Datasheet

Item no. 1566636

V1_06062018_01_en

Adjustable Step-Down Converter 1 Amp, Wide Input Range

The best solution with low power dissipation if high input voltage is present, but your application required a low operating voltage.

Features:
AC or DC Input
No Min. Load Required
Internal Soft-Start (8ms)
Short-Circuit Robust
No Heatsink Required

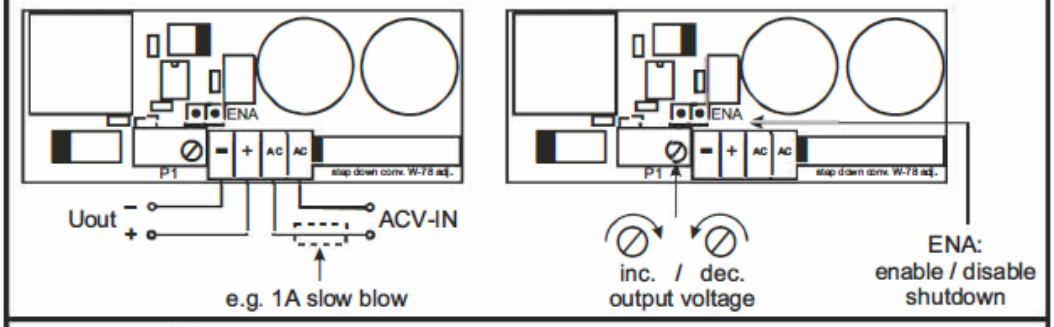
Type: W78 - ADJ
Item No: 1566636

Specifications refer to the standard application circuit at Ta: 25°C

Parameter:	Min.	Typ.	Max.	Units
DC Input Voltage Range	6.9		35	V=
AC Input Voltage RMS (3.3V output voltage at max. load)	6.7			V~
AC Input Voltage RMS			24.75	V~
Output Voltage (adj)	3.0	3.3 to 12	13	V=
Line Voltage Regulation (Uin = min. to max. at 1A)		0.07	0.2	%
Load Regulation (10% to 100% at Uin = 24V~)		0.09	0.2	%
Transient Recovery Time (100% <-> 50% load)		150		µsec
Ripple & Noise (1000 mA)	7		45	mVpp
Internal Power Dissipation (Uin = 24.75 V~ at max. load)		1.4		W
Quiescent Current	3.2		8.5	mA
Shutdown (ENA) Quiescent Current		18	50	µA
Effeciency			88.4	%
Output Current	0		1000	mA
Output Current Limit	1200	1500	1800	mA
Current Limit Hiccup Time	13	16	20	ms
Temperature Coefficient		0.0115	0.012	%/°C
Switching Frequency	400	500	600	kHz
Undervoltage Lockout		6.0	6.2	V=
Undervoltage Hysteresis		330		mV
Thermal Shutdown (internal junction temperature)	135	162		°C
Thermal Shutdown Hysteresis		14		°C
Operating Temperature Range	-40		+65	°C
Operating Junction Temperature Range	-40		+105	°C
Storage Temperature Range	-40		+85	°C
Rel. Air Humidity (non-condensing)			85	%
Dimensions (L-W-H)		59 x 23 x 30		mm
Weight (approx)		22		g

Here is a simple calculation of the required minimal secondary transformer voltage at maximum load.
Set this voltage equal to the desired DC-output voltage plus three volt (e.g. 5V Uout + 3V = 8V min. ACV-IN).

Standard application:



Note:
This converter is a "non-CE-checked" component. The utilisation must comply with the CE norms.

These operating instructions are published by: Conrad Electronic SE, Klaus-Conrad-Straße 1, D-92240 Hirschau/Germany
The operating instructions reflect the current technical specifications at time of print. We reserve the right to change the technical or physical specifications. © Copyright 2010 by Conrad Electronic SE.

Page 1/2

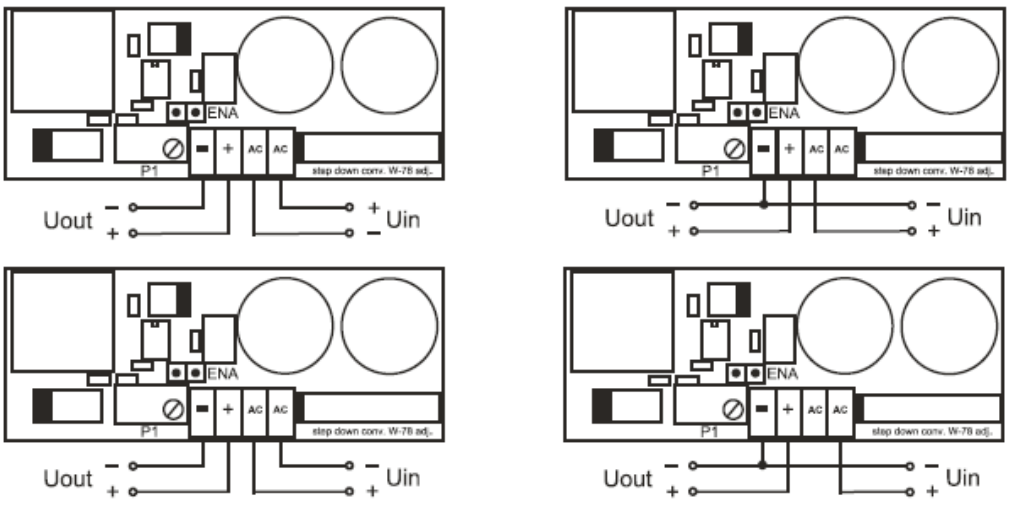
*09/10-MA

Datasheet

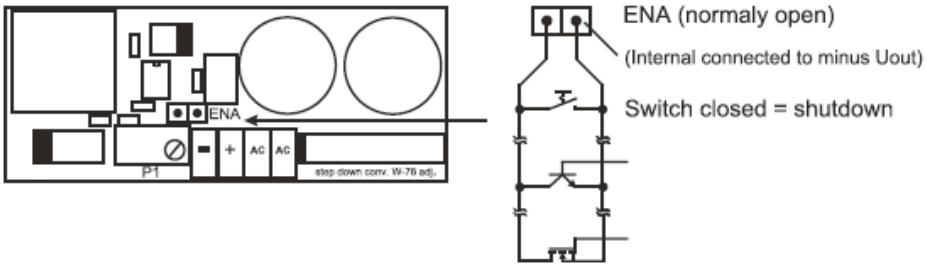
Item no. 1566636

V1_06062018_01_en

Different DC-Input applications:

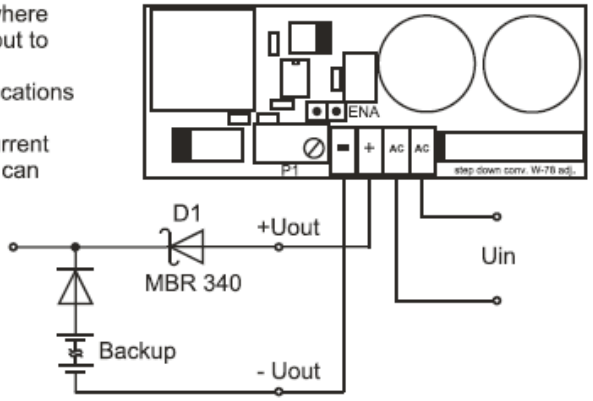


ENA: Different enable / disable shutdown applications:



Reversed output protection:

A danger situation is given in systems where the output will be held high when the input to the W 78-ADJ is absent.
This may occur in battery charging applications or in battery backup systems.
Add a blocking diode (D1) to +Uout if current can flow backwards into the output, this can damage the W 78-ADJ!



Page 2/2