ELECTRICAL AND ENVIRONMENTAL

Specification	Rating
Power requirements	Input: 10 – 32V DC
Power consumption	3.8 W (Max.) Current: 142 mA @ 24 VDC
Temperature	-20 – 70 °C

STUDIO 5000 CONFIGURATION

For Logix versions 20 and beyond, the modules can be added using the EDS Add-On-Profile (AOP). For older versions (19 and below), the module must be added using a Generic Module Profile.

NORTH AMERICAN HAZARDOUS LOCATION APPROVAL

The following information applies when operating the product in hazardous locations:

SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C AND D HAZARDOUS LOCATIONS, OR NONHAZARDOUS LOCATIONS ONLY.
-20°C to +70°C, T5A
Class 1, Div 2 Gps A, B, C, D

THIS EQUIPMENT IS OPEN-TYPE DEVICE AND IS MEANT TO BE INSTALLED IN AN ENCLOSURE SUITABLE FOR THE ENVIRONMENT SUCH THAT THE EQUIPMENT IS ONLY ACCESSIBLE WITH THE USE OF A TOOL.
WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOW TO BE FREE OF IGNITABLE CONCENTRATIONS.
WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENT MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

For professional users in the European Union

If you wish to discard electrical and electronic equipment (EEE), please contact your dealer or supplier for further information.

WARNING – Cancer and reproductive harm – www.p65warnings.ca.gov

ADDITIONAL INFORMATION

The following resources contain additional information that can assist the user with the module installation and operation.

Resource	Link
Slate Installation	http://www.aparian.com/software/slate
Modbus Router User Manual Modbus Router Datasheet Example Code & UDTs	http://www.aparian.com/products/modbusrouterb
Ethernet wiring standard	www.cisco.com/c/en/us/td/docs/video/cds/cde/cde205_220_420/installation/guide/cde205_220_420_hig/Connectors.html
Modbus	http://www.modbus.org

SUPPORT

Technical support will be provided via the Web (in the form of user manuals, FAQ, datasheets etc.) to assist with installation, operation, and diagnostics.

For additional support the user can use either of the following:

Contact Us web link	www.aparian.com/contact-us
Support email	support@aparian.com

High Speed Counter

Quick Start Guide

A-HSC

NOTE: Before installing, configuring, operating, or maintaining Aparian products, please review this information and the information located on www.aparian.com for the latest software, documentation, and installation files specific to your Aparian product.

INTRODUCTION

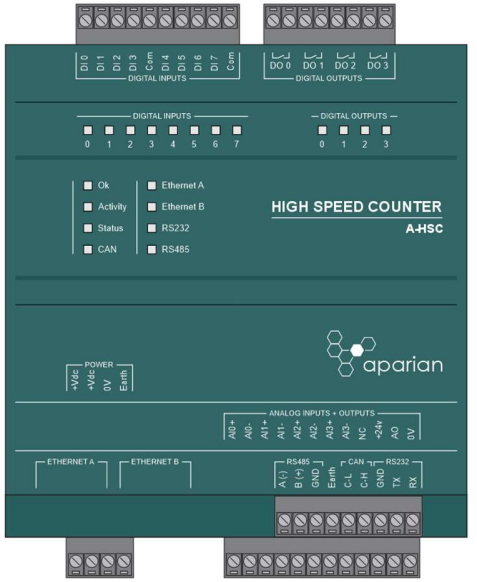
The High Speed Counter provides 8 high speed digital inputs for counter and frequency measurements and sequence-of-events (SOE) applications, as well as 4 digital outputs, 4 analog inputs and 1 analog output. The module can be configured to be either an EtherNet/IP target, a Modbus client or a Modbus server (TCP/RTU).

REQUIRED SOFTWARE

The High Speed Counter requires Aparian Slate software to setup and configure. The software installation can be found at www.aparian.com/software/slate.

MODULE INSTALLATION

The bottom layer contains a 4-way power connector that supports redundant DC power inputs to the module. The middle layer contains one 12-way connector at the front for the analog inputs and output, one 10-way connector at the back for digital inputs and one 8-way connector at the back for the digital outputs.



The top layer contains two RJ45 connectors for Ethernet and one 9-way connector for RS232, RS485, and CAN communications (note that the CAN communication has not been enabled on this module).

LED	Description
Ok	Indicates the system-level operation of the module. **Red**: The module is not operating correctly. For example, if the module application firmware has been corrupted or there is a hardware fault the module will have a red Module LED. **Green (flashing)**: The module has booted and is running correctly without any application configuration loaded. **Green (solid)**: The module has booted and is running with application configuration loaded. **Blue (solid)**: The module is busy updating the application config from the SD Card during startup.
Ethernet A/B	The Ethernet LED will light up when an Ethernet link has been detected (by plugging in a connected Ethernet cable). The LED will flash every time traffic is detected. This module has two Ethernet ports A and B. Each LEDs represents each specific port.
Activity	The activity on the primary interface (EtherNet/IP Target, Modbus Server, or Modbus Client). **Blinking Green**: A successful transaction was completed on the primary interface. **Blinking Red**: The transaction failed on the primary interface (e.g., invalid request).
Status	The status from the primary interface (EtherNet/IP Target, Modbus Server, or Modbus Client). **EtherNet/IP Target** **Solid Green**: The module is connected (with the correct number of connections) to the Logix Controller, and the Logix Controller is in RUN mode. **Flashing Green**: The module is connected (with the correct number of connections) to the Logix Controller, and the Logix Controller is in PROG/FAIL mode. **Solid Red**: The module is not connected to a Logix Controller or it is connected, but the actual number of connections does not match the configured number of connections. **Modbus Client** **Solid Green**: All the Modbus requests configured in the Modbus Aux map are successful. **Solid Red**: One or more of the Modbus requests configured in the Modbus Aux map are failing. **Modbus Server** **Solid Green**: The module has received a Modbus request within the Modbus Slave Timeout configuration. **Solid Red**: The module has **not** received a Modbus request within the Modbus Slave Timeout configuration.
CAN	This is currently not used.
RS232	Indicates if there was activity on the RS232 port as well as the status of the activity. The Modbus transaction was successfully received when **blinking green** or there was a checksum error when **blinking red**.
RS485	Indicates if there was activity on the RS485 port as well as the status of the activity. The Modbus transaction was successfully received when **blinking green** or there was a checksum error when **blinking red**.
Digital Inputs (0-7)	Each channel LED represents the status of that specific digital input point. **Off**: The DI signal is off. **Solid Green**: The DI signal is on. **Solid Yellow/Orange**: The frequency of the DI is greater than 15Hz.
Digital Outputs (0-3)	Each channel LED represents the status of that specific digital output point. **Off**: The DO signal is off. **Solid Green**: The DO signal is on. **Solid Blue**: The frequency of the DO is greater than 10Hz.

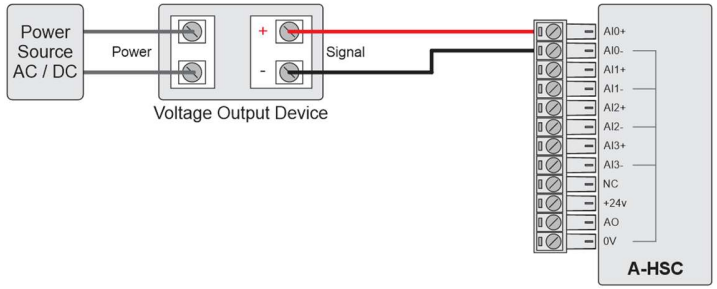
RS485 TERMINATION

All RS485 networks need to be terminated at the extremities (start and end point) of the communication conductor. The termination for the RS485 network can be enabled/disabled via the module configuration. Enabling the termination will connect an internal 150 Ohm resistor across the positive (+) and negative (-) conductors of the RS485 network.

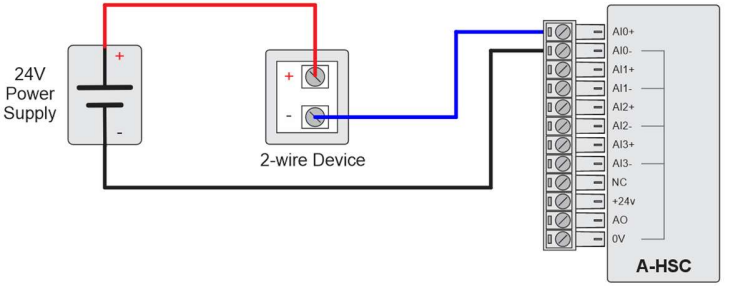
Revision 1.0
09/2026

ANALOG WIRING

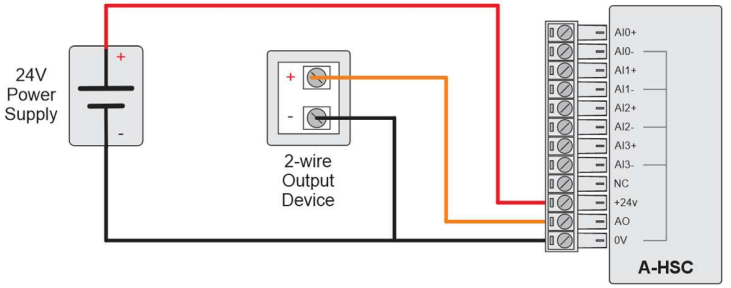
Analog Input (Voltage) wiring:



Analog Input (Current) wiring:



Analog Output wiring:



DIP SWITCHES

DIP Switch	Description
DIP Switch 1	Used to force the module into “Safe Mode”. When in “Safe Mode” the module will not load the application firmware and will wait for new firmware to be downloaded. This should be used only in the rare occasion when a firmware update was interrupted at a critical stage.
DIP Switch 2	This will force the module into DHCP mode which is useful when the user has forgotten the IP address of the module.
DIP Switch 3	This DIP Switch is used to lock the configuration from being overwritten by Slate. When set, Slate will not be able to download to the module.
DIP Switch 4	When this DIP Switch is set at bootup it will force the module Ethernet IP address to **192.168.1.100** and network mask **255.255.255.0**. The user can then switch the DIP switch off and assign the module a static IP address if needed.