



LO10-26D0512-04

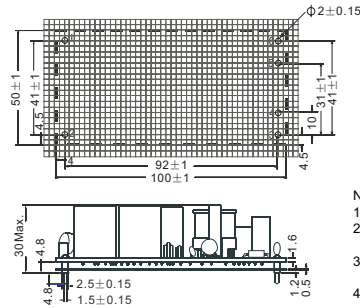
Three-phase three wire or four wire open frame AC-DC converter for electric meters

RoHS

This AC-DC converter is designed for electric-meter application and operates over a very wide input voltage range: 65-460VAC or 90-650VDC. It means that this converter can operate with any two wires connection from the three-phase three wire or four-wire system. When failures happen in the lines system resulting in input over-voltage, the converter will shut down to protect itself and the terminal devices from damage, improving the reliability of the system. The product has two output voltages: 5V and 12V. The isolation voltage is 4000VAC between input and output, and two outputs. The product meets IEC/EN61000 "Burst (4kV)", "Surge (2kV/4kV)" and "EN55022 Class B Conduction/ Radiation". So it is a design solution for electric-meter application sourced from a three-phase AC supply with the requirement of high isolation voltage and rigorous EMC.

FEATURES

- Ultra wide input voltage range: 65 ~ 460VAC/90 ~ 650VDC
- Any two wires connection from the three-phase three wire or four-wire system is available
- Conduction/Radiation: Class B
- Burst/Surge: Class 4
- Multi-output protection functions: over-current protection, short circuit protection, over-voltage protection
- Input under voltage lockout and over-voltage protection
- High efficiency, high reliability
- low ripple & noise, low standby power consumption
- High isolated: 4000VAC
- Long-life low-impedance electrolytic capacitors
- Multi-output, customized available



- NOTES:
1. Unit: mm;
 2. Except especial explanation, the other tolerances are ±0.30mm;
 3. FR-4, 1.6mm thick double sided glass fiber PCB;
 4. 0.55mm black MYLAR insulating sheet material.

Pin	Name	Function Define
1	ACL	AC voltage line wire(L wire) or DC voltage positive
2	ACN	AC voltage neutral wire(N wire) or DC voltage negative
3	OUT2+	The second output positive(+)
4	OUT2-	The second output negative(-)
5	OUT1-	The first output voltage negative(-)
6	OUT1+	The first output voltage positive(+)

OUTPUT SPECIFICATIONS		
Output voltage(V)	OUT1: 5.1	OUT2: 12
Output current(A)*3	1.2(Peak1.8)	0.4(Peak0.8)
Input variation	±0.5%	±1.5%
Load variation(balanced load)	±3%	±5%
Ripple & noise voltage (mVp-p)*1	100Max	150Max
Capacitor load max (µF)	4000	1200
Output over-current protection*4	110-250%Peak@Io2=100%, auto-recovery	110-250%Peak@Io1=100%, auto-recovery
Efficiency (%)	79Typ @Vin=220Vac, Io=100%	
Output short circuit protection	Continuous, and auto recovery	
Output over voltage protection	Feedback-clamp	

LO10-24B13K

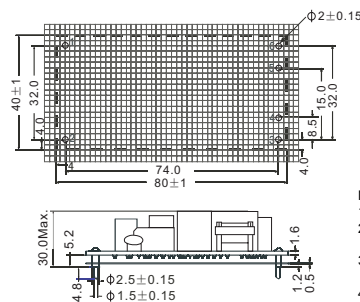
Ultra wide input voltage range switched-mode power supply for electric-meter

RoHS

The LO10-24B13K is designed for electric-meter application and operates over a very wide input voltage range: 30-280VAC or 30-400VDC, 13V single output. The isolation voltage is 4000VAC between input and output. The product meets IEC/EN61000 "Burst (4kV)", "Surge (2kV/4kV)" and "EN55022 Class B Conduction/ Radiation". So it supplies with the requirement of high isolation voltage and rigorous EMC.

FEATURES

- Ultra wide input voltage range: 30 ~ 280VAC/30 ~ 400VDC
- Conduction/Radiation: Class B
- Burst/Surge: Class 4
- Short circuit protection, over-voltage protection
- High efficiency, high reliability
- low ripple & noise, low standby power consumption
- High isolated: 4000VAC
- Long-life low-impedance electrolytic capacitors
- Gild pin, customized available



- NOTES:
1. Unit: mm;
 2. Except especial explanation, the other tolerances are ±0.30mm;
 3. FR-4, 1.6mm thick double sided glass fiber PCB;
 4. 0.55mm black MYLAR insulating sheet material.

Pin	Name	Function
1	ACL	AC voltage line wire(L wire) or DC voltage positive
2	ACN	AC voltage neutral wire(N wire) or DC voltage negative
3	NC	NC
4	No pin	No pin
5	OUT-	Output voltage negative(-)
6	OUT+	Output voltage positive(+)

OUTPUT SPECIFICATIONS	
Output voltage(V)	13
Output current(A)	0.5
Voltage set accuracy	±1%
Input variation	±0.5%
Load variation (10% to 100%)	±1%
Ripple & ripple(mVp-p)	130Max
Temperature drift(%/°C)	±0.02Max
Efficiency (%)	75Typ @Vin=220Vac, Io=100%
Output Short circuit protection	Continuous, and auto recovery
Output over voltage protection	Voltage limited≤15

AC-DC SERIES
DC-DC FIXED INPUT ISOLATED/UNREGULATED
DC-DC FIXED INPUT ISOLATED/REGULATED
DC-DC WIDE INPUT ISOLATED/REGULATED
DC-DC ULTRA-WIDE INPUT ISOLATED/REGULATED
DC-DC WIDE INPUT NON-ISOLATED/REGULATED
LED DRIVER
IGBT DRIVER
ISOLATION AMPLIFIER MODULE



AC-DC Converter

RoHS EN60601-1

LD Series

UNIVERSAL INPUT VOLTAGE ISOLATED & REGULATED OUTPUT, MEDICAL ULTRAMINIATURE AC-DC CONVERTER

LD---- are high efficiency green power modules with least packaging provided by Mornsun. The features of this series are: wide input voltage, DC and AC all in one, high efficiency, high reliability, low loss, safety isolation etc. They are widely used in industrial, office, civil and medical equipments. EMC and safety standards meet international standards IEC61000, UL60950, EN60601 and IEC60950, and Multi-certificate is in processing.

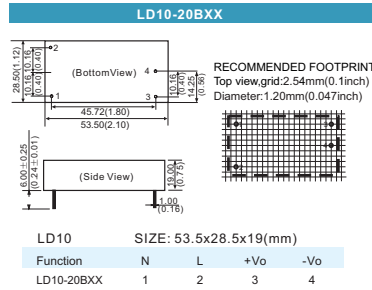
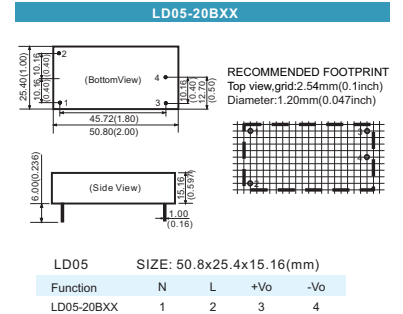
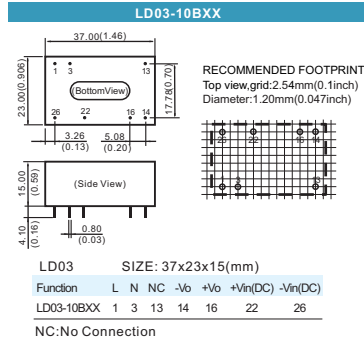
FEATURES

- Universal input voltage range:85~264VAC,120~370VDC
- AC and DC all in one
(input from the same terminal)
- Low ripple & noise
- 4000VAC isolation
- Over output voltage protection ,
- Short circuit protection and over temperature
- High efficiency, high power density
- Low loss, green power
- High electromagnetic compatibility
- Industrial, medical level specifications

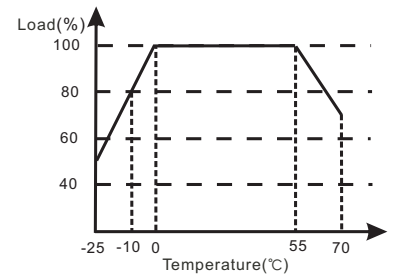


SPECIFICATIONS

Temperature ranges.....	-25℃ ~+70℃
Voltage set accuracy.....	±2%(3.3V:±3%)(typ)
Input variation.....	±0.5%(typ)
Load variation (10% to 100%).....	±1%(typ)
Short circuit protection.....	Continuous, and auto resume
Over temperature protection.....	150℃(max)
Hold-up time(Vin=230VAC).....	LD03&LD05: 30ms(typ) LD10: 50ms(typ)
Switching frequency.....	LD03/05:100kHz(typ) LD10:60kHz(typ)
I/O-isolation voltage.....	LD03:3000VAC LD05&LD10: 4000VAC
EMI/RFI conducted.....	LD03:EN55022,level A LD05:EN55011,level A LD10:EN55011,level B
MTBF.....	>200,000h @25℃
Standby power consumption.....	0.3W(typ)



TEMPERATURE VS LOAD:



Part Number	Power	Vout (VDC)	Iout (VDC)	Ripple and Noise (typ)	Eff(typ) %	Certificate
LD03-10B03	2.3W	3.3	700mA	30mV	63	UL CE
LD03-10B05		5	600mA		72	UL CE
LD03-10B09		9	330mA		74	UL CE
LD03-10B12	3W	12	250mA		76	UL CE
LD03-10B15		15	200mA		76	UL CE
LD03-10B24		24	125mA	78	UL CE	
LD05-20B03	4.2W	3.3	1250mA	30mV	66	UL CE
LD05-20B05		5	1000mA		72	UL CE
LD05-20B09	5W	9	550mA		74	UL CE
LD05-20B12		12	420mA		76	UL CE
LD05-20B15		15	333mA		76	UL CE
LD05-20B24	5.5W	24	230mA	78	UL CE	
LD10-20B03	6.6W	3.3	2000mA	50mV	70	UL CE
LD10-20B05		5	2000mA		74	UL CE
LD10-20B09		9	1100mA		76	UL CE
LD10-20B12	10W	12	900mA		76	UL CE
LD10-20B15		15	700mA		78	UL CE
LD10-20B24		24	450mA	80	UL CE	

Note:LD05,LD10 series have got EN60601-1
LD03 Series: EN60601-1 pending



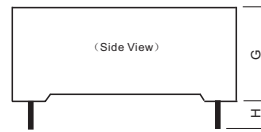
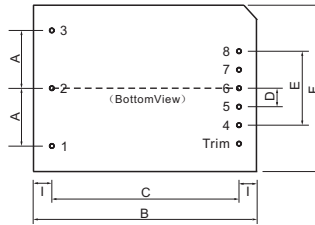
LHXX Series

UNIVERSAL INPUT VOLTAGE ISOLATED & REGULATED OUTPUT
ULTRAMINIATURE AC-DC CONVERTER

RoHS

FEATURES

- Universal input:85~264VAC, 120~370VDC
- AC and DC all in one
(input from the same terminal)
- Low ripple and noise
- 3000VAC isolation
- Over-current protection and short circuit protection
- High efficiency, High power density
- Low loss, green power
- High electromagnetic compatibility
- Industrial level specifications



Note:
Unit:mm(inch)
Pin section:1.00mm(0.039inch)
Pin Length(H): ≥6.00mm(≥0.236inch)
Pin tolerances: ±0.1mm(±0.004inch)
General tolerances: ±0.5mm(±0.020inch)

OUTLINE AND DIMENSIONS

NO.	LH05	LH10	LH15	LH20	LH25
A	12.5	17.5	17.5	20.0	20.0
B	48.5	55.0	62.0	70.0	70.0
C	40.5	47.0	54.0	62.0	62.0
D	4.0	5.0	5.0	5.75	5.75
E	16.0	20.0	20.0	23.0	23.0
F	36.0	45.0	45.0	48.0	48.0
G	20.5	21.0	22.5	23.5	23.5
I	4.0	4.0	4.0	4.0	4.0
H	6.0	6.0	6.0	6.0	6.0

FOOTPRINT DETAILS

Pin	LHXX-10B	LHXX-10A	LHXX-10C	LHXX-10D
1	⊥*	⊥	⊥	⊥
2	AC(N)	AC(N)	AC(N)	AC(N)
3	AC(L)	AC(L)	AC(L)	AC(L)
4	-Vo	-Vo	-Vo1	-Vo1
5	No Pin	No Pin	+Vo1	+Vo1
6	No Pin	COM	-Vo2	No Pin
7	No Pin	No Pin	COM	-Vo2
8	+Vo	+Vo	+Vo2	+Vo2
Trim	Trim**	No Pin	No Pin	No Pin

*: There is no Pin 1 ⊥ on LH15-10BXX.
Trim**: Only For LH20/25-10BXX Series.

MODLES WEIGHT

WEIGHT (TYP)	LH05	LH10	LH15	LH20	LH25
	50g	70g	80g	120g	120g

SPECIFICATIONS

Temperature ranges.....-40°C ~+70°C
Voltage set accuracy.....±2%
Ripple& noise.....≤100mVp-p
Short circuit protection.....Continuous(automatic recovery)
Over current protection.....≥110% Io
Hold-up time.....80ms(typ)/at Vin:230VAC
EMI/RFI conducted.....EN55022, level B
EMC compliance.....Level 3
MTBF.....>300,000h @25°C
I/O-isolation voltage.....3000VAC
Standby power consumption.....LH05/LH10/LH15-10BXX≤0.5W;
LH15(Other model)/LH20/LH25-10BXX≤0.75W

PRODUCT PROGRAM

Part Number	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Load Regulation	Eff (TYP) %	Certificate
LH05-10B03	4W	3.3V/1250mA		±1%	65	UL CE
LH05-10B05		5V/1000mA				UL CE
LH05-10B09		9V/550mA				UL CE
LH05-10B12	5W	12V/420mA		±1%	76	UL CE
LH05-10B15		15V/330mA				UL CE
LH05-10B24		24V/230mA				UL CE
LH05-10A05		+5V/500mA	-5V/500mA			
LH05-10A12	5W	+12V/210mA	-12V/210mA	±2%	76	
LH05-10A15		+15V/160mA	-15V/160mA			
LH05-10A24		+24V/100mA	-24V/100mA			
LH05-10C0505-01		5V/800mA	±5V/100mA			
LH05-10C0512-01	5W	5V/600mA	±12V/100mA	Main:±3% Secondary:±5%	76	
LH05-10C0515-01		5V/600mA	±15V/80mA			
LH05-10C0524-01		5V/600mA	±24V/50mA			
LH05-10D0505-01		5V/900mA	5V/100mA			
LH05-10D0512-01	5W	5V/750mA	12V/100mA	Main:±3% Secondary:±5%	76	
LH05-10D0515-01		5V/700mA	15V/100mA			
LH05-10D0524-01		5V/600mA	24V/100mA			
LH10-10B03	6.6W	3.3V/2000mA		±1%	70	UL CE
LH10-10B05		5V/2000mA				UL CE
LH10-10B09		9V/1100mA				UL CE
LH10-10B12	10W	12V/900mA		±1%	78	UL CE
LH10-10B15		15V/700mA				UL CE
LH10-10B24		24V/450mA				UL CE
LH10-10A05		+5V/1000mA	-5V/1000mA			UL CE
LH10-10A12	10W	+12V/450mA	-12V/450mA	±2%	78	UL CE
LH10-10A15		+15V/350mA	-15V/350mA			UL CE
LH10-10A24		+24V/200mA	-24V/200mA			UL CE
LH10-10C0505-04		5V/1200mA	±5V/400mA			
LH10-10C0512-02	10W	5V/1000mA	±12V/200mA	Main:±3% Secondary:±5%	78	
LH10-10C0515-02		5V/900mA	±15V/200mA			
LH10-10C0524-01		5V/1000mA	±24V/100mA			
LH10-10D0505-02		5V/1800mA	5V/200mA			UL CE
LH10-10D0512-02	10W	5V/1500mA	12V/200mA	Main:±3% Secondary:±5%	78	UL CE
LH10-10D0515-02		5V/1400mA	15V/200mA			UL CE
LH10-10D0524-02		5V/1000mA	24V/200mA			UL CE

Part Number	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Load Regulation	Eff (TYP) %	Certificate
LH15-10B03	9.9W	3.3V/3000mA		±1%	73	UL CE
LH15-10B05		5V/2800mA				UL CE
LH15-10B09		9V/1600mA				UL CE
LH15-10B12	15W	12V/1250mA		±1%	80	UL CE
LH15-10B15		15V/1000mA				UL CE
LH15-10B24		24V/625mA				UL CE
LH15-10B48		48V/320mA				UL CE
LH15-10A05		+5V/1500mA	-5V/1500mA			
LH15-10A12	15W	+12V/650mA	-12V/650mA	±2%	80	
LH15-10A15		+15V/500mA	-15V/500mA			
LH15-10C0505-05		5V/2000mA	±5V/500mA			
LH15-10C0512-02	15W	5V/2000mA	±12V/200mA	Main:±3% Secondary:±5%	80	
LH15-10C0515-02		5V/1800mA	±15V/200mA			
LH15-10C0524-01		5V/2000mA	±24V/100mA			
LH15-10D0505-08		5V/2200mA	5V/800mA			
LH15-10D0512-04	15W	5V/2000mA	12V/400mA	Main:±3% Secondary:±5%	80	
LH15-10D0515-03		5V/2000mA	15V/300mA			
LH15-10D0524-02		5V/2000mA	24V/200mA			
LH20-10B03		3.3V/4100mA		±2%	69	UL CE
LH20-10B05		5V/3500mA				UL CE
LH20-10B12	20W	12V/1600mA		±1%	82	UL CE
LH20-10B15		15V/1300mA				UL CE
LH20-10B24		24V/850mA				UL CE
LH20-10A05		+5V/2000mA	-5V/2000mA			
LH20-10A12	20W	+12V/830mA	-12V/830mA	±2%	82	
LH20-10A15		+15V/650mA	-15V/650mA			
LH20-10C0505-05		5V/2500mA	±5V/500mA			
LH20-10C0512-04	20W	5V/2000mA	±12V/400mA	Main:±3% Secondary:±5%	82	
LH20-10C0515-03		5V/2000mA	±15V/300mA			
LH20-10C0524-02		5V/2000mA	±24V/200mA			
LH20-10D0505-10		5V/3000mA	5V/1000mA			
LH20-10D0512-06	20W	5V/2500mA	12V/600mA	Main:±3% Secondary:±5%	82	
LH20-10D0515-05		5V/2500mA	15V/500mA			
LH20-10D0524-03		5V/2500mA	24V/300mA			
LH25-10B05		5V/4100mA			74	UL CE
LH25-10B12		12V/2100mA				UL CE
LH25-10B15	25W	15V/1600mA		±1%	85	UL CE
LH25-10B24		24V/1100mA				UL CE
LH25-10B48		48V/500mA				UL CE



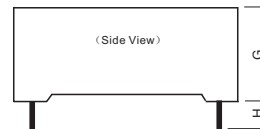
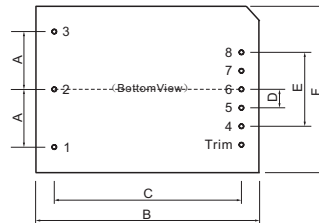
AC-DC Converter

LBXX Series

UNIVERSAL INPUT VOLTAGE ISOLATED & REGULATED OUTPUT
HIGH RELIABILITY AC-DC CONVERTER

FEATURES

- Universal input: 85~264VAC, 120~370VDC
- AC and DC all in one (input from the same terminal)
- Low ripple and noise
- 3000VAC isolation
- Over-current protection and short circuit protection
- High efficiency
- Low loss, green power
- High electromagnetic compatibility
- Wider temperature range, high reliability



Note:
Unit:mm(inch)
Pin section:1.00mm(0.039inch)
Pin Length(H): ≥6.00mm(≥0.236inch)
Pin tolerances: ±0.1mm(±0.004inch)
General tolerances: ±0.5mm(±0.020inch)

RoHS

OUTLINE AND DIMENSIONS

NO.	LB03	LB05	LB10	LB15
A	12.5	17.5	17.5	20.0
B	48.5	55.0	62.0	70.0
C	40.5	47.0	54.0	62.0
D	4.0	5.0	5.0	5.75
E	16.0	20.0	20.0	23.0
F	36.0	45.0	45.0	48.0
G	20.5	21.0	22.5	23.5
H	6.0	6.0	6.0	6.0

FOOTPRINT DETAILS

Pin	LBXX-10B	LBXX-10A	LBXX-10C	LBXX-10D
1	$\frac{1}{2}$ *	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
2	AC(N)	AC(N)	AC(N)	AC(N)
3	AC(L)	AC(L)	AC(L)	AC(L)
4	-Vo	-Vo	-Vo1	-Vo1
5	No Pin	No Pin	+Vo1	+Vo1
6	No Pin	COM	-Vo2	No Pin
7	No Pin	No Pin	COM	-Vo2
8	+Vo	+Vo	+Vo2	+Vo2
Trim	Trim**	No Pin	No Pin	No Pin

$\frac{1}{2}$ * : There is no Pin $\frac{1}{2}$ on LH15-10BXX.
Trim** : Only For LB15-10BXX Series.

MODELS WEIGHT

WEIGHT (TYP)	LB05	LB10	LB15	LB20
	50g	70g	80g	120g

SPECIFICATIONS

Temperature ranges.....-40°C ~ +70°C
Voltage set accuracy.....±2%(main out)
Input variation.....±0.5%(main out); ±1.5%(others)
Ripple & noise.....≤100mVp-p
Short circuit protection.....Continuous, and auto resume (except specialties)
Over current protection.....≥110% Io
Hold-up time.....80ms(typ)/at Vin:230VAC
EMI/RFI conducted.....EN55022, level B
EMC compliance.....Level 3
MTBF.....>300,000h @25°C
I/O-isolation voltage.....3000VAC
Standby power consumption.....≤0.75W

PRODUCT PROGRAM

Part Number	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Ripple and Noise(Typ.)	Eff (TYP) %	Certificate
LB03-10B03	3W	3.3V/1000mA		50mV	68	UL CE
LB03-10B05		5V/600mA			71	UL CE
LB03-10B12		12V/250mA			74	UL CE
LB03-10B15		15V/200mA			75	UL CE
LB03-10B24		24V/125mA			77	UL CE
LB05-10B03	5W	3.3V/1500mA		50mV	70	UL CE
LB05-10B05		5V/1000mA			73	UL CE
LB05-10B09		9V/600mA			75	UL CE
LB05-10B12		12V/450mA			76	UL CE
LB05-10B15		15V/350mA			78	UL CE
LB05-10B24		24V/230mA			79	UL CE
LB05-10A05	5W	+5V/500mA	-5V/500mA	50mV	70	UL CE
LB05-10A12		+12V/210mA	-12V/210mA		74	UL CE
LB05-10A15		+15V/170mA	-15V/170mA		75	UL CE
LB05-10A24		+24V/100mA	-24V/100mA		77	UL CE
LB05-10D0505-01	5W	+5V/900mA	+5V/100mA	50mV	70	UL CE
LB05-10D0512-01		+5V/750mA	+12V/100mA		74	UL CE
LB05-10D0515-01		+5V/700mA	+15V/100mA		74	UL CE
LB05-10D0524-01		+5V/600mA	+24V/100mA		75	UL CE

Part Number	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Ripple and Noise(Typ.)	Eff (TYP) %	Certificate
LB10-10B03	10W	3.3V/3000mA		50mV	70	
LB10-10B05		5V/2000mA			73	
LB10-10B09		9V/1100mA			77	
LB10-10B12		12V/900mA			78	
LB10-10B15		15V/700mA			78	
LB10-10B24		24V/450mA			80	
LB10-10A05	10W	+5V/1000mA	-5V/1000mA	50mV	73	
LB10-10A12		+12V/450mA	-12V/450mA		78	
LB10-10A15		+15V/350mA	-15V/350mA		79	
LB10-10D0505-021		11W	5V/2000mA		5V/200mA	
LB15-10B03	15W	3.3V/3500mA		50mV	74	UL CE
LB15-10B05		5V/3000mA			74	UL CE
LB15-10B12		12V/1250mA			79	UL CE
LB15-10B15		15V/1000mA			80	UL CE
LB15-10B24		24V/625mA			81	UL CE



LI24 Series

UNIVERSAL INPUT VOLTAGE ISOLATED & REGULATED OUTPUT, DIN-RAIL POWER SUPPLIES

RoHS c US

LI24 is a series of DIN-Rail green power supplies with high efficiency and excellent price/performance ratio provided by MORN SUN. This series provide stability and high immunity against electrical disturbance for loads in industrial process controls, machine tools and other equipment exposed to a difficult industrial environment. Compact size, light weight, standard Din Rail installation (35mm) and other features of these power supplies, which saves a lot of space for your design. Build-in large capacitor provides for you enough hold-up time.

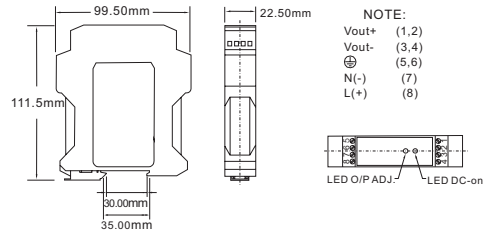
FEATURES

- Universal input voltage: 90~264VAC, 120~370VDC
- AC and DC all in one (input from the same terminal)
- Output voltage adjustable
- Low ripple & noise
- Input under voltage lockout
- Overload and short-circuit protection
- High electromagnetic compatibility
- Meet product standards of industrial class



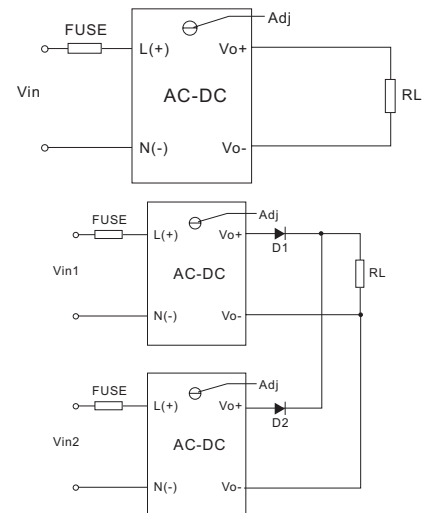
SPECIFICATIONS

Temperature ranges.....	-25°C ~ +70°C
Temperature coefficient.....	0.02% / °C
Switching frequency.....	60kHz
Efficiency.....	85% (typ)
Isolation voltage.....	3000VAC
MTBF.....	>200,000h @25°C
Input under voltage lockout.....	80VAC (±10%)
Load variation (10% - 90%).....	±1%
ripple & noise(20M Bandwidth).....	50mV (typ)
Short circuit protection.....	Continuous (automatic recovery)
Over current protection: LI24-10B05.....	4.4A (typ)
LI24-10B12.....	2.4A (typ)
LI24-10B24.....	1.3A (typ)
Hold-up time.....	80ms (typ)
Cooling.....	Free air convection



Part Number	Power	Vout (VDC)	Iout (VDC)	Ripple and Noise (typ)	Eff (typ) %
LI24-10B05	24W	5	4 ± 0.1A	50mV	75
LI24-10B12	24W	12	2 ± 0.1A	50mV	85
LI24-10B24	24W	24	1 ± 0.05A	50mV	87

TYPICAL APPLICATION



General Application

1. Vin: 90 - 264VAC or 120 - 370VDC;
2. Adj: Adjusting terminal of output voltage. Users can adjust any load freely within the range of output voltage according to your own Need.

Parallel connection Application

1. Two same Din Rail power supplies are in use of parallel connection application, Vin1 and Vin2 are both 90-264VAC or 120-370VDC;
2. Adj: Adjusting terminal of output voltage. Users can adjust any load freely within the range of output voltage according to your own need.
3. When AC-DC2's output voltage is a little lower than AC-DC1's, AC-DC2 is becoming a spare power supply for load, as Vin1 is off or AC-DC1 is in fault.
4. When Vin1 and Vin2 are supplying power to Din Rail power supply alternately, Din Rail power supply will work alternately and supply power to load sostenuto.



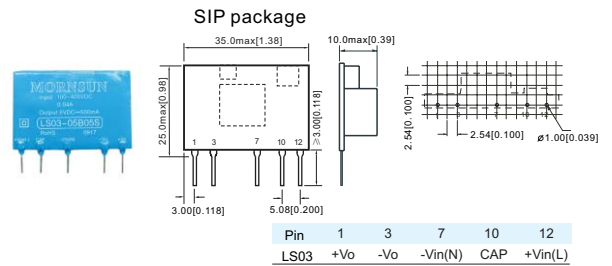
AC-DC Converter

LS03 Series

3W, HIGH VOLTAGE DC-DC(AC-DC) CONVERTER

LS ---- are high efficiency green power modules with miniature packaging provided by Mornsun. The features of this series are: wide input voltage, DC and AC all in one, high efficiency, high reliability, low loss, safety isolation etc. They are widely used in industrial, office and civil equipments, as well as applications where no special requirement for EMC performance. It is recommended to add EMI suppression circuit or take measure to shield when there is strict requirement for EMC performance.

RoHS



Part Number	Power	Vout (VDC)	Iout (mA)	Ripple & Noise (typ)	Eff(TYP) %
LS03-05B03S	1.65W	3.3	500	50mV	70
LS03-05B05S	2.5W	5	500		70
LS03-05B09S	3W	9	330	100mV	75
LS03-05B12S		12	250		78
LS03-05B15S		15	200		78
LS03-05B24S		24	125		78

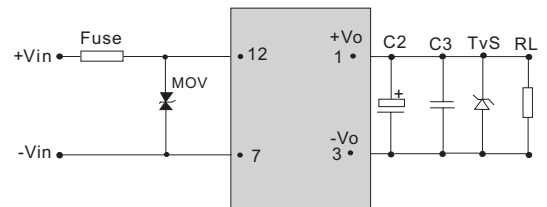
PRODUCT FEATURES

- Wide input voltage:100~400VDC(85~264VAC)
- Over temperature protection and short circuit protection
- Low ripple & noise
- 2000VAC Isolation
- High efficiency,Low loss, green power
- Multiple models available
- Industrial level specifications

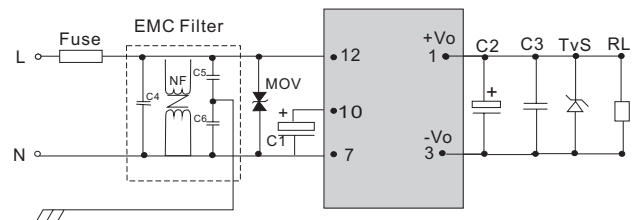
COMMON SPECIFICATIONS

- Input current.....40mA (typ)
- Voltage set accuracy.....± 2%
- Input variation.....± 0.5% (typ)
- Load variation (10%-100%).....± 1% (typ)
- Ripple& noise (20MHz Bandwidth).....100mVp-p(typ)
- Short circuit protection.....Continuous, automatic recovery
- Over temperature protection.....150℃(max)
- Temperature ranges:Operating.....-40℃~+85℃
Storage.....-40℃~+105℃
- Humidity.....85%(max)
- Temperature drift.....± 0.02%/℃(typ)
- Switching frequency.....100kHz(typ)
- Efficiency.....75%(typ)
- I/O-isolation voltage.....2000VAC/1Min
- Case material.....UL94V-0
- Install.....PCB
- MTBF.....>200,000h @25℃
- standby power consumption.....≤0.3W

TYPICAL APPLICATIONS



LS03 DC input typical application



LS03 AC input typical application

EXTERNAL CAPACITORS TYPICAL VALUE

Output Voltage	C1	C2	C3	FUSE	TVS
3.3V	10uF/ 400V	150uF/ 25V	0.1uF/ 50V	0.5A/250V	P4KE6.8A
5V					P4KE12A
9V					P4KE20A
12V		100uF/ 35V			P4KE33A
15V					
24V					