Emerson SM-PROFIBUS-DP-V1

Complete Product Information

Emerson SM-PROFIBUS-DP-V1 connects a supported Control Techniques drive to a PROFIBUS-DP network, providing cyclic process data and DP-V1 acyclic parameter access.

Operating context

The module supports Unidrive SP, Commander SK, Affinity, Digitax ST and Mentor MP. It draws power from the host drive and identifies itself with module code 403. Parameters are accessed through the menu assigned to the installed option slot; firmware is identified through MM.02 and MM.51. Preserve the complete DP-V1 label when selecting a replacement because the earlier DP-only module has different capabilities.

Cyclic exchange can carry up to 32 input and 32 output 16-bit words in a cyclic-only configuration. The drive and master must use matching word counts and mappings. DP-V1 acyclic access operates alongside cyclic data, while legacy non-cyclic modes consume part of the available cyclic allocation. PROFIdrive V2 and V4 are supported; V4 includes standard telegram 1, PNU access, drive identification, a fault buffer and identification and maintenance functions.

The module automatically detects supported network rates from 9.6 kbit/s to 12 Mbit/s. The network permits up to 125 addressed nodes, with no more than 32 devices including repeaters in one segment. Use a unique address from 1 to 125, approved cable and powered termination at both ends. Install the appropriate DP-V1 GSD and configure a DPV1 slave in the master; a DP-V0 GSD does not enable the DP-V1 features.

Module and interface snapshot

Network role	PROFIBUS-DP slave
Supported drives	Unidrive SP, Commander SK, Affinity, Digitax ST and Mentor MP
Module identification	403 in parameter MM.01
Cyclic data capacity	Up to 32 input and 32 output words; 16-bit words, cyclic-only configuration
Non-cyclic access	DP-V1 acyclic channel; legacy modes also available
PROFIdrive support	Profiles V2 and V4
V4 functions	Standard telegram 1, PNU access, drive identification, fault buffer and I&M
Communication rates	9.6 kbit/s to 12 Mbit/s at supported PROFIBUS rates

02 Interfaces, configuration and integration limits

Rate selection	Automatic detection of the master network rate
Node addresses	1 to 125; 0 and 126 reserved
Network capacity	Up to 125 addressed nodes
Segment capacity	32 devices maximum, including repeaters
Network connector	9-way female D-type
Data pins	Pin 3: B, positive/red; pin 8: A, negative/green
Termination supply	Pin 6: isolated +5 V; pin 5: isolated 0 V; termination use only
Other connector signals	Pin 4: CNTR-P/RTS; pin 1 and shell: shield

Termination	Both ends of each segment; termination must remain powered
Maximum segment at 3/6/12 Mbit/s	100 m with approved cable
Maximum segment at 1.5 Mbit/s	200 m with approved cable
Maximum segment at 500 kbit/s	400 m with approved cable
Maximum segment at 187.5 kbit/s	1000 m with approved cable
Maximum segment at 93.75 kbit/s or below	1200 m with approved cable
GSD requirement	DP-V1 GSD and DPV1 slave configuration for DP-V1 features
Power source	Host drive internal supply

Integration boundary

The complete DP-V1 suffix identifies this module. Legacy SM-PROFIBUS-DP hardware and DP-V0 configuration are not equivalent to the DP-V1 feature set.

03 Application roles and commissioning precautions

PLC process-data exchange

Transfer drive command and feedback words cyclically with matching master and drive word counts.

Acyclic parameter access

Use DP-V1 parameter services alongside cyclic operation when the correct GSD and DPV1 slave setup are selected.

PROFIdrive integration

Apply the supported V2 or V4 profile, including V4 standard telegram 1 and PNU parameter access where configured.

Network diagnostics

Use module identity, detected data rate and operating status to separate physical-network faults from mapping or configuration errors.

Isolate before fitting

Disconnect AC power and wait at least ten minutes; verify the drive DC bus is fully discharged before fitting or removing the module.

Retain the exact suffix

Confirm SM-PROFIBUS-DP-V1 on the label. Do not assign DP-V1 capabilities to the earlier DP-only module.

Use the correct GSD

Install the matching DP-V1 GSD and select a DPV1 slave in the master to enable DP-V1 services.

Maintain powered termination

Terminate both ends of each segment. Plan the termination supply so that switching off an end drive does not disable required termination.

Respect segment limits

Keep within the cable length for the selected rate and the 32-device segment limit, including repeaters. Avoid spur connections.

Prove the process-data mapping

Set unique addresses and matching data sizes, then verify commands and feedback in both directions before releasing the machine.

04 Engineering questions and decisions

Which drives support Emerson SM-PROFIBUS-DP-V1?

The user guide covers Unidrive SP, Commander SK, Affinity, Digitax ST and Mentor MP. Match the host version and available option slot to its drive instructions.

How is the DP-V1 module identified?

The complete label includes DP-V1 and its module identification code is 403 in MM.01. MM.02 and MM.51 provide the firmware version components.

How much cyclic data can be exchanged?

A cyclic-only configuration supports up to 32 input and 32 output 16-bit words. Legacy non-cyclic modes reduce the cyclic allocation; the master and drive must use the same data sizes.

Why are DP-V1 services unavailable with some GSD files?

DP-V1 features require the appropriate DP-V1 GSD and a DPV1 slave configuration in the master. A DP-V0 GSD does not expose those features.

How is the PROFIBUS data rate selected?

The module detects and synchronizes to the master network rate automatically. MM.04 indicates the detected rate; a value of -1 means it is waiting to detect network activity.

Which D-type pins carry the PROFIBUS data pair?

Pin 3 is B, positive/red, and pin 8 is A, negative/green. Pins 6 and 5 provide isolated +5 V and 0 V for termination only; pin 1 and the shell connect the shield.

What are the network addressing and segment limits?

Use unique addresses from 1 to 125; 0 and 126 are reserved. A segment supports no more than 32 devices including repeaters, and the complete network supports up to 125 addressed nodes.

What must be checked when communication starts but data is wrong?

Compare word counts and parameter mappings in the master and drive, including the chosen non-cyclic mode and data width. Then prove data flow in both directions under controlled commissioning conditions.

05 Lifecycle, offered unit and related references

Lifecycle status

SM-PROFIBUS-DP-V1: A current manufacturing and support phase for this complete model has not been confirmed by a model-specific lifecycle notice.

Control Techniques module guidance: The SM-PROFIBUS DP-V1 User Guide defines supported drives, module identity and GSD compatibility. These technical compatibility rules do not establish a current lifecycle phase.

Request current support and replacement guidance using the complete module label, host drive, firmware, GSD and network configuration. Apter Power availability is separate from manufacturer lifecycle status.

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

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

Available unit details

Emerson SM-PROFIBUS-DP-V1. Condition: New, original product. Confirm the module and any PROFIBUS connector in the quotation; the host drive, network cable and master configuration are separate.

Configuration record

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.

Technical reference

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

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

Discuss the complete offered reference

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

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