



Sensors



Switches



Controls

Application notes



Application Note : July 2020

Market involved : EV battery chargers

Product : SPMA series

Customer : OEMs

Subject : Ultra-compact power supply design for EV charging stations

CUSTOMER ISSUE :

Electric car sales are on the rise and as a consequence there is a higher demand for charging stations.

The components within the charging station need a power supply with a voltage output of 24 VDC, power output of 15 W with a high level of safety for the final user.

Space within the charging station is at a premium and therefore components need to be as compact as possible to facilitate installation. The maximum width allowed for a 15 W power supply is < 20 mm.

Since EV chargers are typically installed outdoors, power supplies used in these applications need to have a wide operating temperature range.

OUR SOLUTION :

The SPMA24151 is the solution for these types of application.

This power supply provides 24 VDC voltage output @ 0.63 A current output resulting in 15.1 W power output. The SPMA24151 has an ultra-slim design and is just 17.8 mm in width (1 DIN size).

Furthermore, the SPMA24151 meets the 4 kVAC isolation voltage requirement, in Isolation Class II.

The SPMA also comes with integrated protection functions to safeguard the power supply operation even under abnormal conditions. Such protections include: Over Current (OVC), Over Voltage (OVP) and Short Circuit (SCP).

The SPMA meets a wide range of industry standards: CE, UL508, UL 62368, UL1310 Class 2 , UL121201 Class1 Div 2.

BENEFITS :

- Tailored for EV battery chargers
- 24 VDC/15 W in 1 DIN module (width 17.8 mm)
- Insulation voltage 4 kVAC with Isolation class II
- Self-protection under abnormal conditions
- Less heat dissipation in control panel with high efficiency up to 89%
- Resistant to harsh temperatures
- Universal AC input range 85~264 VAC, or DC input range (120 VDC to 350 VDC)