

Success story

Industry: Oil and GAS

PLC
+ HMI
ALL IN ONE™



The Unitronics V560 was a unified solution that was rugged and suitable for an on-road application

Guy Chetrit,
ENGrapted Inc.



How can PLC control make used oil reclamation easier, greener and more efficient?

Summary:

Aaron Oil Company, Inc. is a leader in the used oil recycling and petroleum-based hydrocarbon reclamation sector. They wanted to track gallon amounts of various liquids pumped through a collection truck by analyzing the liquid as it was being loaded onto the truck. A specific set of

I/Os was required, as well as the ability to communicate with other devices on-board, and handle network protocols. The Unitronics Vision560™ met these requirements and more. Using this all-in-one PLC+HMI, Aaron Oil was able to track collections in real time and providing their customers with the fastest, most accurate service possible.

Based in Mobile, Alabama, Aaron Oil Company, Inc. is a leader in used oil recycling and petroleum-based hydrocarbon reclamation. Their goal is to provide safe, reliable and environmentally friendly reclamation service. Towards that goal, Aaron Oil consulted with ENGrapted Engineering Solutions, an engineering and design firm, to develop a new generation route collection truck.

These trucks would drive to customer sites and collect liquid stored at waste tanks onsite. In order to provide the highest quality service, Aaron Oil wanted to be able analyze liquid as it was being pumped onto the truck and track the gallon amounts of the various liquids. This real time analysis is used to route different waste products into the appropriate holding compartments on the truck, as well as tally up individual totals for the various liquids being pumped onboard. Multiple liquids are commonly stratified within a single waste tank at a customer location, some of which might be considered a liability, while others are assets. Aaron Oil needed a control platform on their new trucks that could separate these layers in real-time, in order to provide an honest report and introduce a level of handling efficiency that is second to none in this industry.

They selected a Unitronics Vision560 PLC+HMI, with a V200-18-E6B snap-in I/O module, to handle all of the on-board automation and data collection on the truck. This all-in-one approach offers a powerful PLC with an integrated 5.7-inch color-touch HMI screen and keypad and more than forty points of onboard I/O, including digital and analog options. The Vision560 provides the specific communication features, I/O support and HMI that Aaron Oil needed for their application. The PLC accepted an input from an in-line multi-parameter analyzer, using that information to log the total quantity of each liquid pumped on to the truck and to route them into the correct compartments. It also communicates this data to an on-board PC for real-time invoicing purposes, offering the customer the most accurate gallon amounts. This information is also transmitted in real-time to a central office via secure cellular VPN for accounting purposes. Finally, the data is used, in conjunction with an external GPS-based driver tracking system to promote efficient dispatching and to track driver performance.

The PLC also automates other mission critical decisions and proprietary processes which cannot be replaced by human operation, reducing the likelihood of mistakes due to human error. However, operators can override certain automated tasks depending on their security level.

"The Unitronics V560 was a unified solution that was rugged and suitable for an on-road application," said Guy Chetrit, PE, of ENGrapted Inc. "A specific set of I/Os was required, as well as the ability to communicate with other devices onboard, and handle network protocols. The V560 met these requirements and more. Other benefits of using the V560 PLC were the HMI features, the adaptability of the I/O modules that were compatible with this PLC and the ease of programming."

