



### Features:

- 20W Compact Size 62.0 x 45.0 x 22.0mm
- Wide AC & DC Input 85V to 305VAC (120 to 430VDC)
- Temperature Range -40°C to +85°C
- DIP Dual Output
- I/O isolation test voltage 2500VAC 5mA 1min
- Internal SMD Design
- High Flame-Retardant Housing
- Cooling Method: Natural Convection Cooling
- Excellent EMC shielding, output over-current protection, short-circuit protection.



### Description

The VTX-214-020-4xxx series is a compact 20 W encapsulated AC-DC converter module providing a regulated output from a wide 85–305 VAC / 120–430 VDC input. Designed for PCB mounting, it offers 2500 VAC isolation, high efficiency of  $\geq 78\%$ , and operation across -40°C to +85°C. The module includes built-in protection features such as output overcurrent, short-circuit, lightning, and overheating protection, making it suitable for industrial controls, communications equipment, instrumentation, and distributed power systems.

### Selection Guide

Part Number	Power Rating Watts	Output 1 Voltage Current	Output 2 Voltage Current	Efficiency Typical
<b>VTX-214-020-405</b>	20	+5V/2000mA	-5V/2000mA	>78%
<b>VTX-214-020-409</b>	20	+9/1111mA	-9/1111mA	
<b>VTX-214-020-412</b>	20	+12V/833mA	-12V/833mA	
<b>VTX-214-020-415</b>	20	+15V/667mA	-15V/667mA	
<b>VTX-214-020-424</b>	20	+24V/417mA	-24V/417mA	
<b>VTX-214-020-4505</b>	20	5V	5V/ customised	
<b>VTX-214-020-4512</b>	20	5V	12V/ customised	
<b>VTX-214-020-4524</b>	20	5V	24V/ customised	
<b>VTX-214-020-4605</b>	20	12V	5V/ customised	>82%
<b>VTX-214-020-4612</b>	20	12V	12V/ customised	
<b>VTX-214-020-4624</b>	20	12V	24V/ customised	

**Note: Other output voltages are available upon request.**

Please contact Vigortronix for any enquiries. Products can be altered to suit custom requirements.  
The information contained in this document is subject to change without notice.

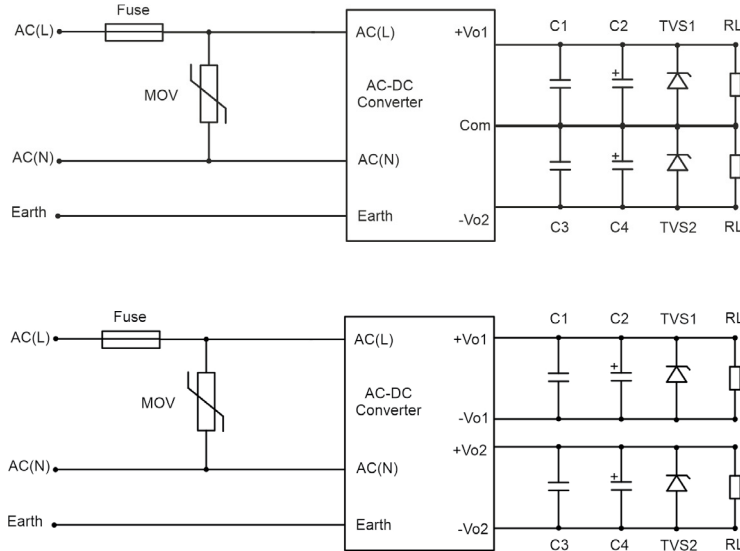
Electrical Specifications					
Item	Symbol	Condition $V_i, -40^{\circ}\text{C} \geq T_c \geq 85^{\circ}\text{C}$ (unless otherwise specified)	Min	Max	Unit
<b>Input Voltage AC</b>	V	-	85	305	VAC
<b>Input Voltage DC</b>	V	-	120	430	VDC
<b>Output Voltage</b>	$V_o$	Full Load	$V_o-2\%$	$V_o+2\%$	V
<b>Output Current</b>	$I_{omax}$	-	-	$\frac{P(\text{power})}{U(\text{Output Voltage})}$	A
<b>Output Ripple Voltage</b>	$V_{p-p}$	Full Load, $V_i$ , BW=20MHz, Normal Temp.	100	250	mV
<b>Output Noise Voltage</b>	$V_{p-p}$	Full Load, $V_i$ , BW=20MHz, Normal Temp.	120	300	mV
<b>Voltage Regulation</b>	$S_v$	$V_{imin} V_i V_{imax}$ , Full Load	-	<0.5	%
<b>Load Regulation</b>	$S_i$	$V_i, i_o=(10\% \sim 100\%) I_{omax}$	-	<0.5	%
<b>Efficiency</b>	$\eta$	$V_i$ , Full Load, Normal Temperature	85	-	%
<b>Insulation Resistance</b>	$R_I$	Input Output, Test Voltage: 500VDC	100	-	M $\Omega$

General Specifications		
<b>Electromagnetic Compatibility (EMC)</b>	Magnetic Field Susceptibility Test	GB6833.2-87
	Electrostatic Discharge (ESD) Susceptibility Test	GB6833.3-87
	Radiated Susceptibility Test	GB6833.5-87
	Conducted Susceptibility Test	GB6833.6-87
<b>Temperature Drift</b>	<0.03%/°C	
<b>Storage Temperature</b>	-40°C~105°C	
<b>Input Frequency</b>	47Hz~63Hz	
<b>Humidity</b>	20%~95%RH	
<b>Leakage Current</b>	5mA(max)	
<b>MTBF</b>	>500000H	
<b>Isolation</b>	2500 VAC	
<b>Size</b>	62.00 x 45.00 x 22.00 mm	

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## Application Schematic for EMC

### Typical Application EMC

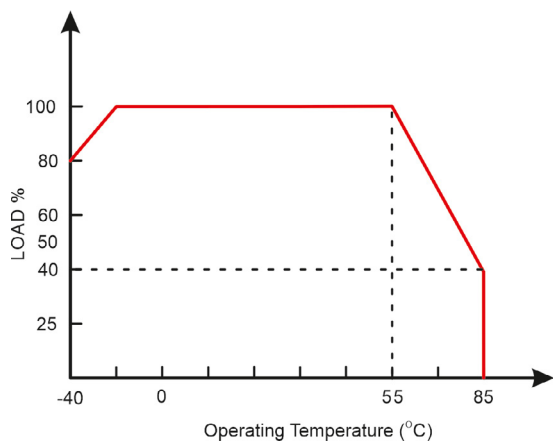


Part Number	C1/C3 (uF)	C2 (uF)	C4 (uF)	TVS1	TVS2	Fuse	MOV
VTX-214-020-405	0.1uF/50V	220	220	SMBJ7.0A	SMBJ7.0A	1Amp/250V Slow Blow	S14K350
VTX-214-020-412		120	120	SMBJ20A	SMBJ20A		
VTX-214-020-4505		47	47	SMBJ7.0A	SMBJ7.0A		
VTX-214-020-4512		100	47	SMBJ7.0A	SMBJ20A		
VTX-214-020-4524		100	47	SMBJ7.0A	SMBJ30A		

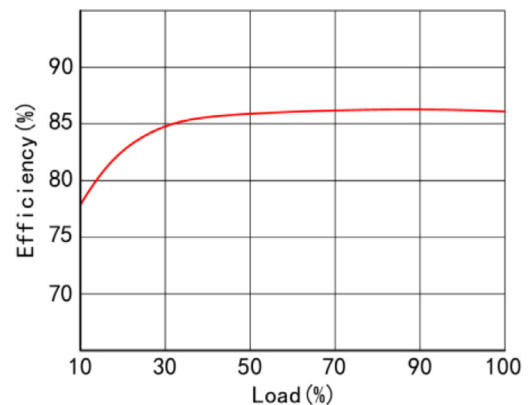
Note: For additional filtering requirements, contact technical support

## Derating Graphs

### Temperature Derating Graph

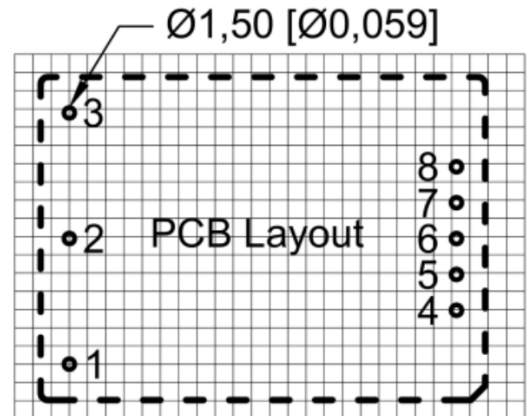
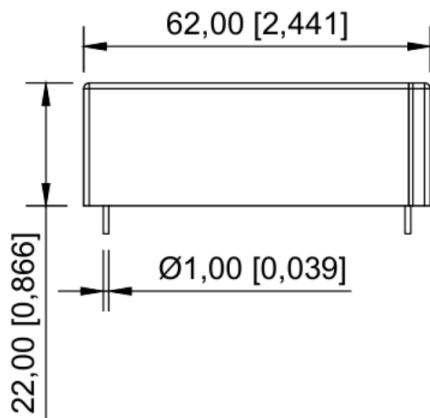


### Efficiency/ Load Graph

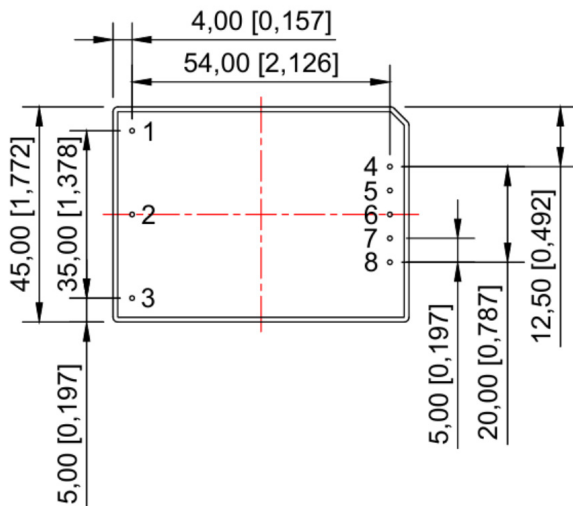


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## Dimensions



Note: The pitch is 2.54 mm x 2.54 mm



PIN Number	Dual	Dual non-common ground
1	AC(L)	AC(L)
2	AC(N)	AC(N)
3	FG	FG
4	+XXVDC	+XXVDC
5	NO PIN	0V2
6	COM	NO PIN
7	NO PIN	+XXVDC
8	-XXVDC	0V1

Note:  
Tolerance for non-critical dimensions: + 0.25mm

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