






















INVENTIA Telemetry & Localization Modules, Expanders & Converters

| MODEL | MT-020 Telemetry Module | MT-021 Telemetry Module | MT-051 Telemetry Module | MT-100 Telemetry Module | MT-101 Telemetry Module | MT-101 3G Telemetry Module | MT-102 Telemetry Module | MT-151 LED Telemetry Module | MT-151 HMI Telemetry Module | MT-202 Telemetry Module | MT-251 Telemetry Module | MT-331 Telemetry Module | MT-512 Telemetry Module | MT-713 Telemetry Module | MT-723 Telemetry Module | MT-723 PT Telemetry Module | MT-UPS-1 Telemetry Module | ML-231 Localization Module | ML-931 Localization Module | EX-101 Expander | RM-120 Converter RS232/M-Bus | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------------------|
| FEATURES |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| I/O Resources | | | | | | | | | | | | | | | | | | | | | | |
| Binary inputs | 0...4 ¹⁾ | 0...4 ¹⁾ | 5 | 8...16 ¹⁾ | 8...16 ¹⁾ | 8...16 ¹⁾ | 0...8 ¹⁾ | 0...28 ¹⁾ | 0...28 ¹⁾ | – | 0...1 ¹⁾ | 0...8 ¹⁾ | 8 | 5 | 5 | 5 | – | 5 | – | 8...16 ¹⁾ | – | |
| Binary outputs | 2 | 4 | – | 0...8 ¹⁾ | 0...8 ¹⁾ | 0...8 ¹⁾ | 0...8 ¹⁾ | 0...12 ¹⁾ | 0...12 ¹⁾ | – | 0...1 ¹⁾ | 0...4 ¹⁾ | 2 | 2 | 2 | 2 | – | 2 | 1 | 0...8 ¹⁾ | – | |
| Counter inputs | 0...4 ^{1,4)} | 0...4 ^{1,4)} | 5 | 8...16 ^{1,2)} | 8...16 ^{1,2)} | 8...16 ^{1,2)} | 0...8 ^{1,2)} | 0...16 ¹⁾ | 0...16 ¹⁾ | – | 0...1 ¹⁾ | 0...6 ¹⁾ | 8 | 5 ³⁾ | 5 ³⁾ | 5 ³⁾ | – | 2 ^{1,2)} | – | 8...16 ^{1,2)} | – | |
| Analog inputs | 2 | 2 | – | 2 | 2 | 2 | 6 | 6 | 6 | – | – | 0...2 ¹⁾ | – | 3 | 3 | 3 ¹⁴⁾ | – | 2 ¹⁵⁾ | – | 2 | – | |
| 1-wire input | 2 | 2 | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | YES | – | – | – | |
| Real Time Clock (RTC) | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | – | – | |
| Ethernet Port | – | – | – | – | – | – | – | YES | YES | – | YES | – | – | – | – | – | – | – | – | – | – | |
| Serial port RS232/422/485 | – | – | – | 1(1/0/0/0) | 2(2/1/1/0) | 2(2/1/1/0) | 2(2/1/1/0) | 2(1/0/1/1) | 2(1/0/1/1) | 2(2/1/1/0) | 2(1/0/1/0) | – | 1 | 1(0/0/1/0) | – | – | – | – | 1(0/0/0/1) ⁸⁾ | 1(0/0/0/1) ⁸⁾ | 2(2/1/1/0) | 1 ¹²⁾ |
| Voice channel | – | – | – | – | – | – | – | – | – | – | – | – | YES | – | – | – | – | – | YES ⁸⁾ | – | – | – |
| Functionality | | | | | | | | | | | | | | | | | | | | | | |
| Local configuration via RS232/USB | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | – | YES | – | |
| Remote configuration over GPRS | YES | YES | YES ⁹⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES ⁹⁾ | YES ⁹⁾ | YES ⁹⁾ | – | YES | YES ⁹⁾ | – | – | |
| Unsolicited messaging | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | YES | – | |
| Data packet sending | YES | YES ¹⁰⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | YES | – | |
| SMS sending | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | – | – | |
| User programming (lines of code limit) | – | – | – | 100 | 1024 | 1024 | 1024 | 5000 | 5000 | 1024 | 5000 | – | – | – | – | – | – | – | – | 1000 | – | |
| Standard serial protocols | – | – | – | – | YES ⁵⁾ | YES ⁵⁾ | YES ⁵⁾ | YES ⁵⁾ | YES ⁵⁾ | YES ⁵⁾ | YES ⁵⁾ | – | YES ⁸⁾ | – | – | – | – | – | YES | YES ⁸⁾ | YES ¹¹⁾ | – |
| Data packet routing | – | – | – | – | YES | YES | YES | YES | YES | YES | YES | – | – | – | – | – | – | – | – | – | – | |
| Manual alarm setting for analog inputs | – | – | – | – | YES | YES | YES ⁷⁾ | – | YES | – | – | – | – | – | – | – | – | – | – | – | YES | |
| Number of analog input alarm levels | 4 | 4 | 4 | 4 | 6 | 6 | 4/6 | 4 | 4 | – | 4 | 4 | – | 4 | 4 | 4 | – | 4 | – | 6 | – | |
| Remote read/write with SMS | YES | YES | YES ¹⁶⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES ¹⁶⁾ | YES | YES ¹⁶⁾ | YES ¹⁶⁾ | YES ¹⁶⁾ | – | YES | YES ¹⁶⁾ | – | – | |
| Access control ⁶⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | YES | – | |
| Local mirroring of external resources | – | – | – | – | YES | YES | YES | YES | YES | YES | YES | – | – | – | – | – | – | – | – | – | – | |
| Datalogger | YES ¹⁸⁾ | YES ¹⁸⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES ⁸⁾ | YES | YES | YES | – | YES | YES | YES | – | |
| MT-DP compatibility (OPC, CSV, ODBC) | YES | YES ¹⁰⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | YES | – | |
| Remote firmware upgrade over GPRS | YES | YES ¹⁰⁾ | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | – | – | |
| Other | | | | | | | | | | | | | | | | | | | | | | |
| Integral GSM/GPRS modem | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | – | – | |
| SIM cards | SIM/MIM | SIM | SIM/μSIM/MIM | SIM | SIM | SIM | SIM | 2xSIM/MIM | 2xSIM/MIM | SIM | 2xSIM/MIM | SIM/MIM | SIM | SIM/MIM | SIM | SIM | – | SIM/MIM | SIM | – | – | |
| 3G network support | YES ⁸⁾ | – | – | – | YES ⁸⁾ | YES | – | YES ⁸⁾ | YES ⁸⁾ | – | YES ⁸⁾ | – | – | – | – | – | – | – | – | – | – | |
| Integral GPS receiver | – | – | – | – | – | – | – | – | – | – | – | – | – | YES ⁸⁾ | YES ⁸⁾ | YES ⁸⁾ | – | YES | YES | – | – | |
| Integrated sensor T/H/P | P ⁸⁾ | – | T | – | – | – | – | T | T | – | – | T ⁸⁾ /H ⁸⁾ /P ⁸⁾ | – | T/H ⁸⁾ | T | T/P | – | T | T | – | – | |
| DC power supply (V)/solar panel (PV) | 9...30 | 9...30 | – | 9...30 | 10,8...36 | 10,8...36 | 10,8...36 | 10,8...36 | 10,8...36 | 10,8...36 | 18...55 | 9...30/PV | 9...30 | – | 7...30 | 7...30 | 21,6...42/PV | 9...30 | 2...5 | 10,8...36 | 21,6...42 | |
| AC power supply (Vrms) | 12...18 | – | – | – | 18...26,4 | 18...26,4 | 18...26,4 | – | – | 18...26,4 | – | – | – | – | – | – | – | – | – | 18...26,4 | – | |
| Power supply for external sensors (V) | 12/20 | – | – | – | – | – | – | – | – | – | – | 5...24 | – | 0...5/15 ⁸⁾ /24 ⁸⁾ | 0...5 | 0...5 | – | – | – | – | – | |
| Power supply monitoring input | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | YES/– | – | YES/– | YES/YES | YES/YES | – | YES/– | YES/YES | YES/– | – | |
| Rechargeable battery int./ext. | ext. | – | – | – | – | – | – | ext. | ext. | – | ext. | int. | – | – | – | – | – | ext. | – | – | – | |
| Internal battery supply | – | – | 3/6/9xR20 | – | – | – | – | – | – | – | – | – | – | 3/6xR20 | 3/6xR20 | 1xR14 ¹³⁾ | – | – | YES ⁸⁾ | – | – | |
| Low power operation modes | – | – | YES | – | – | – | – | – | – | – | – | YES | – | YES | YES | YES | – | YES | YES | – | – | |
| External antenna connector | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | – | – | – | |
| Protection class | IP40 | IP40 | IP67 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP67 | IP68 | IP68 | IP40 | IP40 | IP54 | IP40 | IP40 | |
| Operating temperature range (°C) | -20...+55 | -20...+55 | -20...+60 | -20...+65 | -20...+65 | -20...+55 | -20...+65 | -20...+65 | -20...+65 | -20...+55 | -20...+55 | 0...+55 ¹⁹⁾ | -20...+55 | -20...+55 | -20...+55 | -20...+55 | -20...+55 | -20...+55 | -20...+55 | -20...+55 | -20...+65 | -20...+55 |
| Removable terminal blocks | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | YES | YES | YES | YES | – | – | YES | – | – | YES | YES | |
| DIN rail mounting | YES | YES | – | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | – | – | – | YES | – | – | YES | YES | |
| Warranty | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years ¹⁷⁾ | 3 years | 3 years | 3 years | 3 years | 3 years | 3 years ⁸⁾ | 3 years ⁸⁾ | 3 years | 2 years | |
| Built-in device | – | – | – | – | – | – | – | – | display | – | – | – | – | – | – | – | – | – | accelerometer | accelerometer | – | – |

1) number of binary inputs/outputs and counter inputs is configurable
 2) fmax = 100Hz
 3) fmax = 250Hz

4) fmax = 1kHz
 5) Modbus RTU Master/Slave, transparent mode, other...
 6) password + internal list of authorized IP and telephone numbers

7) for 2 inputs
 8) option
 9) requires MTSpooler
 10) in new version since Q3 2012

11) if connected to MT-101/102/202
 12) RS-232 to M-Bus converter
 13) external battery pack required
 14) one dedicated input for pressure measurement

15) voltage measurement, peak detector, differential measurement
 16) module is not receiving SMS asleep
 17) battery 1 year

18) device status recorder
 19) or -20...+55°C - depending on the version of the internal battery