Universal controller

UCS34

The UCS34 controller is a universal configurable controller designed to control HVAC systems.
Thanks to the large number of inputs and outputs and enormous programming capabilities, the controllers enable the control of HVAC systems in a very wide range. Any application can be entered directly from the controller keyboard and they do not require any external software tools such as a computer, programmer or memory card.

Versatility and flexibility

The UCS controller has powerful and flexible software that allows easy and intuitive programming of various types of applications. The MENU system is organized in a clear and intuitive way and will adapt to the defined application. Unsused functions and parameters are removed from the MENU system.
UCS controllers, unlike freely programmable controllers, do not require external software tools or building own control algorithms by the user. Algorithms and functions for full control of HVAC systems are built-in. To create your own applications, all you need to do is to run the aplication wizard then configure the parameters.

Real-time clock

The UCS34 has built-in a real-time clock with a weekly schedule. Up to 5 time zones can be defined for each day. A time zone is defined by the start time and the stop time of the unit. Within each time zone, setpoints are defined: temperature, humidity, pressure or CO2, fan speed, etc...
Also some devices and processes can be controlled within these zones.

Some functions:

- **Temperature control**
  - Cascade control of temperature(indoor/supply) with min/max limites on supply temperature
  - Primary and secondary heating.
  - Water and electric heaters control.
  - PWM control of electric heaters.
  - Water cooling coil and cooling units control.
  - Preliminary heating.
  - Water heater frost protection.
  - Electric heater overheating protection.
  - Cooling units protection.
  - FREE COOLING function.
- **Humidity control (humidifying and deshumidifying)**
  - Cascade control of humidity with min/max limites on supply sensor.
  - Secondary heater control during deshumidifying.
- **Two additional PID control loops for pressure , CO2 ... control)**
  - Cascade control of humidity with min/max limites on supply sensor.
- **Fan control**
  - Supply and extract fan control.
  - Up do 4-speed fan control and star-delta control.
  - Inverters control.
  - Supply fan and extract fan pressure guard alarm.
  - Motor failure alarm.
- **Heat exchanger control**
  - Plate heat exchanger and rotary heat exchanger control.
  - Exchanger frost protection.
- **Mixing chamber control (recirculation dampers)**
  - Two control mode available: Automatic control or control according to the outdoor temperature graph.
- **Inlet/outlet dampers control**
- **Circulation pump control**
  - Pump activation during low outdoor temperature.
  - Periodical pump and valve activation.
  - Pump failure alarm support.
- **Real-time clock with a weekly schedule**
- **One program for manual mode**
- **Two available programs triggered by programmable events**
  - Defining setpoints within programs and time zones: temperature, humidity, pressure, CO2, fan speed, etc..
  - Processes and devices control within work programs and time zones.

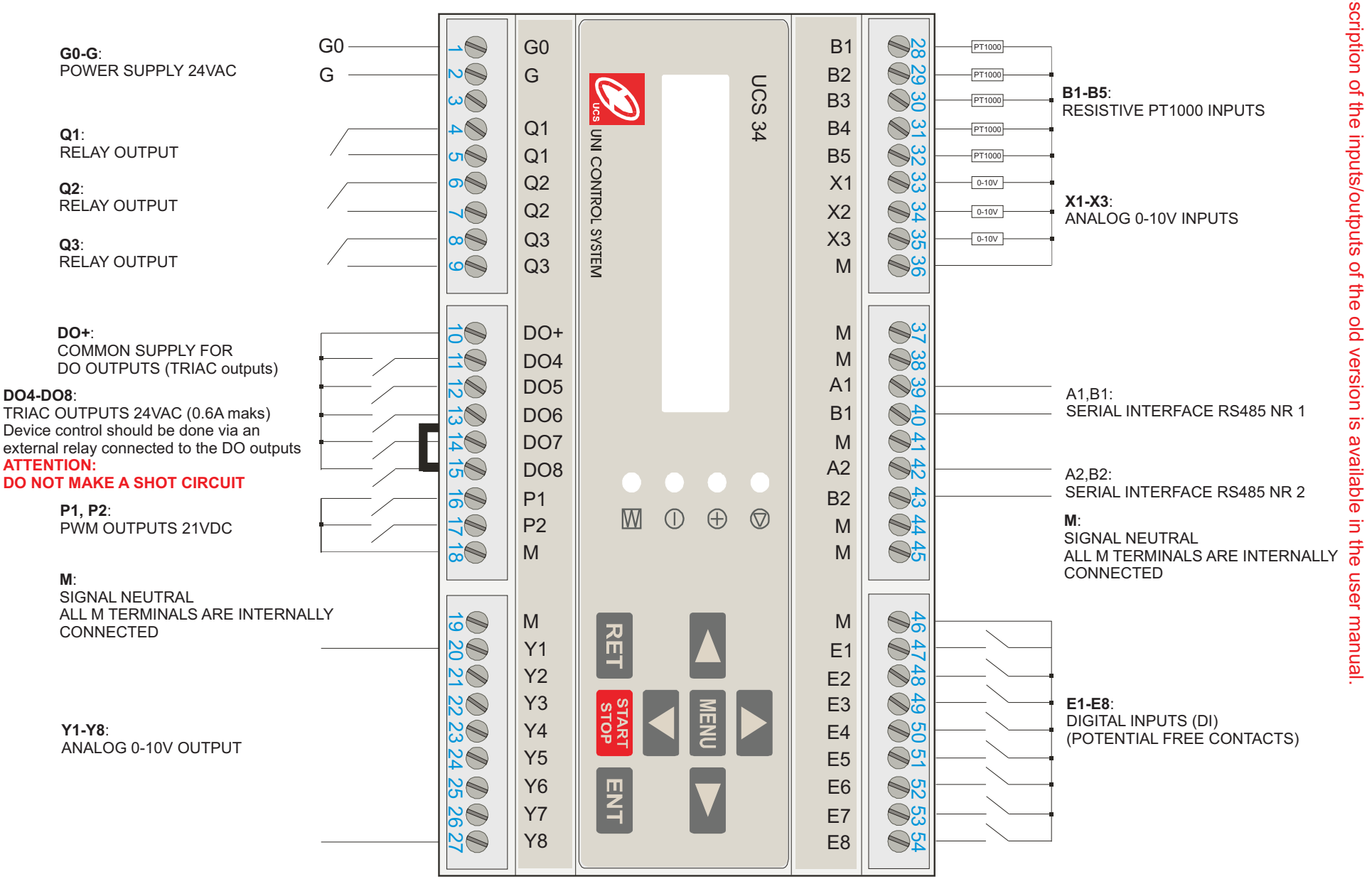
- **IOther functions**
  - Outdoor temperatur compensation (heating curve).
  - Arithmetic functions, e.g. averaging measurements from 2 channels.
- **Some supported alarms**
  - Water heater frost protection alarm.
  - Electric heater overheating alarm.
  - Cooling units alarm.
  - Exchanger Alarm.
  - Supply fan and extract fan pressure guard alarm.
  - Filter pressure guards alarm
  - Motor failure alarm
  - Pump failure alarm
  - Fire alarm
- **RS485 transceiver with MODBUS protocol**
- **Non-volatile memory for data saving**
- **Data protection by password**

Controller preview:

Inputs	**UCS32**	**UCS34**
- Resistive inputs: PT1000 sensor	5	5
- 0-10V analog inputs	2	3
- Digital inputs	5	8
Outputs		
- Relay outputs (NO potential free contact)	2	3
- 24VAC DO (triac)	3	5
- 0-10V analog outputs	4	8
- PWM outputs (for electric heater control)	2	2
- RS485 transceiver port with Modbus communication	2	2
Number of PID loops	8	8
Fan gear number	4	4

UCS34 new version

The description of the inputs/outputs of the old version is available in the user manual.



G0-G:
POWER SUPPLY 24VAC

Q1:
RELAY OUTPUT

Q2:
RELAY OUTPUT

Q3:
RELAY OUTPUT

DO+:
COMMON SUPPLY FOR
DO OUTPUTS (TRIAC outputs)

DO4-DO8:
TRIAC OUTPUTS 24VAC (0.6A maks)
Device control should be done via an external relay connected to the DO outputs
ATTENTION:
DO NOT MAKE A SHOT CIRCUIT

P1, P2:
PWM OUTPUTS 21VDC

M:
SIGNAL NEUTRAL
ALL M TERMINALS ARE INTERNALLY CONNECTED

Y1-Y8:
ANALOG 0-10V OUTPUT

B1-B5:
RESISTIVE PT1000 INPUTS

X1-X3:
ANALOG 0-10V INPUTS

A1,B1:
SERIAL INTERFACE RS485 NR 1

A2,B2:
SERIAL INTERFACE RS485 NR 2

M:
SIGNAL NEUTRAL
ALL M TERMINALS ARE INTERNALLY CONNECTED

E1-E8:
DIGITAL INPUTS (DI)
(POTENTIAL FREE CONTACTS)

Technical information:

Power supply:	24VAC 10%, 50/60Hz
Power consumption:	6VA (outpts P1,P2, DO4...DO8 not loaded)
Working temperatur:	0..50°C
Storage temperature:	-25...50°C
Inputs:	
Resistive B1..B5	Typ PT1000 Range: -25 ...+70°C
Analog X1..X3	Range: 0-10V Input impedance: 500k min.
Digital E1..E8	Input signal: Free potential contact
Outputs:	
Analog Y1...Y8	0-10V / 2mA
PWM P1, P2	21V 2VDC / 50mA (max.) Output resistance: 200Ω
Relay Q1, Q2, Q3	250VAC, 2.5A / resistive load
Digital DO4...DO8	Triac, 24VAC / 0.6A maximum load Minimum load current: 7mA
Communication:	2 x RS485 ports with Modbus RTU/ASCII protocol
CE Compliance	The product is in conformance with the regulations of the following European Directives and harmonized norms: Directives: EMC 2004/108/WE Harmonized norms: PN-EN 61000-6-2, PN-EN 61000-6-3, PN-EN 61131-2.