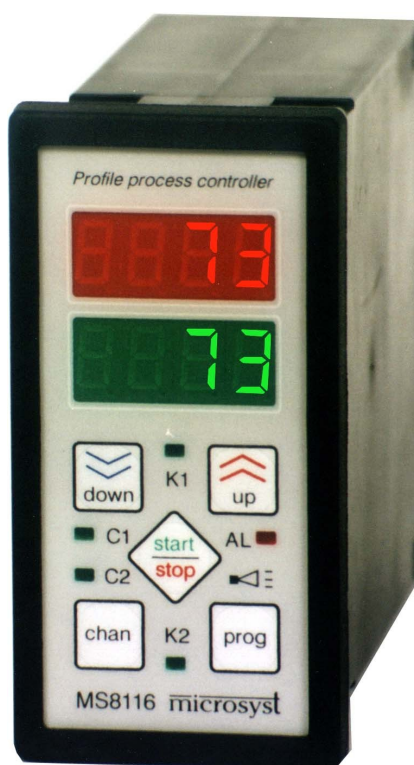


## Microprocessor-based ON/OFF controller

### MS8111TAB2



## TECHNICAL DESCRIPTION AND OPERATION MANUAL

PLOVDIV 2004

## I. DESIGNATION

The microprocessor-based ON/OFF controller of MICROSYST, model MS8111TAB2, is designated for temperature measurement and control, by supervision of fan revolutions in tobacco drying chamber. The controller has one linear input from temperature transmitter and there is a possibility for calibration of the input parameter.

All data are saved in non-volatile memory, including the current status of the controller, i.e. in case of restoring of the power supplying voltage, the controller enters the same mode and stage of control, in which it has been before the power fault.

The device gives a possibility for direct change of the set-point during operation of the system. The controller can also operate without sensor for supervision of fan revolutions.

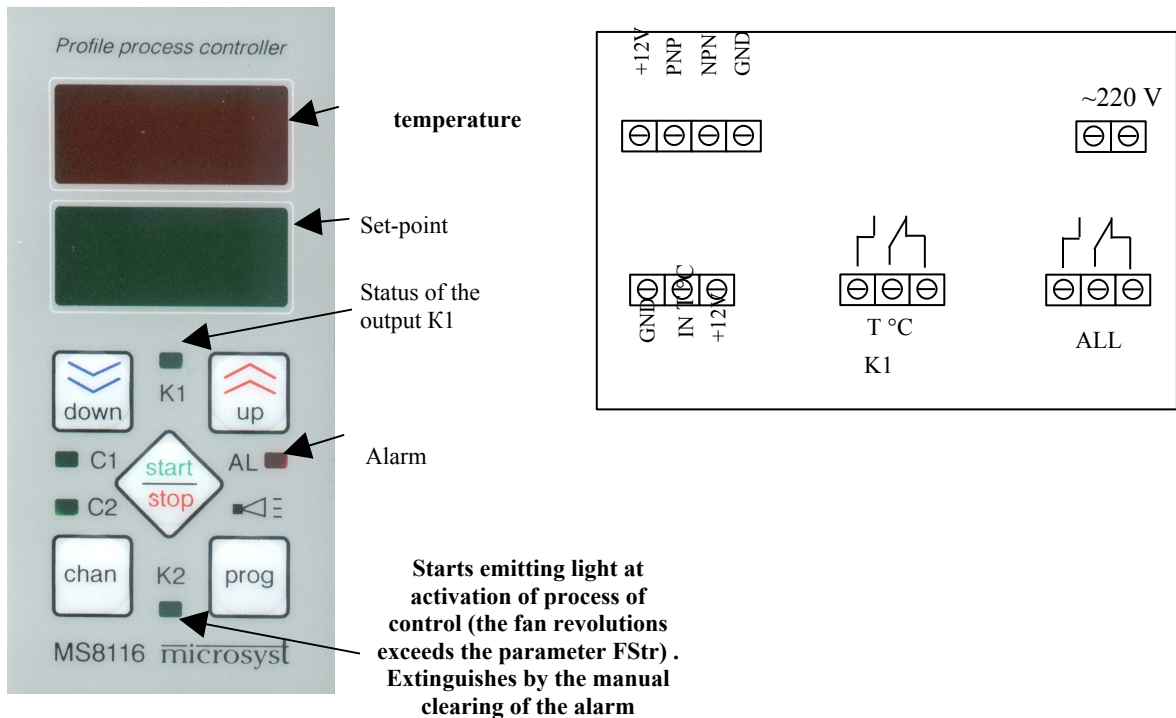
## II. TECHNICAL DATA

<b>Analog inputs</b>	1
Linear current	0 (4) ... 20 mA DC
Linear voltage	0 ... 1 (10) V DC
<b>Digital inputs</b>	1
From inductive sensor	12 V
<b>Relay outputs</b>	2
K1 – ON / OFF	250 V / up to 5 A*
AL – alarm	250 V / up to 5 A*
<b>Indication and keypad</b>	
Display	2x4 digits LED 14 mm
Range of the display	-1999 ... 9999**
Accuracy	± 1 LSB
Keypad	folio
<b>Power supply</b>	
Power supplying voltage	220 V
Frequency of the power supplying voltage	50 Hz (± 1 Hz)
<b>Operating conditions</b>	
Operating temperature	0 ... 50 °C
Operating relative humidity	0 ... 80 % RH
<b>Dimensions</b>	
Overall dimensions (WxHxL)	vertical 48 x 96 x 128 mm
Mounting	Panel in a hole 44 x 90 mm
Weight	max 400 g
<b>Storage</b>	
Storage temperature	-10 ... 70 °C
Storage relative humidity	0 ... 95 % RH

\* - for current over 6 A you have to select other terminals

\*\* - the formats are X.XXX XX.XX XXX.X XXXX

### III.FRONT, BACK PANEL AND BUTTONS



- Edition of the set-point for control
- Programming of parameters
- Programming of system parameters
- Confirmation of made correction
- Exit from mode PROGRAMMING
- Offset of the analog input
- Change of parameters
- Change of parameters






### IV.OPERATION INSTRUCTIONS

At switching on of the power supply, the basic operation menu appears on the display – first input parameter on the first line and the set-point on the second line. For preliminarily programmed period after power supplying **tStF** the control is not active. It can be set by the parameter **Strt** and then the alarm output will switch on. This post-start period can be cancelled (**tStF=0**), values can be programmed in 254 sec. or it can continue till pressing of a button **tStF=HAnd**. It will stop, if you press a random button.

After the end of the period, it is being checked if the set-pointed fan revolutions are reached, and when this condition is fulfilled, the control starts.








In operation mode, in alarm situation for the temperature channel or the supervised fan revolutions, the controller stops controlling and activates the alarm output till pressing of random button. After deactivation of the alarm output the controller can be started again at reaching of the start fan revolutions, i.e. the operator must cancel the alarm.

## 1. Edition of the set-point for control (SP)

-   – Press the two buttons for control of set-point of the temperature channel
-   – Edition of the set-point of the temperature channel
-  – Confirmation of the change


\* If the change is not confirmed in 5 sec, the device automatically returns to the main menu without change of the set-point.

## 2. Programming of the parameters

-  – Press and hold to enter mode PROGRAMMING OF PARAMETERS. **tune PAR** appears on the display.
  -   – By these buttons you can look at the parameters
  -  – Press for edition of parameter
  -   – Change of the value of the parameter
  -  – Confirmation of the change
- When on the display, looking at the parameters, **End** appears, press this button and the device exits mode PROGRAMMING OF PARAMETERS

Parameter	Description	Values	Factory value
<b>ALLo</b>	Low alarm limit for channel 1	-1999 ÷ 9999 (dec. point according to the measured value)	
<b>ALHi</b>	High alarm limit for channel 1	-1999 ÷ 9999 (dec. point according to the measured value)	
<b>tall</b>	Time for alarm activation of channel 1	0 ÷ 100 sec.	
<b>tStF</b>	Time for waiting at power supply. By the parameter <b>Strt</b> you can select the output 'alarm' during this period	0 ÷ 254 sec, HAnd HAnd – till pressing of button	
<b>tALF</b>	Time for activation of alarm in case of decreasing of the revolutions	0 ÷ 100 sec	
<b>FStr</b>	Revolutions for start of the controlling process	0 ÷ 9999 rev./min	
<b>FALL</b>	Limit of revolutions for stop of the controlling process	0 ÷ 9999 rev./min	
<b>HSt</b>	Hysteresis of ON/OFF control mode	1 ÷ 255 (dec. point according to the measured value of channel 1)	
<b>FiLt</b>	Coefficient of filter for analog input 1. Smaller value corresponds to deeper filter.	1 ÷ 100	

### 3. Programming of system parameters


You can access the system parameters only, if at power supplying of the device, you hold the button . The hidden parameters appear at the beginning of the menu with main parameters. You can access them till switching off of the device.

**! Change them extremely carefully, because their change may cause incorrect operation of the device!**



Parameter	Description	Values	Factory value
<b>DPnt</b>	Decimal point of the temperature channel	0 ÷ 4 <sup>(1)</sup>	
<b>Adb</b>	Value of change of the input signal (jump), causing clearing of the filter of the temperature channel	0 ÷ 100	
<b>Adbt</b>	Time for waiting in case of jump of the input parameter over A db, before clearing of the filter of the temperature channel	0 ÷ 100 sec. * 0.5	
<b>F Ob</b>	Number of impulses for revolution	1 ÷ 255	
<b>SP1H</b>	Limitation for the set-point of the temperature channel	-1999 ÷ 9999 (dec. point according to the measured value)	
<b>Strt</b>	Operation of the alarm output in case of power supplying for the period <b>tStF</b> (till pressing of random button). Configuration of straight or inverted alarm output.	0 ÷ 7 <b>Straight alarm output</b> 0 – continuous signal 1 – stopped signal 2,3 – not active  <b>Inverted output</b> 4 – continuous signal 5 – stopped signal 6,7 – not active	

(1) Tuning of the decimal point 0–XXXX 1–XXXX. 2–XXX.X 3–XX.XX 4–X.XXX

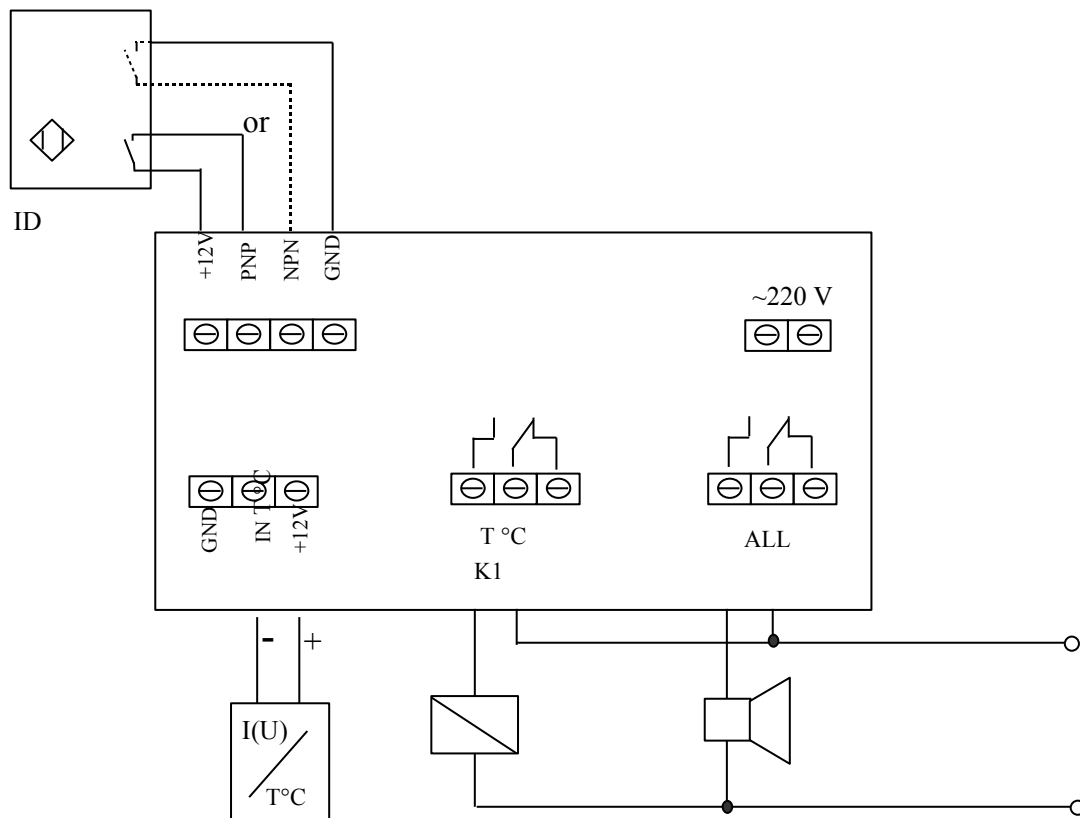
### 4. Addition of offset of the analog input

You can access this option only, if at power supplying the device you press and hold the button . You can change the offset in the same way, as the set-point in normal operation mode is being programmed. The offset is with resolution larger than the measured value. You can access the offset till switching off of the device.

#### NOTE!

In all operating modes the keypad gives a possibility for automatic increasing or decreasing of the values by pressing and holding of one of the buttons  .

## V. SCHEME OF CONNETION



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