PMC-1304-3

Communications Processor

Fully Integrated Solution for
Industrial Internet of Things (IIoT)
and Big Data Applications

www.cet-global.com

Overview

PMC-1304-3 is an ideal instrument to connect serial devices to an IP based Ethernet LAN for any industrial automation systems that require isolation protection as well as high reliability. The Basic Model provides Modbus TCP to RTU Gateway function and supports interrogation from multiple Modbus TCP Masters. The optional RTU Model features 4GB On-Board Memory for local data caching and logging to enhance overall system performance and provides data redundancy. The PMC-1304-3 comes with Tx/Rx LEDs for the serial ports on the Front Panel. The LEDs not only indicate the network status but also help to monitor the communications activities of the attached serial devices. The PMC-1304-3 has been specifically designed with industrial automation in mind and therefore provides un-surpassed performance and reliability under the harshest industrial environments. The PMC-1304-3 can be setup though its user-friendly web console or via our free PMC-EasyCom software.

Features Summary

- Designed to withstand the harshest environments
  - 15kV (contactless) & 6kV (contact) ESD protection and 3kV isolation protection for all Serial ports
  - 1.5kV isolation protection for Ethernet ports
- Dual 10/100BaseT (RJ45)
- Standard 2xRS-485, optional up to 4xRS-485
- Modbus Gateway function
- Multiple Upstream Applications support
- Simple port configuration via its built-in web interface
- One-key Reset to default factory
- DIN-Rail or Panel Mounting
- Extended operating temperature

Basic Model

- 64 Slave IEDs per RS-485/Ethernet port or maximum of 384 Slave IEDs per device
- 4 Modbus TCP Masters per device

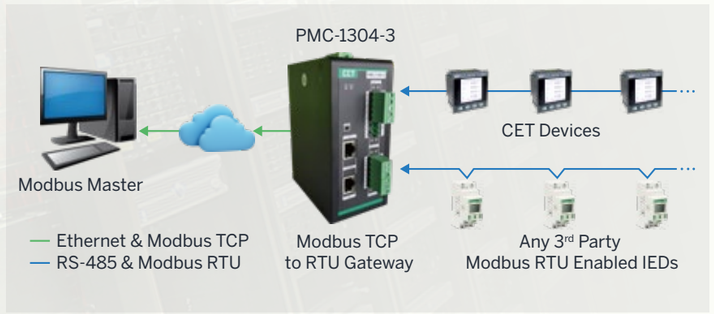
Optional RTU Model

- 64 Slave IEDs per RS-485/Ethernet port or a maximum of 384 Slave IEDs per device
- 16 Modbus RTU Masters per device
- Modbus RTU Mastering
- 4GB On-Board Log Memory
- Local Data Caching and Logging
- FTP Server and SFTP Client Support
- Automatic Data Log push to external

Typical Applications

I. Modbus TCP to RTU Gateway

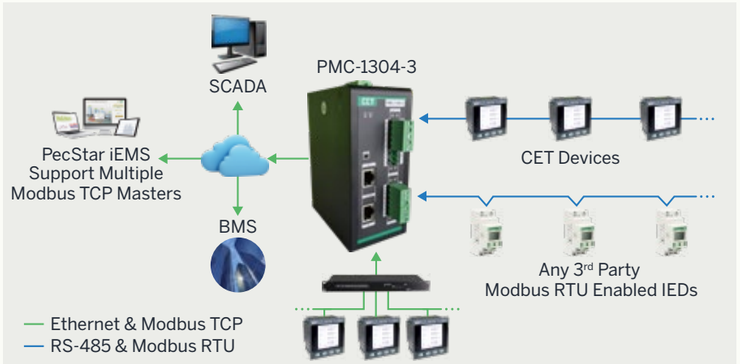
The PMC-1304-3 supports the Modbus TCP to RTU Gateway function that makes it extremely simple for any Modbus TCP Master Applications to interface with Modbus RTU enabled IEDs over a local area network. A simple web-based interface allows users to easily configure the TCP to RTU address mapping and which downstream RS-485 port the IEDs are located.



Modbus TCP to RTU Gateway

II. Multiple Modbus TCP Master Support

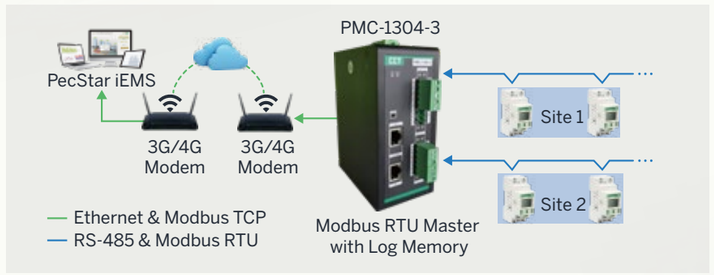
The PMC-1304-3 supports multiple Modbus TCP Masters simultaneously to facilitate information sharing while minimizing the implementation cost. For highly data or communication intensive applications, the RTU model is recommended.



One PMC-1304-3 Serving three Modbus TCP Applications Simultaneously

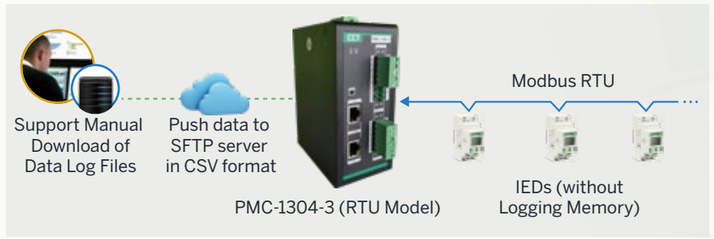
III. Data Logging

The RTU model supports embedded Modbus RTU mastering as well as Local Data Caching and Data Logging of real-time parameters from Modbus RTU enabled IEDs for a maximum of 25,600 data points. The device can be configured to perform data logging from 1-minute to 60-minute intervals. With its large on-board non-volatile memory, the device is capable of storing more than 2-year worth of data at 60-min. recording interval. These features enhance the overall system performance and reliability, reduce the CPU loading of the server applications such as EMS, BMS or SCADA and provide an extra level of data redundancy for IEDs without memory.



Multi-site Data Collection through 3G/4G Modems

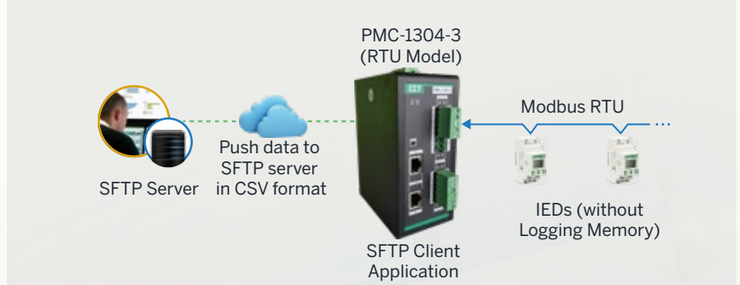
In addition, the RTU model may be deployed as a stand-alone Data Logger without any server systems in a Local Area Network or in remote locations. The RTU model's FTP Server allows manual access and uploading of historical information in zipped CSV format. This versatile function allows users to perform simple data logging of Slave IEDs locally or remotely without any expensive software.



Stand-Alone Data Logger Application

IV. SFTP Client Support

The RTU Model can be configured as an SFTP Client to automatically push the most recent data log files in CSV format to an external SFTP Server over an intranet or internet at pre-determined intervals from hourly to weekly. This is especially useful for distributed or remote Energy Management applications where real-time data update is not required. The log files will be deposited at the SFTP Server at scheduled intervals which can then be processed by 3rd party applications.



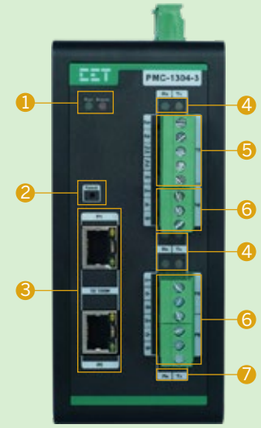
Data Push to FTP Server in CSV Format

V. Customized 3rd-Party Modbus Device Support

Not only does the RTU model support Modbus IEDs from CET, it can also support the Modbus RTU Mastering of any 3rd-Party Modbus IEDs with customized device drivers.

Please contact your local CET Representatives for detailed information and your applications.

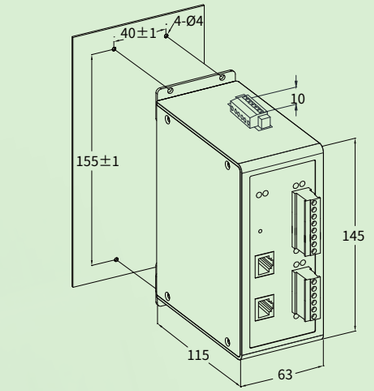
Appearance



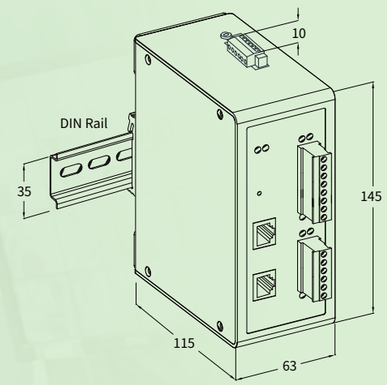
1. Running Status Indicator
2. Reset Button
3. Ethernet Port
4. Serial Port Comm. Status
5. 4-wire RS-422/485
6. 2-wire RS-485
7. Serial Port Comm. Status

Device Dimensions

Unit: mm



Panel Mounting



DIN-Rail Mounting

Technical Specifications

Communication		
10/100 Base Ethernet Ports (P1, P2)	Standard	10/100BaseT, RJ45 connector
	Cable	CAT5, CAT5e (100m maximum)

Serial Ports (P3, P4, P5, P6)		
Standard	1xRS-422/485 (P3), 1xRS-485 (P4)	
Optional	1xRS-422/485 (P3), 3xRS-485 (P4,P5,P6)	
Comm. Parameters	Data bits	5, 6, 7, 8
	Stop bits	1, 2
	Parity	None, Even, Odd, Mark, Space
	Baud rate	300 to 115,200 bps

LED Indicators			
Run (Green)		On	System is running abnormally
		Blinking	Power is on and system is running normally
		Off	Power off or system is running abnormally
Alarm (Red)		On	Abnormal condition
		Blinking	Restoring default parameters
P3, P4, P5, P6	Tx (Yellow)	Blinking	Receiving data
	Rx (Green)	Blinking	Transmitting data

Protocol	
Protocol	Modbus RTU, Modbus TCP, FTP, SFTP, HTTP

Power Supply (L/+, N/-)	
Standard	95-250VAC/DC, 47-440Hz
Optional	20-60VDC Single Power Supply, 20-60VDC Dual Power Supply
Burden	≤5W

Protection	
ESD Protection	15kV (Contactless) and 6kV (Contact) ESD protection for all Serial signals
Isolation Protection	3kV for all Serial signals, 1.5kV for Ethernet Ports

Environmental Conditions	
Operating Temp.	-25°C to 70°C
Storage Temp.	-40°C to 85°C
Humidity	5% to 95% non-condensing
Atmospheric Pressure	70kPa to 106kPa

Mechanical Characteristics	
Casing	Galvanized Iron
Unit Dimensions	115x63x145mm
Shipping Weight	0.95kg
Shipping Dimensions	300x210x150mm
Mounting	DIN-Rail or Panel Mounting
IP Rating	30

Standard of Compliance

Safety Requirements	
Insulation	EN 61010-1: 2010 EN 61010-2-030: 2010
Dielectric Test	2kV @ 1 minute
Insulation Resistance	>100MΩ
Impulse Voltage	5kV, 1.2/50μs

Electromagnetic Compatibility

CE EMC Directive 2014/30/EU (EN 61326: 2013)

Immunity (EN 50082-2)	
Electrostatic Discharge	EN 61000-4-2: 2009
Radiated Fields	EN 61000-4-3: 2006+A1: 2008+A2: 2010
Fast Transients	EN 61000-4-4: 2012
Surges	EN 61000-4-5: 2014+A1: 2017
Conducted Disturbances	EN 61000-4-6: 2014
Magnetic Fields	EN 61000-4-8: 2010
Voltage Dips and Interruptions	EN 61000-4-11: 2004+A1: 2017

Emission (EN 50081-2)	
Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	EN 55011: 2016
Electromagnetic Compatibility of Multimedia Equipment-Emission Requirements	EN 55032: 2015
Limits for Harmonic Current Emissions for Equipment with Rated Current ≤16 A	EN 61000-3-2: 2014
Limitation Of Voltage Fluctuations And Flicker In Low-Voltage Supply Systems For Equipment With Rated Current ≤16 A	EN 61000-3-3: 2013
Emission Standard for Residential, Commercial and Light-Industrial Environments	EN 61000-6-4: 2007+A1: 2011

Mechanical Characteristics	
Spring Hammer Test	IEC 62052-11: 2003
Vibration Test	IEC 62052-11: 2003
Shock Test	IEC 62052-11: 2003

Ordering Information

Product Code										Description
PMC-1304-3 Communications Processor										
Basic Function	T									Modbus TCP/RTU Gateway with Multi-Master Support
	R*									Modbus Mastering with 4GB On-Board Storage
Serial Port		00-02								1×RS-422/RS-485 +1×RS-485 (P3-P4)
		00-04*								1×RS-422/RS-485 +3×RS-485 (P3-P6)
Power Supply			2							95-250VAC/DC, 47-440Hz
			3*							20-60VDC Single Power Supply
			4*							20-60VDC Dual Power Supply
Ethernet Port				T2-xx-xxxx						10/100BaseT (P1, P2)
Language					E					English
PMC-1304-3	-	T	-	00-02	-	2	-	T2-xx-xxxx	-	E	PMC-1304-3-T-00-02-2-T2-xx-xxxx-E (Standard Model)

* Additional charges apply

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Website: www.cet-global.com

Your Local Representative

V.01 08.09.2023