

POWER THE LOOP TECHNOLOGY delivers faster project start-ups

Tiberiu Socaci, business development manager at **Emerson Automation Solutions**, explains how Power the Loop technology is helping technicians perform configuration and maintenance of measurement devices more efficiently



With increasing numbers of measurement devices deployed within process plants to provide actionable operational, safety and reliability data, the technicians responsible for installing, configuring and maintaining them are under increasing pressure. Power the Loop technology, available with the latest handheld communicators, is enabling these tasks to be performed more efficiently, helping to minimise plant downtime and prevent start-up delays.

In the age of the Industrial Internet of Things, within the process industries there is an increasing reliance on devices that monitor the process and plant equipment to provide actionable operational and diagnostic data. As the demand for data grows, the number of devices that need to be managed constantly increases. Greater access to plant-wide data from these devices can provide measurable and significant improvements in the areas of plant and worker safety, regulatory compliance, equipment reliability and process optimisation. However, a proliferation of devices can create increased pressure on technicians with

responsibility for their installation, configuration and maintenance.

There are several challenges, discussed below, that these workers must overcome if they are to perform these tasks as quickly and efficiently as possible.

TOO MUCH TIME SPENT IN A CLUTTERED WORKSHOP

As a consequence of the harsh environments found within process plants, instruments such as pressure transmitters and flow meters will occasionally need to be returned to the workshop for evaluation, maintenance or reconfiguration. For large plants such as refineries that have thousands of devices, this task can be time-consuming and often very inefficient. Just connecting to a specific device in the workshop to check its configuration and functionality can be cumbersome.

With the technician first needing to spend time searching through cabinets to find the right power supply for the device. Then they will need to verify whether the instrument has adequate loop resistance before connecting to it using a device communicator. These

steps take time, especially when you multiply each one by the number of devices being worked on. This can be frustrating if the plant is still operating as normal, but if an outage has been created, this time can also be very costly.

TIME SPENT ON TROUBLESHOOTING AND REPAIRS IN THE FIELD

If a device cannot go to the workshop, perhaps because it is critical to the process and removal might interrupt production. Time is of the essence and any work would need to take place in the field which presents a different set of complications. Although the power supply and adequate loop resistance will be established, what if the problem is the power supply or the wiring to that device?

In a situation where the device is not operating correctly, possibly due to a problem in the surrounding infrastructure, a lot of time can be wasted in the field trying to diagnose even simple issues. Instruments are notoriously difficult to isolate from their surrounding environment, which can result in many wasted hours should the environment turn out to be the issue.

In some cases, discovering what is wrong begins with determining what is not wrong. Problems with power supplies and wiring can be difficult to diagnose without power. However, dragging a separate power supply and loop simulator out into the field just to rule out power issues can be frustrating.

LONG WAITS BEFORE DEVICES CAN BE CONFIGURED

When a new plant or processing unit is being constructed, power is commonly brought to instruments through the control host system. However, before that takes place most of the engineering work must be completed, with plumbing, piping and wiring all typically installed prior to technicians configuring instruments.

In many cases, the instrumentation arrives on site long before the preparatory work is complete and just sits waiting for the rest of the project to

Power the Loop technology enables technicians to perform maintenance tasks more efficiently

be completed. Without power they cannot be configured. When the time finally arrives to configure the transmitters, usually as the project nears its conclusion, the task will often have become a critical path item. With a start-up date looming, device commissioning will often be rushed to prevent a delay. But these devices are almost always critical to the efficient and safe operation of a plant, so rushing this task is never wise.

WHAT TECHNICIANS NEED TO HELP THEM MEET THESE CHALLENGES

To reduce the time taken to repair and configure device on a workbench, it is important for technicians to have the right tools to minimise the external complications of device set-up. Ensuring critical equipment has superior levels of reliability, requires superior tools. The latest technology gives technicians more flexibility in both the workshop and the field, helps them to save time and give them greater confidence about the configuration and repairs they perform on a daily basis.

Because technicians make trips into the field, a lot of the tools they take



Emerson has incorporated Power the Loop technology within its rugged AMS Trex Device Communicator

with them such as hand held communicators must simplify troubleshooting. There is also a need to eliminate unnecessary tools. The ideal scenario is to have the flexibility to configure devices in the field regardless of the infrastructure supporting them. This enables project managers to plan the configuration of devices more effectively, spreading the task across the length of the project and crucially allowing man power to be used for more pressing concerns as a project reaches its conclusion. This helps to keep projects on schedule.

THE BENEFITS OF 'POWER THE LOOP' FUNCTIONALITY

To meet these challenges and help technicians achieve faster configuration and troubleshooting, either in the workshop or out in the field, Emerson has incorporated 'Power the Loop' technology within its AMS Trex Device Communicator. This enables technicians to connect and gain access to instruments without the need for an external power supply or loop simulator. This helps to eliminate many of the challenges we have mentioned, providing much greater flexibility, resulting in greater efficiency.

The ability to power a device in the field means technicians can isolate devices from a potential problem in the

surrounding environment. This allows the technician to rule out common problems such as wiring faults or issues with power and control system I/O or control loop configuration. Equally, when used in the workshop, Power the Loop enables technicians to configure devices in a fraction of the time needed with other communicators.

With Power the Loop, if the instruments are installed, plants do not have to wait for the host system to be installed, or for hardware, I/O and cabling to be run. Instead of waiting on transmitter configuration at the end of a project, technicians can install and configure devices as soon as they arrive, helping to give plant managers greater flexibility in terms of schedule and workforce.

Power the Loop technology is helping to relieve some of the pressure on workers by simplifying and expediting their tasks in the workshop and in the field. By reducing the number of tools technicians need to carry, and helping to take configuration off the critical path, Power the Loop technology helps plants make more efficient use of available man-hours and shorten or eliminate process outages. This results in less downtime, lower costs and increased profitability.

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