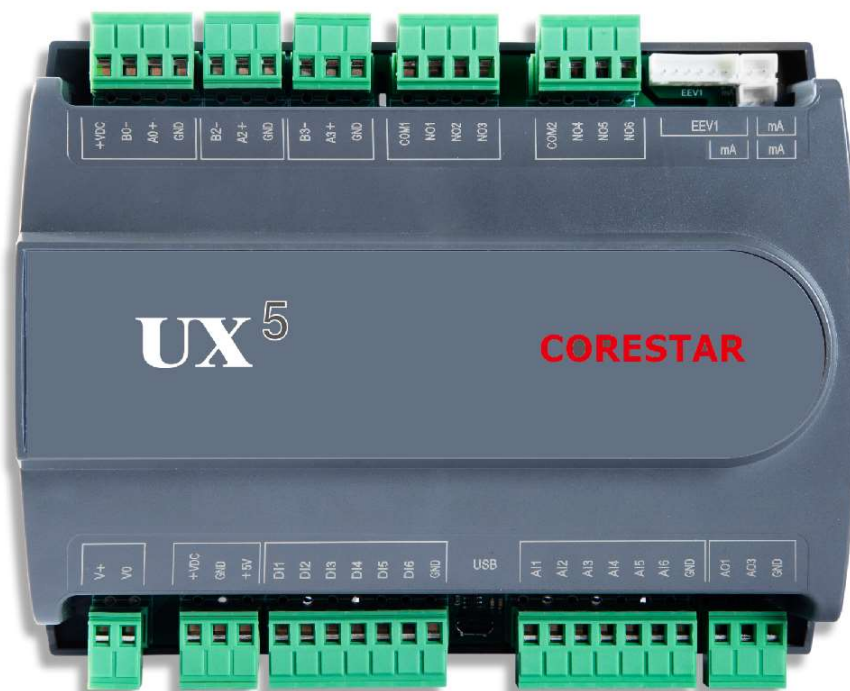


User Manual

(Version V1.1)

UX5

Programmable Logic Controller



Introduction

UX5 is a RTOS (Real Time Operating System) based programmable logic controller which can be used in many applications in the air-conditioning, heating and refrigeration sectors and solution for HVAC/R sector. Since it is programmable with good flexibility, allowing specific solutions to be created on customers request by themselves. UX5 has 3 RS485 build-in communication interfaces and one flexible interface which can be used as CAN bus, Ethernet e.t.c , one built-in uni-polar electronic expansion valve (EEV) driver, and supports CORESTAR's DSP series text screen and touch screen at the same time.

UX5 is supported by GrafEditor programming IDE which create the possibility for end-user to do self-programming.

Features

- Wide voltage input (24Vdc/ 24Vac)
- Flexible and configurable inputs/outputs
- One build-in uni-polar EEV driver
- Totally 4 RS485 serial ports (3 build-in+ one expansion card), easy for system integration
- One build-in SSR
- OTA supported together with external 4G/5G module

Can be used in:

- Precision air conditioning control system for computer room
- Building automation system
- Fresh air control system
- Refrigeration control system
- Automatic control system

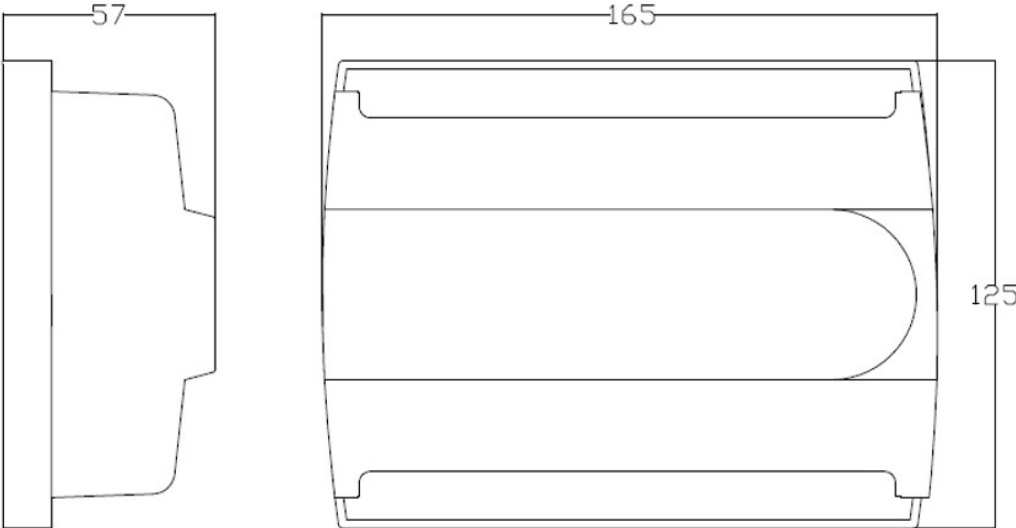
ABSOLUTE MAXIMUM RATINGS:

NOTE: Stresses above/below these ratings may cause permanent damage.

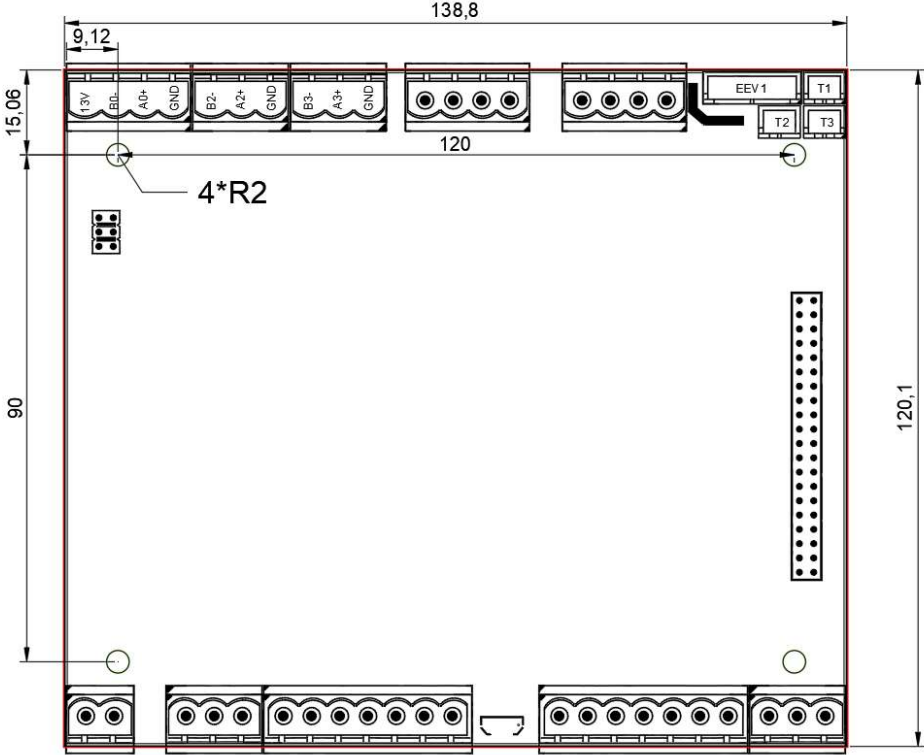
Table 1

parameter	minimum	maximum	unit
Storage temperature	-40	85	°C
Operation temperature	-40	60	°C
DC working voltage	18	35	Vdc
AC working voltage	13	30	Vac
Display cable length	0.1	10	m
Serial communication length(AWG24 shielded cable)	0	500	m
+VDC output current	0	100	mA
+5Vdc output current	0	80	mA

Dimensions with plastic cover (unit mm)



Dimensions without plastic cover (unit: mm)



I/O characteristics

Analogue inputs

Table 2

Channel number	6
Type	
A1	NTC (-50 ~ 90°C; R/T 10 kΩ ±1% @25°C), NTC HT (0~150°C)
	Digital input type: free contact
	0~10V from probes powered by controller
	PT1000
A2, A3, A4	NTC (-50 ~ 90°C; R/T 10 kΩ ±1% @25°C), NTC HT(0~150°C)
	Digital input type: free contact
	0~5V from probes powered by controller
	PT1000
A5	NTC (-50~90°C; R/T 10 kΩ ±1% @25°C), NTC HT(0~150°C)
	0~20 mA /4~20 mA from probes powered by controller
	PT1000
A6	NTC (-50~90°C; R/T 10 kΩ ±1% @ 25°C), NTC HT(0~150°C)
	0~5V from probes powered by controller
	PT1000
Time constant	0.5 s
precision	1%fs

Digital inputs

Table 3

Channel number	6+4 (A1,A2,A3,A4)
Type	
DI1,DI2	Free contacts
	Fast digital inputs (max 500Hz)
DI3.....DI6	Voltage free contacts
Time constant	0.5 s

Analogue outputs

Table 4

Channel number	2
Type	
AO1	0~10VDC
	0~10VDC
	PWM 0/10 V 100 Hz
AO3	PWM 0/10 V 2KHz
Max current	2mA
Precision	±3%

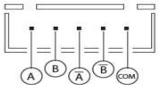
Digital outputs

Table 5

Channel number	5 Relay+ 1 SSR	
Relay type		
SPST	NO1.....NO5	AC 250V 5A
SSR	<250VACy, max. 1.0A, only AC load	
Electrical durability	NO1~NO5: 100K cycles, NO6: no limit	
Mechanical durability	NO1~NO5: 1000K cycles, NO6: no limit	
Certifications	VDE,UL,CQC	

Uni-polar valve outputs

Table 6

Number	1
Max. power for each valve	8W
Voltage	12Vdc
Type of control	Single- pole stepper motor
Port definition	

Current measurement inputs

Number	3
frequency	50/60Hz
Max. input current	25mA
Resolution	10bit
Precision	± 5%

Note:

1. For current monitoring, max support 50A, has to use special sensor of CORESTAR order code: ESR60

Application upgrade guideline

Final user can upgrade application easily by micro-USB port on UX* board

Hardware resources:

1. one computer with USB port
2. Micro-USB cable (Android phone DATA cable)
3. The latest application file (the name must be APP.ZIP and cannot be modified)

Upgrade steps:

Step 1: Connect cable to micro-USB port on UX* board

Step 2: Connect the cable to the computer USB port, after 2~5 seconds, the USB disk icon will appear

Step 3: Double-click to open the USB disk, you can see 2 folders (UPGRADE and SYSTEM)

Step 4: Double click UPGRADE folder to enter

Step 5: Copy the APP.ZIP file to the UPGRADE folder and make sure the copy is complete

Step 6: Unplug the USB cable, power off and restart (when restarting, you will see the red and green lights flash alternately, after the upgrade is complete, only the green light will work in normal operation)

Step 7: upgrade complete

Micro USB

