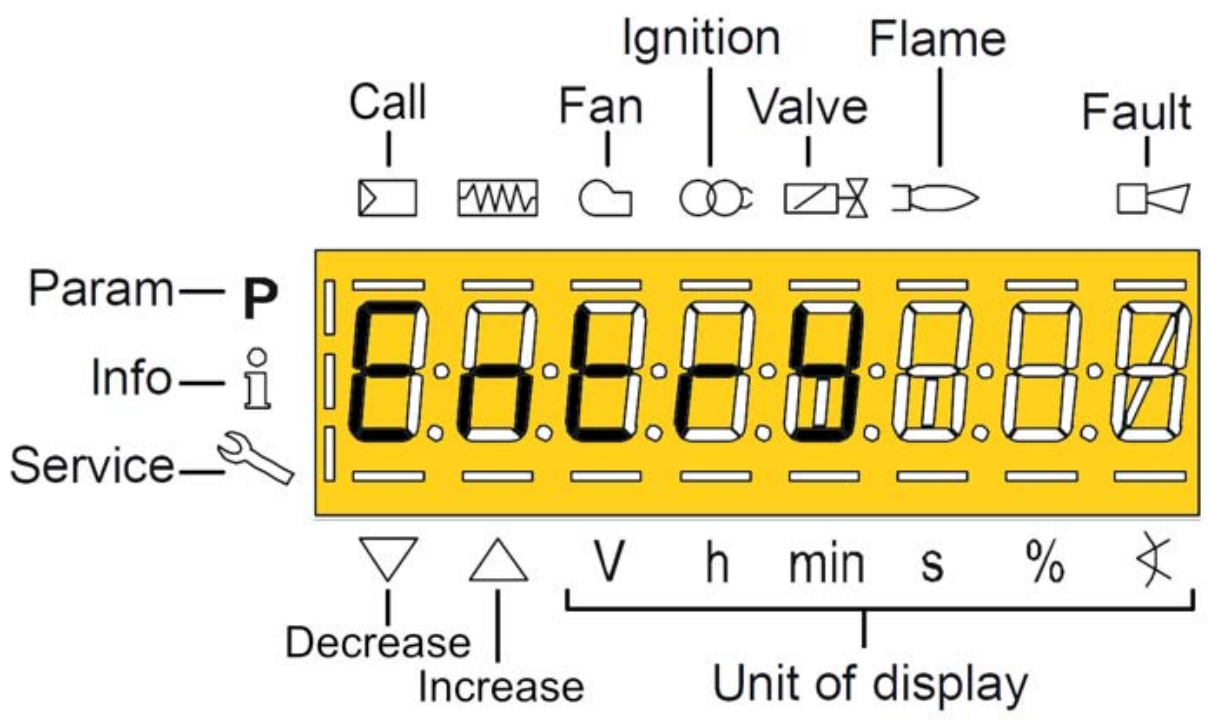




AZL23.00A9

Backlit programming display unit



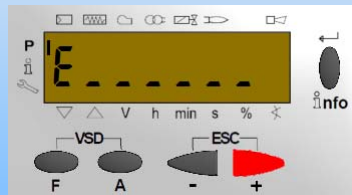
LMV3 login

6. Hold down the F and A buttons together to access the LMV3 parameters.



Hold F & A for 2 seconds and release

OEM level password is: E n t r Y



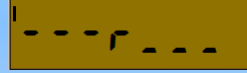
Press + or - until "E" appears



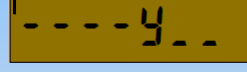
Adjust, Enter



Adjust, Enter



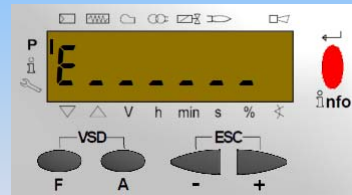
Adjust, Enter



Adjust, Enter



Enter



Press enter



Select a fuel train Section 4 page 18

7. Parameter 201 will be displayed. Parameter 201 sets the fuel train type.

enter

enter

escape

adjust 3 is GP2

Fuel train GP2 is selected

Configure the VSD (or PWM)

8. Parameter 542 will be displayed. Parameter 542 activates or deactivates the use of a VSD.

9. Parameter 641 will be displayed. Parameter 641 is used to standardize the VSD (if used).

Fuel train complete
Press +

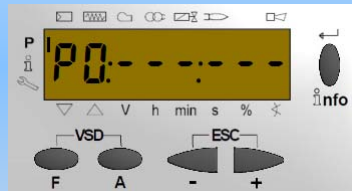
641 = 0 = do not standardize
Press +

542 = 0 = no VSD
Press +

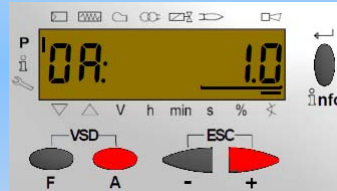
Prompt for Ignition setting

Define the ignition settings for Fuel and Air

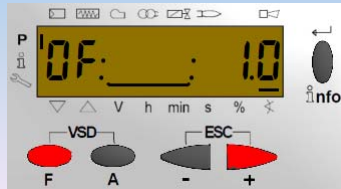
10. P0 will be displayed. P0 is the ignition position of the actuators and VSD. Hold down the F button and use the + and - buttons to set the ignition position for the fuel actuator. Hold down the A button and use the + and - buttons to set the ignition position for the air actuator. Hold down both the F and A buttons together and use the + and - buttons to set the ignition speed for the VSD. Once the safe ignition positions have been entered, press the + button.



Prompt for Ignition setting



Hold A - adjust - release



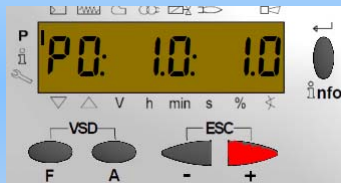
Hold F - adjust - release



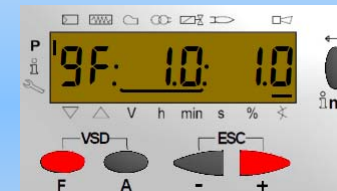
Ignition settings

Define the high fire settings for Fuel and Air

11. P9 will be displayed. P9 is the high fire position of the actuators and VSD. Enter the same values that were used for ignition position P0. Once the safe high fire positions have been entered, press the + button.



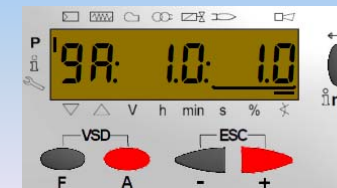
Press + to continue



Hold F - adjust - release



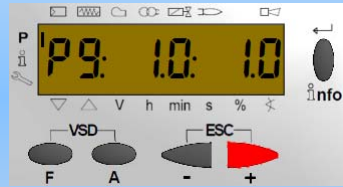
Prompted for High fire ...



Hold A - adjust - release

Ready to attempt startup ... Section 4 page 19

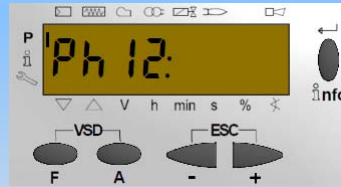
12. The word "run" will be displayed. If the burner is ready to be turned on, press Enter.



High fire settings, press + to continue



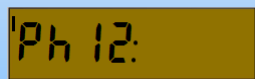
Press enter to continue



Phase 12 Standby, ready for a call for heat

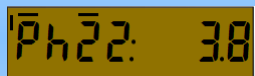
Standby and prepurge

13. The LMV3 will now be in Phase 12 and the burner is ready to be turned on. Turn on the burner switch. The burner should drive to pre-purge (Phase 24) and then drive to ignition (Phase 36). P0 will be displayed again.



Phase 12, Ready for a call for heat: safety loop is complete, low gas, high gas, proof of closure are made:

burner switch ON



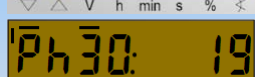
Fan is on waiting for Air pressure switch:

air press switch ON



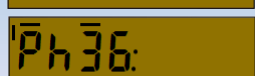
Drive up to purge position

(note drive 'up' bar)



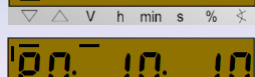
Air pressure on, prepurge position made:

counting ...



Prepurge complete:

drive to ignition position (note drive 'down' bar)

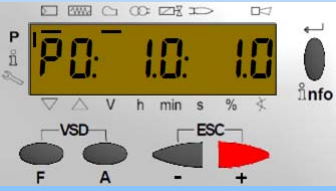


Ignition position reached:

patiently waiting to proceed

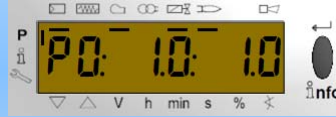
Ignition (Ph 38) ignition + pilot (Ph 40) pilot stands alone (Ph 42)

13. If no changes are desired for the ignition position, press the + button to attempt to light the pilot.



Ignition position reached:	Press +
Ignition	(note bar)
Ignition + Pilot (note bars)	Make flame !
Pilot alone	
Pilot stabilize	If flame is detected

14. The pilot should light and the LMV3 should move to pilot stabilization (Phase 44). If the pilot does not light on a new installation, there could be air in the gas line. Bleed the air in a safe manner if necessary and attempt to re-light the pilot.



Flashing display, if light off was successful

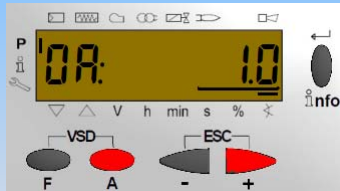
15. P0 will be displayed again once the pilot is lit. Tune the pilot by adjusting the ignition position of the air actuator and / or adjusting the pilot gas pressure regulator, if necessary. Pilot flame should be stable and return a flame signal of 85% or greater. To view the flame signal, hold down the Enter button.

Chance to edit P0 pilot setting ...



P0 flashing ... Edit the pilot setting

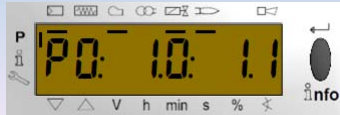
Adjust **ONLY** air, and / or pilot regulator pressure



To adjust:

Hold A, make adjustment, release

DO NOT edit fuel setting, as main fuel valve is still closed .



New pilot setting

Main valve ON (Ph 50)

16. Once a satisfactory pilot flame is established, press the + button. The burner should open the main fuel (gas) valves and attempt to light the main flame. The LMV3 should show a flame failure since the manual main fuel (gas) valve is closed.

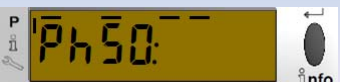
17. If a flame failure does occur, turn off the burner switch and proceed to reset the LMV3. The text "OFF UPr..." should be displayed. Open the manual main fuel (gas) valve. To start the burner again, use the procedure from steps 6, 12, 13, 14, and 15 above to light the pilot off again. Once the pilot flame is established again and P0 is displayed, press the + button and attempt to light the main flame.



P0 flashing ...

Point is 'validated' in the presence of a flame signal

Press +



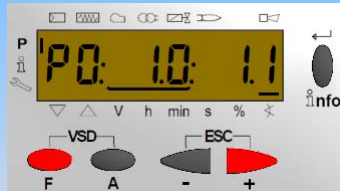
Main valve ON...

Chance to edit P0 main setting ...



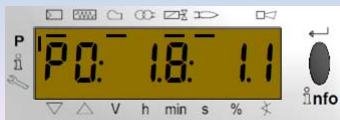
P0 flashing ...

Adjust **ONLY** fuel



To adjust:

Hold F, make adjustment, release
DO NOT edit air setting,
 you must adjust fuel
 to work with the air required
 for a good pilot light off !



New main setting

Fuel curve: P1 thru P9, is always 9 points



Wait for P0 to begin flashing ...

This 'validates' the setting,
 in the presents of a flame signal.

Press +



As you begin the fuel curve,
 the settings you made for P0,
 are automatically transferred to P1,
 as a starting point.

You can now adjust P1 lower if you wish,
 to achieve a higher turndown.



Once P1 is adjusted,
 and begins to flash (validation)

Press +

CALC feature



Wait for P1 to begin flashing ...
 This 'validates' the setting,
 in the presence of a flame signal.
 Press +



Pressing + causes the 'CALC', calculation:
 a straight line ...
 of points P2, P3, P4, P5, P6, P7, and P8 ...
 from your new P1 thru the current P9

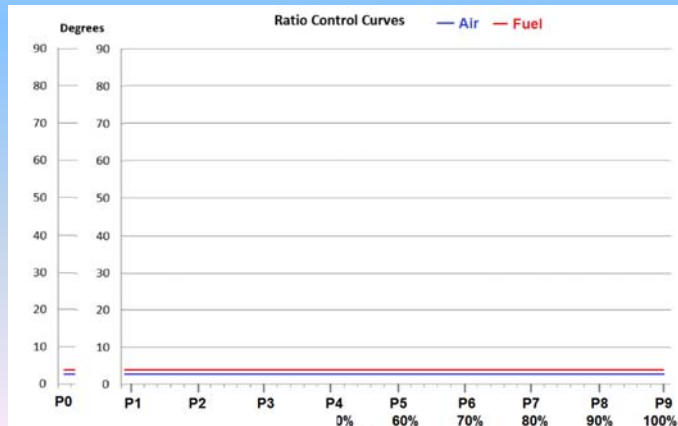


Since the curve is always 9 points ...
 if near at or near high fire,
 the gas regulator must be adjusted,
 which would cause doing the curve over ...
 we will **START** at P9

Fuel curve



As you arrive at P9,
 you will note it has the same, original value,
 you gave it before light off.

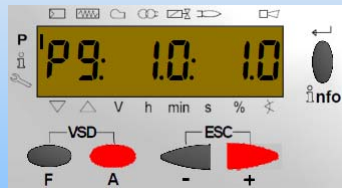


Right now,
 our fuel curve,
 is quite flat !

P0 is not
 considered
 part of the curve.

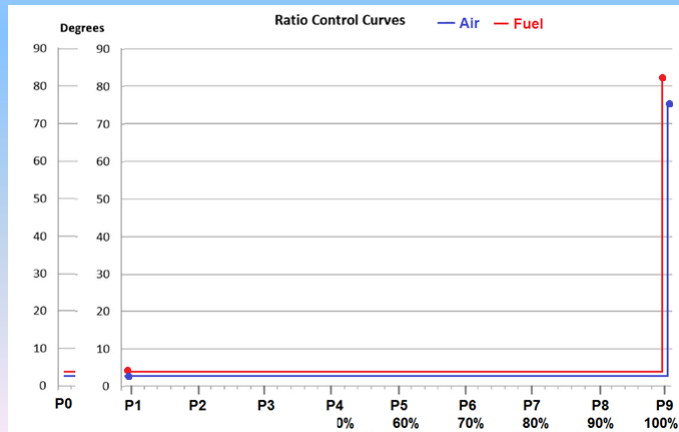
Also, P1 and P9
 are 'anchors' ...
 they **ONLY** change
 when you change
 them, and are not
 calculated.

Fuel curve



Advance the values for P9,
Always lead with the air ! Follow with fuel.

Using your stack analyzer,
adjusting the gas regulator,
until you achieve high fire ...



'Curve' now
has a dramatic
'L' shape !

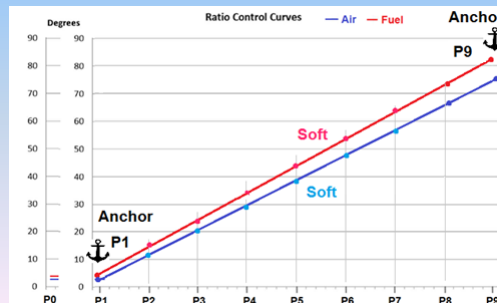
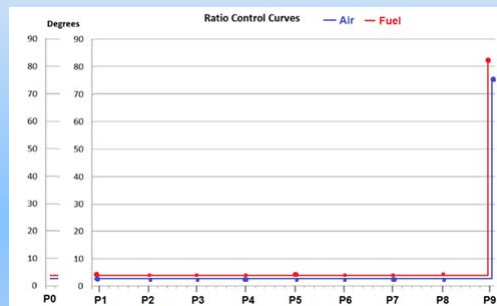
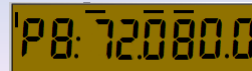
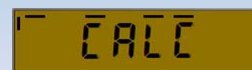
Difference! 'key press' vs. 'key hold (CALC)'



Momentary "-" key press



HOLD "-" key press
(CALC)



Difference! 'key press' vs. 'key hold (CALC)'



Once P9 begins flashing ...

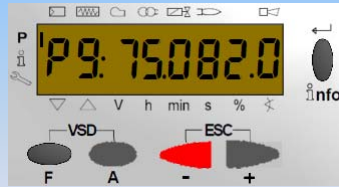
Press - **momentarily**, and release ...



DON'T do this with a live burner!

You will see that P8 retains it's original value.

Press + again to return to P9 ...



Once P9 begins flashing again ...

Press - and **HOLD** until CALC appears and release ...

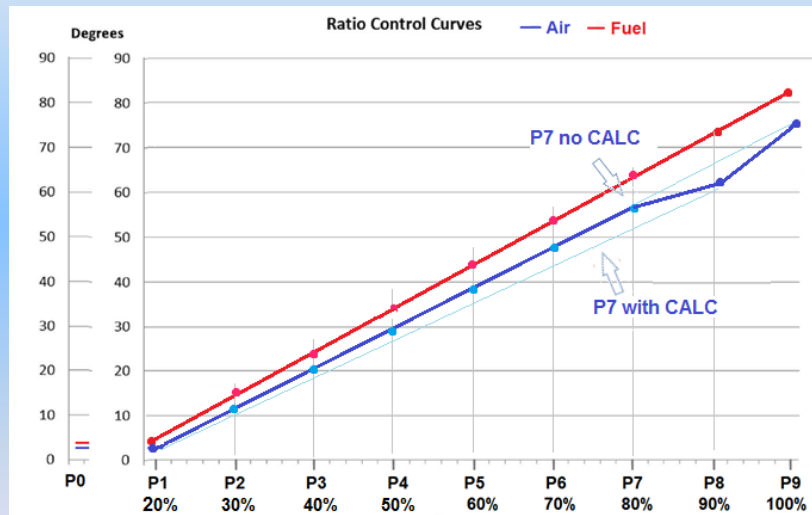


This time P8 was CALC ulated to a point between P9 and P1

(as well as P7, P6, P5, P4, P3, P2)

Timing is everything !

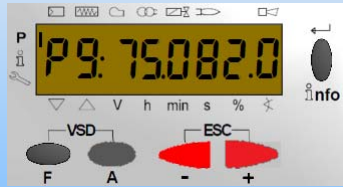
Calculate (CALC), and validate (flash), the rest of the curve...



Each point should be :
 P9 thru P1, -or-
 P1 thru P9

- 1 Adjusted for combustion,
- 2 Wait until it flashes to validate,
- 3 Calculated back to low fire.

Completed curve needs 'Load limits'



Once the entire curve (P9-P1 or P1-P9) begins flashing ...
Press ESC and release ...



Prompt for setting Change, (enter)
Adjust, (+, -)
Save, press (enter)
Press (escape)
Setting is saved
Continue, press (+)



Manual operation



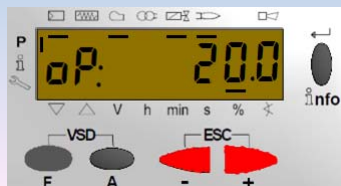
Normal operation:
20.0 % is "solid"



HOLD (F), adjust load (+, -)
release



Manual operation
20.0% is "flashing"



To return to automatic:

Leave curve settings, operate, and shutdown

545 200
 400: SEt
 OP: 200

Load limits complete,
 continue with (escape)

Curve settings,
 continue with (escape)

Operation,
 unit modulates from load control

Ph62:	Drive to low fire
Ph70:	Afterburn
Ph72:	Drive to postpurge
Ph74:	Mandatory postpurge
Ph78:	Option postpurge
Ph10:	Home run
OFF	Off, fully commissioned

Backup / Restore

400: SEt
 000: Int
 041: ---
 05000: 0
 bAC_uP
 rEstorE

F & A

,, ,, enter

+, +, +, +

Enter

Choose
 Backup
 Or
 restore

bAC_uP
 0
 1
 0
 055: ---
 057: ----

Backup

+

enter

Wait, 0
 Done!

55 ID
 56 part no.
 57 SW version

Table for error codes

Serial number	Code	Diagnostic code	Error class	Phase	Startup counter	Output	Description
70x	70x.01	70x.02	70x.03	70x.04	70x.05	70x.06	
701	200	00					NO FAULT!
702							
703							
704							
705							
706							
707							
708							
709							
710							
711							
712							
713							
714							
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716							
717							
718							
719							
720							
721							
722							
723							
724							
725							

