VAPOR RECOVERY COMPRESSOR CONTROL

BY BRENT HAIGHT

Murphy by Enovation Controls has introduced its VRU Pro, a new controller designed specifically for vapor recovery applications. Certified for Class I, Division 2 hazardous area operations, the VRU Pro pairs with smaller horsepower compressors in vapor recovery operations and can be used with an electric motor or natural gas engine.

"About two years ago we realized that vapor recovery compressors were becoming more common, thanks in part to more stringent emission requirements," said Roel Rodriguez, Product Manager for Application Solutions at Enovation Controls. "We also recognized that economically, the vapor coming off these tank batteries typically has a high Btu count. A lot of producers have recognized that this is a way to generate more revenue. Looking at our product portfolio, we really didn't have a controller that fit into that market in terms of input/output, size, and even cost. We set out to develop a controller specific for gas compression vapor recovery applications."

The VRU Pro targets tank battery vapor recovery compressors. The VRU Pro controller keeps the compressor in a ready-to-start condition until tank pressure reaches a preset level. At that point, it starts the compressor to recover the vapor and draw pressure back down to the set point, when it then turns off the compressor.

According to Rodriguez, the system also has the ability to facilitate a variety of advanced control capabilities, including automatic speed, recycle, and capacity control through three-way proportional integral derivative (PID) monitoring of suction pressure, discharge pressure, and drive load.

The purpose-developed software utilized by the VRU Pro was created with an emphasis on versatility and ease of use. Operators simply select from preconfigured options using a tactile keypad and 3.8-in. (96.52-mm) monochrome LCD display. The controller features CAN J1939 engine communications with a closed-loop PID algorithm for monitoring and control.

NEW VRU PRO CONTROLLER WAS PURPOSE-DESIGNED FOR VAPOR RECOVERY APPLICATIONS

"The Rosenberg, Texas, USA, panel shop (where the VRU Pro panel is manufactured) specializes in engineering to order," said Rodriguez. "We typically custom-develop software for panels and install it exactly as the customer needs it to be. To do that, it generally adds costs to the control panel because we are custom-engineering each time. To be competitive and keep the costs down, the approach we took with the VRU Pro was to try and fit as many standard features into the unit as possible and allow the operator to activate the features they need. Each VRU Pro panel is built the same and has the same software, but the customer can configure the controller to their application. For example, they can designate the type of driver and the type of compressor right from the keypad or even a laptop."

The VRU Pro is designed to utilize either AC or DC power. The controller is equipped with 18 fit-for-purpose fixed digital, analog, thermocouple, and frequency inputs and nine field-effect transistor and analog outputs. The VRU Pro is rated to operate in temperatures from -40° to 185°F (-40° to 85°C).

"We recognized that the environments in which these controllers go into can be in the middle of nowhere," said Rodriguez. "We made these units suitable for high vibration and extreme temperature. It is NEMA 4 rated, which means it can be mounted to the outside of an enclosure. The faceplate can face the weather."

The VRU Pro offers the option of US imperial or metric units of measure. Software updates are available on the company's website and can be made to the VRU Pro through a USB data stick.

"As emissions restriction on tank batteries continue to increase, vapor recovery applications will be in demand," said Rodriguez. "We will continue to add features as a standard offering as they make sense. This is an off-the-shelf item, but we remain open to options to increase flexibility and improve the experience."