ABB PM253V01

01 Industrial Controller Processor Module

ABB PM253V01 supports a modular controller arrangement in which processor capacity, communication choices and connected I/O are planned together. The V01 memory execution has its own expansion limit and must remain distinct from higher-memory PM253 variants.

1. **24 V system supply**
2. **PM253V01 + backplane**
3. **SattBus / RS232**
4. **Configured I/O and partners**

Physical and functional arrangement

The processor receives internal power through the controller power-supply and backplane arrangement. Central and remote I/O are configured as part of the complete system; the V01 capacity must be used when checking the project rather than a larger V02 controller limit.

Signal path and configuration

The serial channels have different signal and protocol capabilities. Channel 0 supports the programming/communication role with handshake signals, while channel 1 provides transmit and receive functions according to the supported interface arrangement. Cable and serial-format settings must agree at both ends.

Application boundary

Battery condition affects memory and clock retention. Keep a recoverable project and known clock state before service, and follow the applicable battery procedure. Power and communication LEDs provide local observations, while Fail and Stop indications require interpretation with the controller state.

Ratings apply to the stated hardware execution and operating conditions. Installed firmware, companion modules and configured functions must match the application.

ABB PM253V01

02 Technical data and engineering limits

Processor	Motorola MC68020
Clock frequency	16.7 MHz
RAM	1 Mbyte
Supported I/O units	32 maximum for V01
Floating-point coprocessor	Yes
Serial channels	2 RS232
Serial rate	75–38400 baud; 9600 default
Serial cable length	15 m maximum
SattBus	1 supervisor channel
Internal current	0.6 A maximum from 200-PSMG/PSSG
Operating temperature	+5 to +55 °C
Protection	IP20

Additional interface data

Channel 0 signals	TD, RD, RTS, CTS, DCD and DTR
Channel 1 signals	RD and TD
Serial framing	7 or 8 data bits; odd/even/none parity; 1 or 2 stop bits
Clock normal-mode accuracy	10 ppm, approximately 6 min/year
Backup battery	3.6 V lithium, 1.75 Ah; memory and clock
Backplane key code	5
Power supply system	24 V DC, 19.2–30 V DC including specified ripple
Humidity	90% maximum, non-condensing

Ratings apply to the stated hardware execution and operating conditions. Installed firmware, companion modules and configured functions must match the application.

ABB PM253V01

03 Application map and integration boundaries

01 Modular process control

Execute an Advant Controller 250 application within V01 resources.

02 SattBus supervision

Exchange application data through the configured supervisor channel.

03 Serial equipment integration

Use the appropriate RS232 channel and supported protocol.

04 Legacy system restoration

Recover the exact processor, project and retained-state arrangement.

Variant resource limit

The one-megabyte V01 execution supports a different I/O ceiling from PM253V02. Preserve the exact variant when budgeting the project.

Serial-port distinction

Channel 0 and channel 1 have different signals and roles; preserve the intended port and handshake arrangement.

Retention planning

Keep verified backups before battery or processor service. Validate both retained application state and real-time clock.

Configuration scope: Match V01 memory capacity, backplane keying and the installed application/communication arrangement before substituting a processor.

ABB PM253V01

04 Technical questions that affect operation

Why is a PM253V02 capacity figure inappropriate for PM253V01?

The V01 execution has its own RAM and supported-I/O limit. Check project resources against the exact installed processor variant.

Can the two serial channels on PM253V01 be exchanged without review?

No. Their signal and protocol capabilities differ. Confirm the intended port, handshake arrangement and serial framing before reconnecting a device.

What does a retained program require before battery service on PM253V01?

Keep a recoverable project and follow the approved power and battery procedure. Memory and real-time-clock retention must be considered together.

Why can SattBus activity on PM253V01 coexist with a failed application function?

Communication activity does not prove the correct program, I/O assignment or process state. Trace the affected data path through the configured application.

How should a serial link that works intermittently with PM253V01 be investigated?

Check cable length, connectors, signal assignment, framing and handshake requirements. Compare both ends rather than changing only baud rate.

What must be assessed before expanding I/O around PM253V01?

Count the supported units for the V01 controller and confirm communication and power resources for the intended architecture.

How is a clock discrepancy on PM253V01 distinguished from a program fault?

Review time retention and battery state, compare the controller clock with the process reference and inspect application use of time-dependent data.

Why should the backplane and power module be checked when replacing PM253V01?

The processor relies on the intended controller power and mechanical connection. A matching processor label alone does not prove the restored supply and bus arrangement.

ABB PM253V01

05 Selection, service planning and related equipment

Match the installed arrangement

Match the complete ABB PM253V01 marking and installed configuration. Confirm PM253V01, battery connection, backplane key and serial interfaces.

Support and migration

The current production and manufacturer-support stage for this exact execution is unconfirmed. Match V01 memory capacity, backplane keying and the installed application/communication arrangement before substituting a processor.

Equipment boundary

Confirm the processor and any battery, terminal block or communication cable specifically itemized. Companion hardware and accessories are included only when itemized; the function of the complete installed arrangement depends on the correct combination.

Engineering review before intervention

Archive application and clock state	Retain the working project, I/O allocation and communication settings. Record the clock and battery condition before servicing the processor and establish the intended process stop state.
Check controller resources	Confirm the V01 RAM and I/O limits against the project. Review power-module and backplane compatibility and inspect keying before inserting the processor.

Related equipment navigation

ABB PM566-TP-ETH 1SAP121500R0071

ABB PMAC2A-ETH 603871-109

ABB PM590-ETH-1SAP150000R0271

Related references support separate application assessment and do not imply replacement compatibility. Technical basis: ABB Advant Controller 250 Data Sheet, 493113211.