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Peer-to-Peer Communications with CTC's 5300 Controller

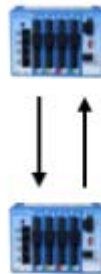
Peer-to-peer communication allows a Model 5300 controller to monitor (read) and change (write) a remote CTC controller's registers (variables), over an Ethernet network. The 5300 controller can act as a master or a remote on the network (CTC controller models 52xx, 51xx, and 27xx controllers with a 2717 can only act as remotes).

How are peer-to-peer communications useful in the field? You can use them to:

- Synchronize operations between multiple controllers
- Allow an HMI on the master to monitor and change functionality on a remote controller
- Provide a central point for data logging
- Add a 5300 controller to an existing system with older model CTC controllers

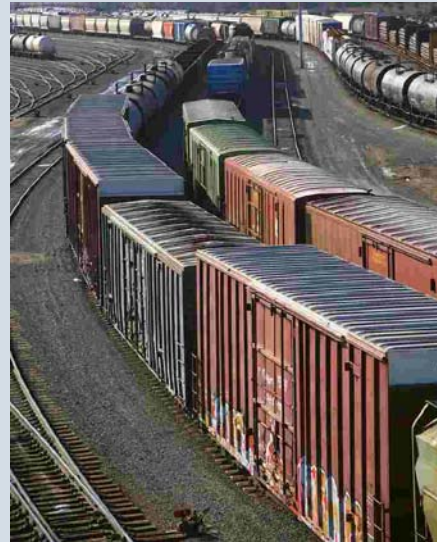
How does it work?

Based on a high-speed communications mechanism called CTC Binary Protocol, the 5300 can read and update up to 50 remote registers from another 5300 typically within 2.5 ms of a request; and write one remote register in less than 20 ms. Register update times may vary depending on network traffic, communication settings, and how fast the remote device can fetch the requested data.



CTC Binary Protocol provides a simple way for a master 5300 to monitor and control functionality on remote CTC controller(s). Designated registers on the remote controller are made public and a copy of their contents is periodically transmitted across the network to the requesting controller(s). The update scan time is configurable and the registers may be read from or written to in a manner similar to

Featured Article



Advanced Automation Products (AAP) has worked closely with CSX headquarters for over four years on various automation projects. As a leader in the transportation industry, CSX is centered on its core competencies in rail transit. Safety and security are driving forces in CSX's technology development. This is the area where AAP has brought in the Blue Fusion controller series.

Remote monitoring and status reporting on systems deployed throughout the CSX system have been high priorities for CSX's management team. The 2001 terrorist attacks heightened the urgency for development of a more closely knit security and monitoring network. CSX's system spreads from upstate New York to Corpus Christi, Texas, and many facilities are in remote areas such as hump yards, where boxcars are linked together with an engine for deployment.

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Just for the fun of it...

regular registers or variables on the master controller. Multiple 5300 masters are supported on the network.

The 5300 can also map a group of registers from a remote controller to registers in the 5300. Up to ten register groups can be mapped, and groups can come from the same or different remote controllers. Each group can access up to 256 registers in the remote controller(s). However, a maximum of 2000 total registers can be mapped by a given master.

The registers in the remote controller can be consecutive or randomly located. Once the mapping is set up, the registers in the master controller automatically update with the remote data at the update rate (typically set to 100 ms). Writes from the master are sent out on-demand one at a time when the value is changed on the master. The master communicates to the remote controller(s) over a standard Ethernet network connecting directly to the Ethernet ports on the remote controller(s).

View the full [application note](#) with programming examples in both Quickstep and QuickBuilder.

Meet Action Automation



Founded in 1984 by Robert Pompei, Action Automation & Controls, Inc. is the northeast's leading industrial automations solution provider. ISO 9001:2000 Registered and UL 508A Certified, Action Automation specializes in five core competencies: pneumatic assembly, motion control, industrial automation control, oil-less compressors & vacuum pumps and value-added contract manufacturing.

Reach Action Automation at its North Attleboro, Mass. offices at +1 800.783.5161 or contact Karl Chambers directly at karl.chambers@ctc-control.com for technical or sales support.

Attention New Customers: Learn with CTC's Automation Kit!

CTC is making available a complete Automation Kit for new customers to get started using the 5300 controller. Call [your local distributor](#) to learn more and order the kit.

Are you a railroad buff? Test your knowledge of railroad lingo:

An *Air Monkey* is:

- the special wrench for adjusting engine airflow
- an air brake repairman
- name for the windsock traditionally affixed to a steam locomotive

Gladhand means:

- air brake hose coupling
- handshake between stationmaster and engineer signifying a train is cleared for departure
- stowing the bags of a fellow rail passenger as a gesture of good will

The term *pigs* refers to:

- a load of pork
- trailers and containers
- a load of iron ingots

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Our job is to make your job easier!

Sincerely,

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