

### UNIVERSAL PROCESS CONTROLLERS UC-820

#### DESCRIPTION

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

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 for resistance thermometer (RTD), thermocouples (TC), 0/4 to 20 mA and 0 to 5/10 V.

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 alarm outputs and 2 other outputs of choice between relay, OC or analog outputs (0/4 to 20 mA or 0 to 10 V).

Binary input control.

Soft-start function.

8 types of alarm functions.

24 V DC supply output to power transmitters and others.

Signal retransmission.

“Gain scheduling” and timer functions.

Auto-tuning using the smart PID algorithm.

Galvanically isolated inputs and outputs.

Password protection.

Fully programmable from the front panel.

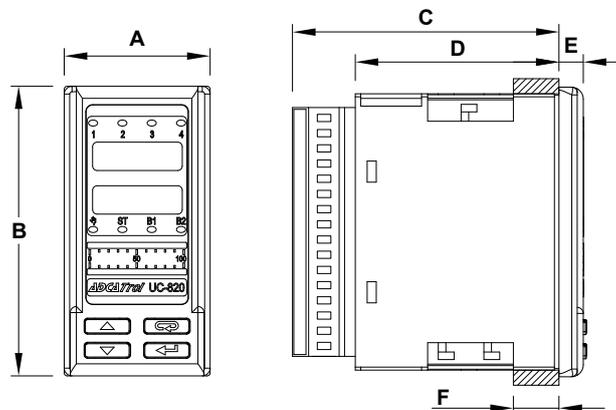
RS-485 Modbus RTU communication.

IP rating IP 65.



#### AVAILABLE

MODELS: UC-820.



DIMENSIONS (mm)							
MODEL	A	B	C	D	E	F	WEIGHT (kg)
UC-820	48	96	70	93	8	15	0,2

## TECHNICAL DATA

GENERAL	
Supply voltage	85 to 253 V AC/DC or 20 to 40 V AC/DC
Ambient temperature	0 to 55 °C
Storage temperature	-20 to +70 °C
IP rating	IP 65 (front); IP 20 (rear)
Material	Housing in PC/ABS
Humidity	< 85%, non condensing
Front panel	96 x 48 mm (cutout: 92 x 45 mm)
Operating position	Any
External magnetic field	0 to 400 A/m

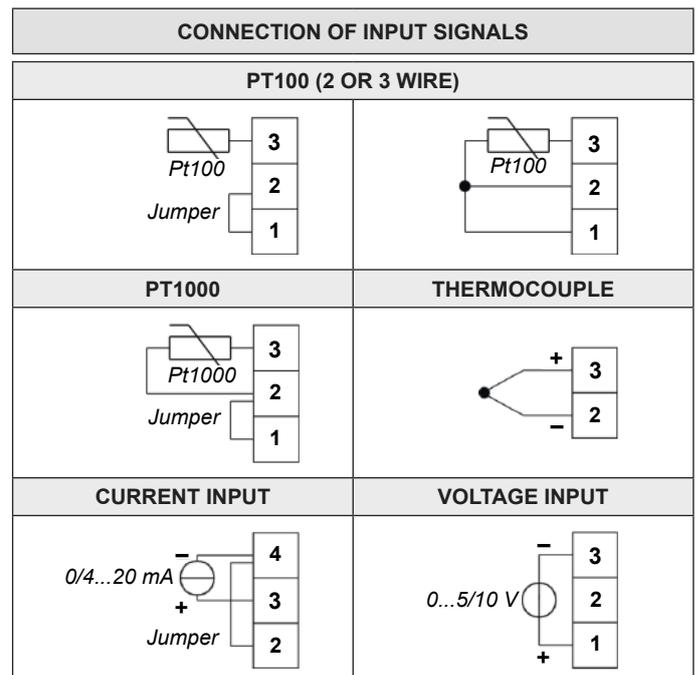
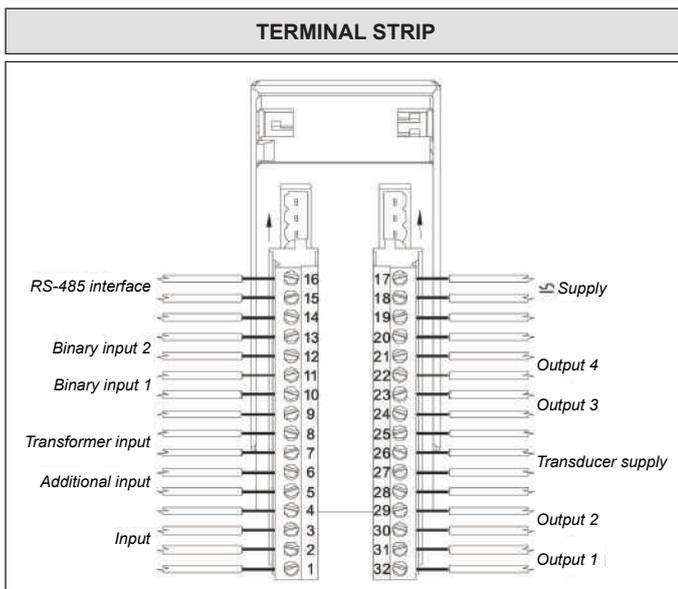
OUTPUTS	
Relay	NO volt free contacts, 2 A @ 230 V AC
	2 change-over volt free contacts 0,5 A @ 230 V AC
OC open-collector	0/5 V, passive NPN, 40 mA max.
Continuous voltage	0 to 10 V, 1 kΩ min.
Continuous current	0/4 to 20 mA, 500 Ω max.
Transducer supply	24 V DC, 30 mA max.

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

INPUTS	
PT100	-200 to 850 °C, 0,2% error
PT1000	-200 to 850 °C, 0,2% error
Fe-CuNi (J)	-100 to 1200 °C, 0,3% error
Cu-CuNi (T)	-100 to 400 °C, 0,3% error
NiCr-NiAl (K)	-100 to 1372 °C, 0,3% error
PtRh10-Pt (S)	0 to 1767 °C, 0,5% error
PtRh13-Pt (R)	0 to 1767 °C, 0,5% error
PtRh30-PtRh6 (B)	200 to 1767 °C, 0,5% error
NiCr-CuNi (E)	-100 to 1000 °C, 0,3% error
NiCrSi-NiSi (N)	-100 to 1300 °C, 0,3% error
Current input (I)	0/4 to 20 mA, 0,2% ±1 digit error
Voltage input (U)	0 to (5)10 V, 0,2% ±1 digit error
Binary	Voltageless
Additional current input	0/4 to 20 mA, 0,2% ±1 digit error

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

## ELECTRICAL CONNECTIONS



OTHER CONNECTIONS	
<b>POWER SUPPLY</b> 	<b>ADDITIONAL ANALOG INPUT SIGNAL</b> $0/4 \dots 20 \text{ mA}$ 
<b>BINARY INPUT 1 AND 2</b> 	<b>CURRENT TRANSFORMER INPUT</b> 
<b>RS-485 INTERFACE</b> 	<b>24V TRANSDUCER SUPPLY</b> 

CONTROL/ALARM OUTPUT SIGNALS
<b>OUTPUT 1, 2, 3, 4: RELAY</b> 
<b>OUTPUT 1, 2: VOLTAGE 0/5 V (SSR)</b> 
<b>OUTPUT 1, 2: CONT. CURRENT 0/4 to 20 mA</b> 
<b>OUTPUT 1, 2: CONT. VOLTAGE 0 to 10 V</b> 

ORDERING CODES UC-820					
GROUP DESIGNATION	UC820	.1	3	1	.1
UC-820 – Universal process controller	UC820				
<b>OUTPUT 1</b>					
Relay		.1			
OC open collector 0/5 V		.2			
Continuous current 0/4 to 20 mA		.3			
Continuous voltage 0 to 10 V		.4			
<b>OUTPUT 2</b>					
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		
<b>24 V TRANSDUCER SUPPLY</b>					
24 V DC supply for transducers, 1 W				1	
<b>POWER SUPPLY</b>					
85 to 253 V AC/DC					.1
20 to 40 V AC/DC					.2

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