

UNIVERSAL PROCESS CONTROLLER UC-820

DESCRIPTION

The UC-820 is a digital universal controller used in the automation of industrial processes. It is ideally suited for use with our range of instrumentation, electric and pneumatic control valves and other electrical equipments.

The controller includes a set of universal type inputs for RTD, thermocouple (TC), logic (binary) and analog inputs. The controller has options for relay, open-collector (OC) and analog outputs using the innovative SMART PID algorithm.

MAIN FEATURES

- Universal measuring input: Resistance thermometer (RTD), thermocouples (TC), 0/4 to 20 mA and 0 to 5/10 V.
- Binary input control.
- Set point value: constant, programmed or from the additional analog input.
- On/off, PID, PID three-step and two-step control (valve control) or PID of heating-cooling type.
- 2 NO relay outputs and 2 other outputs of choice between relay, OC or analog outputs (0/4 to 20 mA or 0 to 10 V).
- Soft-start function.
- 8 types of alarm functions.
- 24 V DC loop power supply output.
- Signal retransmission.
- "Gain scheduling" function.
- Timer function.
- Auto-tuning using the smart PID algorithm.
- Measurement of heating current and monitoring of heater overheating or shortening of the control element.
- Galvanically isolated inputs and outputs.
- Password protection.
- Fully programmable from the front panel.
- RS-485 Modbus RTU communication.
- IP rating IP 65.



TECHNICAL DATA

GENERAL	
Supply Voltage	85 to 253 V AC/DC or 20 to 40 V AC/DC
Ambient temperature	0 to 50 °C
Storage temperature	- 20 to 70 °C
Humidity	< 85% without condensation
Operating Position	Any

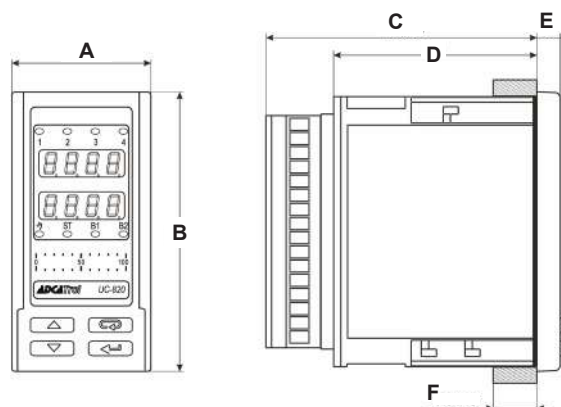
EXTERNAL FEATURES	
Readout field	2 x 4 digits; Digit height: 10 mm; Colors: red and green
Weight	< 0.2 kg
IP rating	From frontal side: IP 65; From rear side: IP 20
Bargraph	2 x 21 points; Colors: red and green

INPUT		
TYPE	RANGE	ERROR
PT100	- 200 to 850 °C	0,2%
PT1000	- 200 to 850 °C	0,2%
Fe-CuNi (J)	- 100 to 1200 °C	0,3%
Cu-CuNi (T)	- 100 to 400 °C	0,3%
NiCr-NiAl (K)	- 100 to 1372 °C	0,3%
PtRh10-Pt (S)	0 to 1767 °C	0,5%
PtRh13-Pt (R)	0 to 1767 °C	0,5%
PtRh30-PtRh6 (B)	200 to 1767 °C	0,5%
NiCr-CuNi (E)	- 100 to 1000 °C	0,3%
NiCrSi-NiSi (N)	- 100 to 1300 °C	0,3%
Chromel-kopel (L)	- 100 to 800 °C	0,3%
Current channels (I)	0/4 to 20 mA	0,2% +/-1 digit
Voltage channels (U)	0 to 5/10 V	0,2% +/-1 digit
Binary	Voltageless	

OUTPUT		
TYPE	PROPERTIES	LOAD CAPACITY
Relay (voltageless)	NO contacts	2 A/ 230 V AC
OC open-collector	0/5 V	Max. 40 mA
Continuous voltage	0 to 10 V	Rload ≥ 1kΩ
Continuous current	0/4 to 20 mA	Rload ≤ 500Ω
Transducer supply output	24 V DC	Max. 30 mA

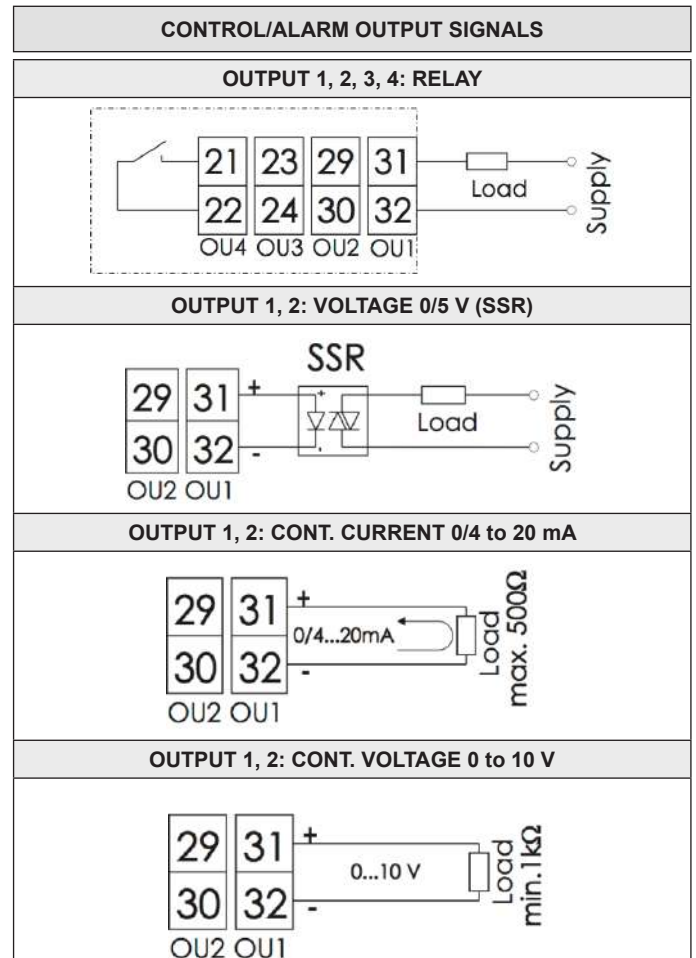
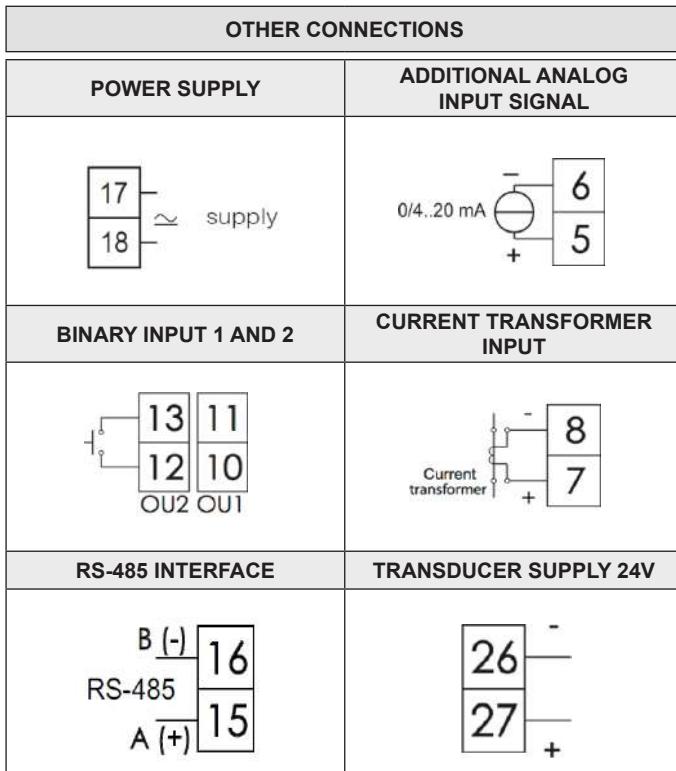
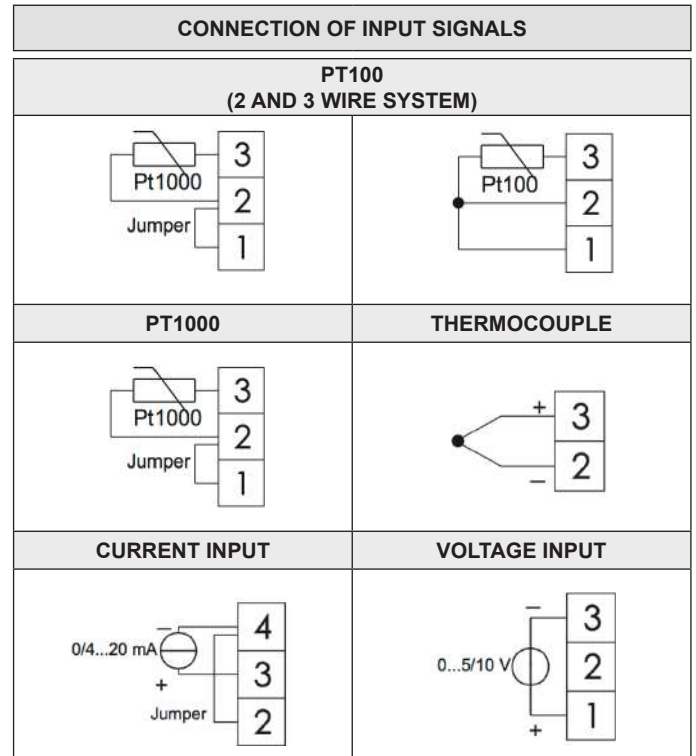
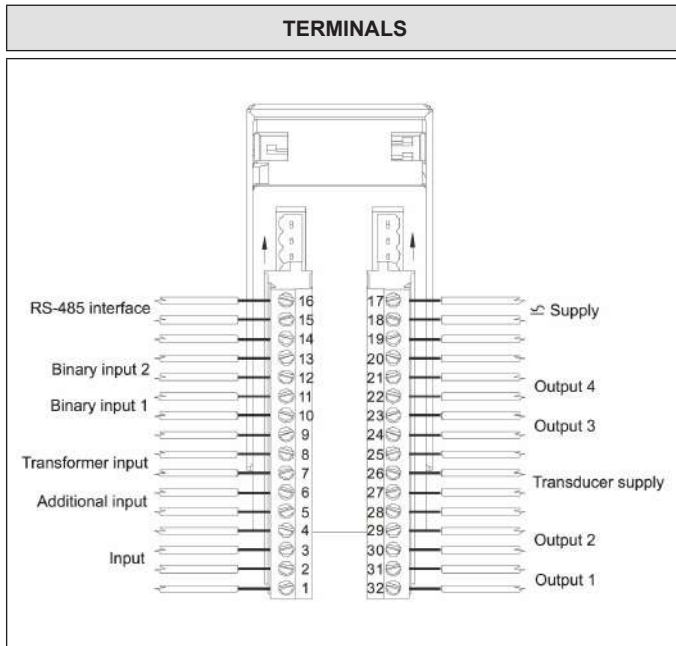
DIGITAL INTERFACE	
Interface type	RS-485
Protocol	Modbus RTU 8N2, 8E1, 8O1, 8N1
Baud rate	4.8, 9.6, 19.2, 38.4, 57.6 kbit/s

SAFETY AND COMPATIBILITY REQUIREMENTS	
Electromagnetic compatibility	Noise immunity acc. to EN 61000-6-2
	Noise emissions acc. to EN 61000-6-4
Pollution level	Level 2 acc. to EN 61010-1
Installation category	Cat. III acc. to EN 61010-1
Maximal phase-to-earth operating voltage	Supply / Output circuits: 300 V; Input circuits: 50 V acc. to EN 61010-1



DIMENSIONS (mm)						
MODEL	A	B	C	D	E	F
UC-820	48	96	93 (max.)	70	8	15 (max.)

ELECTRICAL CONNECTIONS



ORDERING CODES UC-820					
Group designation	UC820	.1	3	1	.1
Universal process controller	UC820				
Output 1					
Relay		.1			
OC open collector (0/5 V)		.2			
Continuous current (0/4 to 20 mA)		.3			
Continuous voltage (0 to 10 V)		.4			
Output 2					
Relay a)			1		
OC open-collector (0/5 V)			2		
Continuous current (0/4 to 20 mA)			3		
Continuous voltage (0 to 10 V)			4		
Transducer Supply 24 V					
None				0	
Supply for transducers 24 V DC 1 W				1	
Power Supply					
85 to 253 V AC/DC					.1
20 to 40 V AC/DC					.2

a) Only when a relay or OC voltage output is selected on output 1.