40W DC-DC Converter P40A-Series

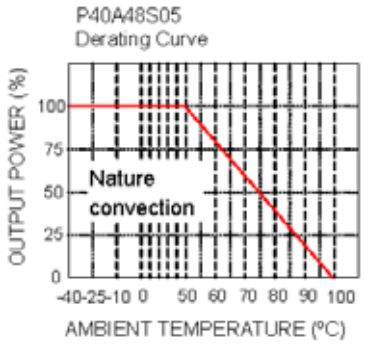
PHI-CON

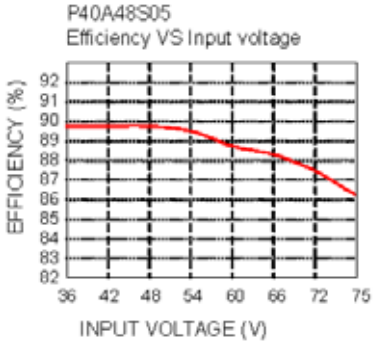
- Offer single, dual and triple output
- 40 W Output power
- 2:1 Wide input voltage range
- International safety standard approval
- Six-Sided continuous shield
- High efficiency up to 90%
- Standard 2" X 2" X 0.4" package
- Fixed switching frequency

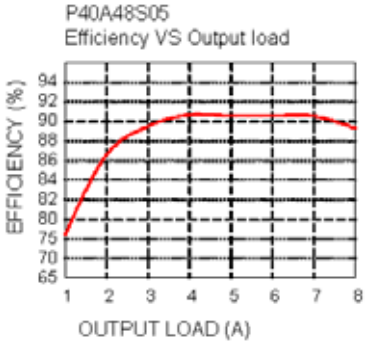
Model selection guide

Typ	Input		Output 1			Output 2 (or Dual Output)			Efficiency typ.	Output ripple & Noise
	nominal voltage [V_{DC}]	current full load [mA]	voltage [V_{DC}]	current [A]	capacitor load max. [µF]	voltage [V_{DC}]	current [A]	capacitor load max. [µF]	[%]	[mV_{p-p}]
Single output										
P40A24S3P3	18-36	1325	3.3	8.0	21000				87	50
P40A24S05	18-36	1961	5.0	8.0	13600				89	50
P40A24S12	18-36	2048	12.0	3.3	2360				88	75
P40A24S15	18-36	1985	15.0	2.6	1510				89	75
P40A48S3P3	36-75	655	3.3	8.0	21000				88	50
P40A48S05	36-75	969	5.0	8.0	13600				90	50
P40A48S12	36-75	1000	12.0	3.3	2360				89	75
P40A48S15	36-75	992	15.0	2.6	1510				89	75
Dual output										
P40A24D3305	18-36	1729	3.3	4.0	11000	5.0	4.0	6800	84	100 @1µF
P40A48D3305	36-75	854	3.3	4.0	11000	5.0	4.0	6800	85	100 @1µF
Triple output										
P40A24T3312	18-36	1512	3.3	6.0	13000	±12.0	±0.4	2 x 330	85	75
P40A24T3315	18-36	1481	3.3	6.0	13000	±15.0	±0.3	2 x 110	85	75
P40A24T0512	18-36	1989	5.0	6.0	6800	±12.0	±0.4	2 x 330	87	75
P40A24T0515	18-36	1958	5.0	6.0	6800	±15.0	±0.3	2 x 110	87	75
P40A48T3312	36-75	747	3.3	6.0	13000	±12.0	±0.4	2 x 330	86	75
P40A48T3315	36-75	732	3.3	6.0	13000	±15.0	±0.3	2 x 110	86	75
P40A48T0512	36-75	982	5.0	6.0	6800	±12.0	±0.4	2 x 330	88	75
P40A48T0515	36-75	967	5.0	6.0	6800	±15.0	±0.3	2 x 110	88	75

Derating







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Specifications

Input	
Voltage range	18-36, 36-75V_{DC}
Filter (see note 1)	L-C type
Under voltage lockout 24V Input model 48V Input model	 DC-DC On max. 17.8 V_{DC} DC-DC Off min. 16 V_{DC} DC-DC On max. 36 V_{DC} DC-DC Off min. 34 V_{DC}
Output	
Output Power	40 W max.
Voltage accuracy full load and nominal V_{in}	Single / Dual: ±1% Triple main: ±1% Auxiliary ±3%
Voltage adjustability (see note 2)	Single output only ±10%
Ripple and noise (at 20 MHz BW)	See table measured with C_L 104pF
Short circuit protection	Hiccup, automatics recovery
Line voltage regulation LL to HL at Full Load	Single/Dual: ±0.5% Triple main: ±1% Triple auxiliary: ±5%
Load voltage regulation	single: ± 0.5% dual: ±1% Triple Main: ±2% Triple Auxiliary: ±5%
Temperature coefficient	± 0.02% / °C, max
Minimum load	Single: and Dual: 0% Triple: 10% of full load

General	
Efficiency	See table
Switching frequency	300 kHz, typ.
Environmental	
Operating temperature	-40°C to +85°C (with derating)
Storage temperature range	-55 °C to +105 °C
Maximum case temp.	+100 °C
Relative humidity	5% to 95%
Cooling	Free-air convection
Physical	
Dimensions	2 x 2 inches 50.8 x 50.8 x 10.2 mm
Weight	60 g
Case material	Nickel-coated copper
Isolation	
Rated voltage	1600 V_{DC}, min
Resistance	10^9 Ω, min.
Capacitance	1000pF, max
Remote control	
Remote control on Remote control off Pin: CTRL	Open 3.5V < Vr < 12V Short or 0V < Vr < 1.2V (referenced to – Input)

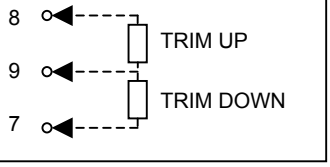
Note1: An external filter capacitor is required for normal operation. The capacitor should be capable of handing 1A ripple current for 24V and 48V models. Example: 220µF/ 100V, ESR <90mΩ.
Note2: Maximum output deviation is 10% inclusive of remote sense and trim. If remote sense is not being used, the +SENSE should be connected to its corresponding +OUTPUT and likewise the sense should be connected to its corresponding -OUTPUT.

Pin connections

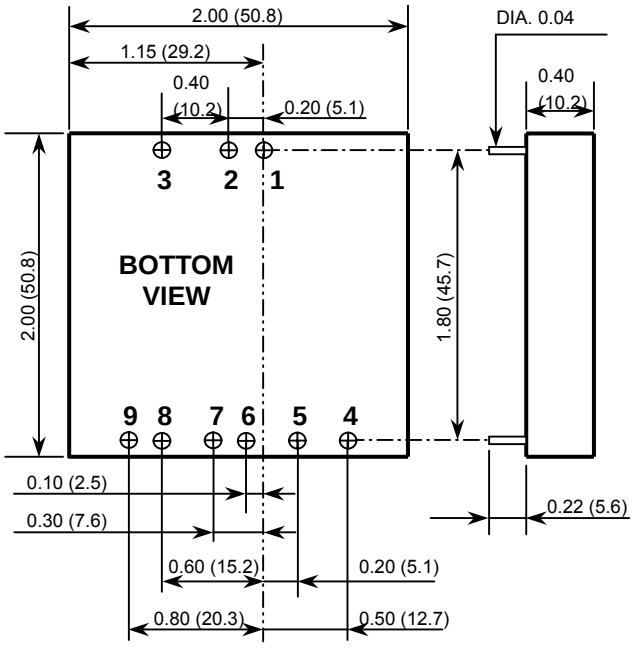
Pin	Standard		
	Single	Dual	Triple
1	+ Input	+ Input	+ Input
2	- Input	- Input	- Input
3	CTRL	CTRL	CTRL
4	NC	3.3 V	+ AUX
5	- Sense (note 2)	3.3V RTN (COM)	Common
6	+Sense (note 2)	NC	- AUX
7	+ Output	NC	+ Output
8	- Output	5V	- Output (COM)
9	TRIM	5V RTN (COM)	NC

Trimming

Output can be externally trimmed by using the method shown below.



Dimensions



1. All dimensions in Inches (mm)
2. Pin pitch tolerance ±0.014(0.35)

HY-LINE® POWER COMPONENTS

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