LP Series 1 Watt
Single and Dual Output DC-DC Power Converters

DATEL®

T-57-11

FEATURES

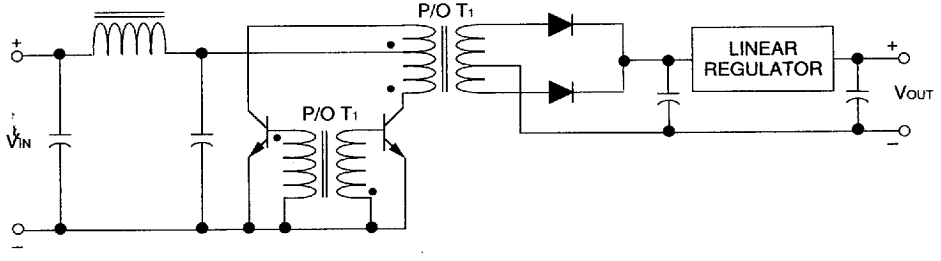
- **Fixed input range; 5V, 12V, 28V (±10%)**
- **Chassis or PC board mount (2" x 1.5" x 0.38")**
- **300V dc input to output isolation**
- **Output current limiting short circuit protection**
- **Very wide operating temperature (-25 °C to +71 °C)**
- **Single or dual outputs**
- **Delivery from stock!**

GENERAL DESCRIPTION

The LP Series of high performance 1 Watt DC-to-DC converters provide the accuracy and reliability you've come to expect from DATEL. Thirteen different 1 Watt models are available in a standard 2" x 1.5" x 0.38" package to cover virtually any application from special in-house designs to your high volume OEM applications. Their compact size, low price, and rugged reliability means you can meet the design-in price spec for high volume applications without the headaches and worry associated with poor quality offshore throwaways.

Outstanding output accuracy combined with low thermal rise, tight regulation, and very low noise and ripple make these power converters ideal for sensitive circuits. A Pi network input filter suppresses input reflected ripple current. Additional features include transformer isolation and current-limiting output protection.

The 1 Watt LP Series are available with input voltages of 5V, 12V, 28V (±10%) with either unipolar or bipolar outputs of 5V, 12V, 24V, 28V, ±12V, and ±15V. The low power LP Series converters are found in applications ranging from Industrial Control Systems, Telecommunications Equipment, Analog Systems, Digital Circuits, Field/Mobile Instrumentation, or wherever high reliability at the lowest possible cost is demanded.



APPLICATIONS

- **Telecommunications Equipment**
- **Local Power Distribution Systems**
- **PC Board Subsystems**
- **Portable/Mobile/Battery Operated Instrumentation**
- **Portable Computer and Computer Controlled Equipment**
- **Low Power Automotive/Avionics/ Marine Systems and Equipment**

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SPECIFICATIONS

	SINGLE OUTPUT MODELS		
	UPM-5/200-D12	**UPM-5/200-D28**	**UPM-12/80-D5**
Output Voltage	12V	28V	5V
Output Current	5V, 200 mA	5V, 200 mA	12V, 80 mA
No Load Input Current	100 mA	40 mA	220 mA
Full Load Input Current, max.	220 mA	100 mA	500 mA
Line Regulation	0.05%	0.05%	0.05%
Load Regulation	0.01%	0.01%	0.05%
Temperature Coefficient	0.02%/°C	0.02%/°C	0.02%/°C
Output Noise and Ripple, max.	20 mV pk-pk	20 mV pk-pk	20 mV pk-pk
Reflected Ripple Current, max.	1V mA pk-pk	5 mA pk-pk	25 mA pk-pk
Isolation Voltage, min.	300V dc	300V dc	300V dc

	SINGLE OUTPUT MODELS			
	UPM-24/40-D5	**UPM-24/40-D12**	**UPM-28/25-D5**	**UPM-28/25-D12**
Output Voltage	5V	12V	5V	12V
Output Current	24V, 40 mA	24V, 40 mA	28V, 25 mA	28V, 25 mA
No Load Input Current	220 mA	95 mA	160 mA	80 mA
Full Load Input Current, max.	500 mA	210 mA	400 mA	180 mA
Line Regulation	0.05%	0.05%	0.05%	0.05%
Load Regulation	0.05%	0.05%	0.05%	0.05%
Temperature Coefficient	0.02%/°C	0.02%/°C	0.02%/°C	0.02%/°C
Output Noise and Ripple, max.	20 mV pk-pk	20 mV pk-pk	20 mV pk-pk	20 mV pk-pk
Reflected Ripple Current, max.	25 mA pk-pk	10 mA pk-pk	20 mA pk-pk	9 mA pk-pk
Isolation Voltage, min.	300V dc	300V dc	300V dc	300V dc

COMMON SPECIFICATIONS

(Typical at 25 °C unless noted.)

Input Voltage Tolerance .....±10%
Output Voltage Accuracy .....±1.0%
Transient Recovery Time .....50 µSec
Short Circuit Protection.....Output Current Limiting
Operating Temperature Range .....-25 °C to +71 °C
Storage Temperature Range.....-55 °C to +85 °C
Output Impedance 0.02Ω
(0.07Ω for UPM-5/200 Model)
Back Ripple Current, maximum.....5% (3% typical) of I_{IN}
Capacitive Coupling, maximum.....50 pF
Breakdown Voltage, minimum.....300V dc
Case Material.....Dially Phthalate
Weight.....1.5 ounce (43 grams)

The 1 watt Series uses 2 DILS-1 or DILS-2 terminal strips for sockets.

SPECIFICATIONS

	DUAL OUTPUT MODELS		
	BPM-12/25-D5	**BPM-12/25-D12**	**BPM-12/25-D28**
Input Voltage	5V	12V	28V
Output Current	±12, ±25 mA	±12, ±25 mA	±12, ±25 mA
No Load Input Current	150 mA	80 mA	30 mA
Full Load Input Current, max.	350 mA	165 mA	65 mA
Line Regulation	0.05%	0.05%	0.05%
Load Regulation	0.05%	0.05%	0.05%
Temperature Coefficient	0.02%/°C	0.02%/°C	0.02%/°C
Output Noise and Ripple, max.	20 mV pk-pk	20 mV pk-pk	20 mV pk-pk
Reflected Ripple Current, max.	17 mA pk-pk	8 mA pk-pk	3 mA pk-pk
Isolation Voltage, min.	300V dc	300V dc	300V dc

	DUAL OUTPUT MODELS		
	BPM-15/25-D5	**BPM-15/28-D12**	**BPM-15/25-D28**
Input Voltage	5V	12V	28V
Output Current	±15, ±25 mA	±15, ±25 mA	±15, ±25 mA
No Load Input Current	160 mA	80 mA	30 mA
Full Load Input Current, max.	400 mA	180 mA	80 mA
Line Regulation	0.05%	0.05%	0.05%
Load Regulation	0.05%	0.05%	0.05%
Temperature Coefficient	0.02%/°C	0.02%/°C	0.02%/°C
Output Noise and Ripple, max.	20 mV pk-pk	20 mV pk-pk	20 mV pk-pk
Reflected Ripple Current, max.	20 mA pk-pk	9 mA pk-pk	4 mA pk-pk
Isolation Voltage, min.	300V dc	300V dc	300V dc

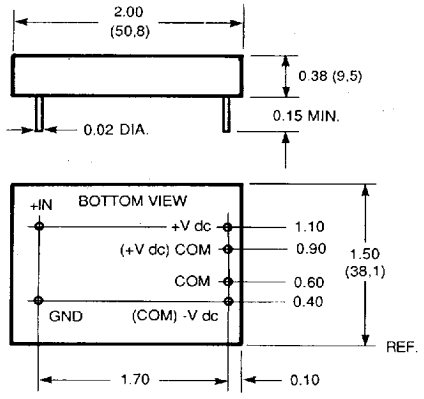
COMMON SPECIFICATIONS

(Typical at 25 °C unless noted.)

Input Voltage Tolerance .....±10%
Output Voltage Accuracy .....±1.0%
Transient Recovery Time .....50 µSec
Short Circuit Protection.....Output Current Limiting
Operating Temperature Range .....-25 °C to +71 °C
Storage Temperature Range.....-55 °C to +85 °C
Output Impedance 0.02Ω
Back Ripple Current, maximum 5% (3% typical) of I_{IN}
Capacitive Coupling, maximum.....50 pF
Breakdown Voltage, minimum.....300V dc
Case Material.....Dially Phthalate
Weight.....1.5 ounce (43 grams)

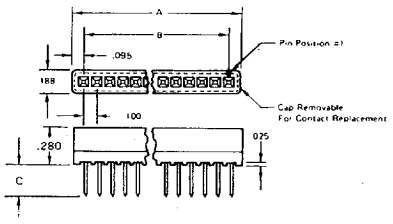
The 1 watt Series uses 2 DILS-1 or DILS-2 terminal strips for sockets.

MECHANICAL DIMENSIONS AND I/O CONNECTIONS



NOTE: PIN DESIGNATIONS IN PARENTHESIS ARE FOR UNIPOLAR OUTPUT MODELS

SOCKETS DILS-1, DILS-2



Model	No. of Contacts	A	B	C	
DILS-1	20	2.090	1.900	.645	WIRE-WRAP
DILS-2	20	2.090	1.900	.145	SOLDER PIN

VERY GENEROUS QUANTITY DISCOUNTS ARE AVAILABLE. CONSULT FACTORY.

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