82
SERIES

deltadue® series
Control and acquisition modules with fieldbus for DIN rail mounting

Not just I/O modules
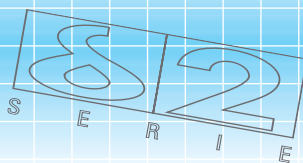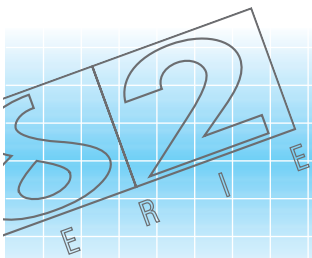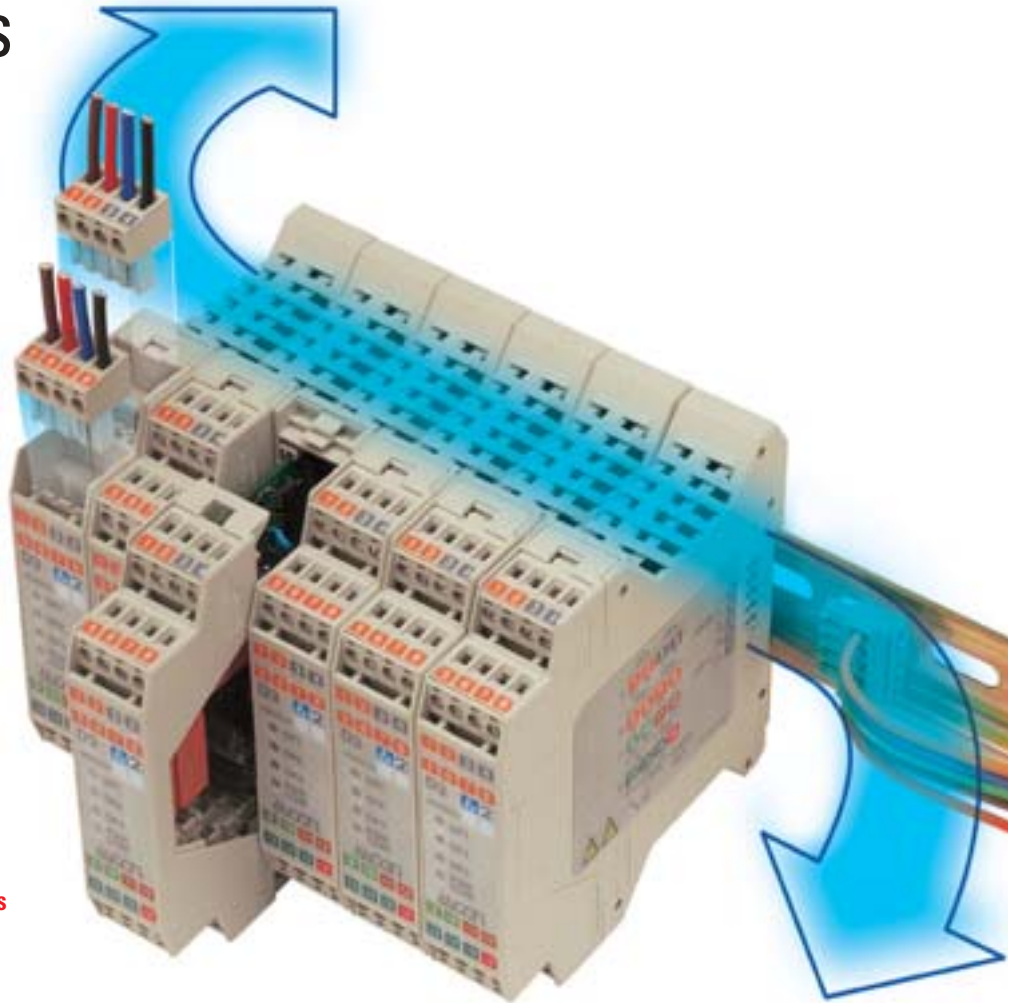
Process and Temperature controllers

Analogue and digital I/O modules
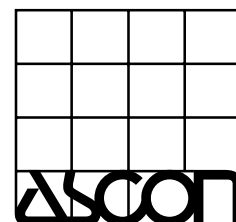
Transmitters with alarm thresholds

PROFIBUS DP / DeviceNet / CanOpen / Modbus fieldbus Interfaces

- **A complete range of compact and flexible modules**
- **PC configurable**
- **Wide choice of Operator Panels**
- **Built-in RS 485 Modbus**
- **Fits the most common architectures**

E

ISO 9001 Certified

ascon

ASCON'S CONTROL AND ACQUISITION

delta**due**® series

ASCON's process control experience and the increasing need for integration of the control systems have brought to the development of the new delta**due**® series, consisting in control and acquisition modules.

The delta**due**® modules can either be rear panel or on-machine mounted. This way, control panels can be more compact and distribution on the plant or on the machine can be optimized. The modules are independent. Each module can work as a single unit or within a set of modules as a part of a stand-alone control system, or integrated in PLC or PC systems. Integration into PROFIBUS DP or DeviceNet or CANopen or Modbus is assured by the "Manager-Gateway" module.

User friendly software assists rapid PC configuration of delta**due**®.

A complete range of modules...

- PID single loop and dual loop controllers with universal input and with time proportioning, valve drive and analogue outputs
- Modular Multi loop controllers up to 31 or more zones
- Analogue and digital data acquisition for:
- PC based systems field interface (front-end)
- Expansion of PLCs or other data processing units.

...compact and flexible...

- Universal input: T/C, RTD (Pt100), mA, mV, Hz, IR sensors and a special Custom linearisation
- Auxiliary power supply for 2-wire transmitters
- Relay, SSR and SSR drive.
- Special functions, Start-up, Timer, etc.
- Hot-swapping
- Common bus for serial communications and 24Vdc power supply
- DIN rail mounting
- Polarized terminal plugs.

Modular Multiloop

3 YEARS WARRANTY
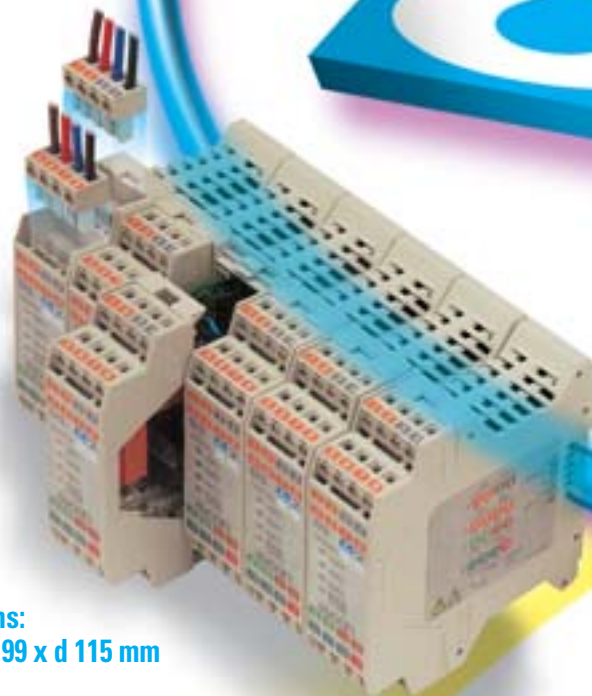
Dimensions:
w 22,5 x h 99 x d 115 mm

CAN
DeviceNet **CANOpen**

PROFI
PROCESS FIELD BUS
BUS

D1, D2, D3 Controllers

- Universal single loop controllers
- Independent dual loop controllers

D7, D8, D9 Acquisition and Transmitter modules

- 1-channel or 2-channel universal analogue input modules
- 6 DI plus 2 DO modules

RS 485

485/232

DX Manager-Gateway

...open to the external world...

All modules have RS485 and Modbus protocol for direct connection to most common Operator Panels and SCADAs. Integration into PROFIBUS DP or DeviceNet or CANopen or Modbus by means of the Manager-Gateway DX module.

...with the "Manager-Gateway"...

The optional DX module includes two important functions
- management of the connected delta**due**® modules for offline configuration, data back up and hot swapping
- serial interface and adaptor for integration on fieldbus.

...with a wide range of HMIs

The delta**due**® series includes self-configuring HMIs, from simple compact alphanumeric Operator Panels to Touch Screen Graphic panels. Connected delta**due**® modules are automatically recognized and their configuration uploaded.

AutoLink®

SCADA software for machines and/or small plants

- Windows environment
- Self-configuration for up to 32 delta**due**® and gamma**due**® instruments; simple and flexible
- Overview, trend and alarm pre-formatted pages
- Plant synoptics
- Data archiving and report generation.

Icons table:

PV input

TC	Thermocouple
Pt100	RTD Pt100
ΔT	Delta temp. (2xRTD)
mA V	mA and mV
Custom	"Custom"

Auxiliary inputs

	Current transformer

Digital inputs

	Isolated contact
	NPN open collector
	TTL open collector
Hz	Frequency

Digital outputs

	SPST relay
	SSR
	PNP open collector
	SSR drive

Analogue output

mA	mA

Fuzzy tuning

	One shot Auto tuning
	One shot Natural frequency

Setpoint

LOC	Local
2 MEM	Memorised

Special functions

START UP	Start-up
TIMER	Timer

Digital input connected functions

	Auto/Man
2 MEM	Memorised setpoint activation
HOLD PV	PV Hold
ACK	Alarm acknowledgement
	Not
T	Toggle
S R	Flip-Flop

Digital output connected functions

	Not
HOLD	Hold
	PWM

PID CONTROL MODULES

D1 Line - Temperature controller
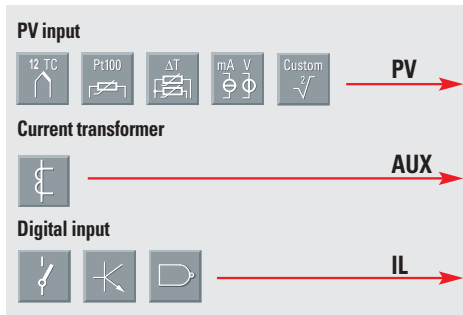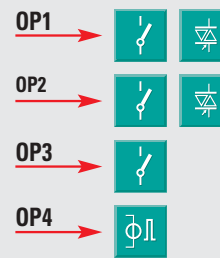
PV input

12 TC   Pt100   ΔT   mA V   Custom → **PV**

Current transformer → **AUX**

Digital input → **IL**

Outputs

OP1 →
OP2 →
OP3 →
OP4 →

Setpoint	Special functions	Digital input functions
LOC 2 MEM	START UP TIMER	2 MEM HOLD PV

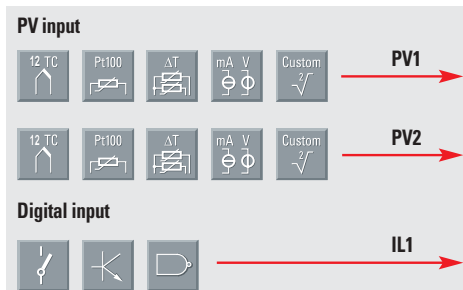**Fuzzy tuning** with automatic selection
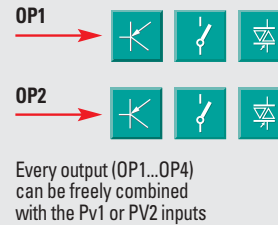
- One shot Auto tuning
- One shot Natural frequency

Serial communications

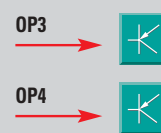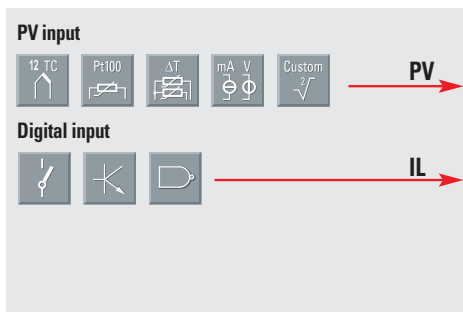**RS485 Modbus Slave** for configuration and supervision purposes

D2 Line - Dual loop control/acquisition module

PV input

12 TC   Pt100   ΔT   mA V   Custom → **PV1**

12 TC   Pt100   ΔT   mA V   Custom → **PV2**

Digital input → **IL1**

Digital outputs

OP1 →
OP2 →

Every output (OP1...OP4) can be freely combined with the Pv1 or PV2 inputs

Digital outputs can also be used as digital inputs

OP3 →
OP4 →

Setpoint	Digital input functions
LOC	2 + 2 MEM HOLD PV ACK

Available functions

Not

Fuzzy tuning with automatic selection

- One shot Auto tuning
- One shot Natural frequency

Serial communications

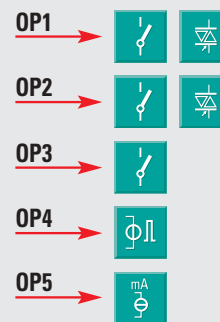**RS485 Modbus Slave** for configuration and supervision purposes

D3 Line - Heat/Cool controller with analogue output

PV input

12 TC   Pt100   ΔT   mA V   Custom → **PV**

Digital input → **IL**

Outputs

OP1 →
OP2 →
OP3 →
OP4 →
OP5 →

Setpoint	Special functions	Digital input functions
LOC 2 MEM	START UP TIMER	2 MEM HOLD PV

Fuzzy tuning with automatic selection

- One shot Auto tuning
- One shot Natural frequency

Serial communications

RS485 Modbus Slave for configuration and supervision purposes

ACQUISITION MODULES

D7 Line - Analogue acquisition, alarm thresholds and transmitter module

PV input

12 TC · Pt100 · ΔT · mA V · Custom → **PV**

Digital input

→ **IL**

Digital input functions

HOLD PV

Outputs (option)

OP1 →

OP2 →

OP5 →

Serial communications

RS485 Modbus Slave
for configuration and supervision purposes

D8 Line -Digital I/O acquisition module with 6 Inputs and 2 Outputs

PV inputs

Hz → **DI1**

Hz → **DI2**

→ **DI3**

→ **DI4**

→ **DI5**

→ **DI6**

Available functions

Not · **Toggle** · **Flip-Flop**

Output

DO1 →

DO2 →

Serial communications

RS485 Modbus Slave
for configuration and supervision purposes

Available functions

Not · **Hold** · **PWM**

D9 Line - 2-channel analogue acquisition module

PV input

12 TC · Pt100 · ΔT · mA V · Custom → **PV1**

12 TC · Pt100 · ΔT · mA V · Custom → **PV2**

Digital input

→ **IL1**

Digital input functions

HOLD PV · ACK

Digital outputs

OP1 →

OP2 →

Digital outputs
can also be used as digital inputs

OP3 →

OP4 →

Available functions

Not

Serial communications

RS485 Modbus Slave
for configuration and supervision purposes
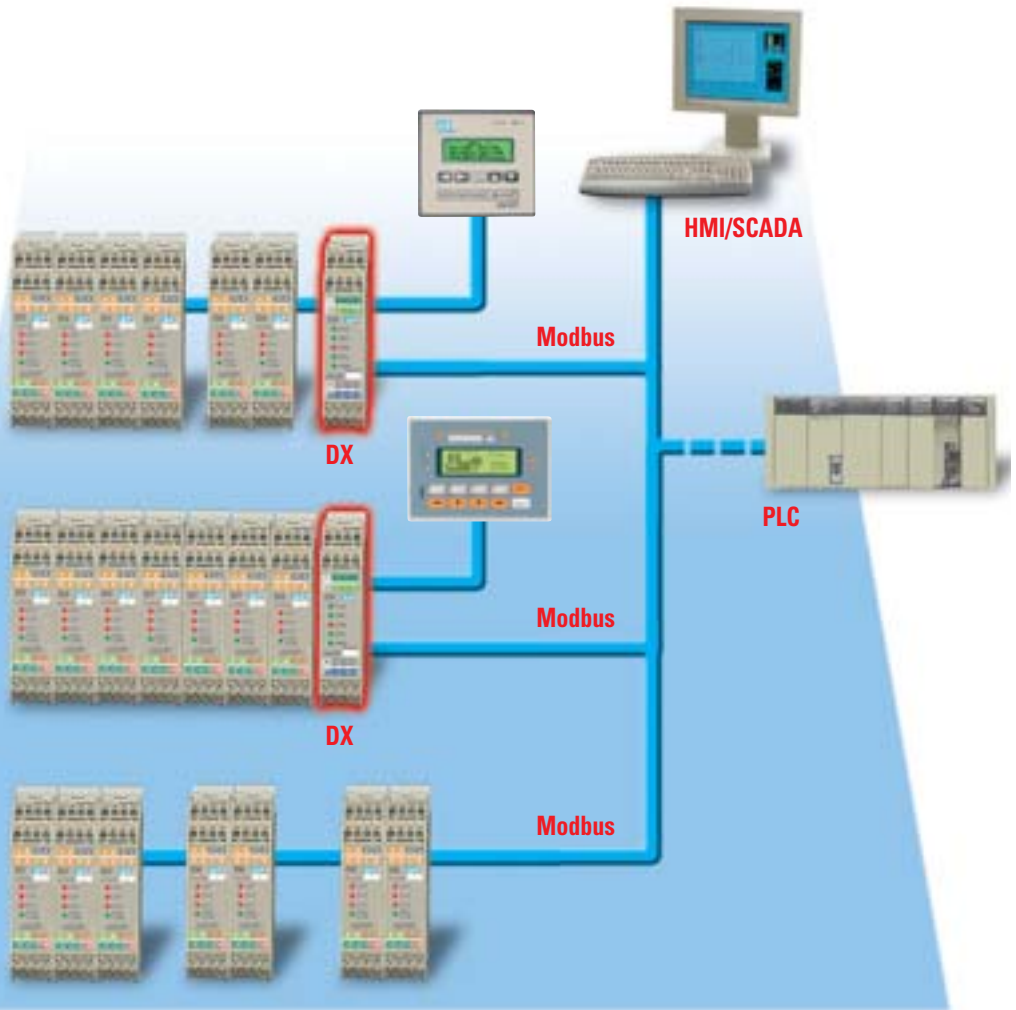
Modular multiloop
PID controller with
local Operator Panel.
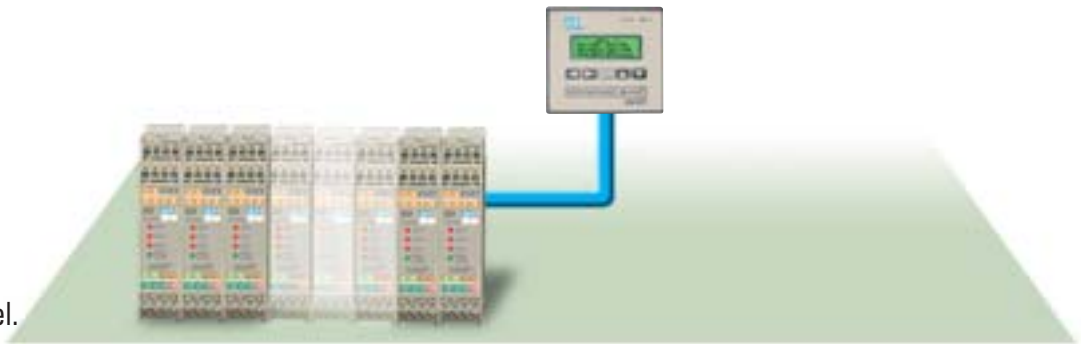
Distributed control
and acquisition system with
DX module (manager and bus
interface) for hot swapping
and connection to local
Operator Panel and remote
SCADA.

HMI/SCADA

Modbus

DX

PLC

Modular multiloop
PID controller with local
Operator Panel interfaced
with remote SCADA.

Modbus

DX

Distributed I/O modules
for acquisition,
data logging
and centralised
supervision of analogue
and digital signals with
the possibility of alarms
and local commands.

Modbus

Industries and Applications

Plastic and Rubber: Injection, Extrusion,
Hot-Runners
Packaging: Thermowelding, Thermoforming

Food: Dairy products, Food Packaging,
Bottling, dried and fresh Pasta,
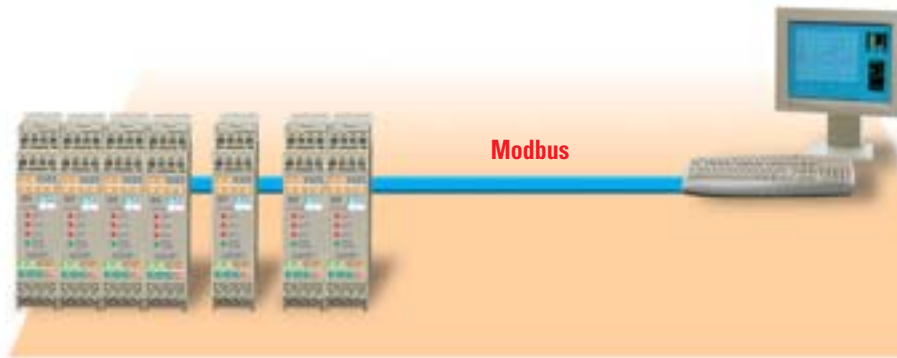oven Products, cereal Silos,
preserving-ripening stores

Vehicles: engine testing Counters,
painting Plants, plate welding Plants
Ceramic and Brick Works: continuous
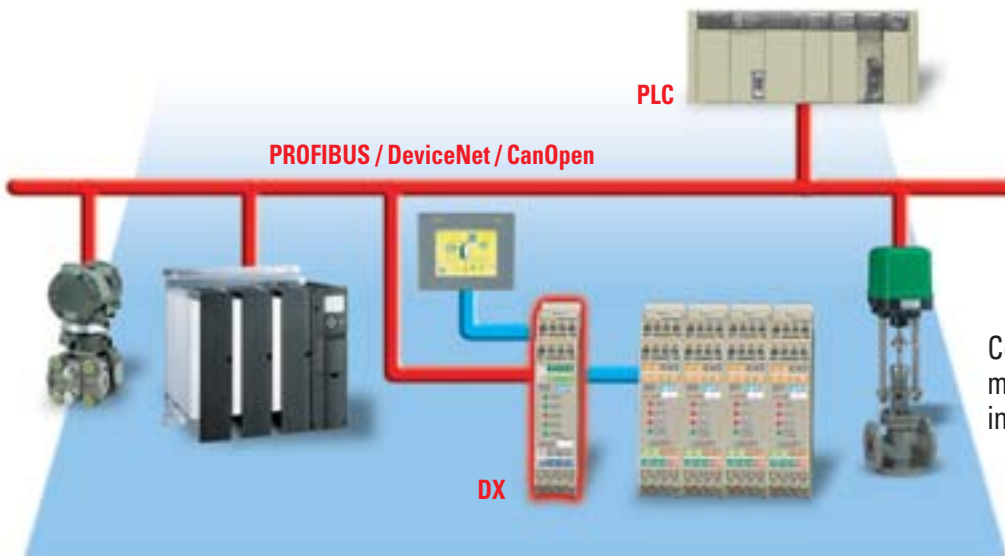Furnaces, intermittent Furnaces, Driers

AND APPLICATIONS

PLC

Modbus
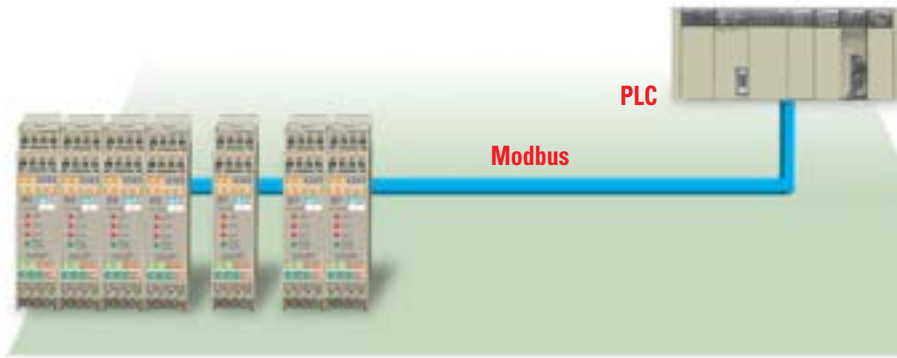
Integration of PLC systems with external distributed PID controls and I/O modules.

Modbus

Distributed I/O modules for PC based sytems.

PLC

PROFIBUS / DeviceNet / CanOpen

DX

Control and acquisition modules with DX fieldbus interface module.

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
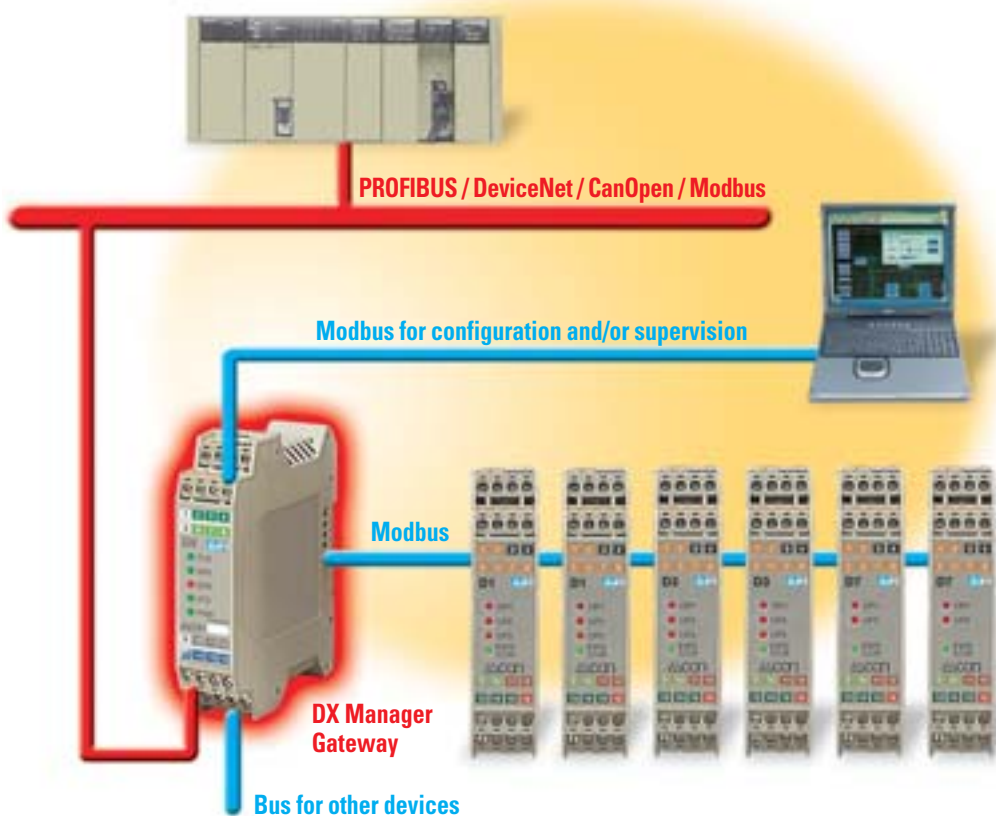**Water Treatment:** waste Waters, Primary Waters, Semi-Conductors.

DX - Manager-Gateway Line

The DX module has 3 serial ports and includes two important functions:
- Manager
- Gateway.

The "Manager" memorises the configuration and parameters of each module and monitors that the latter functions correctly.

Any time a module is substituted, this is recognised by the DX-Manager, which automatically reconfigures and parametrises the substituted module.

The Gateway includes: one fieldbus slave port for the conversion Modbus/PROFIBUS DP, Modbus/DeviceNet, Modbus/CANopen and Modbus/Modbus; two RS485 Modbus Master ports for the connection to the delta**due**® modules and to other Ascon's, or other manufacturer's, devices; one RS485/RS232 Modbus Slave port for the connection to Operator Panels, Supervision PCs and for the configuration of the delta**due**® modules via PC.

PROFIBUS / DeviceNet / CanOpen / Modbus

Modbus for configuration and/or supervision

Modbus

DX Manager Gateway

Bus for other devices

Distributor: