



RS-232/485



- Programmable logic controller (PLC), free programming environment CODESYS®
- Programming according to INTERNATIONAL STANDARD IEC 61131-3
- Embedded GSM 2G/4G modem
- Dual-SIM technology (passive) – access to 2 independent GSM networks ensures superior availability
- Ethernet port 10Base-T/100Base-TX
- RS-232/485 serial port for external devices (galvanic isolation)
- Diagnostic LEDs
- Redundant power inputs
- Real Time Clock (RTC)
- Data logger with 0.1 sec. resolution
- Standard communication protocols (Modbus RTU, Modbus TCP, Transparency)
- FlexSerial - programmable handling of non-standard serial protocols
- Remote configuration, programming, diagnostics and firmware upgrade (OTA)
- Industrial design, DIN rail mounting, screw terminals
- 3-year warranty



Telemetry module MT-221 allows wireless integration of measuring devices, PLC controllers, inputs/outputs systems, operator panels (equipped with a RS-232/485 communication port or Ethernet port) through 2G/LTE network. CODESYS combines advanced technical features with easy to use environment. Module can operate as local Master querying periodically an external device for user defined recourses. MT-221 creates mirror of the external resources in the memory and detects alarms, state changes and fulfilled logic conditions incorporating raw and calculated values. Received data can be locally analyzed based on user program. The module can work with master system directing data packets with queries or commands to its defined serial port or Ethernet port.

Module can be powered with two redundant direct voltage sources (11-30 V). In addition to communication and computing functions, MT-221 module allows you to record large amounts of data.

Industrial design, galvanic isolation, carefully adjusted technical parameters and easy to use configuration tools are important advantages, which makes MT-221 an optimal solution for demanding wireless telemetry, control, diagnostic and surveillance systems.

## Resources

- CODESYS RUNTIME SYSTEM (RTS) 256 kB FLASH memory, 32 kB RAM
- Creating user programs using free CODESYS Development System (in accordance with IEC 61131-3 with debug option)

- Creating projects with a distributed structure of controllers with the ability to share data built into CODESYS RTS
- Integral, global communication modem 2G/4G
- Ethernet port
- Optoisolated RS-232/485 serial port for external devices (monitoring, diagnostics)
- 2 power inputs
- Internal non-volatile memory for configuration data with remote update option
- Data and event logger in Flash memory (8 MB)
- Dual-SIM
- Real Time Clock (RTC)
- Diagnostic LEDs
- USB-C port for configuration

## Functionality

- Transmission modes
  - » 2G/4G - packet transmission
  - » SMS
  - » Ethernet
- Access to module resources using standard MODBUS protocols
- Packet transmission from/to devices connected by serial port
- Intelligent packet routing and Multimaster support in MODBUS mode
- Transparent mode packet sending
- Event based transmission (unsolicited messaging) triggered by change of binary input state, internal flag state, by reaching alarm level of analog input

- Dynamic fields in SMS text
- Unauthorized access protection in the form of authorized phone numbers and IP addresses list (optionally a configuration password)
- Configurable SMS messages triggered by events, internal flags and scheduled
- Data logger with 0.1 sec. resolution
- Remote configuration and programming over network
- Intuitive configuration tools
- Easy service center software integration
- LEDs (module status, GSM communication activity, GSM signal level, DATA activity, serial communication activity, USB-C port activity, Ethernet port activity, power supply input)
- Detachable terminal blocks
- Supply voltage 12/24 V DC
- DIN rail mounting

### General

|                        |                  |
|------------------------|------------------|
| Dimensions (L x W x H) | 105 x 86 x 59 mm |
| Weight                 | 205 g            |
| Fixing                 | DIN Rail 35mm    |
| Operating temperature  | -25°C to +55 °C  |
| Protection class       | IP 20            |

### Modem

|                        |                         |
|------------------------|-------------------------|
| Modem type 4G Cat 1/2G | SIMCOM A7672E           |
| Region                 | Europe, Asia            |
| 2G                     | 900, 1800 MHz           |
| 4G (LTE Cat 1)         | B1, B3, B5, B7, B8, B20 |
| Antenna socket         | 50 Ω, SMA-F             |

### Power supply

|                             |              |        |       |
|-----------------------------|--------------|--------|-------|
| DC (nom. 12 V / 24 V)       | 11 – 30 V DC |        |       |
| Input current (typ.) @ 25°C | Idle         | Active | Max.  |
| 12 V DC                     | 0,04 A       | 0,1 A  | 1,0 A |
| 24 V DC                     | 0,02 A       | 0,05 A | 0,5 A |

### Drawings and dimensions (all dimensions in millimeters)

