CINCON ELECTRONICS

AC-DC SWITCHING POWER SUPPLY CATALOG 2016





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Every day, 365 days a year Cincon makes a difference in people's lives throughout the world.

Design engineers and other power supply specifiers select our AC-DC and DC-DC convertors to power a wide range of products. Cincon power supplies are found in a myriad of applications, from medical equipment used to keep us healthy, to scurity systems working to keep us safe. Name an electronic device in any equipment category and it's likely you'll find a Cincon power supply inside. The communications, test instrumentation, entertainment, lighting, medical, computer, networking, industrial and transportation industries all use Cincon power supplies.

Cincon gives power supply specifiers what they need, speed and specification. Need a power supply fast? Designers can select from one of our 25,000 plus standard model numbers, many available off the shelf from distributors located around the globe. Give us a little more time and we can modify one of our standard products to your requirement. Need a full custom power supply? We do that also.

Using state of the art design tools, our power supplies are engineered with proven technology in one of our two Taiwan design laboratories. We focus heavily on reliability in the early stages of development to ensure a robust final product. Combined with extensive verification testing at the prototype and pilot production stages, Cincon is able to offer power supplies with long operational lives.

Cincon AC-DC and DC-DC power supplies are manufactured in one of our wholly owned, ISO 9001 and ISO 14001 certified, manufacturing facilities in Taiwan and China. Products are built using the latest manufacturing and quality assurance techniques on state of the art equipment; giving our customers not only high quality but also short lead times.

As a global designer and manufacturer of AC-DC and DC-DC power supplies, our products are certified to international safety, efficiency, hazardous substance and EMI standards where required. We also have capability to design and certify to application and country specific standards.

When you require an AC-DC or DC-DC power supply, standard or custom, and have little time, look to us for a solution. Let Cincon power your idea.

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CFM05 SERIES 5 WATT

Features

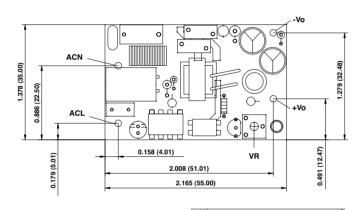
- Universal Input Range 85-264VAC
- Efficiency to 80%
- ٠ EN55022 Class B
- Continuous Short Circuit Protection ٠
- Low Leakage Current 0.25mA Max.

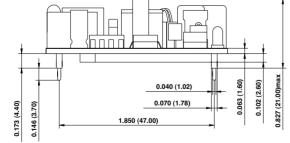




Mechanical Dimensions

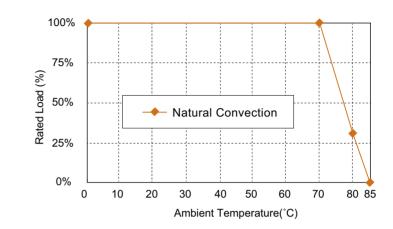
All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.X=±0.5





MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT MIN. MAX.		RIPPLE & (mVp-p) (NOTE 1)	VOLTAGE ACCURACY (NOTE 2)	LINE REGULATION (NOTE 3)	LOAD REGULATION (NOTE 4)	% EFF (Typ.) (NOTE 5)
051 (050000	2.2.1			. ,	,	,	,	. ,
CFM05S033	3.3 V	0 A	1.25 A	50 mV	±1%	±0.5%	±1%	69%
CFM05S050	5 V	0 A	1.0 A	50 mV	±1%	±0.5%	±1%	73%
CFM05S090	9 V	0 A	0.55 A	90 mV	±1%	±0.5%	±1%	77%
CFM05S120	12 V	0 A	0.42 A	120 mV	±1%	±0.5%	±1%	77%
CFM05S150	15 V	0 A	0.33 A	150 mV	±1%	±0.5%	±1%	78%
CFM05S180	18 V	0 A	0.28 A	180 mV	±1%	±0.5%	±1%	79%
CFM05S240	24 V	0 A	0.23 A	240 mV	±1%	±0.5%	±1%	76%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage Frequency Inrush Current Conducted EMI Leakage Current

85-264Vac 47 to 63Hz 40A max. @240Vac CISPR/FCC Class B 0.25mA max.

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection **Over Voltage Protection** Temperature Coefficient

8ms typ. @115Vac Continuous (Auto Recovery) TVS Component to Clamp ±0.05%/°C

SAFETY AND EMC

Emission and Immunity

EN55022 Class B, EN61000-6-3 EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

Isolation **Operating Temperature** Storage Temperature Humidity Cooling Switching Frequency MTBF MIL-HDBK-217F, GB, at 25°C/115VAC 200Khrs min. Altitude Dimensions

```
Input to output = 4,242VDC
0°C-85°C (see derating curve)
-20-85°C
93% RH max. Non condensing
Natural Convection
60KHz Typical
2000m
2.165 x 1.378 x 0.827 inches
(55.00 x 35.00 x 21.00 mm)
35 g (0.08 Pounds)
```

Weight

- 1. Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L. capacitor to
- output for ripple & noise measuring @20MHz BW.
- 2. Voltage accuracy is set at 100% rated load and 25°C.Ta.
- 3. Line regulation is measured from 100Vac to 240Vac with full load. 4. Load regulation is measured from 10% to 100% full load.
- 5. Typical efficiency at 230VAC and full load at 25°C.

CFM10, CFM15 SERIES 10 WATT, 15 WATT

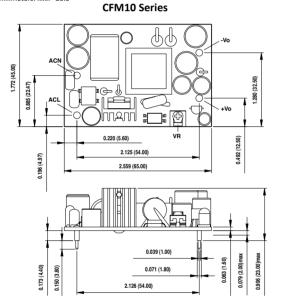
Features

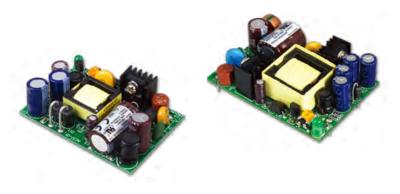
- Universal Input Range 85-264VAC
- Efficiency to 82%
- EN55022 Class B, CISPR/FCC Class B
- Continuous Short Circuit Protection •
- ٠ Leakage Current 0.25mA Max.
- PCB Mountable •



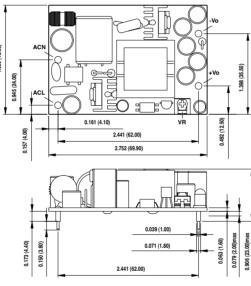
Mechanical Dimensions

All Dimensions In Inches(mm) Tolerance Inches: x.xxx= ±0.02 Millimeters: x.xx= ±0.5





CFM15 Series



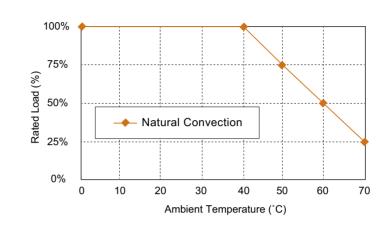
CFM10 Series

MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	(TYP.)
			(NOTE 1)		(NOTE 2)	(NOTE 3)	(NOTE 4)
CFM1001S	5 V	2000 mA	1%	± 1%	± 0.5%	± 1%	73%
CFM1002S	12 V	840 mA	1%	± 1%	± 0.5%	± 1%	76%
CFM1003S	15 V	670 mA	1%	± 1%	± 0.5%	± 1%	76%
CFM1005S	24 V	420 mA	1%	± 1%	± 0.5%	± 1%	77%
CFM1007S	3.3 V	2500 mA	50 mV	± 1%	± 0.5%	± 1%	67%
CFM1009S	9 V	1120 mA	1%	± 1%	± 0.5%	± 1%	72%

CFM15 Series

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE (NOTE 1)	VOLTAGE ACCURACY	LINE REGULATION (NOTE 2)	LOAD REGULATION (NOTE 3)	% EFF. (TYP.) (NOTE 4)
CFM1501S CFM1502S CFM1503S CFM1505S CFM1507S CFM1509S	5 V 12 V 15 V 24 V 3.3 V 9 V	3000 mA 1250 mA 1000 mA 630 mA 3000 mA 1670 mA	1% 1% 1% 50 mV 1%	± 1% ± 1% ± 1% ± 1% ± 1% ± 1%	± 0.5% ± 0.5% ± 0.5% ± 0.5% ± 0.5%	± 1% ± 1% ± 1% ± 1% ± 1% ± 1%	74% 80% 81% 83% 69% 76%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

85-264Vac

47 to 63Hz

100Vac/0.5A max., 240Vac/0.25A max. Cold Start@25°C

20A max. @115Vac 40A max. @230Vac

0.25mA max.

INPUT SPECIFICATIONS

Voltage Frequency Input Current Inrush Current

Leakage Current

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection **Over Voltage Protection** Temperature Coefficient

16ms typ. @115Vac Hiccup Mode (Auto Recovery) TVS Component to Clamp 0.05%/°C

SAFETY AND EMC

Emission and Immunity

Safety

EN55022 Class B, EN61000-6-3 EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

CENERAL OPECIFICATIONS

GENERAL SPECIFICATIO	DNS	
Isolation		Input to output = 4,242VDC
Operating Temperature		0°C-70°C (see derating curve)
Storage Temperature		-20-85°C
Humidity		93% RH max. Non condensing
Cooling		Natural Convection
Switching Frequency	CFM10:	100KHz Typical
	CFM15:	67KHz Typical
MTBF MIL-HDBK-217F, GB, at	25°C/115VAC	200K hrs min.
Altitude		2000m
Dimensions	CFM10:	2.599 x 1.772 x 0.906 inches
		(65.00 x 45.00 x 23.00 mm)
	CFM15:	2.752 x 1.890 x 0.906 inches
		(69.90 x 48.00 x 23.00 mm)
Weight	CFM10:	60 g (0.13 Pounds)
	CFM15:	80 g (0.18 Pounds)

- 1. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output
- for ripple & noise measuring @20MHz BW.
- 2. Line regulation is measured from hign line to low line with full load. Load regulation is measured from full to 10% load.
- Typical efficiency with 230VAC and max. load at 25°C.

CFM20 SERIES 20 WATT

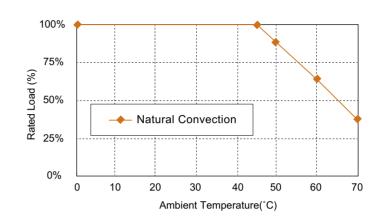
Features

- Universal Input Range 85-264Vac
- Efficiency to 81%
- Industry Standard Pin Out
- EN55022 Class B
- Continuous Short Circuit Protection
- PCB Mountable Type is available



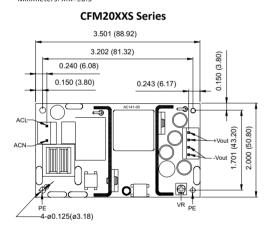


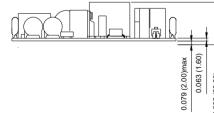
Derating Curve

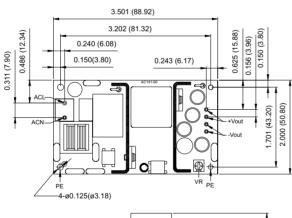


Mechanical Dimensions

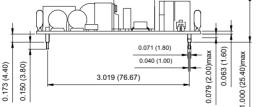
All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.X=±0.5







CFM20XXS-P Series



MODEL	OUTPUT	MIN.	MAX.	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF
NUMBER	VOLTAGE	LOAD	LOAD	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)
				NOTE 1	NOTE 2	NOTE 3	NOTE 4	NOTE 5
CFM2001S	5 V	0 A	4400 mA	1%	±1%	±0.5%	±1%	72%
CFM2002S	12 V	0 A	1800 mA	1%	±1%	±0.5%	±1%	79%
CFM2003S	15 V	0 A	1400 mA	1%	±1%	±0.5%	±1%	80%
CFM2005S	24 V	0 A	920 mA	1%	±1%	±0.5%	±1%	81%
CFM2007S	3.3 V	0 A	4400 mA	50mV	±1%	±0.5%	±1%	66%
CFM2009S	9 V	0 A	2450 mA	1%	±1%	±0.5%	±1%	76%.

Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage
Frequency
Inrush Current
Conducted EMI
Leakage Current

85-264Vac 47 to 63Hz 40A max. @230Vac CISPR/FCC Class B 3.5mA max.

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

16ms typ. @115Vac Hiccup Mode (Auto Recovery) TVS Component to Clamp ±0.05%/*C

SAFETY AND EMC

Emission and Immunity

EN55022 Class B EN61000-6-3, EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

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GENERAL SPECIFICATIONS

Isolation Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF MIL-HDBK-217F, GB, 25°C/115VAC Altitude Dimensions

(CFM20XXS-P)

Weight

Input to output = 4,242VDC 0-70°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 67KHz Typical 3000Khrs min. 2000m 3.501 x 2.000 x 0.906 inches (88.92 x 50.80 x 23.00 mm) 3.501 x 2.000 x 1.000 inches (88.92 x 50.80 x 25.40 mm) 100 g (0.22 Pounds)

NOTE

- Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
- Voltage accuracy is set at 100% rated load and 25°C Ta.
- 3. Line regulation is measured from high line to low line with full load.
- 4. Load regulation is measured from full to 10% load.
- 5. Typical efficiency at 230VAC and full load at 25°C.
- 6. Standard input and output connectors wafer with LONG CHU P3060
- series and mate with MOLEX housing 5195 series or equivalent
- 7. Model "CFM200XS-P": Connectors with pcb mountable type.

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CFM21 SERIES 20 WATT, LOW PROFILE 0.8"

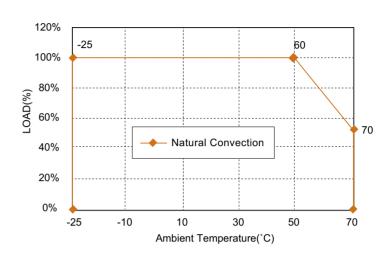
Features

- Universal Input Range 90-264VAC
- Medical and ITE Safety Approvals
- Industry-Standard Pin Out
- Efficiency to 85%
- Continuous Short Circuit Protection
- Over Voltage Protection
- No Load Input Power < 0.3W</p>
- ♦ Leakage Current < 0.1mA</p>
- Safety Standard: UL60601-1/IEC60601-1/ EN60601-1/UL60950-1/IEC60950-1/EN60950-1
- Option for On-Board, Connecter, Screw Terminal and Encapsulated type





Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Input Current	0.3 to 0.5A
Inrush Current	Cold Start @25°C
	40A max. @230Vac
Leakage Current	0.1mA max.

OUTPUT SPECIFICATIONS

Voltage Accuracy:	±1.0% max.
Line Regulation (note 3)	±0.5% max.
Load Regulation (note 4)	±1.0% max.
Hold-up Time	10ms typ. @115Vac
Short Circuit Protection	Continuous
Over Voltage Protection (TVS)	115%-140% of nominal
	output voltage

SAFETY AND EMISSION

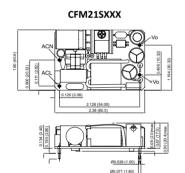
CE Directive Emissions

Safety Approvals

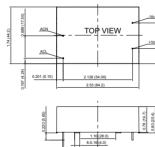
2004/108/EC, 93/42/EEC EN60601-1/EN61204-3/ EN55022/ CISPR Class B EN55024 Class II, UL60601-1, IEC60601-1, EN60601-1, UL60950-1, IEC60950-1, EN60950-1

Mechanical Dimensions

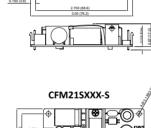
All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 , X.XXX=±0.01 Millimeters: X.XX=±0.5 , X.XX=±0.25



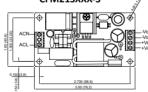




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CFM21SXXX-T





MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	MIN. LOAD	MAX. LOAD	OUTPUT RATED POWER	RIPPLE & NOISE	VOLTAGE ACCURACY	% EFF.
CFM21S033	90-264 VAC	3.3 V	0 A	4.0 A	13.2 W	50 mV	±1%	75%
CFM21S050	90-264 VAC	5 V	0 A	4.0 A	20.0 W	50 mV	±1%	80%
CFM21S090	90-264 VAC	9 V	0 A	2.3 A	20.7 W	90 mV	±1%	81%
CFM21S120	90-264 VAC	12 V	0 A	1.7 A	20.4 W	100 mV	±1%	83%
CFM21S150	90-264 VAC	15 V	0 A	1.4 A	21.0 W	100 mV	±1%	84%
CFM21S240	90-264 VAC	24 V	0 A	0.9 A	21.6 W	100 mV	±1%	85%

GENERAL SPECIFICATIONS

- Efficiency Switching Frequency Isolation Operating Temperature Storage Temperature Cooling Humidity MTBF MIL-STD-217F, GB
- see Table 100KHz typ. Input to output = 5,656VDC -25-70°C (with de-rating) -40-85°C Natural Convection 93% RH max. Non condensing 650Khrs min. 2.38 x 1.60 x 0.80 inches (60.5 x 40.6 x 20.4 mm) -T: 3.00 x 1.60 x 0.77 inches (76.2 x 40.6 x 19.5 mm) -E: 2.53 x 1.74 x 0.80 inches (64.2 x 44.2 x 20.4 mm) -S: 3.00 x 1.60 x 0.77 inches (76.2 x 40.6 x 19.5 mm) 50 g, 55 g (-T, -S), 105 g (-E)

Weight

Dimensions

- 1. Voltage accuracy is set of 100% rated load.
- 2. Add a $0.1\mu F$ ceramic capacitor and a $10\mu F$ E.L. capacitor to output for ripple & noise measuring @20MHz BW.
- 3. Line regulation is measured from high line to low line with full load.
- 4. Load regulation is measured from 10% to 100% full load.
- 5. "T" Version Connection: JST B3P-VH / B4P-VH or equivalent.
- 6. "S" Version Connection: DECA MB332-381A or equivalent.

CFM40, CFM60 SERIES 40 WATT, 60 WATT, 2" X 4" OPEN FRAME

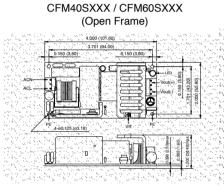
Features

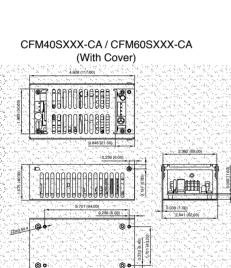
- Universal Input Range 90-264VAC
- Industry Standard Pin Out
- Efficiency to 87%
- EN55022 Class B and CISPR/FCC Class B, Conducted
- Continuous Short Circuit Protection



Mechanical Dimensions

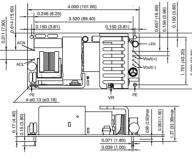
All Dimensions In Inches(mm) Tolerance Inches: x.xx= ±0.02 Millimeters: x.xx= ±0.5





rastriastikski

CFM40SXXX-P / CFM60SXXX-P (Input/Output Connector With Pin)



CFM40 Series

MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)
CFM40S033	3.3 V	6 A	50 mV	± 1%	± 0.5%	± 1%	70%
CFM40S050	5 V	6 A	1%	± 1%	± 0.5%	± 1%	76%
CFM40S090	9 V	4.45 A	1%	± 1%	± 0.5%	± 1%	84%
CFM40S120	12 V	3.34 A	1%	± 1%	± 0.5%	± 1%	85%
CFM40S150	15 V	2.67 A	1%	± 1%	± 0.5%	± 1%	85%
CFM40S240	24 V	1.67 A	1%	± 1%	± 0.5%	± 1%	85%
CFM40S300	30 V	1.33 A	1%	± 1%	± 0.5%	± 1%	86%
CFM40S360	36 V	1.11 A	1%	± 1%	± 0.5%	± 1%	87%
CFM40S480	48 V	0.834 A	1%	± 1%	± 0.5%	± 1%	87%

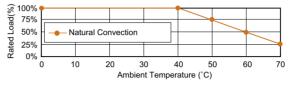
CFM60 Series

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE	VOLTAGE ACCURACY	LINE REGULATION	LOAD REGULATION	%EFF. (Typ.)
CFM60S033	3.3 V	8 A	50 mV	± 1%	± 0.5%	± 1%	72%
CFM60S050	5 V	8 A	1%	± 1%	± 0.5%	± 1%	77%
CFM60S090	9 V	6.67 A	1%	± 1%	± 0.5%	± 1%	84%
CFM60S120	12 V	5 A	1%	± 1%	± 0.5%	± 1%	85%
CFM60S150	15 V	4 A	1%	± 1%	± 0.5%	± 1%	86%
CFM60S240	24 V	2.5 A	1%	± 1%	± 0.5%	± 1%	86%
CFM60S300	30 V	2 A	1%	± 1%	± 0.5%	± 1%	86%
CFM60S360	36 V	1.67 A	1%	± 1%	± 0.5%	± 1%	88%
CFM60S480	48 V	1.25 A	1%	± 1%	± 0.5%	± 1%	88%

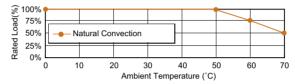
Derating Curve

CFM40SXXX / CFM60SXXX (Open Frame)

CFM40S050, 40S090, 60S033, 60S050, 60S090



CFM40S120, 40S150, 40S240, 40S300, 40S360, 40S480 CFM60S120, 60S150, 60S240, 60S300, 60S360, 60S480



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage Frequency Inrush Current Leakage Current 90-264Vac 47 to 63Hz Cold start@25°C 50A max. @240Vac 1mA max.

OUTPUT SPECIFICATIONS

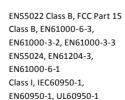
Holdup Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

8ms typ. @115Vac Hiccup Mode (Auto Recover) TVS Component to Clamp ±0.05%/*C

SAFETY AND EMC

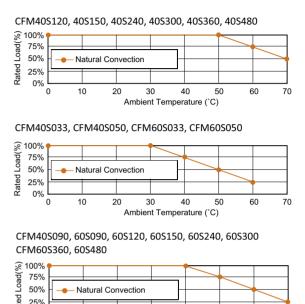
Emission and Immunity

Safety



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CFM40SXXX-CA / CFM60SXXX-CA (With Cover)



25°C Unless Otherwise Noted

10

20

30

40

Ambient Temperature (°C)

50

Input to Output = 4,242VDC

60

70

0%

GENERAL SPECIFICATIONS				
Isolation				
Operating Temperature				

Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF MIL-HDBK-21 Altitude	7F, GB, 25°C/115VAC	0°C-70°C (see derating curve) -20°C-85°C 93% RH max. Non-Condensing Natural Convection 66KHz Typical 200K hrs min. 2000m
Dimensions: CFM40/60 Open Frame CFM40/60 Covered Weight	CFM40/60: CFM40/60 Covered:	4.000 x 2.000 x 1.200 inches (101.60 x 50.80 x 30.48 mm) 4.606 x 2.441 x 1.575 inches (117.00 x 62.00 x 40.00 mm) 170g/175g (0.38/0.39 Pounds) 210g/215g (0.46/0.47 Pounds)

- 1. Add a $0.1\mu F$ ceramic capacitor and a $10\mu F$ E.L. capacitor to output for ripple &
- noise measuring @20MHz BW.
- 2. Line regulation is measured from High Line to low Line with full load.
- 3. Load regulation is measured from Full to 10% load.
- Input connector mates with molex housing 09-50-3031 and molex 2878 series crimp terminal.
- 5. Output connector mates with molex housing 09-50-3041 and molex 2878 series crimp terminal.
- 6. Safety approvals do not apply to the Covered versions, only to the Open-Frame versions.

CFM40M SERIES 40 WATT, 2" X 3" OPEN FRAME

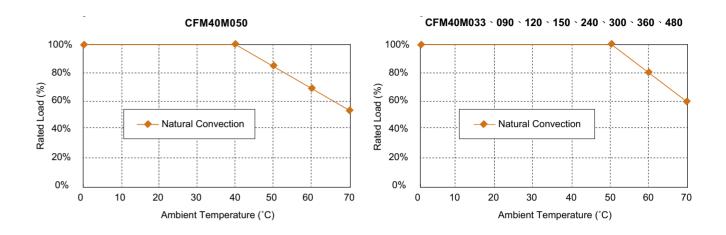
Features

- Universal Input Range 90-264VAC
- Medical and ITE Safety Approvals
- Efficiency to 88% Typical
- Continuous Short Circuit Protection ٠
- ٠ EN55011 and EN55022 Class B
- No Load Power Consumption < 0.3W ٠
- 2" x 3" Package ٠
- 2 MOPP •



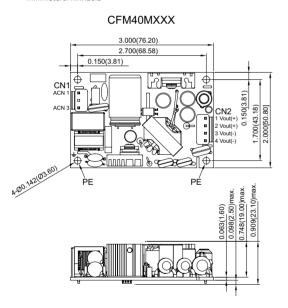


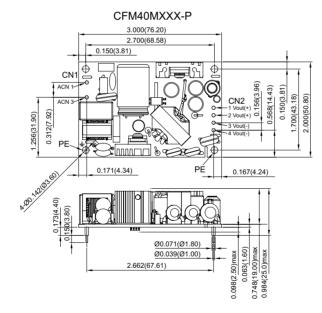
Derating Curve



Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX±0.02 Millimeters: X.XX±0.5





MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.	
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)	
			(NOTE 2)	(NOTE 1)	(NOTE 3)	(NOTE 4)	(NOTE 5)	
CFM40M033	3.3 V	6 A	50 mV	±1%	±0.5%	±1%	76%	
CFM40M050	5 V	6 A	1%	±1%	±0.5%	±1%	80%	
CFM40M090	9 V	4.45 A	1%	±1%	±0.5%	±1%	84%	
CFM40M120	12 V	3.34 A	1%	±1%	±0.5%	±1%	86%	
CFM40M150	15 V	2.67 A	1%	±1%	±0.5%	±1%	87%	
CFM40M240	24 V	1.67 A	1%	±1%	±0.5%	±1%	88%	
CFM40M300	30 V	1.33 A	1%	±1%	±0.5%	±1%	88%	
CFM40M360	36 V	1.11 A	1%	±1%	±0.5%	±1%	88%	
CFM40M480	48 V	0.834 A	1%	±1%	±0.5%	±1%	88%	

Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Inrush Current	Cold start @25°C
	60A max. @240Vac
Input Current	100Vac/1A max
	240Vac/0.55A max.
Leakage Current	100uA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection **Over Voltage Protection Temperature Coefficient**

10ms typ. @115Vac Hiccup Mode (Auto Recover) TVS Component to Clamp ±0.05%/°C

GENERAL SPECIFICATIONS

Isolation
Operating Temperature
Storage Temperature
Humidity
Cooling
Switching Frequency
MTBF MIL-HDBK-217F, GB, 25°C/115VAC
Altitude
Dimensions

Input to output = 5,656VDC 0°C-70°C (see derating curve) -20°C-85°C 93% RH max. Non condensing Natural Convection 65KHz Typical 200Khrs min. 3000m 3.00 x 2.00 x 0.91 inches (76.2 x 50.8 x 23.1 mm) CFM40XXX-P: 3.00 x 2.00 x 0.91 inches (76.2 x 50.8 x 23.1 mm) 90 g

Weight

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SAFETY AND EMISSION

Emission and Immunity

EN55011, EN55022 Class B, EN55022, FCC CFR 47 Part 15,18 EN61204-3, EN61000-6-1, EN610006-3 EN60601-1-2, EN61000-3-2, EN61000-3-3 Class I, IEC60601-1:2005, EN60601-1:2006, UL ANSI/AAMI ES60601-1:2005, IEC60950-1, EN60950-1, UL60950-1

Safety

- 1. Voltage accuracy is set at full load.
- 2. Add a $0.1\mu\text{F}$ ceramic capacitor and a $10\mu\text{F}$ E.L. capacitor to output for
- ripple & noise measurement @20MHz BW.
- 3. Line regulation is measured from 100VAC to 240VAC with full load.
- 4. Load regulation is measured from 10% to 100% full load.
- 5. Typical efficiency at 230VAC and full load 25°C.
- 6. Standard input and output connectors (CN1 and CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series or equivalent.

CFM40D, CFM40T SERIES 40 WATT, DUAL / TRIPLE OUTPUTS

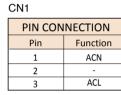
Features

- Universal Input Range 90-264VAC
- 2" x 4" Size
- Industry Standard Pin Out •
- ٠ Efficiency to 81%
- ٠ EN61204-3 Class B and CISPR/FCC Class B
- ٠ Short Circuit Protection



Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=+0.5





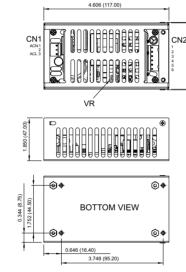
PIN CONNECTION					
Pin	Function				
1	V2				
2	V1				
3	V1				
4	GND				
5	GND				

V3



CFM40D / CFM40T Open Frame

CFM40D / CFM40T With Cover

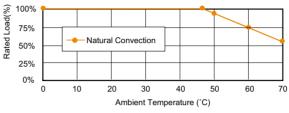


MODEL	OUTPUT	OU	TPUT CURF	ENT	RIPPLE	VOLTAGE	LINE	LOAD	O/P POWER	% EFF.
NUMBER	VOLTAGE	MIN.	RATED	MAX.	(mVp-p)	ACCURACY	REG	REG	MAX.	(Typ.)
CFM40D-01	5V(V1) 12V(V2)	0.4 0.2	3.2 2.0	5.0 2.5	50 120	±3% ±4%	±1% ±2%	±3% ±5%	40.0W	80%
CFM40D-02	5V(V1) 24V(V2)	0.4 0.2	3.2 1.0	5.0 1.5	50 240	±3% ±4%	±1% ±2%	±3% ±5%	40.0W	81%
CFM40T-01	5V(V1) 12V(V2) -5V(V3)	0.4 0.2 0	3.0 2.0 0.3	5.0 2.5 0.5	50 120 50	±3% ±4% ±3%	±1% ±2% ±1%	±3% ±5% ±1%	40.5W	78%
CFM40T-02	5V(V1) 12V(V2) -12V(V3)	0.4 0.2 0	3.0 2.0 0.3	5.0 2.5 0.5	50 120 120	±3% ±4% ±3%	±1% ±2% ±1%	±3% ±5% ±1%	42.6W	78%
CFM40T-03	5V(V1) 15V(V2) -15V(V3)	0.4 0.2 0	3.0 1.5 0.3	5.0 2.3 0.5	50 150 150	±3% ±4% ±3%	±1% ±2% ±1%	±3% ±5% ±1%	42.0W	78%
CFM40T-04	5V(V1) 24V(V2) -12V(V3)	0.4 0.2 0	3.0 1.0 0.3	5.0 1.5 0.5	50 240 120	±3% ±4% ±3%	±1% ±2% ±1%	±3% ±5% ±1%	42.6W	78%
CFM40T-05	5V(V1) 24V(V2) -5V(V3)	0.4 0.2 0	3.0 1.0 0.3	5.0 1.5 0.5	50 240 50	±3% ±4% ±3%	±1% ±2% ±1%	±3% ±5% ±1%	40.5W	78%
CFM40T-06	5V(V1) 24V(V2) 12V(V3)	0.4 0.2 0	3.0 1.0 0.3	5.0 1.5 0.5	50 240 120	±3% ±4% ±3%	±1% ±2% ±1%	±3% ±5% ±1%	42.6W	78%
CFM40T-07	3.3V(V1) 5V(V2) -12V(V3)	0.4 0.2 0	5.0 2.0 0.3	7.0 3.5 0.5	100 100 120	±3% ±4% ±3%	±1% ±3% ±1%	±3% ±5% ±1%	30.0W	71%

Derating Curve

CFM40D-XX / CFM40T-XX (Open Frame)

CFM40D-01, 40D-02, 40T-01, 40T-02, 40T-03, 40T-04, 40T-05, 40T-06, 40T-07



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage
Frequency
Inrush Current

Input Current

Leakage Current

90-264Vac 47 to 63Hz Cold Start@25°C 60A max. @240Vac 1A max. (RMS) @115Vac 3.5mA max.

OUTPUT SPECIFICATIONS

Rated Power for Convection Cooling Maximum Power with 30 CFM Forced Air Holdup Time Short Circuit Over Voltage Protection CFM40D/T

40W (CFM40T-07, 30W) 50W (CFM40T-07, 40W) 20ms typ. @115Vac Hiccup Mode (Auto Recover) 6V on V1(5V) 16V/20V/30V on V2 (12V/15V/24V) 6V on V1 (3.3V), 9V on V2 (5V) ±0.05%/°C

SAFETY AND EMISSION

Over Voltage Protection CFM40T-07

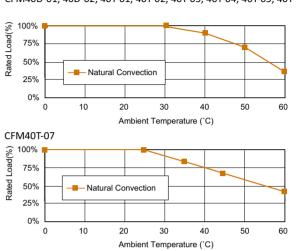
Emission and Immunity

Temperature Coefficient

Safety

EN55022 Class B, FCC Part 15 Class B. EN61000-6-3. EN61000-3-2, EN61000-3-3 EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

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CFM40D-XX-CA / CFM40T-XX-CA (With Cover)

CFM40D-01, 40D-02, 40T-01, 40T-02, 40T-03, 40T-04, 40T-05, 40T-06

GENERAL SPECIFICATIONS

Isolation		I
Operating Temperature		0
Storage Temperature		-,
Humidity		9
Cooling		Ν
Switching Frequency		е
MTBF MIL-HDBK-21	7F, GB, 25°C/115VAC	2
Altitude		2
Dimensions		
	Open Frame	
		(
	With Cover	4
		(

Input to output = 4,242VDC 0-70°C (see derating curve) -20-85°C 93% RH max. Non-Condensing Natural Convection 62.5KHz Typical 200Khrs min. 2000m

4.000 x 2.000 x 1.063 inches (101.60 x 50.80 x 27.00 mm) 4.606 x 2.480 x 1.850 inches (117.00 x 63.00 x 47.00 mm) 180 g (0.40 Pounds) 220 g (0.49 Pounds)

Weight

- NOTE 1. Voltage accuracy is set at full load and 25°C Ta.
- 2. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for Ripple & Noise measuring @20MHz BW.

Open Frame

With Cover

- 3. Line regulation is measured from 100Vac to 240Vac with full load.
- 4. Load regulation is measured from 60% to 100% full load and from 60% to 20% full load (60% ±40% full load)
- 5. Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
- 6. Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal.
- 7. Safety approvals do not apply to the covered versions, only to the open-frame versions

CFM60M SERIES 60 WATT, 2" X 4" OPEN FRAME

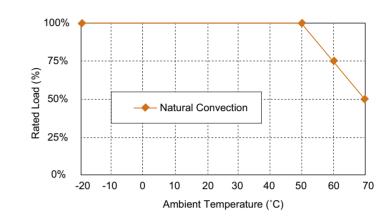
Features

- Universal Input Range 90-264VAC
- Medical and ITE Safety Approvals
- Efficiency to 90% •
- Continuous Short Circuit Protection ٠
- ٠ EN55011 and EN55022 Class B
- 2 MOPP ٠
- No Load Power Consumption < 0.5W ٠
- 2" x 4" Package •

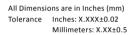


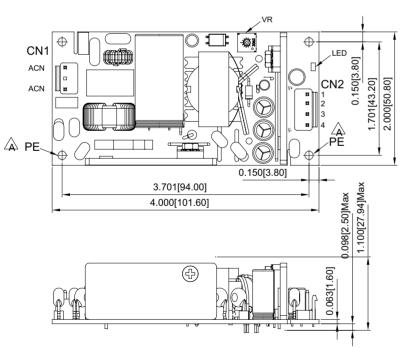


Derating Curve



Mechanical Dimensions





N	10DEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	VOLTAGE	LINE	LOAD	% EFF.
NU	JMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	ADJ. RANGE	REGULATION	REGULATION	(Typ.)
				(NOTE 2)	(NOTE 1)		(NOTE 3)	(NOTE 4)	(NOTE 5)
CFN	160M050	5 V	8 A	1%	±1%	4.75-5.25	±0.5%	±1%	82%
CFN	160M120	12 V	5 A	1%	±1%	11.4-12.6	±0.5%	±1%	87%
CFN	160M150	15 V	4 A	1%	±1%	14.25-15.75	±0.5%	±1%	88%
CFN	160M240	24 V	2.5 A	1%	±1%	22.8-25.2	±0.5%	±1%	89%
CFN	160M480	48 V	1.25 A	1%	±1%	45.6-50.4	±0.5%	±1%	90%

Input Connector CN1					
Pin 1	Line				
Pin 2	Not Fitted				
Pin 3	Neutral				

Output Connector CN2						
Pin 1	+ Vout					
Pin 2	+ Vout					
Pin 3	- Vout					
Pin 4	- Vout					

Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Inrush Current	Cold Start @25°C
	75A max. @240Vac
Input Current	100Vac/1.6A max.,
	240Vac/0.8Amax.
Leakage Current	100uA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection **Over Voltage Protection Temperature Coefficient**

16ms typ. @115Vac Hiccup Mode (Auto Recover) TVS Component to Clamp ±0.05%/°C

GENERAL SPECIFICATIONS

Isolation
Operating Temperature
Storage Temperature

Switching Frequency

Humidity

Cooling

Altitude

Weight

Dimensions

Input to output = 4000VAC (5,656VDC) -20-70°C (see derating curve) -20-85°C 93% RH max. Non-Condensing Natural Convection 65KHz Typical MTBF MIL-HDBK-217F, GB, 25°C/115VAC 200Khrs min. 3000m 4.000 x 2.000 x 1.100 inches (101.6 x 50.8 x 27.94 mm)

125 g

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	n			

SAFETY AND EMISSION

Emission and Immunity

Safety (Medical 3rd)

EN55011, EN55022 Class B, EN55024, FCC CFR 47 Part 15, 18 EN61204-3, EN61000-6-1, EN61000-6-3 EN60601-1-2, EN61000-3-2, EN61000-3-3 Class I, IEC60601-1:2005, EN60601-1:2006, UL ANSI/AAMI ES60601-1:2005, IEC60950-1, EN60950-1, UL60950-1

- 1. Voltage accuracy is set at full load and 25°C Ta.
- 2. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 3. Line regulation is measured from 100VAC to 240VAC with full load.
- 4. Load regulation is measured from 10% to 100% full load.
- 5. Typical efficiency at 230VAC and full load at 25°C.
- 6. Standard input and output connectors (CN1 and CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series and JST SVH-21/41T-P1.1 series crimp terminal or equivalent.
- 7. Optional input and output connectors (CN1 and CN2) wafer with LONG CHU P3060 series and mate with MOLEX housing 5195 series and MOLEX 5194 series crimp terminal or equivalent.

CFM60T SERIES 60 WATT, TRIPLE OUTPUTS

Features

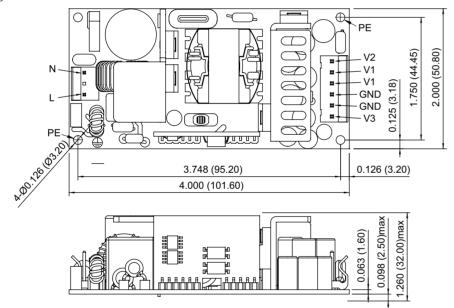
- Universal Input: 90-264VAC
- ♦ 2" x 4" Size
- ٠ Industry-Standard Pin Out
- Efficiency to 83% ٠
- ٠ EN61204-3 Class B and CISPR/FCC Class B
- Short Circuit Protection ٠





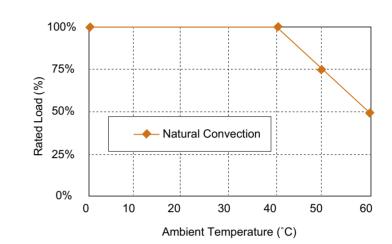
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=+0.5



MODEL	OUTPUT	OUTPUT CURRENT		RIPPLE	VOLTAGE	LINE	LOAD	O/P POWER	% EFF.	
NUMBER	VOLTAGE	MIN.	RATED	MAX.	(mVp-p)	ACCURACY	REG.	REG.	MAX.	(Typ.)
	V1=5 V	0 A	4.0 A	5.0 A	50 mV	±2%	±1%	±4%		
CFM60T-01	V2=12 V	0 A	3.0 A	3.7 A	120 mV	±5%	±1%	±3%	62W	83%
	V3=-12 V	0 A	0.5 A	0.65 A	120 mV	±5%	±1%	±5%		
	V1=5 V	0 A	4.0 A	5.0 A	50 mV	±2%	±1%	±4%		
CFM60T-02	V2=15 V	0 A	2.5 A	3.1 A	150 mV	±4%	±1%	±3%	62W	83%
	V3=-15 V	0 A	0.3 A	0.5 A	150 mV	±5%	±1%	±5%		
	V1=5 V	0 A	4.0 A	5.0 A	50 mV	±2%	±1%	±4%		
CFM60T-03	V2=24 V	0 A	1.5 A	1.8 A	240 mV	±3%	±1%	±3%	62W	83%
	V3=-12 V	0 A	0.5 A	0.6 A	120 mV	±5%	±1%	±5%		
	V1=3.3 V	0 A	6.0 A	7.5 A	50 mV	±4%	±1%	±5%		
CFM60T-04	V2=5 V	0 A	3.0 A	3.7 A	50 mV	±5%	±1%	±4%	40.8W	78%
	V3=-12 V	0 A	0.5 A	0.65 A	120 mV	±5%	±2%	±5%		

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage		90-264Vac
Frequency		47 to 63Hz
Inrush Current	Cold Start@25°C	50A max. @240Vac
Leakage Current		3.5mA max.

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit **Over Voltage Protection** 8ms typ. @115Vac Hiccup Mode (Auto Recover) 6V/7V on V1(3.3V/5V) 15V/18V/28V on V2 (12V/15V/24V) ±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

Safety

Temperature Coefficient

EN55022 Class B, FCC Part 15 Class B, EN61000-3-2, EN61000-3-3, EN55024 Class I, IEC60950-1, EN60950-1, UL60950-1

GENERAL SPECIFICATIONS

Isolation **Operating Temperature** Storage Temperature Humidity Cooling Switching Frequency Altitude Dimensions

Weight

NOTE

- 1. Voltage accuracy is set of 60% rated load.
- 2. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
- 3. Line regulation is measured from 103VAC-127VAC & 207VAC-253VAC with rated load.
- 4. Load regulation is defined by changing $\pm 40\%$ of measured output load from 60% rated load at other outputs set to 60% rated load.
- 5. Input connector mates with molex housing 09-50-3031 and molex 2878 series crimp terminal.
- 6. Output connector mates with molex housing 09-50-3061 and molex 2878 series crimp terminal.

0-60°C (see derating curve) -20-85°C 93% RH max. Non-Condensing Natural Convection 65KHz Typical 2000m 4.000 x 2.000 x 1.260 inches (101.60 x 50.80 x 32.00 mm) 170 g (0.37 Pounds)

Input to output = 4,242VDC

CFM80S SERIES 80 WATT, 2" X 4" OPEN FRAME

Features

- Universal Input Range 90-264VAC
- Continuous Short Circuit Protection
- ♦ Efficiency to 90% Typical
- EN55022 Class B and CISPR/FCC Class B
- EN61000-3-2 Class A
- No Load Power Consumption < 0.5W





CN1:

Pin

2

Pin

1

2

3

5

6

1

CN2:

PIN CONNECTION

3 Neutral

PIN CONNECTION

4 Vout(-)

Function

Line Not Fitted

Function

Vout(+)

Vout(+)

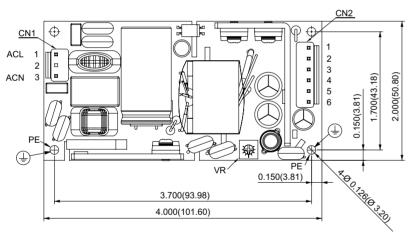
Vout(+)

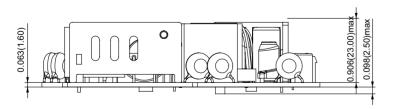
Vout(-)

Vout(-)

Mechanical Dimensions

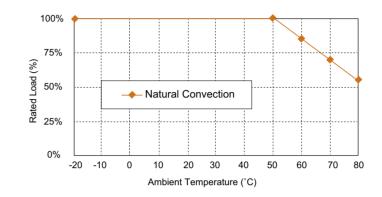






MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	VOLTAGE	LINE	LOAD	% EFF
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	ADJ. RANGE	REGULATION	REGULATION	(Typ.)
			NOTE 2		NOTE 1	NOTE 3	NOTE 4	NOTE 5
CFM80S050	5 V	12 A	1%	±1%	4.75-5.25 V	±0.5%	±1%	86%
CFM80S120	12 V	6.7 A	1%	±1%	11.4-12.6 V	±0.5%	±1%	89%
CFM80S150	15 V	5.36 A	1%	±1%	14.25-15.75 V	±0.5%	±1%	90%
CFM80S240	24 V	3.35 A	1%	±1%	22.8-25.2 V	±0.5%	±1%	90%
CFM80S480	48 V	1.67 A	1%	±1%	45.6-50.4 V	±0.5%	±1%	90%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Inrush Current	Cold start @25°C
	100A max. @240Vac
Input Current	100Vac/1.5A max.,
	240Vac/0.8A max.
Leakage Current	3.5mA max.

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

12mS typ. @115Vac Hiccup Mode (Auto Recover) TVS Component to Clamp ±0.05%/*C

SAFETY AND EMISSION

Emission and Immunity

EN55022 CLASS B, FCC Part 15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3 EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

- Isolation Operating Temperature Storage Temperature Humidity Cooling
- Switching Frequency
- Weight

Dimensions

NOTE

- 1. Voltage accuracy is set at full load.
- 2. Add a $0.1\mu F$ ceramic capacitor and a $10\mu F$ E.L. capacitor to output for
- ripple & noise measurement @20MHz BW.
- 3. Line regulation is measured from 110VAC to 230VAC with full load.
- 4. Load regulation is measured from 10% to 100% full load.
- Typical efficiency at 230VAC and full load at 25°C.
 Standard input and output connectors (CN1 and CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series and JST SVH-21/41T-P1.1 series crimp terminal or equivalent.

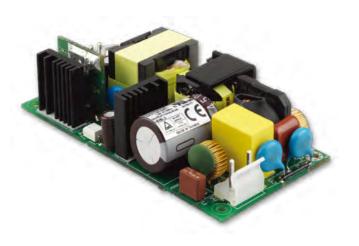
Input to output = 4,242VDC -20-80°C (see derating curve) -20°C-85°C 93% RH max. Non-Condensing Natural Convection 100KHz Typical 4.000 x 2.000 x 1.07 inches (101.6 x 50.8 x 27.1 mm) 155 g

CFM101S SERIES 100 WATT, 2" X 4" OPEN FRAME

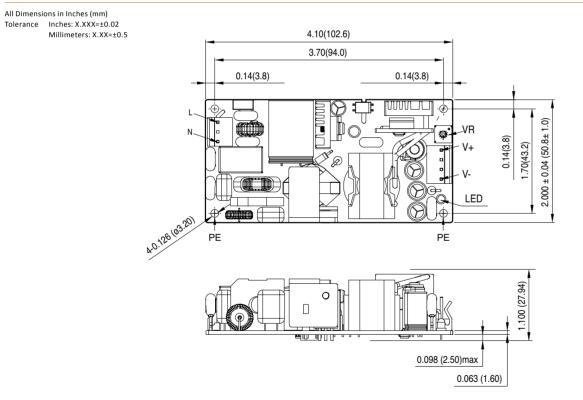
Features

- Universal Input Range 90-264VAC
- ♦ Active PFC Function
- Efficiency at 89% Typical
- Continuous Short Circuit Protection
- EN55022 Class B and CISPR/FCC Class B



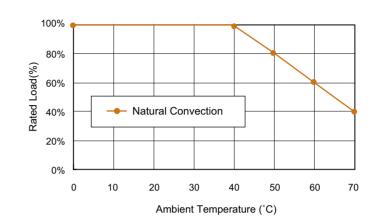


Mechanical Dimensions



MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	VOLTAGE	LOAD	% EFF
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	ADJ. RANGE	REGULATION	(Typ.)
			(NOTE 1)	(NOTE 2)	(NOTE 3)		(NOTE 4)	(NOTE 5)
CFM101S120	12 V	8.4 A	1%	±1%	±0.5%	11.4-12.6 V	±1%	87%
CFM101S150	15 V	6.7 A	1%	±1%	±0.5%	14.25-15.75 V	±1%	87%
CFM101S200	20 V	5.0 A	1%	±1%	±0.5%	19-21 V	±1%	88%
CFM101S240	24 V	4.2 A	1%	±1%	±0.5%	22.8-25.2 V	±1%	88%
CFM101S480	48 V	2.1 A	1%	±1%	±0.5%	45.6-50.4 V	±1%	89%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage Frequency Inrush Current

Conducted EMI

Leakage Current

90-264Vac 47 to 63Hz Cold Start @25°C 90A max. @240Vac CISPR/FCC Class B 3.5mA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

10mS typ. @115Vac Continuous TVS Component to Clamp ±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B FCC Part 15 Subpart B Class B, EN55024, EN61204-3, EN61000-6-3, EN61000-6-1, EN61000-3-2, EN61000-3-3 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

- Isolation
- Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF MIL-HDBK-217F, GB, at 25°C/115VAC Altitude Dimensions

```
Input to output= 4,242VDC
0-70°C (see derating curve)
-20-85°C
93% RH max. Non condensing
Natural Convection
100KHz Typical
200Khrs min.
2000m
102.6 x 50.8 x 27.94 mm
(4.100 x 2.000 x 1.100 inches)
150 g
```

Weight

- 1. Add a $0.1\mu F$ ceramic capacitor and a $10\mu F$ E.L. capacitor to output for
- ripple & noise measurement @20MHz BW. 2. Voltage accuracy is set at 100% full load.
- Line regulation is measured from 110VAC to 230VAC with full load.
- 4. Load regulation is measured from 10% to 100% full load.
- Typical efficiency at 230VAC and full load at 25°C.
- Input connector mates with molex housing 09-50-3031 and molex 2878 series crimp terminal.
- 7. Output connector mates with molex housing 09-50-3041 and molex 2878 series crimp terminal.

CFM100M SERIES 100 WATT, LOW PROFILE 1.05"

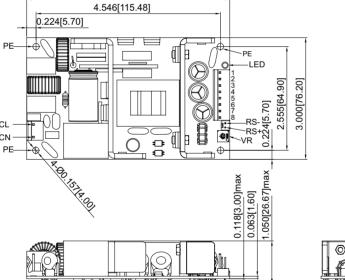
Features

- Universal Input Range 90-264VAC
- Medical and ITE Safety Approvals
- 3" x 5" Package
- ♦ Low Profile 1.05"
- Industry Standard Pin Out
- Active PFC Meets EN61000-3-2
- ♦ High Efficiency up to 92%
- CISPR/FCC Class B
- Remote Voltage Sense
- Over Voltage Protection
- Continuous Short Circuit Protection
- No Load Power Consumption < 0.5W
- ♦ 2 MOPP



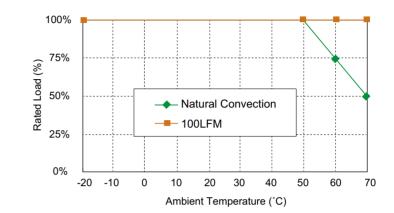
Mechanical Dimensions

All Dimensions are in Inches (mm) Tolerance Inches: X.XXX±0.02 Millimeters: X.XX±0.5 A.546[115.48] PE ACL ACN PE PE



MODEL	OUTPUT	MAX.	MIN.	RIPPLE &	VOLTAGE	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	LOAD	LOAD	NOISE	ADJ. RANGE	ACCURACY	REGULATION	REGULATION	(Typ.)
				(NOTE 1)		(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
CFM100M050	5 V	20 A	0 A	2%	4.75-5.25	±1%	±0.5%	±1%	83%
CFM100M075	7.5 V	13.4 A	0 A	2%	7.13-7.88	±1%	±0.5%	±1%	87%
CFM100M090	9 V	11.2 A	0 A	1%	8.55-9.45	±1%	±0.5%	±1%	89%
CFM100M120	12 V	8.4 A	0 A	1%	11.4-12.6	±1%	±0.5%	±1%	89%
CFM100M150	15 V	6.7 A	0 A	1%	14.25-15.75	±1%	±0.5%	±1%	90%
CFM100M180	18 V	5.6 A	0 A	1%	17.1-18.9	±1%	±0.5%	±1%	90%
CFM100M240	24 V	4.2 A	0 A	1%	22.8-25.2	±1%	±0.5%	±1%	91%
CFM100M280	28 V	3.6 A	0 A	1%	26.6-29.4	±1%	±0.5%	±1%	90%
CFM100M360	36 V	2.8 A	0 A	1%	34.2-37.8	±1%	±0.5%	±1%	91%
CFM100M480	48 V	2.1 A	0 A	1%	45.6-50.4	±1%	±0.5%	±1%	92%
CFM100M480	48 V	2.1 A	0 A	1%	45.6-50.4	±1%	±0.5%	±1%	92%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Inrush Current	
Leakage Current	

90-264Vac 47 to 63Hz 80A max. @240Vac 300uA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Adjustment Range on Vout Over Voltage Protection Temperature Coefficient 16ms typ. Hiccup mode (Auto Recovery) ±5%

±0.05%/°C

Recycle AC input to restart

GENERAL SPECIFICATIONS

Isolation
Operating Temperature
Storage Temperature
Humidity
Cooling
Switching Frequency
MTBF MIL-HDBK-217F, GB, 25°C/115VAC
Altitude
Dimensions

Weight

Input to output = 5,656VDC -20°C-70°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 90KHz Typical 140Khrs min. 3000m 5.000 x 3.000 x 1.050 inches (127.00 x 76.20 x 26.67 mm) 270 g (0.6 Pounds)

SAFETY AND EMISSION

Emission and Immunity

Safety

NOTE

- 1. CFM100M050: Add a $0.1\mu F$ ceramic capacitor and $220\mu F$ E.L.
- capacitor to output for ripple & noise measuring @20MHz BW.
- other model: add a $0.1\mu\text{F}$ ceramic capacitor and a $10\mu\text{F}$ E.L. capacitor to

EN55024, EN61000-6-1, EN61204-3

EN55011 Class B, EN55022 Class B,

IEC60950-1, EN60950-1, UL60950-1

EN60601-1-2, EN61000-3-2

FCC Part15 Class B Class I, IEC60601-1:2005,

EN60601-1:2006,

Class A, B, C, D, EN61000-3-3

ANSI/AAMI ES60601-1:2005

- output for ripple & noise measuring @20MHz BW. 2. Voltage accuracy is set at 100% rated load and 25°C Ta.
- vortage accuracy is set at 100% rated load and 25°C Ta.
 Line regulation is measured from high line to low line with full load.
- Load regulation is measured from full to 10% load.
- Typical efficiency at 230VAC and full load at 25°C.
- 6. Standard input and output connectors wafer with LONG CHU P3060
- series and mate with molex housing 09-50-1031 and 09-50-1081 or equivalent.
- 7. DC output pin 1, 2, 3, 4: Vout (-), DC output pin 5, 6, 7, 8: Vout (+).

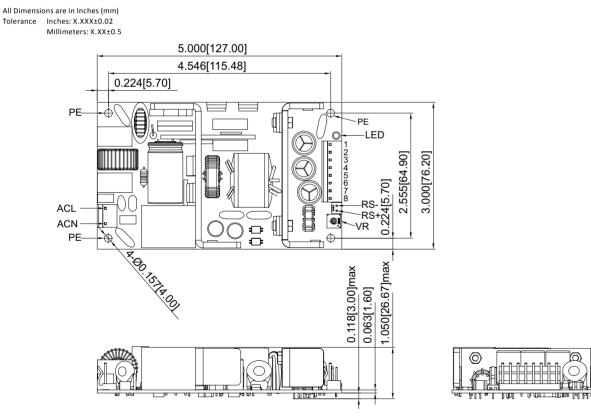
CFM150M SERIES 150 WATT, LOW PROFILE 1.05"

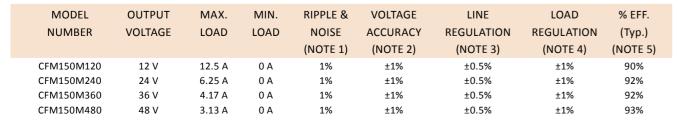
Features

- Universal Input Range 90-264VAC
- Medical and ITE Safety Approvals
- ♦ 3" x 5" Package
- ♦ Low Profile 1.05"
- Industry Standard Pin Out
- Active PFC Meets EN61000-3-2
- ♦ High Efficiency up to 93%
- CISPR/FCC Class B
- Remote Voltage Sense
- Over Voltage Protection
- Continuous Short Circuit Protection
- No Load Power Consumption < 0.5W
- ♦ 2 MOPP

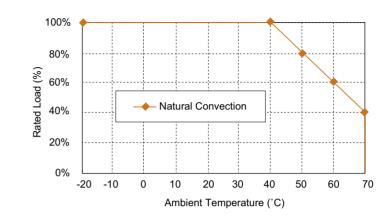


Mechanical Dimensions





Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage
Frequency
Inrush Current
Leakage Current

90-264Vac 47 to 63Hz 110A max. @240Vac 300uA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Adjustment Range on Vout Over Voltage Protection Temperature Coefficient

16ms typ. Hiccup mode (Auto Recovery) ±5% Recycle AC input to restart

±0.05%/°C

GENERAL SPECIFICATIONS

Isolation
Operating Temperature
Storage Temperature
Humidity
Cooling
Switching Frequency
MTBF MIL-HDBK-217F, GB, 25°C/115VAC
Altitude
Dimensions

Weight

Input to output = 5,656VDC -20°C-70°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 90KHz Typical. 150Khrs min. 3000m 5.000 x 3.000 x 1.050 inches (127.00 x 76.20 x 26.67 mm) 270 g (0.6 Pounds)

SAFETY AND EMISSION

Emission and Immunity

Safety

NOTE

- 1. Add a 0.1μF ceramic capacitor and 10μF E.L.
- capacitor to output for ripple & noise measuring @20MHz BW
- 2. Voltage accuracy is set at 100% rated load and 25°C Ta.
- 3. Line regulation is measured from high line to low line with full load.
- 4. Load regulation is measured from full to 10% load.
- 5. Typical efficiency at 230VAC and full load at 25°C.
- 6. Standard input and output connectors wafer with LONG CHU P3060
- series and mate with molex housing 09-50-1031 and 09-50-1081 or equivalent.

EN55011 Class B, FCC Part 15 Class B

IEC60950-1, EN60950-1, UL60950-1

EN60601-1-2, EN61000-3-2

Class I, IEC60601-1:2005,

EN60601-1:2006, ANSI/AAMI ES60601-1:2005

Class A, B, C, D, EN61000-3-3

7. DC output pin 1, 2, 3, 4: Vout (-), DC output pin 5, 6, 7, 8: Vout (+).

CFM201S SERIES 200 WATT, 3" X 5" OPEN FRAME

Features

- Universal Input Range 90-264VAC
- Active PFC Meets EN61000-3-2
- Conductive EMI Meets CISPR/FCC Class B

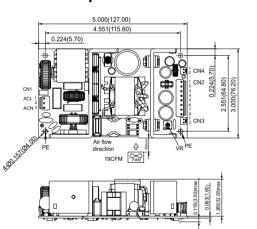
- High Efficiency up to 92%
- Remote Voltage Sense
- Over Temperature Protection



Mechanical Dimensions

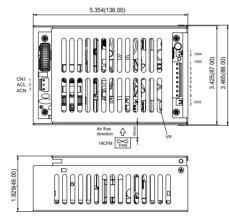
All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5

Open Frame



		CN2:							
ONNECTION		PIN CONNECTION							
Function		Pin	Function	Pin	Function				
ACI		1	Vout(+)	5	Vout(-)				
ACL		2	Vout(+)	6	Vout(-)				
-		3	Vout(+)	7	Vout(-)				
ACN		4	Vout(+)	8	Vout(-)				
	Function ACL	DNNECTION Function ACL	Function ACL - 3	Function Pin Function ACL 2 Vout(+) - 3 Vout(+)	Function Pin Function Pin ACL - 1 Vout(+) 5 2 Vout(+) 6 3 Vout(+) 7				

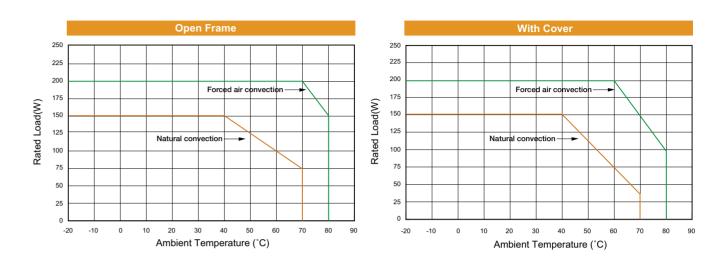
With Cover



CN3:		CN4:	
PIN CO	ONNECTION	PIN C	ONNECTION
Pin	Function	Pin	Function
1	Rs+	1	FAN V+
2	Rs-	2	FAN V-

MODEL	OUTPUT	OUTPUT CURRENT		RIPPLE &	VOLTAGE	LINE	VOLTAGE	LOAD	% EFF.			
NUMBER	VOLTAGE	RATED1	RATED2	NOISE	ACCURACY	REGULATION	ADJ.	REGULATION	(Typ.)			
				(NOTE 1)	(NOTE 2)	(NOTE 3)	(RANGE)	(NOTE 4)	(NOTE 5)			
Main Output Voltage												
CFM201S120	+12 V	16.67 A	12.5 A	120 mV	± 1%	± 0.5%	11.4-12.6	± 1%	89%			
CFM201S240	+24 V	8.34 A	6.25 A	150 mV	± 1%	± 0.5%	22.8-25.2	± 1%	90%			
CFM201S360	+36 V	5.56 A	4.17 A	150 mV	± 1%	± 0.5%	34.2-37.8	± 1%	91%			
CFM201S480	+48 V	4.17 A	3.13 A	150 mV	± 1%	± 0.5%	45.6-50.4	± 1%	92%			
Fan Output Volta	Fan Output Voltage											
All	+12 V	0.5 /	4	120 mV	± 3%	± 1%		± 5%				

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

90-264Vac

100Vac/3A max.,

240Vac/1.5A max. 47 to 63Hz Cold Start@25°C 100A max. @240Vac

CISPR/FCC Class B 3.5mA max.

INPUT SPECIFICATIONS

AC Input Voltage
Input current
Frequency
Inrush Current

rush Current

EMI Leakage Current

Isolation

OUTPUT SPECIFICATIONS

Hold-up Time Over Voltage Protection Short Circuit Protection Temperature Coefficient Input to Output = 3000VAC (4,242VDC) 10ms typ@115Vac Hiccup mode (Auto Recovery) Hiccup mode (Auto Recovery) ±0.05%/*C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3 EN55024, EN61000-6-1, EN61204-3 Class I, IEC60950-1, EN60950-1, UL60950-1 2nd edition

Safety

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GENERAL SPECIFICATIONS

Operating Temperature	-20-80°C (see derating curve)
Storage Temperature	-20-85°C
Over Temperature Protection	Auto Recovery
Humidity	93% RH max. non-condensing
Altitude	2000m
Cooling	Natural convection for 150W
	and forced air convection
	(19CFM FAN) for 200W
Switching Frequency	80-100KHz typ
Dimensions	
Open frame	5.000 x 3.000 x 1.441 inches
	(127.00 x 76.20 x 36.60mm)
With Cover	5.354 x 3.465 x 1.929 inches
	(136.00 x 88.00 x 49.00 mm)
Weight	Open frame 400 g
	With Cover 500 g

- 1. Add a $0.1\mu F$ ceramic capacitor and a $10\mu F$ E.L. capacitor to output for ripple & noise measuring @20MHz BW
- Voltage accuracy is set at 60% rated load and 25°C.Ta.
- 3. Line regulation is measured from high line to low line with rated load.
- 4. Load regulation is measured from full to 10% load.
- 5. Typical efficiency at 230VAC and full load at 25°C.
- Standard input and output connectors (CN1 and CN2) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series or equivalent.
- Optional Input and output connectors (CN1 and CN2) wafer with LONG CHU P3060 series and mate with MOLEX housing 5195 series or equivalent.
- 8. Output connector CN3 (Remote voltage sense) mates with molex
- housing 5051 or equivalent.
- Output connector CN4 (Fan output) mates with MOLEX housing 5051 or equivalent.
 For covered versions add "C" to model number or order part no.
- For covered versions add "C" to model number or order part no. For example CFM2015120-C, safety approvals do not the covered assembly, only to the open-frame power supply.

CFM361S SERIES 360 WATT, 3" X 5" WITH PFC

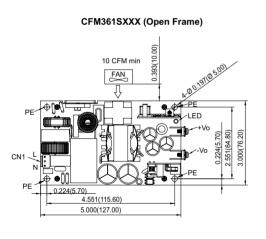
Features

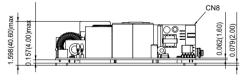
- Universal Input Range 90-264VAC
- ٠ 300W with Natural Convection @ 220Vac/CFM361S
- ٠ 360W with Natural Convection @ 220Vac/CFM361SXXXC
- 360W with Baseplate Cooled -40-85°C/CFM361SXXXC ٠
- EN60950 and EN55022 Class B
- Active PFC Meets EN61000-3-2 ٠
- High Efficiency up to 93.5% Typical ٠
- High Power Density up to 15W/inch³ /CFM361S •
- Remote Voltage Sense ٠
- PS On/Off Remote Control ٠
- ٠ +5V Stand-by Output Power
- 12V Fan Output ٠
- Structure Patented ٠

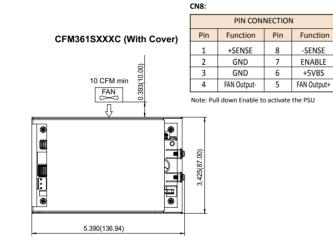


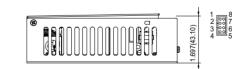
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5









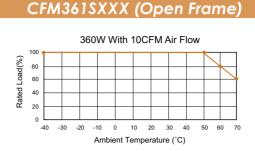
MODEL	OUTPUT	OUTPUT	RIPPLE	VOLTAGE	VOLTAGE	LINE	LOAD	% EFF.			
NUMBER	VOLTAGE	CURRENT	& NOISE	ADJ.RANGE	ACCURACY	REGULATION	REGULATION	(Тур.)			
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(RANGE)	(NOTE 4)	(NOTE 5)			
Main Output Voltage											
CFM361S120	+12 V	29.6 A	120 mVp-p	11.4-12.6V	±1.0%	±0.5%	±1%	92.5%			
CFM361S240	+24 V	14.8 A	150 mVp-p	22.8-25.2V	±1.0%	±0.5%	±1%	93.5%			
CFM361S480	+48 V	7.4 A	150 mVp-p	45.6-50.4V	±1.0%	±0.5%	±1%	93.5%			
Stand-by Output Voltage											
All	+5.0 V	0.5									
Fan Output Voltag	ge										
All	+12.0 V	0.3									

-SENSE

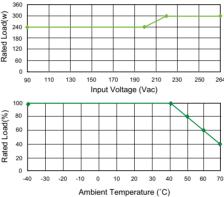
ENABLE

+5VBS

Derating Curve







Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

AC Input Voltage	90-264Vac
Frequency	47 to 63Hz
Inrush Current	50A max. @240Vac
Leakage Current @ 264Vac	3.5mA max.

OUTPUT SPECIFICATIONS

Total Rated Output Power Remote Voltage Sense

Adjustment Range on Vout Hold-up Time **Over Voltage Protection** Short Circuit Protection **Over Temperature Protection** Temperature Coefficient

360W Compensates for wire Voltage drop ±5% 12ms typ.

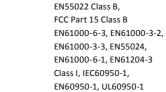
Recycle AC input to restart

Auto Recovery ±0.05%/°C

Hiccup mode(Auto Recovery)

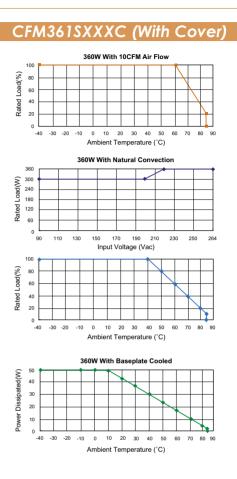
SAFETY AND EMISSION

Emission and Immunity



Safety

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GENERAL SPECIFICATIONS

Isolation Operating Temperature Storage Temperature Humidity	Input to output = 4,242VDC see derating curve -40-85°C 93% RH max. Non condensing
Switching Frequency MTBF MIL-HDBK-217F, GB, 25°C/115VAC	55KHz Typical 100Khrs min.
Altitude	2000m
Dimensions:	
Open frame versions	5.000 x 3.000 x 1.598 inches
Covered versions	(127.00 x 76.20 x 40.60 mm) 5.391 x 3.425 x 1.697 inches (136.94 x 87.00 x 43.10 mm)
Weight:	
Open frame versions	470g (1.04 Pounds)
Covered versions	550g (1.21 Pounds)

NOTE

1. Add a 0.1µF ceramic capacitor and a 47µF E.L. capacitor to output for

- ripple & noise measuring @20MHz BW.
- 2. Voltage accuracy is set at 60% rated load and 25°C Ta. 3. Line regulation is measured from high line to low line with rated load.
- 4. Load regulation is measured at 60%±40% rated.
- 5. Typical efficiency at 230VAC and full Load at 25°C.
- 6. Power dissipation (Pd): Pd =Pi-Po=Po(1-n)/n
- 7. Input connectors (CN1) wafer with TAIWAN KING PIN TERMINAL PVHI series and mate with JST housing VHR series or equivalent Output connectors (CN8) wafer with TAIWAN KING PIN TERMINAL PIDC254M1L series and mate with Molex housing 70450 series or equivalent

CFM750E SERIES 750 WATT

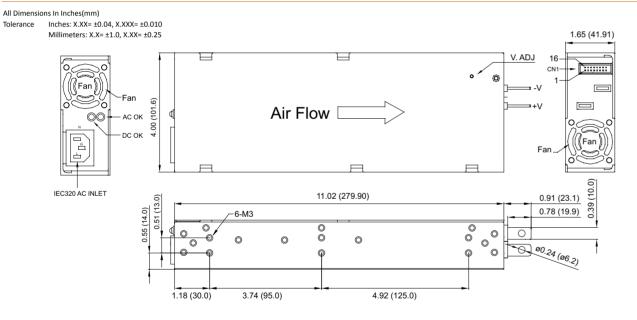
Features

- 1U Low Profile, High Power Density
- Universal Input Range 90-264VAC
- Active PFC Meets EN61000-3-2
- ♦ CISPR/FCC Class B
- ♦ High Efficiency at 91% Typical
- Remote Voltage Sense
- PS On/Off Remote Control
- +5V Stand-by Output Power
- Fan Speed Control with Temperature
- ♦ Active Current Sharing
- I²C Bus Interface





Mechanical Dimensions

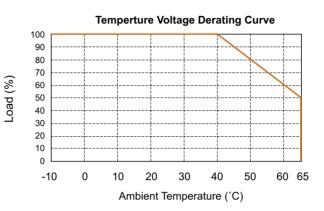


CN1: Molex70247-16 or Equivalent

FIN. V	CONNECTIO	IN .													
16	+SENSE	15	I SHARE	14	+5VSB	13	DC OK	12	V TRIM	11	GND	10	I ² C-SDA	9	ON□OFF
1	-SENSE	2	AC OK	3	+5VSB	4	I ² C-A0	5	OTPW	6	GND	7	I ² C-SCL	8	I ² C-A1

MODEL	OUTPUT	OUTP	UT	RIPPLE	VOLTAGE	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	CURRENT		& NOISE	ADJ. RANGE	ACCURACY	REG.	REG.	(Typ.)
		RATED	MIN.		(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
Main Output Voltage									
CFM750E-240	+24 V	31.2	0	200 mVp-p	22.8-26.4V	±2.0%	±0.5%	±1%	89%
CFM750E-360	+36 V	20.8	0	240 mVp-p	34.2-39.6V	±2.0%	±0.5%	±1%	91%
CFM750E-480	+48 V	15.6	0	240 mVp-p	45.6-52.8V	±2.0%	±0.5%	±1%	92%
Standby Output Voltage									
All	+5.0 V	1.0	0	100 mVp-p		±2.0%			

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

AC Input Voltage
Frequency
Inrush Current
Conducted EMI
Leakage Current/240Vac

90-264Vac 47 to 63Hz 40A max. @230Vac CISPR/FCC Class B 3.5mA max.

OUTPUT SPECIFICATIONS

Total Rated Output Power Remote Voltage Sense

Adjustment Range on Vout Hold-up Time Over Voltage Protection Short Circuit Protection Temperature Coefficient

750W Compensates for wire Voltage drop +10%, -5% 20ms typ. Recycle AC input to Restart

Auto Recovery

±0.05%/°C

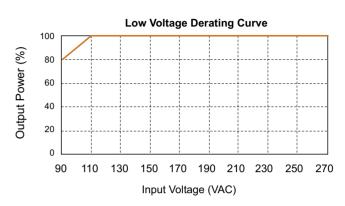
SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

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GENERAL SPECIFICATIONS Isolation Input to output= 4,242VDC -10-65°C (see derating curve) Operating Temperature CFM750E will be in thermal protection for exceeding the rated power output or the operating temperature Storage Temperature -20-85°C Humidity 93% RH max. Non condensing Switching Frequency 100KHz Typical MTBF MIL-HDBK-217F, GB, 25°C/115VAC 80Khrs min. Altitude 2000m Dimensions 11.02 x 4.00 x 1.65 inches (280.0 x 101.6 x 41.9 mm) 1610 g (3.55 Pounds) Weight

NOTE

1. Add a $0.1\mu F$ ceramic capacitor and a $47\mu F$ E.L. capacitor to output for

- ripple & noise measuring @20MHz BW.
- Voltage accuracy is set at 60% rated load and 25°C.Ta.
 Line regulation is measured from high line to low line with rated load.
- Load regulation is measured at 60%±40% rated.
- 5. Typical efficiency at 230VAC and Full Load at 25°C.

CFM1600H SERIES

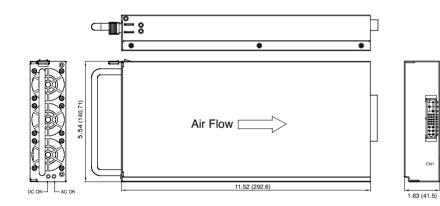
Features

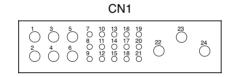
- 1U Low Profile, High Power Density
- Universal Input Range 90-264VAC
- Active PFC Meets EN61000-3-2
- CISPR/FCC Class B
- ♦ High Efficiency at 90% Typical
- ♦ PS On/Off Remote Control
- +5V Stand-by Output Power
- ◆ Fan Speed Control Function (Option)
- Active Current Sharing
- ♦ Hot Swap Redundancy
- Build-in ORing FETs
- ♦ I²C Bus Interface
- Optional 1U x 19" Power-Rack



Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXXX=±0.04,X.XXX=±0.010 Millimeters: X.XXX=±1.0,X.XX=±0.25





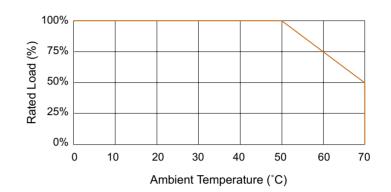
CN1: Positronic PCIB24W9M400A1 or Equivalent PIN CONNECTION

1	-Vout	7	ON/OFF	13	I ² C-A2	19	SB GND
2	-Vout	8	I ² C-A1	14	+SENSE	20	DC OK
3	+Vout	9	I SHARE	15	I ² C-SCL	21	V TRIM
4	-Vout	10	I ² C-A0	16	+5VSB	22	PE
5	+Vout	11	-SENSE	17	AC OK	23	N
6	+Vout	12	I ² C-SDA	18	OTPW	24	L

Note: 1. Pin7 is Short Pin 2. Pull Down Pin7 to Activate the PSU

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT (A) RATED @ 180-264VAC RATED@90-132VAC	RIPPLE & NOISE NOTE 1	VOLTAGE ADJ. RANGE	VOLTAGE ACCURACY NOTE 2	LINE REG. NOTE 3	LOAD REG. NOTE 4	%EFF (Typ.) NOTE 5
	Main Output							
CFM1600H-480-24P	+48 V	33.4 25.0	1%	45.6-52.8 V	± 1%	± 1%	± 1%	90%
	Standby Outpu	ut Voltage						
	+5 V	1	100mVp-p			± 1%	± 1%	
	Main Output							
CFM1600H-240-24P	+24 V	60 50	1%	22.8-26.4 V	± 1%	± 1%	± 1%	88%
	Standby Outpu	ut Voltage						
	+5 V	1	100mVp-p			±1%	± 1%	

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

AC Input Voltage
Frequency
Inrush Current
Conducted EMI
Leakage Current

90-264Vac 47 to 63Hz 40A max. @230Vac CISPR/FCC Class B 3.5mA max.

1200W (@90-132Vac)

1600W (@180-264Vac)

Compensates for Wire

+10%, -5%

Voltage Drop

Auto Recovery

±0.05%/°C

20ms typ.

Single wire Current Sharing

Recycle AC input to Restart

OUTPUT SPECIFICATIONS

Total Rated output

Current Share Adjustment Range on Vout Remote Voltage Sense

Hold-up Time Over Voltage Protection Short Circuit Protection Temperature Coefficient

SAFETY AND EMISSION

Emission and Immunity

Safety

EN55022 Class B, FCC Part15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3 EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

GENERAL SPECIFICATIONS

Isolation

- Operating Temperature
- PSU will be in thermal protection for
- exceeding the rated power output or the
- operating temperature
- Storage Temperature
- Humidity
- Switching Frequency
- MTBF MIL-HDBK-217F, GB, 25°C/115VAC

Altitude Dimensions

Weight

Input to output= 4,242VDC 0-70°C (see derating curve)

-20-85°C 93% RH max. Non condensing 125KHz Typical 70Khrs min.

2000m 11.52 x 5.54 x 1.63 inches (292.6 x 140.7 x 41.5 mm) 2470 g (5.45 Pounds)

- 1. Add a 0.1uF ceramic capacitor and a 47uF E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- Voltage accuracy is set a 60% rated load and 25°C Ta.
 Line regulation is measured from high line to low line with rated load.
- Load regulation is measured at 60%±40% rated load.
- 5. Suffix "-F" to model number with fan speed control function

CFM40C, CFM60C, CFM101C SERIES 40 WATT, 60 WATT, 100 WATT

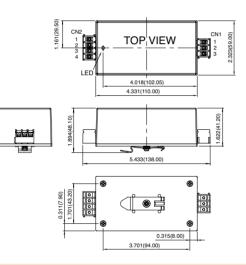
Features

- Universal Input Range 90-264VAC
- Efficiency up to 90%
- ٠ EN55022 and CISPR/FCC Class B
- Continuous Short Circuit Protection ٠
- ٠ LED Indicator for Power ON
- Can be Installed on DIN rail TS-35/7.5 or 15 ٠



Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XX=±0.02 , X.XXX=±0.010 Millimeters: X.X=±0.5 , X.XX=±0.25



CFM40CXXX-DR Series

MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	CURREN	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)
CFM40C033-DR CFM40C050-DR CFM40C120-DR CFM40C120-DR CFM40C150-DR CFM40C240-DR CFM40C300-DR CFM40C360-DR CFM40C480-DR	3.3 V 5 V 9 V 12 V 15 V 24 V 30 V 36 V 48 V	6 A 6 A 4.45 A 3.34 A 2.67 A 1.67 A 1.33 A 1.11 A 0.834 A	50mV 1% 1% 1% 1% 1% 1% 1%	±1% ±1% ±1% ±1% ±1% ±1% ±1% ±1%	$\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$ $\pm 0.5\%$	±1% ±1% ±1% ±1% ±1% ±1% ±1% ±1%	70% 76% 84% 85% 85% 85% 86% 87% 87%

CFM60CXXX-DR Series

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURREN	RIPPLE & NOISE	VOLTAGE ACCURACY	LINE REGULATION	LOAD REGULATION	% EFF. (Typ.)
CFM60C033-DR	3.3 V	8 A	50mV	±1%	±0.5%	±1%	72%
CFM60C050-DR	5 V	8 A	1%	±1%	±0.5%	±1%	77%
CFM60C090-DR	9 V	6.67 A	1%	±1%	±0.5%	±1%	84%
CFM60C120-DR	12 V	5 A	1%	±1%	±0.5%	±1%	85%
CFM60C150-DR	15 V	4 A	1%	±1%	±0.5%	±1%	86%
CFM60C240-DR	24 V	2.5 A	1%	±1%	±0.5%	±1%	86%
CFM60C300-DR	30 V	2 A	1%	±1%	±0.5%	±1%	86%
CFM60C360-DR	36 V	1.67 A	1%	±1%	±0.5%	±1%	88%
CFM60C480-DR	48 V	1.25 A	1%	±1%	±0.5%	±1%	88%

CFM101CXXX-DR Series

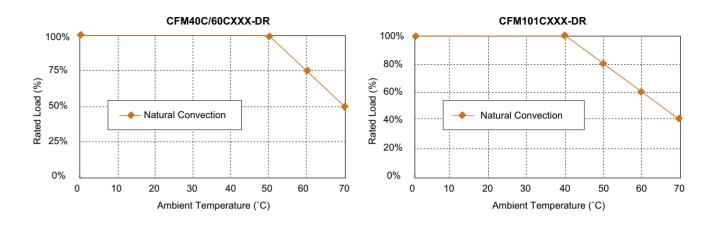
MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.	PF
NUMBER	VOLTAGE	CURREN	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)	(Typ.)
CFM101C120-DR CFM101C150-DR CFM101C200-DR CFM101C240-DR CFM101C480-DR	12 V 15 V 20 V 24 V 48 V	8.4 A 6.7 A 5 A 4.2 A 2.1 A	1% 1% 1% 1%	±1% ±1% ±1% ±1% ±1%	±0.5% ±0.5% ±0.5% ±0.5%	±1% ±1% ±1% ±1% ±1%	87% 87% 88% 88% 90%	0.9 0.9 0.9 0.9 0.9



CN1 PIN CONNECTION				
Pin	Function			
Pin 1	ACN			
Pin 2	ACL			
Pin 3	<u>+</u>			

CN2 PIN CONNECTION				
Pin	Function			
Pin 1	+ Vout			
Pin 2	+ Vout			
Pin 3	- Vout			
Pin 4 - Vout				

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage		90-264Vac
Frequency		47 to 63Hz
Inrush Current	CFM40C/60CXXX-DR	50A max. @240Vac
	CFM101CXXX-DR	90A max. @240Vac
Conducted EMI		CISPR/FCC Class B
Leakage Current		3.5mA max.

OUTPUT SPECIFICATIONS

Hold-up Time	CFM40C/60CXXX-DR CFM101CXXX-DR	8ms typ. @115Vac 10ms typ. @115Vac
Short Circuit Protection		Hiccup Mode (Auto Recover)
Over Voltage Protection Temperature Coefficien		TVS Component to Clamp ±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B EN61000-6-3, EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

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GENERAL SPECIF	ICATIONS	
Isolation		Input to output= 4,242VDC
Operating Temperature		
	CFM40C/60CXXX-DR	0-70°C
	CFM101CXXX-DR	0-70°C
Storage Temperature		-20-85°C
Humidity		93% RH max. Non-Condensing
Cooling		Natural Convection
Switching Frequency		
	CFM40C/60CXXX-DR	66KHz Typical
	CFM101CXXX-DR	100KHz Typical
Altitude		2000m
Dimensions		5.433 x 2.323 x 1.894 inches
		(138.00 x 59.00 x 48.10 mm)
Weight		475 g

- 1. Voltage accuracy is set at full load and 25°C Ta.
- 2. Add a $0.1\mu\text{F}$ ceramic capacitor and a $10\mu\text{F}$ E.L. capacitor to output for ripple & noise measuring @20MHz BW.
- 3. Line regulation is measured from high line to low line with full load.
- 4. Load regulation is measured from full to 10% load.
- 5. CFM40C/60C/101C input connector mates with DECA T40MBB27-03 (Pitch 6.35mm) 3pin positions terminal blocks.
- 6. CFM40C/60C/101C Output connector mates with DECA
- T40MBB27-04 (Pitch 6.35mm) 4pin positions terminal blocks

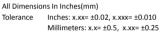
CBM100S Series 100 WATT, AC-DC FULL BRICK POWER MODULE

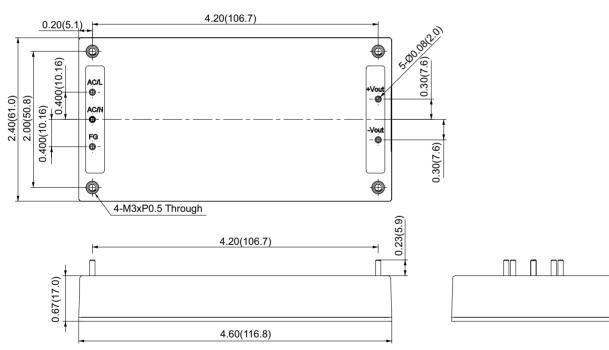
Features

- Universal Input Range 90-264VAC
- Full Load with Baseplate Cooled and No Fan Required
- Wide Operating Temperature Range ٠
- 17mm Ultra Low Profile ٠
- Built-in EN55022 Class B Filter
- Active PFC Meets EN61000-3-2 ٠
- High Efficiency up to 90% Typical ٠
- No Load Input Power Consumption < 0.5W •
- **Over Temperature Protection** ٠
- Over Voltage Protection ٠
- **Over Current Protection** ٠



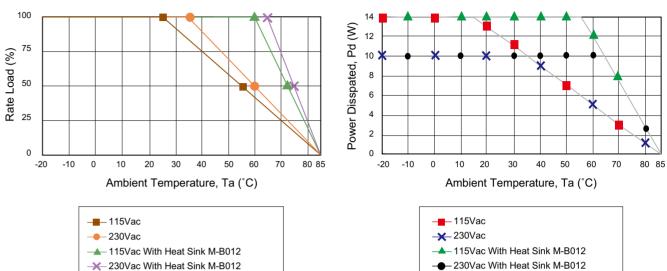
Mechanical Dimensions





MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.	
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)	
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)	
CBM100S120	+12 V	8.4 A	1.0%	±1.0%	±0.5%	±1%	90%	
CBM100S240	+24 V	4.2 A	1.0%	±1.0%	±0.5%	±1%	91%	
CBM100S280	+28 V	3.6 A	1.0%	±1.0%	±0.5%	±1%	91%	
CBM100S360	+36 V	2.8 A	1.0%	±1.0%	±0.5%	±1%	91%	
CBM100S480	+48 V	2.1 A	1.0%	±1.0%	±0.5%	±1%	90.5%	

Derating Curve



-X 230Vac With Heat Sink M-B012

Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

AC Input Voltage	90-264Vac
Frequency	47 to 63Hz
Inrush Current	100A max. @240Vac
Leakage Current @ 264Vac	3.5mA max.

OUTPUT SPECIFICATIONS

Isolation Total Rated Output Power Hold-up Time **Over Voltage Protection** Short Circuit Protection Over Current Protection **Over Temperature Protection** Temperature Coefficient

Input to output= 4242VDC 100W 12ms typ. Recycle AC input to restart Hiccup mode (Auto Recovery) Auto Recovery Auto Recovery

±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3 EN55024, EN61000-6-1, EN61204-3 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

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GENERAL SPECIFICATIONS

Operating Ambient Temperature Storage Temperature Humidity Switching Frequency MTBF ... MIL-HDBK-217F, GB, 25°C/115VAC No Load Input Power Consumption Altitude Dimensions

see derating curve -40-100°C 93% RH max. Non condensing 130KHz Typical 100Khrs min < 0.5W 2000m 4.60 x 2.40 x 0.67 inches (116.8 x 61.0 x 17.0 mm) 236 g (0.52 Pounds)

NOTE

Weight

- 1. CBM100S series: Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L.
- capacitor to output for ripple & noise measuring @20MHz BW.
- 2. Voltage accuracy is set at 60% rated load.
- 3. Line regulation is measured from high line to low line with rated load.
- 4. Load regulation is measured at 60%±40% rated.
- 5. Typical efficiency with 230VAC and full load at 25°C.
- 6. Power dissipation (Pd): Pd =Pi-Po=Po(1-η)/η

TRG10R SERIES 10 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input: 90-264VAC
- ♦ Interchangeable AC Plugs
- EN55022 Class "B" and CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI
- (Output cable length \leq 1800mm)
- No Load Power Consumption < 75mW

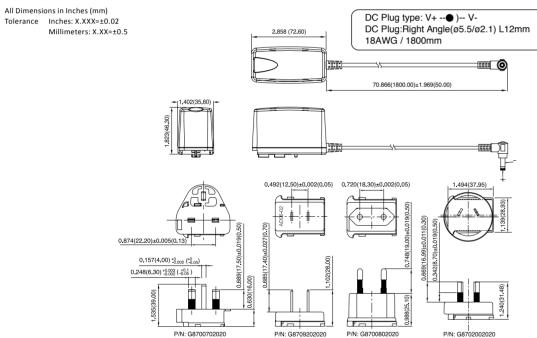


Ordering information

TRG10RXXX - XX E XX Model No. DC Plug Type OVP DC Cable Length and Type 01: 720mm 02: 1220mm 03: 1800mm 11: 720mm with Ferrite Core 12: 1220mm with Ferrite Core 13: 1800mm with Ferrite Core 13: 1800mm with Ferrite Core 13: 1800mm with Ferrite Core

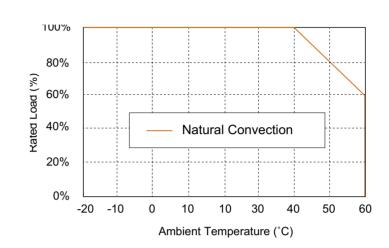


Mechanical Dimensions



MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	CURRENT	AVERAGE
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	EFFICIENCY MIN.
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TRG10R050	5 V	1.6 A	50mVp-p	±2%	±1%	±4%	77.37%
TRG10R059	5.9 V	1.5 A	1%	±2%	±1%	±3%	78.12%
TRG10R060	6 V	1.5 A	1%	±2%	±1%	±3%	81.57%
TRG10R075	7.5 V	1.2 A	1%	±2%	±1%	±3%	81.57%
TRG10R090	9 V	1.1 A	1%	±2%	±1%	±2%	82.14%
TRG10R120	12 V	0.85 A	1%	±2%	±1%	±2%	82.32%
TRG10R136	13.6 V	0.75 A	1%	±2%	±1%	±2%	82.32%
TRG10R150	15 V	0.7 A	1%	±2%	±1%	±2%	82.49%
TRG10R180	18 V	0.55 A	1%	±2%	±1%	±2%	82.14%
TRG10R240	24 V	0.4 A	1%	±2%	±1%	±2%	81.96%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	

90-264Vac 47 to 63Hz 0.4A max. Cold Start @25°C 40A max. @ 240Vac 0.25mA max

Leakage Current

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

10mS typ. @115Vac Continuous (Auto Recovery) TVS Component to Clamp ±0.05%/*C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B EN61000-6-3, EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

- Isolation
- Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF (MIL-HDBK-217F, GB, 25°C/115VAC) Altitude Dimensions
- Input to output= 4,242VDC -20-60°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 67KHz typ. 200K hrs min. 2000m 2.858 x 1.823 x 1.402 inches (72.6 x 46.3 x 35.6 mm) 130 g (0.29 Pounds)

Weight

- NOTE
- 1. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for Ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- Votage setpoint at 00% full load.
 Line regulation measured from 100Vac to 240VAC full load.
- Load regulation measured from 60% to full load and from 60% to
- 20% load (60% +/- 40% load).
- Average Efficiency measured at 25%,50%,75%,100% load and input voltage is 115VAC / 230VAC.

TRG15 SERIES 15 WATT, LEVEL VI EFFICIENCY

Features

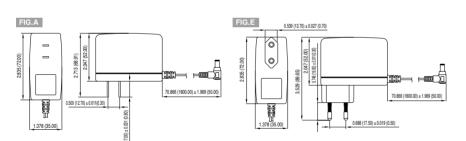
- Universal Input Range 90-264VAC
- ♦ EN55022 Class "B" and CISPR/FCC Class B
- ٠ Continuous Short Circuit Protection
- Over Voltage Protection ٠
- CoC Tier 2 & DoE Level VI (Output cable length \leq 1800mm) (TRG1506: Output Cable Length \leq 1220mm)
- No Load Power Consumption < 75mW

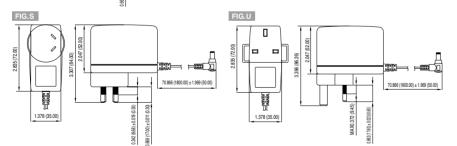
Ordering information



Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5

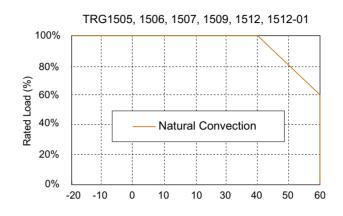




MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE (NOTE 1)	VOLTAGE ACCURACY (NOTE 2)	LINE REGULATION (NOTE 3)	CURRENT REGULATION (NOTE 4)	AVERAGE EFFICIENCY MIN. (NOTE 5)
TRG1505	5 V	2.0 A	50mVp-p	±2%	±1%	±4%	79%
TRG1506	6 V	1.5 A	60mVp-p	±2%	±1%	±3%	81.57%
TRG1507	7.5 V	1.6 A	75mVp-p	±2%	±1%	±3%	83.26%
TRG1509	9 V	1.4 A	90mVp-p	±2%	±1%	±2%	83.54%
TRG1512	12 V	1.0 A	100mVp-p	±2%	±1%	±2%	83.26%
TRG1512-01	13.6 V	1.0 A	100mVp-p	±2%	±1%	±2%	83.97%
TRG1515	15 V	1.0 A	100mVp-p	±2%	±1%	±2%	84.5%
TRG1518	18 V	0.83 A	100mVp-p	±2%	±1%	±2%	84.48%
TRG1524	24 V	0.63 A	100mVp-p	±2%	±1%	±2%	84.54%



Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Input Current	0.5A max.
Inrush Current	Cold Start @25°C
	50A max. @ 240Vac
Leakage Current	0.25mA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection **Over Voltage Protection** Temperature Coefficient

10ms typ. @115Vac Hiccup Mode (Auto Recovery) Hiccup Mode (Auto Recovery) ±0.05% / °C

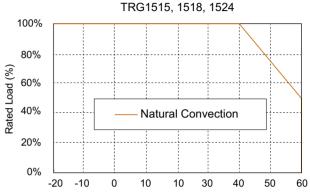
SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B EN61000-6-3, EN61000-3-2, EN61000-3-3, EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

Safety

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GENERAL SPECIFICATIONS

- Isolation
- **Operating Temperature** Storage Temperature Humidity Cooling Switching Frequency

MTBF ... MIL-HDBK-217F, GB, at 25°C/115VAC Altitude Dimensions

- Weight
- NOTE
- 1. Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L. capacitor to output for
- ripple & noise measuring @20MHz BW. 2. Voltage setpoint at 60% full load.
- Line regulation measured from 100Vac to 240VAC full load.
- 4. Load regulation measured from 60% to full load and from 60% to 20% load (60% +/- 40% load).
- 5. Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115VAC / 230VAC.

Input to output= 4,242VDC -20-60°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection Full Load, 115V / 85KHz Typical 230V / 65KHz Typical 200Khrs min. 5000m 2.835 x 2.047 x 1.378 inches (72.00 x 52.00 x 35.00 mm)) 140 g (0.33 Pounds)

TR15RA SERIES 15 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range 90-264VAC
- ♦ Interchangeable AC Plugs
- EN55022 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI
- (Output Cable Length \leq 1800mm)
- No Load Power Consumption < 75mW

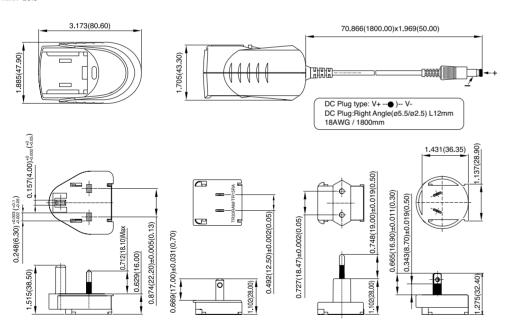


Ordering information

TR15RAXXX -	XX	E	XX	-XX	-BK
Model No.	XX DC Plug Type	e OVP	DC Cable Length and Type 01: 720mm 02: 1220mm 03: 1800mm 11: 720mm with Ferrite Core	Color of Overmold Case BE: Blue GY: Gray RD: Red PE: Purple	-ВК
			12: 1220mm with Ferrite Core 13: 1800mm with Ferrite Core * 18AWG / UL1185	OE: Orange	

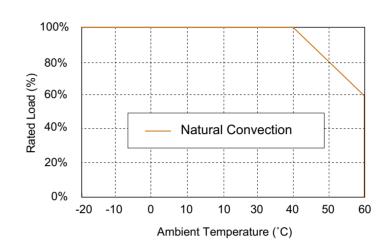
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	CURRENT	AVERAGE
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	EFFICIENCY MIN.
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TR15RA050	5 V	2.0 A	50mVp-p	±3%	±1%	±4%	79.01%
TR15RA059	5.9 V	1.7 A	1%	±2%	±1%	±3%	79.03%
TR15RA090	9 V	1.4 A	1%	±2%	±1%	±2%	83.55%
TR15RA120	12 V	1.1 A	1%	±2%	±1%	±2%	83.81%
TR15RA150	15 V	1.0 A	1%	±2%	±1%	±2%	84.51%
TR15RA180	18 V	0.83 A	1%	±2%	±1%	±2%	84.49%
TR15RA240	24 V	0.625 A	1%	±2%	±1%	±2%	84.51%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage			
Frequency			
Input Current			
Inrush Current			
Lookago Curront			

90-264Vac 47 to 63Hz 0.4A max Cold Start @25°C 90A max. @ 240Vac 0.25mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

10ms typ. @115Vac Continuous (Auto Recovery) TVS Component to Clamp ±0.05% / *C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B EN61000-6-3, EN61000-3-2, EN61000-3-3,EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

Isolation

Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF (MIL-HDBK-217F, GB, at 25°C /115VAC) Altitude Dimensions

```
Input to output= 4,242VDC

-20-60°C (see derating curve)

-20-85°C

93% RH max. Non condensing

Natural Convection

65KHz Typical

200Khrs min.

2000m

3.173 x 1.885 x 1.705 inches

(80.60 x 47.90 x 43.30 mm)

150 g (0.33 Pounds)
```

NOTE

Weight

- 1. Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC full load.
- 4. Load regulation measured from 60% to full load and from 60% to
- 20% load (60% +/- 40% load).
- Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

TRH25 SERIES 25 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input: 90-264VAC
- EN55022 Class B and CISPR/FCC Class B
- ٠ Continuous Short Circuit Protection
- Over Voltage Protection ٠
- CoC Tier 2 & DoE Level VI (Output Cable Length \leq 1800mm) (TRH25033: Output Cable Length \leq 720mm) (TRH25050: Output Cable Length \leq 1220mm)
- No Load Power Consumption < 75mW •

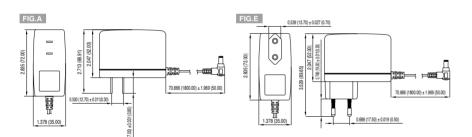
Ordering information

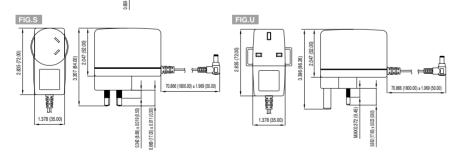
TRH25 XXX -	х	-X	E	XX
Model No.	AC Plug Type A: USA 2 Pin E: Europe 2 Pin U: British 3 Pin S: Australia 2 Pin	DC Plug Type	ÖVP	DC Cable 01: 720m 02: 1220r 03: 1800r 11: 720m 12: 1220r 13: 1800r
				* 18AWG

Length and Type 02: 1220mm 03: 1800mm 11: 720mm with Ferrite Core 12: 1220mm with Ferrite Core 13: 1800mm with Ferrite Core * 18AWG / UL1185 * 16AWG / UL1185 for Vo:5V,3.3V

Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5

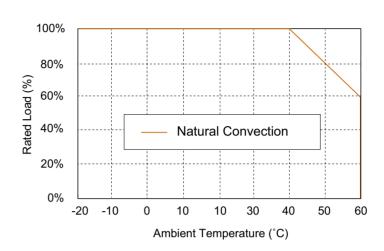




MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	CURRENT	AVERAGE
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	EFFICIENCY MIN.
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TRH25033	3.3 V	4.0 A	50mVp-p	±2%	±1%	±6%	80.97%
TRH25050	5 V	4.0 A	50mVp-p	±2%	±1%	±6%	83.69%
TRH25120	12 V	2.1 A	1%	±2%	±1%	±5%	87.02%
TRH25150	15 V	1.67 A	1%	±2%	±1%	±3%	86.99%
TRH25180	18 V	1.4 A	1%	±2%	±1%	±2%	87.02%
TRH25240	24 V	1.05 A	1%	±2%	±1%	±2%	87.02%



Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Input Current	0.7A max
Inrush Current	Cold Start @25°C
	90A max. @ 240Vac
Leakage Current	0.25mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection **Over Voltage Protection** Temperature Coefficient

10ms typ. @115Vac Continuous (Auto Recovery) TVS Component to Clamp ±0.05% / °C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B EN61000-6-3, EN61000-3-2, EN61000-3-3,EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

- Isolation **Operating Temperature** Storage Temperature Humidity Cooling Switching Frequency Altitude Dimensions
- Weight

NOTE

1. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for

Input to output= 4,242VDC

-20-85°C

2000m

Natural Convection

140 g (0.31 Pounds)

67KHz Typical

-20-60°C (see derating curve)

93% RH max. Non condensing

2.835 x2.047 x 1.378 inches

(72.00 x 52.00 x 35.00 mm)

- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC full load.
- 4. Load regulation measured from 60% to full load and from 60% to
- 20% load (60% +/- 40% load). 5. Average Efficiency measured at 25%,50%,75%,100% load and input voltage is 115Vac / 230Vac.

TRG3OR V SERIES 30 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range 90-264VAC
- ♦ Interchangeable AC Plugs
- EN61204-3 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- ♦ CoC Tier 2 & DoE Level VI
- (Output Cable Length \leq 1800mm)
- No Load Power Consumption < 75mW



Ordering information

 TRG30RXXXV
 -XX
 E
 XX
 Color of Overmoid Case

 Model No.
 DC Plug Type
 OVP
 DC Cable Length and Type
 Color of Overmoid Case

 01: 720mm
 BE: Blue
 BE: Blue
 BE: Blue

 02: 1220mm
 GY: Gray
 GY: Gray

 03: 1800mm
 RD: Red

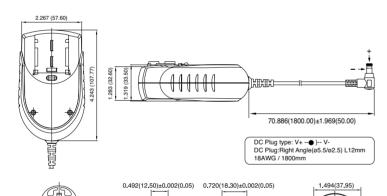
 11: 720mm with Ferrite Core
 PE: Purple

 13: 1800mm with Ferrite Core
 13: 1800mm with Ferrite Core

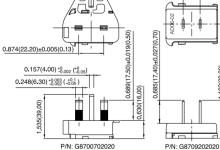
 * 18.WG / UL1185
 * 16AWG / UL1185 for SV • 9V

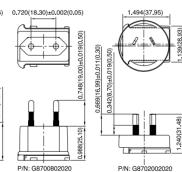
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



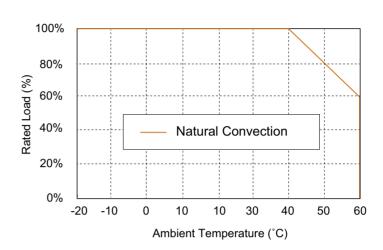
-BK





MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	CURRENT	AVERAGE
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	EFFICIENCY MIN.
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TRG30R050V	5 V	4.0 A	50mVp-p	±2%	±1%	±6%	83.69%
TRG30R090V	9 V	3.0 A	90mVp-p	±2%	±1%	±3%	87.30%
TRG30R120V	12 V	2.5 A	100mVp-p	±2%	±1%	±2%	87.70%
TRG30R150V	15 V	2.0 A	100mVp-p	±2%	±1%	±2%	87.70%
TRG30R180V	18 V	1.67 A	100mVp-p	±2%	±1%	±2%	87.70%
TRG30R240V	24 V	1.25 A	100mVp-p	±2%	±1%	±2%	87.70%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	
Leakage Current	

90-264Vac 47 to 63Hz 0.8A max Cold Start @25°C 100A max. @ 240Vac 0.25mA max.

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Over Voltage Protection

10ms typ. @115Vac Hiccup Mode (Auto Recovery) Latch

SAFETY AND EMISSION

Emission and Immunity

Safety

EN61204-3, EN61000-3-2, EN61000-3-3, FCC CFR Title 47 Part 15 Subpart B Class II, IEC60950-1, UL60950-1, EN60950-1

GENERAL SPECIFICATIONS

Isolation Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF MIL-HDBK-217F, GB, 25°C/115VAC Altitude Dimensions

```
Input to output= 4,242VDC
-20-60°C (see derating curve)
-20-85°C
93% RH max. Non condensing
Natural Convection
65KHz Typical
200Khrs min.
5000m
4.243 x 2.267 x 1.319 inches
(107.77 x 57.60 x 33.50 mm)
300 g (0.66 Pounds)
```

NOTE

Weight

- 1. Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC full load.
- 4. Load regulation measured from 60% to full load and from 60% to
- 20% load (60% +/- 40% load).
- Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

TRG30RA V SERIES 30 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range 90-264VAC
- Interchangeable AC Plugs
- ٠ EN61204-3 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection ٠
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI •
- (Output Cable Length \leq 1800mm)
- No Load Power Consumption < 75mW



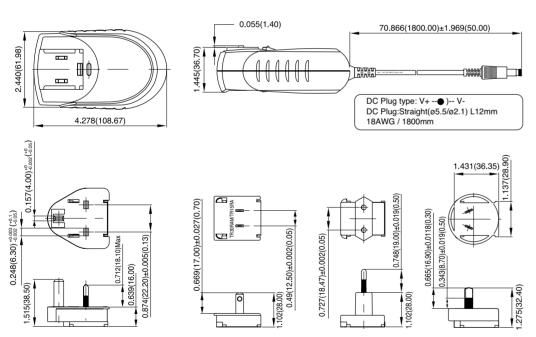
Ordering information

TRG30RAXXXV -XX E Model No. DC Plug Type OVP XX DC Cable Length and Type 01: 720mm 2: 1220mm 03: 1800mm 11: 720mm with Ferrite Core 12: 1220mm with Ferrite Core 13: 1800mm with Ferrite Core

-XX Color of Overmold Case BE: Blue GY: Gray RD: Red PE: Purple OR: Orange * 18AWG / UL1185 * 16AWG / UL1185 for 5V \ 9V

Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5

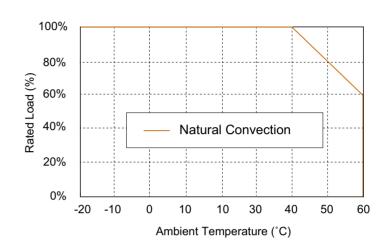


-BK

MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	CURRENT	AVERAGE
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	EFFICIENCY MIN.
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TRG30RA050V	5 V	4.0 A	50mVp-p	±2%	±1%	±6%	83.69%
TRG30RA090V	9 V	3.0 A	90mVp-p	±2%	±1%	±3%	87.30%
TRG30RA120V	12 V	2.5 A	100mVp-p	±2%	±1%	±2%	87.70%
TRG30RA150V	15 V	2.0 A	100mVp-p	±2%	±1%	±2%	87.70%
TRG30RA180V	18 V	1.67 A	100mVp-p	±2%	±1%	±2%	87.70%
TRG30RA240V	24 V	1.25 A	100mVp-p	±2%	±1%	±2%	87.70%



Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	

90-264Vac 47 to 63Hz 0.8A max Cold Start @25°C 100A max. @ 240Vac 0.25mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection **Over Voltage Protection**

10ms typ. @115Vac Hiccup Mode (Auto Recovery) Latch

SAFETY AND EMISSION

Emission and Immunity

EN61204-3, EN61000-3-2, EN61000-3-3 FCC CFR Title 47 Part 15 Subpart B Class II, IEC60950-1, UL60950-1, EN60950-1

Safety

GENERAL SPECIFICATIONS

Isolation **Operating Temperature** Storage Temperature Humidity Cooling Switching Frequency MTBF MIL-HDBK-217F, GB, 25°C/115VAC Altitude Dimensions

```
Input to output= 4,242VDC
-20-60°C (see derating curve)
-20-85°C
93% RH max. Non condensing
Natural Convection
65KHz Typical
200Khrs min.
5000m
4.243 x 2.267 x 1.319 inches
(107.77 x 57.60 x 33.50 mm)
300 g (0.66 Pounds)
```

NOTE

Weight

- 1. Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC full load.
- 4. Load regulation measured from 60% to full load and from 60% to
- 20% load (60% +/- 40% load).
- 5. Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

TRH21A SERIES 20 WATT, LEVEL VI EFFICIENCY

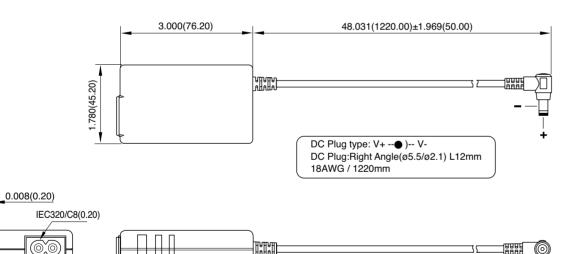
Features

- Universal Input Range 90-264VAC
- Efficiency to 87%
- Continuous Short Circuit Protection •
- Over Voltage Protection ٠
- No Load Input Power < 0.1W
- Leakage Current < 0.1mA ٠
- IEC60950-1/EN60950-1/UL60950-1 ITE Approved ٠
- AC Inlet IEC320/C8 •
- 2 MOOP ٠
- DOE Level VI ٠ (Output Cable Length \leq 1800mm 18AWG) (TRH21A050: Length \leq 1200mm 18AWG)



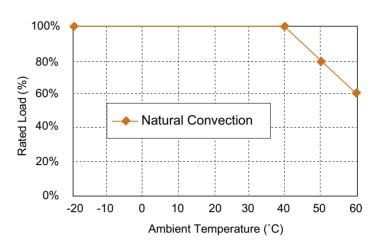
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT RATED POWER	RIPPLE & NOISE	VOLTAGE ACCURACY	LOAD REG.	% EFF.
TRH21A050	90-264 VAC	5 V	3.0 A	15.0 W	50 mV	±2%	±5%	80%
TRH21A090	90-264 VAC	9 V	2.3 A	20.7 W	50 mV	±2%	±4%	85%
TRH21A120	90-264 VAC	12 V	1.8 A	21.6 W	90 mV	±2%	±3%	86%
TRH21A150	90-264 VAC	15 V	1.4 A	21.0 W	100 mV	±2%	±3%	86%
TRH21A180	90-264 VAC	18 V	1.2 A	21.6 W	100 mV	±2%	±2%	87%
TRH21A240	90-264 VAC	24 V	0.9 A	21.6 W	100 mV	±2%	±2%	87%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	90-264Vac
Frequency	47 to 63Hz
Input Current	0.3 to 0.5A
Inrush Current	Cold Start@25°C
	50A max.@240Vac
Leakage Current	0.25mA max.

OUTPUT SPECIFICATIONS

Voltage Accuracy	±2.0% max.
Line Regulation (note 3)	±1.0% max.
Load Regulation (note 4)	see table
Hold-up Time	8ms typ. @115Vac
Short Circuit Protection	Continuous
Over Voltage Protection(TVS)	115%-140% of nominal
	output voltage

SAFETY AND EMISSION

CE Directive Emissions

Safety Approvals

2014/108/EC EN55022/CISPR Class B, EN55024 Class II, IEC60950-1, EN60950-1, UL60950-1

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GENERAL SPECIFICATIONS

- Isolation
- Efficiency
- Switching Frequency
- **Operating Temperature**
- Storage Temperature
- Cooling
- Humidity
- MTBF MIL-STD-217F, GB, at 25°C/115VAC Dimensions
- Weight

NOTE

- 1. Voltage accuracy is set of 60% rated load.
- 2. Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for ripple & noise measuring @20MHz BW.

Input to output= 4,000VAC

-20-60°C (see derating curve)

93% RH max. Non condensing

3.000 x 1.780 x 0.870 inches

(76.20 x 45.20 x 22.10 mm)

see table

-25-85°C

400Khrs min.

Natural Convection

140 g (0.31Pounds)

65KHz typ.

- 3. Line regulation is measured from high line to low line with full load.
- 4. Load regulation is measured from 60% to full load and from 60% to 20% load (60% +/- 40% load).

TRG36A SERIES 36 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range 90-264VAC
- EN55022 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- ♦ CoC Tier 2 & DoE Level VI
- ◆ (Output cable length ≤ 1800mm) (TRG36A09: Output Cable Length ≤ 1220mm) (TRG36A05: Output Cable Length ≤ 720mm 18AWG/UL2464)
- No Load Power Consumption < 75mW

Ordering information

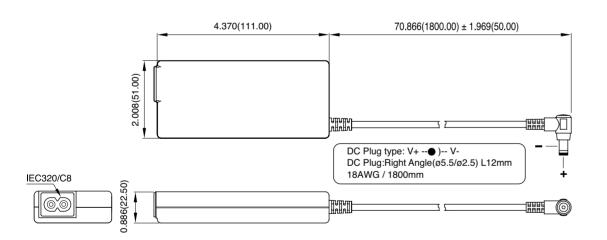






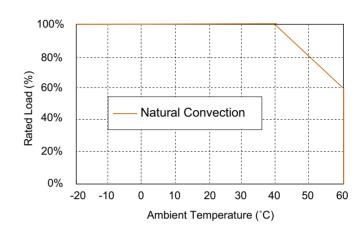
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	AVERAGE
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	EFFICIENCY MIN.
			(NOTE 1)	(NOTE 2)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TRG36A05	5 V	4.0 A	50mVp-p	±2%	±1%	±6%	83.69%
TRG36A09	9 V	3.0 A	1%	±2%	±1%	±5%	87.30%
TRG36A12	12 V	2.5 A	1%	±2%	±1%	±5%	87.70%
TRG36A13	13.5 V	2.4 A	1%	±2%	±1%	±5%	87.97%
TRG36A15	15 V	2.4 A	1%	±2%	±1%	±3%	88.31%
TRG36A18	18 V	2.0 A	1%	±2%	±1%	±2%	88.31%
TRG36A24	24 V	1.5 A	1%	±2%	±1%	±2%	88.31%
TRG36A48	48 V	0.75 A	1%	±2%	±1%	±2%	88.31%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	

90-264Vac 50 to 60Hz 1A max Cold Start@25°C 60A max.@240Vac 0.25mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

8ms typ. @115Vac Continuous(Auto Recover) TVS Component to Clamp ±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3 EN55024, EN61204-3, EN61000-6-1 Class II, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

- Isolation
- Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF ... MIL-HDBK-217F, GB, at 25°C/115VAC Altitude Dimensions
- Input to output= 4,242VDC -20-60°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 67KHz typ. 200Khrs min. 2000m 4.331 x 1.969 x 0.787 inches (110.00 x 50.00 x 20.00 mm) 190 g (0.42 Pounds) IEC320/C8

NOTE

Weight

AC Inlet

- 1. Add a $0.1\mu F$ ceramic capacitor and a 10uF E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- Line regulation measured from 100VAC to 240VAC full load.
 Load regulation measured from 60% to full load and from 60% to
- Load regulation measured from 60% to full load and from 60% to 20% load (60% +/- 40% load).
- Average Efficiency measured at 25%,50%,75%,100% load and input voltage is 115Vac / 230Vac.

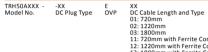
TRH50A SERIES 50 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range 90-264VAC
- EN55022 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI (Output Cable Length ≤1800mm) (TRH50A120, TRH50A150: Output Cable Length ≤1220mm)
- ♦ No Load Power Consumption < 150mW



Ordering information

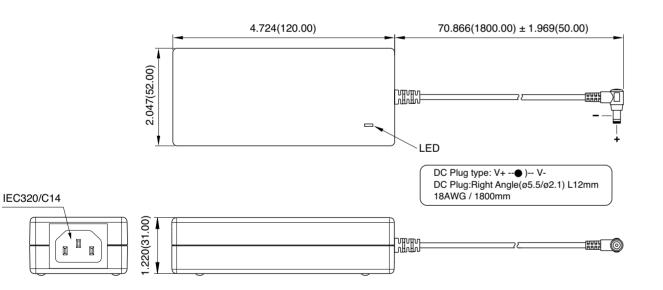






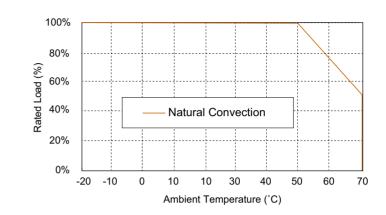
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL OUTPUT OUTPUT RIPPLE & VOLTAGE LINE LO		
NUMBER VOLTAGE CURRENT NOISE ACCURACY REGULATION REGUL (NOTE 1) (NOTE 2) (NOTE 3) (NOT		
TRH50A120 12 V 4.2 A 1% ±2% ±1% ±3 TRH50A150 15 V 3.36 A 1% ±2% ±1% ±3 TRH50A180 18 V 2.8 A 1% ±2% ±1% ±2 TRH50A190 19 V 2.65 A 1% ±2% ±1% ±2 TRH50A240 24 V 2.1 A 1% ±2% ±1% ±2 TRH50A280 28 V 1.8 A 1% ±2% ±1% ±2 TRH50A360 36 V 1.4 A 1% ±2% ±1% ±2 TRH50A480 48 V 1.05 A 1% ±2% ±1% ±2	% 89% % 89% % 89% % 89% % 89% % 89% % 89%	

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	

90-264Vac 47 to 63Hz 1.5A max. Cold Start@25°C 100A max.@240Vac 3.5mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

8ms typ. @115Vac Continuous (Auto Recover) TVS Component to Clamp ±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B, EN61000-6-3, EN61000-3-2, EN61000-3-3 EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

GENERAL SPECIFICATIONS

- Isolation
- Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF ... MIL-HDBK-217F, GB, at 25°C/115VAC Altitude Dimensions
- Input to output = 4,242VDC -20-70°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 65KHz typ. 200Khrs min. 5000m 4.724 x 2.047 x 1.220 inches (120.00 x 52.00 x 31.00 mm) 300 g IEC320/C14

NOTE

Weight

AC Inlet

- 1. Add a $0.1\mu\text{F}$ ceramic capacitor and a 10uF E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC full load.
- Load regulation measured from 60% to full load and from 60% to 20% load (60% +/- 40% load).
- Average efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

TRH70A SERIES 70 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range 90-264VAC
- EN55022 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI (Output Cable Length ≤ 1800mm) (TRH70A120:Output Cable Length ≤ 720mm) (TRH70A150:Output Cable Length ≤ 1220mm)
- ♦ No Load Power Consumption < 150mW

Ordering information

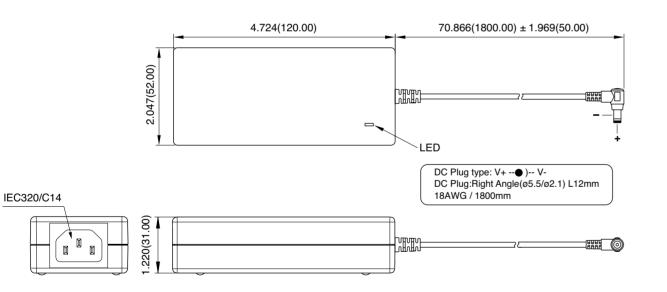
TRH70AXXX - -XX E XX Model No. DC Plug Type OVP DC Cable Length and Type





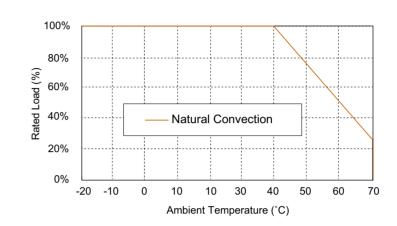
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE (NOTE 1)	VOLTAGE ACCURACY (NOTE 2)	LINE REGULATION (NOTE 3)	LOAD REGULATION (NOTE 4)	AVERAGE EFFICIENCY MIN. (NOTE 5)
TRH70A120	12 V	5.80 A	1%	±2%	±1%	±4%	89%
TRH70A150	15 V	4.65 A	1%	±2%	±1%	±3%	89%
TRH70A180	18 V	3.90 A	1%	±2%	±1%	±2%	89%
TRH70A190	19 V	3.70 A	1%	±2%	±1%	±2%	89%
TRH70A240	24 V	3.00 A	1%	±2%	±1%	±2%	89%
TRH70A280	28 V	2.50 A	1%	±2%	±1%	±2%	89%
TRH70A360	36 V	2.00 A	1%	±2%	±1%	±2%	89%
TRH70A480	48 V	1.50 A	1%	±2%	±1%	±2%	89%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	

90-264Vac 47 to 63Hz 1.5A max. Cold Start@25°C 50A max.@240Vac 3.5mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Hold-up Time Short Circuit Protection Over Voltage Protection Temperature Coefficient

8ms typ. @115Vac Continuous(Auto Recover) TVS Component to Clamp ±0.05%/°C

SAFETY AND EMISSION

Emission and Immunity

EN55022 Class B, FCC Part 15 Class B, EN61000-6-3, EN61000-3-2,EN61000-3-3 EN55024, EN61204-3, EN61000-6-1 Class I, IEC60950-1, EN60950-1, UL60950-1

Safety

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GENERAL SPECIFICATIONS

Isolation

- Operating Temperature Storage Temperature Humidity Cooling Switching Frequency MTBF ... MIL-HDBK-217F, GB, at 25°C/115VAC Altitude Dimensions
- Input to output= 4,242VDC -20-70°C (see derating curve) -20-85°C 93% RH max. Non condensing Natural Convection 65KHz Typical 200Khrs min. 5000m 4.724 x 2.047 x 1.220 inches (120.00 x 52.00 x 31.00 mm) 300 g IEC320/C14

NOTE

Weight

AC Inlet

- 1. Add a $0.1 \mu F$ ceramic capacitor and a $10 \mu F$ E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC full load.
- Load regulation measured from 60% to full load and from 60% to 20% load (60% +/- 40% load).
- Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

TRH100A SERIES 100 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range: 90-264VAC
- Active PFC Meets EN61000-3-2
- Conductive EMI Meets CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI (Output Cable Length ≤ 1800mm) (TRH100A120-150: Output Cable Length ≤ 1220mm) (TRH100A180-480: Output Cable Length ≤ 1800mm)

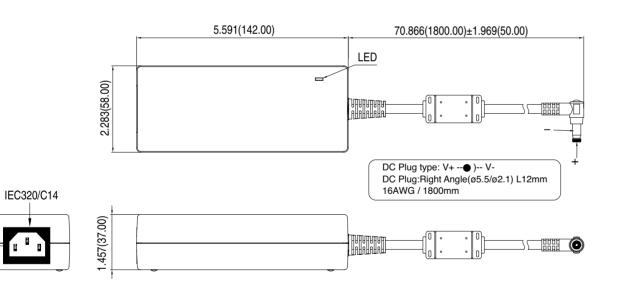
Ordering information



XX DC Cable Length and Type 11: 720mm with Ferrite Core 12: 1220mm with Ferrite Core 13: 1800mm with Ferrite Core 14: 1000mm with Ferrite Core 21: 720mm with two Ferrite Core 22: 1220mm with two Ferrite Core 23: 1800mm with two Ferrite Core 23: 1800mm with two Ferrite Core

Mechanical Dimensions

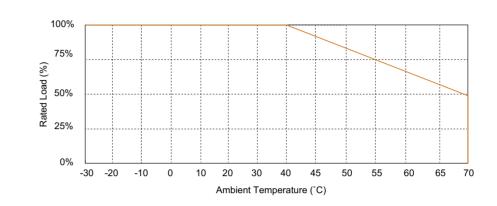
All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL	OUTPUT	MIN.	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	LOAD	CURRENT	NOISE	SETPOINT	REGULATION	REGULATION	(Typ.)
TRH100A120	12 V	0 A	8.34 A	1%	±2%	±1%	±4%	89%
TRH100A135	13.5 V	0 A	7.33 A	1%	±2%	±1%	±4%	89%
TRH100A150	15 V	0 A	6.67 A	1%	±2%	±1%	±4%	89%
TRH100A180	18 V	0 A	5.56 A	1%	±2%	±1%	±2%	89%
TRH100A190	19 V	0 A	5.26 A	1%	±2%	±1%	±2%	89%
TRH100A240	24 V	0 A	4.17 A	1%	±2%	±1%	±2%	89%
TRH100A280	28 V	0 A	3.54 A	1%	±2%	±1%	±2%	89%
TRH100A360	36 V	0 A	2.78 A	1%	±2%	±1%	±2%	89%
TRH100A480	48 V	0 A	2.1 A	1%	±2%	±1%	±2%	89%



Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage Frequency Inrush Current Conducted EMI Leakage Current

90-264Vac 47 to 63Hz 120A max. @240Vac CISPR/FCC Class B 3.5mA max.

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection Over Voltage Protection

16ms typ. @115Vac Continuous Yes

SAFETY AND EMISSION

Emission and Immunity

Safety

EN55022 Class B, FCC Part 15 Class B, EN61000-3-2 EN61000-3-3, EN55024 EN61204-3 Class I, IEC60950-1, EN60950-1, UL60950-1

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GENERAL SPECIFICATIONS

Isolation Operating Temperature

Storage Temperature Cooling Switching Frequency Operating Altitude AC Inlet Dimensions

Weight

NOTE

- 1. Add a $0.1\mu F$ ceramic capacitor and a $10\mu F$ E.L. capacitor to output for
- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC with full load.
- Load regulation measured from 60% to full load and from 60% to 20% load (60% +/- 40% full load).
- Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

Input to output = 4,242VDC -30°C-70°C, 40°C-70°C with 1.67%/°C Derating -40-85°C Natural Convection 65KHz Typical Sea Level to 5000m IEC320/C14 5.591 x 2.283 x 1.457 inches (142.00 x 58.00 x 37.00 mm) 485 g

TRH150A SERIES 150 WATT, LEVEL VI EFFICIENCY

Features

- Universal Input Range: 90-264VAC
- Active PFC Meets EN61000-3-2
- Conductive EMI Meets CISPR/FCC Class B
- Continuous Short Circuit Protection
- Over Voltage Protection
- CoC Tier 2 & DoE Level VI (Output Cable Length ≤ 1200mm) (TRH150A120: Output Cable Length ≤ 950mm) (TRH150A150~480: Output Cable Length ≤ 1220mm)

Ordering information



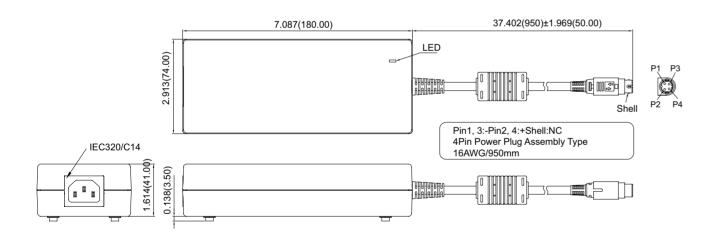
XX DC Cable Length and Type 471:950mm with Ferrite Core 12: 1200mm with Ferrite Core *UL2464 For all models





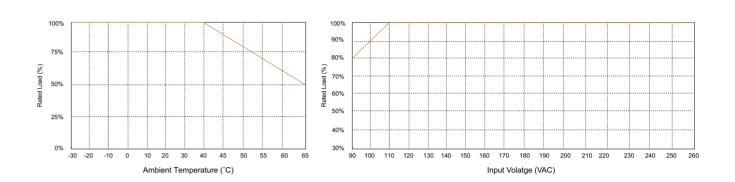
Mechanical Dimensions

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5



MODEL NUMBER	OUTPUT VOLTAGE	MIN. LOAD	OUTPUT CURRENT	RIPPLE & NOISE	VOLTAGE SETPOINT	LINE REGULATION	LOAD REGULATION	% EFF. (Typ.)
TRH150A120	12 V	0 A	12.50 A	2%	±2.5%	±1%	±5%	89%
TRH150A150	15 V	0 A	10.00 A	2%	±2.5%	±1%	±5%	89%
TRH150A180	18 V	0 A	8.34 A	2%	±2.5%	±1%	±5%	89%
TRH150A190	19 V	0 A	7.90 A	2%	±2.5%	±1%	±5%	89%
TRH150A240	24 V	0 A	6.25 A	2%	±2.5%	±1%	±5%	89%
TRH150A280	28 V	0 A	5.36 A	2%	±2.5%	±1%	±5%	89%
TRH150A360	36 V	0 A	4.17 A	2%	±2.5%	±1%	±5%	89%
TRH150A480	48 V	0 A	3.13 A	2%	±2.5%	±1%	±5%	89%

Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage Frequency Inrush Current Conducted EMI Leakage Current

90-264Vac 47 to 63Hz 120A max. @240Vac CISPR/FCC Class B 3.5mA max.

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection Over Voltage Protection

16ms typ. @115Vac Continuous Yes

SAFETY AND EMISSION

Emission and Immunity

Safety

EN55022 Class B, FCC Part 15 Class B, EN61000-3-2 EN61000-3-3, EN55024 EN61204-3 Class I, IEC60950-1, EN60950-1, UL60950-1

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GENERAL SPECIFICATIONS

Isolation Operating Temperature

Storage Temperature Cooling Switching Frequency AC Inlet Dimensions

Weight

NOTE

1. Add a $0.1\mu\text{F}$ ceramic capacitor and a $10\mu\text{F}$ E.L. capacitor to output for

Input to output = 4,242VDC

7.087 x 2.913 x 1.614 inches

(180.00 x 74.00 x 41.00 mm)

-30°C-65°C, 40°C-65°C

with 2%/°C Derating

Natural Convection

67KHz Typical

IEC320/C14

950 g

-40-85°C

- ripple & noise measuring @20MHz BW.
- 2. Voltage setpoint at 60% full load.
- 3. Line regulation measured from 100VAC to 240VAC with full load.
- 4. Load regulation measured from 60% to full load and from 60% to
- 20% load (60% +/- 40% full load).
 Average Efficiency measured at 25%, 50%, 75%, 100% load and input voltage is 115Vac / 230Vac.

TR3OP SERIES 30 WATT, POE ADAPTER

Features

- ♦ 30W Single Output
- Universal Input Range 90-264VAC
- ♦ High Efficiency to 88%
- EN55022 Class B and CISPR/FCC Class B
- Continuous Short Circuit Protection
- ♦ CEC & ErP Level V
- Class I



Ordering information

Mechanical Dimensions

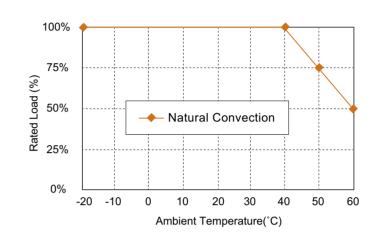
All Dimensions in Inches (mm)

Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5

TR30P-480-XX- XX Model No. 01: 30W Power Adapter with Output Lightning Protection 02: 30W Power Adapter



Derating Curve



Specifications

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Voltage	
Frequency	
Input Current	
Inrush Current	

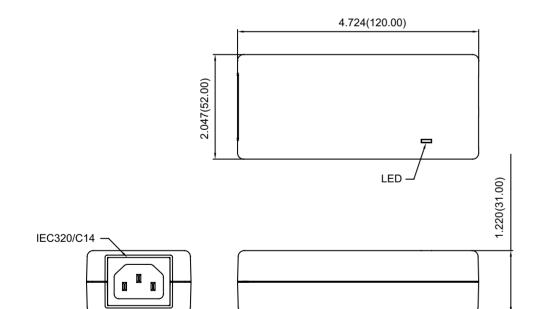
90-264Vac 47 to 63Hz 0.8A max. Cold Start@25°C 70A max. @240Vac 3.5mA max.

Leakage Current

OUTPUT SPECIFICATIONS

Holdup Time Short Circuit Protection Over Current Protection Temperature Coefficient

8ms typ. @115Vac (Auto Recovery) Yes ±0.05%/°C



PIN	Input	PIN	Output
1	TX(+)	1	TX(+)
2	TX(-)	2	TX(-)
3	RX(+)	3	RX(+)
4	NC	4	DC+
5	NC	5	DC+
6	RX(-)	6	RX(-)
7	NC	7	GND
8	NC	8	GND

	ENET Input	AP/BR Output	
Ħ	\Box		

MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.	
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	(Typ.)	
			(NOTE 2)	(NOTE 1)	(NOTE 3)	(NOTE 4)	(NOTE 5)	
TR30P-480-01	48 V	0.63 A	150 mV	±2%	±0.5%	±1%	88%	
TR30P-480 -02	48 V	0.63 A	150 mV	±2%	±0.5%	±1%	88%	
TR30P-560-01	56 V	0.54 A	150 mV	±2%	±0.5%	±1%	88%	
TR30P-560 -02	56 V	0.54 A	150 mV	±2%	±0.5%	±1%	88%	

GENERAL SPECIFICATIONS

Isolation Switching Frequency Operating Temperature Storage Temperature Humidity Cooling MTBF MIL-HDBK-217F, GB, 25°C/115VAC Altitude Dimensions

```
Input to output= 4,242VDC
65KHz Typical
-20-60°C (see derating curve)
-20-85°C
93% RH max. Non condensing
Natural Convection
200Khrs min.
2000m
4.724 x 2.047 x 1.22 inches
(120.00 x 52.00 x 31.00 mm)
158 g ( 0.35 Pounds)
```

Weight

- 1. Voltage accuracy is set at 60% full load and 25°C Ta.
- Add a 0.1µF ceramic capacitor and a 10µF E.L. capacitor to output for ripple & noise measuring @20MHz BW.
- 3. Line regulation is measured from 100Vac to 240VAC with full load.
- 4. Load regulation is measured from 60% to 100% full load and from 60% to 20% full load (60% +/- 40% load).
- 5. Typical efficiency with 230VAC and max. load at 25°C.

TRG60A-POE-L SERIES 60 WATT, POE ADAPTER

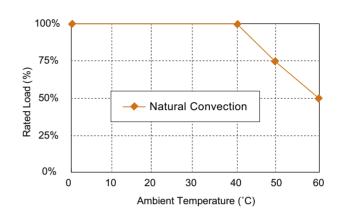
Features

- ♦ 60W Single Output
- Universal Input Range 90-264VAC
- CEC & ErP Level V
- EN55022 Class B and CISPR/FCC Class B ٠
- Continuous Short Circuit Protection
- Output Lightning Protection ٠
- Class I ٠

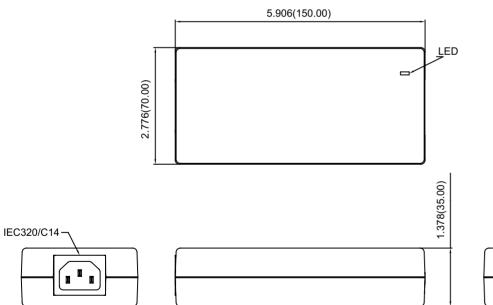




Derating Curve



Mechanical Dimensions



PIN	Input	PIN	Output
1	TX(+)	1	TX(+)
2	TX(-)	2	TX(-)
3	RX(+)	3	RX(+)
4	NC	4	DC+
5	NC	5	DC+
6	RX(-)	6	RX(-)
7	NC	7	GND
8	NC	8	GND

-		_
	INPUT OUTPUT	
-		

MODEL	OUTPUT	OUTPUT	RIPPLE &	VOLTAGE	LINE	LOAD	% EFF.
NUMBER	VOLTAGE	CURRENT	NOISE	ACCURACY	REGULATION	REGULATION	(Тур.)
			(NOTE 2)	(NOTE 1)	(NOTE 3)	(NOTE 4)	(NOTE 5)
TRG60A-POE-L	48 V	1.2 A	150 mV	±2%	±1%	±2%	88%

All Dimensions in Inches (mm) Tolerance Inches: X.XXX=±0.02 Millimeters: X.XX=±0.5

66

90-264Vac 47 to 63Hz Cold Start@25°C 80A max. @240Vac 1.5mA max.

INPUT SPECIFICATIONS

OUTPUT SPECIFICATIONS Holdup Time Short Circuit Protection **Over Current Protection** Temperature Coefficient

Specifications

Voltage

Frequency

Inrush Current

Leakage Current

±0.05%/°C

8ms typ. @115Vac (Auto Recovery) Auto-Recovery

All Specifications Typical At Nominal Line, 75% Load and 25°C Unless Otherwise Noted

GENERAL SPECIFICATIONS

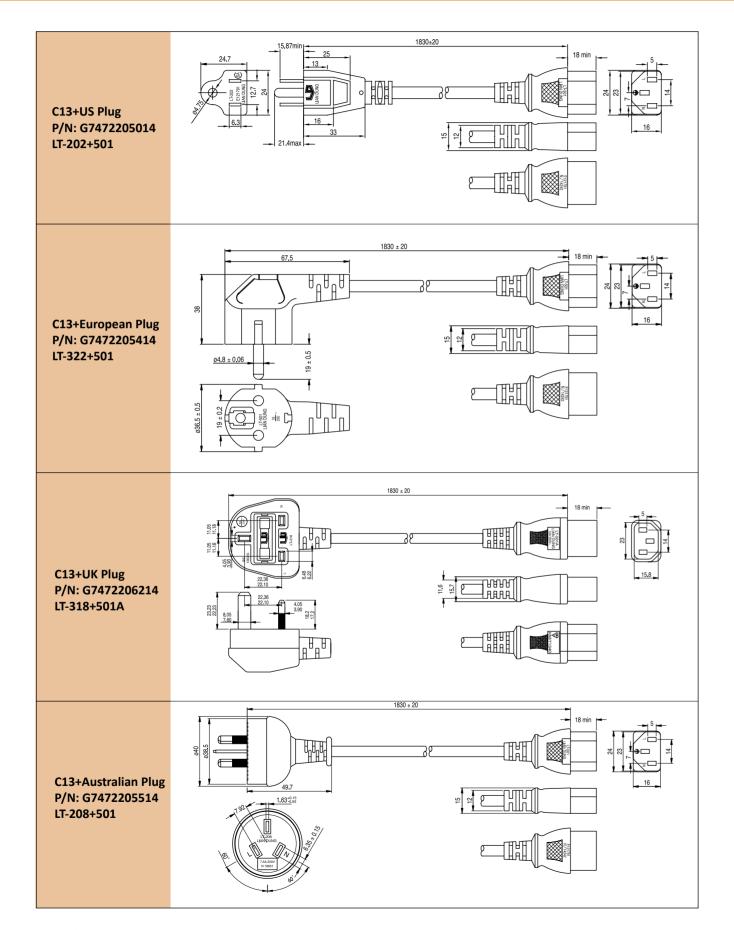
Isolation Switching Frequency **Operating Temperature** Storage Temperature Humidity Cooling MTBF MIL-HDBK-217F, GB, 25°C/115VAC Altitude Dimensions

Input to output= 4,242VDC 65KHz Typical 0-60°C (see derating curve) -25-85°C 93% RH max. Non condensing Natural Convection 200K hrs min. 2000m 5.906 x2.776 x 1.378 inches (150.00 x 70.00 x 35.00 mm) 348 g (0.77 Pounds)

Weight

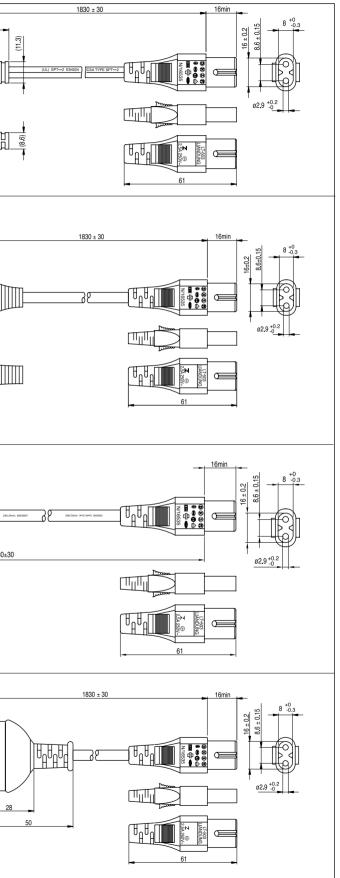
- 1. Voltage accuracy is set at 60% full load and 25°C Ta.
- 2. Add a $0.1\mu\text{F}$ ceramic capacitor and a $10\mu\text{F}$ E.L. capacitor to output for ripple & noise measuring @20MHz BW.
- 3. Line regulation is measured from 100VAC to 240VAC with full load.
- 4. Load regulation is measured from 60% to 100% full load and from 60% to 20% full load (60% +/- 40% load).
- 5. Typical efficiency with 230 VAC and max. load at 25 $^\circ\text{C}.$

AC POWER CORD



C7+US Plug P/N: G7476205014 LT-301+503	
C7+European Plug P/N: G7472205314 LT-207+503	
C7+UK Plug P/N: G7472205214 LT-317+503	7.98 ± 0.13
C7+Australian Plug P/N: G7472207014 LT-219+503	

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WALL-MOUNT AC-DC SWITCHING ADAPTER

Straight/Inner-Outer+

----+

05 : 5.5 x 2.1 x 12mm

13 : 5.5 x 2.1 x 12mm

14 : 5.5 x 2.5 x 12mm

27 : 5.5 x 2.5 x 9.5mm

TRXXXX -
Model No.

Right Angle / Inner-Outer+

----+

03 : 5.5 x 2.1 x 12mm

04 : 5.5 x 2.5 x 12mm

16 : 5.5 x 2.1 x 11mm

22 : 5.5 x 2.5 x 9.5mm

43 : 5.5 x 2.1 x 9.5mm 44 : 3.5 x 1.35 x 7.5mm 105 : 3.5 x 1.05 x 9.5mm 111 : 3.5 x 1.35 x 9.5mm 122 : 3.5 x 1.35 x 12mm 141 : 5.5 x 2.1 x 11mm 150 : 3.5 x 1.35 x 9mm 317 : 5.5 x 2.5 x 9mm

DESK-TOP AC-DC SWITCHING ADAPTER

ΧХ

DC Plug Type

26 : 5.5 x 2.5 x 9.5mm 20 : 5.5 x 2.5 x 9mm 32 : 5.5 x 2.1 x 7.5mm 21 : 5.5 x 2.5 x 9.5mm 33 : 5.5 x 2.1 x 11.5mm 24 : 5.5 x 2.1 x 9.5mm 35 : 4.0 x 1.7 x 9.5mm 31 : 3.5 x 1.35 x 7.5mm 37 : 5.5 x 2.5 x 7.5mm 34 : 5.5 x 2.1 x 11.5mm 39 : 3.5 x 1.35 x 9mm 36 : 3.5 x 1.35 x 9mm 41 : 3.5 x 1.35 x 7.5mm 40 : 4.0 x 1.7 x 9.5mm 45 : 4.75 x 1.7 x 9.5mm 42 : 3.5 x 1.35 x 9.5mm

Right Angle/Inner+Oute

01 : 5.5 x 2.1 x 12mm

02 : 5.5 x 2.5 x 12mm

17 : 5.5 x 2.1 x 11mm

19 : 5.5 x 2.5 x 10.5mm

46 : 4.0 x 1.7 x 12mm 48 : 5 x 1.5 x 9.5mm 49 : 2.35 x 0.7 x 9.5mm

Straight/Inner+Outer-

11 : 5.5 x 2.1 x 12mm 12 : 5.5 x 2.5 x 12mm

18 : 5.5 x 2.5 x 11mm

50 : 4.0 x 1.7 x 11mm

23 : 5.5 x 2.1 x 9.5mm

TRXXXXX -

Model No.

Straight/Inner-Outer+		Right Angle/Inner-Out		
	+	+		
	05 : 5.5 x 2.1 x 12mm	03 : 5.5 x 2.1 x 12mm		
	13 : 5.5 x 2.1 x 12mm	04 : 5.5 x 2.5 x 12mm		
	14 : 5.5 x 2.5 x 12mm	16 : 5.5 x 2.1 x 11mm		
	27 : 5.5 x 2.5 x 9.5mm	22 : 5.5 x 2.5 x 9.5mm		
		43 : 5.5 x 2.1 x 9.5mm		
		44 :3.5 x 1.35 x 7.5mm		

	X	XX	
	OVP Option	DC Cable Length and Type	
er-	A: Without OVP Option	01: 720mm	
	E : With OVP Option	02: 1220mm	
		03: 1800mm	
		11: 720mm with Ferrite Core	
		12: 1220mm with Ferrite Core	
ı		13: 1800mm with Ferrite Core	

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Cincon offers a wide variety of DC plugs for every customers. Please contact your distributor or E-Mail sales@cincon.com.tw for more information.

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Company	Date
First Name	Last Name
Country	City
Address	
Telephone	Fax
E-mail	
Product Type	Application
Output Voltages	Output Currents
Input Voltages	Efficiency
Isolation	Protection

Storage / Operating Temperature Range

Mechanical Description

Safety Standard

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Rer	na	rĸs



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