ABB ABB Series Service Manual

PM867K02

1. Description

3BSE081638R1

3. Product Information

3BSE081638R1 | ABB | PM867K02 Redundant Processor Unit HI

Manufacturer : ABB

Product No : 3BSE081638R1

Product type : PM867K02 Redundant Processor Unit HI

Number of batteries : 2

High integrity, certified for SIL3. Requires configuration according to Safety Manual. Local organizations must comply with the Qualifications to secure successful sales of ABB safety systems, to order safety equipment.

High integrity, certified for SIL3. Requires configuration according to Safety Manual.

Package including:

- 2 pcs PM867, CPU
- 2 pcs TP830, Baseplate
- 2 pcs TB807, ModuleBus terminator
- TK850, CEX-bus extension cable
- TK851, RCU-Link cable
- 2 pcs Battery for memory backup (4943013-6)
- No license included

Clock Frequency : 133MHz

Memory : 64MB

Only compatible for 800xA 6.0.2 and onwards.

Performance : 0.09 ms

Processor type : MPC866

Power supply : 24 V DC (19.2-30 V DC)

Weight: 2.7 Kg

The CPU board contains the microprocessor and RAM memory, a real-time clock, LED indicators, INIT push button, and a CompactFlash interface.

The base plate of the PM867 controller has two RJ45 Ethernet ports (CN1, CN2) for connection to the Control Network, and two RJ45 serial ports (COM3, COM4). One of the serial ports (COM3) is an RS-232C port with modem control signals, whereas the other port (COM4) is isolated and used for the connection of a configuration tool. The controller supports CPU redundancy for higher availability (CPU, CEX-Bus, communication interfaces and S800 I/O).

The high integrity functionality is enabled by the addition of an SM812 module and the SIL-certified software. The AC 800M High-Integrity also offers IEC 61508 and TÜV-certified control environment for combining safety and business-critical process control in one controller unit without sacrificing the safety integrity. Only compatible for 800xA 6.0.2 and onwards. Please see Product Update for more information.

Package including:

2 pcs PM867, CPU

2 pcs TP830, Baseplate, width = 115mm

2 pcs TB807, ModuleBus terminator

1 pcs TK850, CEX-bus expansion cable

1 pcs TK851, RCU-Link cable

2 pcs Battery for memory backup (4943013-6) 1 for each CPU

General info

Article number 3BSE081638R1 (PM867K02)

Redundancy Yes

High Integrity Yes

Clock Frequency 133 MHz

Performance, 1000 boolean operations 0.09 ms

Performance 0.09 ms

Memory 64 MB

RAM available for application 46.559 MB

Flash memory for storage No

Detailed data

Processor type MPC866

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 18 MB

Power supply 24 V DC (19.2-30 V DC)

Power consumption +24 V typ/max 210 / 360 mA

Power dissipation 5.1 W (8.6 W max)

Redundant power supply status input Yes

Built-in back-up battery Lithium, 3.6 V

Clock synchronization 1 ms between AC 800M 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 1 electrical, 7 optical

I/O clusters on Modulebus with red. CPU 0 eletrical + 7 optical

I/O capacity on Modulebus Max 96 (single PM867) or 84 (red. PM867) I/O 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

5 V : max 1.5 A

Ethernet channels 2

Ethernet interface Ethernet (IEEE 802.3), 10 Mbit/s, RJ-45, female (8-pole)

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 100 ppm (approx. 1 h/year)

RS-232C interface 2 (one general, 1 for service tool)

RS-232C interface (COM3) (non red. only) RS-232C, 75-19 200 baud, RJ-45 female (8-pole), not opto isolated, full RTS-CTS support

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 < 55 dB (A)

Vibration 10 < f < 50 Hz: 0.0375 mm amplitude,

50 < f < 150 Hz: 0.5 g acceleration,

5 < f < 500 Hz: 0.2 g acceleration

Rated Isolation Voltage 500 V a.c.

Dielectric test voltage 50 V

Protection class IP20 according to EN 60529, IEC 529

Altitude 2000 m (6 562 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

ISA Secure certified Yes

Marine certificates ABS, BV, DNV-GL (LR, Lloyd (Pending)

TUV Approval Yes

RoHS compliance EU RoHS, UAE RoHS, CN RoHS

WEEE compliance DIRECTIVE/2012/19/EU

Dimensions

Width 119 mm (4.7 in.)

Height 186 mm (7.3 in.)

Depth 135 mm (5.3 in.)

Weight (including base) K01 1200 g (2.6 lbs) / K02 2700 g (5.95 lbs)