PicoPort Version Info

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

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.
• 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.
- 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.
- 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 Subscribe 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.
- 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
  - 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

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

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.

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