

User console of the MTD Time Timer Time Code System

AV-MTD BE19



Supplement to
MTD Time Timer Time Code System
Instruction Manual

TABLE OF CONTENTS

Page

A1 SAFETY INSTRUCTIONS

A2 COPYRIGHT

A3 CE-DECLARATION

INTRODUCTION

1

OPERATING MODES

2

SHORT DESCRIPTION

3

REAR CONNECTIONS AND SPECIFICATIONS

4

A1 Safety Instructions

General rules:	Only use the device as directed in a dry atmosphere. Treat the AV-MTD BE19 with the same care as other studio devices. Please follow the advice in the following operators manual.
Damages in transit:	If the device shows obvious damages from transit the shipper in question must be notified and the dealer must be informed.
Positioning:	Position device only where sufficient air circulation can be maintained. Extreme temperatures, dust, humidity, shocks and strong electromagnetic fields must be avoided.
Maintenance:	Use a moist soft textured fabric cloth when cleaning the housing. Do not use polish or any other cleaning agents.
Repairs:	The AV-MTD BE19 does not require any extra maintenance. There are no user serviceable parts inside the device. Repairs should be sent to an authorized service partner.

A2 Copyright

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Information in this publication replaces all previously published information. Alpermann+Velte Electronic Engineering GmbH assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. Whenever it is likely that safe operation is impaired, the instrument must be made inoperative and secured against unintended operation. The appropriate service authority must then be informed.

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A3 CE declaration of conformity

We,

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herewith declare under our sole responsibility that the

AV-MTD BE19

meets the intent of the following directives, standards and specifications:

73/23/EEC Low Voltage Directive

- EN 60950 electrical and mechanical safety

89/336/EEC Electromagnetic Compatibility

EN 50081-1 Emissions

- EN 55022
- EN 55103-1

EN 50082-1 Immunity

- EN 55024
- EN 55103-2

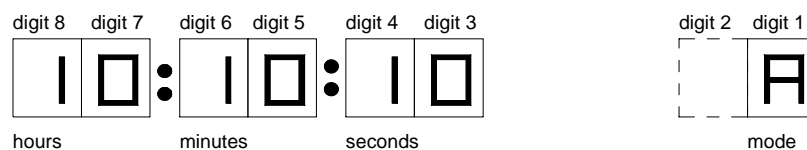
The following preconditions have to be fulfilled:

- Only high-quality shielded cables have been used to connect data inputs/outputs.
- Housing has been connected to ground.

Introduction

Alpermann + Velte has developed a system for Multiple Time Displays (MTD). A MTD system consists of a central generator unit, digital displays and/or analogue clocks, and user console(s). The central generator unit outputs a special LTC format. This LTC will henceforth denoted as LTC(MTD). The LTC(MTD) represents the data link to all the digital displays, and it contains real time, date and user selectable timers. User consoles communicate via a serial interface (RS485) with the central generator unit.

MTD BE19 is an user console of the MTD system with a display (7-segment LEDs) of 25mm digit height. The colour of the LEDs can be ordered to red, green or yellow. The 7-digit display provides a time display (hours:minutes:seconds) and an indication of the operating mode, e.g.:



The brightness of the LED's are adjustable by using the BCD turn switch located on the front panel:

Stage	Function
0	The display becomes inactive, only a decimal point in the lowest possible brightness is lit up.
1 - 7	Adjusts the brightness (1 = lowest, 7 = highest).
8	Reserved.
9	Test mode, where all LED's are lit up with maximum brightness.

After power-on, all of the LED's will light up shortly and then the display will show the revision number (e.g. „7.3 b9“), any built-in options and the selected operating mode.

Using the key pad control is given over the whole MTD system. There are various installations and configurations to set up the MTD system according to your best needs. A serial RS485 interface connects the user console to the central generator unit. The HEX turn switch Mode at the front panel defines the basic operation mode of the user console. Mode „0“ permits to operate the unit as a local stop timer. To use the unit as an LTC reader display, mode „6“ (= LTC time display) or mode „7“ (= LTC user display) should be selected. All other modes are provided for being used in a MTD system, and the unit will extract the data of the LTC(MTD).

Operating modes

Positions of the HEX turn switch Mode:

Mode	Description	Remarks
0	local stop timer	no LTC or RS485 required
1	1 st main time	display and/or select one time unit out of A - F, 2, 3
2	real time	display and/or set
3	date	display and/or set
4,5	not used	
6	LTC time information	LTC reader: display of time
7	LTC user bits	LTC reader: display of user bits
8	installation mode	display and operation of all time units
9	general operating mode	display and operation of all time units
A	time A	display and operation of time A (e.g. stop timer A)
B	time B	display and operation of time B (e.g. stop timer B)
C	time C	display and operation of time C (e.g. stop timer C)
D	time D	display and operation of time D (e.g. stop timer D)
E	time E	display and operation of time E (e.g. stop timer E)
F	time F	display and operation of time F (e.g. stop timer F)

After a change of mode with the HEX turn switch the display indicates the new mode for a moment (e.g.: „mode b“). As soon as new LTC data are read, the selected time can be displayed.

Short description

Please refer to "MTD Time Timer Time Code System, Instruction Manual" for a description which is complete and with all details.

For displaying and/or operating only a particular time please select the required time (mode) using the turn switch Mode, e.g. "A". With mode switch at stage 8 or 9 it is possible to display and operate all time units (the whole MTD system), simply press key + or - to select the next time unit (next operating mode). The digit 1 of the display indicates the selected time (mode). With mode 8 it is in particular possible to do the following installations:

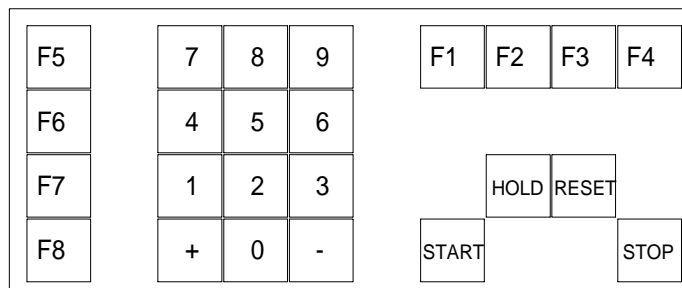
- Access rights, enter and quit this installation by pressing keys 9 and 1 simultaneously.
- Programmable function keys, enter and quit this installation by pressing keys 9 and 2 simultaneously.
- Configuration of the display and of the DOWN counting, enter and quit this installation by pressing keys 9 and 3 simultaneously.

Access rights means: using mode 8 or 9 it is defined which time unit (mode) can be operated and displayed, or only displayed, or neither operated nor displayed.

F1 ... F4 and F5 ... F8 are programmable function keys. A function for example will be UP or DOWN for a stop timer, A or B for selecting an operating mode (time) directly. Each function key will lit up if the programmed function is selected. But due to internal hardware it is not possible to lit two or more of the keys F5 F8 at same time, so a proper arrangement of the functions should be considered. It is recommended to use keys F1 ... F4 for stop timer functions, keys F5 ... F8 for direct operating mode selection. As an accessory key labels will be included to give each key the name of the programmed function.

The functions of all further keys are fixed:

- Keys 0 ... 9 to enter a start/offset/compare time value.
- Keys + and - to select the next operating mode (next time) - on condition that HEX turn switch is at stage 8 or 9.
- Keys START, HOLD, RESET, STOP for stop timer operation.

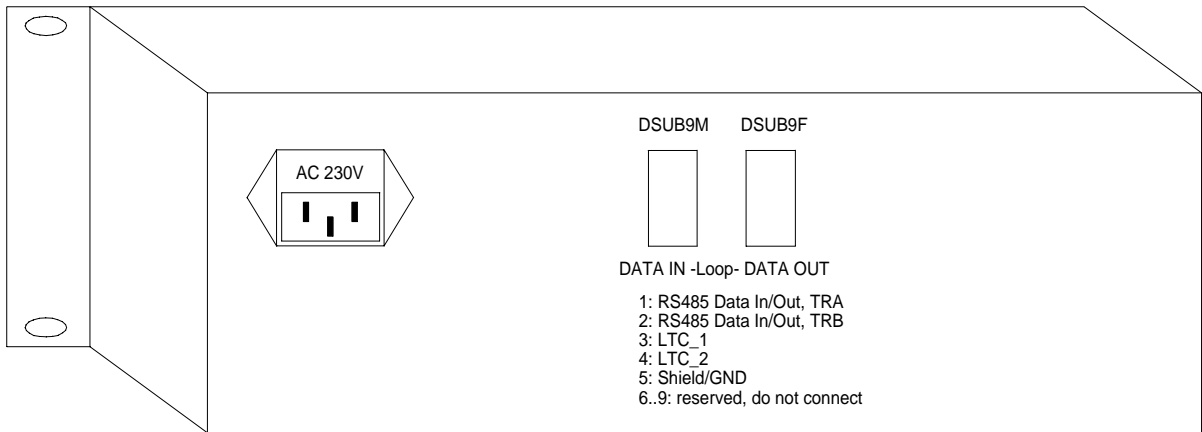


The installation of access rights and function keys will be stored at MTD BE19, so it is still available next time the unit is being switched on.

Configuration of the display and of the DOWN counting defines the separating sign of a time display (HH:MM:SS or HH.MM.SS), the leading zeros, the flashing in case of negative values, DOWN counting with or without overflow, ... This installation will in fact be transferred to the central generator via RS485 interface, and there will be the storage of the parameters. Anything altered at this installation will affect the whole MTD system.

Rear connections and specifications

Housing: metal
 Height of box: 88.5mm (incl. screws)
 Width of box: 445mm (without front plate)
 Depth of box: depending on built-in options:
 type 1: 127mm (without front plate, incl. jacks)
 type 2: 107mm (without front plate, incl. jacks)
 Front plate: 19", 2U, thickness = 3mm



LTC input: balanced, 60mV - 5V, 47kΩ, < 40 frames/second
 Power supply: 100-240 VAC, 50/60Hz
 Power consumption: typ. 9W, max. 12W
 Weight: 1.8kg approx.
 Operating temperature: 5°C to 40°C
 Admissible humidity of air: 35% to 85%, non-condensing

Connecting DATA IN: e.g.: cable of type KDA. Cables have to be shielded, with the shield having no interrupt from the hood of one connector via the cable to the hood of the other connector.

KDA	DSUB9M	DSUB9F
TRA	1	1
TRB	2	2
LTC_1	3	3
LTC_2	4	4
GND	5	5

Distribution of the DATA = RS485 + LTC(MTD) signals	Twist the TRA/TRB and LTC_1/LTC_2 signals. Pin 6 - 9 are reserved and shall not be connected. Example: 3-pair twisted cable.
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