Emerson SM-APPLICATIONS

Complete Product Information

Emerson SM-APPLICATIONS is a Control Techniques drive applications processor with CTNet, EIA-RS485 communication and two digital inputs and outputs for programmable drive and process control.

Operating context

SyPTPro provides DPL, IEC 61131-3 based ladder and function block programming, together with parameter monitoring, breakpoints and single-step debugging. The module runs application-specific tasks from the drive internal power supply. Its slot configuration is accessed through drive menu 15, 16 or 17; menu 81 aliases the current slot within the application, helping preserve parameter references when the slot changes.

CTNet provides a high-speed communication path at up to 5 Mbit/s. The separate EIA-RS485 port supports CT-ANSI slave operation and Modbus RTU or ASCII master/slave operation at up to 115200 bit/s, using two-wire or four-wire connections. A program is required when the module acts as the serial master; network topology, cable, baud rate and termination must be designed together.

The module provides two 24 V digital inputs and two positive-logic digital outputs controlled through menu 86. Active outputs source up to 20 mA; inactive outputs are effectively floating, and an output overload deactivates both channels. CTSync supports synchronization between suitable drives. Preserve the original module identity and application revision when assessing a replacement, because the Plus and Lite variants have different capabilities.

Module and interface snapshot

Module function	Dedicated applications processor for a supported drive
Module identity	Original SM-Applications; identification parameter 301
Programming environment	SyPTPro; DPL, ladder and function block programming
Execution model	Task-based real-time drive and process control
Power source	Host drive internal power supply
CTNet interface	High-speed network; up to 5 Mbit/s
Serial interface	EIA-RS485; two-wire or four-wire
Serial maximum rate	115200 bit/s

02 Interfaces, I/O and network limits

Serial protocols	CT-ANSI slave; Modbus RTU and ASCII master/slave
Digital inputs	2 × 24 V positive-logic inputs
Digital outputs	2 × 24 V positive-logic outputs
Output current	20 mA maximum; overload deactivates both outputs
Inactive output state	Effectively floating
Slot parameter menus	15, 16 or 17, according to drive slot
Program slot alias	Menu 81
Digital I/O parameter menu	Menu 86

Synchronization	CTSync
CTNet termination	82 ohm, 0.25 W at both ends with approved green CTNet cable
CTNet network limit	255 nodes; segment and repeater limits depend on network design
CTNet terminals	6: CTNet A; 7: shield; 8: CTNet B
Digital I/O terminals	9: 0 V; 10: DI0; 11: DI1; 12: DO0; 13: DO1
Digital input limit	Maximum applied input voltage ±30 V
Input threshold	9.5 V ±0.3 V

Integration boundary

Applies to the original SM-Applications module. SM-Applications Plus, Lite and Lite V2 have separate identities and must not be treated as identical replacements.

03 Application roles and commissioning precautions

Drive sequencing

Execute application-specific DPL, ladder or function block logic alongside the drive control functions.

Distributed CTNet systems

Exchange process data with suitable CTNet nodes using approved cable, correctly terminated segments and a coordinated baud rate.

Serial device integration

Implement CT-ANSI slave or Modbus RTU/ASCII master or slave communication over the module RS485 interface.

Local event and I/O handling

Read two digital inputs and control two positive-logic outputs through the user program, while respecting the output current limit.

Isolate the host drive

Disconnect the supply and observe the host drive discharge procedure before fitting or removing the module. Never use the module as a safety isolation device.

Retain the application

Save the SyPTPro project, drive parameters, module slot and firmware details before replacement or configuration changes.

Match the original variant

Confirm SM-Applications on the module label. Plus, Lite and Lite V2 have distinct hardware and software characteristics.

Terminate CTNet correctly

Use approved CTNet cable; fit 82 ohm, 0.25 W termination at both ends of the recommended green cable. Excess termination loads the network.

Respect digital output limits

Each active output is a 24 V positive-logic source rated up to 20 mA. An overload deactivates both outputs; an inactive output is floating.

Preserve insulation and routing

Follow the manual separation requirements for data and I/O circuits. Route communication cables away from drive power wiring and bond shields as specified.

04 Engineering questions and decisions

What does Emerson SM-APPLICATIONS add to a drive?

It adds a dedicated processor for application-specific real-time tasks, together with CTNet, RS485 and local digital I/O. It is powered by the supported host drive internal supply.

Which programming tools does SM-APPLICATIONS use?

SyPTPro supports native DPL plus IEC 61131-3 based ladder and function block programming. Watch windows, breakpoints and single-step facilities assist commissioning.

Which serial protocols are supported?

The EIA-RS485 port supports CT-ANSI slave, Modbus RTU master/slave and Modbus ASCII master/slave operation. The maximum serial rate is 115200 bit/s; master operation requires the appropriate application program.

How is the SM-APPLICATIONS slot addressed?

The host drive uses menu 15, 16 or 17 according to the occupied slot. From the module application, menu 81 aliases the current slot. The original SM-Applications module identification value is 301.

What local digital I/O is available?

There are two 24 V digital inputs and two positive-logic digital outputs. Menu 86 controls the I/O; an active output sources up to 20 mA, while an inactive output is effectively floating.

How should the CTNet cable be terminated?

For the recommended Control Techniques green CTNet cable, fit an 82 ohm, 0.25 W resistor across the data pair at each end of the cable run. Use the approved cable and the CTNet design rules for segments and repeaters.

Can RS485 use both two-wire and four-wire connections?

Yes. Both arrangements are supported, with wiring, line loading and termination selected for the network. The host PC or controller interface must provide the required transceiver control for its chosen arrangement.

Is SM-APPLICATIONS identical to the Plus or Lite versions?

No. The original, Plus, Lite and Lite V2 are separate variants. Compare the exact label, required interfaces, firmware, application project and host-drive support before considering a substitution.

05 Lifecycle, offered unit and related references

Lifecycle status

SM-APPLICATIONS: A current manufacturing and support phase for this exact original module has not been confirmed by a model-specific lifecycle notice.

Control Techniques module guidance: The SM-Applications Modules and Motion Processors User Guide distinguishes the original module from Plus, Lite and Lite V2. Its functional and migration guidance is not a current lifecycle declaration.

Request current support and replacement guidance from Control Techniques using the complete module label, drive type, firmware and SyPTPro project. Apter Power availability is separate from manufacturer lifecycle status.

Reference: Control Techniques SM-Applications module guidance.

Explore other Emerson references

Portfolio navigation only; no compatibility or substitution is implied.

Emerson KJ3224X1-EA1 12P4367X022	View product
Emerson EN-204 EN-204-00-000	View product
Emerson KJ2201X1-BA1	View product
Emerson KC4011X1-BW1	View product

Available unit details

Emerson SM-APPLICATIONS. Condition: New, original product. Confirm the supplied module, removable terminal blocks and any accessories in the quotation; the host drive and application software are separate.

Configuration record

Retain the final SyPTPro project, drive parameter record, module identity, terminal schedule and network configuration. Include the tests used to verify communication, local I/O and process behavior so the next service action can reproduce the acceptance check.

Technical reference

Control Techniques SM-Applications Modules and Motion Processors User Guide, 0471-0062-04, Issue 4

Apter Power summary, not a manufacturer manual. The original module excerpt is supplied separately in Downloads.

Discuss the complete offered reference

Emerson SM-APPLICATIONS | New, original product

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