



Introducing the newest single-application controllers from CCC!

SERIES 3++ TM

Features & Benefits



- New technology, industrial-grade digital hardware throughout; 100% surface mounted components
- Integrated CPU/IO board, with individually switch-selectable 20 mA or 5 Vdc inputs and outputs and on-board monitoring of power supply voltages, analog outputs, and internal temperature
- Oversized, off-the-shelf power supplies
- Updated front-panel assembly with additional keys and a 4x10 character LCD status screen
- Modbus RTU serial ports can be replaced by Modbus TCP Ethernet ports
- Maximum ambient temperature now up to 60 °C (140 °F)
- Analog input channel-to-channel isolation up to 500 volts, static protection to 4000 volts
- Optional conformal coating of printed circuit boards
- Hazardous area ratings pending

The new Series 3++ Controller family builds on the phenomenally successful and reliable Series 3 Plus product line.

The perfect choice for updating aging Series II, Series 3, and Series 3 Plus systems, Series 3++ Controllers combine the proven control features of Series 3 Plus controllers with the advantages of modern electronic components and an updated operator interface.

Upgrades from Series 3 Plus Systems are especially painless, as no re-engineering, panel modifications or wiring changes are needed. The new controllers are true drop-in replacements!

As with their predecessors, Series 3++ Controllers are also a great choice for new applications and retrofits.



Ideal for Series 3 Plus Upgrades

Even the most reliable electronic devices are more apt to fail after many years in service. Replacement is thus advisable to head-off problems with aging control equipment in critical service applications. In situations where no change in control strategy is required and no additional functionality is desired, a simple hardware upgrade is often all that is needed. New Series 3++ Controllers are the perfect replacement for aging Series 3 Plus units. To make the process as simple as possible, they have been designed as a "plug and play" hardware upgrade. In fact, the old circuit boards and front panel can be replaced without removing the case or rewiring the field I/O, serial communication, and power connections. No wiring to change, no new panel cutouts - it's drop-in simple!



This easy-to-implement approach doesn't stop with the hardware - the controller software and configuration methods are virtually unchanged as well. Parameter settings can thus be read from your Series 3 Plus Controllers and downloaded to their Series 3++ replacements. Few if any changes are ever needed, and then only to customize new features. The loadsharing and other peer-to-peer features of Series 3++ Controllers will also interact seamlessly with those of Series 3 Plus Controllers, thus ensuring a smooth transition when upgrading or expanding existing networks.

Designed for Reliability

The Series 3++ Controller has been designed to exceed the already impressive reliability of its Series 3 Plus predecessor.

In addition to employing updated components, state-of-the-art manufacturing techniques, and reliable, off-the-shelf power supplies, the following on-board diagnostics have been added:

- All analog outputs have integral read-back loops to identify hardware or field wiring problems
- A built-in sensor alerts plant personnel if the temperature inside the case exceeds acceptable limits;
- The performance of the power supplies and all DC/DC voltage converters are internally monitored.

Faster, More Flexible Set-Up & Commissioning

Other Series 3++ improvements can simplify the set-up and commissioning of new systems:

- Each analog input and output can be independently switch-selected as either a 4-20 mA current-loop or 0/1-5 Vdc voltage circuit, thus accommodating a mix of process condition transmitters and final control element transducers;
- Precision circuitry means no field calibration of those analog I/O circuits is ever needed, saving time during loop checkout.

Available Configurations

Series 3++ Controllers are available in a variety of configurations to accommodate any type of installation:

Sleeve-mount Controller

A complete compressor controller consisting of a case (sleeve), front, engineering and back panels, CPU/IO board, and power supply assembly; or a steam turbine controller that also includes an Auxiliary PCB (speed board) and separate field termination assemblies (optional). Perfect for new applications, Series II and Series 3 Controller replacement, or Series 3 Plus system expansion.

Plate-mount Controller

CPU/IO, optional speed board, back panel assembly and power supply assembly mounted on a plate; with remote mountable front panel/engineer panel assembly.

Series 3 Plus Upgrade

This hardware "plug and play" retrofit option for Series 3 Plus sleeve-mount serial Modbus controllers includes only the new CPU/IO board, front panel/engineering panel assembly, and power supply assembly. Items not included are the case, back panel assembly, or turbine FTA's. Either in-house engineering software review or review by on-site field engineer is recommended.

Ethernet Option

Sleeve-mount compressor controller with the Port 3 & 4 serial port terminals replaced with Modbus TCP Ethernet back panel assemblies.

Note:

With the exception of the Modbus Ethernet option, Series 3++ and Series 3 Plus Controllers have identical removable field-wiring terminals strips. So, when replacing a Series 3 Plus unit, you can simply unplug the I/O and serial port terminal blocks and transfer them to the replacement, thus simplifying the upgrade process and eliminating the risk of rewiring errors.



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