



WEIGHT BATCHING CONTROLLER

with Analog Output

and MODBUS RTU communication

MS8347

V 2.3



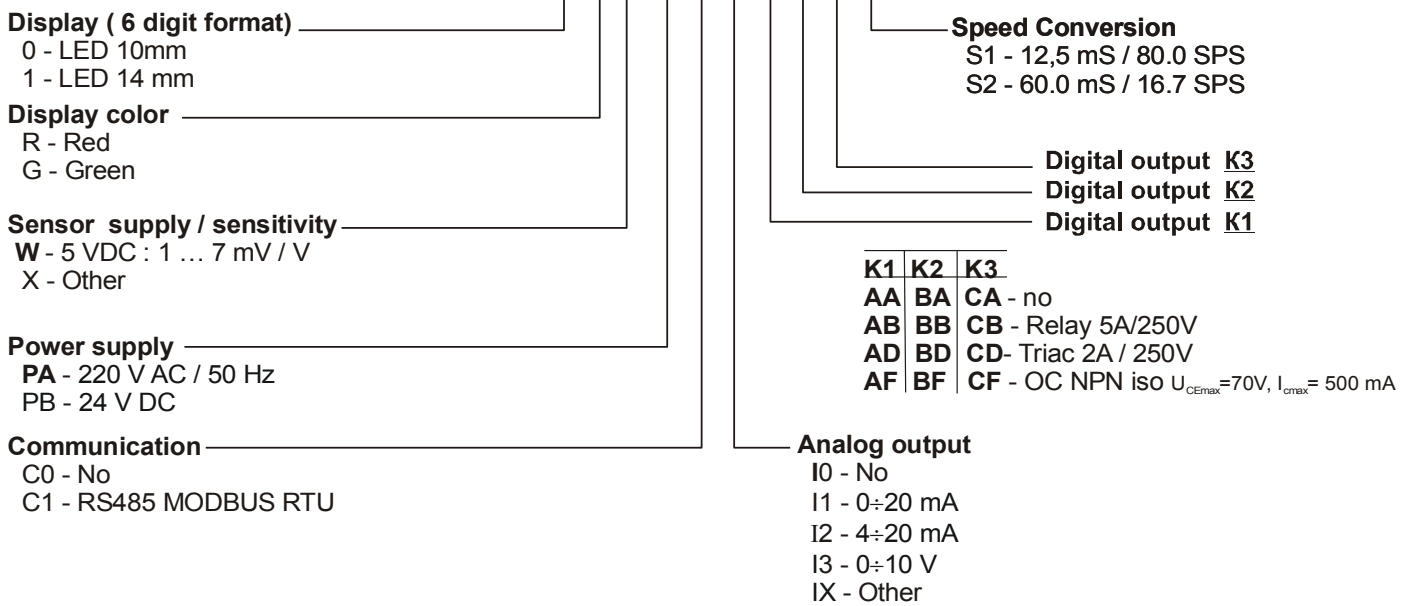
TECHNICAL DESCRIPTION AND USER MANUAL

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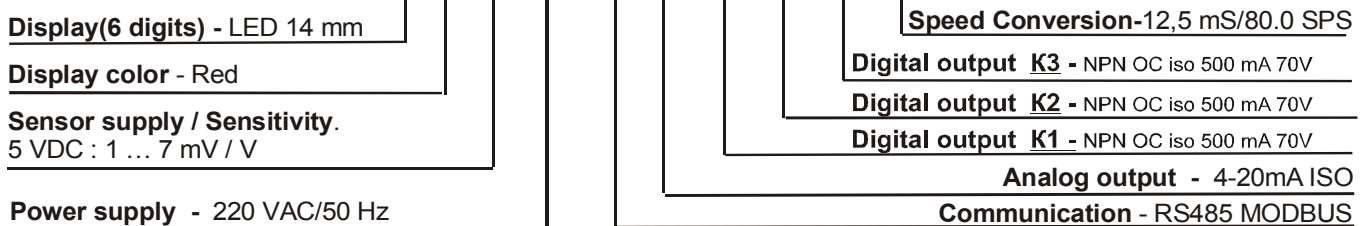
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I. ORDER CODE

MS 8347 - x.x.x.x.x.x.x.x.x.x



Example: MS 8347- 1.R.W.PA.C1.I1.AF.BF.CF.S1



II. VERSION FEATURES

- *MS 8347 is implemented in two hardware variants depending on requirement of conversion speed. The software supports both. It is necessary in Menu / Parameter / Bit – „SYST/rS485/bit6” with which hardware works the software to be specified. Depending on that the maximum conversion speed is 12.5 mS /80 SPS – number of measurements per second/ or 60 mS / 16.7 SPS/. In both variants for greater noise immunity can be operated with 100 mS / 10 SPS /.*
- *MS 8347 operates as a controller / it controls it's outputs, only if the tare weight is less than that of Calibration / CALL /.*
- *MS 8347 forms three independent galvanically isolated power supply voltages:*
 - *Power supply of the Measurement circuit*
 - *Power supply of Analogue output and digital inputs.*
 - *Power supply of RS485*
- *The analogue output signal has insensitivity of the zero about 5 mV, i.e. in zero input indication the output is about 5 mV (0.05% in range 0 ÷ 10 V) . Above that level the output operates linearly with accuracy 0.003% FS.*

III. ADVANTAGES

- High measurement accuracy – 0.003% FS.
- User selectable measurement speed - up to 80 SPS.
- Galvanic insulation of the measurement part from analogue output, digital inputs and outputs and from RS485.
- Fast selection of up to 4 sets of parameters by combination of two digital inputs
- Automatic counter of ready doses.
- Analogue output that transmits the input process variable up to 0.003% linearity.
- MODBUS RTU communication by galvanically insulated RS485.

IV. DESIGNATION

MS8347 is suitable for including in dosing or batching systems by weight method. The input signal is formed by bridge weight sensor which is supplied by the device. The sensitivity and the power supply of the sensor are hardware fixed and have to be specified in the order code.

The analog output which is galvanically insulated from the input signal transmits the measured process variable. Most commonly used is uniform signal 0 ÷ 20 mA DC; 4 ÷ 20 mA DC ; 0÷ 10 V DC which has to be specified in the order code.

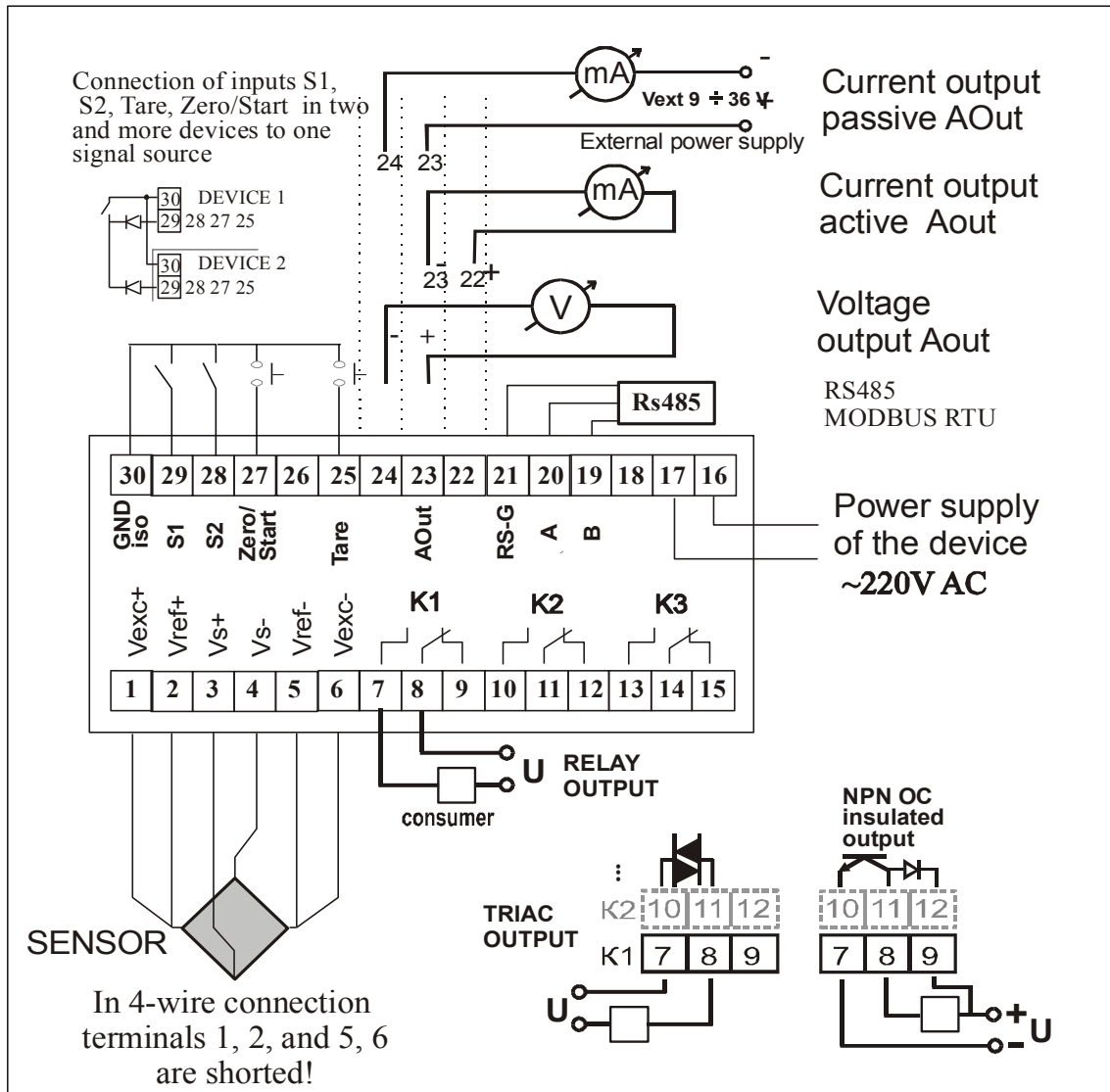
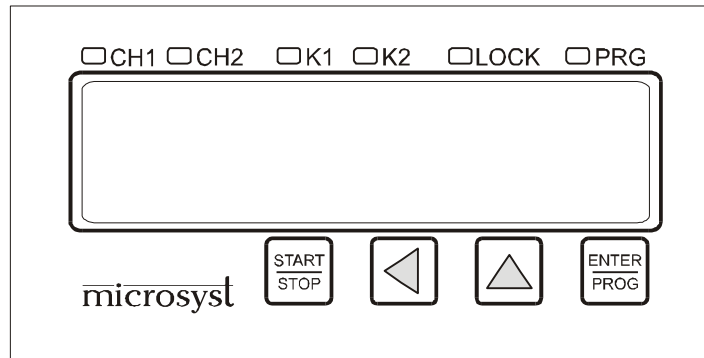
The device has four galvanically insulated from the measurement part digital inputs **TARE, ZERO, S1 and S2** which are designed respectively to tare and reset the measurement, and for selection of specified in advance set-points.

The controller has three digital outputs, which are user configurable.

V. TECHNICAL DATA

Analog input		from bridge weight sensor	
- power supply / sensitivity of the sensor	5 V D / 1 ÷ 7 mV/ V(other)		
- measurement accuracy	0.003%		
- temperature stability	5 ppm/ °C		
- conversion time without software filter:	According to the configuration of order code and from SYST/rS485/bit6 menu:		
- fast / slow conversion	- 12.5 / 100 mS or 60 / 100 mS		
- software filters: arithmetic mean - of 1 level exponential – of 2 level	<ul style="list-style-type: none"> • Arithmetic mean - 1 ÷ 16 measurements (x10 ms) • exponential - attenuation % - 0, 50, 75, 88, 94 % 		
Analogue output, DC		1	
- transmitting the measurement	0 ÷ 20 mA 4 ÷ 20 mA 0 ÷ 10 V other		
- conversion accuracy	0.003%		
- temperature stability	5 ppm/ °C		
- output forming time	60ms		
- measurement part insulation	1500 V DC for 1 s		
Digital inputs		3	
Tare, Zero/Start, S1, S2-selection set of parameters-2	Low active level NPN to GND iso minimum time to Tare and Zero tmin= 20 ms		
Digital outputs		3	
K1, K2, K3	<ul style="list-style-type: none"> • Relay 250 V AC / 5A • Triac 250 V / 2 A • NPN OC iso 500 mA 70V transistor open collector, insulated from measurement part, required an external power supply. Insulation - 1500V DC for 1 s 		
- output forming time	20 ms		
Communication	MODBUS RTU RS485; 9600 bps; parity non/even; 1 / 2 stop		
Power supply			
Power supply	220 V AC / 50 Hz 80 ÷ 250 VAC / 50 ÷ 60 Hz 24 V DC		
Display and Keypad			
- display range	6 seven segment LED's 14 / or 10/ mm - 99999÷99999		
- display format	XXXXX, X.XXXX, XX.XXX, XXX.XX XXXX.X program selectable, by decimal point		
- display color	red green transparent		
- LEDs			
- keypad	Semi sensor keypad		
Operating conditions			
Operating temperature	0 ÷ 50 °C		
Operating relative humidity	без кондензация 0 ÷ 80 % rh		
Protection class	IP 40		
Dimensions			
Overall dimensions (WxHxL)	96 x 48 x 128 mm		
Mounting	Panel in hole 90 x 44 mm		
Weight	Max 400 g		
Storage			
Storage temperature	-10 ÷ 70 °C		
Relative humidity	without condensation 20 ÷ 90 % rh		

VI. FRONT AND BACK PANEL. TERMINAL AND ELECTRICAL CONNECTION



- In 4-wire connection the relevant neighboring terminals 1,2 and 5,6 are shorted.
- The controller has four LEDs - K1, K2, LOCK and PROG. K1, K2 and LOCK light when the respective outputs K1, K2 and K3 are active. The PROG LED light in programming mode. The PROG LED flashes in B mode with the maximum weight reached if it is not displayed.

Selection of parameter set (Prog 1 ÷ 4) for dosing by the state of external inputs S1, S2 connected to GND iso / terminal 30 / -Active 0 or off - 1

Input	Terminal	Prog 1	Prog 2	Prog 3	Prog 4
S1	29	0	0	1	1
S2	28	0	1	0	1

VII. OPERATING MODES

The controller is used as a part of controlling of processes for dosing of materials. Based on measured input weight three digital and one analog output are formed.

They are supported 4 sets of operating set points(SP):

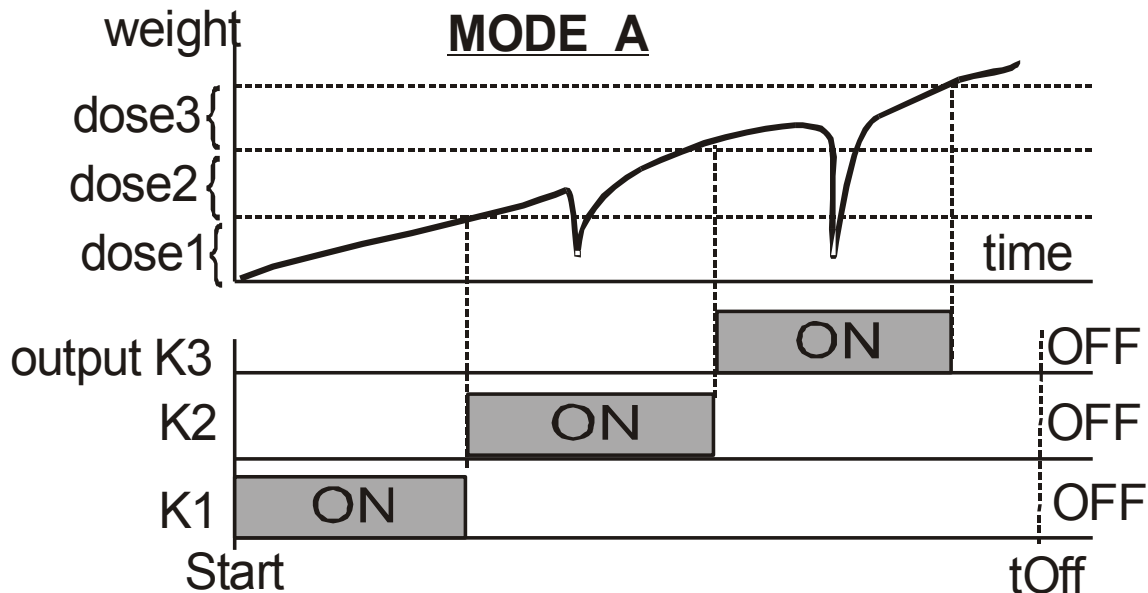
- Dose 1 / weight of switching K1 “dose 1”
- Dose 2 / weight of switching K2 “dose 2”
- Dose 3 / weight of switching K3 “dose 3”

Selection of one of the four sets when setting the set-points or in operating mode is set by combination of the inputs **S1, S2**.

The choice of one of the four sets of parameters in the operating or setting mode is set by a combination of the status of the inputs **S1, S2** see item **VI**.

Using the parameter “**ConFiG**” (*Configuration word that defines the functionality of the controller and represents an integer, the sum of the values of seven bits*) in the system parameters (see item **IX**), by setting the value of **Bit 7**, the corresponding operating mode is selected:

7.1 **MODE A** - Dispenser / Mixer: “**ConFiG**” (*Bit 7 = 0*)



- Declines in the graph are eventual interference or vibrations. If the measured value has reached a certain set-point the respective output become active and it is active whether the measured value falls below the set-point. The output is active till the pressing the **Stop** button, timeout **tOff** ≠ 0 or reaching the last dose.

After power supply voltage the device is waiting for start of **Zero/Start** input. An active level of this input starts the process. **K1** output becomes active. When reaching **dose1**, **K1** becomes inactive and **K2** becomes active. When reaching **dose1+dose2**, **K2** becomes inactive and **K3** becomes active. When reaching **dose1+dose2+dose3**, **K3** becomes inactive. Next start – in transition from inactive to active level of **Zero/Start** input.

Sequence of switching **Start**→**K1**→**K2**→**K3**→**Stop** can not be changed.

The controller gaps one or more stages if the weight at start exceeds their set-points.

The whole process is limited in time by **tOff** parameter.

Start can be configured (parameter **ConFiG**) with (**Bit 6 = 64**) or without (**Bit 6 = 0**) taring.

It is permissible integration of inputs **Tare** and **Zero/Start** with which is obtained taring at startup.

Start by active level of input **Zero/Start** when switching on the power supply voltage have to be weighed against the option “tare at startup”. If the option is active or if inputs **Zero/Start** and **Tare** are

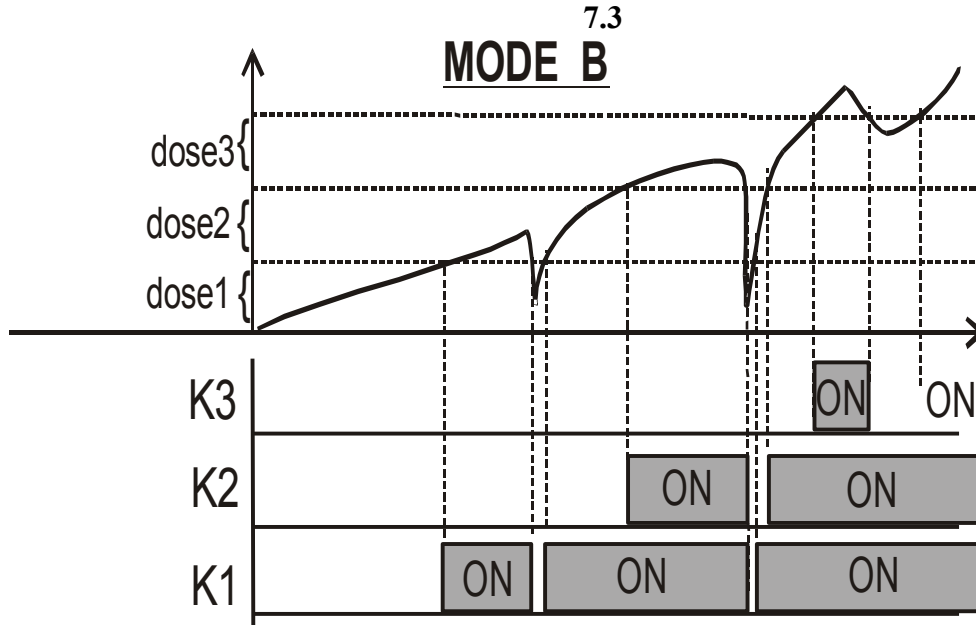
integrated can be used a pulse not constant input signal to avoid re-tare in power supply failure and restoration.

On the front panel there is a **Start/Stop** button which is with analogous function or stops the process if it is already started.

Inversion of the outputs is possible by parameter **ConFiG(Bit 0, Bit 1, Bit 2)**.

Parameters **dose1, 2 and 3** are dosing set-points (for example when mixing various ingredients)

7.2 MODE B - Comparator / The step controller /: "ConFiG" (Bit 7 = 128)



- Declines in the graph are eventual interference or vibrations. Above certain set-point the respective output become active and it become inactive if the measured value is below the set-point. At reverse there is no hysteresis.

Parameters dose1, 2 and 3 are switching levels.

After power supply voltage a normal operating mode is activated. Three digital outputs are formed.

Output **K1** become active exceeding the weight “**dose 1**” and it become inactive at weight less than “**dose 1**”. Its logic of action can be inverted by **bit 0** of the “**ConFiG**” parameter. Output **K2** become active exceeding the weight “**dose 1 +dose 2**” and it become inactive at weight less than “**dose 1 +dose 2**”. Its logic of action can be inverted by **bit 1** of the “**ConFiG**” parameter.

Output **K3** become active exceeding the weight “**dose 1 +dose 2 +dose 3**” and it become inactive at weight less than “**dose 1 +dose 2 +dose 3**”. Its logic of action can be inverted by **bit 2** of the “**ConFiG**” parameter.

Input **Zero/Start** has function “reset” of the tare (indications as after calibration)

In this mode the **Start/Stop** button of the front panel is not used.

7.2.1 MODE B (MAX MODE) - SHOWING MAXIMUM WEIGHT:

It is a sub-mode (**MAX MODE**) of basic **mode B**, so the configuration of the unit needs to be done from parameter “**ConFiG**” (**Bit 7 = 128**) to basic **mode B** and parameter “**rS 485**” - **Configuration word** (**Bit 6 = 64**) for **MAX MODE**.

This **mode B** variant is intended for strength testing. The test consists of loading the test body with a force / weight from initial **PV** to fracture or (**PV_max**).

Status / Event	After Power ON	After active input Start / Zero
<i>Display value</i>	PV	PV_max
PROG LED	flashes	It does not light
Calculation of PV_max	PV_max = 0	PV_max = PV
With Tare input active	PV_max = 0	PV_max = 0

- The outputs function as in mode B.
- In this mode, the unit always calculates the maximum value in tact with the outputs.
If current **PV** > **PV_max**, then **PV_max = PV**.
- The **Prog LED** does not light when **PV_max** is displayed and flashes if **PV** is displayed.
- The readings can be changed by the **START / STOP** button on the front panel. It is accompanied by **PV / PV hi** messages. This only changes the display and does not affect the accumulated **PV max**.
- When power is **ON PV_max = 0** and the unit displays the current **PV** measurement.
- For each active **Start / Zero** input, **PV_max** assigns a **PV** value. (**PV_max = PV**)
- With each tare **PV max = 0**.
- **Tare Input** - If used, it must be **Zero / Start** independent via "**ConFiG**", or it will only act after **Zero** on the keyboard.
"**ConFiG**" (**Bit 6 = 64 + Bit 7 = 128**)=**192** - Taring is independent of zeroing.
"**ConFiG**" (**Bit 6 = 0 + Bit 7 = 128**)=**128**, Tare will act after **Zero** on the keyboard.

Other features:

- **Zero** from the keyboard does not directly affect **PV_max**.
- The display filter does not affect the **PV max** but the other filters does.
- **PV_max** is available via **MODBUS**, as well as a **bit** for the corresponding **MAX MODE** configuration (see table). Below
- **PV_max** is calculated in all operating modes, but is only displayed in the current mode. In others, it is only available through **MODBUS**.

VIII. OPERATING GUIDE

The controller supports up to 4 parameter sets with preset assignments of **dose_1**, **dose_2** and **dose_3**. In the **PARAMETER SETTING mode**, the parameters for each set are set.

Before starting the dosing process or in the "PARAMETER SETTING" mode, the desired set of parameters, namely Prog 1, Prog 2, Prog 3 or Prog 4, is selected using the inputs S1 and S2.

8.1. SCREEN MENUS AND BUTTONS FUNCTION

Button	Function		
Up	<i>By pressing the button to change the on-screen menus in the following sequence :</i>		
	<ul style="list-style-type: none"> - Zero – Display the tare value - Count – Number of doses - Call – Calibration mode – it can be hidden - Prog – Parameters setting - Measure – Current measured value <p><i>5 sec. after using the button, goes back to the main menu.</i></p>		
Left	Go back to the main menu – Measure		
Enter/Prog	♦ According to <u>currently selected menu</u> this button has following functions:		
	Current Menu	Function	
	Zero	Zero	Clearing the current tare
	Count	Clear Count	Clearing the counter
	Call	Calibration	Enter in calibration mode
Prog	Programming	Enter in parameters setting mode	
Enter/Prog + Left	♦ Tare in mode – Measure. The buttons pushed and hold up to stop the flashing the message „Tare“.		
♦ <i>Function Tare , Zero and Call can be hidden by “CONFiG” parameter from SYSTEM PARAMETERS menu</i>			
Start/Stop	Start/Stop in mode A		

8.2 TARE – / with buttons „Enter/Prog + Left” or with digital input /

The device can be tared by ‘**Tare**’ input at any time except calibration procedure, during setting the parameters and during filling for **mode A**. This also applies to the input ‘**Zero/Start**’ - clearing of the tare / filling start.

In **mode B**, for tare there is additional condition to go through ‘**Zero**’ first (indications as after calibration). This condition can be canceled by parameter in **CONFiG**. When taring the weight measurement starts 1 s after activation of the input and continues 1s. If this weight is bigger than **tArEHi (% or HiL-t)** the operation becomes invalid and flashing inscription “**tArEEr**” appears on the display.

If the button **Enter / Prog** is pressed at power on (activation of system parameters), tare is performed unconditionally. If the measured **weight > tArEHi** message appears “**tArEEr**” to power off.

8.3. RESET - Zero for mode B

This function is activated by the digital input or by keypad if this is enabled by the configuration word “**CONFiG**”

When activating the respective input the tare value is reset. This function is not active during calibration, during setting of parameters and during filling for **mode A**.

8.4. CALIBRATION - Call

- ◆ **Before calibration the device has to be tared.**
- ◆ Reference weight has to be placed.
- ◆ Allow to establish the value of the display.
- ◆ Enters “CALIBRATION” mode with button “**Enter/Prog**” .
- ◆ Use the arrows to correct the displayed value under placed reference weight.
- ◆ Press the “**Enter/Prog**” button to confirm and out of calibration.

- ◆ *Exit from “CALIBRATION” menu is performed automatically also 10 sec. after pressing a button and the changed value is stored.*

8.5. DOSES COUNTER – Count

The controller makes automatic reading of number of switching of **K3** and stores them in nonvolatile memory. The counter is incremented by 1 when the measured weight exceeds the parameter **doSE 3**. After reaching 1000000 the counter is reset and continues its work. In the main menu there is an option to reset the counter (see “Operating guide” point 1)

8.6. SETTING THE DOSING PARAMETERS - Prog

Setting of parameters – mode “**Prog**”. Changing the parameters is done through “**Left**” and “**Up**” buttons. The current digit for change is shown by flashing dot, using “**UP**” button the value is changed and using “**Left**” button the position of the flashing dot is changed. If the change of sign of the number is enabled it is changed when the flashing dot is on leftmost digit.

doSE1	Dose1 / weight of changing of K1 . Dimension and decimal point according to maximum measured weight and resolution of the sensor. In mode A it represents a dose, and in mode B – level. All features are in effect for the next two set-points.
doSE 2	Weight of changing of K2
doSE 3	Weight of changing of K3



After setting of “**doSE 3**”, “**End**” appears on the display. When pressing a button other than “**Enter/Prog**” proceed to re-setup of set-points. By pressing the “**Enter/Prog**” exit from setting mode.

8.7. ERROR MESSAGE

Error	Function
“ ErrorA ”	Measurement error. It is necessary the connection of measuring sensor with the device to be checked. Parameter ErLuvL determines the limit for activation of this message.
“ ErrorU ”	The tare weight together with some of operating set-points exceed the maximum measured weight by the device.
“ tArEEr ”	Tare weight > tArEHi (% from HiL-t).

IX. SYSTEM PARAMETERS OF THE CONTROLLER

- Available when button **Enter/Prog** is pressed after power until inscription „**Tune**“ appears on the display. After releasing the button “**SYSt**” appears on the display. After pressing the button „**Enter/Prog**” parameters from the following table appear on the display:

Parameter	Function		Value
A1	Slope of the analog input. <i>(It is calculated automatically in calibration mode).</i> Not to be change !		± 99999 (/ 1024)
Point	Position of the decimal point - 4 most significant bits are read, i.e. allowable values 128, 64, 32, 16 and 0 for : 0.0000, 00.000, 000.00, 0000.0 and 00000		
Hi L-t	Maximum value of set-points in mode B or their sum in mode A . It determines the limits when changing them.		
tArEHi	Maximum weight of tare (% of Hi L-t) . If the weight is above this limit when try to tare appears message TArEEr up to correct tare and is not perceived start mode A .		0 ÷ 100
Filt D	Coefficient of the display filter.	* 0.5	0.00 ÷ 1.00
Filt J	Threshold of clearing of display filter.	* 100	0 ÷ 99999
ConFiG	Configuration word. <i>For setup see below.</i>		0 ÷ 255
rS 485	Communication parameters. <i>For setup see below.</i>		0 ÷ 255
Adr rS	Modbus address		0 ÷ 255
Flt Ar **	Average filter of the measured weight.	* 1	1 ÷ 5
Flt EP ***	Exponential filter of the measured weight.	* 1	1 ÷ 5
Flt J	Threshold of reset of the filter as % of the range.	* 0.1	0.1 ÷ 100.0
Flt t	Time for filter bounce	* 0.1	0.00 ÷ 2.00 s
Hi nE-t	Weight corresponding to the upper limit of the analog output range $A_{out} = (AP1 * W / Hi nEt + AP0) * 16$ {W – current indication, Aout – value of the input of DAC}		0 ÷ 99999
AP1	Multiplier factor of the analogue output	 Not to be change !	-99999 ÷ 99999
AP0	Coefficient “shift” when forming A out		-99999 ÷ 99999
ErLeuL	Limit of the message ErrorA – measurement error. When measuring values under these values ErrorA appears on the display.		0 .. 200 x 32 (ADC units)
t Off	In mode A – time delay for dosing process . Start after set point of first output. This option is canceled with value 0.		0 ÷ 65535 x 2s
End	End. For exit „ Enter/Prog ”.		

* Recommended values

** The values of the parameter correspond to the following average amounts:

- 1 – single measurement
- 2 – 2 consecutive measurements
- 3 – 4 consecutive measurements
- 4 – 8 consecutive measurements
- 5 – 16 consecutive measurements

*** In a larger value of the parameter the filter is deeper.

“ConFiG” - Configuration word - sum of the numbers from chosen options have to be entered (i.e. Sum of 8 numbers) *			
Bit 0	Inversion of K1 output **	NO	0
		YES	1
Bit 1	Inversion of K2 output	NO	0
		YES	2
Bit 2	Inversion of K3 output	NO	0
		YES	4
Bit 3	Calibration menu “Call”	Enabled	0
		Disabled	8
Bit 4	Tare from front panel buttons - TARE	Enabled	0
		Disabled	16
Bit 5	Tare reset from front panel buttons - ZERO	Enabled	0
		Disabled	32
	If it is in mode A	If it is in mode B	
Bit 6	It doesn't tare at start up	Tare is possible after reset only	0
	It tare at start up	Tare is independent of reset	64
Bit 7	Selection of operating mode	Mode A	0
		Mode B	128

Setting the configuration word

Each bit in the configuration word has weight value and in the configuration word have to be entered sum of the weight values.

- **Example for setting of “ConFiG” parameter:**

$$“CONFiG” = 0+0+0+8+0+0+64+128=200$$

Device Configuration: K1, K2 and K3 without invert; Call menu is disabled; allowed Tara and Zero via the keyboard, non-resetting tare; MODE B




Changing this values to be done with caution.
Once activated the access it is possible to power off.

When entering setting of system parameters, the outputs are in inactive state (it depends on inversion options in “ConFiG”).

Normal output – normally open; Inverted – normally closed.

** Inversion of K1 output – example for **mode B:**

	measured weight < doSE 1	Measured weight ≥ doSE 1
normal	K1 is inactive	K1 is active
inverted	K1 is active	K1 is inactive

“ rS 485” - Configuration word				
- sum of the numbers from chosen options have to be entered (i.e. sum of 7 numbers) *				
Bit 0	WRITE DISABLE (It can be reset by menu of the device only)	NO	0	
		YES	1	
Bit 1	BROADCAST DISABLE	NO	0	
		YES	2	
Bit 2	EVEN PARITY	NO	0	
		YES	4	
Bit 3	2 STOP BITS	NO	0	
		YES	8	
Bit 4	ADC SPEED – this bit selects the conversion speed - fast / slow	HIGH	0	
		LOW	16	
Bit 5	ADC TYPE - specifies the type of ADC convertor, which is built-in in the controller. <i>Wrong value stops the measurement !</i>		ADS	0
			AD	32
Bit 6	MAX MODE	NO	0	
		YES	64	

X. ACTIONS AGAINST INTERFERENCE

1. Recommendations for use of connecting wires

- **The cable connecting the sensor to the controller has to be shielded. The shield has to be connected to only one end of the cable to the ground bus of the power source.**
- Wires that transmit a similar type of signals can be packed together but if the signals are different the wires must be separated for prevent electromagnetic interaction.
- When there has to be crossed wires with different types of signals this must be done at an angle of 90 degrees and a long distance.
- Wires which carry weak signals and wires connecting the sensors to controller must not be near contactors, motors, generators, radios and wires which carry large currents.

2. Noise suppression by using of built-in filters in the controller

- In the controller there are three software filters – average and exponential for the value used for control functions and another that filters this value before it displayed.

XI. MODBUS RTU RS485 COMMUNICATION (option)

The device is MODBUS RTU SLAVE with possibility for communication of 9600 bps by RS485 2WIRE line. In standard performance without using a repeaters, to one line can be connected up to 32 devices, with repeaters - up to 247. There is an option for a special performance for up to 128 devices without repeaters. In parameters table in column HOLDING REGISTER ADDRESS are presented the addresses of the relevant parameters. Here will be considered other communication options. There is equality between parameter or operating mode change through the front panel buttons and change by network – i.e. the device can be influenced simultaneously from both sources.

IMPLEMENTED MODBUS FUNCTIONS	
MODBUS FUNCTION	ACTION
01	Reading single bits. /read coils/
03	Reading of HOLDING REGISTERS, /read holding register/
05	Writing single bit, /preset single coil/
06	Writing a single HOLDING REGISTER, / write single register /
10	Writing multiple consecutive HOLDING REGISTERS. /write multiple register/

HOLDING REGISTERS								
Label	Address	Data	Show		Label	Address	Data	Show
Doze3	10	Long	Unsignet		AP1	98	Float	
//Doze3W2	12	Long	Unsignet		AP0	100	Float	
//Doze3W3	14	Long	Unsignet		Config	102	MSByte	Unsignet
//Doze3W4	16	Long	Unsignet		DPoint	102	LSByte	Unsignet
Doze2	18	Long	Unsignet		FLT J	103	Integer	Unsignet
//Doze2W2	20	Long	Unsignet		FLT AR	104	MSByte	Unsignet
//Doze2W3	22	Long	Unsignet		FLT EP	104	LSByte	Unsignet
//Doze2W4	24	Long	Unsignet		FLT T	105	LSByte	Unsignet
Doze1	26	Long	Unsignet		Filt Displ	107	LSByte	Unsignet
//Doze1W2	28	Long	Unsignet		Filt Displ J	108	Integer	Unsignet
//Doze1W3	30	Long	Unsignet		T off	111	MSByte	Unsignet
//Doze1W4	32	Long	Unsignet		DEV ID = 5457	126	Integer	Unsignet
Slope	82	Float			MOD ADR	127	Integer	Unsignet
Hi L-t	86	Long	Unsignet		CNT	208	Long	Unsignet
TARE Hi	92	MSByte	Unsignet		PV	210	Float	
ErrLvl	94	MSByte			cmd	212	MSByte	Unsignet
HI NET	96	Float						

COIL ADDRESS			
Label	Address	Label	Address
K1 inv	1632	2 STOP BITS	1763
K2 inv	1633	ADC SPEAD 0-HI; 1-LO	1764
K3 inv	1634	ADC TYPE	1765
Disable Clbr	1635	ZARO/START IN	2104
Disable button TARE	1636	K3	2107
Disable button ZERO	1637	K2	2108
TARE in mode B : 1-NO, 0-YES	1638	K1	2109
MODE: 0-A; 1-B	1639	TARE IN	2528
WR DISABLE (ENABLE ONLY FROM	1760	S1	2530
BROADCAST DISABLE	1761	S2	2531
EVEN PARITY	1762		

- For MS8347, **DEV ID = 5457**
- Float parameters are in IEEC754 format.
- For START/STOP and TARE by network „cmd“ parameter is used
 - Record of 90 is equivalent to activation of input Start for ~ 50ms
 - Record of 150 is equivalent to activation of input Tare for ~ 50ms
 - Record of 32 leads to Stop
 The value is automatically reset after record of a value.
- Indexes W2,W3 and W4 the relevant parameters, selected by the positions of both inputs for selecting of set-point S1 and S2.
- The parameter A1 of the device screen is displayed x1024, ie read over the network 1 and the menu of the device would be 1024.
- Calibration in the network is the value of the reference weight is saved in PV.
- The decimal point is decorative and the device doesn't scale. For example 111,22 appears on the display but PV will be written 11122. This is the same for all parameters with weight dimension.
- The parameters with time dimension also be read as a whole numbers without decimal point.
- For example 2.23 is readed 223
- The response time of the device is determined by the ADC and the mode to be used, but it can't be < 10 ms.
- When A1=1024 the readings are obtained in ADC code respectively 18 bit for ADS and 20 bit for AD. **0 mV is the middle of the range, and the negative value is displayed 0**
- The parameter A0 (offset of the measurement) is service informative. A0 = 0. Not to be changed!

WARRANTY CARD

Warranty Card № :

Warranty : months

Serial number :

The product is bought by:

with invoice № :/..... 20.....

WARRANTY CONDITIONS

The warranty consists of free repair of all manufacturing defects that can occur during the warranty period. **The repair is done by presenting of this warranty card in the service base with which is bought the product.** The warranty does not cover damage caused by poor transport, poor storage, incorrect usage, forces of nature, failure to follow instructions and when others made an attempt to remove the defects. In these cases the defect can only be removed for a fee.

Service during the warranty period and settlement of claims is done under the current legislation.

REPAIRS MADE IN THE SERVICE BASE

Service	Data of entry	Order number	Type of the repair	Date of delivery	Performer of the repair

Seller:

Buyer:

Bulgaria, 4000 Plovdiv, 4 Murgash str.
Tel.: (+359 32) 642 519, 640 446 fax: (+359 32) 640 446
www.microsyst.net e-mail: info@microsyst.net