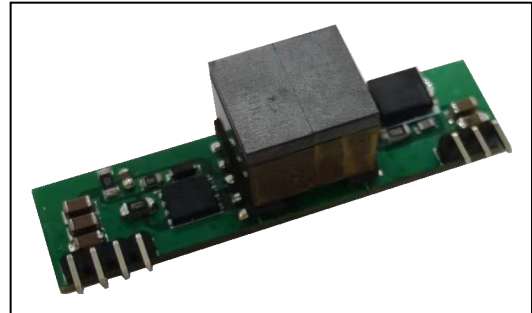


DESCRIPTION

52V Boost Converter Module (Isolation Type)



FEATURES

- Small SIL package
- Suitable for IEEE802.3af/at compliant PSEs
- Industrial Temperature
- High efficiency (>92%)
- Input voltage range 10V to 30V
- Minimal external components required
- Short-circuit and Thermal protection
- Adjustable Output (44V to 56V)
- 1500V isolation (input to output)
- **Sdapo** “design-in” assistance

2. Description

The DP7200 module is a low noise DC/DC boost converter, designed to generate the higher voltages required for IEEE802.3 PSE applications from lower voltage supplies. This module provides exceptional efficiency (>92%) while providing full compatibility with the IEEE 802.3af/at power and isolation requirements.

The module accepts a wide DC voltage input range, from 10V to 30V. The input voltage is then boosted to generate the higher voltages required to power any IEEE802.3af/at PSE circuits (including those supplied by **Sdapo**). The DP7200 provides a regulated adjustable output, of between 44V and 57V.

DP7200 has been designed to provide an ideal solution for powering the **Sdapo** DP6100 PSE module from a vehicle battery, 12V plug-top PSU or other commonly available power supplies. Its low cost, small footprint, high efficiency and in-built isolation make it an extremely versatile DC-DC boost converter for a wide range of potential applications.

1 Product Overview

1.1 DP7200 Product Selector

Part Number	Output Voltage	Maximum Output Power *
DP7200	44V to 55V	30 Watts

*At 25°C with $V_{IN} = 12V$

Table 1: Ordering Information

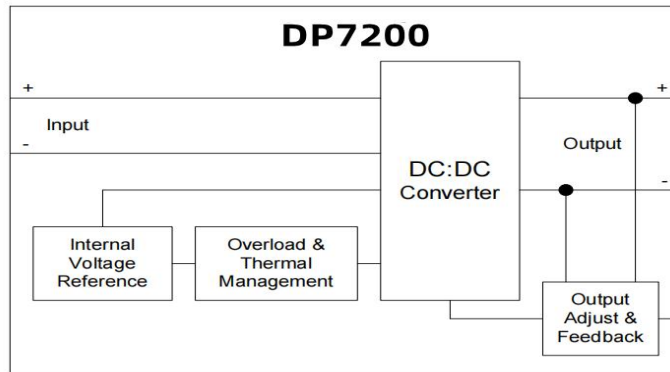


Figure 1: Block Diagram

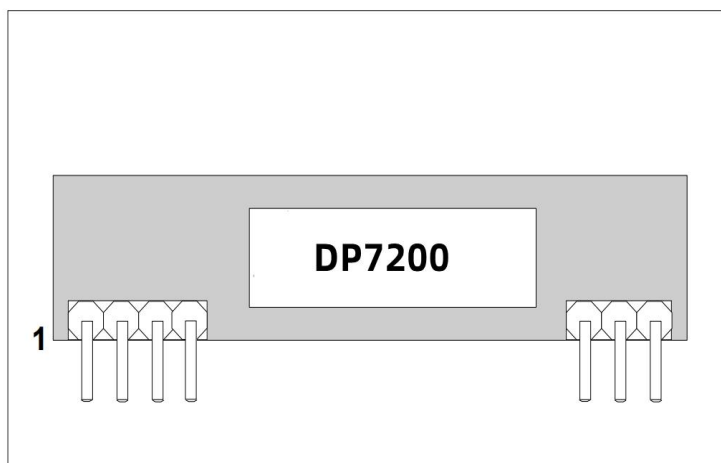


Figure 2: DP7200 Package Format

1.2 Pin Description

Pin #	Name	Description
1	VIN+	Direct Input +. These pins connect to the positive (+) output of the power supply.
2		
3	VIN -	Direct Input -. These pins connect to the negative (-) output of the power supply.
4		
5	-VDC	DC Return. This pin is the return path for the +VDC output.
6	ADJ	Output Adjust. The output voltage can be adjusted up or down from its nominal value of 52V. This can be done by connecting an external resistor from this pin to the – VDC or +VDC pins.
7	+VDC	DC Output. This pin provides the regulated output from the DC/DC converter.

Table 2: Pin Description

2 Functional Description

2.1 Typical Connections

The DP7200 has a wide input voltage range of 10Vdc to 30Vdc; as shown in Figure 3.

Depending on the length of lead and decoupling of the power supply being used the customer may need to connect an electrolytic capacitor across the DP7200 input which will reduce the ripple from the supply.

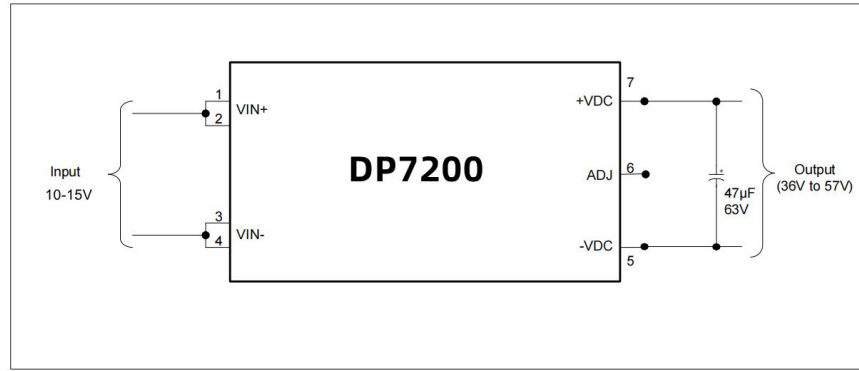


Figure 3: Typical Connection Diagram

2.2 Output Voltage Adjustment

The DP7200 series has an OADJ pin, which allows the output voltage to be increased or decreased. Figure 4 shows how the ADJ pin is connected.

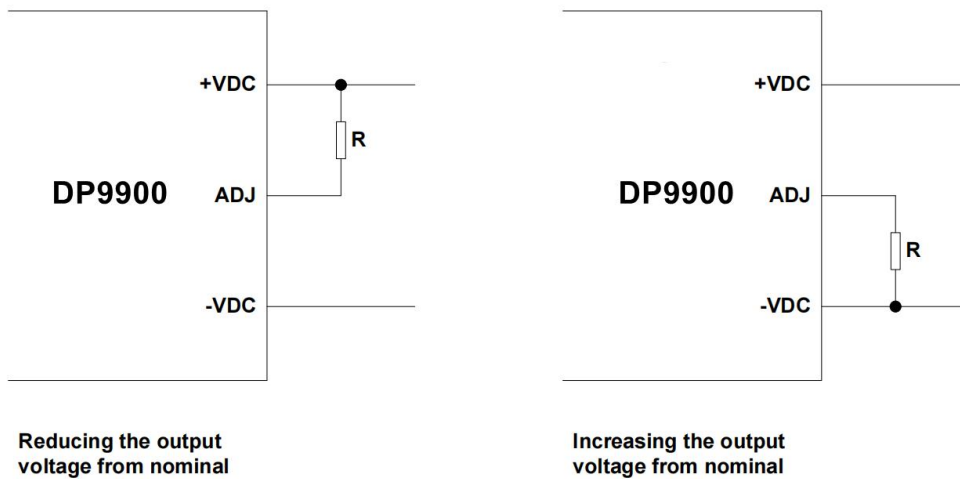


Figure 4: Output Adjustment

Reducing the output voltage, connect R between ADJ and +VDC	
Value of R	DP7200 Output
470K	44.7V
1M	48.3V
Increasing the output voltage, connect R between ADJ and -VDC	
Value of R	DP7200 Output
0 Ohms	56V

Table 3: Output Adjustment Resistor (R) Value

2.3 Typical Connections

The DP7200 requires minimal external components as shown in Figure 5.

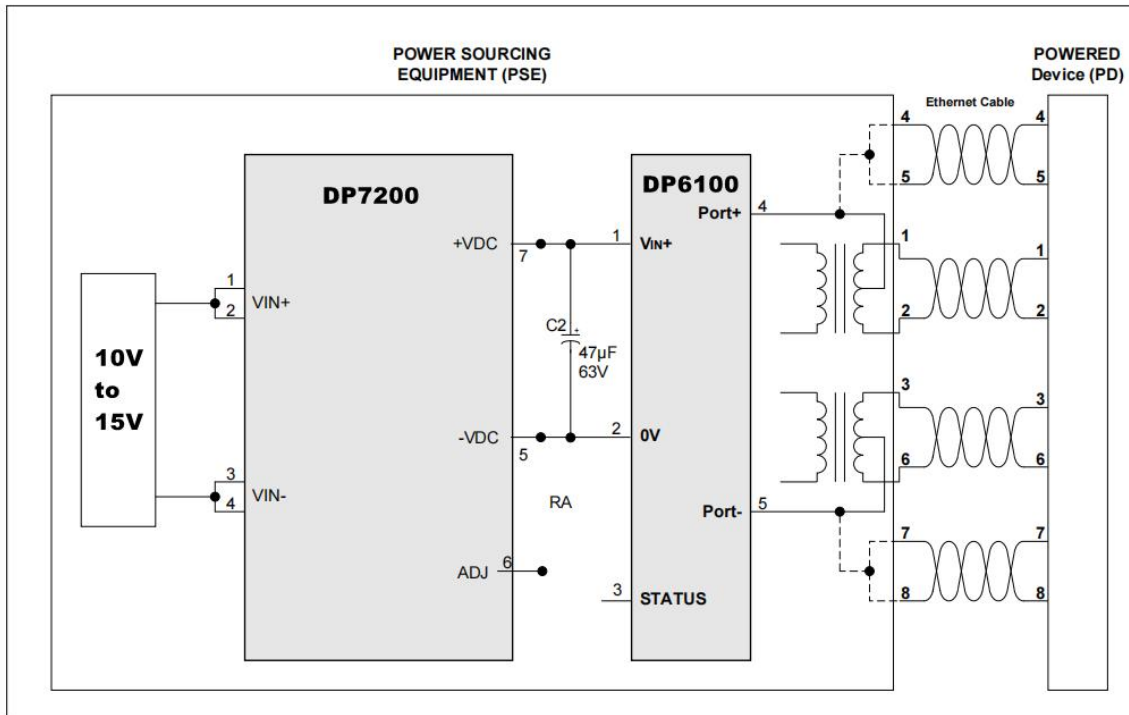


Figure 5: Typical Connection Diagram

3 Electrical Characteristics

3.1 Absolute Maximum Ratings

	Parameter	Symbol	Min	Max	Units
1	DC Supply Voltage	V_{CC}	10	30	V
2	Surge Voltage at Output (for 1ms)	V_{SURGE}	-0.6	80	V
3	Storage Temperature	T_S	-40	+100	°C

3.2 Recommended Operating Conditions

	Parameter	Min	Typ	Max	Units
1	Input Supply Voltage	10	20	30	V
2	Operating Temperature	-40	25	85	°C

3.3 DC Electrical Characteristics

	DC Characteristic	Sym	Min	Typ ¹	Max	Units
1	Nominal Output Voltage	+VDC	50.5	52	53.5	V
2	Peak Output Power	I_{LOAD}			30	W
3	Line Regulation	V_{LINE}		0.1		%
4	Load Regulation – Min to Max	V_{LOAD}		0.1		%
5	Output Ripple and Noise 2	V_{RN}		200		mV _{p-p}
6	Peak Efficiency	EFF		92		%
7	Short-Circuit Duration	T_{SC}			∞	sec
8	Isolation Voltage (I/O) - Impulse Test	V_{ISO}			1500	V _{PK}

Note 1: Typical figures are at 25°C with a nominal 52V supply and are for design aid only. Not Guaranteed

Note 2: See Figure 3

4 Package

