10. Set the operating mode

10.1 Select a configuration

10.1.1 Configuration description

***Note**: in the default Master configuration, the setpoint coincides with the maximum fan speed (menu **4: SETUP** > parameter **C4** = **hi**), and the controller automatically selects the sensor with the stronger signal (menu **4: SETUP** > parameter **C1** = **hi**).*

Configuration	Signal/Transducer	Type of control	Description
rS-010, rS-020, rS-420	signal 0–10 Vdc/0–20 mA/4–20 mA	**Slave**	They receive a voltage or current signal in input and replicate it proportionally to the analog **OUT** output and Modbus **COM1**. Control, alarms, and value display are always in volt (rS-010) or milliamp (rS-020, rS-420).
rtE-01, rtE-02	probe NTC 10 kΩ @ 25 °C/77 °F	**Master**	They read NTC sensor values and convert them to temperature values. Regulation, alarms, and value display will always be in temperature (° C). ***NOTICE**: use the rtE-02 configuration if the MEI-4 input expansion module is installed.*
rPr420	transducers with 4-20 mA output and mA reading	**Master**	It reads transducer values with current output. Regulation, alarms, and value display will always be in milliampere.
rPr015, rPr025, rPr030, rPr045,	transducers with 4-20 mA output and bar reading	**Master**	They read transducer values with current output with different scales and convert them into pressure values. Control and value display will always be in pressure (bar). While the minimum and maximum limit alarm on the inputs are in mA, regardless. ***Note**: if the signal is less than 4 mA, 0 bar will always appear on the display.*
rPu030	transducers with V dc output and bar reading	**Master**	It reads transducer values with voltage output and converts them into pressure values. Regulation and value display will always be in pressure (bar).
rUu-05, rUu-010	transducers with V dc output and V dc reading	**Master**	They read transducer values with voltage output. Regulation, alarms, and value display will always be in volt.

10.1.2 Technical specifications of the configurations

Following are the specifications of each configuration:

***Note**: from version 8.0 of the ECM firmware, the temperature and pressure values can be viewed with Imperial units of measure (°F e psi). Therefore, where the text indicates the unit of measure available in °C, it is also available in °F, and where bar is indicated, psi is also available. For the conversion values, use the following formulas: °F = 32+ (°C x 9/5), psi = bar x 14.5.*

Configuration	Mode	IN1/IN2 input	Signal/ Transducer/	Display	Setpoint	Proportional band
rS020	Slave	0–20 mA Ri= 100 Ω	0–20 mA	0–23.5 mA	-	-
rS-010	Slave	0–10 V dc Ri= 10 kΩ	0–10 V dc	0–10 V dc	-	-
rS-420	Slave	4–20 mA Ri= 100 Ω	4–20 mA	0–23.5 mA	-	-
rtE-01 (default)	Master	NTC 10 kΩ @ 25 °C/77 °F	NTC 10 kΩ @ 25 °C/77 °F	from -30 to + 99 °C	45 °C	7.5 °C
rtE-02	Master	NTC 10 kΩ @ 25 °C/77 °F	NTC 10 kΩ @ 25 °C/77 °F	from 9.6 to 99 °C	45 °C	7.5 °C

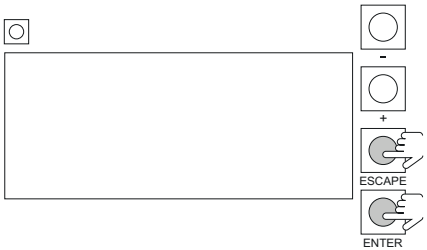
Configuration	Mode	IN1/IN2 input	Signal/ Transducer/	Display	Setpoint	Proportional band
rPr420	Master	4–20 mA Ri= 100 Ω	4–20 mA	4–20 mA	14 mA	2.6 mA
rPr015	Master	4–20 mA Ri= 100 Ω	0–15 bar > 4–20 mA	0–15 bar	10.6 bar	2.4 bar
rPr025	Master	4–20 mA Ri= 100 Ω	0–25 bar > 4–20 mA	0–25 bar	17.0 bar	3.5 bar
rPr030	Master	4–20 mA Ri= 100 Ω	0–30 bar > 4–20 mA	0–30 bar	17.0 bar	3.5 bar
rPr045	Master	4–20 mA Ri= 100 Ω	0–45 bar > 4–20 mA	0–45 bar	25.0 bar	5.2 bar
rUu05	Master	0–5 V dc Ri= 10 kΩ	0.5–4.5 V dc	0–5 V dc	2.9 V dc	0.8 V dc
rPu030	Master	0–5 V dc Ri= 10 kΩ	0–30 bar > 0–5 V dc	0–35 bar	17.0 bar	3.5 bar
rUu010	Master	0–10 V dc Ri= 10 kΩ	0–10 V dc	0–10 V dc	6 V dc	1.6 V dc

10.1.3 Select a configuration

***NOTICE**: this deletes any previous change and restores all selected configuration default values.*

***Note**: follow this procedure also if there is a fault in displaying the parameters on the display: all selected configuration default values will be restored.*

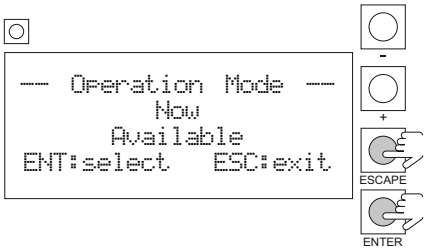
To change/restore a configuration:



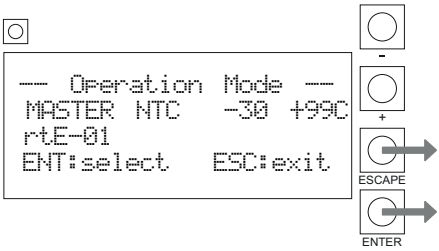
1. Simultaneously press and hold down the **ESCAPE** and **ENTER** keys.



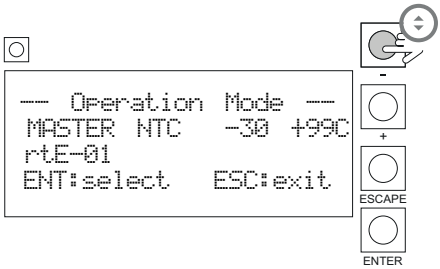
2. Press and hold down both keys, briefly press the **RESET** button (or turn the controller off and on).



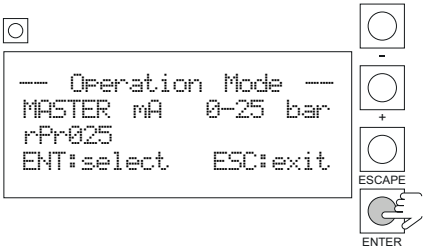
3. Holding down the two keys, wait for the "Operation mode now available" message.



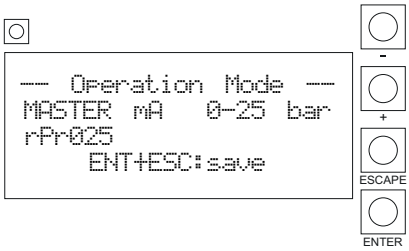
4. Simultaneously release the **ESCAPE** and **ENTER** keys: the last set configuration appears.



5. Press **-**(or **+**) to scroll through the settings.



6. Press the **ENTER** key for the selected configuration.



7. Continue as follows:
   - To confirm, press the **ENTER** and **ESCAPE** keys: the "Saving new values. Please wait" message appears that confirms that it is being saved. Then, the controller restarts and displays the home page.
   - To cancel and modify the selected configuration press the **ESCAPE** key once.
   - To return to the home page, press the **ESCAPE** key twice.

10.2 Editing parameters

10.2.1 Basic parameters

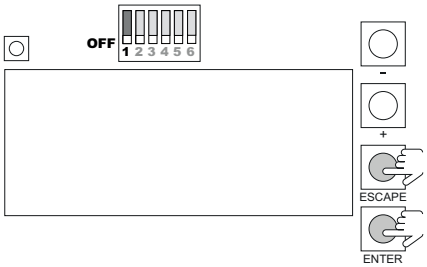
SW1-1 = *Off* > ***ESCAPE*** + ***ENTER***
or
SW1-1 = *On* > ***ENTER*** + ***ESCAPE*** > ***1: BASIC***

Note*: from version 8.0 of the ECM firmware, the temperature and pressure values can be viewed with Imperial units of measure (°F e psi). Therefore, where the text indicates the unit of measure available in °C, it is also available in °F, and where bar is indicated, psi is also available. For the conversion values, use the following formulas: °F = 32+ (°C x 9/5), psi = bar x 14.5.*

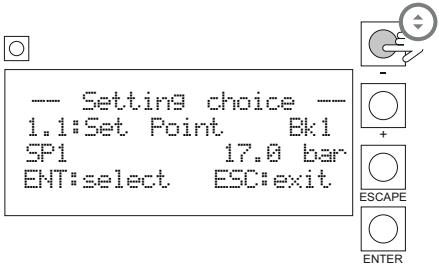
Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Transducer/ sensor/signal	Configuration	Settings system
SP1/SP2	Setpoint 1/ Setpoint 2	°C	-15.0	+90.0	45.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	+20.0	+90.0	45.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	4.0	20.0	14.0	4–20 mA	rPr420	
		bar	0	15.0	10.6	0–15 bar > 4–20 mA	rPr015	
		bar	0	25.0	17.0	0–25 bar > 4–20 mA	rPr025	
		bar	0	30.0	17.0	0–30 bar > 4–20 mA	rPr030	
		bar	0	45.0	25.0	0–45 bar > 4–20 mA	rPr045	
		V dc	0	5.0	2.9	0.5–4.5 V dc	rUu-05	
		bar	0	30.0	17.0	0–30 bar > 0–5 V dc	rPu030	
		V dc	0	10.0	6.0	0–10 V dc	rUu010	
LNight	Maximum night limit speed (% RPM)	%	0%	100%	100%	All	All	
SSpray	Speed (% RPM) with SPRAY on	%	0%	100%	100%	All	All	
JH 1	Upper speed limit for jump 1 (% RPM)	%	0%	100%	100%	All	All	
JL 1	Lower speed limit for jump 1 (% RPM)	%	0%	100%	100%	All	All	
JH 2	Upper speed limit for jump 2 (% RPM)	%	0%	100%	100%	All	All	
JL 2	Lower speed limit for jump 2 (% RPM)	%	0%	100%	100%	All	All	
Working Fan Direction (*)	Working (normal) direction of rotation of the fans	-	CW	CCW	CW	All	All	

***Note** (*): expert parameters, can only be displayed and edited with switch 1 = On (DIP switch SW1). Note: to know the working direction of rotation of the fans, please refer to the product documentation.*

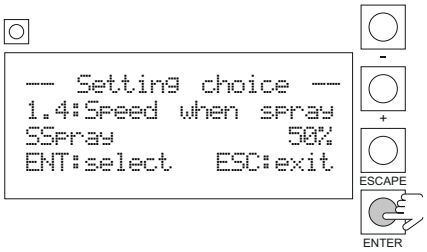
10.2.2 Edit a basic parameter



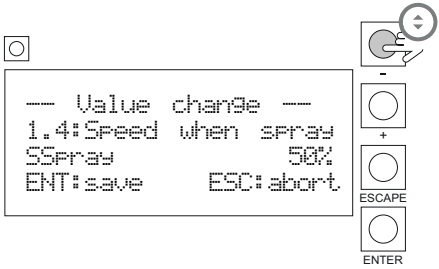
1. Leave switch 1 of DIP switch **SW1 OFF** and simultaneously press the **ENTER** and **ESCAPE** keys.



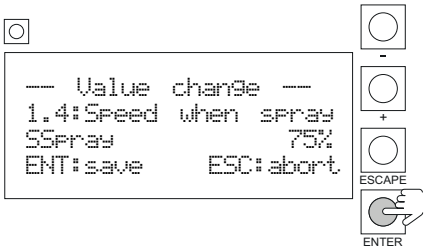
2. Press **+** (or **-**) to scroll through the parameters.

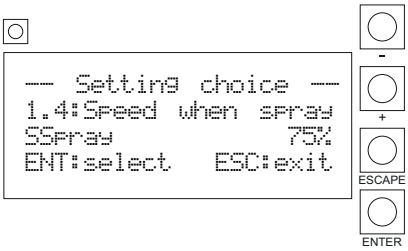


3. Press the **ENTER** key at the parameter of interest.



4. Press **+** (or **-**) to edit the selected parameter value.





5. Continue as follows:
   - To save the value, press the **ENTER** key: the value is saved in the volatile memory and the message "Remember: to save changed values press ENT * ESC" appears to remember how to perform the final saving step.
   - To cancel the change, press the **ESCAPE** key: it returns to step 3.

6. Continue as follows:
   - To edit the other parameters in the same submenu, repeat the procedure in step 4.
   - To save the changes made, press the **ENTER** and **ESCAPE** keys: the "Saving new values Pleas wait" message appears that confirms the saving is in progress. Then, the home page is displayed.
   - To cancel the changes, press the **ESCAPE** key: the "Restoring old values Change values discarded" message is displayed, informing the operator that the previous values have been restored and then the home page is displayed.

10.2.3 Expert level parameters for set 1 and 2

SW1-1** = On > **ENTER** + **ESCAPE** > **2: EXPERT Bank 1/3: EXPERT Bank 2

***Note**: from version 8.0 of the ECM firmware, the temperature and pressure values can be viewed with Imperial units of measure (°F e psi). Therefore, where the text indicates the unit of measure available in °C, it is also available in °F, and where bar is indicated, psi is also available. For the conversion values, use the following formulas: °F = 32+ (°C x 9/5), psi = bar x 14.5.*

***Note**: parameters **SP1**, **SP2**, **Pb1**, and **Pb2** are only visible with the controller in Master mode.*

***Note**: in Master configurations, the dedicated setpoint for the external unit is the algebraic sum of the setpoint in use (**SP1** or **SP2**) and the setpoint for the external unit in use (**USP1** or **USP2**).*

***Note**: in Slave configurations, the dedicated setpoint for the external units is simply the setpoint for the external unit in use (**USP** or **USP2**).*

Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Transducer/ sensor/signal	Configuration	Settings system
SP1/SP2	Setpoint 1/ Setpoint 2	°C	-15.0	+90.0	45.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	+20.0	+90.0	45.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	4.0	20.0	14.0	4–20 mA	rPr420	
		bar	0	25.0	17.0	0–25 bar > 4–20 mA	rPr025	
		bar	0	30.0	17.0	0–30 bar > 4–20 mA	rPr030	
		bar	0	45.0	25.0	0–45 bar > 4–20 mA	rPr045	
		V dc	0	5.0	2.9	0.5–4.5 V dc	rUu-05	
		bar	0	30.0	17.0	0–30 bar > 0–5 V dc	rPu030	
		V dc	0	10.0	6.0	0–10 V dc	rUu010	
Pb 1/ Pb 2	Fan proportional band	°C	2.0	55.0	7.5	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	2.0	55.0	7.5	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	0.2	16.0	2.6	4–20 mA	rPr420	
		bar	0.5	15.0	2.4	0–15 bar > 4–20 mA	rPr015	
		bar	1.0	25.0	3.5	0–25 bar > 4–20 mA	rPr025	
		bar	1.0	30.0	3.5	0–30 bar > 4–20 mA	rPr030	
		bar	1.0	45.0	5.2	0–45 bar > 4–20 mA	rPr045	
		V dc	0.1	5.0	0.8	0.5–4.5 V dc	rUu-05	
		bar	1.0	30.0	3.5	0–30 bar > 0–5 V dc	rPu030	
		V dc	0.2	10.0	1.6	0–10 V dc	rUu010	
Hi 1/ Hi 2	Maximum speed limit (% RPM)	%	0	100	100	All	All	
Lo 1/ Lo 2	Minimum speed limit (% RPM)	%	0	100	0	All	All	
dE 1/ dE 2	Execution time for changing from the minimum speed to the maximum speed, and vice versa	s	1.5	60.0	2.0	All	All	

Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Transducer/ sensor/signal	Configuration	Settings system
Sh 1/ Sh 2	Input value that forces the fan control command to the maximum. (Bypass maximum speed limit)	°C	-9.7	+99.8	99.8	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	+29.6	+99.8	99.8	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	4.0	20.0	20.0	4–20 mA	rPr420	
		bar	0	15.0	15.0	0–15 bar > 4–20 mA	rPr015	
		bar	0	25.0	25.0	0–25 bar > 4–20 mA	rPr025	
		bar	0	30.0	30.0	0–30 bar > 4–20 mA	rPr030	
		bar	0	45.0	45.0	0–45 bar > 4–20 mA	rPr045	
		V dc	0	5.0	5.0	0.5–4.5 V dc	rUu-05	
		bar	0	30.0	30.0	0–30 bar > 0–5 V dc	rPu030	
		V dc	0	10.1	10.0	0–10 V dc	rUu010	
ShH 1/ ShH 2	Hysteresis on value of **Sh 1** and **Sh 2**	°C	1.0	30.0	1.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	1.0	30.0	1.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	0.1	5.0	0.1	4–20 mA	rPr420	
		bar	0.1	5.0	0.1	0–15 bar > 4–20 mA	rPr015	
		bar	0.1	8.0	0.1	0–25 bar > 4–20 mA	rPr025	
		bar	0.1	8.0	0.1	0–30 bar > 4–20 mA	rPr030	
		bar	0.1	15.0	0.1	0–45 bar > 4–20 mA	rPr045	
		V dc	0.1	2.5	0.1	0.5–4.5 V dc	rUu-05	
		bar	0.1	15.0	0.1	0–30 bar > 0–5 V dc	rPu030	
		V dc	0.1	5.0	0.1	0–10 V dc	rUu010	

Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Transducer/ sensor/signal	Configuration	Settings system
SI 1/ SI 2	Input value that forces the fan control command to zero. (Bypass minimum speed limit)	-	0	20.0	0	-	rS-020	
		-	4	20.0	4	-	rS-420	
		-	0	10.0	0	-	rS-010	
		°C	-25.1	+79.5	-25.1	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	+9.6	+79.5	+9.6	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	4.0	20.0	4.0	4–20 mA	rPr420	
		bar	0	15.0	0	0–15 bar > 4–20 mA	rPr015	
		bar	0	25.0	0	0–25 bar > 4–20 mA	rPr025	
		bar	0	30.0	0	0–30 bar > 4–20 mA	rPr030	
		bar	0	45.0	0	0–45 bar > 4–20 mA	rPr045	
		V dc	0	5.0	0	0.5–4.5 V dc	rUu-05	
		bar	0	30.0	0	0–30 bar > 0–5 V dc	rPu030	
		V dc	0	10.0	0	0–10 V dc	rUu010	
SIH 1/ SIH 2	Hysteresis of value of **SI 1** and **SI 2**	mA	0.1	10.0	0.2	-	rS-020	
		mA	0.1	5.0	0.2	-	rS-420	
		V	0.1	5.0	0.1	-	rS-010	
		°C	1.0	30.0	1.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	1.0	30.0	1.0	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	0.1	5.0	0.1	4–20 mA	rPr420	
		bar	0.1	5.0	0.1	0–15 bar > 4–20 mA	rPr015	
		bar	0.1	8.0	0.1	0–25 bar > 4–20 mA	rPr025	
		bar	0.1	8.0	0.1	0–30 bar > 4–20 mA	rPr030	
		bar	0.1	15.0	0.1	0–45 bar > 4–20 mA	rPr045	
		V dc	0.1	2.5	0.1	0.5–4.5 V dc	rUu-05	
		bar	0.1	15.0	0.1	0–30 bar > 0–5 V dc	rPu030	
		V dc	0.1	5.0	0.1	0–10 V dc	rUu010	

Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Transducer/ sensor/signal	Configuration	Settings system
USP 1/ USP 2	Setpoint for voltage output to external unit (spray unit) **OUT**	mA	0	20.0	15.0	-	rS-020	
		mA	0	20.0	11.0	-	rS-420	
		V	0	10.0	7.5	-	rS-010	
		°C	-54.9	+55.0	-1.6	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	-54.9	+55.0	-1.6	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	-8	+8	-0.6	4–20 mA	rPr420	
		bar	-7.5	+7.5	-0.4	0–15 bar > 4–20 mA	rPr015	
		bar	-12.5	+12.5	-0.8	0–25 bar > 4–20 mA	rPr025	
		bar	-15	+15	-0.8	0–30 bar > 4–20 mA	rPr030	
		bar	-22.5	+22.5	-1.0	0–45 bar > 4–20 mA	rPr045	
		V dc	-2.5	+2.4	-0.2	0.5–4.5 V dc	rUu-05	
		bar	-15	+15	-1.0	0–30 bar > 0–5 V dc	rPu030	
		V dc	-5.1	+4.9	-0.5	0–10 V dc	rUu010	
UPb 1/ UPb 2	Proportional band for voltage output to external unit (spray unit) **OUT**	mA	0.5	20	4.2	-	rS-020	
		mA	0.5	20	4.2	-	rS-420	
		V	0.2	10	2.1	-	rS-010	
		°C	2.0	55.0	2.4	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	2.0	55.0	2.4	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	0.5	15.0	1.0	4–20 mA	rPr420	
		bar	0.5	15.0	0.8	0–15 bar > 4–20 mA	rPr015	
		bar	1.0	25.0	1.2	0–25 bar > 4–20 mA	rPr025	
		bar	1.0	30.0	1.2	0–30 bar > 4–20 mA	rPr030	
		bar	1.0	45.0	1.8	0–45 bar > 4–20 mA	rPr045	
		V dc	0.1	5.0	0.4	0.5–4.5 V dc	rUu-05	
		bar	1.0	30.0	1.5	0–30 bar > 0–5 V dc	rPu030	
		V dc	0.2	10.0	0.8	0–10 V dc	rUu010	

10.2.4 Configuration parameters

SW1-1** = On > **ENTER** + **ESCAPE** > **4:SETUP

***Note**: the values of these parameters are defined automatically by the set predefined configuration (see "Select a configuration" on page 69). They can be singularly edited according to need.*

Parameter/ page	Description	Values	Default	Configuration	Settings system
C0	Operating modes and number of inputs used	**GP1**: Slave controller that uses one input **GP2**: Slave controller that uses two inputs	GP2	rS-010, rS-020, rS-420	
		r1: Master proportional controller that uses one input **r2**: Master proportional controller that uses two inputs **rP1**: PID controller that uses one input **rP2**: PID controller that uses two inputs	r2	rtE-01, rtE-02, rPr420, rPr015, rPr025 rPr030, rPr045, rUu-05, rPu030, rUu010	
C1	Input to use. The other input is still visible from the display or from Modbus port (input selection)	Con **C0** = **GP1, r1, rP1, rAP1** ▪ **oFF**: always uses input **IN1** With **C0** = **GP2, r2, rP2, rAP2** ▪ **hi**: always uses the input with the higher value ▪ **Lo**: always uses the input with the lower value	hi	All	
C4	Setpoint position	**oFF**: Slave controller	oFF	rS 010 , rS 020, rS-420	
		hi: Master controller, setpoint at **Pb** high end. **Lo**: Master controller, setpoint at low end of **Pb**. **Mid**: PID controller, setpoint at **Pb** center	hi	rtE-01, rtE-02, rPr420, rPr015, rPr025 rPr030, rPr045, rUu-05, rPu030, rUu010	

Parameter/ page	Description	Values	Default	Configuration	Settings system
C5	Input **IN3** functions	**Nothing**: not connected / reading value / switching parameter set **SP from IN3**: set setpoint by external signal 0–10 V. **Floating SP**: adjust setpoint as a function of the external temperature. **Slave Safety**: control in Slave mode (Slave safety)	Nothing	rtE-01, rtE-02, rPr420, rPr015, rPr025 rPr030, rPr045, rUu-05, rPu030, rUu010	
C6	Relay **RL1** management	**RL1=off-> error**: RL1=off: relay Off when the controller is in fail status. **RL1=off-> error + S2**: RL1=off: relay Off when the controller is in fail status and contract S2 is closed. **RL1=off-> error + S2 + OFF**: RL1=off: relay Off when the controller is in fail status, contract S2 is closed, and the speed command is zero. **RL1=off -> Spray OFF**: command to spray unit On/Off	RL1=off-> error	All	

Parameter/ page	Description	Values	Default	Configuration	Settings system
C7	**OUT_1** analog output settings	**output SLAVE 0-10V**: command to Slave unit (fans), with proportional input 0–10 Vdc at the **Co** value. **output SPRAY 1-10 V**: command to Water-Spray unit 0.75-10 VDC with specific setpoint and proportional band. **output USP-DIR 0-10V**: command to Master motorized actuator with 0–10 Vdc input with specific setpoint and proportional band.	SLAVE 0-10 V	All	
C8	**OUT_2** analog output settings	**output SUP-REV 10-0V**: reverse command to Master motorized actuator with input 10–0 Vdc with specific setpoint and proportional band **output SLAVE 10-0V**: reverse command to Slave unit with proportional input 10–0 Vdc at the **Co** value. **output SLAVE 0.75-10V**: command to Slave unit with proportional input 0.75–10 Vdc at the **Co** value.	SPRAY 1-10V	All	

***Note**: parameters **C2** and **C3** are set automatically as a function of the predefined configuration chosen and cannot be modified.*

10.2.5 C0, C1 and C4 parameter combinations for each configuration

Configuration	C0	C1	C4
rS-010, rS-020	**GP2 (default)**	**Hi**	**oFF**
		Lo	**oFF**
	GP1	**oFF**	**oFF**
rtE-01, rtE-02, rPr420, rPr015, rPr025 rPr030, rPr045, rUu-05, rPu030, rUu010	**r2 (default)**	**Hi**	**Hi**
			Lo
		Lo	**Hi**
			Lo
	r1	**oFF**	**Hi**
			Lo

10.2.6 PID control parameters

SW1-1** = On > **ESCAPE** + **ENTER** > **5:PID

***Note**: parameters visible only with **4: SETUP** > parameter **C0** = **rP1** or **rP2**.*

***Note**: from version 8.0 of the ECM firmware, the temperature and pressure values can be viewed with Imperial units of measure (°F e psi). Therefore, where the text indicates the unit of measure available in °C, it is also available in °F, and where bar is indicated, psi is also available. For the conversion values, use the following formulas: °F = 32+ (°C x 9/5), psi = bar x 14.5.*

Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Transducer/ sensor/signal	Configuration	Settings system
P	Proportional band	°C	2.0	55.0	7.5	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-01	
		°C	2.0	55.0	7.5	NTC 10 kΩ @ 25 °C/ 77 °F	rtE-02	
		mA	0.2	16.0	2.6	4–20 mA	rPr420	
		bar	0.5	15.0	2.4	0–15 bar > 4–20 mA	rPr015	
		bar	1.0	25.0	3.5	0–25 bar > 4–20 mA	rPr025	
		bar	1.0	30.0	3.5	0–30 bar > 4–20 mA	rPr030	
		bar	1.0	45.0	5.2	0–45 bar > 4–20 mA	rPr045	
		V dc	0.1	5.0	0.8	0.5–4.5 V dc	rUu-05	
		bar	1.0	30.0	3.5	0–30 bar > 0–5 V dc	rPu030	
		V dc	0.2	10.0	1.6	0–10 V dc	rUu010	
I	Integral component weight	-	0.0	1000	2	All	All	
D	Derivative component weight	-	0.0	1000	1	All	All	
ti	Integration time	s	0.0	100.0	1.0	All	All	
td	Derivation time	s	0.0	100.0	10.0	All	All	

10.2.7 Parameters for Modbus communication with PC-BMS

SW1-1** = On > **ESCAPE** + **ENTER** > **6: MODBUS

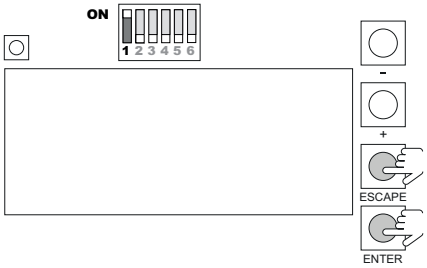
***Note**: the parameters for Modbus communication with the EC fans cannot be modified.*

Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Settings system
MBaddr	Controller Modbus address	-	1	247	247	
MBrate	Communication speed ▪ **4800** ▪ **9600** ▪ **19200** (default) ▪ **38400**	baud	4800	38400	19200	

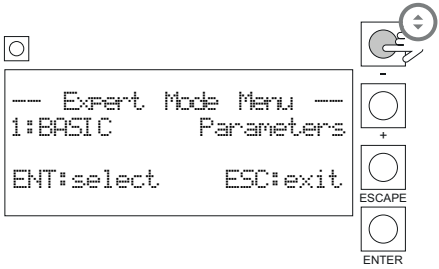
Parameter/ page	Description	Unit of measure	Minimum	Maximum	Default	Settings system
MBtype	Communication mode ■ **8b+1s NO p.**: 8 bit, no parity, 1 stop bit ■ **8E1+1s EVEN p.**: 8-bit, even parity, 1 stop bit (default) ■ **8b+1s ODD p.**: 8 bit, odd parity, 1 stop bit	-	-	-	8b+1s EVEN p.	

***Note**: when editing the Modbus parameters for the PC/BMS and ECM connection, communication between the ECM and the EC fans is interrupted. If the emergency speed is activated for the EC fans, they start rotating at that speed.*

10.2.8 Edit any parameter



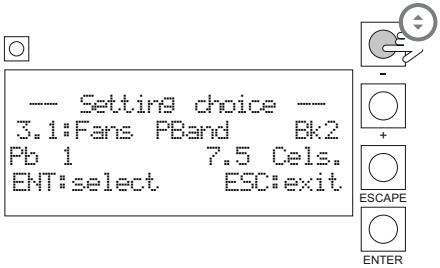
1. Leave switch 1 of DIP switch **SW1 ON** and simultaneously press the **ENTER** and **ESCAPE** keys.



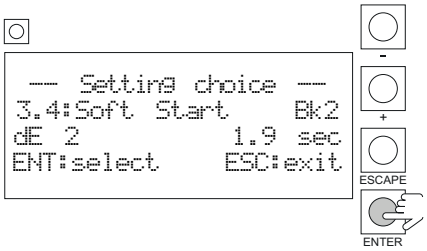
2. Press **-** (or **+**) to scroll through the menu.



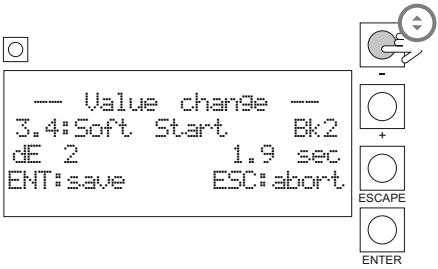
3. Press the **ENTER** key at the parameter of interest.



4. Press **-** (or **+**) to scroll through the parameters.



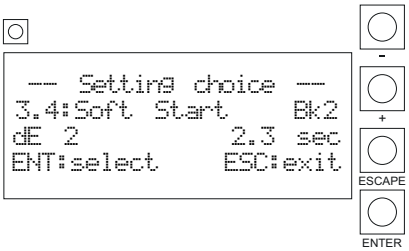
5. Press the **ENTER** key at the parameter of interest.



6. Press **-** (or **+**) to edit the parameter value.



7. Continue as follows:
   - To save the value, press the **ENTER** key: the value is saved in the volatile memory and the message "Remember: to save changed values press ENT * ESC" appears to remember how to perform the final saving step.
   - To cancel the change, press the **ESCAPE** key: it returns to step 5.



8. Continue as follows:
   - To edit the other parameters in the same submenu, repeat the procedure in step 4.
   - To save the changes made, press the **ENTER** and **ESCAPE** keys: the "Saving new values Pleas wait" message appears that confirms the saving is in progress. Then, the home page is displayed.
   - To cancel the changes, press the **ESCAPE** key: the "Restoring old values Change values discarded" message is displayed, informing the operator that the previous values have been restored and then the home page is displayed.