

delta**due**[®] series Control and acquisition modules with fieldbus for DIN rail mounting

Not just I/O modules

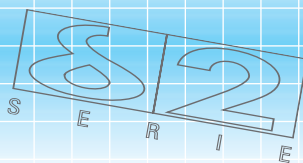
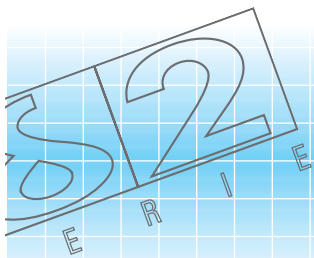
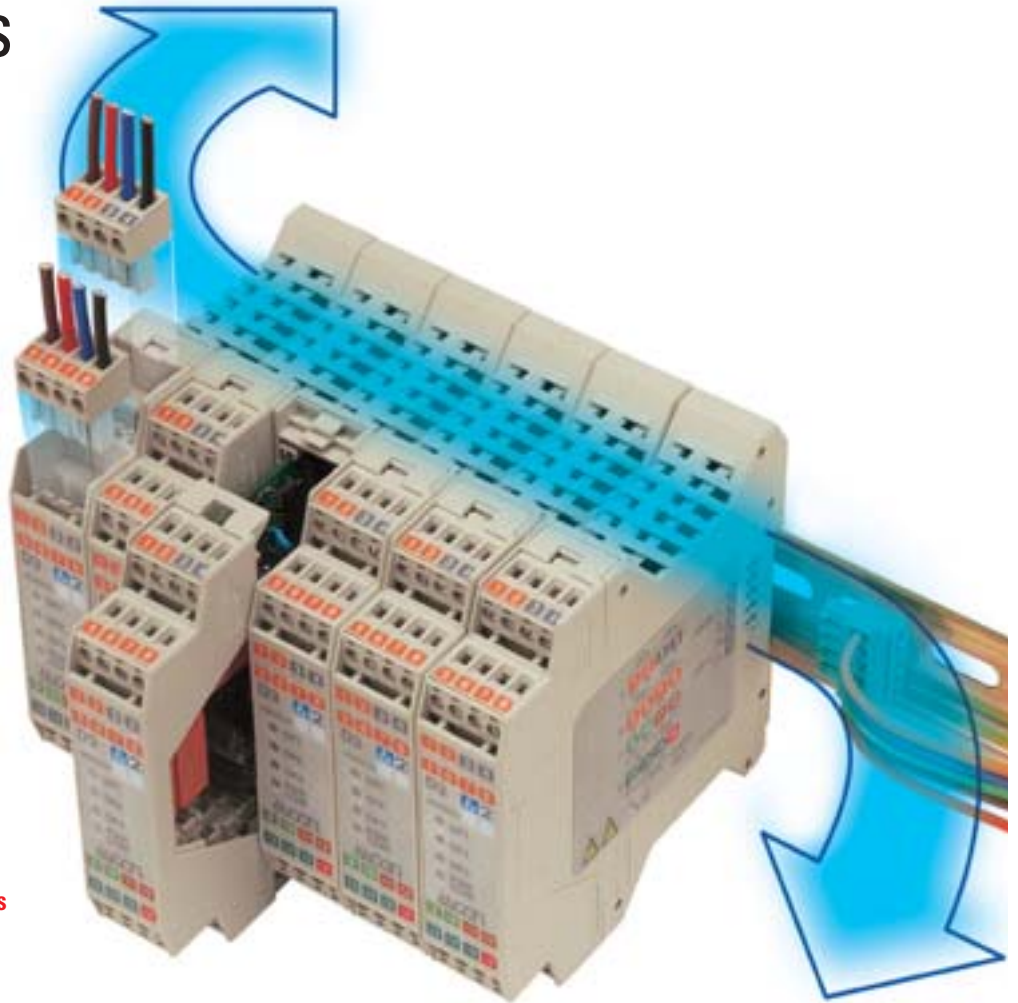
Process and Temperature
controllers

Analogue and digital
I/O modules

Transmitters with alarm
thresholds

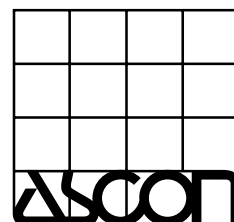
PROFIBUS DP / DeviceNet /
CanOpen / Modbus fieldbus
Interfaces

- 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'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

PROFIBUS
PROCESS FIELD BUS
BUS

MODULES FOR DIN RAIL MOUNTING



**D1, D2, D3
Controllers**

- Universal single loop controllers
- Independent dual loop controllers

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



**D7, D8, D9
Acquisition and
Transmitter modules**

...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.

RS 485



DX Manager-Gateway

485/232

**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

- Thermocouple
- RTD Pt100
- Delta temp. (2xRTD)
- mA and mV
- "Custom"

Auxiliary inputs

- Current transformer

Digital inputs

- Isolated contact
- NPN open collector
- TTL open collector
- Frequency

Digital outputs

- SPST relay
- SSR
- PNP open collector
- SSR drive

Analogue output

- mA

Fuzzy tuning

- One shot Auto tuning
- One shot Natural frequency

Setpoint

- Local
- Memorised

Special functions

- Start-up
- Timer

Digital input connected functions

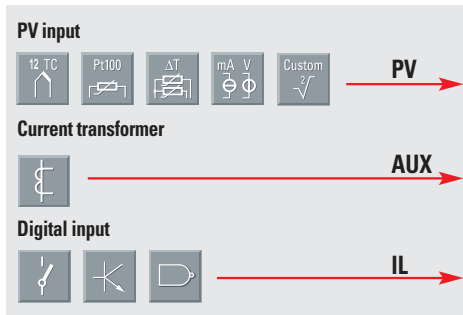
- Auto/Man
- Memorised setpoint activation
- PV Hold
- Alarm acknowledgement
- Not
- Toggle
- Flip-Flop

Digital output connected functions

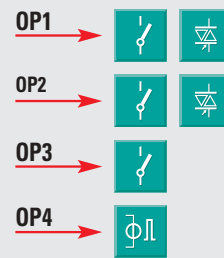
- Not
- Hold
- PWM

PID CONTROL MODULES

D1 Line - Temperature controller



Outputs



Fuzzy tuning with automatic selection

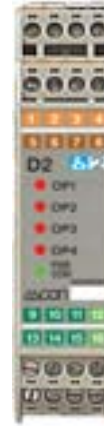
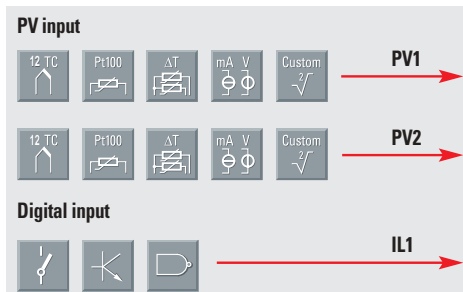
- One shot Auto tuning
- One shot Natural frequency

Serial communications

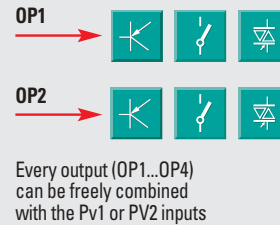


RS485 Modbus Slave
for configuration and supervision purposes

D2 Line - Dual loop control/acquisition module

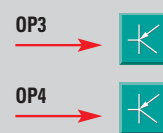


Digital outputs



Every output (OP1...OP4) can be freely combined with the Pv1 or Pv2 inputs

Digital outputs can also be used as digital inputs



Available functions

- Not

Fuzzy tuning with automatic selection

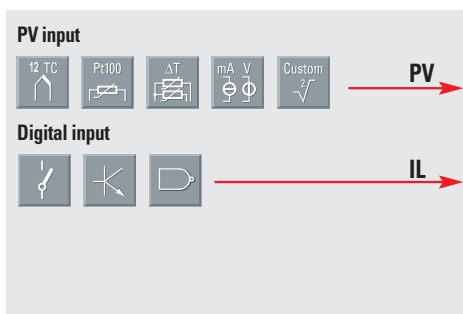
- One shot Auto tuning
- One shot Natural frequency

Serial communications

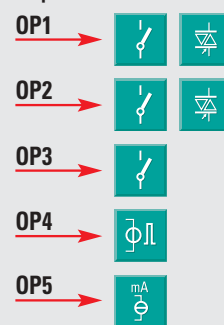


RS485 Modbus Slave
for configuration and supervision purposes

D3 Line - Heat/Cool controller with analogue output



Outputs



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 → **IL**

Digital input functions

HOLD PV




Outputs (option)

OP1 → [Switch]

OP2 → [Switch]

OP5 → [mA]

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

DI1 → [Switch] [Not] [Hz]

DI2 → [Switch] [Not] [Hz]

DI3 → [Switch] [Not]


DI4 → [Switch] [Not]

DI5 → [Switch] [Not]

DI6 → [Switch] [Not]

Available functions

Not Toggle Flip-Flop




Output

DO1 → [Switch] [Diode] [Pulse]

DO2 → [Switch] [Diode] [Pulse]

Serial communications


RS485 Modbus Slave
for configuration and supervision purposes

Available functions

Not Hold PWM

D9 Line - 2-channel analogue acquisition module

PV input

PV1 → [12 TC] [Pt100] [ΔT] [mA V] [Custom]


PV2 → [12 TC] [Pt100] [ΔT] [mA V] [Custom]

Digital input

IL1 → [Switch] [Not] [Pulse]

Digital input functions

HOLD PV ACK



Digital outputs

OP1 → [Switch] [Diode] [Pulse]


OP2 → [Switch] [Diode] [Pulse]

Digital outputs can also be used as digital inputs

OP3 → [Switch]

OP4 → [Switch]

Serial communications

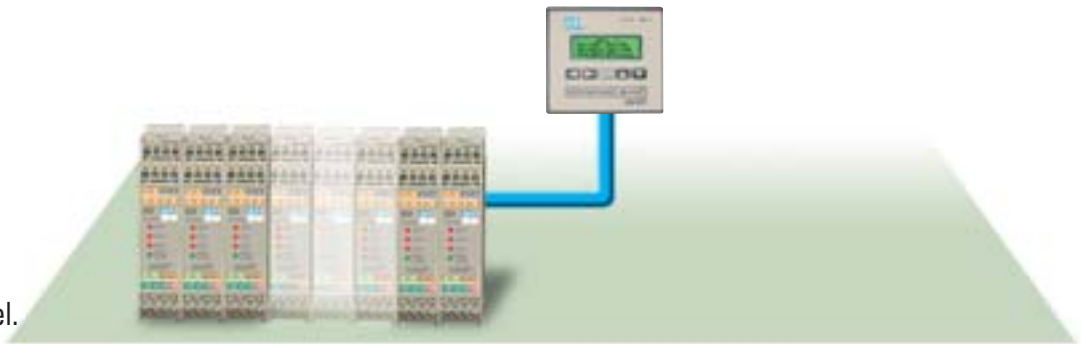

RS485 Modbus Slave
for configuration and supervision purposes

Available functions

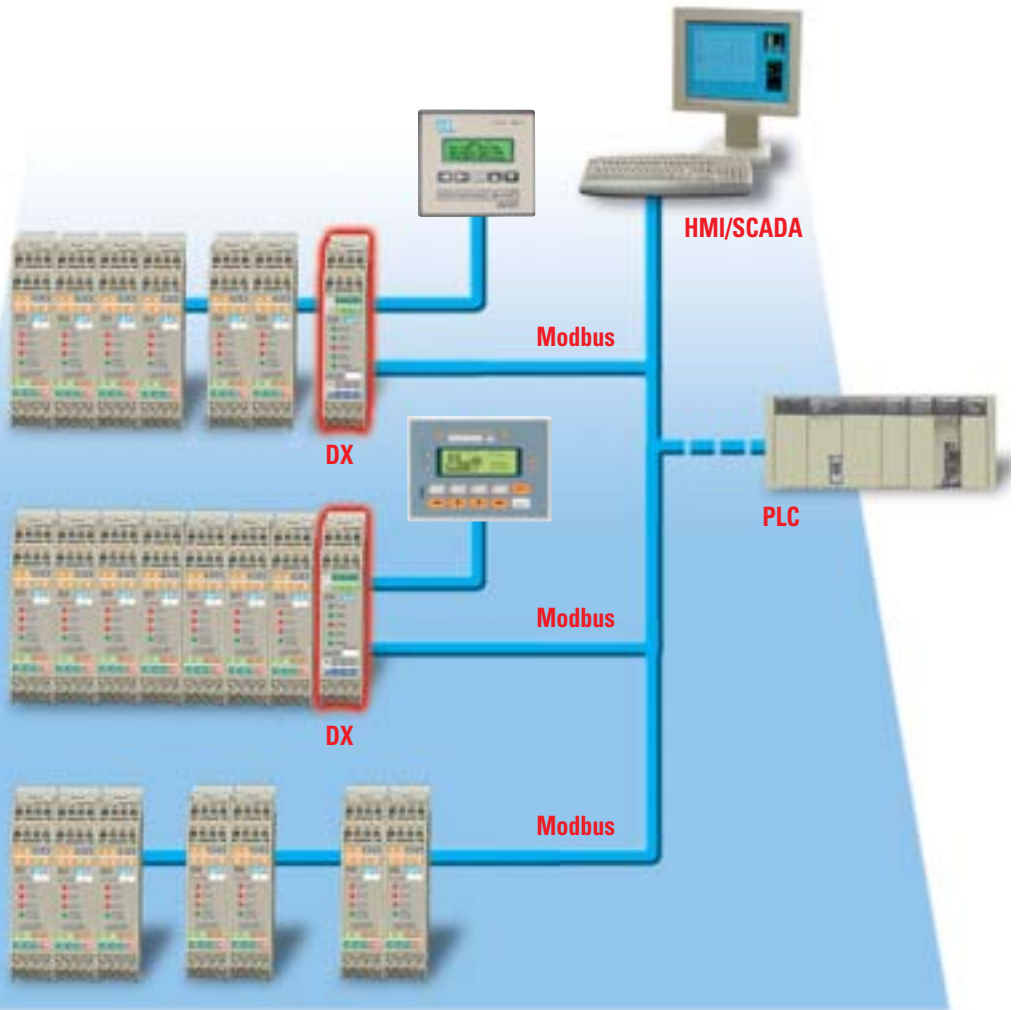
Not

ARCHITECTURES A

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.



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

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

Industries and Applications

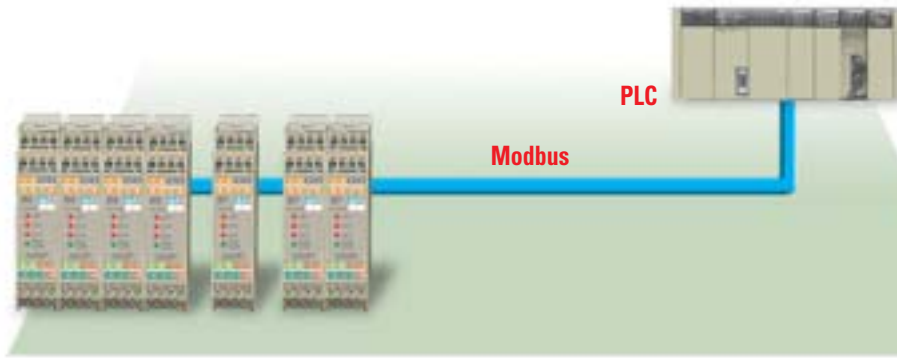
Plastic and Rubber: Injection, Extrusion, Hot-Runners
Packaging: Thermowelding, Thermoforming

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

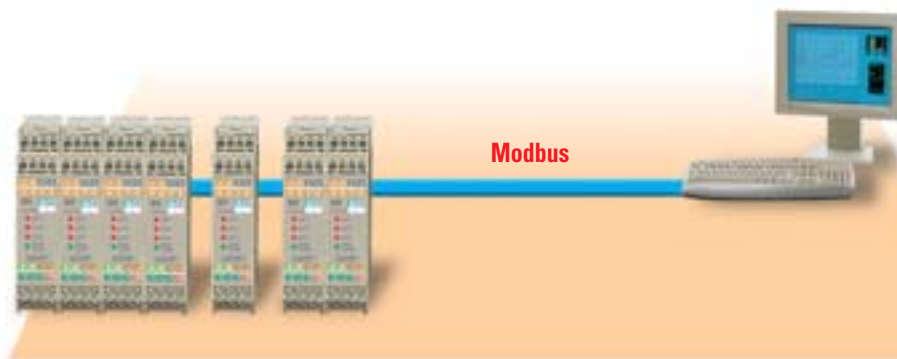
Vehicles: engine testing Counters, painting Plants, plate welding Plants
Ceramic and Brick Works: continuous Furnaces, intermittent Furnaces, Driers



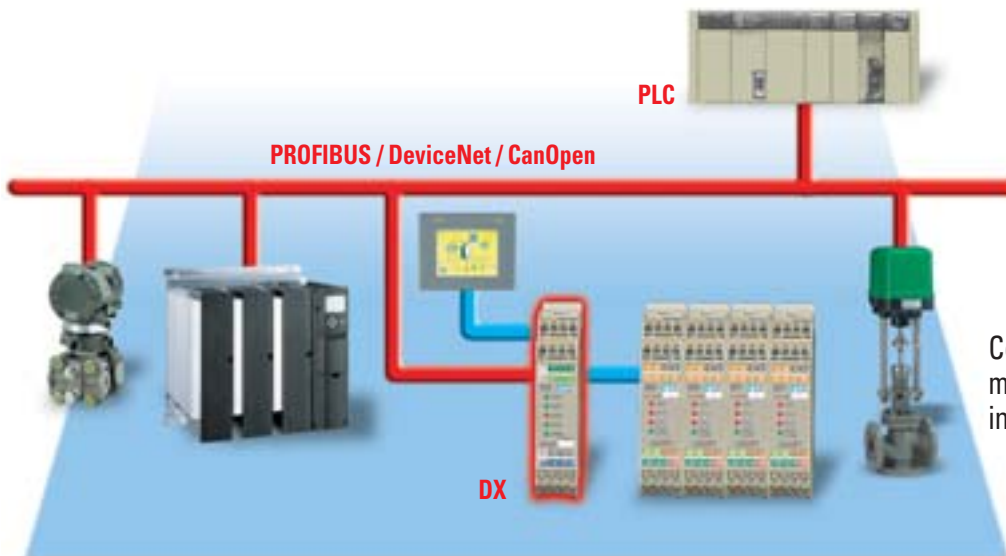
AND APPLICATIONS



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



Distributed I/O modules for PC based systems.



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 Pharmaceuticals: Fine chemistry, Pharmaceuticals, 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.

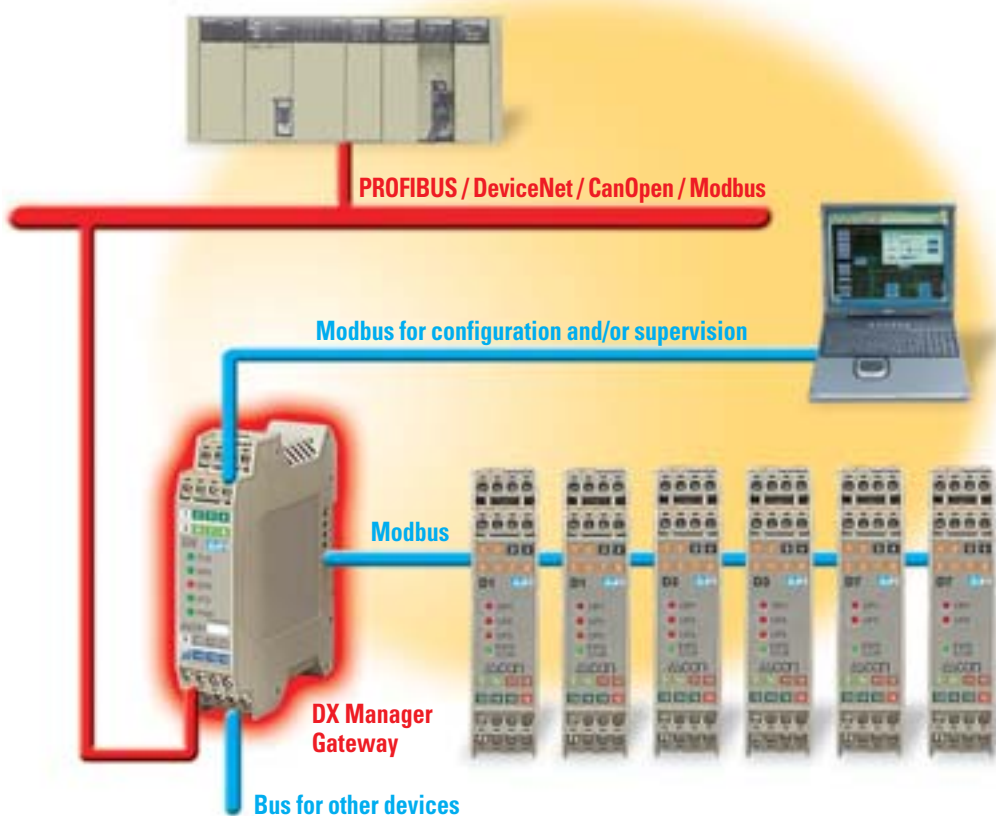


DX - Manager-Gateway Line

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.



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