User's Manual

INDU iMAX 500

iMAX 500 KW-V
iMAX 500 KW-H
iMAX 500F KW-V
iMAX 500F KW-H
iMAX 500 KW-V 28TO
iMAX 500 KW-H 28TO
iMAX 500F KW-V 28TO
iMAX 500F KW-H 28TO

MIKSTER®
INDUSTRIAL TECHNOLOGY

INDU iMAX 500
v.2.1.3
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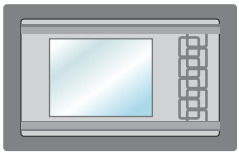
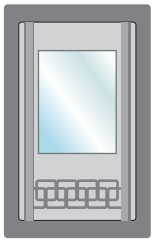
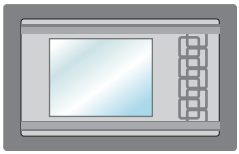
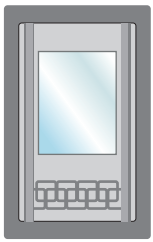
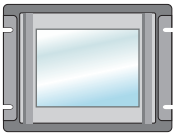
1. Structure, applications, potential

The INDU iMAX 500 Controller is an All-in-One type compact unit combining the controller function with the operator's touch pad function extended by communication options and built-in I/O signal management.
Owing to its capabilities the said controllers are designed to control those industrial processes, in which temperature is the most important element, such as: smoke-chambers, brewing boilers, defrosting chambers, etc.
Smoke-chamber control is the main purpose, for which this controller has been built, and this is reflected in the type of data being shown, controller operation procedure, etc.

The main component is the "Control Panel", indispensable in any controller, which allows to:
- configure the whole controller
- set parameters controlling the process
- observe current measurements

2. INDU iMAX 500 Controller

Controller	*One partial Front Panel type*	*Outside dimensions*	*Dimensions of assembling hole*	*Assembling depth dimensions (toegether with connections)*
iMAX 500 KW-H		269x177mm	235x142mm *str.nr.5 dokładny rys. techniczny	80mm
iMAX 500 KW-V		177x269mm	142x235mm *str.nr.5 dokładny rys. techniczny	80mm

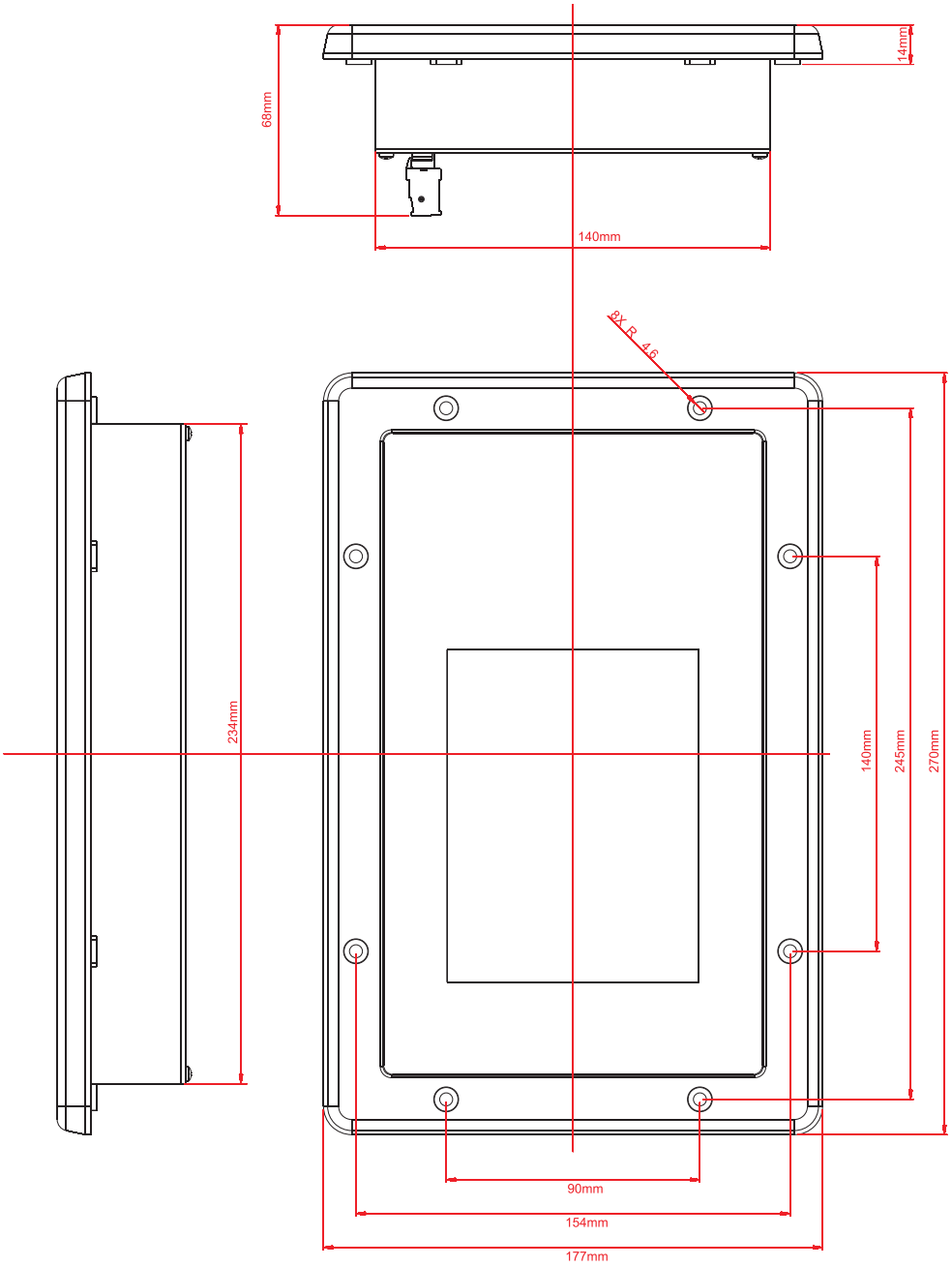
Controller	*One partial Front Panel type*	*Outside dimensions*	*Dimensions of assembling hole*	*Assembling depth dimensions (toegether with connections)*
iMAX 500 KW-H 28 TO		269x177mm	235x142mm	80mm
iMAX 500 KW-V 28 TO		177x269mm	142x235mm	80mm
iMAX 500F KW-V		190x139mm	156x127mm	100mm
iMAX 500F KW-H		139x190mm	127x156mm	100mm
iMAX 500F KW-H 28 TO		190x139mm	156x127mm	100mm

Controller	One partial Front Panel type	Outside dimensions	Dimensions of assembling hole	Assembling depth dimensions (toegether with connections)
iMAX 500F KW-H 28 TO		139x190mm	127x156mm	100mm

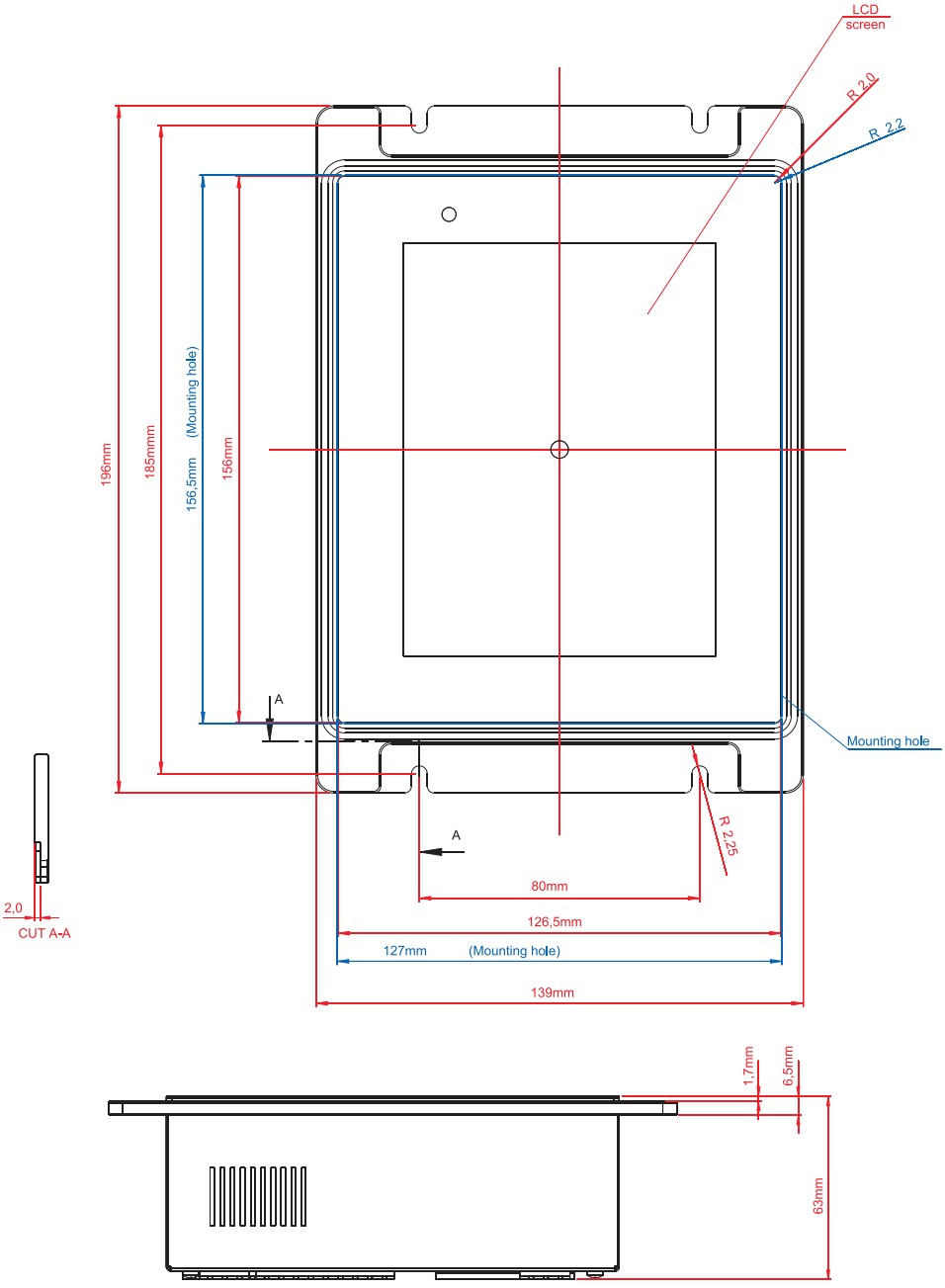
2.1. Input Output

Description	Controller							
	iMAX 500 KW-H	iMAX 500 KW-V	iMAX 500 KW-H 28TO	iMAX 500 KW-V 28TO	iMAX 500F KW-H	iMAX 500F KW-V	iMAX 500F KW-H 28TO	iMAX 500F KW-V 28TO
POWER SUPPLY	24V DC 1A	24V DC 1A	24V DC 1A	24V DC 1A	24V DC 1A	24V DC 1A	24V DC 1A	24V DC 1A
Relay outputs	14	14			14	14		
Transistor outputs			28	28			28	28
Analog Outputs	1	1	1	1	1	1	1	1
Analog Inputs	4	4	4	4	4	4	4	4
Digital Inputs	8	8	8	8	8	8	8	8
Digital Measuring Inputs	1	1	1	1	1	1	1	1
Communications	RS485	RS485	RS485	RS485	RS485	RS485	RS485	RS485

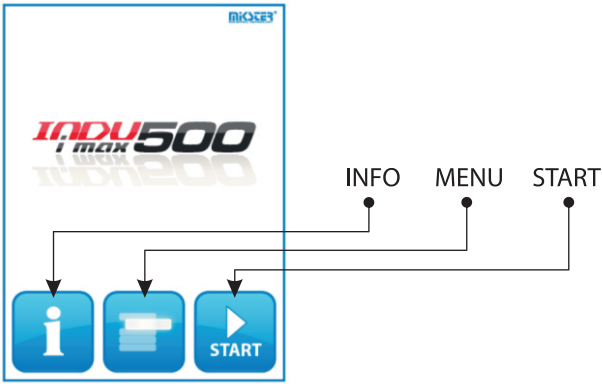
2.1.1 INDU iMAX 500



2.1.2 INDU iMAX 500F



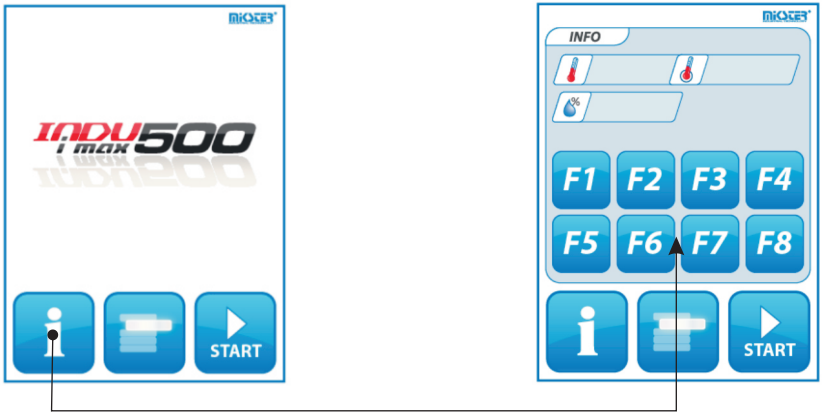
3. INDU iMAX 500 – START OF OPERATION



As soon as power is turned on the graphic display will show the screen with three icons, namely INFO, MENU and START.

3.1. INFO key functions

Selection of INFO key results in displaying the current measurements of temperature, bar temperature, humidity and eight function keys F (F1..F8) additionally on the screen. Setting of function keys is performed the same as PAUSE and STOP mode setting (described in chapter 5.2.4 "Parameter setting for PAUSE mode and STOP mode and F1..F8").



4. Process programs

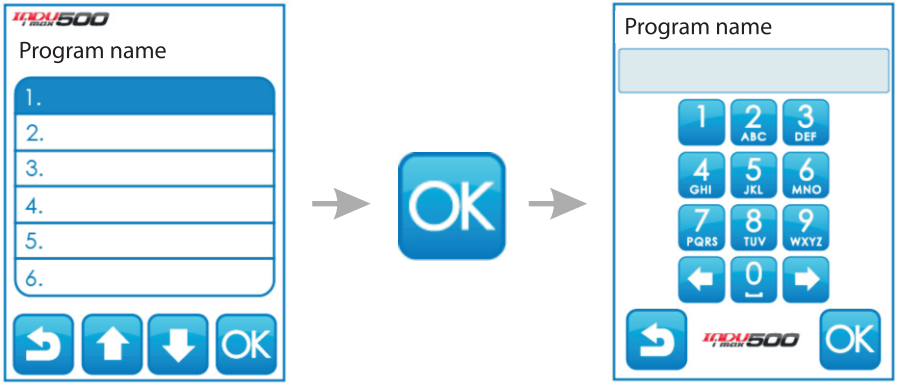
4.1. Manufacturing process programming

Do the following in order to create a new program or edit an already existing one:

- press the button  and then click on 

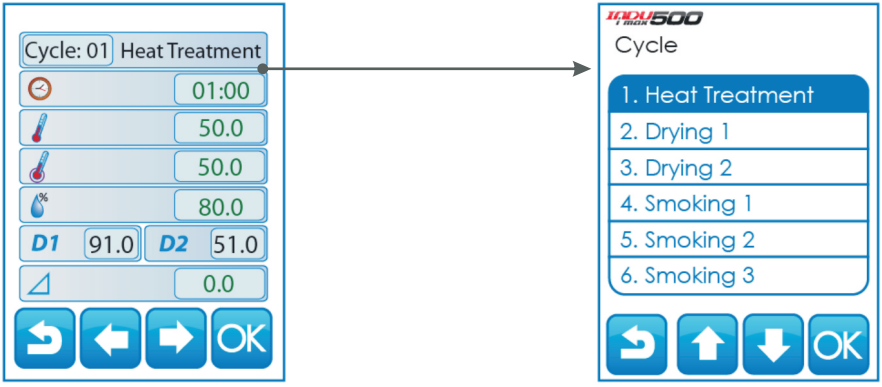
- enter the programming password (default password: 1111
- list of programs will be displayed

NOTE!!!
At first start up the list of programs is empty;
enter the names of programs via an alphanumeric keyboard



- select the program you whish to enter or modify by clicking on proper items and confirming with "OK.".
- enter the program name (*letter on the position is entered by depressing the key with the selected letter the proper number of times*).

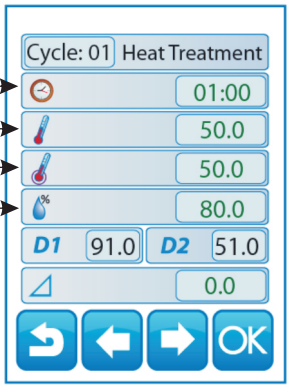
Now, we can start the process edition. Using  keys select the number of the cycle you wish to edit.



(entering the name for the step is done by means of STEP PARAMETERS function, described in chapter 5.2.2)

Then enter:

- how long the cycle must go on
- preset chamber temperature
- preset bar temperature
- preset humidity



INDU iMAX 500 in capable of regulating the temperature increment in function of time (fish smoking technology) or in function of bar temperature (parboiling in temperature differential). If necessary, during entering the process program one shall enter under [DELTA] field the value of temperature increment in oC/min, if [2] was selected in setup F10, or temperature difference between the chamber temperature and the baton temperature, if [1] was selected in setup F10.

In case of entering the "DELTA" increment value equal to [0.0] no temperature increase regulation is realized. The value of delta [3] function in SETUP F10 cell is reserved for INDU iMAX500 tumbler.

(the way of realization of temperature increment algorithm is determined under SETUP menu, as F10 function value)

If additional SF..60 has been selected under set up then it is necessary to set up also the weigl

(addition 1 

) PH (addition 2 

)

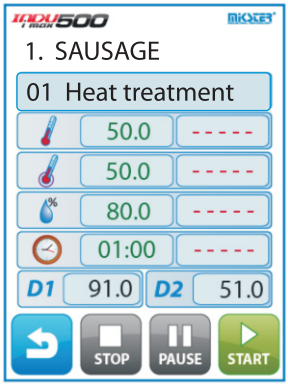
4.2. Execution of program stored in memory

If previous process was completed or it is the first start up then the process proceeds as follows:

Do the following in order to execute any program previously saved in the controller memory

- press [Start] key
- using  arrows one can scroll the list of programs

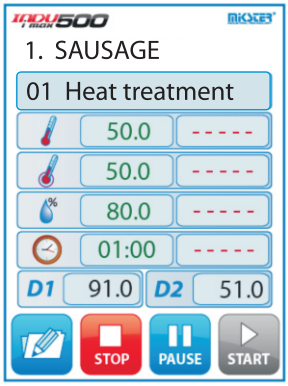
- select the proper program and click on „OK."



If the SETUP cell no 69 is set to 2..200 value, the program will be executed the specified number of times, if it is set to -1 than the program will be executed in an infinite loop.

4.3. Program execution interruption

It is possible to interrupt program execution at any time; in order to do that press [STOP] key. It is also possible to interrupt currently executed program temporarily; to do that press [PAUSE] key



If the program is not completed in a natural way but due to power supply failure then at the next activation the controller will continue the interrupted process automatically if the power supply interruption does not exceed the time preset under SETUP cell no 12.

4.4. Editing of parameters set during controller operation

It is possible to correct previously set parameters while the controller executes a program.
In order to do that - during program execution- press [CONFIGURATION]  the set values start flashing in green.

To edit a given parameter it is necessary to click on proper beam and after entering the changes click on [OK]

ATTENTION !!!

Alterations introduced during controller operation are valid only until the end of technological process.After closing the program, the controller "remembers" program withdata set during the programming process.
During the program data edition the time count as well as the control of condition of the cycle end – are stopped.
The controller automatically returns to the normal mode of operation if no key was pressed for one minute.

5. Controller configuration

The controller possesses very highly developed configuration functions, which allow to adjust its parameters and way of working to user's individual needs. Suitable settings entered through the configuration menu are stored in the controller memory and used during its work.

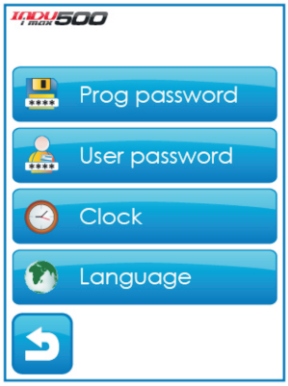
Controller configuration has been divided into the following functions

- user's functions
- service functions 1
- service functions 2

5.1. User functions

Those functions enable to set up:

- programming password
- user password
- time and data
- menu language



5.1.1. Programming password

To change the programming password fist enter the old one (1111) and then enter the new password.

5.1.2. User password

To change the user password firs enter the old one (1111) and then enter the new password.

5.1.3. Time and date setting

To set the time and data select the "CLOCK" function and enter proper date and time via a keyboard and confirm selection with [OK] button.

5.1.4. Setting menu language

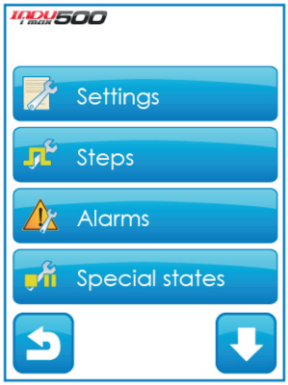
To set menu language it is necessary to select "LANGUAGE" function.

5.2. Service functions 1

Those functions enable to select:

- settings
- step parameters
- alarms
- STOP and PAUSE mode parameters
- I/O parameters
- overview

To access the Service functions 1 the user password must be entered.



5.2.1. Controller parameter setting

Select [SETTING] function to set the controller parameters

Then, we can start to edit the controller parameters (parameters are saved under cells numbered from F01 to F77). In order to edit the selected parameter one shall select it from the list and click on [OK].

Repeat the procedure shown before until required values are set in each cell. The table below shows the meaning of individual cells

CELL NO.	CELL NAME	FACTORY-SET VALUE	RANGE	DESCRIPTION
F01	RS NO. FOR PC	1	1..32	Number in the RS - 485 network, by which the PC computer recognizes the controller
F02	V TRANS FOR PC	4	0..4	Baud rate RS - 485 – connection with PC 0-9600 1-19200 2-38400 3-62500 4-115200
F03	LCD BACKLIGHT LEVEL	0	0..2	0-max 1-min 2-optimal
F04	END COND. TIME	1	0..99	Additional time to process end
F05	PAUSE STATUS	0	0..2	0- pause from key 1-pause released cyclically according to program; cycle time stopped 2 - pause released cyclically according to program; cycle time not stopped
F06	ALARM BEEP	1	0..1	0 – turned off 1- turned on
F07	TEMP. UNIT	0	0..1	Temperature measurement unit 0-0°C 0°F
F08	PLATE. TEMP	380	-99..999	Smoke generator plate temp.
F09	SMOKE TEMP	250	-99..999	Smoke temperature
F10	DELTA STATUS	0	0..2	0- delta OFF 1- delta bar-chamber 2- delta temperature rise in time
F11	REC. FREQ.	1	0..99	Recording frequency
F12	TIME FOR RESTART	40	0..999	Time in minutes [min]

CELL NO.	CELL NAME	FACTORY-SET VALUE	RANGE	DESCRIPTION
F13	MAX CHAMB. SET T	200	-99..999	Maximum preset chamber temperature
F14	MAX CORE SET T	200	-99..999	Maximum preset bar temperature
F15	HUMIDITY TYPE	0	0..4	Moisture measurement type: 0 – psychometric method 1 – with current detector in channel 1 2- with current detector in channel 2 3 - with current detector in channel 3 4 - with current detector in channel 4 5 - with digital detector 1 wire
F16	MANUAL REL NUM	0	0..14	0 – function deactivated 1 .. 14 number of manually controlled relay
F17	DELTA ENABLE	1	0..1	0 – active function 1 – inactive function
F18	HUMIDITY ENABLE	1	0..1	0 – hidden parameter 1– parameter shown on display
F19	EDIT DISABLE	0	0..1	0 – editing of process parameters during its duration 1 – no editing of process parameters during its duration
F20	KEYBOARD CLICK	1	0..1	0 – sound signal off 1 – sound signal on
F21	MAX CHAMBER TEMP	100	-99..999	Max. permitted chamber temp.
F22	MAX CORE TEMP	90	-99..999	Max. permitted bar temperature
F23	MAX PLATE TEMP	800	-99..999	Max. permitted smoke generator temperature
F24	MAX SMOKE TEMP	800	-99..999	Max. permitted smoke temperature
F25	MAX HUMIDITY	99	0..99	Max. permitted smoke temperature
F26	TCH-OFFSET (D)	0	-200..200	Chamber temperature correction value – dry sensor
F27	TCH-OFFSET (W)	0	-200..200	Chamber temperature correction value –wet sensor
F28	TCO-OFFSET	0	-200..200	Bar temperature correction value
F29	TPL-OFFSET	0	-200..200	Smoke generator plate temperature correction value
F30	TSM-OFFSET	0	-200..200	Smoke temperature correction value
F31	HUM. OFFSET	0	0..99	Humidity correction value
F32	TYPE OF DIG.INP	0	0..1	Type of voltage delivered to control inputs: 0 – constant voltage 1 – variable voltage
F33	STAT.REL.FOR END	0	0..1	Type of input signal for cycle termination condition: 0 – input signal from control input 1 - input signal from relay output
F34	REL. NO.FOR END	0	1..14	Number of control input or relay for cycle termination condition

CELL NO.	CELL NAME	FACTORY-SET VALUE	RANGE	DESCRIPTION
F35	MIN CHAMB. SET T	0	-99..999	Minimum temperature set for chamber
F36	MIN CORE SET T	0	-99..999	Minimum temperature set for bar
F37	MIN HUMIDITY SET	0	0..99	Minimum humidity set
F38	MAX HUMIDITY SET	0	0..99	Maximum humidity set
F39	MIN ADDITION1SET	0	-199..999	Minimum addition set 1
F40	MAX ADDITION1SET	0	-199..999	Maximum addition set 1
F41	MIN ADDITION2SET	0	-199..999	Minimum addition set 2
F42	MAX ADDITION2SET	0	-199..999	Maximum addition set 2
F43	STAT AL. MAX TCH	0	0..1	Alarm mode: 0 - ruthless, 1 - relative
F44	STAT AL. MAX TCO	0	0..1	Alarm mode: 0 - ruthless, 1 - relative
F45	STAT AL. MAX HUM	0	0..1	Alarm mode: 0 - ruthless, 1 - relative
F46	STAT AL. MAX TPL	0	0..1	Alarm mode: 0 - ruthless, 1 - relative
F47	STAT AL. MAX TS	0	0..1	Alarm mode: 0 - ruthless, 1 - relative
F48	EMPTY			
F49	EMPTY			
F50	EMPTY			
F51	EMPTY			
F52	EMPTY			
F53	EMPTY			
F54	EMPTY			
F55	EMPTY			
F56	EMPTY			
F57	ID	0	0..1	0 – identification off 1 – identification on
F58	TECHNICAL INSPECTION	0	0..1	0 – function off 1 – function on
F59	NUM. OF SMOK. REL.	0	1..14	Number of smoking relay 0 relay for counting down the time between the next chamber cleaning processes
F60	TIME TO WASHING	0	0..999	Time between washing processes in hours
F61	PROGRAMMING PASS. EN	1	0..1	0 – function off, access to "Programming" menu does not need password 1 – function on, access to "Programming" menu needs password

CELL NO.	CELL NAME	FACTORY-SET VALUE	RANGE	DESCRIPTION
F62	USER PASS. EN	1	0..1	0 – function off, access to "Service Functions 1" menu does not need password 1 – function on, access to "Service Functions 1" menu needs password
F63	DIGITAL INPUTS LOGIC	1	0..1	0 – positive logics 1 – negative logics
F64	WEIGHT TAR.	1	0..3	0-tare off 1-tare on F4 pressed 2-automatic tare on start every step 3- automatic tare on start every step or F4 pressed
F65	CLIPS SENSOR	0	0..1	Chamber temperature and humidity sensor with a digital CLIPS (page 30). 0 – function off 1 – function on
F66	EMPTY			
F67	EMPTY			
F68	EMPTY			
F69	COUNTER CONST.	0	0..9999	Counter constant - - regulator divider for impulses counter
F70	LOOP PROG.STEPS.		-1..99	-1 – program repeated in the endless loop 0,1 – program performered once 2..99 – program repeated multiple (K-multiple 2-99)
F71	RH 1 FILTER	0	0..999	Main humidity filter
F72	RH 2 FILTER	2	0..5	Humidity filter displayed
F73	REL MOTOR G1	0	1..14	0 – function off 1..14 – determines which of relays controls 1gear of motor
F74	REL MOTOR G2	0	1..14	0 – function off 1..14 – determines which of relays controls 2 gear of motor
F75	MOTOR ACCELERATION TIME	10	0..99	Time specified in seconds. Determines the minimum time necessary to speed up the motor on the 1st gear to throw it to the 2nd gear safely
F76	MOTOR BREAKING TIME	10	0..99	Time specified in seconds. Determines the minimum time necessary to brake the motor on the 2nd gear to throw it to the 1st gear safely
F77	TYPE OF ANALOG OUTPUTS	0	0..1	0 – 0..20mA 1 – 4..20mA

CELL NO.	CELL NAME	FACTORY-SET VALUE	RANGE	DESCRIPTION
F78	TIME INFO VISIBLE	0	0..9999	0 – INFO window is not hidden automatically. 1..999 – time after which follows automatic hiding
F79	I1 MAX	0	-9999..9999	Scaling of the current input values 1.
F80	I1 MAX	100	-9999..9999	Scaling of the current input values 1. Maximum
F81	I2 MIN	0	-9999..9999	Scaling of the current input values 2.
F82	I2 MAX	100	-9999..9999	Scaling of the current input values 2. Maximum
F83	I3 MIN	0	-9999..9999	Scaling of the current input values 3.
F84	I3 MAX	100	-9999..9999	Scaling of the current input values 3. Maximum
F85	I4 MIN	0	-9999..9999	Scaling of the current input values 4.
F86	I4 MAX	100	-9999..9999	Scaling of the current input values 4. Maximum
F87	EMPTY			
F88	EMPTY			
F89	ADDITION 1 ENABLE	1	0..1	0 – addittion 1 inactive 1 – addition 1 active
F90	ADDITION 2 ENABLE	1	0..1	0 – addition 2 inactive 1 – addition 2 active
F91	CORE ENABLE	1	0..1	0 - core temperature disabled 1 -core temperature active
F92	F1 MODE	0	0..1	0 – button F1 bistable 1 – button F1 monostable
F93	F2 MODE	0	0..1	0 – button F2 bistable 1 – button F2 monostable
F94	F3 MODE	0	0..1	0 – button F3 bistable 1 – button F3 monostable
F95	F4 MODE	0	0..1	0 – button F4 bistable 1 – button F4 monostable
F96	F5 MODE	0	0..1	0 – button F5 bistable 1 – button F5 monostable
F97	F6 MODE	0	0..1	0 – button F6 bistable 1 – button F6 monostable
F98	F7 MODE	0	0..1	0 – button F7 bistable 1 – button F7 monostable
F99	F8 MODE	0	0..1	0 – button F8 bistable 1 – button F8 monostable
F100	EDIT STEP IN CYCLE	0	0..1	Choice possibility of technological step for current cycle

> ***Attention!!***
> *Setting identical values of MIN and MAX will prevent parameters from edition*

5.2.2. Step parameter setting

Each process controlled by INDU iMAX 500 consists of technological steps executed in a sequence. The controller may store settings for 16 steps.
Define the following elements for each step:

- name
- relay status
- step termination condition

Select the "Step parameters" function in order to set these parameters and then select the proper step from the list and click on [OK] button

- enter the step name „OK"
- the symbols denoting particular relays will be displayed (symbol  means, that a given relay will be active in a given step, whereas the symbol  means that it will be deactivated); if you want to alter the relay status you only need to select it

Then it is necessary to select the condition of the technological step termination

No.	Symbol	Step termination condition
1	TIR>TIS	cycle end after reaching preset time value
2	TCHR>TCHS	cycle end after exceeding preset value of temperature inside chamber
3	TCR>TCS	cycle end after exceeding preset value of bar temperature
4	HUR>HUS	cycle end after exceeding preset humidity value
5	TIR>TIS OR TCHR>TCHS	cycle end after reaching preset time value, or after exceeding preset value of temperature inside chamber

No.	Symbol	Step termination condition
6	TIR>TIS OR TCR>TCS	cycle end after reaching preset time value and after exceeding preset value of bar temperature
7	TIR>TIS OR HUR>HUS	cycle end after reaching preset time value and after exceeding preset humidity value
8	TIR>TIS AND TCHR>TCH	cycle end after drop of temperature inside chamber below preset value
9	TIR>TIS AND TCR>TCS	cycle end after drop of temperature in bar below preset value
10	TIR>TIS AND HUR>HUS	cycle end after drop of humidity below preset value
11	TCHR<TCHS	cycle end after drop of temperature inside chamber below preset value
12	TCR<TCHS	cycle end after drop of temperature in bar below preset value
13	HUR<HUS	cycle end after drop of humidity below preset value
14	TIR>TIS OR TCHR<TCHS	cycle end after reaching preset time value, or after drop of temperature inside chamber below preset value
15	TIR>TIS OR TCR<TCS	cycle end after reaching preset time value, or after drop of temperature in bar below preset value
16	TIR>TIS OR HUR<HUS	cycle end after reaching preset time value, or after drop of humidity below preset value
17	TIR>TIS AND TCHR<TCH	cycle end after reaching preset time value and after drop of temperature inside chamber below preset value
18	TIR>TIS AND TCR<TCS	cycle end after reaching preset time value and after drop of temperature in bar below preset value
19	TIR>TIS AND HUR<HUS	cycle end after reaching preset time value and after drop of humidity below preset value
20	INn=1	cycle end when "end release" is on
21	TIR>TIS AND INN=1	cycle end after reaching preset time value, and "end release" must be on
22	TIR>TIS OR INN=1	cycle end after reaching preset time value, or after switching on "end release"
23	INn=0	cycle end when "end release" is off
24	TIR>TIS AND INN=0	cycle end after reaching preset time value, and "end release" must be off

No.	Symbol	Step termination condition
25	TIR>TIS OR INN=0	cycle end after reaching preset time value, or after switchin off "end release"

5.2.3. Alarm setting

16 alarms can be activated in the controller. Each alarm can be defined by the following:

- name,
- relay status,
- alarm delay time time from alarm detection to its activation,
- outputs logic,
- alarm status.

To set the alarm parameters, one should select „ALARM" function.
The list of alarms will be displayed.

No.	Alarm name	ALARM DESCRIPTION
1	Burner failure	Alarm if the active status on the digital input Di1
2	No R phase	Alarm if the active status on the digital input Di2
3	No S phase	Alarm if the active status on the digital input Di3
4	No T phase	Alarm if the active status on the digital input Di4
5	In5	Alarm if the active status on the digital input Di5
6	In6	Alarm if the active status on the digital input Di6
7	In7	Alarm if the active status on the digital input Di7
8	In8	Alarm if the active status on the digital input Di8
9	----	
10	----	
11	----	
12	Sensor chamber	Alarm if lack of sensor or sensor default on analogue input Ch1
13	Sensor core	Alarm if lack of sensor or sensor default on analogue input Ch2
14	Wet sensor	Alarm if lack of sensor or sensor default on analogue input Ch3

No.	Alarm name	ALARM DESCRIPTION
15	Smoke sensor	Alarm if lack of sensor or sensor default on analogue input Ch4
16	-----	
17	Chamber temperature	Alarm if chamber exceeded maximum temperature Ch1
18	Core temperature	Alarm if core exceeded maximum temperature Ch3
19	Humidity	Alarm if maximum of humidity exceeded
20	Smoke temperature	Alarm if smoke exceeded maximum temperature Ch4

Attention!!!
Active status on the Digital input means:
- low status if F63 logic of digital inputs = 0
- high status if F63 logic of digital inputs = 1

Select the alarm which parameters are to be set and press „OK" then enter the name by the alphanumeric keypad and press „OK.."

– set the relay status similarly as the setting of steps parameters

„Alarm delay" enter the time after which the controller reacts in the case of alarm detection (time in seconds)

„Logic" the function defines how to relate the set status in the function

„Outputs when alarm" with relays, the following options are possibile:

„Status setting" these relays will be turned on which have been set in the „Outputs when alarm" function

„Status addition" these relays will be turned on that results from the normal operations as well as the relays set in the „Outputs when alarm" function

„Status removal" these relays will be exluded from the working ones (normal operation) which are set in the „Outputs when alarm" function

„Alarm status" this function defines the controller reaction in the case of the particular alarm. The following options are possibile:

„Alarm OFF" - the controller will ignore the particular alarm
„Process interruption" - if the controller is in the process execution and the alarm occurs, the process will be interrupted
„Process continuation" - if the controller is in the process execution and the alarm occurs, the controller will adequately set relays and the process will be continued.

5.2.4. Parameter setting for PAUSE mode and STOP mode and key functions F1..F8

The controller has two special modes: stop and pause; you may set the following for each of them:

- which outputs are to be active
- how long should particular mode last
- logics of output setting in relation to relays being set by any process in progress

5.2.5. I/O parameter setting

Each of the 8 relays possesses individually set working parameters. Operation of each relay is described by:

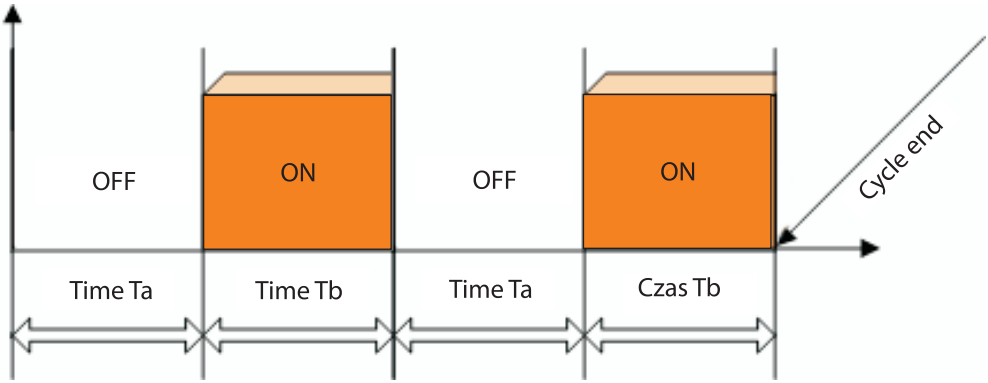
- name
- time type, and time values Ta, Tb
- regulator type and regulator measurement channel
- regulator set value shift in relation to the value set in program
- shift of operation level for algorithm with dynamic set value
- "lower" hysteresis
- "upper" hysteresis

Follow the procedure below to set these parametersy:

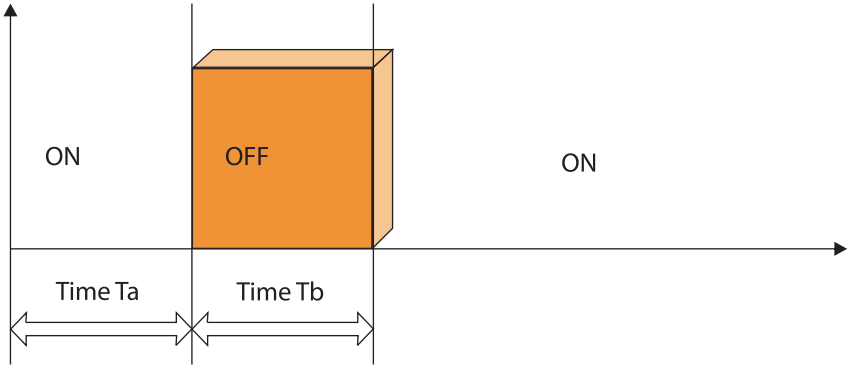
- select function "Parameters of outputs 0/1""
- the list of all relays will be displayed

> ***ATTENTION!!!***
> *At first activation the list of relays contains the default names; it is necessary to enter proper names of relays via an alphanumeric keyboard*

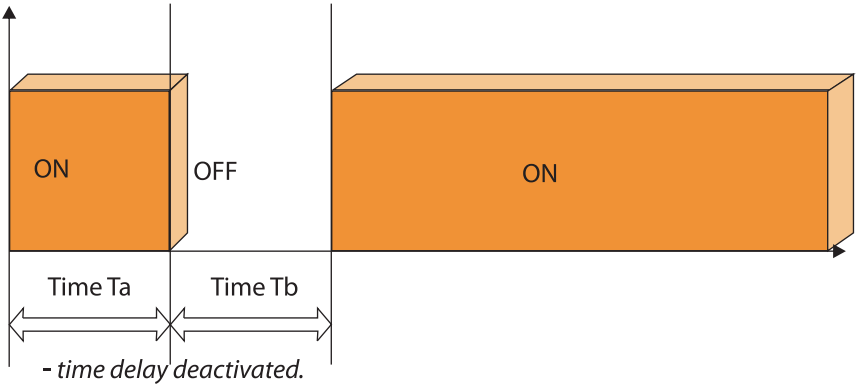
- select the relay to set its parameters,
- enter name
- like in programming and depress [OK].
- the controller will pass to the next settings after depressing [OK.]



- *pulse generator deactivated on start.*



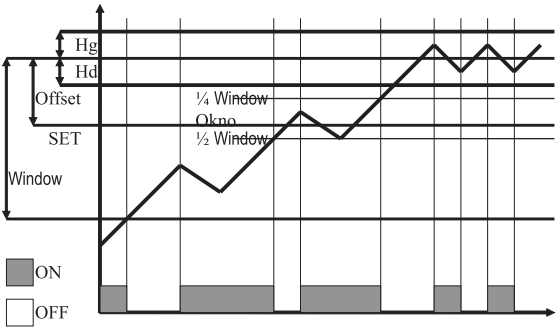
- *time delay deactivated*



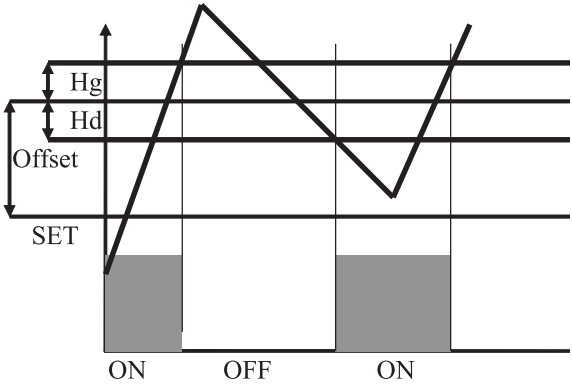
- *time delay deactivated.*

Time mode of pulse generator starting from 0

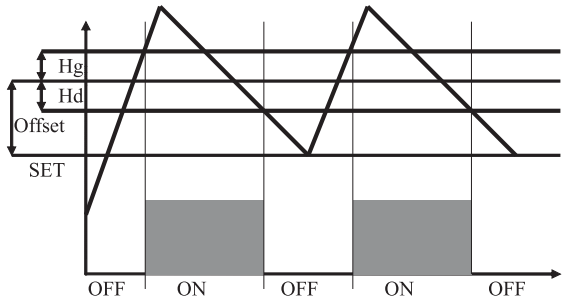
- then set times Ta and Tb – time value is given in seconds
- select regulator controlling particular relay, available regulator options:
  - regulator off
  - heating progress



  - cooling progress
  - heating hysteresis



  - cooling hysteresis



Pulse counter – counts the pulses from selected control input

- selection of input number for counter takes place by setting the measurement channel (chamber temperature – input 1)

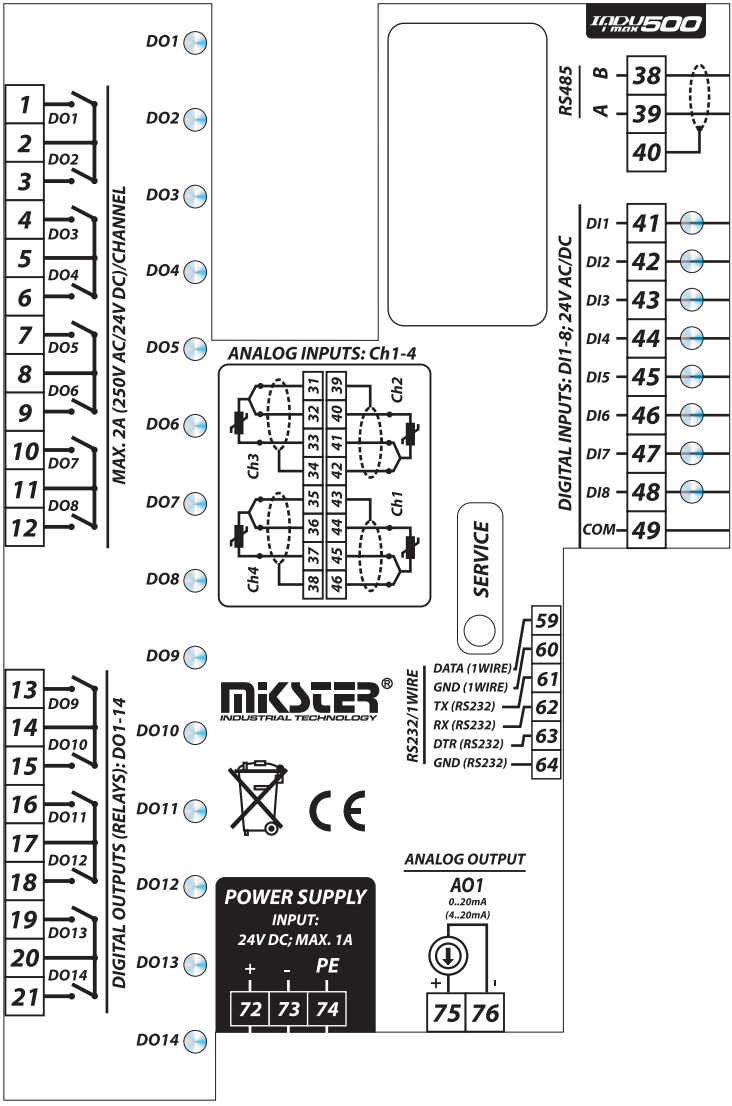
Preset value – preset number of pulses for counting is specified at program editing; it is the preset additions –only one such a regulator can be defined!!!

- select measurement channel
- select preset channel
- enter offset
- enter "window"
- enter lower hysteresis
- enter upper hysteresis
- select next relay for parameter setting and repeat operations listed before

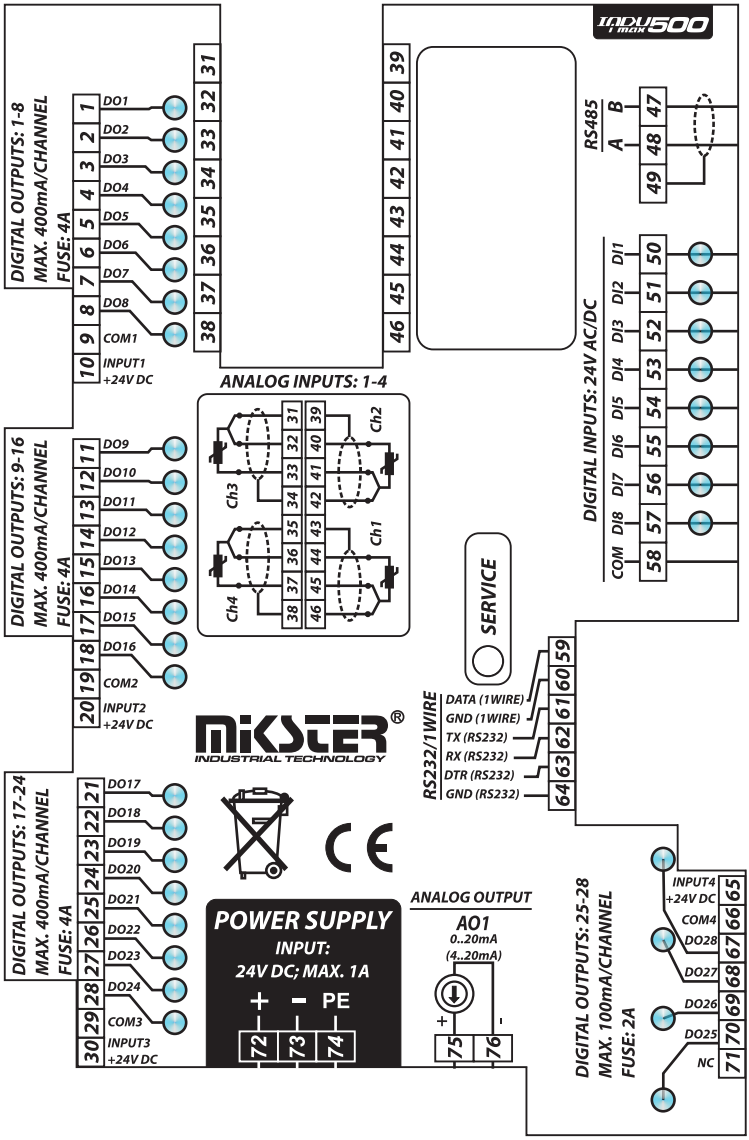
ATTENTION !!!
It is possible to set any measurement channel and independent preset channel for the regulator

Select the OUTPUT function to set the parameters of 0/1 outputs .
Select one of available bistable outputs confirming with proper key.

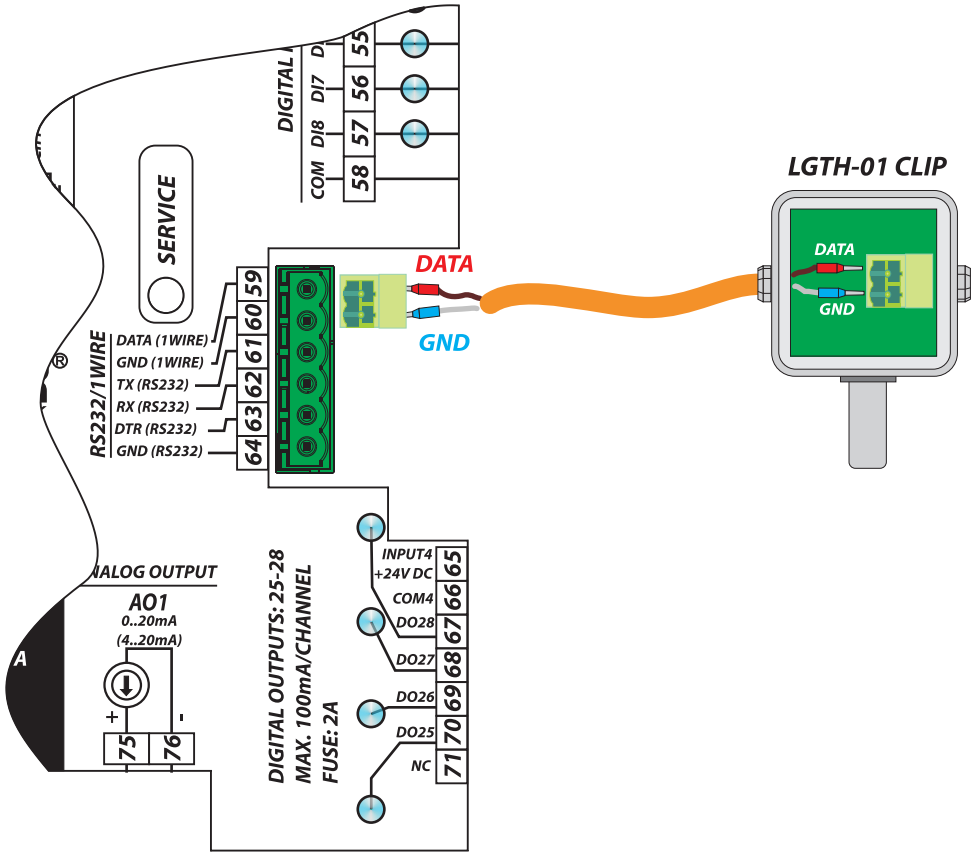
5.2.6. Description of the connectors - iMAX500(F) KW-V(H)



5.2.7. Description of the connectors - iMAX500(F) KW-V(H) - 28TO



5.2.8. Connect the digital temperature and humidity sensor (CLIP) to the controller INDU iMAX 500

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GUARANTEE CERTIFICATE

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The hereby guarantee confirms the high quality and proper operation of the product.
Guarantee is valid for 12 month from the date of sale.
Guarantee obliges the producer to remove free of charge all defects of the sold product in 14 days from the delivery of a faulty product to the service.

GUARANTEE CONDITIONS

- Exploitation of the device should be performed in accordance with its destination and the User's Manual.
- The guarantee expires in the following cases:
  - » Breaking of the leaden seal,
  - » Mechanical damages,
  - » Damages caused by improper exploitation,
  - » Corrections in the Guarantee Certificate, unless changes were introduced by the producer.
- The guarantee does not include damages occurred during the transportation.
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