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 TCP / Modbus RTU 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
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 TCP or Modbus RTU is assured by the Gateway modules.

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.
ON MODULES FOR DIN RAIL MOUNTING

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

...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 TCP or Modbus RTU by means of the Gateway modules DX and DY.

...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.
**PID CONTROL MODULES**

**D1 Line - Temperature controller**

**Main universal input**
- PV

**Current transformer**
- AUX

**Digital input**
- IL

**Outputs**
- DP1
- DP2
- DP3
- DP4

**Serial communications**
- RS485 Modbus Slave for configuration and supervision purposes

**Fuzzy tuning**
- One shot
- Auto tuning
- Natural frequency

**Available functions**
- Start-up
- Timer

**Special functions**
- Local
- Memorised

**Setpoint**
- Local
- Memorised

**Digital input functions**
- Start-up
- Timer
- Auto/Man
- Memorised setpoint activation
- PV Hold
- Alarm acknowledgement
- Not
- Toggle
- Flip-Flop
- PWM

**D2 Line - Dual loop control/acquisition module**

**Main universal inputs**
- PV1
- PV2

**Digital input**
- IL1

**Outputs**
- DP1
- DP2
- DP3
- DP4

**Serial communications**
- RS485 Modbus Slave for configuration and supervision purposes

**Fuzzy tuning**
- One shot
- Auto tuning
- Natural frequency

**Available functions**
- Not

**Digital input functions**
- Start-up
- Timer
- Auto/Man
- Memorised setpoint activation
- PV Hold
- Alarm acknowledgement
- Not
- Toggle
- Flip-Flop
- PWM

**D3 Line - Heat/Cool controller with analogue output**

**Main universal input**
- PV

**Digital input**
- IL

**Outputs**
- DP1
- DP2
- DP3
- DP4

**Serial communications**
- RS485 Modbus Slave for configuration and supervision purposes

**Fuzzy tuning**
- One shot
- Auto tuning
- Natural frequency

**Available functions**
- Not

**Digital input functions**
- Start-up
- Timer
- Auto/Man
- Memorised setpoint activation
- PV Hold
- Alarm acknowledgement
- Not
- Toggle
- Flip-Flop
- PWM
ACQUISITION MODULES

D7 Line - Analogue acquisition, alarm thresholds and transmitter module

Main universal Input

Digital input

Outputs (option)

Serial communications

RS485 Modbus Slave
for configuration and supervision purposes

D9 Line - 2-channel analogue acquisition module

Main universal Inputs

Digital input

Digital outputs

Available functions

Not

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

Digital inputs

Available functions

Not

Toggle

Flip-Flop

Serial communications

RS485 Modbus Slave
for configuration and supervision purposes
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

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

Distributed control and acquisition system with DX module (manager and bus interface) for hot swapping and connection to local Operator Panel and 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.
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 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 and Modbus RTU/Modbus RTU;
- 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.

DX Manager
Gateway
Modbus for configuration and/or supervision

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