

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.) ⁽²⁾	EFFICIENCY (MAX.)	REGULATION		MODEL NUMBER ^(9,10)
						LINE	LOAD	
28.8 W	10.8-13.2 Vdc	0.8-1.8 Vdc	0 A	16 A	89%	±10 mV	±12 mV	PTV12020L
88 W	10.8-13.2 Vdc	1.2-5.5 Vdc	0 A	16 A	94%	±5 mV	±10 mV	PTV12020W

Part Number System with Options

P T V 1 2 0 2 0 W A H

Product Family
Point of Load Alliance Compatible

Mounting Version
V = Vertical

Input Voltage
12 = 12 V

Output Current
02 = 16 A

Mechanical Package
Always 0

Mounting Style⁽⁹⁾
D = Horizontal Through-Hole (Matte Sn)
H = Horizontal Through-Hole (Sn/Pb)

Pin Style
A = Through-Hole Std. Pin Length (0.150")

Output Voltage Code
W = Wide, L = Low Voltage

Output Voltage Adjustment of the PTV12020 Series

The ultra-wide output voltage trim range offers major advantages to users who select the PTV12020. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 1.2 Vdc to 5.5 Vdc for suffix 'W' and 0.8 Vdc to 1.8 Vdc for suffix 'L'. When the PTV12020 converter leaves the factory the output has been adjusted to the default voltage of 1.2 V for the PTV12020W and 0.8 V for PTV12020L.

EFFICIENCY TABLE - PTH12020L ($I_O = I_{OMAX}$)

OUTPUT VOLTAGE	EFFICIENCY
$V_O = 1.8 \text{ V}$	87%
$V_O = 1.5 \text{ V}$	85%
$V_O = 1.2 \text{ V}$	83%
$V_O = 1.0 \text{ V}$	80%
$V_O = 0.8 \text{ V}$	77%

EFFICIENCY TABLE - PTV12020W ($I_O = I_{OMAX}$)

OUTPUT VOLTAGE	EFFICIENCY
$V_O = 5.0 \text{ V}$	93%
$V_O = 3.3 \text{ V}$	91%
$V_O = 2.5 \text{ V}$	89%
$V_O = 1.8 \text{ V}$	86%
$V_O = 1.5 \text{ V}$	84%
$V_O = 1.2 \text{ V}$	81%

Notes

- Remote ON/OFF. Positive logic
ON: Pin 3 open; or $V > 2 \text{ V}$
OFF: Pin 3 GND; or $V < 0.6 \text{ V}$.
- See Figures 1, 2, 3 and 6 for safe operating area curves.
- A 560 μF electrolytic input capacitor is required for proper operation as well as a 22 μF high-frequency ceramic capacitor. The electrolytic capacitor must be rated for the minimum rms of ripple current.
- An external output capacitor is not required for basic operation. Adding 330 μF of distributed capacitance at the load will improve the transient response.
- 1 A/ μs load step, 50 to 100% I_{Omax} . $C_3 = 330 \mu\text{F}$.
- If utilized V_{out} will track applied voltage by $\pm 0.3 \text{ V}$ (up to V_O set point).
- The pre-bias start-up feature is not compatible with Auto-Track™. This is because when the module is under Auto-Track™ control, it is fully active and will sink current if the output voltage is below that of a back-feeding

source. Therefore to ensure a pre-bias hold-off, one of the following two techniques must be followed when input power is first applied to the module. The Auto-Track™ function must either be disabled, or the module's output held off using the Inhibit pin. Refer to Application Note 199 for more details.

- The set-point voltage tolerance is affected by the tolerance and stability of R_{set} . The stated limit is unconditionally met if R_{set} has a tolerance of 1% with 100°C or better temperature stability.
- To order Pb-free (RoHS compatible) through-hole parts replace the mounting option 'H' with 'D', e.g. PTV12020WAD.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

PTV12020W Characteristic Data

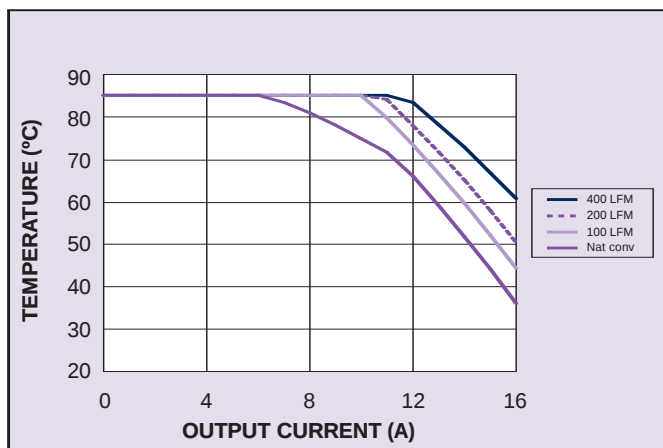


Figure 1 - Safe Operating Area
Vin = 12 V, Output Voltage = 5 V (See Note A)

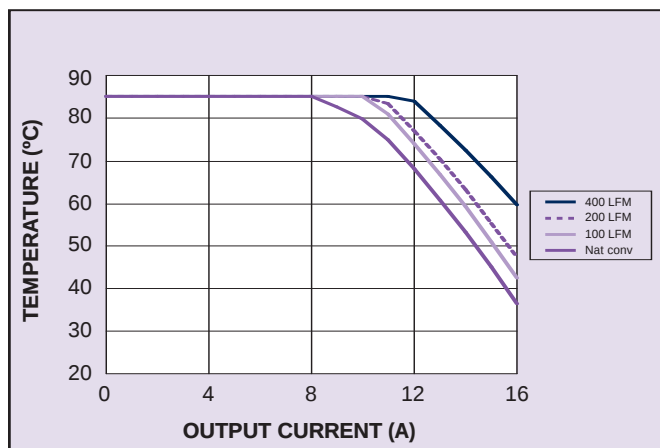


Figure 2 - Safe Operating Area
Vin = 12 V, Output Voltage = 3.3 V (See Note A)

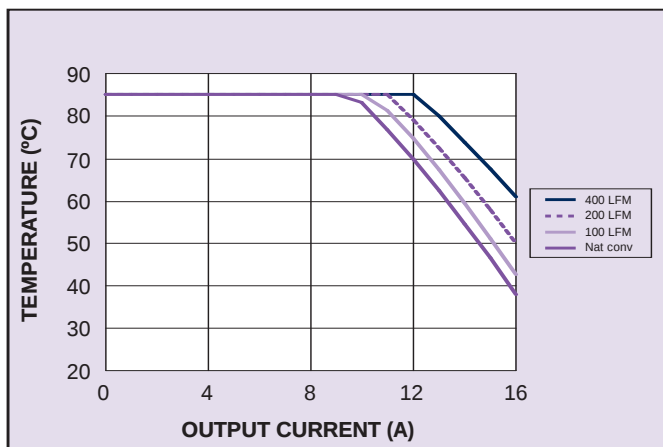


Figure 3 - Safe Operating Area
Vin = 12 V, Output Voltage ≤ 1.8 V (See Note A)

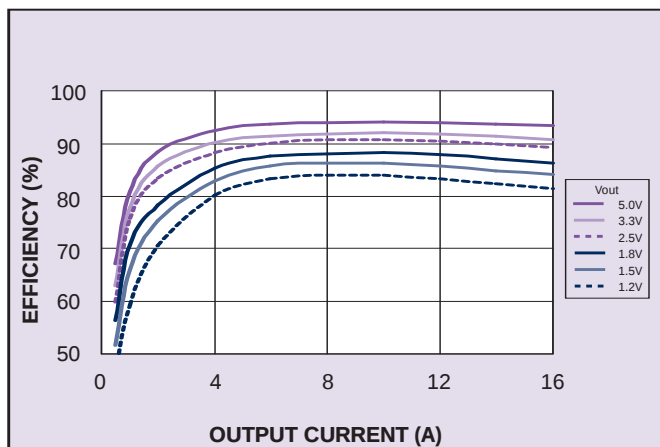


Figure 4 - Efficiency vs Load Current
Vin = 12 V (See Note B)

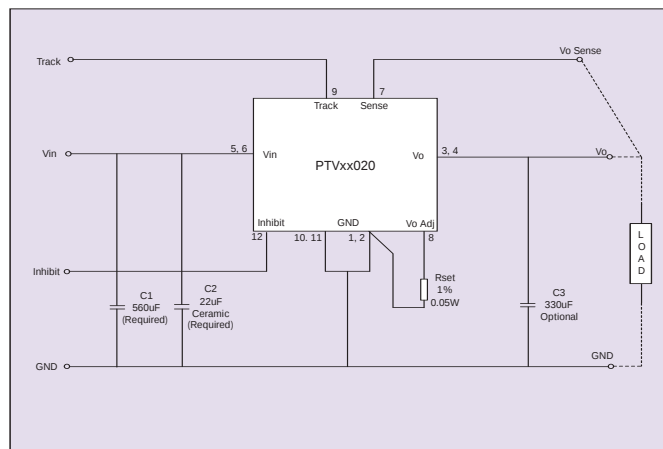


Figure 5 - Standard Application

Notes

- A** SOA curves represent the conditions at which internal components are within the Artesyn derating guidelines.
- B** Characteristic data has been developed from actual products tested at 25 °C. This data is considered typical data for the converter.

PTV12020L Characteristic Data

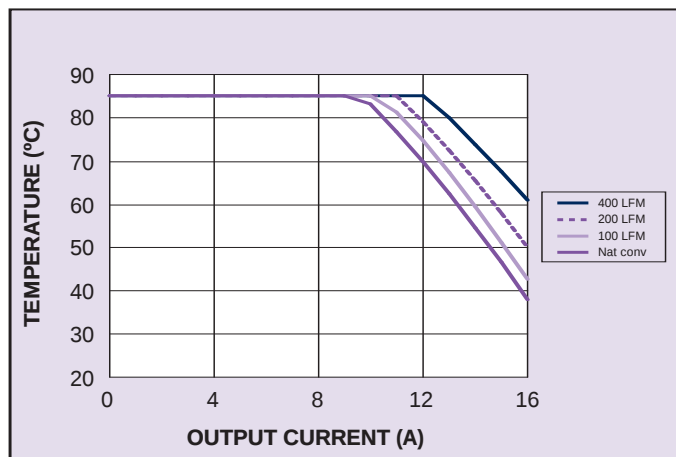


Figure 6 - Safe Operating Area
Vin = 12 V, Output Voltage ≤ 1.8 V (See Note A)

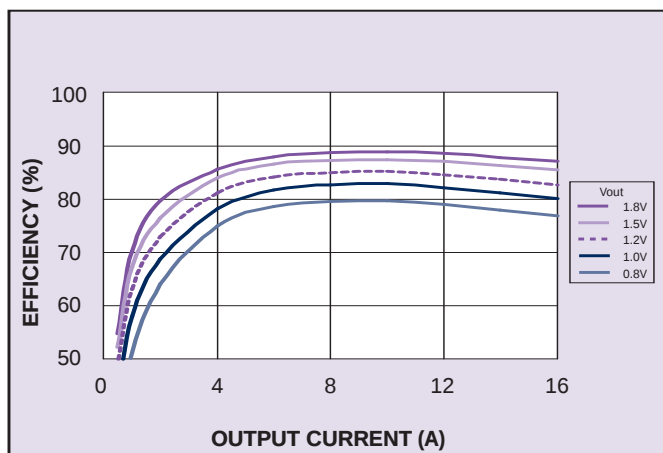


Figure 7 - Efficiency vs Load Current
Vin = 12 V (See Note B)

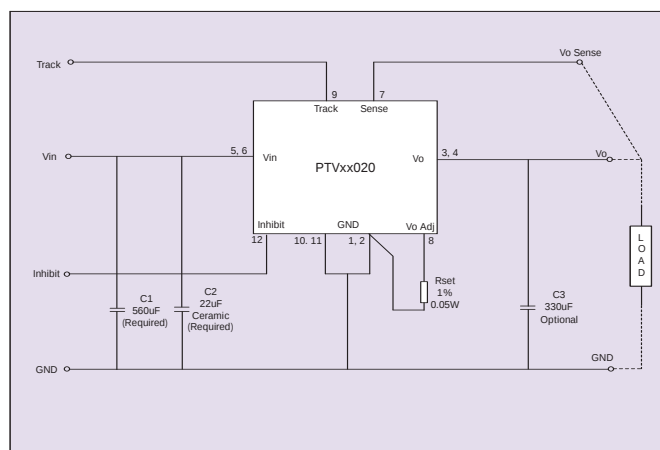
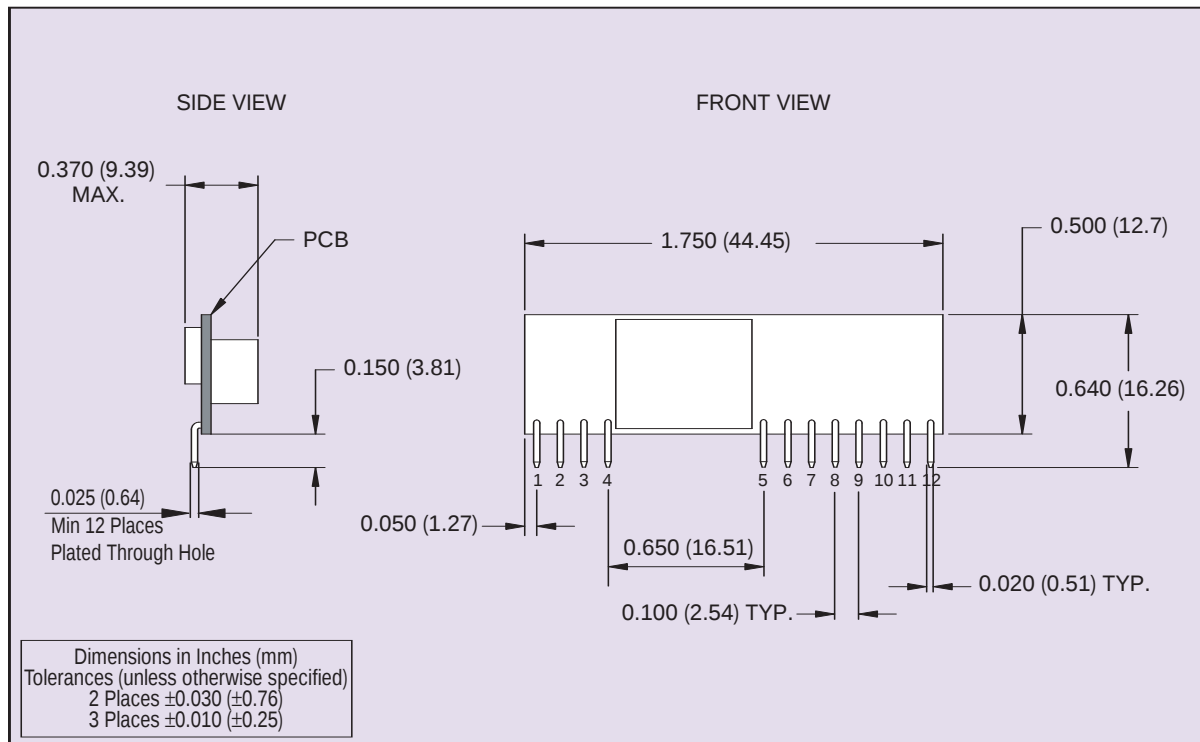


Figure 8 - Standard Application

Notes

- A** SOA curves represent the conditions at which internal components are within the Artesyn derating guidelines.
- B** Characteristic data has been developed from actual products tested at 25 °C. This data is considered typical data for the converter.



PIN CONNECTIONS	
PIN NO.	FUNCTION
1	Ground
2	Ground
3	Vout
4	Vout
5	Vin
6	Vin
7	Vo Sense
8	Vo Adjust
9	Track
10	Ground
11	Ground
12	Inhibit

Figure 9 - Mechanical Drawing and Pinout Table