



### Description

The TCM series of DC/DC converters combines the leading edge technology of the 360 Watt MTW series with a chassis mount metal case. The chassis mount case is designed for mounting to an enclosure or Din-Rail applications. The 4:1 input range, industry leading efficiencies, and precisely regulated output make the TCM series an excellent power solution for battery applications. The output voltage is fully isolated from the input, allowing the output to be positive or negative polarity and with various ground connections.

Through holes are provided to allow easy mounting or addition of a heatsink for extended temperature operation. Integrated terminal blocks allow for easy connectivity. An optional DIN Rail Adaptor is available for DIN Rail Mounting the TCM.

Product is designed and manufactured in the USA.

To order with optional DIN Rail Mount specify part number by –DIN. i.e. 24S12.30 TCM-DIN

- 4:1 Input voltage range
- High power density
- Small size 3.2" x 4.3" x 1.0"
- Efficiency up to 95.6%
- Excellent thermal performance with metal case
- Over-Current and Short Circuit Protection
- Over-Temperature protection
- Auto-restart
- Monotonic startup into pre bias
- Constant frequency
- Remote ON/OFF
- Good shock and vibration damping
- Extended Temperature Range -55°C Available.
- RoHS Compliant

Model	Input Range VDC		Vout VDC	Iout ADC
	Min	Max		
24S12.30TCM (ROHS)	9	36	12	30
24S24.15TCM (ROHS)	9	36	24	15
24S28.13TCM (ROHS)	9	36	28	13

Extended Temperature Range of -55°C to +85°C is available. Add "-T" to the part number when ordering.

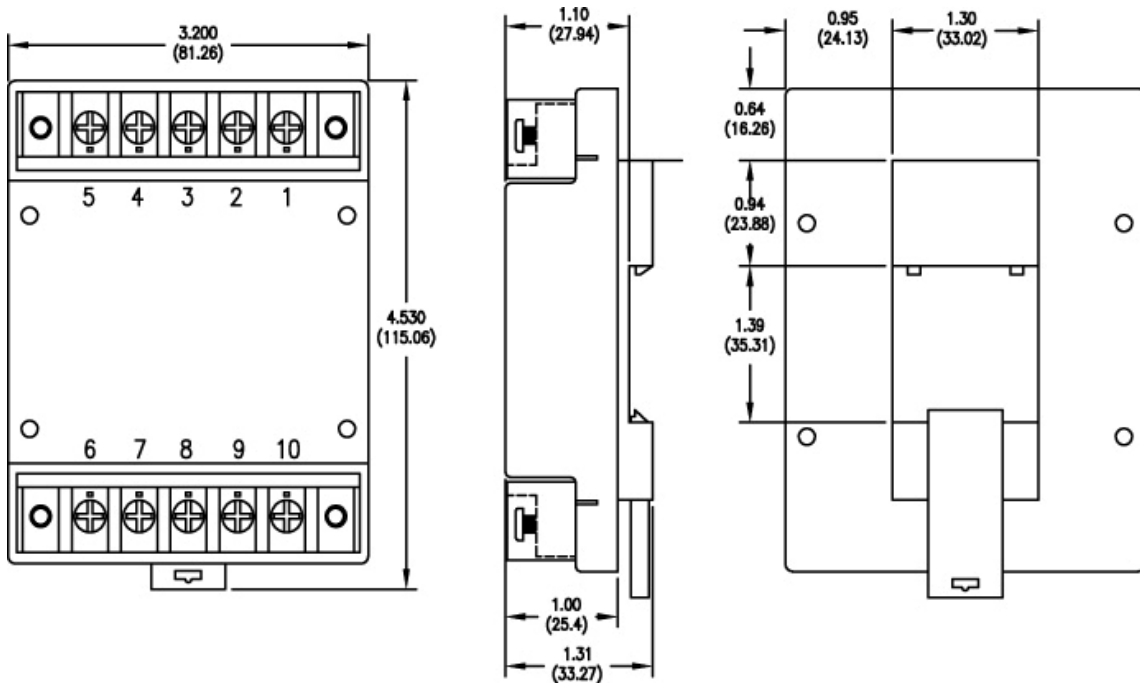
1. Designed to meet MIL-STD-810G for functional shock and vibration. The unit must be properly secured to the interface medium (PCB/Chassis) by use of the threaded inserts of the unit.

2. A thermal management device, such as a heatsink, is required to ensure proper operation of this device. The thermal management medium is required to maintain baseplate < 85°C at full rated load.

3. The TCM series is designed with the internal capacitance required to support one foot of connection wire on the input and output. For applications with longer connection requirements consult the factory.

#### Performance Specifications

Model	Vout (VDC)	Iout (ADC)	Power (Watts)	Ripple/Noise (mVp-p)		Regulation Max (%)		Vin (VDC)	Range (VDC)	Iin No Load (mA)	Iin Full Load (A)	Efficiency Full Load (%)	
		Max		Typ	Max	Line	Load	Nom		Max	Max	24Vin Min	24Vin Typ
	24S12.30TCM	12	30	360	120	180	0.15	0.15	24	9-36	280	45.3	93.7
24S24.15TCM	24	15	360	240	360	0.15	0.15	24	9-36	300	45	94.5	95.2
24S28.13TCM	28	13	360	280	380	0.15	0.15	24	9-36	280	45	94.3	95.4



Mechanical Tolerances  
 X.XX : ±0.020 inches (.51mm)  
 X.XXX: ±0.005 inches (.127mm)

Terminal	Label	Function
1	+Input	Positive Input Voltage
2	+ Input	Positive Input Voltage
3	On/Off	TTL Input referenced to -Input
4	-Input	Negative Input Voltage
5	-Input	Negative Input Voltage
6	-Output	Negative Output Voltage
7	-Output	Negative Output Voltage
8	N/C	Not Connected
9	+Output	Positive Output Voltage
10	+Output	Positive Output Voltage



# PRODUCT BRIEF

## TCM Series

General Specifications				
All Models				Units
<b>ON/OFF Function</b>				
Converter – ON	HIGH Logic Level / Leave ON/OFF Pin Open	MIN	2.0	V
Leakage Current		MAX	0.16	mA
Converter – OFF	LOW Logic Level / Tie ON/OFF Pin to -INPUT	MAX	0.8	V
Sinking Current for Logic Low		MAX	0.36	mA
Idle Current (Module is OFF)		MAX	4	mA
Turn-on Time to 1% error from On/Off		MAX	20	ms
<b>Isolation</b>				
Input to Output Isolation 10 $\mu$ A Leakage		MIN	2250	VDC
Input to Output Resistance		MIN	10	M $\Omega$
Input to Output Capacitance		TYP	4500	pF
<b>Environmental</b>				
MTBF	Telecordia SR-332, Method 1 Case 1 50% electrical stress, 40 $^{\circ}$ C components	5.4M		hrs
Case Operating Temperature Range		MIN MAX	-40 85	$^{\circ}$ C
Extended Case Operating Temperature Range		MIN MAX	-55 85	$^{\circ}$ C
Storage Temperature		MIN MAX	-55 125	$^{\circ}$ C
Thermal Impedance: Chassis to Ambient		TYP	5.2	$^{\circ}$ C/W
Thermal Shutdown Case Temperature (Auto Restart)		TYP	95	$^{\circ}$ C
<b>General</b>				
Efficiency		Up to 96.1%		
Switching Frequency (Output Ripple is 2X Switching Freq)		TYP	200	kHz
Unit Weight		430		g
Case Dimension		3.2" x 4.3" x 1.00"		
Designed to meet UL/cUL 60950, IEC/EN 60950-1				

The TCM series provides a chassis mountable product that uses MTW converters. For more detailed performance data please refer to the MTW series data sheet.