

The module DTMF MST-1 is an electronic device that enables the control of an alarm system control panel by a telephone set that is equipped with the tone dialling mode (DTMF). It allows to check the status of an alarm system and control panel's zones and to perform certain user functions. It can interface with the CA-6 plus (software version 3.04, 4.00 or later) and CA-10 control panels (from the software version 4.2).

CONNECTION DESCRIPTION

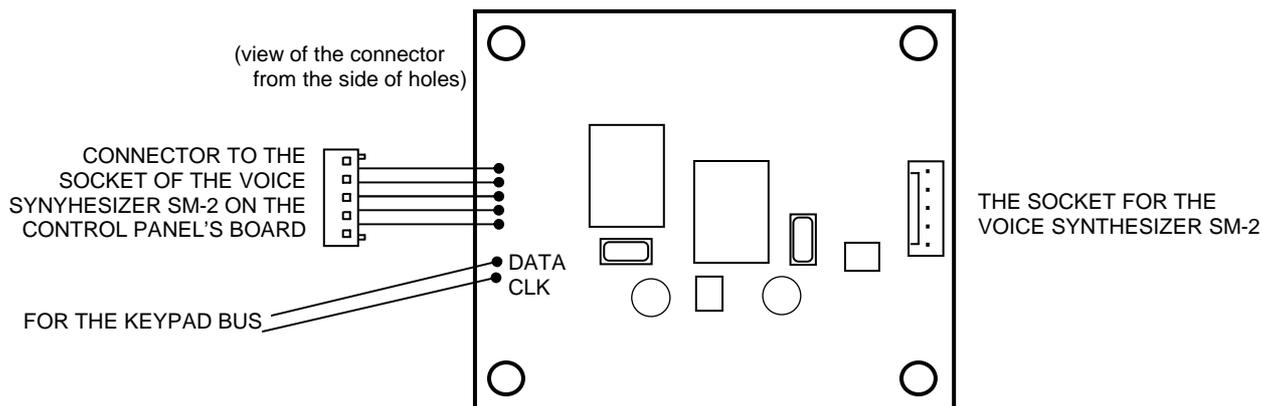


Figure: Module board

The module may be installed in the control panel housing.

Plug **the connector with cable** to the voice synthesiser socket on the control panel's board. If a voice synthesiser has been already connected to that socket it should be unplugged and reconnected to the identical socket on the module's board.

Two leads **DATA** and **CLK** (without connector) are to be used for the connection of the module with keypads' buses. Names of the leads indicate the terminals on the control panel's board, to which they need to be connected. In the CA-10 plus control panel the lead CLK is to be connected to the terminal **CLK1** that relates to the first partition.

ACTIVATION

Co-operation of the module with the control panel requires activation of the options by means of service functions.

1. FS 5 option 3 in the first set - "Telephone answering".
2. For CA-6 plus: FS 131 option 4 - "DTMF module operation enabled".
For CA-10 plus: FS 131 option 2 - "DTMF module operation enabled".

The method of answering telephone is defined in an identical way as for other dialler's functions (single or double calling, number of rings).

FUNCTIONS

The remote control can be effected from a telephone the control panel calls up during voice messaging (immediately after the message from speech synthesizer is reproduced), or after getting through from any telephone set (**NOTE!** The CA-10 plus v4.2 performs control only when the connection is initialized from an external telephone set). Having received the call, the module reports its readiness with two beeps (high-pitched and low-pitched) when it works with the CA-6 plus, or with three beeps (high-pitched, low-pitched and high-pitched) when it works with the CA-10 plus control panel.

It is possible to perform operations of two types:

1. Checking the status of zones or partitions.
2. Performing a user function.

The below table presents the functions performed by the MST-1 module:

CODE	DESCRIPTION
[0][#]	End of connection with the control panel
[1][#]	Checking the status of partition 1
[2][#]	Checking the status of partition 2
[3][#]	Checking the status of partition 3 (it relates to the CA-10 plus control panel)
[4][#]	Checking the status of partition 4 (it relates to the CA-10 plus control panel)
[9][#]	Checking zones status
[CODE][#]	Arming/disarming, alarm clearing
[CODE][*][4]	Zones bypass
[CODE][*][5]	Silent arming
[CODE][*][7]	Controlling of the output of "MONO switch" type
[CODE][*][8]	Controlling of the output of "BI switch" type

The control is performed using DTMF signals of the telephone keyboard. To call the selected function press sequentially telephone keys in accordance with the calling method as shown in the table.

Partition status signalling:

- three short beeps – partition disarmed;
- four short and one long beeps - partition armed.

Alarm in a partition or memory of an alarm are signalled with a series of short beeps (changing from high to low) that last approx. 2,5 seconds directly after signals informing on partition status.

The function "*Checking zone status*" can readout the information, which of keypad's LEDs shine with a steady light and which of them are blinking. During co-operation with CA-10 control panel the module informs in accordance with the settings of service functions FS 12 do FS 15.

The indication of a zone of an armed partition means **memory of an alarm** triggered by this zone, while the indication of a zone of a disarmed partition means **violation of the zone**. In the CA-6 control panel the number of a diode relates to the number of a zone, while in the CA-10 plus control panel the installer himself defines the numbers of zones to be indicated by LEDs of the keypad assigned to the partition (such keypad needs to be connected to the control panel). It is possible to check the status of LEDs numbered from 1 to 12.

The method of checking the zone status:

- After the first calling of the function [9][#], the module generates short beeps, the number of which is equal to the lowest number of a shining LED. If none of LEDs shines, the module generates two long beeps.
- The subsequent calling of the function [9][#] indicates the next LED, which is shining. The review needs to be continued till hearing two long signals informing that there are no more LEDs shining. The repeated calling the function (after two long signals) will restart the review of zone status.
- In order to check the zones status in the control panel CA-10 plus, first it is necessary to check the status of one of zones through calling an appropriate function: ([1][#]; [2][#]; [3][#] or [4][#]), and afterwards to check the status of its zones with the function [9][#]. Each of zones needs to be called separately.

User functions, protected with a code, are performed in an identical way as during using the control panel's keypad (see description in the user manual). Acoustic signalling is identical with signalling of the keypad. To go into the mode of control of other partitions in CA-10 plus press [1][#]; [2][#]; [3][#] or [4][#].

The performance of the remaining user functions, functions of "hold down" type, partitions quick arming and entering the service mode through the MST-1 module is blocked.

The function [0][#] breaks the phone connection. Similarly the control panel finishes the connection if for 30 seconds it doesn't receive any DTMF signal from a telephone set.

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