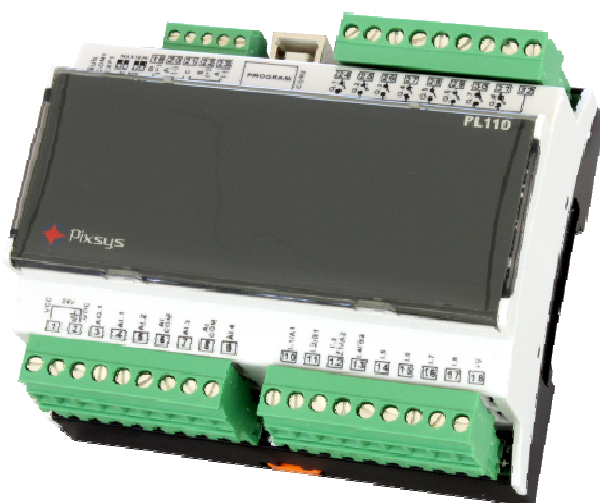


Pixsys
ELECTRONICS



PLC

PL110

Datasheet

1 Acquisition and actuation module PL110

1.1 Introduction

Thanks for choosing a Pixsys device. The PL110 is a compact PLC. Distinctive feature is the optional OLED display to visualize/write alphanumeric data. Page structure is pre-programmed but it is possible to choose visualized variables. Pixsys PLprog development tool in Ladder language allows to program via USB port both the operating logic and the visualization. Analogue inputs are available for NTC temperature sensors and V/mA signals. Relay outputs make the PL110 suitable for AC applications. A Real-time clock with back-up battery is available and allows timeframe programming. Connectivity is provided by 2 RS485 ports supporting Modbus-RTU protocol. Additional I/O can be managed with Pixsys expansion modules series MCM260.

Main features	
Operating conditions	Temperature 0-45 °C, Humidity 35..95 rU%
Box	6 DIN rail modules Self-extinguishing polycarbonate / V0
Sealing	Box IP30
Weight	Approx. 250 gr.
Dimensions	90 x 107,6 depth 63 mm

Ordering codes:

PL110 -	<input type="checkbox"/>	<input type="checkbox"/>	
Features	1		8 digital inputs 4 analogue inputs (10 bit resolution) 8 relay outputs 1 analogue 0..10V (8 bit)
	2		8 digital inputs 4 analogue inputs (10 bit resolution) 8 relay outputs 1 analogue 0..10V (8 bit) OLED graphic display 128x64 pixel
Power-supply		A	24V AC/DC

N°	Description
5	Yellow led COM2 : <ul style="list-style-type: none"> ON → during output transmission on COM2 port.
6	Relay outputs terminal block
7	Power-supply terminal block, analogue inputs/output
8	Terminal with OLED display and keys (only on PL110-2A)
9	Digital inputs terminal block

1.3 Main hardware features

Hardware		
Power-supply	+VDC -VDC	24V AC/DC 6VA
Analogue inputs	AI.1	Current 0-20mA / 4-20mA (10 bit resolution)
	AI.2	Tension 0-10V (10 bit resolution)
	AI.3	Input NTC-10K = $\beta 3435$ Potentiometer 10 K Ω (10 bit resolution)
	AI.4	Input NTC-10K = $\beta 3435$ Potentiometer 10 K Ω (10 bit resolution)
Encoder inputs ¹	I.1/A1 I.2/B1 I.3/Z1	1st input for bidirectional encoder
	I.3/A2 I.4/B2	2nd input for bidirectional encoder
Digital inputs	I.1÷I.8	Inputs PNP V _{LH} = 15,0V (threshold "0" → "1") V _{HL} = 10,5V (threshold "1" → "0")

¹ First encoder input uses hardware inputs I1 and I2, eventually also I3 for the management of zero signal (in this case it is not possible to use the second encoder). Second encoder input uses hardware inputs I3 and I4. If encoder inputs are used, the relevant digital inputs are not available. Max. frequency for encoders is 25 KHz if not used contemporarily, 15 KHz if both inputs are used contemporarily. The PL110 notices positive and negative signals of the A signal, so it redouble the number of counts/turns.

Hardware		
Relay outputs	Q.1÷Q.8	2A 250Vac/30Vdc resistive load (p.f.=1) 1A 250Vac/30Vdc inductive load (p.f.=0.40) 6A max. total current Q.1÷Q.8
Analogue output	AQ.1	0-10V (8 bit resolution)
Communication port ²	COM1	RS485 available on terminal block
	EXP1	RS485 available on terminal block
	COM2	USB (VCP virtual comm port)

² Serial ports are isolated from power-supply, inputs and outputs. COM1 and EXP1 are not isolated between each other.

1.5 Electrical wirings

1.5.1 Connectors and terminal blocks

N°	Name	Description		
1	+VDC	Power-supply 24V AC/DC 6VA. To improve noise immunity, the use of a dedicated supply or transformer is recommended.		
2	-VDC $\underline{\underline{=}}$	N.B.: If more devices are connected in AC using the same transformer, it is necessary to comply with polarity of the power connection between the various devices.		
3	AQ.1	Analogue output AQ.1 positive signal (0÷10 VDC)		
4	AI.1	Analogue input AI.1 positive signal		
5	AI.2	Analogue input AI.2 positive signal		
6	AI-COM	Common negative signal for analogue inputs AI.1 e AI.2		
7	AI.3	Analogue input AI.3 positive signal		
8	AI-COM	Common negative signal for analogue inputs AI.3 e AI.4		
9	AI.4	Analogue input AI.4 positive signal		
10	I.1 / A1	Digital input	Input for bidirectional encoder no.1 Signal A.	Inputs PNP V _{LH} = 15,0V threshold "0"→"1" V _{HL} = 10,5V threshold "1"→"0" To activate digital inputs, switch the signal +V (pin 18) to the input pin.
11	I.2 / B1	Digital input	Input for bidirectional encoder no.1 Signal B.	
12	I.3 Z1 / A2	Digital input	Input for bidirectional encoder no. 1 signal Zero, or input for bidirectional encoder no. 2 Signal A.	
13	I.4 / B2	Digital input	Input for bidirectional encoder no. 2 Signal B.	
14	I.5	Digital input		
15	I.6	Digital input		
16	I.7	Digital input		
17	I.8	Digital input		

N°	Name	Description	
18	+V	Common positive signal for digital inputs. Connect this signal to one of the digital inputs I1÷I18, to activate inputs. Tension available on these pins can supply sensors to be connected to the analogue inputs (max 20mA). (N.B.: on these pins the available supply is Vcc, not stabilized!).	
19	B	Signal RS485+	COM1 serial
20	A	Signal RS485-	COM1 serial
21	C	Signal RS REF	COM1 and EXP1 interface
22	B	Signal RS485+	EXP1 interface
23	A	Signal RS485-	EXP1 interface
	PROGRAM	USB	COM2 VCP of programming
24	Q.1	Relay output	Contacts features: 2A 250Vac/30Vdc resistive load (p.f.=1) 1A 250Vac/30Vdc inductive load (p.f.=0.40)
25	Q.2	Relay output	
26	Q.3	Relay output	
27	Q.4	Relay output	
28	Q.5	Relay output	
29	Q.6	Relay output	
30	Q.7	Relay output	
31	Q.8	Relay output	
32		Common relay outputs	6A max. total current Q.1÷Q.8