

## TECHNICAL SPECIFICATIONS

POWER	Sn (kVA)	10	15	20	30	40	60	80	100	120
	Pn (kW)	8	12	16	24	32	48	64	80	96
INPUT	Voltage	380 / 400 / 415 Vac 3ph + N								
	Voltage Tolerances	± 15% (without downgrading), -36% ( depending on load percentage)								
	Frequency	50 / 60 Hz								
	Frequency Tolerances	± 10%								
	Power Factor	≥ 0.99								
	THDi	< 4%								
BYPASS	Dual Input	Optional								
	Voltage	380 / 400 / 415 Vac 3ph + N								
	Voltage Tolerances	± 10% (adjustable)								
	Frequency	50 / 60 Hz								
	Frequency Tolerances	± 4% adjustable up to ± 10%								
	Maintenance Bypass	Standard								
OUTPUT	Voltage	380 / 400 / 415 Vac 3ph + N								
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load)								
	Frequency	50 / 60 Hz (selectable)								
	Frequency Tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize, adjustable up to ± 5%)								
	Power Factor	0,8 (optional 0,9)								
	THDv	< 2% (linear load), < %5 (non-linear load)								
	Crest Factor	3:1								
OVERLOAD CAPACITY	≤ %110	up to 60 min.								
	≤ %125	up to 10 min.								
	≤ %150	up to 1 min.								
EFFICIENCY	Online	up to 92%								
	Eco-mode	up to 98%								
GENERAL	Technology	True online-double conversion, IGBT rectifier								
	Control	DSP, SPWM								
	Paralleling Units	Up to 6 units								
	Communication	SNMP (optional), RS232, RS485, MODBUS								
	Remote monitoring	SNMPView, Remote panel(Optional)								
	Dry contacts	Programmable 3 dry contacts								
	Custom inputs	Generator, Battery temperature sensor, Remote EPO, Remote Start/Stop								
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)								
	Relative humidity	0% - 95% (without condensation)								
	Maximum altitude	≤2000 m								
	Noise level	< 65 dB (A)								
UPS CABINET	Dimensions (GxDxY) (mm)	480 x 895 x 1225						480 x 1000 x 1225		
	Weight	140	150	160	185	200	265	330	350	
	Degree of Protection	IP20								
	Colour	RAL9005								
BATTERY	Battery Quantity	60 / 64								
	Type	VRLA AGM								
	Internal battery (maximum)	64	128	64	-----					
	Internal Battery Capacity	7 - 9Ah			12Ah					
STANDARDS	Safety	EN 62040-1								
	EMC	EN 62040-2								
	Performance	EN 62040-3								
UPS LIFETIME	10 Years									

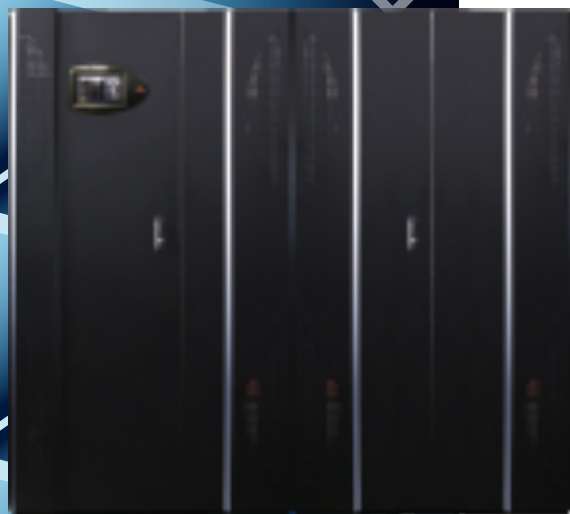
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# UPS

# D1 Series

160-800 kVA

Three phase



- ▶ **2L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 4\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (optional 0,9)
- ▶ High input and output performance
- ▶ Dual input (optional)
- ▶ Short circuit protection
- ▶ Parallel operation
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Touch screen TFT LCD user interface
- ▶ Remote monitoring and management software





# D1 Series UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>	Sn (kVA)	160	200	250	300	400	500	600	800	
	Pn (kW)	128	160	200	240	320	400	480	640	
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3- ph + N								
	Voltage Tolerances	± 15% (without downgrading), -36% (depending on load percentage)								
	Frequency	50 / 60 Hz								
	Frequency Tolerances	± %10								
	Power Factor	≥ 0,99								
	THDi	<%4								
<b>BYPASS</b>	Dual input	Optional								
	Voltage	380 / 400 / 415 Vac 3-ph + N								
	Voltage Tolerances	± %10 (adjustable)								
	Frequency	50/60 Hz								
	Frequency Tolerances	± %4 [adjustable up to ± 10%]								
	Maintenance Bypass	Standard								
<b>OUTPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N								
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load in accordance with VFI-SS-11)								
	Frequency	50/60 Hz (selectable)								
	Frequency Tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize, adjustable up to ± 5%)								
	Power Factor	0,8 (optional 0,9)								
	THDv	< 2% (linear load), < 5% (non-linear load)								
	Crest Factor	3:1								
<b>OVERLOAD CAPACITY</b>	≤ %110	up to 60 min.								
	≤ %125	up to 10 min.								
	≤ %150	up to 1 min.								
<b>EFFICIENCY</b>	Online	up to 92%								
	Eco-mod	up to 98%								
<b>GENERAL</b>	Technology	True online-double conversion, IGBT rectifier								
	Control	DSP, SPWM								
	Paralleling units	up to 6								
	Communication	SNMP, USB, RS232, RS485, MODBUS								
	Remote monitoring	Remote panel (Optional)								
	Dry contacts	Programmable 3 dry contacts								
	Custom inputs	Generator, Battery temperature sensor, Remote EPO								
	Touchscreen TFT LCD Display	Optional								
<b>ENVIRONMENT</b>	Operating Temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)								
	Relative Humidity	0% - 95% (without condensation)								
	Maximum Altitude	≤2000 m								
	Noise level dB(A)	<65 dB (A)				< 70 dB (A)			< 75 dB (A)	
<b>UPS CABINET</b>	Dimensions	W (mm)	630	705			2185		3430	
		D (mm)	1110	1260			810		810	
		H (mm)	1450	1600			2030		1925	
	Weight	525	590	850	870	1380	1600	1800	2200	
	Degree of Protection	IP20								
Colour	RAL9005									
<b>BATTERY</b>	Battery Quantity	60 / 64								
	Type	VRLA AGM								
<b>STANDARDS</b>	Safety	EN 62040-1								
	EMC	EN 62040-2								
<b>UPS LIFETIME</b>	10 Years									

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# UPS

# E1 Series

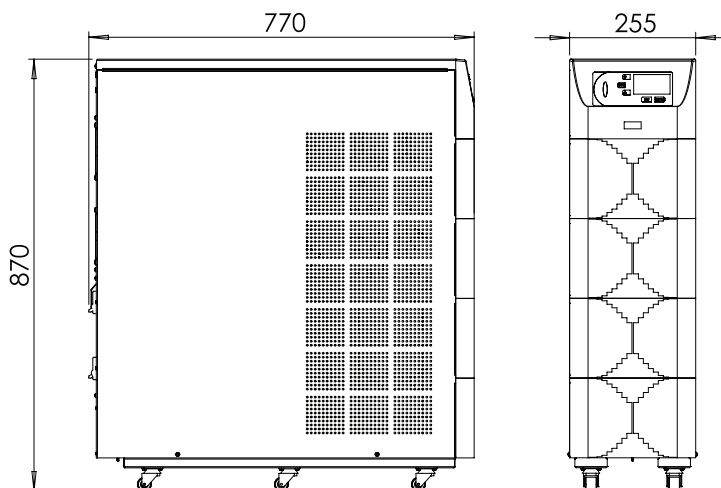
10-20 kVA

Three phase



- ▶ **PFC & 3L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 5\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (optional 0,9)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Parallel operation
- ▶ 7/24 technical support and customer service



# E1 Series UPS

## TECHNICAL SPECIFICATIONS

POWER	Sn (kVA)	10	15	20
INPUT	Voltage	380 / 400 / 415 Vac 3- ph + N		
	Voltage Tolerances	-25% , +20% (without downgrading)		
	Frequency	50 / 60 Hz		
	Frequency Tolerances	± 10%		
	Power Factor	≥ 0,99		
	THDi	<%5		
BYPASS	Voltage	380 / 400 / 415 Vac 3-ph + N		
	Voltage tolerances	± 10% (adjustable)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 4% (adjustable up to ± 10%)		
	Maintenance Bypass Standard	Standard		
OUTPUT	Voltage	380 / 400 / 415 Vac 3-ph + N		
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load in accordance with VFI-SS-11)		
	Frequency	50/60 Hz		
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)		
	Power Factor	0,8 (optional 0,9)		
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)		
	Crest Factor	3:1		
OVERLOAD CAPACITY	≤ %110	60 min.		
	≤ %125	10 min.		
	≤ %150	1 min.		
EFFICIENCY	Online	up to %94		
	Eco-mode	up to %98		
GENERAL	Technology	PFC IGBT Rectifier, Three level inverter		
	Control	Dual DSP, SPWM		
	Paralleling units	Up to 6 units		
	Communication	SNMP(optional), RS232, RS485, MODEM, MODBUS		
	Remote monitoring	SNMPView, Remote monitoring panel (optional)		
	Dry contacts	Programmable 3 dry contacts		
	Custom inputs	Generator, Remote EPO, Remote start/stop		
	Maintenance bypass	Standard		
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)		
	Relative humidity	0% - 95% (without condensation)		
	Maximum altitude	≤ 2000 m		
	Noise level	<55 dB (A)		
UPS CABINET	Dimensions (W x D x H) (mm)	255 x 770 x 870		
	Weight (kg)	51		51
	Degree of protection	IP20		
	Colour	RAL9005		
BATTERY	Internal battery quantity	30		
	External battery cabinet socket	7-9		
	External battery capacity (Ah)	Standart		
STANDARDS	Safety	EN 62040-1		
	EMC	EN 62040-2		
	Performance	EN 62040-3		
UPS LIFETIME		10 Years		

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# UPS

# E2 Series

20-200 kVA

Three phase



- ▶ **3L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 4\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,9 (1 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Touch screen TFT LCD user interface
- ▶ Remote monitoring and management software





# E2 Series UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>	Sn (kVA)	20	30	40	60	80	100	120	160	200
	Pn (kW)	18	27	36	54	72	90	108	144	180
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3- ph + N								
	Voltage Tolerances	-%15, +%20 (without downgrading), -%36 (depending on load percentage)								
	Frequency	50 / 60 Hz								
	Frequency Tolerances	± %10								
	Power Factor	≥ 0,99								
	THDi	<%4								
<b>BYPASS</b>	Dual Input	Optional								
	Voltage	380 / 400 / 415 Vac 3-ph + N								
	Voltage tolerances	Adjustable up to -25%, +20%								
	Frequency	50/60 Hz								
	Frequency tolerances	adjustable up to ± 10%								
	Maintenance bypass	Standard								
<b>OUTPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N								
	Voltage tolerances	± %1 (static load), ± %5 (dynamic load)								
	Frequency	50/60 Hz (selectable)								
	Frequency tolerances	± % 0,1 (self-synchronize), ± %1 (mains-synchronize, adjustable up to ± 5%)								
	Power Factor	0,9 [1 optional]								
	THDv	< 2% (linear load), < 5% (non-linear load)								
	Crest Factor	3:1								
<b>OVERLOAD CAPACITY</b>	≤ %110	60 min.								
	≤ %125	10 min.								
	≤ %150	1 min.								
<b>EFFICIENCY</b>	Online	%100 Load	up to 96%							
		%50 Load	95%							
	Eco-mod	up to 98%								
<b>GENERAL</b>	Technology	Three level IGBT rectifier & inverter								
	Control	DSP, SPWM								
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)								
	Paralleling Units	Up to 6								
	Communication	SNMP(Optional), RS232, RS485, MODBUS								
	Remote Monitoring	Remote panel(Optional)								
	Programmable Dry Contacts	3 (standard)								
	Programmable Custom Inputs	4								
	Charge With Temperature Compensation	Optional								
	Cold Start	Standard								
Touch Screen TFT LCD User Interface	Standard									
<b>ENVIRONMENT</b>	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)								
	Relative humidity	0% - 95% (without condensation)								
	Maximum altitude	≤ 2000 m								
	Noise Level (dB (A))	<60	<65	<70						
<b>UPS CABINET</b>	Dimensions	W (mm)	480	630	735					
		D (mm)	995	860	1040					
		H (mm)	1235	1430	1840					
	Degree of Protection	IP20								
	Colour	RAL9005								
<b>BATTERY</b>	Battery Quantity	40 ± 4 (adjustable)								
	Type	VRLA AGM								
	Internal Battery Quantity (max.)	40	-							
	Internal Battery Capacity (Ah)	7-9	-							
<b>STANDARDS</b>	Safety	EN 62040-1								
	EMC	EN 62040-2								
<b>UPS LIFETIME</b>	10 Years									

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# UPS

## E3 Series

10-800 kVA

Three phase



- ▶ **3L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 3\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between**
- ▶ **0%-100% load**

- ▶ High output power factor 0,9 (optional 1)
- ▶ High input and output performance
- ▶ Cold Start (optional)
- ▶ Remote monitoring and management software
- ▶ Short circuit protection
- ▶ External bypass(optional)
- ▶ Optimum generator compatibility
- ▶ Parallel operation
- ▶ Touch screen TFT LCD user interface
- ▶ Automatic and manual battery test adjustable as period and time



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# E3 Series UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>	Sn (kVA)	10	20	30	40	60	80	100	120	160	200	250	300	400	500	600	800
	Pn (kW)	9	18	27	36	54	72	90	108	144	180	225	270	360	450	540	720
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N															
	Voltage Tolerances	-15%,+20% (without downgrading), -36% (depending on load percentage)															
	Frequency	50 / 60 Hz															
	Frequency Tolerances	± 10%															
	Power Factor	≥ 0,99															
	THDi	< 3%															
<b>BYPASS</b>	Dual Input	Optional															
	Voltage	380 / 400 / 415 Vac 3-ph + N															
	Voltage tolerances	± 10% (adjustable)															
	Frequency	50 / 60 Hz															
	Frequency tolerances	± 4% (adjustable up to ± 10%)															
	Maintenance Bypass Standard	Standard															
<b>OUTPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N															
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load)															
	Frequency	50 / 60 Hz (selectable)															
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize, adjustable up to ± 5%)															
	Power Factor	0,9 (1 optional)															
	THDv	< 2% (linear load), < 5% (non-linear load)															
	Crest Factor	3:1															
<b>OVERLOAD CAPACITY</b>	≤ %110	60 min.															
	≤ %125	10 min.															
	≤ %150	1 min.															
<b>EFFICIENCY</b>	Online	%100 Load	up to 96%														
		%50 Load	95%														
	Eco-mod	up to 98%															
<b>GENERAL</b>	Technology	Three level rectifier & inverter															
	Control	DSP, SPWM															
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)															
	Paralleling Units	Up to 6															
	Communication	SNMP, USB, RS232, RS485, MODBUS															
	Remote Monitoring	Remote monitoring panel(Optional)															
	Dry Contacts	Programmable 3 dry contacts															
	Custom Inputs	Generator, Battery temperature sensor, Remote EPO, Remote Start/Stop															
	Touch Screen TFT LCD User Interface	Standard															
<b>ENVIRONMENT</b>	Operating Temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)															
	Relative Humidity	0% - 95% (without condensation)															
	Maximum Altitude	≤ 2000 m															
	Noise level dB(A)	<60				<65				<70							
<b>UPS CABINET</b>	Dimensions	W (mm)	480	475	630	1040	1230	1430	2530	3230							
		D (mm)	990	895	860	730	810	810	810	810							
		H (mm)	1235	1230	1435	1835	1925	1925	2025	2025							
	Weight (kg)	200	350	675	750	850	970	1400	2200								
	Degree of Protection	IP20															
Colour	RAL9005																
<b>BATTERY</b>	Internal Battery Quantity (max.)	64	128	64	-----												
	Internal Battery Capacity (Ah)	7 - 9Ah	12Ah														
	Type	VRLA AGM															
<b>STANDARDS</b>	Safety	EN 62040-1															
	EMC	EN 62040-2															
	Performance	EN 62040-3															
<b>UPS LIFETIME</b>	10 Years																

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# UPS

## E4 Series Modular

20 kVA x 6 Module

Three phase



- ▶ **3L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 3\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **Distributed bypass**
- ▶ **Common battery operation**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,9 (optional 1)
- ▶ High input and output performance
- ▶ Touch screen TFT LCD user interface
- ▶ Cold start (optional)
- ▶ Short circuit protection
- ▶ External bypass(optional)
- ▶ Optimum generator compatibility
- ▶ High efficiency eco-mod (up to 98%)
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time

**LIMITLESS  
PARALLELING**

**LIMITLESS  
POWER**



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# E4 Series UPS

## TECHNICAL SPECIFICATIONS

# 6x20

Module	1	2	3	4	5	6	
<b>POWER</b>	Sn (kVA)	20	40	60	80	100	120
	Pn (kW)	18	36	54	72	90	108
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N					
	Voltage Tolerances	- 25%, +20% (without downgrading), -36% (depending on load percentage)					
	Frequency	50 / 60 Hz					
	Frequency Tolerances	± 10%					
	Power Factor	≥ 0,99					
	THDi	< 3%					
<b>BYPASS</b>	External Bypass	Optional					
	Voltage	380 / 400 / 415 Vac 3-ph + N					
	Voltage Tolerances	up to - 25%, +20% (adjustable)					
	Frequency	50 / 60 Hz					
	Frequency Tolerances	up to ± 10% (adjustable)					
	Maintenance Bypass	Standard					
<b>OUTPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N					
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load)					
	Frequency	50 / 60 Hz (selectable)					
	Frequency Tolerances	± 0.1% (self-synchronize), ± 1% (bypass-synchronize, adjustable up to ± 5%)					
	Power Factor	0,9 [1 optional]					
	THDv	< 2% (linear load), < 5% (non-linear load)					
Crest Factor	3:1						
<b>OVERLOAD CAPACITY</b>	≤ %110	60 min.					
	≤ %125	10 min.					
	≤ %150	1 min.					
<b>EFFICIENCY</b>	Online	%100 Load	up to 96%				
		%50 Load	95%				
	Eco-mode	up to 98%					
<b>GENERAL</b>	Technology	Three level rectifier & inverter, Hot-swappable modular					
	Control	DSP, SPWM					
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)					
	Communication	SNMP, USB, RS232, RS485, MODBUS					
	Remote Monitoring	Remote monitoring panel (optional)					
	Programmable Dry Contacts	3 (standard), 7 (optional)					
	Programmable Custom Inputs	4					
	Temperature Compensated Charge	Optional					
Touchscreen TFT LCD Display	Standard						
<b>ENVIRONMENT</b>	Operating Temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)					
	Relative Humidity	0% - 95% (without condensation)					
	Maximum Altitude	≤ 2000 m					
	Noise level dB(A)	<50	<52	<54	<56	<58	<60
<b>UPS CABINET</b>	Dimensions ( W x D x H ) (mm)	630 x 960 x 1700					
	Degree of Protection	IP20					
	Colour	RAL 9005					
<b>BATTERY</b>	Battery Module	Hot-Swap battery modules					
	Battery Quantity	40 ± 4 (adjustable)					
	Type	VRLA AGM					
<b>STANDARDS</b>	Safety	EN 62040-1					
	EMC	EN 62040-2					
	Performance	EN 62040-3					
<b>UPS LIFETIME</b>	10 Years						

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# UPS

## E4 Series Modular

40 kVA x 5 Module

Three phase



- ▶ **3L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 3\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **Distributed bypass**
- ▶ **Common battery operation**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,9 (optional 1)
- ▶ High input and output performance
- ▶ Touch screen TFT LCD user interface
- ▶ Cold start (optional)
- ▶ Short circuit protection
- ▶ External bypass(optional)
- ▶ Optimum generator compatibility
- ▶ High efficiency eco-mod (up to 98%)
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time

**LIMITLESS  
PARALLELING**

**LIMITLESS  
POWER**



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# E4 Series UPS

## TECHNICAL SPECIFICATIONS

# 5x40

	Module	1	2	3	4	5
<b>POWER</b>	Sn (kVA)	40	80	120	160	200
	Pn (kW)	36	72	108	144	180
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N				
	Voltage Tolerances	- 25%, +20% (without downgrading), -36% (depending on load percentage)				
	Frequency	50 / 60 Hz				
	Frequency Tolerances	± 10%				
	Power Factor	≥ 0,99				
	THDi	< 3%				
<b>BYPASS</b>	External Bypass	Optional				
	Voltage	380 / 400 / 415 Vac 3-ph + N				
	Voltage Tolerances	up to - 25%, +20% (adjustable)				
	Frequency	50 / 60 Hz				
	Frequency Tolerances	up to ± 10% (adjustable)				
	Maintenance Bypass	Standard				
<b>OUTPUT</b>	Voltage	380 / 400 / 415 Vac 3-ph + N				
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load)				
	Frequency	50 / 60 Hz (selectable)				
	Frequency Tolerances	± 0.1% (self-synchronize), ± 1% (bypass-synchronize, adjustable up to ± 5%)				
	Power Factor	0,9 [1 optional]				
	THDv	< 2% (linear load), < 5% (non-linear load)				
	Crest Factor	3:1				
<b>OVERLOAD CAPACITY</b>	≤ %110	60 min.				
	≤ %125	10 min.				
	≤ %150	1 min.				
<b>EFFICIENCY</b>	Online	%100 Load	up to 96%			
		%50 Load	95%			
	Eco-mode	up to 98%				
<b>GENERAL</b>	Technology	Three level rectifier & inverter, Hot-swappable modular				
	Control	DSP, SPWM				
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)				
	Communication	SNMP, USB, RS232, RS485, MODBUS				
	Remote Monitoring	Remote monitoring panel (optional)				
	Programmable Dry Contacts	3 (standard), 7 (optional)				
	Programmable Custom Inputs	4				
	Temperature Compensated Charge	Optional				
Touchscreen TFT LCD Display	Standard					
<b>ENVIRONMENT</b>	Operating Temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)				
	Relative Humidity	0% - 95% (without condensation)				
	Maximum Altitude	≤ 2000 m				
	Noise level dB(A)	<53	<55	<57	<59	<61
<b>UPS CABINET</b>	Dimensions ( W x D x H ) (mm)	830 x 1110 x 1945				
	Degree of Protection	IP20				
	Colour	RAL 9005				
<b>BATTERY</b>	Battery Module	Hot-Swap battery modules				
	Battery Quantity	40 ± 4 (adjustable)				
	Type	VRLA AGM				
<b>STANDARDS</b>	Safety	EN 62040-1				
	EMC	EN 62040-2				
	Performance	EN 62040-3				
<b>UPS LIFETIME</b>		10 Years				

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# UPS

## E6 Series 20-40 kVA

Three phase

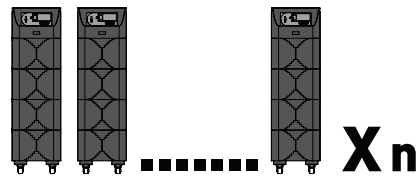


- ▶ **3L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains  $\leftrightarrow$  Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 4\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **Common battery operation**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,9 (1 optional)
- ▶ High input and output performance
- ▶ Optimum generator compatibility
- ▶ Cold start (optional)
- ▶ Short circuit protection
- ▶ External bypass (optional)
- ▶ Remote monitoring and management software
- ▶ High efficiency eco-mod (up to 98%)
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time

**LIMITLESS  
PARALLELING**

**LIMITLESS  
POWER**



Technical specifications  
TÜRKAK  
E6 series become accredited by  
TURKISH ACCREDITATION AGENCY

# ELEN

# E6 Series UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>	Sn (kVA)	20	40
	Pn (kW)	18	36
<b>INPUT</b>	Voltage	380 / 400 / 415 Vac 3-Ph + N	
	Voltage Tolerances	-15%, +20% (without downgrading)	
	Frequency	50 / 60 Hz	
	Frequency Tolerances	± 10%	
	Power Factor	≥ 0,99	
	THDi	<4%	
<b>BYPASS</b>	External Bypass	Optional	
	Voltage	380 / 400 / 415 Vac 3-Ph + N	
	Voltage Tolerances	± 10% (adjustable)	
	Frequency	50 / 60 Hz	
	Frequency Tolerances	adjustable up to ± %10	
	Maintenance Bypass	Standard	
<b>OUTPUT</b>	Voltage	380 / 400 / 415 Vac 3-Ph + N	
	Voltage Tolerances	± 1% (static load), ± 4% (dynamic load)	
	Frequency	50 / 60 Hz	
	Frequency Tolerances	± 0.1% (self-synchronizel), ± 1% (bypass-synchronizel) up to ± 5% (mains-synchronizel)	
	Power Factor	0,9 (1 optional)	
	THDv	≤ 2 % (linear load), ≤ 5% (non-linear load)	
	Crest Factor	3:1	
<b>OVERLOAD CAPACITY</b>	≤ %110	60 min	
	≤ %125	10 min	
	≤ %150	1 min	
<b>EFFICIENCY</b>	Online	%100 Load	up to 95%
		%50 Load	95%
	Eco-mod	up to 98%	
<b>GENERAL</b>	Technology	Three-level rectifier & inverter	
	Control	DSP, SPWM	
	Paralleling units	Up to 8 units (adjustable)	
	Communication	SNMP, USB, RS232, RS485, MODBUS	
	Remote monitoring	SNMPViev, Remote monitoring panel (optional)	
	Dry contacts	3 units	
	Programmable custom input	4 units	
	Cold Start	Optional	
<b>ENVIRONMENT</b>	Operation Temperature	from 0°C up to +40°C (from 20°C to 25°C for maximum battery life)	
	Relative Humidity	0% - 95% (without condensation)	
	Maximum Altitude	≤ 2000 m	
	Noise Level dB(A)	<55	
<b>UPS CABINET</b>	Dimensions (W x D x H) (mm)	255 x 830 x 870	480 x 895 x 1385
	Degree of protection	IP20	
	Colour	RAL 9005	
<b>BATTERY</b>	Battery quantity	40 ± 4 (adjustable)	
	Type	VRLA AGM/GEL	
	Battery module	Common battery (paralleling operation)	
	Internal Battery Quantity (max.)	40	132
	Internal Battery Capacity (Ah)	7-9Ah	
<b>STANDARDS</b>	Safety	EN 62040-1	
	EMC	EN 62040-2	
	Performance	EN 62040-3	
<b>UPS LIFETIME</b>	10 Years		

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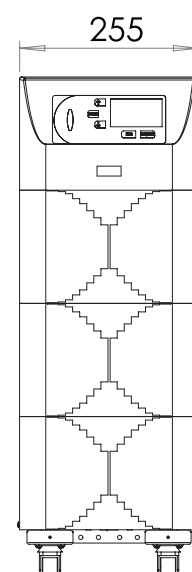
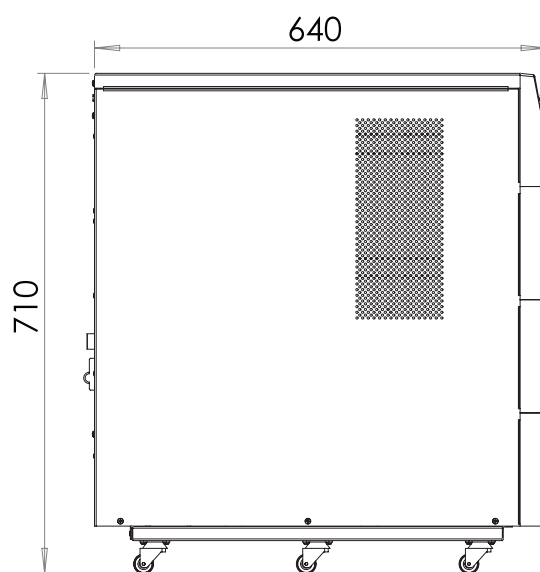


# UPS

## FA2 Series 3-5 kVA | Single phase

- ▶ **PFC & 3L Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Low input current THDi**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (0,9 optional)
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service



# F A2

Series  
UPS

## TECHNICAL SPECIFICATIONS

POWER (kVA)		3	5		
INPUT	Voltage	110/115 /120/127 Vac 1ph + N			
	Voltage tolerances	-25%, +20% (without downgrading)			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± 10%			
	Power factor	≥ 0.99			
	THDi	< 5%			
OUTPUT	Voltage	110/115 /120/127 Vac 1ph + N			
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load)			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)			
	Power factor	0,8 (0,9 optional)			
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)			
	Crest factor	3:1			
OVERLOAD CAPACITY	≤ %110	30 min.			
	≤ %125	60 sec.			
	≤ %150	10 sec.			
EFFICIENCY	Online	%94			
GENERAL	Technology	True online-double conversion, Three level inverter, PFC			
	Control	Microprocessor, SPWM			
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)			
	Communication	SNMP (optional), RS232			
	Remote monitoring	SNMPView, UPSilon, Remote monitoring panel (optional)			
	Dry contacts	Battery mode, Battery low			
	Custom inputs	Remote EPO			
	Cold start	Standard			
	Maintenance bypass	Standard			
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)			
	Relative humidity	0% - 95% (without condensation)			
	Maximum altitude	≤ 2000 m			
	Noise level	< 40dB (A)	< 45dB (A)		
UPS CABINET	Dimensions (W x D x H) (mm)	255x620x545	255x710x640		
	Weight (kg)	29	35		
	Degree of protection	IP20			
	Colour	RAL9005			
BATTERY	Internal battery quantity	14	20	20	30
	Internal battery capacity (Ah)	7-9			
	External battery socket	Standard			
STANDARDS	Safety	EN 62040-1			
	EMC	EN 62040-2			
UPS LIFETIME	10 Years				

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# ELEN

# UPS

# FC1 Series

5-60 kVA

Three phase



- ▶ **2L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 2\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,9
- ▶ High input and output performance
- ▶ Remote emergency power off
- ▶ Short circuit protection
- ▶ Parallel operation
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Easy installation and maintenance
- ▶ Remote monitoring and management software



# F C1

Series  
UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>	Sn (kVA)	5	7.5	10	15	20	30	40	50	60
	Pn (kW)	4.5	6.75	9	13.5	18	27	36	45	54
<b>INPUT</b>	Voltage	190 / 200 / 208 / 220 Vac 3ph + N								
	Voltage Tolerances	± 15% (without downgrading), -36% ( depending on load percentage)								
	Frequency	50 / 60 Hz								
	Frequency Tolerances	± 10%								
	Power Factor	≥ 0.99								
	THDi	< 4%								
<b>BYPASS</b>	Dual Input	Optional								
	Voltage	190 / 200 / 208 / 220 Vac 3ph + N								
	Voltage Tolerances	± 10% (adjustable)								
	Frequency	50 / 60 Hz								
	Frequency Tolerances	± 4% adjustable up to ± 10%								
	Maintenance Bypass	Standard								
<b>OUTPUT</b>	Voltage	190 / 200 / 208 / 220 Vac 3ph + N								
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load)								
	Frequency	50 / 60 Hz (selectable)								
	Frequency Tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize, adjustable up to ± 5%)								
	Power Factor	0,9								
	THDv	< 2% (linear load), < %5 (non-linear load)								
	Crest Factor	3:1								
<b>OVERLOAD CAPACITY</b>	≤ %110	up to 60 min.								
	≤ %125	up to 10 min.								
	≤ %150	up to 1 min.								
<b>EFFICIENCY</b>	Online	up to 92%								
	Eco-mode	up to 98%								
<b>GENERAL</b>	Technology	True online-double conversion, IGBT rectifier								
	Control	DSP, SPWM								
	Paralleling Units	Up to 6 units								
	Communication	SNMP (optional), RS232, RS485, MODBUS								
	Remote monitoring	SNMPView, Remote panel(Optional)								
	Dry contacts	Programmable 3 dry contacts								
	Custom inputs	Generator, Battery temperature sensor, Remote EPO, Remote Start/Stop								
<b>ENVIRONMENT</b>	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)								
	Relative humidity	0% - 95% (without condensation)								
	Maximum altitude	≤2000 m								
	Noise level	< 65 dB (A)								
<b>UPS CABINET</b>	Dimensions (GxDxY) (mm)	480 x 895 x 1225						480 x 1000 x 1225		
	Weight	165	170	185	200	265	330	350		
	Degree of Protection	IP20								
	Colour	RAL9005								
<b>BATTERY</b>	Battery Quantity	38								
	Type	VRLA AGM								
	Internal battery (maximum)	76	114	76	-----					
	Internal Battery Capacity	7 - 9Ah			12Ah			-----		
<b>STANDARDS</b>	Safety	EN 62040-1								
	EMC	EN 62040-2								
<b>UPS LIFETIME</b>	10 Years									

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# UPS

# FD1 Series

80-120 kVA

Three phase



- ▶ **2L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 4\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,8 (optional 0,9)
- ▶ High input and output performance
- ▶ Dual input (optional)
- ▶ Short circuit protection
- ▶ Parallel operation
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Touch screen TFT LCD user interface
- ▶ Remote monitoring and management software





# F D1

Series  
UPS

## TECHNICAL SPECIFICATIONS

POWER	Sn (kVA)	80	100	120
	Pn (kW)	64	80	96
INPUT	Voltage	190 / 200 / 208 / 220 Vac 3ph + N		
	Voltage Tolerances	± 15% (without downgrading), -36% ( depending on load percentage)		
	Frequency	50 / 60 Hz		
	Frequency Tolerances	± 10%		
	Power Factor	≥ 0.99		
	THDi	< 4%		
BYPASS	Dual Input	Optional		
	Voltage	190 / 200 / 208 / 220 Vac 3ph + N		
	Voltage Tolerances	± 10% (adjustable)		
	Frequency	50 / 60 Hz		
	Frequency Tolerances	± 4% adjustable up to ± 10%		
	Maintenance Bypass	Standard		
OUTPUT	Voltage	190 / 200 / 208 / 220 Vac 3ph + N		
	Voltage Tolerances	± 1% (static load), ± 5% (dynamic load)		
	Frequency	50 / 60 Hz (selectable)		
	Frequency Tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize, adjustable up to ± 5%)		
	Power Factor	0,8 (0,9 optional)		
	THDv	< 2% (linear load), < %5 (non-linear load)		
	Crest Factor	3:1		
OVERLOAD CAPACITY	≤ %110	up to 60 min.		
	≤ %125	up to 10 min.		
	≤ %150	up to 1 min.		
EFFICIENCY	Online	up to 92%		
	Eco-mode	up to 98%		
GENERAL	Technology	True online-double conversion, IGBT rectifier		
	Control	DSP, SPWM		
	Paralleling Units	Up to 6 units		
	Communication	SNMP (optional), RS232, RS485, MODBUS		
	Remote monitoring	SNMPView, Remote panel(Optional)		
	Dry contacts	Programmable 3 dry contacts		
	Custom inputs	Generator, Battery temperature sensor, Remote EPO, Remote Start/Stop		
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)		
	Relative humidity	0% - 95% (without condensation)		
	Maximum altitude	≤2000 m		
	Noise level	< 65 dB (A)		
UPS CABINET	Dimensions (GxDxY) (mm)	630 x 1110 x 1450	705 x 1260 x 1600	780 x 1260 x 1850
	Weight	525	590	850
	Degree of Protection	IP20		
	Colour	RAL9005		
BATTERY	Battery Quantity	38		
	Type	VRLA AGM		
STANDARDS	Safety	EN 62040-1		
	EMC	EN 62040-2		
UPS LIFETIME		10 Years		

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# F E1

Series  
UPS

## TECHNICAL SPECIFICATIONS

<b>POWER</b>	Sn (kVA)	5	7,5	10
<b>INPUT</b>	Voltage	190 / 200 / 208 / 220 Vac 3ph + N		
	Voltage Tolerances	-25% , +20% (without downgrading)		
	Frequency	50 / 60 Hz		
	Frequency Tolerances	± 10%		
	Power Factor	≥ 0,99		
	THDi	<5%		
<b>BYPASS</b>	Voltage	380 / 400 / 415 Vac 3-ph + N		
	Voltage tolerances	± 10% (adjustable)		
	Frequency	50 / 60 Hz		
	Frequency tolerances	± 4% (adjustable up to ± 10%)		
	Maintenance Bypass Standard	Standard		
<b>OUTPUT</b>	Voltage	190 / 200 / 208 / 220 Vac 3ph + N		
	Voltage tolerances	± 1% (static load), dynamic load in accordance with VFI-SS-11		
	Frequency	50/60 Hz		
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize)		
	Power Factor	0,8 (optional 0,9)		
	THDv	≤ 2% (linear load), ≤ 5% (non-linear load)		
	Crest Factor	3:1		
<b>OVERLOAD CAPACITY</b>	≤ %110	60 min.		
	≤ %125	10 min.		
	≤ %150	1 min.		
<b>EFFICIENCY</b>	Online	up to 94%		
	Eco-mode	up to 98%		
<b>GENERAL</b>	Technology	PFC IGBT Rectifier, Three level inverter		
	Control	Dual DSP, SPWM		
	Paralleling units	Up to 6 units		
	Communication	SNMP(optional), RS232, RS485, MODEM, MODBUS		
	Remote monitoring	SNMPView, Remote monitoring panel (optional)		
	Dry contacts	Programmable 3 dry contacts		
	Custom inputs	Generator, Remote EPO, Remote start/stop		
	Maintenance bypass	Standard		
<b>ENVIRONMENT</b>	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)		
	Relative humidity	0% - 95% (without condensation)		
	Maximum altitude	≤ 2000 m		
	Noise level	<55 dB (A)		
<b>UPS CABINET</b>	Dimensions (W x D x H) (mm)	255 x 770 x 870		
	Weight (kg)	51		51
	Degree of protection	IP20		
	Colour	RAL9005		
<b>BATTERY</b>	Internal battery quantity	20		
	External battery cabinet socket	7-9		
	External battery capacity (Ah)	Standart		
<b>STANDARDS</b>	Safety	EN 62040-1		
	EMC	EN 62040-2		
	Performance	EN 62040-3		
<b>UPS LIFETIME</b>		10 Years		

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# UPS

## FE3 Series

10-800 kVA

Three phase



- ▶ **3L Rectifier & Inverter technology**
- ▶ **High short circuit withstand capacity**
- ▶ **Regenerative operation** (Mains ↔ Load)
- ▶ **Regenerative loading** (Easy Loading Test)
- ▶ **Low input current THDi ( $\leq 3\%$ )**
- ▶ **Low output voltage THDv ( $\leq 2\%$ )**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ Parallel operation with up to 6 units (optional 8)
- ▶ High output power factor 0,9 (optional 1)
- ▶ High input and output performance
- ▶ Soft Start (optional)
- ▶ Remote monitoring and management software
- ▶ Short circuit protection
- ▶ External bypass(optional)
- ▶ Optimum generator compatibility
- ▶ High efficiency eco-mod (up to 98%)
- ▶ Touch screen TFT LCD user interface
- ▶ Automatic and manual battery test adjustable as period and time



# F E3 Series UPS

## TECHNICAL SPECIFICATIONS

POWER	Sn (kVA)	5	10	15	20	30	40	50	60	80	100	120	
	Pn (kW)	4.5	9	13.5	18	27	36	45	54	72	90	108	
INPUT	Voltage	190 / 200 / 208 / 220 Vac 3ph + N											
	Voltage Tolerances	± 15% (without downgrading), -36% (depending on load percentage)											
	Frequency	50 / 60 Hz											
	Frequency Tolerances	± 10%											
	Power Factor	≥ 0,99											
	THDi	< 3%											
BYPASS	Dual Input	Optional											
	Voltage	190 / 200 / 208 / 220 Vac 3ph + N											
	Voltage tolerances	± 10% (adjustable)											
	Frequency	50 / 60 Hz											
	Frequency tolerances	± 4% (adjustable up to ± 10%)											
	Maintenance Bypass Standard	Standard											
OUTPUT	Voltage												
	Voltage tolerances	± 1% (static load), ± 5% (dynamic load)											
	Frequency	50 / 60 Hz (selectable)											
	Frequency tolerances	± 0.1% (self-synchronize), ± 1% (mains-synchronize, adjustable up to ± 5%)											
	Power Factor	0,9 [1 optional]											
	THDv	< 2% (linear load), < 5% (non-linear load)											
	Crest Factor	3:1											
OVERLOAD CAPACITY	≤ %110	60 min.											
	≤ %125	10 min.											
	≤ %150	1 min.											
EFFICIENCY	Online	%100 Load	up to %95,5										
		%50 Load	up to %95										
	Eco-mod	%98											
GENERAL	Technology	Three level rectifier & inverter											
	Control	DSP, SPWM											
	Classification in accordance with EN 62040-3	VFI - SS - 111(Voltage Frequency Independent)											
	Paralleling Units	Up to 6											
	Communication	SNMP, USB, RS232, RS485, MODBUS											
	Remote Monitoring	Remote monitoring panel(Optional)											
	Dry Contacts	Programmable 3 dry contacts											
	Custom Inputs	Generator, Battery temperature sensor, Remote EPO, Remote Start/Stop											
	Touch Screen TFT LCD User Interface	Standard											
ENVIRONMENT	Operating Temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)											
	Relative Humidity	0% - 95% (without condensation)											
	Maximum Altitude	≤ 2000 m											
	Noise level dB(A)	<70											
UPS CABINET	Dimensions	W (mm)	780			2130			705		705		
		D (mm)	1260			810			3350		4250		
		H (mm)	1850			2025			1600		1600		
	Weight (kg)	850			1000			1380		1600		1700	
	Degree of Protection	IP20											
	Colour	RAL9005											
BATTERY	Internal Battery Quantity (max.)	64			128			64		-----			
	Internal Battery Capacity (Ah)	7 - 9Ah			12Ah								
	Type	VRLA AGM											
STANDARDS	Safety	EN 62040-1											
	EMC	EN 62040-2											
	Performance	EN 62040-3											
UPS LIFETIME	10 Years												

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# UPS

## L1 Series

650VA | 1250VA

Single phase



- ▶ **Line Interactive**
- ▶ **High short circuit withstand capacity**
- ▶ **Automatic voltage regulation (AVR)**
- ▶ **Low input current THDi ( $\leq 3\%$ )**
- ▶ **Silent operation**
- ▶ **Easy installation**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ Energy-saving sleep mode
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Long battery life with smart battery charge leading
- ▶ Remote monitoring and management software
- ▶ Low transfer time ( $\leq 5\text{ms}$ )
- ▶ Easy installation and maintenance
- ▶ 7/24 technical support and customer service



# L1 Series UPS

## TECHNICAL SPECIFICATIONS

POWER (VA)		650	850	1000	1250
INPUT	Voltage	220 / 230 Vac			
	Voltage tolerances	- %25, +%20			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± %10			
	Protection	High Voltage			
OUTPUT (on mains)	Automatic Voltage Reg. (AVR)	Standard			
	Voltage	220 / 230 Vac			
	Voltage tolerances	± %10			
	Waveform	Modified sine wave			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± % 0,5			
	Power Factor	0,5			
	Protection	Overload and short circuit			
OVERLOAD CAPACITY	110%	Continuously			
	125%	60 sec.			
	150%	10 sec.			
	> 150%	3 sec.			
GENERAL	Technology	Line-Interactive			
	Control	Microprocessor			
	Communication	not available		USB (standard), RS232 (optional)	
	Transfer time < 5ms	< 5ms			
	Remote monitoring UPSilon	UPSilon			
	Cold start Standard	Standard			
	Power inlet IEC320-C13/C14	IEC320 - C13 / C14			
	Power outlet 1 x F-type 4 x F-type	1 x F-type		4 x F-type	
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)			
	Relative humidity	0% - 95% (without condensation)			
	Maximum altitude ≤2000 m	≤ 2000 m			
	Noise level < 45 dB (A)	< 45dB (A)			
UPS CABINET	Dimensions (W x D x H) (mm)	100 x 310 x 140		146 x 349 x 163	
	Weight	5	5,6	8,8	9,1
	Degree of protection	IP20			
	Colour	RAL9005			
BATTERY	Battery Type	Maintenance free dry type lead-acid			
	Recharge Time	6h (up to 90% capacity)			
CAPACITY	Load	1 PC*	1 PC*	1 PC*	1 PC*
	Time	15 min.	20 min.	40 min.	50 min.
STANDARDS	Safety	EN 62040-1			
	EMC	EN 62040-2			

\*1 PC: computer case + 17" LCD Monitor

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# ELEN

# UPS

# L2 Series

1-3 kVA

Single phase



- ▶ **Line Interactive**
- ▶ **High short circuit withstand capacity**
- ▶ **Sine wave**
- ▶ **Automatic voltage regulation (AVR)**
- ▶ **Silent operation**
- ▶ **Easy installation**
- ▶ **High input pf 0,99 between 0%-100% load**

- ▶ High output power factor 0,6
- ▶ High input and output performance
- ▶ Cold start
- ▶ Short circuit protection
- ▶ Smart fan control
- ▶ Automatic and manual battery test adjustable as period and time
- ▶ Optimum generator compatibility
- ▶ Low transfer time (<5ms)
- ▶ 7/24 technical support and customer service



# L2 Series UPS

## TECHNICAL SPECIFICATIONS

POWER (kVA)		1	2-3		
INPUT	Voltage	220 / 230 / 240 Vac			
	Voltage tolerances	- %25, +%20			
	Frequency	50 / 60 Hz (Auto detect)			
	Frequency tolerances	± %10			
OUTPUT (on mains)	Voltage	220 / 230 / 240 Vac			
	Voltage tolerances	± %10			
	Frequency	50 / 60 Hz			
	Frequency tolerances	± %10			
OUTPUT (on battery)	Voltage	220 / 230 / 240 Vac (sine wave)			
	Voltage tolerances	± %2			
	Frequency	50 / 60 Hz (selectable)			
	Frequency tolerances	± %0,1			
	Power factor	0,6			
	THDv	≤ %3 (linear load)			
	Crest factor	3:1			
OVERLOAD CAPACITY	110%	30 min.			
	125%	60 sec.			
	150%	10 sec.			
	> 150%	3 sec.			
GENERAL	Technology	Line-Interactive			
	Control	Microprocessor			
	Communication	SNMP(Optional), RS232			
	Transfer time	< 5ms			
	Remote monitoring	SNMPView, UPSilon			
	Cold start	Standard			
ENVIRONMENT	Operating temperature	from 0 °C up to +40 °C (from 20 °C to 25 °C for maximum battery life)			
	Relative humidity	0% - 95% (without condensation)			
	Maximum altitude	≤ 2000 m			
	Noise level	< 45 dB (A)			
UPS CABINET	Dimensions (W x D x H) (mm)	175x480x270	255x590x710	255x650x870	255x780x870
	Weight (kg)	14	16	18	20
	Degree of protection	IP20			
	Colour	RAL9005			
BATTERY	Internal Battery Quantity	4			
	Internal Battery Capacity (Ah)	7-9			
	External Battery Cabinet Socket	Standard			
STANDARDS	Safety	EN 62040-1			
	EMC	EN 62040-2			

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# SERVO VOLTAGE STABILIZER

# R1 Series

6-30 kVA

Single phase

- Microprocessor Control
- User Friendly
- High Safety

## ✓ TECHNOLOGY

- High efficiency
- Steady operation
- Maximum sensibility

## ✓ RELIABLE

- Wide input voltage tolerances
- Automatic Activation
- Short circuit, lightning and over voltage protection
- Overload protection

## ✓ USER FRIENDLY

- Reduced weight/volume/footprint
- Failure / warning / situation indicator with light
- Graphic LCD panel
- Multilanguage option
- Advanced data and event record
- 128 real time event log
- Intelligent fan control
- Fan backup
- Bypass switch (standard)
- Protection unit (standard)
- 10-year spare part availability
- 7/24 technical support and customer service
- 2-year warranty

## ✓ STANDARDS

- CE, ISO 9001:2008, ISO 14001, EAC





# R1 Series

## SINGLE PHASE SERVO VOLTAGE STABILIZER TECHNICAL SPECIFICATIONS

POWER (kVA)		6	10	15	20	30
VOLTAGE	Input Voltage	220 V, 1-ph + N				
	Input Voltage Tolerances	Normal	150 - 255V			
		Wide (Opt.)	130 - 255V			
	Frequency	50 / 60 Hz				
	Output Voltage	220V				
	Output Voltage tolerances	Adjustable between $\pm 1\%$ and $\pm 5\%$				
	Regulation Speed (V/sn)	80			40	
OVERLOAD CAPACITY	%110	30 min.				
	%125	10 min.				
	%150	1 min.				
GENERAL	Protection	Overload				
		General Failure				
	Output Protection Contactor	Standard				
	Control	Microprocessor				
	Graphic LCD Panel	Standard				
	Indicators with light Input	Input				
		Output				
		Overload				
		General Failure				
	Measurements	True RMS Input Voltage				
		True RMS Output Voltage				
		True RMS Output Current				
		Frequency				
Load Percentage						
Efficiency	$\geq 95\%$					
Cooling	Fan backup					
Bypass switch	Standard					
ENVIRONMENT	Operating temperature	0°C - 40°C				
	Storage temperature	-10°C - +50°C				
	Relative humidity	0% - 95% (without condensation)				
	Altitude	$\leq 2000$ m				
	Noise level (dB (A))	< 50				
PHYSICAL SPECIFICATION	Dimensions (W x D x H) (mm)	450 x 350 x 300	560 x 380 x 300	600 x 440 x 320	550 x 550 x 770	600 x 600 x 780
	Degree of protection	IP20				
	Color	RAL9005				
LIFE TIME	10 Years					

ELEN reserves the right, at its sole discretion, to change, amend and modify the information given above without prior notice.

# STATIC VOLTAGE STABILIZER

## SR1 Series

1-30 kVA

Single phase

- Microprocessor Control
- Thyristor Controlled Technology
- High Reliability

### ✓ TECHNOLOGY

- High Efficiency
- Steady Operation
- Maximum Sensibility

### ✓ RELIABLE

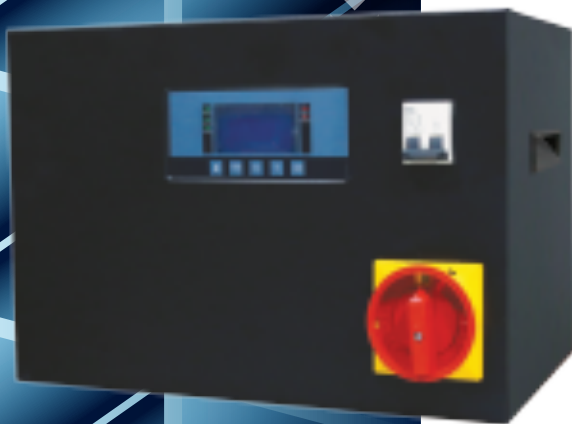
- Wide input voltage tolerance
- Automatic activation
- Short circuit, lightning and over voltage protection
- Overload protection

### ✓ USER FRIENDLY

- Reduced weight/volume/footprint
- Failure / warning / situation indicator with light
- Graphic LCD panel
- Multilanguage option
- Advanced data and event record
- 128 real time event log
- Smart fan control
- Fan redundancy
- Bypass switch (standard)
- Protection unit (standard)
- 10-year spare part availability
- 7/24 technical support and customer service

### ✓ STANDARDS

- CE, ISO 9001:2008, ISO 14001, EAC



# SR1 Series

## SINGLE PHASE STATIC VOLTAGE STABILIZER TECHNICAL SPECIFICATIONS

POWER (kVA)		1	2	3	6	10	15	20	30	
VOLTAGE	Input Voltage	220 V, 1-ph + N								
	Input Voltage Tolerances	Normal	70 - 300V			150 - 255V				
		Wide (Opt.)	-----			130 - 255V				
	Frequency	50 / 60 Hz								
	Output Voltage	220V								
	Output Voltage Tolerances	± %10			Between ±2% - 5%					
	Regulation Speed (V/sec)	500								
OVERLOAD CAPACITY	%110	30 min.								
	%125	10 min.								
	%150	1 min.								
GENERAL	Protection	Overload								
		General Failure								
	Output Protection Contactor	Standard								
	Control	Microprocessor								
	Graphic LCD Panel	Standard								
	Indicators With Light Input	Input								
		Output								
		Overload								
		General Failure								
	Measurements	True RMS Input Voltage								
		True RMS Output Voltage								
		True RMS Output Current								
		Frequency								
		Load Percentage								
Efficiency	≥ %96									
Cooling	Fan redundancy									
Bypass Switch	Standard									
ENVIRONMENT	Operating Temperature	0°C - 40°C								
	Storage Temperature	-10°C - +50°C								
	Relative Humidity	0%- 95% (without condensation)								
	Operating Altitude	≤ 2000 m								
	Audible Noise Level (dB (A))	< 50								
PHYSICAL SPECIFICATION		195 x 400 x 265			255 x 640 x 710			455 x 320 x 325		
	Degree of Protection	IP20								
	Colour	RAL9005								
LIFE TIME	10 Years									

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# SERVO VOLTAGE STABILIZER

# R3 Series

10-800 kVA

Three phase

- Microprocessor Control
- User Friendly
- High Safety

## ✓ TECHNOLOGY

- High efficiency
- Steady operation
- Maximum sensibility

## ✓ RELIABLE

- Wide input voltage tolerances
- Automatic Activation
- Short circuit, lightning and over voltage protection
- Overload protection

## ✓ USER FRIENDLY

- Reduced weight/volume/footprint
- Failure / warning / situation indicator with light
- Graphic LCD panel
- Multilanguage option
- Advanced data and event record
- 128 real time event log
- Intelligent fan control
- Fan backup
- Bypass switch (standard)
- Protection unit (standard)
- 10-year spare part availability
- 7/24 technical support and customer service

## ✓ STANDARDS

- CE, ISO 9001:2008, ISO 14001, EAC



# R3 Series

## THREE PHASE SERVO VOLTAGE STABILIZER TECHNICAL SPECIFICATIONS

POWER (kVA)		10	15	20	30	45	60	75	100	120	150	200	250	300	400	500	600	700	800	900
VOLTAGE	Input Voltage	380-400-415V, 3-ph + N																		
	Input Voltage	Normal		260 - 440V (Phase-Phase)																
	Tolerances	Wide (Opt.)		225 - 440V (Phase-Phase)																
	Frequency	50 / 60 Hz																		
	Output Voltage	380/400/415V (Phase-Phase)																		
	Output Voltage tolerances	Adjustable between $\pm 1\%$ and $\pm 5\%$																		
	Regulation Speed (V/sn)	80												40						
OVERLOAD CAPACITY	$\leq \%110$	30 min.																		
	$\leq \%130$	10 min.																		
	$\leq \%150$	1 min.																		
GENERAL	Protection	Overload General Failure																		
	Output Protection Contactor	Standard																		
	Control	Microprocessor																		
	Graphic LCD Panel	Standard																		
	Indicators with light	Input																		
		Output																		
		Overload																		
		General Failure																		
	Measurements	True RMS Input Voltage																		
		True RMS Output Voltage																		
		True RMS Output Current																		
		Frequency																		
		Load Percentage																		
Efficiency	$\geq \% 97$																			
Cooling	Fan backup																			
Bypass switch	Standard																			
ENVIRONMENT	Operating temperature	0°C - 40°C																		
	Storage temperature	-10°C - +50°C																		
	Relative humidity	% 0-90 (without condensation)																		
	Altitude	$\leq 2000$ m																		
	Noise level (dB (A))	< 50																		
PHYSICAL SPECIFICATION	Dimensions	Width (mm)	530	730	730	1030	1530	1530	1530	1530	2580	1530								
		Depth (mm)	530	630	630	780	780	705	780	870	890	705								
		Height (mm)	980	1220	1320	1450	1525	1525	1525	2025	2025	1525								
	Degree of protection	IP20																		
Color	RAL9005																			
LIFE TIME	10 Years																			

ELEN reserves the right, at its sole discretion, to change, amend and modify the information given above without prior notice.



# STATIC VOLTAGE STABILIZER

## SR3 Series

10-800 kVA

Three phase

- Microprocessor Control
- Thyristor Controlled Technology
- High Reliability



### ✓ TECHNOLOGY

- High Efficiency
- Steady Operation
- Maximum Sensibility

### ✓ RELIABLE

- Wide input voltage tolerance
- Automatic activation
- Short circuit, lightning and over voltage protection
- Overload protection

### ✓ USER FRIENDLY

- Reduced weight/volume/footprint
- Failure / warning / situation indicator with light
- Graphic LCD panel
- Multilanguage option
- Advanced data and event record
- 128 real time event log
- Smart fan control
- Fan redundancy
- Bypass switch (standard)
- Protection unit (standard)
- 10-year spare part availability
- 7/24 technical support and customer service

### ✓ STANDARDS

- CE, ISO 9001:2008, ISO 14001, EAC

# SR3 Series

## THREE PHASE STATIC VOLTAGE STABILIZER TECHNICAL SPECIFICATIONS

POWER (kVA)		10	15	20	30	45	60	75	100	120	150	200	250	300	400	500	600	700	800	900	
VOLTAGE	Input Voltage	380-400-415V, 3-ph + N																			
	Input Voltage Tolerances	Normal	260 - 440V (Phase to Phase)																		
		Wide (Opt.)	225 - 440V (Phase to Phase)																		
	Frequency	50 / 60 Hz																			
	Output Voltage	380/400/415V (Phase to Phase)																			
	Output Voltage Tolerances	Between $\pm 2\%$ and $\pm 5\%$																			
	Regulation Speed (V/sec)	500																			
OVERLOAD CAPACITY	%110	30 min.																			
	%125	10 min.																			
	%150	1 min.																			
GENERAL	Protection	Overload																			
		General Failure																			
	Output Protection Contactor	Standard																			
	Control	Microprocessor																			
	Graphic LCD Panel	Standard																			
	Indicators With Light	Input																			
		Output																			
		Overload																			
		General Failure																			
	Measurements	True RMS Input Voltage																			
		True RMS Output Voltage																			
		True RMS Output Current																			
Frequency																					
Load Percentage																					
Efficiency	$\geq 97\%$																				
Cooling	Fan redundancy																				
Bypass Switch	Standard																				
ENVIRONMENT	Operating Temperature	0°C - 40°C																			
	Storage Temperature	-10°C - +50°C																			
	Relative Humidity	%0 - %95 (without condensation)																			
	Operating Altitude	$\leq 2000$ m																			
	Audible Noise Level (dB (A))	< 50																			
PHYSICAL SPECIFICATION	Dimensions	Width (mm)	530	730	730	1030	1530	1530	1530	1530	2580	1530									
		Depth (mm)	530	630	630	780	780	705	780	870	890	705									
		Height (mm)	980	1220	1320	1450	1525	1525	1525	2025	2025	1525									
	Degree of Protection	IP20																			
	Colour	RAL9005																			
LIFE TIME	10 Years																				

ELEN reserves the right, at its sole discretion, to change, amend and modify the information given above without prior notice.

# STATIC TRANSFER SWITCH

## ST3 Series

50-2500A

Three phase

- Microprocessor Control
- User Friendly
- High Reliability

### ✓ TECHNOLOGY

- High Efficiency
- With 3 / 4 pole
- Steady Operation
- Maximum Sensibility

### ✓ RELIABLE

- Adjustable input voltage tolerances ( $\pm 25\%$ )
- Automatic activation
- Adjustable transfer
- Zero current switching
- Local and remote emergency power off (EPO)
- Short circuit, lightning and over voltage protection
- Phase sequence protection
- SCR failure detection

### ✓ USER FRIENDLY

- Reduced weight/volume/footprint
- Failure / warning / situation indicator with light
- Graphic LCD panel
- Multilanguage option
- Advanced data and event record
- 128 real time event log
- Smart fan control
- Fan redundancy
- 10-year spare part availability
- 7/24 technical support and customer service

### ✓ STANDARDS

- EN 62310-1 (Safety)
- EN 62310-2 (EMC)
- CE, ISO 9001:2008, ISO 14001, EAC



# ST3 Series

## THREE PHASE STATIC TRANSFER SWITCH TECHNICAL SPECIFICATIONS

CURRENT (A)		50	100	200	250	300	400	630	800	1000	1200	1500	2500
VOLTAGE	Voltage	380/400/415V, 3-ph + N											
	Voltage Tolerances	±%25 (Adjustable)											
	Frequency	50/60 Hz											
	Frequency Tolerances	±%10 (Adjustable)											
	Pole number	3-Pole / 4-Pole											
	Crest Factor	3,5:1											
TRANSFER	Transfer Mode	Break Before Make Switching											
	Transfer Time	≤5 ms (between synchronous sources) ≤10 ms (between unsynchronized sources)											
	Transfer Methods	Automatic-Manual											
OVERLOAD	%110	60 min.											
	%130	10 min.											
	%150	2 min. 1 min.											
	%200	10 sec. 2 sec.											
	%500	250 ms 100 ms											
GENERAL	Protection	SCR failure detection											
		Overload											
		Electronic short circuit											
		Phase sequence failure											
	Switching	3-phase switching											
	Control	Microprocessor											
	UPS Compatibility	Compatible operation with C, D, E series											
	Remote Monitoring	Remote monitoring panel (optional)											
	Efficiency	≥%99											
Cooling	Forced Cooling												
ENVIRONMENT	Operating Temperature	0°C - 40°C											
	Storage Temperature	-10°C - +50°C											
	Relative Humidity	%0 - %95 (without condensation)										< 70	
	Altitude ≤ 2000 m	≤ 2000 m											
	Noise Level (dB (A))	< 50			< 55			< 60			< 70		
STS CABINET	Dimensions (W x D x H) (mm)	630x660x1470			705x810x1670			780x810x1850			1260x810x1850		
	Degree of Protection	IP20											
	Colour	RAL9005											
STANDARDS	Safety	EN 62310-1											
	EMC	EN 62310-2											
LIFE TIME		10 Years											

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# Accessories

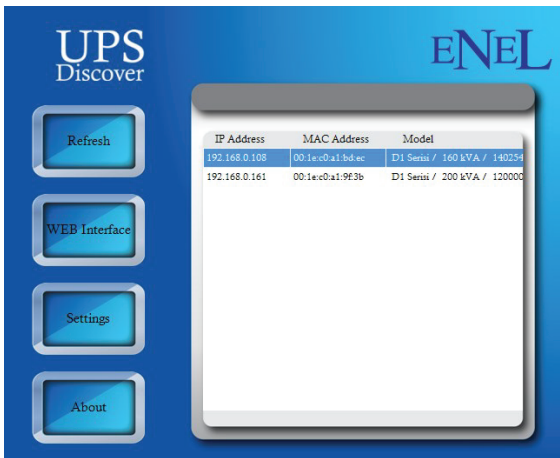
# ELEN

## SNMP

SNMP provides management and monitoring of UPS and other equipments on 10/100 Mb LAN. Enel SNMP adapter is developed to integrate UPS and other equipments to the network systems and to bring in high reliability and security by communicating with the related management system.



## UASNMP007-1



Network Information	
MAC Address	00-1e-c0-a1-bd-09
IP Address	192.168.0.156
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.2
Primary DNS Server	192.168.0.1
Secondary DNS Server	192.168.0.10

System Information	
<b>Production</b>	
Manufacturer	ENEL
Model	AL Series
Identification	ESA
Topology	2L
Serial Number	
Software	ESA_V111 / AL1_V103
<b>System</b>	
Name	ESA
Description	UPS Agent
Contact	Administrator
Location	Istanbul - TURKEY
Time	12:58:39 16/02/1985
Temperature	22 °C

Rated Information	
<b>Input</b>	
Frequency	50 Hz
<b>Battery</b>	
Charge Voltage	36 V
Number of Batteries	3
Number of Group	1
<b>Output</b>	
Voltage	220 V
<b>Bypass</b>	
Frequency	50 Hz

## REMOTE PANEL

Remote panels are designed to monitoring remotely ups informations like operation mode, voltage, current etc.

## UAR001



## BATTERY TEMPERATURE SENSOR

Battery temperature sensor is used to change batteries according to battery temperature variation.

## UAOK-003-01

## PARALLELING KIT

A parallel system may be designed by connecting outputs of multiple uninterruptible power supplies to a common load switch. A parallel system will safely supply loads that are overly sensitive against electric power outages. In a parallel system, when any of UPSs malfunction and become offline, other UPSs continue to supply the load, thereby preventing any interruption with supply to load.

- UAA006-1 C10-40 KVA
- UAA006-2 C60-120 KVA, D160 kVA
- UAA006-3 D200-300 KVA
- UAA006-4 D400-800 KVA

## COLD START

When there is no utility power and the UPS is off, the cold start feature will switch the UPS and connected equipment onto battery power.



# Accessories



## ISOLATION TRANSFORMERS

Isolation transformers are used for safety in high sensitive applications.

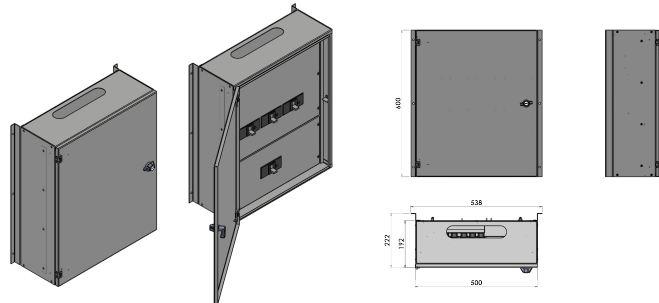
UAT3-C030X	C 30 kVA UPS	UAT3-D250X	D 250 kVA UPS
UAT3-C040X	C 40 kVA UPS	UAT3-D300X	D 300 kVA UPS
UAT3-C060X	C 60 kVA UPS	UAT3-D400X	D 400 kVA UPS
UAT3-C080X	C 80 kVA UPS	UAT3-D500X	D 500 kVA UPS
UAT3-C100X	C 100 kVA UPS	UAT3-D600X	D 600 kVA UPS
UAT3-C120X	C 120 kVA UPS	UAT3-D700X	D 700 kVA UPS
UAT3-D160X	D 160 kVA UPS	UAT3-D800X	D 800 kVA UPS
UAT3-D200X	D 200 kVA UPS		



## EXTERNAL BYPASS PANELS

External bypass panels are used to supply power to load manually in case of maintenance and troubleshooting.

UAB3-C030X	C 30 kVA UPS
UAB3-C040X	C 40 kVA UPS
UAB3-C060X	C 60 kVA UPS
UAB3-C080X	C 80 kVA UPS
UAB3-C100X	C 100 kVA UPS
UAB3-C120X	C 120 kVA UPS
UAB3-D160X	D 160 kVA UPS
UAB3-D200X	D 200 kVA UPS
UAB3-D250X	D 250 kVA UPS
UAB3-D300X	D 300 kVA UPS

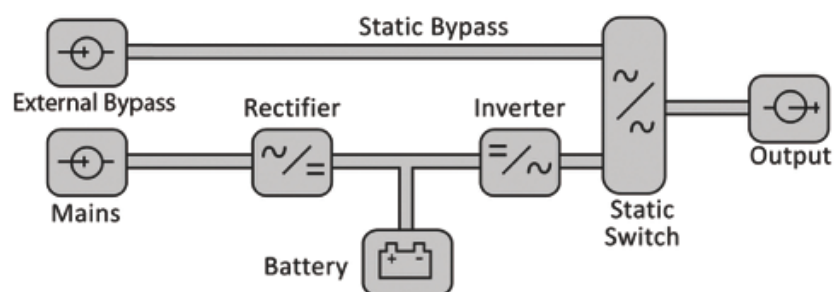


## DUAL INPUT

Dual input option is used to supply the UPS from two different utility. Second input may be different utility company, different power transformer, different UPS output etc.

Dual Input UPS block structure

UAA01A-C030X	C 30 KVA UPS
UAA01A-C040X	C 40 KVA UPS
UAA01A-C060X	C 60 KVA UPS
UAA01A-C080X	C 80 KVA UPS
UAA01A-C100X	C 100 KVA UPS
UAA01A-C120X	C 120 KVA UPS
UAA01B-D160X	D 160 KVA UPS
UAA01B-D200X	D 200 KVA UPS
UAA01B-D250X	D 250 KVA UPS
UAA01B-D300X	D 300 KVA UPS
UAA01B-D400X	D 400 KVA UPS
UAA01B-D500X	D 500 KVA UPS
UAA01B-D600X	D 600 KVA UPS
UAA01B-D700X	D 700 KVA UPS
UAA01B-D800X	D 800 KVA UPS



# ELEN

“Export to over 60 countries”



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