

## CASE STUDY:

# ENSURING DEPENDABLE POWER SUPPLY FOR PORTABLE MEDICAL VENTILATORS



## AT A GLANCE

### Requirements

- ✓ Must operate in home environments and post-acute care facilities
- ✓ Must accommodate up to 5 hours of continuous use on a single charge
- ✓ Input voltage range of 80VAC to 264VAC at 47-63Hz & 400Hz
- ✓ Options for Class I & II inputs
- ✓ Output voltage of 15V+/-5% maximum output current of 10A

### Benefits

- ✓ Power supplies can efficiently operate within an input voltage range of 90 to 264 VAC, with a frequency of 50-60Hz
- ✓ Meets medical safety certification IEC 60601 3rd Ed, Amend 1
- ✓ BF Leakage and 2 MOPP
- ✓ Operates in temperature range of -10oC to +70oC
- ✓ Features exceptional efficiency reaching up to 89%



## OVERVIEW

A leading portable ventilator manufacturer approached Astrodyne TDI

with an innovative vision for the next generation of medical devices. They were seeking a power solution that could match the advanced functionality of their turbine-based ventilator, a compact and portable solution that operated without the need for external compressed gas resources.

## POWER CHALLENGES

The ventilator is designed to cater to a wide range of settings, from home environments to post-acute care facilities, serving both adults and children with ease. This device has a dual Lithium battery pack and prioritizes portability and convenience, providing up to 5 hours of continuous use on a single charge. Its power requirements include an input voltage range of 80VAC to 264VAC at 47-63Hz & 400Hz, options for Class I & II inputs, and an output voltage of 15V+/-5%. In addition, it boasts a maximum output current of 10A delivered through a specialized output cord with a Lemo connector.

## ASTRODYNE TDI'S SOLUTION

After careful consideration of the project requirements, Astrodyne TDI confidently presents the EDP series of external power adapters as the perfect solution for this innovative system. These power supplies come equipped with the specified output cord, molded ferrites, input wire bale IEC lock, and custom packaging tailored to meet the power demands. The EDP series boasts features such as compliance with Safety: Medical IEC 60601 3rd Ed, Amend 1, BF Leakage, 2 MOPP, operating temperature range of -10oC to +70oC, exceptional efficiency reaching up to 89% at 230 VAC, universal 90-260 VAC input, active power factor correction, Class I/II options, DoE Efficiency Level VI, and full RoHS compliance.