

Control upgrade for high power rectifiers

Life cycle extension with the AC 800PEC controller



Complete life cycle services | Limited life cycle services

- Active: A full range of life cycle services are available
- Classic: Product is not actively sold
- Limited: Few or no life cycle services available
- Obsolete: Service and spare parts availability is not guaranteed

AC 800PEC controller

New technology

- Extend the overall life-time of the rectifier system
- Full service support for maintenance, extensions and troubleshooting
- Full spare parts availability
- Latest processing technology (processor and components) significantly increases computing power
- State-of-the art human machine interface (HMI full color graphic panel)
- Most advanced interface support (see below)

Spare parts

- Long term spare parts availability (see above comment)

Interface features

- Optical link from CPU to fast (CombiIO) and slow (S800) input/output modules and puls amplifiers
- Ethernet connection to process panel
- Many available bus communication protocols

Most common protocols are:

- Ethernet modbus TCP/IP
- Modbus RTU (master and slave)
- Profibus DP (master and slave)
- Other protocols are available on request

PSR controller

Old technology

- Limited lifetime of control platform
- Service support for maintenance, extensions and troubleshooting not guaranteed
- Spare parts availability not guaranteed
- 80186 microprocessor system
- LCD display with text strings
- Limited Interface support

Spare parts

- Limited spare parts availability

Interface features

- 19" rack – 1st (PPA) & 2nd (PPB) generation CPU; system based on B448 bus with interfaces available via different prints on the bus with RS232 / RS485 hardware
- 19" rack – 3rd (PPC) generation CPU; combination of B448 base and ArcNet (distributed inputs and outputs)
- Limited communication protocols

Controlling thyristor rectifiers

- Pulses generated by the PEC are optically transmitted to firing board fitted directly to the rectifier
- Pulse generation is digital and less prone to electromagnetic interference
- Under voltage ride-through capability
- Synchronization signal is taken from LV side rectifier transformer with filtering capabilities that eliminate amplification of unwanted frequencies

Commissioning, debugging and service features

- Debugging performed with sophisticated ABB control builder software. Any signal can be observed
- Programming interface provided by ABB control builder software in accordance with IEC61131
- Increased maintainability of the software due to different abstraction layers for programming
- Available sophisticated remote diagnostics support
- Sophisticated diagnostics support allows remote access via VPN, local data logging and transient recording facilities

Human machine interface (HMI panel)

- Operator interface provided via an ABB 800 series process panel
- Operator interface provided with ABB process panel
- Full color backlit TFT display
- Supports multiple languages
- Multi-window viewing of process data with password protection
- Event recording (with time stamping) and list output
- Trending window for digital process values available

Controlling thyristor rectifiers

- The firing pulse is generated by the firing card which is amplified in the PSR rack and relayed electrically via triax cable (copper) to the pulse transformer
- Pulse generation is analog.
- Synchronization signal for firing is tapped from the high voltage (HV) side which requires a voltage transformer

Commissioning, debugging and service features

- Debugging performed with service unit SD B005 data viewing in hexadecimal format only for PSR1 (with CPU; PPA)
- FUPLA2 software, editor
- One software layer with dedicated hardware for various functions e.g. communication (PMA323 card), thyristor firing (GDB card) etc.
- Limited availability for remote diagnostics

Human machine interface (HMI panel)

- AC C094
- Operator interface provided with AF C094 AEL
- Black and white display
- Single Language
- 8 line, 40 character display limit
- No trending of analog process signals i.e. DC current, DC voltage, primary voltage, etc.
- No trending of digital process signals i.e. common trip, main breaker status, firing angle, etc.

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