

01 Readiness and operating boundary

Schneider Electric AM-SA85-000

Network Adapter

Schneider Electric AM-SA85-000 is a single-channel ISA host adapter for connecting a computer to a Modbus Plus network. Its usable communication path depends on the installed SA85 driver and the configuration of the host application.

Keep the hardware and software identities separate

AM-SA85-000 is the single-channel ISA adapter. The host application supplies a separate communication configuration. Q1683 covers CitectSCADA 1.00, 1.01, 1.10, 1.11, 1.20, 2.00, 2.01 and 3.00; it does not establish support for every modern Windows or Citect release.

01	Physical host path	ISA bus
02	Network path	One Modbus Plus channel
03	Software scope	Only the legacy Citect versions listed in Q1683
04	Card setup	Memory and station address set by DIP switches

Evidence: FA197319; Q1683 p.1

Load the documented legacy driver chain

The documented Citect environment loads the Modicon device driver and the DOS runtime component before starting Windows. The Windows MBPLUS component provides the application-side driver. Treat this as a historical setup sequence, not an instruction to install old components into an unsupported operating system.

01	SA85.SYS	Modbus Plus device driver
02	DOS_MP.EXE	Modbus Plus DOS TSR
03	MBPLUS.DLL	Modbus Plus Windows driver
04	Q1683 interrupt	0x5B with /r2
05	Startup location	DOS_MP launched from WINSTART.BAT before Windows

Evidence: Q1683 pp.1-2

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AM-SA85-000

02 Configuration and interface setup

Map the board to the selected adapter

Give the board a unique name and select MBPLUS as the board type. If the host uses multiple SA85 boards, the board address must match the driver /n option. Board identity selects the adapter; it is not the destination PLC address.

01	Board name	User-defined unique name
02	Board type	MBPLUS
03	Board address	Board number used in SA85.SYS /n
04	I-O Port field	Not used in the documented board form
05	Interrupt and Special Opt fields	Not used in the documented board form

Evidence: Q1683 p.1 Boards form

Link the Citect port to its board

Create a unique port name and point its board-name field to the intended board. The documented MBPLUS form does not use asynchronous serial framing fields. Do not try to cure an MBPLUS route problem by adding Modbus RTU baud or parity values to these unused fields.

01	Port name	User-defined unique name
02	Board name	Exact name from the board form
03	Port number	Not used
04	Baud and data bits	Not used
05	Stop bits and parity	Not used
06	Special Opt	Not used

Evidence: Q1683 p.1 Ports form

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03 Installation decision sequence

Set a route rather than only a final node

The I-O-device address identifies the PLC route, whereas the device number identifies the I-O device within the network configuration. The selected port name completes the chain back to the adapter. A bridged route includes the bridge and target node in the correct order.

01	Device name	User-defined unique name
02	Device number	Network-wide I-O device number
03	Address	PLC route in the form p.p.p.p.p
04	Direct example	Node 1: route 1
05	Bridged example	Node 2 through bridge 5: route 5,2
06	Protocol / port	MBPLUS / chosen Citect port name

Evidence: Q1683 p.1 I-O Devices form

Allocate virtual ports for the polling plan

One board can have up to eight virtual ports, and a port can serve multiple Modbus Plus units. For performance, Q1683 recommends a virtual port for each unit. Do not confuse eight virtual ports with eight physical channels or a restriction to eight destination devices.

01	Physical channel count	One for AM-SA85-000
02	Virtual port allocation	Up to eight per board in the documented Citect setup
03	Units per virtual port	Multiple units permitted
04	Performance arrangement	Separate virtual port per unit where appropriate

Evidence: Q1683 p.1 virtual-port note

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04 Verification and fault isolation

Keep timing values within their source context

The table records the Q1683 legacy configuration values. Pending requests, transfer blocks and polling intervals are separate settings. Confirm the installed driver and application release before applying them; increasing a timeout alone does not repair an incorrect board identifier or PLC route.

01	MaxPending	2
02	Block	238 bytes
03	Retry / Delay	0 / 0
04	TimeOut	2000 milliseconds
05	PollTime	20 milliseconds
06	WatchTime	30 seconds

Evidence: Q1683 p.2 Standard citect.ini options

Verify the intended PLC variable class

The legacy MBPLUS configuration uses distinct address classes for coils, input status and registers. Select the proper class before evaluating values or enabling writes. A successfully established route does not prove that the application is reading the intended variable type.

01	00001 class	Output coils; digital
02	10001 class	Input status; digital
03	30001 class	Input registers; integer, long, real or string
04	40001 class	Output registers; integer, long, real or string

Evidence: Q1683 p.2 Modbus Variables

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05 Acceptance and service handover

Check string interpretation and clock selection

StringReverse = 0 prevents swapping bytes within words of strings in the documented configuration. Q1683 also distinguishes the standard clock option from a high-resolution clock selection. Verify the representation of known PLC data before interpreting a byte-order issue as an adapter fault.

01	MBPLUS StringReverse	0: no byte swapping in string words
02	Kernel MsClock	Documented value 0
03	High-resolution clock option	Set MsClock to 1 in the documented performance context
04	Acceptance check	Correct variable class, known value and intended string byte order

Evidence: Q1683 p.2 Citect.ini options

Trace communication through all three forms

For the supported legacy environment, trace board identification to port selection and then to the PLC route. Confirm the driver components and their startup sequence. AM-SA85-030 changes the supplied package by including the AM-SA85-000 adapter and driver-suite CD, not by converting this card to a PCI host interface.

Evidence: Q1683 pp.1-2; FA197319

Related portfolio navigation

These separate product pages are reference navigation, not a statement of interchangeability or approval for the installed system.

Schneider Electric 140NOE77101	View Schneider Electric 140NOE77101 page
Schneider Electric 140NOE77110	View Schneider Electric 140NOE77110 page
Schneider Electric 140NOE77111	View Schneider Electric 140NOE77111 page

Technical evidence record

Replacement for the Modbus Plus ISA adapter AM-SA85-000 - FA197319

Using SA85 Modbus Plus Card - CitectSCADA Q1683, 23 November 2007

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