INDUSTRIAL CONTROL COMMUNICATIONS, INC.

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PicoPort Version Info

07.31.2025

Firmware

- V4.500 release
- Added support to Siemens FLN Master and Slave for device addresses and point numbers up to 255.
- Fixed issue where USB Serial Pass-Through may drop characters or packets that are received in quick succession.
- Fixed issue with USB Serial Pass-Through where characters from a previous session could be sent when reopening the COM port.
- Increased USB Serial Pass-Through buffer size to match the USB Serial Sniffer buffer size.
- Decreased USB Serial Sniffer packetization timer to reduce interpreting multiple consecutively received packets as a single packet.
- Fixed BACnet MS/TP Server issue where an old COV notifications could be sent when communication is disabled then later reenabled via DeviceCommunicationControl commands.
- Improved BACnet MS/TP Server COV subscription lifetime calculation accuracy.

01.13.2025

Firmware

- V4.400 release
- Reduced object memory usage of BACnet MS/TP Server input objects by 30% and output/value objects by 15%.
- Increased allowable size of BACnet MS/TP Server objects' Object Name, Active Text, and Inactive Text properties to 32 characters.
- Increased allowable range of BACnet MS/TP Server Analog objects' Units property from 255 to 65535.
- Added BACnet MS/TP Client/Server driver to support both client and server capabilities to be performed simultaneously.
- Added 7 data bit support to USB Serial Sniffer Settings.
- Added support for a selectable padding character (space or zero) to Generic Serial ASCII Encoded Decimal and Hexadecimal Numbers for encoded Database Data.
- Fixed number truncation behavior of Generic Serial ASCII Encoded Decimal Number encoding for Database Data packet objects.
- Fixed encoding and decoding Generic Serial ASCII Encoded Hexadecimal numbers using Low Byte First byte order when an odd number of characters are used.
- Added support for trailing space characters when decoding Generic Serial ASCII Encoded Decimal and Hexadecimal Numbers.
- Fixed issue with Generic Serial Master, running on the Host port, where a database write on startup, prior to the driver starting, may not cause the driver to issue a write request.

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- Reworked Modbus RTU Slave Function Code 06 to reject any writes to standard 32-bit registers (where the 32-bit value is comprised of two 16-bit registers), since FC06 can only send one 16-bit register.
- Reworked Modbus RTU Master Function Code 06 to split standard 32-bit register writes (where the 32-bit value is comprised of two 16-bit registers) into two requests, since FC06 can only send one 16-bit register.
- Fixed issue when reading Modbus RTU Slave discretes where unused bits may not be 0 in the response packet.
- Fixed possible rollover issue for Modbus RTU Slave discrete mappings.
- Fixed issue with BACnet MS/TP Client where the driver may cease to send requests if a response to another client's request is sent while the request is pending transmission.
- Fixed issue where the Run Mode Network Configuration Parameter could be set to Running instead of Configuration Mode while the device is in Configuration Mode and a fatal error occurs.
- Fixed database writing issue for writes that start prior to the Network Configuration Parameters database block and extend into the Network Configuration Parameters database block.
- Improved USB protocol error checking.

Datasheet version

- December 6, 2024

12.17.2020

Firmware

- V4.300 release
- Added a Factory Reset option to the Run Mode network configuration parameter.
- Increased the USB Serial Sniffer buffer size and maximum number of packets.
- Fixed BACnet COV detection issue when the special NaN value is used.
- Added support for the CD-6G detector to Macurco Modbus Monitor.
- Added a new Normalized Reading (Float) parameter for each detector to Macurco Modbus Monitor.
- Fixed issue where only up to 256 Service Objects can be accessed by master/client drivers.
- USB communication and error handling improvements.

Datasheet version

- December 11, 2020

05.27.2020

Firmware

- V4.200 release
- Added Modbus RTU Firewall Router protocol.
- Added support for Relinquish/Release Events to BACnet MS/TP Server, Metasys N2 Slave, and Siemens FLN Slave.
- Added support for Manual Triggers to Generic Serial Master transactions.

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- Added support for Received Events to Generic Serial Slave transactions.
- Increased object memory capacity by 6% to accommodate new Relinquish/Release Events.
- Added support to increment the RX Error counter for SPI communications when corrupted packets are detected.
- Changed BACnet error code returned when the number of COV's or objects exceed what fits in a packet from Buffer Overflow to Segmentation Not Supported.
- Fixed issue when writing the maximum length (16 characters) to the device object name from the BACnet network where the last character is dropped.
- Fixed issue where device object properties do not retain their values when written via BACnet to the host port when the host port is configured for BACnet MS/TP.
- Added support for exception codes 0A Gateway Path Unavailable and 0B Gateway Target Device Failed to Respond to Modbus RTU Master Diagnostics Objects.
- Fixed issue with parsing transactions and packet data objects when Generic Serial is configured on both ports.
- Added support for rounding truncated numbers when using the ASCII Encoded Decimal Number Element Encoding in the Generic Serial drivers.
- Fixed issue where Network Configuration Parameters are not initialized in the database if USB to Serial Pass-Through is enabled.
- Fixed default pin state biasing for disabled serial ports.

Datasheet version

- April 27, 2020

11.26.2018

Firmware

- V4.100 release
- Fixed issue in Metasys N2 slave driver where COS notifications stop being sent to the master.
- Fixed delays in Metasys N2 COS reporting on high traffic networks.
- Improved Metasys N2 slave COS checking when the driver is running on multiple ports.

07.24.2018

Firmware

- V4.000 release
- BACnet BTL Re-Certification changes
    - Made Polarity property writable from the network for Binary Inputs and Binary Outputs.
    - Made the Local Date and Local Time properties of the Device object writable from the network.
    - Added date and time validation and rollover checking for Unix time format
    - Fixed issue where WritePropertyMultiple did not always return the recommended error code for syntax errors that occur after the first property.

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- Reworked Modbus RTU Slave driver to allow Coils and Discrete Inputs to be mapped directly to database locations.
- Updated Macurco Modbus Monitor driver to support sensor addresses from 1 - 99 and added support for CD-6H.
- Fixed issue with USB communications where response packets may not always be sent.
- Corrected check in Modbus RTU Slave to return an exception when 16-bit registers and 32-bit registers are accessed in a single request.

Datasheet version

- June 29, 2018

01.05.2018

Firmware

- V3.200 release
- Added ability to release an object's value to Metasys N2 Master.
- Added ability to release a point's value to Siemens FLN Master.
- Increased configuration file memory by 25 percent.
- Increased object memory by 7 percent.
- Fixed issue where network configuration parameters would be reset when applying a device update file using the Network Parameter Utility.
- Reworked when network configuration parameters are overwritten with values from the configuration file. This behavior is now triggered by the ICC Configuration Studio.
- Changed reset behavior of the network port's RS-485 data enable signal to be consistent with all other UART signals.
- Fixed upper range of TX-6 RD detector for Macurco Modbus Monitor.
- Added validation checks for Macurco Modbus Monitor baud rate and parity network parameters.

09.05.2017

Firmware

- V3.100 release
- Added new feature, Write Triggering, to control when service object writes are triggered when values are written to the database.
- Added enhancement to Modbus RTU Master driver's Group Multiple Writes setting to allow always grouping writes for entire service object.
- Added fail-safe timeout functionality to BACnet MS/TP Server driver.
- Added the Fail-safe Timeout protocol-specific network configuration parameter for BACnet MS/TP Server.
- Fixed issue with timeout detection in all slave/server drivers where a timeout could take twice as long under certain circumstances.
- Improved behavior of Value Change Detection database logic operation when using an enable trigger.

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- Fixed issue in all master/client drivers that group multiple write requests into a single packet where requests may be split up after a single write within a service object even though multiple values change simultaneously.

Datasheet version

- September 5, 2017

07.19.2017

Firmware

- V3.000 release
- Added configurable Max Info Frames to BACnet MS/TP Client and Server to allow the device to send more than one packet each time it has the token.
- Added support to BACnet MS/TP Client and Server to allow writing to the device's Object Name, Object Identifier, and Max Info Frames properties over the BACnet network.
- Added support for Pulse Frequency Detection and changed the Pulse Counter I/O type to Pulse Input.
- Added floating point data type support and multiplier and offset scaling to the Pulse Input I/O type.
- Changed the Pulse Counter "Pin Change" mode option to "Any Edge".
- Improved pulse detection and debouncing algorithms for the Pulse Input I/O type to reduce CPU overhead and protect against interrupt overload.
- Added the Contact Style selection setting to the Digital Input and Pulse Input I/O types.
- Fixed issue with multiplier and offset scaling for GPIO objects where the selected data type affected the result.
- Added new feature to rapidly flash the status LED green when the device's Run Mode is in Configuration Mode to indicate parameters are being synchronized with the host.
- Added support for performing a write for all service objects mapped to network configuration parameters or persistent user parameters upon startup when the host port is configured as a master.
- Added support to all slave/server drivers to signal when communications is restored after a timeout occurs.
- Added a new Status Code, NETWORK_COM_ERROR, to signify when a network timeout is active.
- Added Macurco Modbus driver.
- Improved timeout detection in all slave/server drivers to account for receive errors and packets not intended for the device.
- Fixed issues with detecting leading space characters for fixed-length decimal values in Generic Serial driver Database Data.
- Changed Modbus RTU Sniffer gap time detection from 4 characters to 3 to account for devices that use an exact 3.5 character gap time.
- Added feature to Modbus RTU Sniffer driver to detect when the master is no longer sending requests after a specified timeout time and trigger a timeout event to apply fail-safe values.
- Changed how unused communication and I/O pins are defaulted when unused.

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12.12.2016

Firmware

- V2.500 release
- Added support for port diagnostics byte counters.
- Added support for custom control of the status LED.

10.28.2016

Firmware

- V2.400 release
- Fixed issue in FLN Slave where writes to LDO's would not apply the bitmask properly.
- Optimized startup routines to decrease boot time.
- Fixed issue with DMX-512 Slave where receive errors could not be detected on the first received character.
- Fixed issue with DMX-512 Slave where receive errors in irrelevant characters caused the packet to be ignored.
- Improved Generic Serial driver's detection of variable length database data for ASCII decimal numbers with leading '+' or '-' characters.

09.15.2016

Firmware

- V2.300 release
- Changed the encoding of the Firmware Version network configuration parameter from 0xMMmm, where M is the major revision and m is the minor revision to FW_VERSION × 1,000, where FW_VERSION is the full version, such as 2.300.
- Added support to Generic Serial driver for handling leading '+' characters for ASCII decimal numbers.

Datasheet version

- September 15, 2016

08.15.2016

Firmware

- V2.200 release
- Added support to BACnet MS/TP Client and Server so that the APDU Timeout, Number of APDU Retries, and Max Master property values set over the network are persistent across reboots.
- Added support for time and date information in BACnet MS/TP Client and Server by utilizing an externally-provided real-time clock mapped into the device's database.
- Fixed issues with using the USB Virtual COM port with Windows 10.
- Added support for 7 data bits to the USB Pass-Through Mode.

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- The device no longer goes into an error/warning state when Host - Network Serial Pass-Through mode is active.
- Corrected issues in device information when no configuration file is loaded on the device.

Datasheet version

- August 1, 2016

06.15.2016

Firmware

- V2.101 release
- Fixed issue where the serial driver would not detect errors on the first byte of a packet.
- Fixed issue with Generic Serial drivers where transactions with a large amount of variable sized packet data objects could cause the device to hang.
- Added support for the Database Matched Byte packet data object to Generic Serial drivers.

05.11.2016

Firmware

- V2.100 release
- Doubled the maximum supported configuration file size.
- Added support for a configurable Product ID.
- Added detection of non-configured protocol values in the Network Configuration Parameters' Protocol parameter so that the device now goes into the Invalid Configuration error state.
- Fixed issues with FLN and BACnet drivers when no objects are configured.

03.01.2016

Firmware

- V2.000 release
- Increased Object Memory by 50%.
- Added Persistent User Parameters
- Added support for PWM Modulation Mode, allowing the PWM output to modulate either Duty Cycle or Frequency.
- Added Generic Serial Master protocol.
- Added Generic Serial Slave protocol.
- Added Host - Network Pass-Through protocol.
- Added support for Internal Float (ADF), Internal Integer (ADI), and Internal Byte (BD) object types to Metasys N2 Slave.
- Modified Siemens FLN Slave driver's interpretation of non-zero intercept values so that the physical value sent on the network matches the database value for LAI and LAO points.

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- Fixed USB connection issue where the device is sometimes not detected by the USB host when plugging in the USB cable to an already powered device.
- Fixed issue where writing 0xFFFF to a Network Configuration Parameter would reinitialize them from the configuration file upon resetting.
- BACnet BTL Certification changes
    - Added data type checks to Present Value writes so that only the proper data type is allowed.
    - Added support for configurable APDU Timeout.
    - Added support for configurable Number of APDU Retries.
    - Added support for APDU retries for confirmed requests.
    - Made the following device properties network writable: APDU Timeout, Number of APDU Retries, and Max Master.
    - Fixed issue with APDU Timeout timer where the timer started before the request was transmitted on the network.
    - Added support for the Reliability property in all supported object types.
    - Added support for configurable Number of States for Multi-state objects.
    - Added support for Offset by One option for Multi-state objects for both Client and Server.
    - Changed behavior of Multi-state Objects' Present Value property so that it cannot go outside of the range 1 - Number of States. If the database value is out of that range, the FAULT Status Flag is set and the Reliability will be either Under Range or Over Range.
    - Increased Vendor Name and Model Name OEM Setting string to support up to 32 characters.
    - Added error code when accessing Priority Array and Relinquish Default properties for virtual objects, because these properties are not supported.
    - Added feature to BACnet client to detect if a server device is no longer online and begin transmitting Who-Is requests to it instead of continuing to send read or write requests.
    - Removed support for 4800 baud rate, since the BACnet specification states the minimum is 9600.
    - Updated Revision to 12.
    - Updated Object Types Supported Device object property.
    - Fixed Number of States datatype for Multi-state objects.
    - Improved error handling and error responses for error conditions when handling all packets.
    - Fixed issue with the ReadPropertyMultiple ALL properties for the Device object.
    - Corrected the properties reported for ReadPropertyMultiple ALL, OPTIONAL, and REQUIRED for all objects.
    - Fixed issue when reading a Device object property using the wildcard instance number where the Object ID in the response used the wildcard instance number instead of the device's actual instance number.
    - Increased MS/TP buffer size to 501 resulting in a new Maximum APDU size of 480.
    - Fixed NPoll token count from 52 to 50.
    - Added password to ReinitializeDevice.
    - Fixed issue where device would respond to Confirmed Broadcast Request packets.

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- Fixed issue where the device would ignore Data Expecting Reply packets targeted to the broadcast address.
- Fixed issue where the device would not properly ignore packets not for us by adding the Skip Data state to the receive state machine.
- Fixed EventCount handling error in MS/TP Master Node State Machine as described in addendum 135-2004d-8.
- Fixed poll for master to self issue in the DONE_WITH_TOKEN and PASS_TOKEN states.
- Added support to SubscribeCOV for the situation where the Lifetime argument is omitted from the request and should be assumed to be 0 (indefinite lifetime).
- Fixed issue where a COV could be issued after the COV has expired.
- Added support to initiate a COV notification after receiving a subscribe COV request.
- Fixed issue with reading the ACTIVE_COV_SUBSCRIPTIONS property of the device object.
- Fixed issue with reading the DEVICE_ADDRESS_BINDINGS property of the device object.
- Fixed issues with configured Relinquish Default value data type conversion.
- Fixed issue with Susbscribe COV requests' Lifetime parameter not supporting the full Unsigned range.
- Fixed error code returned when a Subscribe COV request is received for the Device object.
- Fixed issue with DeviceCommunicationControl Time Duration timer not supporting the full Unsigned range.
- Fixed error code returned when a ReinitializeDevice request is received after a DeviceCommunicationControl DISABLE request is received.
- Fixed issue with COV Increment property's internal "unused" signifier value.
- Set maximum limit on Multi-state Number Of States property so that the internal reserved NULL value cannot be used.
- Added error reporting for BACnet Client when a Diagnostics object is used for Multi-state objects that have an invalid value.
- Fixed implementation of Device Instance wildcard value of 4194303 to be interpreted as if the device instance matches.
- Optimized performance for scenarios where the device is connected to a live BACnet network while powered on.
- Relaxed MS/TP timing parameters to ensure the specified times are never violated.

Datasheet version

- March 1, 2016

04.01.2015

Firmware

- V1.300 release
- Add Inverted, Auto Reset, and Bitmask trigger options to database logic enable triggers.
- Added Bit Copy, Indirect Copy, Flag Test & Set, Value Change Detection, Multiplexer, and Byte Reverse database logic operations.

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- Fixed issue where received bytes could be dropped during critical sections when the receiver is disabled.
- Added Protocol Format setting for the USB Serial Sniffer Settings protocol.
- Added PWM Frequency setting to GPIO Analog (PWM) Outputs.
- Added error code response to USB communications to prevent pipe stalls.
- Fixed packet corruption issue in USB serial sniffer when sniffer buffer overflows occur.
- Improved compiler optimizations.

Datasheet version

- April 1, 2015

10.30.2014

Firmware

- V1.202 release
- Changed BACnet MS/TP Client static device destination address limit to 254 to support MS/TP slave-only addresses.
- Fixed issue where USB task may not be running if a fatal error occurs during startup.
- Added support for I/O objects mapped to configuration memory.
- Added support for timeout objects mapped to configuration memory.

Datasheet version

- October 30, 2014

08.22.2014

Firmware

- V1.201 release
- Optimized startup order of all tasks.
- Fixed issue when saving/restoring reserved configuration parameters.
- Fixed BACnet DeviceCommunicationControl service.
- Corrected BACnet Protocol_Services_Supported Device property flags.
- Added check in Modbus Slave to respond with an exception to requests spanning multiple incompatible register remaps.

Datasheet version

- September 2, 2014

08.05.2014

Firmware

- V1.200 release

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- Changed Run Mode configuration parameter Reset value to 65535 (0xFFFF) and redefined the value of 0 to be Startup mode.
- Added floating point as a native database data type.
- Added USB Virtual COM Port support.
- Added FLN Master protocol.
- Added Toshiba Computer Link Master protocol.
- Added USB Serial Sniffer Settings protocol to use for packet capturing.
- Added Trigonometric Operations to Database Logic.
- Added Random operation to Database Logic.
- Changed I/O and Database Logic to run on startup instead of after the Run Mode parameter is set to Running.
- Fixed issue where writing to FLN LDO points fails.
- Improved SPI error handling when an invalid number of bits are clocked.
- Added ability for unused host port pins to be used as GPIO pins 6 - 9.
- Added configurable fields for Vendor ID, Vendor Name, and Model Name to BACnet MS/TP drivers.
- Added ability to relinquish written values in BACnet Client.
- Added write support for COV Increment property for BACnet Analog objects and added a configuration setting.
- Fixed COV checking for BACnet Multi-state objects.
- Fixed protocol configuration parameters for BACnet Client.
- Removed 0xFF byte pad in BACnet MS/TP packets.
- Fixed issue where internal pull up resistor was not enabled if GPIO pin is configured for pulse counter only.
- Changed GPIO Analog Offset field to a floating point number from an unsigned integer.
- Fixed issue where GPIO Pulse Counter would not operate in conjunction with Analog Input functionality on the same pin.
- Improved packet handling for DMX-512 Slave driver.
- Fixed issues in M-Bus Master driver when decoding and encoding string values.
- Fixed issues when Database Logic is used to update configuration parameters.
- Fixed issue with BACnet which could cause a duplicate packet to be sent 40 bit times after the first.
- Fixed issue in BACnet where the first reply to a poll for master was ignored if the last packet received was a partial packet.
- Changed I/O Analog Offset field to a floating point number from an integer.
- Fixed issue in Modbus when converting negative 32-bit integer values to floating point.
- Changed firmware revision string format.
- Various code optimizations

Datasheet version

- September 2, 2014

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11.18.2013

Firmware

- V1.104.00 release
- Added 6 parameters to EnGenius driver
- Added support for older EnGenius firmware
- Fixed issue with Debounce Filter and Hysteresis Filter when using an enable trigger.

Datasheet version

- October 1, 2013

09.27.2013

Firmware

- V1.103.00 release
- Disabled internal pull-down resistors when GPIO is configured for Digital Output, Analog Input, or PWM Output.
- Added operation type to Not, And, Or, and Exclusive Or operations to select bitwise or logical operations.
- Added a floating point multiplier field to database logic inputs and output.
- Changed internal database logic data type to double when performing operations.
- Changed the data type of database logic constant values to double.
- Database logic bug fixes.

Datasheet version

- September 3, 2013

08.29.2013

Firmware

- V1.102.00 release
- Added Exponential, Root, and Logarithm database logic operations.
- Added rounding to database logic operations which require it.
- Added support for base e (natural log, exponential) operations.
- Added SPI Slave support.
- Updated debounce algorithm for pulse counter inputs.

Datasheet version

- September 3, 2013

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08.05.2013

Firmware

- V1.101.00 release
- Added debounce time to pulse counter.
- Added Modulo database logic operation.

Specifications version

- May 31, 2013

07.31.2013

Firmware

- V1.100.00 release
- Fixed issue where BACnet driver would communicate even if there is traffic at a different baud rate.
- Added database logic.
- Added pulse counter to the I/O objects.
- Fixed Metasys Master issue where binary values were not updating correctly.

Specifications version

- May 31, 2013

05.21.2013

Firmware

- V1.008.00 release
- Added additional protocol-specific configuration parameter checks.
- Improved Modbus RTU Master response checking.
- Added USB function to read the device's serial number.
- Added licensing support.
- Removed limitations on configuration memory writes.
- Minor bug fixes.

Specifications version

- January 2, 2013

04.03.2013

Firmware

- V1.004.00 release
- Added VMA device support for Metasys Master driver.
- Minor bug fixes.

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Specifications version

- January 2, 2013

03.26.2013

Firmware

- V1.002.00 release
- Added protocol configuration parameters.
- Switched to new version format and added new USB function to read the new format.

Specifications version

- January 2, 2013

02.26.2013

Firmware

- V1.000 initial release

Specifications version

- January 2, 2013