

MTx Sensor



Designation of MT Sensors are temperature measurements of devices like motors, controllers, batteries and other model accessories. Presentation of the measured data is realized by the JETIBOX terminal and the wireless information transfer is ensued with aid of the DUPLEX 2,4GHz system.

The Duplex System takes advantage of the 2,4GHz-Band for communication which allows not only the transfer of remote control data to the model, but also in the opposite direction to the transmitter. The telemetric data measured during operation are transmitted in real time and the actual state of the data can be depicted on the JETIBOX LCD-display. The MT unit records minimum and maximum temperatures of the individual sensors and delivers besides that their actual values.

The JETIBOX terminal takes care of parameter adjustments as well as of indications of measured data.

The MT device consists of two parts. In the first instance of the MT module itself, which is recording the data measured by temperature sensors connected to the MT module, which on the other hand can be connected to the JETIBOX, to a receiver or to an Expander of the DUPLEX system. Keep an eye on the temperatures of the module and sensors in order not to expose them to temperatures higher than allowable – see technical data table.

The MT module allows triggering of acoustic alerts by the individual sensors. These alerts can report of temperature limit violations by too high or too low temperatures exceeding adjusted limits. The acoustic signal is generated by the transmitter module DUPLEX Tx which contains a small siren. The signals are differentiated by Morse codes in order to be able to distinguish between the individual types of alerts referring to individual sensors. The acoustic signalling of parameter violations will be generated even if there is no JETIBOX available. With a connected JETIBOX there will be an indication on its display showing which parameter has been violated. If several parameters have been violated at the same time the alert sounds change consecutively as well as the indications in the JETIBOX LCD-display.

Technical Data	MT125	MT300
Dimensions	19 x 14 x 4 mm	19 x 14 x 4 mm
Weight (without cables)	10 g (4 g)	6 g (3 g)
Number of Temperature Sensors	2	2
Temperature Sensor Range	- 55°C +125°C	- 40°C +300°C
Measuring Accuracy	0,5 °C	5 °C
MT-Module Operation Temperature	- 10°C to + 85° C	- 10°C to + 85° C
Supply Voltage	3,5 – 8,4V	3,5 – 8,4V
MT-Module & Sensor intrinsic consumption	7 mA	20 mA

Connection of the MT-Module: see Figs. on page 3 and 4.

1. The triple core cable with JR plug can be connected directly to the JETIBOX (socket with the coding pulse, +, -). A supply voltage of 5-8,4V must be connected to the second JETIBOX input coded with (+, -). The wireless data transfer is not working when wired up this way and measuring data are directly shown in the JETIBOX LCD display. This setup does not allow alert triggering due to the fact that the siren is a component of the transmitter module which is in that case not connected. Alert reports will be shown on the LCD-display only.
2. Connect the triple core cable of the MT-Module with JR plug to the socket on the back side of the DUPLEX-receiver (coded with Ext.). The current supply for the MT-Module is delivered by the receiver. In order to adjust MT-Module parameters connect the JETIBOX to the transmitter module and switch on the DUPLEX receiver and transmitter.
3. Connect the triple core cable of the MT-Module with JR plug to one of the EXPANDER inputs. The Expander allows connection of several telemetry sensors to one receiver. In that case the MT-Module gets its current supply via the Expander and the Expander via the receiver.

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Connection of MT-Sensors:

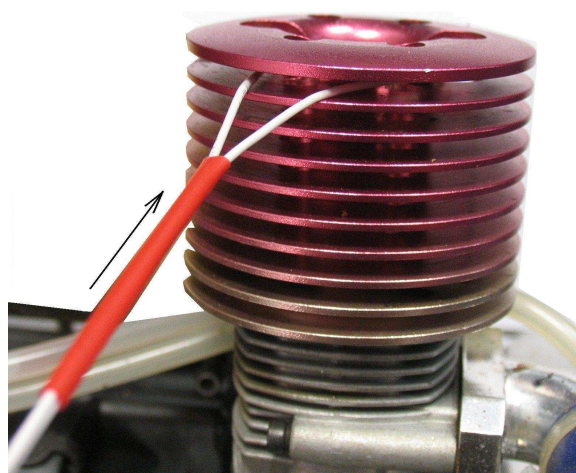
In the MT125 Module you will find two inputs for the connection of temperature sensors coded A and B. Connect the sensors to these inputs while paying attention to polarity (red sensor wire to + and the black one to -). Constituent parts of the MT300 sensor are two sensors which comprise a loop of heat resistant conductor in the central part. A silicon tube sliding over the loop serves for fastening purposes.

Fastening of the sensors:

Place the MT-Module as far away as possible from heat sources in order not to exceed the allowed maximum temperature.

Sensors of the MT125 Module are able to measure temperatures up to 125°C. Fasten the sensor to the measured object as secure and tight as possible in order to prevent contact losses and herewith falsify measurement results. Choose a fastening method which corresponds to the assumed maximum temperature of the measured object. For low temperatures you may choose glue or shrink tubing (batteries, controllers etc.). In case of higher temperatures fasten the sensors by means of the enclosed plastic tape.

Sensors of the MT300 Module can be used for higher temperatures (engine cylinders, engine exhausts etc.). The sensors are adapted to this purpose and comprise a loop of heat resistant conductor in the middle. Before tightening moisten the silicon tube with alcohol or white spirit in order to improve its sliding ability on the cables. Put the measuring object, for instance an engine cylinder, through the loop and tighten the loop strongly by means of the silicon tube in order to obtain a tight contact between the loop and the measuring object (for instance with cooling fins of an engine cylinder). After evaporation of the alcohol the silicon tube will firmly hold the loop tight. In order not to damage the sensor the dia. of the loop should not be smaller than 20 mm.



Parameter adjustment of MT-Modules:

Parameter adjustment a data readout is accomplished by the JETIBOX terminal. After connection to the MT-Sensor there appears an identification of the sensor and in the second line the actually measured temperature data of both sensors. By pushing button D (downward arrow) of the JETIBOX you will enter the MT-Module menu.

Menu of the MT-Module:

SENSOR MENU: ACTUAL VALUE – select presentation of actual measured data by pressing button D (down arrow)

Actual Temp. A – presents the actual temperature of sensor A

Actual Temp. B – presents the actual temperature of sensor B

SENSOR MENU: MIN / MAX – push button D (down arrow) in order to select the recorded extreme values which occurred during measurements on both sensors.

Temp. A MIN / MAX – represents the minimum and maximum temperature value which has been recorded by sensor A during all measurements.

Temp. B MIN / MAX – represents the minimum and maximum temperature value which has been recorded by sensor B during all measurements.

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Records of all extremes can be deleted in the menu *Setting - Erase Data*. If you don't delete all data records manually, the MT-Module will record the maximum and minimum sensor temperatures whether it has been in the meantime disconnected of the voltage supply or not, i. e. the presented data can concern preceding operations.

SENSOR MENU: *Setting* – by pushing button D (down arrow) the basic MT-Module adjustment will be selected.

Erase Data – pushing buttons R and L (right and left arrows) simultaneously will delete all records of measured parameters (minimum and maximum temperature values of sensors A and B).

Beep Temp. A – adjustment of a Morsealphabet character which will announce violation of the set alert temperature of sensor A by an acoustic signal of the DUPLEX Tx transmitter module.

Beep Temp. B – adjustment of a Morsealphabet character which will announce violation of the set alert temperature of sensor B by an acoustic signal of the DUPLEX Tx transmitter module.

SENSOR MENU: *ALARMS* – by pushing button D (downward arrow) you will enter the adjustment modes of particular alerts. If violation of a set parameter occurs the indication of the JETIBOX LC display will show in the second line of the basic menu the original indication as well as the particular alert indication alternately and the siren of the transmitter module will emit alert signals. The first tone is a reference signal and the second tone is the corresponding Morse signal of the particular alert. There will be no particular signal emitted if the alert is in OFF position.

Temp. High A – signal adjustment for high temperatures, if the measured temperature exceeds the set value alert of sensor A will be activated.

Temp. Low A – signal adjustment for low temperatures, if the measured temperature is below the set value alert of sensor A will be activated.

Temp. High B – signal adjustment for high temperatures, if the measured temperature exceeds the set value alert of sensor B will be activated.

Temp. Low B – signal adjustment for low temperatures, if the measured temperature is below the set value alert of sensor B will be activated.

Warranty:

For this product we grant a warranty of 24 months from the day of purchase under the assumption that it has been operated in conformity with these instructions at recommended voltages and that it has not been damaged mechanically. Warranty and post warranty service is provided by the manufacturer.

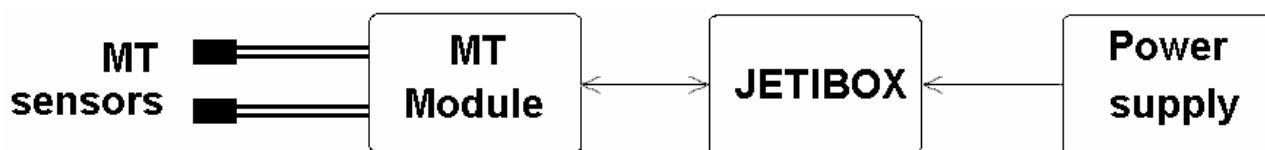
We wish you successful flying with the products of:
JETI model s.r.o. Příbor, www.jetimodel.cz

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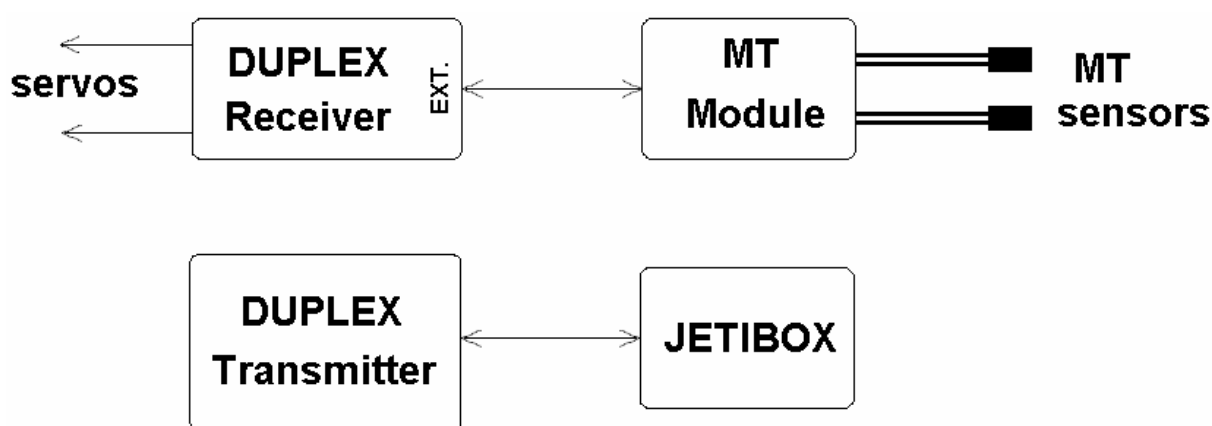


Connection alternatives of MT-Moduls:

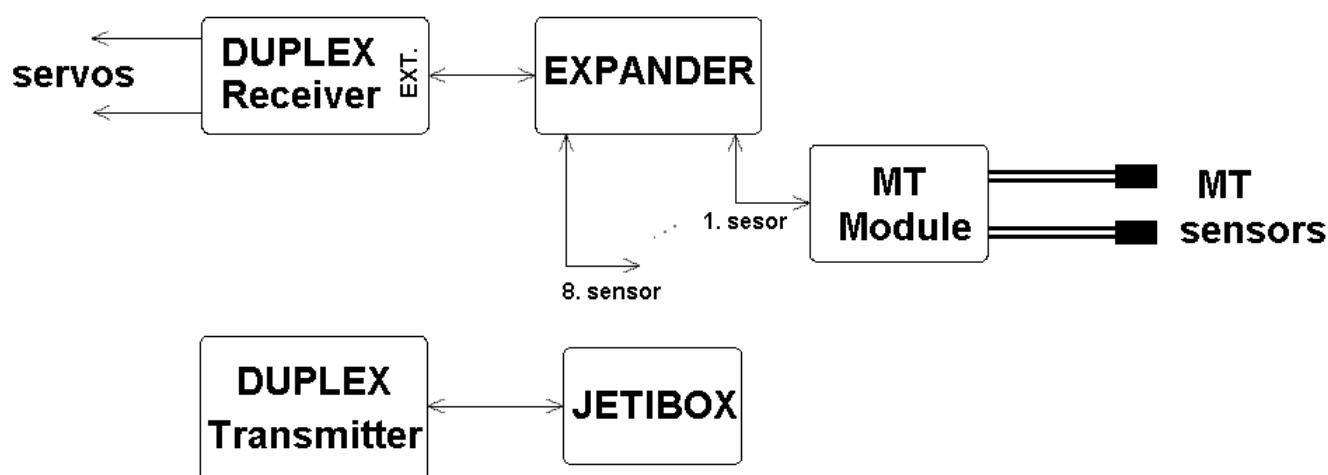
1. **directly to the JETIBOX.** In that case it is necessary to apply a voltage source of 5 to 8,4V, for instance a receiver abattery.



2. **directly to the receiver input (Ext.).** In that case a MT-Module can be connected. The MT-Module obtains its current supply via the receiver.



3. **Connection via an Expander Ex.** In that case data of several sensors can be processed simultaneously (depending upon type of Expander). The MT-Module receives its current supply via the Expander.



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MT modul Menu as shown by the JETIBOX LCD:

