

# miline FTL10

LED Multifunction Clock

## Operating Manual



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## 1 Safety Instructions

Please read these instructions carefully and follow all instructions and safety information. Non-observance could result in injury to persons and / or damage the unit.

Use only the included AC adapter. Check for tight fit in the socket. Wobbly plugs or receptacle may cause a fire. If you want to disconnect power, do not unplug the cord, but disconnect the AC adapter.

Connect the display to an easily accessible power outlet (230 V / 50 Hz), which is located near the installation site.

Do not touch the plug contacts with metallic, sharp or wet objects.

Please do not open the housing of the display. Refer servicing to an expert, as this usually leads to the loss of your warranty claims.

Protect the display from moisture, water, steam and aggressive fluids!

Do not install near strong magnetic fields. The reception may be impaired.

## 2 Scope of Delivery

Please check the product's package for completeness:

Standard:

- Multifunction clock including angle bracket
- AC adapter
- Remote control
- Batteries for the remote control

Option:

- Multifunction Sensor
- Batteries for the multifunction sensor

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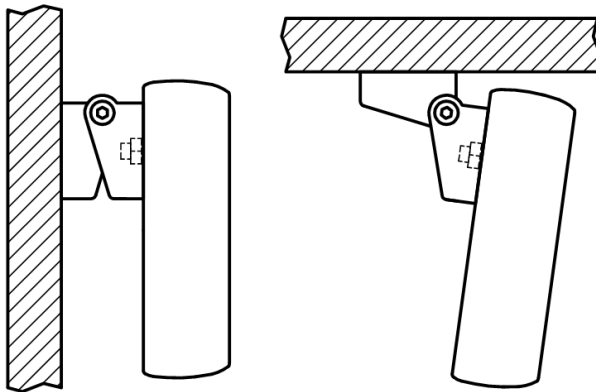
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## 3 Mounting

### LED Multifunction Clock “miline FTL10”

The adjustable bracket on the back allows wall or ceiling mounting.

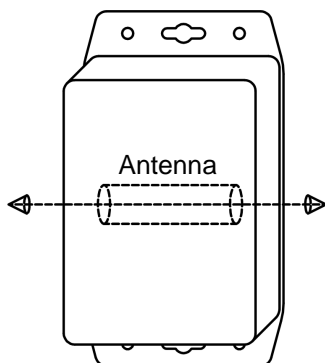
Examples:



### Multifunction Sensor “MFS10” (optional)

The integrated antenna must be in horizontal position for DCF77-reception. Please regard for a correct position in case of wall mounting. The sensor is always horizontal, if it's mounted on the ceiling.

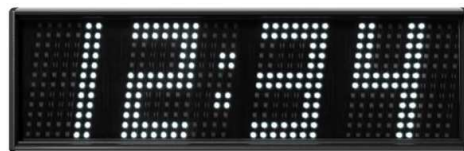
Example:



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## 4 Brief Description



LED Multifunction Clock "miline FTL10"

433 Mhz



Multifunction Sensor "MFS10" (optional)



IR



Remote Control for Configuration

The "miline FTL10" display with 120 mm character height and white LEDs is designed for use in indoor and semi-outdoor areas. The standard version of this display alternately shows time and date (user adjustable, based on quartz) in an adjustable change interval from 1 to 30 seconds.

Optionally, the standard model can be upgraded to a multi-function display. An external wireless sensor "MFS10" provides DCF77 radio clock, temperature and humidity sensor.

The implemented LED dot matrix technology and automatic brightness adjustment to the ambient light serve for a readability up to an angle of  $\pm 60^\circ$ .

A variable wall bracket on the back of the anodised aluminium profile housing allows both wall and ceiling mount.

In case of power failure, the internal battery is able to save time and date up to 10 years. Settings on the display are done with the included remote control.

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## 5 Start-Up

### Display without Multifunction Sensor

- Plug the AC adapter.
- Open the remote control and insert the batteries.
- Set time and date (see chapter "Configuration").

### Display with Multifunction Sensor

- Plug the AC adapter.
- Open the remote control and insert the batteries.
- Open the multifunction sensor and insert the batteries. At this, the green function LED will flash up for one second.
- Regarding the synchronisation settings, see chapter "Configuration".

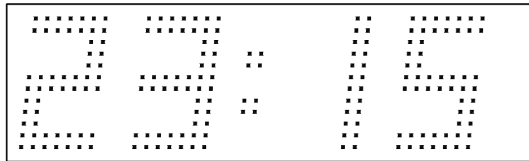
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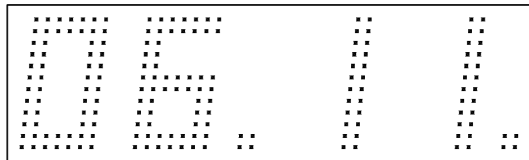
## 6 Operating Mode

According to expansion stage, the display shows the following measures:

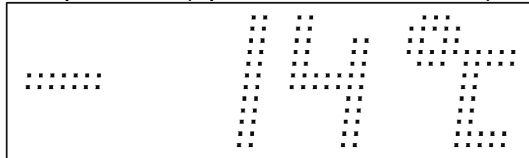
Time



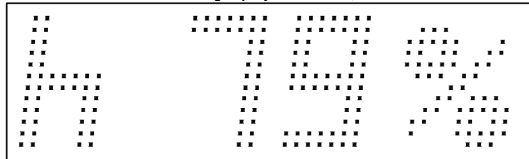
Date



Temperature (optional, with "MFS10")



Relative humidity (optional, with "MFS10")



### Low Battery:

If the batteries in the sensor "MFS10" are too low, the display shows a battery icon instead of temperature and humidity level.



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## 7 Configuration

The display is configured with the included universal remote control.




Button	Function
	On-off switch for the display
	Setup mode
VOLUME +/-	Digit selection (date / time) and menu navigation
CHANNEL +/-	Value adjustment



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## 7.1 Display Settings

Press button  for 2 seconds until the display's hour digit starts to flash, then use the navigation keys to select the desired menu item. The values can be changed with the corresponding buttons.

**Menu Navigation** (button "VOLUME +"):

Hours	Time setting For systems with multi-function sensor, DCF77 defaults always take precedence.
Minutes	
Day	Date setting For systems with multi-function sensor, DCF77 defaults always take precedence.
Month	
P1 - Display time	Appearance of the single measures:  00: deactivated 01: activated  Standard without „MFS10“: P1 + P2 = 01 P3 + P4 = 00  Standard with „MFS10“: P1...P4 = 01
P2 - Display date	
P3 - Display temperature (optional with "MFS10")	
P4 - Display humidity (optional with "MFS10")	
P5 - Alternation interval	Time for displaying a measure. Setting range: 01 to 30 seconds Standard: 05
P6 - Maximum brightness	This menu item is shown with the current maximum brightness. Setting range: 01 to 99 Standard: 99
P7 - Flashing colon (at the time)	Setting range: 00 / 01 00: deactivated 01: activated Standard: 01
P8 - Radio channel	Selection of the radio channel Setting range: 01 to 06 Standard: 01
P9 - Request DCF77 reception	DCF77 status (description see next page)

The settings are saved with the button . After that, setup mode is left.

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## 7.2 Channel Setting Multifunction Sensor (optional)

6 radio channels are provided for communication between the sensor and display. This allows the operation of up to 6 display systems in the same transmission range.

It may be necessary to synchronize the multifunction sensor with the display.

Please proceed as follows:

- Select desired radio channel (01 to 06) with display's menu item P8.
- Open the multi-function light sensor and press the button on the board about 1 second until the green LED is lit.
- After synchronisation, this LED goes off and the display will quit setup mode automatically.
- After 20 seconds at the earliest, current data are shown.

## 7.3 DCF Setting (optional)

You can force an attempt for DCF77 reception with menu item P9 to find the optimal position for the multifunction sensor.

Please stay in this menu and observe the status message. If the reception is sufficient, you get the following sequence (within max. 5 minutes):

Status message	Meaning
0	Attempt for reception started
1	DCF signal identified
2	Data reception
3	Time and date have been updated

The DCF signal is not sufficient, if the status message changes between "1" and "2". At status "0", no reception is possible.

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## 8 Declaration of Conformity

### EG-Konformitätserklärung Declaration of EC-Conformity

**Produktbezeichnung:** "miline FTL10"

Product:

**Hersteller:** microSYST Systemelectronic GmbH  
**Manufacturer:** Zur Centralwerkstätte 10  
92637 Weiden

<p><b>Das bezeichnete Produkt stimmt mit der folgenden Europäischen Richtlinie überein:</b> We herewith confirm that the above mentioned product meets the requirements of the following standard:</p>		<p><b>Die Übereinstimmung des bezeichneten Produktes mit den Vorschriften der Richtlinie wird nachgewiesen durch die vollständige Einhaltung folgender Normen:</b> The correspondence of the above mentioned product with these requirements is proved by the fact that these products meet with the following single standards:</p>
<b>Nummer</b>	<b>Bezeichnung</b>	<b>Europäische Norm</b>
<b>2004/108/EG</b>	<b>Elektromagnetische Verträglichkeit (EMV)</b>	EN61000-6-2:2006
		EN61000-6-3:2007

Weiden, den 27.Oktober 2008

  
Silvan Hartwig  
**Geschäftsführer**  
Managing director

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## 9 Guarantee

The display is guaranteed for the duration specified in the “General Terms and Conditions” regarding manufactured products and services rendered for the electrical industry against defects which existed at the time the device was delivered to the buyer.

The device is subject to technical change without notice. Errors and omissions are accepted. No claims can be honored for the shipment of a new product. The buyer is required to make notification of defects within 2 weeks after identification of such. Non-observance of notification requirements is equated with acceptance of the defect.

Defects and their symptoms must be described as accurately as possible in order to allow for reproducibility and elimination. The buyer must provide for access to all required and/or useful information regarding defects at no charge, as well as to the affected devices, and must make all of the required data and machine time available free of charge.

The guarantee does not cover defects, which result from non-observance of the prescribed conditions of use, or from improper handling.

If the device has been placed at the disposal of the buyer for test purposes and has been purchased subsequent to such testing, both parties agree that the product is to be considered “used” and that it has been purchased “as is”. No guarantee claims may be made in such cases.

The “General Terms and Conditions” regarding manufactured products and services rendered for the electrical industry apply as well.

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## 10 Technical Data

### LED Multifunction Clock “miline FTL10”

Display type:	LED dot matrix
Application range:	indoor and semi-outdoor (without direct solar radiation)
Angle of radiation:	±60°
Character height:	120 mm
Reading distance:	up to approx. 50 m
Display colour:	white
Light intensity:	> 2000 cd/sqm
Brightness control:	automatically; maximum value manually adjustable
View:	single-sided
Display:	time: hours + minutes, date: day + month; With optional multifunction sensor:
Clock preciseness:	temperature: -40 to +60 °C; humidity: h 01 to 99 % ±1 min. / year from 0 to +40 °C ambient temperature; DCF-exact (“radio controlled clock”) via optional multifunction sensor
Interfaces:	IR interface; 433 MHz radio interface (6 channels)
Operating voltage:	15 to 40 VDC; 230 VAC via external power supply plug
Power consumption:	approx. 10 W
Housing:	anodised aluminium
Housing dimensions:	see next chapter
Housing colour:	black
Mounting:	wall or ceiling mounting; inclination adjustable
Protection:	IP54
Operating temperature:	-20 to +60 °C
Storage temperature:	-25 to +70 °C
Equipment:	multifunction sensor “MFS10”

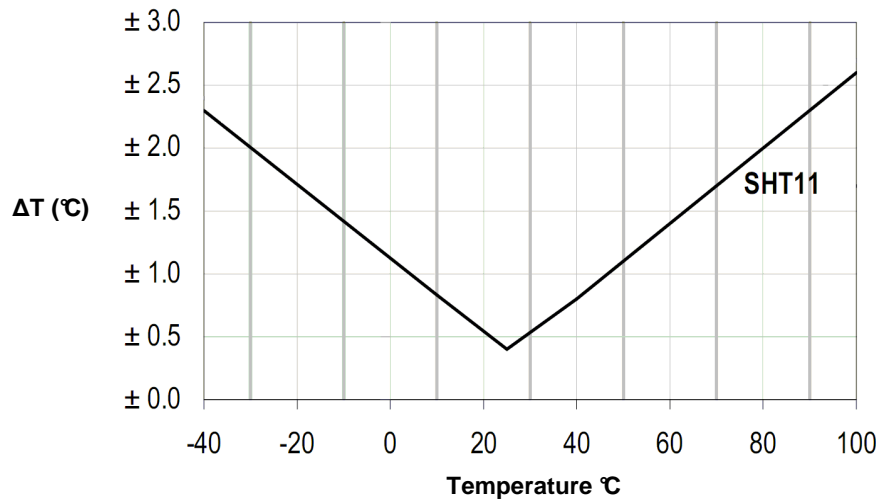
### Multifunction Sensor “MFS10”

Interface:	433 MHz radio interface (6 channels)
Sensors:	temperature sensor; humidity sensor
Aerial:	DCF77-reception (“radio controlled clock”)
Features:	temperature measurement; humidity measurement; 2 x a day DCF77-reception; communication to “miline FTL10” via radio (433 MHz)
Number of displays	
per multifunction sensor:	10 pieces with parallel operation
Range:	max. 50 m, depending on ambient conditions
Operating voltage:	3 VDC (via 2 x batteries AA)
Housing:	plastic
Housing dimensions:	see next chapter
Housing colour:	grey
Mounting:	wall or ceiling mounting
Protection:	IP65
Operating temperature:	-40 to +60 °C
Storage temperature:	-40 to +60 °C

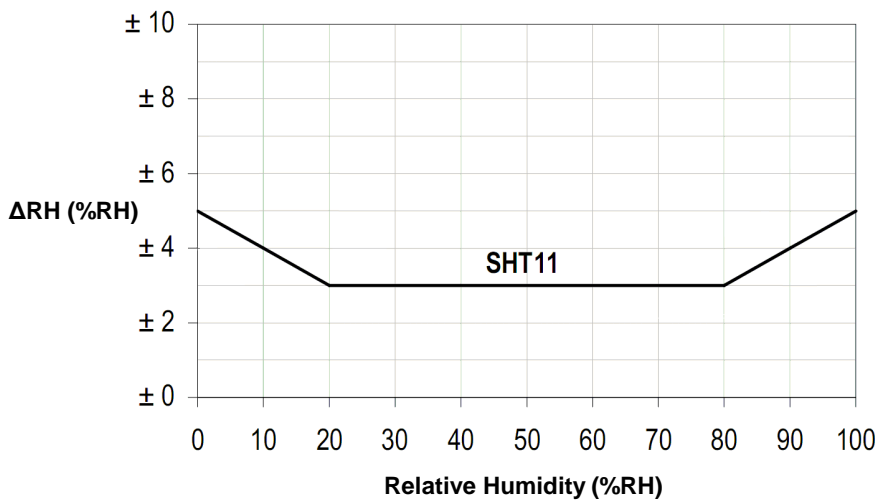
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## Maximum T-tolerance



## Maximum RH-tolerance (at 25 °C)

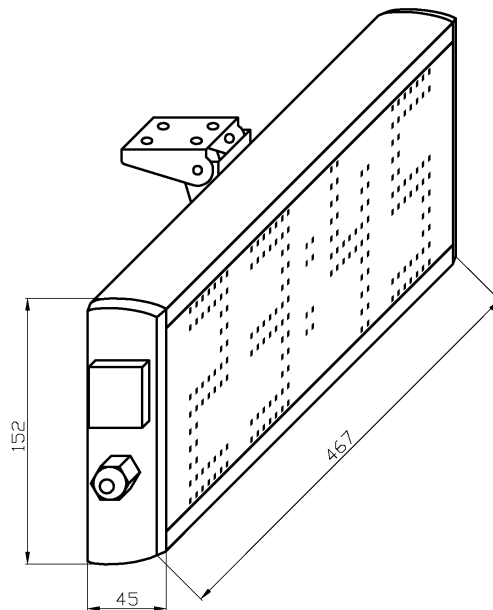


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## 11 Dimensions

LED Multifunction Clock "miline FTL10"



Multifunction Sensor "MFS10"

