INSTRUCTION AND SERVICING MANUAL

B6 REGULEX® BAY

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TRANSLATION OF THE ORIGINAL MANUAL

IMPORTANT : **Before assembly and start-up, please read and clearly understand all the documents relating to this equipment (professional use only).**

THE PICTURES AND DRAWINGS ARE NON CONTRACTUAL. WE RESERVE THE RIGHT TO MAKE CHANGES WITHOUT PRIOR NOTICE.

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INSTRUCTION AND SERVICING MANUAL

B6 REGULEX® BAY

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Electric diagrams : B6 REGULEX® BAY

Spare parts : B6 REGULEX® bay (Doc. 573.310.050)

Dear Customer,

You are the owner of our new REGULEX® bay and we would like to take this opportunity to thank you.

To make sure your investment will provide full satisfaction, special care has been taken by KREMLIN during all designing and manufacturing processes.

To obtain the best result, safe and efficient operation of your equipment, we advice you to read and make yourself familiar with this instruction and service manual. Indeed, the non-compliance with instructions and precautions stated in this manual could reduce the equipment working life, result in operating trouble and create unsafe conditions.

1- SAFETY INSTRUCTIONS

■ GENERAL SAFETY INSTRUCTIONS

CAUTION : The equipment can be dangerous if you do not follow our instructions concerning installation and servicing described in this manual and in accordance with applicable European standards and local national safety regulations.

Please carefully read all the instruction literature before operating your equipment.

Only trained operators can use the equipment (To acquire an essential training, please contact the "KREMLIN REXSON University" training center - Stains).

The foreman must ensure that the operator has understood the safety instructions for this equipment as well as the instructions in the manuals for the different parts and accessories.

Read carefully all instruction manuals, label markings before operating the equipment.

Incorrect use may result in injury. This equipment is for professional use only. It must be used only for what it has been designed for. Never modify the equipment. The parts and accessories supplied must be regularly inspected. Defective or worn parts must be replaced.

Never exceed the equipment components' maximum working pressure.

Comply with regulations concerning safety, fire risks, electrical regulations in force in the country of final destination of the material. Use only products or solvent compatible with the parts in contact with the material (refer to data sheet of the material manufacturer).

Refer to 'Installation and safety instructions' document (doc. 578.001.130)

■ SPECIFIC SAFETY INSTRUCTIONS

BAY

The working of the electrical equipment implies necessarily the presence of dangerous voltages on some of its parts.

The non-compliance with the safety requirements can lead to bodily injuries and to important properly damages.

The bay consists of components or products, which have their own safe instructions. We strongly advice you to read the instruction manual of these products attentively.

The correct and safe working of this equipment supposes a transport, a stocking, a setting -up and an installation in compliance with the rule book.

Before cleaning or removing components of the equipment, it is compulsory :

1 - to stop the compressed air supply,

2 - to open the pump drain valve,

3 - to drain the REGULEX® proportioning gun to depressurize the hoses.

2- DESCRIPTION

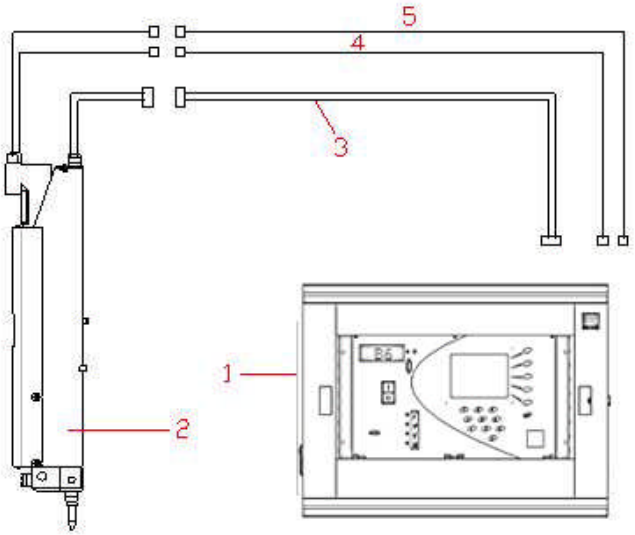
DESCRIPTION OF THE REGULEX® SYSTEM

The REGULEX® system is composed of a control bay, a Regulex® proportioning gun and cables that connect the bay and the gun. The whole is designed to precisely meter and dispense silicone, adhesives and any other extruded materials.

The system is normally mounted on a robot. The manipulator sends a signal to the Regulex® electronic bay to provide the necessary output to dispense the bead.

The main function of the REGULEX® is to control and regulate the dispensing of the material.

The materials can be applied hot or cold depending upon the use conditions.



1 - B6 REGULEX® bay with unit

2 - REGULEX® proportioning gun

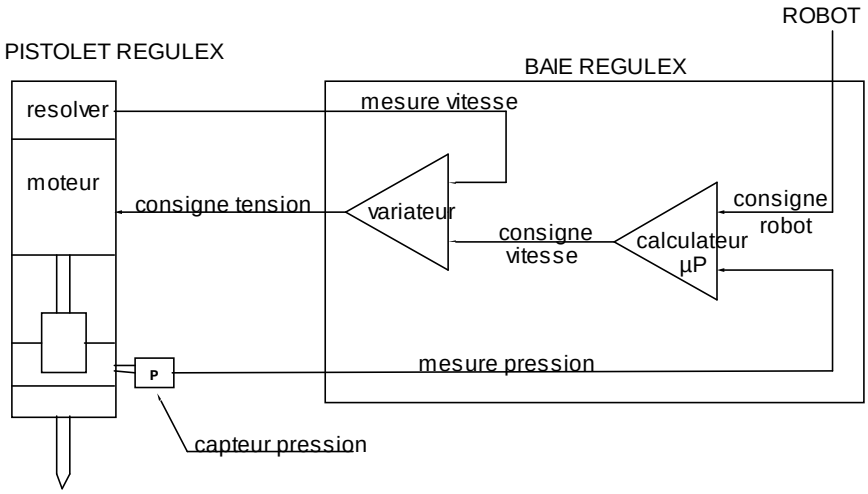
3 - REGULEX® cable (length : 10 m, 15-pins connector)

4 - Motor cable (length : 10 m, 4-pins connector)

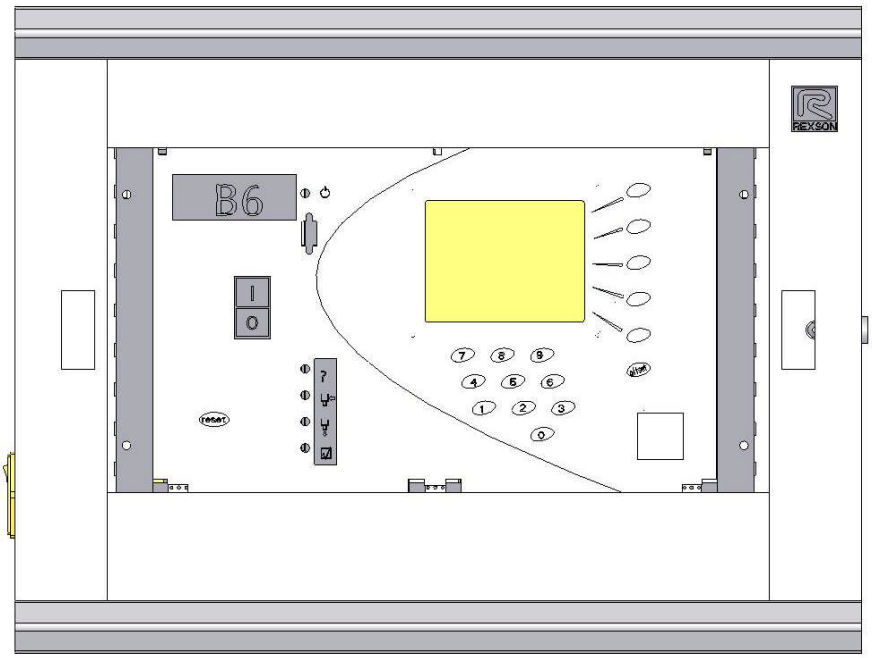
5 - Resolver cable (length : 10 m, 6-pins connector)

REGULEX® SYSTEM PRINCIPLE

The main function of the REGULEX® system is to control and regulate the dispensing of the bead. As it is in relation with the robot and depending upon the flow information that is sent periodically by the robot, it will act on the piston of the chamber to give in the shortest time possible the flow asked by the robot.



3- TECHNICAL FEATURES OF THE REGULEX® BAY



It consists of :

Control and sign systems,

A programming device by keyboard,

A variable speed drive,

A processor card,

A digital display that enables the visualization of the operating of the REGULEX® (visualization of the weight dispensed in real time and control of the weight alarms, visualization of the pressures and of the piston moving in real time, control and storage of the alarms and faults).

The Regulex® bay is situated inside a protective box. It can be integrated in a control box when you remove it from the box.

Electric supply (V) **Power (W)**	230 - 50 Hz 1200
External unit **Protection**	L 600 mm x H 350 mm x P 420 mm IK 08
Bay **Weight**	19" (L 491mm x H 358 mm x P 300 mm) 12 kg / 26.5 lb
Ventilation **Ambient temperature** **Noise**	Forced and filtered From 0 to 45°C / from 0 to 113° F 15 dBa
Interfaces	B6 bay and REGULEX® proportioning system B6 bay and robot bay
RS 485 **Internet, Eternet connection**	Yes option

4- INSTALLATION

The bay has to be installed so that it does not suffer from vibration.

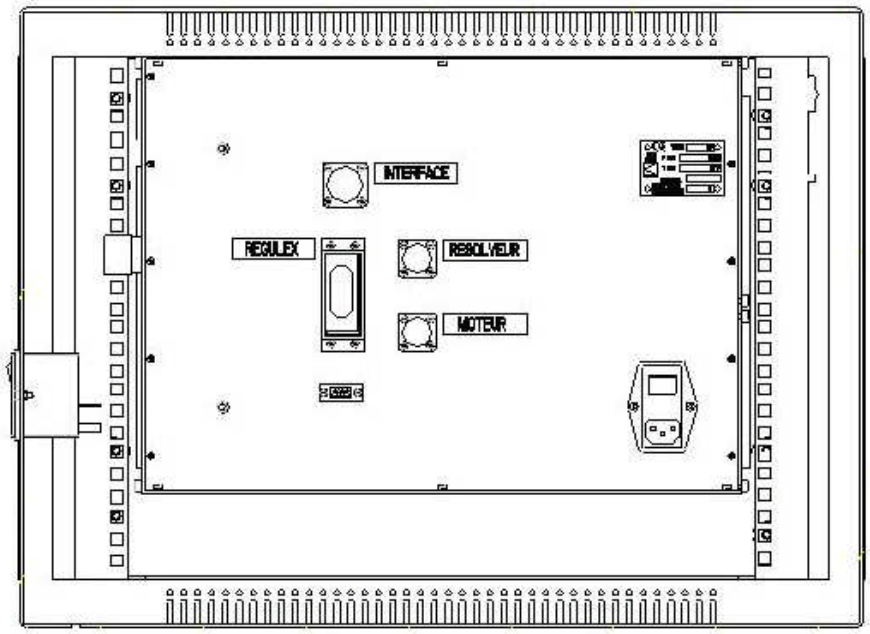
At the rear part of the B6 bay :

Connect the cables between the B6 bay and the REGULEX® proportioning gun :

- Regulex® (15-pins socket, HARTING)
- Resolver (6-pins socket, JAEGER)
- Motor (4-pins socket, JAEGER)

Connect the cable between the B6 bay and the robot bay (12-pins socket, JAEGER : INTERFACE UNIT).

REAR PART OF THE B6 BAY



Install an HP hose between the fluid outlet of the filling pump and the fluid inlet of the REGULEX® proportioning gun.

Install a plastic hose (4 x 6) to supply the valves of the REGULEX® proportioning gun. Connect the REGULEX® to the compressed air network via a pressure reducing valve filter. Adjust the pressure to 6 bar / 87 psi.

Connect the filling pump motor to the compressed air network via a pressure reducing valve filter. Adjust the pressure between 1 to 5 bar / 14.5 to 72.5 psi.

Plug in the B 6 bay (220 V).

5- OPERATING

- **SWITCHING ON**

Switch the 'O-I' switch, located on the side of the unit or the one located at the rear part of the bay (if there is no unit) to position 'I' :

The green light 'SWITCH ON' will light on,

⇒ switching on of the voltages.

⇒ switching on of the screen.

Input the 'O-I' switch located on the front of the bay.

⇒ operating of the variable speed drive.

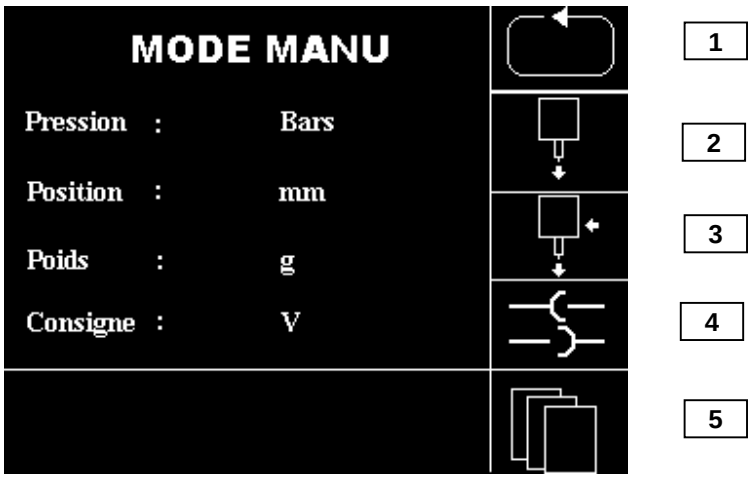
Flyleaf (Banner)

ILLUSTRATION NO CONTRACTUAL
(modification of the date depending upon the evolutions)

Graphic page, temporized 5 seconds to give the place up to the "manu page".
The bay is totally inactive during that stage.

- **MANU MODE**

Manual Page



Main page of the application.
From that page, you have access to the following functions :
1 - Access to the function and to the automatic mode page (see 'Auto Page')
2 - Access to the extrusion function
3 - Access to the priming / filling function
4 - Access to the function and to the page Visualization of the Inlets/Outlets (see § Inlets/Outlets)
5 - Access to the function and to the page modification of parameter and fault (see § parameter)
6 - Access to the function and to the sensor offset page (see § offset) by an input on OFFSET key.
Nota :
The 'extrusion' key acts like a push-button. The function is active as long as the key is input.
The 'Auto' and 'Priming' keys act like a push-button. The function is active at the first input and inactive at the second input. In case of fault, the function is automatically reset to the initial state (manual mode and priming stop).

Four informations are performed successively with cyclic refresh. The pressure, the position, the instruction and the weight are recalculated and displayed continuously.

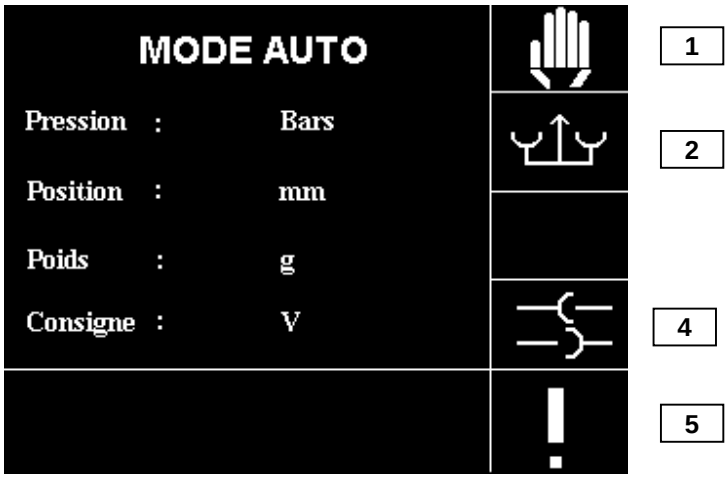
The fluid weight is kept at the display and is cumulated from a manual extrusion to another until to pass in auto mode.

No review is managed.

The lower line of the screen displays the last fault noticed. The possible acknowledgement of that fault is possible via the page 'List of faults'.

- **AUTO MODE**

Auto Page



From that page, you have access to the following functions :

1 - Access to the function and to the Manu Mode page (see 'Auto Page')

2 - Storage of the weight of reference (see 'Weight Page')

4 - Access to the function and to the page Visualization of the Inlets/Outlets (see 'Page Inlets/Outlet')

5 - Access to the function and to the page Visualization of fault (see 'Page Fault')

The 'manu' key of that page acts like a push-button. The function is active at the first input and inactive at the second input. In case of fault, the function is automatically reset to the initial state (manual mode).

The call of that page causes automatically the reset of the dispensed material weight.

The weight of material is kept on the display until the beginning of a new extrusion cycle (moment of robot information flip-flop in extrusion position).

No review is managed.

Nota : To take into account the new memorized weight, shift into Manual Mode.

Four informations are performed successively with static refresh. The pressure, the position, the instruction and the weight are recalculated and displayed continuously.

The lower line of the screen displays the last fault noticed. The possible acknowledgement of that fault is possible via the page 'List of faults'.

6- OPERATING OF THE REGULEX® ASSEMBLY

To operate the REGULEX®, you must :

- correct the offsets (see 'Page offsets - § 13 ')
- check the values of the parameters and modify them if necessary (see 'Page parameters - § 10')

The parameters are entered at the factory before the bay is released for delivery. For each parameter, a value is given for the first operating.

Caution : Some parameters must correspond to the kind of REGULEX® gun operated by the bay.

The values of the other parameters can be modified to ensure optimum operating of the REGULEX® system.

■ PRIMING

This function can be performed in **manual** operating **(MANU page).**

- Input the **EXTRUSION** {2} key until the REGULEX® piston reaches its lower position.
- Release the key.
- Pressurize the filling pump (from 0 to 6 bar / from 0 to 87 psi) and the valves (6 bar / 87 psi) :

  The filling and exhaust valves of the REGULEX® proportioning gun are open.
- Input the **PRIMING/FILLING** {3} key.

  The fluid is forced through the hoses and the REGULEX® chamber.

  When the fluid goes out from the lower part of the REGULEX® gun, let the fluid go out during 1 or 2 mm to drain correctly the circuits : the REGULEX® is primed.
- Input one more time the **PRIMING/FILLING** {3} key.

→ End of fluid priming, the valves are closed.

■ REGULEX® FILLING

Display on the screen '**AUTO MODE**' {1}.

The 'FILLING' LED is on, the REGULEX® chamber is filling.

When the filling is finished :

The 'READY' LED lights up, the 'FILLING' LED goes out.

■ MANUAL DISPENSING

- Display on the screen '**MANU MODE**' {1}.

At the end of the filling operation, the Regulex® piston is at its upper position, the system measures, checks, regulates the following data : piston position, pressure in the chamber, flow instruction.

- Input the 'EXTRUSION' key :

The exhaust valve is open, the REGULEX® piston comes down in the chamber at the programmed internal instruction.

→ Dispensing of the bead.

At the end of the dispensing, display on the screen '**AUTO MODE**' {1} to fill once again the REGULEX®.

■ AUTOMATIC SEAL DISPENSING

IMPORTANT : Check that the parameters have been preset according to the kind of REGULEX® proportioning gun.

- Display on the screen **'AUTO MODE'.**

➔ The robot controls then the REGULEX® proportioning gun.

Three functions are performed successively during the automatic operating :

Filling - Regulation - Extrusion.

Filling :

The REGULEX® chamber is filled by servo-controlling the piston raising at the pressure in the chamber.

The piston reaches its high position (high position defined as parameter by use depending upon the length and the section of bead to dispense).

During the filling, the LED is on. When the filling is completed, the LED goes out.

Regulation :

The system regulates the pressure to reach the desired value, corresponding to the last stored flow.

When the correct pressure and position are reached, the 'READY' LED lights up.

The 'READY' signal is sent to the robot.

The exhaust valve stays closed.

Extrusion :

The robot controls the seal extrusion.

The REGULEX® exhaust valve opens. The 'EXTRUSION' LED lights up.

➔ Dispensing of the bead.

IMPORTANT

During the programming of the trajectory, start the application of bead where it will have the most constant diameter.

At the end of bead :

- Keep a constant flow at the end of the trajectory,
- Program a null flow at the instant before the covering of the bead,
- Then program the closing of the exhaust valve.

CAUTION

Before any intervention on the cables connected to the REGULEX® bay, you must switch off the bay.

■ SIGNALLING

The B6 bay is provided with 5 LEDS :

1 - a **'SWITCHING ON'** LED (green).

2 - a **'FAULT'** LED (red) indicating a fault in the operating that caused the stop of the REGULEX®.

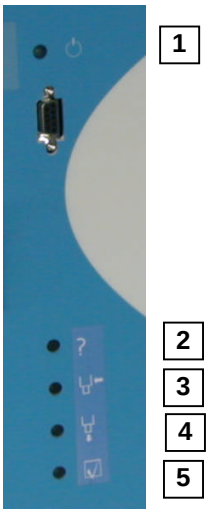
3 - a **'FILLING'** LED (orange) indicating that the REGULEX® is going to be filled.

4 - an **'EXTRUSION'** LED (green) indicating that the system is in extrusion stage.

5 - a **'READY'** LED (green) indicating that the REGULEX® is filled and available for another extrusion.

Nota :

The LEDS (FILLING, READY, EXTRUSION) are functional in automatic mode only.



7- SHUTDOWN OF THE REGULEX®

- **SHUTDOWN SUPERIOR TO 5 MN**

  The REGULEX® dosing gun must fall back.

  A null flow must be programmed.

  The nozzle must coming stemming in a receptacle full of oil (or any other appropriate material) or positioning itself in a tip.

- **EXTENDED SHUTDOWN (EXAMPLE : NIGHT)**

  Carry out the previous stage.

  Turn the 'O-I' switch located on the front part of the bay on the 'O' position to cut off the power (input during 1 second) but leave the bay switch on.

  Shut off the compressed air on the filling shift.

  Leave compressed air on the REGULEX® gun valves.

- **STARTING UP**

  Put air on the filling shift.

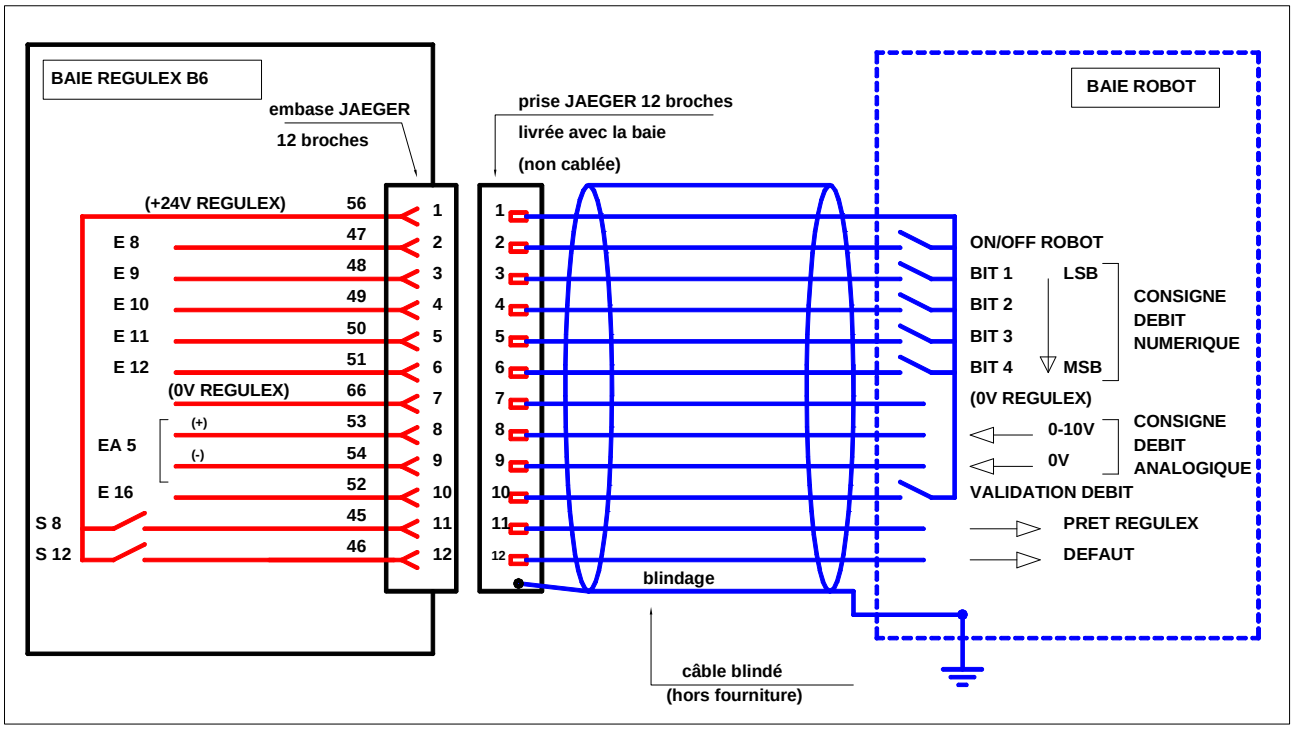
  Operate the REGULEX® bay by turning the 'O-I' switch on 'I' position.

  From the REGULEX® bay, drain the REGULEX® gun before continuing an automatic cycle.

8- INTERFACE UNIT

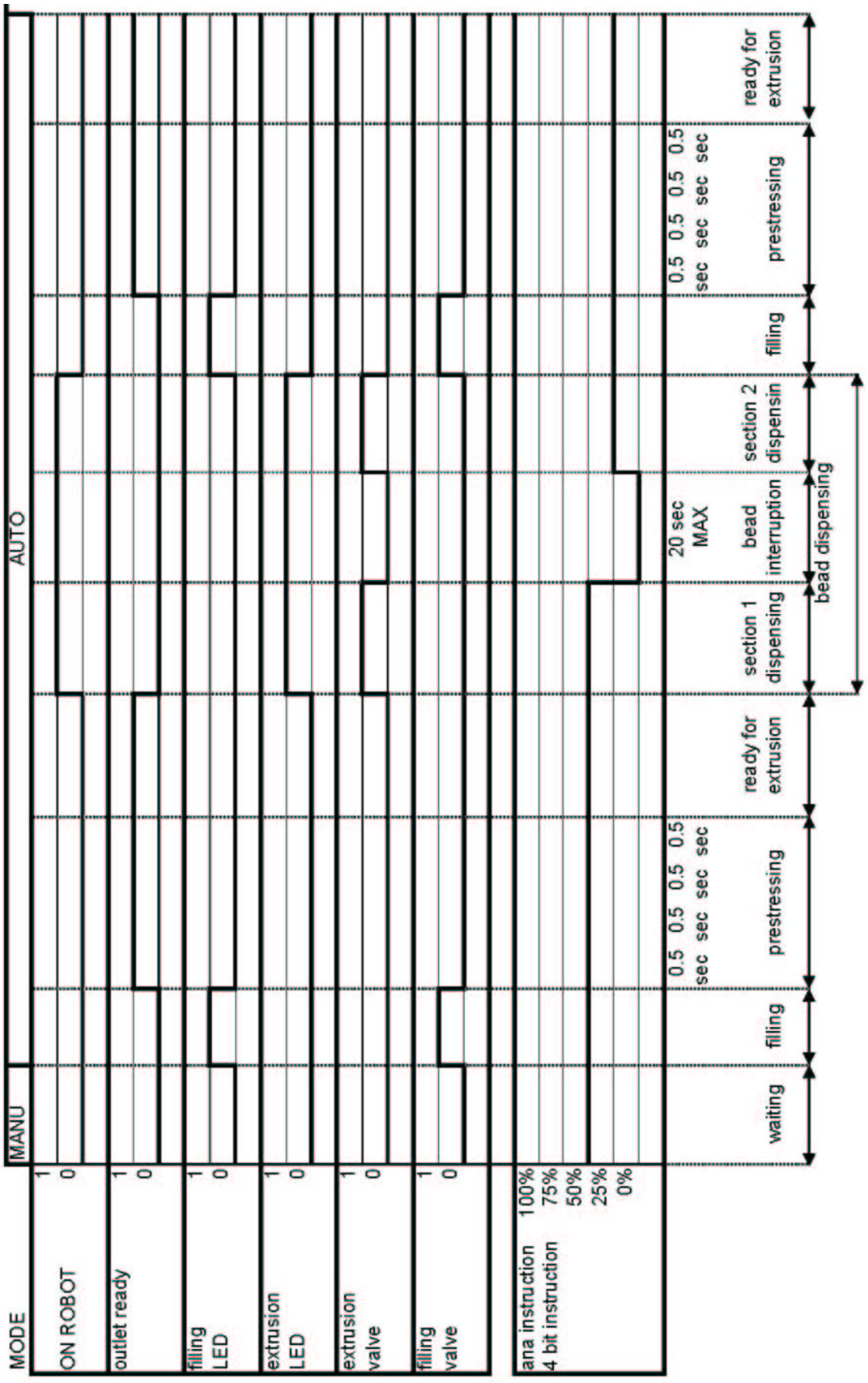
The 12 pins JAEGER connector enables the exchanges between the B6 REGULEX® bay and the robot bay.

WARNING : the cable connecting the 12 pins JAEGER connector and the robot bay must be shielded. The shield must be connected to the robot bay earth.



9- TIMEMETER

Operating example



10- ADJUSTMENT OF THE PARAMETERS

- **LIST OF THE PARAMETERS :**

The parameters are entered at the factory before the bay is released for delivery. For each parameter, a value is given for the first operating.

PARAMETER N°	SPECIFICATION	MINI LIMIT	MAXI LIMIT	VALUE FOR THE FIRST OPERATING
01	Interface definition	01	04	04
02	System maximum pressure (bar)	10.0	150.0	50
03	Piston low position (mm)	1.0	50.0	11
04	Maximum filling time (sec)	10.0	99.9	99.9
05	Filling shutdown high position (mm)	00.0	50.0	5
06	Pressure instruction during the filling (bar)	00.0	25.0	2
07	Servo-control gain during the filling	01	99	10
08	Servo-control gain during the regulation	01	99	10
09	Piston low position in regulation (mm)	00.0	50	8
10	Difference instruction / measure for ready signal (%)	01	20	10
11	Flow instruction filter	01	20	10
12	Bead modification tempo	01	20	10
13	Flow modification stage gain (%)	01	99	10
14	Maxi flow coefficient	01	99	10
15	Flow standard instruction in manual application	00.0	99.9	10
16	Language choice (Fr:: 1; Spa.: 2; Engl.: 3)	1	3	1
17	Material density selection (%)	25	400	100
18	Regulex® piston section (mm2)	01	4000	2205
19	Weight alarm tolerance (%)	01	20	5
20	Simulation internal value of the external instruction	00	99.9	10
21	Configuration parameter of the RS 232 connection			5
22	Configuration parameter of the RS 485 connection			6
23	Response address of the ModBus slave	1	127	2
24	Pressure sensor scale	10	250	50
25	Position sensor scale	10	100	25
26	Exhaust valve version	0	1	0

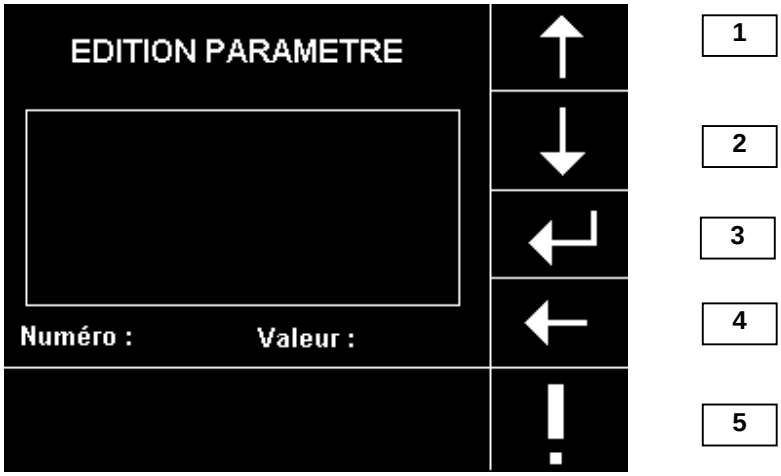
Some parameters must correspond to the kind of REGULEX® proportioning gun : P 02, P 03, P 05, P 09, P 18, P 24, P 25, P 26.

A bad adjustment of these parameters will cause a malfunction and sometimes the damage of the Regulex® gun.

REGULEX® version	Stroke	P 03 Low position (mm)	P 05 High position (mm)	P 09 Low position (mm)	P 18 Piston section (mm2)	P 02 Pressure (bar)	P 24 Pressure sensor (bar)	P 25 Position sensor (mm)	P 26 Kind of valves
Type : compacted									
2	25	23	3	20	71	45	50	25	0
5	25	23	3	20	198	45	50	25	0
25	13	11	3	8	2205	45	50	25	0
50	25	23	3	20	2205	45	50	25	0
Type : reinforced, white case									
47 D 220V	50	48	5	40	961	60	100	50	1
47 D 24V	50	48	5	40	961	60	100	50	1
100 D 220V	50	48	5	40	2155	45	100	50	1
100 D 24V	50	48	5	40	2155	45	100	50	1
Type : reinforced, blue case									
47 R 220V	50	48	5	40	961	100	150	50	1
47 R 24V	50	48	5	40	961	100	150	50	1
107 R 220V	50	48	5	40	2155	80	150	50	1
107 R 24V	50	48	5	40	2155	80	150	50	1
7 R 24V	50	48	5	40	198	100	150	50	1
27 R 24V	50	48	5	40	642	100	150	50	1

■ **PARAMETERS EDITION**

Page Input of parameter



You gain access to that page from the '**MANU page** '.
From that page, you gain access to the following functions :
4 - Back to the main page
5 - Access to the function and to the page Visualization of fault (see 'Fault page')
From1 to 3 - Modification of a bay operating parameter.

The '↑' and '↓' keys enable the selection of a parameter between the 26 available.
All parameters are associated to an individual commentary about its function.
The commentary is written in editing mode.
The digital keyboard is active only in that mode.
You gain access to all parameters in reading and modification.
The '↵' key vets the data entered in the value field.

➢ **PARAMETER 01 : TYPE OF ROBOT INTERFACE**
(connection mode between the robot and the Regulex® used to code the flow information)

Mini. limit	Maxi. limit	Value for the first operating
01	04	04

Possible values	Interface type
01	Robot 4 bits
02	Reserved
03	External analog instruction
04	Internal analog instruction

➢ **PARAMETER 02 : MAXIMUM PRESSURE DURING FILLING, REGULATION OPERATIONS AND EXTRUSION**
(pressure threshold not to exceed in the chamber of the Regulex®)

Mini. limit (bar)	Maxi. limit (bar)	Value for the first operating (bar)
10.0	150.0	50.0

- **PARAMETER 03 : LOW PISTON LIMIT**
  (position that the Regulex® piston must never exceed during the extrusion (manual or automatic) in order to avoid a bottoming out)

Mini. limit (mm)	Maxi. limit (mm)	Value for the first operating (mm)
1.0	50.0	11.0

- **PARAMETER 04 : MAXIMUM FILLING TIME**
  (when the filling begins, a timer of the value adjusted to the parameter 04 is activated)

Mini. limit (sec.)	Maxi. limit (sec.)	Value for the first operating (sec.)
10.0	99.9	99.9

- **PARAMETER 05 : POSITION AT WICH THE REGULEX IS CONSIDERED FILLED**
  (position of the Regulex® at which it is considered filled)

Mini. limit (mm)	Maxi. limit (mm)	Value for the first operating (mm)
00.0	50.0	05.0

The adjustment of the position provides:
- the volume of glue or mastic, necessary for the dispensing,
- a possible backward movement of the piston to depressurize the material located in the chamber before reaching the piston upper stop (stop located at 1 mm of the maximum high position)

- **PARAMETER 06 : MIN. FEEDING PRESSURE**
  (*Pressure to which the feeding starts)*

Mini. limit (bar)	Maxi. limit (bar)	Value for the first operating (bar)	Recommended value
00.0	25.0	02.0	00.1

This parameter defines the speed of ascension of the piston in feeding : the lower the pressure is, faster is the feeding

Caution : The pump supplying the Regulex® must give the flow.

- **PARAMETRE 07 : SERVO-CONTROL GAIN IN PRESSURE DURING THE FILLING STAGE**
  (Speed of acceleration of the motor allowing to accelerate or slow down the cfeeding)

Mini. limit	Maxi. limit	Value for the first operating
01	99	10

The parameter defines the speed of the piston ascent during the filling stage : the higher the servo-control is, the faster the piston goes up.

Example : If the value is to 10 and that the feeding is not fast enough ➔ parameterize the value to 20 to accelerate the feeding.

Caution : The pump supplying the Regulex® must give the flow.

- **PARAMETER 08 : SERVO6CONTROL GAIN IN PRESSURE DURING THE REGULATION STAGE**
  (Acceleration gain of the motor allowing to reach the pressure of the regulation operation [SENDING OF THE 'READY'] SIGNAL)

Mini. limit	Maxi. limit	Value for the first operating
01	99	10

- **PARAMETER 09 : PISTON POSITION LOW LIMIT DURING THE REGULATION STAGE**

(position limit that the Regulex® piston shall not exceed during the regulation stage)

Mini. limit (mm)	Maxi. limit (mm)	Value for the first operating (mm)
00.0	50.0	08.0

That position preset after test enables the detection:
- a valve leak,
- air presence in the Regulex® chamber.

- **PARAMETER 10 : PRESSURE TOELRANCE FOR THE REGULATION OPERATION**
  (Tolerance between theorical pressure and real pressure at the beginning of extrusion to vet the READY signal)

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
01	20	10

Example : - If the value of the parameter is increased ➔ the Ready signal ` is validated more quickly
- If the value of the parameter is decreased ➔ The quality of the bead is improved

- **PARAMETER 11 : FLOW INSTRUCTION FILTER**
  (*limits the uncontrolled variations of bead diameter due to interferences on the ROBOT-REGULEX® connection)*

Mini. limit	Maxi. limit	Value for the first operating	Recommended value
01	20	10	20

Example : If the value is to 20% :
- ***above this threshold ➔ the flow variation is considered***
- ***below this threshold ➔ the flow variation is not considered***

Caution : We use this parameter only in analogic mode.

- **PARAMETER 12 : MAX. PERIOD FOR FLOW MODIFICATION**
  (necessary time to change the bead variation expressed by torque of 50 ms)

Mini. limit	Maxi. limit	Value for the first operating
01	20	10

Example : - 01 = 50 ms.
- 20 = 1sec.

- **PARAMETER 13 : SERVO-CONTROL GAIN DURING THE FLOW MODIFICATION STAGE**
  (defines the pressure servo-control features during the flow variation stage)

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
01	99	10

- **PARAMETER 14 : MAX. FLOW COEFFICIENT**
  (defines the maximum flow obtained when the robot information is at 100% of its value)

Mini. limit	Maxi. limit	Value for the first operating
01	99	10

- **PARAMETER 15 : FLOW STANDRAD INSTRUCTION IN MANUAL APPLICATION**
  (defines the flow when the SB 1 manual application push button is input [In 1/10 Volt])

Mini. limit	Maxi. limit	Value for the first operating
00.0	99.9	10.0

Example : with a flow of 150cc : - P15 = 50 ➔ flow = 150cc/mn x 0.5 ➔ 75cc/mn
- P15 = 10 ➔ flow = 150cc/mn x 0.1 ➔ 15cc/mn

- **PARAMETER 16 : LANGUAGE CHOICE**

Mini. limit	Maxi. limit	Value for the first operating
1	3	1

Possible values	Language
1	French
2	Italian
3	English
4	Spanish

- **PARAMETER 17 : DENSITY OF THE APPLICATED MATERIAL**
  (Density of the fluid application in relation to water (%))

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
25	400	100

Example.: - Density = 1,35 ➔ 135%
- Density = 0,8 ➔ 80%

- **PARAMETER 18 : REGULEX® PISTON SECTION**
  (Piston section in mm² with 3 significative digit numbers, without decimal (refer to chart - § 10))

Mini. limit (mm^2)	Maxi. limit (mm^2)	Value for the first operating (mm^2)
01	4000	2205

- **PARAMETER 19 : TOLERANCE ON VARIATION OF APPLICATION WEIGHT FOR EACH CYCLE**

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
01	20	5

- **PARAMETER 20 : FLOW INSTRUCTION IN INTERNAL INSTRUCTION**
  (Internal value of simulation of the external instruction, sent usually by the robot. It is only active in mode 4 of the parameter 1. Value from 0 to 10 V, with only one decimal)

Mini. limit	Maxi. limit	Value for the first operating
00.0	99.9	10.0

- **PARAMETER 21 : CONFIGURATION PARAMETER OF THE RS 232 CONNECTION**

```
RS232 7bits>00/8bits>10
  300 >1 2400>4 SParit>20
```

600 >2 4800>5 Ppair >40
1200>3 9600>6 P1pair>60

Can be programmed:

- The speed (300, 600, 1200, 2400, 4800, 9600 bauds) - respective code (1, 2, 3, 4, 5, 6), any other code is considered for 9600 bauds
- The format (7 bits/ 8 bits) - respective code (00,10), any other code is considered for 8 bits
- The parity (without, with even parity, with uneven parity) - respective code (20,40,60), any other code is considered for "without parity"

Serial connection not managed.

The parameter is taken into account only when switching on or reset of the bay.

- **PARAMETER 22 : CONFIGURATION PARAMETER OF THE RS 485 CONNECTION**

RS485 8bits/sans Parite
300 ->1 2400->4
600 ->2 4800->5
1200->3 9600->6

The speed (300, 600, 1200, 2400, 4800, 9600 bauds) - respective code (1, 2, 3, 4, 5, 6) , any other code considered for 9600 bauds, is the only parameter that can not be modified.

The format is fixe (8 bits) and the parity is not managed.

The parameter is taken into account only when switching on or reset of the bay.

- **PARAMETER 23 : RESPONSE ADDRESS OF THE MODBUS SLAVE**

Mini. limit	Maxi. limit	Value for the first operating
1	127	2

Any slave stays liable to the processing of the frames to the slave 0 however (refer to specification of protocol).

The parameter is taken into account only when switching on or reset of the bay.

- **PARAMETER 24 : PRESSURE SENSOR SCALE**

Mini. Limit (bar)	Maxi. Limit (bar)	Value for the first operating (bar)
10	250	50
Nota : to take into account the modification of the parameter input "Reset"		

- **PARAMETER 25 : POSITION SENSOR SCALE**

Mini. Limit (mm)	Maxi. Limit (mm)	Value for the first operating
10	100	25
Nota : to take into account the modification of the parameter input "Reset"		

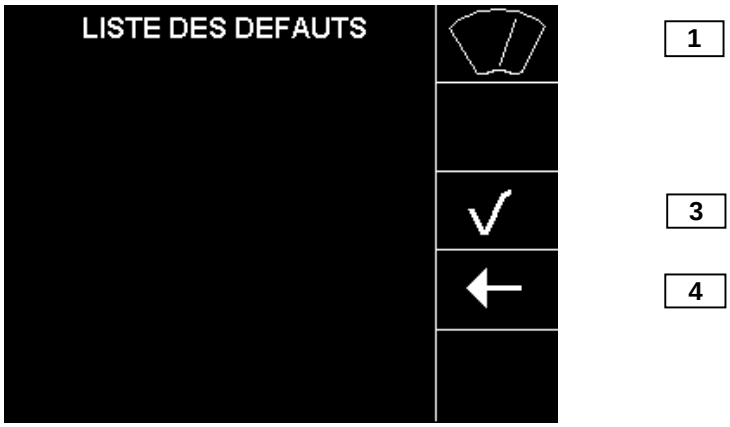
- **PARAMETER 26 : EXTRUSION VALVE VERSION**

Mini. Limit	Maxi. Limit	Value for the first operating

0	1	0
P 26 = 0 for Regulex® type compacted (valve normally open) P 26 = 1 for Regulex® type reinforced (valve normally closed) *Nota : to take into account the modification of the parameter input "Reset"*		

11- FAULTS

Fault Page



From that page, you gain access to the following functions :

1 - Erasing of the list of faults.

3 - Acknowledgement of the last fault.

4 - Back to the previous menu page (page of the parameter input in manual mode, auto page in manu mode).

The acknowledgement of the last fault has only two effects :

- Cancellation of the fault number on the bay outlet intake.
- Erasing of the fault text in the fault zone of the page concerned.

The list of the faults is managed in editing mode.

Each line has the number of fault, on 2 digit numbers and a text on 24 characters.

The list will display the 16 last faults, the most recent fault is under the title (at the top of the screen).

These numbers of faults, with an arbitrary meter of seconds, initialiazed to zero when switching on, are kept in memory for exploitation by RS 485 connection.

LIST OF FAULTS	POSSIBLE CAUSES	CHECKS TO MAKE AND MODIFICATIONS TO CARRY OUT

DEF 8	Overpressure in regulation	Due most of the time to a too important difference between the flow instruction having been used to calibrate and the new flow instruction requested in exploitation. In that case, the system takes as instruction 80% of the P 02 parameter value. Requires an extrusion with the new value of flow for a recalibration and suppression of Fault. Reduce P 02
DEF 9	Overpressure in extrusion	Same as DEF 8 but during the extrusion Reduce parameter P 14
DEF 10	Temporization duration filling too short - P 04 too low. Filling pump flow insufficient or null.	Check the pump pressure. Increase it if necessary. Check the filter. Clean it if necessary. Check the hoses. Unclog them if necessary. For hot supply, check the temperature. Check if the drum is not empty. Change it if necessary. Increase the value of P 04.
DEF 11	Filling pressure too high P 07 too low	Increase the value of P 07 (maxi 99). Check the pump pressure. Reduce it if necessary. Material more fluid. Reduce the pump pressure. For hot supply, reduce the temperature.
DEF 12	Material too fluid Air in the material Value of the parameter 09 too low	Increase the value of P 09. Check if the drum is not empty. Change it if necessary. Check the follower plate. Drain it if necessary. Check the pressure on the follower plate. Increase it if necessary. For hot supply, check the temperature. Reduce it if necessary.
DEF 13	Flow asked too important. Value of the parameter 08 too high.	Reduce the flow instruction in regulation. Reduce the value of P 08.
DEF 14	Tip clogged. Flow asked too important Material viscosity too high.	Check the material viscosity. Check the material expiry date. For hot supply, check the temperature and increase it if necessary. Check the state of the tip, clean it and unclog it if necessary. Reduce the fluid flow. Reduce the value of P 14 and reduce the robot speed.
DEF 15	- Too important bead volume. - Bad adjustment of the parameter 03 and 05. - Valve leak	- Check bead volume: For regulex 25 : 25 cc maxi For regulex 50 : 50 cc maxi. For regulex 47 : 47 cc maxi. For Régulex 100 : 100 cc maxi - Check the parameter P 03. Increase its value (refer to chart - § 10) - Check the parameter P 05. Decrease its value. - Check valve
DEF 22	- Variator in error	- Check if the switch (0/I) on the front of bay is engaged (put in power of the variator) - See the faults'list of the variator (refer to Doc. Variator)
DEF 23		Motor overload

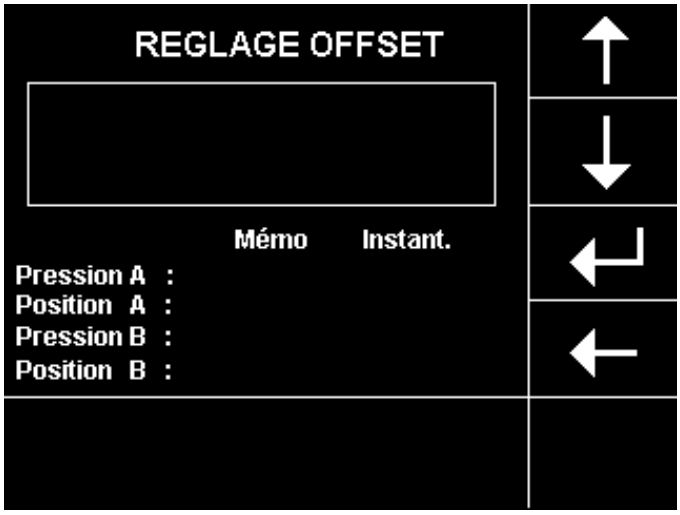
12- ADJUSTMENT OF THE OFFSETS

This operation is necessary to associate the B 6 REGULEX® bay and the REGULEX® gun.

It consists of correcting the zero of the pressure and position sensors. These corrections are made :

- at the operating of the system,
- after intervening on one of the sensors,
- after intervening on the REGULEX® gun.

Offset Page



From that page, you gain access to the following functions :

Back to the manu page

Modification of the offset of a bay sensor.

The '↑' and '↓' keys enable the selection of a parameter between the 4 available.

The 4 available parameters are :

Sensor pressure Regulex A

Sensor position Regulex A

Sensor pressure Regulex B

Sensor position Regulex B

The parameters are associated to a commentary on the function.

The commentary and the offset values are written in editing mode in the frame provided for that purpose.

The digital keyboard is not active in that mode.

All the parameters are available in reading and modification.

On two columns, the previous stored value and the sensor raw value (without offset compensation); the display is made in physical quantity (bar and mm).

Only one input on the '↵' key vets the sensor current value as a new origin. The limiting control is in conformity with the previous version. If fault, a message is displayed in the Fault zone.

Pressure sensor Channel A : Offset automatic compensation on pressure sensor channel A (bar)

Position sensor Channel A : Offset automatic compensation on position sensor channel A (mm)

Pressure sensor Channel B : Offset automatic compensation on pressure sensor channel B (bar)

Position sensor Channel B : Offset automatic compensation on piston position sensor channel B (mm)

Offset patching procedure

The bay must be 'switched on', but not 'into service'.

⇒ The variable speed drive must not be supplied 'with power'.

⇒ The REGULEX® proportioning machine must **not be in pressure.**

Pressure offset patching :

Select 'Sensor pressure Regulex A' ⇒ display : xx bar / xx psi

xx bar / xx psi is the pressure that the sensor measures. The value of that pressure must be contained in - 4 bar / 59 psi and + 4 bar / 59 psi to make the validation possible (otherwise, fault of the pressure sensor).

xx bar / xx psi + ↵ key → pressure 0

Position offset patching :

Select sensor position Regulex A ⇒ display : xx mm

By means of a screwdriver, lift up the end of the potentiometer (13) that is on the lubricator (28) and raise it to the top of the light.

The value of that position must be contained in 0 to + 4mm to make the validation possible (otherwise, fault of the movement sensor).

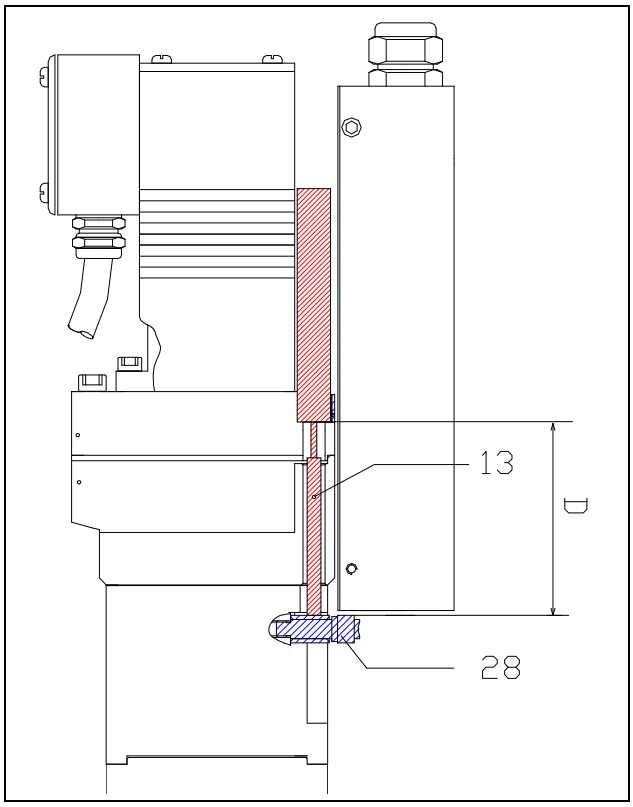
xx mm + ↵ key → position 0

Important :

Dimension of the position sensor with lock-nut (sensor to stop) :

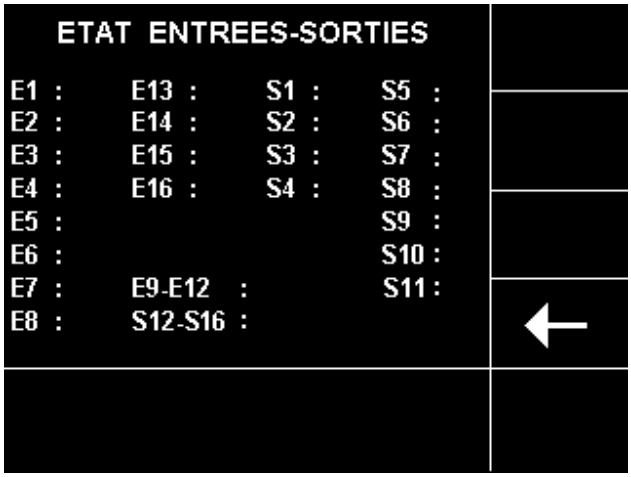
- Regulex® proportioning machine, type compacted : D = 69,5 mm
- Regulex® proportioning machine, type reinforced : D = 123 mm

Example above :
Dosing machine, version compacted 5cc



13- INLETS - OUTLETS

Inlets/Outlets Page



This page displays under binary from (0 or 1) :

The inlets from E1 to E8 and from E13 to E16

The outlets from S1 to S11

The external robot instruction

The Fault word available on external connector

The inlets corresponding to the robot 4 bits (from E9 to E12) are represented in decimal from 0 to 15.

The outlets corresponding to the Faults outlets (from S12 to S16) are represented in decimal from 0 to 31.

The variables are refreshed.

- **FLOW CODING (E9 → E12) : DISPLAY FROM 1 TO 15**

Hexadecimal - binary equivalence

1 - 0001	6 - 0110	11 - 1011
2 - 0010	7 - 0111	12 - 1100
3 - 0011	8 - 1000	13 - 1101
4 - 0100	9 - 1001	14 - 1110
5 - 0101	10 - 1010	15 - 1111

14- DISPENSED WEIGHT

- **ALARM 'DISPENSING WEIGHT'**

The selection of the dispensed weight is carried out by acting on the 'Weight' key of the page 'Auto mode'.

The instruction is stored under the form of the parameter 24, for its storage in EEPROM (but not available via the parameter modification function).

By the vet of 'Weight' while the dispensed weight has a null value, the check function is deactivated.

The analysis of dispensed weight is made at the end of extrusion (when the extrusion signal passes from active to inactive).

The following formula is applied :

If AbsoluteValue (Theorical Value - Dispensed weight during extrusion) > Tolerance * Theorical Value, then an alarm is generated. Any malfunction of the parameters can lead to an alarm for each extrusion.

- **CALCULATION AND DISPLAY OF THE DISPENSED WEIGHT**

The extruded weight is displayed on the screen.

In manual mode, all the successive extrusions are cumulated. No reset to zero is made between each extrusion.

In automatic mode, the display is refreshed all the 300 ms and is stiffened at the end of extrusion. The display is maintained until the beginning of the next extrusion.

The end of extrusion is the passage of the extrusion inlet from active to inactive.

The passage from a mode to another (manu<>auto) leads to the reset to zero of the display.

The extruded weight is obtained by means of the following formula (within about a sign) :

(Position at the beginning (mm) - Current Position (mm)) * Section(mm2)* Density.

This result is divided by 10000 to obtain the weight in gram. All calculations are made in whole value, without fluctuating calculation. The result is rounded to the gram.

During the piston moving stage, the value displayed is the value that is applicated.

15- COMMUNICATION

- **PROTOCOL**

The protocol of communication used is a light version of MODBUS.

At the beginning, the protocol was for operating in a MODICON (Schneider) programmable automaton environment. As some of the functions are appropriate to an automaton, only the functions of reading / writing of words (individual or by blocs) and a function of test are kept. They are :

Functions 3 and 4 : multiple reading of words (virtual address in word).

Function 5 : writing of a byte in Boolean (in RAM only)

Function 6 : writing of a word (in RAM)

Function 8 : under function 0, simple echo of line (test of communication)

Function 16 : writing of N words

All functions not implemented are treated as illegal functions (sending n°1 specific ('ILLEGAL FUNCTION'))

Protocol available on the web site www.modicon.com

Document of reference :

Modicon Modbus Protocol (in English only)

PI-MBUS-300 Rev. J

- **EXCHANGES OF DATAS**

The partition of zones available by the protocol corresponds to the physical mapping of the MC9S12DP256 central processing unit.

The Modbus addresses are always under the form of words, but the microcontroler addresses are always under the form of bytes. Then, there is still a 2 factor between the Modbus addresses and the HC 12 addresses. Theoretically, only the Modbus addresses interest the user.

Physical Inlets/ Outlets

The inlet-outlet zone from 0 to 3FF corresponds to the microcontroler inlets/outlets.

For operating safety reasons, it is only available in reading.

For the understanding of the datas, please refer to the Motorola document.

The zone covers the 0-3FF space that is to say from 0 to 1FF in Modbus.

That access, without interest a priori, can enable a possible dagnosis of the card by distant connection.

EEPROM Memory

The EEPROM zone is between 400 to FFF (3 Bytes). It contains the operating parameters.

There are 5 different parameters, all of them are saved on 4 bytes.

Parameters available via the keyboard, numbered from 1 to 26, available in reading and writing.

Parameter of electronic offset that corresponds to the value representing the zero of the analog amplification chain. They are 8 and correspond to the analog channels from 0 to 7, available only in reading.

Parameter of sensor offset that correspond to the value representing the zero of the sensor. They are 8 and correspond to the sensors from 0 to 7, available only in reading.

The current work values, saved by the central processing unit, as the weight of reference of material to extrude. For the moment, that value is unique.

EEPROM zone Checksum, only in reading, at the HC12 0xFFC address (8FE in MobBUS).

All datas are accessible in raw value as saved in the EEPROM.

To get the real values, it is necessary to apply coefficients of scale (divide the value read in EEPROM by the scale factor).

Chart of the parameter modbus address

Parameter	Description	Taken into account in manu/auto	Usable Modbus Functions (*)	Scale factor	HC12 address	Modbus address
01	Interface type	No	3/4 and 16	1	0x400	0x200
02	Pressure threshold	No	3/4 and 16	10	0x404	0x202
03	Piston low position	No	3/4 and 16	10	0x408	0x204
04	Filling maximum duration	No	3/4 and 16	10	0x40C	0x206
05	Filling shutdown high position	No	3/4 and 16	10	0x410	0x208
06	Pressure instruction during the filling	No	3/4 and 16	10	0x414	0x20A
07	Servo-control gain during the filling	No	3/4 and 16	1	0x418	0x20C
08	Servo-control gain during the regulation	No	3/4 and 16	1	0x41C	0x20E
09	Piston low limit threshold during the regulation	No	3/4 and 16	10	0x420	0x210
10	Difference instruction / measure for ready signal	No	3/4 and 16	1	0x424	0x212
11	Flow instruction filter	No	3/4 and 16	1	0x428	0x214
12	Bead modification tempo	No	3/4 and 16	20	0x42C	0x216
13	Servo-control in flow modification	No	3/4 and 16	10	0x430	0x218
14	Maximum flow coefficient	No	3/4 and 16	10	0x434	0x21A
15	Flow standard instruction	No	3/4 and 16	10	0x438	0x21C
16	Language	No	3/4 and 16	1	0x43C	0x21E
17	Fluid density selection	No	3/4 and 16	10	0x440	0x220
18	Piston section	No	3/4 and 16	1	0x444	0x222
19	Weight alarm tolerance	No	3/4 and 16	10	0x448	0x224
20	Simulation value of the external instruction	No	3/4 and 16	10	0x44C	0x226
21	Configuration parameter of the RS232 connection	No	3/4 and 16	1	0x450	0x228
22	Configuration parameter of the RS485 connection	No	3/4 and 16	1	0x454	0x22A
23	Response address of the ModBus slave	No	3/4 and 16	1	0x458	0x22C
24	Pressure sensor scale (in tenth of bar)	No	3/4 and 16	1	0x45C	0x22E
25	Position sensor scale (in tenth of mm)	No	3/4 and 16	1	0x460	0x230
26	Extrusion valve version	No	3/4 and 16	1	0x464	0x232

Nota : The informations not taken into account in manu/auto need a reset to be vetted.
All access must be made on the even-numbers of words (4 bytes access→ 2 words)
All double words are in reading/writing mode (RWL)

Chart of the sensor offsets

Sensor Offset	Description	Usable Modbus functions	HC12 Address	ModBus Address
01	Pressure sensor channel A	3 or 4	0x4C0	0x260
02	Position sensor channel A	3 or 4	0x4C4	0x262
03	Pressure sensor Channel B	3 or 4	0x4C8	0x264
04	Position sensor channel B	3 or 4	0x4CC	0x266
05	Robot instruction Analog channel	3 or 4	0x4D0	0x268
06	Reserve 6	3 or 4	0x4D4	0x26A
07	Reserve 7	3 or 4	0x4D8	0x26C
08	Reserve 8	3 or 4	0x4DC	0x26E

Available only in reading under the form of long words

Chart of the electronic offsets

Electronic Offset	Description	Usable Modbus Functions	HC12 Address	Modbus Address
01	Pressure sensor channel A	3 or 4	0x540	0x2A0
02	Position sensor channel A	3 or 4	0x544	0x2A2
03	Pressure sensor channel B	3 or 4	0x548	0x2A4
04	Position sensor channel B	3 or 4	0x54C	0x2A6
05	Robot instruction analog channel	3 or 4	0x550	0x2A8
06	Reserve 6	3 or 4	0x554	0x2AA
07	Reserve 7	3 or 4	0x558	0x2AC
08	Reserve 8	3 or 4	0x55C	0x2AE

Available only in reading under the form of long words

Chart of the work current values memorized

Data offsets	Description		HC12 Address	ModBus Address
01	Instruction of extruded reference weight	3 /4 & 16(0X10)	0x5A0	0x2D0

Available in reading/writing under the form of long words, **taken into account when switching on and during the auto/manu passage**

RAM Memory

The RAM zone is available in reading in the space reserved for Modbus. The writings, depending upon the destination can be prohibited or authorized by limiting the kind of Modbus functions to use for the access.

The passing change of a parameter to EEPROM RAM image is taken into account during the passage from auto to manu.

Two actions cancel their effects :

A reset

An inlet in the menu of configuration of the parameters.

In the two cases, the RAM image of the EEPROM is reloaded by the EEPROM content.

The writing of the EPROM RAM image does not affect the EEPROM.

The parameters noted "not taken into account during the manu/auto passage" can only be modified by modbus when carrying out the following process :

Modification of the value in EEPROM

Reset

The kind of access indicates the following informations :

RO	Read Only, reading only
RWW	Read/ Write Word, reading writing under the form of double byte (16 bits)
RWL	Read/ Write Long, reading writing under the form of quadruple byte (32 bits)

In the RWL mode and only in that mode, the processor checks that all 4 bytes length parameters are transmitted under the form of 2 words of 16 bits in the writing sequences.

The reading is not affected by the length of the data.

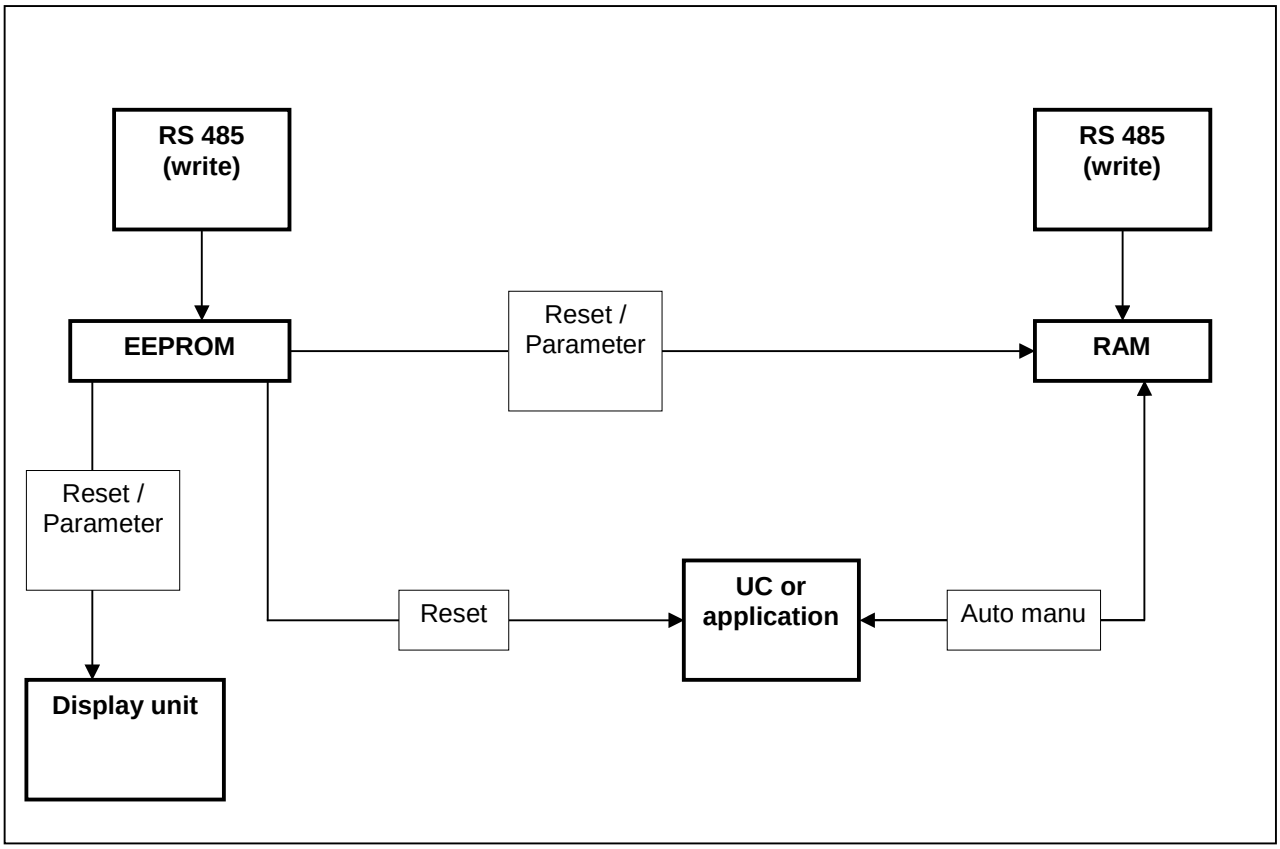


Chart of the machine parameters Modbus address in RAM

Parameter	Description	Byte height	Taken into account in manu/auto	Usable Modbus Functions (*)	HC12 Address	ModBus Address
01	Interface type	2	No	3 /4,6 and 16	0x1090	0x848
02	Pressure threshold	2	Yes	3 /4,6 and 16	0x1092	0x849
03	Piston low position	2	Yes	3 /4,6 and 16	0x1094	0x84A
04	Filling maximum duration	2	Yes	3 /4,6 and 16	0x1096	0x84B
05	Filling shutdown high position	2	Yes	3 /4,6 and 16	0x1098	0x84C
06	Pressure instruction during the filling	2	Yes	3 /4,6 and 16	0x109A	0x84D
07	Servo-control gain during the filling	2	Yes	3 /4,6 and 16	0x109C	0x84E
08	Servo-control gain during the regulation	2	Yes	3 /4,6 and 16	0x109E	0x84F
09	Piston low limit threshold during the regulation	2	Yes	3 /4,6 and 16	0x10A0	0x850
10	Difference instruction / measure for ready signal	2	Yes	3 /4,6 and 16	0x10A2	0x851
11	Flow instruction filter	2	Yes	3 /4,6 and 16	0x10A4	0x852
12	Bead modification tempo	2	Yes	3 /4,6 and 16	0x10A6	0x853
13	Servo-control gain in flow modification	2	Yes	3 /4,6 and 16	0x10A8	0x854
14	Maximum flow coefficient	2	Yes	3 /4,6 and 16	0x10AA	0x855
15	Flow standard instruction in manual application	2	Yes	3 /4,6 and 16	0x10AC	0x856
16	Language	2	Yes	3 /4,6 and 16	0x10AE	0x857
17	Fluid density selection	2	No	3 /4,6 and 16	0x10B0	0x858
18	Piston section	2	No	3 /4,6 and 16	0x10B2	0x859
19	Weight alarm tolerance	2	Yes	3 /4,6 and 16	0x10B4	0x85A
20	Simulation internal value of the external instruction	2	Yes !	3 /4,6 and 16	0x10B6	0x85B
21	Configuration parameter of the RS232 connection	2	No	3 /4,6 and 16	0x10B8	0x85C
22	Configuration parameter of the RS485 connection	2	No	3 /4,6 and 16	0x10BA	0x85D
23	Response address of the Modbus slave	2	No	3 /4,6 and 16	0x10BC	0x85E
24	Pressure sensor scale (in tenth of bar)	2	No	3 /4,6 and 16	0x10BE	0x85F
25	Position sensor scale (in tenth of mm)	2	No	3 /4,6 and 16	0x10C0	0x860
26	Extrusion valve version	2	No	3 /4,6 and 16	0x10C2	0x861

Nota : The informations not taken into account in manu/auto need a reset to be vetted.

Caution, during the reset, the values taken into account are in EEPROM.

Chart of the internal parameters Modbus address in RAM

Description	Usable Modbus Functions	Access type	Bytes height	HC12 Address	Modbus Address	Commentary
Mode Forcing	3/ 4 and 6	RWW	2	0x1000	0x800	Mode forcing (See note 1)
Reset to zero list of fault	3/ 4 and 6	RWW	2	0x1002	0x801	Erasing of the list of faults (See note 2)
Weight of extruded material Channel A on the last extrusion	3/ 4 and 6	RWW	2	0x1004	0x802	Weight cumulated in gram on 16 bits of the extruded material channel A
Weight of extruded material Channel A	3/ 4 and 16	RWL	4	0x1008	0x804	Weight cumulated in gram on 32 bits of the extruded material Channel A
Arbitrary meter of time	3/ 4 and 16 (x10)	RWL	4	0x1010	0x808	Meter that enables the dating of the Faults (can be used to obtain « the current hour ») in hundredth of second - 4 significative bytes
Stage of dialogue	3/ 4	RO	2	0x101A	0x80D	Graphic page in the process of being displayed (Note 3)
TOR Inlets	3/ 4	RO	2	0x101C	0x80E	Reading of the 16 inlets of the card
Pressure sensor A	3/ 4	RO	2	0x1020	0x810	Reading of the compressed A pressure inlet of the sensor and electronic offsets (sensor point 12 bits)
Position sensor A	3/ 4	RO	2	0x1022	0x811	Reading of the compressed A position inlet of the sensor and electronic offsets (sensor point 12 bits)
Instruction analog inlet	3/ 4	RO	2	0x1028	0x814	Reading of the compressed external instruction inlet of the sensor and electronic offsets (sensor point 12 bits)
Analog inlet 6	3/ 4	RO	2	0x102A	0x815	Reading of the compressed analog inlet 6 of the sensor and electronic offsets (sensor point 12 bits)
Analog inlet 7	3/ 4	RO	2	0x102C	0x816	Reading of the compressed analog inlet 7 of the sensor and electronic offsets (sensor point 12 bits)

Chart of the internal parameters Modbus address in **RAM**

Description	Usable Modbus Functions	Access Type	Bytes height	HC12 Address	Modbus Address	Commentary
Analog inlet 8	3/ 4	RO	2	0x102E	0x817	Reading of the compressed analog inlet 8 of the sensor and electronic offsets (sensor point 12 bits)
TOR outlets	3/ 4	RO	2	0x101E	0x80F	Reading of the 16 outlets of the card
Fault 0 (the most recent with date) 4 bytes	3/ 4	RO	4	0x1030	0x818	The structure of Fault is a word of 32 bits, the 24 bits of strong weight give the instant, (copy of time meter at the moment of the apparition in second), and the 8 bits of weak weight give the number of fault (0xFF indicates no fault)
Fault 1	3/ 4	RO	4	0x1034	0x81A	Idem above
Fault 2	3/ 4	RO	4	0x1038	0x81C	Idem above
Fault 3	3/ 4	RO	4	0x103C	0x81E	Idem above
Fault 4	3/ 4	RO	4	0x1040	0x820	Idem above
Fault 5	3/ 4	RO	4	0x1044	0x822	Idem above
Fault 6	3/ 4	RO	4	0x1048	0x824	Idem above
Fault 7	3/ 4	RO	4	0x104C	0x826	Idem above
Fault 8	3/ 4	RO	4	0x1050	0x828	Idem above
Fault 9	3/ 4	RO	4	0x1054	0x82A	Idem above
Fault 10	3/ 4	RO	4	0x1058	0x82C	Idem above
Fault 11	3/ 4	RO	4	0x105C	0x82E	Idem above
Fault 12	3/ 4	RO	4	0x1060	0x830	Idem above
Fault 13	3/ 4	RO	4	0x1064	0x832	Idem above
Fault 14	3/ 4	RO	4	0x1068	0x834	Idem above
Fault 15 (the oldest one)	3/ 4	RO	4	0x106C	0x836	Idem above
Weight of reference A	3/ 4,6 and 16	RWL	4	0x1070	0x838	For your information only
Coefficient of weight A	3/ 4,6 and16	RWL	4	0x1074	0x83A	For your information only
Mini weight check A	3/ 4,6 and16	RWL	4	0x1078	0x83C	For your information only
Maxi weight check A	3/ 4,6 and 16	RWL	4	0x107C	0x83E	For your information only

Note 1 :

The mode forcing is made by writing :

0xAAAA in the word to ask for a passage in automatic mode

0x5555 in the word to ask for a passage in manual mode

The word is reset to zero when the forcing is really taken into account.
Any other value transmitted gives a Modbus error.

Caution : the writing in the word of forcing can cause a latent mode if some precautions are not taken. The forcing is taken into account only when the application is on the graphic page 'manual mode' or 'auto mode'. It is necessary to check the screen stage (see note 3) before transmitting a request for forcing. Otherwise, the order will be taken into account when getting back to one of the pages 'auto' or 'manu'.

Note 2 :

The erasing of the fault table is made by writing :

0x00FF in the word to ask for an erasing

The action is asynchronous. It can be made any time.
Any other value transmitted gives a Modbus error.

Note 3 :

A dedicated word, available only in reading word, enables to know the active graphic page or the active function.

Word value	Graphic page or function
0	Not defined
1	***Manual mode page***
2	Offset management page (from manu page)
3	Inlet/outlet visualization page (from manu page)
4	Parameter input page (from manu page)
5	Faults visualization page (from manu page)
6	Priming in progress
7	Manual extrusion in progress
8	***Automatic mode page***
9	Faults visualization page (from auto page)
10	Inlet/outlet visualization page (from auto page)

The mode forcing is only taken into account during the stages 1 and 8.

Note 4 :

The lists of faults and extruded weight are common to the Modbus protocol and to the application : the reset to zero of the information by means of the serial connection leads automatically to a refresh of the values displayed on the screen.

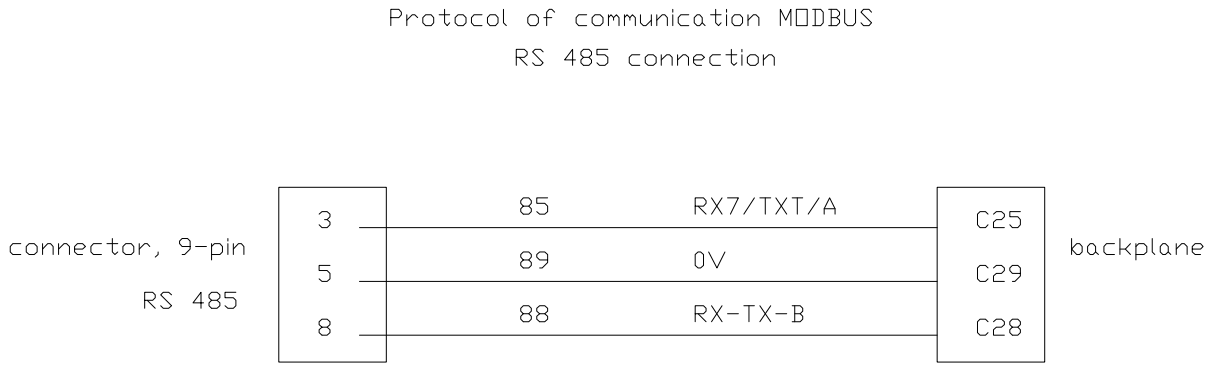
Note 5 :

When a request is not correct (incorrect address, incorrect data, …), the bay sends a fault code, standard code of the Modbus protocol.

The equipment must unscramble that fault code. A lot of equipments content themselves with sending the 'CRC Incorrect' status without any other information.

■ **RS 485 COMMUNICATION CONNECTOR WIRING**

The connector is at the rear part of the bay.



16- DIGIVEX VARIATOR

Instruction manual of the manual enclosed.

The variator must be programmed to ensure a correct operating of the B6 bay.

KREMLIN REXSON markets the variator fitted with its program. (refer to Spare parts' list of the B6 bay - Doc. 573.310.050)