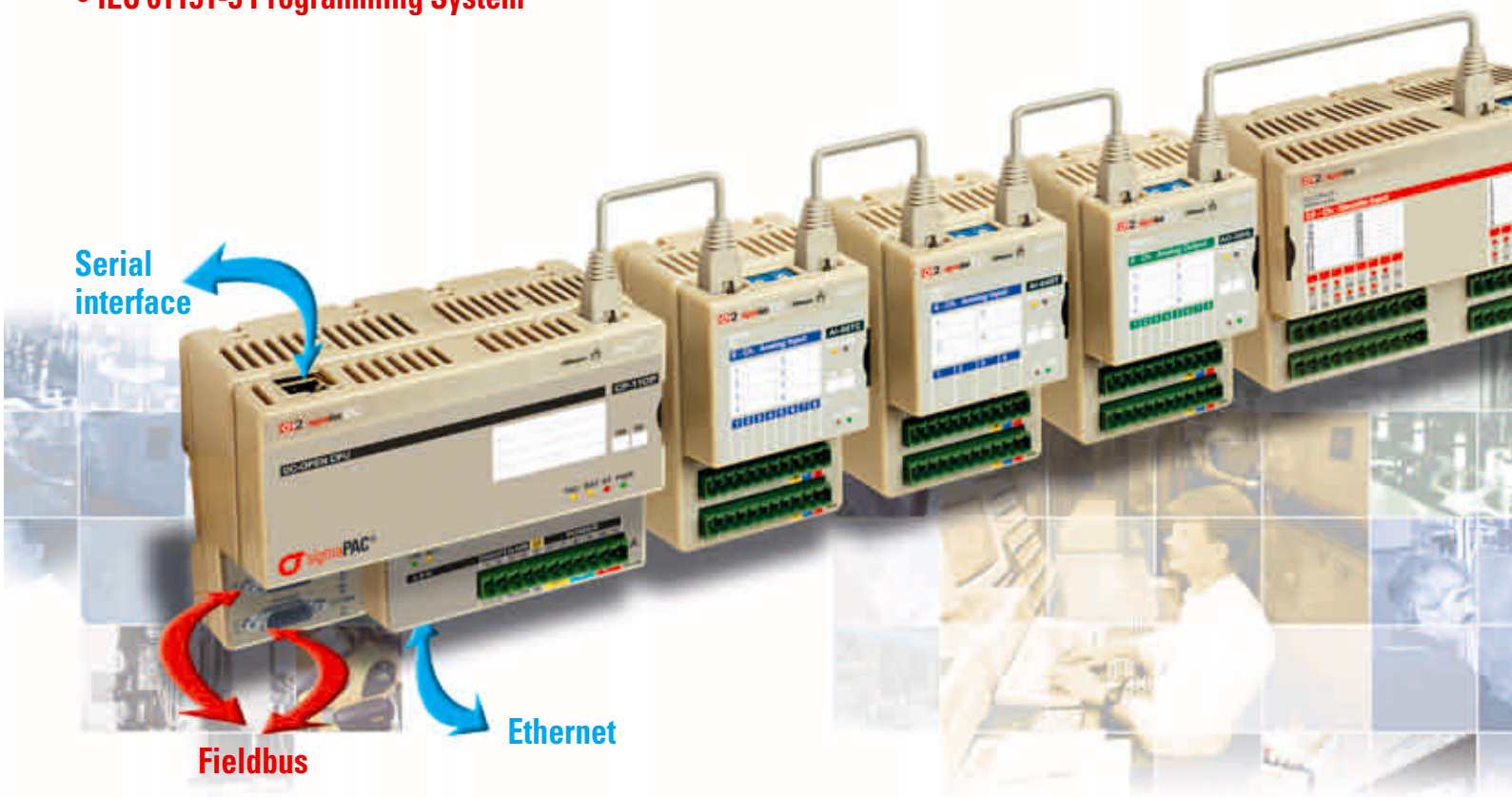
BC. 04.02 S2/E

σ2 SERIES

sigmaPAC®
Programmable Automation Controller
Distributed Automation Solution with Fieldbus

- **Advanced PID control**
- **Logic and batch control**
- **Open connectivity to Most Major Fieldbuses**
- **IEC 61131-3 Programming System**



E

ISO 9001 Certified

ASCON

sigmaPAC® - The late

Automation of machines and systems increasingly requires solutions meeting the following needs:
- Modularity
- Scalability
- Geographical and functional distribution
- Communication standarization
- Compliance with international standards
- Reduction in hierarchical levels
- Easier mounting and cabling
- Simplified installation and maintenance.

ASCON S.p.A., a leading Italian manufacturer in the design and production of industrial automation instruments and systems, supported by its strong presence with OEM and System Integrators and its expertise and long history of innovative technologies, offers SigmaPAC, a powerful and innovative complete control system. Due to its exceptional modularity and flexibility features, SigmaPAC may be used in the most diverse applications.

One system... many solutions

SigmaPAC offers a vast range of possible configurations:
- A wide variety of I/O modules with autonomous functions and integrated bus interface
- An ability to carry out process control functions and constant, logical and sequential controls
- Personalized libraries of Function Blocks for specific application sectors
- Interface with the most common buses in industrial environments (Modbus, CAN, Profibus, DeviceNet, Ethernet, etc.)
- DIN-rail mounting with removable screw or spring terminals
- Possibility to develop centralized or distributed solutions without modifying or adding components.

Cutting-edge technology

Through the use of the most innovative hardware and software technologies, SigmaPAC allows for even the most demanding control solutions to be developed, integrating different tasks from advanced regulation functions to the management of automation sequences. Communication standardization and integration are guaranteed through the use of widely accepted industry standards - such as fieldbuses, the Ethernet network and serial communications with standard protocols.

SigmaPAC offers a complete development environment, based on languages complying with IEC 61131-3 standards, which guarantee the ease of development and maintenance of automation solutions.

est PLC generation

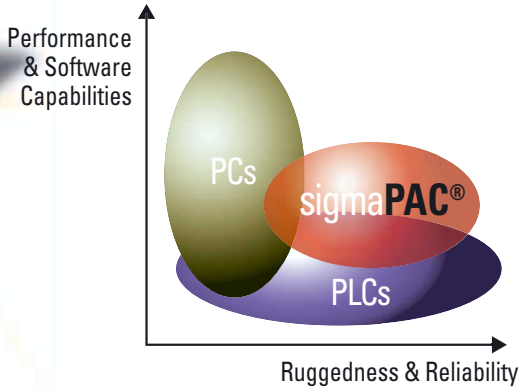
The first low-cost PAC

SigmaPAC belongs to a new generation of programmable controllers, equipped with great processing capacity, known as PAC (Programmable Automation Controller), and is characterized by:

- "a multi-function platform": equipped with control functions (PID, Auto/Man station management, Autotuning,…) for various types of variables (temperature, pressure, range, level, position,…), logical and sequential functions, process calculations
- "a single development environment" to implement multi-structure functions
- "instruments aimed at designing software architectures" to allow program flows to be defined and multiple parallel tasks to be carried out on the same CPU
- "modular and open architecture" both for industrial applications in the manufacturing industry and for process system automation units
- "maximum connectivity" guaranteed by various interface ports: serial RS 232, 485, Ethernet, fieldbus.

Comparison table

Features	PLC	Sigma**PAC**
Dedicated analogue measurement and control	-	Yes
Custom and complex example algorithms	-	Yes
Control algorithms: Advanced PID	-	Yes
Floating point processor	-	Yes
Complete programming tool	Optional	Yes
Ethernet and web connectivity	Optional	Yes
Digital logic	Yes	Yes
Real time OS	Yes	Yes
Industrial temperature range	Yes	Yes
Shock and vibration resistant	Yes	Yes



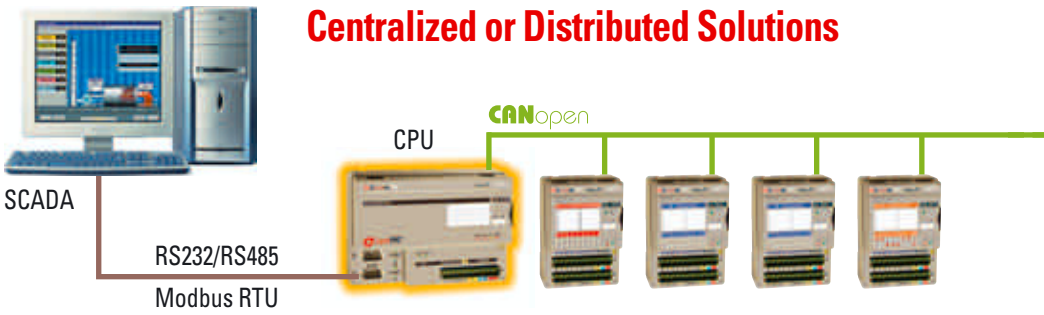
sigmaPAC® ...centralized or di

SigmaPAC is here!
One of the characteristics of SigmaPAC is its architecture which enables the complete distribution of signal interface units.
The adoption of a standard fieldbus as its system bus allows standard third party devices (transducers, actuators and operator interfaces) to be connected and controlled directly by the SigmaPAC Central Unit.

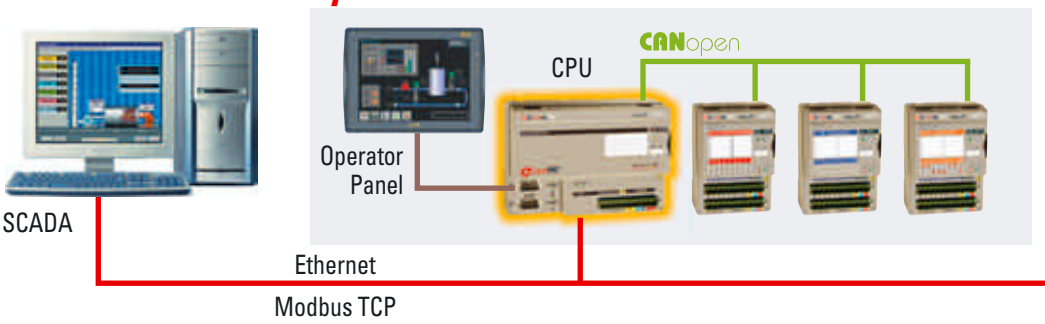
Centralized or distributed... for us it is all the same
Through the adoption of a high-efficiency standard protocol, the performance of SigmaPAC is not "penalized" if the architecture required is distributed.
The I/O modules may be located directly next to the measurement or control points without the use of further interface devices.

Geographical and functional distribution
The onboard intelligence residing in each module allows basic processing to be distributed, and relieves the CPU from trivial repetitive operations.
Power-up and power-down functions allow the state of the output variables to be determined upon start-up or in the event of an interruption.

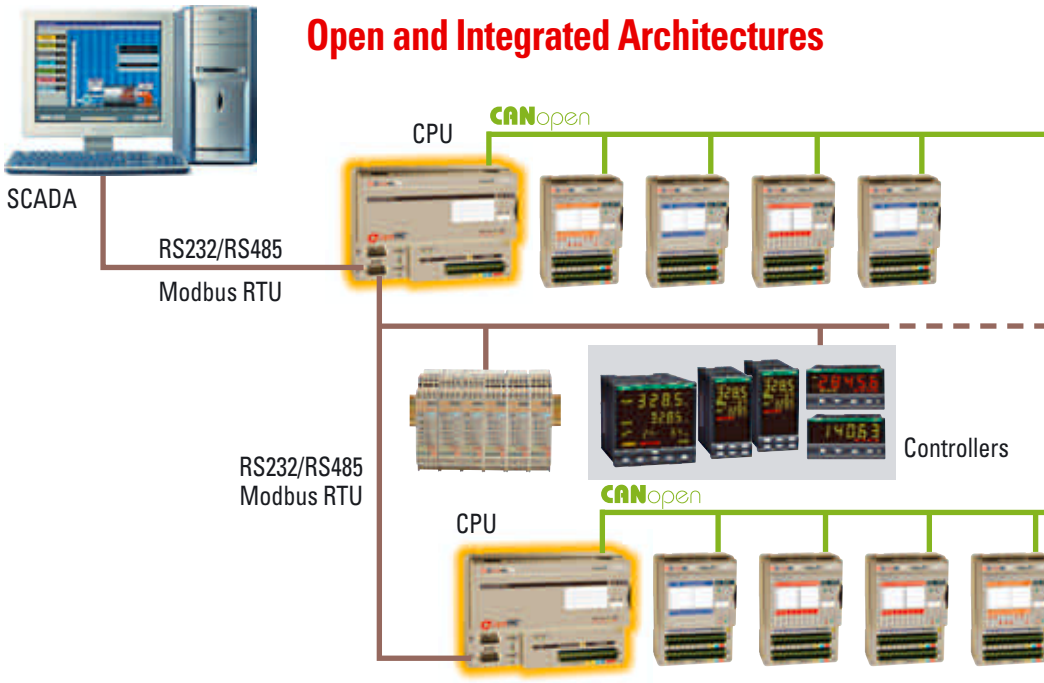
Centralized or Distributed Solutions



Syncronized Automation Cells



Open and Integrated Architectures



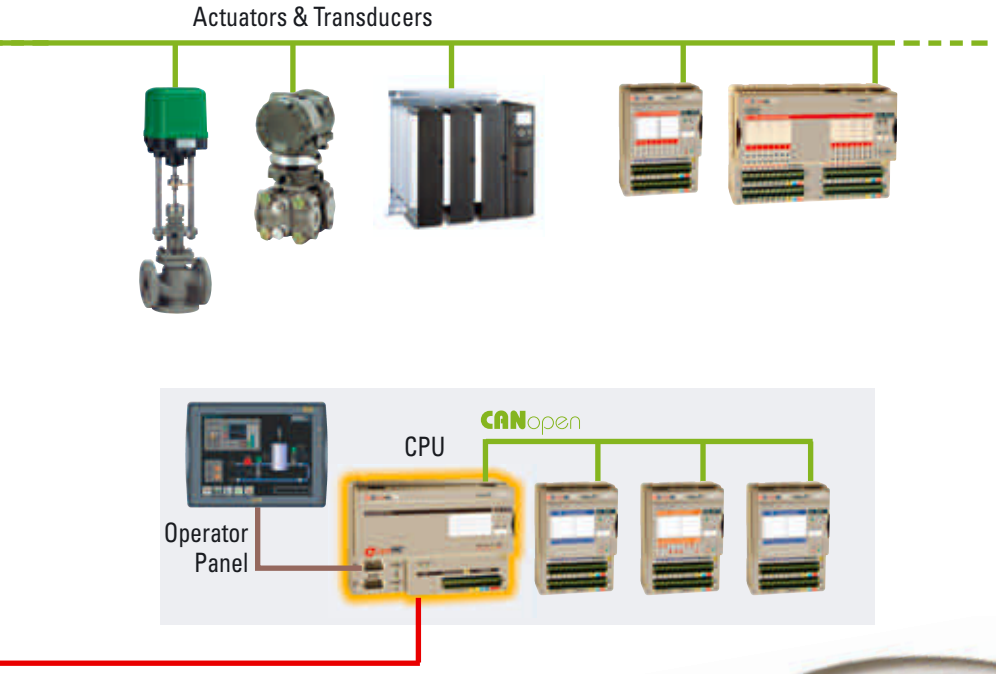
Industries and Applications

Plastic and Rubber: injection, extrusion, hot-runners
Packaging: thermowelding, thermoforming

Food: dairy products, food packaging, bottling, dried and fresh pasta, oven products, cereal silos, preserving-ripening stores

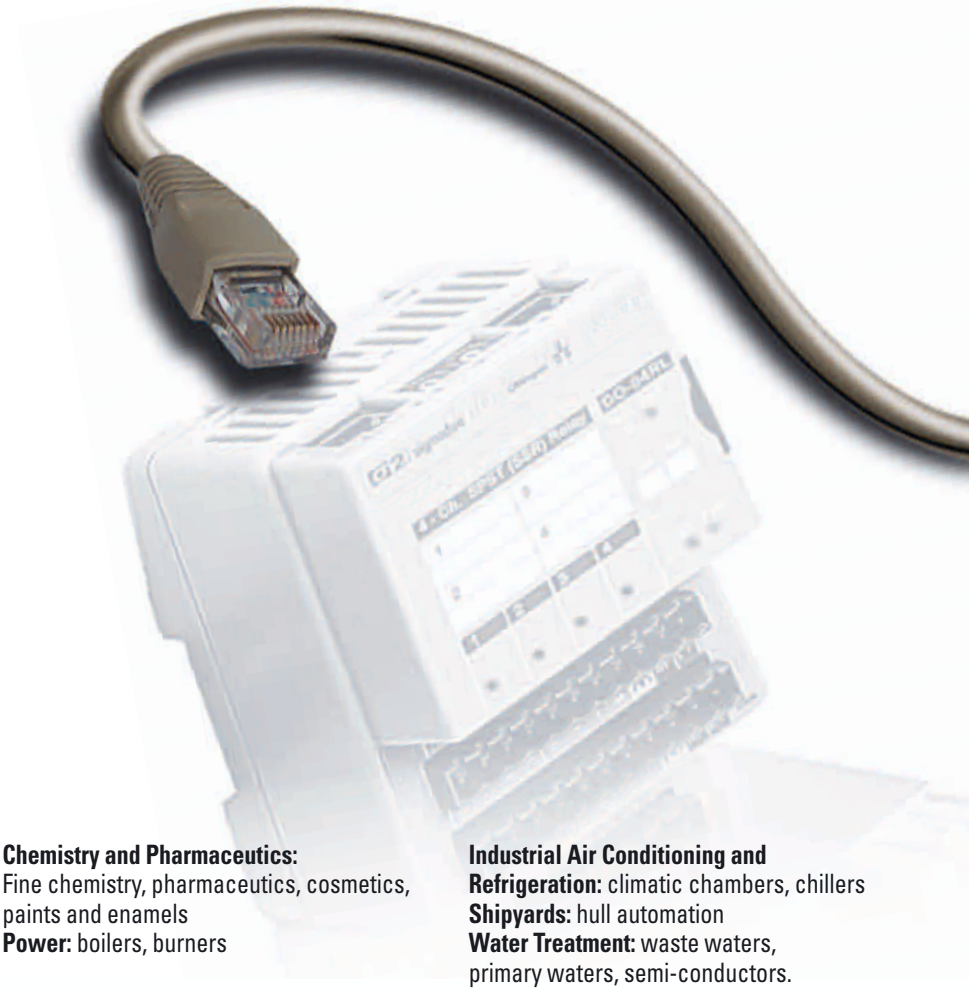
Vehicles: engine testing counters, painting plants, plate welding plants
Ceramic and Brick Works: continuous furnaces, intermittent furnaces, driers

stributed... the same solution!



Synchronized... islands of automation
The automation of part of the system or machines may be managed independently by a CPU connected to a number of I/O modules.
It is possible to use secondary communication ports available on the CPU to exchange synchronism data or messages with other units in different areas. To this end, it is possible to choose whether to use the serial ports RS232/485 with Modbus RTU or ASCII protocol (the Master/Slave mode may be configured on each port), or to use other fieldbuses such as Profibus Dp, Modbus TCP or CANopen.

"Single click" connection
The advantage in terms of reduced cable and cabling needs, as well as the indirect reduction in engineering activities required by the system or automated machine, is significant.
The CPU and the I/O modules are connected by standard CAT5 Ethernet cables.



Metal Works: blast furnaces, thermal treatment furnaces
Glass: blast furnaces; furnaces for the treatment of flat, hollow, curved glass

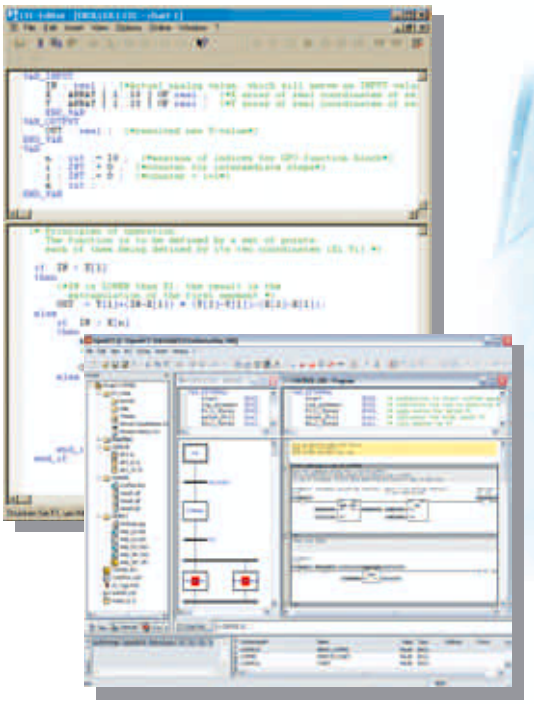
Chemistry and Pharmaceutics:
Fine chemistry, pharmaceutics, cosmetics, paints and enamels
Power: boilers, burners

Industrial Air Conditioning and Refrigeration: climatic chambers, chillers
Shipyards: hull automation
Water Treatment: waste waters, primary waters, semi-conductors.

sigmaPAC® - IEC 61

Standard IEC 61131-3 programming
The OpenPCS programming environment allows applications to be created in the 6 programming languages that comply with international standard IEC 61131-3 (Instruction List, Structured Text, Sequential Function Chart, Function Block Diagram, Continuous Function Chart and Ladder Diagram).

ASCON Automation Suite
The multitasking programming environment allows the project to be split into different tasks, executed sequentially or on the basis of a time cycle.
The variable declaration window guides users towards structured programming.
The 5 language editors aid in the correct execution of the application, automatically highlighting the keywords in the textual languages, and allow the function menus to be accessed rapidly.
The diagnostics window allows any errors to be immediately identified during the project compilation phase.
Powerful and complete online debugging tools and useful off-line simulation allow the code to be verified from a functional point of view.
Furthermore, the server tool integrated in OpenPCS (with name OPC) permits immediate connections with standard third party SCADA software.
Project management is facilitated by integrating documentation files in various formats in the specific Project-browser folder.



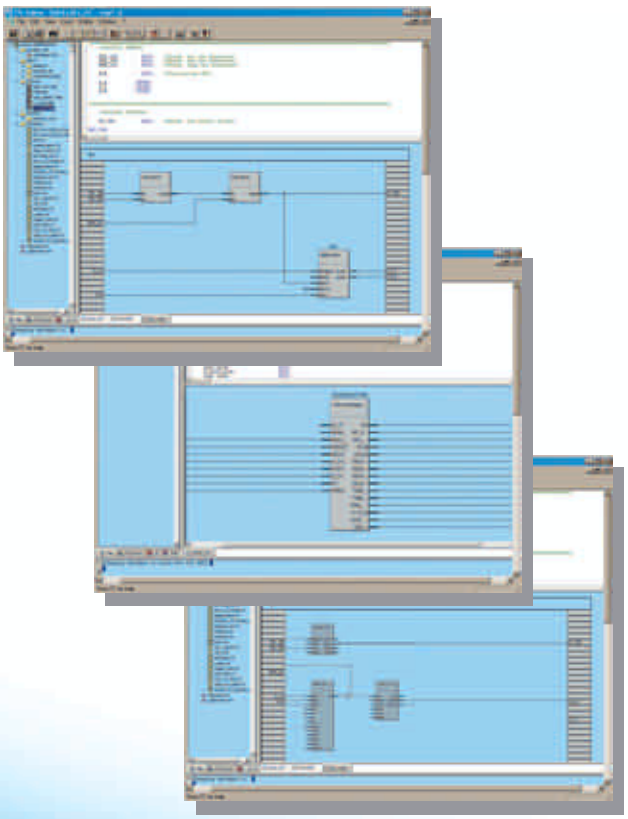
l131-3... and more

Vast function libraries… to aid programming
A complete set of libraries contain numerous function blocks for rapid and effective achievement of control and sequence routines.

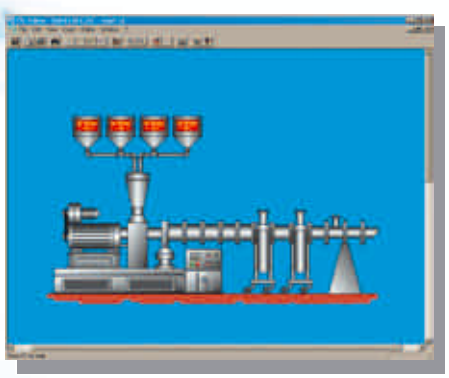
Ascon Control Library
- PID with advanced functions
- Automatic/Manual output
- Autotuning function
- Heat/Cool algorithms (with overlap)

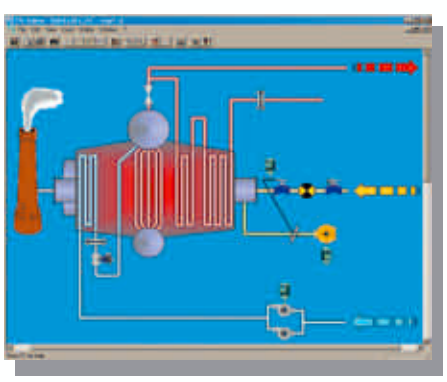
Ascon Process Control Library
- SetPoint programmer
- F_0 calculation for sterilization process
- Simplified reading/writing for network Operator Panels
- Moving average calculation
- Function block aimed at Modbus RTU and TCP communications
- Functions for accessing the real time clock
- Functions for setting the Watchdog and the Wake Up Alarm
- ….

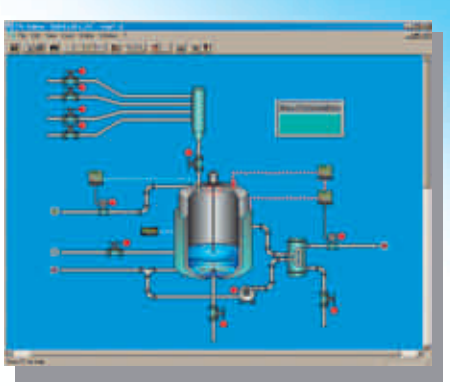
Ascon I/O Library
Includes Function Blocks aimed at configuring, exchanging data and activating advanced functions in the I/O modules.



Numerous programming examples … to speed up development
Ascon offers numerous application examples such as boiler control, autoclaves, furnaces, plastic processing, etc.







sigmaPAC® - Open connectiv

Open connectivity

The CPU integrates different interface ports with standard communications protocol:

CANopen port

This port interfaces I/O modules and other CANopen devices like Operator Panels, Inverters, Motors, Valves…

Ethernet port

Primarily used for:

- CPU programming with OpenPCS
- HMI connection via the commonly used Modbus TCP protocol
- The Unit configuration and the way to access the System files (configuration, applications, IEC61131, retentive data etc.).

Serial RS 232

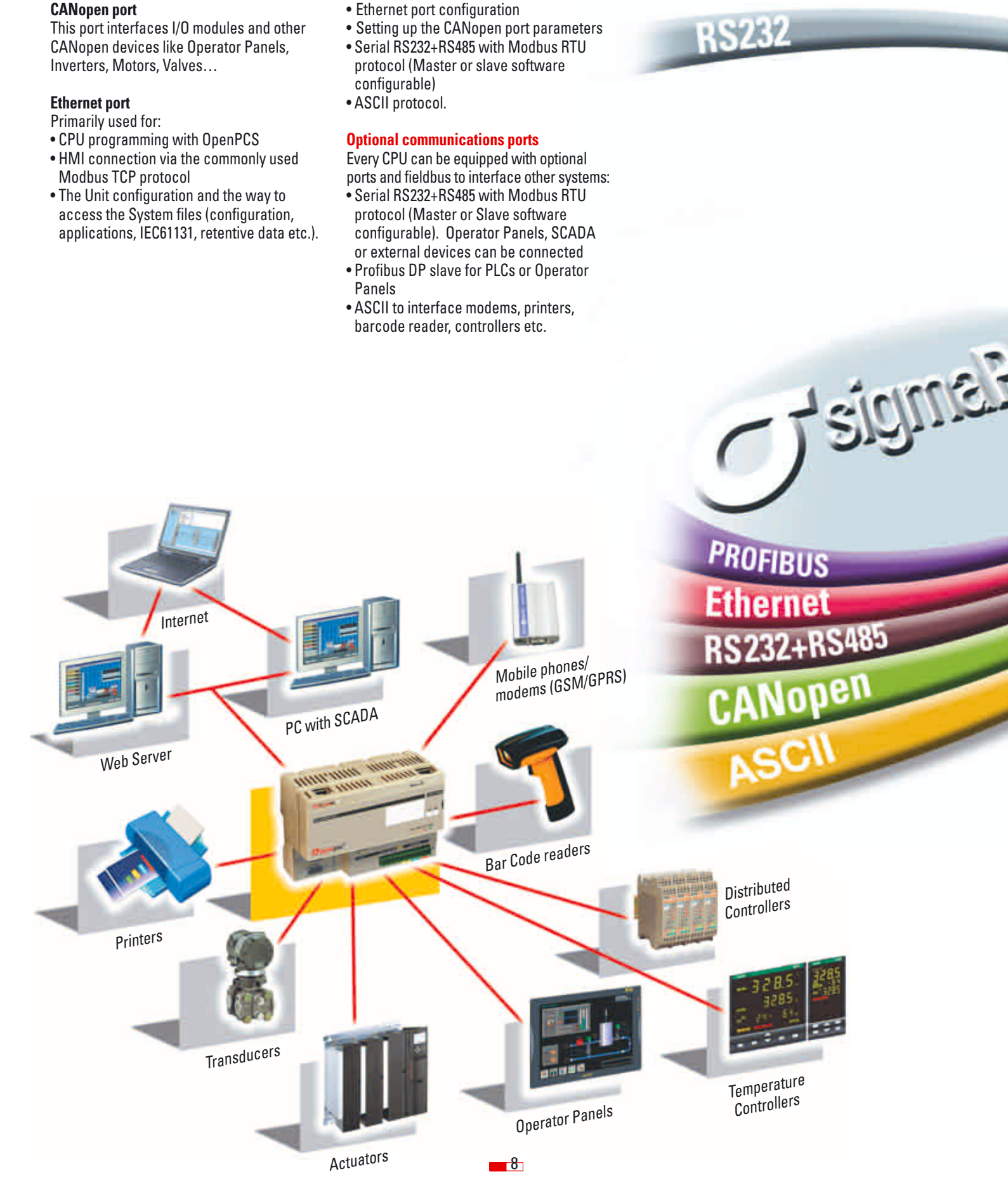
Can be used in alternative to the Ethernet port for:

- Setting up the CPU
- Ethernet port configuration
- Setting up the CANopen port parameters
- Serial RS232+RS485 with Modbus RTU protocol (Master or slave software configurable)
- ASCII protocol.

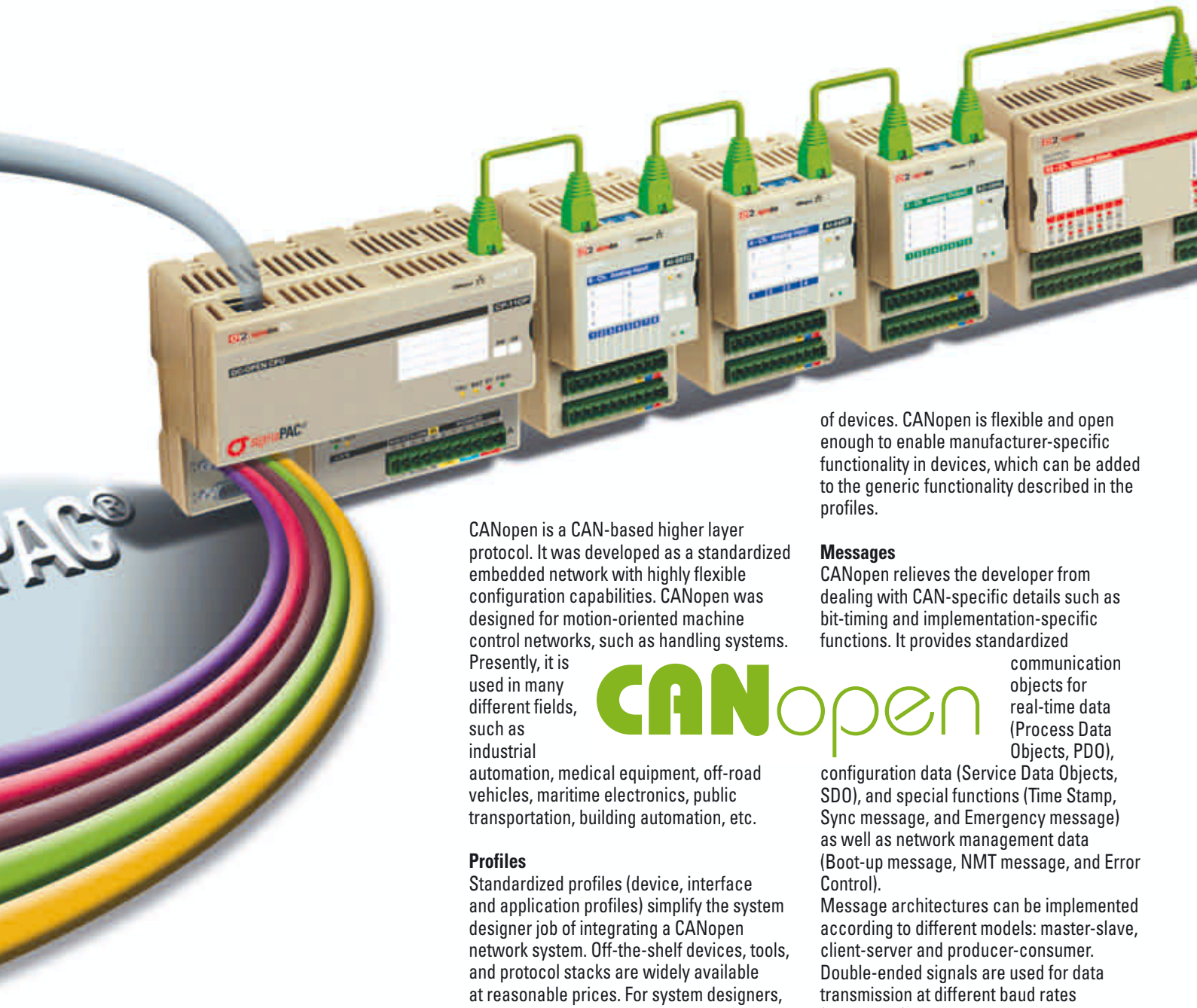
Optional communications ports

Every CPU can be equipped with optional ports and fieldbus to interface other systems:

- Serial RS232+RS485 with Modbus RTU protocol (Master or Slave software configurable). Operator Panels, SCADA or external devices can be connected
- Profibus DP slave for PLCs or Operator Panels
- ASCII to interface modems, printers, barcode reader, controllers etc.



vity to most major fieldbuses



CANopen is a CAN-based higher layer protocol. It was developed as a standardized embedded network with highly flexible configuration capabilities. CANopen was designed for motion-oriented machine control networks, such as handling systems. Presently, it is used in many different fields, such as industrial automation, medical equipment, off-road vehicles, maritime electronics, public transportation, building automation, etc.

Profiles
Standardized profiles (device, interface and application profiles) simplify the system designer job of integrating a CANopen network system. Off-the-shelf devices, tools, and protocol stacks are widely available at reasonable prices. For system designers, it is very important to reuse application software. This requires not only the communication compatibility but also the interoperability and interchangeability of devices. CANopen is flexible and open enough to enable manufacturer-specific functionality in devices, which can be added to the generic functionality described in the profiles.

Messages
CANopen relieves the developer from dealing with CAN-specific details such as bit-timing and implementation-specific functions. It provides standardized communication objects for real-time data (Process Data Objects, PDO), configuration data (Service Data Objects, SDO), and special functions (Time Stamp, Sync message, and Emergency message) as well as network management data (Boot-up message, NMT message, and Error Control).
Message architectures can be implemented according to different models: master-slave, client-server and producer-consumer.
Double-ended signals are used for data transmission at different baud rates (up to 1 Mb), depending on the length of the network.
CANopen takes care of error detection and diagnostic services.

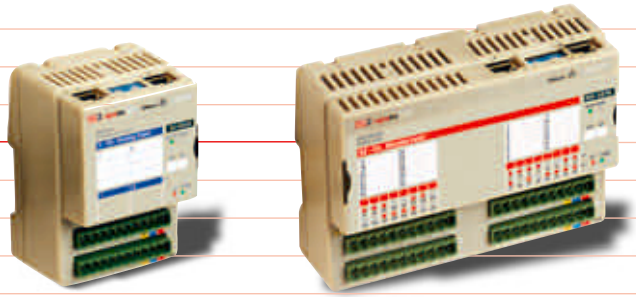
Automation Network
Ascon Spa is part of Automation Network, a business-to-business platform that associates the Companies that use OpenPCS IEC61131-3 software integrated to their products. This allows all members to complement their range of products with compatible products from other members. This, in turn, allows the members' products to be offered on markets that were previously not accessible to individual companies. In addition, every company has access to a complete range of products in its local market from the Automation Network Companies, which in turn enables successful competition against the products of a full-line major supplier. There are already more than twenty "Automation Network" member companies, and these are convinced that the future lies in a new, synergistic business model matching typical component suppliers with service providers in a network of independent companies capable of offering a broader global spectrum of solutions and products to their local customers. Members are from Italy, Sweden, France, Switzerland, Germany, Austria, USA, Canada, China and Taiwan.

Powered by OpenPCS

sigmaPAC®
All you need

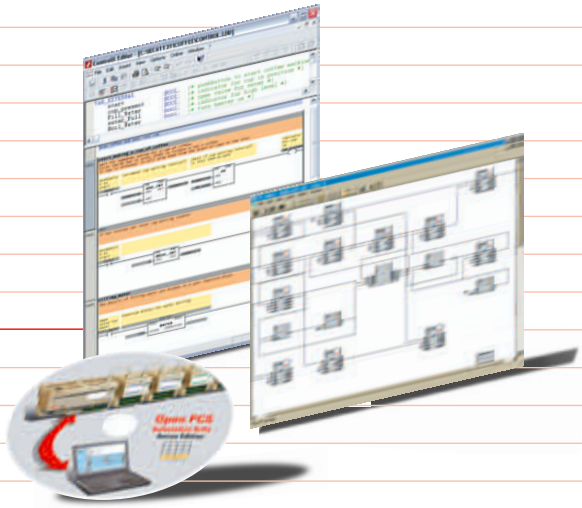
CPU

Programmable Automation Controller IEC 61131-3 compliant.



I/O Modules

Wide range of modules for analogue,
digital, relay input/output signals.



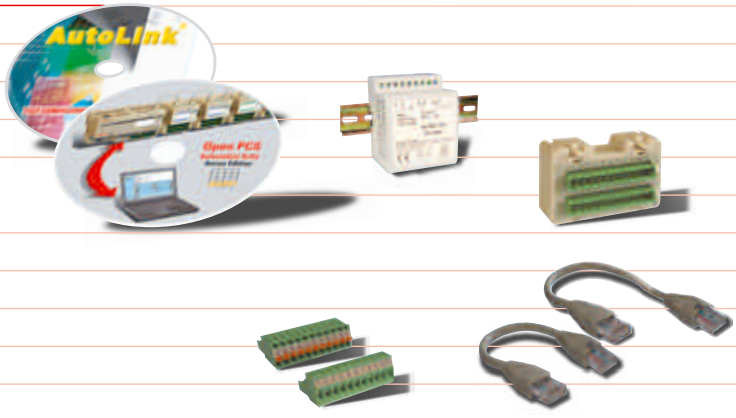
Ascon Automation Suite

Complete programming environment
according IEC 61131-3 standard with Ascon Function Libraries.

Operator Panels

Colour and monochrome touch screen panels
for local HMI with different sizes.

Accessories



Autolink
Standard SCADA software
for local and remote HMI with trends, logs, alarms, etc...

Power supply
Various sizes available.

Additional terminal blocks
To make local cabling easier.

CANopen RJ45 cables
For a "single click" connection of network devices.

Termination connectors
For CANopen network termination.

CPU

The CPU offers a high degree of flexibility. It can function as a slave device on a Modbus RTU (also master), Modbus TCP, CANopen, Profibus network and act as CANopen master on the underlying CANopen system (I/O modules and third party devices).
Thus the CPU is the ideal device for modular systems with distributed control architecture. With integrated industry standard open communications, the CPU makes it possible to easily communicate with decentralized I/O devices or other PLCs.

Programming and Supervision
The CPU comes equipped with OpenPCS software including drivers for Ethernet or serial interface for an unlimited number of installations within the factory buildings.
Ethernet is used for configure, programming and supervisory functions. OpenPCS running on a PC can be connected through the Ethernet port to download the developed project and debug the program online.

CANopen Configuration
The CANopen network may be set up in one of two ways:
- Ascon I/O Library
- Standard CANopen Configuration software.

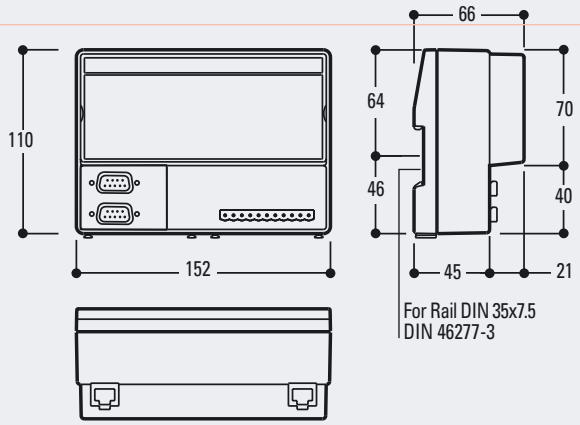
In both cases, all slave settings are stored in the non-volatile memory of the CPU. When the CPU is started, all slave nodes are automatically configured.

Integrated Features
The real time Operating System manages task scheduling and event handling.
Special functions, such as Watchdog or Wake Up alarms, are available to control the correct functionality of a SigmaPAC system, and can be used by external devices for security purposes.

Characteristics

Processor	32 bit processor, ARM architecture
	4 MB Memory Flash
	16 MB SDRAM
	128 kB SRAM with battery Back-up
Default interfaces	X0 RS485
	X1 RS232 (USB optional)
	X2 Ethernet 10baseT port
	X3 RS232
	X4 RS485
On board I/O	Configurable alarm relay digital output
	Watchdog and Wake Up digital output
	One Digital input available
Communications protocols	CANopen Master
	CANopen Slave (optional)
	Modbus RTU Slave
	Modbus RTU Master
	Modbus TCP Server
	Profibus DP
	ASCII

Dimensions



Features

Electrical	
Power Supply	24Vdc nominal (min 18V, max. 30V)
Environmental	
Operating temperature	0...+55°C standard
Storage temperature	-20...+85°C
Relative humidity	5...95%, non condensing
Vibration resistance	IEC 60068-2-6
Shock resistance	IEC 60068-2-27
General	
Mounting	on DIN rail, vertical, free air
Protection degree	IP20
CE Marking	EN 50081-2, EN 50082-2, EN 61010

SigmaPAC	
CU-02 0010	4MB flash, 16MB SDRAM, Ethernet 10T port, CANopen RJ45 port, RS232 RJ45 port
CU-02 0110	4MB flash, 16MB SDRAM, Ethernet 10T port, CANopen RJ45 port, RS232 USB port
CU-02 5010	4MB flash, 16MB SDRAM, Ethernet 10T port, CANopen RJ45 port, RS232 RJ45 port, + 2 Serial (DB9 ports): RS232, RS485
CU-02 5110	4MB flash, 16MB SDRAM, Ethernet 10T port, CANopen RJ45 port, RS232 USB port, + 2 Serial (DB9 ports): RS232, RS485
CU-02 2010	4MB flash, 16MB SDRAM, Ethernet 10T port, CANopen RJ45 port, RS232 RJ45 port, + Profibus DP (DB9 port)
CU-02 2110	4MB flash, 16MB SDRAM, Ethernet 10T port, CANopen RJ45 port, RS232 USB port, + Profibus DP (DB9 port)

sigmaPAC® - Remote I/O modules f

Remote I/O modules for effective distributed automation
Each module has embedded fieldbus interface and power supply: therefore the modules can be distributed along the plant or on board of machines, in order to reduce engineering, mounting and wiring costs.

Multifunction modules for high flexibility
Through software configuration, sigma**due**® I/O modules can be used for different purposes.
For example, a module can simultaneously count frequency inputs, read inputs status or activate the digital outputs to generate PWM outputs.
Some sigma**due**® modules have universal analogue inputs which can be configured for various sensor types.
The availability of 2, 8, 16 and 32-channel modules provides great flexibility, fitting many different applications.

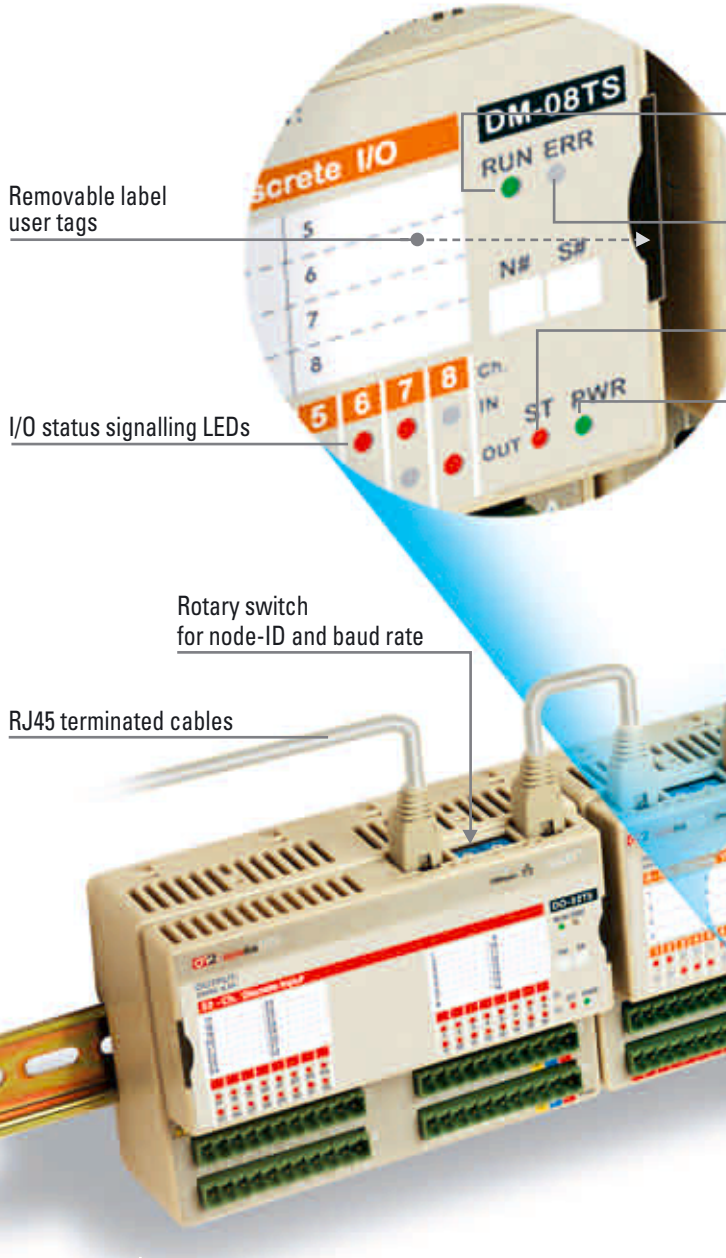
Processing capability on board
The embedded microprocessor allows local signal conditioning and data handling, such as linearisations, data scaling, engineering units conversion, alarm handling, etc. .
This relieves the CPU from a considerable load of computing power, thus improving performance and bus efficiency.

High performance
Accuracy class: 0.1% and 16 bit resolution for analogue I/O.
Analogue sampling: from 5ms max. total conversion time.
Transfer of input data on fieldbus network: 5ms max. for all I/O.

Easy installation and Quick Wiring
- Bus Connection: two RJ45 connectors on each module for fast hot swap
- Removable terminal block plugs
- Screw or spring clamp type plugs
- Additional Terminal Block available to make an easier wiring of field signals can be easily added to each module.

Fieldbus technology
- Built-in fieldbus interface for CANopen.

CANopen is successfully employed in many industrial control systems: the very flexible applications layer and many optional functionalities perfectly match network designer needs.

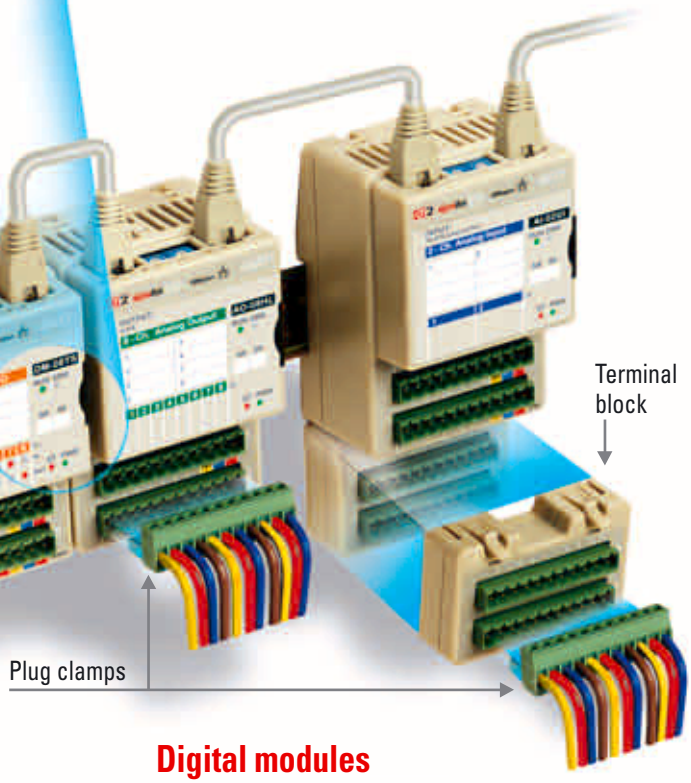


Analogue modules

Model	Ch.s	Inputs	Outputs	Resolution class	Isolation class	Accuracy	Acq. time	Functions	Note
AI-02UI	2	Universal: RTD, TC, mA, mV, V, Potentiometer		16 bit	2500 V	0.1%	20 ms	Linearisation Scaling, Engineering Units Limits Autotare Autozero	Isolation between the two inputs High accuracy High Speed
AI-08TC	8	TC, mV		16 bit	800 V	0.1%	60 ms	Linearisation Scaling Engineering Units Limits	Differential inputs
AI-04RT	4	RTD, TC, mV		16 bit	800 V	0.1%	120 ms	Linearisation Scaling Engineering Units Limits	
AI-08HL	8	mA, V		16 bit	800 V	0.1%	10 ms	Limits Offset, scaling	Fast acquisition
AI-08DP	8	mA, V Dual Polarity		16 bit	800 V	0.1%	10 ms	Limits Offset, scaling	Fast acquisition
AO-08HL	8		mA, V	16 bit	800 V	0.1%	20 ms	Limits	High accuracy High Speed
AO-08DP	8		mA, V Dual Polarity	16 bit	800 V	0.1%	20 ms	Limits	High accuracy High Speed

or effective distributed automation

LED name	Status	Meaning
RUN	ON	Operational
	Blinking	Pre-operational (CANopen)
	Single flash	STOPPED
	OFF	Device in RESET state
ERR	ON	BUS OFF
	Single flash	Warning limit reached (comm.s error)
	Double flash	Error Control Event
	Triple flash	Sync Error (CANopen)
	OFF	No error. Device working
ST	ON	DIAG Error
	Blinking	INIT and DIAG running
	Single flash	Baud rate setting
	OFF	Module OK and ready
PWR	ON	Module Power Supply ON
	OFF	Module Power Supply OFF

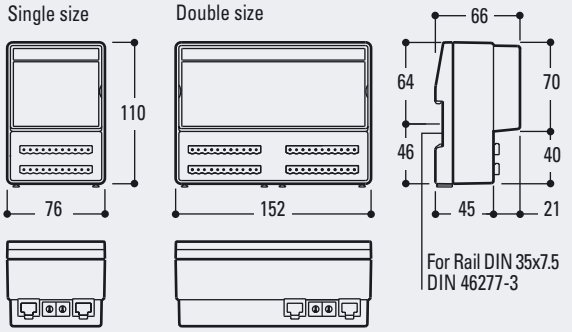


Common Features

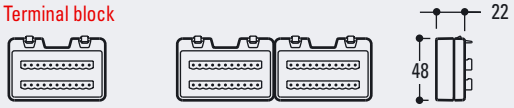
Electrical	
Power Supply:	24 Vdc nominal (min 18 V, max. 30 V)
Three way isolation:	I/O to Logic - Logic to Fieldbus Power Supply to all circuits
Environmental	
Operating temperature:	-10...+65°C standard -20...+70°C extended
Storage temperature:	-40...+85°C
Relative humidity:	5...95 %, non condensing
Vibrations (3 axes):	10...57 Hz, 0.0375 mm/57...150 Hz, 0.5 G
Shock (3 axes):	15 G, 11 ms half sine
General	
Mounting:	on DIN rail, vertical, free air
Protection degree:	IP20
CE Marking:	EN 50081-2, EN 50082-2, EN 61010

Dimensions

I/O modules



Terminal block



Digital modules

Model	Channels I	Channels O	Size	Input Voltage	Output Voltage	Output Current	Isolation Class	Functions: Counters	Edge detect	Latch	PWM	Pulse	Note
DI-16LV	16		Single	24 Vdc		–	800 V		✓	✓			Optoisolated Sink (PNP)
DI-16HV	16		Single	115 Vac		–	2500 V		✓	✓			Optoisolated
DI-32LV	32		Double	24 Vdc		–	800 V		✓	✓			Optoisolated Sink (PNP)
DO-16TS		16	Single		24 Vdc	500 mA	800 V					✓	High Side Transistor
DO-16TP		16	Single		24 Vdc	2 A	800 V					✓	High Side Transistor
DO-32TS		32	Double		24 Vdc	500 mA	800 V						High Side Transistor
DO-04RL		4	Single		250 Vac	2 A (SPST) 1 A (SSR)	4000 V					✓	SPST Relay SSR Relay
DO-04TX		4	Single		24 Vdc	6 A	800 V					✓	High Side Transistor
DO-08RL		8	Double		250 Vac	2 A (SPST) 1 A (SSR)	4000 V					✓	SPST Relay SSR Relay
DM-08TS	8 I/O		Single	24 Vdc	24 Vdc	500 mA	800 V	✓	✓	✓	✓	✓	Optoisolated
DM-16TS	8	8	Single	24 Vdc	24 Vdc	500 mA	800 V		✓	✓			Sink (PNP) Input or/and
DM-32TS	16	16	Double	24 Vdc	24 Vdc	500 mA	800 V		✓	✓			High Side Transistor Output
DO-32TR		32	Single		24 Vdc	50 mA	800 V						Flat connector for relays modules

sigmaPAC®
Accessories

Operator Panels

A variety of Operator Panel sizes are available.
Connection to SigmaPAC system via:
1) Serial RS485 (Modbus RTU driver embedded)
2) Ethernet (Modbus RTU driver embedded) .

OP MT 8121X

- 64K color 12,1" TFT display
- SVGA (800 x 600 pixel) resolution
- Resistive touch screen
- Connection to industrial bus systems and Ethernet
- 256 MB user memory
- 256 MB internal Flash memory
- 3 Host USB 1.1 ports + 1 Client USB 2.0 port
- IP65 front panel protection
- Dimensions (mm): 322 x 243 - Cutout 51 mm
- Cutout (mm): 305 x 231 mm - Cutout 7 mm.

OP MT 8104XH

- 64K color 10,4" TFT display
- SVGA (800 x 600 pixel) resolution
- Resistive touch screen
- Connection to industrial bus systems and Ethernet
- 256 MB user memory
- 256 MB internal Flash memory
- 1 SD and SDHC card slot
- 2 Host USB 2.0 ports
- IP65 front panel protection
- Dimensions (mm): 322 x 243 - Depth 51 mm
- Cutout (mm): 305 x 231 mm - Cutout 7 mm.

OP MT 8070iH

- 64K color 7,0" TFT display
- LED backlight
- WVGA (800 x 480 pixel) resolution
- Resistive touch screen
- Connection to industrial bus systems and Ethernet
- 64 MB user memory
- 128 MB internal Flash memory
- 1 SD card slot
- 1 Host USB 1.1 port + 1 Client USB 2.0 port
- IP65 front panel protection
- Dimensions (mm): 286 x 212 mm - Depth 50 mm
- Cutout (mm): 259 x 201 mm - Cutout 7 mm

OP MT 6050iV

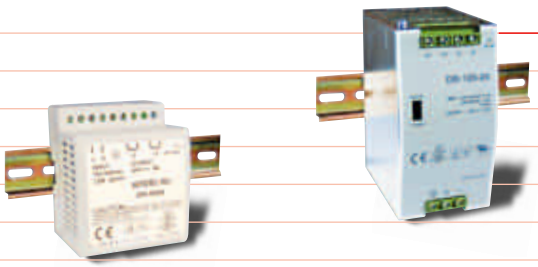
- 64K color 4.3" TFT display
- LED backlight
- Resolution 480 x 272 pixel
- Resistive touch screen
- Connection to industrial bus systems and Ethernet
- 64 MB user memory
- 128 MB internal Flash memory
- 1 Client USB 2.0 port
- IP65 front panel protection
- Dimensions (mm): 128 x 102 - depth28 mm
- Cutout (mm): 119 x 93 mm - Cutout 4 mm.

Easy Builder 8000

The OP operator panel configuration allows customized viewing of process variables, the creation of graphic pages, alarm management schedules and integrated system macros.

Autolink: the easy SCADA

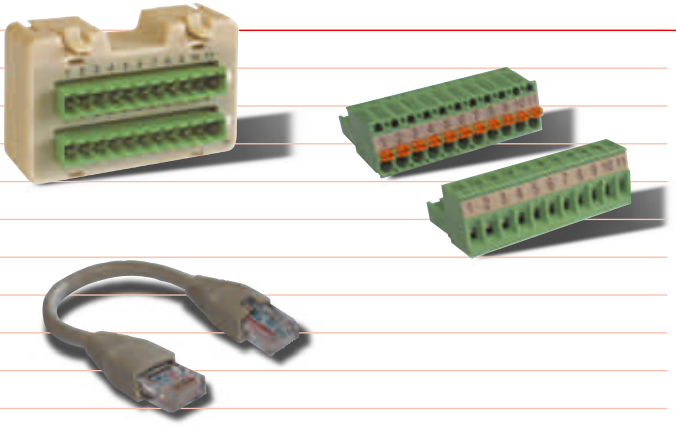
- Data acquisition and monitoring
- Process operation
- Extensive driver library
- Mimic and pre-formatted pages
- Real time and historical trending
- Powerful alarm handling
- Flexible configurable reporting
- Recipe management
- Security levels for operator access
- Ethernet TCP/IP networking
- Data exporting to commonly used databases.



Power Supply Units	
Input Voltage:	88...264 Vac
Output Voltage:	24V, ±1%
Output rated current:	2A (DR-45-24),
	5A (DR-120-24)
Protection:	Over voltage, Overload, auto recovery
Temperature:	-10...+50 °C
Mounting:	DIN Rail
Dimensions:	97x78x67 mm (DR-45-24),
	65x125x103 mm (DR-120-24)

Industrial standards GSM/GPRS/UMTS Modem

- E-GSM four band 850/900/1800/1900 MHz
- GPRS Class 10 (up to 4 Rx/2 Tx
- SMS point to point
- GSM (SMA-M connector) antenna
- Serial data output (female sub-D 15 connector)
- Power supply: 5.5... 32 Vdc (micro-FIT connector)
- AT commands: GSM 07.05 e 07.07.



Cables and connectors

- Additional Terminal Block 2x11 poles
- Plug clamps available with screw or spring clamp option
- Cables with RJ45 connectors are available with 14 cm or 22 cm standard lengths for easy daisy-chain connection of the I/O modules
- Termination connectors.

Support and Services

Support in selecting and configuring the system
"Sigma Team" is a team of specialists available to guide you when selecting and configuring components, to provide quotes and to recommend the best level of immediate and ongoing support.

Internet
Visit www.ascon.it for details and information on the various levels of support offered for the SigmaPAC system.
The internet sites allow you to download numerous documents, such as technical charts, manuals, application examples, software, and more.
Furthermore, you may make requests and submit queries to Ascon technicians.

Post-Sale Services
System specialists are available to help you use the system to the best of its capabilities. Our telephone assistance service will resolve most of your needs.
Ascon staff is also available on a contract basis to support your technicians onsite, wherever requested.

Application Control Strategy
Upon request, Ascon may develop Control Strategies and Functional Macroblocks to resolve problems inherent in a unique or special application, or component thereof, in a simple and standard manner. These may then be replicated and modified by clients to adapt to similar applications.

Installation Assistance
Ascon technicians are qualified in the installation of the SigmaPAC system.
We work with the customer to assign the most qualified engineer to the application.

Seminars, Courses, Training
Ascon regularly organizes seminars on the SigmaPAC system, courses regarding the products and applications, and training sessions aimed at developers and installers. Customized courses may also be created for client-specific applications.

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