

Smart Compressor Control (SCC) on Rooftop Packaged Unit

Contractor: Inland Mechanical Services
Site: Azusa PD, Azusa, CA

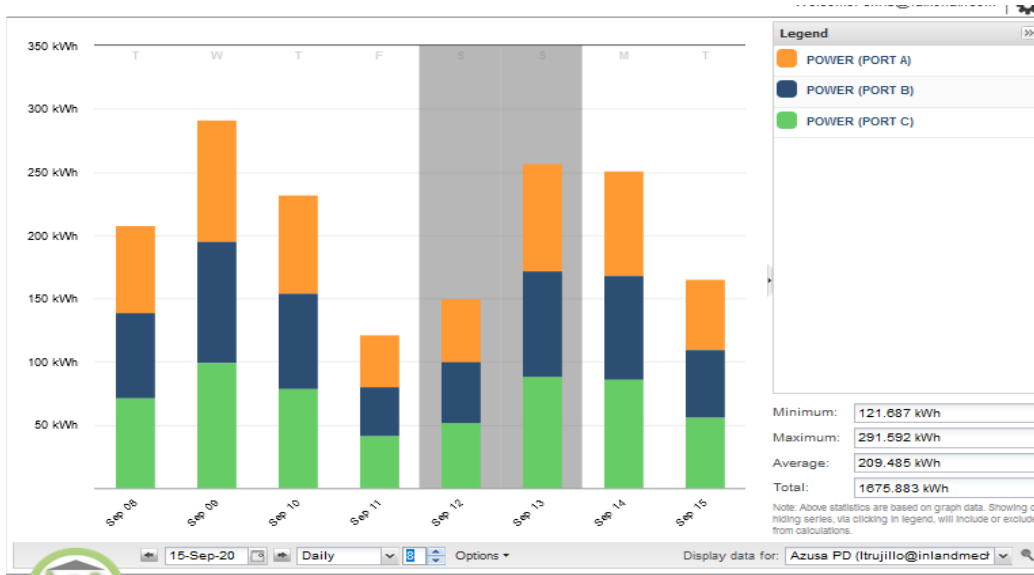


Details of Project: A Falkonair Smart Compressor Control (SCC) was installed in line with a Variable Frequency Drive (VFD) on the scroll compressor on their 25 Ton Rooftop Packaged Unit in September 2020. Prior to the installation, the system was closely monitored around the clock for eight days, collecting detailed data on kWh consumption and ambient temperatures. The post data readings showed that the SCC surpassed energy saving expectations even with unanticipated weather challenges (higher overall temperatures on average). The projections to the customer prior to installation were estimated to be 25%. The post installation data, after eight days of around the clock monitoring, revealed a savings of more than **33%**.



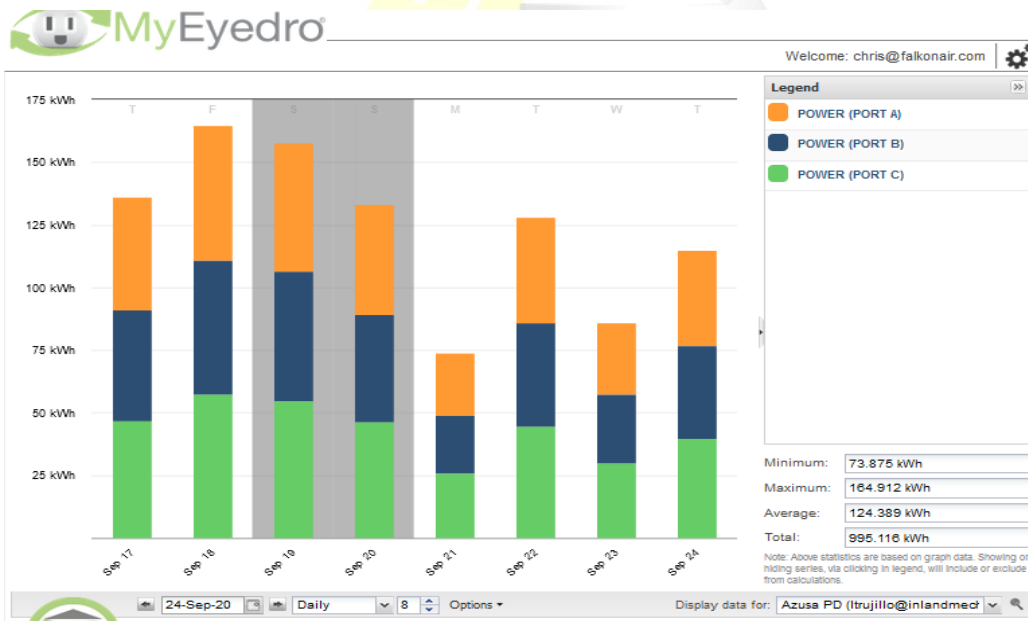
PRE-INSTALLATION ENERGY AUDIT

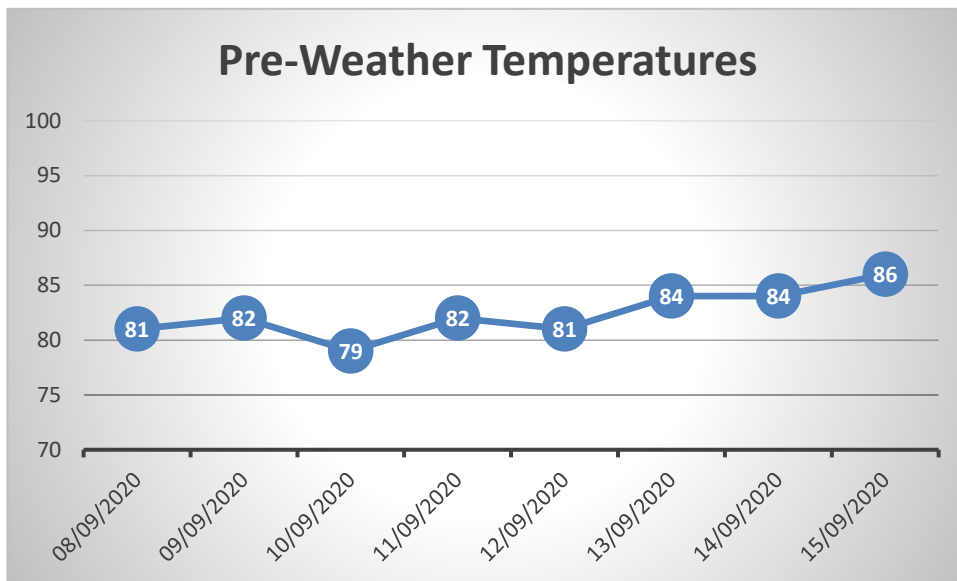
During the pre-installation energy audit phase, the energy usage of the individual Rooftop Packaged Unit system was assessed. During this period, the average consumption of this unit was approximately 209.48 kWh/day.



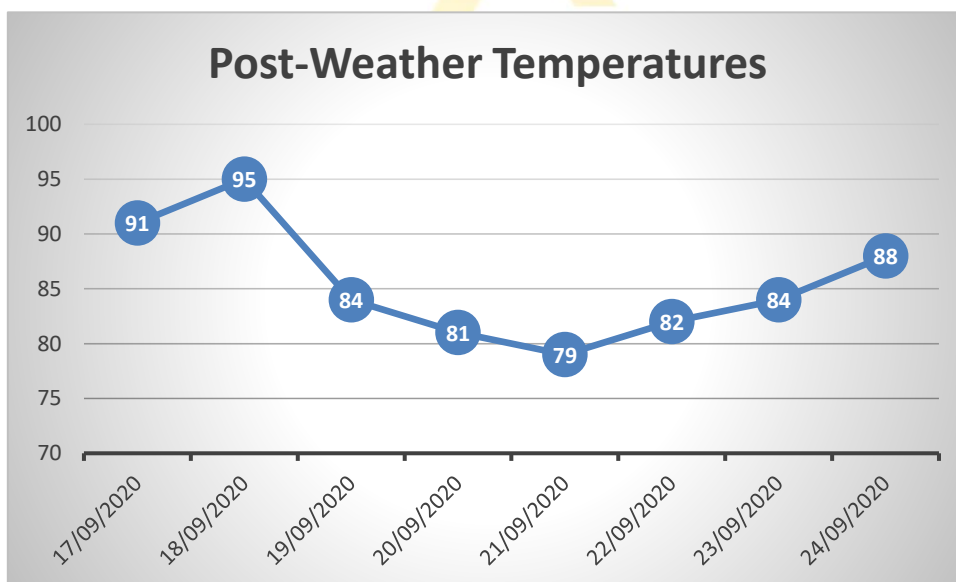
POST-INSTALLATION ENERGY AUDIT

During the post-installation energy audit phase, the energy usage of the individual Rooftop Packaged Unit system was assessed. During this period, the average consumption of this unit was approximately 124.38 kWh/day.





Average Temperature 82°F



Average Temperature 85°F

Summary: The readings clearly show a savings of 41%. The savings percentage has been scaled back from 41% to 33% to reflect projected annual savings. This is done so winter ambient temperature forecasting and consumption can be taken into consideration. Other noticeable benefits since the installation of the SCC include: the compressor now working more efficiently with less short cycling and the customer has also seen an improved humidity comfort level in the building. Since this installation, Inland Mechanical has installed several other projects with the Smart Compressor Control (SCC), and more case studies will follow.

Pre-installation Consumption

Average daily	209.485 kWh
Estimated annual consumption (extrapolated)	73,362.025 kWh.
Approx. annual running costs	\$ 11,004.30

Post-installation Consumption

Average daily	124.389 kWh
Estimated annual consumption (extrapolated)	42,325.825 kWh
Approx. annual running costs	\$ 6,348.87

Overall savings	42.31 %
Cash savings	\$ 4,655.43
Consumption savings	31,036.2 kWh
ROI	2.5 years



“We are always looking at introducing new technologies to further reduce utility spend as this is one of our client’s largest cost. We met with the Falkonair Team to gain an understanding of how the SCC/VFD system could benefit our clients with a conservative projection of 25% and after being presented the technology it made sense to trial. It has been 5 months now and the system is delivering exceeded expectations of savings. We are certainly looking forward to seeing what further savings can be achieved in the height of summer this year...”

Leonel Trujillo, CEO: Inland Mechanical Services