

PCC-1416

4.3" Touch HMI Device, Electronic CAM Controller

Features

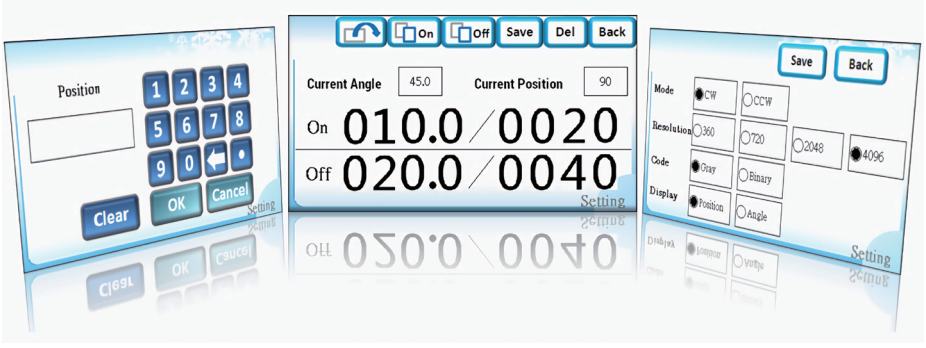
- High-color High-resolution Touch Screen
- Front Panel: IP65 Waterproof
- Support Virtual Numeric Keypad
- Support Binary and Gray Code
- Use with Absolute Encoder
- Provide Start Input Pin (Output Protection)
- Provides 8 Banks, 16 Outputs, and 32 Area Settings
- Password Protection Mechanism
- Parameter Copy Function
- Easy Installation and Maintenance

Introduction

The PCC-1416 electronic CAM controller uses digital signal processing technology to replace the traditional mechanical CAM system, thereby eliminating mechanical noise, preventing component wear, and achieving higher speed and more precise operation. Its digital settings allow operational parameters to be easily modified, overcoming the issues of difficult-to-adjust metal cam blades. This controller plays an important role in the field of automation and machine control, particularly in applications requiring precise timing control, such as automatic lathes, textile machines, printing presses, testing equipment, assembly lines, packaging systems, and more.

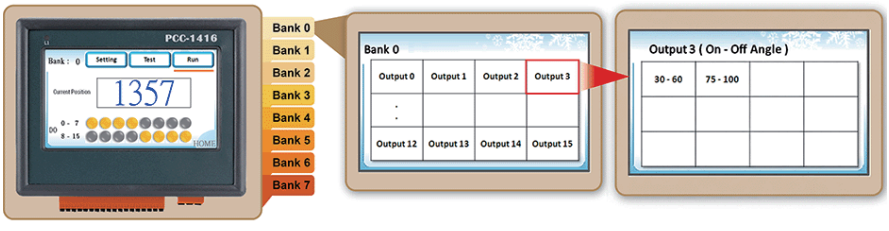
- **Easy-to-use**

The controller is equipped with a 4.3-inch high-resolution color TFT touchscreen, providing an intuitive and convenient operation interface, significantly simplifying the setting process. Each operation page is divided by function, and only necessary information is displayed to avoid excessive complexity, making parameter settings more intuitive and easy to understand. The virtual numeric keypad allows for quick input of angle and position values, enhancing operational convenience. Users can easily duplicate Bank and Output parameters, simplifying the repetitive setup process.



- **8 Banks, 16 Outputs, and 32 Areas**

The controller provides 8 banks (program), each of which can support up to 32 area settings. Each area setting allows for the configuration of ON/OFF angle or position parameters, and can be assigned to one CAM output channel. Users can quickly switch to the bank based on different production needs, enabling multi-functionality and enhancing the flexibility and efficiency of the production line.



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- **High Resolution Encoder Input**
  PCC-1416 supports Binary Code and Gray Code and can be used with absolute encoders. Its resolution can reach up to 12 bits (4096 or 0.08 °), enabling finer and more stable operation, ensuring that the product meets stringent specifications and significantly enhancing quality and consistency.

- **Output Protection and Emergency Stop**
  PCC-1416 provides a Start Input pin, which must be grounded before allowing the module's DO (CAM) channels to output, to prevent abnormal output during machine testing and adjustment. It can also as an emergency stop switch, enabling on-site personnel to quickly control the system and reduce workplace safety risks.



- **Teaching Mode**
  In addition to manually entering the angle or position value, you can also directly use the encoder current value. The teaching mode is integrated into the operation process, allowing the controller to automatically update the values without needing to switch modes.

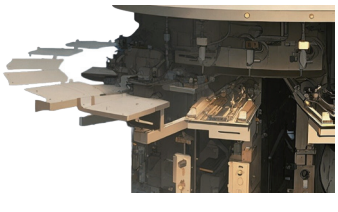
- **Password Protection and Quick Adjustment**
  Built-in password protection effectively prevents unauthorized users from modifying parameters. All output area parameters have been digitized without the need to replace or redesign the physical cam. Users can be quickly switched according to needs, easily achieving diversified control.

- **High Durability**
  Since there are no mechanical parts prone to wear as in traditional cam systems, the electronic cam controller offers a longer lifespan and lower maintenance requirements. The front panel ensures the reliability of the controller in harsh environments.

Application of CAM Controller in Turret Test Machine

Turret test machines are widely used in production lines, especially in processes that require multiple steps of processing or testing. These machines consist of multiple workstations, each responsible for different operations or testing tasks, such as appearance inspection, dimension and weight measurement, functional testing, labeling or laser engraving, etc. The rotation or movement function of the turret allows materials to be transferred sequentially between different workstations, achieving a high degree of automation.

The responsibility of the cam controller is to manage the start and end signals of each working phase. When the turret sends the workpiece to the next station, the cam controller restarts the control of the work phase. If multiple workstations involve similar operations, the cam controller can coordinate the work progress of these workstations to ensure that each operation is started and completed at the right time. This ensures the smooth progress of the entire production or testing process. Since turret test machines may need to handle up to 30 different work stages simultaneously, the high performance and flexibility of cam controllers make them a core component in such systems.





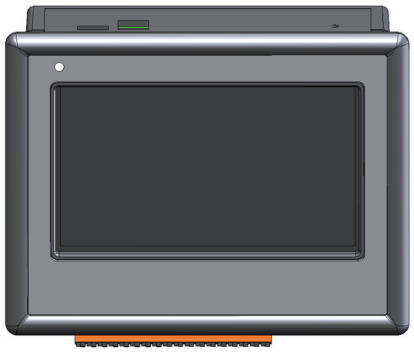
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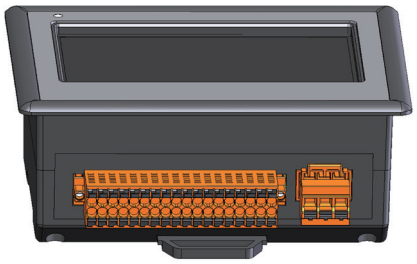
System Specifications

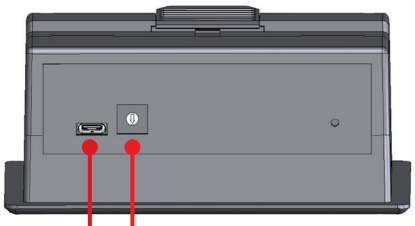
Display	
Type	TFT LCD (65535 colors), defective pixels <= 3
Size	4.3"
Backlight Life	20,000 hours
Brightness	400 cd/m2
Resolution	480 x 272
Touch Panel	Yes
LED Indicators	
Status	1
Encoder Input	
No. of Axes	1
Mode	CW/CCW (Programmable)
Coding Format	Binary/Gray Code
Resolution	12-bit (Max.)
Pulses Per Revolution	360/720/2048/4096
Frequency	1200 rpm @ 360 PPR 600 rpm @ 720 PPR 210 rpm @ 2048 PPR 105 rpm @ 4096 PPR
Digital Input	
Channels	1x Start Input 3x Bank Input
Type	Wet
Sink/Source (NPN/PNP)	Sink (NPN)
ON Voltage Level	+ 3 VDC (Max.)
OFF Voltage Level	+ 10 ~ 24 VDC
Digital Output	
Channels	16
Type	Open Collector
Sink/Source (NPN/PNP)	Sink (NPN)
Load Voltage	+ 30VDC (Max.)
Load Current	100 mA (per channel)
Response Speed	150 μs (Max.)
HMI	
Buzzer	Yes
Rotary Switch	0 ~ 9
Reset Button	Yes
USB	
Ports	1x USB 3.1 (Firmware updates only)
Power	
Input Range	+ 12 ~ 48 VDC
Consumption	2.5 W
Mechanical	
Dimensions (mm)	131 x 114 x 54
Panel Cut-out (mm)	120±1, 92±1
Installation	DIN-Rail mounting / Wall mounting
Ingress Protection Rating	Front panel: IP65
Environment	
Operating Temperature	-20 ~ +50° C
Storage Temperature	-30 ~ +80 ° C
Humidity	10 ~ 90% RH, Non-condensing

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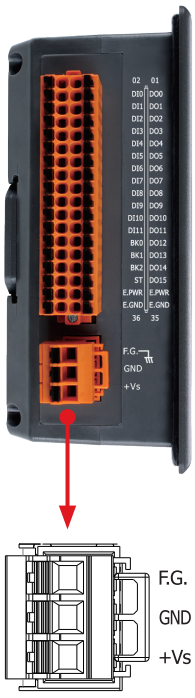
Appearance







Pin Assignments

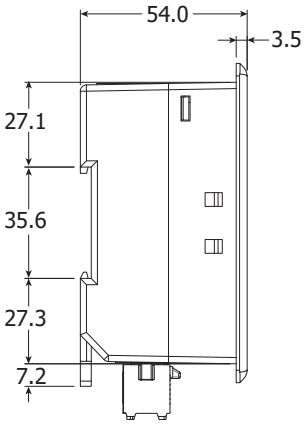


Pin Assignment	Terminal No.		Pin Assignment
DI0	02	01	DO0
DI1	04	03	DO1
DI2	06	05	DO2
DI3	08	07	DO3
DI4	10	09	DO4
DI5	12	11	DO5
DI6	14	13	DO6
DI7	16	15	DO7
DI8	18	17	DO8
DI9	20	19	DO9
DI10	22	21	DO10
DI11	24	23	DO11
BK 0	26	25	DO12
BK 1	28	27	DO13
BK 2	30	29	DO14
ST	32	31	DO15
E.PWR	34	33	E.PWR
E.GND	36	35	E.GND

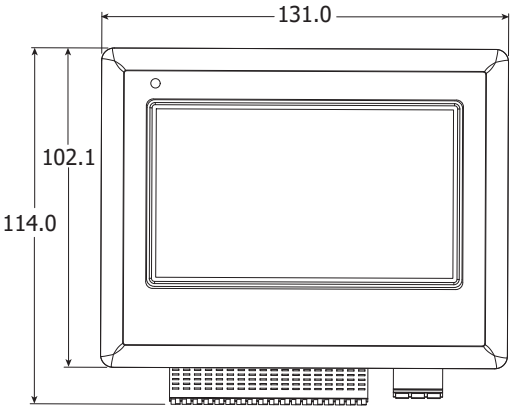
36-pin Connector

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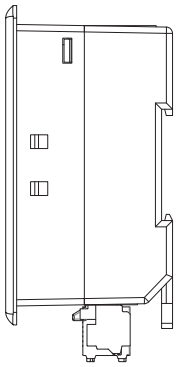
Dimensions (Units: mm)



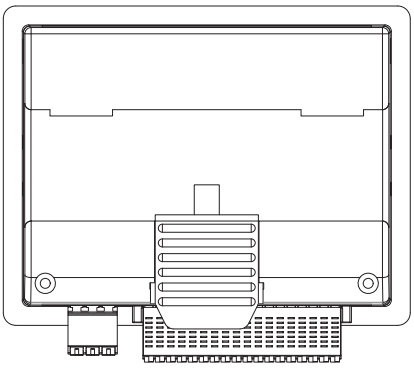
Left Side View



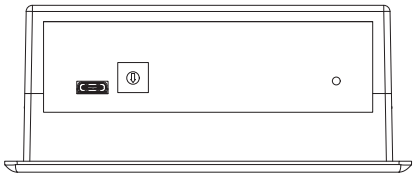
Front View



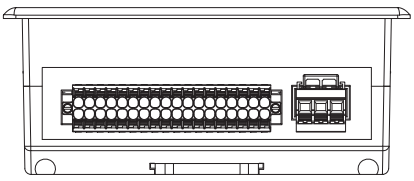
Right Side View



Rear View



Top View



Bottom View

Ordering Information

PCC-1416 CR	4.3" Touch HMI Device, Electronic CAM Controller (RoHS)

Accessories

CA-USB-AC1-L018 	USB 2.0, A to Type C with screw lock, 1.8 m
MDR-60-24 	Power Supply, 85~264 VAC to 24 VDC/2.5 A, 60 W, DIN-rail mounting

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