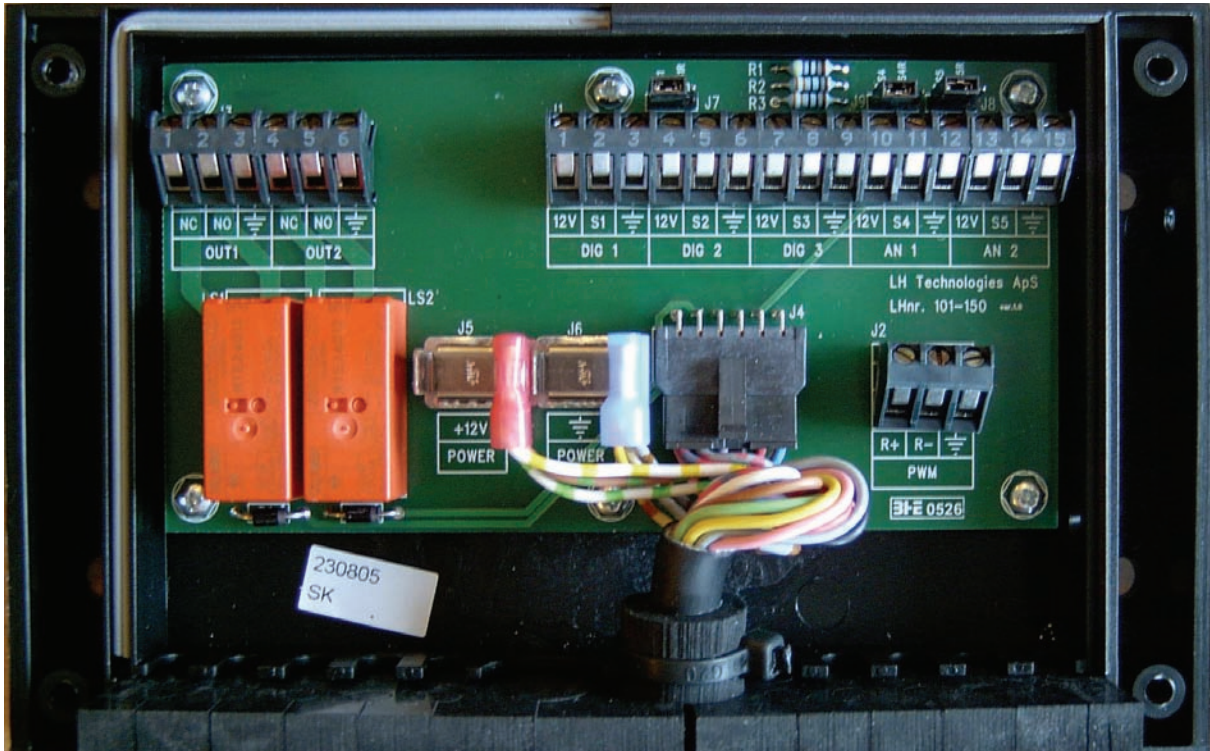


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1. Connections table



Description	Connection	
Carrier flowmeter	Supply	12 V
	Signal	S2
	Ground	⊥
Liquid flow sensor	Supply (Brown)	12 V
	Signal (Black)	S4
	Ground (Blue)	⊥
Master signal (12V is spraying)	Supply (Brown)	12 V
	Signal (Black)	S5



Jumpers	Position
J7	S1 R
J9	S4
J8	S5 if External master S5R if always active

Function	Key	Description
1. Power on	Pro	The unit will power on and show the first working screen <div style="border: 1px solid black; padding: 2px; display: inline-block;">Inj . rate 2.00 %</div>
2. Power off	↑ and ↓	The unit will power off
3. Selection of working screen	↑ or ↓	

3. Functionality

Function	Display	Comments	Possible actions
1. Injection dose rate	inj . rate 2.00 %	This is the desired dose rate for the injected product. It is set as a percentage of the main carrier flow.	Pro to change dose rate ↑ ↓ to select another display value
2. Injection flow	inj . flow 0.00 l / r	This is the actual flow of injected product	↑ ↓ to select another display value
3. Carrier flow	car . flow 0.00 l / r	This is the actual main carrier flow	↑ ↓ to select another display value
4. Injected volume	inj . vol 0.000 l	This is the injected volume counter	↑ ↓ to select another display value CLR to clear the counter.

4. Priming

To activate priming, push the Pump switch to CAL



The pump will then start running and the display will show pumped volume.

priming
0.000 l

When predefined prime volume has been injected, the display will go back to the previous working screen.

5. Alarms

Function	Display	Comments	Possible actions
1. Pump not running	Pump st opped	Alarm message will appear when injection started but the pump is not turning	Check cabling and pump
2. No liquid injected	Inj . Tank empt y	This means that no liquid is injected. Alarm message will appear only if the liquid presence sensor is mounted.	Check plumbing and/or fill the tank.

6. Program

Function	Display	Possible actions	Comments
Access / Exit		Push Pro for 3 seconds	Master must be off
1. Carrier flowmeter	Car . flow set up	<p>↓ to select another step</p> <p>Pro to enter carrier flowmeter calibration (1.1)</p> <p>Push Pro for 3 seconds to escape program</p>	
1.1	Car . flow 150 p/l	<p>↑ ↓ to modify value</p> <p>Pro to validate value</p>	Main carrier flowmeter calibration in pulses/l
2. Injection pump	Inj . pump set up	<p>↑ ↓ to select another step</p> <p>Pro to enter calibration (2.1)</p> <p>Push Pro for 3 seconds to escape program</p>	
2.1 Injection pump type	Inj . pump Piston 2	<p>↑ ↓ to modify value</p> <p>Pro to validate value (2.2)</p> <p>CLR to escape (2)</p>	Choices are : Peristaltic Piston 1 (head) Piston 2 (heads) Piston 3 (heads) Piston 4 (heads)
2.2 Injection pump calibration	Inj . pump 6.00	<p>↑ ↓ to modify value</p> <p>Pro to validate value (2)</p> <p>CLR to start Autocalibration (see ch. 7)</p>	This is the complete pump calibration (all heads together). Units are pulses/ml. Average value is 3.00 per head for a piston pump.
3. Prime calibration	prime set up	<p>↑ to select another step</p> <p>Pro to enter calibration (3.1)</p> <p>Push Pro for 3 seconds to escape program</p>	
3.1	Prime 2.000 l	<p>↑ ↓ to modify value</p> <p>Pro to validate value</p> <p>CLR to start Autocalibration (see ch. 8)</p>	This is the volume that must be pumped to prime the system.

7. Pump autocalibration

Function	Display	Possible actions	Comments
2.2 Injection pump calibration	Inj . pump 6.00	<p>↑ ↓ to modify value</p> <p>Pro to validate value (2)</p> <p>CLR to start Autocalibration</p>	This is the complete pump calibration (all heads together). Units are pulses/ml. Average value is 3.00 per head for a piston pump.
2.2.1	Start autocal	<p>CLR to exit Autocalibration</p> <p>Push on the CAL switch on the pump to start the calibration. Collect the pumped volume. Keep the CAL switch pushed until calibration is finished</p>	Pump must be ready to inject (tubes filled)
2.2.2	Start 235 p	Display shows the counted pulses from the pump.	Release the CAL switch when enough pulses have been counted.
2.2.3	inj . vol 0.000 l	<p>↑ ↓ to set the pumped volume</p> <p>Pro to validate</p>	Release the CAL switch when enough pulses have been counted.

8. Prime autocalibration

Function	Display	Possible actions	Comments
3.1 Prime calibration	Prime 2.000 l	<p>↑ ↓ to modify value</p> <p>Pro to validate value</p> <p>CLR to start Autocalibration</p>	This is the volume that must be pumped to prime the system.
2.2.1	Start autocal	<p>Push on the CAL switch on the pump to start the calibration. Keep the CAL switch pushed until calibration is finished</p>	
2.2.1	priming 0.000 l	<p>Display will show injected volume Release the CAL switch when system has been primed</p> <p>Pro to validate</p>	

