Emerson SM-PROFIBUS-DP-V1

Installation & Commissioning Guide

01 Confirm the drive and preserve its configuration

Identify the exact option

Confirm SM-PROFIBUS-DP-V1 on the complete module label. The module identification value is 403 in MM.01. Record the host drive type, option slot and firmware components from MM.02 and MM.51. Keep the DP-V1 suffix in the service record; earlier DP-only hardware does not establish the same functions.

Preserve the PLC and drive records

Save the drive parameters and master project, including the GSD version, slave address, data size and mapping. Record whether cyclic-only, legacy non-cyclic or DP-V1 acyclic services are used. The drive and master configuration must be reviewed as one system before the replacement is enabled.

Isolate before accessing the option slot

Stop the machine under its maintenance procedure. Disconnect AC power and wait at least ten minutes, then verify that the drive DC bus is fully discharged. Follow the host drive isolation and access instructions before inserting or removing a Solutions Module.

Confirm the supported host

The user guide covers Unidrive SP, Commander SK, Affinity, Digitax ST and Mentor MP. Use the applicable drive fitting procedure and available option position. The module takes power from the drive; the supported number of simultaneous options depends on the host.

Field reference

Module identity	DP-V1 label; MM.01 = 403
Firmware record	MM.02 and MM.51
Master record	GSD, slave type, address and data map
Safe access	AC isolated; DC bus verified discharged

Identify	Configure	Verify
Exact DP-V1 label, host and slot	GSD, addresses and mapped values	Cyclic and acyclic communication

02 Wire the network and maintain powered termination

Use the correct data pair

Connect the PROFIBUS data pair to pin 3, B positive/red, and pin 8, A negative/green, on the 9-way female D-type interface. Pin 1 and the shell are shield connections; pin 4 is CNTR-P/RTS. Check the connector pin numbering before termination.

Keep the termination supply within its purpose

Pin 6 provides isolated +5 V and pin 5 isolated 0 V for termination only. Do not treat these pins as a general auxiliary power source. Use approved connectors and cable, with integrated connector inductors where required above 1.5 Mbit/s.

Preserve termination when equipment is off

Each segment must be terminated at both ends. Required termination must remain powered; switching off a drive at an end can remove its termination supply. Include independent powered termination in the network design where continuity is required during a drive outage.

Check shields and topology

Ground the cable shield close to the drive, with the cabinet grounding arrangement specified in the manual. Avoid spurs and keep a recommended minimum of one metre between nodes. Include repeaters in the segment device count and inspect every connector before a network scan.

Field reference

Pin 3 / pin 8	B positive/red / A negative/green
Pin 6 / pin 5	Isolated +5 V / 0 V, termination only
Pin 4	CNTR-P / RTS
Pin 1 and shell	Shield

03 Configure addresses, GSD and process-data allocation

Assign a unique address

Use addresses 1 to 125 for network nodes; 0 and 126 are reserved. MM.03 holds the module address. An address change becomes active after module re-initialization. Keep the address in the master project, drive record and cable schedule consistent.

Select the appropriate GSD

Install the DP-V1 GSD appropriate to the host and configure a DPV1 slave in the master. A DP-V0 GSD prevents use of the DP-V1 functions. When a legacy compatibility mode is selected, use the GSD required by that mode rather than assuming the normal DP-V1 file remains appropriate.

Match the input and output allocation

Cyclic-only operation permits up to 32 input and 32 output 16-bit words. Legacy Mode 1 non-cyclic exchange permits 31, while PPO4 mode permits 28. Ensure the master and drive counts match, and keep the distinction between 16-bit words and default 32-bit mapped values explicit.

Save and re-initialize deliberately

MM.32 re-initializes the option with its updated configuration, then returns to OFF. This operation does not itself save settings in non-volatile memory. Use the host drive parameter-save procedure separately, and verify that the intended configuration survives the planned restart.

Field reference

Node address	MM.03; unique value 1-125
Data configuration	MM.05, or separate counts through MM.39/MM.40
Mapped parameters	Match each master variable to the intended drive value
Commit sequence	Save using host procedure; re-initialize option

04 Prove communication and diagnose the operating state

Check the detected network rate

MM.04 displays the automatically detected PROFIBUS rate. A value of -1 means the module has not detected network activity and is waiting for the master. Inspect wiring, termination, master state and the allowed segment length before treating this as a mapping fault.

Use operating status to separate faults

A positive MM.06 value indicates the number of processed cyclic messages per second. Zero indicates established communication without data transfer; repeated transitions through -1 can indicate a master/slave configuration mismatch. Investigate the drive diagnostics before changing several settings at once.

Respond to initialization or configuration errors

MM.06 = -2 indicates an internal hardware initialization failure, while -3 indicates a configuration error. For configuration errors, MM.49 and MM.50 provide additional information. Retain the fault record and apply the module diagnostic procedure before restoring operation.

Prove commands and feedback

Check process values in both directions under controlled commissioning conditions. Confirm the intended control word, speed reference and returned status values, then verify any acyclic parameter transaction. Restore the normal master program and document the response to loss and recovery of communication.

Field reference

3 / 6 / 12 Mbit/s	100 m maximum segment
1.5 Mbit/s	200 m maximum segment
500 kbit/s	400 m maximum segment
187.5 kbit/s / lower rates	1000 m / 1200 m at 93.75 kbit/s or below

05 Retain the commissioning and support record

Keep a reproducible service package

Retain the complete DP-V1 label, host drive and slot, firmware values, saved parameters, GSD and PLC project. Include addresses, data sizes, mappings, topology, cable tests and the results of cyclic and acyclic communication checks.

Review future support for the exact module

Request current support and replacement guidance using the complete module and host identity. Technical compatibility and GSD guidance in the user guide do not declare a current manufacturing phase. Keep manufacturer lifecycle status separate from the availability of an offered unit.

Identify	Configure	Verify
Exact DP-V1 label, host and slot	GSD, addresses and mapped values	Cyclic and acyclic communication

Explore other Emerson references

Portfolio navigation only; no compatibility or substitution is implied.

Emerson A6560	View product
Emerson ES0350.M1A05L.27N0	View product
Emerson KJ3101X1-BB1 12P1866X062	View product
Emerson KJ4001X1-CC1 12P0733X042	View product

Discuss the complete offered reference

Emerson SM-PROFIBUS-DP-V1 | New, original product

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Technical reference

Control Techniques SM-PROFIBUS DP-V1 User Guide, 0471-0008-11, Issue 11

Apter Power application summary. Follow the complete module and host equipment instructions.