ARTESYN TECHNOLOGIES

3T SERIES

Single output

- **75% efficiency**
- **UL and CSA approvals**
- **Adjustable output voltage**
- **Logic inhibit**
- **Short circuit protection**
- **Parallelability**
- **Remote sense**

These wide range input, three terminal, 25kHz switching regulators are versatile, inexpensive, and efficient. They provide a single adjustable output from a DC source. 75% typical efficiency is an added advantage of the switcher which helps reduce transformer and heatsink requirements over an equivalent linear regulator. Since their efficiency is essentially independent of input voltage, output current need not be derated with increasing input voltage. Other features include: short circuit protection; remote on/off; parallelability and remote sensing. The 3T Series modules are unique open board DC/DC converters that help solve tough power system requirements.

[2 YEAR WARRANTY]

SPECIFICATION

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

OUTPUT SPECIFICATIONS		
Output voltage (Adjustable)	3T12AP 3T20AP 3T5AN	+4.5VDC to +30VDC +4.5VDC to +15VDC –4.5VDC to –30VDC
Remote sense		Remove JP1 for remote sense operation
Line regulation +10V to +60V (See Note 1)	3T12AP 3T20AP 3T5AN	See Figure 2 See Figure 2 ±0.2%
Load regulation	NL to FL (See Note 2)	±1.0%
Ripple and noise	3T12AP 3T20AP 3T5AN	150mV Pk-Pk, max. 150mV Pk-Pk, max. 250mV Pk-Pk, max.
Transient response (3T20AP)	+5V (8A to 16A) +15V (8A to 16A)	200mV pk transient, 1ms recovery to 1% 350mV pk transient, 0.8ms recovery to 1%
Temperature coefficient		±3mV/°C
Input/output voltage differential	Minimum 3T12AP 3T20AP 3T5AN	 3V(V_{in}≥15V), 5V(V_{in}<15V) 3.5V(V_{in}≥15V), 5V(V_{in}<15V) See Figure 1
Output current limit (Factory set)	3T12AP 3T20AP (See Note 3) 3T5AN	17A ±10% 24A to 27A 8A ±15%
Soft start		Standard
INPUT SPECIFICATIONS		
Input voltage range	See Figure 1	10VDC to 60VDC
Remote ON/OFF	Inhibit Operate	>3V <1V

GENERAL SPECIFICATIONS		
Efficiency		75% typical
Switching frequency		25kHz
Approvals and standards		UL478 CSA C22.2-234 No. 950
Weight	3T12AP 3T20AP 3T5AN	0.30kg (10.59oz) 0.40kg (14.12oz) 0.35kg (12.36oz)
MTBF	MIL-HDBK-217C	95,000 Hours
ENVIRONMENTAL SPECIFICATIONS		
Thermal performance	Operating ambient: 3T12AP, 3T5AN 3T20AP Non-operating	 0°C to +50°C 0°C to +70°C –20°C to +85°C
Maximum heatsink temperature	3T12AP, 3T5AN 3T20AP	+60°C +80°C
Relative humidity	Non-condensing	5% to 80% RH
Altitude	Operating Non operating	10,000 feet max. 30,000 feet max.

Notes

1 Line regulation is over the full +10V to 60V input range.
2 Load regulation is over the range of no load to maximum average output current.
3 The current limit of 3T20AP is factory set at 24A to 27A. However, when units are used in parallel configuration, the current limit should be set at 20A. Consult factory for a full explanation of parallel operation of 3T regulators.

International safety standard approvals

UL478 Reg. File No. E131987

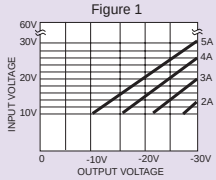
CSA C22.2-234 No. 950 File No. LR41062C
Electrical Bulletin No. 1402C

150 to 360 Watt Non-isolated DC/DC regulators

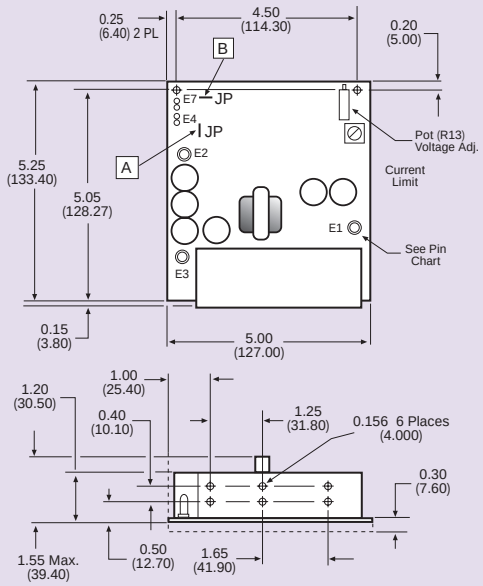
INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	NO LOAD INPUT CURRENT	TYPICAL EFFICIENCY	MODEL NUMBER
+10V to +60VDC	+4.5 to 30V	0-12A	40mA	75%	3T12AP-6130
+10V to +60VDC	+4.5 to 15V	0-20A	40mA	75%	3T20AP-6115
+10V to +60VDC	–4.5 to –30V	0-5A	40mA	75%	3T5AN-6130

Figure 1 : Min. required input voltage: 3T5AN-6130

Figure 1



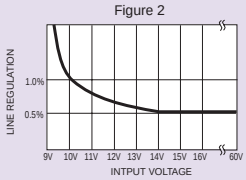
Dimensions : 3T5AN-6130



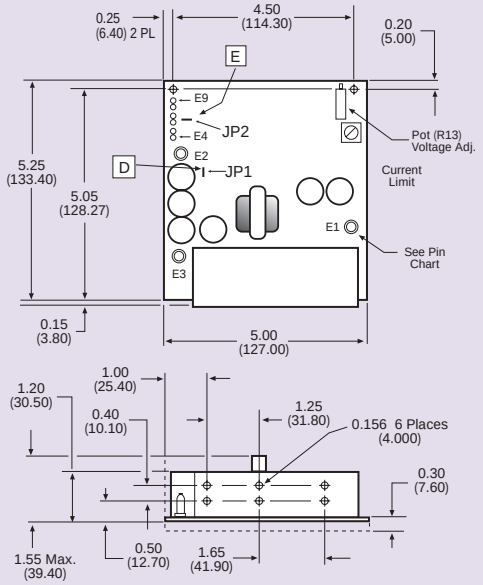
ALL DIMENSIONS IN INCHES (mm)

Figure 2 : Line Reg. 3T12AP-6130 & 3T20AP-6115

Figure 2



Dimensions : 3T12AP-6130 & 3T20AP-6115



ALL DIMENSIONS IN INCHES (mm)

PIN CONNECTIONS (3T5AN)		
PIN	FUNCTION	NOTE
E1	+ Input	C
E2	– Output	C
E3	Return	C
E4	+ Remote Sense	A
E5	– Remote Sense	
E6	Inhibit (Remote On/Off)	
E7	Sync In	B

PIN CONNECTIONS (3T12AP AND 3T20AP)		
PIN	FUNCTION	NOTE
E1	+ Input	F
E2	+ Output	F
E3	Return	F
E4	– Remote Sense	D
E5	+ Remote Sense	
E6	Pos. Sync Out	G
E7	Neg. Sync Out	G
E8	Sync In	E
E9	Inhibit (Remote On/Off)	

Mechanical notes for 3T5AN

A Remove JP1 for remote sense.
B Remove JP2 to synchronise 3T5AN to 3T12AP or 3T20AP.
C Terminals are 8-32 studs, 8 to 12 in-lbs torque required.

Mechanical notes for 3T12AP and 3T20AP

D Remove JP1 for remote sense.
E Remove JP2 to synchronise to another to 3T12AP or 3T20AP.
F Terminals are 8-32 studs, 8 to 12 in lbs torque required.
G E6 output is used as clock to synch other 3T12AP's or 3T20AP's to a single 3T12AP or 3T20AP. E7 is used to synch 3T5AN's to a single 3T12AP or 3T20AP.

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