

Industrial Microprocessor Controller



INDU-41

*Intended for;
Liquid dispenser*

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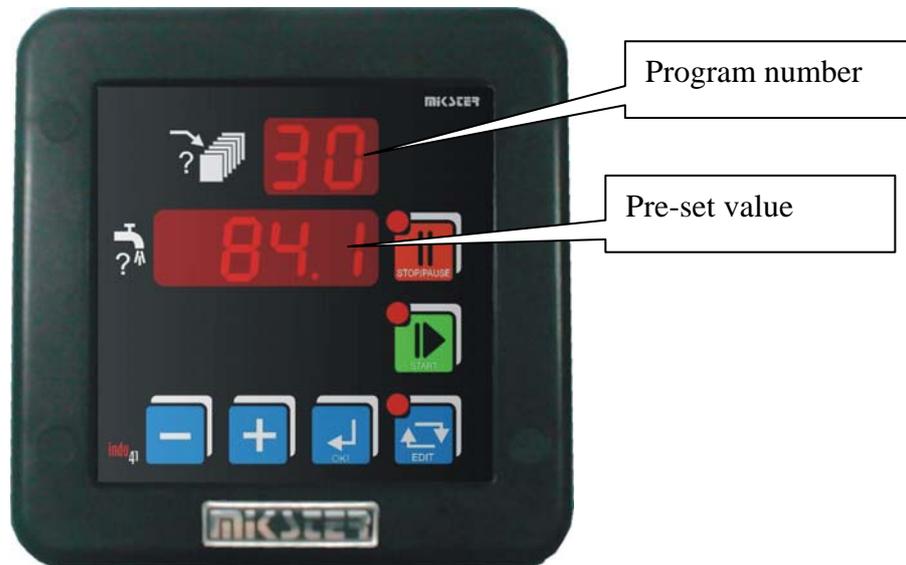
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LIST OF CONTENTS

What the controller is intended for and how it works?	3
Specifications	4
Start up the dosing process	4
Pre-set value change	4
How to pause/stop the dosing process?	4
Info mode	5
Set-up	5
Alarm	7
Err 1 - lack of sealing of the dosing valve	7

What the controller is intended for and how it works?



INDU41 controller is intended for dosing any quantities of any media. Special attention has been paid to ensure correct controller operation in most heavy environment conditions.

The controller is equipped with two relay outputs intended for operating the electrical valves:

- REL1 rough dosing
- REL2 precise dosing

One of the relay outputs (REL5) is activated after dosage process termination or in case of alarm condition appearance, and two inputs:

- pulse input
- dual state control input

The controller is able to dose the medium by means of one dosing valve. In such a case REL2 output (precise dosing) should be used and a Set-up facility set as follows:

- in F3 cell insert 0
- in F4 cell insert the value of advance (offset)

Specifications

Display	LED ½ " x 2 digits LED ½ " x 4 digits
Power supply	230 VAC (optional: 24,110) ± 10%
Keyboard	6 keys (micro switches)
Dimensions of device casing	134x134x65 mm
Assembling hole	90x90 mm
Inputs	dual state digital: Control input: on/off connection to device ground Pulse control input: on/off connection to device ground (50 kHz max.) Max. contact resistance in ON state - 100 Ohm Min. contact resistance in OFF state - 10,000 Ohm
Outputs	Two relay outputs - on/off contacts (250 VAC/8A)
Protection degree	IP65 (at the frontal side)
Power consumption	3W
Programming	100 programs with ability to edit the pre-set values

Start up the dosing process

In order to have dosed an appropriate media quantity START key should be pressed. The proper program (0 .. 99) is then selected with keys PLUS/MINUS. START key repressing begins the media dosing process. In case if setting in the setup cell is F7=3 or 4, dosing will start as soon as proper level will be given to digital input. Therefore, remote controlled dosing is possible.

Pre-set value change

If there is a need to change the pre-set values EDIT key is used for this purpose. In order to allow the pre-set value change the editing access code should be entered. Then the edited program number should be selected (the upper display) and a number acknowledgement done with OK key and afterwards the pre-set values can be changed with PLUS/MINUS keys. Leaving the EDIT mode is performed after repressing EDIT key.

How to pause/stop the dosing process?

It is possible to pause/stop the dosing process at any time: Pause mode (single STOP/PAUSE key pressing) or permanent dosing interruption: STOP mode (repressing STOP/PAUSE key again). When the controller runs Pause mode (pulsating of LED near STOP/PAUSE key) return to the dosing process is performed with START key. When setting in the cell F7 is either 3 or 4, and controller is currently executing the dosing procedure, giving proper level to digital input will make the unit switch to the pause mode. If the same level is given once more, the dosing

will be continued. As soon as the dosing procedure is completed (STOP mode), confirm the level using the OK key.

Info mode

There is a possibility to obtain information about the current dosing process. If the process is under execution (START or PAUSE modes) pressing the MINUS key causes displaying of IF message together with information dependent on the values originally entered in Set-up F6 and F11cells. Info mode can be left with OK key or after 5 seconds the mode is left automatically.

Set-up

In order for the controller to enter SET-UP mode MINUS key should be pressed and hold down and then EDIT key pressed. Fx message appears then on the upper display, containing information on SET-UP cell number. The cell number can be changed with PLUS/MINUS keys. Entering the function of editing the selected cell is performed by pressing the OK key. Press EDIT key to leave the cell editing.

SET-UP cell description:

Cell No	Typical value	description
SF2	Typical value: 1	decimal point position (0 - none; 1 - tenths; 2 - hundredths; 3- thousandths)
SF3	Typical value: 0	how many units before the pre-set value the rough dosing is turn off
SF4	Typical value: 0	how many pulses before the pre-set value the precise dosing is turn off
SF5	Typical value: 0	counting the units of the medium being dosed: F5=0 - upwards until the pre-set value F5=1 - downwards from the pre-set value until 0
SF6	Typical value: 0	number of units, which cause the alarm 1 after the count-down being done: a valve lack of sealing F6=0 - alarm 1 is turn off F6=(1 ... 9999) - number of units, which cause the alarm 1 after the count-down being done
SF7	Typical value: 0	control input configuration: F7=0 - alarm 2 turn off F7=1 - alarm 2 when the input is ON F7=2 - alarm 2 when the input is OFF F7=3 - dosing start when digital input is ON F7=4 - dosing start when digital input is OFF
SF8	Typical value: 0	access code to EDIT mode (program pre-set value change)
SF9	Typical value: 0	access code to SET-UP mode

SF10	Typical value: 0	kind of information displayed in START/PAUSE modes F10=0 - depending on contents of F6 cell if F6=0: how many units remains to termination of the dosing if F6=1: how many units have been already dosed F10=1 - pre-set value
SF11	Typical value: 1	(0/1) internal sound signalling OFF/ON media quantity corresponding to one pulse
SF12	Typical value: 0.250	the medium value corresponding to 1 impulse. This value must correspond to the factory data of the liquid flow counter. Example: if the producer ensures 4 impulses for 1 liter the value 1 liter / 4 impulses = 0.250 should be entered to the F11 cell. The sequence of entering is as follows: at first a whole number ("0" in the example) should be entered and the OK key pressed, then a fractional part ("250" in the example) should be entered and the OK key pressed for the confirmation. Increasing and decreasing of the entered values can be done by PLUS / MINUS keys.
SF13	Typical value 5	Maximum permissible time between pulses, set in seconds 0..99. Note: When SF13 cell value set as 0 the control is switched OFF. Example: Protection against uncontrolled water overflow, checking the correctness of cable connections. If during an operation the controller is not getting impulse at the given time, SF13 proceeds into Err 3 mode closing the valve and activating simultaneously an alarm.

Alarm

Err 1 - lack of sealing of the dosing valve

Err 2 - lack of acknowledgement from the control input

Err 3 - lack of impulses

The controller is provided with valve sealing control function. Alarm signal appears if the medium volume increases by the number of units pre-set in SET-UP while the controller is in STOP mode (the valves are closed).

Alarm arrival should be acknowledged with OK key. If emergency reasons will not be eliminated the controller will generate the alarm signal again.

Alarm event service configuration is contained in SET-UP cells F6 and F7.

Information about software version

In order to show the software current version it is necessary to press and hold MINUS key and then press PLUS key. In order to leave press OK.

Notes

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