MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Amikon cover with selected official Emerson pages

PAC8000 REMOTE I/O

8623-FT-IS

INTRINSICALLY SAFE DIGITAL INPUT FIELD TERMINAL

OFFICIAL SOURCES

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PAC8000 Remote I/O

The Control Solution for Process Industries

Introduction

PAC8000 Remote I/O is a completely modular I/O solution for both general purpose and hazardous area applications. Based upon a carrier system, PAC8000 supports a wide range of modules and I/O functions, including intrinsic safety signals. An open architecture allows communication with a variety of different fieldbuses by selecting the appropriate type of Bus Interface Module (BIM).

Designed to resist extreme temperatures, humidity, corrosive materials, shocks, and vibration, PAC8000 delivers full specification performance in even the harshest environments. In ATEX environments PAC8000 excels – all components can be mounted and live worked in Zone 2 / Division 2 and ATEX Zone 1 hazardous areas. The I/O includes types that can be connected directly to intrinsically safe (Exi) or increased safety (Exe) field wiring.

PAC8000 Remote I/O integrates seamlessly with PACSystems solutions and is connected via PROFINET or Modbus TCP to RX3i and RSTi-EP controllers.

Harsh & Hazardous Area Operation

PAC8000 can go where other products cannot. They can be field mounted and subjected to the following:

- -40°C to +70°C operating range
- ISA Level G3 corrosion
- 30g shocks and 5g vibration
- Operation in Class I, Division 2 and Zone 2 hazardous areas with I/O module field wiring including intrinsically safe (Exi) and increased safety (Exe) options
- Supports UL HAZLOC C1D1 and ATEX Zone 1 hazardous areas with I/O module field wiring including intrinsically safe (Exi) and increased safety (Exe) options



High Availability

PAC8000 supports PROFINET System Redundancy (PNSR), enabling synchronized independent controllers to service the I/O and transition from active to back-up controller without interruption. With controllers separated up to 10 kilometers from each other, processes will be resilient from physical disruption. Consider unplanned downtime a thing of the past.

Variety of I/O Modules

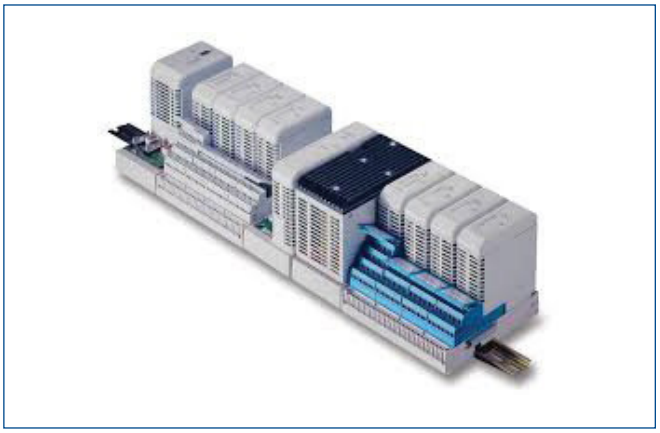
Beyond just analog and digital I/O, a broad range of PAC8000 I/O modules are available, including options for low-level instrumentation, AC mains, and intrinsically safe signals. 4, 8, 16, and 32 field channels modules are available, and all modules provide comprehensive diagnostic information.

Easy Troubleshooting and Machine Setup

Using integrated PAC Machine Edition (PME) software, you can easily configure PAC8000 I/O. If you are using PROFINET then it is even easier using the GSDML file. PME is the same software as all PACSystems CPUs so you only need a single tool from small to large applications. This approach utilizes the same hardware configuration, network configuration, and programming editors. HMI development is also streamlined with a single tag database for QuickPanel+ HMIs.

HART Support

PAC8000 Modbus EBIM can provide HART data directly to Emerson's Asset Management System (AMS), allowing remote configuration and access to field instrument diagnostic information. PAC8000 can also acquire HART data for use in the process controlapplication. HART devices may be selected for regular status monitoring and alerts can be issued if the status changes. This allows for reduced commissioning time, reduced downtime, and reduced maintenance costs.



Specifications

Mounting Format

- DIN Rail

Network Interfaces

- PROFINET
- Modbus/TCP

Gateways / Bridges

- HART

Network Redundancy

- MRP
- Dual LAN

System Redundancy

- PNSR or Modbus/TCP

I/O Redundancy

- Dual

Media Support

- Copper & MM Fiber

Media Connector

- 2x RJ45 or 2x SFP

I/O Types

- 24 VDC,
- 115/230 VAC in
- 2-60 VDC,
- 20 - 265 VAC out
- Analog, RTD, Thermocouple

Specialty Modules

- Pulse Test (24 VDC)
- Pulse Input
- Sequence of Events (SoE) Inputs
- ASH Detector

Isolation

- Galvanic Isolation
- DI, DO, AI, AO

Hot Swap

- Yes

Environmentals

- IP20
- -40˚C to 70˚C
- Conformal Coat
- ISA Level G3 corrosion
- 30g shock
- 5g vibration

Agency Approvals

- UL
- UL HAZLOC C1D1
- CE
- ATEX Zone 1
- Intrinsically Safe

Marine

- Lloyd's Register

I/O Family Comparison



Product	PACSystems RSTi	PACSystems RSTi-EP	VersaPoint	VersaMax Modular	RSTi-OM	PAC8000	PACSystems RX3i
Type	Distributed Slice	Distributed Slice	Distributed Slice	Chassis Based	On-machine Distributed	Intrinsically Safe	Chassis Based
Network Interfaces	PROFINET PROFIBUS DP Modbus/TCP Modbus/RTU DeviceNet	PROFINET P ROFIBUS DP Modbus/TCP EtherCAT Ethernet/IP	PROFINET PROFIBUS DP Modbus/TCP DeviceNet	PROFINE PROFIBUS DP Modbus/TCP EGD DeviceNet GENIUS	PROFINET Modbus TCP OPC UA MQTT (simultaneous on same device)	PROFINET Modbus/TCP	PROFINE PROFIBUS DP Modbus/TCP EGD CMX
System Redudancy	Modbus/TCP Modbus/RTU DeviceNet	PROFINET PROFIBUS DP	-	PNSR, EGD or GENIUS	-	PNSR or Modbus/TCP	PNSR or EGD
Hot Swap	No	Yes	No	Yes	No	Yes	Yes
Environmentals	PROFINET PROFIBUS DP	IP20 -20°C to 60°C	IP20 -20°C to 55°C	IP20 0°C to 60°C -40°C to 60°C (opt.) Conformal Coat (opt.)	IP67 -20°C to 60°C	IP20 -40°C to 70°C Conformal Coat	IP20 0°C to 60°C -40°C to 60°C (opt.) Conformal Coat (opt.)
Agency Approvals	Modbus/TCP DeviceNet	PROFINET PROFIBUS DP	UL UL HazLoc C1D2 CE ATEX Zone 2 TUVSIL3	UL UL HazLoc C1D2 CE ATEX Zone 2	UL UL HazLoc C1D2 CE ATEX Zone 2	UL UL HazLoc C1D1 CE ATEX Zone 1 Intrinsically Safe	UL UL HazLoc C1D2 CE ATEX Zone2
Marine	Modbus/TCP EGD	DNV GL	-	ABS, BV, DNVGL, LR (only select models)	-	LR	ABS, BV, DNVGL (only select models)
I/O Module Size (W x H x D)	12 x 99 x 70mm	11.5 x 120 x 76mm	12 x 120 x 70mm	66.8 x 163.5 x 70mm	65 x 212 x 29.8mm	42 x 110 x 106mm	34 x 145 x 140mm
Typical Applications	Basic Machine	Machine Control Light Process Control General Automation	Functional Safety	Machine and Light Process Control General Automation	On-machine Cabinetless I/O	Harsh Environment Process Control	Complex Machine Process Control Motion Control General Automation
Level of Diagnostics	Good	Better	Best	Better	Better	Best	Best

Field Terminals and Accessories

Part Number	Description	Part Number	Description
8601-FT-NI	Field terminal, non-incendive (Div 2)	8617-FT-NI	Field Terminal, non-incendive, for 16 ch DI
8602-FT-ST	Field terminal, standard	8618-FT-MT	16-pin Mass Termination Assembly (Div 2)
8603-FT-FU	Field terminal, non-incendive, fused (Div 2)	8619-FT-MT	44-pin Mass Termination Assembly (Div 2)
8604-FT-FU	Field terminal, fused	8620-FT-MT	Field terminal assembly
8605-FT-TC	Field terminal, thermocouple	8621-FT-IS	Intrinsically Safe Field terminal, standard
8606-FT-RT	Field terminal, RTD	8622-FT-IS	Intrinsically Safe Field terminal, loop-disconnect (not for 8 channel DI)
8607-FT-TC	Field terminal, 8-channel with T/C	8623-FT-IS	Intrinsically Safe Field terminal for 8220-DI-IS
8608-FT-NI	Field terminal, 8-channel, non-incendive	8624-FT-IS	Intrinsically Safe Field terminal with loop- disconnect
8610-FT-NA	Field terminal, non-arcing (Div 2)	8625-FT-IS	Intrinsically Safe Field terminal, THC
8611-FT-FU	Field terminal, non-arcing, fused (Div 2)	8626-FT-IS	Intrinsically Safe Field terminal, RTD
8612-FT-NA	16-channel Field terminal, non-arcing	8632-FT-NI	32-channel Field terminal
8615-FT-4W	Field terminal, 4wire (current sinking)	8650-FT-PX	32-channel PX/Switch FTA for 8125/7
8616-FT-FU	PAC8000 Field terminal, fused		

I/O Carriers

Part Number	Description	Part Number	Description
8707-CA-08	8 module carrier	8718-CA-NS	BIM & Node Serices Carrier for Profibus & Modbus
8709-CA-08	I/O Carrier, 8 module with earth bar	8720-CA-04	4 module Intrinsically Safe carrier
8710-CA-04	4 module carrier	8723-CA-RB	Railbus isolator carrier
8711-CA-NS	Node services carrier, screw terminal LAN	8724-CA-PS	Intrinsically Safe module power supply carrier
8712-CA-NS	Node services carrier, Profibus-DP LAN	8725-CA-RB	Railbus isolator carrier with PFM
8715-CA-BI	BIM only carrier for Profibus & MODBUS LANs	8727-CA-08	8 module Intrinsically Safe carrier
8717-CA-PS	Carrier for 8910-PS-DC	8729-CA-08	Intrinsically Safe Carrier, 8 module, 64-address system