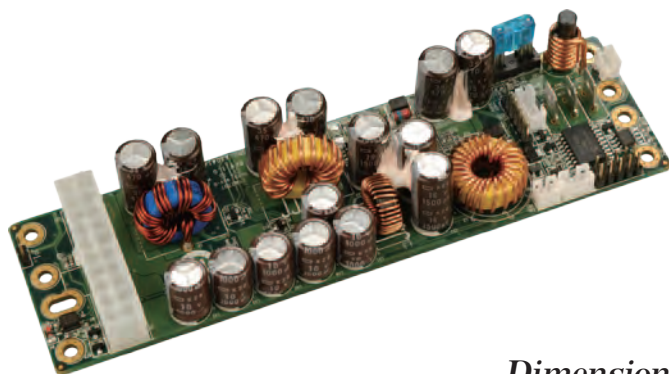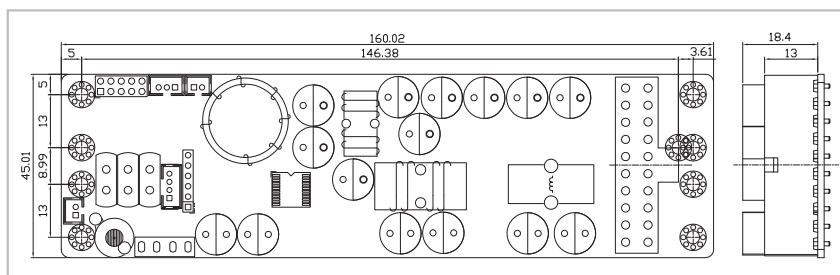# IDDV–6304140A

140 W DC/DC Smart ATX Converter Module for Vehicle

140W

Dedicated ATX power for car PC and battery powered applications

Designed to provide power and to control power on/off switch of a motherboard based on the ignition status.

Dimensions *(Unit: mm)*

160.02
146.38
18.4
13
3.61
45.01
8.99
5
13

Features

1. Wide input range: 6-30 VDC
2. Smart system on/off control
3. Six selectable power on/off timing modes
4. Load down protection
5. Over voltage protection
6. Short circuit protection
7. Over current protection
8. Battery voltage monitor
9. Amplifier on-delay control
10. RoHS compliant
11. Compact size
12. Infrared remote off (optional)

Specifications

- Output (max.): 5 V@10 A, 3.3 V@10 A, 12 V@4 A, -12 V@0.15 A & 5 VSB@1.5 A
- Max. total output: 140 W
- Input: 6 VDC to 30 VDC
  Min. input operating voltage: 5.7 V
  Max. input operating voltage: 30 V
- Deep-discharge shut down voltage: 10.6 V
- Startup voltage: 8 V
- Efficiency: up to 90%
- Dimensions: 45 mm x 160 mm
- Weight: NW: 118 g
- Operating temperature: -20ºC ~ 85ºC
- Storage temperature: -25ºC ~ 90ºC

Pout

100%
85%
70%

55ºC 70ºC 85ºC   Temp. ºC
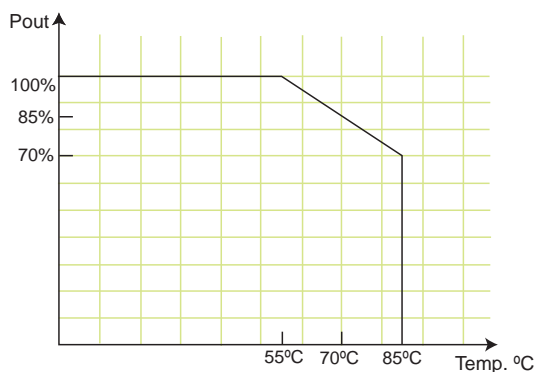
■ Pin Assignments

Input Power Connector

CN15	Batt (+)
CN16	ACC ON
CN17	Batt (-)

Output Power Connector

J1	Standard 20-pin ATX

■ Wire Harness Selection Guide

SBC Main Power (J1)

PN: CB-ATX20PIO-RS
20-pin ATX to 20-pin ATX / SATA / HDD cables

Input Power Connector (CN15, 16, 17)

PN: CB-BATACC-RS
Wire to battery and ACC on

Packing Information

1 x IDDV-6304140A
1 x QIG
1 x Wire cable for PWR/SW and MB/SW (P/N: 32100-153400-RS)
1 x Wire cable for LED /AMP (P/N: 32100-153500-RS)

Ordering Information

Part No.	Description
IDDV-6304140A-R10	140 W DC/DC 6-30 VDC input, vehicle converter module
CB-ATX20PIO-RS	30 cm, 20-pin ATX to 20-pin ATX / SATA (20 cm) / HDD cables
CB-BATACC-RS	30 cm, wire to battery and ACC on

1 Industrial Computing Solutions

2 Video Capture Solutions

3 Embedded Computing Solutions

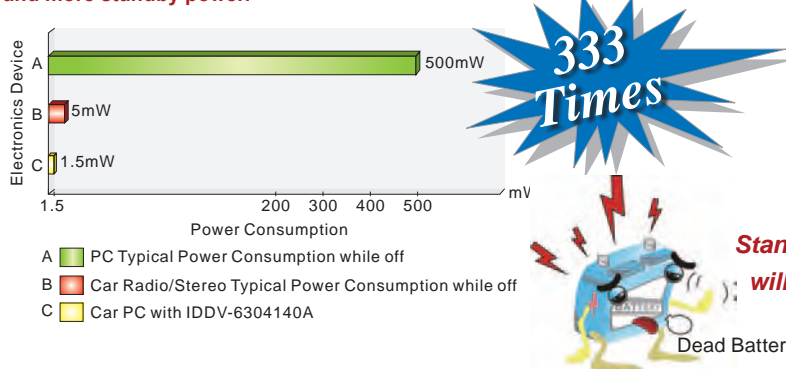**4** Automation Control

5 ORing Network Communication

6 Power Supply/ Peripherals

7 Panel Solutions Introduction

■ PCs Still Consume Power While Off

A typical PC consumes 500mW of power when the system is powered off. The current computer market trend demands more and more standby power.

333 Times

- A PC Typical Power Consumption while off
- B Car Radio/Stereo Typical Power Consumption while off
- C Car PC with IDDV-6304140A

Standard ATX Power Supply will Drain the Car Battery!

Dead Battery

How the IDDV-6304140A work to keep your battery alive.

Step1. Ignition=Off
The IDDV-6304140A cuts off all the power rails including 5VSB, internal µP power consumption keep less than 1.5mW.

Step2. Ignition=On (ACC On)
The IDDV-6304140A waits for 10 seconds then turns on the 5VSB rail.
Auto On (jumper selectable) - After 1 sec. The µP sends an "ON" signal to the motherboard via the two wires connected to the motherboard's on/off pins.
Manual On (jumper selectable) - Nothing happens until the power button on the IDDV-6304140A is pushed.

Step3. Ignition=On
During driving: acts like a regular PC, turns on/off anytime by pushing the on/off button.

Step4. Ignition=Soft Off.
The IDDV-6304140A waits for "10~40" seconds (jumper selectable) and then µP sends a signal to turn off the motherboard. The computer should turn off gracefully during the shutdown procedure. During this period, normal power will be available for the system to perform normal shutdown.

Step5. Ignition=Hard Off.
5VSB is still available for 0 seconds, 45 seconds, 1 hour, or never (jumper selectable) before being cut off by µP. At this stage, the system will keep minimum power consumption so that the system won't drain the car battery.

■ 12V Battery Vehicle Load Dump Transients

'Load dump' transients occur when a battery is disconnected from the charging system during charge. The alternator, with a finite response time of 40ms to 400ms, generates power with nowhere to go. This damages electronic devices.

12V System
Load Dump Transients
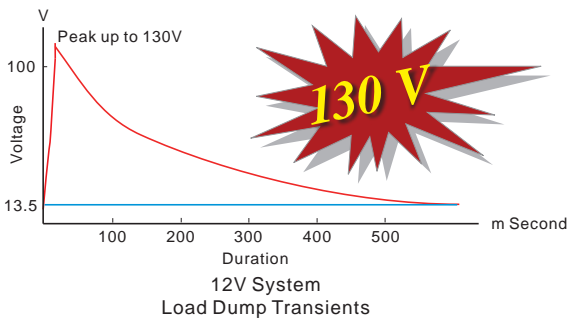
130 V

Load dump transients typically reach peak voltages of 130 volts in 12 volt systems with relatively slow rise times.

EMI sprays and RFI sparking is everywhere. Electrical transients run zapping embedded electronics. Electronics located in a vehicle must withstand 600V transients and "load dump" situations.

■ IDDV-6304140A Wiring Diagram

MB On/Off Timing Mode Selector
Stereo Amplifier Enable
IR Sensor
LED

KINO Series

MB On/Off Button

IDDV-6304140A

20-pin ATX
5Vsb

ACC ON

Internal µP Control
5 Vsb On/Off

System On/Off Switch

Ignition

Mini-ITX Board

Sidebar navigation:
1 Industrial Computing Solutions
2 Video Capture Solutions
3 Embedded Computing Solutions
4 Automation Control
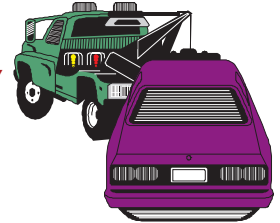5 ORing Network Communication
6 Power Supply/ Peripherals
7 Panel Solutions Introduction