



IP68中功率控制器 (3.0~9.0KW)
IP68 Medium Power Controller (3.0~9.0KW)

中功率控制器 Medium Power Controller	72450-721000 /84700/ 841000 /96700 /961000/ 144600
产品外型尺寸 Product size	189x142x62.3mm
额定功率区间 Rated power range	3KW~9.0KW,全贴片铝基板工艺, 温升低 All-chip aluminum substrate process, low temperature rise
额定电压范围 Rated voltage range	48V/60V/72V/84V/96V/108V / 144V
母线电流选型 Busbar current selection	150A- 500A
相线电流选型 Phase line current selection	450A-1000A采用非接触相电流传感器, 效率高, 温升低, 驾驶感好 Adopting non-contact phase current sensor.High efficiency, low temperature rise, good driving sense
适配电机传感器 Adaptive Motor Sensor	旋转变压器 resolver
适配电机种类 Applicable motor type	旋变电机 Shift the motor
适配接口种类 Adaptive interface type	CAN通信、485通信、一线通、模拟仪表等 CAN communication, 485 communication, one-line communication, analog instrumentation, etc.
无线通信适配 Wireless Communication Adaptation	安卓和苹果手机APP Android and Apple Mobile App

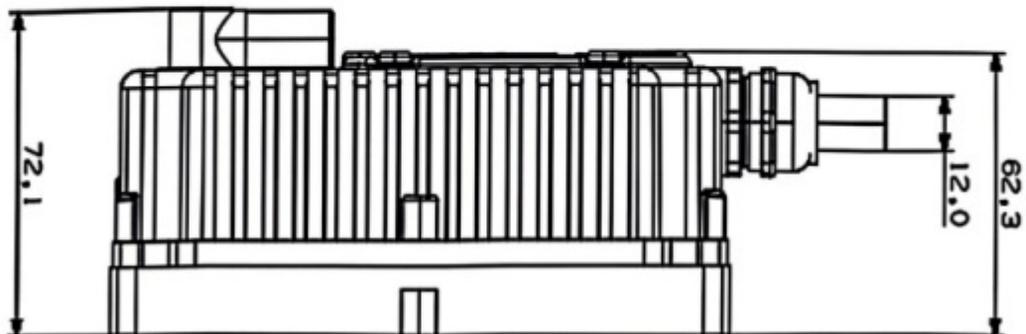
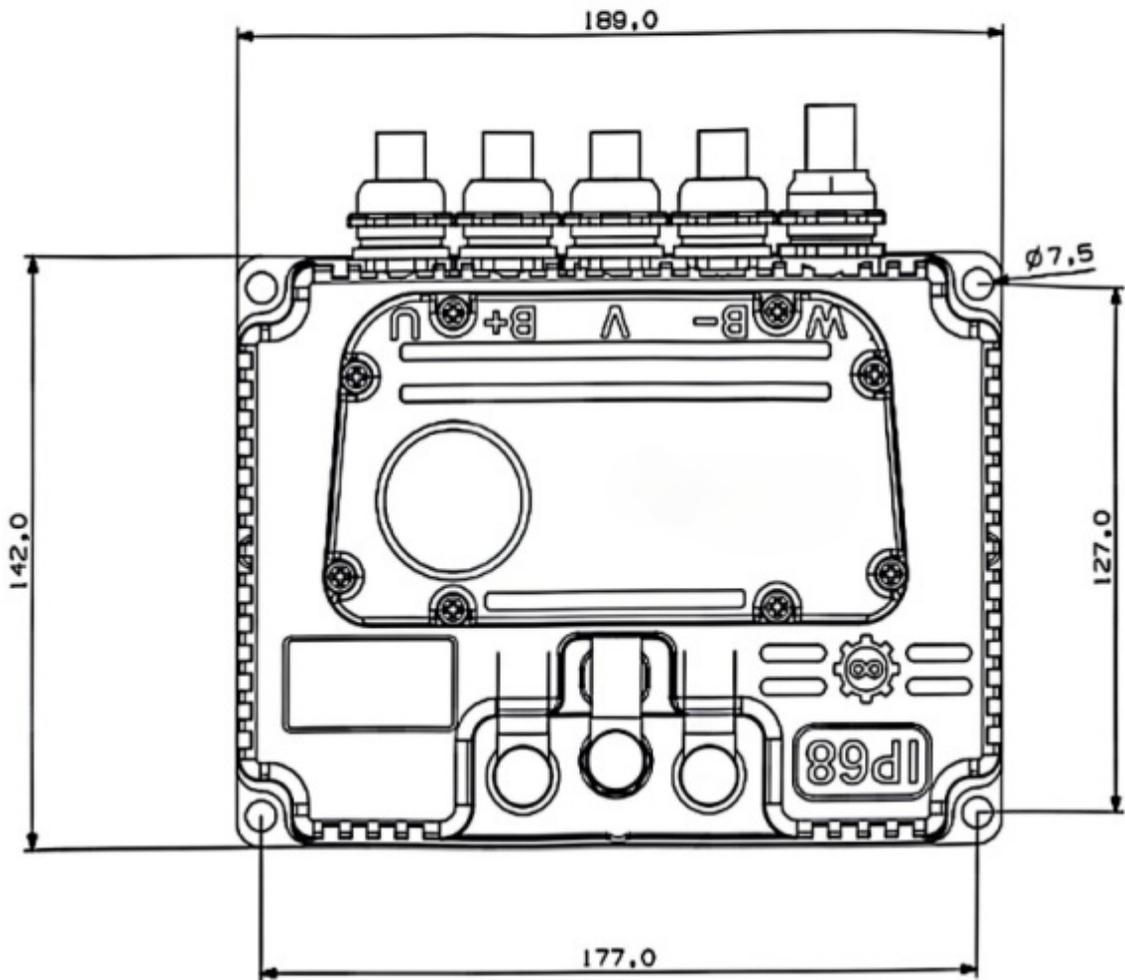
产品特性

Product Characteristics

项目 sports event	内容 element		
1	位置传感类型 Position sensing type	旋变 Reformation	
2	加速踏板供电5V Accelerator pedal supply 5V	5V	
3	加速踏板信号 Accelerator pedal signal	0.5V~4.3V 1.1~3.9V	上位机设置 Upper computer setup
4			
5	高档 低挡 High-end Low-end	悬空无效接地有效 Suspended Invalid Grounded Valid	
6	后退档 backward gearing	悬空无效接地有效 Suspended Invalid Grounded Valid	
7	防盗信号 anti-theft signal	悬空无效接地有效 Suspended Invalid Grounded Valid	
8	低刹 low braking	悬空行车接地停车悬空停车接地行车 Suspended Traveling Vehicle Grounded Parking Suspended Parking Grounded Traveling Vehicle	上位机设置 Upper computer setup
9	高刹 come to a halt	悬空行车接高停车悬空停车接高行车 高：电池正或不隔离的12V Suspended traveling catch high parking Suspended parking catch high traveling High: Battery positive or non-isolated 12V	上位机设置 Upper computer setup
10			
11			
12			

安装尺寸 单位 (mm)
Mounting Dimensions Unit (mm)

IP68

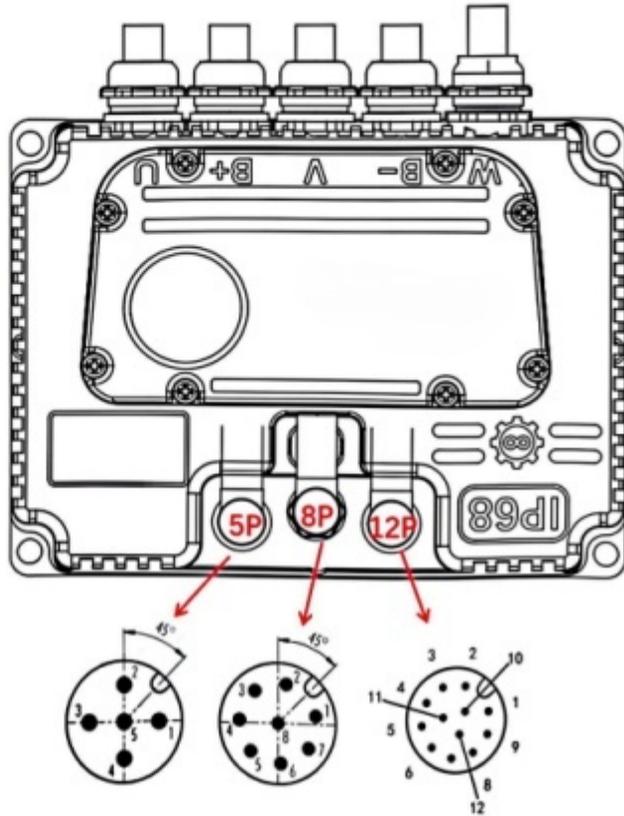


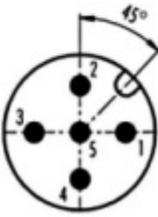
端口功能定义

Port Function Definition

IP68引脚定义

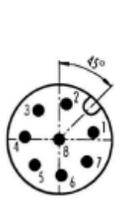
IP68 Pin Definitions

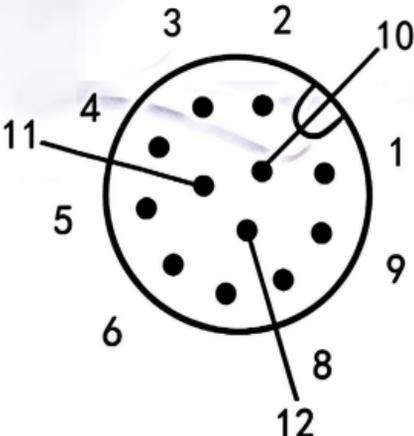


5PIN 接头 5PIN connector		颜色 color					
		X	Y	1	棕 brown	12V+IN	12V+IN
	1	2,50	0,00	2	白 white	BL	低刹 Low braking
	2	0,00	2,50	3	蓝 blue	BH	高刹 High brake
	3	-2,50	0,00	4	黑 black	PGND	隔离地 Quarantine place
	4	0,00	-2,50	5	灰 grey	WO	轮动信号 Wheel motion signal
5	0,00	0,00					

端口功能定义

Port Function Definition

8PIN 接头 8PIN connector	颜色 color	增量编码器 incremental encoder	霍尔 hall	旋变编码器 Rotary encoder	绝对值编码器 Absolute value encoder	差分编码器 differential encoder																												
 <table border="1" data-bbox="235 725 378 942"> <thead> <tr> <th></th> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr><td>1</td><td>2,69</td><td>0,57</td></tr> <tr><td>2</td><td>0,57</td><td>2,69</td></tr> <tr><td>3</td><td>-1,66</td><td>2,20</td></tr> <tr><td>4</td><td>-2,75</td><td>0,19</td></tr> <tr><td>5</td><td>-1,94</td><td>-1,94</td></tr> <tr><td>6</td><td>0,19</td><td>-2,74</td></tr> <tr><td>7</td><td>2,20</td><td>-1,65</td></tr> <tr><td>8</td><td>0,00</td><td>0,00</td></tr> </tbody> </table>		X	Y	1	2,69	0,57	2	0,57	2,69	3	-1,66	2,20	4	-2,75	0,19	5	-1,94	-1,94	6	0,19	-2,74	7	2,20	-1,65	8	0,00	0,00	1	白 white	P	P 档	ESO+	DATA-	B-
		X	Y																															
	1	2,69	0,57																															
	2	0,57	2,69																															
	3	-1,66	2,20																															
	4	-2,75	0,19																															
	5	-1,94	-1,94																															
	6	0,19	-2,74																															
7	2,20	-1,65																																
8	0,00	0,00																																
2	棕 brown	TEMP	TEMP	TEMP	TEMP	TEMP	GND																											
3	绿 green	B	B	Sin-	CLK-	A-																												
4	黄 yellow	A	A	Sin+	CLK+	A+																												
5	灰 grey	GND	GND	GND	GND	Z+																												
6	粉 pink	-	-	COS-	-	Z-																												
7	蓝 blue	Z	C	Cos+	DATA+	B+																												
8	红 red	HALL+	HALL+	ESO-	HALL+	HALL+																												

12 芯接头 12PIN connector	颜色 color			
	1	棕 brown	CANH CAN 高 CAN high	
	2	蓝 blue	CANL CAN 低 CAN low	
	3	白 white	SPD 一线通输出 One line output	
	4	绿 green	SV 油门电压 Throttle voltage	
	5	粉 pink	PB5 P/巡航 P/Cruise	
	6	黄 yellow	ACC+ 油门供电 Accelerator power supply	
	7	黑 black	GND 油门地 Throttle ground	
	8	灰 grey	FD 防盗 Anti theft	
	9	红 red	FW 高速 high speed	
	10			
	11	橙 orange	FW2 低速 low speed	
	12	浅绿 light green	RE 后退 retreat	

蜂鸣器告警声音次数描述

Buzzer Alarm Sound Count Description

- 1.正常开机时，蜂鸣器会响一声，然后不再响。
- 2.如果出现长鸣，请检查刹车和油门是否同时有效。利用这个功能，可以检查刹车和油门是否正常：同时踩下蜂鸣器响，放开任何一个就不响。
3. 如果出现 2 声短 1 声长，周而复始，说明控制器在自学习状态，要按照自学习操作步骤完成自学习。
4. 如果出现 2 声短，短暂停一下，再出现 1 声短，周而复始，说明控制器程序校验失败，这种情况下要重新升级程序。
5. 如果出现 4 声短 1 声长再加 5 声短，周而复始，说明升级的程序和控制器不匹配，请检查程序是否和控制器标签上的型号相符，如果不符，找相符的程序重新升级。
6. 如果出现 1 到 15 次响声，根据声音次数判断故障，故障表如下

- 1.The buzzer will sound once and then stop sounding when the unit is normally turned on.
2. If a long beep occurs, check that the brake and throttle are both active. Using this function, you can check
This function allows you to check if the brake and gas pedal are functioning properly: the buzzer sounds when the brake is pressed at the same time, but does not sound when either one is released.
- 3.If there are two short beeps and one long beep, the controller is in a self-learning state. Follow the Self-Learning procedure to complete self-learning. 4.
4. If there are two short beeps, a short pause, and then one short beep, then the cycle starts again, the controller program has failed to calibrate, in which case you should follow the self-learning procedure to complete the self-learning. The controller program has failed to calibrate, in which case the program should be upgraded.
5. If there are 4 short beeps, 1 long beep, then 5 short beeps, and so on, there is a mismatch between the upgraded program and the controller. Please check if the program matches the model number on the controller label, if not, find the program that matches. If not, find the program that matches and re-upgrade.
6. If there are 1 to 15 beeps, determine the fault according to the number of beeps, the fault table is as follows

蜂鸣器告警声音次数描述

Buzzer Alarm Sound Count Description

	故障描述 fault description	声音次数 Number of sounds	
1	电机霍尔故障 Motor Hall Failure	1	控制器和电机之间的信号线没接好 The signal wire between the controller and the motor isn't connected properly.
2	油门踏板故障 Gas pedal malfunction	2	油门没有回零, 或者油门踏板坏。注意重启控制器时默认会显示故障, 当自检通过后, 故障会消失。 Throttle not returning to zero, or bad gas pedal. Note that when restarting the controller Fault will be displayed by default and will disappear when the self-test passes.
3	电流保护重启 Current protection restart	3	异常保护告警 Abnormal protection alarms
4	相电流过流 Phase current overcurrent	4	异常保护告警 Abnormal protection alarms
5	电压故障 voltage fault	5	电压太低或太高, 超出控制器允许范围 Voltage is too low or too high, outside the controller's permissible range
6	防盗告警信号 anti-theft alarm signal	6	保留 reservations
7	电机过温 Motor over-temperature	7	电机温度太低或太高超出使用范围 Motor temperature too low or too high out of operating range
8	控制器过温 Controller over-temperature	8	控制器温度太低或太高超出使用范围 Controller temperature is too low or too high outside the operating range
9	相线流溢出 Phase line flow overflow	9	异常保护告警 Abnormal protection alarms
10	相电流零点故障 Phase current zero fault	10	控制器内部告警 Controller Internal Alarms
11	相线短路故障 phase line short circuit fault	11	相线短路, 或电机故障 Phase wire short circuit, or motor failure
12	线电流零点故障 Line current zero fault	12	控制器内部告警 Controller Internal Alarms
13	MOSFET上桥故障 MOSFET upper bridge failure	13	控制器上桥损坏 Controller Upper Bridge Damage
14	MOSFET下桥故障 MOSFET lower bridge failure	14	控制器下桥损坏 Controller lower bridge damaged
15	峰值线电流保护 peak line current protection	15	硬件过流保护告警 Hardware overcurrent protection alarm