

PACMotion VFD

IC866-XXX-XXX-XX



PACMotion VFD

Emerson's PACMotion VFD is an integrated, rugged, and modular variable frequency drive designed for a range of applications, including water/wastewater, metro, automotive, mining, food and beverage, packaging, oil and gas, discrete manufacturing and modular machine designs. The PACMotion VFD seamlessly integrates with Emerson's controllers and Field Agent technology. Leveraging the total system architecture provides continuous feedback that can improve your process and profitability. The flexible design offers power ranges from 0.75 to 250kW (1 to 350HP) as well as a host of communications protocols. Options such as a braking resistors, input and output chokes, external filters, external keypad, and encoder option cards let you customize the PACMotion VFD to your requirements

- Exceptionally compact
- Easy access mounting slots for quick installation
- Simple startup and configuration options– “plug in and drive”
- User-friendly operation
- Easily accessible wire terminals on front
- Laminated help card with quick reference to parameters and wiring
- 32kHz PWM for low noise operation
- On-board diagnostic tools
- IP66 for jet spray environments
- IP55 for dirty environments

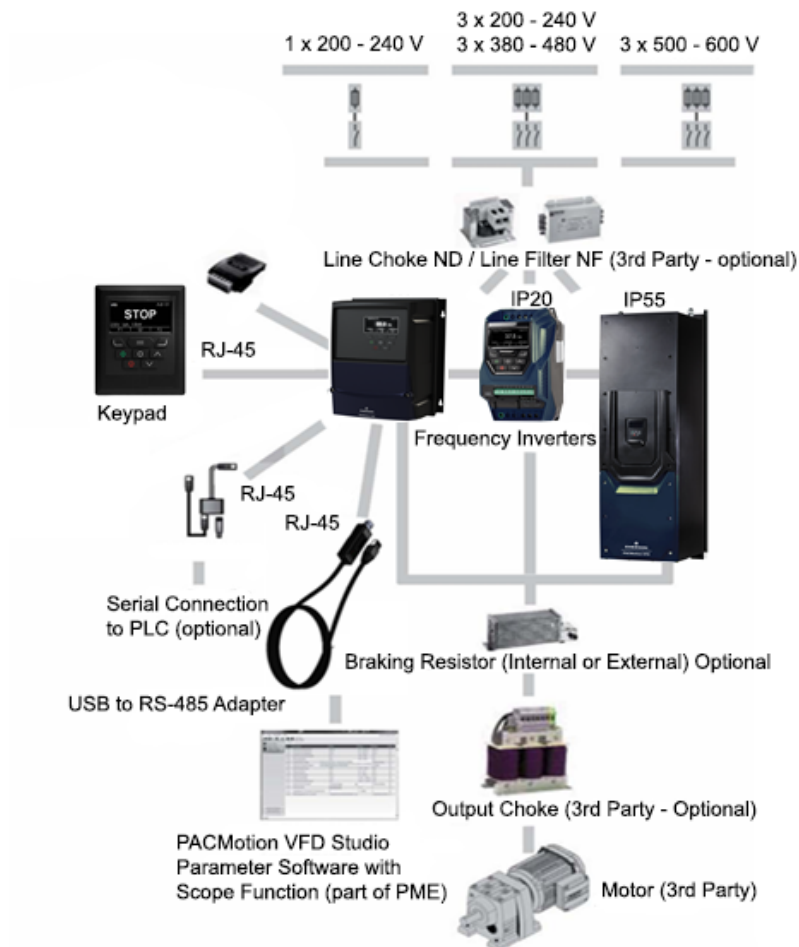
Type Designation & Decoding

Example: IC866-0015-4B1-2P		
Product name	IC866	PACMotion Variable Frequency Drive (VFD)
Recommended motor power	0015	0015 = 1.5 kW
Connection voltage	4	2 = 200 – 240V
		4 = 380 – 480V
		6 = 500 – 600V
Interference suppression on the input	B	0 = None
		A = Class C2
		B = Class C1
Connection type	1	1 = 1-phase
		3 = 3-phase
Design	2	2 = Standard IP20 housing
		5 = IP55/NEMA-12K housing
		6 = IP66/NEMA-4X housing
Option Card	P	M=Modbus TCP
		P = PROFINET RT (Standard)
		0 = Empty (Purchase separately)
Country-specific variant	(60Hz)	60Hz design variant

Refer to *PACMotion Variable Speed Drives User Guide*, GFK-3111A for the PACMotion VSD Product Matrix and for further product details.

The PACMotion Variable Frequency Drives are offered as part of suite of PACMotion products, as shown in the following System Diagram:

Figure 1: System Diagram



A list of available inverters is provided in the *PACMotion Variable Speed Drives User Guide*.

A typical system will consist of a suitable inverter for each motor to be controlled,

Each inverter:

- may contain one Option Card (optional)
- may contain a Bluetooth module (optional)
- may have a remote keypad attached (optional)
- may be attached to a braking resistor (may be internal or external and is optional)
- will communicate with a PC running PACMotion VFD Studio which is launched from Emerson's Programming and Configuration software, Proficy Machine Edition (PME). PACMotion VFD

Studio is used to set up and monitor the VFD parameters. PME is used to configure and program any associated PACSystems Programmable Controllers (PLCs).

- Most systems will run under the control of an Emerson Programmable Controller, such as IC695CPE400. In that case, communications between the controller and the drive will take place over PROFINET.

PACMotion VFD Studio is used to configure and monitor the parameters in the PACMotion Drives. This software is launched from Emerson’s Programming and Configuration software, Proficy Machine Edition (PME). PME Release 9.80 SIM 11 is required.

Upgrade Strategy: N/A

Upgrade Kit: N/A

Release History

Rev	Date	Description
A	April 2020	Initial publication.

Functional Compatibility

Subject	Feature	Minimum Version Required
PLC CPU Firmware Version Requirements	RX3i PNC001-Bxxx Release 3.00 New Hardware & Firmware to Resolve Component Obsolescence	CPE330 Release 8.95 CPU320/CPU315 Release 8.95 CPE310/CPE305 Release 8.95 CRU320 Release 8.95 CPE302 Release 9.40 (Other CPU models are not supported)
	RX3i PNC001 Release 2.26 Support Remote Get HART Device Information COMMREQ	CPE330 Release 8.95 CPU320/CPU315 Release 8.95 CPE310/CPE305 Release 8.95 CRU320 Release 8.95 CPE302 Release 9.40 (Other CPU models are not supported)
	Extended PROFINET device Subslot Number range	CPE330 Release 8.70 CPU320/CPU315 Release 8.70 CPE310/CPE305 Release 8.70

Subject	Feature	Minimum Version Required
		CRU320 Release 8.70 CPE302 Release 9.40 (Other CPU models are not supported)
	RX3i PNC001 Release 2.20 HART Pass Through	CPE330 Release 8.50 CPU320/CPU315 Release 8.50 CPE310/CPE305 Release 8.50 CRU320 Release 8.50 CPE302 Release 9.40 (Other CPU models are not supported)
	RX3i PNC001 release 2.11 (or later) Hot Standby Redundancy with PROFINET I/O	CRU320 Release 8.40 CPE330 Release 8.70 (Other CPU models are not supported)
	RX3i PNC001 Release 2.00 Hot Standby Redundancy with PROFINET I/O	CRU320 Release 8.00 CPE330 Release 8.70 (Other CPU models are not supported)
	RX3i PNC001 Release 2.00 Non-Hot Standby Redundancy system	CPU320/CPU315 Release 7.13 CPE310/CPE305 Release 7.10 CRU320 Release 8.00 CPE302 Release 9.40 (Other CPU models are not supported)
Programmer Version Requirements	PACMotion VFD Studio	PAC Machine Edition Logic Developer PLC 9.80 SIM 2, or later is required to give the user access to the Emerson PACMotion VFD Studio. This package allows the user to configure the internal VFD parameters.

Subject	Feature	Minimum Version Required
PROFINET Controller Version Requirements	If using PROFINET System Redundancy, users MUST upgrade the PNC001 (PROFINET Controller) to Version 2.2 or later firmware.	Effective with PME 8.6 SIM 3 and PME 8.5 SIM 11 (PPS 2.6 SIM3 and PPS 2.5 SIM11), the PNC001 is configured to use RT Class 2 for redundant PROFINET connections. To meet specification, this requires PNC001 firmware 2.2 or later. Under these conditions, redundant VersaMax and/or CEP PROFINET I/O will NOT connect or transfer I/O or Alarm Data if the PNC001 is running firmware prior to Version 2.2.
GSDML Version Requirements		GSDML-V2.31-Intelligent Platforms, LLC-PACmotionVFD-20200113.xml
Profinet Controller Stand Alone CPE100/115 Requirements	Simplex (non-redundantly controlled) PROFINET IO	9.35
Profinet Controller Stand Alone CPE400 Requirements	32 Simplex (non-redundantly controlled) PROFINET IO	9.00
Profinet Controller Programmer Version Requirements	RX3i PNC001 Release 3.00	PME 8.50 SIM 9 or 8.60 SIM 1
	RX3i PNC001 Release 2.11(or later) 128 PROFINET Device Support ¹ Critical Network Port	PME 8.50 SIM 9 or 8.60 SIM 1

¹ Attempts to store a configuration utilizing this feature to a prior-release PNC001 will result in an Unable to deliver configuration to module fault, which leaves the PNC001 in an un-configured state.

Subject	Feature	Minimum Version Required
	RX3i PNC001 Release 2.00 (or later) Hot Standby Redundancy with PROFINET I/O Non-Hot Standby Redundancy system using CRU320	PAC Machine Edition 8.00 SIM 5
	RX3i PNC001 Release 2.00 (or later) Non-Hot Standby Redundancy system	PAC Machine Edition 7.00 SIM 8

Problems Resolved by this Revision

None.

New Features and Enhancements

None.

Restrictions and Open Issues

None.

Operational Notes

PACMotion VFD:

Operational Note	Description
PROFINET GSDML File	The PACMotion VFD GSDML file is available from the website. GSDML File for PACMotion VFD

Product Documentation

PACSystems Manuals

PACSystems RX3i and RSTi-EP CPU Reference Manual	GFK-2222
PACSystems RX3i and RSTi-EP CPU Programmer's Reference Manual	GFK-2950
PACSystems RX3i and RSTi-EP TCP/IP Ethernet Communications User Manual	GFK-2224
PACSystems TCP/IP Ethernet Communications Station Manager User Manual	GFK-2225
PAC Machine Edition Logic Developer Getting Started	GFK-1918
Proficy Process Systems Getting Started Guide	GFK-2487
PACSystems RX3i & RSTi-EP PROFINET I/O Controller Manual	GFK-2571

RX3i Manuals

PACSystems RX3i System Manual	GFK-2314
PACSystems RX3i PROFINET Scanner Manual	GFK-2737
PACSystems RX3i CEP PROFINET Scanner User Manual	GFK-2883
PACSystems RX3i Serial Communications Modules User's Manual	GFK-2460

PACMotion VFD Manuals

PACMotion Variable Frequency Drives User Guide	GFK-3111A
PACMotion Variable Frequency Drives Advanced User Guide	GFK-3112A

Secure Deployment Guides

PROFINET I/O Devices Secure Deployment Guide	GFK-2904
PACSystems RXi, RX3i and RSTi-EP Controller Secure Deployment Guide	GFK-2830
PACMotion Variable Frequency Drives Secure Deployment Guide	GFK-3166A

User manuals, product updates and other information sources are available on the Emerson support website,

<http://www.emerson.com/industrial-automation-controls/support>.

Support Links

Home link: <http://www.emerson.com/industrial-automation-controls>

Knowledge Base: <https://www.emerson.com/industrial-automation-controls/support>

Customer Support and Contact Information

Americas

Phone: 1-888-565-4155
1-434-214-8532 (If toll free option is unavailable)

Customer Care (Quotes/Orders>Returns): customercare.mas@emerson.com
Technical Support: support.mas@emerson.com

Europe

Phone: +800-4444-8001
+420-225-379-328 (If toll free option is unavailable)

Customer Care (Quotes/Orders>Returns): customercare.emea.mas@emerson.com
Technical Support: support.mas.emea@emerson.com

Asia

Phone: +86-400-842-8599
+65-6955-9413 (All other countries)

Customer Care (Quotes/Orders>Returns): customercare.cn.mas@emerson.com
Technical Support: support.mas.apac@emerson.com

Any escalation request should be sent to: mas.sfdcescalation@emerson.com

Note: If the product is purchased through an Authorized Channel Partner, please contact the seller directly for any support.

Emerson reserves the right to modify or improve the designs or specifications of the products mentioned in this manual at any time without notice. Emerson does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson product remains solely with the purchaser.

© 2020 Emerson. All rights reserved.

Emerson Terms and Conditions of Sale are available upon request. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

