PCU500

PCU controller

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SENSORS

1 Product description

The PCU500 platform control unit provides the required reliability in the required applications,such as mobile lifting platforms.The key components of the PCU500 set are the PCU platform operation control unit and the PJS500(operating handle).It can connect to the construction units,sensors,limited switches,LED,motor controllers,buttons,electron stops,alarms and other interfaces of various numbers and simulated machines,and communicate with it through the CAN bus system.

The PCU500 design goal is high reliability.Can resist the effects of typical EMI/RFI in extreme temperature,vibration,impact,and walking mechanical operation environment.

The main features are as follows:

- Multi-button selection scheme(4 keys in the standard,6 or 9 keys can be extended)
- Up to 4 digital mode display tubes
- High-performance reliable operating handle,5 million operating cycles or more
- High-performance reliability operation button,1 million operation cycle or more
- Emergency stop button
- Buzzer
- CAN signal output
- Can resist EMI/RFI level 100 v/m
- Low power consumption

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2 Technical specification

Electrical characteristics	
Supply voltage	9-36V DC
Current consumption	＜180mA
Initialization time	＜1.5s
Interface	CANopen
Connector	T1739030120

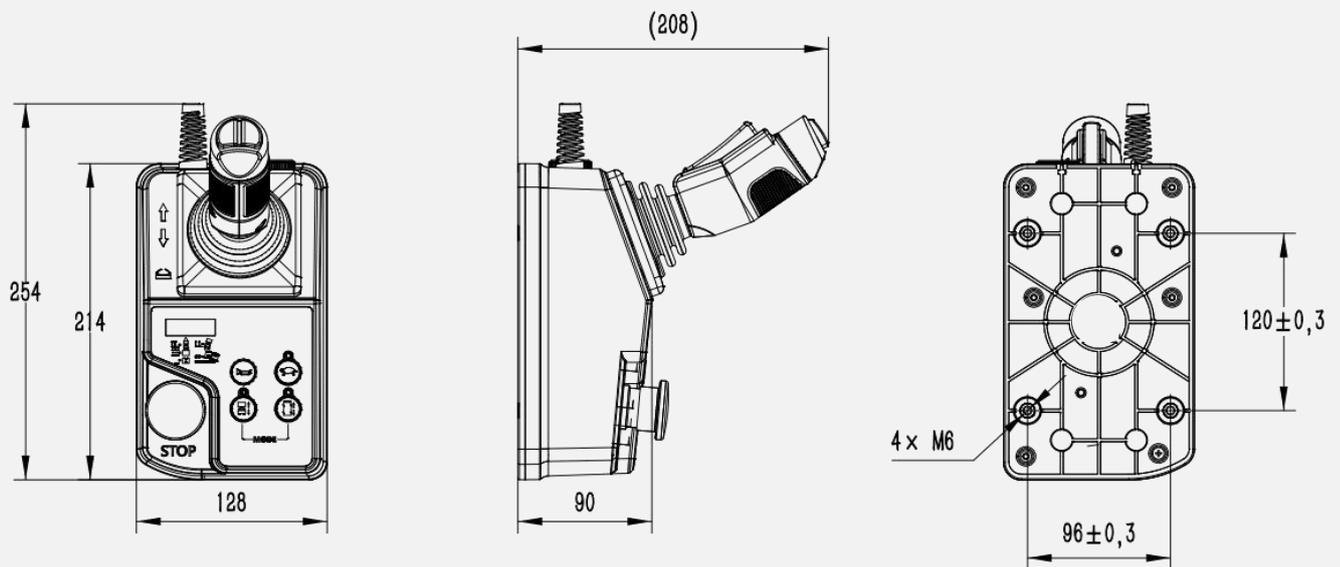| Environmental parameters	
Life time	Joystick≥5 million cycles;Button≥1 million cycles
Operating temperature	-40~+85℃
Protection level	IP65

3 Electrical connection
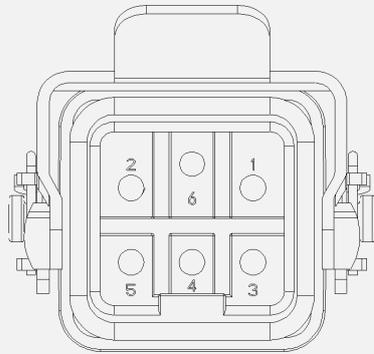
PIN	Definition
1	GND
2	CAN-H
3	Urgent stop 9-36VDC (Depending on the power supply in)
4	Power in (from battery) 9-36VDC
5	CAN-L

4 Installation size

5 CAN protocol

(1) Hand handshake agreement

Active by the ECU, passive PCU, after calling**:**

Device	Command	Explanation	Other
ECU	A0	Continue to send A0	Interval: About 320ms
PCU	A0A0 01	PCU receives A0,answerA001	
ECU	1A	ECU received A001,indicating that the handshake was successful and began to continue sending 1A to obtain PCU data	1A interval 50ms

(2) Normal communication

Device	Command	Explanation	Other
ECU	1A	Actively send	50ms/time
PCU	15 20 32 40 50 68 70 C3 92	PCU response	
ECU	D3 D9 D7 D6 DF 82 90 B5	ECU response	

(3) PCU communication protocol

Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7	Byte8
15	21	32	40	50	68	70	C0	D1

| Position	Command	Description
Byte0	15	Fixed to 15
Byte1	Bit0	1: Lift mode, 0: Walk mode
	Bit1	0
	Bit2	1: Switch fast/slow
	Bit3	0
Byte2	Bit0	1: Press the horn button,0: Release the horn button
	Bit1	1: Handle enable release,0: Handle enable press
	Bit2	1: Press the lifting button,0: Release the lifting button
	Bit3	1: Press the walk button,0: Release the walk button
Byte3		0
Byte4		0
Byte5	Bit0	1: Handle enable press, 0: Handle enable release
	Bit1	1: Right-click the handle and press,0: Right-click the handle to release
	Bit2	1: Left button on the handle to press,0: Left button on the handle to release

	Bit3	1: Handle direction - forward, 0: Handle direction - backward
Byte6		Handle AD value
Byte7		
Byte8	XX	Checksum

(4) ECU communication protocol

Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7	Byte8
D3	D9	D7	D6	DF	82	90	B5

Location	Command	Description
Byte0 (Dx)	Bit0	1: Light on the left digital tube E,0: left digital tube E destroy
	Bit1	1: Light on the left digital tube F,0: left digital tube F destroy
	Bit2	1: Light up on the left digital tube G,0: left digital tube G extinguish
	Bit3	1: Light on the left digital tube DP,0: left digital tube DP extinguish
Byte1 (Dx)	Bit0	1: Light on the left digital tube A,0: left digital tube A destroy
	Bit1	1: Light on the left digital tube B,0: left digital tube B destroy
	Bit2	1: Light on the left digital tube C,0: left digital tube C destroy
	Bit3	1: Light on the left digital tube D,0: left digital tube D destroy
Byte2 (Dx)	Bit0	1: Light on the right digital tube E,0: right digital tube E destroy
	Bit1	1: Light on the right digital tube F,0: right digital tube F destroy
	Bit2	1: The right digital tube G lights up, 0: right digital tube G destroy
	Bit3	1: Light on the right digital tube DP,0: Right digital tube DP destroy
Byte3 (Dx)	Bit0	1: Light on the right digital tube A,0: right digital tube A destroy
	Bit1	1: Light on the right digital tube B,0: right digital tube B destroy
	Bit2	1: Light on the right digital tube C,0: right digital tube C destroy
	Bit3	1: Light on the right digital tube D,0: right digital tube D destroy
Byte4 (Dx)	D7	Lifting mode
	DD	Walk mode
Byte5 (8x)	Bit0	
	Bit1	
	Bit2	
	Bit3	1: Buzzer sounds,0: Buzzer off
Byte6 (9x)	Bit0	1: Slow mode,0: Fast mode
	90	Walk + fast mode
	91	Walk + Slow mode
	96	Lift+fast mode
	97	Lift+slow mode
Byte7 (Bx)	B5	

Digital tube schematic diagram is as follows:
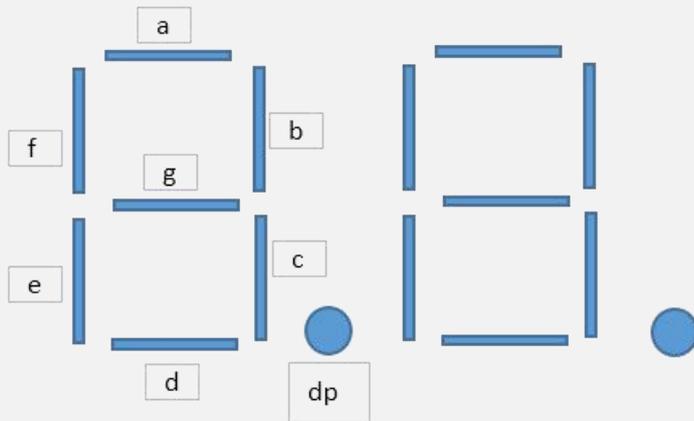
6 Precautions for use

(1) The power supply of this product uses an independent power supply,and it is recommended not to be connected in parallel with other loads.During use,the power supply is not allowed to have serious safety hazards or instability,otherwise it will cause the product to fail!

(2)When using this product,please operate in strict accordance with the specified wiring method under the specified power supply voltage to prevent short circuit and damage to the power supply and sensor caused by misoperation.

(3)Do not disassemble the sensor without permission,so as not to cause the sensor to not work properly.

(4)This sensor is a precision device,please handle it with care during use.

(5)Do not use in a strong magnetic field environment.

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