

**SIMPLICON**



**Intelligent Distributed Controls**

**SIMPLICON™** provides the ideal control solution for systems requiring distributed intelligence throughout the plant, factory floor or building. Ideal for conveyor control, materials handling, sortation, palletising, intelligent picking and routing.

The **SIMPLICON™** family of industrial intelligent modules are designed to control machine subassemblies or plant sections independently and are then networked together to provide a true multi-processor system solution. **SIMPLICON™** offers unique advantages over traditional single processor platforms at every stage of the project lifecycle.

- No centralised PLC
- Bus type architecture
- No complex wiring
- Intelligent plug-in modules
- No complex programming

## Project Management – Reduce cost, time and risk

Modularity fixes costs and encourages standardisation of designs and documentation, from initial design proposal through to final commissioning.

Modular software eliminates repetition whilst pre-programmed functions provide tested designs and proven performance.

The incredibly easy to use configuration utility removes the dependency and cost of high-level software programming skills and in-depth communications knowledge.

## Design – A simplified approach

Distributing the intelligence throughout the plant provides a programming methodology such that even the most complex machines can be broken down into simple separate tasks, where each task has its own processor relating to the mechanical sub assembly or plant section being controlled.

OEM's are able to provide customised solutions by simply linking modular sections together.

## Programming - Easy to configure, modular, reusable

The **SIMPLICON™** configuration utility (Simplinet) is unique in providing a true multi processor PLC designer, within a familiar windows based project tree structure.

Control algorithms are created in a CAD style drawing package using ladder logic for simple tasks with a library of function blocks for more sophisticated controls using drag and drop functionality.

Individual modules once configured are saved as objects, linked together and down loaded to the target modules remotely or via local programming port.

The ease with which an engineer can navigate through the software means that future maintenance and modifications can be achieved without recourse to the original programmers.

## Build and commissioning – Reduces cabinet size, cabling and commissioning time on site

Plant sections and machine sub-assemblies may be factory wired and tested even before shipment reducing installation time on site and eliminating the need for individual I/O checking during commissioning.

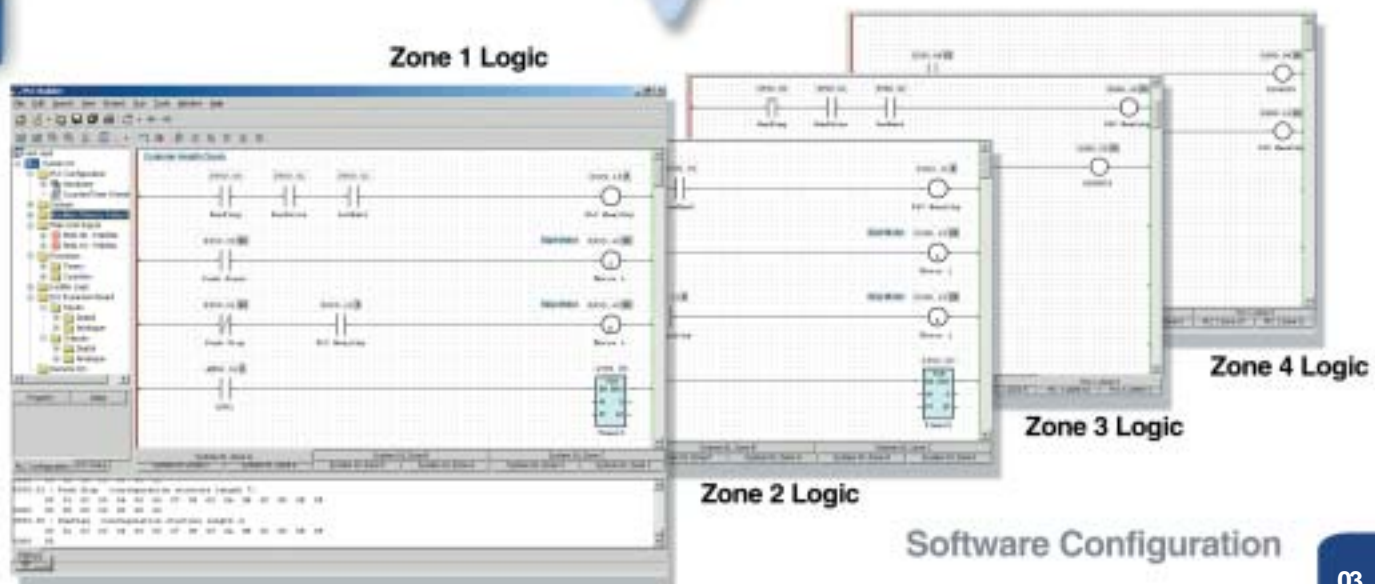
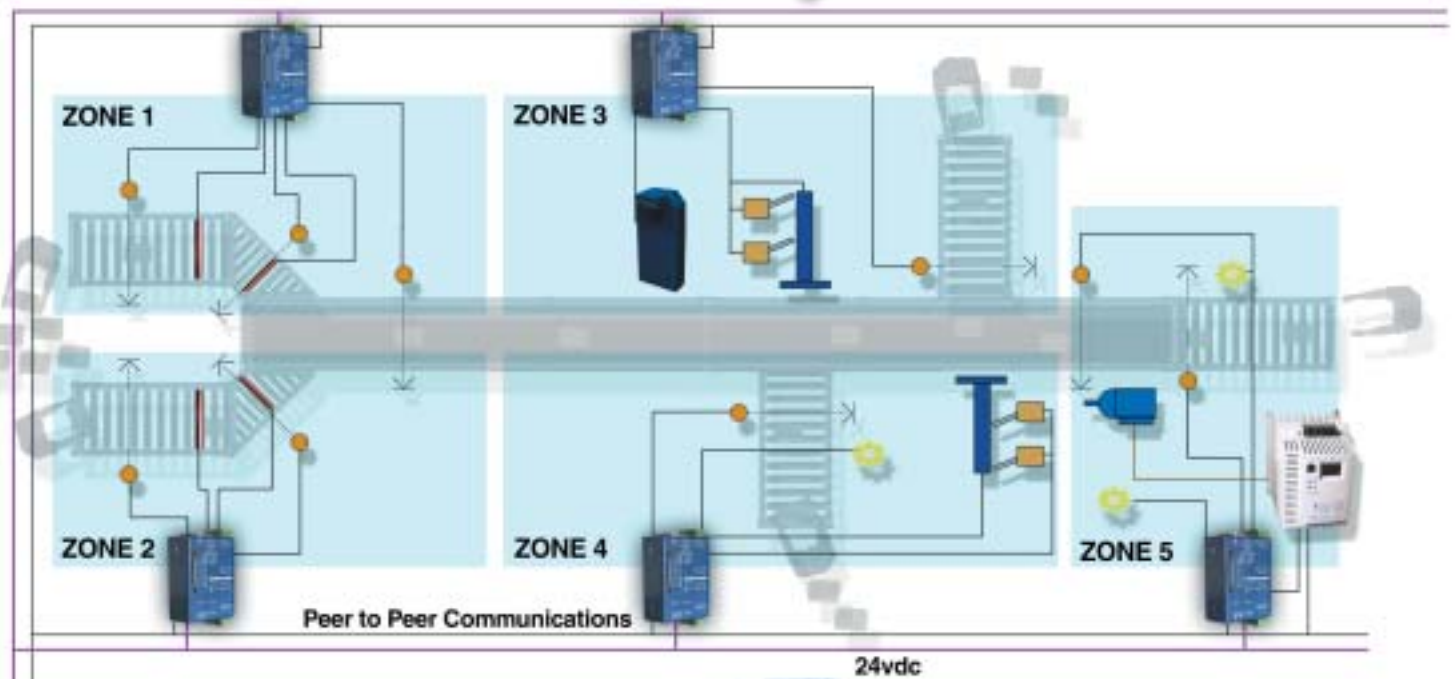
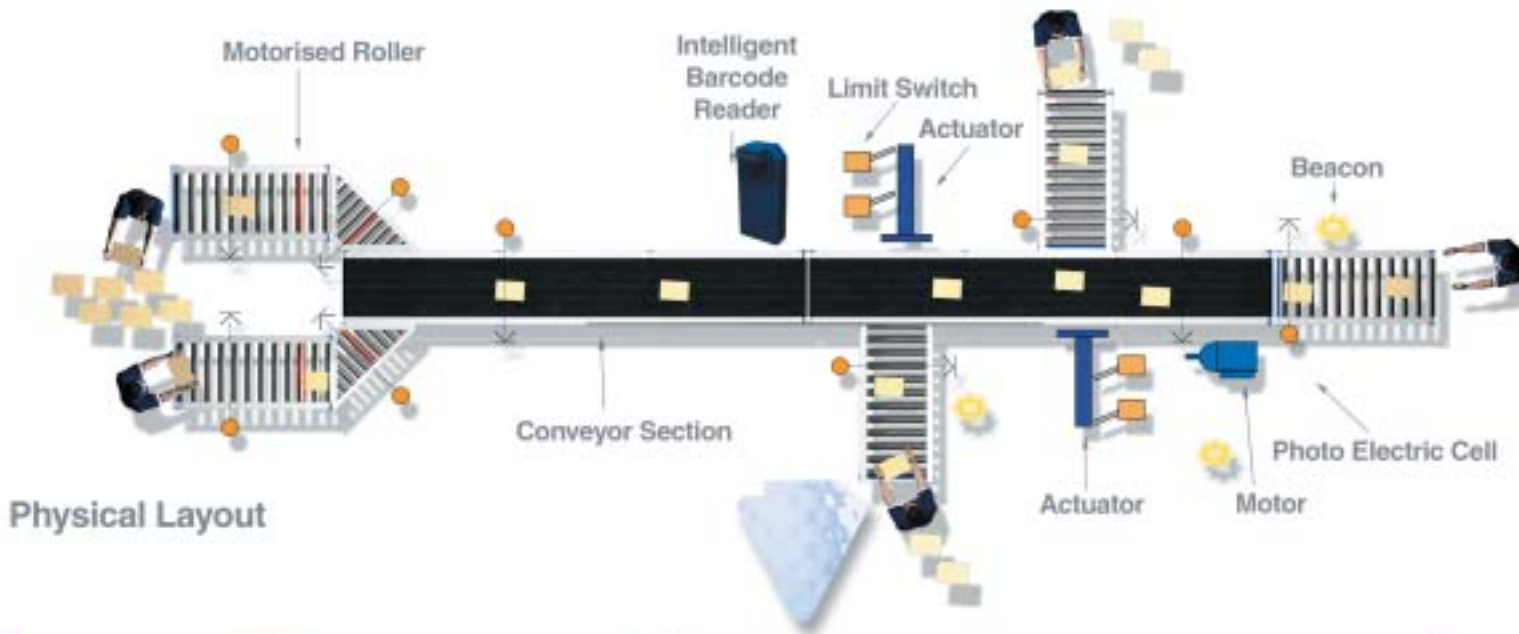
Decentralised design reduces central control cabinet size and point-to-point wiring.

Easily integrated with bus type power distribution and field mounted motor controllers.

Initial commissioning can be started before the system is complete reducing the intensity of activities normally associated with the traditional approach of install, cable and commission.

Modifications, extensions and upgrades can be achieved without changes to the existing system.

# Decentralised Methodology



# Simple Integrated Control

## Network Module

**Supply:** Powered from SP200 Controller

**Communications:**  
Ethernet 10 base-T  
Diagnostics Port RS232

**Memory:**  
8kByte Dual Port RAM

**Dimensions (mm):** 110H x 80W x 40D  
(Fitted)

**Protection:** IP40

**Features:**  
RJ45 Ruggedised Connector  
Diagnostic LED's  
Diagnostic Port

## SP200 Intelligent Controller

**Supply:** 10-30vdc

**Inputs:**  
8 Digital Inputs 24vdc PNP  
2 High Speed Inputs

**Outputs:**  
8 Isolated Relay Outputs

**Communications:**  
2 Serial Ports, fully configurable  
RS232/RS422/485 +  
Optional Fibre Optic

**Memory:** 160kbyte FLASH, 130kByte SRAM

**Dimensions (mm)::**  
110H x 250W x 40D

**Protection:** IP40

**Features:**  
Removable LCD and keypad  
Comprehensive Status Indications  
JTAG Serial programming interface  
Internal Transducer Power Source  
Real time clock with battery backup  
Individually Isolated Relay Outputs  
LED status indication for Digital Inputs  
LED status indication for Relay Outputs

## Extension Module

**Supply:** 10-30vdc

**Inputs:**  
8 Digital inputs 24vdc PNP

**Outputs:**  
8 Isolated Relay Outputs

**Dimensions (mm):**  
110H x 120W x 40D

**Protection:** IP40

**Features:**  
I/O Specification same as SP200  
Individually isolated Relay Outputs  
LED status indication for Digital Inputs  
LED status indication for Relay Outputs



Optional Single Cable Power and Comms Connection



# Simple Integrated Control

## SP100 Intelligent Controller

**Supply:** 10-30vdc  
**Inputs:** 4 Digital inputs 24vdc PNP  
**Outputs:** 4 Isolated Relay Outputs  
**Communications:**  
RS485 Multidrop Bus  
RS232 for peripherals  
2 Serial Ports, fully configurable  
**Memory:**  
160kbyte FLASH, 16kByte SRAM  
**Dimensions (mm):**  
110H x 90W x 40D (excl conn)  
**Protection:** IP40  
**Features:**  
Comprehensive Status Indications  
JTAG Serial programming interface  
Internal Transducer Power Source

## SP50 Intelligent Bar Code Reader

**Supply:** 10-30vdc  
**Inputs:** 3 Digital inputs 24vdc PNP  
**Outputs:** 2 Isolated Relay Outputs  
**Communications:**  
Fibre Optic  
**Memory:**  
64kbyte FLASH, 32kByte SRAM  
**Dimensions (mm):**  
195H x 90W x 40(70)D  
**Protection:** IP54  
**Features:**  
Scanner read range 200mm  
Scan Rate 52 per second  
Object presence detector  
Supports all major codes

## SP60 Intelligent Tag Reader

**Supply:** 10-30vdc  
**Inputs:** 3 Digital inputs 24vdc PNP  
**Outputs:** 2 Isolated Relay Outputs  
**Communications:**  
Fibre Optic  
**Memory:**  
64kbyte FLASH, 32kByte SRAM  
**Dimensions (mm):**  
195H x 90W x 40(70)D  
**Protection:** IP54  
**Features:**  
Tag read/write range 35mm at 13.6 Mhz  
Object presence detector  
No broadcasting licence required  
Compatible with ICODE, Tagit and My-d tags



### Real Time Routing and Tracking

#### Typical Applications:

- Hanging Garment Trolley Guidance
- Tote and Tracking systems
- Packaging Machinery
- Palletising



# Open Network Communications

**SIMPLICON™** provides flexible open network connectivity for ease of integration with the technology that best suits your application.

## Mobile Plant Applications



## Remote Diagnostics



## Stand Alone Applications



OPC Compliant for ease of integration with SCADA and host systems

## Ethernet

The **SIMPLICON™** Ethernet Network Module connects directly to 10 Mbit Ethernet and provides an open high performance powerful communication system for a network of **SIMPLICON™** Intelligent Modules.

Ethernet is today used in over 90% of our IT and internet systems Worldwide, and is also fast becoming established in control systems, enabling the seamless integration of plant floor real time control systems, and the business to create a transparent factory environment.

Ethernet TCP/IP enables peer to peer communications between all **SIMPLICON™** devices on the network, essential for distributed intelligent systems.

Communications feature report by exception and event driven commands to reduce network traffic and bandwidth.

Ethernet facilitates web browser visualisation for access of real time production data 24 hours a day, 7 days a week from any location in the world.

Remote Alarms via SMS Text Message



## Serial

Two software configurable RS232/RS422/RS485 ports are provided as standard on the **SIMPLICON™** SP200 Module.

Port 1 provides a communications interface to industry standard protocols for example; modbus for serial connections to host computer, modem, scanner, weigher etc.

Port 2 provides peer to peer communication for a maximum of 32 **SIMPLICON™** nodes.

**SIMPLICON™** offers the ability to break down complex systems into individual tasks and native sequences. The control algorithm for each task resides in its own processor embedded in each **SIMPLICON™** Intelligent Field Device.

**SIMPLICON™** modules are networked together over peer-to-peer communications, which enable them to communicate with each other in real time.

The **SIMPLICON™** configuration utility (Simplinet) provides a true multi-tasking environment within a single Windows™ application. Using the Simplinet utility means the software engineer can work in the familiar IEC 6-1131 environment, with the added benefit of flexibility allowing a logical structured approach to programming even the most complex systems.

The Simplinet utility allows the software engineer to use a true multi-tasking mechanism to produce modular application software, where these individual modules can be tested separately, which increases the safety integrity and security of the complete system.

## SIMPLICON™ Simplinet Screen Overview

Simplinet provides a familiar Windows environment for programming either single or a complete system of up to 32 Simplicon modules all within a single application. The Windows tree structure enables modules and I/O to be selected from project sub directories which are then configured and down loaded to target modules.

In addition to a library of logic elements and function blocks a useful favourites list enables you to quickly select items and drag them into position in the logic designer. Placing the object over an existing wire automatically connects it into position. The powerful CAD style logic designer allows logic elements to be moved, copied and deleted with all actions recorded allowing you to step backwards and forwards at will.

I/O field mapping tables are provided and are particularly useful when block copying modules of the same type to quickly change the I/O point and data references

A useful property box provides a simple method of defining and conditioning each I/O point, removing tedious set-up time for standard features such as time delays, filtering and logging features. As a useful commissioning aid, these parameters can also be modified via the SP200 controller LCD display/keypad and can then be automatically uploaded.



Selecting an output on the screen allows you to choose its functionality from a pop-up table by simply right clicking the mouse button.

## **SIMPLICON**

IDC Ltd  
Keynes House  
Chester Park  
Alfreton Road  
Derby  
DE21 4AS

tel:: +44 (0)1332 604 030

fax:: +44 (0)1332 604 031

website:: [www.simplicon.co.uk](http://www.simplicon.co.uk)

email:: [sales@simplicon.co.uk](mailto:sales@simplicon.co.uk)

The **SIMPLICON™** product range is designed and manufactured by **Intelligent Distributed Controls Ltd. (IDC)**

**Intelligent Distributed Controls** reserve the right to make changes to specification without notice