

Datasheet

PMA-Series

Cosel

Our company network supports you worldwide with offices in Germany, Austria, Switzerland, Great Britain and the USA. For more information please contact:

FORTEC Elektronik AG

Hauptniederlassung
Lechwiesenstr. 9
86899 Landsberg am Lech

Telefon: +49 (0) 8191 91172-0

Telefax: +49 (0) 8191 21770

E-Mail: sales@fortecag.de

Internet: www.fortecag.de

FORTEC Elektronik AG

Büro Nord
Am Hasenkamp 36
22457 Hamburg

Telefon: +49 (0) 40 54 80 56 11

Telefax: +49 (0) 40 54 80 56 13

E-Mail: nord@fortecag.de

Internet: www.fortecag.de

FORTEC Elektronik AG

Büro West
Hohenstaufenring 55
50674 Köln

Telefon: +49 (0) 221 272 273-0

Telefax: +49 (0) 221 272 273-10

E-Mail: west@fortecag.de

Internet: www.fortecag.de

FORTEC Elektronik AG

Büro Wien
Nuschinggasse 12
A-1230 Wien

Telefon: +43 1 8673492-0

Telefax: +43 1 8673492-26

E-Mail: office@fortec.at

Internet: www.fortec.at

ALTRAC AG

(Tochter der FORTEC):
Bahnhofstraße 3
CH-5436 Würenlos

Telefon: +41 (0) 44 7446111

Telefax: +41 (0) 44 7446161

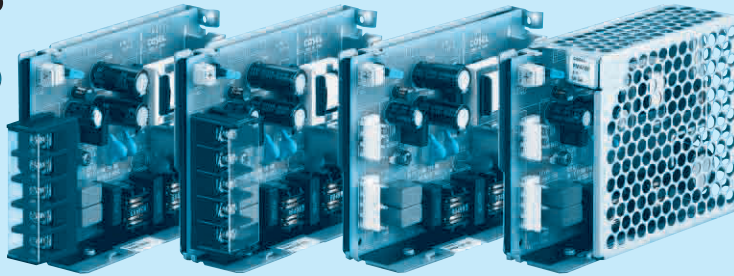
E-Mail: info@altrac.ch

Internet: www.altrac.ch

The information contained in this document has been carefully researched and is, to the best of our knowledge, accurate. However, we assume no liability for any product failures or damages, immediate or consequential, resulting from the use of the information provided herein. Our products are not intended for use in systems in which failures of product could result in personal injury. All trademarks mentioned herein are property of their respective owners. All specifications are subject to change without notice.

PMA15F

① PM ② A ③ 15 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T1) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-04-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type

Specification is changed at option, refer to Instruction Manual.

MODEL	PMA15F-3R3	PMA15F-5	PMA15F-12	PMA15F-15	PMA15F-24
MAX OUTPUT WATTAGE[W]	9.9	15	15.6	15	16.8
DC OUTPUT	3.3V 3A	5V 3A	12V 1.3A	15V 1A	24V 0.7A

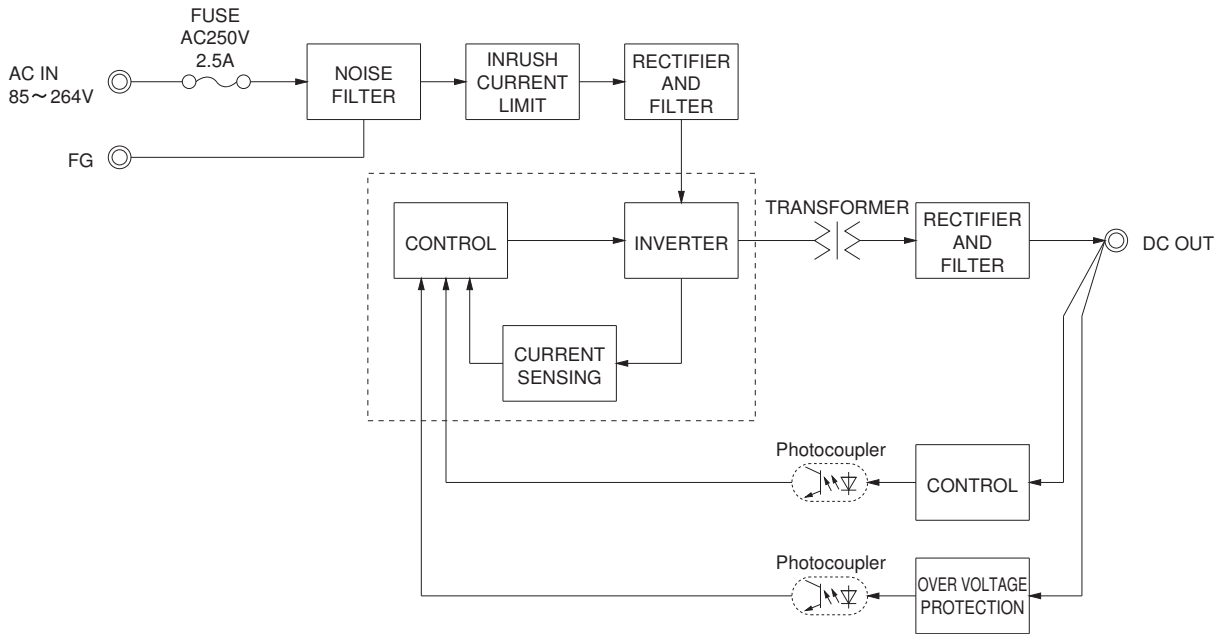
SPECIFICATIONS

	MODEL	PMA15F-3R3	PMA15F-5	PMA15F-12	PMA15F-15	PMA15F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to the Instruction Manual 1.1 and 3.2) *3					
	CURRENT[A]	ACIN 100V	0.30typ (Io=100%)	0.40typ (Io=100%)			
		ACIN 200V	0.15typ (Io=100%)	0.20typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 440)					
	EFFICIENCY[%]	ACIN 100V	66typ	70typ	74typ	76typ	76typ
		ACIN 200V	67typ	74typ	78typ	79typ	79typ
INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start)					
	ACIN 200V	30typ (Io=100%) (At cold start)					
LEAKAGE CURRENT[mA]	0.05/0.10max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1)						
OUTPUT	VOLTAGE[V]	3.3	5	12	15	24	
	CURRENT[A]	3.0	3.0	1.3	1.0	0.7	
	LINE REGULATION[mV]	20max	20max	48max	60max	96max	
	LOAD REGULATION[mV]	40max	40max	100max	120max	150max	
	RIPPLE[mVp-p]	0 to +50°C	80max	80max	120max	120max	120max
		*1 -10 - 0°C	140max	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	120max	150max	150max	150max
		*1 -10 - 0°C	160max	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max
		*1 -10 to +50°C	60max	60max	150max	180max	290max
DRIFT[mV]	*2	20max	20max	48max	60max	96max	
START-UP TIME[ms]	200typ (ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage.						
HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%)						
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.85 to 3.60		4.50 to 5.50		10.00 to 13.20	13.20 to 18.00	19.20 to 27.00
OUTPUT VOLTAGE SETTING[V]	3.30 to 3.40		5.00 to 5.15		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]	4.00 to 5.25	5.75 to 7.00	15.00 to 18.00	20.00 to 25.00	30.00 to 37.00	
	OPERATING INDICATION	LED (Green)					
	REMOTE ON/OFF	Not provided					
ISOLATION	INPUT-OUTPUT	AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max *3					
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter *4)					
OTHERS	CASE SIZE/WEIGHT	31 X 78 X 103mm [1.22 X 3.07 X 4.06 inches] (W X H X D) / 230g max (with cover : 265g max)					
	COOLING METHOD	Convection					

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM101).
 *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
 *3 Derating is required.
 *4 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.

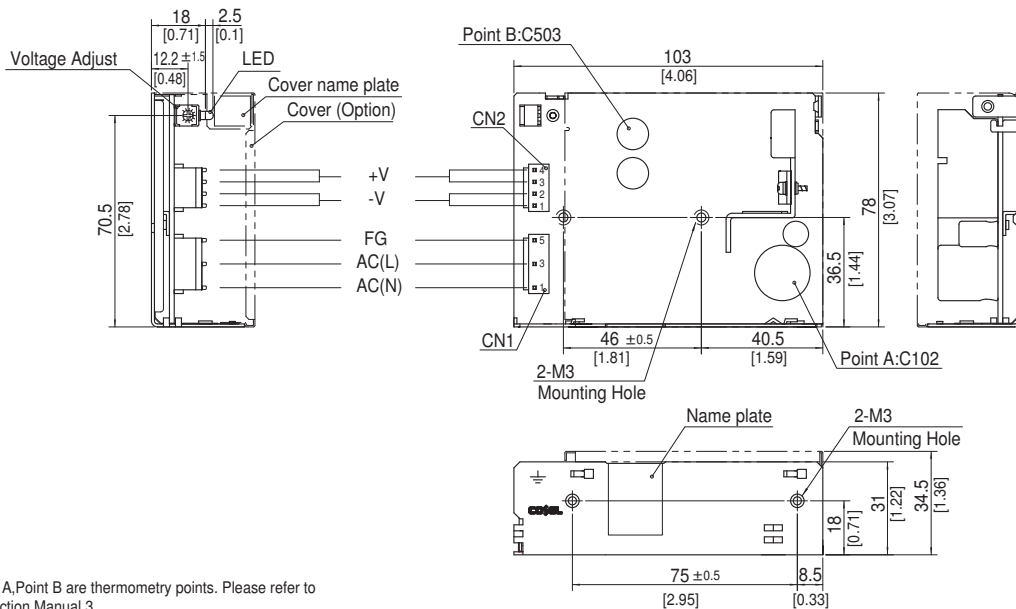
*5 Please contact us about safety approvals for the model with option.
 *6 Please contact us about another class.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T,T1 and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A,Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector	Mating Connector	Terminal
CN1	1-1123724-3	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-4	Chain 1123721-1
		Loose 1318912-1

(Mfr : Tyco Electronics AMP)

※ I/O Connector is Mfr.Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

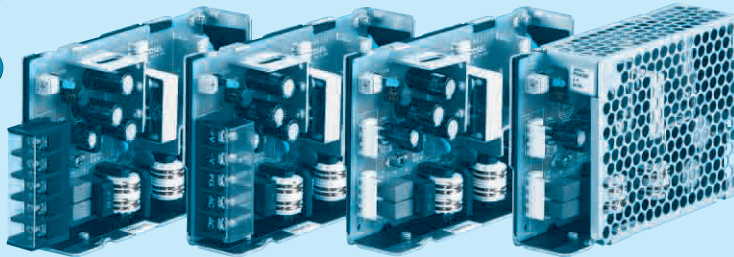
<PIN CONNECTION>

Pin No.	Input	Pin No.	Output
1	AC(N)	1, 2	-V
2		3, 4	+V
3	AC(L)		
4			
5	FG		

※ Tolerance : ±1 [±0.04]
 ※ Weight : 230g max (with cover : 265g max)
 ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
 ※ Chassis material : Electric galvanizing steel board
 ※ Keep drawing current per pin below 5A of CN2.
 ※ Dimensions in mm, []=inches
 ※ Mounting torque : 0.6N · m (6.3kgf · cm) max
 ※ Please connect safety ground to the unit in 2-M3 holes.

PMA30F

① PM ② A ③ 30 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T1) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-04-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type

Specification is changed at option, refer to Instruction Manual.

MODEL	PMA30F-3R3	PMA30F-5	PMA30F-12	PMA30F-15	PMA30F-24
MAX OUTPUT WATTAGE[W]	19.8	30	30	30	31.2
DC OUTPUT	3.3V 6A	5V 6A	12V 2.5A	15V 2A	24V 1.3A

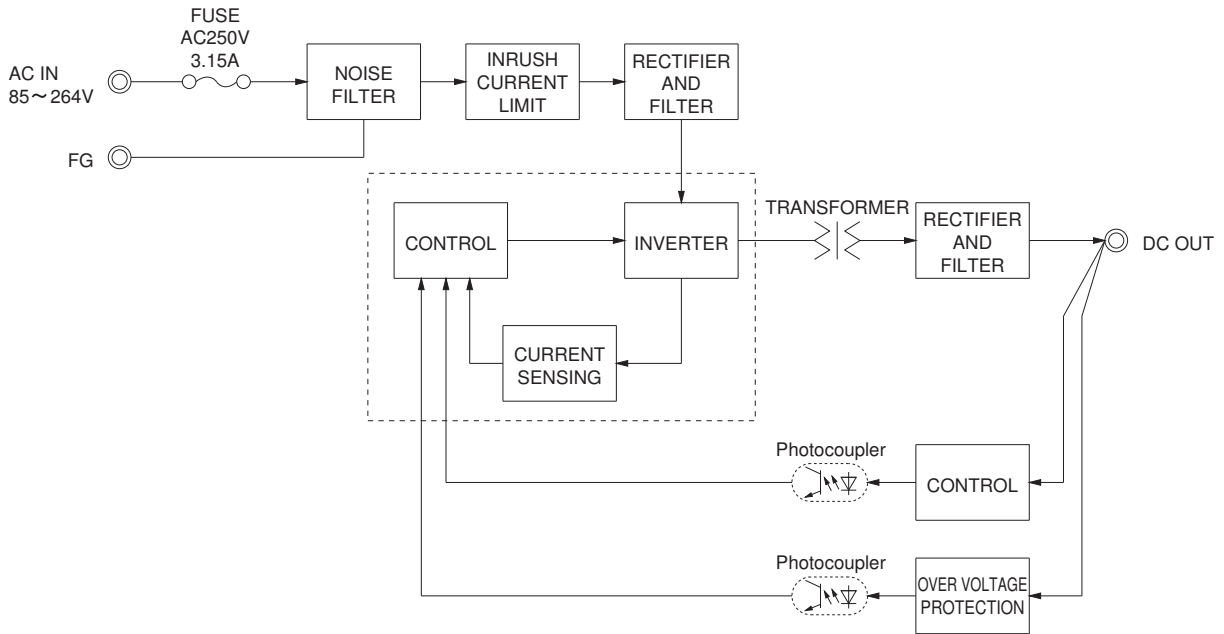
SPECIFICATIONS

	MODEL	PMA30F-3R3	PMA30F-5	PMA30F-12	PMA30F-15	PMA30F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1φ (Refer to the Instruction Manual 1.1 and 3.2) *3					
	CURRENT[A]	ACIN 100V	0.50typ (Io=100%)	0.70typ (Io=100%)			
		ACIN 200V	0.30typ (Io=100%)	0.40typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 440)					
	EFFICIENCY[%]	ACIN 100V	67typ	71typ	76typ	77typ	77typ
		ACIN 200V	69typ	74typ	78typ	80typ	80typ
INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start)					
	ACIN 200V	30typ (Io=100%) (At cold start)					
LEAKAGE CURRENT[mA]	0.05 / 0.10max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1)						
OUTPUT	VOLTAGE[V]	3.3	5	12	15	24	
	CURRENT[A]	6.0	6.0	2.5	2.0	1.3	
	LINE REGULATION[mV]	20max	20max	48max	60max	96max	
	LOAD REGULATION[mV]	40max	40max	100max	120max	150max	
	RIPPLE[mVp-p]	*1	0 to +50°C	80max	80max	120max	120max
			-10 - 0°C	140max	140max	160max	160max
	RIPPLE NOISE[mVp-p]	*1	0 to +50°C	120max	120max	150max	150max
			-10 - 0°C	160max	160max	180max	180max
	TEMPERATURE REGULATION[mV]	*2	0 to +50°C	50max	50max	120max	150max
			-10 to +50°C	60max	60max	150max	180max
DRIFT[mV]	20max	20max	48max	60max	96max		
START-UP TIME[ms]	200typ (ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage.						
HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%)						
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.85 to 3.60		4.50 to 5.50		10.00 to 13.20	13.20 to 18.00	
OUTPUT VOLTAGE SETTING[V]	3.30 to 3.40		5.00 to 5.15		12.00 to 12.48	15.00 to 15.60	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]	4.00 to 5.25	5.75 to 7.00	15.00 to 18.00	20.00 to 25.00	30.00 to 37.00	
	OPERATING INDICATION	LED (Green)					
	REMOTE ON/OFF	Not provided					
ISOLATION	INPUT-OUTPUT	AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *3					
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter *4)					
OTHERS	CASE SIZE/WEIGHT	31 X 82 X 120mm [1.22 X 3.23 X 4.72 inches] (W X H X D) / 240g max (with cover : 280g max)					
	COOLING METHOD	Convection					

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM101).
 *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
 *3 Derating is required.
 *4 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.

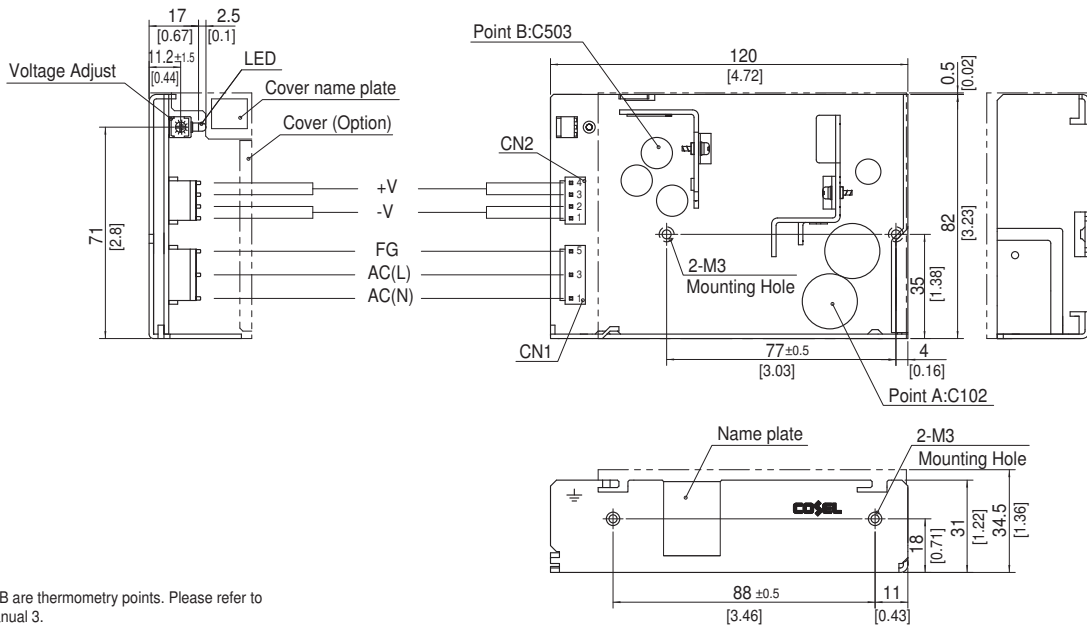
*5 Please contact us about safety approvals for the model with option.
 *6 Please contact us about another class.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T, T1 and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector	Mating Connector	Terminal
CN1	1-1123722-5	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-4	Chain 1123721-1
		Loose 1318912-1

(Mfr : Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

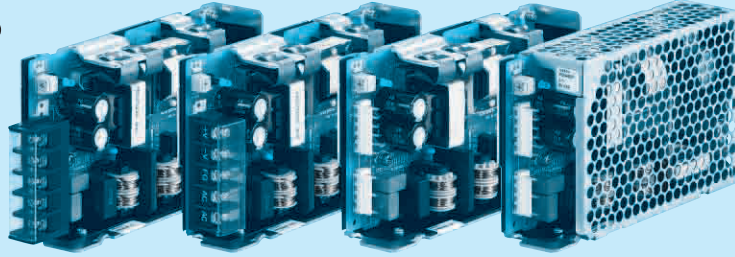
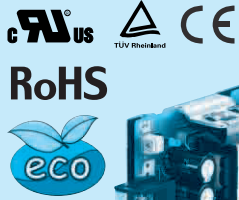
<PIN CONNECTION>

CN1		CN2	
Pin No.	Input	Pin No.	Output
1	AC(N)	1, 2	-V
2		3, 4	+V
3	AC(L)		
4			
5	FG		

※ Tolerance : ±1 [±0.04]
 ※ Weight : 240g max (with cover : 280g max)
 ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
 ※ Chassis material : Aluminum
 ※ Keep drawing current per pin below 5A of CN2.
 ※ Dimensions in mm, []=inches
 ※ Mounting torque : 0.49N · m (5kgf · cm) max
 ※ Please connect safety ground to the unit in 2-M3 holes.

PMA60F

① PM ② A ③ 60 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T1) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-04-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type
- R : with Remote ON/OFF

Specification is changed at option, refer to Instruction Manual.

MODEL	PMA60F-3R3	PMA60F-5	PMA60F-12	PMA60F-15	PMA60F-24
MAX OUTPUT WATTAGE[W]	39.6	60	60	60	60
DC OUTPUT	3.3V 12A	5V 12A	12V 5A	15V 4A	24V 2.5A

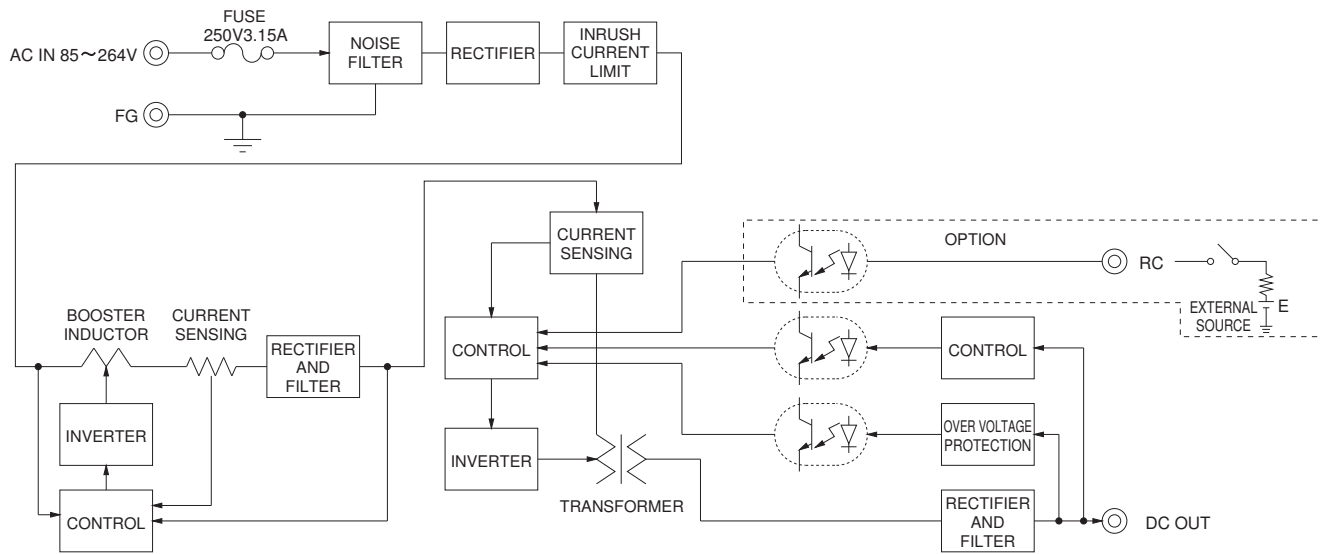
SPECIFICATIONS

	MODEL	PMA60F-3R3	PMA60F-5	PMA60F-12	PMA60F-15	PMA60F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to the Instruction Manual 1.1)					
	CURRENT[A]	ACIN 100V	0.7typ (lo=100%)	0.8typ (lo=100%)			
		ACIN 200V	0.4typ (lo=100%)	0.5typ (lo=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 63)					
	EFFICIENCY[%]	ACIN 100V	77typ	80typ	80typ	81typ	81typ
		ACIN 200V	78typ	83typ	82typ	83typ	83typ
	POWER FACTOR (lo=100%)	ACIN 100V	0.98typ				
		ACIN 200V	0.85typ		0.90typ		
INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%) (At cold start)					
	ACIN 200V	30typ (lo=100%) (At cold start)					
LEAKAGE CURRENT[ma]	0.09 / 0.18max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC60601-1)						
OUTPUT	VOLTAGE[V]	3.3	5	12	15	24	
	CURRENT[A]	12.0	12.0	5.0	4.0	2.5	
	LINE REGULATION[mV]	20max					
	LOAD REGULATION[mV]	40max					
	RIPPLE[mVp-p] *1	0 to +50°C	80max	80max	120max	120max	120max
		-10 - 0°C	140max	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p] *1	0 to +50°C	120max	120max	150max	150max	150max
		-10 - 0°C	160max	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max
		-10 to +50°C	60max	60max	150max	180max	290max
	DRIFT[mV] *2	20max					
START-UP TIME[ms]	250typ (ACIN 100V, lo=100%)						
HOLD-UP TIME[ms]	20typ (ACIN 100V, lo=100%)						
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.85 to 3.60	4.50 to 5.50	10.00 to 13.20	13.20 to 18.00	19.20 to 27.00		
OUTPUT VOLTAGE SETTING[V]	3.30 to 3.40	5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]	4.00 to 5.25	5.75 to 7.00	15.00 to 18.00	20.00 to 25.00	30.00 to 37.00	
	OPERATING INDICATION	LED (Green)					
	REMOTE ON/OFF	Optional (Required external power source)					
ISOLATION	INPUT-OUTPUT-RC *3	AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-RC-FG *3	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTIITUDE	-10 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *4					
	STORAGE TEMP.,HUMID.AND ALTIITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 *6					
OTHERS	CASE SIZE/WEIGHT	32 X 82 X 135mm [1.26 X 3.23 X 5.31 inches] (W X H X D) / 350g max (with cover : 395g max)					
	COOLING METHOD	Convection					

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM101).
 *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
 *3 Applicable when Remote ON/OFF (optional) is added. RC is insulated with input, output and FG.
 *4 Derating is required.
 *5 Please contact us about safety approvals for the model with option.

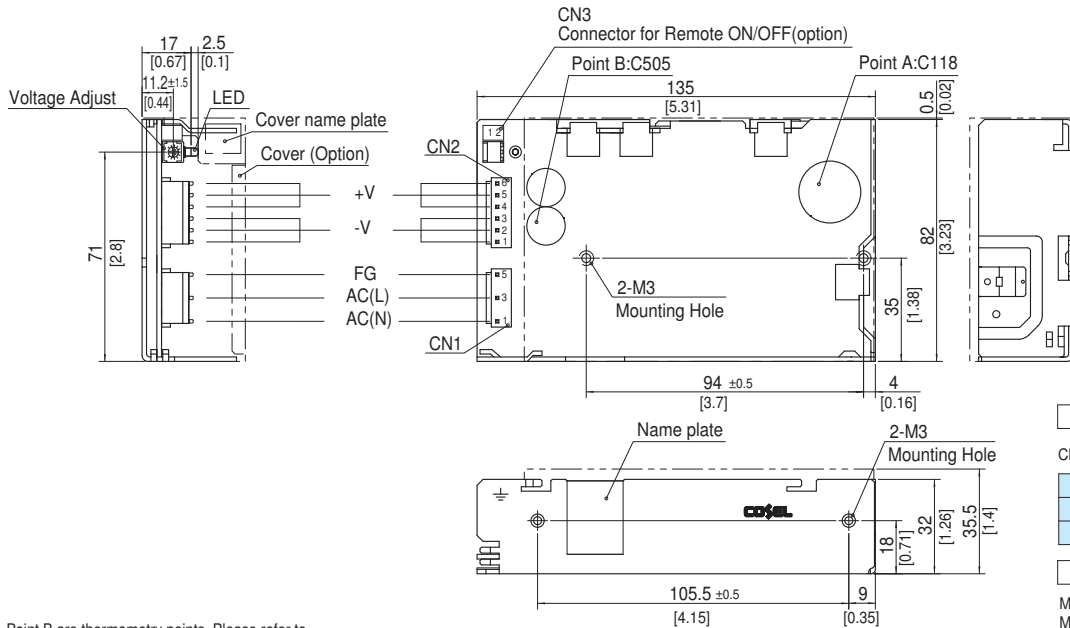
*6 Please contact us about class C.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T,T1,R and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A,Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector	Mating Connector	Terminal	
CN1	1-1123724-3	1-1123722-5	Chain 1123721-1
			Loose 1318912-1
CN2	1-1123723-6	1-1123722-6	Chain 1123721-1
			Loose 1318912-1

(Mfr : Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

<PIN CONNECTION>

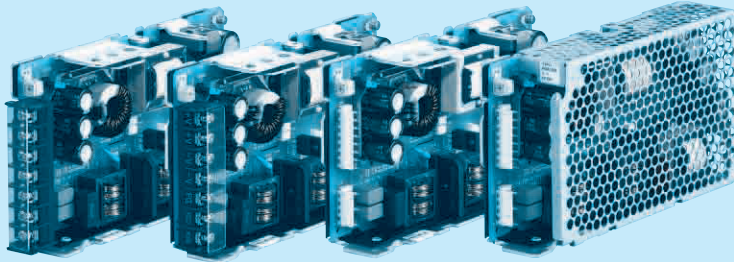
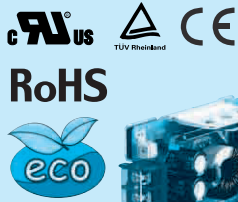
Pin No.	Input
1	AC(N)
2	
3	AC(L)
4	
5	FG

Pin No.	Output
1 - 3	-V
4 - 6	+V

- ※ Tolerance : ± 1 [± 0.04]
- ※ Weight : 350g max (with cover : 395g max)
- ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
- ※ Chassis material : Aluminum
- ※ Keep drawing current per pin below 5A of CN2.
- ※ Dimensions in mm, []=inches
- ※ Mounting torque : 0.49N · m (5kgf · cm) max
- ※ Please connect safety ground to the unit in 2-M3 holes.

PMA100F

① PM ② A ③ 100 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-06-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
T : Vertical terminal block
T1 : Horizontal terminal block
N : with Cover
J1 : VH(J.S.T.)connector type
R : with Remote ON/OFF

Specification is changed at option, refer to Instruction Manual.

MODEL	PMA100F-3R3	PMA100F-5	PMA100F-12	PMA100F-24	PMA100F-48
MAX OUTPUT WATTAGE[W]	66	100	102	108	100.8
DC OUTPUT	3.3V 20A	5V 20A	12V 8.5A	24V 4.5A	48V 2.1A

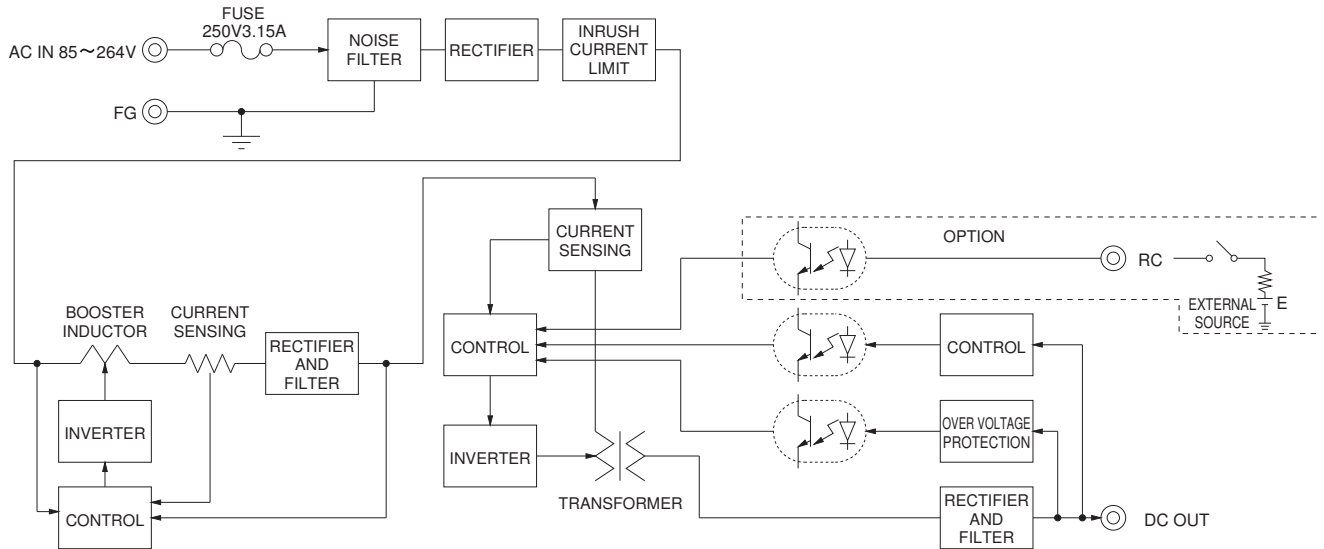
SPECIFICATIONS

	MODEL	PMA100F-3R3	PMA100F-5	PMA100F-12	PMA100F-24	PMA100F-48	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to the Instruction Manual 1.1)					
	CURRENT[A]	ACIN 100V	0.9typ (Io=100%)	1.3typ (Io=100%)			
		ACIN 200V	0.5typ (Io=100%)	0.7typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 63)					
	EFFICIENCY[%]	ACIN 100V	77typ	81typ	82typ	84typ	84typ
		ACIN 200V	78typ	83typ	83typ	86typ	86typ
	POWER FACTOR (Io=100%)	ACIN 100V	0.98typ				
		ACIN 200V	0.85typ	0.90typ			
INRUSH CURRENT[A]	ACIN 100V	20typ (Io=100%) (At cold start)					
	ACIN 200V	40typ (Io=100%) (At cold start)					
LEAKAGE CURRENT[mA]	0.09 / 0.18max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1)						
OUTPUT	VOLTAGE[V]	3.3	5	12	24	48	
	CURRENT[A]	20.0	20.0	8.5	4.5	2.1	
	LINE REGULATION[mV]	20max	20max	48max	96max	192max	
	LOAD REGULATION[mV]	40max	40max	100max	150max	240max	
	RIPPLE[mVp-p]	0 to +50°C	80max	80max	120max	150max	150max
		*1 -10 - 0°C	140max	140max	160max	160max	200max
	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	120max	150max	150max	250max
		*1 -10 - 0°C	160max	160max	180max	180max	300max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	240max	480max
		*1 -10 to +50°C	60max	60max	150max	290max	600max
	DRIFT[mV]	*2	20max	20max	48max	96max	192max
	START-UP TIME[ms]	250typ (ACIN 100V, Io=100%)					
	HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%)					
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.85 to 3.60	4.50 to 5.50	10.00 to 13.20	19.20 to 27.00	39.00 to 53.00		
OUTPUT VOLTAGE SETTING[V]	3.30 to 3.40	5.00 to 5.15	12.00 to 12.48	24.00 to 24.96	48.00 to 49.92		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]	4.00 to 5.25	5.75 to 7.00	15.00 to 18.00	30.00 to 37.00	58.00 to 65.00	
	OPERATING INDICATION	LED (Green)					
	REMOTE ON/OFF	Optional (Required external power source)					
ISOLATION	INPUT-OUTPUT-RC	*3 AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-RC-FG	*3 AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *4					
	STORAGE TEMP.,HUMID.AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 *6					
OTHERS	CASE SIZE/WEIGHT	34 X 93 X 168mm [1.34 X 3.66 X 6.61 inches] (W X H X D) / 560g max (with cover : 625g max)					
	COOLING METHOD	Convection					

*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM101).
 *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
 *3 Applicable when Remote ON/OFF (optional) is added. RC is insulated with input, output and FG.
 *4 Derating is required.
 *5 Please contact us about safety approvals for the model with option.

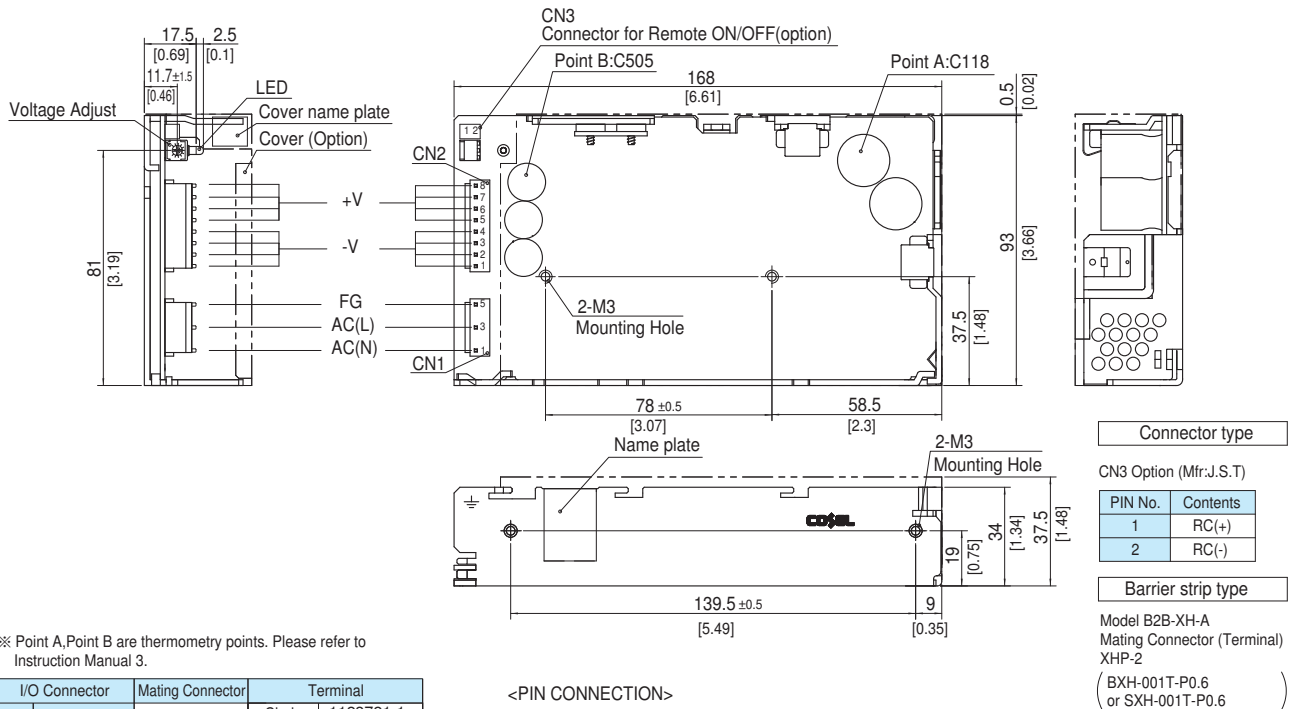
*6 Please contact us about class C.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T, T1, R and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector	Mating Connector	Terminal
CN1	1-1123724-3	1-1123722-5
		Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-8	1-1123722-8
		Chain 1123721-1
		Loose 1318912-1

(Mfr: Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

<PIN CONNECTION>

Pin No.	Input	Pin No.	Output
1	AC(N)	1 - 4	-V
2		5 - 8	+V
3	AC(L)		
4			
5	FG		

※ Tolerance : ± 1 [± 0.04]
 ※ Weight : 560g max (with cover : 625g max)
 ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
 ※ Chassis material : Aluminum
 ※ Keep drawing current per pin below 5A of CN2.
 ※ Dimensions in mm, [] =inches
 ※ Mounting torque : 0.49N · m (5kgf · cm) max
 ※ Please connect safety ground to the unit in 2-M3 holes.

FORTEC

ELEKTRONIK AG

Our company network supports you worldwide with offices in Germany, Austria, Switzerland, Great Britain and the USA. For more information please contact:

FORTEC Elektronik AG

Hauptniederlassung
Lechwiesenstr. 9
86899 Landsberg am Lech

Telefon: +49 (0) 8191 91172-0
Telefax: +49 (0) 8191 21770
E-Mail: sales@fortecag.de
Internet: www.fortecag.de

FORTEC Elektronik AG

Büro Nord
Am Hasenkamp 36
22457 Hamburg

Telefon: +49 (0) 40 54 80 56 11
Telefax: +49 (0) 40 54 80 56 13
E-Mail: nord@fortecag.de
Internet: www.fortecag.de

FORTEC Elektronik AG

Büro West
Hohenstaufenring 55
50674 Köln

Telefon: +49 (0) 221 272 273-0
Telefax: +49 (0) 221 272 273-10
E-Mail: west@fortecag.de
Internet: www.fortecag.de

FORTEC Elektronik AG

Büro Wien
Nuschinggasse 12
A-1230 Wien

Telefon: +43 1 8673492-0
Telefax: +43 1 8673492-26
E-Mail: office@fortec.at
Internet: www.fortec.at

ALTRAC AG

(Tochter der Fortec AG):
Bahnhofstraße 3
CH-5436 Würenlos

Telefon: +41 (0) 44 7446111
Telefax: +41 (0) 44 7446161
E-Mail: info@altrac.ch
Internet: www.altrac.ch

Members of the FORTEC Group:

