Quick reference guide to programming the Sigma and gamma/ L pumps

On the front side of the pump there are five keys, a control panel with digital display and 3 status LEDs.
Key functions

Key functions

P = Keep pressed for 2 seconds to switch to adjustment mode
or
P = confirm an entry

i = On pressing the button, switches between continuous display displays

UP arrow key = increases numerical value

DOWN arrow key = decreases numerical value

STOP/START = stop/start pump

ProMinent recommends that the pump user read the operating instructions of the pump. This quick reference guide is only an addition to the main documents of your metering pump.

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Part No. 985936

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“Manual” operating mode

Operating mode “Manual” and the maximum stroke rate are preset on pump delivery.

- Change stroke rate using the ↑ or ↓ arrow keys.
- Press the i-key to navigate between the control display of the pump (this includes. stroke rate, stroke length %, total number of strokes, etc.)
- Start or stop the pump with the STOP-key.

“Analog” operating mode (optional)

For control at 4 - 20 mA

- Keep the P-key pressed until the display flashes. Then release the key.
- Keep arrow key ↑ or ↓ pressed until “MODE” appears on the display. Then press the P-key.
- Keep arrow key ↑ or ↓ pressed until “ANALOG” appears on the display. Then press the P-key.
- The pump is in analog operating mode.
- If the red LED lights and “ANALG” appears on the display then either the pump is receiving no analog signal or the signal is lower than 3.7 mA.
  (pump operates in the range between 4-20 mA)

Settings for control at 4 - 20 mA (or 0 - 20 mA)

- Keep the P-key pressed until the display flashes. Then release the key.
- Keep arrow key ↑ or ↓ pressed until “SET” appears on the display. Then press the P-key.
- Keep arrow key ↑ or ↓ pressed until “ANALG” appears on the display. Then press the P-key.
- Keep arrow key ↑ or ↓ pressed until “4-20 mA” or “0-20 mA” appears on the display. Then press the P-key.
- The pump will react proportionally to the current signal, 4 mA = 0 strokes/min., 20 mA = maximum rate
- Select the curve* to provide an individual response to an mA input signal.

*For detailed information, refer to operating instructions.

“Contact” operating mode

Pulse input over universal control cable (from, e.g. water meter or DULCOMETER® controller).

“Contact” operating mode (basis)

- Keep the P-key pressed until the display flashes. Then release the key.
- Keep arrow key ↑ or ↓ pressed until “MODE” appears on the display. Then press the P-key.
- Keep arrow key ↑ or ↓ pressed until “CONTACT” appears on the display. Then press the P-key.
- The pump is in contact operating mode.

Set multiplier/divisor

- The factor should lie between 00.01 and 99.99.
- Set the pumps to “CONTACT” operating mode, as previously described.
- Keep the P-key pressed until the display flashes. Then release the key.
- Keep arrow key ↑ or ↓ pressed until “SET” appears on the display. Then press the P-key.
- Keep arrow key ↑ or ↓ pressed until “CNTCT” appears on the display. Then press the P-key.
- Actuate the P-key or use the arrow keys ↑ or ↓ to adjust the Memory “ON” or “OFF” function. Then press the P-key.**
- The first of 4 (four) digits flashes XX.XX
- Use arrow key ↑ or ↓, to assign a numeric value to the flashing digit. Press the P-key to move to the next digit.
- Repeat this process until the required factor is set. (this means, enter 02.50 for multiplier 2.5 and 00.50 for divisor 2).
- Press the P-key to return to pump operation.

**Switching on the Memory function increases the stroke rate when the pulse input is faster than the pump speed.

Fast priming” function

Fast priming when controlled externally

- **Press the i-key until “FREQ” appears on the right side of the display.**
- **Now simultaneously press arrow keys ↑ and ↓ so that the pump runs at its maximum rate (“MAX”).**

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Calibration

For calibration, connect the pump to a calibration bar or a measuring cylinder.

- Stop the pump with the -key.
- Keep the -key pressed until the display flashes. Then release the key.
- Keep arrow key or pressed until “SET” appears on the display. Then press the -key.
- Keep arrow key or pressed until “CALIB” appears on the display. Then press the -key.
- Keep arrow key or pressed until “ON” appears on the display. Then press the -key. “Start” will now flash on the display.
- Press the -key to start calibrating. The pumps starts and the number of strokes is counted. It is recommended to run the calibration for approx. 1 minute or for 200 strokes.
- Press the -key to stop calibrating. Determine the pump volume (enter as follows: 50 ml = 0.050 litres)*.
- Change the displayed volume to the set pump volumes using the or arrow keys.
- Press the -key to accept this value for the pump.
- Use arrow key or , to set the unit of measurement to litres.*
- Then press the -key. Calibration is now completed.
- Use the -key to navigate between continuous displays and, e.g. to view the pump output in litres per hour and the total feed volume.

* If calibrated in gallons, enter the pump volume in gallons and set the unit of measurement to gallons.

Flow control

Connect Flow Control to the pump for this function. The Flow Control is not supplied with the pump and must be purchased separately.

- Keep the -key pressed until the display flashes. Then release the key.
- Keep arrow key or pressed until “SET” appears on the display. Then press the -key.
- Keep arrow key or pressed until “FLOW” appears on the display. Then press the -key.
- Keep arrow key or pressed until “ON” appears on the display. Then press the -key.
- You can now set the “Tolerance” = permissible number of consecutive strokes with lifting volumes that are too low. A fault is displayed if the “Tolerance” threshold is overshot.
- Use arrow key or , to assign a numeric value to the flashing digit. Press the -key to move to the next digit.
- Repeat this procedure until the required number is set (maximum 125).

Auxiliary rate

A universal control cable must be connected to the pump. The pump feeds with the preset stroke rate (auxiliary rate) when the grey and the black wire are closed.

Set auxiliary rate

- Keep the -key pressed until the display flashes. Then release the key.
- Keep arrow key or pressed until “SET” appears on the display. Then press the -key.
- Keep arrow key or pressed until “AUX” appears on the display. Then press the -key.
- You can now enter a value between 0 and the maximum stroke rate.
- Use arrow key or , to assign a numeric value to the flashing digit. Press the -key to move to the next digit.
- Repeat this process until the required value is set.
- Press the -key to return to pump operation.

Note:

- **A universal control cable must be connected to the pump for operating modes Analog or Contact.**
- **A ProMinent® flow control must be connected to use the flow control function.**
- **A two-stage level switch from ProMinent must be connected to the pump for level control.**
- **The large rotary dial on the front of the pump is used to set the stroke length**
  - **Settings between 0% and 100% can be made.**
  - **For standard dosing heads, a setting between 30% and 100% is recommended.**
  - **For gamma/ L metering pumps with self-bleeding dosing head, a setting between 50% and 100% is recommended.**

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Universal control cable

- Purchased separately

Length	Part no.
2 metres	1001300
5 metres	1001301
10 metres	1001302

Functions

- External control of pump using the universal control cable
- 4 (four) different pump functions are possible using the 5 (five) wires of the control cable.

Pause
Brown – Black

- When these two wires have an open contact, the pump goes into operation mode “PAUSE” mode.
- “PAUSE” appears on the display and the pump stops.
- If both wires are closed then the pump is activated and feeds according to the set operating mode.
- If the control cable is connected to the pump and the PAUSE function is not used then wire contact Brown - Black must be closed; otherwise, the pump goes into “PAUSE” mode.

Contact
White-Black-Brown

- Pulses between these two leads trigger a metering stroke in “CONTACT” operating mode.

Analog
Blue-Black-Brown

- For operation at 4-20 mA, blue positive terminal (+), black negative terminal (-); apparent impedance 120 Ohm.

Auxiliary rate
Grey-Black-Brown

- When these wires have an open contact, the pump runs normally.
- When contact is closed, the pump feeds at the preset stroke rate.

Status LEDs

Green LED indicator lights up

- The normal mode LED lights up on each pump stroke.

Yellow LED indicator lights up

- The pump is set to a stroke volume of +/- > 10% during calibration.
- “CALIB” flashes on the side of the display.

Yellow LED indicator lights up

- The display flashes; the fluid level in the storage tank has reached “liquid level low 1st stage”.

Red LED indicator lights up

- “MINIM” flashes on the display; the fluid level in the storage tank has reached “liquid level low 2nd stage”.

Red LED indicator lights up

- “ANALG” flashes on the display; no mA input or mA input lower than 3.7 mA (operation at 4 - 20 mA)

Red LED indicator lights up

“FLOW” flashes on the display; the permissible number of consecutive strokes with lifting volumes that are too low. has been exceeded

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