

RT-PAC 可编程逻辑控制器



常熟市国瑞科技股份有限公司

1、产品综述

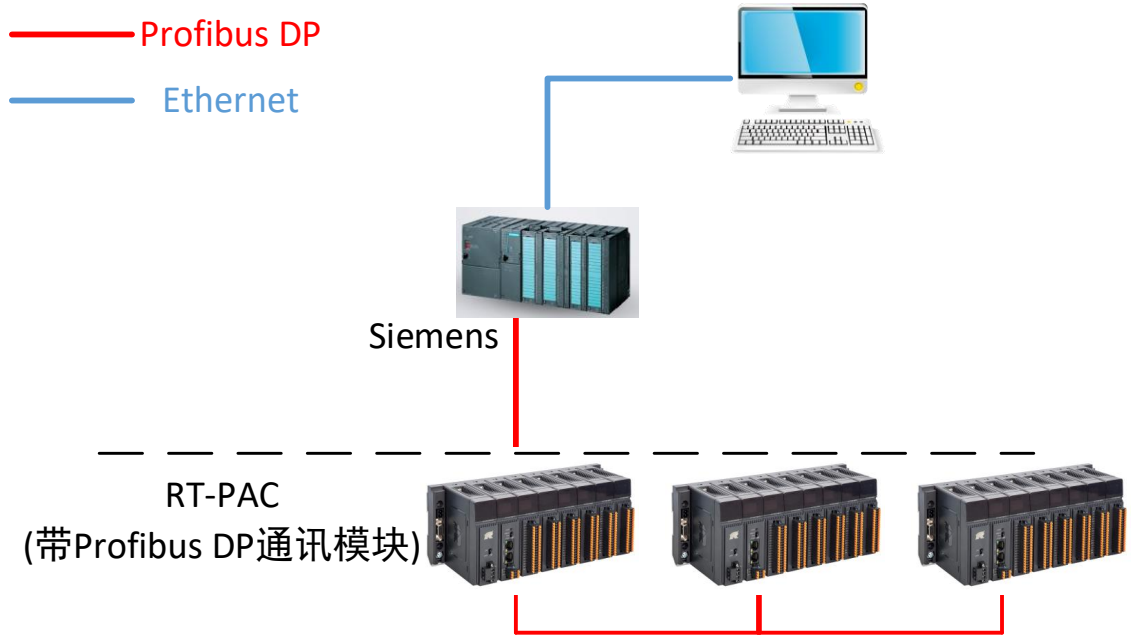
传统可编程逻辑控制器具有可靠性高、抗干扰能力强、体积小、重量轻、功耗低、维护方便等优点，但目前国内类似产品很少能满足船用工作环境，导致国外品牌可编程逻辑控制器占据了大部分国内市场。

RT-PAC系列可编程控制器（简称RT-PAC）是针对船用环境使用条件，自主设计与研发，汲取了国际主流PAC的成功经验，瞄准了当今PAC的最新发展方向，采用了计算机、通信、电子和自动控制等方面的国际先进技术，在CPU操作系统、I/O信号处理、网络通讯、软件开发及生产工艺等方面具有优越的性能，是适用于各种自动化控制的可编程控制器。RT-PAC是对传统PAC功能的极大提升，其组网的灵活性、系统平台的开放性、编程软件的灵活性以及模块的智能性可使复杂的控制项目得以完美地实现。

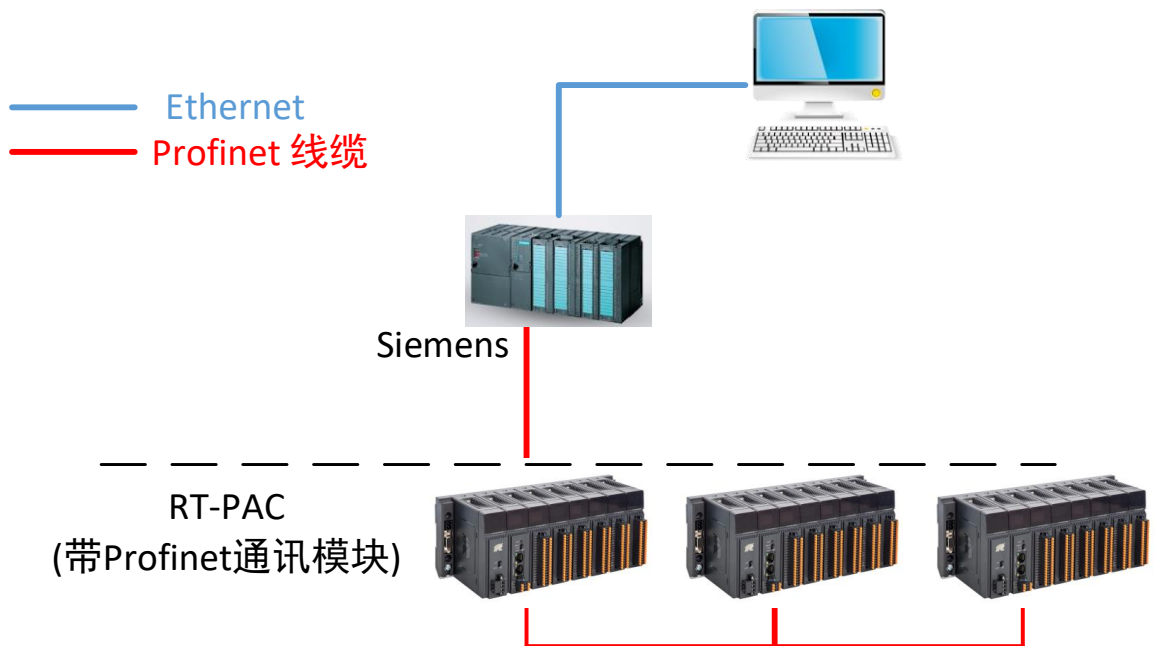


2、系统架构

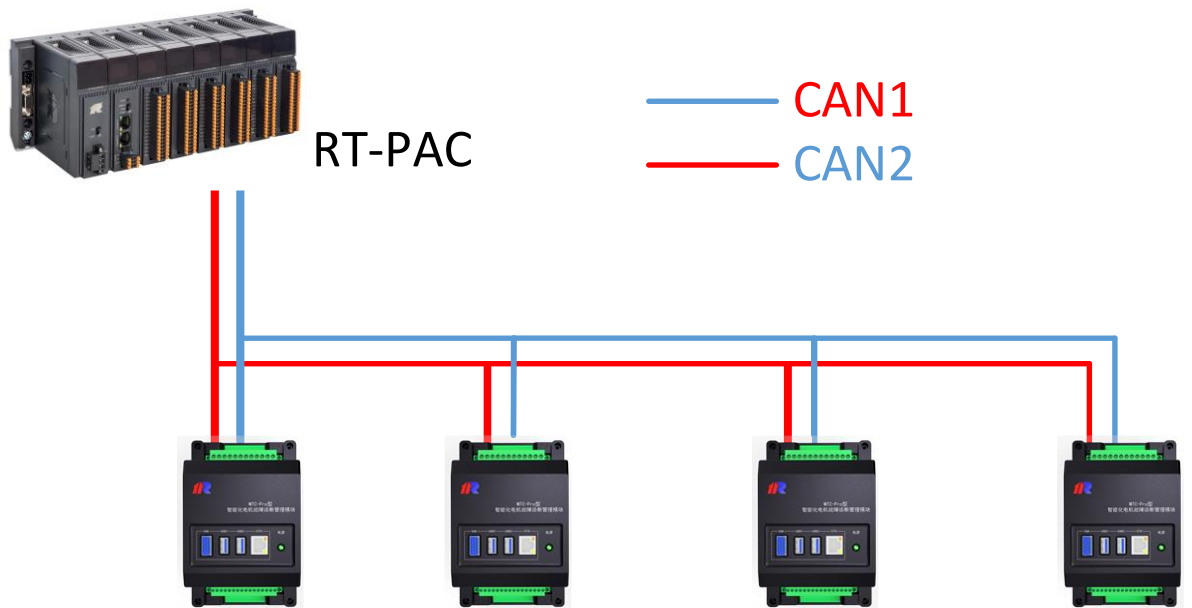
- ◆ 与西门子 CPU 通过 Profibus DP 通讯



- ◆
- ◆ 与西门子 CPU 通过 Profinet 通讯




- ◆ 与底层设备通过双冗余 CAN 通讯



3、产品特点

- ✓ 国产化自主可控；
- ✓ 外形小巧, 安装方便；
- ✓ 端子排支持插拔, 维护快捷；
- ✓ 一体式底板, 模块支持热插拔, 稳定可靠；
- ✓ 内部采用现场总线通信, 响应速度更快, 效率更好；
- ✓ OLED显示, 清晰易懂, 方便故障诊断；
- ✓ 支持Profibus与Profinet协议, 与西门子CPU兼容；
- ✓ 支持双冗余CAN网络, 可与底层设备直接通信；
- ✓ 具有双冗余10/100Mbps自适应以太网接口, 网络切换时间 $\leq 90\text{ms}$ ；
- ✓ 支持RS485通讯方式, 通信模块最多可提供4路独立RS485通讯链路；
- ✓ 强大的电磁兼容抗干扰能力, 可适应 $-10\sim 55^{\circ}\text{C}$ 的环境温度；

4、船级社认证



中国船级社
CHINA CLASSIFICATION SOCIETY
型式认可证书
CERTIFICATE OF TYPE APPROVAL

型式批准 / Product Approval

可编程控制器
PROGRAMMABLE CONTROLLER

制造商 / Manufacturer
常熟瑞特电气股份有限公司
Changshu Ruite Electric Co., Ltd.
江苏省常熟市虞山镇经济开发区
No. 2, Qingdao Road, High and New Technology Industrial Park, Yushan Town, Changshu City, Jiangsu Province

型式批准 / Notation
无附加条件 / Approval Standard

证书有效期至 / This Certificate is valid until
2020年9月11日 / Sep. 11, 2020

发证机构 / 中国船级社
发证日期 / 2019年12月19日

证书编号 / Certificate No. / 2019090001

证书页码 / Page 1 of 4



CERTIFICATE NUMBER: PSC000001054
ISSUANCE DATE: 10-Sep-2019
EXPIRATION DATE: 03-Sep-2024
ABS TECHNICAL OFFICE: CN-Shanghai DSD

CERTIFICATE OF
Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of
CHANGSHU RUIE ELECTRIC CO., LTD.
NO. 2 QINGDAO ROAD, NEW-HIGH TECHNOLOGY INDUSTRY
PARK OF YUSHAN TOWN, CHANGSHU, JIANGSU, CHINA

www.abs.com and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not constitute a design or classification procedure required by ABS Rules for products to be installed on ABS equipped installations or this assessment are detailed on the pages attached to this certificate.

Product: Programmable Logic Controller
Model: RSP4C

The Product Design Assessment (PSA) Certificate remains valid until 03/09/2024 or until the Rules and/or Standards used in the assessment are revised or until there is a change in the design or manufacturing design components to the above system (and).

Acceptance of product is limited to the "intended service" details prescribed in the certificate and in per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which make an on-order contract for construction on or previous to the effective date of the ABS Rules and Standards applied at the time of PSA. However, use of the Product for any ABS unit is subject to agreement between the manufacturer and intended client.

Approved Representative of Shipping
Baocheng Wang
Shanghai, China

NOTES: This certificate and/or assessment certificate can only be used in conjunction with the Rules, Codes, Standards or other criteria of ABS as a reference. Rules and Standards of ABS are subject to change. The Bureau is not responsible for the use of ABS Rules, Codes, Standards or other criteria of ABS as a reference. The Bureau is not responsible for the use of ABS Rules, Codes, Standards or other criteria of ABS as a reference. The Bureau is not responsible for the use of ABS Rules, Codes, Standards or other criteria of ABS as a reference. The Bureau is not responsible for the use of ABS Rules, Codes, Standards or other criteria of ABS as a reference.

Certificate of Product Design Assessment (PSA)

Page 1 of 1

CERTIFICATE No. TAA0000216

DNV-GL

TYPE APPROVAL CERTIFICATE

This is to certify:
That the Programmable Controller
with type designation(s)
RT-PAC-000C, 0010, 0100, 0200, 0210, 0300, 0310, 0320, 0330, 0410, 0510, 0600, 0610, 0620, 0700, 0800
Issued to
Changshu Ruite Electric Co., Ltd.
Changshu, JIANGSU, China

It is found to comply with
DNV-GL rules for classification - ships, offshore units, and high speed and light craft


Application to:
Product(s) approved by this certificate is/are accepted for installation on all vessels classed to DNV-GL.

Temperature: A
Strength: X
Endurance: A
Endurance: 7.5

Issued at Hamburg on 2019-06-14

This Certificate is valid until 2024-06-13.
DNV-GL local station: Shanghai

Approval Engineer: Marco Rinkat



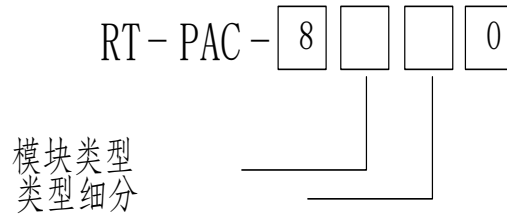
For DNV-GL
Head Office
Jensens Papestrøm
Head of Section

This Certificate is valid in force and conditions specified. Any subsequent change in design or construction may render this Certificate invalid. This applies also when a later Type Approval certificate has been issued for the same product.

Form code: TA-201 Revision: 2018-12 www.dnv.com Page 1 of 4
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5、模块选型

RT-PAC 系列可编程逻辑控制器选型列表如下：



模块类型： Module type	
0	背板
	类型细分： 0——8 槽 1——12 槽 2——4 槽
1	电源模块
2	CPU 模块
	类型细分： 0——双网口单 IP CPU 1——双网口双 IP CPU
3	通信模块
	类型细分： 0——PROFIBUS-DP 模块 1——PROFINET 模块 2——CAN 模块 3——串口通信模块
4	数字量输入模块
5	数字量输出模块
6	模拟量输入模块
	类型细分： 0——电压电流输入 1——热电阻输入 2——热电偶输入
7	模拟量输出模块
8	空槽模块
9	远程 IO 模块

型号	RT-PAC-8210	RT-PAC-8200	RT-PAC-8410	RT-PAC-8510	RT-PAC-8600	RT-PAC-8610	RT-PAC-8620	RT-PAC-8700
图片								
描述	双网口双 IP CPU	双网口单 IP CPU	32路数字量输入	32路数字量输出 32	8路电流电压型 输入	8路电阻温度输入	8路热电偶信号 输入	4路电流电压输出
尺寸	32mm×110mm×100mm							
防护等级	IP20							
供电方式	DC 5V 底板供电							
工作温度	-10~55℃							
功耗	2.5W	2.5W	1.6W	2.25W	1.9W	2.4W	2.4W	2.6W
重量	180g	180g	160g	180g	160g	140g	160g	160g
热插拔	●	●	●	●	●	●	●	●

故障自诊 断	●	●	●	●	●	●	●	●
特点	双路以太网 Modbus TCP 数据通信	双冗余以太网 Modbus TCP 数据通信	每路通道带电气隔离	每路通道带电气隔离	测量精度 12bit	测量精度 24bit	测量精度 24bit	测量精度 16bit

型号	RT-PAC-8100	RT-PAC-8300	RT-PAC-8310	RT-PAC-8320	RT-PAC-8330	RT-PAC-8900	RT-PAC-8000	RT-PAC-8010	RT-PAC-8020
Model									
图片 picture									
描述 describe	电源模块 Power module	Profibus-DP 从站模块 PROFIBUS DP slave module	Profinet 从站模块 PROFINET slave module	CAN 通信模块 Can communication module	串口通信模块 Serial communication module	远程 IO 模块 Remote IO module	8 槽位底板 8 slot base plate	12 槽位底板 12 slot base plate	4 槽位底板 4 slot base plate
尺寸 Size	32mm×110mm×100mm						292mm×110 mm	420mm×110 mm	164mm×110 mm
防护等级 Degree of protection	IP20								

供电方式 Power supply mode	DC 5V 底板供电(DC 5V backplane power supply)						——	——	——
工作温度 working temperature	-10~55°C								
功耗 Power waste	——	2W	<6W	2.25W	1.75W	<6W	——	——	——
重量 weight	200g	220g	160g	160g	160g	200g	650g	1000g	325g
通讯协议	——	Profibus-DP	Profinet	CAN2.0B	自定义	内部协议	——	——	——

Communication protocol					custom	Internal agreement			
物理接口 Physical interface	——	RS485	RJ45	CAN	RS485	RJ45	——	——	——

