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# MICROPROCESSOR BATCH CONTROLLER
# MOD.DOSAX 2020-2030-2040


CE

THE APPLIANCE DESCRIBED HEREIN CONFORMS TO STANDARDS EN55011, EN61000-3-2, IEC 1000-4-2, IEC1000-4-4

24/01/2006 VERSION 3.0

**OPERATING MODE SELECTION:**

PRESS THE **CS** KEY

1 SIMULTANEOUS MODE
WHEN THE START BUTTON IS PRESSED, ALL THE ENABLED PREDETERMINERS START TO MEASURE OUT THE PRODUCT

2 SEQUENTIAL MODE
WHEN THE START BUTTON IS PRESSED, THE FIRST ENABLED PREDETERMINER STARTS, FOLLOWED BY THE SECOND, AND SO ON

3 INDIVIDUAL MODE
PRESS ONE OF THE F KEYS ON THE LEFT (F1 = PRODUCT 1, F2 = PRODUCT 2...) IN ORDER TO SELECT THE PRODUCT
PRESS THE START BUTTON IN ORDER TO START THE INDIVIDUAL PRODUCT

USE THE ARROW KEY IN ORDER TO SELECT THE OPERATING MODE
PRESS THE ENTER KEY TO CONFIRM
THE WORD “ON” ALONGSIDE THE OPERATING MODE INDICATES THE PRE-SELECTED MODE

**NOTE:**
TO START UP THE SIMULTANEOUS OR SEQUENTIAL CYCLE, PRESS START FROM THE MAIN PAGE
TO START UP THE INDIVIDUAL CYCLE, SELECT THE PRODUCT USING ONE OF THE FUNCTION KEYS (F1, F2...) AND THEN PRESS THE START KEY

**SETTING THE DOSAGE QUANTITY:**

PRESS ONE OF THE F KEYS ON THE LEFT (F1 = PRODUCT 1, F2 = PRODUCT 2...) IN ORDER TO SELECT THE PRODUCT

SET THE DESIRED QUANTITY (SET)

CONFIRM BY PRESSING THE ENTER KEY

PRESS THE ESC KEY IN ORDER TO RETURN TO THE DOSAGE PAGE

**GENERAL NOTES**

WHEN THE PRODUCT IS IN THE START PHASE, THE LETTERS **PR** (PREDETERMINER) FLASH ON THE LEFT OF THE DISPLAY

IF THE STOP BUTTON IS PRESSED IN ORDER TO INTERRUPT THE DOSAGE, THE LETTER **S** APPEARS NEXT TO THE PRODUCTS THAT WERE IN THE START PHASE

WHEN A PREDETERMINER HAS REACHED THE END OF THE DOSAGE OPERATION, AN ASTERISK LIGHTS UP ALONGSIDE THE LETTERS **PR**

IT IS NOT POSSIBLE TO MODIFY THE SETTINGS OR PARAMETERS DURING THE DOSAGE CYCLE

THE PRESENCE OF THE LITRE COUNTER IMPULSES IS INDICATED BY THE **IN** LED FLASHING

**TOTALIZATORS**

PRESS ONE OF THE F KEYS ON THE LEFT (F1 = PRODUCT 1, F2 = PRODUCT 2...) IN ORDER TO SELECT THE PRODUCT

PRESS THE **F1** KEY

THE DISPLAY SHOWS THE PARTIAL TOTALIZATOR WHICH CAN BE RESET USING THE CLEAR KEY

THE HISTORICAL TOTALIZATOR (NOT RESETTABLE) IS DISPLAYED WHEN THE ARROW KEY IS PRESSED

**PARAMETERS MENU**

PRESS ONE OF THE F KEYS ON THE LEFT (F1 = PRODUCT 1, F2 = PRODUCT 2...) IN ORDER TO SELECT THE PRODUCT

PRESS THE **F2** KEY

**ERROR PERCENTAGE COEFFICIENT**
CARRY OUT 3 IDENTICAL CONSECUTIVE DOSAGE TESTS (WITH FULL LINE)
SET THE AVERAGE ERROR VALUE FOUND USING THE NUMERICAL KEYBOARD (I.E. IF – 5% PRODUCT DOSED WAS FOUND, ENTER –5% AND CONFIRM BY PRESSING ENTER)

**LITRE COUNTER FACTORIZATION COEFFICIENT**
THIS VALUE IS NORMALLY SET IN THE CRAIND LABORATORIES.
IF IT IS NECESSARY TO CHANGE THE SET VALUE, NOTE THE LITRE COUNTER (ASSEMBLED ON THE DOSAGE LINE) REGISTRATION NO. AND CONTACT CRAIND PERSONNEL, WHO WILL INFORM YOU OF THE ORIGINAL CALIBRATION VALUE.

**DECIMAL NUMBERS**
0 = DECIMAL POINT DISABLED
1 = 1 DECIMAL POINT ENABLED

**CALCULATION TYPE**
0 = INCREMENTAL CALCULATION
1 = DECREMENTAL CALCULATION

**CALCULATION BLOCK**
0 = WHEN THE PREDETERMINER IS IN THE STOP PHASE, ANY INCOMING IMPULSES ARE CALCULATED BY THE TOTALIZATORS
1 = WHEN THE PREDETERMINER IS IN THE STOP PHASE, ANY INCOMING IMPULSES ARE NOT CALCULATED BY THE TOTALIZATORS

**OUT IMPULSES** (FACTORIZED IMPULSE OUTPUT)
0 = OUTPUT DISABLED

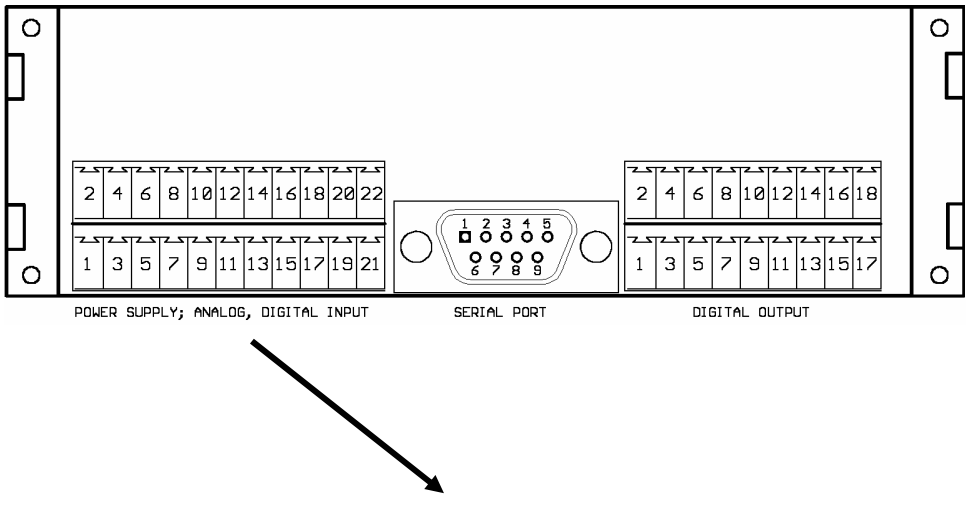
1 = OUTPUT ALWAYS ENABLED (INDEPENDENTLY FROM WHETHER THE INSTRUMENT IS RUNNING OR NOT)
2 = OUTPUT ONLY ENABLED DURING OPERATION, WHEN THE PREDETERMINER STOPS THE OUTPUT WILL SEND OUT ANY IMPULSES THAT IT HAS MEMORIZED IN ORDER TO COMPLETE THE REMOTE CALCULATION
3 = OUTPUT ONLY ENABLED DURING OPERATING, WHEN THE PREDETERMINER STOPS THE OUTPUT WILL BE INTERRUPTED AND ANY MEMORIZED IMPULSES WILL BE CANCELLED

**MINIMUM ALARM**
USED IN ORDER TO AUTOMATICALLY INTERRUPT (AFTER A SET LENGTH OF TIME) THE PRODUCT SUPPLY IN THIS PAGE IT IS POSSIBLE TO ENTER THE MINIMUM ALARM IN SECONDS, TENTHS AND HUNDREDTHS OF A SECOND. WARNING: IF THE MINIMUM ALARM IS SET, ANY SUPPLY STOPPAGES THE FIRST TIME THE SYSTEM IS USED SHOULD BE CONSIDERED NORMAL IN AS MUCH AS MORE TIME THAN THAT SET IS NECESSARY IN ORDER TO FILL THE LINE.

**MAXIMUM ALARM**
USED IN ORDER TO PREVENT EXCESSIVE PRODUCT LOADS DAMAGING THE DOSAGE SYSTEM. IN THIS PAGE IT IS POSSIBLE TO ENTER THE MAXIMUM ALARM IN SECONDS, TENTHS AND HUNDREDTHS OF A SECOND.

**SEQUENTIAL STOP**
IT IS POSSIBLE TO ENABLE A PAUSE BETWEEN EACH DOSAGE AND THE NEXT WHEN THE MACHINE IS IN SEQUENTIAL MODE

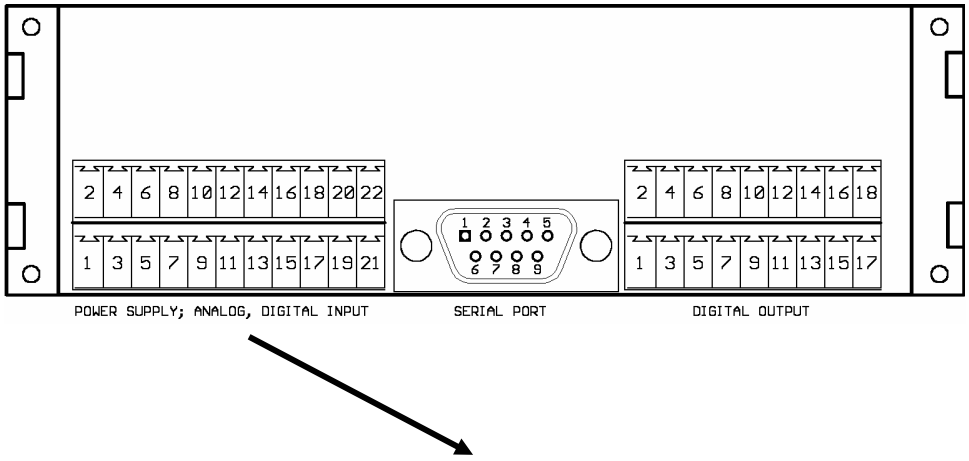
*Power Supply Description:*



| Pin No. | Description |
|---|---|
| 1 | 24 Vac |
| 3 | 0 Vac |

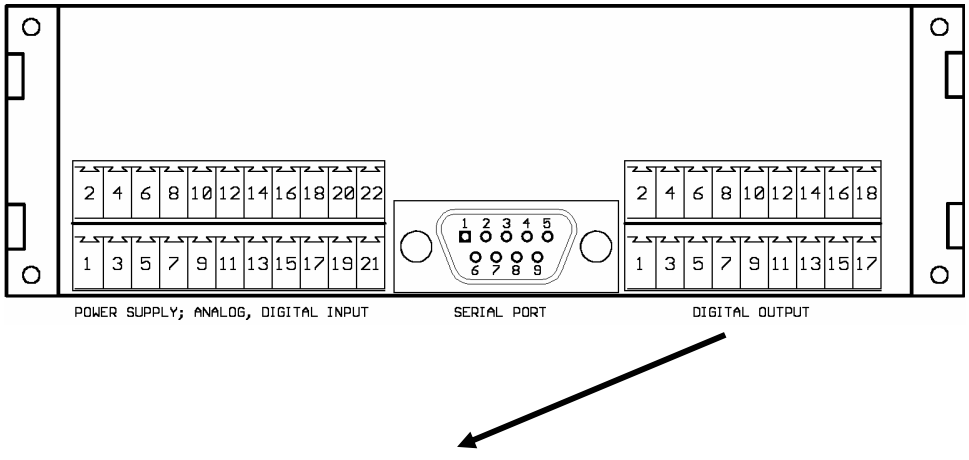
*Description of digital input connections:*

**NOTE:**
**it is advisable to use a separation transformer dedicated to the instrument power supply. In the presence of strong electromagnetic disturbance or if the conductors are placed near power lines, use shielded cables and filters for the 24 V supply. The shielding should only be earthed on one side and must not be used as a return for the signals.**




| Input No. | Pin No. | Description |
|---|---|---|
| Com-in | 21 | Common inputs: litre counter, start, stop, resetting (+ 12 Vdc) |
| 0 Vdc | 13 | 0 Vdc (generally not used) |
| 1 | 2 | Digital input 1 (remote start) |
| 2 | 4 | Digital input 2 (remote stop) |
| 3 | 5 | Digital input 3 (impulses from litre counter 1) |
| 4 | 6 | Digital input 4 (impulses from litre counter 2) |
| 5 | 7 | Digital input 5 (impulses from litre counter 3) |
| 6 | 8 | Digital input 6 (impulses from litre counter 4) |
| 7 | 9 | Digital input 7 (remote reset) |

*Description of digital output connections:*



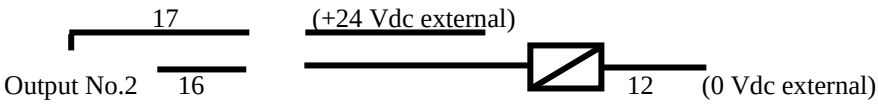
## ATTENTION:

**for instrument DOSAX 2020-2030-2040 produced from january 2006, the alarm exit out 8 becames Mos-fet and uses only the pin 6**

Mos-fet and relay output connections after january 2006:

| Output No. | Pin No. | Description |
|---|---|---|
| Com-out + | 17 | Common outputs +24 Vdc |
| Com-out - | 12 | Common outputs 0 Vdc |
| 1 | 18 | Out 1 mos-fet (factorized impulse output 1) |
| 2 | 16 | Out 2 mos-fet (factorized impulse output 2) |
| 3 | 14 | Out 3 mos-fet (factorized impulse output 3) |
| 4 | 1 | Out 4 clean relay contact (predeterminer 1) |
| 4 | 3 | Out 4 clean relay contact (predeterminer 1) |
| 5 | 9 | Out 5 clean relay contact (predeterminer 2) |
| 5 | 11 | Out 5 clean relay contact (predeterminer 2) |
| 6 | 13 | Out 6 clean relay contact (predeterminer 3) |
| 6 | 15 | Out 6 clean relay contact (predeterminer 3) |
| 7 | 2 | Out 7 clean relay contact (predeterminer 4) |
| 7 | 4 | Out 7 clean relay contact (predeterminer 4) |
| 8 | 6 | Out 8 mos-fet (alarm) |
| 8 | 8 | not used |
| 9 | 10 | Out 9 mos-fet (factorized impulse output 4) |

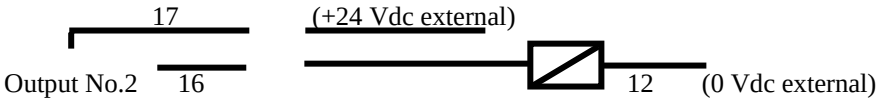
Mos-fet outputs:



Mos-fet and relay output connections before january 2006:

| Output No. | Pin No. | Description |
|---|---|---|
| Com-out + | 17 | Common outputs +24 Vdc |
| Com-out - | 12 | Common outputs 0 Vdc |
| 1 | 18 | Out 1 mos-fet (factorized impulse output 1) |
| 2 | 16 | Out 2 mos-fet (factorized impulse output 2) |
| 3 | 14 | Out 3 mos-fet (factorized impulse output 3) |
| 4 | 1 | Out 4 clean relay contact (predeterminer 1) |
| 4 | 3 | Out 4 clean relay contact (predeterminer 1) |
| 5 | 9 | Out 5 clean relay contact (predeterminer 2) |
| 5 | 11 | Out 5 clean relay contact (predeterminer 2) |
| 6 | 13 | Out 6 clean relay contact (predeterminer 3) |
| 6 | 15 | Out 6 clean relay contact (predeterminer 3) |
| 7 | 2 | Out 7 clean relay contact (predeterminer 4) |
| 7 | 4 | Out 7 clean relay contact (predeterminer 4) |
| 8 | 6 | Out 8 clean relay contact (alarm) |
| 8 | 8 | Out 8 clean relay contact (alarm) |
| 9 | 10 | Out 9 mos-fet (factorized impulse output 4) |

Mos-fet outputs:




TECHNICAL FEATURES:

| | |
|---|---|
| Power supply | 24 Vca 50/60 Hz |
| Max. absorption | 10 VA |
| Relay outputs | 110 Vca/dc 1 A max |
| Mos-fet static outputs | 12 - 48 Vdc 1 A max |
| Sensor power supply | 12 Vdc 80 mA max |
| Protection level | IP 64 |
| Working temperature | -10 +45 °C |

## PASSWORD SETUP

The user is asked to enter a 4-digit password to protect access to SETUP parameters.


the password can be entered using the numeric keys: **2040** (not modifiable)

To confirm press the **ENTER** key

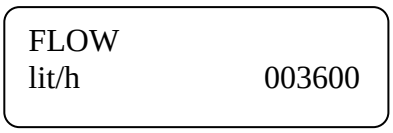
If you enter the wrong password you can enter the correct one again

to exit this page press the **ESC** key

**ANNEX TO DOSAX 2040 MANUAL**

# FLOW

During the dosage phase it is possible to view flow by pressing ↑:




Press ↑ again to return to previous screen.

The parameter menu pages for configuring flow are described below:

In this page it is possible to define the flow scale shown according to the following order:

0 = litres/second
1 = litres/minute
2 = litres/hour

To modify the value:

Use the keypad to type in the desired value

In the event of errors, use **CLEAR** to erase any incorrect numbers

Press **ENTER** to confirm the value typed in

By pressing **ENTER** the following menu page will appear:

Press **ESC** to quit page visualisation and return to main menu

| |
|---|
| NO. MEANS 001 |
| ← QUIT ENTER:YES |

In this page it is possible to introduce a value (from 1 to 100) of flow reading means; this parameter can be used when flow reading is particularly unstable. Consider that:

001 = reading quick in increasing or decreasing, but less stable
100 = reading slow in increasing or decreasing, but more stable

To modify the value:

Use the keypad to type in the desired value

In the event of errors, use **CLEAR** to erase any incorrect numbers

Press **ENTER** to confirm the value typed in

By pressing **ENTER** the following menu page will appear:
Press **ESC** to quit page visualisation and return to main menu

| |
|---|
| min. ALARM 000200 |
| ← QUIT ENTER:YES |

In this page it is possible to introduce the minimum flow alarm (the alarm output is shown on the terminal board). The minimum alarm is used to signal malfunctions during dosage (for example, product shortage, tube ruptures, etc.), when it triggers, the display will show the following message at regular intervals.


To modify the value:

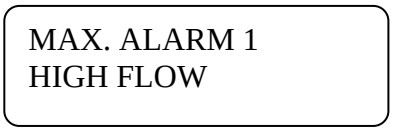
Use the keypad to type in the desired value

In the event of errors, use **CLEAR** to erase any incorrect numbers

Press **ENTER** to confirm the value typed in

By pressing **ENTER** the following menu page will appear:
Press **ESC** to quit page visualisation and return to main menu


In this page it is possible to introduce the maximum flow alarm (the alarm output is shown on the terminal board). The maximum alarm serves to prevent excessive flow from damaging the dosage system.
When the alarm triggers, the display will show the following message at regular intervals.




Reduce flow to conserve the dosage system measurement elements.

To modify the value:

Use the keypad to type in the desired value

In the event of errors, use **CLEAR** to erase any incorrect numbers

Press **ENTER** to confirm the value typed in

By pressing **ENTER** the following menu page will appear:
Press **ESC** to quit page visualisation and return to main menu

In this page it is possible to introduce a value expressed in seconds (max. 127) in order to delay the minimum flow alarm triggering. This parameter is used in order to prevent blocks in supply when the plant is started up with the line empty.

**N.B.:**
**Minimum and maximum flow alarms are expressed in the chosen unit of measurement (for example litres/hour) and they replace those described on the DOSAX 2040 MICROPROCESSOR BATCH CONTROLLER manual.**