

The unit is connected with the rest of the system through two serial ports. One serial port could be optical or RS485 or RS232. The other one could be RS485 or RS232. TCP/IP connection is established with dedicated serial to Ethernet converter.

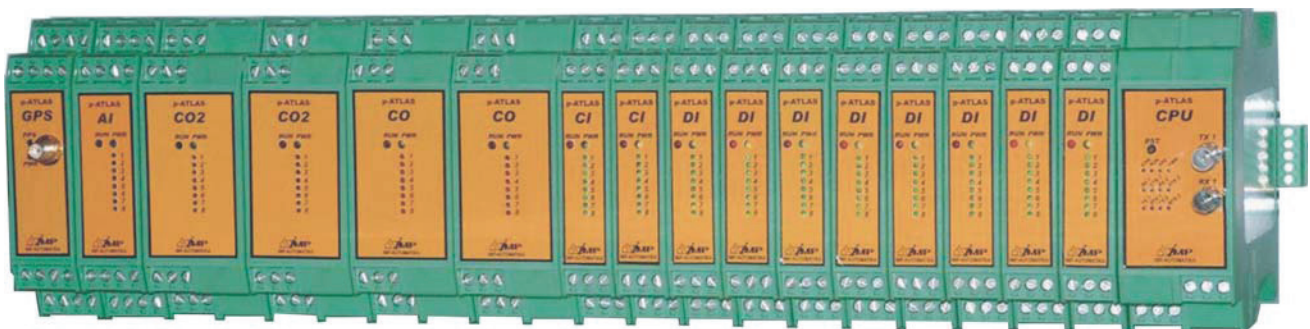
It supports IEC 6070-5-101 unbalanced and balanced slave protocol and MODBUS RTU master protocol.

PLC function is realized through specialized FBD (Function Block Diagram) editor. For station setup and basic monitoring special application called *pATLAS Setup and Monitoring* is used.

The piko Atlas® device is miniature modular remote terminal unit (RTU) for data acquisition and control, with possibility of PLC algorithm implementation. It consists of one master CPU module and several I/O slave modules, maximum 8 modules of each type. All modules are connected through I2C bus.

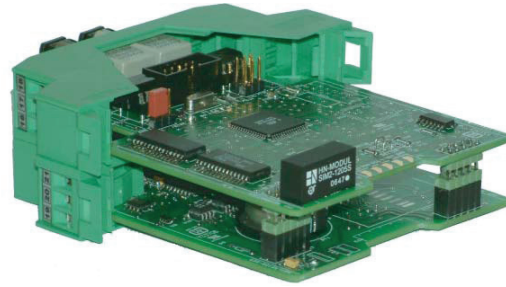
piko Atlas has these kinds of I/O slave modules:

- Digital Input Module that can be configured as simple digital inputs or counter digital inputs with 1ms synchronization for simple digital inputs (max. 8 digital input modules, 8 digital inputs per each module)
- Digital Output Module that can be configured as permanent duration commands, single-step pulse commands or two-step pulse commands.
- Analogue Current Input Module has 8 inputs that can be 0 to +20 mA or 0 to +10 mA.
- Analogue Current Input Module with 4 galvanic separated inputs with software configurable input range.
- Analogue Current Output Module has 2 outputs, 0 to 20 mA.
- Analogue Voltage Output Module, -10 to 10 V.
- GPS Module.



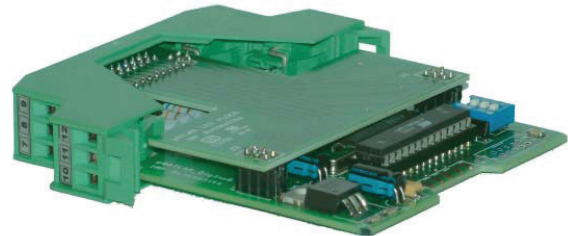
### CPU Module

- Atmel ATMEGA128 (ATMEGA2561) on 16 MHz
- 32 KB of FRAM memory
- real time clock
- 2 serial ports (optical and RS-485/RS-232)
- TCP/IP connection via serial to Ethernet converter
- input for external time synchronization from GPS receiver
- configuration and setup logged in SD card



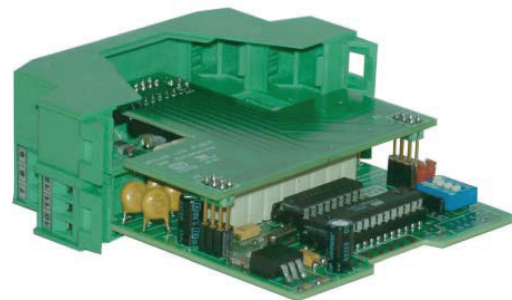
### Digital Input Module

- number of inputs: 8
- connection mode: in groups of 2 inputs
- interface type: optocoupler
- galvanic separation: 2 kV persistent and 5kV impulse between input and electronics
- input voltage:  $V_s = 24/48/220$  VDC



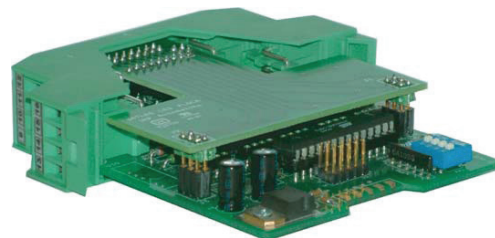
### Digital Output Module (CO-permanent, CO1-single-step pulse, CO2-two-step pulse)

- number of outputs: 8
- galvanic separation: 2 kV persistent and 5 kV impulse between output and electronics
- output specifications:
  - maximal voltage: 300 VDC, 250 VAC
  - maximal current: 4 A
- command pulse duration: from 100 ms to 25.5 s, selectable



### Analog Input Module (AI)

- number of inputs: 8
- connection type: single ended
- current input: 0 to 10 mA or 0 to 20 mA
- resolution: 12-bit
- sample rate: 110 Ks/ second
- input resistance: 205 Ohms (0-10mA) or 412 Ohms (0-20mA)
- common ground



### Module with galvanic separated analog inputs (AI4)

- number of inputs: 4
- input current: configured by software in range from -20 mA to 20 mA
- resolution: 21-bit
- sample rate: 12.5 s/ second
- input resistance: 50 Ohms
- all channels with separate ground

### Analog Current Outputs Module

- number of outputs: 2
- galvanic separation: 1 kV between input and electronics
- output current: 0 to 10 mA or 0 to 20 mA
- maximum load resistance: 500 Ohms

### Analog Voltage Outputs Module

- number of outputs: 4
- galvanic separation: 1 kV between input and electronics
- output voltage: -10 to 10 V

### GPS Module

- protocols: NMEA, TSIP, TAIP, IRIGB
- synchronization pulse: PPS, PPM, PPH on RS-485 or TTL level
- serial connection: RS-232/RS-485

### I2C Termination

- active termination of I2C bus

### Power Supply

- +12V DC
- consumption: 1.5 A for +12 V

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