



# CC-Link

# NEWS

E U R O P E A N E D I T I O N

ISSUE 5

AUTUMN 2003

## Visit the **CLPA** at **Nuremberg**

We will be highlighting the success and strengths of CC-Link at this year's SPS/IPC/DRIVES/ ELECTRIC AUTOMATION Show at Nuremberg, Hall 6, Stand No. 6-219.

**W**ith a 40 square metre stand, we focus on our European partners products and advances in CC-Link technology. The stand will be offering consultancy and advice on all aspects of CC-Link including practical issues, such as CC-Link connectivity, software configuration tools, optimising network performance and general installation advice.

For new members wishing to develop connectivity to CC-Link, free parts kits can be made available to assist with the development of compatible products.



## CLPA Membership still growing

**M**embership of the CLPA has grown by nearly 400% since November 2000, with world-wide membership now over 500. Nearly half these are outside Japan, whereas over 2 years ago it was only 17%.

This rapid increase in membership demonstrates the world-wide acceptance that CC-Link is now enjoying.

As membership of the CLPA has increased, so has the number of CC-Link compatible products, with around 150 added in the last 18 months to reach nearly 500.

There are now more than 1.5 million installed CC-Link nodes in a wide range of Automation applications. CC-Link is particularly suited for Automation control due to its speed (10Mbps) and its inherent highly deterministic method of communication.

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# CC-Link is evolving with an eye to safety!

CC-Link provides both the benefits of reducing wiring and improvement of safety in field networks.

One of the areas attracting much attention is that of securing the safety of personnel around automation I/O, including switches, sensors and power loads. In short, it is the establishment of a high level of production line safety. Large safety control panels and extensive field wiring, however, are problems in establishing a safety network.

The CLPA is now pursuing this high-security performance by developing "CC-Link Safety". In addition to reducing wiring costs

and the amount of field wiring, it makes it possible to use with existing stations and to monitor from the control equipment side.

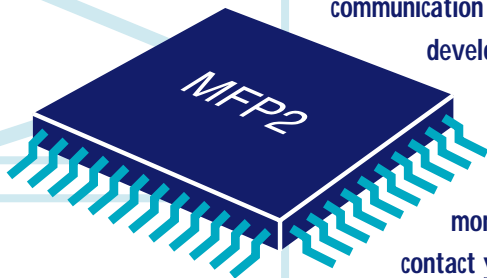
It also incorporates the necessary safety technology that will allow CLPA to request approval and meet the requirements of EN954-1 category 4 and safety standard IEC61508SIL3.

Also, we plan to meet the requirements of the extended safety protocol standard IEC61508 for safety networks. These efforts demonstrate the continual updating of CC-Link technology to provide a truly global, open industrial network that satisfies the needs of the automation marketplace.

## Communication LSI

CLPA offers its partners limited quantities of the CC-Link communication LSI free of charge so that partners can develop CC-Link products and make prototype devices for testing. The communication LSI with built-in communication protocol enables easy development without the

need to understand details of the CC-Link protocol. For more information, please contact your local CLPA office.



### Sample of Communication LSI

- CC-Link dedicated communication LSI (MFP2) for remote I/O station
- CC-Link dedicated communication LSI (MFP3) for remote device station
- CC-Link dedicated communication LSI (CLC21) for remote I/O station

\* These LSI chips are available to "Regular" CLPA members or higher. "Registered" members must upgrade to "Regular" status in order to obtain these devices.

## CC-Link information delivery service: CLPA Plaza

### Subscribe to CLPA Plaza!

"CLPA Plaza" is designed to deliver new CC-Link information to many registrants. We strive to provide useful information. Please use this service to receive CC-Link related information free of charge.

Examples of information available include:

- New CC-Link product information, including the contents posted on CLPA web site.
- CC-Link compatible product information provided by CLPA manufacturer members.
- Information about the CC-Link related events and CC-Link educational seminars.

# CC-Link helps mechatronics company cut start up time to save energy costs

## CC-Link in action

Becatron Mechatronica B.V. of Apeldorn have been a specialist in the mechatronics industry for 15 years. Based on their huge technical experiences they decided to install a CC-Link system to manage energy saving and machine safety for ITS, Europe's largest rewinder of aluminium foils and cling films.

ITS make over 7,000 tonnes of foils per year, produced on over 40 machines in their factory in Apeldorn. Production at ITS has increased by over 20 fold in the last 15 years but they have managed to keep staffing levels the same and overheads to a minimum by investing in the latest automation technologies.

Before the new energy saving system was installed all the machines were stand alone, and every machine needed an operator to start and stop them. With the new CC-Link control system ITS can utilise staff more effectively and now one member of staff looks after a production process, rather than an individual machine.

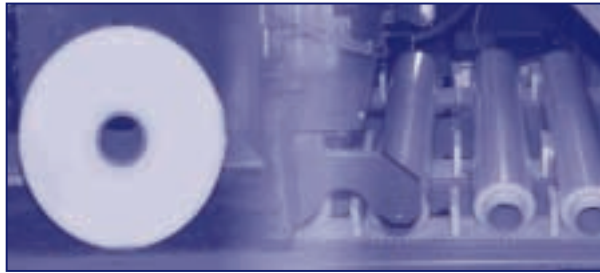
Before starting production the rewinding machines need to build up to their operating temperature. This can take up to 5 minutes per machine. To prevent energy demand peaks the machines must be started consecutively. The start up sequencing of all the machines in the factory was quite complicated and long winded, but with a totally automated procedure any operator errors are now prevented. The machines work 24 hours a day, 5 days a week, and when production targets are met they shut down to save energy.

The purpose of the new installation is the integration of all the machines into one homogenous system. As a bonus, the new CC-link system also oversees the monitoring of the production machines, and can shut down a machine if it is idle too long. A powered up machine that is not producing can also be a potential fire risk, as material can sometimes be stopped halfway through the heating elements of the machines when temperature build up occurs; the new CC-Link system ensures this will never happen.

Machines on the factory floor also need to be periodically shut down for scheduled maintenance, and the CC-link system is flexible enough to incorporate this into the control philosophy by using its unique station offline facility.

Production areas are divided into seven areas of control. Each area has a specific action. The CC-Link system is very simple in concept. Each machine in ITS's factory is connected to a CC-Link I/O module. The CC-Link system then starts and stops the machines in line with production requirements.

The master for the overseeing system is a micro modular PLC, connected to a 4 line text HMI. The HMI allows the maintenance operators to alter any of the switching times of the production machines from a central location.



Over the entire factory 15 systems are connected to CC-link, using 50 I/O stations on a single 4 wire network. RS485 multi-drops were tried at first to connect the machines together, but as more stations and more data for expanded control was needed, a cleaner infrastructure was required.

CC-Link was chosen as it is very fast in its reaction compared to other fieldbus networks, and Becatron are more confident of a CC-link integrated solution than Profibus DP, due to the local noise problems which can occur from the high energy rewinding machines.

Gerrit Beking, Managing Director of Becatron says of the CC-Link system "ITS is a very special customer of ours and we wanted to install a system that would give them a trouble free solution. Since we installed CC-Link it has never stopped working and is extremely reliable. The configuration and start up of the system was very simple, with CC-Link's station auto-detect feature being very useful. We also received a great deal of support from our local automation equipment supplier Getronics, who have helped and advised us on the maximisation of the potential of the new network"

ITS is an environmentally friendly organisation, and have agreed with the local energy supply company that they will reduce peaks in demand, and also to supply profile of their intended consumption to get keener energy process. Using CC-link enables them to minimise energy expenditure and also monitor energy usage. Payback for the new entire system based on lost production time and energy is well under one year.

In the future ITS want to expand the CC-link system and Becatron will set about the task of sending and receiving production data through the CC-link system to the machines, so that ITS management have a real-time production overview. The CC-Link system will also be connected to a SCADA system to enable more management of the production processes, and allow the automatic start of the production line when an order is received by ITS.

Becatron built the new system, including all panel building, installation, and software writing. They installed the new system in only two months with the flexible cabling of CC-link allowing Becatron to make all the installation without interrupting production. Becatron are an official Integrator Partner of Mitsubishi Electric for PLC and Motion products.

# New CC-Link products

## WAGO-I/O-SYSTEM 750



The Wago-I/O-System 750 is a modular, fieldbus independent I/O system which is fully CC-Link compliant, offering 2048 remote I/O and up to 64 stations. High speed communications is an impressive 10Mbps at 100m cable length.

Additional PLC functions can be implemented via a PFC (Programmable Fieldbus Controller) which meets IEC 61131-3 requirements.

## LEONI Cable Terminal



CC-Link Communication Cable  
LEONI Part Number: L45467-Y19-C15  
1. Compliant with CC-Link Specification 1.10, Capable of 10 Mbps Operation

(Beldfoil) Shield with 100% Shield Coverage plus Tinned Copper Braid Shield with about 80% Shield Coverage, 22 AWG (19x34) Tinned Copper Drain Wire, PVC - Polyvinyl Chloride Outer Jacket. Applicable Specifications: in progress

### Features

- Three twisted #20 (7x28) AWG Bare Copper Conductors with Foam High Density Polyethylene Insulation, Aluminum Foil - Polyester Tape

[www.leoni-special-cables.com](http://www.leoni-special-cables.com)

# Members European Branch

## European Vendors

### Pneumatic Valve Manifolds

SMC Pneumatics UK Ltd.  
Vincent Avenue, Crowhill  
Milton Keynes MK8 0AN  
Tel: +44 0800 1382930  
Fax: +44 1908 555064

### Temperature Controller

TC Ltd.  
PO Box 130  
Uxbridge Middlesex UB8 2YS  
Tel: +44 1895 252222  
Fax: +44 1895 273640

### Gateway Devices

Pepperl + Fuchs GB  
77 Ripponden Road  
Oldham, Lancs OL1 4EL  
Tel: +44 161 6336431  
Fax: +44 161 6246537

### Pneumatic Valve Manifolds

Festo Ltd.  
Harvest Crescent, Ancells  
Business Park  
Hants GU13 8XP  
Tel: +44 1252 775000  
Fax: +44 1252 775001

### Local Cell Equipment

Yamato Scale (UK) Ltd.  
5 Maple Park, Lowfields  
Avenue, Leeds SL12 6HH  
Tel: +44 0113 2717999  
Fax: +44 0113 2717012

### Gateway Devices

Bihl & Wiedemann GmbH  
Flobwörthstraße 41  
D-68199 Mannheim  
Tel: +49 621 339960  
Fax: 49 621 3392239

### PCI Cards

Woodhead Connectivity Ltd.  
Factory No.9 Rassau Ind. Est.,  
Ebbw Vale, Gwent  
Wales NP3 5SD  
Tel: +44-1495-350436  
Fax: +44-1495-350877

### Master Computer and PCI Card

NEC (UK) Ltd  
NEC House, 1 Victoria Road  
London W3 6BL  
Tel: +44-208-993-8111  
Fax: +44-208-992-7161  
[www.nec-global.com/office/europe.html](http://www.nec-global.com/office/europe.html)

### Miscellaneous

NAIS/Matsushita Electric  
Works (Europe) AG  
Rudolf-Diesel-Ring 2, 83607  
Holzkirchen, Germany  
Tel: +49-8024-6480  
Fax: +49-8024-648111  
[www.meweurope.com/mew](http://www.meweurope.com/mew)

### Data Acquisition & Computer

Contec Microelectronics  
Europe B.V.  
Binnenweg 4, 2132 CT  
Hoofddorp, Netherlands  
Tel: +31-23-567-3030  
Fax: +31-23-567-3035  
[www.contec-europe.com](http://www.contec-europe.com)

### HMI

Pro-face HMI B.V. Amsteldijk  
166 1079 LH, Amsterdam  
The Netherlands  
Tel: +31-20-6464-134  
Fax: +31-20-6464-358  
[www.proface.com/company\\_e/offices.htm](http://www.proface.com/company_e/offices.htm)

### Automation Products

Mitsubishi Electric Europe B.V.  
Travellers Lane  
Hatfield AL10 8XB  
Tel: +44 1707 276100  
Fax: +44 1707 278695  
[www.mitsubishi.co.uk/automation](http://www.mitsubishi.co.uk/automation)



For more information, contact:

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