# PM891K01
## Compact Product Suite hardware selector



The PM891 processor is a monolithic unit equipped with power supply, CPU-boards and unit termination. The unit contains microprocessor and RAM memory, a real-time clock, LED indicators, INIT push button and a Secure Digital interface. The PM891 does not contain any internal battery The PM891 has two RJ45 Ethernet ports (CN1, CN2) for connection to the Control Network, and one RJ45 serial port (COM4). The COM4 port is isolated and used for a configuration tool. The PM891 supports CPU redundancy for higher availability (CPU, CEX-Bus, communication interfaces and S800 I/O).

The communication expansion bus (CEX-Bus) is mounted on the unit. The CEX-Bus is used for extending the on-board communication ports with communication interface units. It is possible to use redundant communication interfaces on the CEX-Bus. The CEX-Bus Interconnection unit BC810 is used to increase the availability on the CEX-Bus by dividing it into separate segments. The optical Modulebus of the unit can be used for connecting seven clusters of S800 I/O units (each comprising up to 12 units). Each PM891 is provided with a unique Ethernet address which provides hardware identity to the unit.

## Features and benefits

- Reliability and simple fault diagnosis procedures
- Modularity, allowing for step-by-step expansion
- IP20 Class protection without the requirement for enclosures
- The controller has full EMC certification
- High performance and large application memory
- Sectioned CEX-Bus using a pair of BC810
- Built-in redundant Ethernet Communication ports

| General info | |
|---|---|
| Article number | 3BSE053241R1 (PM891K01) |
| Redundancy | No |
| High Integrity | No |
| Clock Frequency | 450 MHz |
| Performance, 1000 boolean operations | 0.043 ms |
| Performance | 0.043 ms |
| Memory | 256 MB |
| RAM available for application | 208.985 MB |
| Flash memory for storage | Yes |

**Detailed data**

| | |
|---|---|
| Processor type | MPC8270 |
| Switch over time in red. conf. | max 10 ms |
| No. of applications per controller | 32 |
| No. of programs per application | 64 |
| No. of diagrams per application | 128 |
| No. of tasks per controller | 32 |
| Number of different cycle times | 32 |
| Cycle time per application programs | Down to 1 ms |
| Flash PROM for firmware storage | 16 MB |
| Power supply | 24 V DC (19.2-30 V DC) |
| Power consumption +24 V typ/max | 660/750 mA |
| Power dissipation | 15.8 W (18 W max) |
| Redundant power supply status input | Yes |
| Built-in back-up battery | No |
| Clock synchronization | 1 ms between AC800M controllers by CNCP protocol |
| Event queue in controller per OPC client | Up to 3000 events |
| AC 800M transm. speed to OPC server | 36-86 events/sec, 113-143 data messages/sec |
| Comm. modules on CEX bus | 12 |
| Supply current on CEX bus | Max 2.4 A |
| I/O clusters on Modulebus with non-red. CPU | 0 eletrical + 7 optical |
| I/O clusters on Modulebus with red. CPU | 0 eletrical + 7 optical |
| I/O capacity on Modulebus | Max 84 modules |
| Modulebus scan rate | 0 - 100 ms (actual time depending on number of I/O modules) |
| Supply current on Electrical Modulebus | 24 V : max 1.0 A<br>5 V : max 1.5 A |
| Ethernet channels | 2 |
| Ethernet interface | 10/100 Mbit/s |
| Control Network protocol | MMS (Manufacturing Message Service) and IAC (Inter Application Communication) |
| Recommended Control Network backbone | 100 Mbit/s switched Ethernet |
| Real-time clock stability | 50 ppm (approx 0.5h / year) |
| RS-232C interface | 1 for service tool (COM 4) |
| RS-232C interface (COM3) (non red. only) | Not supported |
| RS-232C interface (COM4) (non red. only) | RS-232C, 9 600 baud, RJ-45 female (8-pole), opto isolated, no RTS-CTS support |

**Environment and certification**

| | |
|---|---|
| Temperature, Operating | 0 to +55 °C (+32 to +131 °F) |
| Temperature, Storage | -40 to +70 °C (-40 to +158 °F) |
| Temperature changes | 3 °C/minutes according to IEC/EN 61131-2 |
| Pollution degree | Degree 2 according to IEC/EN 61131-2 |
| Corrosion protection | G3 compliant to ISA 71.04 |
| Relative humidity | 5 to 95 %, non-condensing |
| Emitted noise | - |
| Vibration | 10 < f < 50 Hz: 0.0375 mm amplitude,<br>50 < f < 150 Hz: 0.5 g acceleration,<br>5 < f < 500 Hz: 0.2 g acceleration |
| Rated Isolation Voltage | 50 V |
| Dielectric test voltage | 500 V a.c. |
| Protection class | IP 20 according to EN 60529, IEC 529 |
| Altitude | 2000 m (6562 ft) according to IEC/EN 61131-2 |
| Emission & Immunity | EN 61000-6-4, EN 61000-6-2 |
| Environmental conditions | Industrial |
| CE Mark | Yes |
| Electrical Safety | EN 50178, IEC 61131-2, UL 61010-1, UL 61010-2-201 |
| Hazardous location | UL 60079-15, cULus Class 1, Zone 2, AEx nA IIC T4, ExnA IIC T4Gc X |
| Marine certificates | ABS, BV, DNV-GL, LR |
| TUV Approval | No |
| RoHS compliance | EN 50581:2012 |
| WEEE compliance | DIRECTIVE/2012/19/EU |

**Dimensions**

| | |
|---|---|
| Width | 174 mm (6.85 in.) |
| Height | 186 mm (7.32 in.) |
| Depth | 94 mm (3.70 in.) |
| Weight (including base) | 1600 g (3.5 lbs) |

—
**solutions.abb/compactproductsuite**
**solutions.abb/controlsystems**

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.