



郑州众智科技股份有限公司
SMARTGEN(ZHENGZHOU) TECHNOLOGY CO., LTD.

MARINE PRODUCT CATALOGUE 船舶产品选型样册



郑州众智科技股份有限公司

SMARTGEN(ZHENGZHOU) TECHNOLOGY CO., LTD.

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v 1.2



Chinese WeChat Service Account
官微中文服务号



English WeChat Service Account
官微英文服务号



SmartGen Products App
众智产品 APP

www.smartgen.com.cn www.smartgen.cn

2017-2018



SMARTGEN TECHNOLOGY

About Us 关于我们

SmartGen Technology specializes in design, development, manufacture, sale and service of engine/genset control, ATS and ATS control, engine heaters, battery chargers and related products, is one of world's most influential equipment manufacturers in the industry.

After 20 years of development, SmartGen has successively developed hundreds of control modules with independent intellectual property rights and obtained more than 200 patents.

SmartGen has multiple firsts in China, is one of the earliest enterprises in R&D and production of genset controller and ATS controller, is only one genset controller enterprise through the German MTU certification, is the earliest enterprise for R&D of integrated genset parallel controller

SmartGen, which owns more than 50 offices or agencies in domestic and overseas, is committed to providing satisfied products and services for customers. We will continue to innovate and self-transcend, strive to be the most trustworthy international brand!

Enterprise Spirit: Self-improvement and unity make perfect.

Enterprise Vision: Grow to be the most trusted brand in the industry and equip every piece of equipment of the world with a more intelligent brain!

众智科技专业从事发动机/发电机组智能控制、双电源切换开关及智能控制、发动机机体加热器、蓄电池充电器等相关产品的设计、研发、制造、销售和服务,是全球发电机组行业最具影响力的设备制造商之一。

历经20年的发展, 我们共研发出几百种具有自主知识产权的控制模块, 获得了200余项专利, 以确保持续为全球客户提供最具价值的产品解决方案。

众智科技拥有中国多个第一,中国最早从事发电机组控制器、双电源切换控制器研发和生产的企业之一, 中国唯一一家发电机组控制器通过德国MTU认证公司, 中国最早研发出一体化发电机组并联控制器.....

众智科技在全球设立50多个办事处或代理机构, 致力于向客户提供满意的产品和服务。我们将一如既往的不断创新与自我超越, 争取成为全球发电机组行业最值得信赖的国际品牌!

企业精神: 自强不息, 众智成城。

企业愿景: 成长为行业最值得信赖的品牌, 为世界上每一台设备都装配一颗更加智能的心!



CCS

SmartGen Test Room 众智试验室



SmartGen Test Room / 众智试验室



Prototype Test Room / 发电机组真机试验室



分布式光油互补发电试验系统



Test System of Distributed Solar-diesel Hybrid Generation
分布式光油互补发电试验系统

SmartGen Test Room covers an area of nearly 1,000 square metres. With gradual improvements for years, it has become one of the handful of top-ranking test bases in the industry at present.

In order to meet requirements of various products, the continuous capital injection of testing center has totalled up to over 10 million yuan. Besides, we successively purchased multiple sets of advanced test equipment from well-known enterprises at home and abroad.

At present, the main test types include EMC test, environmental tests and functional tests.

众智试验室占地面积近千平方米。历时多年的逐渐完善, 目前已经成为了行业内屈指可数的一流试验基地。

为了适应各种产品要求, 测试中心近年来持续注资一千多万, 先后从国内外知名企业采购多套高精尖测试设备。

目前主要测试类型包括: EMC电磁兼容性测试、环境类测试、功能类测试。

Enterprise Honor 企业荣誉



ISO 9001
质量管理体系认证



ISO 14001
环境管理体系认证



OHSAS 18001
职业健康安全管理体系认证



Marine Certificate
of Type Approval
中国船社认证



Certificate of
Invention Patent
发明专利证书



AAAA 级
Good Standardizing
Practice Certificate
标准化良好行为证书



CE Certificate
CE证书



CCC Certificate
CCC证书



Software Copyright
软件著作权登记证书



UL Certificate
UL证书



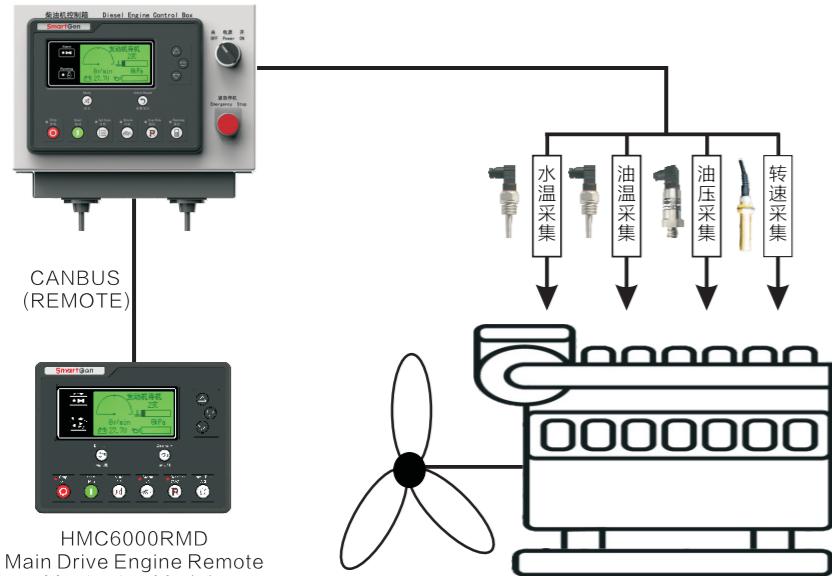
Intellectual Property
Management System
Certificate
知识产权管理体系证书



High-tech Enterprise Certificate
高新技术企业证书

Solution for Marine- Main Drive Engine / 船舶解决方案-主推

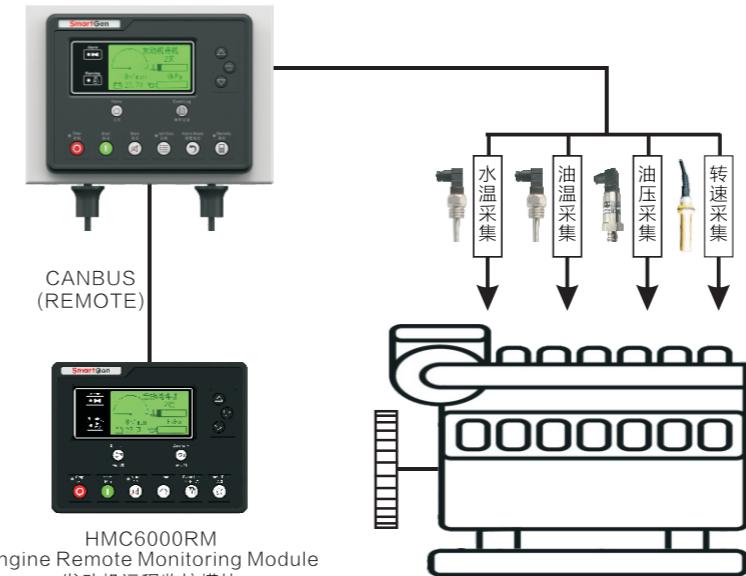
MGCP100D
Main Drive Engine Control Panel
主推控制屏



HMC6000RMD
Main Drive Engine Remote Monitoring Module
主推发动机远程监控模块

- ▶ Suitable for diesel engine with machinery GOV or main drive system; 适用于机械调速或主推进系统的柴油机;
- ▶ Local/remote modes for achieving local start/stop and remote start/stop; 具有机旁/遥控模式可选择，可实现在机旁模式开/停机和遥控模式开/停机;
- ▶ LCD for displaying water temperature, oil temperature, oil pressure, speed, battery voltage, runtime, number of starts; LCD显示水温、油温、油压、转速、电池电压、运行时间、开机次数;
- ▶ All parameters can be set via controller on site, convenient and efficient; 参数均可现场通过面板进行设定，方便快捷;
- ▶ With override, storm and remote three modes, push-buttons of self-checking, alarm reset and mute functions, easy to operate; 面板具有越控模式、风浪模式、遥控模式、自检、报警复位和静音功能的按键，操作简便方便;
- ▶ Real-time clock and event log, convenient for maintenance and troubleshooting; 具有实时时钟、报警信息显示和历史记录，方便维护和故障查询;
- ▶ Operating voltage/工作电压: DC(8~35)V;
- ▶ Operating conditions: Temperature: (-25~+70)°C Humidity: (20~93)%; 工作条件：温度：(-25~+70)°C 湿度：(20~93)%;
- ▶ CCS certificate and IP44 protection class; 具有CCS认证，防护等级IP44;
- ▶ Case dimensions(L*W*H)(mm): 285*187*205(except shock absorber); 外形尺寸(长*宽*高)(mm): 285*187*205(不含减震器);
- ▶ Panel cutout(L*W*H)(mm): 120*65, 4*M6 screw; 安装尺寸(长*宽*高)(mm): 120*65, 4*M6螺孔;

MGCP100M
Diesel Engine Monitor
柴油机监控仪



HMC6000RM
Engine Remote Monitoring Module
发动机远程监控模块

Solution for Marine- Monitor / 船舶解决方案-监控仪

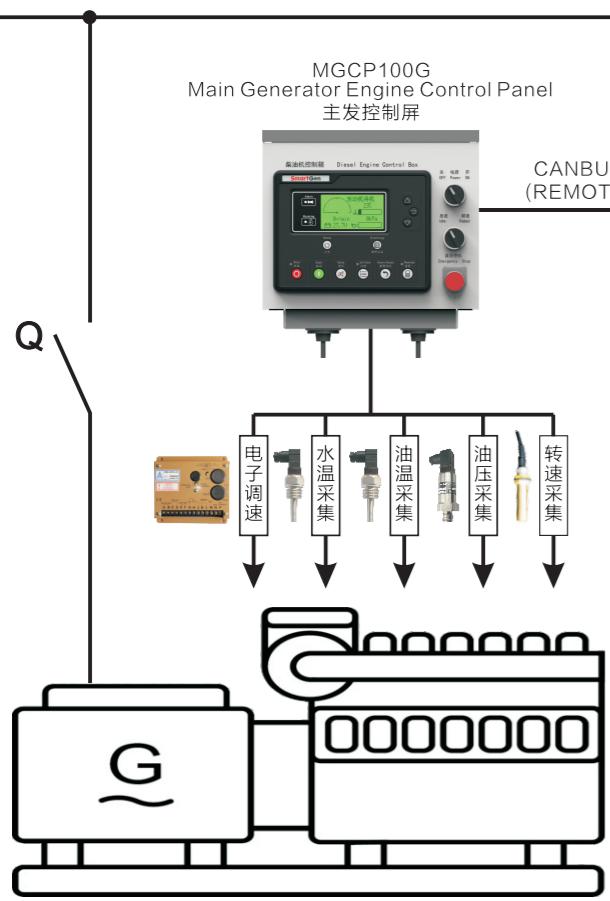
- ▶ Suitable for diesel engine with monitoring system; 适用于柴油机监控系统;
- ▶ Local/remote modes for achieving local start/stop and remote start/stop; 具有机旁/遥控模式可选择，可实现在机旁模式开/停机和遥控模式开/停机;
- ▶ LCD for displaying water temperature, oil temperature, oil pressure, speed, battery voltage, runtime, number of starts; LCD显示水温、油温、油压、转速、电池电压、运行时间、开机次数;
- ▶ All parameters can be set via controller on site, convenient and efficient; 参数均可现场通过面板进行设定，方便快捷;
- ▶ With push-buttons of self-checking, alarm reset and mute functions, easy to operate; 面板具有自检、报警复位、静音和遥控模式功能的按键，操作简便方便;
- ▶ Real-time clock, alarm information display and event log, convenient for maintenance and troubleshooting; 具有实时时钟、报警信息显示和历史记录，方便维护和故障查询;
- ▶ Operating voltage/工作电压: DC(8~35)V;
- ▶ Operating conditions: Temperature: (-25~+70)°C Humidity: (20~93)%; 工作条件：温度：(-25~+70)°C 湿度：(20~93)%;
- ▶ CCS certificate and IP44 protection class; 具有CCS认证，防护等级IP44;
- ▶ Case dimensions(L*W*H)(mm): 240*175*106(except shock absorber); 外形尺寸(长*宽*高)(mm): 240x175x106(不含减震器);
- ▶ Panel cutout(L*W*H)(mm): 120*65, 4*M6 screw; 安装尺寸(长*宽*高)(mm): 120x65, 4xM6螺孔;

Solution for Marine- Main Generator Engine / 船舶解决方案-主发

MGCP100G
Main Generator Engine Control Panel
主发控制屏

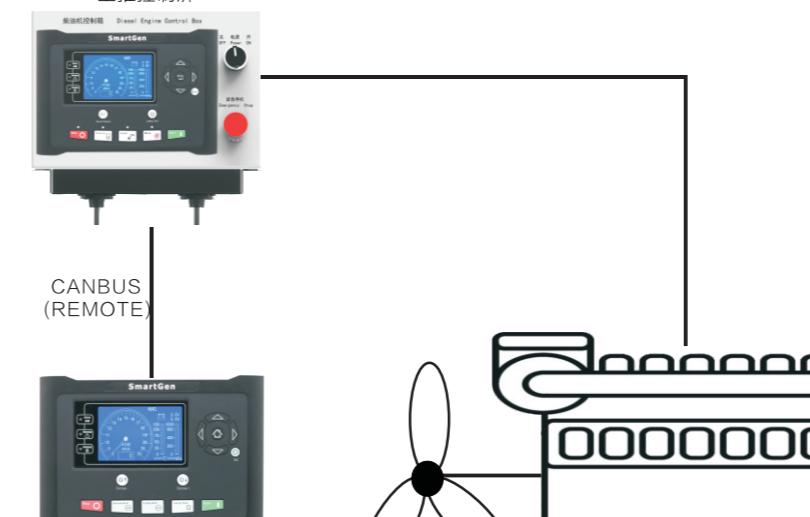
HMC6000RM
Engine Remote Monitoring Module
发动机远程监控模块

CANBUS
(REMOTE)



- ▶ Suitable for diesel engine with electronic GOV or main generator system; 适用于电子调速或主发系统的柴油机;
- ▶ Local/remote modes for achieving local start/stop and remote start/stop; 具有机旁/遥控模式可选择，可实现在机旁模式开/停机和遥控模式开/停机;
- ▶ LCD for displaying water temperature, oil temperature, oil pressure, speed, battery voltage, runtime, number of starts; LCD显示水温、油温、油压、转速、电池电压、运行时间、开机次数;
- ▶ All parameters can be set via controller on site, convenient and efficient; 参数均可现场通过面板进行设定，方便快捷;
- ▶ With push-buttons of self-checking, alarm reset and mute functions, easy to operate; 面板具有自检、报警复位、静音和遥控模式功能的按键，操作简便方便;
- ▶ Idle/high speed knob, emergency push-button and electronic governor can be built-in; 具有怠速/高速旋钮、急停按钮，可内置电子调速器;
- ▶ Real-time clock and event log, convenient for maintenance and troubleshooting; 具有实时时钟、报警信息显示和历史记录，方便维护和故障查询;
- ▶ Operating voltage/工作电压: DC(8~35)V;
- ▶ Operating conditions: Temperature: (-25~+70)°C Humidity: (20~93)%; 工作条件：温度：(-25~+70)°C 湿度：(20~93)%;
- ▶ CCS certificate and IP44 protection class; 具有CCS认证，防护等级IP44;
- ▶ Case dimensions(L*W*H)(mm): 278*180*245(except shock absorber); 外形尺寸(长*宽*高)(mm): 278*180*245(不含减震器);
- ▶ Panel cutout(L*W*H)(mm): 120*65, 4*M6 screw; 安装尺寸(长*宽*高)(mm): 120*65, 4*M6螺孔;

HMC9000S
Main Drive Engine Control Panel
主推控制屏

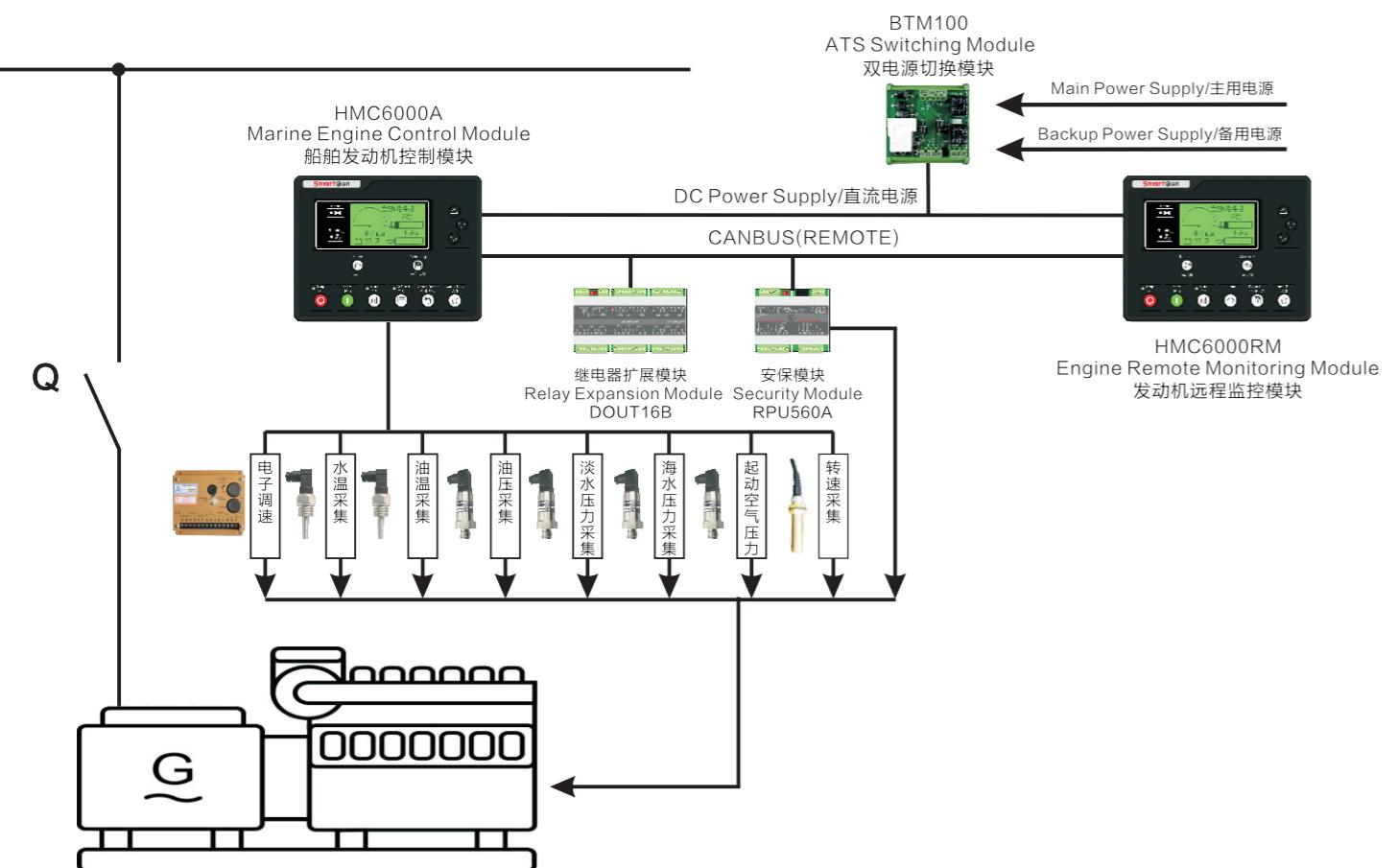


HMC3300
Main Drive Engine Remote Monitoring Module
主推发动机远程监控模块

Solution for Marine- ECU Engine / 船舶解决方案-电喷发动机

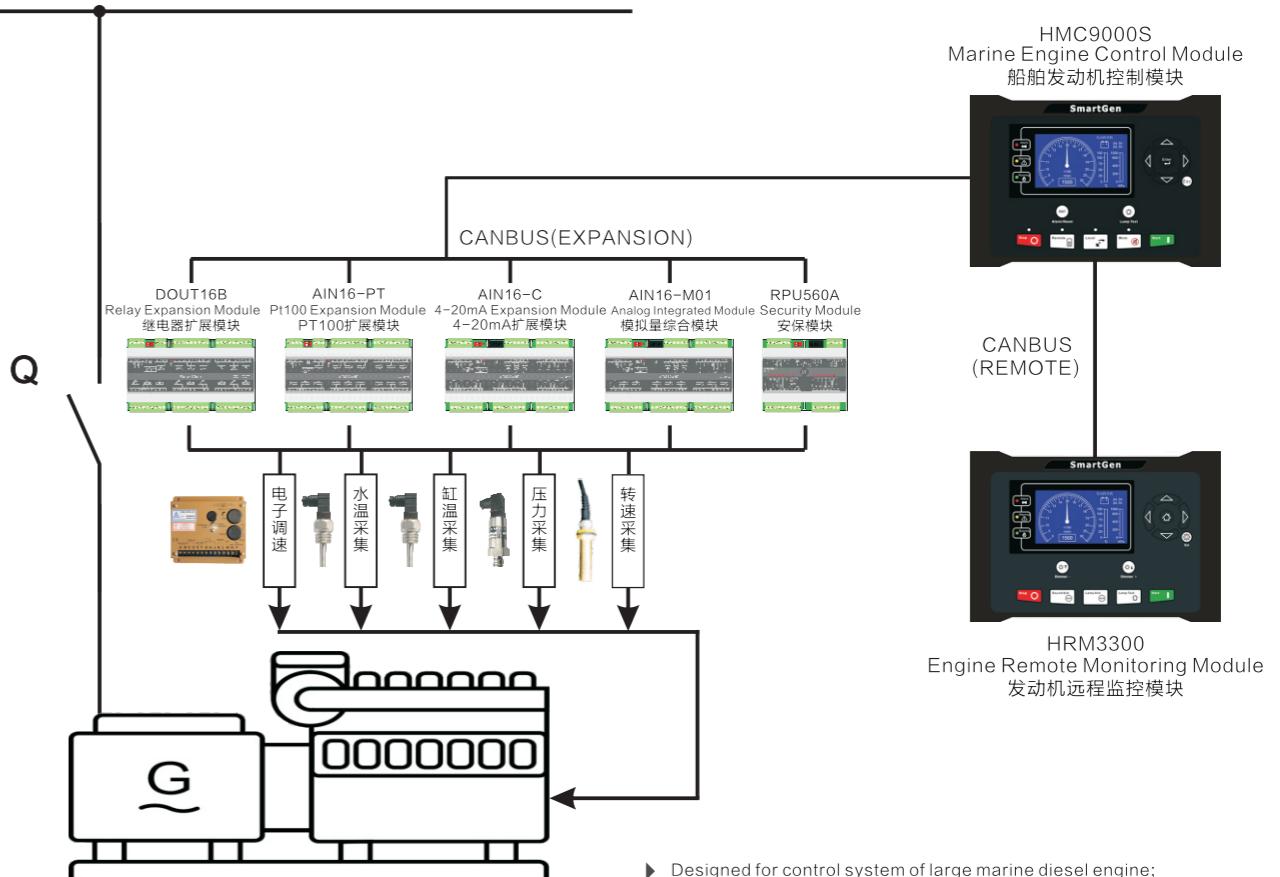
- ▶ Suitable for main generator engine system or main drive engine system of ECU diesel engine; 适用于主发系统或主推进系统的电喷柴油机;
- ▶ Local/remote modes for achieving local start/stop and remote start/stop; 具有机旁/遥控模式可选择，可实现在机旁模式开/停机和遥控模式开/停机;

- ▶ 4.3 inches colour LCD for displaying water temperature, oil temperature, oil pressure, speed, battery voltage, runtime and other ECU data and ECU alarm and stop alarm information; 4.3寸彩屏显示水温、油温、油压、转速、电池电压、运行时间和ECU数据以及ECU报警和停机报警信息;
- ▶ All parameters can be set via controller on site, convenient and efficient; 参数均可现场通过面板进行设定，方便快捷;
- ▶ With push-buttons of local and remote modes, self-checking, alarm reset and mute functions, easy to operate; 面板具有机旁模式、遥控模式、自检、报警复位和静音功能的按键，操作简便方便;
- ▶ Real-time clock and event log, convenient for maintenance and troubleshooting; 具有实时时钟、报警信息显示和历史记录，方便维护和故障查询;
- ▶ Operating voltage/工作电压: DC(18~35)V;
- ▶ Operating conditions: Temperature: (-25~+70)°C Humidity: (20~93)%; 工作条件：温度：(-25~+70)°C 湿度：(20~93)%;
- ▶ CCS certificate and IP44 protection class; 具有CCS认证，防护等级IP44;
- ▶ Case dimensions(L*W*H)(mm): 360*175*225(except shock absorber); 外形尺寸(长*宽*高)(mm): 360*175*225(不含减震器);
- ▶ Panel cutout(L*W*H)(mm): 205*85, 4*M6 screw; 安装尺寸(长*宽*高)(mm): 205*85, 4xM6螺孔;

Solution for Medium Diesel Engine– Main Generator Engine / 中型柴油机解决方案-主发


- ▶ Designed for control system of medium marine diesel engine; 控制器适用于中型船舶柴油机控制系统;
- ▶ Controller can expand remote monitoring module(HMC6000RM) via CANBUS to achieve remote control of engine; 控制器可通过CANBUS总线方式扩展远程监控模块 (HMC6000RM) , 实现对发动机的远程监控;
- ▶ Controller can expand a 16-channel relay output module(DOUT16B) via CANBUS to realize alarms receiving and output controlling; 控制器可通过CANBUS总线方式扩展16路继电器输出模块 (DOU16B) 实现多种报警和控制输出;
- ▶ Controller can expand security module(RPU560A) via CANBUS to achieve multiple protection of engine; 控制器可通过CANBUS总线方式扩展安保模块 (RPU560A) , 实现对发动机的多重保护;
- ▶ Maximum 6 sensor inputs can be connected to controller, four of them are available for the following types: 0~1K resistance, 0~5V voltage, 4~20mA current; 控制器可接入最多6路传感器输入, 其中后4路可实现0~1K电阻型、0~5V电压型、4~20mA电流型的多种类型选择;
- ▶ Dual-power transfer module(BTM100) can be fitted with controller to achieve uninterrupted switching of dual power supply and failures warning; 控制器可配合双电源切换模块 (BTM100) , 实现两路电源的不间断切换和故障报警;
- ▶ Alarm threshold and protection delay of each sensor can be set by via controller to protect every measuring point accurately; 控制器可分别对每一路传感器设置保护阈值和报警延时, 实现对每一个测量点的精准保护;
- ▶ All data can be set on control panel at the site, conveniently and efficiently; 参数均可现场通过面板进行设定, 方便快捷;
- ▶ Operating voltage/工作电压: DC(8~35)V;
- ▶ Operating condition: Temperature: (-25~+70)°C Humidity: (20~93)%; 工作条件: 温度: (-25~+70)°C 湿度: (20~93)%;
- ▶ With CCS certificate and IP44 protection class; 具有CCS认证, 防护等级IP44;
- ▶ Case dimensions(L*W*H)/外形尺寸(长*宽*高)(mm): 780*580*210;

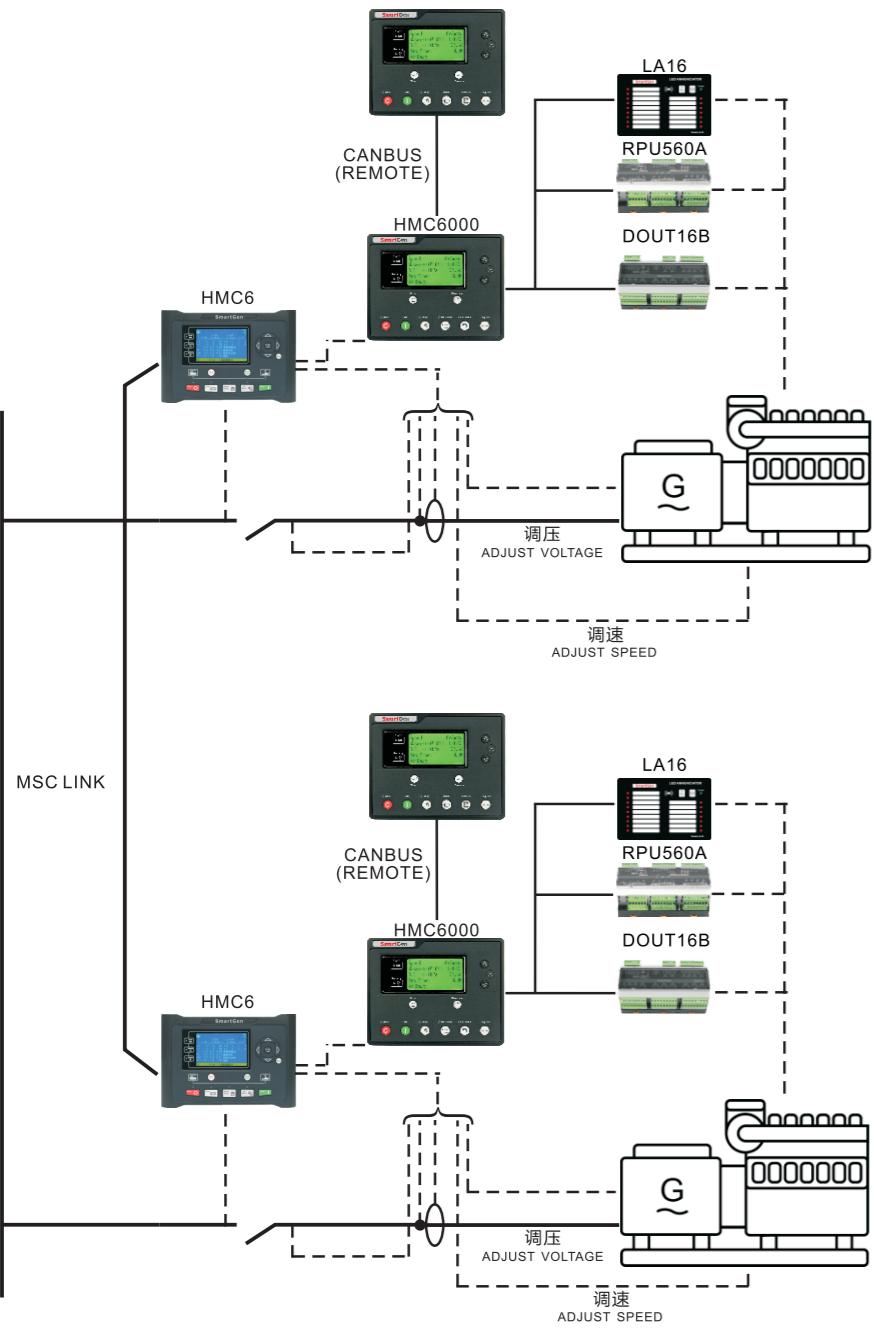

MGCP100B
Wall-mounted Engine Control Panel
壁挂式发动机控制屏

Solution for Large Diesel Engine– Main Generator Engine / 大型柴油机解决方案-主发


- ▶ Designed for control system of large marine diesel engine; 适用于大型船舶柴油机控制系统;
- ▶ 4.3 inches colour LCD with backlight, multilingual interface (including English, Chinese); 4.3寸彩屏带背光, 可选中/英文显示;
- ▶ Controller can expand 16 remote monitoring modules(HRM3300) at most via CANBUS to achieve remote monitoring of engine; 可通过远程CANBUS总线方式扩展最多16块远程监控模块 (HRM3300) , 实现对发动机的远程监控;
- ▶ Controller can expand two 16-channel relay output modules(DOUT16B) at most via CANBUS to realize alarms receiving and output controlling; 可通过扩展CANBUS总线方式扩展最多2块继电器输出模块 (DOUT16B) 实现多种报警和控制输出;
- ▶ Controller can expand two PT100 expansion modules(DOUT16-PT) at most via CANBUS to realize PT100 analog data acquisition; 可通过扩展CANBUS总线方式扩展最多2块PT100扩展模块 (AIN16-PT) , 实现多路PT100模拟量数据采集;
- ▶ Controller can expand two expansion modules(AIN16-C) at most via CANBUS to realize 4~20mA signal acquisition; 可通过扩展CANBUS总线方式扩展最多2块4~20mA扩展模块 (AIN16-C) , 实现多路4~20mA信号采集;
- ▶ Controller can expand two analog misc modules(AIN16-M01) at most via CANBUS to realize temperature, pressure and speed acquisition as well as 4~20mA signal outputting; 可通过扩展CANBUS总线方式扩展最多2块模拟量综合模块 (AIN16-M01) , 实现多路温度、压力、转速数据采集, 同时可配置输出4~20mA信号;
- ▶ Controller can expand security module(RPU560A) via CANBUS to achieve multiple protection of engine; 可通过扩展CANBUS总线方式扩展安保模块 (RPU560A) , 实现对发动机的多重保护;
- ▶ Controller can control and communicate with dozens of EFI engines with J1939 interface via CANBUS; 可通过扩展CANBUS总线方式和具有J1939接口的数十种电喷发动机进行控制及通信;
- ▶ Real-time clock , alarms displaying and event log make it convenient for maintenance and troubleshooting; 具有实时时钟、报警信息显示和历史记录, 方便维护和故障查询;
- ▶ All data can be set on control panel at the site, conveniently and efficiently; 参数均可现场通过面板进行设定, 方便快捷;
- ▶ Operating voltage/工作电压: DC(18~35)V;
- ▶ Operating condition: Temperature: (-25~+70)°C Humidity: (20~93)%; 工作条件: 温度: (-25~+70)°C 湿度: (20~93)%;
- ▶ With CCS certificate and IP44 protection class; 具有CCS认证, 防护等级IP44;
- ▶ Case dimensions(L*W*H)(mm): 900*640*225; 外形尺寸(长*宽*高)(mm): 900*640*225;


MGCP100L
Vertical Engine Control Panel
立柜式发动机控制屏

Parallel Unit and Power Management / 并机及功率管理



功率管理模块HMC6 + 主控模块HMC6000

Power management module HMC6 + Main control module HMC6000

SENSORS/传感器



- Measuring Range: (-20~+150)°C; 测温范围: (-20~+150)°C;
- Output Mode: Three-wire System 电阻输出;
- Measurement Accuracy Class: Class 0.25; 测量精度: 0.25级;

SGWS115
Temperature Sensor(resistance type)
电阻型温度传感器



- Measuring Range: (0~1)MPa; 测量范围: (0~1)MPa;
- Signal Output: (4~20)mA; 信号输出: (4~20)mA;
- Measurement Accuracy Class: Class 0.25; 测量精度: 0.25级;

SGPT110
Pressure Transmitter
压力变送器(4~20mA)

- Suitable for genset parallel unit and power management system;
适用于发电机组并机及功率管理系统;
- Suitable for 3-phase 4-wire, 3-phase 3-wire, 2-phase 3-wire and single phase 2-wire power supply and 50/60Hz system;
适用于三相四线、三相三线、二相三线和单相二线电源和50/60Hz系统;
- Real-time clock, alarms information displaying and event log make it convenient for maintenance and faults finding;
具有实时时钟、报警信息显示和历史记录，方便维护和故障查询;
- 4.3 inches colour LCD with backlight, multilingual interface (including English, Chinese);
4.3寸彩屏带背光，可选中/英文显示;
- Can achieve manual/auto paralleling of maximum 16 gensets with same or different capacity. Data are transmitted by gensets via CANBUS;
可实现最多16台同容量或不同容量的发电机组的手动/自动并联，控制器之间通过CANBUS总线连接实现数据快速交互；
- Can control GOV and AVR to achieve automatic speed/voltage regulating, synchronization and load sharing;
具有控制GOV和AVR的功能，可以实现自动调速、调压、同步、及负荷均分；
- Control and protection for engine: start/stop of the gen-set and protection of engine's various operating data;
具有发动机控制和保护功能，可对发动机的起动、停机进行控制，对发动机的各种运行参数进行保护；
- For Bus, controller has loss of phase and phase sequence wrong detection functions; For generator, controller has overvoltage, under voltage, over frequency, under frequency, over current, over power, reverse power, loss of phase, phase sequence wrong detection functions;
母排具有缺相、逆相序检测功能，发电机具有过压、欠压、过频、欠频、过流、过功率、缺相、逆相序检测功能；
- with parallel/disassemble load soft transfer functions;
具有并联/解列时负载软转移功能；
- All data can be set on control panel at the site, conveniently and efficiently;
参数均可现场通过面板进行设定，方便快捷；
- Operating voltage/工作电压: DC(8~35)V;
- Operating condition: Temperature: (-25~+70)°C
Humidity: (20~93)%;
工作条件: 温度: (-25~+70)°C 湿度: (20~93)%;
- With CCS certificate/具有CCS认证；

Marine Engine Control Modules / 船舶发动机控制模块



HMC9000S/HMC9000A
Marine Engine Control Modules
船舶发动机控制模块



HRM3300
Engine Remote Monitoring Module
发动机远程监控模块



HMC6000RMD
Main Drive Engine Remote Monitoring Module
主推发动机远程监控模块



HMC6000A
Marine Engine Control Module
船舶发动机控制模块



HMC6000ED
Marine Main Drive Engine Control Module
船舶主推控制模块



HMC6000EG
Marine Generator Engine Control Module
船舶主发控制模块



HMC6000RM
Engine Remote Monitoring Module
发动机远程监控模块

Model/型号	HMC9000S	HMC9000A	HMC6000A	HMC6000ED	HMC6000EG
Display/显示器	4.3 inches colour LCD(480*272) 4.3寸彩屏(480*272)			LCD(132*64)	
Operation Panel/操作面板			Silicon Rubber/硅胶		
Language/控制器语言			Chinese& English/中文&英文		
Digital Input/开关量输入口	18		11		
Analogue Input/模拟量输入口	8		6		
Relay Output/继电器输出口	8		8		
Transistor Output/晶体管输出口	8		9		
Current Sensor/电流型传感器个数	4				
Resistance Sensor 电阻型传感器个数	4			6	
HRM3300Module Extension HRM3300模块扩展		●			
LA16 Module Extension LA16模块扩展	●				●
RPU560A Module Extension RPU560A模块扩展			●		
AIN16 Module Extension AIN16模块扩展	●				
AIN16-PT Module Extension AIN16-PT模块扩展	●				
AIN16-C Module Extension AIN16-C模块扩展	●				
AIN16-K Module Extension AIN16-K模块扩展	●				
AIN16-M01 Module Extension AIN16-M01模块扩展	●				
DIN16A Module Extension DIN16A模块扩展	●				
DOUT16B Module Extension DOUT16B模块扩展			●		
HMC6000RM Remote Module HMC6000RM远程模块			●		
HMC6000RMD Remote Module HMC6000RMD远程模块				●	
COM.Interface/通讯接口	RS485/USB		RS485/LINK		LINK
CANBUS Port Extension 扩展CANBUS接口			●		
Remote CANBUS Port 远程CANBUS接口			●		
GOV/调速控制	●				
ECU CAN1939/电喷CAN1939		●			
DC Supply/直流工作电源范围	DC(18~35)V			DC(8~35)V	
Case Dimensions/外形尺寸(mm)	266*182*45(L*W*H)			197*152*47(L*W*H)	
Panel Cutout/安装尺寸(mm)	214*160			186*141	
Operating Temp./工作温度				(-25~+70)°C	

Marine Power Management Modules / 船舶功率管理模块



HMC9510E
Marine Generator Set Control Module
船舶发电机组控制模块

► Marine generator set controller with autostart function, graphic LCD display, has power generation collection and display, engine control and protection, USB, RS485, CANBUS interface, CCS certification.
图形液晶显示自启动船用发电机组控制器，具有发电电量采集及显示、发动机控制及保护、USB、RS485、CANBUS接口，CCS认证。



HMC9510
Paralleling and Protection Module
并联保护控制模块

► Adopts silicone panel and pushbuttons for better operation in high/low temperature environment; Realizes manual/auto parallel system of maximum 20 genset with different capacity; Integrates GOV and AVR control functions, automatic synchronization and load sharing;
采用硅胶面板及按键，适应高低温环境能力强，可实现20台不同容量的发电机组手动、自动并联，具有控制GOV和AVR的功能，可以自动同步及负荷均分。



HMC6
Power Management Control Module
功率管理控制模块



LA16
LED Lamp Expansion Module
LED灯扩展模块

► Able to achieve load sharing of maximum 16 units
能够实现最多16台机组负荷分配
► Multiple auto start/stop modes 可以实现多种自动起停机方式
► Can handle conditional connection of heavy consumers and NEL trip
能够处理多路重载问询和多路非重要负载脱扣

► LED display module with 16 programmable lamps
16路可编程LED灯显示模块
► With LINK and CANBUS ports 带LINK和CANBUS接口
► Panel Cutout(mm): 163*103
安装尺寸(mm): 163*103
► Case Dimensions(mm): 180*120*37
外形尺寸(mm): 180*120*37

Model/型号	HMC9510E	HMC9510	HMC6
Display/显示器	4.3inches colour LCD(480*272)/4.3寸彩屏(480*272)		
Operation Panel/操作面板	Silicon Rubber/硅胶		
Language/控制器语言	Chinese & English & Others/中文&英文&其他	Chinese& English/中文&英文	
Digital Input/开关量输入口	8	7	10
Analogue Input/模拟量输入口	5		
Relay Output/继电器输出口	8		15
Engine Control and Protection 发动机控制及保护	●		
AC System/交流制式	1P2W/2P3W/3P3W/3P4W		
Alternator Voltage/交流电压范围	(15 ~ 360)V(ph-N)		
Alternator Frequency/交流频率	50/60Hz		
KW/Amp Detecting & Display 功率/电流检测及显示	●		
Monitor Interface/监控接口	RS485		
Programmable Interface/编程接口	USB/RS485		
CANBUS(J1939)	●		
MSC(CAN)		●	
GOV/调速控制	(-10 ~ 10)V	(-10 ~ 10)V/(-20 ~ 20)mA	
AVR/调压控制	(-10 ~ 10)V	(-10 ~ 10)V/(-20 ~ 20)mA	
DIN16A Module Extension DIN16A模块扩展	●		●
DOUT16B Module Extension DOUT16B模块扩展	●		●
LA16 Module Extension LA16模块扩展			●
RTC & Event Log 实时时钟及历史记录	●		
Scheduled start Genset/定时试机	●		
Maintenance/保养功能	●		
ULP/用户可编程逻辑	●		
DC Supply/直流工作电源范围	DC(8 ~ 35)V		
Case Dimensions/外形尺寸(mm)	266*182*45(L*W*H)		
Panel Cutout/安装尺寸(mm)	214*160		
Operating Temp./工作温度	(-25 ~ +70)°C		

Marine Engine Expansion and Battery Protection Modules / 船舶发动机扩展及电量保护模块

Model/型号	Functions/功能	Model/型号	Functions/功能
BTM100 ATS Switching Module BTM100双电源切换模块 Case Dimensions/外形尺寸(mm): 91*89.7*54 Two DC power input and one power output to achieve two DC power uninterrupted switch. DC power input voltage is (18~35)V. 两路直流电源输入，一路电源输出，实现两路直流电源不间断切换。直流电源输入电压范围(18~35)V。		DOUT16B Digital Output Module DOUT16B开关量输出模块 Case Dimensions/外形尺寸(mm): 161.6*89.7*60.7 An expansion module with 16 digital outputs. Each output can be programmed and processed data are transmitted to DOUT16B for processing by HGM9000/HMC6000 via CANBUS port. 一个扩展16路开关量输出模块，每一路输出都能实现可编程。HMC9000/HMC6000把处理后的DOUT16B数据通过CANBUS传输到DOUT16B输出模块进行处理。	
DIN16A Digital Input Module DIN16A开关量输入模块 Case Dimensions/外形尺寸(mm): 107.6*89.7*60.7 An expansion module with 16 channels digital input. Each channel can be programmed and the name of each channel can be defined by users. The data collected by DIN16A are transmitted to HMC9000 controller via CANBUS port. 一个扩展16路开关量输入模块，每一路输入功能都可编程，每一路输入名称可自定义。DIN16A采集到的数据通过CANBUS传输到HMC9000控制器进行处理。		AIN16 Analog Input Module AIN16模拟量输入模块 Case Dimensions/外形尺寸(mm): 144*96*39.3 Is an expansion module with 16 channels sensor input. Pt100 temperature sensor input or 4mA~20mA current sensor input can be chosen for each channel; Otherwise, two of them can be chosen as K-type thermocouple sensor input. The main module HMC9000 receives data via CANBUS port and different alarm threshold values can be set for each sensor via HMC9000. 一个16路传感器输入模块，每一路输入都可以选择PT100温度传感器输入或者(4~20)mA电流传感器输入，另两路可以选择K分度(热电偶)传感器输入，数据通过CANBUS接口连接到HMC9000主控控制器，在主控控制器中可分别对16路输入中的每一路设置报警阈值。	
AIN16-C 4~20mA Analog Input Module AIN16-C 4~20mA模拟量输入模块 Case Dimensions/外形尺寸(mm): 161.6*89.7*60.7 A miscellaneous expansion module with sixteen 4~20mA analog inputs and 3 speed inputs. The data are transmitted to HMC9000 main controller for processing via CANBUS port. The alarm threshold value of each channel can be set via HMC9000. 一个16路(4~20)mA和3路转速模拟量综合采集模块，采集数据通过CANBUS接口传递到HMC9000主控控制器，在主控控制器中可分别对每一路输入的报警阈值进行设置。		AIN16-PT PT100 Analog Input Module AIN16-PT PT100模拟量输入模块 Case Dimensions/外形尺寸(mm): 161.6*89.7*60.7 An expansion module with 16 PT100 analog inputs. The data are transmitted to HMC9000 main controller for processing via CANBUS port. Each channel can be set as "enable" or "disable" and different alarm threshold values can be set via HMC9000. 一个16路PT100模拟量采集模块，采集到的数据通过CANBUS接口连接到HMC9000主控控制器，在HMC9000中可分别对16路输入中的每一路设置使能位或报警阈值。	
AIN16-M01 Analog Miss Module AIN16-M01模拟量综合模块 Case Dimensions/外形尺寸(mm): 161.6*89.7*60.7 A miscellaneous expansion module with 3 speed inputs, one 4~20mA input, eight PT100 inputs and four 4~20mA outputs. The data are transmitted to HMC9000 main controller for processing via CANBUS port. Each channel can be set as "enable" or "disable" and different alarm threshold values can be set via HMC9000. 一个综合模拟量输入/输出扩展模块，一共有3路转速输入，1路(4~20)mA输入，8路PT100输入，4路(4~20)mA输出。采集到的数据通过CANBUS接口连接到HMC9000中可分别对16路中的每一路设置使能位或报警阈值。		AIN24 Analog Input Module AIN24模拟量输入模块 Case Dimensions/外形尺寸(mm): 161.6*89.7*60.7 An expansion module which has 14 "K-type" thermocouple sensor inputs, 5 resistor sensor inputs and five 4~20mA current sensor inputs. The data are transmitted to the main controller (HGM9530 & HGM9540 or HGM9300 CAN) for processing via CANBUS port. Each channel can be set as "enable" or "disable" and different alarm threshold values can be set via main controller. 一个24路模拟量采集模块，具有14路K型电偶，5路PT100，5路(4~20)mA，采集到的数据通过CANBUS接口连接到HGM9530, HGM9540或HGM9300 CAN主控控制器，在主控控制器中可分别对24路输入中的每一路设置使能位或报警阈值。	
RPU560A Security Module RPU560A安保模块 Case Dimensions/外形尺寸(mm): 107.6*89.7*60.7 A security module that can autonomously maintain the engine running and protect it in case of master control fault. The module is connected to master controller HMC9000 via CANBUS port. All parameters and alarm types can be checked on the master controller. It can be widely used in marine emergency units, main propulsion units, main generator units and pumping units. 一个能够独立运行保护发动机正常运转的模块，该模块通过CANBUS和主控HMC9000连接，所有数据和停机报警信息都能通过主控模块查看。适用于船用主推、主发、应急机组或水泵机组。		RHS300 Load Sharing Module RHS300功率均分模块 Case Dimensions/外形尺寸(mm): 161.6*89.7*60.7 ► Suitable for 1P2W/3P3W AC systems; ► Load sharing function; ► Widely used in marine genset field and land genset field; 广泛应用于船机和陆机；	
HOC300 Over Current Protection Module HOC300过流保护模块 Case Dimensions/外形尺寸(mm): 89.7*71.6*60.7 ► Suitable for 1P2W/2P3W/3P3W/3P4W AC systems; ► Detects load current accurately; ► 2 relay output; ► Widely used in marine genset field and land genset field; 广泛应用于船机和陆机；		HFT300 Frequency Detection Module HFT300频率检测模块 Case Dimensions/外形尺寸(mm): 89.7*71.6*60.7 ► Suitable for 1P2W/2P3W/3P3W/3P4W AC systems; ► Over/under frequency protection function; ► 2 relay output; ► Widely used in marine genset field and land genset field; 广泛应用于船机和陆机；	
HPD300 Reverse Power Protection Module HPD300逆功率保护模块 Case Dimensions/外形尺寸(mm): 89.7*71.6*60.7 ► Suitable for 1P2W/2P3W/3P3W/3P4W AC systems; ► Detects 3-phase voltage, 3-phase current, frequency and power parameters; ► 2 relay output; ► Widely used in marine genset field and land genset field; 广泛应用于船机和陆机；		HVD300 Voltage Detection Module HVD300电压检测模块 Case Dimensions/外形尺寸(mm): 89.7*71.6*60.7 ► Suitable for 1P2W/2P3W/3P3W/3P4W AC systems; ► Detect 3-phase voltage, phase sequence; ► 2 relay output; ► Widely used in marine genset field and land genset field; 广泛应用于船机和陆机；	
HSM300 Sync Control Module HSM300同步模块 Case Dimensions/外形尺寸(mm): 89.7*71.6*60.7 ► Suitable for 1P2W/3P3W AC systems; ► Synchronizes genset with bus; ► Widely used in marine genset field and land genset field; 广泛应用于船机和陆机；		HEP300 Electronic Potentiometer HEP300电子电位器 Case Dimensions/外形尺寸(mm): 89.7*71.6*60.7 Used for converting the relay output signal of sync controller or power split controller to analog signal which can be used by speed governor or AVR. It also can convert the voltage to current signal or PWM signal (with drop PWM signal). This module can replace conventional electric potentiometer and provide a solution for relay speed regulation. 用于将模块输出的继电器信号转换成调速器或调压器可以识别的模拟量信号；也可以把模块输出的电压信号转换成电流信号、以及PWM信号和PWM下垂信号。该模块可替代传统的电动电位器，为继电器调速提供了一个解决方案。	