

# AC-DC PSU for a Hematology Analyzer

## INDUSTRY

Life Science - Medical

## SOLUTION

CoolX1800

## APPLICATION

Hematology Analyzer

## CHALLENGE

A global operating manufacturer in the diagnostics and life science industry contacted AE to require an AC-DC power supply that powers different parts of their Hematology analyzer with various output powers and voltage requirements as follows:

- 12 V/240 W for preamps and fluid drivers
- 24 V/240 W for CBC, IFM fluid pumps, and heaters
- 3.3 V/182 W for high-end computer circuits
- 12 V/480 W for high-end computer circuits, high-end display, and power Ethernet switch
- 5 V/155 W for high-end computer circuits and fluid controls

## SOLUTION

The customer was unsure which PSU in particular would fit their requirements, as they had not yet fully defined their final power requirements when they first approached AE. AE's Field Application Engineers reviewed the system loads, and noted that some of these would have short duration of peak power (pumps). Because of this, it was advised that they characterise their true average and peak power needs.

Initially the CoolX1800 was selected for this testing phase. Its low line power capability ensured that the customer could characterise the system under all operating conditions. Utilising the PMBus communications and control features, the customer was able to monitor and capture the normal and worst case power needs over a variety of operating conditions, such as varying temperature and input voltage. The ability to capture and record this data

in real time actually demonstrated that they would need more power than what they originally believed. Therefore, the CoolX1800 was the ideal power supply for their needs.

However, in previous systems they had challenges in demonstrating system compliance to primary to secondary isolation. In order to have system meet this test and operate, they often had to implement additional paths to ground and isolation transformers. The AE engineering team recommended the G option of the CoolX series. This option allows customers and safety agencies to carry out the full 4KVAC isolation test across the input and output of the power supply. This saved the customer significant time in both their in house testing and their regulatory compliance testing at the external test agencies.

## CONCLUSION / RESULT

The customer got the right fit for their application that featured digital control and communication to monitor in their system. They have found a suitable PSU which works on low line power based on their requirements. This has been supported by the availability of multiple isolated outputs from one PSU which resulted in a compact product. Additionally, system safety compliance was greatly accelerated by using the -G option.



A turning point for the customer was AE's product scope and the overall great support from the engineering team to provide the best-fit product, supporting the customer through all test phases and AE's excellent customer service.



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