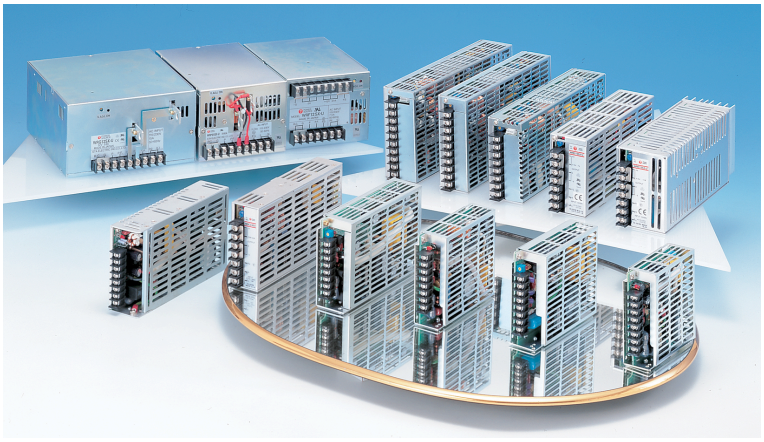
ETA-USA
Your power supply experts

# 15 WATT AC-DC CONVERTER

# WRM-SX SERIES



## General Description

Universal, or auto-ranging, inputs for world wide use. Output power from 15 to 600 watts. Up to (4) outputs available. All models except WRF and WRP are approved to international safety standards. (WRF and WRP to UL1950 and CSA234 only)

RoHS

## Features:

1. Universal input 85-264 VAC
2. EMI: meets EN 55022/B, FCC/B
3. Compact size
4. High efficiency and reliability
5. Output voltage adjustable
6. Over voltage protection

| Specifications WRM**SX-U 15WATTS/SINGLE | Model | | | | |
|---|---|---|---|---|---|
| | WRM05SX-U | WRM12SX-U | WRM15SX-U | WRM24SX-U | WRM48SX-U |
| **Input Characteristic** | | | | | |
| Input Voltage | AC115-230V | | | | |
| Input Current | 0.42 | 0.41 | | 0.40 | |
| Input Range | AC85-264V(DC110-350V) | | | | |
| Input Frequency | 50/60Hz | | | | |
| Input Frequency Range | 47-440Hz | | | | |
| Phase | Single | | | | |
| Inrush Current *1 | 30A(maximum)at AC115V/60A(maximum) at AC230V | | | | |
| Efficiency [%] (typical) *2 | 75 | 79 | 79 | 79 | 82 |



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| Output Characteristic | Model | | | | |
|---|---|---|---|---|---|
| | WRM05SX-U | WRM12SX-U | WRM15SX-U | WRM24SX-U | WRM48SX-U |
| Output Voltage [V] | 5 | 12 | 15 | 24 | 48 |
| Output Current [A] | 3.0 | 1.3 | 1.0 | 0.7 | 0.35 |
| Voltage Adjust Range | +/- 5% of Rated Output Voltage(at no load within the input range) | | | | |
| Ripple and Noise [mVp-p](maximum) *3 | 100 | 170 | 200 | 290 | 530 |
| Regulation | | | | | |
| a.Statistic Line Regulation [mV](maximum) | 25 | 60 | 75 | 120 | 240 |
| b.Statistic Load Regulation [mV](maximum) | 50 | 120 | 150 | 240 | 480 |
| c.Temperature Coefficient *4 | 0.03%/°C | | | | |
| d.Drift[mV](maximum) *5 | 40 | 75 | 90 | 135 | 255 |
| e.Dynamic Load Regulation [mV](typical) *6 | not specified | | | | |
| f.Recovery Time *6 | not specified | | | | |
| Rise up time | 200mS(maximum) at 25°C and rated input/output | | | | |
| Hold up time | 10mS(minimum) at 25°C and rated input/output | | | | |
| Functions | | | | | |
| Overcurrent Protection >110% of | Current Limiting with automatic recovery | | | | |
| Rated Output Current[A] | 3.3 | 1.43 | 1.1 | 0.77 | 0.39 |
| Overvoltage Protection >110% of | Zener diode clamping | | | | |
| Rated Output Voltage[V] | 5.75 | 13.8 | 17.3 | 27.6 | 55.2 |
| Remote Sense | not available | | | | |
| Remote On/Off | not available | | | | |
| Power Fail Detection | not available | | | | |
| Parallel/series Operation | not available | | | | |
| Environmental | | | | | |
| Operating Temperature *8 | -5 to +40°C/open frame type:-5 to +50°C | | | | |
| Operating Humidity | 30 to 85%RH(non-condensing) | | | | |
| Storage Temperature | -20 to +85°C | | | | |
| Storage Humidity | 10 to 85%RH(non-condensing) | | | | |
| Withstanding Voltage | Primary-Secondary AC3,000V for 1minute | | | | |
| | Primary-Frame Ground AC2,500V for 1minute | | | | |
| | Secondary-Frame Ground AC500V for 1minute | | | | |
| Isolation Resistance | Primary-Secondary-Frame Ground 50MΩ(minimum) by DC500V insulation tester | | | | |
| Vibration | 5-10Hz:10mm double amplitude,10-55Hz:19.6m/s$^2$,20minutes' period for 60minutes each along X,Y,Z axes(non-operating) | | | | |
| Shock | 294m/s$^2$ | | | | |
| Cooling | Convection | | | | |
| Leakage Current | 1mA(maximum) at 25°C,rated input/output and rated input frequency | | | | |
| Line Conducted Noise | Built to meet VDE0871 Class B | | | | |
| | Built to meet FCC Part15-B Class B | | | | |
| Safety | UL: UL1950 | | | | |
| | CUL: CSA C22.2 No234(Level 3) | | | | |
| | VDE: EN60950,IEC950,VDE0805 | | | | |
| ? Weight (typical) | 290g/open frame type:275g | | | | |
| ? MTBF [H] | 650,000 | | | | |
| ? Switching Frequency[kHz](typical) | 30 | 30 | 25 | 25 | 25 |

Conditions:

*1 at cold start

*2 at DC130V input and rated output

*3 measured by a bayonet probe at the output connector at a 0 to 100MHz bandwidth

*4 at -5 to +50°C/open frame type:-5 to +50°C

*5 for 7hours from 1hour after switch-on at 25°C and rate input/output

*6 when output current changed from 25% of rated output current to 75% rapidly at AC115/230V input

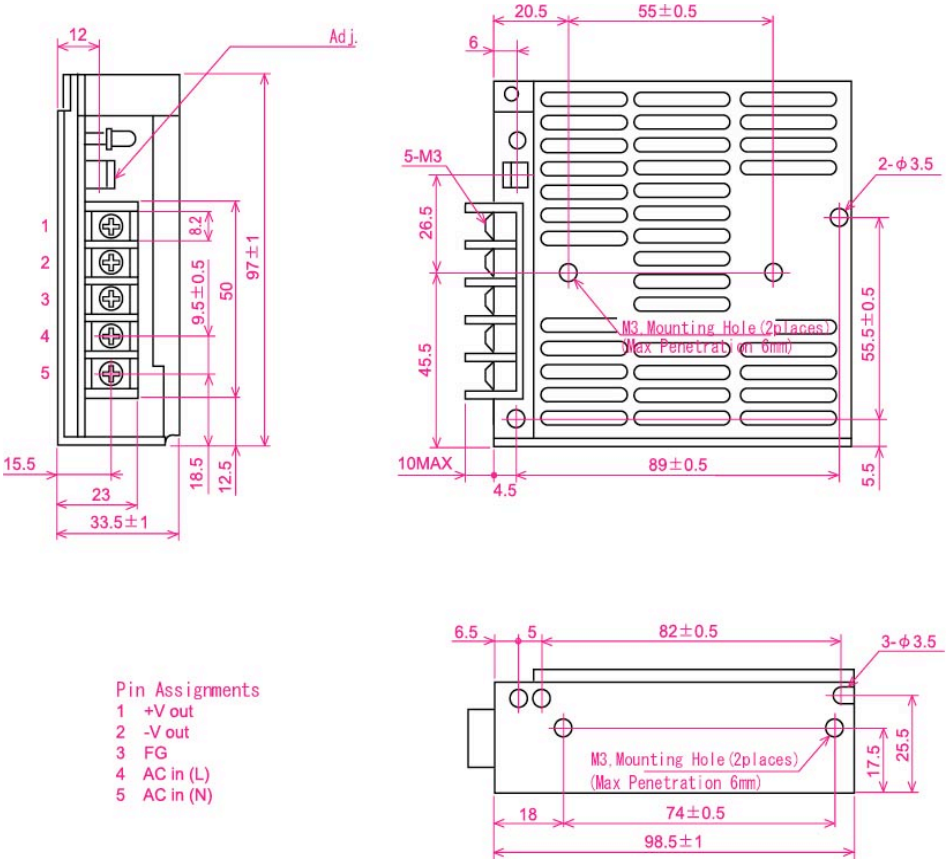
*7 safety approved at 25°C

*8 variable on input voltage and load condition



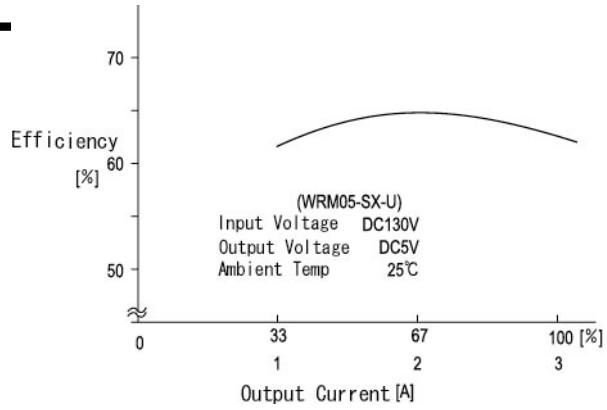
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## DIMENSION DIAGRAM

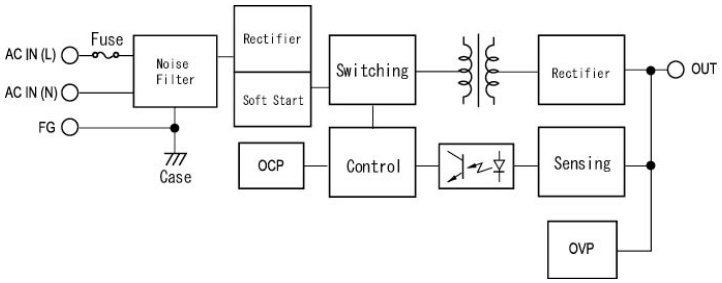



Pin Assignments
1 +V out
2 -V out
3 FG
4 AC in (L)
5 AC in (N)

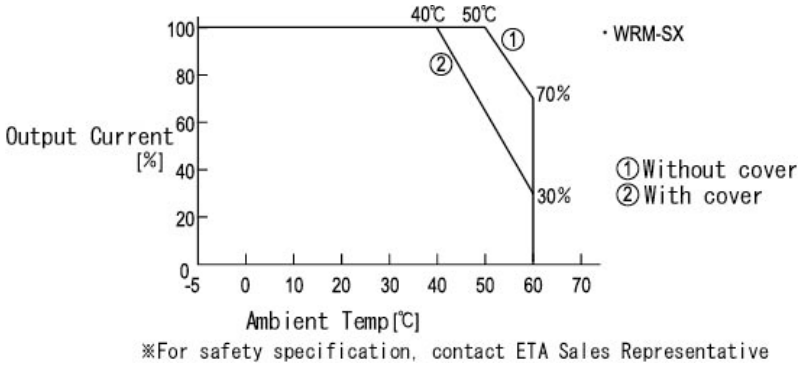
## EFFICIENCY CURVE




## BLOCK DIAGRAM




## DERATING CURVE




※For safety specification, contact ETA Sales Representative



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