

Comparison table of telemetry and location modules, expanders and converters

MODULE	MT-020 Telemetry Module	MT-021 Telemetry Module	MT-051 Telemetry Module	MT-101 Telemetry Module	MT-102 Telemetry Module	MT-151 LED v2 Telemetry Module
FEATURES						
I/O Resources	End of Life	End of Life		End of Life	End of Life	
Binary inputs	0 – 4 ¹⁾	0 – 4 ¹⁾	5	8 – 16 ¹⁾	0 – 8 ¹⁾	16 – 28 ¹⁾
Binary outputs	2	4	-	0 – 8 ¹⁾	0 – 8 ¹⁾	0 – 12 ¹⁾
Counter inputs	0 – 4 ^{1,4)}	0 – 4 ^{1,4)}	5	8 – 16 ^{1,2)}	0 – 8 ^{1,2)}	0 – 4 ¹⁾
Analog inputs	2	2	-	2	6	6
1-wire input	2	2	1 ⁸⁾	-	-	-
Real Time Clock (RTC)	YES	YES	YES	YES	YES	YES
Ethernet Port	-	-	-	-	-	YES
Serial port RS232/422/485	-	-	-	2(2/1/1/0)	2(2/1/1/0)	2(1/0/1/1) ⁸⁾
Voice channel	-	-	-	-	-	-
Functionality	End of Life	End of Life		End of Life	End of Life	
Local configuration via RS232/USB/ETH	-/+/-	-/+/-	-/+/-	+/-/-	+/-/-	-/+/+
Remote configuration over GPRS	YES	YES	YES ⁹⁾	YES	YES	YES
Unsolicited messaging	YES	YES	YES	YES	YES	YES
Data packet sending	YES	YES	YES	YES	YES	YES
SMS sending	YES	YES	YES	YES	YES	YES
User programming (lines of code limit)	-	-	-	1024	1024	5000
Standard serial protocols	-	-	-	YES ⁵⁾	YES ⁵⁾	YES ⁵⁾
Data packet routing	-	-	-	YES	YES	YES
Manual alarm setting for analog inputs	-	-	-	YES	YES ⁷⁾	-
Number of analog input alarm levels	4	4	4	6	4/6	4
Remote read/write with SMS	YES	YES	YES ¹⁶⁾	YES	YES	YES
Access control ⁶⁾	YES	YES	YES	YES	YES	YES
Local mirroring of external resources	-	-	-	YES	YES	YES
Datalogger	YES ¹⁸⁾	YES ¹⁸⁾	YES	YES	YES	YES
MT-DP compatibility (OPC, CSV, ODBC)	YES	YES	YES	YES	YES	YES
Remote firmware upgrade over GPRS	YES	YES	YES	YES	YES	YES
Other	End of Life	End of Life		End of Life	End of Life	
Integral GSM/GPRS modem	YES	YES	YES	YES	YES	YES
SIM cards	SIM/MIM ⁸⁾	SIM	SIM/μSIM/MIM ⁸⁾	SIM	SIM	2xSIM/MIM ⁸⁾
2G/3G/4G network support	+/-/ ⁸⁾	+/-/-	+/-/-	+/-/+	+/-/+	+/-/+ ⁸⁾
Integral GPS receiver	-	-	-	-	-	-
Integrated sensor T/H/P	p ⁸⁾	-	T	-	-	T
DC power supply (V)/solar panel (PV)	9 – 30	9 – 30	-	10,8 – 36	10,8 – 36	10,8 – 30
AC power supply (Vrms)	12 – 18	-	-	18 – 26,4	18 – 26,4	-
Power supply for external sensors (V)	12/20	-	-	-	-	-
Power supply monitoring input	YES/-	YES/-	YES/-	YES/-	YES/-	YES/-
Rechargeable battery int./ext.	ext.	-	-	-	-	ext.
Internal battery supply	-	-	3/6/9xR20	-	-	-
Low power operation modes	-	-	YES	-	-	-
External antenna connector/ISM	YES	YES	YES	YES	YES	YES
Protection class	IP 40	IP 40	IP 67	IP 40	IP 40	IP 40
Operating temperature range (°C)	-20...+55	-20...+55	-20...+60	-20...+65	-20...+65	-20...+65
Removable terminal blocks	YES	YES	YES	YES	YES	YES
DIN rail mounting	YES	YES	-	YES	YES	YES
Warranty	3 years	3 years	3 years	3 years	3 years	3 years
Built-in device	-	-	-	-	-	-

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) lithium batteries -30...+65 °C
 11) if connected to MT-101/102/202
 12) RS-232 to M-Bus converter
 13) external battery pack required

MODULE	MT-151 HMI v2 Telemetry Module	MT-156 HMI Telemetry Module	MT-202 Telemetry Module	MT-331 Telemetry Module	MT-512 Telemetry Module	MT-651 Telemetry Module
FEATURES						
I/O Resources			End of Life			
Binary inputs	16 – 28 ¹⁾	0 – 12 ¹⁾	-	0 – 8 ¹⁾	8	2
Binary outputs	0 – 12 ¹⁾	0 – 12 ¹⁾	-	0 – 4 ¹⁾	2	2 ²²⁾
Counter inputs	0 – 4 ¹⁾	-	-	0 – 6 ¹⁾	8	-
Analog inputs	6	10	-	0 – 2 ¹⁾	-	6 ²³⁾
1-wire input	-	1	-	1	-	-
Real Time Clock (RTC)	YES	YES	YES	YES	YES	YES
Ethernet Port	YES	YES	-	-	-	-
Serial port RS232/422/485	2(1/0/1/1) ⁸⁾	3(2/0/1/0/1) ²⁵⁾	2(2/1/1/0)	-	1(1/0/1 ⁸⁾ /0)	1(0/0/1/0)
Voice channel	-	-	-	-	YES	-
Functionality			End of Life			
Local configuration via RS232/USB/ETH	-/+/+	-/+/+	+/-/-	-/+/-	-/+/-	-/+/-
Remote configuration over GPRS	YES	YES	YES	YES	YES	YES
Unsolicited messaging	YES	YES	YES	YES	YES	YES
Data packet sending	YES	YES	YES	YES	YES	YES
SMS sending	YES	YES	YES	YES	YES	YES
User programming (lines of code limit)	5000	5000	1024	-	-	-
Standard serial protocols	YES ⁵⁾	YES ⁵⁾	YES ⁵⁾	-	YES ⁸⁾	YES ⁵⁾
Data packet routing	YES	YES	YES	-	-	-
Manual alarm setting for analog inputs	-	-	-	-	-	YES
Number of analog input alarm levels	4	4	-	4	-	6
Remote read/write with SMS	YES	YES	YES	YES ¹⁶⁾	YES	YES
Access control ⁶⁾	YES	YES	YES	YES	YES	YES
Local mirroring of external resources	YES	YES	YES	-	YES	-
Datalogger	YES	YES	YES	YES	YES ⁸⁾	YES
MT-DP compatibility (OPC, CSV, ODBC)	YES	YES	YES	YES	YES	YES
Remote firmware upgrade over GPRS	YES	YES	YES	YES	YES	YES
Other			End of Life			
Integral GSM/GPRS modem	YES	YES	YES	YES	YES	YES
SIM cards	2xSIM/MIM ⁸⁾	2xSIM/MIM ⁸⁾	SIM	SIM/MIM ⁸⁾	SIM	2xSIM
2G/3G/4G network support	+/-/+ ⁸⁾	+/-/+	+/-/+	+/-/+ ⁸⁾	+/-/+	+/-/+
Integral GPS receiver	-	-	-	-	-	YES
Integrated sensor T/H/P	T	T	-	T/H ⁸⁾ /P ⁸⁾	-	T
DC power supply (V)/solar panel (PV)	10,8 – 30	10,8 – 30	10,8 – 36	9 – 30/PV	9 – 30	7 – 30
AC power supply (Vrms)	-	-	18 – 26,4	-	-	-
Power supply for external sensors (V)	-	-	-	7 – 24	-	-
Power supply monitoring input	YES/-	YES/-	YES/-	YES/-	YES/-	-
Rechargeable battery int./ext.	ext.	ext.	-	int.	-	-
Internal battery supply	-	-	-	-	-	YES
Low power operation modes	-	-	-	YES	-	YES
External antenna connector/ISM	YES	YES	YES	YES	YES	YES
Protection class	IP 40	IP 40	IP 40	IP 40	IP 40	IP 65
Operating temperature range (°C)	-20...+65	-20...+65	-20...+65	0...+55 ¹⁹⁾	-20...+55	-20...+55
Removable terminal blocks	YES	YES	YES	YES	YES	YES
DIN rail mounting	YES	YES	YES	YES	YES	YES ⁸⁾
Warranty	3 years	3 years	3 years	3 years ¹⁷⁾	3 years	3 years
Built-in device	display	display	-	-	-	accelerometer

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
 20) Li-Ion
 21) GSM i GPS

22) Output 1 for control external bistable relay
 23) 2 optoisolated groups of analog inputs: 2x10/100 V and 200 mV input with 1 μV resolution
 24) dedicated cable needed
 25) M-BUS

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MODULE	MT-652 Telemetry Module	MT-713 v3 Telemetry Module	MT-723 Telemetry Module	MT-723 PT Telemetry Module	ML-231 Location Module	ML-941 Location Module	EX-101 Expander
FEATURES							
I/O Resources							End of Life
Binary inputs	2	5	6	6	5	–	8 – 16 ¹⁾
Binary outputs	2	2	2	2	2	1	0 – 8 ¹⁾
Counter inputs	–	5 ³⁾	5 ³⁾	5 ³⁾	2 ^{1,2)}	–	8 – 16 ^{1,2)}
Analog inputs	6 ²³⁾	3	3	3 ¹⁴⁾	2 ¹⁵⁾	–	2
1-wire input	–	–	–	–	YES	–	–
Real Time Clock (RTC)	YES	YES	YES	YES	YES	YES	–
Ethernet Port	–	–	–	–	–	–	–
Serial port RS232/422/485	1(0/0/1/0)	1(0/0/1 ⁸⁾ /0)	–	–	1(0/0/0/1 ⁸⁾	1(0/0/0/1 ⁸⁾	2(2/1/1/0)
Voice channel	–	–	–	–	YES ⁸⁾	–	–
Functionality							End of Life
Local configuration via RS232/USB/ETH	-/+/-	-/+/-	-/+/-	-/+/-	-/+ ²⁴⁾ /-	-/+ ²⁴⁾ /-	+/-/-
Remote configuration over GPRS	YES	YES ⁹⁾	YES ⁹⁾	YES ⁹⁾	YES	YES ⁹⁾	–
Unsolicited messaging	YES	YES	YES	YES	YES	YES	YES
Data packet sending	YES	YES	YES	YES	YES	YES	YES
SMS sending	YES	YES	YES	YES	YES	YES	–
User programming (lines of code limit)	–	uProg (32 lines)	uProg (32 lines)	–	–	–	1000
Standard serial protocols	YES ⁵⁾	YES ⁸⁾	–	–	YES	YES ⁸⁾	YES ¹¹⁾
Data packet routing	–	–	–	–	–	–	–
Manual alarm setting for analog inputs	YES	–	–	–	–	–	YES
Number of analog input alarm levels	6	4	4	4	4	–	6
Remote read/write with SMS	YES	YES ¹⁶⁾	YES ¹⁶⁾	YES ¹⁶⁾	YES	YES ¹⁶⁾	–
Access control ⁶⁾	YES	YES	YES	YES	YES	YES	YES
Local mirroring of external resources	–	YES	–	–	–	–	–
Datalogger	YES	YES	YES	YES	YES	YES	YES
MT-DP compatibility (OPC, CSV, ODBC)	YES	YES	YES	YES	YES	YES	YES
Remote firmware upgrade over GPRS	YES	YES	YES	YES	YES	YES	–
Other							End of Life
Integral GSM/GPRS modem	YES	YES	YES	YES	YES	YES	–
SIM cards	2xSIM	SIM/MIM ⁸⁾	SIM	SIM	SIM/MIM ⁸⁾	SIM	–
2G/3G/4G network support	+/-/-	+/+/ ⁺ NB-IoT, LTE Cat M1	+/-/-	+/-/-	+/-/-	+/-/-	-/-/-
Integral GPS receiver	YES	YES ⁸⁾	YES ⁸⁾	YES ⁸⁾	YES	YES	–
Integrated sensor T/H/P	T	T	T	T	T	T	–
DC power supply (V)/solar panel (PV)	7 – 30	9 – 30 ⁸⁾	7 – 30	7 – 30	9 – 30	2 – 5	10,8 – 36
AC power supply (Vrms)	–	–	–	–	–	–	18 – 26,4
Power supply for external sensors (V)	–	0–5/15 ⁸⁾ /24 ⁸⁾	0 – 5	0 – 5	–	–	–
Power supply monitoring input	–	YES/–	YES/YES	YES/YES	YES/–	YES/YES	YES/–
Rechargeable battery int./ext.	int. ²⁰⁾	–	–	–	ext.	–	–
Internal battery supply	–	3/6xR20	1xR14 ¹³⁾	1xR14 ¹³⁾	–	YES ⁸⁾	–
Low power operation modes	YES	YES	YES	YES	YES	YES	–
External antenna connector/ISM	YES ²¹⁾	YES	YES	YES	YES	–	–
Protection class	IP 65	IP 67	IP 68	IP 68	IP 40	IP 54	IP 40
Operating temperature range (°C)	-20...+55	-20...+55 ¹⁰⁾	-20...+60	-20...+60	-20...+55	-20...+55	-20...+65
Removable terminal blocks	YES	YES	–	–	–	–	YES
DIN rail mounting	YES ⁸⁾	–	–	–	–	–	YES
Warranty	3 years	3 years	3 years	3 years	3 years	3 years ⁸⁾	3 years
Built-in device	accelerometer	BLE, ext. OLED	–	–	accelerometer	accelerometer	–

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

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 6) password + internal list of authorized IP and telephone numbers
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9) requires MTSpooler
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MODULE	RM-120 RS232-M-Bus Converter	MT-UPS-1 Telemetry Module	IOT-RT-01 IOT Sensor	IOT-RTH-01 IOT Sensor	IOT-RG-01 IOT Gateway	IOT-RG-02 IOT Gateway	IOT-TST-01 IOT Tester
FEATURES							
I/O Resources							
Binary inputs	–	–	–	–	–	–	–
Binary outputs	–	–	–	–	–	–	–
Counter inputs	–	–	–	–	–	–	–
Analog inputs	–	–	–	–	–	–	–
1-wire input	–	–	–	–	–	–	–
Real Time Clock (RTC)	–	–	YES	YES	–	–	YES
Ethernet Port	–	–	–	–	–	–	–
Serial port RS232/422/485	1 ¹²⁾	–	–	–	1(1/0/0/0)	1(0/0/1/0)	–
Voice channel	–	–	–	–	–	–	–
Functionality							
Local configuration via RS232/USB/ETH	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-
Remote configuration over GPRS	–	–	–	–	–	–	–
Unsolicited messaging	–	–	–	–	–	–	–
Data packet sending	–	–	–	–	–	–	–
SMS sending	–	–	–	–	–	–	–
User programming (lines of code limit)	–	–	–	–	–	–	–
Standard serial protocols	–	–	–	–	–	–	–
Data packet routing	–	–	–	–	–	–	–
Manual alarm setting for analog inputs	–	–	–	–	–	–	–
Number of analog input alarm levels	–	–	–	–	–	–	–
Remote read/write with SMS	–	–	–	–	–	–	–
Access control ⁶⁾	–	–	–	–	–	–	–
Local mirroring of external resources	–	–	–	–	–	–	–
Datalogger	–	–	–	–	–	–	–
MT-DP compatibility (OPC, CSV, ODBC)	–	–	–	–	–	–	–
Remote firmware upgrade over GPRS	–	–	–	–	–	–	–
Other							
Integral GSM/GPRS modem	–	–	–	–	–	–	–
SIM cards	–	–	–	–	–	–	–
2G/3G/4G network support	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-
Integral GPS receiver	–	–	–	–	–	–	–
Integrated sensor T/H/P	–	–	T	T/H	–	–	–
DC power supply (V)/solar panel (PV)	21,6 – 42	21,6 – 42/PV	–	–	5 – 30	5 – 30	–
AC power supply (Vrms)	–	–	–	–	–	–	–
Power supply for external sensors (V)	–	–	–	–	–	–	–
Power supply monitoring input	–	–	–	–	–	–	–
Rechargeable battery int./ext.	–	ext.	–	–	–	–	int. ²⁰⁾
Internal battery supply	–	–	YES	YES	–	–	–
Low power operation modes	–	YES	YES	YES	–	–	–
External antenna connector/ISM	–	–	–	–	YES	YES	–
Protection class	IP 40	IP 40	IP 30	IP 30	IP 40	IP 40	IP 30
Operating temperature range (°C)	-20...+55	-20...+55	-20...+60	-20...+60	-20...+60	-20...+60	-20...+60
Removable terminal blocks	YES	YES	–	–	YES	YES	–
DIN rail mounting	YES	YES	–	–	–	–	–
Warranty	3 years	3 years	3 years	3 years	3 years	3 years	3 years
Built-in device	–	–	–	–	–	–	display

1) one dedicated input for pressure measurement
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