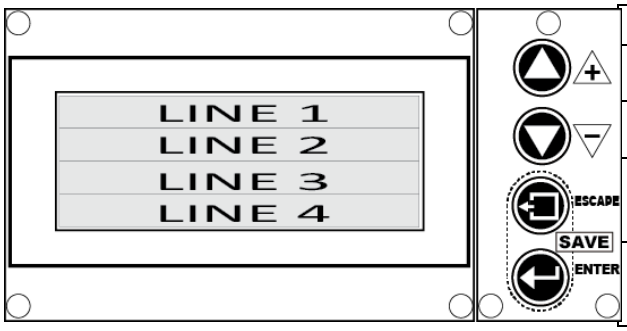
4. Display and control devices

4.1. Display and buttons

The unit is equipped with a 4-row backlit LCD display, with 20 characters per row, and four function keys: “UP”, “DOWN”, “ESCAPE”, “ENTER”. The latter are used to carry out the parameter display and settings operations.



BUTTONS	Function descriptions
UP	Scroll the selected menu items upward Increase the selected value
DOWN	Scroll the selected menu items down Decrease the selected value
ESCAPE	Exit the current selection Mute alarms Pressed with ENTER: input menu / save changes
ENTER	Enter the menu or the selected parameter Temporarily save the modified value Pressed with ESCAPE: input menu / save changes

When switched on, the following appears for three seconds:

1	EPS Vr.1.0	Manufacturer's name, device model, X.Y software release
2	Water Flow	Device name
3	Digital Controller	Device name
4		

After a few seconds, if the device is in “WET READY” mode (Spray enabled), the following home page appears:

1	-- Wet Ready - 09:01	System status: see paragraph 4.2, RTC hours and minutes (*)
2	QR 0.0l/m Ta 33.0°C	Required rated water flow, in l / m; external temperature
3	QA 0.0l/m Tp -7.0°C	Effective ramp "A" water flow rate, in l / m; plenum temperature
4	QB 0.0l/m 0h 00m	Effective ramp "B" water flow rate, in l/m; value totaled by the hour meter

(*) Display row No.1 is reserved for display of the Real Time Clock **device status messages** (see paragraph 4.2).
N.B. The value totaled by the hour meter is increased every minute but only saved in EEPROM every fifteen minutes, to limit wear
N.B. To view the homepage, starting from any page of the display, press the "ESCAPE" key one or more times.

4.2. EPS status messages

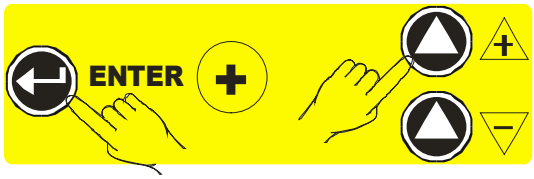
They reflect the running EPS operating mode, presenting the following messages:

1	**------ Dry------- HH . MM**	Not enabled: insufficient external temperature, local clock time
1	**-- Wet Ready-- HH . MM**	Enabled: sufficient external temperature, local clock time
1	**- Wet Work - HH . MM**	Water supply, local clock time
1	**----- Stop ---- HH . MM**	Stop command, local clock time
1	**Man.Drain - HH . MM**	Manual ramp drain cycle on, local clock time
1	**Aut.Drain - HH . MM**	Automatic ramp drain cycle on, local clock time
1	**---Purging--- HH . MM**	Automatic adiabatic panel purge cycle on, local clock time
1	**--T. Ice-- HH . MM**	It concludes the EPS duty cycle and causes the system to discharge. The RL1 alarm relay is not de-energized

N.B. For alarm and warning messages, that are added to these**,** see chapter 7.

4.3. Display contrast adjustment

To change the LCD display contrast, press and hold the "ENTER" key down first and then the "UP (+)" key to increase, or "DOWN (-)" to decrease; on the display only line No. 3 is changed, which provides information on the current "dimming" level.

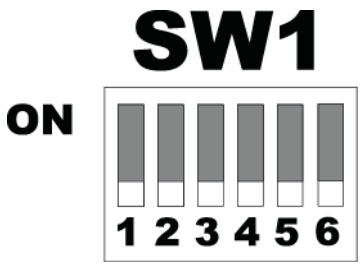


1	**---- XXXX ----**	System status
2		
3	**LCD DIMMER 235**	Current dimmer value: 0 to 255
4		

The value of the dimmer changes the contrast value on the LCD display, in steps of 5 units, from 0 to 255 in a circular manner.
For values over 190 the contrast is very low, these values must be avoided in order not to compromise the reading.

4.4. Dip switches settings: SW1

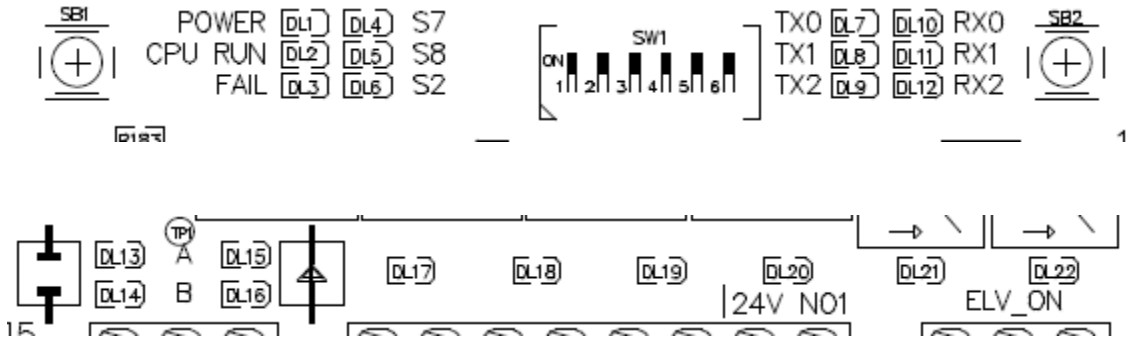
The device is equipped with No. 6 miniature switches (dip-switches) to activate special functions or modes of use, set in the basic software or customizable on request.



SW1		Meaning
1	ON	Allow access to the parameter change function
	OFF	Block access to the parameter change function
2	ON	Hysteresis switching temperature Dry <-> Wet 1 °C/1.8 °F
	OFF	Hysteresis switching temperature Dry <-> Wet 3 °C/5.5 °F
3	ON	STOP input active if S2 open
	OFF	STOP input active if S2 closed
4	ON	stable ModBus forcing
	OFF	momentary ModBus forcing, duration 30 seconds
5	Reserved	
6	ON	Display temperature in °F and pressure in psi
	OFF	Display temperature in °C and pressure in bar

4.5. Signal LEDs

The following signaling LEDs are included, indicating the activation of the functions described in the table below when on.



DL1	**Power**	**green**	ON = power on
DL2	**CPU Run**	**green**	ON with flashing 1 Hz = microcontroller in regular operation
			OFF / ON / irregular flashing = microcontroller failure
DL3	**Fail**	**red**	ON = FAIL: one or more alarms triggered, message on display, see chapter **7**
			OFF = OK: no alarm
DL4	**S7**	**yellow**	ON = drain manual control input on (manual drainage)
DL5	**S8**	**yellow**	ON = manual purging command for the panels
DL6	**S2**	**yellow**	ON = start consent
			OFF = forces the device into "Stand-By", closes nozzle supply valve active load
DL7	**Tx0**	**yellow**	ON = output data transmission on serial "0"
DL8	**Tx1**	**yellow**	ON = output data transmission on serial "1"
DL9	**Tx2**	**yellow**	ON = output data transmission on serial "2"
DL10	**Rx0**	**yellow**	ON = receiving input data on serial "0"
DL11	**Rx1**	**yellow**	ON = receiving input data on serial "1"
DL12	**Rx2**	**yellow**	ON = receiving input data on serial "2"
DL13	**A_Open**	**yellow**	ON = OPEN command for three-way modulating valve "A"
DL14	**B_Open**	**yellow**	ON = OPEN command for three-way modulating valve "B"
DL15	**A_Close**	**yellow**	ON = CLOSE command for three-way modulating valve "A"
DL16	**B_Close**	**yellow**	ON = CLOSE command for three-way modulating valve "B"
DL17	**Out_3**	**green**	ON = supply relay **RL3 ON**
DL18	**Out_2**	**green**	ON = drain relay **RL4 ON**
DL19	**Out_1**	**green**	ON = drain relay **RL5 ON** for external system
DL20	**Pump**	**green**	ON = supply pump relay **RL6 ON** for external system
DL21	**Alarm**	**green**	ON = relay **RL1 ON** no alarms, normal operation
			OFF = relay RL2 OFF one or more alarms triggered
DL22	**Elv_On**	**green**	ON = relay **RL2 ON** EPS running, one or more valves open
			OFF = relay RL1 OFF Spray not active