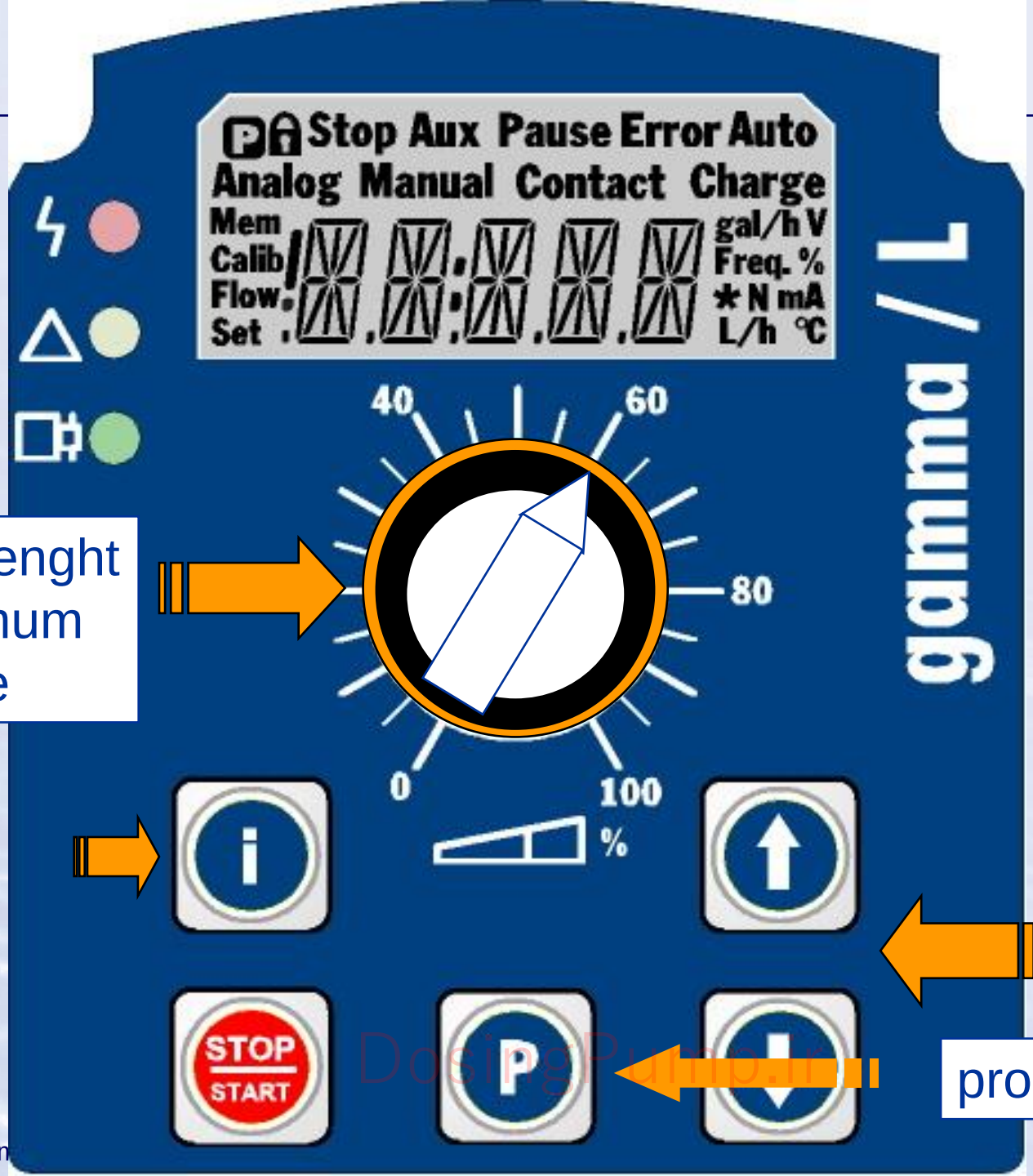
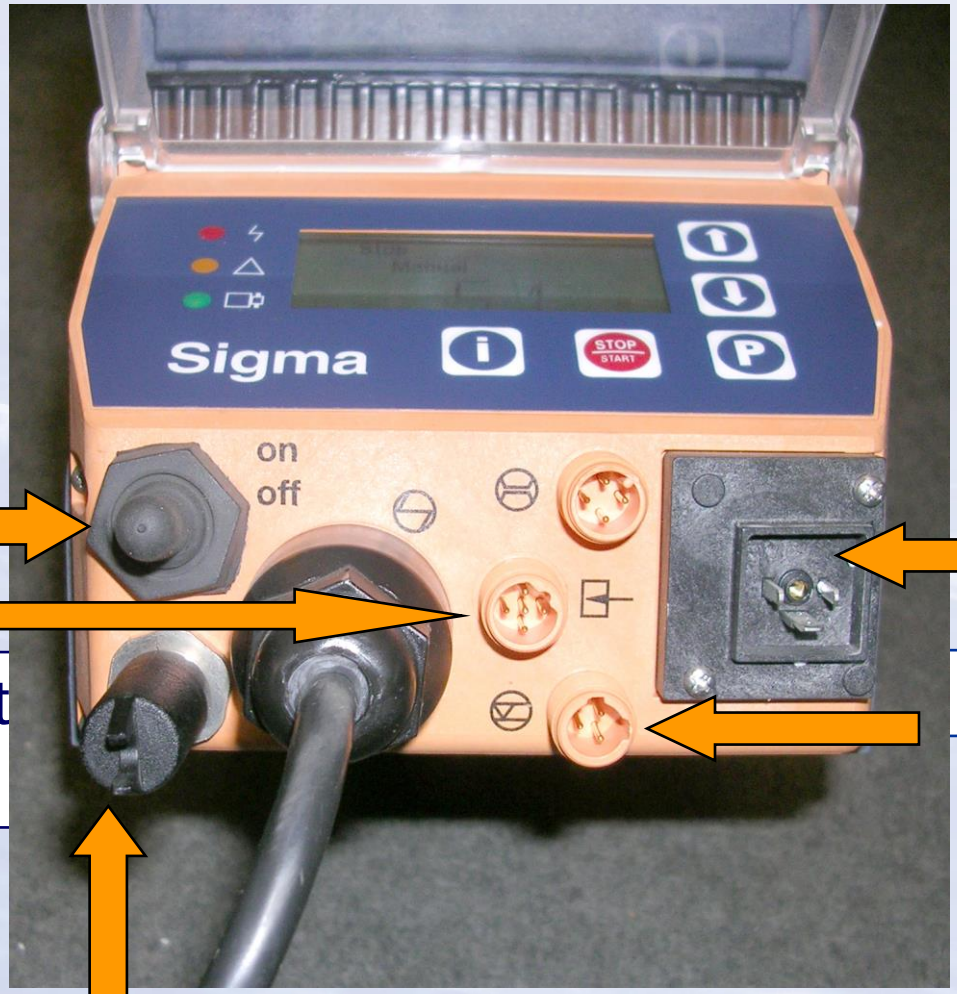


Stroke lenght = maximum flow rate

Set display

Set frequency

program



Switch On-off

mA-freq-contact
pause input

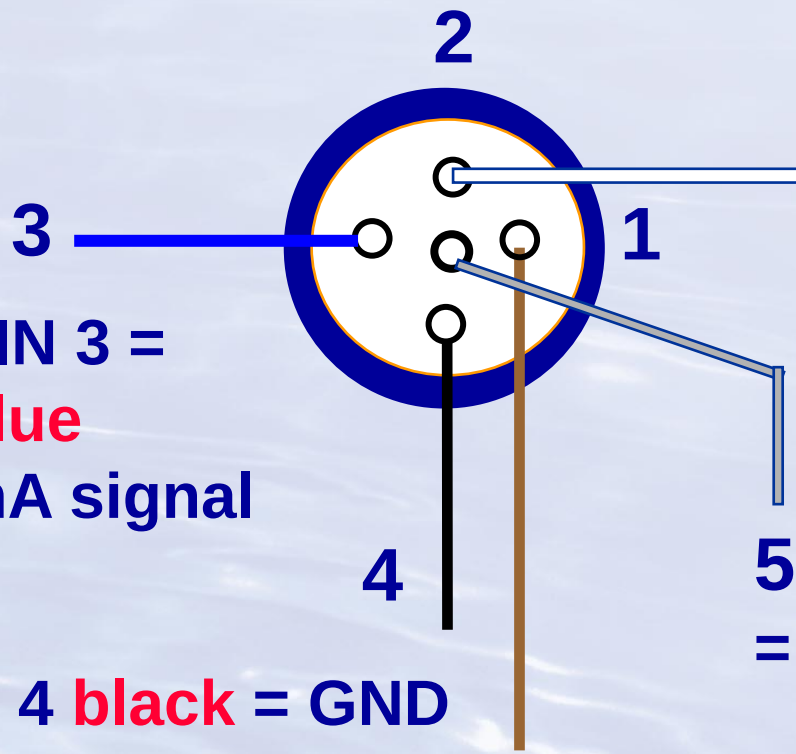
Relay output

Float switch input

Input Rupture diaphragm

ProMinent®

Universal external control cable



PIN 3 =
blue
mA signal

2 white to 4 black
= potentialfree contacts
0.5 mA at + 5 V

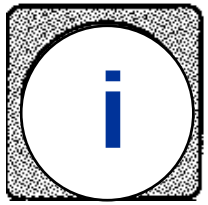
5 grey + 4 black
= Auxiliary frequency

4 black = GND

1 brown
+ 4 black = Pause function

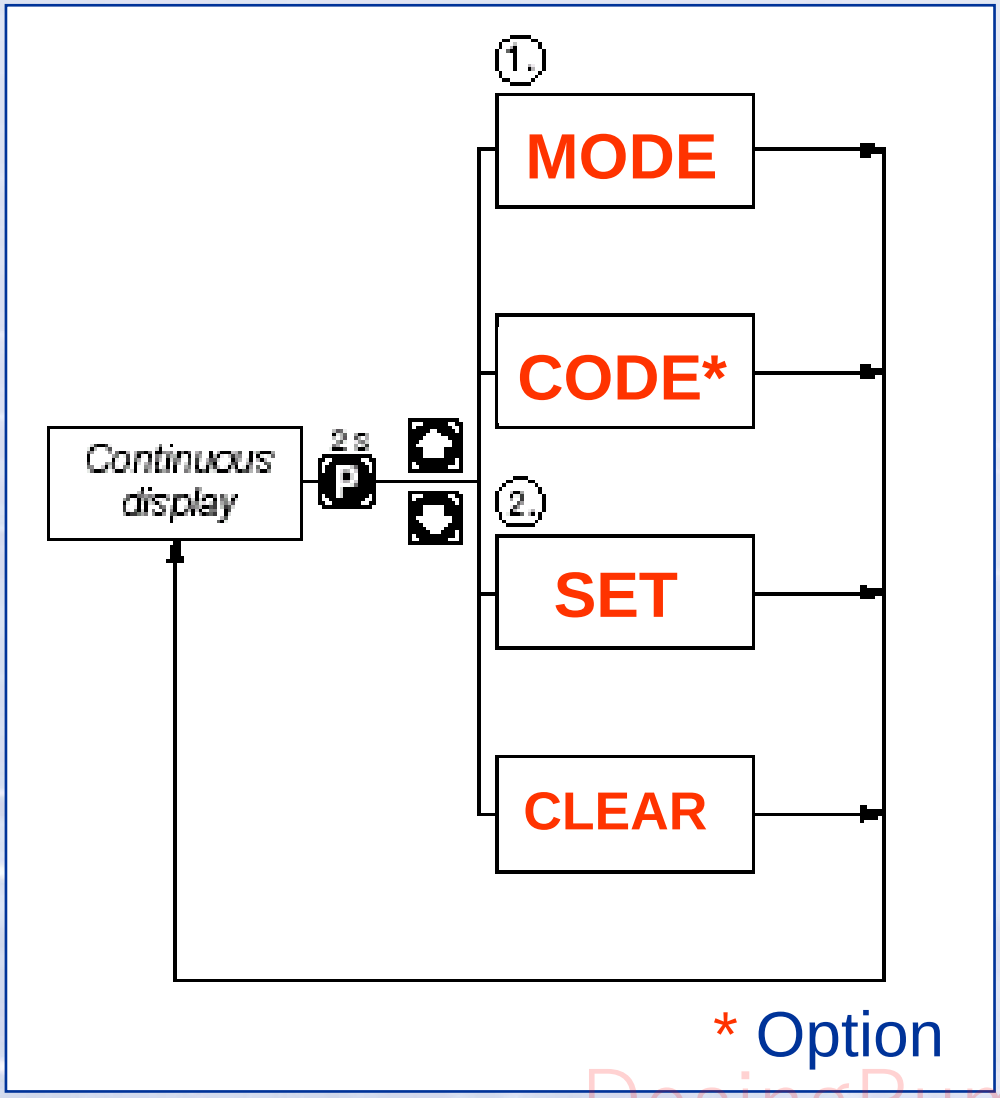
Permanent display

- Stroke frequency
- Stroke length
- Stroke counter
- Dosing capacity l/h
- Dosing amount l
- Residual strokes of batch
- Residual liters of batch
- Control current
- Factor/memory
- Display external mode

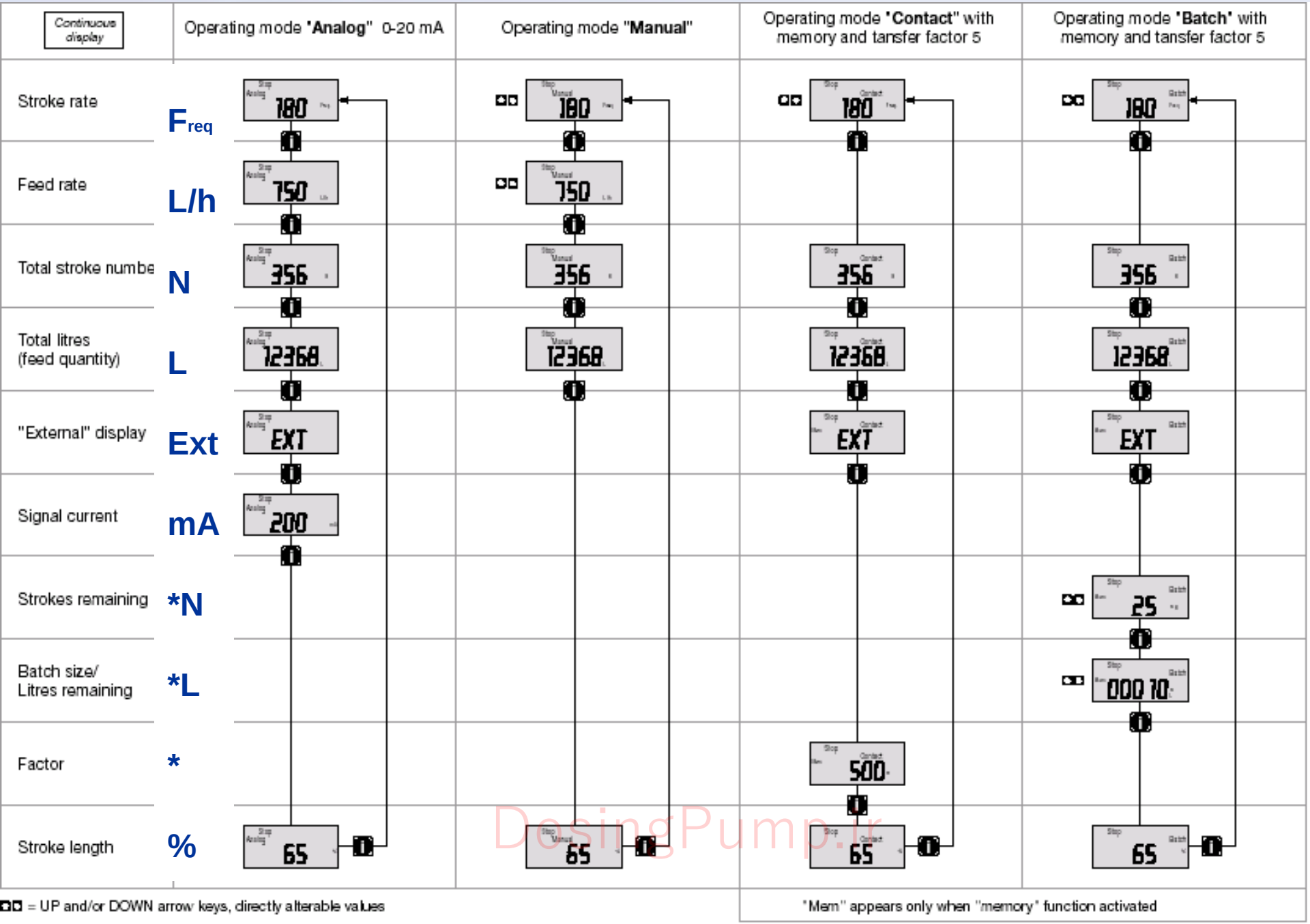


Depending on Identcode and selected mode of operation

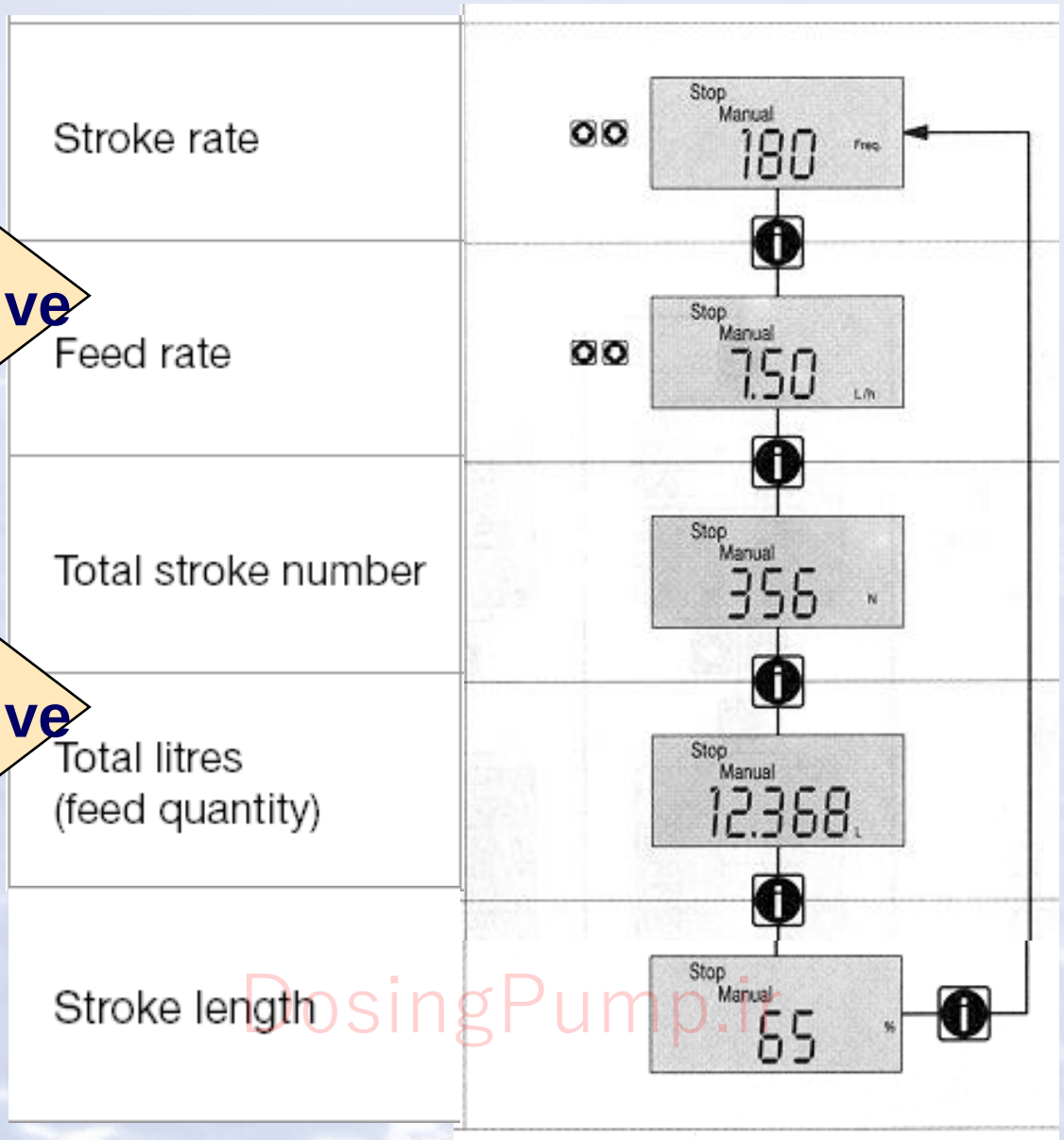
Menu structure



Continous displays



Display „MANUAL“



calibration active

calibration active

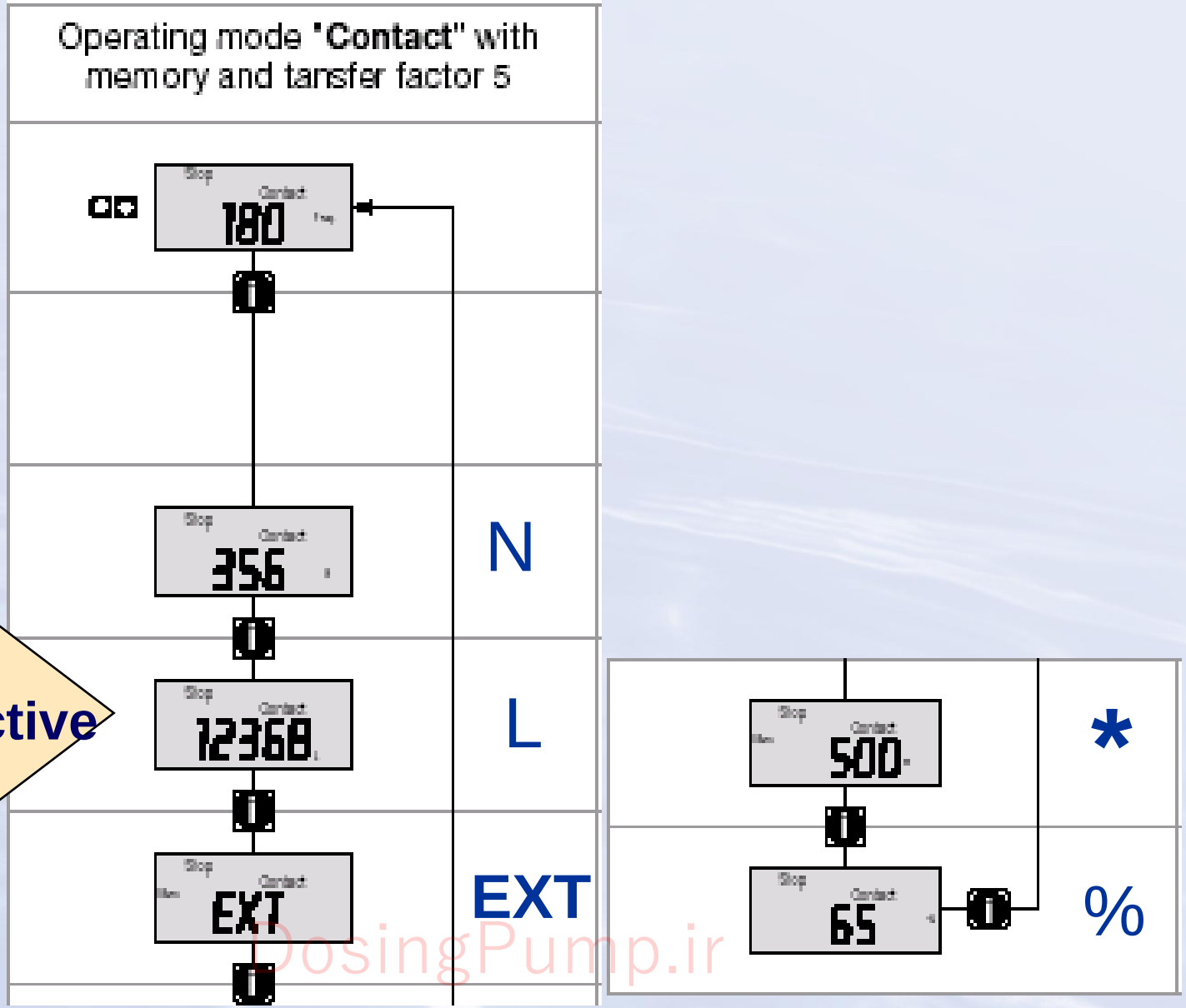
L / h

N

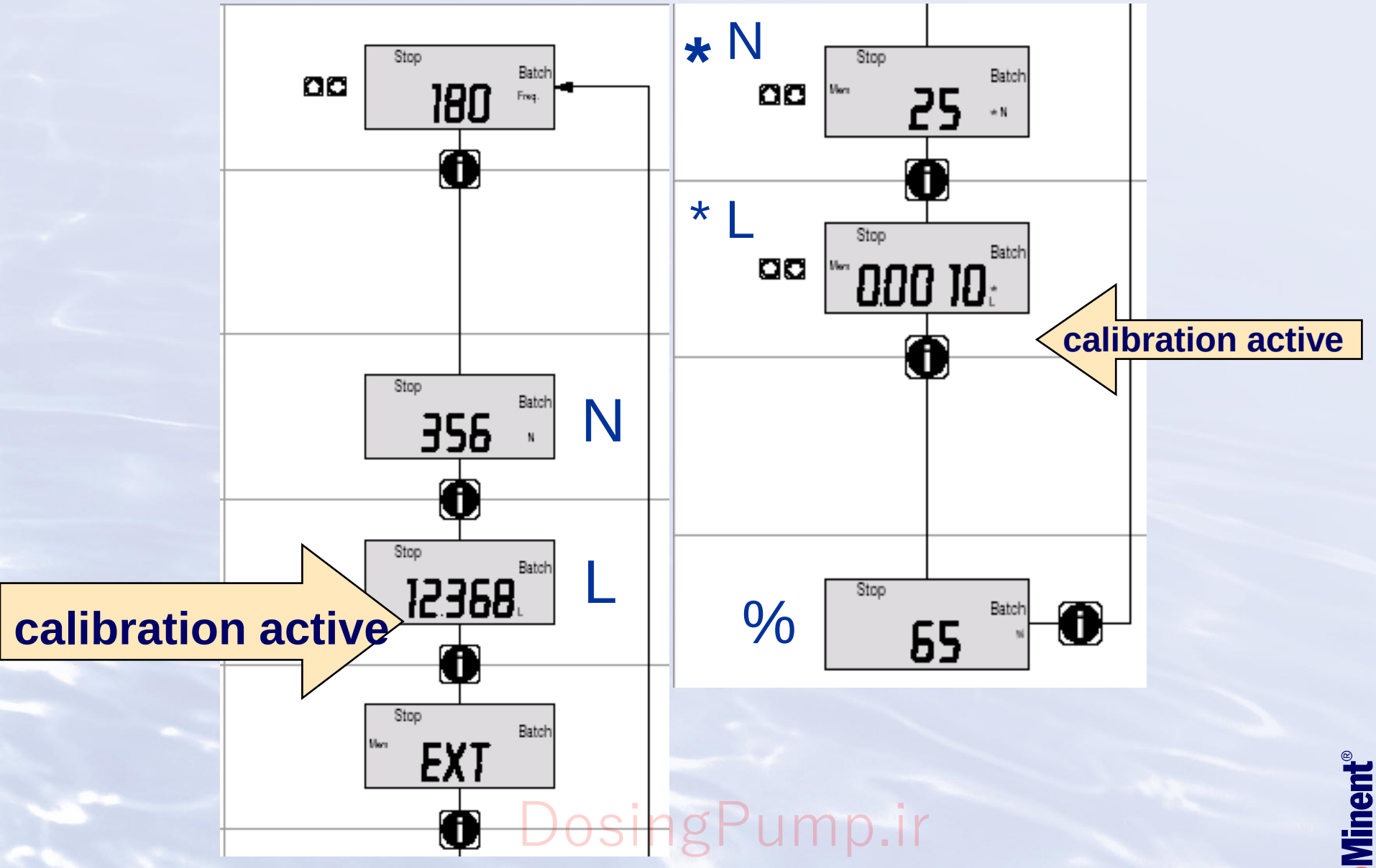
L

%

Display „CONTACT“



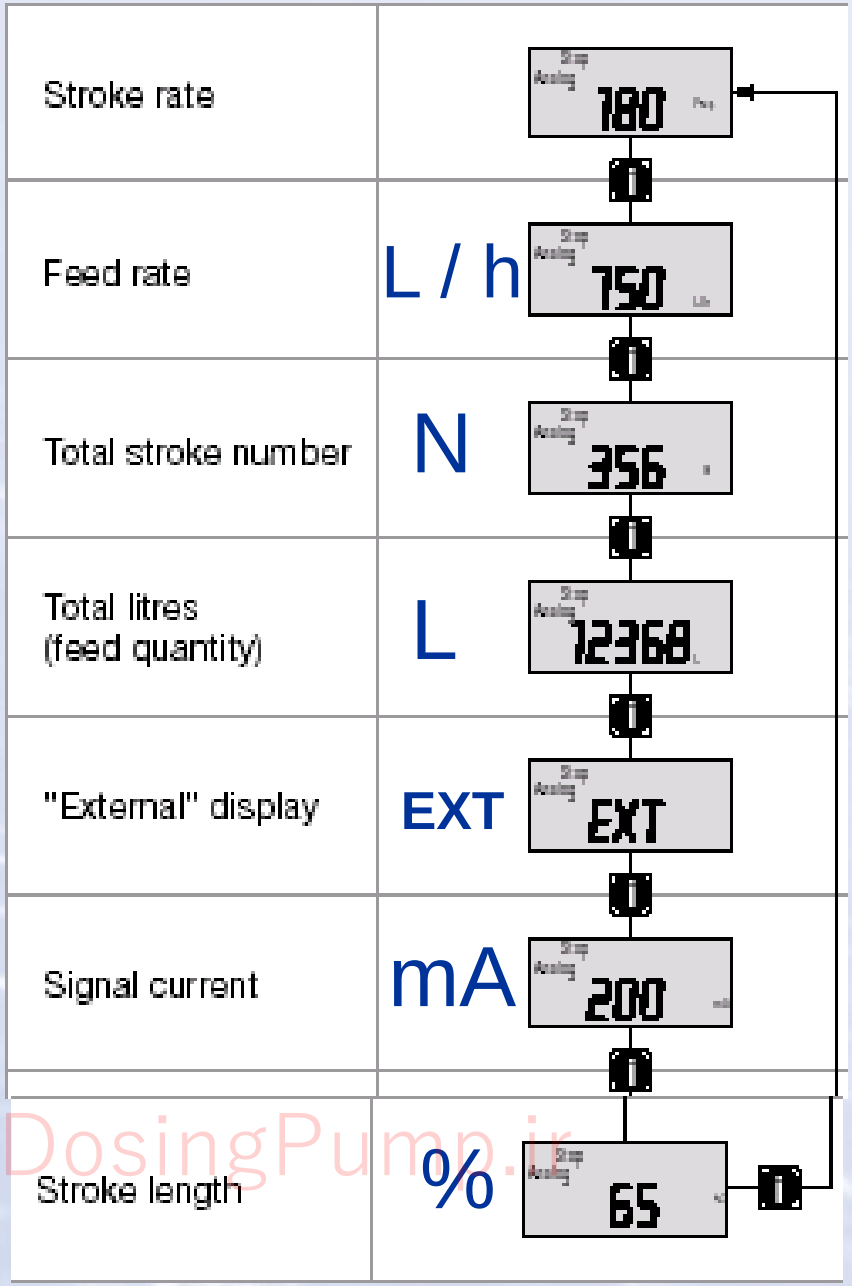
Display „Batch“



Display „ANALOG“

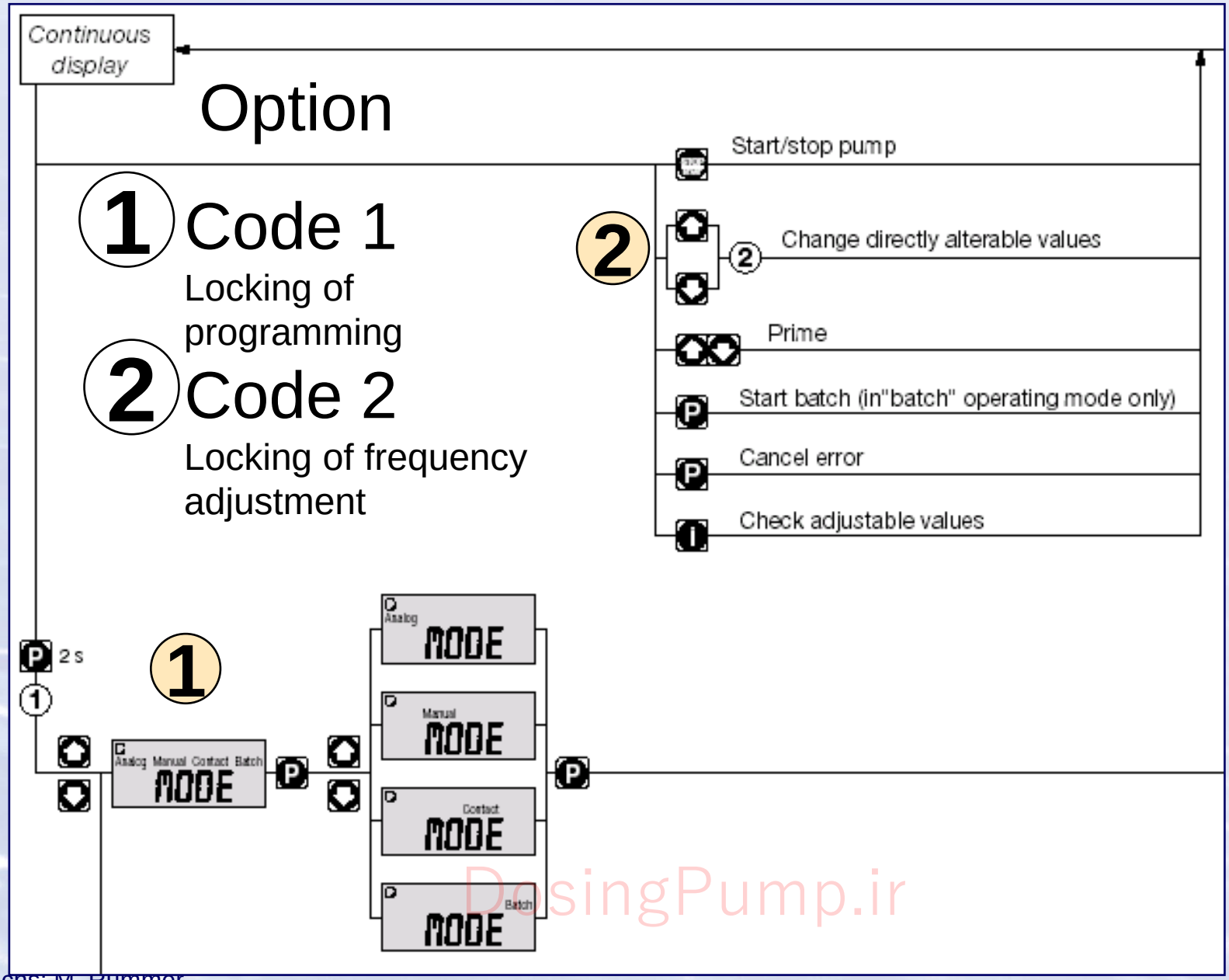
calibration active

calibration active



ProMinent®

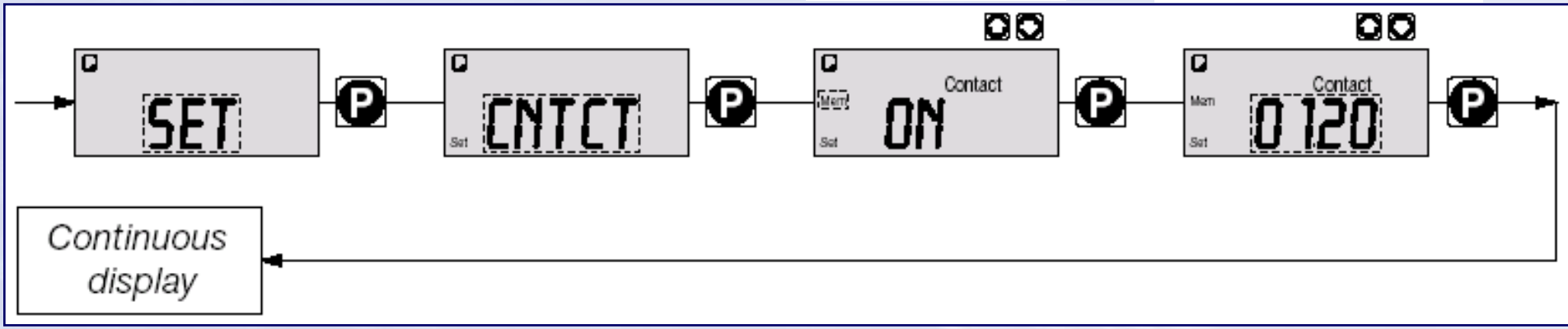
Manual operation



CONTACT operation

Memory
ON / OFF

Set *
Pulse Factor



The following versions are available:

- Contact - identity code: external 1:1
- * Contact - identity code: external with pulse control

"Memory" = the gamma/ L adds up the unused excess strokes, up to the stroke memory's maximum capacity of 65535 strokes.
Display indication: "Mem"

CONTACT operation

Memory = ON

stroke memory is not cleared
in case of
START / STOP und PAUSE

Pulse Factor

0,01 - 99,99

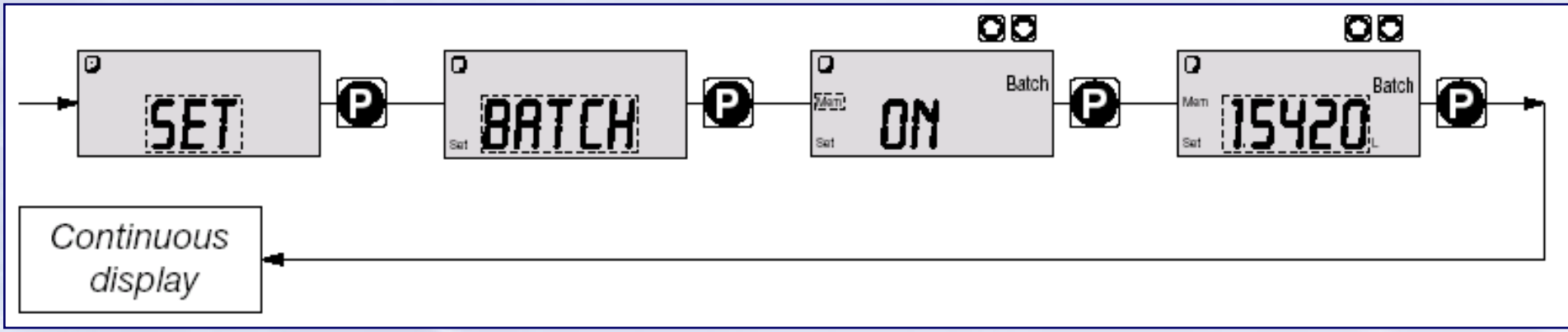
CONTACT operation Pulse Control

	Factor	Pulse (sequential)	Stroke number (sequential)
Increase	1	1	1
	2	1	2
	25	1	25
	99,99	1	99,99
	1.50	1	1.5 (1 / 2)
	1.25	1	1.25 (1 / 1 / 1 / 2)
Reduction	1	1	1
	0.50	2	1
	0.10	10	1
	0.01	100	1
	0.25	4	1
	0.40	2.5 (3 / 2)	(1 / 1)
	0.75	1.33 (2 / 1 / 1)	(1 / 1 / 1)

BATCH operation

Memory = ON

stroke memory is not cleared in case of START / STOP and PAUSE

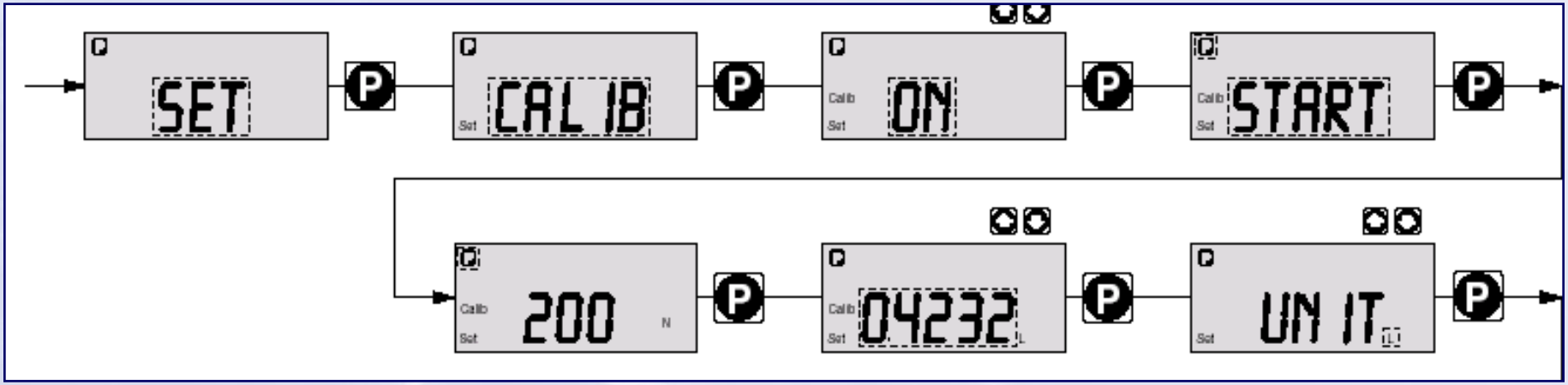


“Memory ON“ = the gamma/ L add the set batch size in strokes to the resting number of strokes. Every contact signal increases the current stroke memory by the batch size

„Memory OFF“= every contact signal resets the stroke number in the memory to the original batch size

Display indication: “Mem”

Calibration

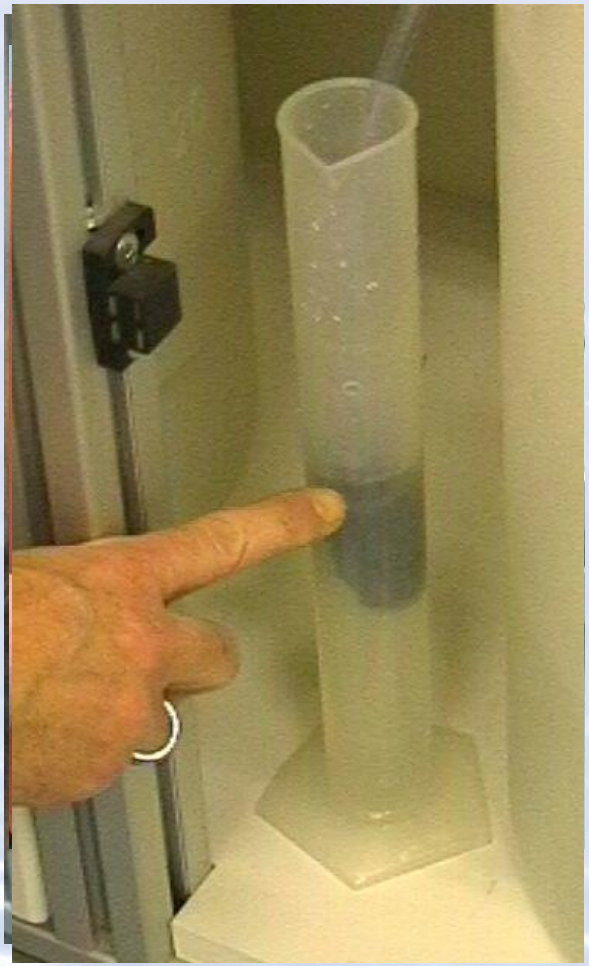


Do not go below 30 % stroke length (SEK type: 50 %).

This will significantly affect accuracy of calibration.

Calibration becomes increasingly accurate the more strokes made by the gamma/ L during calibration (recommended: at least 200 strokes).

Calibration step by step



Find out the settings for the maximum wanted capacity:
stroke length, frequency

1. Install pump correctly
   Length of suction and discharge hose
   stable backpressure
   pump head primed without gas bubbles
2. Stroke length 100 %, frequency according to the medium
3. Fill measuring cylinder or calibration assembly
4. Start pump
5. Run the pump for at least 1 min.
   Or an adequate stroke number
6. Stop pump and read the discharged quantity:
7. Calculate: original vol. - residual medium = discharged volumne at 100% stroke length and a certain stroking rate

Calibration step by step

Calibration with the calibration menu

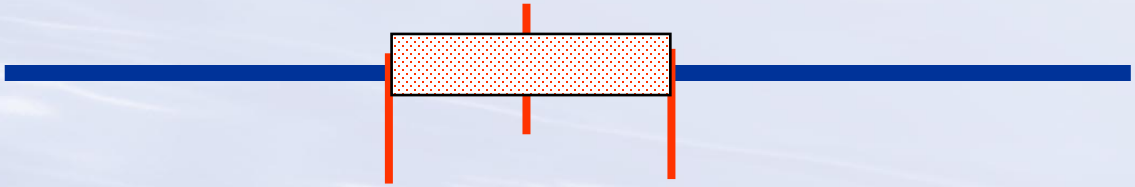
7. Adjust desired capacity
   = fix the working point

Then

8. Fill measuring cylinder again
9. Got to „Set CALIB ON START“
   press P to start the pump
   run the pmp for at least min. 200 strokes
10. Determine the discharged medium quantity
11. Type in the quanatity
12. Select unit for display : L or Gal
    Close calibration with P

Calibration

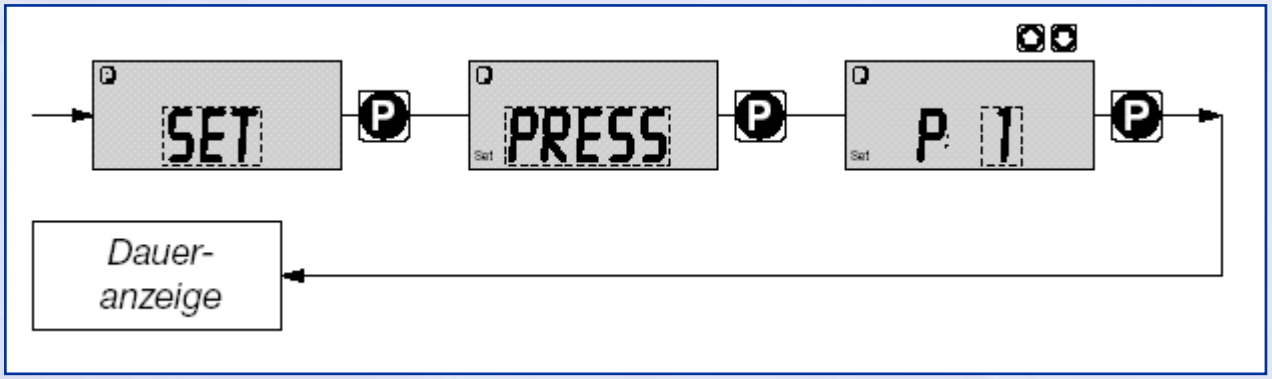
Adjusted stroke length
for calibration 60 %



50 % 70 %

Valid stroke length
Range after
calibration
± 10 % stroke length

Druckstufen einstellen

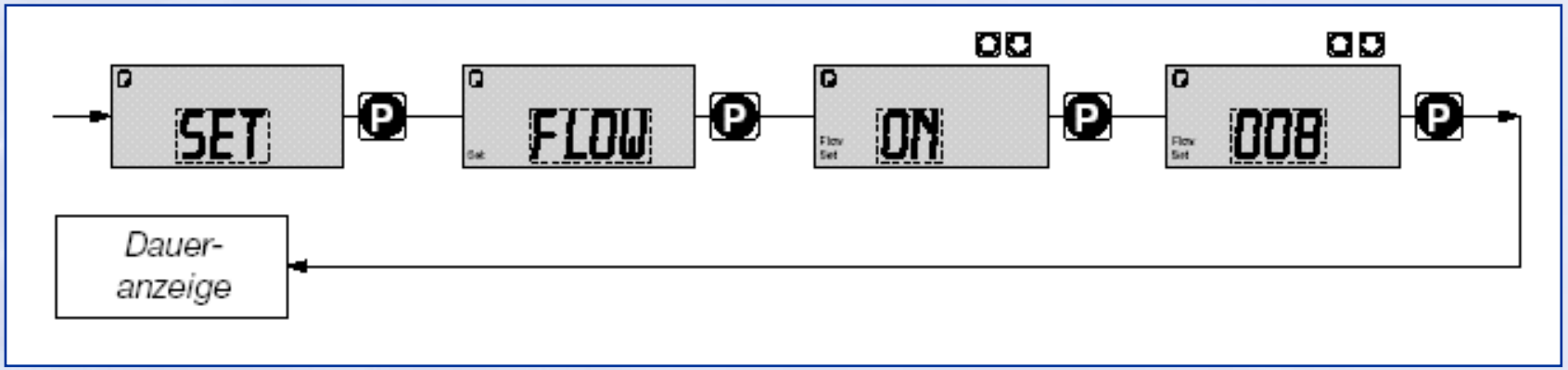


Folgende Nenndrücke können sie bei diesen Fördereinheitengrößen wählen (Nenndruck in bar):

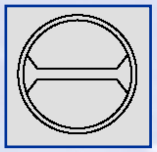
Fördereinheitengröße	Druckstufe 1	Druckstufe 2	Druckstufe 3	Druckstufe 4
1601, 1602,1605	4	7	10	16
1000, 1005, 1008	4	7	10	
0708, 0713	4	7		

Bei den Pumpentypen 0413, 0420, 0220, 0232 ist keine Einstellung möglich.

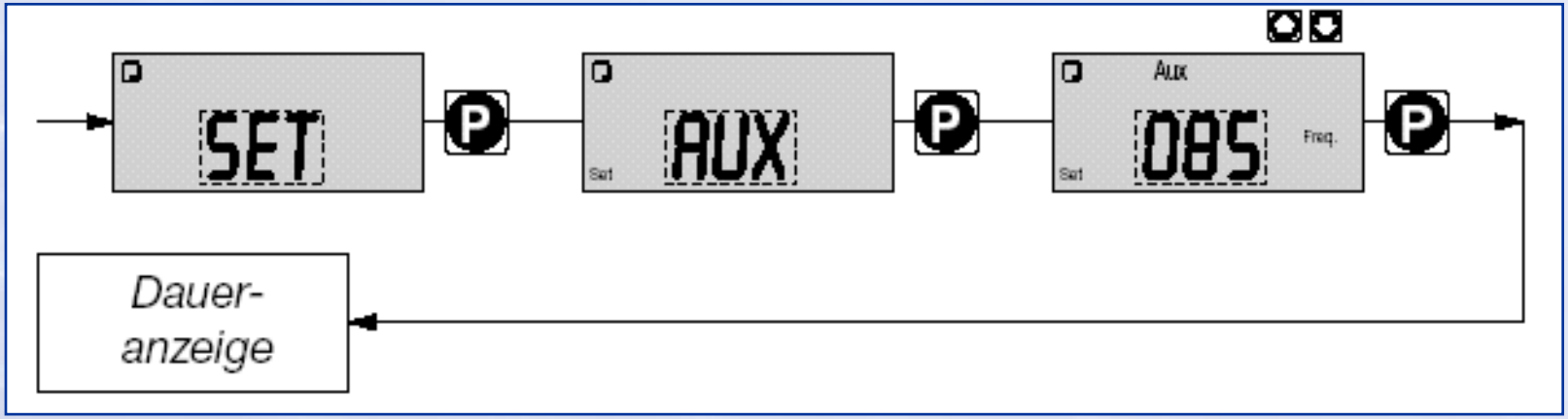
Dosing monitor Flow Control



The FLOW menu does only appear with connected flow control unit

Cable plugged in at  „flow control„

Setting AUXiliary frequency



The Auxiliary frequency always overrides manual frequency and the current operation mode

Possible applications

- **shock dosing limit depending; time depending**
- **Fixed basic load dosing**
- **Increased dosing for tank filling**

ProMinent®

Control types

- 0 Manual + external 1:1
- 1 Manual + external with pulse control
- 2 Manual + external 1:1 + analogue current
- 3 Manual + external with pulse control + analogue
- 4 as 0 + 14-day process timer
- 5 as 3 + 14-day process timer
- P as 3 + Profibus DP interface
  no relay with Profibus version

Relay options

0 = no relay
1 = fault indicating relay, (NC)
3 = fault indicating relay, (NO)
4 = fault indicating rel., (NC) + pacing rel. (NO)
5 = fault indicating rel., (NO) + pacing rel. (NO)
6 = switch off relay (NC)
7 = switch off relay (NO)
8 = switch off relay (NC) + pacing rel. (NO)
9 = switch off relay (NO) + pacing rel. (NO)

Standards cataloge

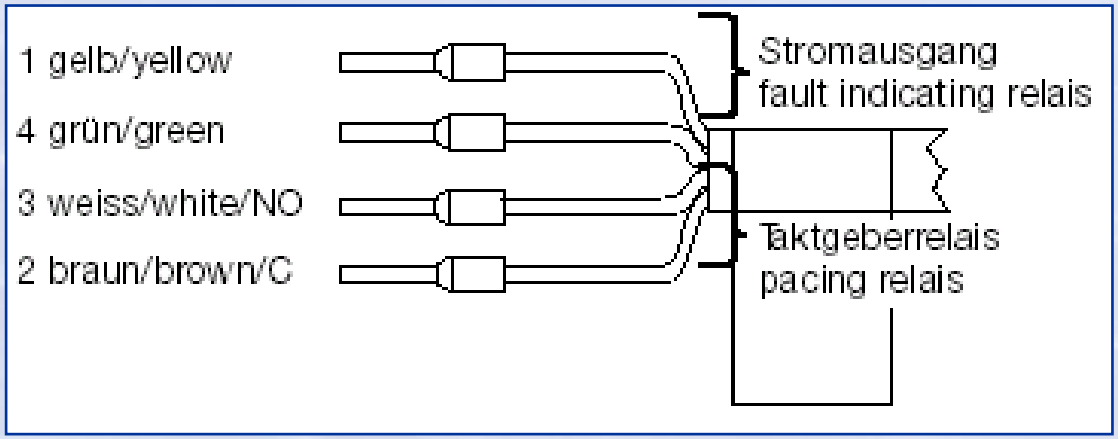
additional options Beta+GaLa

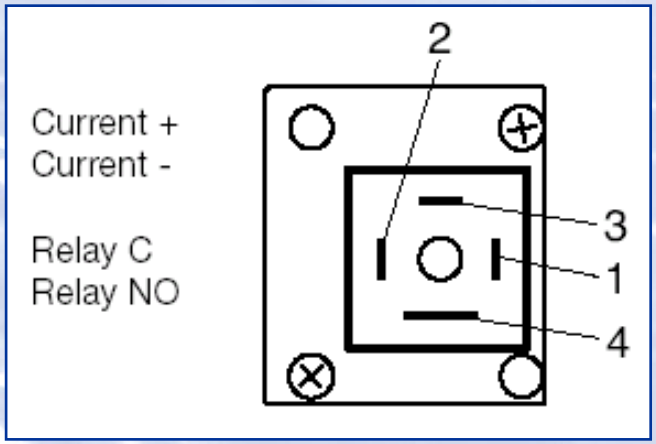
Relay options

A = switch off relay + warningrel. (NC)
B = switch off relay + warningrel. (NO)
F = power relay (NC)
G = power relay (NO)
C = 4-20 mA + fault indicating relay, (NC)
D = 4-20 mA + fault indicating relay, (NO)
E = 4-20 mA + pacing relay

additional Options exclusively GaLa

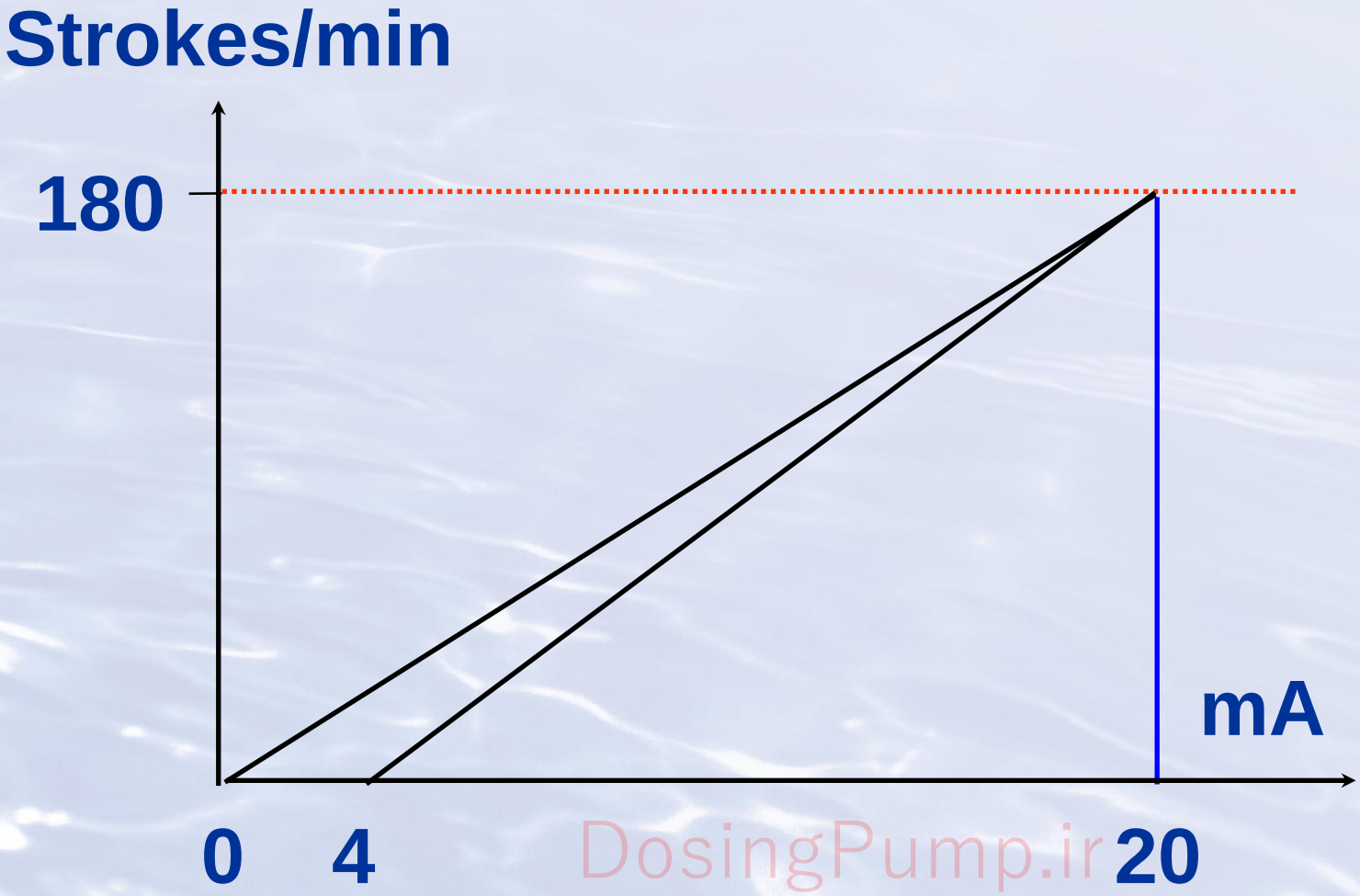
Cable and socket configuration:



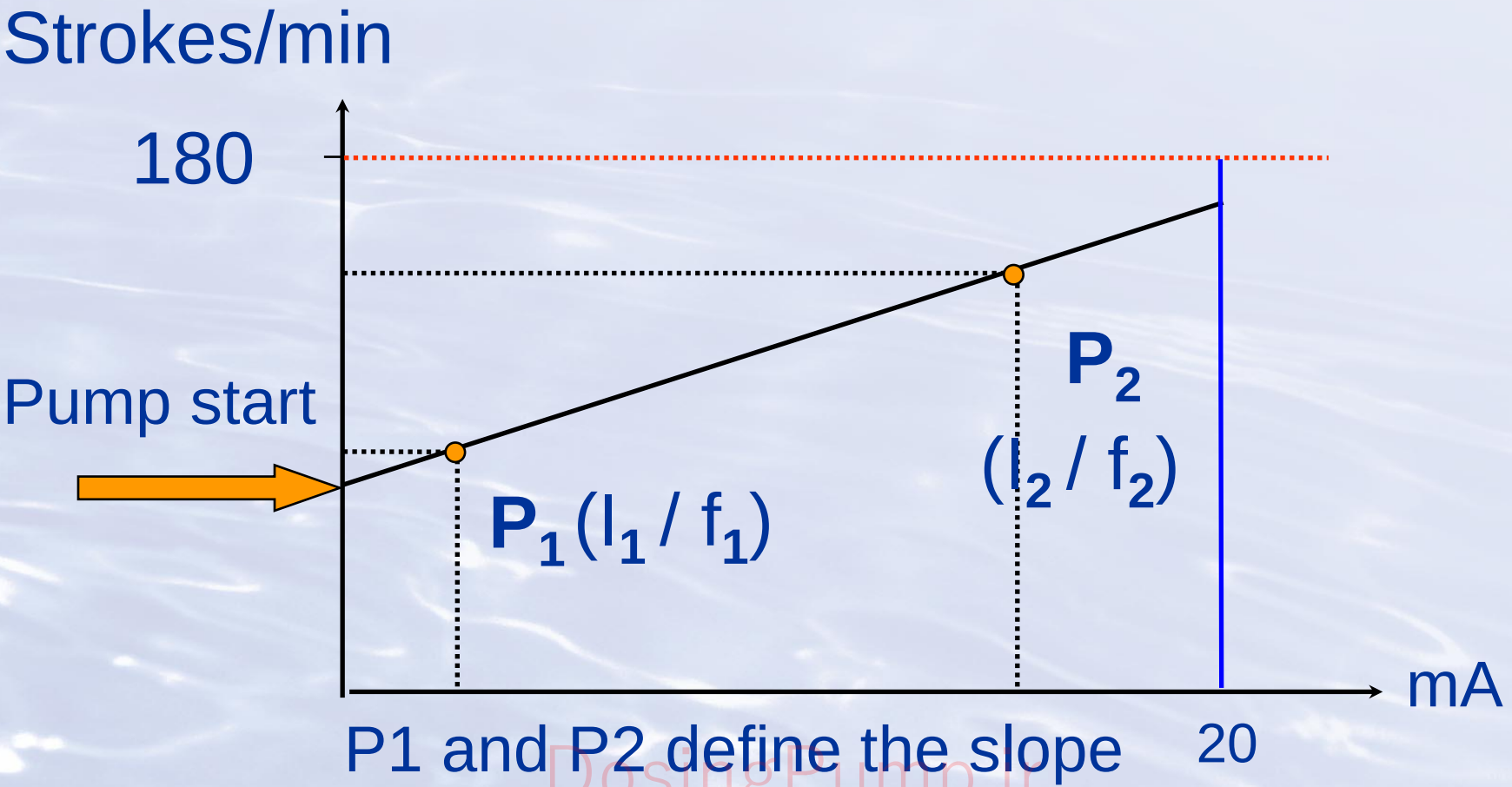


Fault-indicating relay (250v-2A)
Pulse generator relay (24v-100ma)
Power relay (250v-16A)

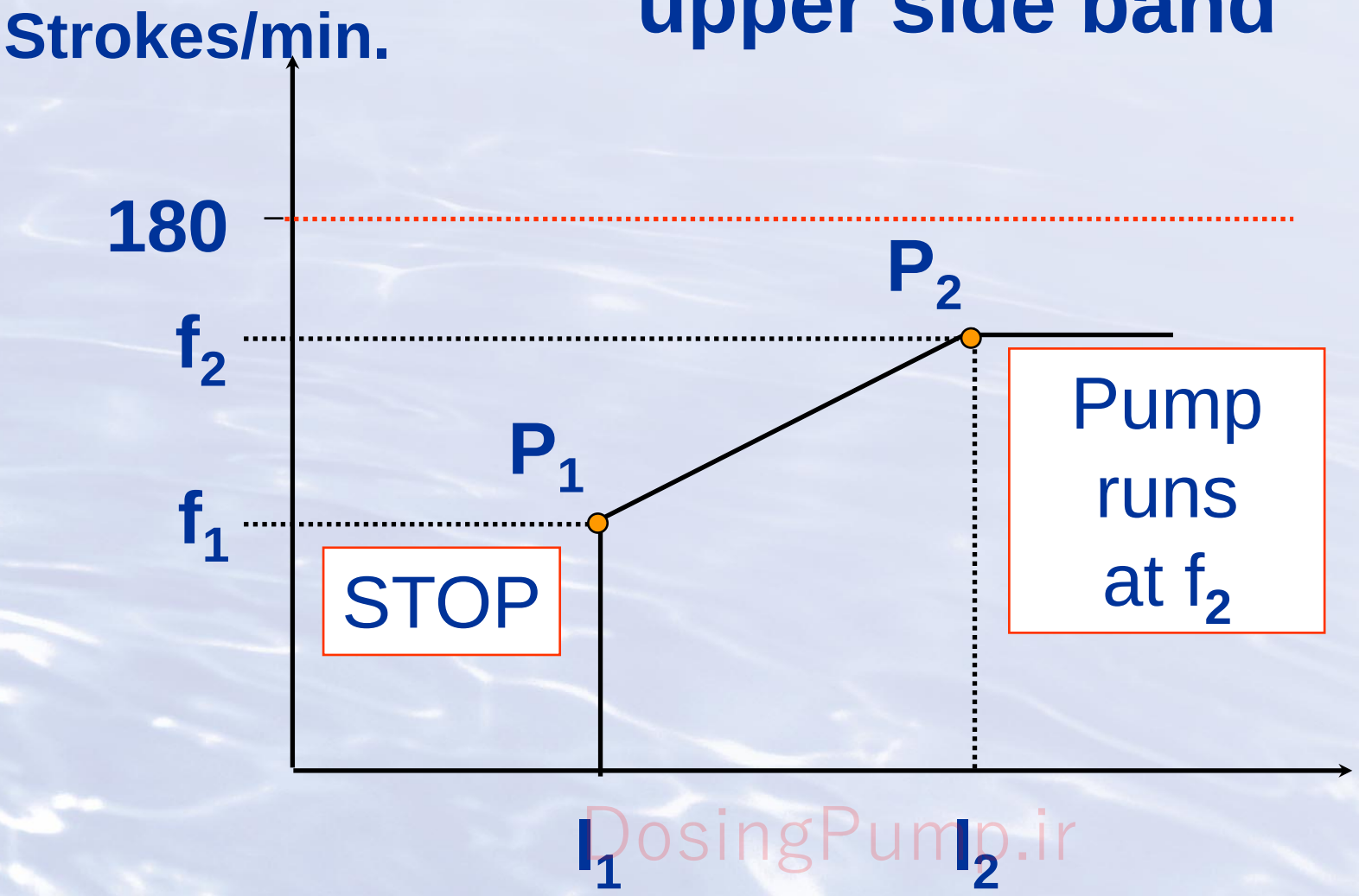
Analog control 0/4-20 mA



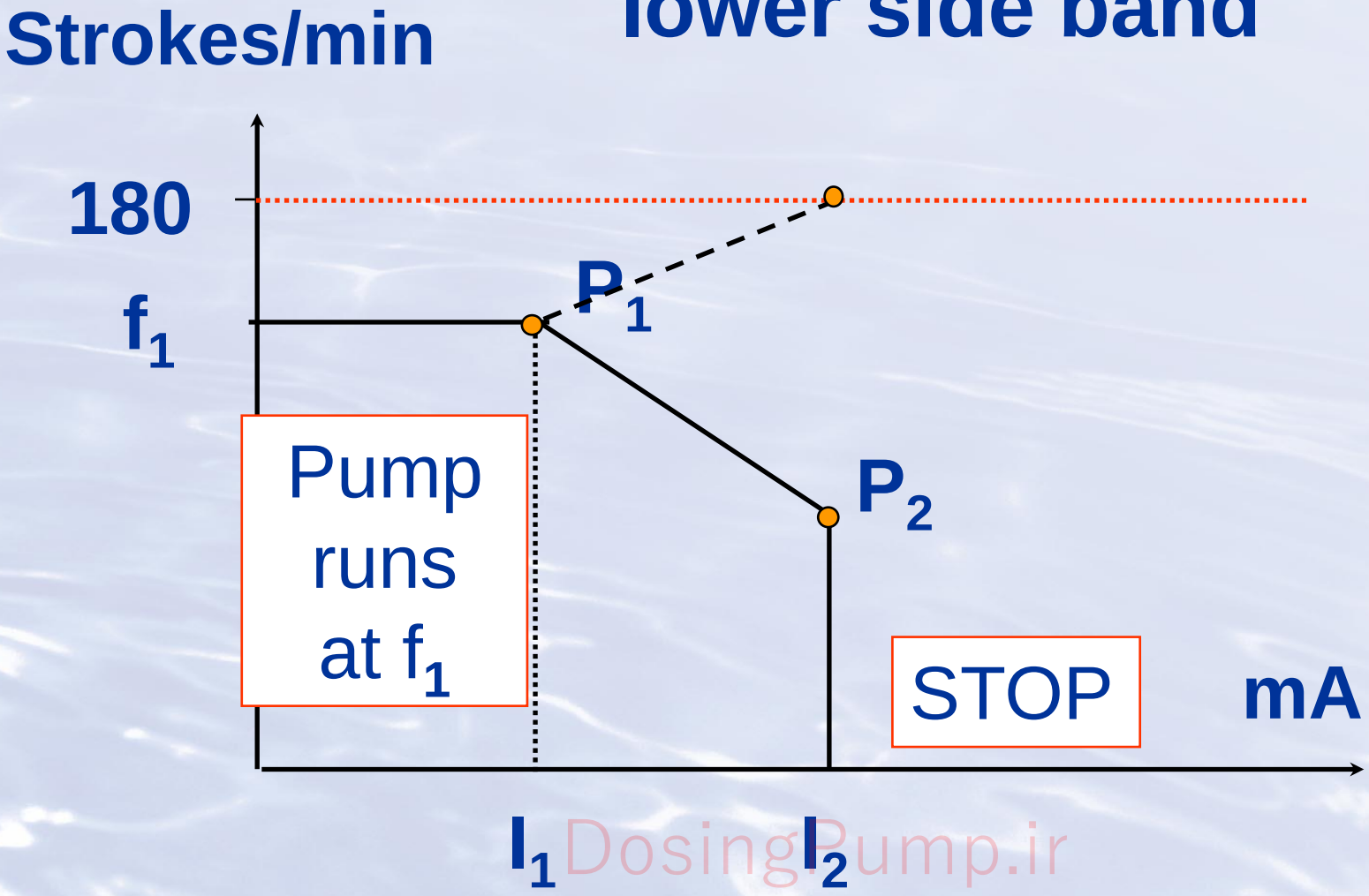
Analog control-variable slope



Analog control upper side band



Analog control lower side band



The signal I at the output shows the current calculated capacity:

$$\mathbf{I(4...20) = \frac{16 * f * L + 4}{f_{max} * 100}}$$

or

$$\mathbf{I(0...20) = \frac{20 * f * L}{f_{max} * 100}}$$

I = output current in mA
f = stroke frequency in strk./min.
L= stroke length in %
f_{max} = 180 strokes/min

examples:
I(4...20) =
(16*180*100+4):180*100
I(4...20) = 16+4 = 20 mA
bei 180 strk./min. and100% stroke

I(0...20) =
(20*180*100):180*100
I(0...20) = 20 mA

In the "Contact" and "Batch" operating modes f is the stroke rate set in the "Stroke rate" permanent display.