Atlas Max-RTL®

Multifunctional processing computer

Atlas Max-RTL® presents a modern multipurpose process computer for monitoring and control of the electric power facilities. The acquisition of needed process data is achieved through the direct management of the subordinated process equipment and I/O modules, including underlying protective devices. Therefore, an efficient control of the crucial parts of the power system could be fully accomplished. Finally, AtlasMax-RTL is SCADA compliant, providing full support toward higher-layer Control Centers.

Atlas Max-RTL® is ported on Real-Time Linux (RTL) platform, which allows complex system configurations with large number of manageable slave devices. The implemented standard network services (like telnet, SSH, FTP, SFTP, etc.) provide extraordinary portability and connectivity towards other advanced hardware platforms.

Full PLC (Programmable Logic Controller) support is provided through the existing FBD (Functional Block Diagram) and ST (Structured Text) editors and PLC debugger.

Technical characteristics

- I/O modules mounted in standard 6U 19" racks.
- Robust metal casing to reduce impact of electromagnetic interference
- Modular architecture, up to 12 modules in one 6U 19"rack
- Expanding capacity by adding racks with I / O modules
- Galvanic isolation of all input and output signals
- Support to standard industrial communication protocols
- Current and voltage effective value measurements
- Real time error detection
- Communication via GPRS modem and AMS1200
- PLC algorithm
- Recording Sequence of events (SOE) with 1 ms resolution using buffer of 16000 changes
- Relay digital outputs: single-stage and two-stage - SBO (Select Before Operate)
- Optofetic digital outputs
- Possibility of local/remote control
- LEDs on all modules for indication of acquisition process activity and error indication

CPU module Atlas XP2

- Processor AMD Geode LX800 (500MHz)
- Simultaneous communication with 4 master SCADA centres
- 2 x RS-232 port
- 1 x RS-422/485 port
- 2 x Ethernet port 10/100 Mbps
- 2 x USB port
- SSD - Compact Flash Type II
- VGA output
- Supported protocols:
  - IEC 60870-5-101 Master/Slave
  - IEC 60870-5-102 Master
  - IEC 60870-5-103 Master
  - IEC 60870-5-104 Client/Server
  - MODBUS RTU i TCP Master/Slave
  - MODBUS TCP Client/Server
  - SPA Master
  - ASEA/SINDAC 9000
  - RC1
  - ANSI C12.21
  - IEC 61850 Client/Server
  - DNP3 Master
  - Hart Master
  - Profibus Master
  - BACNET Master
  - GOOSE
  - NEO 2000 Master
  - FINS Master
- Distribution of exact time using GPS receiver
- Creating PLC algorithm using Function Block Diagram environment

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Modems

- GPRS
- AMS 1200 – analogue modem for communication with Motorola GM340 radio-station and similar types of radio-stations

Modules BIS32, BIS32W, DIS32, DBS32 – digital inputs

- 32 galvanically isolated inputs
- Voltage levels: 24VDC, 48VDC, 110VDC, 220VDC
- Acquisition period: 1 ms

Modules BOF32, BOF32W, DOF32 – opto-fet digital outputs

- 32 galvanically isolated outputs
- Command voltage: 24VDC, 48VDC

Module DOR16 – relay digital outputs

- 16 relay outputs
- Control voltage: 12VDC, 24VDC, 48VDC, 110 VDC, 220VDC, 230VAC
- Maximum allowed current per output: 100 mA
- Possibility to issue two-stage commands – Select Before Operate

Modules BAO08, AOS08 – current outputs

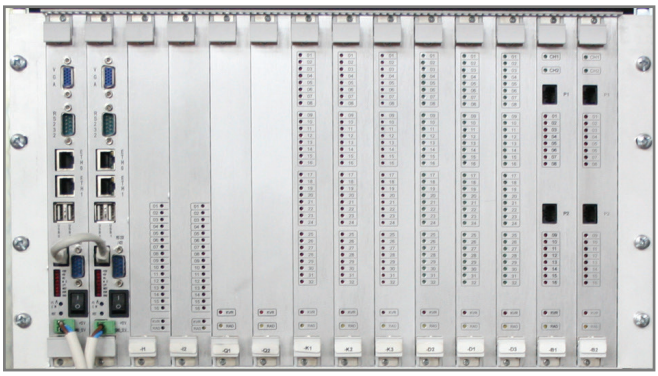
- 8 galvanically isolated outputs
- Range -20..20mA, 0..20mA, 4..20mA, -10..10mA, 0..10mA, -5..5 mA
- Maximum load per output: 500 Ω
- Minimum period of issuing output: 30ms
- Resolution: 12 bits

Modules BI16, I16, AIR16 – measurements of DC currents

- 16 galvanically isolated measurement channels
- Measurement range: -20..20mA, 0..40 mA, 0..20mA, 4..20mA, -10..10 mA, 0..10mA, 1..10 mA, 0..5 mA, -5..5 mA, -2.5..2.5mA
- Input resistance: 25 Ω
- Resolution: 16 bits
- Acquisition period: 20 ms

Modules BR16, R16 – resistance measurements

- 16 galvanically isolated measurement channels
- Probe types: Pt100, Pt200, Pt500, Pt1000, Cu10, Cu100, Cu53, Ni100, Ni120, Ni150
- Resolution: 16 bits
- Acquisition period: 200 ms



Modules BV16, V16 – voltage measurement

- 16 galvanically isolated measurement channels
- Measurement range: -1..1V, -0.5..0.5V, -0.1..0.1V, -50..50mV
- Thermocouple types: J, K, T, R, S, U, L, F, N, E, B
- Input resistance: more than 100MΩ
- Resolution: 16 bits
- Acquisition period: 200ms

Modules BPC02, BOP02 – frequency measurements and overspeed protection

- 2 galvanically isolated measurement channels
- Input signal voltage level: 12VDC – 48VDC
- 16 galvanically isolated outputs
- Measurement range: 0-5000 RPM
- Aquisition period: 1ms

Module UI3 – measurement of effective values of alternating voltage and current

- 3 galvanically isolated voltage measurement channels – 0..100 V AC
- 3 galvanically isolated current measurement channels – 0..5A AC (1A AC)

Power supply

- 100-240VDC (VAC) / 12VDC, 15A
- 100-240VDC (VAC) / 24VDC, 10A

UPS module Gaus GPSS24V300W

- Power supply 87-264VAC
- Output: 12VDC, 24VDC, 230VAC

Environmental conditions and compliance with standards

- Operating temperature: 0˚C do 50˚C
- Humidity: 5% - 95% non-condensing
- EMC in compliance with EN 61000-6-4, EN 61000-6-2, EN 61000-4

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