# ARCH ANC50 AC-DC Power Datasheet

http://www.manuallib.com/arch/anc50-ac-dc-power-datasheet.html

KEY FEATURES

.. Switching Power Module for PCB Mountable
.. Fully Encapsulated Plastic Case
.. Universal Input Range 90-264VAC, 47-440 Hz
.. Regulated Output
.. Low Ripple and Noise
.. Small Size But Higher Wattage
.. Screw Terminal For Optional
.. CE, CB and UL Approval
.. 3-Years Product Warranty

ARCH ELECTRONICS CORP.

AC-DC Power Module

# ANC50 SERIES 50 Watts

## KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Regulated Output and Low Ripple and Noise
- Small Size as ANC 15Watt with 50Watt Higher Power
- Screw Terminal For Optional
- CE, UL Approval (Pending)
- 3-Years Product Warranty


E199779 LEVEL3

## ELECTRICAL SPECIFICATIONS

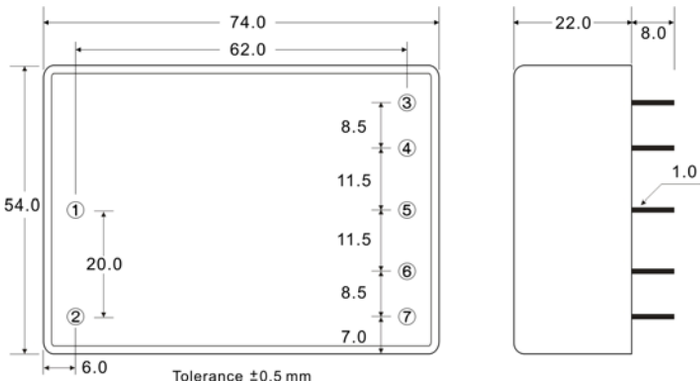
| Model No. ( Single Output ) | | ANC50-5S | ANC50-12S | ANC50-15S | ANC50-24S | ANC50-48S |
|---|---|---|---|---|---|---|
| Max Output Wattage (W) | | 40W | 50W | 50W | 50W | 50W |
| Input | Voltage | 90-264 VAC or 120-370 VDC | | | | |
| | Frequency (Hz) | 47-63 Hz | | | | |
| | Current (Full load) | 1000 mA max. (115 VAC) / 500 mA max. (230 VAC) | | | | |
| | Inrush Current (<2ms) | 30 A max. (115 VAC) / 60 A max. (230 VAC) | | | | |
| | Leakage Current | 0.25 mA max. | | | | |
| | External Fuse (recommend) | 3.15 A slow blow type | | | | |
| Output | Voltage (V.DC.) | 5V | 12V | 15V | 24V | 48V |
| | Voltage Accuracy | ±2% | | | | |
| | Current (mA) max | 8000 | 4167 | 3333 | 2083 | 1040 |
| | Line Regulation (LL-HL) (typ.) | ±1% | | | | |
| | Load Regulation (5-100%) (typ.) | ±1% | | | | |
| | Minimum Load | 0% | | | | |
| | Maximum Capacitive Load | 80000 uF | 20000 uF | 18000 uF | 6000 uF | 470uF |
| | Ripple & Noise | 120mV | 120mV | 150mV | 240mV | 480mV |
| | Efficiency (at 230 VAC) | 86% | 90% | 87% | 88% | 89% |
| | Hold-up Time | 10 ms min. | | | | |
| | Switching Frequency | 65 kHz | | | | |
| Protection | Over Power Protection | Hiccup technique, auto-recovery | | | | |
| | Over Voltage Protection | Zener diode clamp | | | | |
| | Short Circuit Protection | Hiccup mode, indefinite (automatic recovery) | | | | |
| Isolation | Input-Output (V.AC) | 3000V | | | | |
| | Input-FG (V.AC) | 1500V | | | | |
| | Output-FG (V.AC) | 500V | | | | |
| Environment | Operating Temperature | -40°C…+70°C (with derating) | | | | |
| | Storage Temperature | -40°C…+85°C | | | | |
| | Temperature Coefficient | ±0.02%/°C | | | | |
| | Humidity | 95% RH | | | | |
| | MTBF | >200,000 h @ 25°C (MIL-HDBK-217F) | | | | |
| Physical | Dimension (L x W x H) | 2.91 x 2.13 x 0.87 Inches ( 74.0 x 54.0 x 22.0 mm ) Tolerance ±0.5 mm | | | | |
| | Case Material | Plastic resin with Fiberglass (flammability to UL 94V-0) | | | | |
| | Weight | 166 g | | | | |
| | Cooling Method | Free air convection | | | | |
| Safety | Agency Approvals | CE, UL/cUL | | | | |
| EMC | EMI (Conducted & Radiated Emission) | EN 55022 | | | | |
| | EMS (Noise Immunity) | EN 55024 | | | | |

1.All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

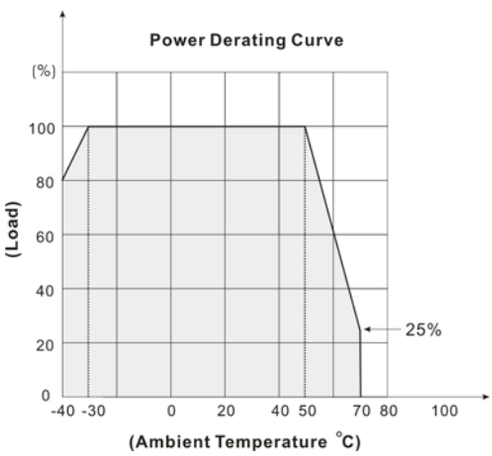
# ANC50 SERIES 50 Watts

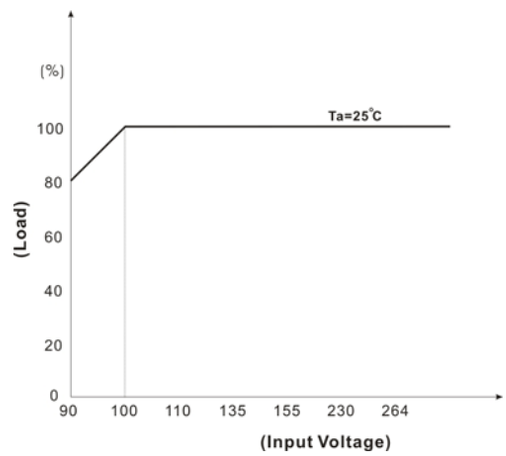
## MECHANICAL DIMENSION ( Top View )



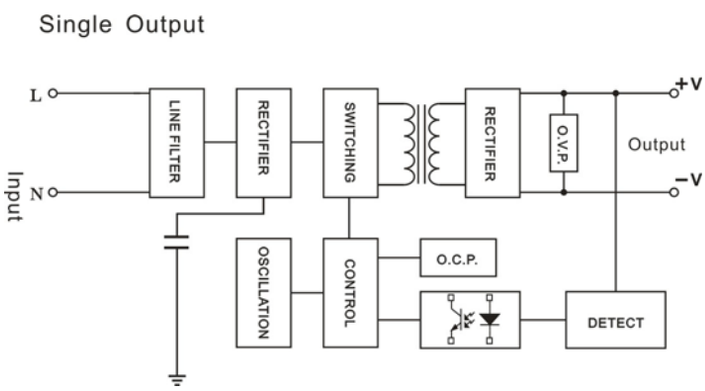

| PIN# | SINGLE |
|---|---|
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | NO PIN |
| 4 | -DC OUT |
| 5 | NO PIN |
| 6 | +DC OUT |
| 7 | NO PIN |

## DERATING




## BLOCK DIAGRAM

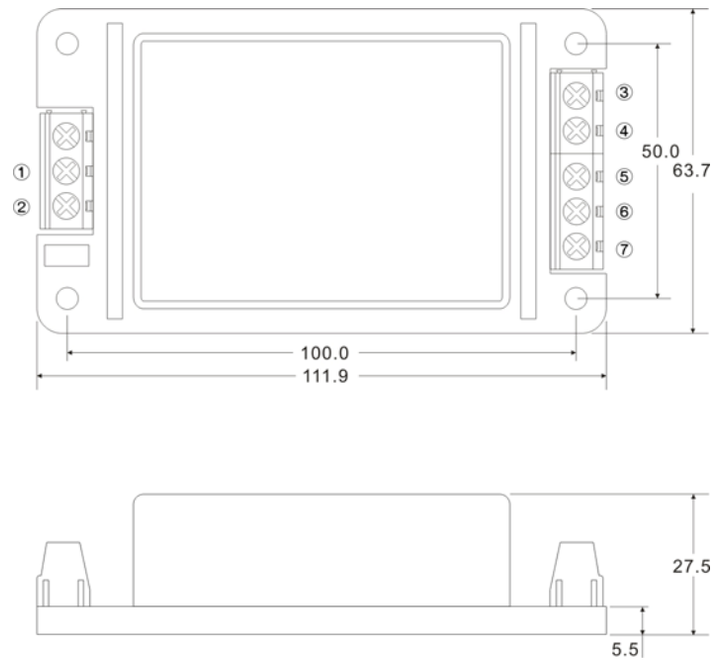


# ANC50 SERIES 50 Watts

## SCREW TERMINAL

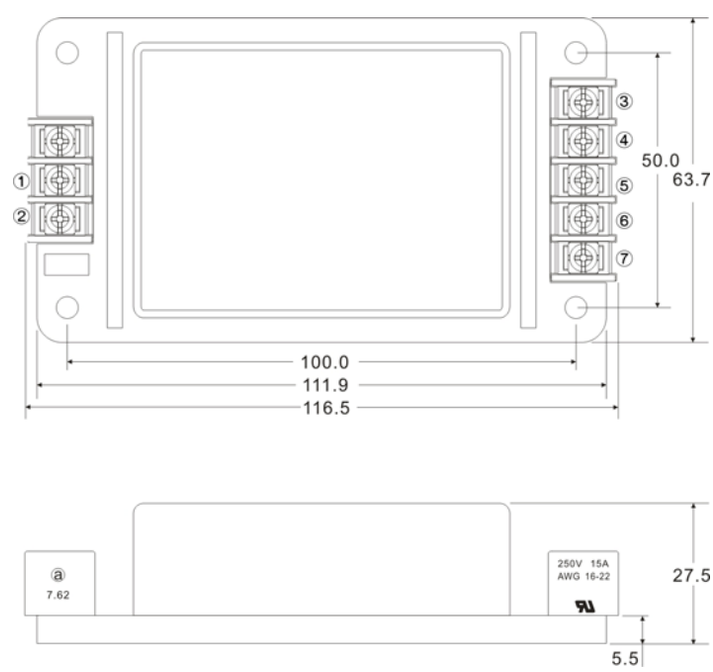
### ANC50-A2


| PIN# | Single |
|---|---|
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | NO CONNECT |
| 4 | -DC OUT |
| 5 | NO CONNECT |
| 6 | +DC OUT |
| 7 | NO CONNECT |




### ANC50-A5


| PIN# | Single |
|---|---|
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | NO CONNECT |
| 4 | -DC OUT |
| 5 | NO CONNECT |
| 6 | +DC OUT |
| 7 | NO CONNECT |

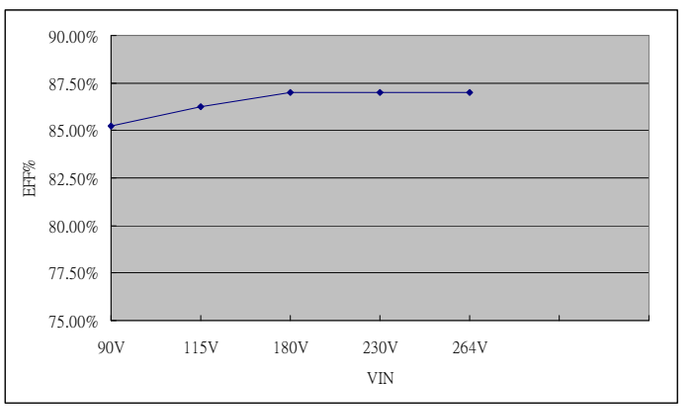


## EFFICIENCY VERSUS LOAD

### ANC50-5S

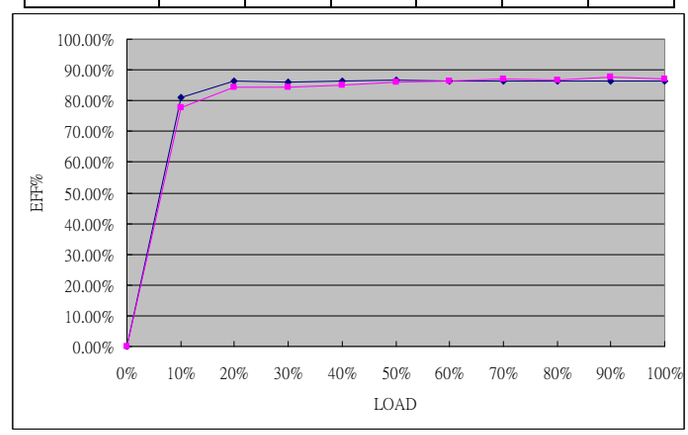
VIN VS Efficiency

| Input Voltage (V) | 90 | 115 | 180 | 230 | 264 |
|---|---|---|---|---|---|
| Efficiency (%) | 85.23 | 86.26 | 87.02 | 87.02 | 87.02 |




LOAD VS Efficiency

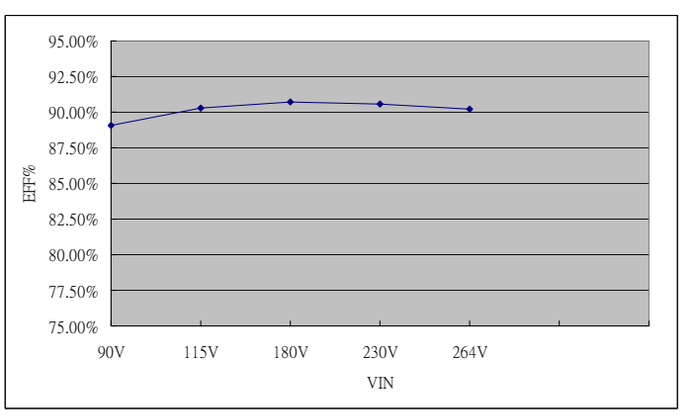
| Load (%) | 10 | 20 | 30 | 40 | 50 | |
|---|---|---|---|---|---|---|
| 115V (%) | 80.95 | 86.34 | 86.17 | 86.53 | 86.61 | |
| 230V (%) | 77.84 | 84.55 | 84.39 | 85.16 | 85.89 | |
| Load (%) | 60 | 70 | 80 | 90 | 100 | |
| 115V (%) | 86.41 | 86.52 | 86.35 | 86.37 | 86.27 | |
| 230V (%) | 86.39 | 87.06 | 86.81 | 87.60 | 87.18 | |




### ANC50-12S

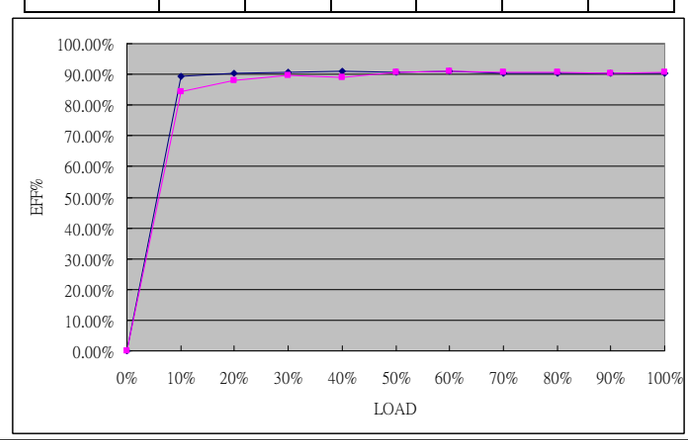
VIN VS Efficiency

| Input Voltage (V) | 90 | 115 | 180 | 230 | 264 |
|---|---|---|---|---|---|
| Efficiency (%) | 89.08 | 90.26 | 90.74 | 90.57 | 90.24 |




LOAD VS Efficiency

| Load (%) | 10 | 20 | 30 | 40 | 50 | |
|---|---|---|---|---|---|---|
| 115V (%) | 89.21 | 90.43 | 90.68 | 91.11 | 90.72 | |
| 230V (%) | 84.31 | 88.10 | 89.62 | 89.13 | 90.73 | |
| Load (%) | 60 | 70 | 80 | 90 | 100 | |
| 115V (%) | 91.07 | 90.49 | 90.38 | 90.24 | 90.23 | |
| 230V (%) | 91.07 | 90.77 | 90.76 | 90.48 | 90.69 | |

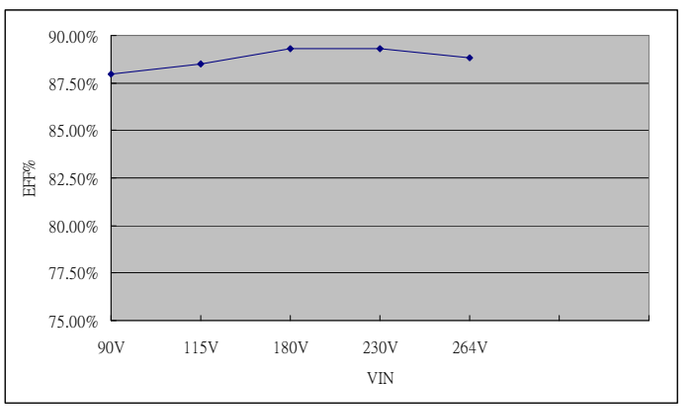


## EFFICIENCY VERSUS LOAD

### ANC50-15S

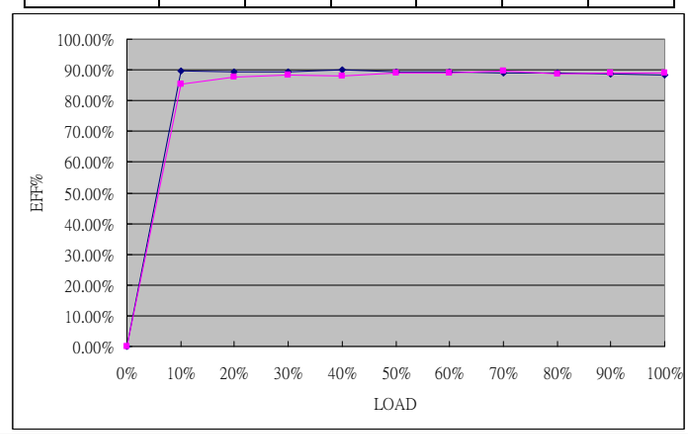
VIN VS Efficiency

| Input Voltage (V) | 90 | 115 | 180 | 230 | 264 |
|---|---|---|---|---|---|
| Efficiency (%) | 87.95 | 88.50 | 89.29 | 89.29 | 88.81 |




LOAD VS Efficiency

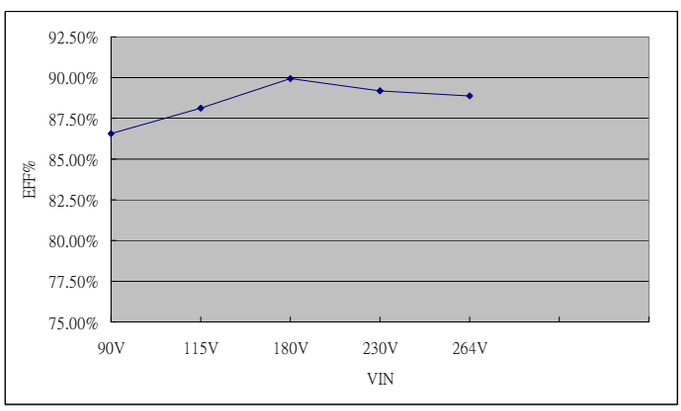
| Load (%) | 10 | 20 | 30 | 40 | 50 | |
|---|---|---|---|---|---|---|
| 115V (%) | 89.71 | 89.24 | 89.42 | 89.89 | 89.44 | |
| 230V (%) | 85.22 | 87.68 | 88.37 | 87.93 | 89.11 | |
| Load (%) | 60 | 70 | 80 | 90 | 100 | |
| 115V (%) | 89.40 | 89.14 | 88.94 | 88.78 | 88.51 | |
| 230V (%) | 89.13 | 89.66 | 88.73 | 88.95 | 89.13 | |




### ANC50-24S

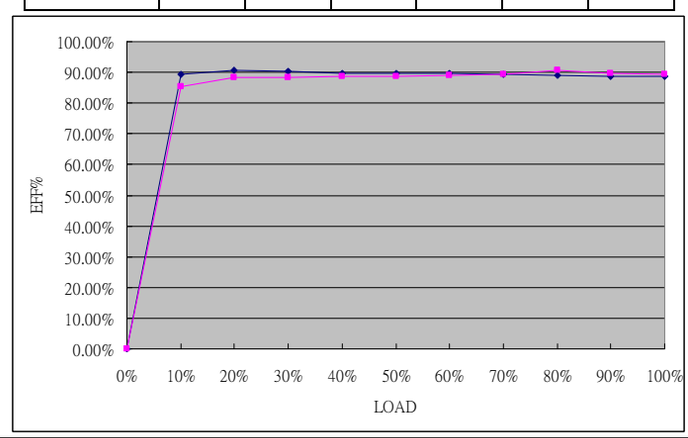
VIN VS Efficiency

| Input Voltage (V) | 90 | 115 | 180 | 230 | 264 |
|---|---|---|---|---|---|
| Efficiency (%) | 86.56 | 88.12 | 89.92 | 89.20 | 88.88 |




LOAD VS Efficiency

| Load (%) | 10 | 20 | 30 | 40 | 50 | |
|---|---|---|---|---|---|---|
| 115V (%) | 89.27 | 90.83 | 90.25 | 89.76 | 89.66 | |
| 230V (%) | 85.28 | 88.38 | 88.35 | 88.59 | 88.70 | |
| Load (%) | 60 | 70 | 80 | 90 | 100 | |
| 115V (%) | 89.56 | 89.39 | 89.07 | 88.73 | 88.55 | |
| 230V (%) | 89.03 | 89.27 | 90.54 | 89.57 | 89.43 | |

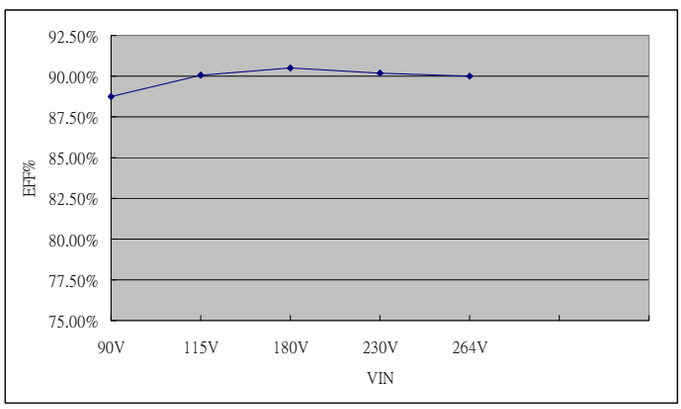


## EFFICIENCY VERSUS LOAD

### ANC50-48S

VIN VS Efficiency

| Input Voltage (V) | 90 | 115 | 180 | 230 | 264 |
|---|---|---|---|---|---|
| Efficiency (%) | 88.76 | 90.04 | 90.52 | 90.18 | 90.02 |




LOAD VS Efficiency

| Load (%) | 10 | 20 | 30 | 40 | 50 | |
|---|---|---|---|---|---|---|
| 115V (%) | 91.16 | 91.16 | 92.04 | 92.02 | 91.27 | |
| 230V (%) | 87.88 | 88.68 | 89.23 | 90.74 | 90.63 | |
| Load (%) | 60 | 70 | 80 | 90 | 100 | |
| 115V (%) | 90.60 | 90.30 | 90.12 | 89.96 | 89.69 | |
| 230V (%) | 88.93 | 89.39 | 90.93 | 90.50 | 90.16 | |