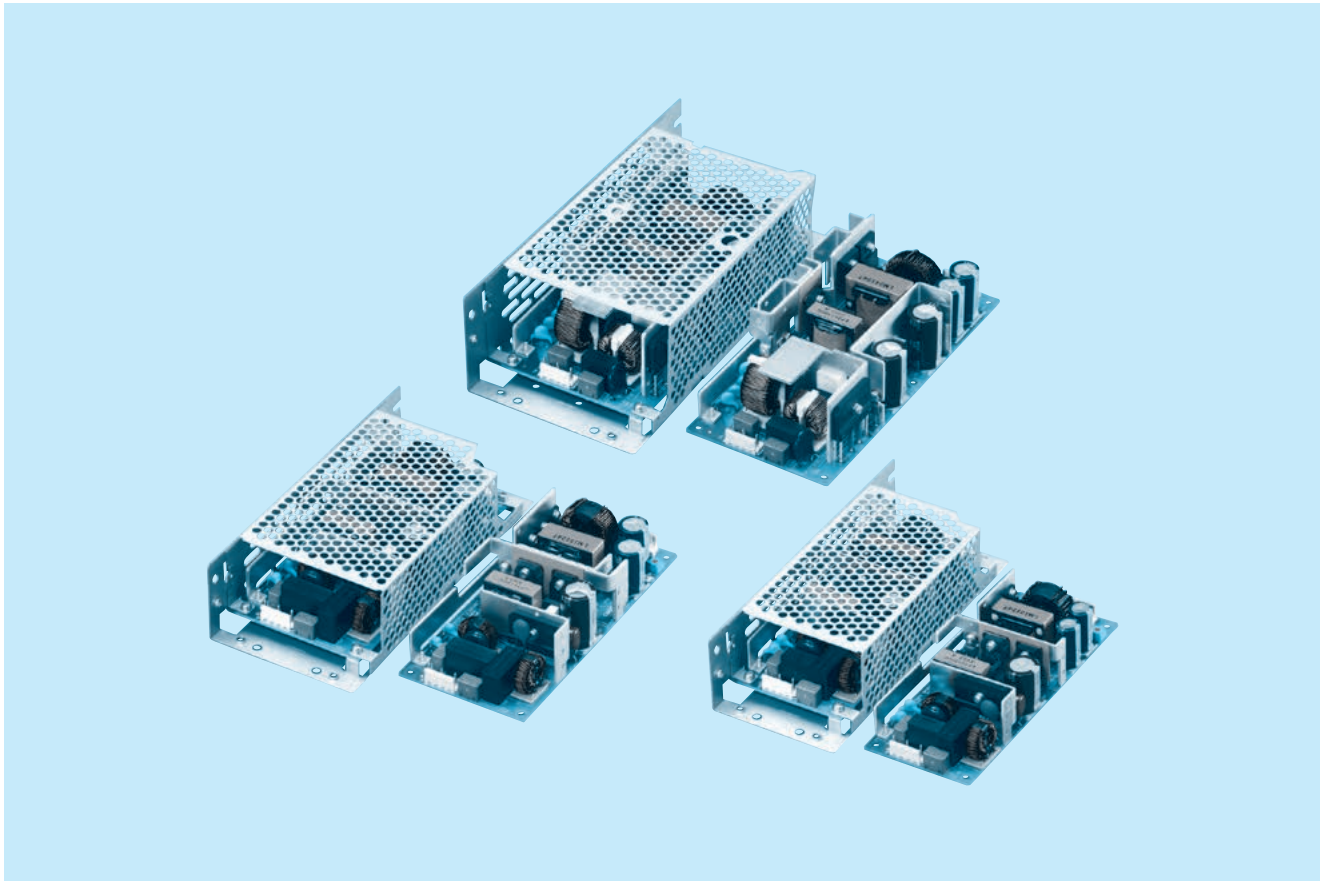
COSEL

Medical electric equipment | Power Factor Correction | World wide | Cost Effective | Rugged PCB type | Safety Approvals | EMI | Inrush current limiting | OCP | OVP

LMA-series



Feature

For medical electric equipment
Internal dual fuses
Low leakage current
High power & peak power (option)
Small and compact PCB construction
Built-in inrush current, overcurrent and overvoltage protection circuits
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Universal input (AC85-264V)
Power factor correction

Safety agency approvals

ANSI/AAMI ES60601, EN60601-1 3rd

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

5-year warranty

CE marking

Low Voltage Directive
RoHS Directive

EMS Compliance : EN61204-3, EN61000-6-2
IEC60601-1-2 (2014), EN60601-1-2 (2015)

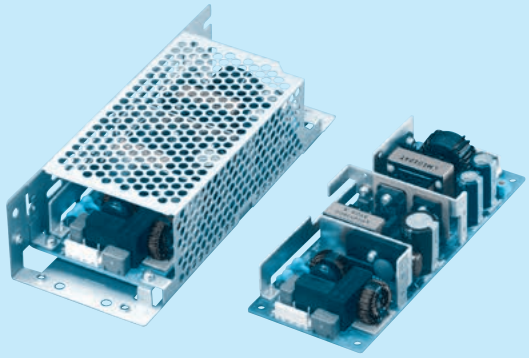
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

COSEL AC-DC Power Supplies Medical Type

LMA100F

Ordering information

LM	A	100	F	-□	-□
①	②	③	④	⑤	⑧



Example recommended EMI/EMC filter
NAM-04-101

High voltage pulse noise type : NAP series
Low leakage current type : NAM series

＊A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

①Series name
②Single output
③Output wattage
④Universal input
⑤Output voltage
⑧Optional ＊1
C : with Coating
G : Low leakage current
H : with the function to be acceptable to output peak current
J1 : VH(J.S.T.)connector type
R : with Remote ON/OFF
R2 : with Remote ON/OFF
S : with Chassis
SN : with Chassis & cover
P : Setting in the overcurrent protection rating

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
＊Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	LMA100F-24-Y	LMA100F-24-HY
MAX OUTPUT WATTAGE[W]	103.2	103.2 (206.4) ＊2
DC OUTPUT	24V 4.3A	24V 4.3A (8.6A) ＊2

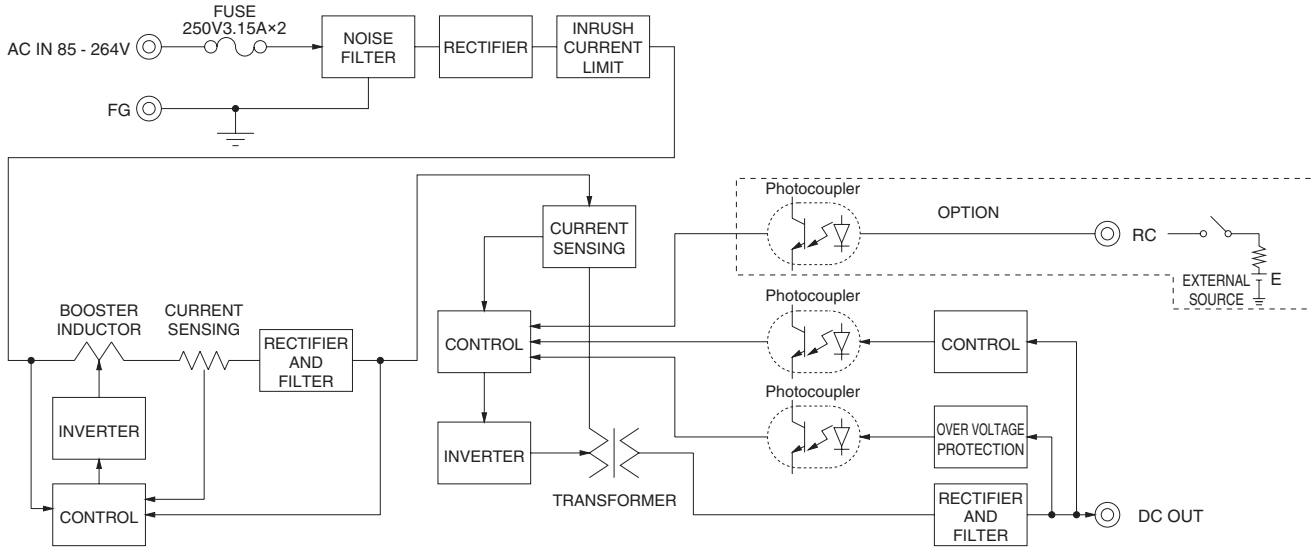
SPECIFICATIONS

	MODEL		LMA100F-24-Y	LMA100F-24-HY
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Refer to “Derating” ,Instruction Manual 1 and 3)	
	CURRENT[A]	ACIN 100V	1.4typ (Io=100%)	
		ACIN 200V	0.7typ (Io=100%)	
	FREQUENCY[Hz]		50 / 60 (47 - 63)	
	EFFICIENCY[%]	ACIN 100V	84.0typ (Io=100%)	84.0typ (Io=100%)
		ACIN 200V	86.0typ (Io=100%)	86.0typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.99typ (Io=100%)	
		ACIN 200V	0.95typ (Io=100%)	
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25℃)	
		ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25℃)	
	LEAKAGE CURRENT[mA]		0.10 / 0.25max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1)	
OUTPUT	VOLTAGE[V]		24	24
	CURRENT[A]		4.3	4.3 (Peak 8.6) ＊2
	LINE REGULATION[mV] ＊7		96max	96max
	LOAD REGULATION[mV] ＊7		150max	150max
	RIPPLE[mVp-p] ＊3	0 to +50℃	120max	120max
		-10 - 0℃	160max	160max
	RIPPLE NOISE[mVp-p] ＊3	0 to +50℃	150max	150max
		-10 - 0℃	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	240max	240max
		-10 to +50℃	290max	290max
	DRIFT[mV] ＊4		96max	96max
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)	
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)	
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		19.20 to 27.50	19.20 to 27.50
	OUTPUT VOLTAGE SETTING[V]		24.00 to 24.96	24.00 to 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically	
	OVERVOLTAGE PROTECTION[V]		27.60 to 33.60	27.60 to 33.60
	OPERATING INDICATION		Not provided	
	REMOTE SENSING		Not provided	
	REMOTE ON/OFF		Option (Required external power source.)	
ISOLATION	INPUT-OUTPUT-RC ＊6		AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 2MOOP	
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOOP	
	OUTPUT-RC-FG ＊6		AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)	
	OUTPUT-RC ＊6		AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature)	
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-10 to +70℃, 20 - 90%RH (Non condensing), (Refer to “Derating”, Instruction Manual 3) 3,000m (10,000feet) max	
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max	
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis	
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis	
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (AT ONIY AC input)		ANSI/AAMI ES60601-1, EN60601-1 3rd, Complies with IEC60601-1-2 4th Ed.	
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B	
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) ＊8	
OTHERS	CASE SIZE/WEIGHT		62×33×155mm [2.44×1.30×6.10 inches] (W×H×D) / 290g max (with chassis & cover : 470g max)	
	COOLING METHOD		Convection (Refer to “Derating”, Instruction Manual 3) ＊5	

＊1 Specification is changed at option, refer to Instruction Manual.
＊2 Peak loading for 10sec. And Duty 40% max.
( ) means peak current. There is a possibility that an internal device is damaged when the specification is exceeded.
＊3 This is the value that measured on measuring board with capacitor of 22μF at 150mm from output terminal.
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
＊4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
＊5 Derating is required.
＊6 Applicable when remote control (optional) is added.
＊7 Please contact us about dynamic load and input response.
＊8 Please contact us about another class.

＊ To meet the specifications. Do not operate over-loaded condition.
＊ Parallel operation is not possible.
＊ Derating is required when operated with chassis and cover.
＊ Sound noise may be generated by power supply in case of pulse load.

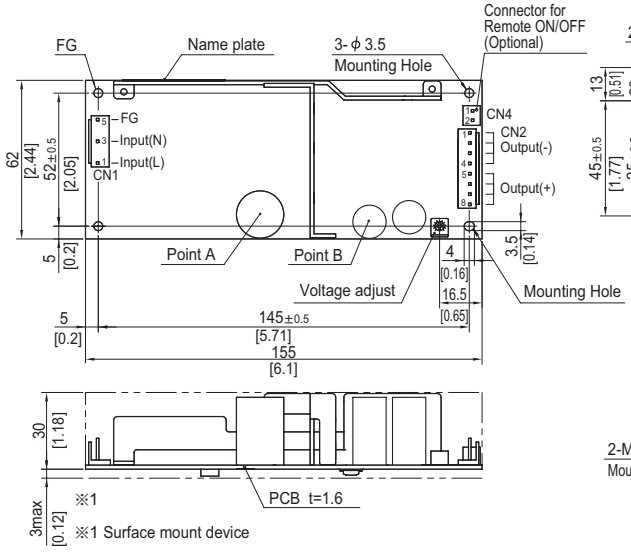
Block diagram



External view

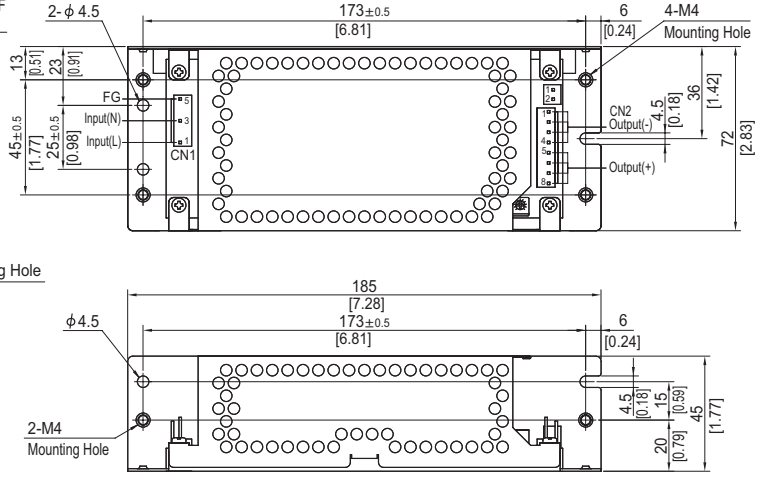
※ External size of option is different from standard model.

Standard type



※1 Surface mount device

Chassis and cover type



※ 4 Mounting holes are existing.
※ The back side of P.C.B. of the power supply is assembled some SMDs.
Be attention not to bump against the attached area by vibration.
※ Use the spacer of 8mm length or more regarding insulation.
And do not use press-fitting bush.
※ Point A, Point B are thermometry points.

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)

※ I/O Connector is Mfr. Tyco Electronics
※ Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

CN1

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

CN2

Pin No.	Output
1 to 4	-V
5 to 8	+V

※ Keep drawing current per pin below 5A for CN2.

※ Tolerance : ±1 [±0.04]
※ Weight : 290g max (with chassis & cover : 470g max)
※ PCB material : CEM3
※ Optional chassis and cover material : Electric galvanizing steel board.
※ Dimensions in mm, [ ]=inches
※ Mounting torque (Mounting hole of chassis) :1.5N・m (16kgf・cm) max

Connector type

CN4 Option (Mfr:J.S.T)

PIN No.	Contents
1	RC(+)
2	RC(-)

Barrier strip type

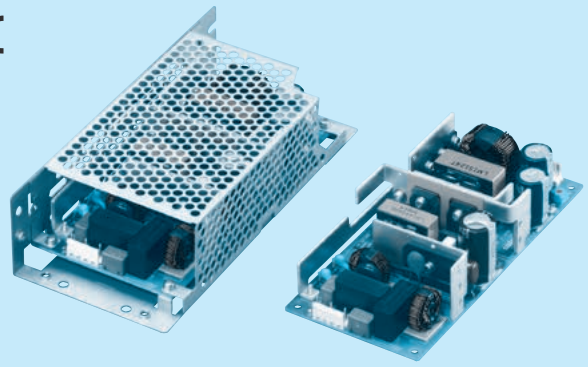
Model B2B-XH-A
Mating Connector (Terminal)
XHP-2
(BXH-001T-P0.6 or SXH-001T-P0.6)

COSEL AC-DC Power Supplies Medical Type

LMA150F

Ordering information

LM	A	150	F	-□	-□
①	②	③	④	⑤	⑥



Example recommended EMI/EMC filter
NAM-04-101

High voltage pulse noise type : NAP series
Low leakage current type : NAM series

＊A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

①Series name
②Single output
③Output wattage
④Universal input
⑤Output voltage
⑥Optional ＊1
C : with Coating
G : Low leakage current
H : with the function to be acceptable to output peak current
J1 : VH(J.S.T.)connector type
R : with Remote ON/OFF
R2 : with Remote ON/OFF
S : with Chassis
SN : with Chassis & cover
P : Setting in the overcurrent protection rating

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
＊Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	LMA150F-24-Y	LMA150F-24-HY
MAX OUTPUT WATTAGE[W]	151.2	151.2 (302.4) ＊2
DC OUTPUT	24V 6.3A	24V 6.3A (12.6A) ＊2

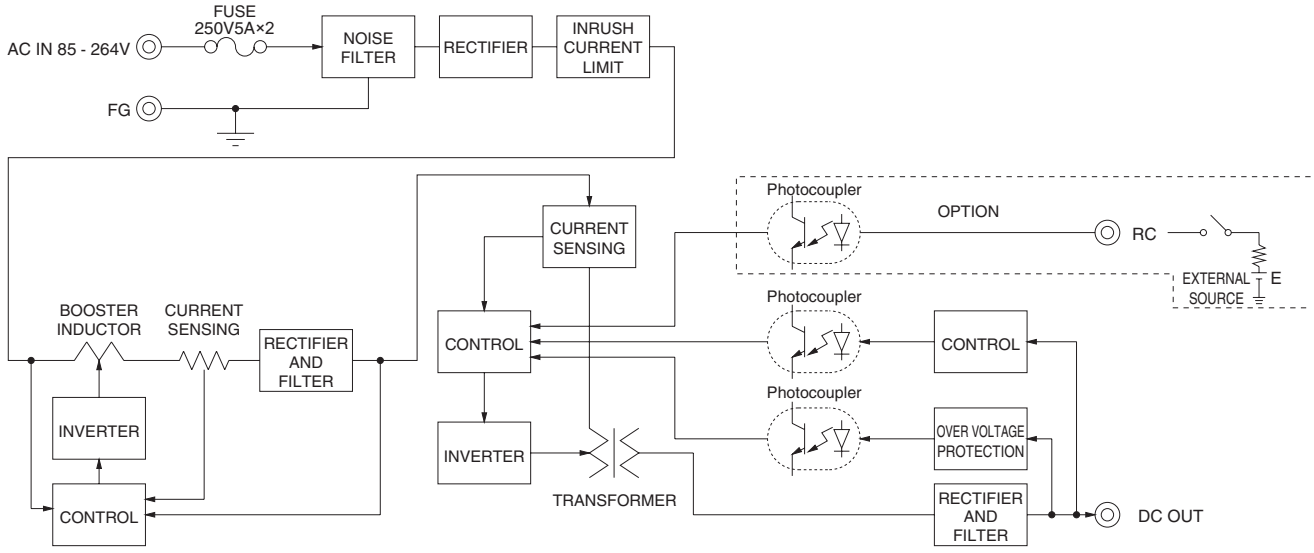
SPECIFICATIONS

	MODEL		LMA150F-24-Y	LMA150F-24-HY
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Refer to “Derating” ,Instruction Manual 1 and 3)	
	CURRENT[A]	ACIN 100V	2.0typ (Io=100%)	
		ACIN 200V	1.0typ (Io=100%)	
	FREQUENCY[Hz]		50 / 60 (47 - 63)	
	EFFICIENCY[%]	ACIN 100V	85.0typ (Io=100%)	85.0typ (Io=100%)
		ACIN 200V	87.0typ (Io=100%)	87.0typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.99typ (Io=100%)	
		ACIN 200V	0.95typ (Io=100%)	
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25℃)	
		ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25℃)	
	LEAKAGE CURRENT[mA]		0.10 / 0.25max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1)	
OUTPUT	VOLTAGE[V]		24	24
	CURRENT[A]		6.3	6.3 (Peak 12.6) ＊2
	LINE REGULATION[mV] ＊7		96max	96max
	LOAD REGULATION[mV] ＊7		150max	150max
	RIPPLE[mVp-p] ＊3	0 to +50℃	120max	120max
		-10 - 0℃	160max	160max
	RIPPLE NOISE[mVp-p] ＊3	0 to +50℃	150max	150max
		-10 - 0℃	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	240max	240max
		-10 to +50℃	290max	290max
	DRIFT[mV] ＊4		96max	96max
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)	
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)	
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		19.20 to 27.50	19.20 to 27.50
	OUTPUT VOLTAGE SETTING[V]		24.00 to 24.96	24.00 to 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically	
	OVERVOLTAGE PROTECTION[V]		27.60 to 33.60	27.60 to 33.60
	OPERATING INDICATION		Not provided	
	REMOTE SENSING		Not provided	
	REMOTE ON/OFF		Option (Required external power source.)	
ISOLATION	INPUT-OUTPUT-RC ＊6		AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 2MOOP	
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOOP	
	OUTPUT-RC-FG ＊6		AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)	
	OUTPUT-RC ＊6		AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature)	
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-10 to +70℃, 20 - 90%RH (Non condensing), (Refer to “Derating”, Instruction Manual 3) 3,000m (10,000feet) max	
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max	
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis	
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis	
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (AT ONIY AC input)		ANSI/AAMI ES60601-1, EN60601-1 3rd, Complies with IEC60601-1-2 4th Ed.	
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B	
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) ＊8	
OTHERS	CASE SIZE/WEIGHT		75×36.5×160mm [2.95×1.44×6.30 inches] (W×H×D) / 370g max (with chassis & cover : 600g max)	
	COOLING METHOD		Convection (Refer to “Derating”, Instruction Manual 3) ＊5	

＊1 Specification is changed at option, refer to Instruction Manual.
＊2 Peak loading for 10sec. And Duty 40% max.
( ) means peak current. There is a possibility that an internal device is damaged when the specification is exceeded.
＊3 This is the value that measured on measuring board with capacitor of 22μF at 150mm from output terminal.
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
＊4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
＊5 Derating is required.
＊6 Applicable when remote control (optional) is added.
＊7 Please contact us about dynamic load and input response.
＊8 Please contact us about another class.

＊ To meet the specifications. Do not operate over-loaded condition.
＊ Parallel operation is not possible.
＊ Derating is required when operated with chassis and cover.
＊ Sound noise may be generated by power supply in case of pulse load.

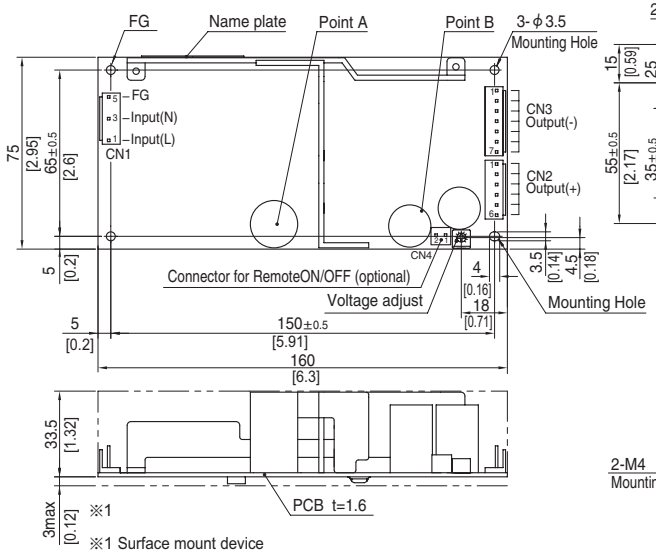
Block diagram



External view

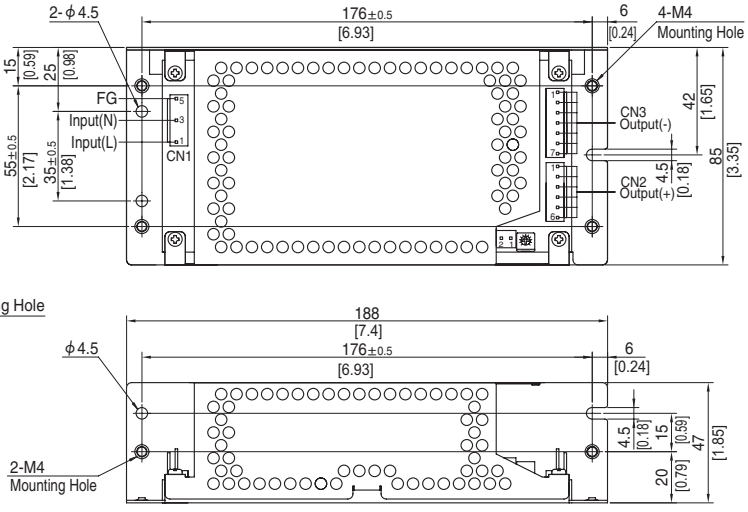
※ External size of option is different from standard model.

Standard type



※1 Surface mount device

Chassis and cover type



※ 4 Mounting holes are existing.
※ The back side of P.C.B. of the power supply is assembled some SMDs.
Be attention not to bump against the attached area by vibration.
※ Use the spacer of 8mm length or more regarding insulation.
And do not use press-fitting bush.
※ Point A, Point B are thermometry points.

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
CN3	1-1123723-7	1-1123722-7	Chain	1123721-1
			Loose	1318912-1

(Mfr:Tyco Electronics)

※ I/O Connector is Mfr. Tyco Electronics
※ Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

CN1

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

CN2

Pin No.	Output
1 to 6	+V

CN3

Pin No.	Output
1 to 7	-V

※ Keep drawing current per pin below 5A for CN2,CN3.

※ Tolerance : ±1 [±0.04]
※ Weight : 370g max (with chassis & cover : 600g max)
※ PCB material : CEM3
※ Optional chassis and cover material : Electric galvanizing steel board.
※ Dimensions in mm, [ ]=inches
※ Mounting torque (Mounting hole of chassis) :1.5N・m (16kgf・cm) max

Connector type

CN4 Option (Mfr:J.S.T)

PIN No.	Contents
1	RC(+)
2	RC(-)

Barrier strip type

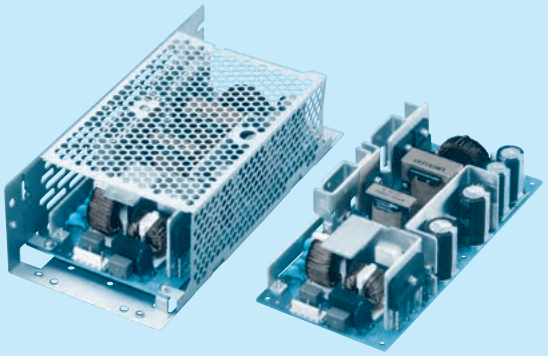
Model B2B-XH-A
Mating Connector (Terminal)
XHP-2
(BXH-001T-P0.6
or SXH-001T-P0.6)

COSEL AC-DC Power Supplies Medical Type

LMA240F

Ordering information

LM	A	240	F	-□	-□
①	②	③	④	⑤	⑥



Example recommended EMI/EMC filter
NAM-06-101

High voltage pulse noise type : NAP series
Low leakage current type : NAM series

＊A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

①Series name
②Single output
③Output wattage
④Universal input
⑤Output voltage
⑥Optional ＊1
C : with Coating
G : Low leakage current
H : with the function to be acceptable to output peak current
J1 : VH(J.S.T.)connector type
R : with Remote ON/OFF
R2 : with Remote ON/OFF
S : with Chassis
SN : with Chassis & cover
P : Setting in the overcurrent protection rating

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
＊Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

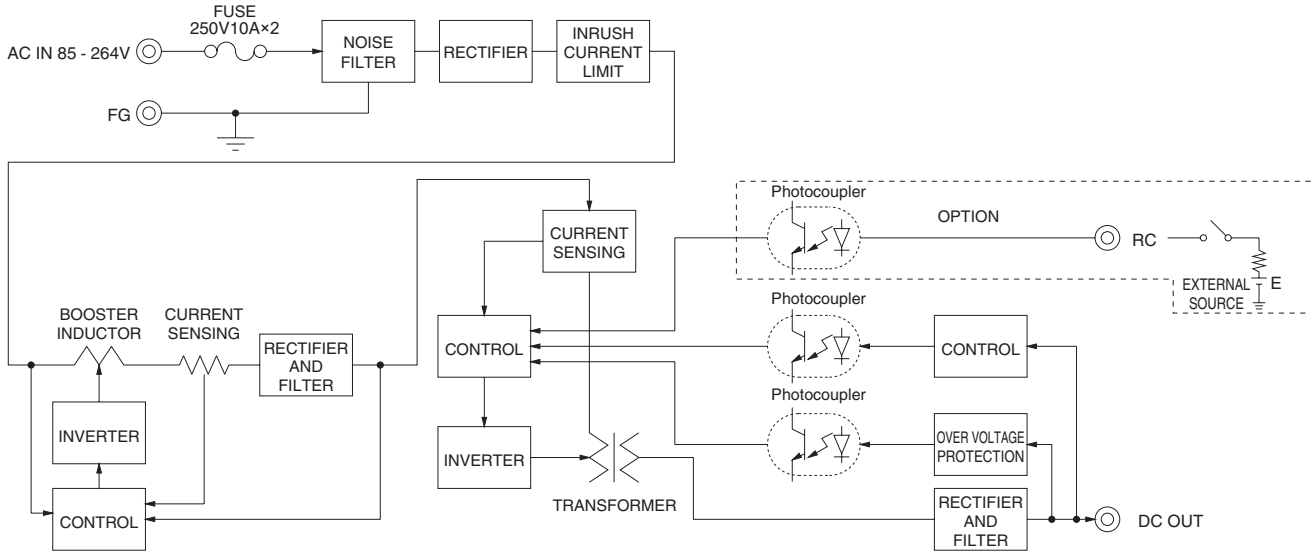
MODEL		LMA240F-24-Y	LMA240F-24-HY
MAX OUTPUT WATTAGE[W]		300	300 (480) ＊2
DC OUTPUT	Convection	24V 10A	24V 10A (20A) ＊2
	Forced air	24V 12.5A	24V 12.5A (20A) ＊2

SPECIFICATIONS

	MODEL		LMA240F-24-Y	LMA240F-24-HY
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Refer to “Derating” ,Instruction Manual 1 and 3)	
	CURRENT[A]	ACIN 100V	3.9typ (Io=100%)	
		ACIN 200V	1.8typ (Io=100%)	
	FREQUENCY[Hz]		50 / 60 (47 - 63)	
	EFFICIENCY[%]	ACIN 100V	86.0typ (Io=100%)	86.0typ (Io=100%)
		ACIN 200V	88.0typ (Io=100%)	88.0typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.99typ (Io=100%)	
		ACIN 200V	0.95typ (Io=100%)	
	INRUSH CURRENT[A]	ACIN 100V	15 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)	
		ACIN 200V	30 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)	
	LEAKAGE CURRENT[mA]		0.15 / 0.40max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1)	
OUTPUT	VOLTAGE[V]		24	24
	CURRENT[A]	Convection	10	10 (Peak 20) ＊2
		Forced air	12.5	12.5 (Peak 20) ＊2
	LINE REGULATION[mV] ＊7		96max	96max
	LOAD REGULATION[mV] ＊7		150max	150max
	RIPPLE[mVp-p] ＊3	0 to +50℃	120max	120max
		-10 - 0℃	160max	160max
	RIPPLE NOISE[mVp-p] ＊3	0 to +50℃	150max	150max
		-10 - 0℃	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	240max	240max
		-10 to +50℃	290max	290max
	DRIFT[mV] ＊4		96max	96max
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)	
	HOLD-UP TIME[ms] ＊9		20typ (ACIN 100V, Io=100%)	
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		19.20 to 27.50	19.20 to 27.50
	OUTPUT VOLTAGE SETTING[V]		24.00 to 24.96	24.00 to 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically	
	OVERVOLTAGE PROTECTION[V]		27.60 to 33.60	27.60 to 33.60
	OPERATING INDICATION		Not provided	
	REMOTE SENSING		Not provided	
	REMOTE ON/OFF		Option (Required external power source.)	
ISOLATION	INPUT-OUTPUT·RC ＊6		AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 2MOOP	
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOOP	
	OUTPUT·RC-FG ＊6		AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)	
	OUTPUT-RC ＊6		AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (At Room Temperature)	
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-10 to +70℃, 20 - 90%RH (Non condensing), (Refer to “Derating”, Instruction Manual 3) 3,000m (10,000feet) max	
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max	
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis	
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis	
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (AT ONIY AC input)		ANSI/AAMI ES60601-1, EN60601-1 3rd, Complies with IEC60601-1-2 4th Ed.	
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B	
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) ＊8	
OTHERS	CASE SIZE/WEIGHT		84×46×180mm [3.31×1.81×7.09 inches] (W×H×D) / 540g max (with chassis & cover : 860g max)	
	COOLING METHOD		Convection / Forced air (Refer to “Derating”, Instruction Manual 3) ＊5	

＊1 Specification is changed at option, refer to Instruction Manual.
＊2 Peak loading for 10sec. And Duty 40% max.
( ) means peak current. There is a possibility that an internal device is damaged when the specification is exceeded.
＊3 This is the value that measured on measuring board with capacitor of 22μF at 150mm from output terminal.
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
＊4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
＊5 Derating is required.
＊6 Applicable when remote control (optional) is added.
＊7 Please contact us about dynamic load and input response.
＊8 Please contact us about another class.
＊ To meet the specifications. Do not operate over-loaded condition.
＊ Parallel operation is not possible.
＊ Derating is required when operated with chassis and cover.
＊ Sound noise may be generated by power supply in case of pulse load.

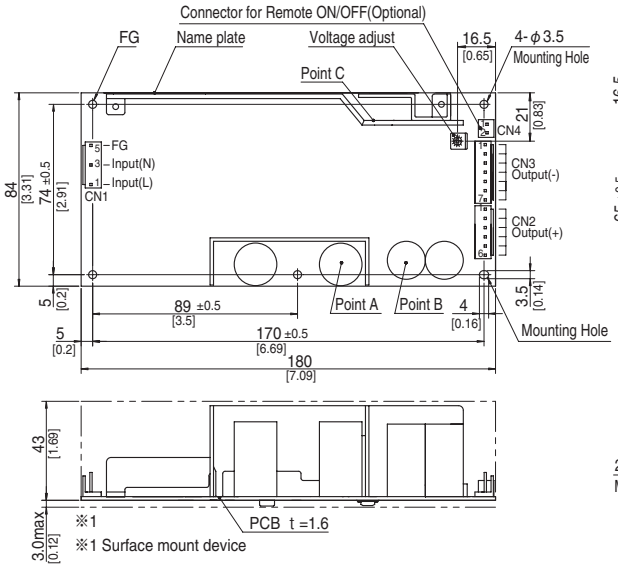
Block diagram



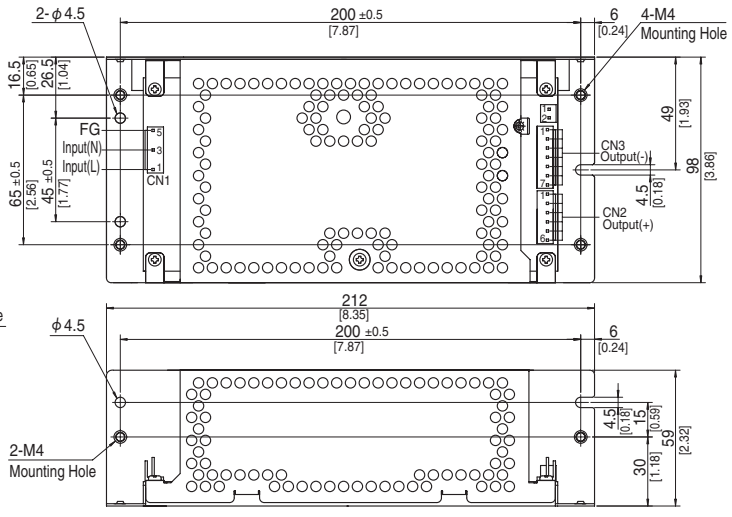
External view

※ External size of option is different from standard model.

Standard type



Chassis and cover type



※ 5 Mounting holes are existing.
※ The back side of P.C.B. of the power supply is assembled some SMDs.
Be attention not to bump against the attached area by vibration.
※ Use the spacer of 8mm length or more regarding insulation.
And do not use press-fitting bush.
※ Point A, Point B, Point C are thermometry points.

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
CN3	1-1123723-7	1-1123722-7	Chain	1123721-1
			Loose	1318912-1

(Mfr:Tyco Electronics)

※ I/O Connector is Mfr. Tyco Electronics
※ Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

CN1

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

CN2

Pin No.	Output
1 to 6	+V

CN3

Pin No.	Output
1 to 7	-V

※ Keep drawing current per pin below 5A for CN2,CN3.

※ Tolerance : ±1 [±0.04]
※ Weight : 540g max (with chassis & cover : 860g max)
※ PCB material : CEM3
※ Optional chassis and cover material : Electric galvanizing steel board.
※ Dimensions in mm, [ ]=inches
※ Mounting torque (Mounting hole of chassis) :1.5N・m (16kgf・cm) max

Connector type

CN4 Option (Mfr:J.S.T)

PIN No.	Contents
1	RC(+)
2	RC(-)

Barrier strip type

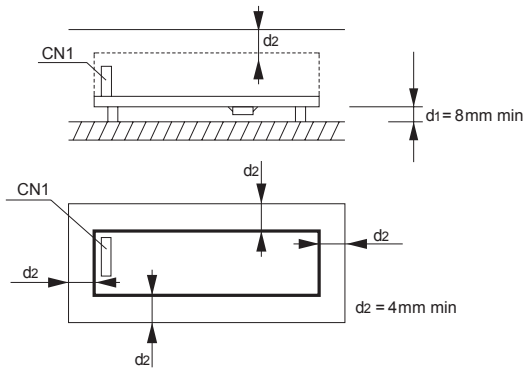
Model B2B-XH-A
Mating Connector (Terminal)
XHP-2
(BXH-001T-P0.6
or SXH-001T-P0.6)

Assembling and Installation Method

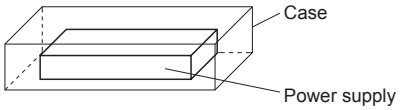
Installation method

■This power supply is manufactured by SMD technology.The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.

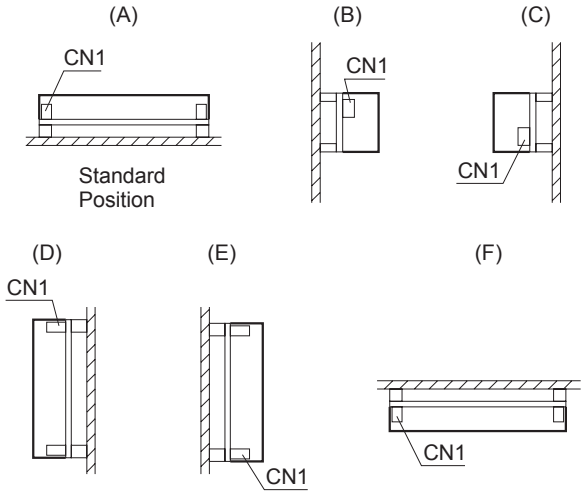
■In case of metal chassis, keep the distance between d1 & d2 for to insulate between lead of component and metal chassis, use the spacer of 8mm or more between d1. If it is less than d1 & d2, insert the insulation sheet between power supply and metal chassis.



■There is a possibility that it is not possible to cool enough when the power supply is used by the sealing up space as showing in right figure.Please use it after confi rming the temperature of point A and point B of Instruction Manual 3.



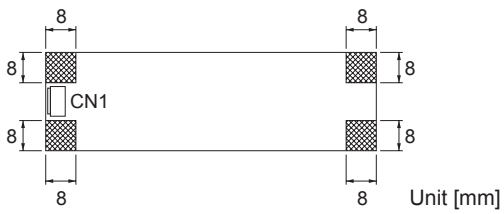
■(F) mounting is not possible when unit is with case cover, but if need to operate unit by (F) positioning with case cover, temperature / load derating is necessary. For more details, please contact our sales or engineering departments.



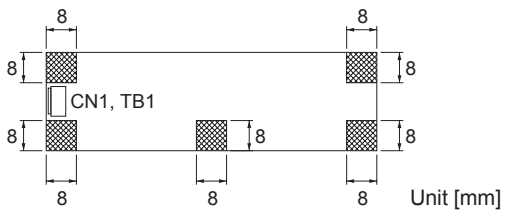
Mounting screw

■The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.

● LMA100F, LMA150F



● LMA240F



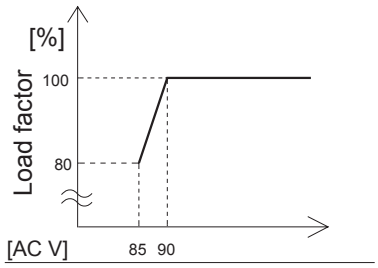
■If metallic fittings are used on the component side of the board,ensure there is no contact with surface mounted components.

■This product uses SMD technology.Please avoid the PCB installation method which includes the twisting stress or the bending stress.

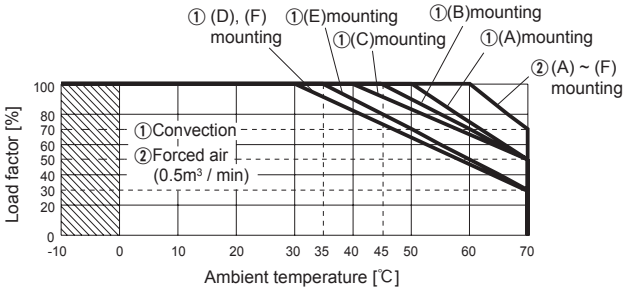
＊Recommendation to electrically connect FG to metal chassis for reducing noise.

Derating

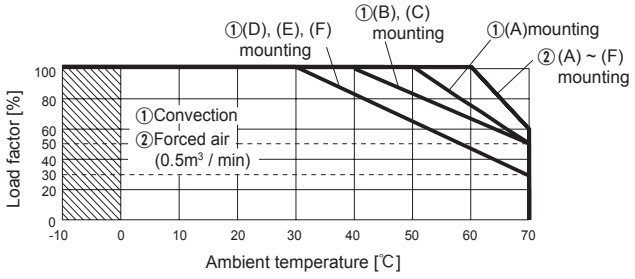
● Derating curve for input voltage



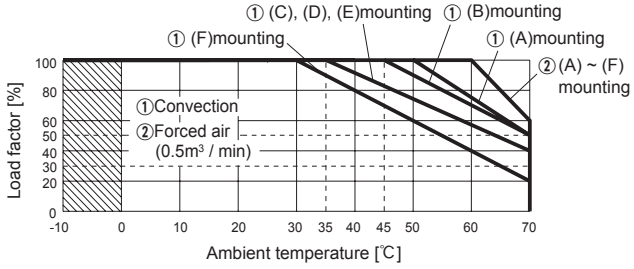
● LMA100F Ambient temperature derating curve (Reference value)



● LMA150F Ambient temperature derating curve (Reference value)



● LMA240F Ambient temperature derating curve (Reference value)



Output voltage	Output power[W]	
	①Convection	②Forced air
24V	240.0	300.0

■The operative ambient temperature is different by with ⁄ without chassis cover or mounting position.
Note: In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
■Make sure the temperature at point A and point B is less than the temperatures shown in Instruction Manual 3.
■The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.

Instruction Manual

◆ It is neccessary to read the “Instruction Manual” and “Before using our product” before you use our product.

Instruction Manual https://en.cosel.co.jp/product/powersupply/LMA/
Before using our product https://en.cosel.co.jp/technical/caution/index.html

LMA NOTICE

Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current ✻1 [A]	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
					Material	Single sided	Double sided	Series operation	Parallel operation
LMA100F	Active filter	60	1.4	Thermistor	CEM-3		Yes	Yes	No
	Forward converter	130							
LMA150F	Active filter	60	2.0	Thermistor	CEM-3		Yes	Yes	No
	Forward converter	130							
LMA240F	Active filter	60	3.9	SCR	CEM-3		Yes	Yes	No
	Forward converter	130							

✻1 The value of input current is at ACIN 100V and rated load.

МАКРО ГРУПП

Макро Групп – это:

- дистрибьютор электронных компонентов с 1994 года
- контрактный производитель электроники с 2007 года с собственным производством в Санкт-Петербурге (компания Макро ЕМС, входит в ГК Макро Групп)
- поставщик полупроводниковых материалов
- комплексный поставщик электронных компонентов
- моделирование и производство полупроводниковых эпитаксиальных гетероструктур для задач оптоэлектроники

Головной офис расположен в Санкт-Петербурге. Собственные представительства в крупных промышленных городах России и стран СНГ.

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- отсрочки платежей
- поставка электронных компонентов по проектным ценам
- инженерная поддержка проектов заказчиков
- сертификат системы менеджмента качестве ISO 9001-2015
- необходимые сертификаты и лицензии