



CC-Link adds energy management capabilities

Energy management functions have been added to CC-Link, the open automation network technology, to create a combined energy and production management control system. The new CC-Link IE Energy capabilities allow managers to easily monitor energy consumption by individual machines or processes over the same networks they are already using for general control purposes.

CC-Link is a high performance industrial open network technology that handles both control and information data at high speed, to provide efficient, integrated factory and process automation. It is available in a 10 Mbps fieldbus version or an industry leading 1Gbps industrial Ethernet version, CC-Link IE. Both versions offer full determinism and support the new energy management features.

Energy management is now firmly on the agenda of most organizations, particularly manufacturing companies whose energy consumption is usually going to be higher than that of non-manufacturers. In addition to the regulatory and legal situation surrounding energy use, most companies are now realizing energy is no different to any other raw material and efficient use of it is simply good business. There is also social pressure as well as shareholder pressure for companies to be seen to be good "corporate citizens" and doing their part to protect the environment.

A manufacturing plant will include many energy consuming devices, many of which are large electrical loads, such as ovens, conveyors or other heavy mechanical systems, all of which must work in unison to complete the production process. CC-Link IE Energy offers the ability to monitor all of these individually and in real time, allowing optimization of each device to be achieved.

Without CC-Link IE Energy, collecting data from each device and determining how to optimize it would be so complicated as to be impractical. Instead production managers would only be able to consider overall energy consumption and be unable to focus on achieving true optimization in all areas of a plant.

Easily installed using a single cable network, CC-Link IE Energy will control entire production systems (and feed real time production information through to enterprise management IT systems). The new CC-Link IE Energy functions add the additional function on the same network of close and low-cost monitoring of energy consumption right down to the level of the individual device.

A controller connected into the network can then analyze data in real time and issue energy management instructions. An example of this would be to alter the status of a device between on, off and standby modes in relation to scheduled times for shift changeovers, lunch breaks etc. It could also power down devices or switch them to idling mode if they are unlikely to be used for a period of time.

A device like a heater could be adjusted so that its temperature is allowed to drop when it is not in use, but not so much that there would be a production delay when it was next called into action.

Equipment such as pumps, fans and conveyors often waste huge amounts of energy because they run at or near full speed for extended periods, when an analysis of their duty cycle may suggest speed reductions, idling or stops are acceptable for much of the time.

The net result of CC-Link IE Energy is to provide real-time energy visualization level management reports. Combining production and control information with energy information will enable simultaneous cross-optimization of operational control and energy management.

On a purely financial front CC-Link IE Energy can be used to adjust power consumption to prevent it from exceeding contract maximums and thus incurring higher tariffs. Often this can be achieved by switching various pieces of equipment to standby mode, or by setting motor driven equipment to their minimum energy speed when appropriate, thus reducing overall consumption.



Summarised John Browett, General Manager of the CC-Link Partner Association (CLPA), "CC-Link IE Energy is our best example of the CLPA's commitment to continuous development of our technology to provide industry leading solutions. We added motion and safety control capabilities to the network about a year ago. With the additional energy management functions, CC-Link IE Energy is fulfilling its promise to be a single high performance, open Ethernet technology that offers all automation features required by today's applications. In today's highly competitive environment, a technology that simplifies installations and reduces cost will be in high demand. We believe that CC-Link IE Energy's ability to combine multiple control types on a single cable addresses these demands directly."

About the CLPA

The CC-Link Partner Association (CLPA) is an international organisation with over 1,700 member companies worldwide. The partners' common objective is promotion and technical development of the family of CC-Link open network technologies. Over 1,200 certified products are now available from over 250 manufacturers. CC-Link is the leading open industrial automation network technology in Asia and is becoming increasingly popular in Europe and the Americas. The European headquarters is in Germany, with offices throughout the continent. The key details for CLPA's Gateway to China (G2C) can be found at the URL www.cc-link-g2c.com.

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