



## Eaton PDU powers growth while supporting energy-efficiency

### Product:

Three-Phase Power Distribution Unit with Eaton® 9390 UPS

### Location:

Exeter, R.I.

### Market Served:

Data Centers

*"Of all the things we've implemented in the past 12 months, it was definitely the easiest and smoothest transition."*

*- Scott Moody, corporate technology manager*

### Background

In 13 years, Carousel Industries has become a leading technology consultant and solutions provider with award-winning performance and customer service. It designs, implements and maintains technology solutions such as IP telephony, data infrastructure, unified communications, power and cooling, IVR, wireless, security, and speech applications for small businesses to large enterprises. It also provides a complete range of services, from design engineering, installation and project management to repair, remote monitoring, support agreements and financing.

In the role of technology advisor, Carousel helps customers create a technology roadmap. It does the homework, identifying all the pertinent components to a data center and infrastructure, testing the products, and then partnering with vendors that have proven to be the most stable and reliable, and offer the best support model products. In addition to selling, implementing and supporting customers' technology solutions, Carousel puts them to work in its own environment so team members can speak firsthand about their effectiveness and efficiency. Headquartered in Rhode Island, the company serves customers from more than 20 offices nationwide.

### Challenge

With a history of continuous growth, Carousel found itself in the midst of another growth spurt. To meet new demands, the company needed to expand its data center and add a lab environment where all its business units needing an area to test out new hardware, configurations, etc. could have a testing "sandbox" that didn't interfere with production.

Scott Moody, corporate technology manager, coordinates efforts to design new space and the products to support company growth. "Expanding the data center and adding the lab environment really took us to the next tier, if you will, for power distribution and management," he said.

During the planning, it was realized that 90% of the data center takes one type of voltage while the remaining 10% has other voltage requirements. Carousel needed a hybrid solution that allows flexibility without having to move everything around within the data center to support where power is available.

"The decision, thankfully, when it comes to selecting products, rarely falls in my court," Moody said. "The power and infrastructure team is responsible for servicing, selling and supporting cooling and power solutions for our customers and our selection was based on its recommendations and design. We really followed the process as one of our customers would experience it. We went to them and accepted their recommendation to go with their preferred partner, Eaton."



Powering Business Worldwide

Knowing the chosen power solution had to support the data center and lab, Jonathan Caserta, solutions architect for the power and infrastructure team, first reviewed the current data center systems. Equipment included 12 racks, each with a small UPS at the bottom (2200-3000 VA).

"We needed to do something about our power and didn't really have the need for redundancy or anything like that," Caserta said. "We were looking for something that would shine and showcase what we can do."

## Solution

Caserta and his team recommend the Eaton three-phase power distribution unit (PDU) and the Eaton 9390 UPS. Individually and in combination, the units offer reliability, easy expansion, energy-efficiency, a small footprint, and the ability to monitor and manage everything remotely. They're also backed by Eaton's extensive network of field technicians for fast, reliable service.

The Eaton three-phase PDU offers a scalable solution that meets current needs and easily adjusts for future expansion, something vitally important to Carousel, since it plans to continue its growth pattern. For this industry, a 75 kVA PDU with two 42 cct panel boards with state-of-the-art BCMS was configured. This unit was supported by a floor stand and air skirts to contain the airflow and reduce the cooling waste. For current purposes, the unit effortlessly manages power needs and is the smallest in the industry, so it occupies minimal space. Should growth require adding another unit, replacing the current PXGX card with a PXGX PDP communication card will allow for daisy chaining multiple PDUs, reducing individual network drops to power equipment.

Given that Carousel is in the midst of a power usage effectiveness (PUE) initiative, the energy- efficiency and opportunity for energy savings are appealing. Due to its high efficiency rating, the PDU was configured with a TP-1 transformer, offering >98% efficiency at traditional DC operating loads.

"We recommended the TP-1 because of the high level of efficiency," Caserta recalled. "And, we just thought it would be a great piece of equipment to showcase."

The PDU is packed with an advanced Energy Management System (EMS) that works hand-in- hand with remote monitoring and management. EMS constantly monitors power conditions at branch circuit, sub-feed and main breaker levels, so if loads or environmental conditions exceed defined thresholds, the unit sends an alert so the situation can be addressed before it becomes a critical issue. A state-of-the-art display system is included with the PDU so technicians can always see up-to-the-minute power conditions.

For remote monitoring and management capabilities, the Intelligent Power Management Software Suite (IPSS) gives Carousel all the information needed to monitor down to the breaker level how much power it's drawing. Consumption trends are visible for 24 months. Employees can access a global view of the network from any PC with a Web browser to simply monitor, pull data, make energy adjustments or shutdown equipment remotely.

"It's part of our entire 'let's lower our energy' and really be able to track where our energy is going focus," Caserta noted. "Those are all the reasons we decided to go with the Eaton unit."

## Implementation

The complete implementation process lasted seven or eight months. "We followed the same process our customers would follow with the implementation, testing, support and service," Moody said. "It went really well."

Folks from Carousel and Eaton truly partnered on the front-end of the process to smooth out the actual installation. "We were able to get our electricians and Eaton together in the pre-planning," Moody recalled. "They figured out where we were going to put it, how we were going to distribute the power, and how we wanted it wired up. We have a generator for our facility and they talked through ways to incorporate that, too."

At the point at which the equipment was installed, Moody said, "of all the things we've implemented in the past 12 months, it was definitely one of the easiest and smoothest transitions to do for a lot of different reasons. It was quick and painless."

Caserta echoed that, saying, "The Eaton technicians are great. They all know their stuff inside and out. We really had a wonderful experience getting this thing up and running."

## Results

Since installation, the PDU and UPS have run seamlessly. "From a manager's perspective, I don't have to worry about it," Moody said. "One of the things we liked was that Eaton provided us with a custom PDU, from the layout to the amount of outlets. They were able to sit down and work with us and design to our needs, rather than trying to fit our needs into what was available to us. I would consider that probably being the best part.

"It's simple," Moody continued. "At the end of the day it's not bells and whistles, it's just simple and efficient. It doesn't require us to be power experts to be able to manage and maintain our own consumption in a world where we're constantly changing and our demands on power vary by the hour, not by the day. It gives us that ability."

With Eaton's three-phase PDU and 9390 UPS, Carousel Industries is now able to:

- Continue its aggressive growth pattern with minimal equipment modifications
- Preserve space in equipment rooms
- Remotely monitor and manage all units connected to the system
- Maintain continuous uptime and availability
- Save money on power and cooling costs
- Call Eaton's technical support staff for anytime assistance



**Eaton Corporation**  
Electrical Sector  
8609 Six Forks Road  
Raleigh, NC 27615  
Toll free: 1.800.356.5794  
[www.eaton.com/powerquality](http://www.eaton.com/powerquality)

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