



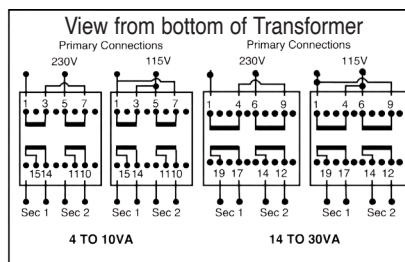
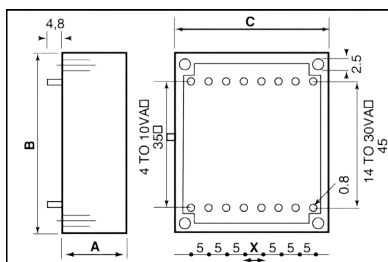
POWER SUPPLIES, TRANSFORMERS & UPS

3

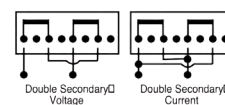
Designed to meet the demands of various industries and applications, our products ensure reliable and stable power delivery, safeguarding your critical systems from interruptions and inefficiencies. Our Power Supplies offer consistent performance, while our Transformers provide efficient voltage regulation and adaptability.

PCB TRANSFORMERS

Flat Pack Transformers

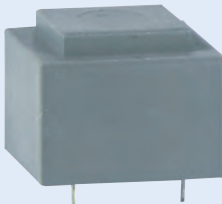
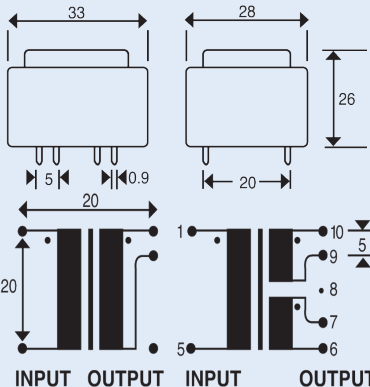
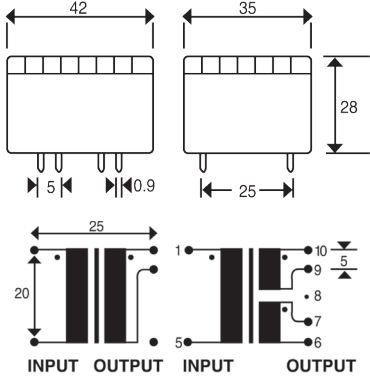
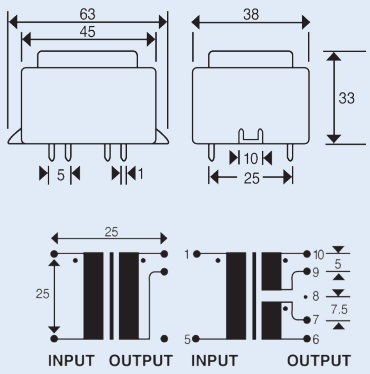


Series Parallel Connections



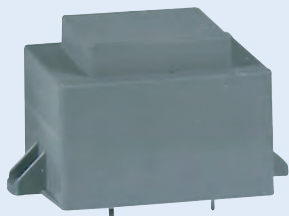
4VA		6VA		10VA		14VA		18VA		24VA		30VA	
Code	Volts	Code	Volts	Code	Volts	Code	Volts	Code	Volts	Code	Volts	Code	Volts
FP4272	2 x 7,2	FP6272	2 x 7,2	FP10272	2 x 7,2	FP14272	2 x 7,2	FP18272	2 x 7,2	FP24272	2 x 7,2	FP30272	2 x 7,2
FP4209	2 x 9,0	FP6209	2 x 9,0	FP10209	2 x 9,0	FP14209	2 x 9,0	FP18209	2 x 9,0	FP24209	2 x 9,0	FP30209	2 x 9,0
FP4212	2 x 12	FP6212	2 x 12	FP10212	2 x 12	FP14212	2 x 12	FP18212	2 x 12	FP24212	2 x 12	FP30212	2 x 12
FP4215	2 x 15	FP6215	2 x 15	FP10215	2 x 15	FP14215	2 x 15	FP18215	2 x 15	FP24215	2 x 15	FP30215	2 x 15
FP4218	2 x 18	FP6218	2 x 18	FP10218	2 x 18	FP14218	2 x 18	FP18218	2 x 18	FP24218	2 x 18	FP30218	2 x 18
FP4224	2 x 24	FP6224	2 x 24	FP10224	2 x 24	FP14224	2 x 24	FP18224	2 x 24	FP24224	2 x 24	FP30224	2 x 24
A=19	B=53	A=23	B=53	A=29	B=53	A=25	B=68	A=29	B=68	A=32	B=68	A=36	B=68
C=44	X=5	C=44	X=5	C=44	X=5	C=57	X=6	C=57	X=6	C=57	X=6	C=57	X=6

*For more technical information contact your nearest AC/DC branch or distributor

Type 30 - 1,5 VA	Code	Secondary Voltage (V)	Secondary Current (MA)	Off-load Voltage (V)	PIN Configuration Top View
 Eff.: 66% Temp. rise 21 °C	P01172	7,2	200	10,5	
	P01272	2 x 7,2	2 x 100	2 x 10,9	
	P01195	9,5	150	14,1	
	P01295	2 x 9,5	2 x 75	2 x 14,1	
	P01112	12,0	125	17,6	
	P01212	2 x 12,0	2 x 62	2 x 17,1	
	P01115	15,0	100	22,9	
	P01215	2 x 15,0	2 x 50	2 x 22,2	
	P01117	17,5	85	26,2	
	P01217	2 x 17,5	2 x 42	2 x 25,9	
	P01124	24,0	62	34,8	
	P01224	2 x 24,0	2 x 31	2 x 34,5	
Type 38 - 2 VA	Code	Secondary Voltage (V)	Secondary Current (MA)	Off-load Voltage (V)	PIN Configuration Top View
 Eff.: 60% Temp. rise 24 °C	P02172	7,2	275	8,4	
	P02272	2 x 7,2	2 x 137	2 x 8,4	
	P02195	9,5	200	11,2	
	P02295	2 x 9,5	2 x 100	2 x 11,1	
	P02112	12,0	170	14,4	
	P02212	2 x 12,0	2 x 85	2 x 14,1	
	P02115	15,0	130	17,9	
	P02215	2 x 15,0	2 x 65	2 x 17,1	
	P02117	17,5	115	20,8	
	P02217	2 x 17,5	2 x 55	2 x 20,2	
	P02124	24,0	83	28,7	
	P02224	2 x 24,0	2 x 40	2 x 28,8	
Type 42 - 3 VA	Code	Secondary Voltage (V)	Secondary Current (MA)	Off-load Voltage (V)	PIN Configuration Top View
 Eff.: 67% Temp. rise ±28 °C	P03172	7,2	415	8,6	
	P03272	2 x 7,2	2 x 208	2 x 8,7	
	P03195	9,5	330	11,3	
	P03295	2 x 9,5	2 x 165	2 x 11,3	
	P03112	12,0	250	14,4	
	P03212	2 x 12,0	2 x 125	2 x 13,9	
	P03115	15,0	200	17,9	
	P03215	2 x 15,0	2 x 100	2 x 18	
	P03117	17,5	170	21,4	
	P03217	2 x 17,5	2 x 85	2 x 21,2	
	P03124	24,0	125	28,5	
	P03224	2 x 24,0	2 x 60	2 x 28,5	

PCB TRANSFORMERS

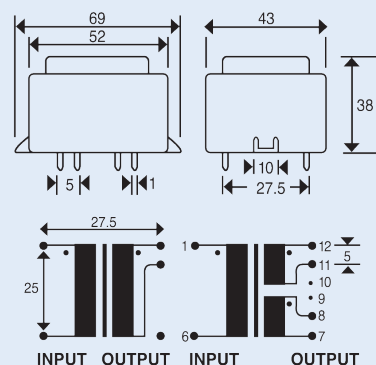
Type 48 - 5,5 VA



Eff.: 74% Temp. rise $\pm 30^{\circ}\text{C}$

Code	Secondary Voltage (V)	Secondary Current (mA)	Off-load Voltage (V)
P05172	7,2	760	9,4
P05272	2 x 7,2	2 x 380	2 x 9,2
P05195	9,5	580	12,0
P05295	2 x 9,5	2 x 290	2 x 11,7
P05112	12,0	450	15,1
P05212	2 x 12,0	2 x 225	2 x 15,0
P05115	15,0	360	18,7
P05215	2 x 15,0	2 x 180	2 x 18,9
P05117	17,5	310	21,9
P05217	2 x 17,5	2 x 155	2 x 21,9
P05124	24,0	230	30,2
P05224	2 x 24,0	2 x 115	2 x 30,9

PIN Configuration Top View (Footprint)

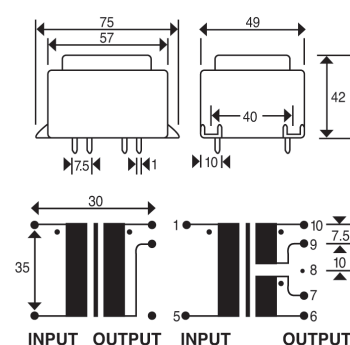


Type 54 - 10 VA

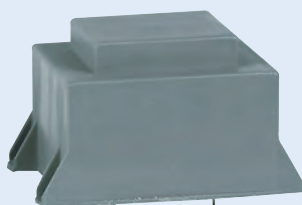


Eff.: 80% Temp. rise $\pm 35^{\circ}\text{C}$

P10172	7,2	1,38	10,3
P10272	2 x 7,2	2 x 0,69	2 x 10,3
P10195	9,5	1,05	11,5
P10295	2 x 9,5	2 x 0,525	2 x 13,6
P10112	12,0	0,83	17,2
P10212	2 x 12,0	2 x 0,415	2 x 14,6
P10115	15,0	0,66	17,1
P10215	2 x 15,0	2 x 0,33	2 x 21,5
P10117	17,5	0,57	21,1
P10217	2 x 17,5	2 x 0,285	2 x 25,0
P10124	24,0	0,41	28,9
P10224	2 x 24,0	2 x 0,205	2 x 28,6

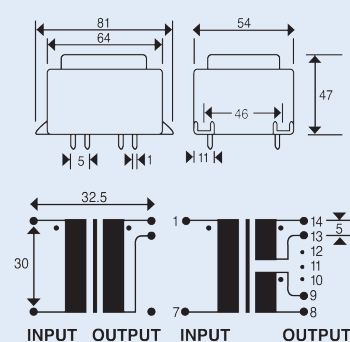


Type 60 - 15 VA



Eff.: 83% Temp. rise $\pm 38^{\circ}\text{C}$

P15172	7,2	2,08	8,7
P15272	2 x 7,2	2 x 1,04	2 x 9,5
P15195	9,5	1,57	11,8
P15295	2 x 9,5	2 x 0,785	2 x 11,9
P15112	12,0	1,25	14,7
P15212	2 x 12,0	2 x 0,625	2 x 14,8
P15115	15,0	1,0	18,6
P15215	2 x 15,0	2 x 0,5	18,5
P15117	17,5	0,85	23,2
P15217	2 x 17,5	2 x 0,425	2 x 23,2
P15124	24,0	0,62	29,7
P15224	2 x 24,0	2 x 0,315	2 x 31,8

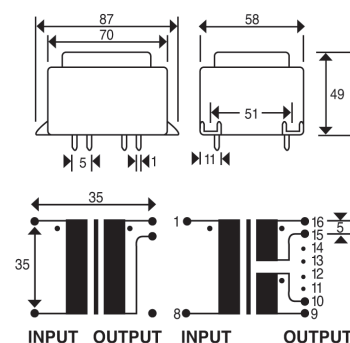


Type 66 - 22 VA

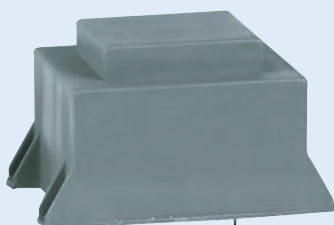


Eff.: 84% Temp. rise $\pm 42^{\circ}\text{C}$

P22172	7,2	3,05	9,1
P22272	2 x 7,2	2 x 1,525	2 x 9,1
P22195	9,5	2,31	11,1
P22295	2 x 9,5	1,155	2 x 12,0
P22112	12,0	1,83	14,2
P22212	2 x 12,0	2 x 0,915	2 x 15,0
P22115	15,0	1,46	17,7
P22215	2 x 15,0	2 x 0,73	2 x 18,4
P22117	17,5	1,25	20,8
P22217	2 x 17,5	2 x 0,625	2 x 22,0
P22124	24,0	0,91	27,5
P22224	2x 24,0	2x 45,5	2x 30,12



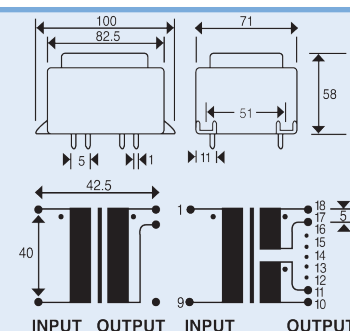
Type 78 - 40 VA



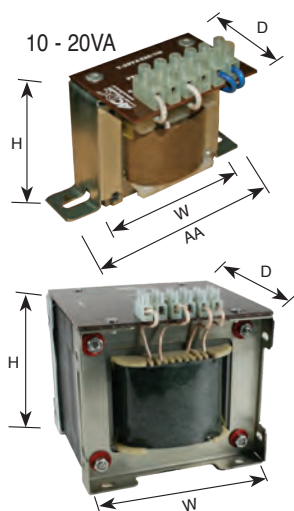
Eff.: 86% Temp. rise $\pm 46^{\circ}\text{C}$

P40172	7,2	5,5	9,0
P40195	9,5	4,2	10,8
P40112	12,0	3,3	14,2
P40115	15	2,6	17,5
P40117	17,5	2,2	19,6
P40124	24	1,6	27,2

* Other voltages available on request



POWER TRANSFORMERS SINGLE PHASE



Standard Voltages

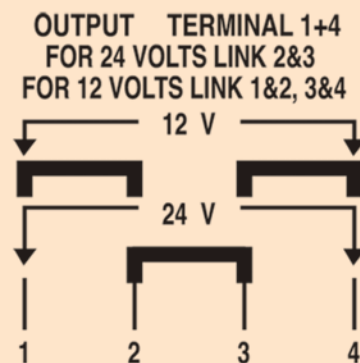
230/12V	400/24V	525/24V
230/24V	400/48V	525/110V
230/48V	400/110V	525/230V
230/110V	400/230V	
230/230V		

ex stock 20-600VA

Single Phase-Open Type Double Wound

VA Rating Code	Dimensions (mm)				Weight kg
	W	AA	H	D	
T-10VA	60	100	65	60	0.4
T-20VA	80	80	85	85	1.1
T-25VA	80	75	80	80	1
T-30VA	80	80	80	80	1.1
T-40VA	85	90	75	75	1.5
T-50VA	85	85	90	90	1.5
T-75VA	100	90	95	95	2.2
T-100VA	100	95	90	90	2.2
T-125VA	105	100	105	105	2.9
T-150VA	105	100	105	105	2.9
T-175VA	120	120	90	90	3.3
T-200VA	105	115	95	95	3.6
T-225VA	120	120	90	90	4
T-250VA	105	105	115	115	3.8
T-300VA	125	115	110	110	5
T-350VA	125	120	115	115	5.1
T-400VA	138	135	110	110	5.8
T-500VA	160	135	140	140	8.3
T-600VA	150	150	150	150	8.5
T-650VA	138	135	140	140	8.5
T-750VA	140	140	150	150	10.2
T-1000VA	190	190	150	150	15
T-1500VA	190	190	165	165	17.2
T-2000VA	210	220	150	150	15
T-2500VA	190	190	170	170	17
T-3000VA	190	190	180	180	20
T-4000VA	210	210	190	190	24
T-5000VA	230	240	210	210	29
T-6500VA	260	260	220	220	36
T-7500VA	270	270	230	230	43
T-10000VA	270	270	250	250	50
T-15000VA	340	350	260	260	55

Standard Multitaps



Typical series/parallel connections

VA Rating	Codes	
	Pri: 0-230-400V Sec: 12-24V Terms: 0-12 0-12	Pri: 0-400-525V Sec: 115-230V Terms: 0-115 0-115
25VA	T-25VA M1	*T-25VA M2
50VA	T-50VA M1	*T-50VA M2
100VA	T-100VA M1	*T-100VA M2
150VA	T-150VA M1	*T-150VA M2
200VA	T-200VA M1	*T-200VA M2
300VA	T-300VA M1	*T-300VA M2
500VA	T-500VA M1	*T-500VA M2

NOTE:

ALL VA RATINGS
ARE AT AMBIENT
TEMPERATURE 25°C

NB. ALL PRICES UP TO 1000V ONLY

- Autowound Transformers and other voltages manufactured to your order.
- Isolation Transformers include earth screen and terminal and are available in all the above sizes.

DIN TRANSFORMERS



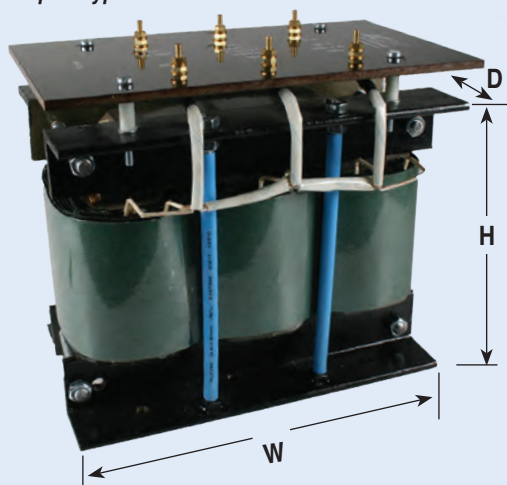
All above power transformers from 25-150VA can be supplied for direct mounting onto 35mm DIN Rail. To order, add prefix D. Example DT-100VA M1.

Optional Extras

Code	Description	Transformer Size
T-EX1	Extra Tapping	Under 25A
T-EX2	Extra Tapping	25-50A
T-EX3	Extra Tapping	Above 50A
T-FS1	Extra Fuse on Primary 1000V (10 x 85)	Up to 16A
T-PER1	Perspex Terminal Shield	Up to 200VA
T-PER2	Perspex Terminal Shield	225VA to 1kVA
T-PER3	Perspex Terminal Shield	1.5-20kVA
T-SCN1	Earth Screen & Terminal	Up to 200VA
T-SCN2	Earth Screen & Terminal	225VA to 1kVA
T-SCN3	Earth Screen & Terminal	1.5-20kVA

POWER TRANSFORMERS THREE PHASE

Open Type



Enclosed Air Cooled Transformers
manufactured to order



Oil Cooled type (cable box cover removed)
Available in different colours
(eg. Avocado Green/ Electric Orange)

Three Phase-open type transformer

KVA Rating Code	H	W	D	Weight
T-0.10KVA	170	140	100	3,5kg
T-0.15KVA	170	140	100	4,5kg
T-0.25KVA	210	150	110	6kg
T-0.35KVA	210	150	110	7kg
T-0.50KVA	220	170	140	9kg
T-1KVA	250	230	150	12kg
T-1.5KVA	250	250	120	15kg
T-2KVA	215	225	145	22kg
T-3KVA	225	225	165	30kg
T-4KVA	225	235	185	36kg
T-5KVA	255	245	185	50kg
T-6.5KVA	275	265	195	40kg
T-7.5KVA	285	265	195	60kg
T-10KVA	315	310	200	80kg
T-15KVA	359	346	200	90kg
T-20KVA	650	450	350	120kg
T-25KVA	650	450	350	165kg
T-30KVA	700	500	350	200kg
T-40KVA	800	500	400	240kg
T-50KVA	800	550	400	280kg
T-75KVA	850	600	400	400kg
T-100KVA	900	700	450	680kg
T-125KVA	900	730	500	750kg
T-150KVA	900	750	550	850kg
T-200KVA	950	800	600	900kg
T-250KVA	960	850	600	970kg
T-300KVA	960	850	600	970kg

Three Phase oil cooled transformer 'open bushings'

KVA Rating Code
T5KVA
T7.5KVA
T10KVA
T15KVA
T20KVA
T25KVA
T30KVA
T40KVA
T50KVA
T75KVA
T100KVA
T125KVA
T150KVA
T200KVA
T250KVA
T300KVA

NOTE:
ALL STANDARD PRICES
ARE FOR
UP TO 1000V ONLY.

For above 1000V,
prices on application.

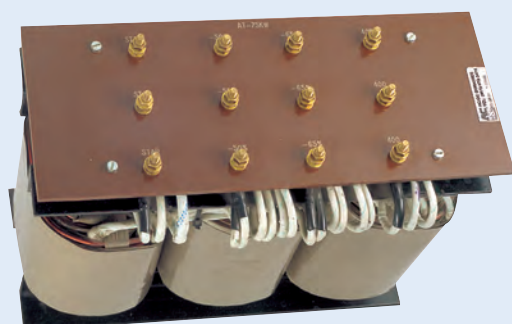
Optional Extras (for oil cooled only)

Code	Transformer Size	Description	Code	Transformer Size	Description
T-C100	All	Cable Box	T-PER3	1,5-20kVA per phase	Perspex shield
T-B100	> 25kVA	Breather required for all oil cooled 3 phase transformers above 25kVA	T-SCN1	0,1-0,15kVA per phase	Earth screen and terminal
T-D100	Oil Cooled	Drain valve for oil cooled transformers	T-SCN2	0,25-1kVA per phase	Earth screen and terminal
T-PER1	0,1-200VA per phase	Perspex shield	T-SCN3	1,5-20kVA per phase	Earth screen and terminal
T-PER2	0,25-1kVA per phase	Perspex shield			

Motor Starting Autowound Transformers

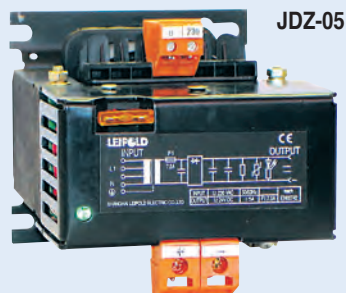
Code	400V Motor	H	W	D	Weight
AT-05	5.5kW	180	195	100	7kg
AT-07	7.5kW	240	230	135	15kg
AT-11	11kW	250	230	150	10kg
AT-15	15kW	250	230	150	12kg
AT-18.5	18,5kW	250	270	120	20kg
AT-22	22kW	250	270	120	22kg
AT-30	30kW	300	270	140	28kg
AT-37	37kW	300	270	140	30kg
AT-45	45kW	360	320	150	34kg
AT-55	55kW	360	320	150	36kg
AT-75	75kW	360	320	170	50kg
AT-90	90kW	400	320	180	60kg
AT-110	110kW	440	340	200	80kg

- 5 starts per hour
- Larger sizes available on request
- 50 & 65% taps
- Over temperature switches available on request



Available in Foot Mounting or Back Mounting
to fit directly onto a chassis plate

UNREGULATED POWER SUPPLIES



JDZ-05

- IP20
- Ripple $\leq 5\%$
- Fuse Protection
- LED

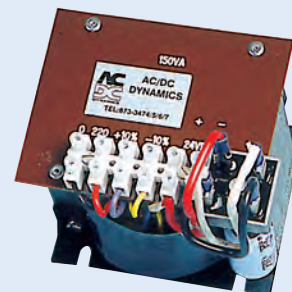
Input	Output 24VDC	Code
220VAC	2A	JDZ-2A
220VAC	5A	JDZ-5A
220VAC	8A	JDZ-8A
220VAC	10A	JDZ-10A

VA	Code with rectifier + capacitor	Output		Code with rectifier only
		12VDC	24VDC	
25VA	T- 25VDC/*	2A	1A	T- 25VR/*
50VA	T- 50VDC/*	4A	2A	T- 50VR/*
100VA	T- 100VDC/*	8A	4A	T- 100VR/*
150VA	T- 150VDC/*	12A	6A	T- 150VR/*
200VA	T- 200VDC/*	16A	8A	T- 200VR/*
250VA	T- 250VDC/*	20A	10A	T- 250VR/*
300VA	T- 300VDC/*	25A	12A	T- 300VR/*
400VA	T- 400VDC/*	32A	16A	T- 400VR/*
500VA	T- 500VDC/*	40A	20A	T- 500VR/*
750VA	T- 750VDC/*	62A	31A	T- 750VR/*
1000VA	T-1000VDC/*	83A	41A	T-1000VR/*

Primary: 110, 230, 400 or 525VAC
 Secondary: *12 or 24VDC } to be specified

Applications

VDC: Contactors, relays & valves
 VR: Brakes & clutches ONLY



Type VDC

SPECIAL TRANSFORMERS



T-87



DT series

Bell Transformers • Double wound, IP20 • DIN mounting

Code	Input Volts	Output Volts	VA
T-87	230V	8V	8VA
DT10212	230V	0-12V 0-12V (0-24V)	10VA
DT15212	230V	0-12V 0-12V (0-24V)	15VA
DT15612	230V	0-6V 0-6V	15VA

Other voltages manufactured to order.

Swimming Pool Lighting Transformers

c/w end cover & terminals

Code	Input Volts	Output Volts	VA
SP-15VA	230V	12V	15VA
SP-300VA	230V	12V	300VA

c/w flying leads only (open type)

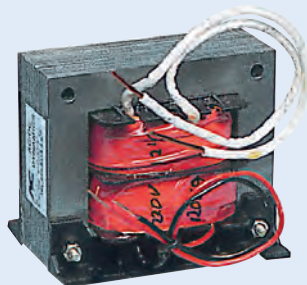
SP-120VA	230V	12V	120VA
SP-300VA	230V	12V	300VA

With flying leads (open type) c/w Thermal Cut-out

SAB-120VA	230V	12V	120VA
SAB-300VA	230V	12V	300VA



With End Covers



Open type

Boiler Inspection Transformers

Code	Input Volts	Output Volts	VA
BOT-125	230V	32VAC	125VA
BOT-125/24VDC	230V	24VDC	125VA
BOT-250	230V	32VAC	250VA
BOT-250/24VDC	230V	24VDC	250VA
BOT-250/48VDC	230V	48VDC	250VA
BOT-400	230V	32VAC	400VA

• In steel enclosure with 2 x 5A socket outlets • Size(mm): 130H x 177W x 200D

LED Lamp

Code	Description	LIT
BIL-10W-E27 32VAC	Supply Voltage: 32VAC Base: E27 Colour Temp: Cool White Power: 10W	LIT



BOT-250

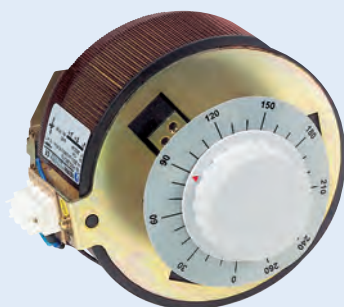


BIL-10W-E27 32VAC

NEW

VARIABLE TRANSFORMERS

Open Type (Single Phase)



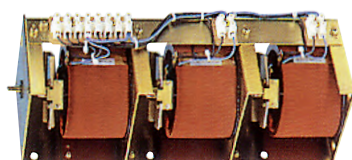
Code	Supply	Spare Knobs	Output		Power KVA	Dimensions D x W x Ø	Motor Drive 230V
			V	A			
HSG260/2.5	230V	HSG-K6	0-260V	2,5A	0,65	98 x 142 x 117	HMA-M50
HSG260/4.5	230V	HSG-K8	0-260V	4,5A	1,17	120 x 149 x 125	HMA-M100
HSG260/10	230V	HSG-K10	0-260V	10A	2,60	120 x 197 x 153	HMA-M250
HSG0302/230	230V	HSG-K8	0-260V	13A	3,38	146 x 197 x 174	—
HSG260/20	230V	HSG-K10	0-260V	20A	5,20	110 x 302 x 230	—

For vertical or horizontal mounting. Unit supplied with Knob and scale plate

Spare Scale Plate

Code	Description
HSG-L1	For 2.5 Amp
HSG-L2	For 4.5, 10, 13 Amp
HSG-L3	For 20, 30 Amp

Open Type (Three Phase)



HTG450/2.5	400V	HSG-K8	0-450V	2,5A	1,95
HTG450/4.5	400V	HSG-K10	0-450V	4,5A	3,51
HTG450/10	400V	HSG-K10	0-450V	10A	7,80
HTG450/20	400V	HSG-K10	0-450V	20A	15,60



Motor Drive (230V)

HMA-3/M50
HMA-3/M100
HMA-3/M250
HMA-3/M400

Enclosed Type (Single Phase)



Code	Supply	Output		Power KVA	Dimensions H x W x D
		V	A		
TDGC2-1KVA	230V	0-260V	4A	1,0	200 x 170 x 210
TDGC2-2KVA	230V	0-260V	8A	2,0	235 x 207 x 208
TDGC2-3KVA	230V	0-260V	12A	3,0	267 x 240 x 210
TDGC2-5KVA	230V	0-260V	20A	5,0	310 x 250 x 260

Enclosed Type



Amps	Single Phase	Volts		3 Phase	Volts	
		In	Out		In	Out
4.5A	HSN260/4.5	230	260	—	—	—
8A	HSN260/8	230	260	—	—	—
10A	HSN260/10	230	260	HTN450/10	400	450
15A	HSN260/15	230	260	HTN450/15	400	450
20A	HSN260/20	230	260	HTN450/20	400	450

SPECIAL TRANSFORMERS

Appliance Transformers



FNC Type

Code	Watts	Input Volts	Output Volts
FNC-200	200W	110-230V	230-110V
FNC-300	300W	110-230V	230-110V
FNC-500	500W	110-230V	230-110V
FNC-1000	1000W	110-230V	230-110V

Features

- Transformer that converts 220/240VAC to 110/120VAC or vice-versa
- Overheat protected

Audio Transformers



Code	Output	Supply	Tappings
AUT100/5	0-4-8 Ohm	100V	1.5, 2.5, 3.5, 5W
AUT100/12	0-4-8 Ohm	100V	12W

- For Public Address Systems

REGULATED POWER SUPPLIES



8-PIN Plug-In

Amps	Code 5VDC	Code 12VDC	Code 24VDC	Specifications
100mA	PSU/0.1/5*	PSU/0.1/12*	PSU/0.1/24*	*Supply Voltage 110V or 230V (to be specified)
300mA	PSU/0.3/5*	PSU/0.3/12*	PSU/0.3/24*	• Overload protection • Short circuit protection



PSU-Type
500mA - 2A



EPSU-Type
100mA

DIN Rail Mount

Amps	Code 5VDC	Code 12VDC	Code 24VDC	Specifications
100mA	EPSU/0.1/5*	EPSU/0.1/12*	EPSU/0.1/24*	* Supply voltage: 110V or 230V (to be specified)
500mA	PSU/0.5/5*	PSU/0.5/12*	PSU/0.5/24*	• Overload protection & short circuit protection
1A	PSU/1/5*	PSU/1/12*	PSU/1/24*	• Adjustable output: 5V = 1.5V - 7VDC,
2A	PSU/2/5*	PSU/2/12*	—	12V = 1.5V - 14VDC, 24V = 1.5V -26.4VDC

Robust DIN Power Supplies - Single Phase



Amps	Code		Input	Output	Adjustment	Size W x H x D
	12V	24V				
2A	—	DR-4524	100-240VAC	24VDC	±10%	78 x 93 x 56
2.5A	—	DR-6024	100-240VAC	24VDC	±10%	78 x 93 x 56
3.5A	DR-4512	—	100-240VAC	12VDC	±10%	76 x 93 x 56
4.5A	DR-6012	—	100-240VAC	12VDC	±10%	78 x 93 x 56

zamel cet



ZIM-Type



Switch Mode Power Supplies - 12VDC

Supply voltage 190 to 260VAC 50/60Hz

Code	Amps	Rated Power	Dimensions
ZIM-12/08	0.8A	10W	1 Mod (17.5mm)
ZIM-12/12	1.2A	15W	2 Mod (35mm)
ZIM-12/25	2.0A	24W	3 Mod (53mm)

Switch Mode Power Supplies - 24VDC

Supply voltage 190 to 260VAC 50/60Hz

Code	Amps	Rated Power	Dimensions
ZIM-24/04	0.4A	10W	1 Mod (17.5mm)
ZIM-24/06	0.6A	15W	2 Mod (35mm)
ZIM-24/12	1.0A	24W	3 Mod (53mm)

Switch Mode Supplies are stabilised power supplies that are smaller and lighter compared to traditional power supplies and have a more stable output voltage.

Features

- Max output current: 7.5A (at 12V)
- No load resistance | DIN rail Mounting
- Operating Temperature: -20° to 85°C

Stabilised Power Supplies

Supply voltage 230VAC 50/60Hz

Code	Output Voltage	Amps	Dimensions
ZSM-11	3,5,9,14,18,24VDC	125mA	3 Mod (53mm)
ZSM-12	12VDC	250mA	3 Mod (53mm)
ZSM-24	24VDC	125mA	3 Mod (53mm)

Features

- Voltage regulator with thermal protection and current limiter.
- Power supply indication: LED
- DIN rail mounting
- Operating Temperature -20° to 85°C

Transformers

Supply Voltage 230VAC 50/ 60Hz, Rated Power: 15VA

Code	Rated Secondary Voltage	Rated Secondary Current	Dimensions
TRM-8	8VAC	1.88A	3 Mod (53mm)
TRM-12	12VAC	1.25A	3 Mod (53mm)
TRM-24	24VAC	0.625A	3 Mod (53mm)
TRM-358	3 / 5 / 8VAC	5 / 3 / 1.88A	3 Mod (53mm)

Features

- Short circuit and overload protection
- Inner thermal protection
- DIN rail mounting
- Thermal Insulation Class: B (120DC)

DIN MOUNT SWITCH MODE POWER SUPPLIES

Enclosed DIN Rail Mount



Watts	Code 5VDC	Amps	Code 12VDC	Amps	Code 24VDC	Amps
5W	DRA05-5	1.0A	DRA05-12	0.42A	DRA05-24	0.21A
10W	DRA10-5	2.0A	DRA10-12	0.84A	DRA10-24	0.42A
18W	-	-	DRA18-12	1.67A	DRA18-24	1.00A
30W	DRA30-5	4.5A	DRA30-12	2.5A	DRA30-24	1.25A
60W	-	-	DRA60-12	5.0A	DRA60-24	2.5A
75W	-	-	-	-	DR-75-24	3.1A
100W	-	-	DR-10012	7.5A	DR-10024	4.2A
120W	-	-	DRA120-12	10.0A	DRA120-24	5.0A
240W	-	-	DRA240-12	20.0A	DRA240-24	10A
480W	-	-	-	-	DRA480-24	20A

- Supply Voltage:
 - 5-60W: 100-240VAC
 - 75-120W: 100-120/200-240VAC (switch selectable)
 - 240-480W: 100-240VAC
- Output Accuracy: $\pm 2\%$
- Load Regulation: $\pm 2\%$
- Output Voltage Adjust:
 - 5-20W: $\pm 10\%$ | 30 - 480W: $\pm 20\%$
- Output Short Circuit Protection
- Derating from 50-70°C derate by 30%



DIN Rail Mount Power Supplies

Watts	Code 5VDC	Amps	Code 12VDC	Amps	Code 24VDC	Amps	Code 48VDC	Amps	Voltage Display
20W	DPSU/3/5	4.0A	-	-	-	-	-	-	No
40/50W	DPSU/5/5	8.0A	DPSU/3/12	4.2A	-	-	-	-	Yes
100/72W	-	-	DPSU/5/12	8.3A	DPSU/3/24	-	-	-	Yes
120W	-	-	DPSU/10/12	10.0A	DPSU/5/24	-	-	-	Yes
240W	-	-	DPSU/20/12	16.6A	DPSU/10/24	-	DPSU/5/48	5A	Yes (12V-NO)
500W	-	-	DPSU/40/12	41.6A	DPSU/20/24	-	DPSU/10/48	10A	No
1000W	-	-	DPSU/80/12	83.3A	DPSU/40/24	-	DPSU/20/48	20A	Yes

- Supply Voltage: 90-264VAC
 - 100W: 90-132/180-264VAC (switch selectable)
 - 240W/12V & 1000W/12V: 180-264VAC
- Line Regulation: $\pm 1\%$
- Load Regulation: $\pm 1\%$ (1000W/12V: 3%)
- Output voltage adjustment: $\pm 10\%$
- Output short circuit protection
- Overload Protection

Chassis Mount Power Supplies



50W	PSU/10/5	10.0A	-	-	-	-	-	-	No
150W	-	-	PSU/10/12	12.5A	-	-	-	-	No
240W	-	-	PSU/20/12	20.0A	-	-	-	-	No
320W	-	-	PSU/25/12	26.6A	PSU/10/24	13.3A	-	-	No
500W	-	-	-	-	PSU/20/24	20.8A	-	-	No

- Supply voltage: 90-264VAC
- Load Regulation: $\pm 1\%$
- Output voltage adjustment: $\pm 10\%$
- Output short circuit protection: Auto Recovery
- Overload Protection
- Automatic power limitation

DIN Power Supplies - Three Phase



Amps	Code 24VDC	Input	Output	Adjustment
10A	SL10/3	340-500VAC	24VDC	23-27V
20A	SL20/3	340-500VAC	24VDC	23-27V
40A	SL40/3	340-500VAC	24VDC	23-27V

- Overload protection - auto recovery
- Short circuit protection - auto recovery
- Over voltage protection - latch off

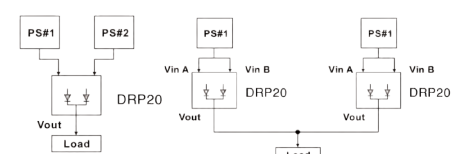


Redundant Parallel Connection Modules

Amps	Code	Input	Ready Relay
10A	DRP10	9-35VDC	NO
20A	DRP20	21-28VDC	2 x C/O (1.0A Max)



Redundant Application



1+1 Redundancy: Using 1 more PS as the redundant unit.

Single Use: Connecting only one PS to one Load to reduce the stress of the diodes and hence increase the reliability.

DIN MOUNT SWITCH MODE POWER SUPPLY



XCSF30

XCSF240



XCSF85

XCSF120

XCSW121



XCSW241

Heavy Duty Single Phase: 120 - 230VAC Input (90 - 264VAC / 100 - 345VDC)

Power	Output @ 45°C						V Out Adjust	Size (mm) H x W x D
	12VDC	24VDC	48VDC	Cont A	Overload	Peak		
85W	-	XCSF85C	-	3.5A	6A / 30sec	10A / 50msec	23-27.5V	115 x 39 x 128
	XCSF85B	-	-	6	9A / 30sec	10A / 50msec	12-15V	115 x 39 x 128
120W	-	-	XCF120DP	2.5A	8A / 30sec	7.5A / 50msec	45-55V	115 x 39 x 128
	-	XCSF120C	-	5A	8A / 30sec	15A / 50msec	23-27.5V	115 x 39 x 128
240W	-	-	XCSF240DP	5A	7.5A / 30sec	25A / 400msec	45-55V	140 x 63.5 x 135
	-	XCSF240C	-	10A	15A / 30sec	25A / 400msec	23-27.5V	140 x 63.5 x 135

1 or 2 Phase: 230 - 400 - 500VAC Input (185 - 550VAC / 270 - 725VDC)

120W	-	XCSW121C	-	5A	7.5A / 5sec	15A / 0.5sec	23-27.5V	115 x 39 x 130
	XCSW121B	-	-	8A - 7A	10-9A / 5sec	15A / 0.5sec	12-15V	115 x 39 x 130

1, 2 or 3 Phase: 230 - 400 - 500VAC Input (185 - 550VAC / 270 - 770VDC)

240W	-	-	XCSW241DP	5A	6A / 5sec	20A / 0.5sec	45-55V	115 x 55 x 130
	-	XCSW241C	-	10A	15A / 5sec	20A / 0.5sec	24-27.5V	115 x 55 x 130
	XCSW241B	-	-	16A	20A / 5sec	20A / 0.5sec	12-15V	115 x 55 x 130

- Short circuit, Overload, Over temperature, Input/Output over voltage protected.
- Output voltage decay alarm set at -10% Vout nominal (Contact Output)
- High outrush current to guarantee downstream overcurrent protection and for heavy load startup.
- Load regulation < 1% • Compact dimensions and high efficiency

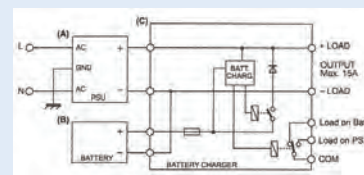
NEW



Back-up Battery Charger/Controller (With changeover from mains to battery)

Code	Input / Load Volts	Load Current
XCSU5240W024VAA	12 or 24VDC	20A/10A

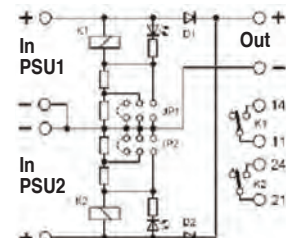
- Built-in change over of load from power supply to battery and alarm output
- Selectable battery charging current: 0.12 - 4A
- Low voltage protection for battery



Redundant Parallel Connection Module

Code	Input		Output		Size (mm) H x W x D
	Volts (DC)	Amps	Volts (DC)	Amps	
XCSBD	12 - 24 - 48	15A	12 - 24 - 48	15A	130 x 43 x 85

- This module can connect in redundant parallel two power supplies not fitted with built-in "O-ring" diodes. (Output decoupling diodes).
- Status LED's and relays for fault indication and remote failure alarm



BOX TYPE SWITCH MODE POWER SUPPLIES

Chassis Mount Supply Volts: 170 - 260VAC

- Output Accuracy: $\pm 2\%$
- Load Regulation: $\pm 2\%$
- Overload Protection
- Short Circuit Protection



Watts	Code 5VDC	Amps	Code 12VDC	Amps	Code 24VDC	Amps	Code 48VDC	Amps	Size (mm) W x L x H
15W	SNP-15W/5	3A	SNP-15W/12	1.3A	-	-	-	-	70 x 39 x 31
25W	SNP-25W/5	5A	SNP-25W/12	1.7A	SNP-25W/24	1.1A	-	-	80 x 48 x 22
40W	-	-	SNP-40W/12	3.5A	SNP-40W/24	1.8A	-	-	110 x 79 x 35
60W	SNP-60W/5	10A	SNP-60W/12	5A	SNP-60W/24	2.5A	SNP-60W/48	1.25A	110 x 79 x 35
100W	SNP-100W/5	20A	SNP-100W/12	8.5A	SNP-100W/24	4.5A	-	-	129 x 98 x 38
120W	-	-	SNP-120W/12	10A	SNP-120W/24	5A	SNP-120W/48	2.5A	129 x 98 x 38
150W	-	-	SNP-150W/12	12.5A	SNP-150W/24	6.2A	-	-	160 x 98 x 50
200W	-	-	SNP-200W/12	16.5A	SNP-200W/24	8.3A	SNP-200W/48	4.2A	160 x 98 x 50
250W	-	-	SNP-250W/12	20A	SNP-250W/24	10A	SNP-250W/48	5A	160 x 98 x 50
350W	-	-	SNP-350W/12	30A	SNP-350W/24	15A	SNP-350W/48	7.5A	199 x 98 x 50
480W	-	-	-	-	SNP-480W/24	20A	-	-	240 x 125 x 65

MAINS POWER SUPPLIES

Unregulated, Plugs into 16A Socket Outlet

Code	Volts	Amps	Output Connection
MD1606-*	230VAC to 6VDC	1.6A	*Barrel Plug or Terminal
MD1009-*	230VAC to 9VDC	1.0A	*Barrel Plug or Terminal
MD1012-*	230VAC to 12VDC	1.0A	*Barrel Plug or Terminal
MD0812-*	230VAC to 12VDC	0.8A	*Barrel Plug or Terminal
12VAP-24-2.1	230VAC to 24VAC	0.5A	*Barrel Plug or Terminal
15VAP-12-*	230VAC to 12VAC	1.2A	*Barrel Plug or Terminal
15VAPL-16-*	230VAC to 16VAC (C/W LED)	0.9A	*Barrel Plug or Terminal
15VAP-24-*	230VAC to 24VAC	0.62A	*Barrel Plug or Terminal
25VAP-12-*	230VAC to 12VAC	0.5A	*Barrel Plug or Terminal
25VAP-24-*	230VAC to 24VAC	1.0A	*Barrel Plug or Terminal

*Barrel plug inside Ø size to be specified: 1.4, 2.1, 2.5 or T for Terminal. 
Standard Plug wiring + Internal – External. Other voltages made up to your specification.

Unregulated, Plugs into 2 Pin Euro Socket

Code	Voltage	Amps
EU-5002T	230VAC to 3/4.5/6/7.5/9/12VDC	0.5A

Regulated, Plug-In Power Supply - 100-240VAC (Switch Mode Type)

Code 2 Pin Euro	Code 3 Pin SA	Amps	Output Voltage
S0510	-	1A	5VDC
S0520	-	2A	5VDC
S0530	-	3A	5VDC
S0910	-	1A	9VDC
S0915	-	1.5A	9VDC
S0920	-	2A	9VDC
S1205	S1205Z	0.5A	12VDC
S1210	S1210Z	1A	12VDC
S1220	S1220Z	2A	12VDC
-	S2405Z	0.5A	24VDC
-	S2410Z	1A	24VDC

Barrel Plug: inside Ø size: 2.1mm

Unregulated 2 Pin Euro

Input: 230VAC
Barrel Plug:
Inside Ø: 2.1mm



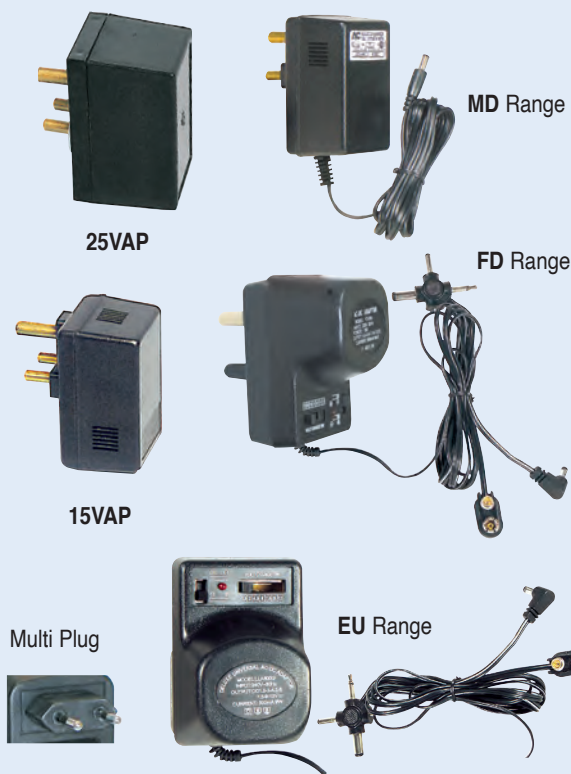
Code	Output Voltage	Amps
EU1215 2.1	12VDC	150mA
EU24100 2.1	24VDC	1000mA

Regulated Bench Type Power Supplies (Switch Mode) - Input volts 100-240VAC

Code 12VDC	Amps	Watts	Size (mm) L x W x D	Code 24VDC	Amps	Watts	Size (mm) L x W x D
S1210D	1A	12W	86 x 48 x 30	S2410D	1A	24W	98 x 47 x 32
S1220D	2A	24W	98 x 47 x 31	S2420D	2A	48W	110 x 56 x 33
S1230D	3A	36W	110 x 56 x 33	S2430D	3A	72W	117 x 53 x 30
S1240D	4A	48W	110 x 56 x 33	S2440D	4A	96W	150 x 65 x 38
S1250D	5A	60W	112 x 54 x 32	S2450D	5A	120W	150 x 65 x 38

Input voltage: 90 - 264VAC
Short Circuit Protection. Overload Protection.

Load Regulation: ±5%
Line Regulation: ±1%



3 Pin SA



2 Pin Euro



S1230D

NEW

POWER ADAPTORS

Regulated Power Supply - Variable Output selectable by Dial Switch

Input plug: 2Pin Euro plug, Supply Voltage: 100-240VAC@50Hz/60Hz

Output Plug: 5 x Barrel Jack Sizes (3.5x1.35, 5.5x2.1, 5.5x2.5, 2.35x0.7, 4.0x1.7), 2.5mm mono



YSV60-2



YSV36-1



YSV1500-2250

YSV1500-1000

YSV1000-1000

Code	Output Volts	Output Amps	Wattage	USB Adaptor
YSV60-2	9V/12V/13.5V/15V/19V/20V/24VDC	2.5-3.4A	60W	No
YSV36-1	5V/6V/7.5V/9V/12V/13.5V/15VDC	2.4-3A	36W	Yes
YSV1500-2250	3V/4.5V/5V/6V/7.5V/9V/12VDC	2.25A	27W	Yes
YSV1500-1000	9V/12V/13.5V/15V/18V/20V/24VDC	1.0A	24W	No
YSV1000-1000	3V/4.5V/5V/6V/7.5V/9V/12VDC	1.0A	12W	Yes



Car Power Adaptor

Switch Mode



Universal Regulated Power Supply

Code	PSA-1500M
Output Volts	3 / 4.5 / 6 / 9 / 12VDC
Output Amps	1.5A
Input Volts	11 - 14VDC

Accessories - c/w 6 x Detachable Plugs

USB Adaptors

Code	A13-180	ST02-USB	RAY-RC002	SU11
	12 - 24VDC	100 - 240VAC	100 - 240VAC	100 - 240VAC
	2 x 5V, 3.1A (Total)	2 x 5V, 2.1A (Total)	2 x 5V, 1A & 5V, 2.4A	5 x 5V, 8A (Total)

VARIABLE POWER SUPPLIES



DF1730SL-5A



DF1730SL-10/20A
DF1760-10A



PROVA-8000



DF1731SL3A
Dual PSU

- Ripple < 1mV RMS
- Load Regulation 1%
- Current Limit

Single Output Power Supplies - 230VAC

Code	Voltage	Current	Parallel	Indication
DF1730SL-5A	0-30VDC	0 - 5A	—	Digital
DF1730SL-10A	0-30VDC	0 - 10A	—	Digital
DF1730SL-20A	0-30VDC	0 - 20A	—	Digital
DF1760SL-10A	0-60VDC	0 - 10A	—	Digital
PROVA-8000	0-40VDC	0 - 5A	—	Digital

Dual Output Power Supplies - 230VAC

Code	Voltage	Current	Parallel	Indication
DF1731SL3A	2 x 0-30VDC	2 x 0-3A	6A	Digital
DF1731SL10A	2 x 0-30VDC	2 x 0-10A	20A	Digital

Series connection: 0 - 60VDC
Parallel connection: 0 - 30VDC (Dual-output)

DC-DC VOLTAGE CONVERTERS



- Short Circuit & Overload Protection
- Over temperature protected
- Wide DC input range
- Internal protection fuse



XCSA120 XCSA240FC

DIN Rail DC-DC Voltage Converters

Power	Code	Voltage DC	Vin Range	Iin Max	Vout Adj. Limits	Continuous Amps Out
120W	XCSA120BC	12V 24V	10.5 - 18V	12A	22.5 - 27.5V	5A
120W	XCSA120CB	24V 12V	18 - 36V	5.1A	12.0 - 15.0V	7A
120W	XCSA120CC	24V 24V	18 - 36V	5.8	22.5 - 27.5V	5A
120W	XCSA120DC	48V 24V	36 - 72V	2.8A	22.5 - 27.5V	6.5A
240W	XCSA240FC	110V 24V	110 - 130V	2.4A	22.5 - 27.5V	10A

Compact design: H115mm x W55mm x D130mm (XCSA240: H140mm x W73mm x D137mm)

This series is designed to convert 20 - 28VDC voltage to 13.8VDC. Suitable for use with radios & other 12VDC equipment in 24VDC vehicles



Step-Down DC to DC Converter - 24VDC/12VDC

Code	Output	Surge	Fuse*
DF1714C	7A	10A	7A
DF1715C	15A	20A	15A
DF1716C	20A	25A	20A
DF1717C	25A	30A	25A
MSD500-12	40A	45A	40A

- Input voltage: DC24V±4V
 - Output voltage: 13.65-13.8VDC
 - Ripple < 5mV
 - Load regulation: 3%.
 - Input protection: over-voltage/current-limit/reverse polarity
- * To be fitted when installing

Step-Up DC to DC Converter

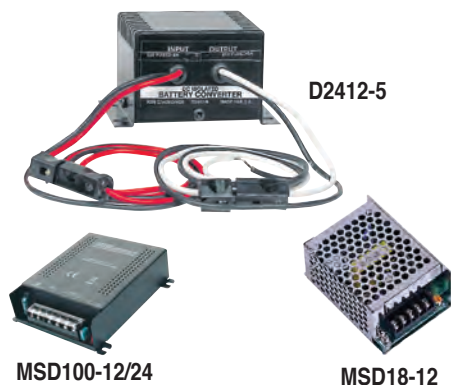
Code	Output Current	Surge	Input Volts	Output Volts
MSD100-12/24	12V/8A 24V/4A	9A 5A	10.5 - 16VDC Adjustable	12 - 24VDC Adjustable

Step-Down DC to DC Converter - Isolated

Code	Output Current	Surge	Input Volts	Output Volts
MSD18-12	1.5A	2A	12 - 28VDC	7.5/9/12VDC

DC to DC Battery Charger

Code	Output Current	Surge	Input Volts	Output Volts
D2412-5	5A	5A	11 - 35VDC	13.8VDC



D2412-5

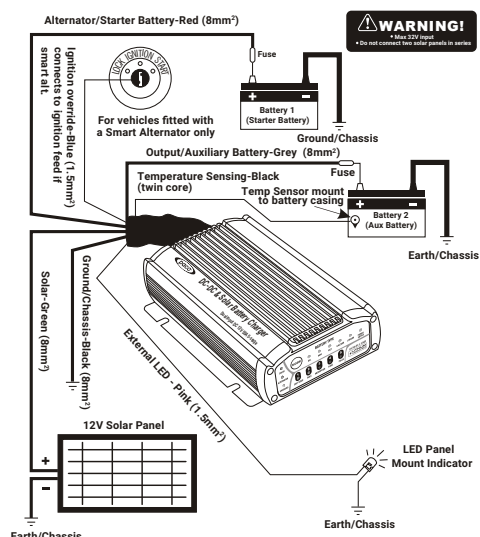
MSD100-12/24

MSD18-12

DC-DC SOLAR BATTERY CHARGER IP67

Solar Battery Chargers

- Dual Input Operation using an alternator and/or solar panels
- 5 Stage Fully Automatic charging
- Suitable for All types of 12V Lead Acid batteries and Lithium batteries
- Ignition connection to switch on charging through ignition signal, also compatible with variable voltage alternators to match charging input with vehicle operating conditions
- Multiple Built-In Protective features
- Will not charge unless securely connected to load, spark free connection
- Power Supply Function
- Temperature Compensation



Code	DC/PV-1225		DC/PV-1250	
Solar Input Voltage Range	9 -32VDC		9 -32VDC	
Alternator Input	12/24VDC		12/24VDC	
Output Current	25A		50A	
Maximum Output Power	375W		750W	
Power Supply Output	13.8VDC 25A		13.8VDC 50A	
Dimensions (L x W x H)	161 x 114 x 44mm		199x 114 x 44mm	
Weight	1.3 kg		1.7kg	
Battery Types	AGM, GEL, WET, Calcium, Lithium			
Suggested Battery Capacity	Lead Acid	Lithium	Lead acid	Lithium
	75 - 300Ah	50 - 250Ah	150 - 600Ah	100 - 500Ah
Charging Voltage	Dependant On Battery Type Selected			

ENERGIZER BATTERIES

Energizer Max Alkaline

							
Type	AAAA	AAA	AA	C	D	9V	1.5V
1 Pack Code	—	—	—	—	—	522BP1-MAX	—
2 Pack Code	E96BP2	—	—	E93BP2-MAX	E95BP2-MAX	—	—
4 Pack Code	—	E92BP4-MAX	E91BP4-MAX	—	—	—	LR44/4
8 Pack Code	—	EM-AAA-BP8	EM-AA-BP8	—	—	—	—

Energizer Specialty

						
Type	3V CR2032 Lithium	3V CR2025 Lithium	3V CR2016 Lithium	3V 123	3V CR2 Lithium	A23 12V
1 Pack Code	—	—	—	ES-123-BP1	ES-CR2-BP1	ES-A23-BP1
2 Pack Code	ES-CR2032-BP2	ES-CR2025-BP2	ES-CR2016-BP2	—	—	ES-A23-BP2

Energizer Rechargeable

				
Type	AAA(700mAh)	AA (2000mAh)	AA (2300mAh)	9V(175mAh)
1 Pack Code	—	—	—	NH22BP1
4 Pack Code	NH12RP4-700	NH15RP4-1400	ER-AA-2300MAH-BP4	—

BATTERY CHARGERS

Universal Ni-Cd & Ni-MH Chargers

			
Code	PB-500	ER-CH-UNI	ER-CH-MAXI
Battery	4 x AA / AAA or 2 x C	AA / AAA / C / D / 9V	4X AA
Charge Time	4 Hours	3-5 hours	—
Features	- Enables the activation of remaining chemical in alkaline batteries - LED indication of charging, good / bad battery - Micro-processor chip controlled charging with auto cut-off & safety timer	- Versatile charger for the five most popular battery types - Easy to read fuel gauge - Fast and safe charging from 3 to 5 hours - Batteries to be ordered separately	- Intuitive charging at an affordable price - Charger status indication - Overcharge protection - Safety shut off 4x AA 2000mAh Batteries included.

WORLD'S
FIRST
CHARGER
FOR NORMAL
ALKALINE
BATTERIES

JUMP STARTERS



Lithium Jump Starters & Powerbanks



Code	Volts	Battery	Start Amps	Peak Amps	Extra Features
C1355	12V	6Ah	150A	300A	c/w Jump Start Clamps & USB Cable. USB (QC): 5V/2.4A, 9V/2A Flash Light
NEW PD-200S	12V	60Ah	300A	600A	c/w Jump Start Clamps & Built-in LED Light USB-C: PD 100W max USB-A: QC 18W max XT90: 12V/600A max
NEW EPS-301	12V	10Ah	300A	500A	c/w Jump Start Clamps & Built-in LED Light USB-A: 5V/2.4A
NEW EPS-900B	12V/24V	35Ah	12V: 2000A 24V: 500A	12V: 2000A 24V: 1000A	c/w Jump Start Clamps & Built-in LED Light USB-A: QC 18W Max

Lead Acid Heavy Duty Jump Starters

Code	Volts	Battery	Start Amps	Peak Amps
PS1000	12V	18Ah	500A	1100A
TD04	12/24V	2 x 18Ah	1100A / 12V 500A / 24V	2200A / 12V 1100A / 24V

Battery Jumper Cables

Code Pair	Amps	Length
OY-405	100A	2.5m
OY-403	200A	2.5m
OY-402	300A	2.5m
OY-401	400A	2.5m

Booster Cables

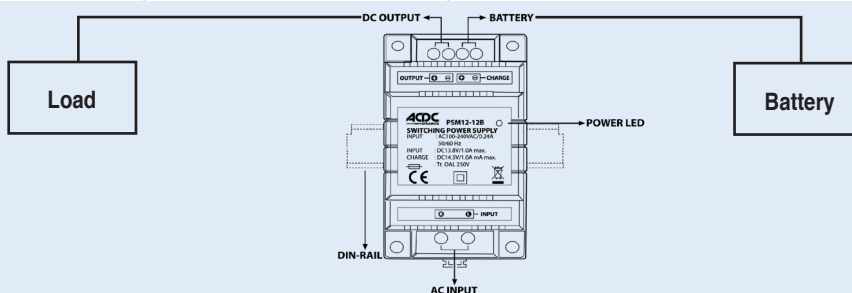
Code	SB212407
	300A 2.5m Booster Cable in zip-up bag
Code	SB212407X
	300A 2.5m Booster Cable c/w gloves and 3.5m tow rope in zip-up bag

BATTERY CHARGERS

DIN Mount Power Supply and Battery Charger - 100 - 240VAC

Code	Power Supply O/P	Battery Charger O/P	Dimensions
PSM12-12B	12 Volt @ 1A	13.8 Volt @ 150mA	53W x 99H x 63D
PSM24-12B	12 Volt @ 2A	13.8 Volt @ 250mA	53W x 99H x 63D

The PSM12-12B/ PSM24-12B, supplies power to the load and charges the battery at the same time. The unit carries on providing back-up power to the load via the battery even when mains power is not available.



Standby Generator Battery Charger - 100 - 240VAC - DIN Rail Mount



Code	Battery Size	Output	Mounting	Features
DSE-9150	65Ah	12V / 3A	Horizontal DIN Rail or Panel	Multi stage charging with boost. Short circuit /reverse polarity protected. Switched mode design. Units can be paralld
DSE-9702	105Ah	12V / 5A	Vertical DIN Rail or Panel	
DSE-9701	160Ah	24V / 5A	Vertical DIN Rail or Panel	
DSE-9470	160Ah	12/24V / 10A	Vertical DIN Rail or Panel	
NEW BC1205	105Ah	12V / 5A	Vertical/Horizontal DIN Rail	
NEW BC2405	160Ah	24V / 5A	or Chassis Mount	



Standby Generator Battery Charger - 100 - 240VAC - DIN Rail Mount



Code	Description	Features
GENCHARGE 312	3A@12VDC Output	• Boost output for quick charging
GENCHARGE 324	3A@24VDC Output	• Easy replaceable fuse
GENCHARGE 512	5A@12VDC Output	• Flame resistant plastic
GENCHARGE 524	5A@24VDC Output	• Short circuit, over current & reverse connection protected

BATTERY CHARGERS

All our battery chargers are for use with lead acid batteries



Enclosed Type

Industrial Automatic Type (Standard supply voltage 230VAC)

Amps	12V Code	Size (mm)	24V Code	Size (mm)
3A	—	—	ETE24/3	300 x 250 x 200
5A	ETE12/5	300 x 250 x 200	ETE24/5	300 x 250 x 200
10A	ETE12/10	400 x 300 x 200	ETE24/10	400 x 300 x 200
15A	ETE12/15	500 x 400 x 200	ETE24/15	400 x 300 x 200
20A	ETE12/20	400 x 300 x 200	ETE24/20	500 x 400 x 200
25A	ETE12/25	400 x 300 x 200	ETE24/25	500 x 400 x 200

Optional factory extras for enclosed type

Mains Failure Relay: BC100

Enclosed Version Features

IP65 wall mounting panel with on-off switch, ammeter, voltmeter, mains pilot light, test switch and 2 glands.



8-Pin Plug-in Type



TE12/5N
TE24/3N



AP12/20



PM-1424

Multi-Stage Battery Chargers

2-Stage Constant Voltage Charging:

Initial charge current is held at maximum output. As battery gains charge and voltage rises towards the end-charge value the current ramps downward to a maintenance level at full charge.

Amps	12V Code	Supply Volts	Size (mm)	24V Code	Supply Volts	Size (mm)
300mA	TE12/0,3	230VAC	8 Pin plug in	—	—	—
3A	—	—	—	TE24/3N	110-240VAC	195 x 95 x 47
5A	TE12/5N	100-240VAC	195 x 95 x 47	—	—	—

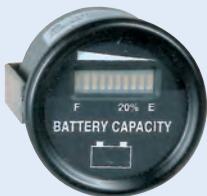
3-Stage Speed Charging:

(1) *High-speed bulk charge*: initial charge current held at max output until voltage reaches setpoint above end-charge value. Battery attains 80% of full charge at rapid pace.

(2) *Relaxed charge to 100% capacity*: charge current is slowly ramped down to end-charge level.

(3) *Maintenance charge*: voltage drops to end-charge value, trickle current compensates for self discharge of battery.

Amps	12V Code	Supply Volts	Size (mm)	24V Code	Supply Volts	Size (mm)
5A	AP12/5	110/230VAC	150 x 110 x 40	AP24/5	110/230VAC	175 x 110 x 45
10A	AP12/10	90-265VAC	175 x 110 x 45	—	—	—
14A	—	—	—	PM-1424	230VAC	280 x 209 x 85
20A	AP12/20	90-265VAC	225 x 110 x 50	—	—	—
25A	PM-2512	110/230VAC	280 x 209 x 85	PM-2524	110/230VAC	400 x 209 x 85

	Battery Indicators			Battery Indicator & Hour Counter	Analogue Battery Indicator
					
Indicator	ID-12V / ID24-36V ID-48V	IS24-80V	IST24-80V	V332-12VDC V332-24VDC	HC12-48V
Indicator & Relay	—	ISR24-80V	ISTR24-80V	—	—
	- Automatic Battery Voltage selected - Automatic zero-ing after charge is finished - Flashing LED's indication when battery needs charging - Relay output when battery reaches low level 1.73V/cell - Dimensions: 53 x 32mm (rectangle type) Ø 57mm (round type)			Panel cutout: 52mm Ø 12VDC: 8-16VDC 24VDC: 16-32VDC	99999.9 Hour Counter

BATTERY CHARGERS

DF1773 & TC-2420



Domestic Enclosed Type (Standard supply voltage 230VAC)

Code	Description	Amps	Battery Volts	Size (mm) W x H x D
DF1773	Man Charger	10A	12 or 24V	280 x 200 x 122
TC-2420	Man/Auto Charger	20A	12 or 24V	220 x 200 x 150

Heavy Duty Manual Battery Chargers - Dual Voltage



Code	Battery Volts	Rated Amps	Charge Current			Battery Size
			Slow	Fast	Boost	
THOR 320	12V	17A	7.5A	25A	180A	120/140Ah
	24V	14A	7.5A	20A	160A	
THOR 450	12V	33A	8.5A	57A	290A	140/160Ah
	24V	37A	11A	63A	220A	
THOR 650	12V	55A	15A	80A	400A	160/180Ah
	24V	56A	15A	90A	380A	

Heavy Duty Microprocessor Controlled Battery Charger - Dual Voltage

Code	Battery Volts	Rated Amps	Slow	Fast	Boost	Battery Size
THOR 350	12V	23A	5A	40A	180A	120/140Ah
	24V	23A	5A	40A	160A	

- Jump Start not to exceed 5 sec
- Supply Voltage 230VAC
- Slow/Fast/Boost charging
- Ammeter
- Overheat protection
- Reverse Polarity protection
- Fan cooling on **THOR 350**
- Protection fuses



Automatic Battery Chargers

Code	Output Voltage	Charging Current	Battery Size
SMC-1204T	12V	4A/12A	14-175Ah
SMC-1205Z	12V	8A/20A	35-250Ah
SMC-1206	12V	16A/30A	35-250Ah

Features

- Fully automatic with micro-processor control, High frequency switch mode technology
- Short circuit, Reverse polarity and Overload protection
- Suitable for all GEL, AGM, VRLA, Deep cycle and Lead-acid batteries

Automatic Intelligent Battery Chargers



Code	Input Volts	Output Volts	Charging Current	Mode	Display
HF0210DV	230VAC	12/24VDC	2/6/10A	Auto Intelligent	LED
HF0220	230VAC	12VDC	2/10/20A	Auto Intelligent	LED

Micro processor controlled with intelligent multi stage charging mode. Fast and slow charging option. Short circuit, reverse polarity, overload, overheating and spark protected.

Three-Step Battery Chargers 40W Plug-in Type - 100-240VAC



Code	Output Voltage	Charging current	Voltage	
			Absorption	Trickle
111-06152-130	12V	1.5A	14.7V	13.8V
111-06272-131	6/12V	2.7A	7.3 / 14.7V	6.9/13.8V
111-12152-130	24V	1.5A	29.4V	27.6V

Charger outputs constant charge current until charge voltage climb to the absorption voltage. The charge voltage is held constant for 120min, allowing the charge current to decay to a small trickle current. The charge voltage falls to trickle level, charging the battery with a small trickle current to maintain the charge.

Desktop Lead-Acid Battery Charger - 100-240VAC

161-06802-130	12V	8A	14.7V	13.8V
161-12502-130	24V	5A	29.4V	27.6V

- Use with wheel chairs or golf carts
- LED indication of the State of charge, possible connection problems, battery deep discharge

SMART BATTERY CHARGERS

NEW



F3500



F6000



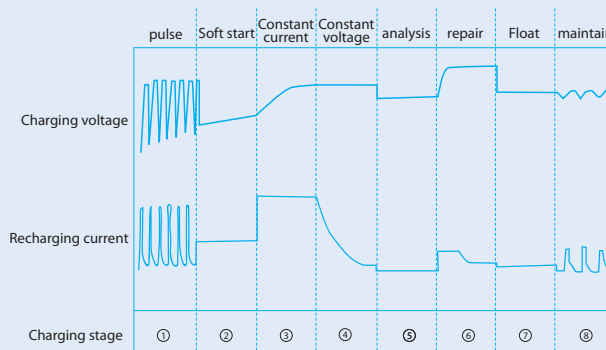
F15000



F26000

Smart Battery Chargers - The Series with multi stage charging functionality to maintain and charge **Lead-acid, AGM and Lithium Batteries.**

Code	Output Voltage	Charging Current	Battery Size
F3500	6/12VDC	3.5A	up to 60Ah
F6000	6/12VDC	6.0A	up to 120Ah
F15000	6V/12V/24VDC	15.0A/ 15.0A / 8.0A	up to 250Ah
F26000	6V/12V/24VDC	24.0A / 26.0A / 13.0A	up to 400Ah



8 Stage Charging

Features

- Smart 8-Stage Charging Algorithm
- Battery Reconditioning Function
- Automatic Detection of Non-Rechargeable Batteries
- Protection: reverse connection, overheating protection, short circuit protection, overcharging protection



High Frequency Battery Chargers - 230VAC

Code	Output Voltage	Charging Current	Display
HFG4DVD	6/12VDC	2 / 4A	LED
HFG7DVD-24	12/24VDC	7 / 3.5A	Digital

- Micro processor controlled with intelligent multi-stage charging.
- Short circuit, reverse polarity, overload, overheating and spark protected.

Multi Stage Battery Chargers - 190-265VAC



Code	Output Voltage	Charging Current	Display
ENC1210	12VDC	10A	LED
ENC1220	12VDC	20A	LED
ENC2405	24VDC	5A	LED
ENC2410	24VDC	10A	LED

- Automatic 3-Stage Charging: Constant Current / Constant Voltage / Float Charge
- Automatic temperature Compensation
- LED Charge Status Indication
- Protection - Over Charging, Short Circuit, Over Heating, Reverse Polarity

7 Stage Battery Chargers - 190-265VAC

Gel / AGM / Flooded / Lithium (selectable)



Code	Output Voltage	Charging Current	Display
EBC1210	12VDC	10A	Digital
EBC1220	12VDC	20A	Digital
EBC1240	12VDC	40A	Digital
EBC1250	12VDC	50A	Digital
EBC2405	24VDC	4A	Digital
EBC2410	24VDC	10A	Digital
EBC2420	24VDC	20A	Digital
EBC2425	24VDC	25A	Digital

- LED Digital Display: Battery Voltage, Charge Current, Charging Stage Indication
- 7-Stage Automatic Charging: De-sulphation / Soft Start / Constant Current / Constant Voltage / Battery Test / Reconditioning / Float Charge
- Internal temperature compensation
- Protection - Over Charging, Short Circuit, Over Heating, Reverse Polarity

PRECISION WATERPROOF BATTERY CHARGERS IP65

Blue Smart Charger, c/w Bluetooth

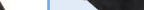
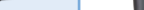
							
Code	BSC-12/4	BSC-12/7	BSC-12/10	BSC-12/15	BSC-24/5	BSC-24/8	BSC-24/B
Supply Voltage	200 - 265VAC	180 - 265VAC	180 - 265VAC	180 - 265VAC	180 - 265VAC	180 - 265VAC	180 - 265VAC
Charging Current	4A/0.8A	7A	10A	15A	5A	8A	13A
Battery Capacity	20-50Ah	20-70Ah	30-100Ah	50-150Ah	20-50Ah	30-80Ah	50-130Ah
Dimensions	45 x 81 x 182mm	47 x 95 x 190mm	60 x 105 x 190mm	60 x 105 x 190mm	47 x 95 x 190mm	60 x 105 x 190mm	75 x 140 x 240mm

- Display the status of your charger and battery and even control the functions of your charger using the VictronConnect App
- DC connector: Clamps, Ring Lugs
- Water, dust & chemical resistant
- Seven step smart charge algorithm
- Recovery of fully discharged batteries
- Automatic power supply function
- Automatic compensation for high or low temperature
- Low power mode for smaller batteries
- Li-ion battery mode



VictronConnect App

Victron Blue Smart Charger Accessories

NEW						
Code	BSC-CC*	BSC-BIM8	BSC-12VCL	BSC-BIP	BSC-RB	BSC-WM
Description	Carry case for blue smart IP65 charger and accessories	Battery indicator eyelet M8	12V cigarette lighter plug	Battery indicator panel	Rubber bumper for blue smart IP65 charger	Wall mount for blue smart IP65 charger

*Carry case only: no charger and accessories included



Blue Smart High Efficiency Adaptive Chargers IP22

Code	BSC-IP22-12/20	BSC-IP22-12/30	BSC-IP22-24/12	BSC-IP22-24/15
Supply Voltage	180 - 265VAC	180 - 265VAC	180 - 265VAC	180 - 265VAC
Charging Voltage	12VDC	12VDC	24VDC	24VDC
Charging Current	20A	30A	12A	15A
Night / Low	5A	8A	3A	4A
Dimensions (mm)	235 x 1208 x 65	235 x 1208 x 65	235 x 1208 x 65	235 x 1208 x 65

- Display the status of your charger and battery and even control the functions of the charger using the VictronConnect App
- Micro-processor controlled, 6 stage adaptive charging algorithms: Test, Bulk, Absorption, Recondition, Float, Storage
- Charging is automatically adapted to battery usage conditions
- Also charges LifePO₄ batteries
- LED status indication
- Protected against overheating
- Night / Low charge modes (charging current reduced to 25% of nominal)



VictronConnect App

Skylla Universal Input Voltage Chargers IP21

Code	SC-TG-24/30	SC-TG-24/50	SC-I-24/80	SC-I-24/100
Supply Voltage	90-265VAC / 90-400VDC	90-265VAC / 90-400VDC	90-265VAC / 90-400VDC	90-265VAC / 90-400VDC
Charging Voltage	24VDC	24VDC	24VDC	24VDC
Charging Current	30A	50A	80A	100A
Charge Algorithm	3 Stage	3 Stage	7 Stage	7 Stage
Battery Capacity	150-300Ah	250-500Ah	400-800Ah	500-1000Ah
Dimensions (mm)	365 x 250 x 147	366 x 250 x 147	402 x 250 x 140	403 x 250 x 140

- 2 Isolated outputs to charge 2 battery banks, the second output is limited to 4A
- SC-I series can be synchronised in parallel charging mode by interconnecting via RJ45
- Fitted with battery temperature / voltage charging level compensation
- Battery voltage sensing to compensate for cable resistance
- Can be used as a power supply
- Auto storage mode enabled when battery not subjected to discharge



NEW

SMALL DC UPS

Mini DC UPS - Ideal power source for various digital devices during power outages



ECO-32700



NPS8012

Code	ECO-32700	NPS8012
Input		
AC Input Voltage	100-240VAC@50Hz	100-240VAC
DC Output		
Output	5VDC/2A, 9VDC/1A, 12VDC/1A	48VDC/2A, 12VDC/8A
USB Output	1 x 5VDC/2A	1 x 5VDC/2A
POE Output	24VDC/0,5A	24/48VDC/1A (30W)
Rated Power	18W	100W
Battery		
Capacity	8000mAh LiFePO4	4 x 6000mAh LiFePO4
Cycle life	1000 Cycles	1000 Cycles
Size (mm)	160 x 105 x 28	258 x 226 x 49

- With multiple DC outputs
- High-capacity LiFePO4 batteries
- Intelligent circuit design with over-charging, over-discharging and short circuit protections
- Suitable for use with WIFI routers, CCTV, cameras, POS devices, etc.

LINE INTERACTIVE UPS

Line-Interactive Modified Sine Wave UPS - Compact c/w Battery



Code	Watts	VA	Size (mm)	Standby Time	No. of Batteries
D-650	390	650	145 x 320 x 65	5-10min	1
D-800	480	800	145 x 320 x 65	5-10min	1
D-1000	600	1000	165 x 370 x 140	5-10min	2
D-1200	720	1200	165 x 370 x 140	5-10min	2
D-1500	900	1500	165 x 370 x 140	5-10min	2
UPS-2200D	1320	2200	165 x 370 x 140	5-10min	3

- Software CD (included)
- AVR Function. Auto volts regulator
- Over charge/discharge protection
- Overload and circuit protection
- LCD Display
- Full load backup time: 4mins
- Half load backup time: 16mins
- Wide input volts range: 140-275VAC
- Output voltage: 230VAC $\pm$ 10%
- Spare batteries 12V/7AH SY1270
- Spare Software CD: D-UPSSOFT

NEW

OTIMA II RACK/TOWER LINE INTERACTIVE UPS



- Highly Flexibility with Rack/Tower Mounting Design
- Pure Sine Wave Output
- User-Friendly & Easy to Shift LCD Display
- Output Power Factor 0.9
- Programmable Outlets: Connect to Non-Critical Loads
- Priority Output: Connect to Mission-Critical Loads
- ECO (Efficiency Corrective Optimizer) Operation for Energy Saving
- Very High Efficiency in Battery Mode
- USB & RS232 Port
- Hot-Swappable Battery Design

Code	OT-2-R/T-1.1K	OT-2-R/T-2K	OT-2-R/T-3K
Wattage	990W	1800W	2700W
kVA	1.1kVA	2kVA	3kVA
DC Volts	24VDC	48VDC	72VDC
Charge Current	1.5A	1.5A	1.5A
Battery (Included)	12V / 9Ah x 2	12V / 9Ah x 4	12V / 9Ah x 6
Replacement Battery Code	SY1290	SY1290	SY1290
Size (mm) WxDxH	410 x 438 x 88	510 x 438 x 88	630 x 438 x 88
Weight	13.4kg	21.5kg	29.3kg

GALLEON ONE RACK/TOWER LIFEPO4 ONLINE UPS



- High Flexibility with Rack/Tower Mounting Design
- **Built-in LiFePO4 Battery**
- True Double Conversion
- ≥ 0.99 Output Power Factor
- Frequency Converter Mode
- Generator Compatible
- Fast Battery Recharge Time
- Low THDi
- Long Battery Life: > 2000 Cycles
- Built-in protection circuit in battery pack
- Energy Saving Eco Mode

Code	G1-1000RTLI	G1-1500RTLI	G1-2000RTLI	G1-3000RTLI
Wattage	900W	1350W	1800W	2700W
kVA	1 kVA	1.5kVA	2kVA	3kVA
Charge Current	1 - 8A (Adjustable)			
Battery Included	25.6V / 7.5Ah LiFePO4	48VDC / 5Ah LiFePO4	76.8 VDC/2.5 Ah x 2 LiFePO4	76.8V / 2.5Ah x 3 LiFePO4
Replacement Battery Code	G1-RTLI-25.6V-7.5AH	G1-RTLI-48V-5AH	G1-RTLI-76.8V-2.5AH	
Size W x D x H	410 x 438 x 88mm		510 x 438 x 88mm	630 x 438 x 88mm
Weight	10,8kg	11,6kg	14,4kg	20,5kg

DTH11-R SERIES TOWER/RACK MOUNT ONLINE UPS



- c/w 2U Base Stand and Local Monitoring Software (Optional Rack mounting Brackets to be ordered separately)
- Double conversion online design
- Output power factor 1
- 1 Phase input, 1 Phase output
- Communication interface RS232, USB
- Emergency Power Off Function (EPO)
- Hot swappable battery design for 1-3kVA
- ECO mode for energy saving
- Adjustable charging current
- The comprehensive display allows easy monitoring
- Generator input compatible

Code	DTH11-1KR	DTH11-2KR	DTH11-3KR	DTH11-6KRL	DTH11-10KRL
Wattage	1000W	2000W	3000W	6000W	10000W
kVA	1kVA	2kVA	3kVA	6kVA	10kVA
DC Volts	24V	48V	72V	192V	192V
Charge Current	1A	1-4A	1-4A	1-12A	1-12A
Battery	12/7Ah x 2	12/7Ah x 4	12/7Ah x 6	12/7Ah x 16 (not included)	12/7Ah x 16 (not included)
Internal Battery Included	Yes	Yes	Yes	No (See Optional Battery Boxes)	No (See Optional Battery Boxes)
Replacement Battery Code	SY1270	SY1270	SY1270	SY1270	SY1270
Size W x D x H	440 x 380 x 88mm	440 x 450 x 88mm	440 x 600 x 88mm	440 x 470 x 88mm	440 x 470 x 88mm
Weight	11.6kg	15.5kg	24.2kg	12kg	12kg

Optional Battery Boxes for 6-10kA

Code	DTH11-2U	DTH11-4U
Form Factor	2U	4U
Battery Type	12/7Ah	12/7Ah
Battery Number	16pcs (not incl)	20pcs (not incl)
Size W x D x H	440 x 670 x 88mm	440 x 470 x 176mm

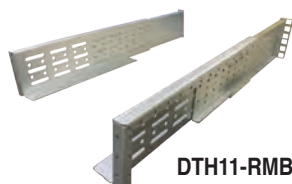
Accessories

Code	Description
DTH11-RMB	Optional Rack Mounting Bracket
DTH11-SNMP	SNMP Card

See page 3.25 for Battery Back-up Time Guidance



DTH11-2U



DTH11-RMB



DTH11-SNMP

NEW GALLEON ONE RT 1-10K RACK/TOWER MOUNT ONLINE UPS



- High Flexibility with Rack/Tower Mounting Design
- True Double-Conversion
- Output Power Factor 1
- 50Hz/60Hz Frequency Converter Mode
- Programmable Outlets: Connect to Non-Critical Loads (1-3kVA)
- Priority Output: Connect to Mission-Critical Loads (1-3kVA)
- Emergency Power Off Function (EPO)
- Hot Swappable Battery Design
- ECO mode for Energy Saving
- Low Input THDi
- Adjustable Charging Current via LCD Panel (6-10kVA)
- Smart Battery Charger Design
- Generator Compatible

Code	G1-RT1000L	G1-RT1500L	G1-RT2000L	G1-RT3000L	G1-RT6000L	G1-RT10000L
Wattage	1000W	1500W	2000W	3000W	6000W	10000W
kVA	1kVA	1.5kVA	2kVA	3kVA	6kVA	10kVA
DC Volts	24VDC	48VDC	48VDC	72VDC	240VDC	240VDC
Charge Current	2-12A	2-12A	2-12A	2-8A	4A	4A
Battery	12V / 9Ah x 2	12V / 7Ah x 4	12V / 9Ah x 4	12V / 9Ah x 6	12V / 7Ah x 20 (not included)	12V / 9Ah x 20 (not included)
Internal Battery Included	Yes	Yes	Yes	Yes	No (See Optional Battery Boxes)	
Replacement Battery Code	SY1290	SY1270	SY1290	SY1290	SY1270	SY1290
Size (mm) WxDxH	410 x 438 x 88	410 x 438 x 88	510 x 438 x 88	630 x 438 x 88	610 x 438 x 88	610 x 438 x 88
Weight	6.6kg	7.8kg	8.1kg	12.4kg	17kg	20kg



G1-RT10K-BP-3U

Optional Battery Boxes for Galleon ONE RT Online UPS 6-10kVA

Code	G1-RT10K-BP-3U*
Form Factor	3U
UPS Model	6-10kVA
Battery Type	12V / 7-9Ah
Battery Number	20 pcs (not included)
Size (mm) WxDxH	600 x 438 x 133 [3U]
Weight	Up to 63kg

*Empty battery boxes: Batteries to be ordered separately (see page 5.36).
See page 3.25 for Battery Back-up Time Guidance

NEW KR-RM SERIES 10-40KVA CONFIGURABLE ONLINE UPS



- High Flexibility with Rack/Tower Mounting Design
- Adjustable Input & Output 3-3/3-1/1-1 for 10-20KVA and 3-3/3-1 for 30-40KVA
- Pure Sine Wave
- LCD Rotate Function for Rack or Tower Configuration
- Output Power Factor 0.9
- ECO Mode for Energy Saving & EPO Function (Emergency Power Off)
- High AC/AC Efficiency up to 96%
- RS485+EPO (RS232 + Dry contact, SNMP slot)
- Adjustable Charging Current

Code	KR10KVA-RM	KR20KVA-RM	KR30KVA-RM	KR40KVA-RM
Wattage	9000W	18000W	27000W	36000W
kVA	10kVA	20kVA	30kVA	40kVA
Phase	3/3, 3/1, 1/1	3/3, 3/1, 1/1	3/3, 3/1	3/3, 3/1
DC Volts	384VDC (288 - 480VDC)	384VDC (288 - 480VDC)	384VDC (288 - 480VDC)	384VDC (288 - 480VDC)
Charge Current	4A (1-10 settable)	4A (1-10 settable)	15A (1-20 settable)	15A (1-20 settable)
Size (mm)WxDxH	438 x 500 x 130 [3U]	438 x 500 x 130 [3U]	438 x 680 x 130 [3U]	438 x 680 x 130 [3U]
Battery* (Excl.)	32 pcs default (16 pcs x 2)	32 pcs default (16 pcs x 2)	32 pcs default (16 pcs x 2)	32 pcs default (16 pcs x 2)
Weight	50kg	50kg	85kg	85kg



Battery Boxes for KR-RM Series 10-40KVA Online UPS

Code	KR-RM-BP-3U*
Form Factor	3U
UPS Model	10KVA - 40KVA
Battery Type	12V / 7-9Ah
Battery Number	16pcs (not included)
Size (mm) WxDxH	438 x 500 x 130 [3U]

*Empty Battery Boxes: Batteries to be ordered separately (see page 5.36)
See page 3.25 for Battery Back-up Time Guidance

NEW

HIGH FREQUENCY ONLINE UPS



Pure Sine Wave UPS - 400VAC Three Phase (IN) to Three Phase (OUT)
With Online Double Conversion

Code	kW	kVA	Size WxDxH (mm)	DC Voltage	Battery QTY AGM*
DTH33-40KL	40	40	425x780x1200	384V	32
DTH33-50KL	50	50	425x780x1200	384V	32
DTH33-80KL	80	80	425x780x1200	384V	32
DTH33-100KL	100	100	600x800x1600	384V	32

Applications:

Communication Centres, Financial Centres, Data Centres, Security and Industrial Control Systems

- Wide Input Range
- N+X Parallel Technology
- Automated Self Testing
- Generator Compatible
- Battery Number Configurable (30-34)
- Multifunction Touch Screen LCD Display
- Cold Start Function
- Energy Saving Eco-Mode
- PFC Technology input power factor ≥ 0.99
- Supports RS232/RS485 Communication
- * Note: Batteries and Battery Boxes to be ordered separately. See page 3.25 & 5.36

NEW

LOW FREQUENCY ONLINE UPS



Pure Sine Wave UPS - 400VAC Three Phase (IN) to Three Phase (OUT)
With Online Double Conversion

Code	kW	kVA	Size WxDxH (mm)	DC Voltage	Battery QTY AGM*
HQ-3380	72	80	500 x 800 x 1600	384V	32
HQ-33100	90	100	700 x 800 x 1800	384V	32
HQ-33120	108	120	700 x 800 x 1800	384V	32
HQ-33160	144	160	700 x 800 x 1800	384V	32
HQ-33200	180	200	1640x 850 x 1950	384V	32

Applications:

Medical Equipment, Computer Equipment, Data Centres, Precision Instruments and Control Systems

- N+1 redundant cooling system
- Built-in manual maintenance bypass
- Output Isolation Transformer
- Automated Self Testing
- 7" Multilingual Color Touch screen display
- Supports RS232/RS485 Communication
- Uses phase locked loop technology alongside electronic static bypass switch
- Battery QTY can be adjusted (29 - 34)
- * Note: Batteries and Battery Boxes to be ordered separately. See page 3.25 & 5.36

EXTERNAL BATTERY CABINET

C-Type Battery Cabinet, No Wheels



Model	Layer	Product Size (mm)	Battery Capacity	Quantity (Panasonic Size)
C-1B	1	280 x 190 x 220	24Ah/17Ah	2/3 PCs
C-2	1	470 x 390 x 310	17/24/38/65/100Ah	10/6/4/2/2 PCs
C-6	2	420 x 450 x 600	17/24/38/65/100Ah	20/16/12/6/6 PCs
C-12	3	780 x 455 x 900	17/24/38/65/100Ah	30/24/12/10 PCs
C-20	4	950 x 455 x 1190	24/38/65/100Ah	56/40/20/20 PCs
C-24	4	1150 x 455 x 1190	65AH/100Ah	24 PCs
C-32	4	780 x 880 x 1190	65AH/100Ah	32 PCs

A-Type Battery Cabinet, c/w Wheels

BAT-A4	2	420 x 450 x 670	17/24/38/65/100Ah	20/12/8/4/4 PCs
BAT-A8	2	760 x 450 x 770	17/24/38/65/100Ah	36/20/16/8/8 PCs
BAT-A16	4	780 x 455 x 1360	24/38/65/100Ah	32/32/16/16 PCs
BAT-A20	4	950 x 455 x 1360	24/38/65/100Ah	40/40/20/20 PCs

EXTERNAL BATTERIES FOR EXTENDED BACK-UP TIME

Power (VA)	1000	1500	2000	3000	6000	10000	10000	20000	30000	40000	50000	60000	80000	100000	120000	160000	200000
QTY Bat	2	4	4	6	20/16	20/16	32	32	32	32	32	32	32	32	32	32	32
Battery Capacity	Back-Up Time (Minutes)*																
7Ah	8	11	8	8	13/10	8/6	13	6	4	3	-	-	-	-	-	-	-
9Ah	10	14	10	10	17/13	10/8	17	8	6	4	-	-	-	-	-	-	-
12Ah	14	18	14	14	23/18	14/11	22	11	7	6	-	-	-	-	-	-	-
24Ah	28	37	28	28	46/36	28/22	44	22	15	11	-	-	-	-	-	-	-
35Ah	40	54	40	40	67/53	40/32	65	32	22	16	-	-	-	-	-	-	-
45Ah	52	69	52	52	86/68	52/41	83	41	28	21	16	13	-	-	-	-	-
65Ah	75	100	75	75	-	-	120	60	40	30	23	19	14	-	-	-	-
80Ah	92	123	92	92	-	-	147	74	49	37	29	24	18	14	-	-	-
100Ah	115	154	115	-	-	-	184	92	61	46	36	30	23	18	15	11	9
200Ah	-	-	-	-	-	-	-	-	123	92	-	-	46	36	30	23	18

* The above times are only a rough guide and could vary due to battery condition, environmental conditions and depth of discharge.

©ACDC Dynamics

AUTOMATIC VOLTAGE REGULATORS (A.V.R)

Output of this mains stabiliser is regulated to within 1% for input -15% to +20% of nominal range



Constant Voltage Transformer (C.V.T.) - 230/230V*

Code	Max Output	Supply Connection	Load Connection	Back Up 1P CB	Dimensions (mm)	Weight (kg)
TE 300	1.3A	16A Plug	1 x 16A Socket	20A	260 x 188 x 360	17
TE 1000	4.3A	16A Plug	1 x 16A Socket	20A	260 x 188 x 360	31
TE 1500	6.5A	16A Plug	1 x 16A Socket	20A	330 x 350 x 400	44
TE 2000	8.7A	16A Plug	1 x 16A Socket	20A	330 x 350 x 400	50
TE 3000	13A	16A Plug	1 x 16A Socket	20A	330 x 350 x 400	68
TE 4000	17.4A	Terminals	2 x 16A Sockets	25A	370 x 426 x 450	78
TE 5000	21.7A	Terminals	2 x 16A Sockets	32A	370 x 426 x 450	100
TE 6000	26.1A	Terminals	Terminals	32A	420 x 460 x 600	120
TE 7000	30.4A	Terminals	Terminals	40A	420 x 460 x 600	135
TE 8000	34.8A	Terminals	Terminals	40A	420 x 460 x 600	150

* Specify voltage when ordering. Other voltages made on request.

Single Phase Voltage Regulator (Output load regulation 1% or 3% selectable) Digital display



Code	Output Amps	Output Connector	Size (mm)	Weight (kg)
SDC-1000VA	4.35A	Socket	230 x 120 x 150	6.2
SDC-1500VA	6.50A	Socket	260 x 140 x 170	7.3
SDC-2000VA	8.70A	Socket	260 x 140 x 170	7.9
SDC-3000VA	13A	Terminals	310 x 220 x 250	11
SDC-5000VA	21A	Terminals	310 x 220 x 250	13
SDC-8000VA	34A	Terminals	430 x 465 x 305	22
SDC-10KVA	43A	Terminals	430 x 465 x 305	27

Features

- Technology: servo motor type transformer
- Input Voltage: 140VAC - 260VAC
- Input Frequency: 50/60Hz
- Output Voltage: 230VAC
- Efficiency: 98%
- Display: LED display input voltage/output voltage
- Protection: High voltage protection
- Low voltage protection
- High temperature protection
- Overload protection
- Delay time protection
- Short circuit protection

Single Phase Voltage Regulator with zero - cross switching technology - (Output regulation 5%)

Code	Output Amps	Output Connector	Size (mm)	Weight (kg)
E-600	1.3A	Socket	210 x 140 x 135	3.0kg
E-1200	2.6A	Socket	210 x 140 x 135	3.5kg
E-2400	5.2A	Socket	240 x 160 x 120	5.3kg

Single Phase Compact AVR (Output regulation 8%)

Code	Output Amps	Output Connector	Size (mm)	Weight (kg)
SR-500VA	2.1A	Socket	241 x 169 x 90	1.78kg
SR-1000VA	4.35A	Socket	241 x 169 x 90	4.3kg
SR-1500VA	6.50A	Socket	261 x 169 x 114	5.2kg

Features

- Relay type automatic voltage regulator
- Input Voltage range: 140VAC - 280VAC
- Input Frequency: 50/60Hz
- Output Voltage: 230VAC
- Efficiency: 98%
- Output accuracy: $\pm 5\%$
- Protection: High/Low voltage protection
- High temperature protection
- Time delay protection
- Short circuit protection



E-Range



SR-Range

THREE PHASE VOLTAGE REGULATOR



3 Phase Voltage Regulator (Output Load Regulation 2%) - Input Volts $\pm 15\%$ 400V + N

Code	Capacity		Current (220V)	Current (380V)	Size W x D x H	Weight
	kVA	kW				
ARD-3010	10KVA	8KW	26A	15A	280 x 380 x 620	50kg
ARD-3015	15KVA	12KW	39A	22A	280 x 380 x 620	58kg
ARD-3020	20KVA	16KW	52A	30A	360 x 460 x 810	85kg
ARD-3030	30KVA	24KW	78A	45A	360 x 460 x 810	100kg
ARD-3045	45KVA	36KW	118A	68A	360 x 460 x 810	115kg
ARD-3060	60KVA	48KW	157A	91A	420 x 550 x 960	140kg
ARD-3080	80KVA	64KW	210A	121A	420 x 550 x 960	165kg
ARD-3100	100KVA	80KW	263A	152A	420 x 550 x 960	230kg
ARD-3120	120KVA	96KW	315A	182A	550 x 800 x 1700	620kg
ARD-3150	150KVA	120KW	394A	228A	550 x 800 x 1700	750kg

3 Phase Voltage Regulator (Output Load Regulation 2%) - Input Volts $\pm 30\%$ 400V + N

HRD-45KVA	45KVA	36kW	118A	68A	800 x 500 x 1000	240kg
HRD-60KVA	60KVA	48kW	157A	91A	800 x 500 x 1000	280kg
HRD-80KVA	80KVA	64kW	210A	121A	800 x 500 x 1000	320kg
HRD-120KVA	120KVA	96kW	315A	182A	550 x 800 x 1700	620kg
HRD-150KVA	150KVA	120kW	394A	228A	550 x 800 x 1700	750kg
HRD-200KVA	200KVA	160kW	530A	300A	550 x 800 x 1700	900kg

Specifications

- Output voltage range: $\pm 1\% \sim \pm 5\%$ adjustable
- Output precision: standard $\pm 2\%$
- Respond time: < 0.042 sec
- Overheat bypass: main coil temperature $> 130^\circ\text{C}$, transfer to bypass automatically
- Protection: input low voltage/ output high voltage/ open-phase
- Energy saving function: auto power cut off without loading
- Efficiency: $\geq 98\%$ (at full load)
- Output low/ high voltage/ open-phase voltage protection
- Isolated voltage detection circuit. Settable voltage protection points. Auto cut off for abnormal voltage output and audible alarm.
- Resists unbalanced current
- Double lap winding design. Even when phase loading is 50% unbalanced, voltage drop between wires will not happen

Features

- Low iron loss high magnetic intensity silicon steel, closed slots design
- High full groove ratio winding technique

ARD series is the most reliable AVR with magnetolectric technology. All these efforts make our AVR unique with lowest line loss and voltage drop. Moreover, compact size, light-weight, high efficiency and high reliability are their most significant characteristics. Non-contact design makes this AVR different to the traditional carbon brush or relay type AVR, without sparking/arc. We can say ARD series is the best voltage regulator for industrial usage.



15A VOLTAGE PROTECTION PLUG

Voltage Protection Plugs for home & office use

Code	Description
VP15R	15A Red Housing
VP15G	15A Grey Housing
VP10G	16A Grey Housing c/w Schuko plug and socket and 1m cable. <i>For export only</i>

Specifications

- Overvoltage – drop out: 253V – reset: 248V
- Undervoltage – drop out: At 190V, 3 sec delay @ 170V inst. off – reset: 195V
- Delay on reconnection: 180s
- Lightning protection: 6.5kA, ($V_c = 750\text{V}$)
- LED indicates supply connected
- Relay: 16Amps @ 230V

Normal Working: The relay is switched on and it supplies voltage to the output socket only if the input voltage is within safe limits. The green 'VOLTS OK' led is on. The input voltage is measured and the true RMS value is calculated. It is not just an average of the input voltage.

Over voltage protection: If the input voltage rises above 253V, the relay will switch off and the red 'HIGH VOLTS' led will come on. It will reset if the voltage drops below 248V.

Under voltage protection: If the input voltage drops below 190V the relay will stay on and the red 'LOW VOLTS' led will flash to indicate a momentarily low voltage. If the voltage doesn't recover after 3 seconds the relay will switch off and the 'LOW VOLTS' led will stay on. If the input voltage drops below 170V, the relay will switch off immediately without the 3 second delay and the 'LOW VOLTS' led will stay on. It will reset if the voltage rises above 195V.

Delay: When the unit is connected, it waits for 3 minutes (180 seconds) before switching the output on. Whenever it switches off (over or under volt) it will wait for 3 minutes before switching on again.

No more damaged equipment due to "brown-outs" (low voltage). Protect your fridge and vital equipment now!

- Protects against over and undervoltage supply
- Protects against lightning
- Plugs into 15A socket outlet



VP15R



VP15G

VOLTAGE GUARDS AND SURGE LIMITERS

Micro processor designed voltage monitoring that safely disconnects sensitive electrical/electronic devices from dangerous voltage fluctuations. Reconnection is automatic when voltage has stabilised.

1-Phase

Includes protection against

- Spikes
- Surges
- Lightning



Code	FRIDGEGUARD-*	VOLTGUARD-*	AVS15-*
Nominal Voltage	230VAC	230VAC	230VAC
Current Rating	6A	7A	15A
Surge/Spike Amps	6.5kA	6.5kA	6.5kA
Response time under voltage	0.5s	0.5s	1s
High voltage disconnect (HVD)	—	255 - 265V	260V
High voltage re-connect	—	2V below HVD	3 - 7V below HVD
Low voltage disconnect (LVD)	180-190V	180-190V	185V
Low voltage re-connect	5V above LVD	5V above LVD	3 - 7V below HVD
Reconnect delay	3min	30s/3min	2 - 5min

* Add outlet type to code **R16** (16A SA Plug), **SC** (SCHUKO)

1-Phase

Includes protection against

- Spikes
- Surges
- Lightning



VOLTAGE PROTECTION

- With Display



Code	NOTEBOOK-**	AVS30-MICRO	AVS30A
Nominal Voltage	85 - 265VAC	230VAC	220-240VAC
Current Rating	1A	30A	30A
Surge/Spike Amps	9kA	6.5kA	6.5kA
Response time under voltage	1s	0.5 - 10s	1s
High voltage disconnect (HVD)	265VAC	230 - 300V	210-270VAC (Def: 255VAC)
High voltage re-connect	255VAC	3-5V below HVD	5-10V below HVD
Low voltage disconnect (LVD)	85VAC	150-230V (PH-N)	120-200VAC (Def: 180VAC)
Low voltage re-connect	95VAC	3-5V above LVD	5-10V above LVD
Reconnect delay	10sec	10s - 10min	6s-2min

** Add to code **CL** = Clover Leaf connector, **F8** = FIG8 connector

3-Phase

Includes protection against

- Spikes
- Surges
- Lightning



Code	AVS3P-0	AVS303-37	AVS303-60
Nominal Voltage	230VAC(PH-N)	230VAC(PH-N)	230VAC(PH-N)
Current Rating	1xC/O Contact (16A)	37A	60A
Surge/Spike Amps	6.5kA	6.5kA	6.5kA
Response time under voltage	1s	1s	1s
High voltage disconnect (HVD)	230 - 300VAC (PH-N)	230 - 300VAC (PH-N)	230 - 300VAC (PH-N)
High voltage re-connect	4V below HVD	4V below HVD	4V below HVD
Low voltage disconnect (LVD)	150 - 230VAC (PH-N)	150 - 230VAC (PH-N)	150 - 230VAC (PH-N)
Low voltage re-connect	4V above LVD	4V above LVD	4V above LVD
Reconnect delay	10s-10min	10s-10min	10s-10min

MOBILE POWER BACKUP SYSTEMS

Mobile Back-up - 230VAC single phase, to be used for home or office during power cuts. All-In-One Inverter / Charger / Auto Change Over / Trolley.

Input voltage 12VDC/230VAC Earth leakage, Polarity Reverse, Over Voltage, Low Voltage, Overheat, Short Circuit Protection	 Now includes battery capacity display		 600-1000W		 1500-3000W		
	Code - Modified (No Batt)	EPS-150B	EPS-300B	EPS-600B	EPS-1000B	EPS-1500B	EPS-2000B
	Code - Pure Sine (No Batt)	CPS-150B	CPS-300B	CPS-600B	CPS-1000B	CPS-1500B	CPS-2000B
	Constant Watts	150W	300W	600W	1000W	1500W	2000W
	Peak Watts	300W	600W	1200W	2000W	3000W	4000W
Voltage	12VDC	12VDC	12VDC	12VDC	12VDC	12VDC	
Charging Current	5A	5A	10A	10A	15A	15A	
Space for Battery	1 x 65Ah	1 x 65Ah	1 x 102Ah	1 x 102Ah	1 x 102Ah	1 x 102Ah	
Back-up time full load	2.5hrs	1.3hrs	1hrs	35min	25min	20min	

Specifications

- Robust industrial wheels
- LED Display of battery and output status
- EPS & CPS models supplied without batteries.
- EPS/CPS 150-300W can accommodate 1 x 65AH battery (SY12065)
- EPS/CPS 600W and up can accommodate 1x 102AH Battery (SY120102)
- Batteries for EPS/CPS models to be ordered separately

NOTE - Battery back up times shown above are approximate and are calculated for 50% depth of discharge to prolong battery life. When fully charged, please unplug the unit if not in use (Please refer to the product manual for more details).

NEW

1 PH ENERGY STORAGE SYSTEM WITH TROLLEY

- UPS Function
- LCD Display of Battery Status and Working Mode
- **HYTR-1K-100AHL** includes a 100Ah LiFePO4 Battery
- **HYTR-1K 12VDC** is supplied without batteries. See page 5.36 for batteries.



Back-up Trolleys with Hybrid Inverter

Code	HYTR-1K-100AHL	HYTR-1K 12VDC
AC Outputs		
Rated Power	1000W	
Output Voltage	230VAC/50Hz	
AC Outlets	1 x 3-pin SA, 1 x Schuko, 1 x N-type Sockets	
Charging		
230VAC Adaptor	Built-in Charger (IEC Inlet)	
PV Input	75V / 625W max	
Battery		
Capacity	100Ah/1280Wh	Excl. Batteries
Voltage	12VDC	12VDC
General		
Dimensions	540 x 465 x 240mm	
Packages Includes	AC Input Cable	

- UPS Function
- LCD Display of battery status
- Supplied without batteries. See page 5.36 for batteries
- Battery type selectable: Lithium or Lead Acid
- No PV Input



BTR-1K 12VDC



BTR-2K 24VDC

Back-up Trolleys with Inverter Charger

Code	BTR-1K 12VDC	BTR-2K 24VDC
AC Outputs		
Rated Power	1000VA/600W	2000VA/1200W
Output Voltage	230VAC/50Hz	
AC Outlets	1 x 3-pin SA	
Battery/Charging		
Nominal Voltage	12VDC	24VDC
Battery Type	Lead Acid / Lithium	Lead Acid / Lithium
Charging Current	10A / 15A (Selectable)	7A / 10A (Selectable)
General		
Dimensions (Battery Box)	360 x 260 x 450mm	405 x 350 x 625mm
Packages Includes	AC Input Cable	