Series **UWC** & **TUWC**

20W Isolated Regulated AC-DC Power Supply

PICO Electronics, Inc.

PRODUCT OVERVIEW

The UWC & TUWC series is a switching AC-DC power supply available in single and dual outputs. They offer excellent line and load regulation and is continuously protected against short circuits. The highly reliable module is capable of up to 20W power in a wide ambient temperature range -20°C to +70°C. These modules are the perfect design choice for your most stringent industrial applications.

FEATURES

- Up to 20W output power
- Single and dual outputs
- Compact size - 3.215" x 2.27"
- Through hole or terminal strip
- Continuous short-circuit protection
- Universal input range - 85-265VAC
- Fixed operating frequency

Contact Pico for part number of available options:

- Expanded operating temp: -40°C to +85°C
- Select screening per MIL-STD-883:
  - Stabilization Bake
  - Temperature Cycle
  - Burn-In
- Special Input Voltage, Output Voltage, or Output Power

T	UWC	28	S
MOUNTING	SERIES NAME	NOM. OUTPUT VOLTAGE	NUMBER OF OUTPUTS
BLANK = THRU HOLE **T** = TERMINAL STRIP	**UWC**	**3.3** = 3.3V **5** = 5V **5.2** = 5.2V **12** = 12V **15** = 15V **24** = 24V **28** = 28V **48** = 48V	**S** = SINGLE **D** = DUAL

MODEL LIST

SINGLE OUTPUT

Through Hole	Terminal Strip	Output Voltage [VDC]	Output Current Min. (2) [A]	Output Current Max. [A]	Output Power [W]	Efficiency (1) [%] typ.	Load Regulation 10-100% [%] max	Output Voltage Tolerance (1) [±VDC]	Output Ripple @ 1MHz BW [mVp-p] max
UWC3.3S	TUWC3.3S	3.3	303	3030	10	72	2	2	150
UWC5S	TUWC5S	5	300	3000	15	74	2	2	200
UWC5.2S	TUWC5.2S	5.2	288.5	2885	15	74	2	2	200
UWC12S	TUWC12S	12	166	1660	20	80	2	2	200
UWC15S	TUWC15S	15	133	1330	20	80	2	2	200
UWC24S	TUWC24S	24	83.3	833	20	84	1	1	200
UWC28S	TUWC28S	28	71.4	714	20	84	1	1	200
UWC48S	TUWC48S	48	41.6	416	20	84	1	1	400

Note 1: Tested at nominal input voltage and full output load.
Note 2: Maintain minimum 10% of rated load to prevent a voltage surge.

DUAL OUTPUT

Through Hole	Terminal Strip	Output Voltage [VDC]	Output Current Per Output Min. (2) [A]	Output Current Per Output Max. [A]	Output Power Per Output [W]	Efficiency (1) [%] typ.	Load Regulation 10-100% [%] max	Output Voltage Tolerance (1) [±VDC]	Output Ripple @ 1MHz BW [mVp-p] max
UWC5D	TUWC5D	±5	150	1500	7.5	74	2	2	200
UWC12D	TUWC12D	±12	83	830	10	78	2	2	150
UWC15D	TUWC15D	±15	66.5	665	10	78	2	2	150
UWC24D	TUWC24D	±24	41.7	417	10	80	2	2	150
UWC28D	TUWC28D	±28	35.7	357	10	80	2	2	150

Note 1: Tested at nominal input voltage and full output load.
Note 2: Maintain minimum 10% of rated load to prevent a voltage surge.
Note 3: Dual output loads must be balanced.

SPECIFICATIONS (115VAC/60Hz, Full Load, T_A = +25°C, 1 hour warm up unless otherwise specified)

INPUT

Parameter	Condition	Min.	Typ.	Max.	Units
Input Voltage Range		85	115	265	VAC
Input Frequency		47	60	440	Hz
Input Fuse Recommendation	With external 10Ω inrush thermistor	1A, Rated Voltage ≥ Input Voltage			
Input Thermistor Recommendation		-	10	-	Ω

OUTPUT

Parameter	Condition	Min.	Typ.	Max.	Units
Line Regulation		-	-	1	±%

SPECIFICATIONS (115VAC/60Hz, Full Load, T_A = +25°C, 1 hour warm up unless otherwise specified)

ENVIRONMENTAL

Parameter	Condition	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient without derating	-25	-	+70	°C
Storage Temperature Range	Ambient	-55	-	+105	°C
Temperature Coefficient		-	0.02	-	%/°C
Cooling	Free Air Convection				

GENERAL

Parameter	Condition	Min.	Typ.	Max.	Units
Operating Frequency		-	100	-	kHz
Isolation Voltage	Input to output	2121	-	-	VDC
Size	L x W x H	2.5 x 2.3 x 0.5 (63.5 x 58.4 x 12.7)			inches (mm)
Weight		-	130	-	grams
Case	Glass Reinforced Polymer				
Potting	Vacuum Impregnated Epoxy				
Box Packaging	8 x 7.5 x 1.5 (203.2 x 190.5 x 38.1) or 12 x 9 x 1.5 (304.8 x 228.6 x 38.1)				inches (mm)

PROTECTIONS & FEATURES

Parameter	Condition	Min.	Typ.	Max.	Units
Short circuit	Continuous, auto-recovery				

DESIGNED TO MEET

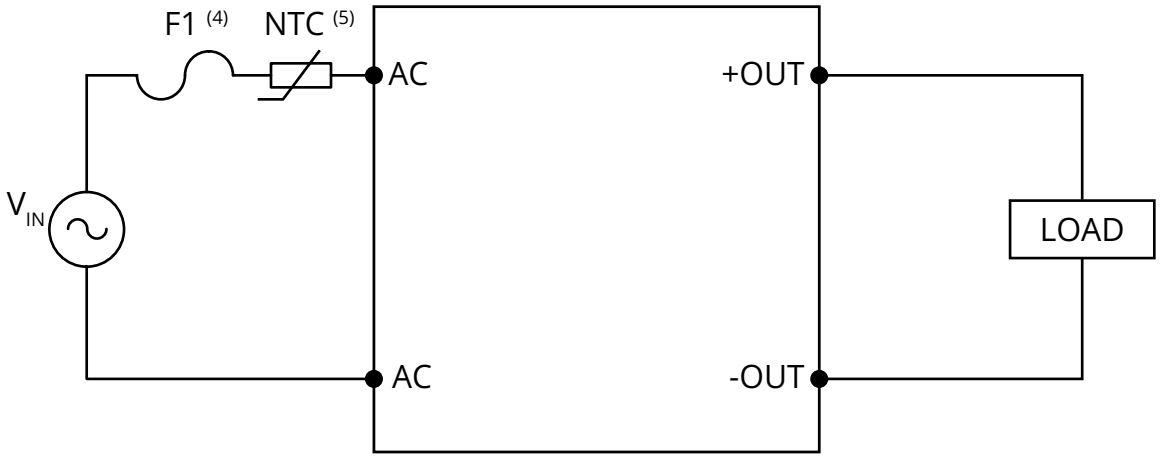
Test	Referenced Standard	Description
Vibration	MIL-STD-202	Method 204, Vibration, High Frequency, Condition D
Shock	MIL-STD-202	Method 213, Shock (Specified Pulse), Condition I
Humidity	MIL-STD-202	Method 106, Moisture Resistance
Altitude	MIL-STD-202	Method 105, Barometric Pressure (Reduced), Condition D

OPTIONS AVAILABLE – CONTACT PICO FOR PART NUMBER

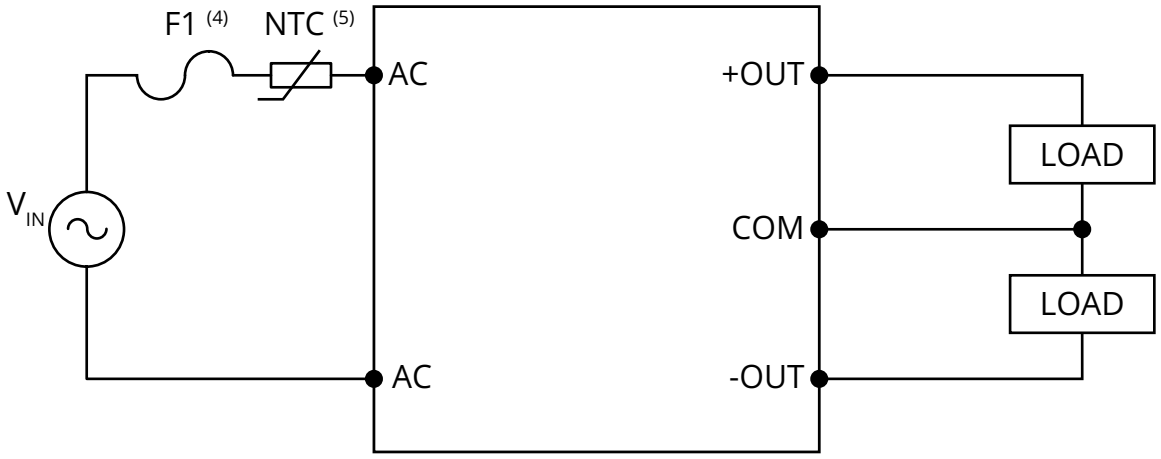
Parameter	Referenced Standard	Description
Stabilization Bake	MIL-STD-883	Referenced Method 1008 Non-operating maximum storage temperature for 24 hours
Temperature Cycle	MIL-STD-883	Referenced Method 1010 Non-operating at temperature extremes, 15 mins/temp, 10 cycles
Burn-In	MIL-STD-883	Referenced Method 1015 Max operating temperature for 160 hours
Expanded Operating Temperature Range	-55°C to +85°C	

TYPICAL CONNECTION CIRCUIT

SINGLE OUTPUT



DUAL OUTPUT

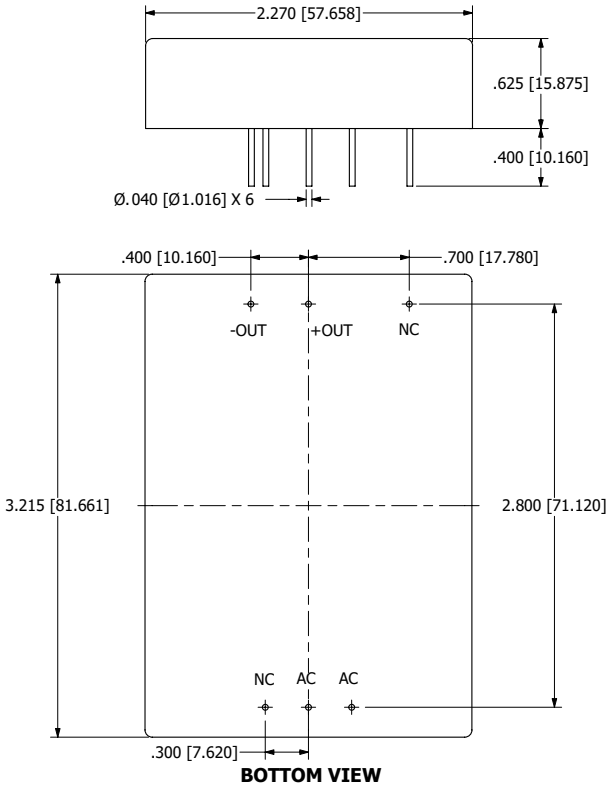


Note 3: Dual output loads must be balanced.
Note 4: A 1A fuse is required on the input.
Note 5: A 10Ω inrush thermistor is required on the input.

MECHANICAL DRAWINGS

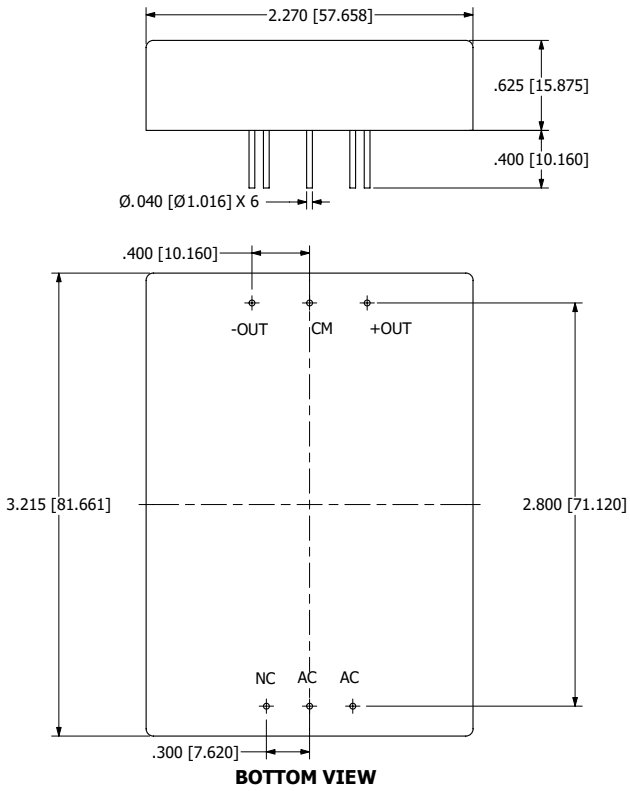
THROUGH HOLE

SINGLE OUTPUTS



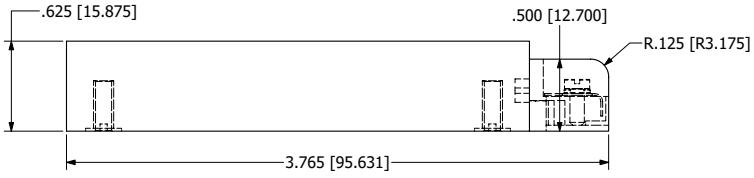
BOTTOM VIEW

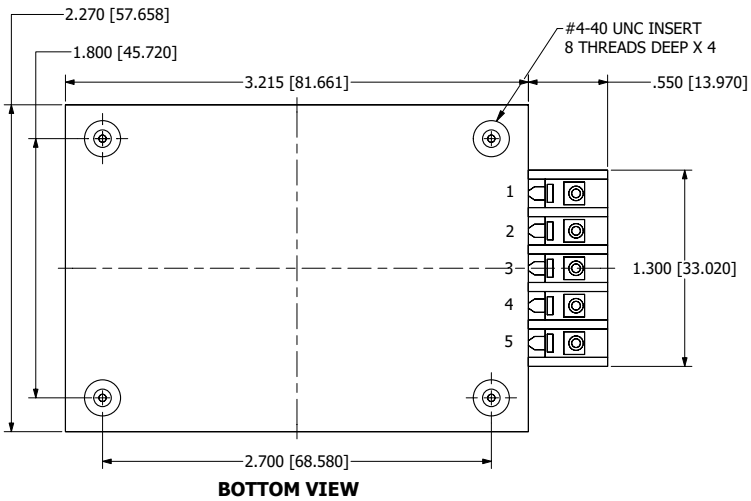
DUAL OUTPUTS



BOTTOM VIEW

TERMINAL STRIP





BOTTOM VIEW

PIN	FUNCTION	
	SINGLE	DUAL
1	AC IN	
2	AC IN	
3	N/C	-OUT
4	-OUT	COM
5	+OUT	

NOTES
a. ALL DIMENSIONS ARE IN INCHES, [ ] = MM
b. RECOMMENDED MOUNTING TORQUE: 3-5 IN-LBS

BOX PACKAGING - BULK