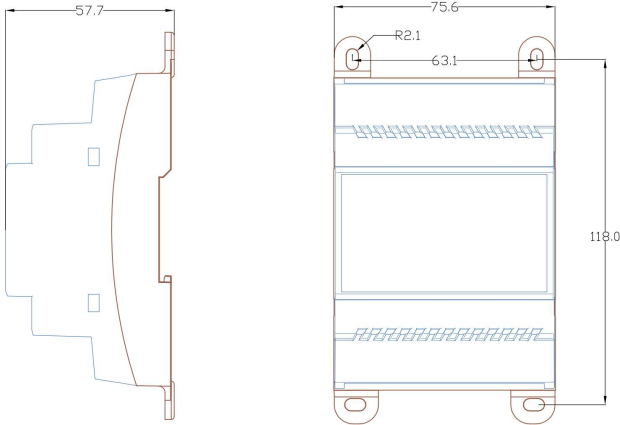


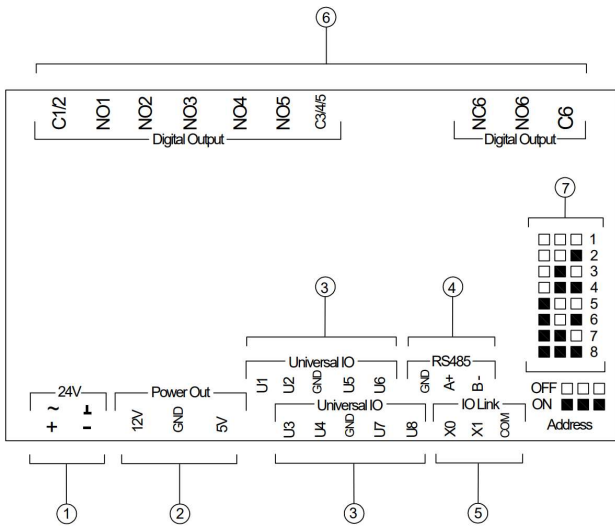
## User Manual

(Version V1.2)

### Dimensions



### Terminal definition



indicator	meaning
1	Power supply V+ and V-
2	+12V: for active probe +5V: for active probe
3	Universal I/O
4	RS485
5	SSR or IO LINK
6	Relay
7	Modbus address DIP switch

### Introduction

UXN is an universal software configurable input and output expansion module developed by CORESTAR.

Any of the terminals (marked as U1~U8) can be flexibly configured as the input or output channel (I/O) required by the customer, such as digital input, PWM input and output, analog input and output, passive and active sensor probe input, etc.

Maximum of 8 modules can be expanded on one RS485 bus, and the PLC can obtain the collected data and operating status of each expansion module through communication (Modbus RTU) instructions.

### Features

- 8 software-configurable universal I/O
- Supports more than 20 types of analog signal acquisition
- Built-in 6 conventional relays and 2 solid-state relays
- Standard MODBUS-RTU communication protocol
- One RS485 bus can expand 8 modules
- Compact structure, supports rail or screw installation

### Applicable scenarios

Building automation, HVAC, refrigeration, IoT and other systems

## ABSOLUTE MAXIMUM RATINGS

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

Table 1

	Min.	Max.	unit
Operating temperature	-40	70	°C
Storage temperature	-40	70	°C
RH%, non-condensing	0	95	%

Table 2

Terminal symbol	direction	voltage/current	Min.	Max.	unit
V+ to V-	In	voltage, AC 50/60Hz	20	28	V
		voltage, DC	20	36	V
	out	current	0	500	mA
+12V to GND	out	current	0	100	mA
+5V to GND	out	current	0	100	mA
U1~U8 to GND	in	voltage	-0.3	12	V
		current	-2	30	mA
	out	current	-2	2	mA
X0 /X1 to COM	bi-direction	voltage	-36	36	V
		current	-20	20	mA
A+ /B- to GND	bi-direction	voltage	-0.3	5.5	V
NO1~NO2 to C1/2	bi-direction	voltage	0	250	V
NO3~NO5 to C3/4/5		current	0	3	A
NO6/NC6 to C6	bi-direction	Voltage	0	250	V
		current	0	1	A

## Universal inputs/outputs

U1~U8 is software configurable to be one of the types listed below:

Type	property	description	number	feature
Analogue inputs <sup>①</sup>	RTD	NTC normal temperature	8	-40°C to +105°C
		NTC high temperature		-30°C to +150°C
		NTC low temperature		-80°C to +105°C
		PT1000		-100°C to +400°C
		PT500		-100°C to +300°C
		PT100	4	-200°C to 850°C, 3-wire
		thermocouple	4	J type: K type: T type:
	PWM <sup>②</sup>	Low: 0V, High: 10V	8	100Hz or 2KHz,
	Current	4-20mA powered by external	8	2-wire / 3-wire
		4-20mA powered by board <sup>③</sup>		
Voltage <sup>②</sup>	0-10V powered by external	8	impedance of signal <1 KΩ	
	0-10V powered by board <sup>③</sup>			
	0-5V powered by board <sup>④</sup>	8		
non-isolated digital inputs	Digital	Voltage free	8	
		Pulse	8	Max. current 2mA
Analogue outputs	PWM	Low: 0V, high: 10V	8	100Hz or 2KHz,
	Voltage	0-10V	8	Max. current 2mA

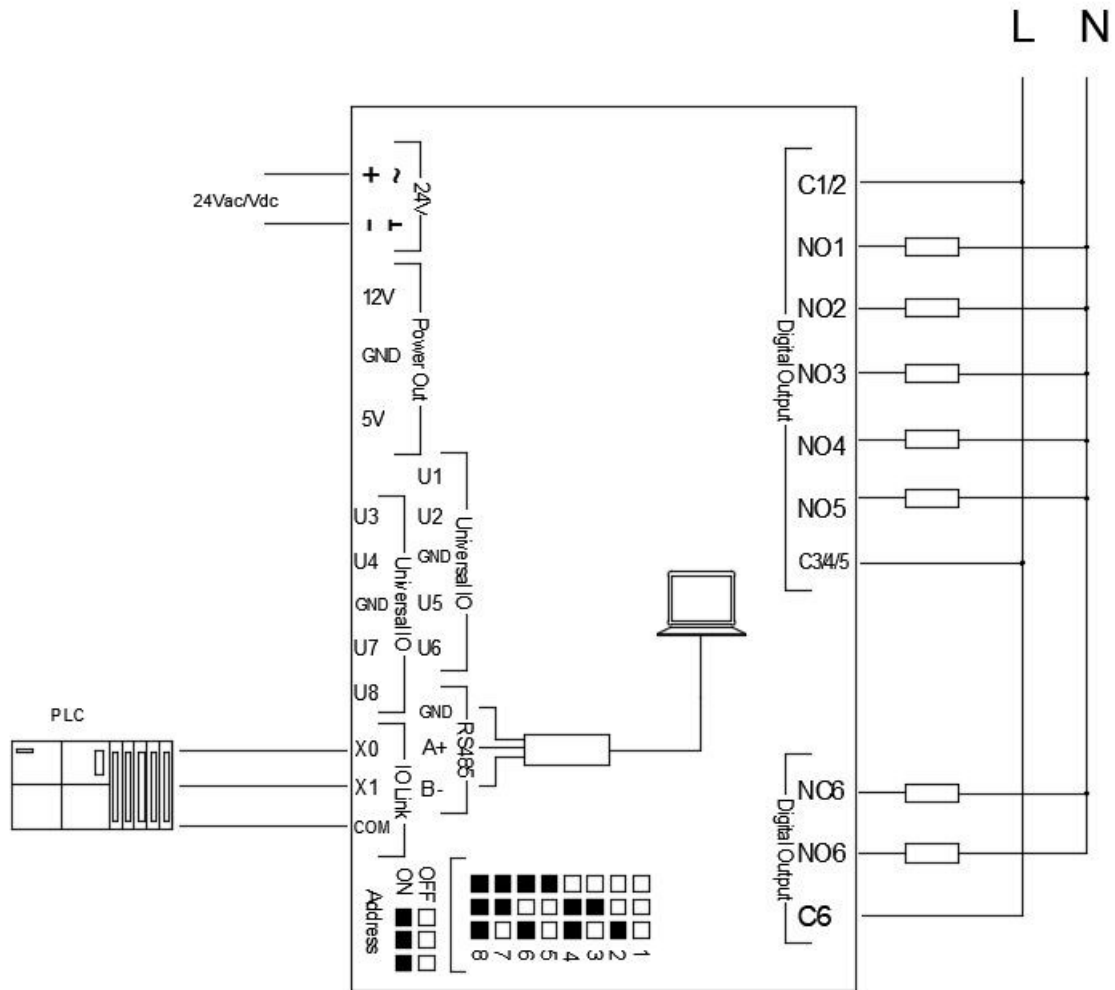
### NOTE:

- ① The reading accuracy is  $\pm 0.3\%$  FS, and the maximum length of the cable is 10 meters
- ② The module has internal pull-down, requires the measured signal current > 0.5mA
- ③ The module has +12V output for active probe, maximum output current is 100mA.
- ④ The module has +5V output for active probe, maximum output current is 100mA.

## Relay outputs:

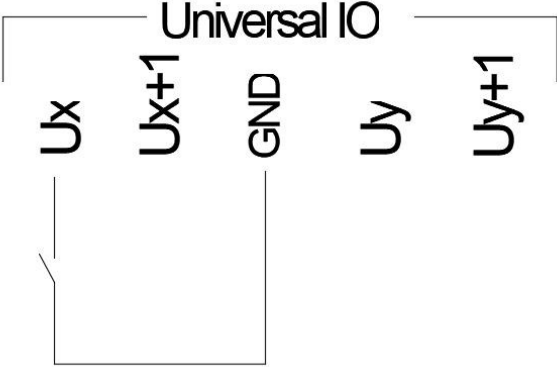
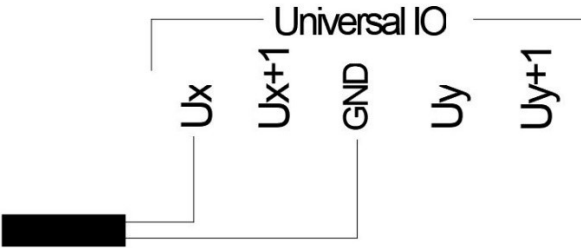
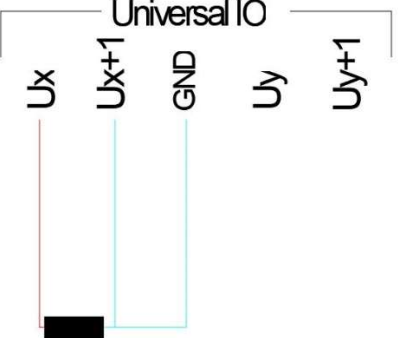
type	number	specification
Relay	5	SPST, NO
	1	SPDT
SSR	2	Max. voltage: 40Vac/Vdc Max. current: 100mA <b>IO-Link function needs to be disabled</b>

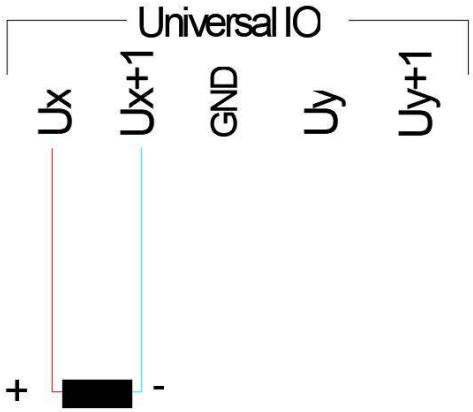
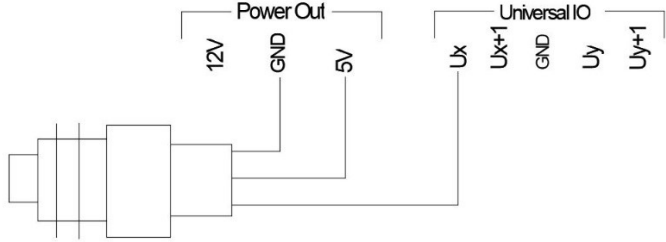
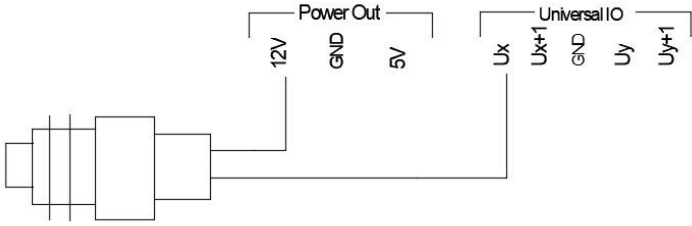
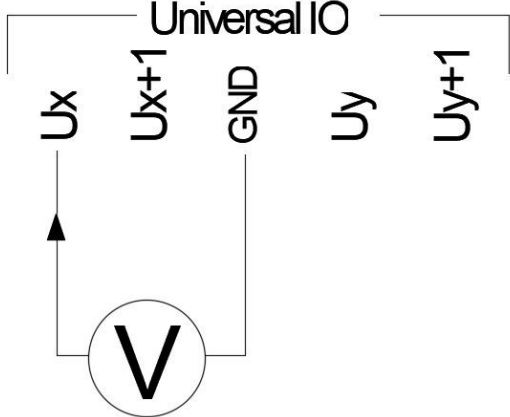
## Wiring

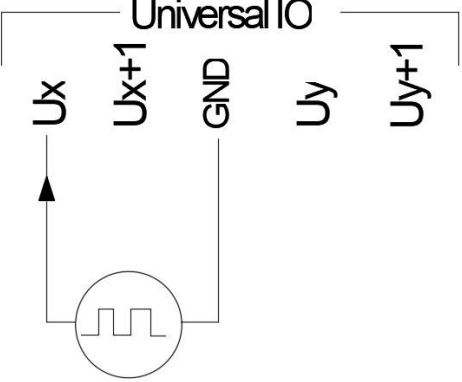
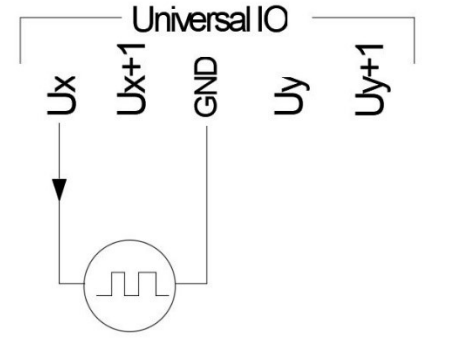
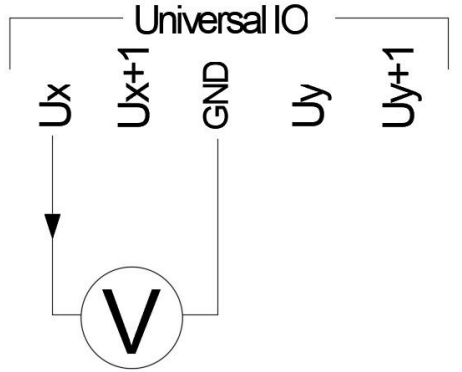
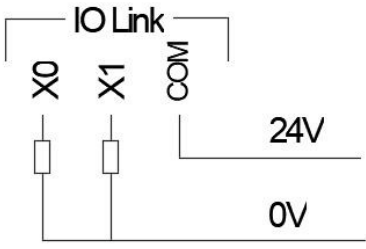


## Universal Inputs/Outputs wiring

- x=1、3、 y=5、 7
- The I/O function can be debugged, tested, configured and copied through the software running on a computer. Please contact the relevant sales staff to obtain it.
- The I/O function can be configured through Modbus RTU protocol, Please contact the relevant sales staff to obtain the registers list.

Signal	Wiring	Channel number
Digital input		8
<ul style="list-style-type: none"> <li>● NTC</li> <li>● PT500</li> <li>● PT1000</li> </ul>		8
PT100		4

<ul style="list-style-type: none"> <li>● K thermocouple</li> <li>● J thermocouple</li> <li>● T thermocouple</li> </ul>		<p>4</p>
<p>0.5V~4.5V Pressure transducer</p>		<p>8</p>
<p>4-20mA Pressure transducer</p>		<p>8</p>
<ul style="list-style-type: none"> <li>● 0-5V input</li> <li>● 0-10V input</li> </ul>		<p>8</p>

<ul style="list-style-type: none"> <li>● Pulse counter</li> <li>● Pulse frequency measurement</li> </ul>		<p>8</p>
<p>PWM output</p>		<p>8</p>
<p>0-10V output</p>		<p>8</p>
<p>SSR (Solid State Relay)</p> <p>NOTE: IO Link function needs to be disabled</p>		<p>2</p>