

R*RICAMBI***&***RICAMBI***A**

ricambi accessori per carrelli elevatori
forklifts spare parts

CONVERTITORI DC/DC

AVVISATORI ACUSTICI

CARICABATTERIE

2013

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I convertitori DC/DC **RICAMBI & RICAMBI** sono progettati per essere impiegati nel settore della movimentazione elettrica, con accumulatori da 36 a 150 Volt.

Con i convertitori dc/dc si evitano collegamenti intermedi a 12 o 24 volt, che utilizzando solo alcuni elementi della batteria, ne provocano uno sbilanciamento di corrente e tensione pregiudicandone in tal modo la carica e l'efficienza, con il rischio di ridurre la durata e conseguenti costose spese per la riparazione ed eventuale sostituzione.

I convertitori dc/dc vengono impiegati per alimentare:

- Circuiti di servizio.
- Lampade rotanti e fari
- Avvisatori Acustici
- Elettrovalvole
- Ventole
- Accessori e strumentazione elettronica in genere.

RICAMBI & RICAMBI offre una vasta gamma di convertitori DC/DC.

Oltre ai convertitori standard, sono disponibili le versioni resinate IP65 e quelle galvanicamente isolate.

La nuova serie di converter IP65 sono stati progettati per soddisfare le correnti esigenze di mercato, ed oltre ad essere pienamente compatibili con la serie precedente, offrono adesso una adeguata protezione contro gli agenti atmosferici, rendendoli adatti anche all'installazione su carrelli che operano in zone con elevati tassi di umidità e polveri.



- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione**
(Protections: Short circuit / Overload / Over voltage)
- **Raffreddamento a ricircolo d'aria**
(Cooling by free air convection)
- **Collegamento con Faston o connettore Amp a 6 poli.**
(Faston or 6 pin Amp connector)
- **Intercambiabile con convertitori CESAB**
(Fully Interchangeable for CESAB forklift Truck)

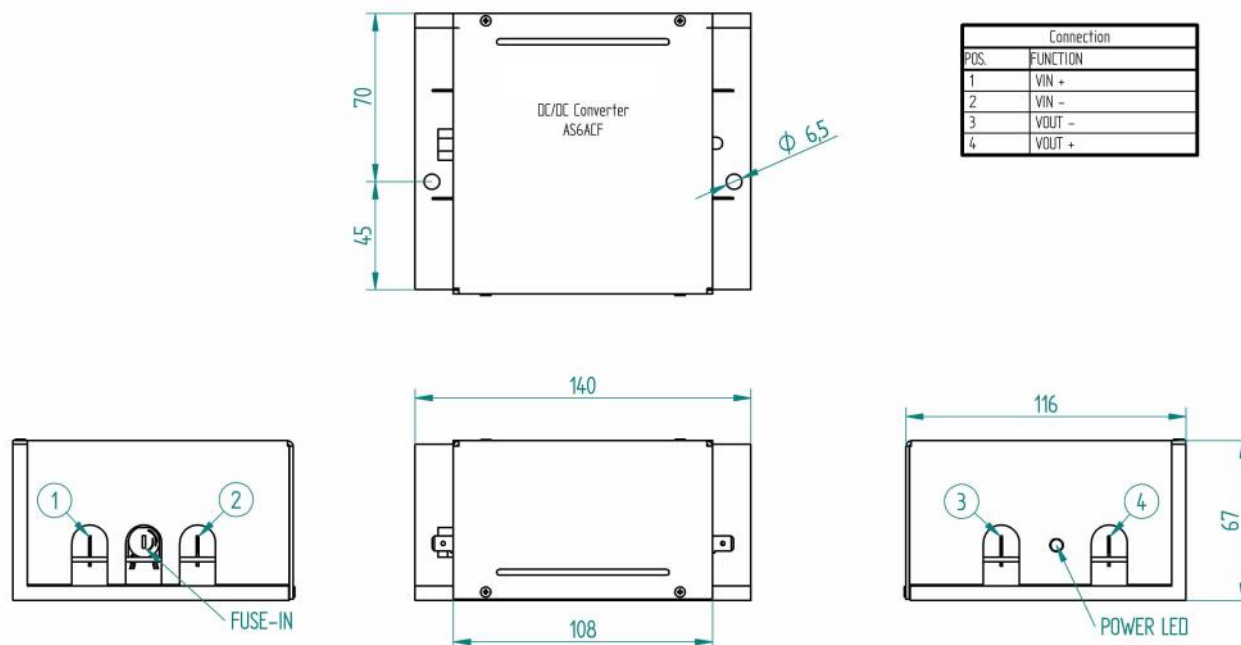


SPECIFICATION

MODEL		AS6ACF	AS6ACC	AS6ACF-12V	AS6ACC-12V
OUTPUT	DC VOLTAGE	24V		12V	
		Other output voltage are available on request			
	RATED CURRENT	6A			
	CURRENT RANGE	0 ~ 6A			
	RATED POWER	145W		75W	
	RIPPLE & NOISE (max.) n.1	100mV p-p			
	CONNECTION	FASTON	AMP CONNECTOR	FASTON	CONNECTOR
	VOLTAGE TOLERANCE n.2	± 0.1%			
	LOAD REGULATION	± 0.5%			
	CESAB CODE	0054860	2773040	/	
INPUT	VOLTAGE RANGE	36 ~ 150VDC			
	EFFICIENCY (Typ.)	90%			
	ENABLE BY CONTACT KEY	Optional			
PROTECTION	OVERLOAD	105 ~ 125% rated output Power			
		Protection type : Constant current limiting			
	OVER VOLTAGE	33V		18V	
		Protection type : Crowbar (SCR + fuse)			
	OVER TEMPERATURE	80°C ±5°C detect on heatsink of power transistor			
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down			
OTHER PROTECTION	Input Transient Protection – Input Reverse Polarity				
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH			
OTHERS	CE CERTIFICATION	Yes			
	DIMENSION	145*115*65mm (L*W*H)			
	WEIGHT	0,7 Kg			
NOTE	1. All parameters NOT specially mentioned are measured at 48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

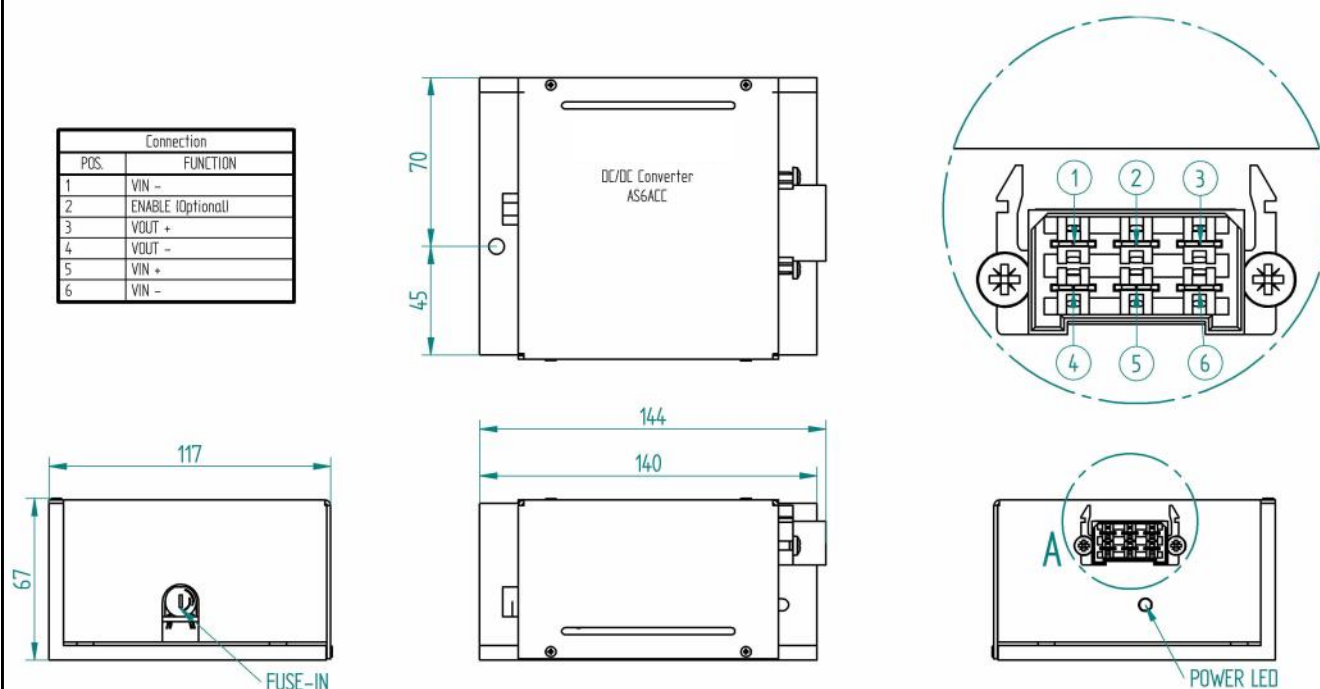
◆ **AS6ACF (0054860) Mechanical Specification**

Unit: mm



◆ **AS6ACC (2773040) Mechanical Specification**

Unit: mm





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione**
(Protections: Short circuit / Overload / Over voltage)
- **Raffreddamento a ricircolo d'aria forzato**
(Cooling by free air convection)
- **Collegamento con Faston o connettore Amp a 6 poli.**
(Faston or 6 pin Amp connector)
- **Intercambiabile con convertitori CESAB**
(Fully Interchangeable for CESAB forklift Truck)

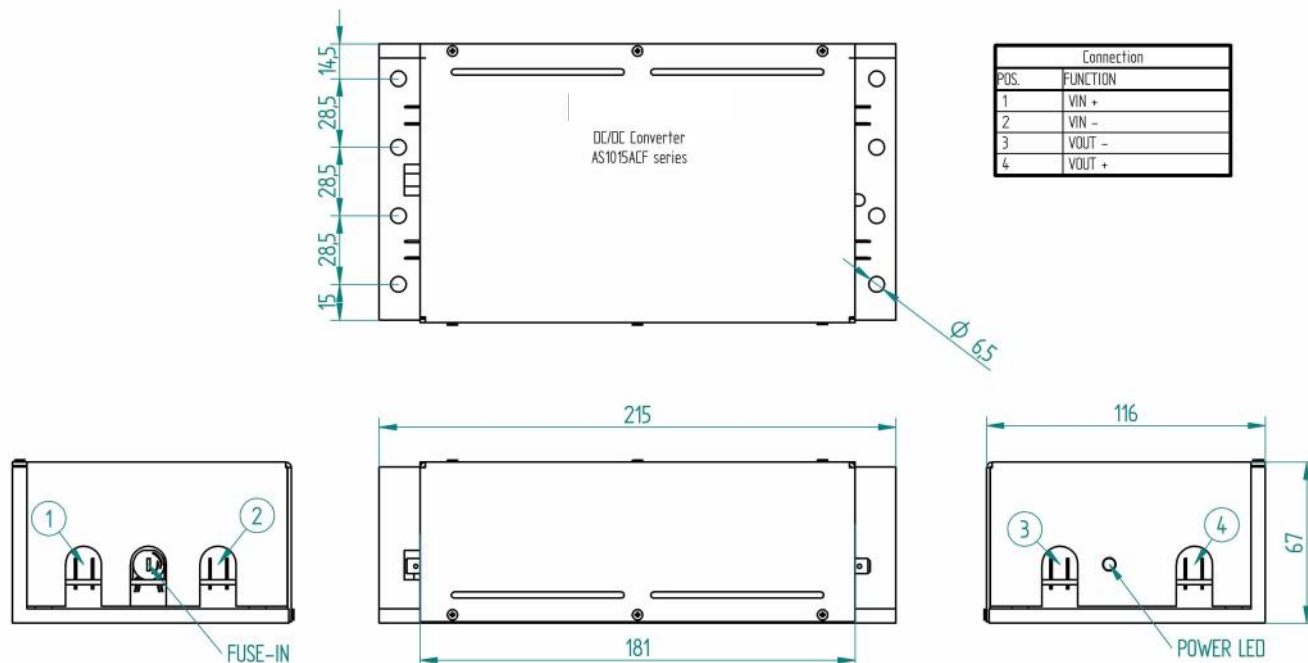
SPECIFICATION



MODEL		AS10ACF	AS15ACF	AS10ACC	AS15ACC	AS10ACF-12V	AS15ACF-12V	AS10ACC-12V	AS15ACC-12V
OUTPUT	DC VOLTAGE	24V				12V			
		Other output voltage are available on request							
	RATED CURRENT	10A	15A	10A	15A	10A	15A	10A	15A
	CURRENT RANGE	0 ~ 15A							
	RATED POWER	240W	360W	240W	360W	120W	180W	180W	180W
	RIPPLE & NOISE (max.) n.1	100mV p-p							
	CONNECTION	FASTON		AMP CONNECTOR		FASTON		CONNECTOR	
	VOLTAGE TOLERANCE n.2	± 0.1%							
	LOAD REGULATION	± 0.5%							
CESAB CODE	0054861	0054862	2773041	2773042	/	/	/	/	
INPUT	VOLTAGE RANGE	36 ~ 150VDC							
	EFFICIENCY (Typ.)	90%							
	ENABLE BY CONTACT KEY	Optional							
PROTECTION	OVERLOAD	105 ~ 125% rated output Power							
		Protection type : Constant current limiting							
	OVER VOLTAGE	33V				18V			
		Protection type : Crowbar (SCR + fuse)							
	OVER TEMPERATURE	80°C ±5°C detect on heatsink of power transistor							
OTHER PROTECTION	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH							
OTHERS	CE CERTIFICATION	Yes							
	DIMENSION	215*115*65mm (L*W*H)							
	WEIGHT	1,10 Kg							
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

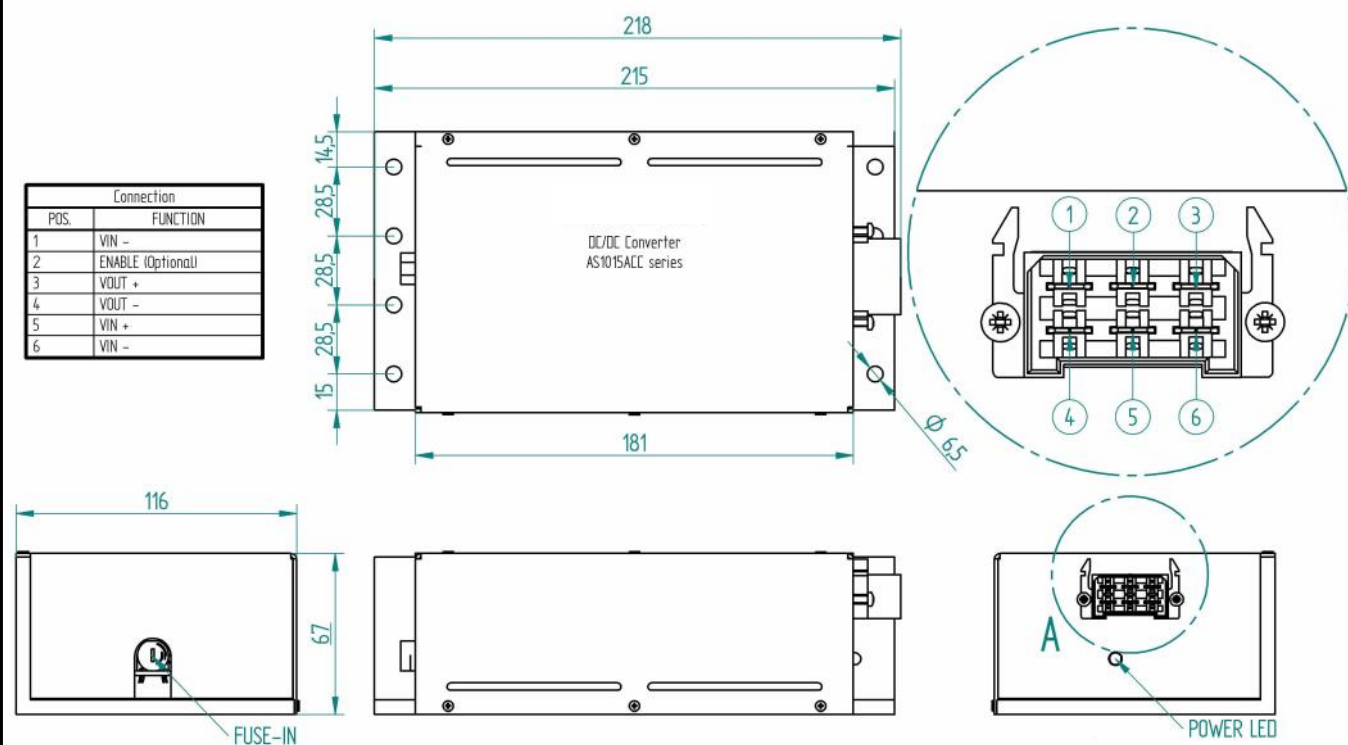
♦ **AS10-15ACF (0054861 - 0054862) Mechanical Specification**

Unit: mm



♦ **AS10-15ACC (2773041 - 2773042) Mechanical Specification**

Unit: mm





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione**
(Protections: Short circuit / Overload / Over voltage)
- **Raffreddamento a ricircolo d'aria forzato**
(Forced Air Cooling)
- **Collegamento con Faston o connettore Amp a 6 poli.**
(Faston or 6 pin Amp connector)
- **Intercambiabile con convertitori CESAB**
(Fully Interchangeable for CESAB forklift Truck)

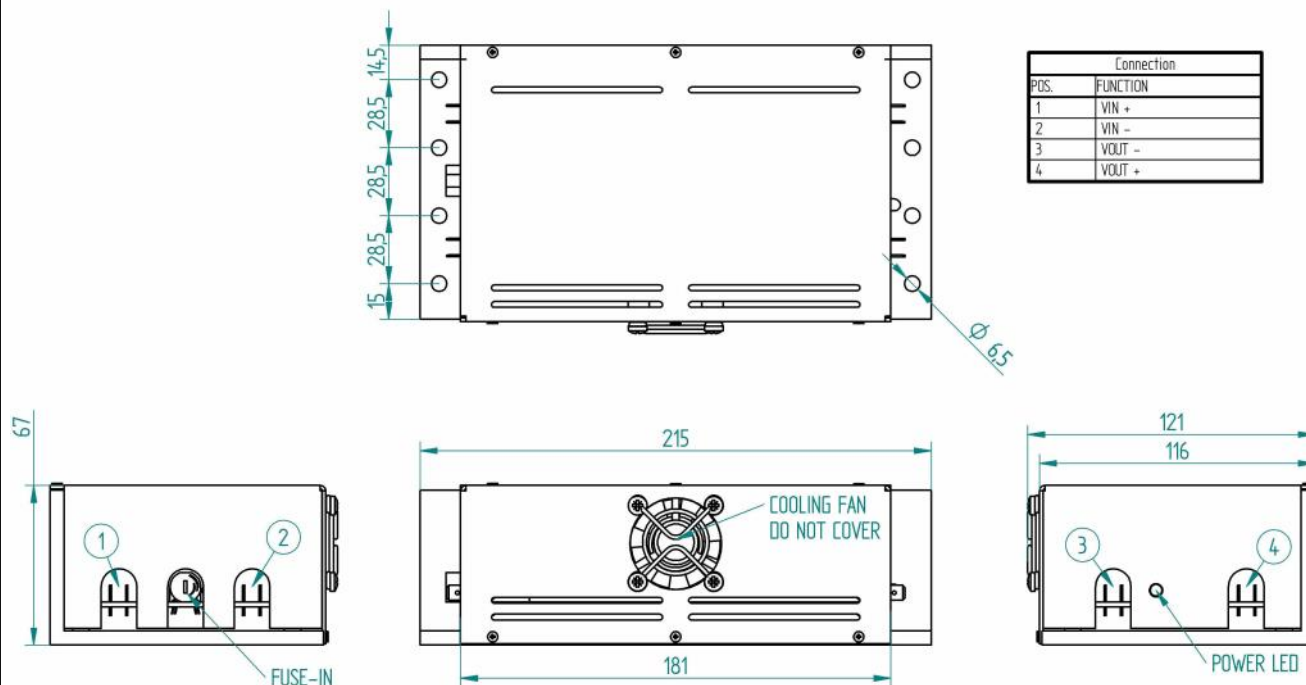


SPECIFICATION

MODEL		AS30ACF	AS40ACF	AS30ACC	AS40ACC	AS30ACF-12V	AS40ACF-12V	AS30ACC-12V	AS40ACC-12V
OUTPUT	DC VOLTAGE	24V				12V			
		Other output voltage are available on request							
	RATED CURRENT	30A	40A	30A	40A	30A	40A	30A	40A
	CURRENT RANGE	0 ~ 30A	0 ~ 40A	0 ~ 30A	0 ~ 40A	0 ~ 30A	0 ~ 40A	0 ~ 30A	0 ~ 40A
	RATED POWER	720W	960W	720W	960W	360W	480W	360W	480W
	RIPPLE & NOISE (max.) n.1	100mV p-p							
	CONNECTION	FASTON		AMP CONNECTOR		FASTON		CONNECTOR	
	VOLTAGE TOLERANCE n.2	± 0.1%							
	LOAD REGULATION	± 0.5%							
CESAB CODE	0054881	0054882	2773043	2773044	/	/	/	/	
INPUT	VOLTAGE RANGE	36 ~ 150VDC							
	EFFICIENCY (Typ.)	90%							
	ENABLE BY CONTACT KEY	Optional							
PROTECTION	OVERLOAD	105 ~ 125% rated output Power							
		Protection type : Constant current limiting							
	OVER VOLTAGE	33V				18V			
		Protection type : Crowbar (SCR + fuse)							
	OVER TEMPERATURE	80°C ±5°C detect on heatsink of power transistor							
OTHER PROTECTION	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH							
OTHERS	CE CERTIFICATION	Yes							
	DIMENSION	215*115*65mm (L*W*H)							
	WEIGHT	1,60 Kg							
NOTE	1. All parameters NOT specially mentioned are measured at 48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

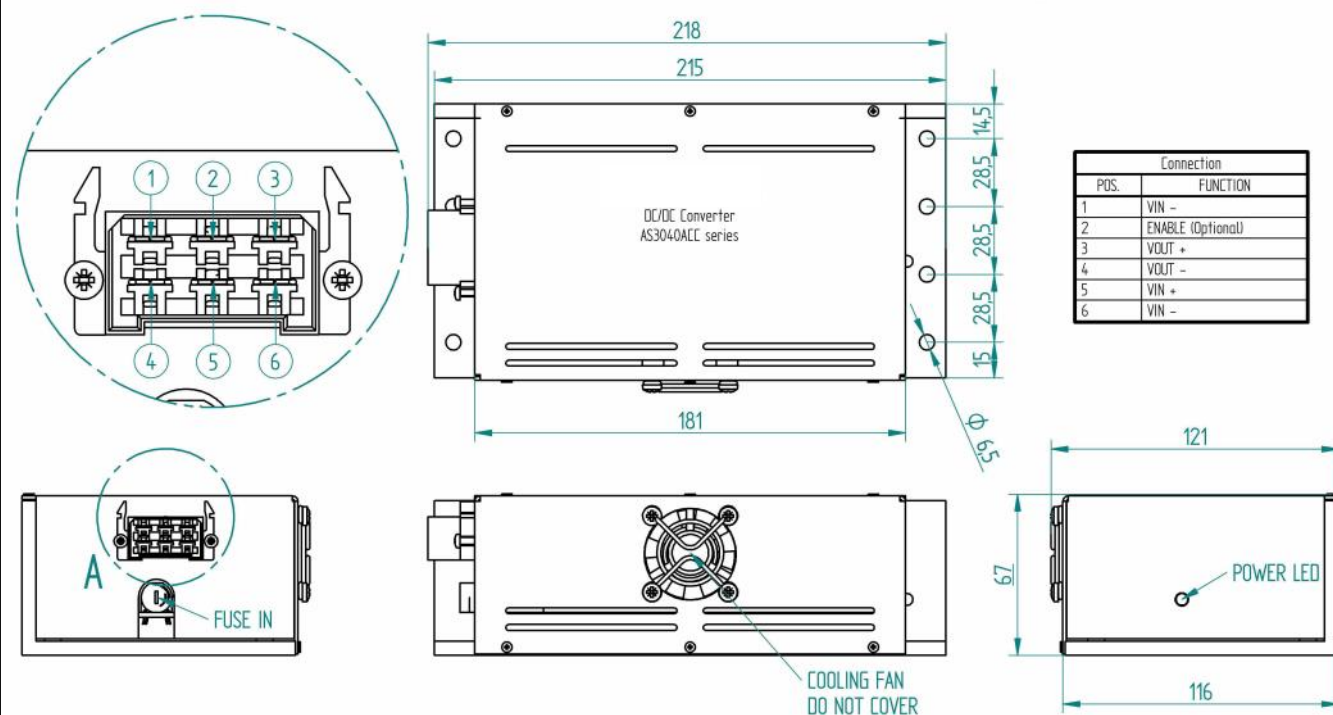
◆ **AS30-40ACF (0054881 - 0054882) Mechanical Specification**

Unit: mm



◆ **AS30-40ACC (2773043 - 2773044) Mechanical Specification**

Unit: mm





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura**
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- **Protezione IP65**
(IP65 Protection degree)

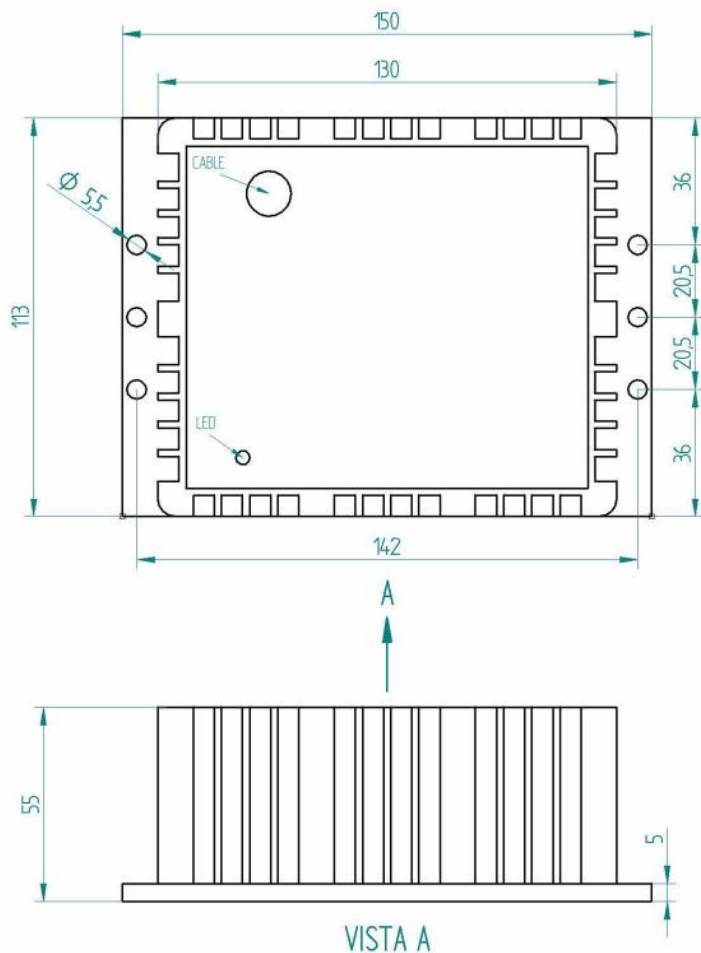


SPECIFICATION

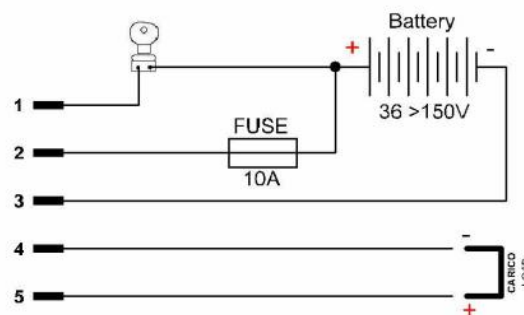
MODEL		AS6A24VT	AS10A24VT	AS12A24VT	AS6A12VT	AS10A12VT	AS12A12VT
OUTPUT	DC VOLTAGE	24V			12V		
		Other output voltage are available on request					
	RATED CURRENT	6A	10A	12,5A	6A	10A	12,5A
	CURRENT RANGE	0 ~ 6A	0 ~ 10A	0 ~ 12,5A	0 ~ 6A	0 ~ 10A	0 ~ 12,5A
	RATED POWER	145W	240W	300W	72W	120W	150W
	RIPPLE & NOISE (max.) n.1	100mV p-p					
	VOLTAGE TOLERANCE n.2	± 0.1%					
LOAD REGULATION	± 0.5%						
INPUT	VOLTAGE RANGE	36 ~ 150VDC (18 ~ 36 VDC available on request)					
	EFFICIENCY (Typ.)	90%					
	ENABLE BY CONTACT KEY	Yes					
PROTECTION	OVERLOAD	105 ~ 125% rated output Power					
		Protection type : Constant current limiting					
	OVER VOLTAGE	33V			18V		
		Protection type : Crowbar (provide external fuse on +VIN)					
	OVER TEMPERATURE	70°C ±5°C internal					
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down					
OTHER PROTECTION	Input Transient Protection – Input Reverse Polarity						
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH					
OTHERS	CE CERTIFICATION	Yes					
	CASE DIMENSION	130*113*55 (L*W*H)					
	WEIGHT	1,50 Kg					
NOTE	1. All parameters NOT specially mentioned are measured at 48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.						

◆ **Mechanical Specification**

Unit: mm



Connections		
POSITION	COLOR	FUNCTION
1	Bianco (White)	ENABLE
2	Rosso (Red)	+ VIN
3	Nero (Black)	- VIN
4	Blu (Blue)	- VOUT
5	Marrone (Brown)	+ VOUT





- Ampio range di tensione in ingresso
(Wide input range)
- Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- Protezione IP65
(IP65 Protection degree)

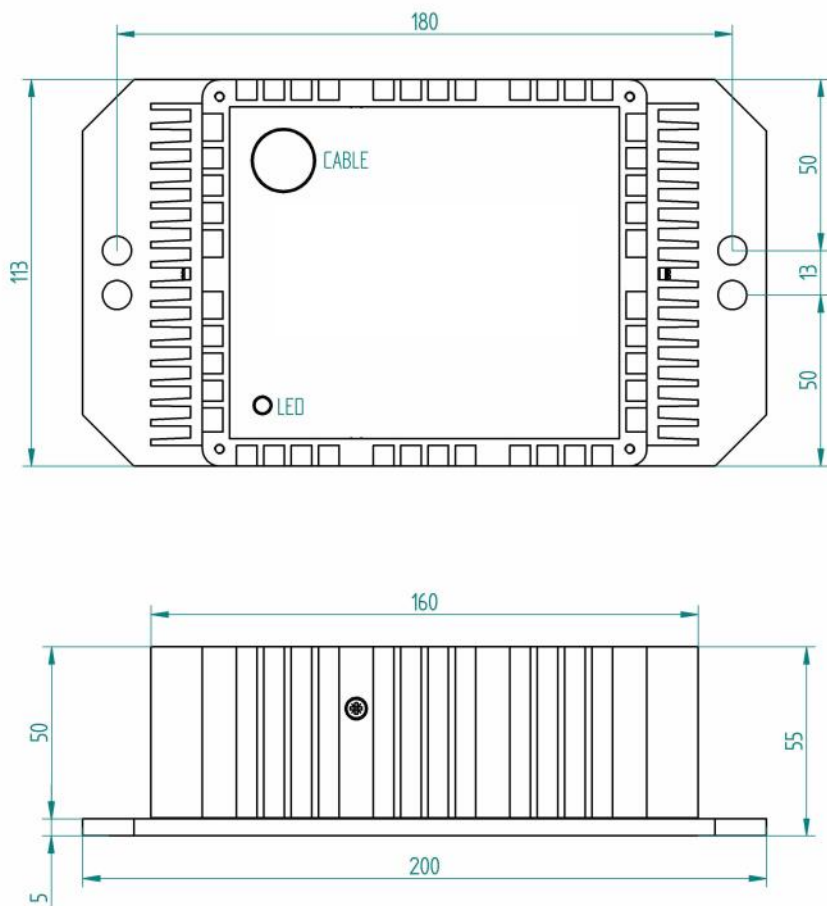


SPECIFICATION

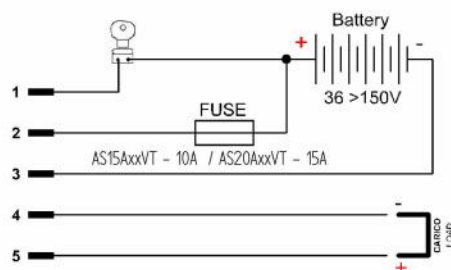
MODEL		AS15A24VT	AS20A24VT	AS15A12VT	AS20A12VT
OUTPUT	DC VOLTAGE	24V		12V	
		Other output voltage are available on request			
	RATED CURRENT	15A	20A	15A	20A
	CURRENT RANGE	0 ~ 15A	0 ~ 20A	0 ~ 15A	0 ~ 20A
	RATED POWER	360W	480W	180W	240W
	RIPPLE & NOISE (max.) n.1	100mV p-p			
	VOLTAGE TOLERANCE n.2	± 0.1%			
	LOAD REGULATION	± 0.5%			
INPUT	VOLTAGE RANGE	36 ~ 150VDC			
	EFFICIENCY (Typ.)	90%			
	ENABLE BY CONTACT KEY	Yes			
PROTECTION	OVERLOAD	105 ~ 125% rated output Power			
		Protection type : Constant current limiting			
	OVER VOLTAGE	33V		18V	
		Protection type : Crowbar (provide external fuse on +VIN)			
	OVER TEMPERATURE	70°C ±5°C internal			
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down			
OTHER PROTECTION	Input Transient Protection – Input Reverse Polarity				
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH			
OTHERS	CE CERTIFICATION	Yes			
	CASE DIMENSION	160*113*55(15A) – 160*113*70(20A) (L*W*H)			
	WEIGHT	1,70 Kg (15A) - 1,90 Kg (20A)			
NOTE	1. All parameters NOT specially mentioned are measured at 48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

♦ **Mechanical Specification**

Unit: mm



Connections		
POSITION	COLOR	FUNCTION
1	Bianco (White)	ENABLE
2	Rosso (Red)	+ VIN
3	Nero (Black)	- VIN
4	Blu (Blue)	- VOUT
5	Marrone (Brown)	+ VOUT





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura**
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- **Protezione IP65**
(IP65 Protection degree)

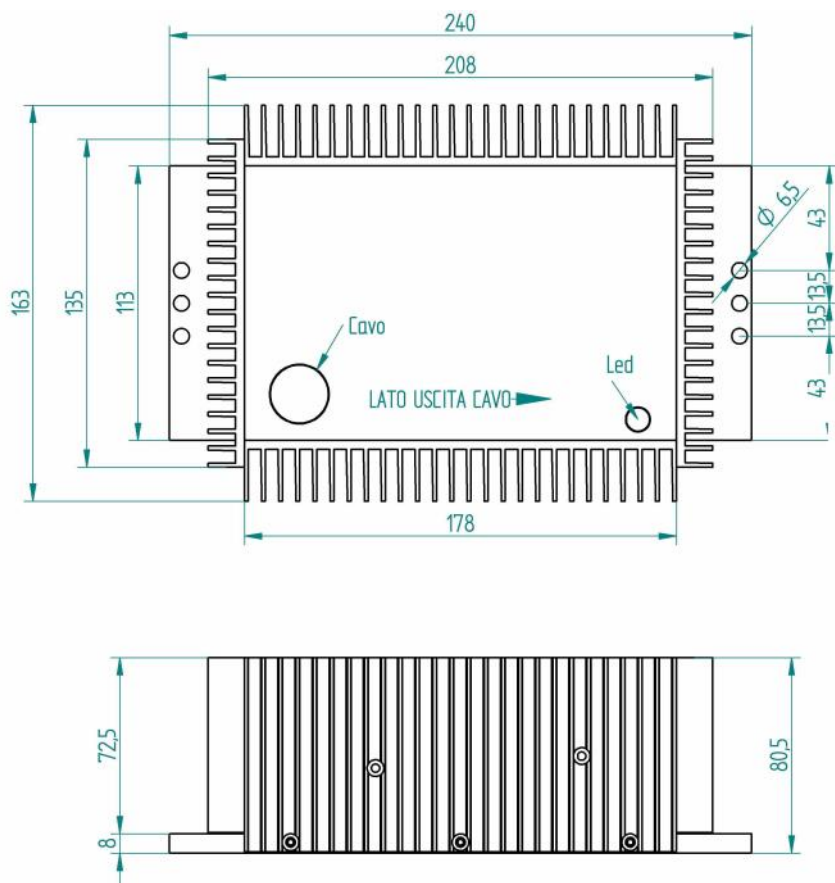


SPECIFICATION

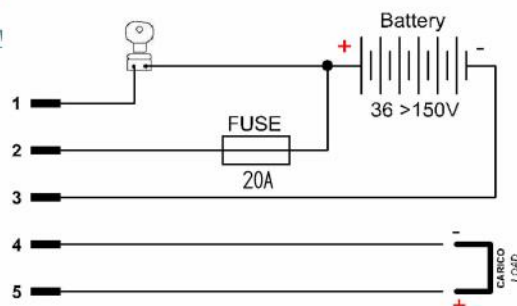
MODEL		AS30A24VT	AS30A12VT
OUTPUT	DC VOLTAGE	24V	12V
		Other output voltage are available on request	
	RATED CURRENT	30A	
	CURRENT RANGE	0 ~ 30A	
	RATED POWER	720W	360W
	RIPPLE & NOISE (max.) n.1	100mV p-p	
	VOLTAGE TOLERANCE n.2	± 0.1%	
INPUT	LOAD REGULATION	± 0.5%	
	VOLTAGE RANGE	36 ~ 150VDC	
	EFFICIENCY (Typ.)	90%	
	ENABLE BY CONTACT KEY	Yes	
PROTECTION	OVERLOAD	105 ~ 125% rated output Power	
		Protection type : Constant current limiting	
	OVER VOLTAGE	33V	18V
		Protection type : Crowbar (SCR + FUSE)	
	OVER TEMPERATURE	70°C ±5°C internal	
ENVIRONMENT		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
	OTHER PROTECTION	Input Transient Protection – Input Reverse Polarity	
	WORKING TEMP.	-20 ~ +60°C	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
OTHERS	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH	
	CE CERTIFICATION	Yes	
	CASE DIMENSION	215*160*80 (L*W*H)	
NOTE	WEIGHT	4 Kg	
		1. All parameters NOT specially mentioned are measured at 48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.	

◆ **Mechanical Specification**

Unit: mm



Connections		
POSITION	COLOR	FUNCTION
1	Bianco (White)	ENABLE
2	Rosso (Red)	+ VIN
3	Nero (Black)	- VIN
4	Blu (Blue)	- VOUT
5	Marrone (Brown)	+ VOUT





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura**
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- **Isolamento Galvanico tra: Ingresso / Uscita / Involucro**
(Input / Output / Case Insulation)
- **Protezione IP65**
(IP65 Protection Degree)

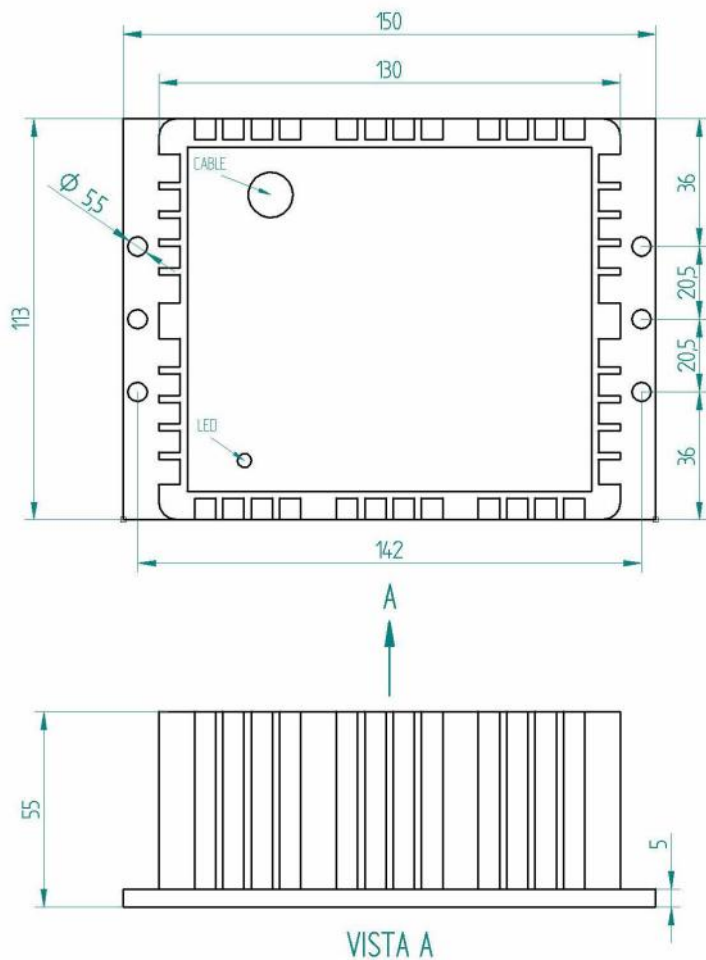


SPECIFICATION

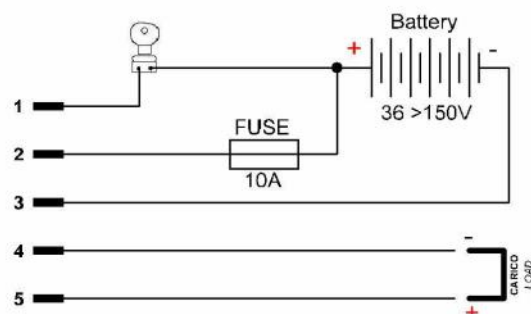
MODEL		ASIS150W12	ASIS150W24
OUTPUT	DC VOLTAGE	12V	24V
	RATED CURRENT	12,5A	7A
	CURRENT RANGE	0 ~ 12,5A	0 ~ 7A
	RATED POWER	150W	165W
	RIPPLE & NOISE (max.) n.1	120mV p-p	
	VOLTAGE TOLERANCE n.2	± 1%	
	LOAD REGULATION	± 1%	
INPUT	VOLTAGE RANGE	50 ~ 100VDC	
	EFFICIENCY (Typ.)	88%	
ENABLE BY CONTACT KEY		Yes	
PROTECTION	OVERLOAD	105 ~ 125% rated output Power	
		Protection type : Constant current limiting	
	OVER TEMPERATURE	75°C ±5°C Internal	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
	OTHER PROTECTION	Input Transient Protection – Input Reverse Polarity	
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH	
OTHERS	CE CERTIFICATION	Yes	
	CASE DIMENSION	130*113*55mm (L*W*H)	
	WEIGHT	1,5 Kg	
NOTE	1. All parameters NOT specially mentioned are measured at 48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.		

◆ **Mechanical Specification**

Unit: mm



Connections		
POSITION	COLOR	FUNCTION
1	Bianco (White)	ENABLE
2	Rosso (Red)	+ VIN
3	Nero (Black)	- VIN
4	Blu (Blue)	- VOUT
5	Marrone (Brown)	+ VOUT





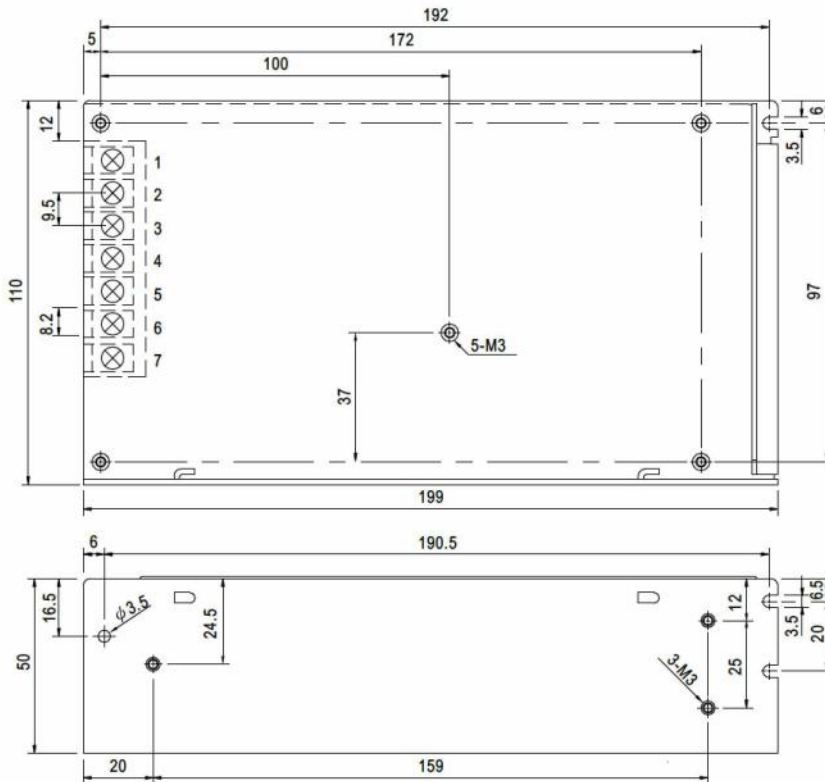
- **Ampio range di tensione in ingresso**
(2:1 Wide input range)
- **Protezione contro corto circuito, sovraccarico e sovratensione**
(Protections: Short circuit / Overload / Over voltage)
- **Isolamento Galvanico tra Ingresso / Uscita / Involucro**
(Input / Output case Insulation)
- **Filtro EMI Integrato e basso valore di ripple**
Built-in EMI Filter, low ripple noise
- **Raffreddamento a ricircolo d'aria**
Cooling by free air convection

SPECIFICATION



MODEL		ASI150B-12	ASI150C-12	ASI150D-12	ASI150B-24	ASI150C-24	ASI150D-24
OUTPUT	DC VOLTAGE	12V			24V		
	RATED CURRENT	12.5A			6.3A		
	CURRENT RANGE	0 ~ 12.5A			0 ~ 6.3A		
	RATED POWER	150W			151.2W		
	RIPPLE & NOISE (max.) n.2	120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	11 ~ 16VDC			23 ~ 30VDC		
	VOLTAGE TOLERANCE n.3	± 1.0%			± 1.0%		
	LINE REGULATION	± 0.5%			± 0.3%		
	LOAD REGULATION	±0.5%			±0.3%		
INPUT	VOLTAGE RANGE	19 ~ 36VDC	36 ~ 72VDC	72 ~ 144VDC	19 ~ 36VDC	36 ~ 72VDC	72 ~ 144VDC
	EFFICIENCY (Typ.)	75%	77%	79%	77%	80%	82%
	DC CURRENT (Typ.)	6.8A/24V	3.4A/48V	2.7A/96V	6.8A/24V	3.4A/48V	2.7A/96V
PROTECTION	OVERLOAD	105 ~ 135% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	16.8 ~ 20V/10% load			31.5 ~ 37.5V/10% load		
Protection type : Hiccup mode, recovers automatically after fault condition is removed							
ENVIRONMENT	WORKING TEMP.	-10 ~ +60°C (Refer to output load derating curve)					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP. / HUM.	-20 ~ +85°C, 10 ~ 95% RH					
SAFETY & EMC (n.3)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV (for D type only)					
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH					
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B					
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; light industry level, criteria A					
OTHERS	MTBF	296.2K hrs min.(ASI150B)		289.9K hrs min.(ASI150C)	289K Hrs min.(ASI150D)		
	DIMENSION	199*110*50mm (L*W*H)					
	WEIGHT	0.86 Kg.					
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.						

Mechanical Specification



Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1,2	INPUT ※	4,5	DC OUTPUT -V
3	FG	6,7	DC OUTPUT +V

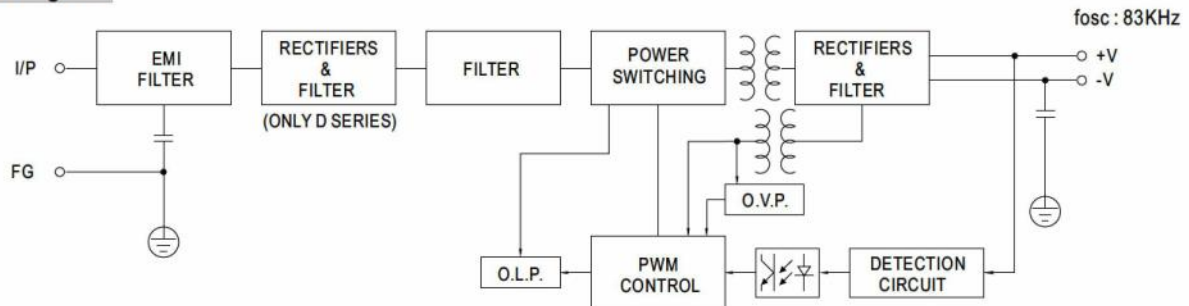
※ SD-150B,C

Pin No.	Assignment
1	DC INPUT V+
2	DC INPUT V-

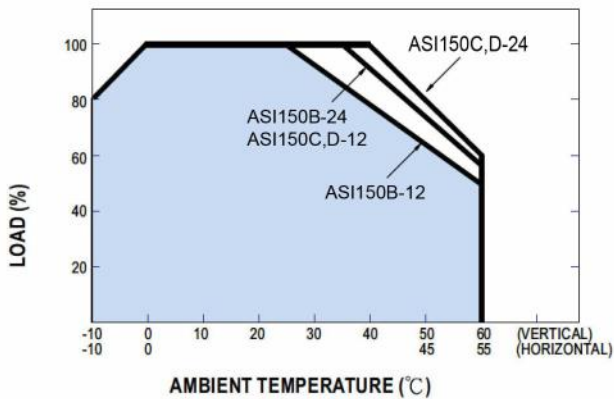
※ SD-150D

Pin No.	Assignment
1,2	AC/DC INPUT

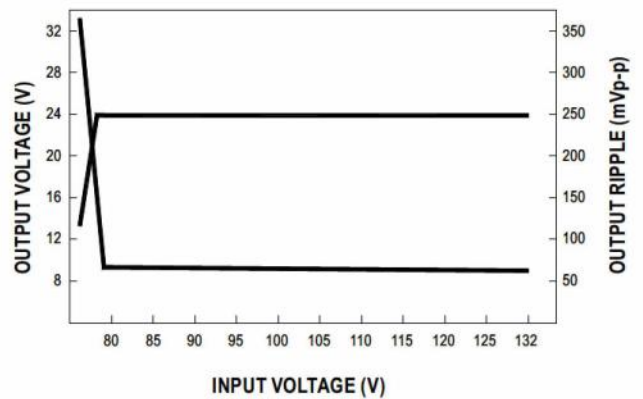
Block Diagram



Derating Curve



Static Characteristics (24V)





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura**
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- **Isolamento Galvanico tra Ingresso / Uscita / Involucro**
(Input / Output case Insulation)
- **Filtro EMI Integrato e basso valore di ripple**
Built-in EMI Filter, low ripple noise
- **Raffreddamento a ricircolo d'aria forzato**
Forced Air Cooling

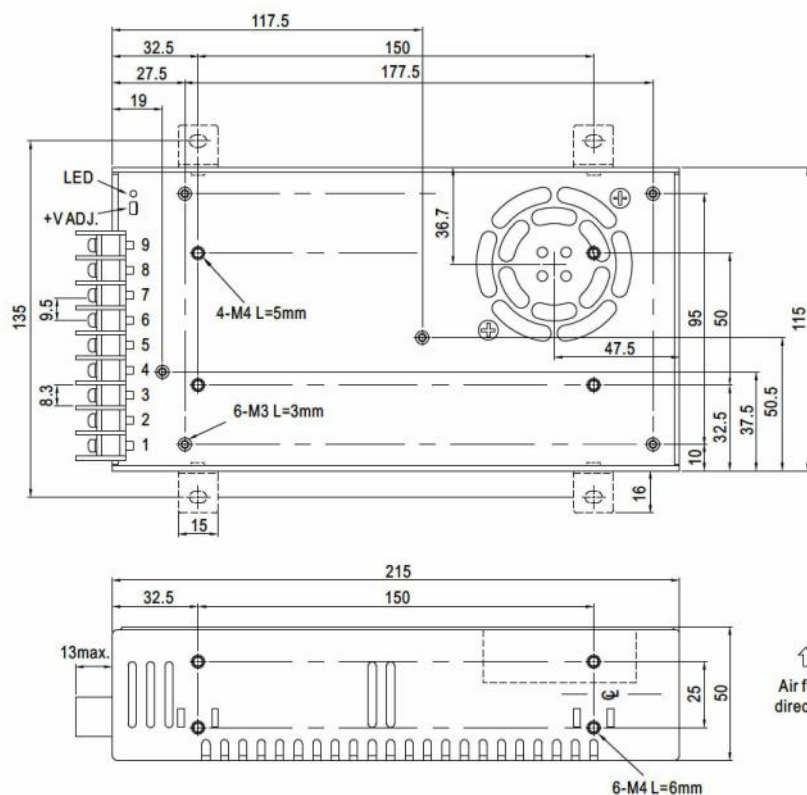


SPECIFICATION

MODEL		ASI350B-12	ASI350C-12	ASI350D-12	ASI350B-24	ASI350C-24	ASI350D-24
OUTPUT	DC VOLTAGE	12			24		
	RATED CURRENT	27,5A		29,2A	14,6A		
	CURRENT RANGE	0 ~ 27,5A	0 ~ 27,5A	0 ~ 29,2A	0 ~ 14,6A		
	RATED POWER	330W	330W	350W	350W		
	RIPPLE & NOISE (max.) n.2	120mV p-p			150mV p-p		
	VOLTAGE ADJ. RANGE	11 ~ 16			23 ~ 30		
	VOLTAGE TOLERANCE n.3				± 1.0 %		
	LINE REGULATION	± 0.3 %			± 0.2 %		
LOAD REGULATION	± 1.0 %						
INPUT	VOLTAGE RANGE	19 ~ 36 VDC	36 ~ 72 VDC	72 ~ 144 VDC	19 ~ 36 VDC	36 ~ 72 VDC	72 ~ 144 VDC
	EFFICIENCY (Typ.)	80%	81%	83%	80%	81%	87%
PROTECTION	OVERLOAD	105 ~ 135% rated output power					
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER VOLTAGE	17 ~ 20V			31.5 ~ 37.5V		
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER TEMPERATURE	80°C ±5°C detect on heatsink of power transistor					
Protection type : Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C (Refer to output load derating curve)					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH					
SAFETY & EMC (n.3)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV					
	WITHSTAND VOLTAGE	I/P-O/P:2KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC 25°C 70%RH					
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B					
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; ENV50204, light industry level, criteria A					
OTHERS	MTBF	209.4K hrs min.					
	DIMENSION	215*115*50mm (L*W*H)					
	WEIGHT	1.1Kg					
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.						

Mechanical Specification

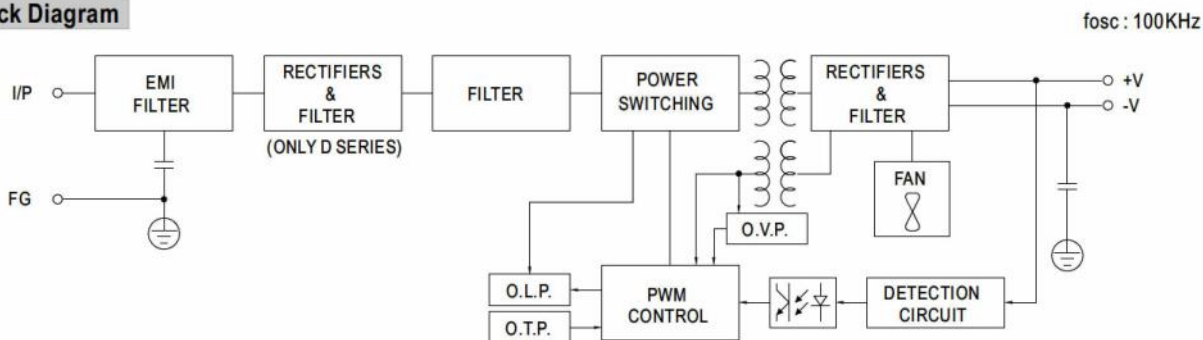
Unit:mm



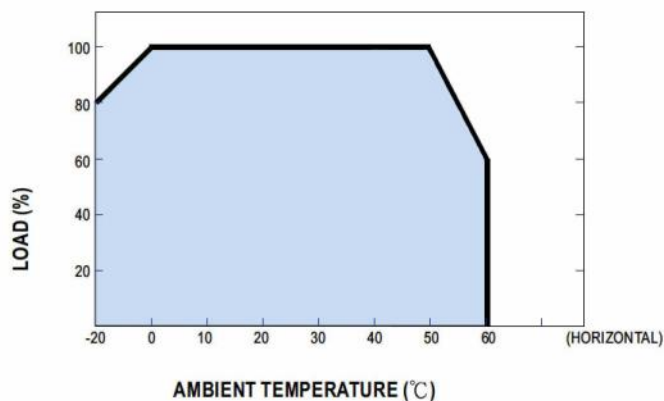
Terminal Pin No. Assignment :

Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4,5,6	DC OUTPUT V-
2	DC INPUT V-	7,8,9	DC OUTPUT V+
3	FG $\perp$		

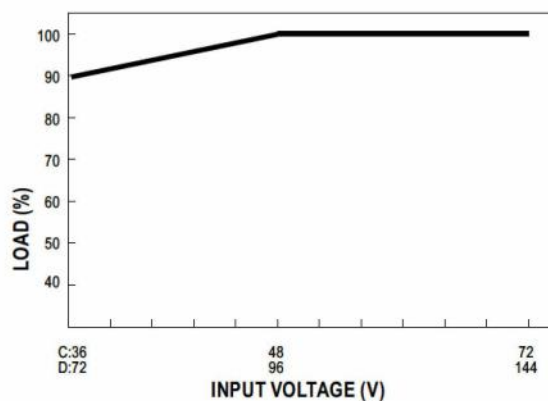
Block Diagram



Derating Curve



Static Characteristics





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura**
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- **Isolamento Galvanico tra Ingresso / Uscita / Involucro**
(Input / Output case Insulation)
- **Filtro EMI Integrato e basso valore di ripple**
Built-in EMI Filter, low ripple noise
- **Raffreddamento a ricircolo d'aria forzato**
Forced Air Cooling

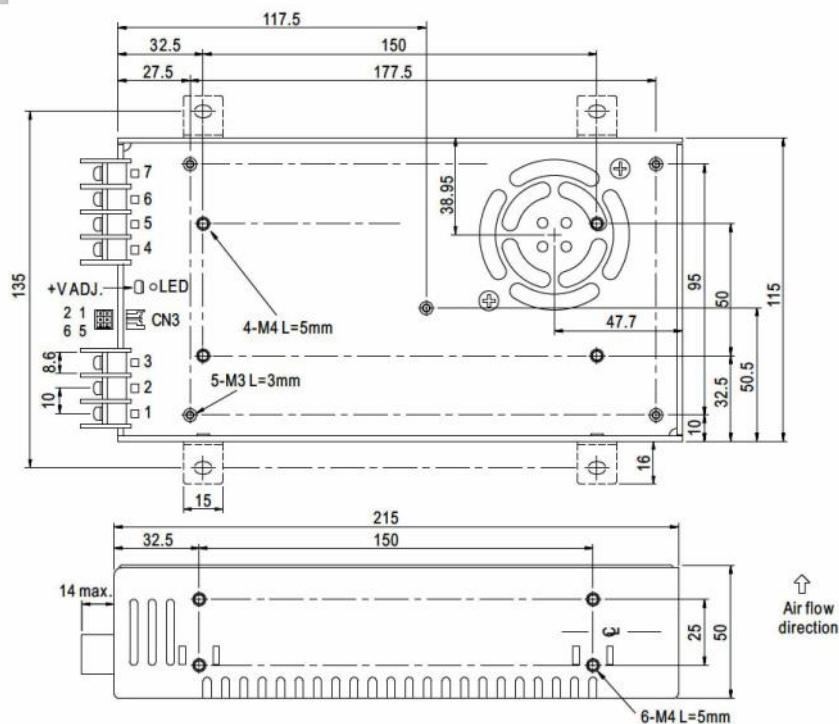


SPECIFICATION

MODEL		ASI500L-12	ASI500H-12	ASI500L-24	ASI500H-24
OUTPUT	DC VOLTAGE	12		24	
	RATED CURRENT	40A		21A	
	CURRENT RANGE	0 ~ 40A		0 ~ 21A	
	RATED POWER	480W		504W	
	RIPPLE & NOISE (max.) n.2	150mV p-p			
	VOLTAGE ADJ. RANGE	11 ~ 15		23 ~ 30	
	VOLTAGE TOLERANCE n.3	± 1.0 %			
	LINE REGULATION	± 0.5 %			
	LOAD REGULATION	± 0.5 %			
INPUT	VOLTAGE RANGE	19 ~ 72 VDC	72 ~ 144 VDC	19 ~ 72 VDC	72 ~ 144 VDC
	EFFICIENCY (Typ.)	86%	87%	88%	89%
PROTECTION	OVERLOAD	105 ~ 125% rated output power			
		Protection type : Constant current limiting, shut down o/p voltage after about 5 sec., re-power on to recover			
	OVER VOLTAGE	16 ~ 19V		31 ~ 35V	
		Protection type : Shut down o/p voltage, re-power on to recover			
	OVER TEMPERATURE	80°C ±5°C detect on heatsink of power transistor			
Protection type : Shut down o/p voltage, recovers automatically after temperature goes down					
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH			
SAFETY & EMC (n.3)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV			
	WITHSTAND VOLTAGE	I/P-O/P:2KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC 25°C 70%RH			
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B			
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; ENV50204, light industry level, criteria A			
OTHERS	MTBF	196.3K hrs min.			
	DIMENSION	215*115*50mm (L*W*H)			
	WEIGHT	1.15Kg			
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives				

Mechanical Specification

Unit:mm



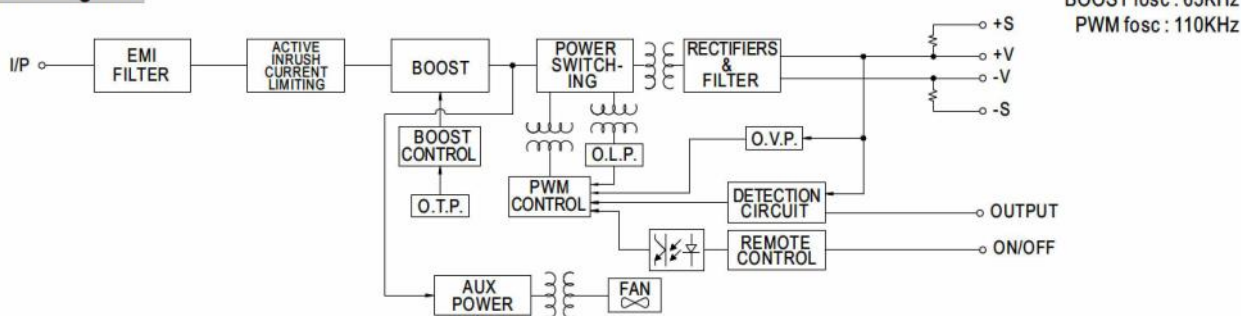
DC Input Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4,5	-V
2	DC INPUT V-	6,7	+V
3	FG $\perp$		

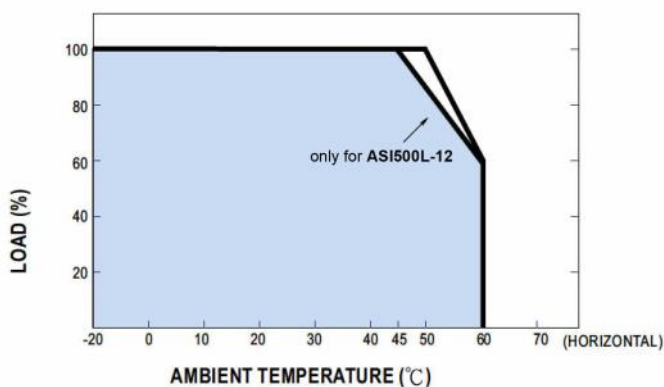
Control Pin No. Assignment (CN3) : HRS DF11-6DP-2DS or equivalent

Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	+S	4	GND	HRS DF11-6DS or equivalent	JST SPHD-002T-P0.5 or equivalent
2	-S	5	RC		
3	OUTPUT OK	6	RCG		

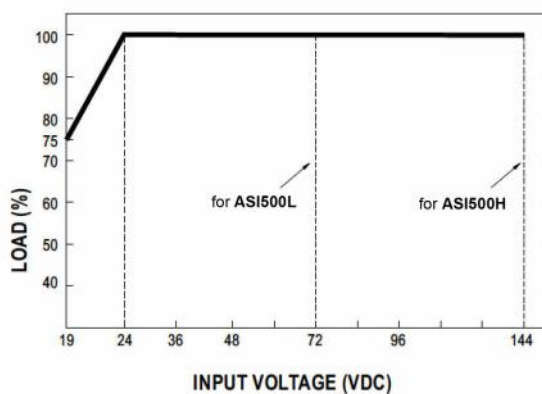
Block Diagram



Derating Curve



Static Characteristics





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezioni: corto circuito, sovraccarico, sovratensione, sovratemperatura**
(Protections: Short circuit / Overload / Over voltage / OverTemperature)
- **Isolamento Galvanico tra Ingresso / Uscita / Involucro**
(Input / Output case Insulation)
- **Filtro EMI Integrato e basso valore di ripple**
Built-in EMI Filter, low ripple noise
- **Raffreddamento a ricircolo d'aria forzato**
Forced Air Cooling

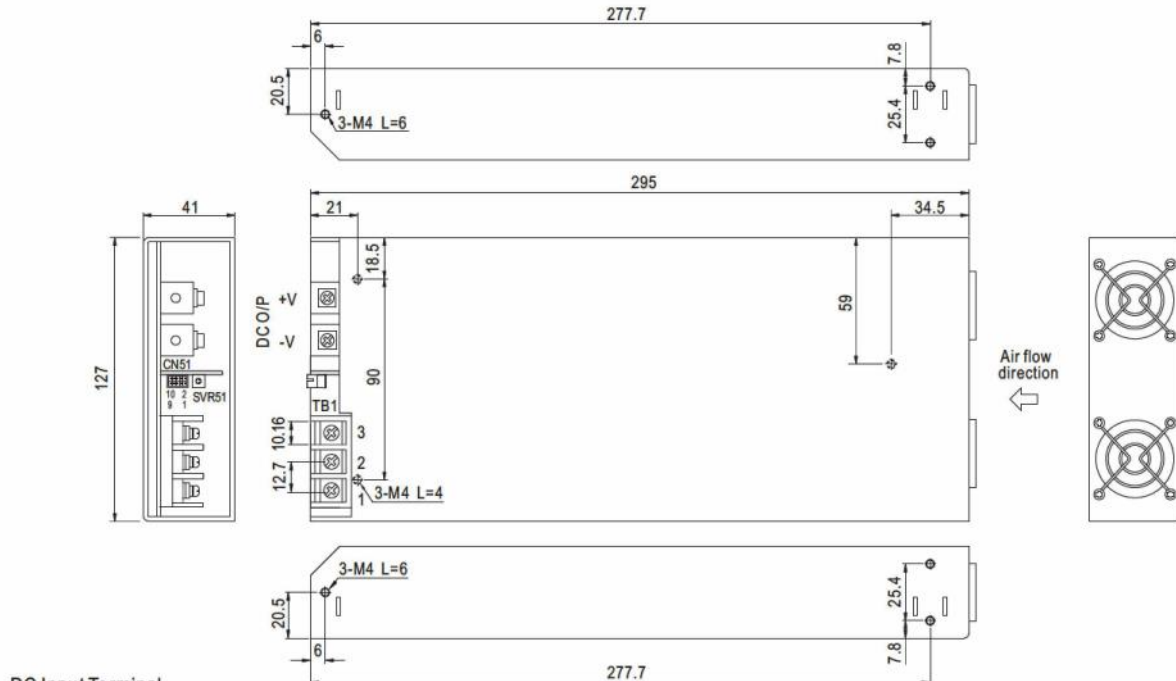
SPECIFICATION



MODEL		ASI1000L-12		ASI1000H-12		ASI1000L-24		ASI1000H-24	
OUTPUT	DC VOLTAGE	12V				24V			
	RATED CURRENT	60A				40A			
	CURRENT RANGE	0 ~ 60A				0 ~ 40A			
	RATED POWER	720W				960W			
	RIPPLE & NOISE (max.) n.2	150mVp-p							
	VOLTAGE ADJ. RANGE	11 ~ 15V				23 ~ 30V			
	VOLTAGE TOLERANCE n.3	±1.0%							
	LINE REGULATION	±0.5%							
	LOAD REGULATION	±0.5%							
INPUT	VOLTAGE RANGE	19 ~ 72VDC				72 ~ 144VDC			
	EFFICIENCY (Typ.)	84%		85%		88%		89%	
PROTECTION	OVERLOAD	105 ~ 125% rated output power							
		Protection type : Constant current limiting, unit will shut down o/p voltage after about 5sec. Re-power on to recover							
	OVER VOLTAGE	16 ~ 19V				31 ~ 35V			
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	85°C ±5°C (TSW2) detect on heatsink of O/P diode; 75°C ±5°C (TSW1) detect on heatsink of power transistor							
	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH							
SAFETY & EMC (n.3)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV							
	WITHSTAND VOLTAGE	I/P-O/P:2KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25 / 70% RH							
	EMI EMISSION	Compliance to EN55022 (CISPR22)							
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A							
OTHERS	MTBF	106.7K hrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	295*127*41mm (L*W*H)							
	WEIGHT	1.94Kg							
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25 of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.								

■ Mechanical Specification

Unit:mm



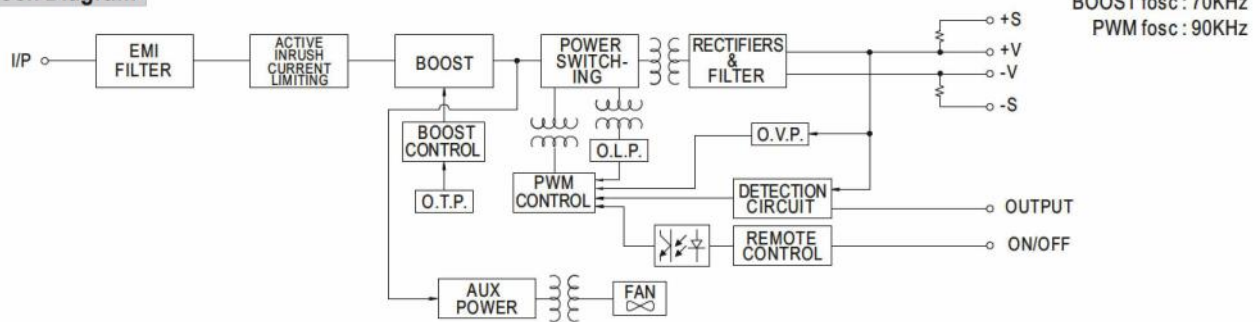
DC Input Terminal
Pin No. Assignment

Pin No.	Assignment
1	DC INPUT V+
2	DC INPUT V-
3	FG $\equiv$

Control pin number assignment (CN51) : HRS DF11-10DP-2DS or equivalent

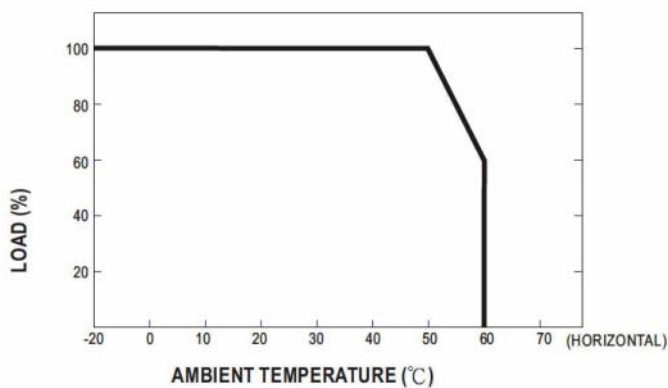
Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	+S	5	AUX	9	RCG	HRS DF11-10DS or equivalent	JST SPHD-002T-P0.5 or equivalent
2	-S	6	AUXG	10	NC		
3	OUTPUT OK	7	RC1				
4	GND	8	RC2				

■ Block Diagram

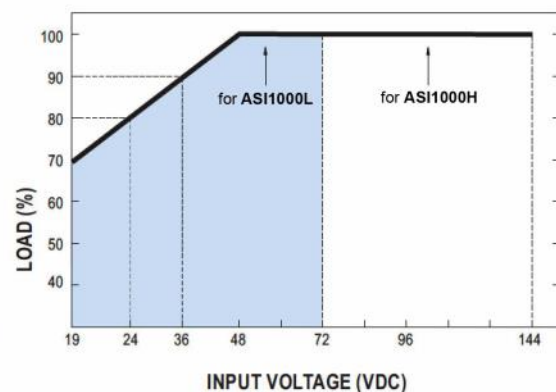


BOOST fosc : 70KHz
PWM fosc : 90KHz

■ Derating Curve



■ Static Characteristics





- **Ingresso 10 ~ 28 VDC**
(10~28 VDC Input)
- **Protezione IP66**
(IP66 Protection degree)
- **Collegamento con Faston**
(Faston Connection)
- **Intensità Sonora Regolabile**
(Adjustable Sound Pressure)

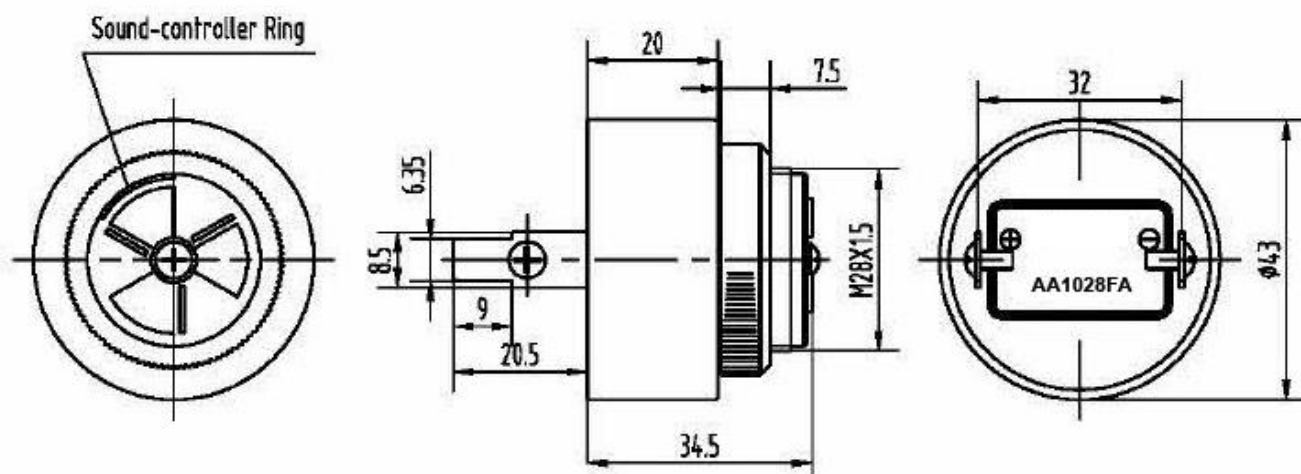


SPECIFICATION

MODEL		AA1028FA
INPUT	VOLTAGE RANGE	10 ~ 28VDC
	DC CURRENT max	22 mA
SOUND	SOUND PRESSURE	92dB at 60cm (max)
	SOUND FREQUENCY	3000Hz ±10%
PROTECTION	INTERNAL PROTECTION	IP66
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH
OTHERS	CE CERTIFICATION	Yes
	CASE MATERIAL	Black ABS
	DIMENSION	View mechanical specification
	WEIGHT	35 g.

MECHANICAL SPECIFICATION

Unit: mm





- **Ampio range di tensione in ingresso**
(Wide input range)
- **Protezione contro inversione di polarità**
(Protections: Reverse Polarity)
- **Protezione IP66**
(IP66 Protection degree)
- **Collegamento con Faston**
(Faston Connection)
- **Intensità Sonora Regolabile**
(Adjustable Sound Pressure)

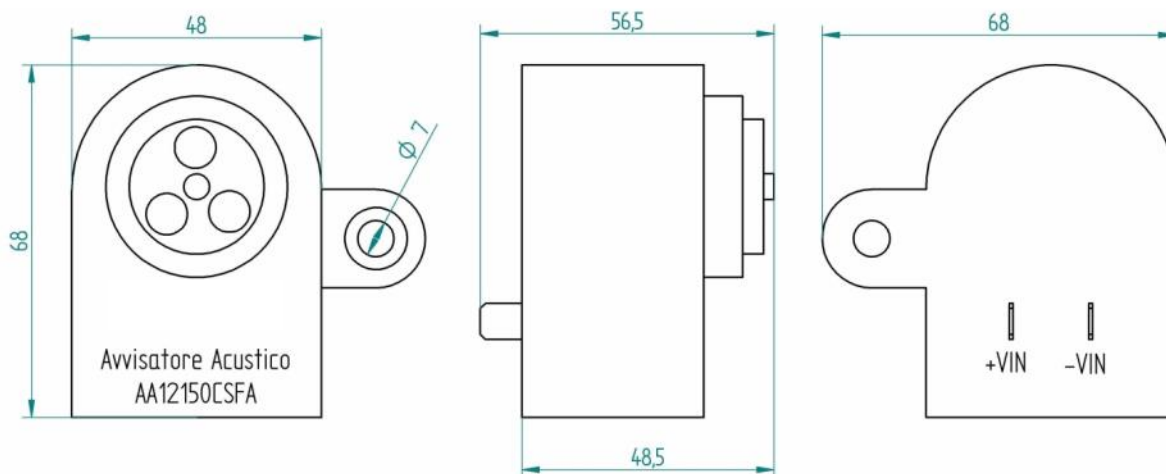
SPECIFICATION



MODEL		AA12150CSFA
INPUT	VOLTAGE RANGE	12 ~ 150VDC
	DC CURRENT max	< 25mA
SOUND	SOUND PRESSURE	92dB at 60cm (max)
	SOUND FREQUENCY	3000Hz ±10%
PROTECTION	REVERSE POLARITY	By diode
	INTERNAL PROTECTION	IP66
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP. / HUM.	-40 ~ +85°C , 10 ~ 95% RH
OTHERS	CE CERTIFICATION	Yes
	CASE MATERIAL	Black ABS
	DIMENSION	View mechanical specification
	WEIGHT	0,15 Kg

MECHANICAL SPECIFICATION :

Unit: mm





- **Carica a 3 Stadi**
3 Stage Charging
- **Alimentazione AC 115/230VAC selezionabile tramite commutatore**
AC 115/230VAC selected by switch
- **Protezioni: Corto Circuito, Inversione di Polarità, Over voltage, Surriscaldamento**
Protection: Short Circuit, Reverse Polarity, Over voltage, Over Temperature
- **Ideale per la carica di batterie Piombo-Acido**
Charger for lead-acid batteries
- **Raffreddamento a ricircolo d'aria**
Cooling by free air convection

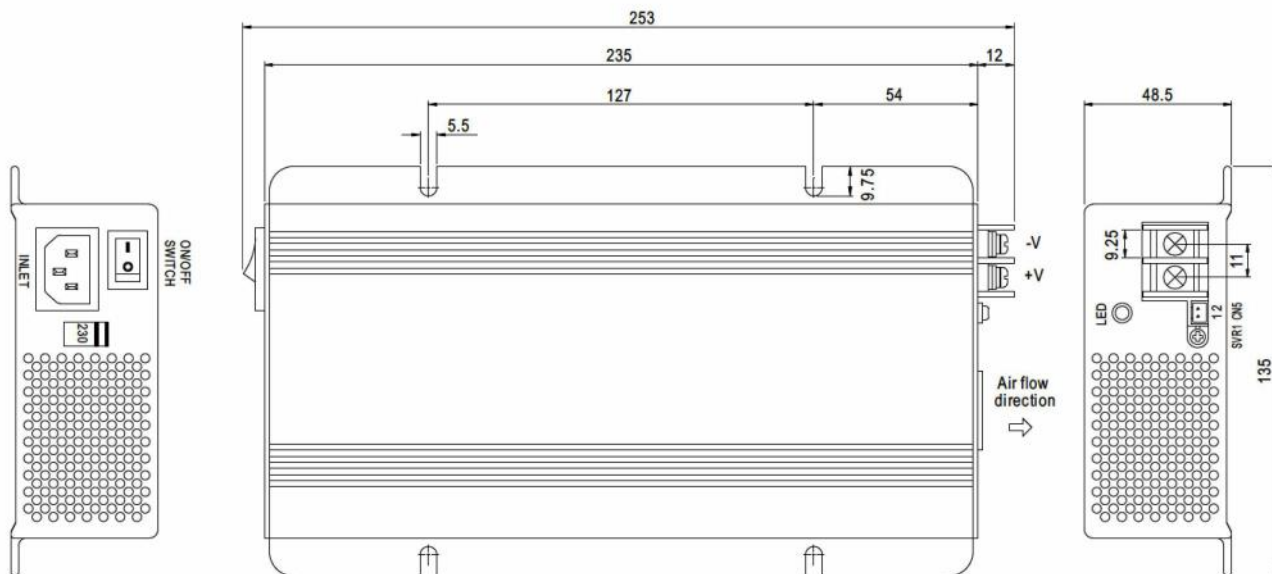


SPECIFICATION

MODEL		CBSA300P-12	CBSA300P-24	CBSA300P-48
OUTPUT	BOOST CHARGE VOLTAGE	14.4V	28.8V	57.6V
	FLOAT CHARGE VOLTAGE	13.6V	27.2V	54.4V
	VOLTAGE ADJUSTABLE RANGE	13 ~ 14.7V	26 ~ 28.8V	52 ~ 58.6V
	RECOMMENDED BATTERY CAPACITY (AMP HOURS)	60 ~ 200Ah	30 ~ 100Ah	15 ~ 50Ah
	BATTERY TYPE	Open & Sealed Lead Acid		
	MAX. OUTPUT CURRENT	20.85A	10.5A	5.3A
	CONTINUOUS OUTPUT CURRENT	12.5A	6.25A	3.2A
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC selected by switch		
	EFFICIENCY (Typ.)	85%	86%	88%
	AC CURRENT (Typ.)	6A/115 VAC - 3A/230 VAC		
	POWER FACTOR (Typ.)	>0.65 at 230 VAC		
PROTECTION	OVERVOLTAGE	16 ~ 18V	31 ~ 35V	59 ~ 64V
		Protection type : Shut down o/p voltage, re-power on to recover		
	SHORT CIRCUIT	O/P Built in fuse (FS100) to protect short circuit condition, shut down o/p voltage and can not re-power on		
	REVERSE POLARITY	by Internal Fuse		
	OVER TEMPERATURE	Protection type : Automatically derate charge current until zero		
ENVIRONMENT	WORKING TEMP.	-10 ~ +50°C (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP. / HUM.	-40 ~ +85°C, 10 ~ 95% RH		
SAFETY & EMC	SAFETY STANDARDS	IEC60335-2-29 CB approved by TUV(except for 48V), UL60950-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH		
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B		
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level, criteria A		
OTHERS	MTBF	115.8Khrs min. MIL-HDBK-217F (25°C)		
	DIMENSION	253*135*48.5mm(L*W*H)		
	WEIGHT	1.45 Kg		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.			

Mechanical Specification

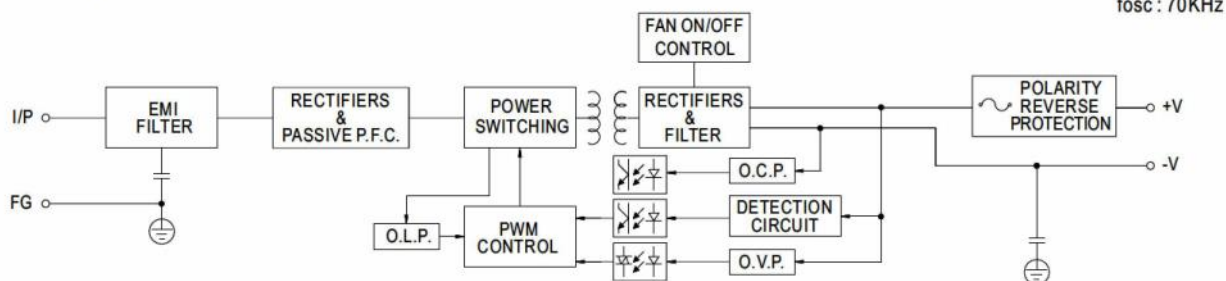
Unit:mm



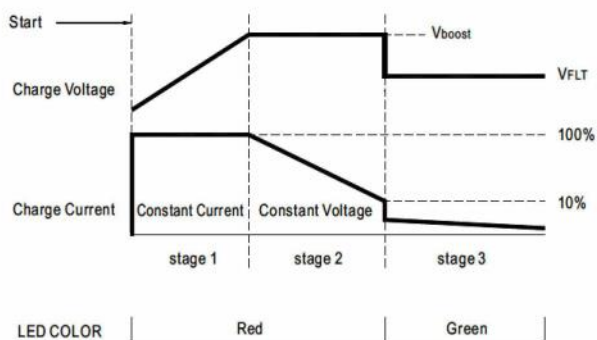
Remote Control(CN5) : JST B2B-XH or equivalent

Assignment	Mating Housing	Terminal
PIN1,2 Open: Normal work	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
PIN1,2 Short: Stop Charging		

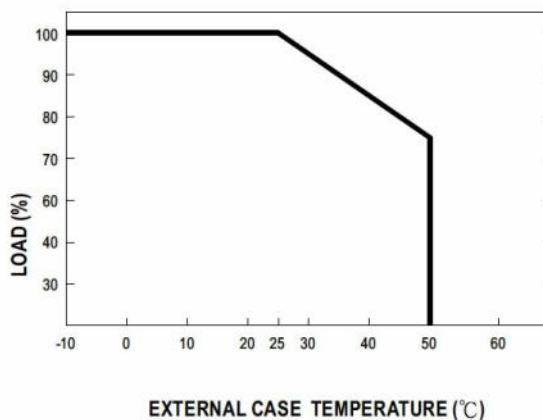
Block Diagram



Charging Curve



Output Load VS Temperature





- **Modalità di carica selezionabile a 2, 3 o 8 Stadi**
Selectable 2 / 3 / 8 Stage Charging
- **Ingresso AC universale**
Universal AC Input
- **Protezioni: Corto Circuito, Inversione di Polarità, Over voltage, Surriscaldamento**
Protection: Short Circuit, Reverse Polarity, Over voltage, Over Temperature
- **Ideale per la carica di batterie Piombo-Acido**
Charger for lead-acid batteries
- **Funzione di compensazione in base alla temperature della batteria**
Built-In Temperature Compensation Function

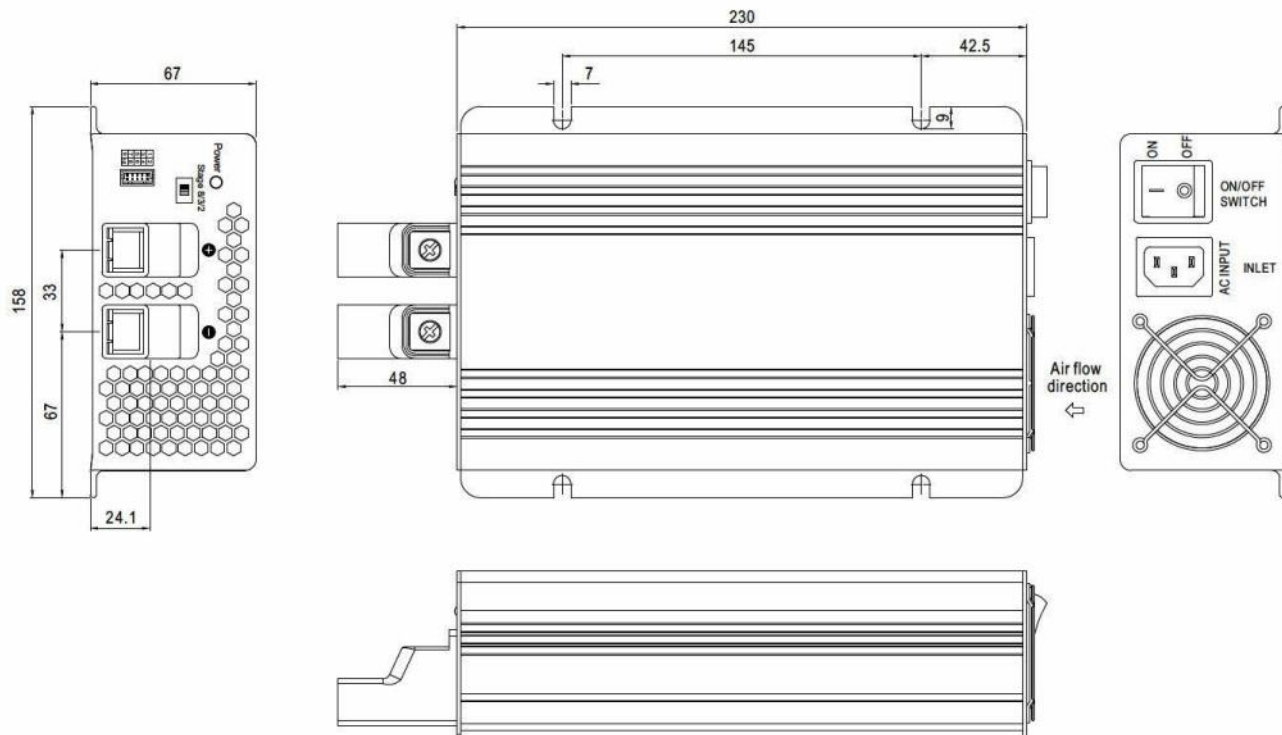


SPECIFICATION

MODEL		CBSA600P-12	CBSA600P-24	CBSA600P-48
OUTPUT	BOOST CHARGE VOLTAGE	14.4V	28.8V	57.6V
	FLOAT CHARGE VOLTAGE	13.8V	27.6V	55.2V
	RECOMMENDED BATTERY CAPACITY (AMP HOURS)	135 ~ 400Ah	70 ~ 210Ah	35 ~ 105Ah
	BATTERY TYPE	Open & Sealed Lead Acid		
	MAX. OUTPUT CURRENT	40A	21A	10.5A
INPUT	VOLTAGE RANGE	90 ~ 264VAC		
	EFFICIENCY (Typ.)	86%	87%	89%
	AC CURRENT (Typ.)	6.8A/115 VAC - 3.4A/230 VAC		
	POWER FACTOR (Typ.)	0.95 at 230 VAC - 0.98 at 115 VAC at full load		
PROTECTION	OVERVOLTAGE	16 ~ 18V	32 ~ 35V	64.5 ~ 69.5V
		Protection type : Shut down o/p voltage, re-power on to recover		
	SHORT CIRCUIT	O/P Built in fuse to protect short circuit condition, shut down o/p voltage and can not re-power on		
	REVERSE POLARITY	by Internal Fuse		
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down		
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP. / HUM.	-40 ~ +85°C, 10 ~ 95% RH		
SAFETY & EMC	SAFETY STANDARDS	UL1012, TUV EN60335-1, EN60335-2-29 (except for 48V), EN60950-1(48V only) approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.8KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH		
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22), EN61000-3-2,-3		
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024; light industry level, criteria A		
OTHERS	MTBF	135.6Khrs min. MIL-HDBK-217F (25°C)		
	DIMENSION	230*158*67mm(L*W*H)		
	WEIGHT	2.2 Kg		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 3. Please choose the "3 stage" selection when the charger is used to charge the batteries and power the loads in the same time.			

■ Mechanical Specification

Unit:mm



Control Pin No. Assignment(CN100) : HRS DF11-10DP-2DS or equivalent

Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1,2	RY13	8	NTC(5K Ω)	HRS DF11-10DS or equivalent	HRS DF11-10SC or equivalent
3,4	NC	9	RC-		
5,6	RY15	10	RC+		
7	GND				

RY13 : Battery bank OK

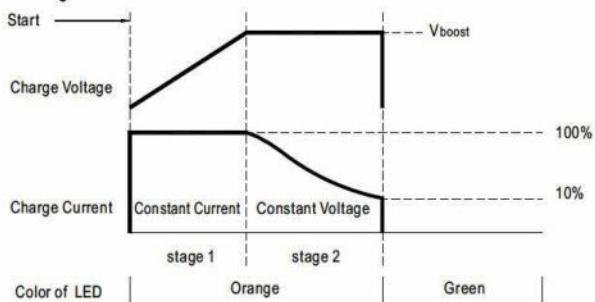
RY15 : Charging OK

NTC / GND : Temperature sense

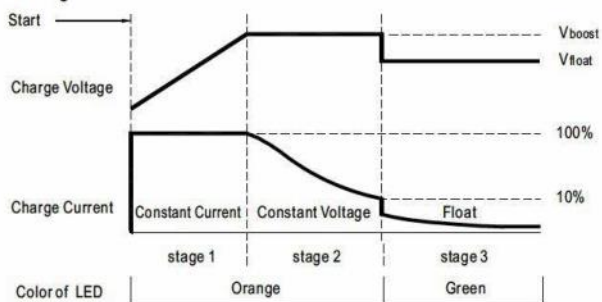
RC+ / RC-: Remote ON/OFF

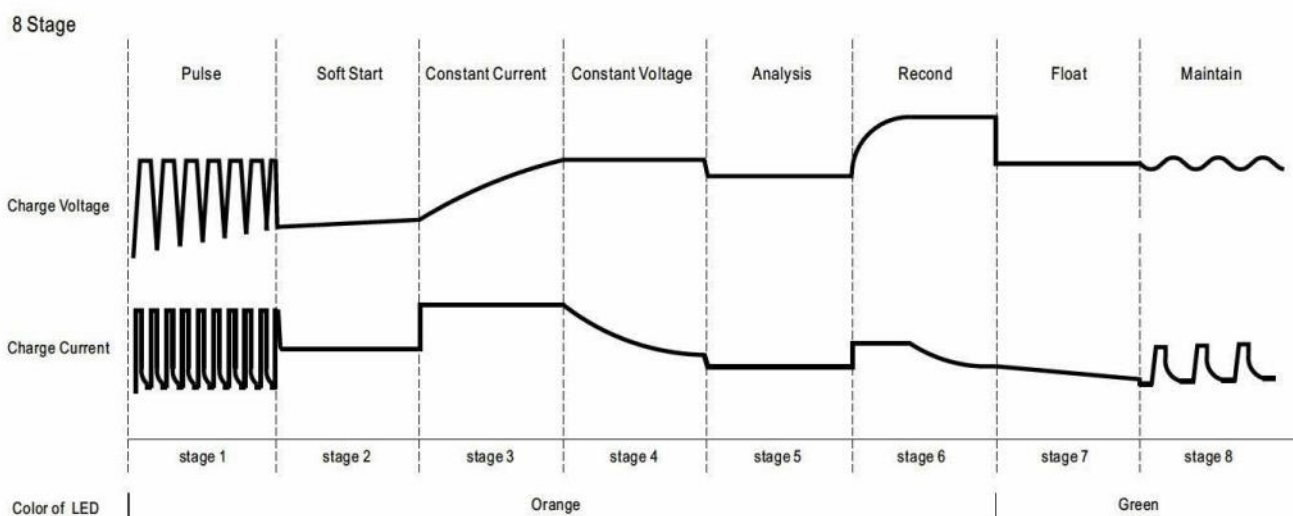
■ Charging Curve

2 Stage

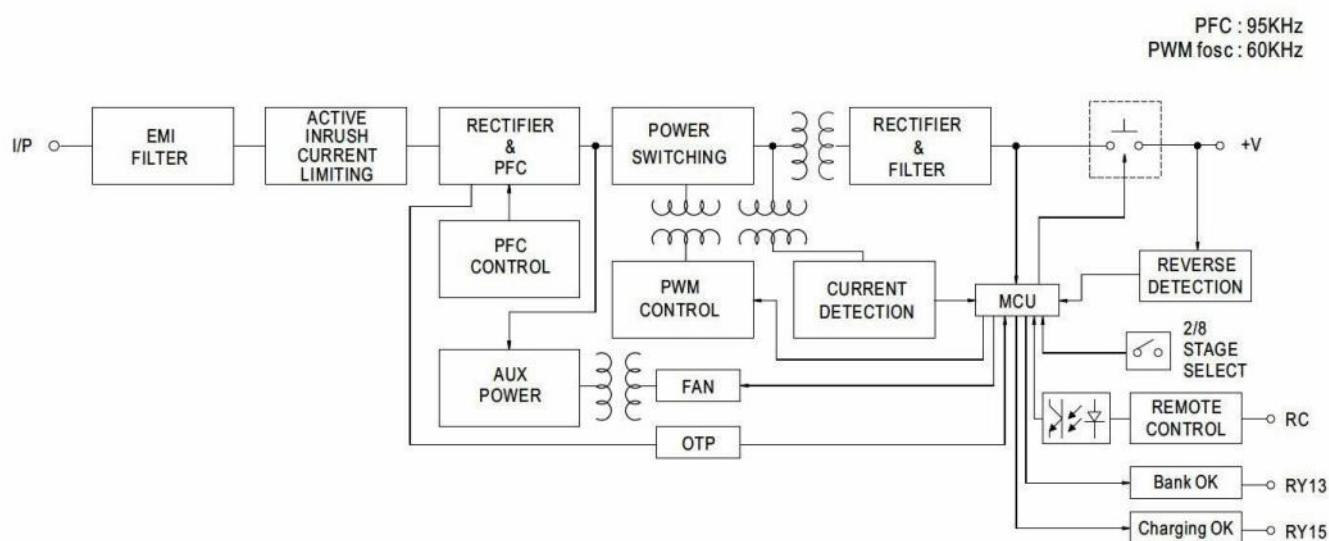


3 Stage

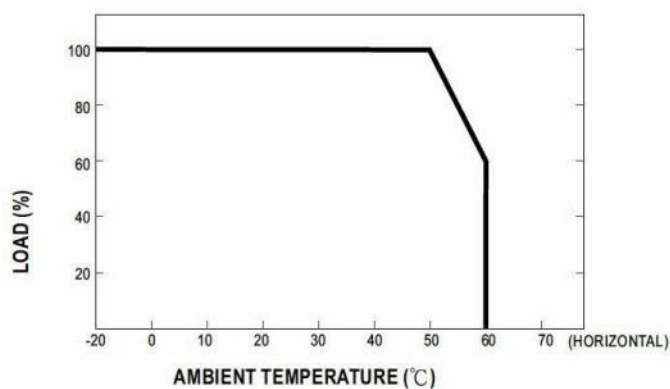




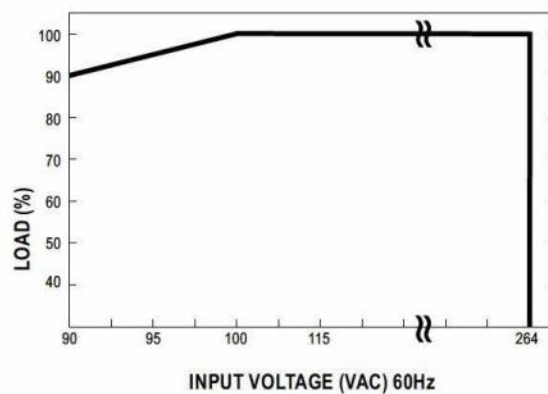
Block Diagram



Derating Curve



Static Characteristics





- **Modalità di carica selezionabile a 2, 3 o 8 Stadi**
Selectable 2 / 3 / 8 Stage Charging
- **Ricarica Simultanea di 2 Batterie**
2-Bank Charger
- **Protezioni: Corto Circuito, Inversione di Polarità, Over voltage, Surriscaldamento**
Protection: Short Circuit, Reverse Polarity, Over voltage, Over Temperature
- **Controllato a microprocessore**
Controlled by microprocessor
- **Funzione di compensazione in base alla temperature della batteria**
Built-In Temperature Compensation Function

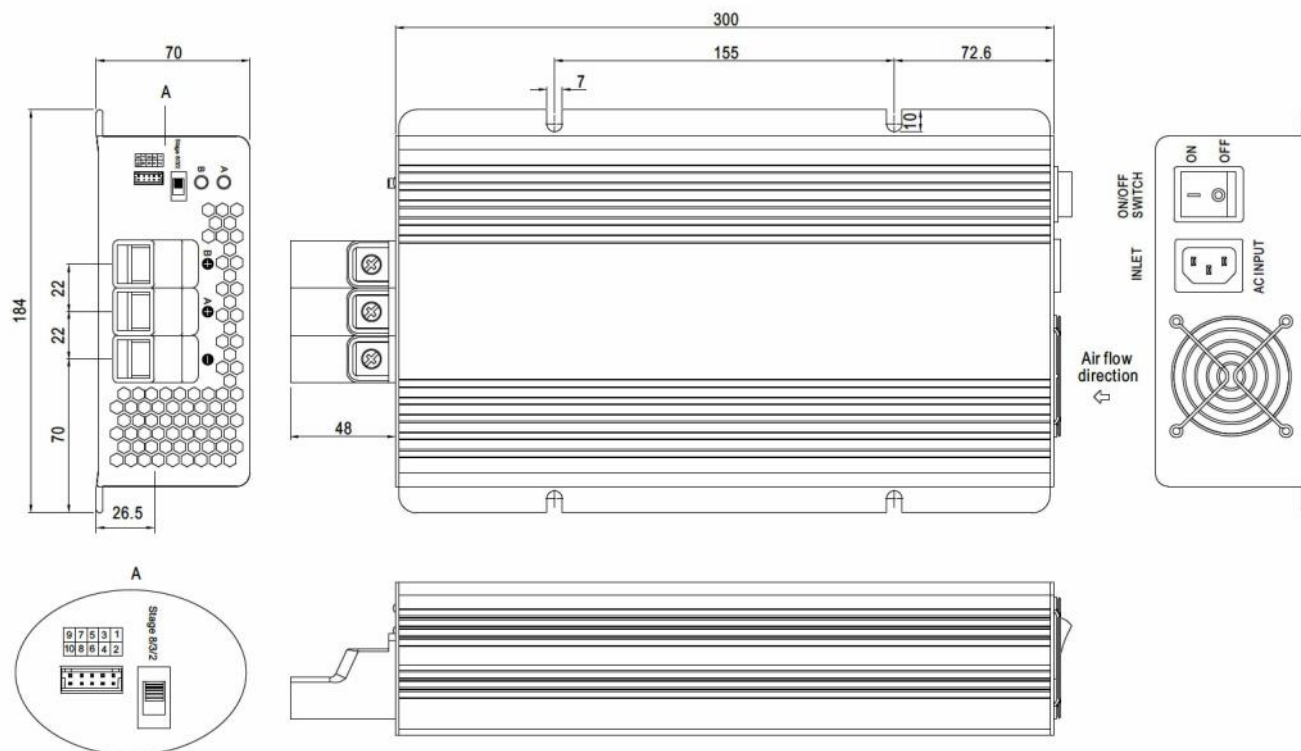


SPECIFICATION

MODEL		CBSA1000P-12	CBSA1000P-24	CBSA1000P-48
OUTPUT	BOOST CHARGE VOLTAGE	14.4V	28.8V	57.6V
	FLOAT CHARGE VOLTAGE	13.8V	27.6V	55.2V
	RECOMMENDED BATTERY CAPACITY (AMP HOURS)	200 ~ 600Ah	120 ~ 350Ah	60 ~ 175Ah
	BATTERY TYPE	Open & Sealed Lead Acid		
	MAX. OUTPUT CURRENT	60A	34.7A	17.4A
INPUT	VOLTAGE RANGE	90 ~ 264VAC		
	EFFICIENCY (Typ.)	85%	88%	89%
	AC CURRENT (Typ.)	12A/115 VAC - 5.2A/230 VAC		
	POWER FACTOR (Typ.)	0.95 at 230 VAC - 0.98 at 115 VAC at full load		
PROTECTION	OVERVOLTAGE	16 ~ 18V	32 ~ 35V	64.5 ~ 69.5V
		Protection type : Shut down o/p voltage, re-power on to recover		
	SHORT CIRCUIT	by internal circuit		
	REVERSE POLARITY	by internal circuit		
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down		
ENVIRONMENT	WORKING TEMP.	-20 ~ +60°C (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP. / HUM.	-40 ~ +85°C, 10 ~ 95% RH		
SAFETY & EMC	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH		
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22), EN61000-3-2,-3		
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024; light industry level, criteria A		
OTHERS	MTBF	127.4Khrs min. MIL-HDBK-217F (25°C)		
	DIMENSION	300*184*70mm(L*W*H)		
	WEIGHT	2.2 Kg		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 3. Please choose the "3 stage" selection when the charger is used to charge the batteries and power the loads in the same time.			

■ Mechanical Specification

Case No. 804B Unit:mm



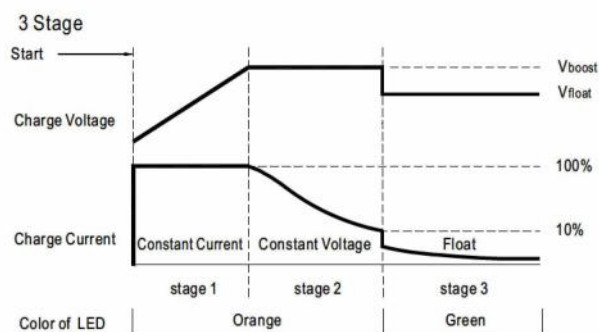
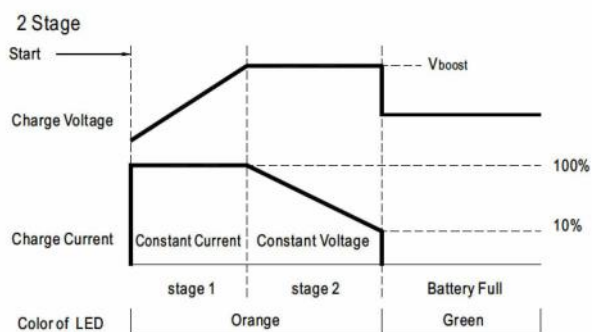
Control Pin No. Assignment(CN100) : HRS DF11-10DP-2DS or equivalent

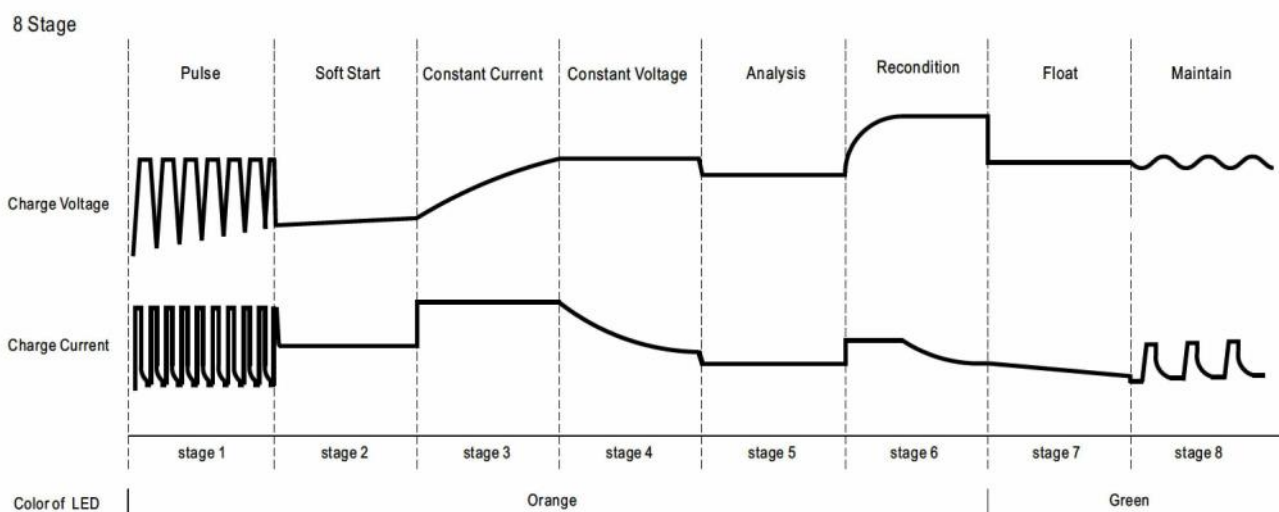
Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1,2	RY13	8	NTC(5K Ω)	HRS DF11-10DS or equivalent	HRS DF11-10SC or equivalent
3,4	RY14	9	RC-		
5,6	RY15	10	RC+		
7	GND				

RY13 : Bank A OK
RY14 : Bank B OK
RY15 : Charger OK

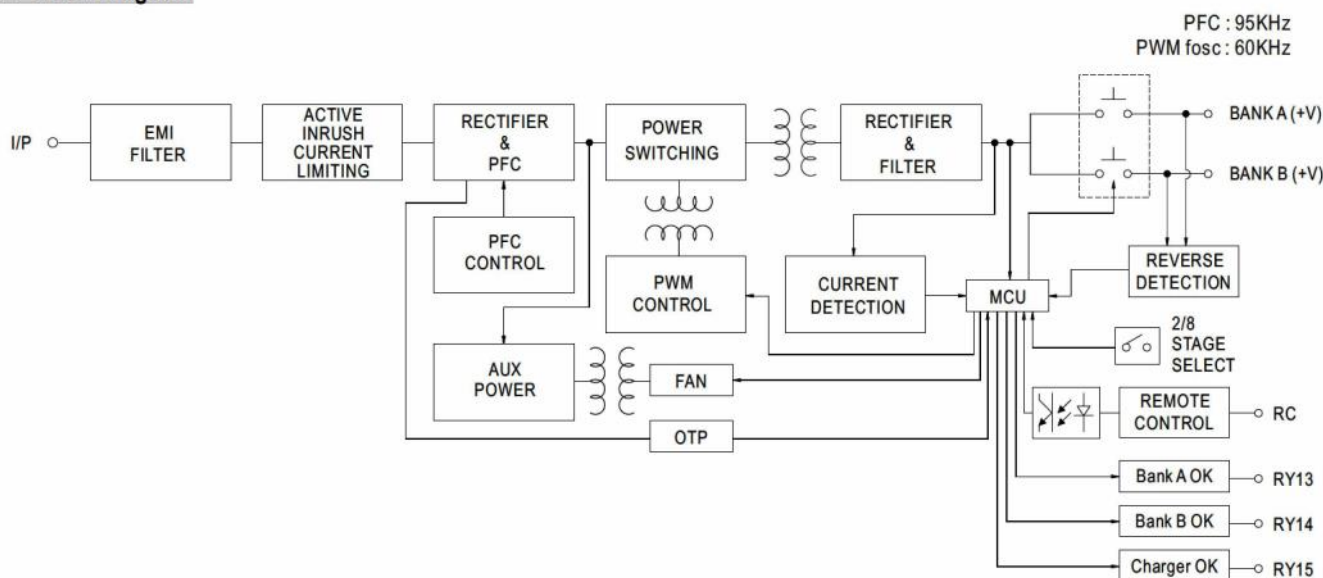
NTC / GND : Temperature sense
RC+ / RC-: Remote ON/OFF

■ Charging Curve

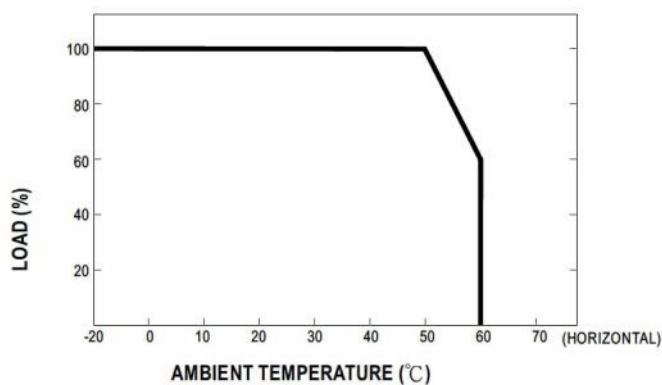




Block Diagram



Derating Curve



The Function of LEDs

Battery	Color of LED
Fail	Red
Charging	Orange
Battery Full	Green