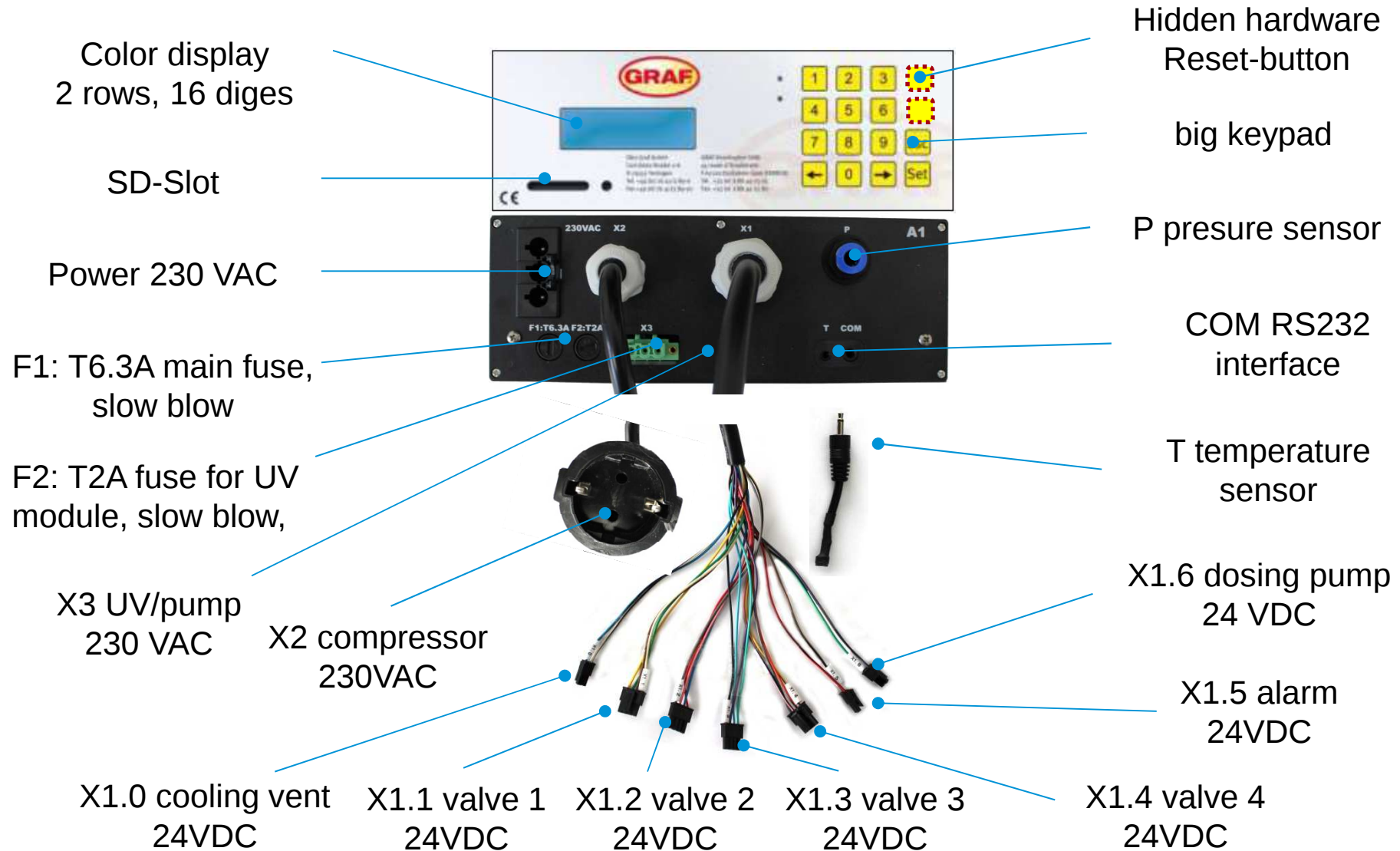


KLARO Control Technology

KL24plus



KLARO Control -Technology

Operation Menu (1)



	KL24plus
operating mode balance time	operating mode rest: xxxx.xx min
valve 1, 2, 3, 4, compressor KLplus: UV-modul, Phosphorus removal, workload %	operating hours meter reading
Valve 1, 2, 3, 4 fan, UV, phosphorus removal, level measuring KLplus: On :„1“, Off: „0“	manual operation
System is real-time operated	Date time

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Operating Menu (2)



	KL24plus
enter start and end date of vacation; maximum 90 days possible	Vacation date setup
logbook maximum entries: 128	read out old errors
shows all settings	setup report
change settings without entering service area	action code
enter service area	service code enter

EPro

Service codes



KL24plus

1948

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Service Menu(1)



	KL24plus
25 tables with standard settings (i.e. 4-50 PE)	basic setup selection
cycle T1-12, cyclepause T13,14 vacation mode T15,16 term of cycle T17 [min] term of aeration T18 [h/d] total running time T19 [h/d]	duration period setup
maximum 24 cycles standard: 04	starting times number of cycles
offset time of cycles standard: 01:30, 07:30, 13:30, 19:30	starting times setup

KLARO Steuerungstechnik

Service Menu(2)



	KL24plus
programme will be restarted with new settings	restart the cycle
after a waiting time of 2 minutes, all valves will be switched on in series within 60 seconds time	operation test start
Logbook for a maximum of 52 weeks	total oper. hours per week
deletes logbook (fault messages & all operating hours)	clear logbook
enter project name with ◀▶ keys file name for logbook	enter name

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Service Menu (3)



	KL24plus
english, polski, italiano, espanol, bilgarski, deutsch, norsk, francais, ...	Language selection
1 2 3 4 5 6 7 8 Standard: 1 1 1 1 X 1 0 0 1 : monitoring valve1 2 : monitoring valve 2 3 : monitoring valve 3 4 : monitoring valve 4 5 : - 6 : acoustic alert 7 : monitoring 380V compr. 8 : monitoring UV-module	software jumper setup

KLARO Control Technology

Service Menu(4)



	KL24plus
1 2 3 4 Standard: 1 1 1 1 1 : compr. active with valve1 2 : compr. active with valve2 3 : compr. active with valve3 4 : compr. active with valve4	compressor on-off setup
3 Mobile phone numbers for text message alerts about fault messages via a KLARO-GSM-Module	send SMS

KLARO Control Technology

Service Menu (5)



	KL24plus
ventilation: 35°C (external cabinet: 30°C) alarm: 50°C system off: 55°C	temperatures setup
switch-on period P-period: xx min	P-module settings
switch-on period UV-time: 00 Min	UV light unit setup
change UV after: 1500 hrs.	
operating hours reset	
water level start at: xxx cm recirculation: xmin alert flooding from: xxx cm	level measuring setup

KLARO Control Technology

Service Menu (6)



	KL24plus
daily? no/yes	service alarm
monthly? no/yes	
date of service? no/yes	
insert SD-card and press „set“	SD-Card

EPro

Standard settings for control unit KLplus



Tacts	Explanation	Valve		4 PE C	4 PE N	4 PE D	6 PE C	6 PE N	6 PE D	8 PE C
T 1	Charging	1	[min]	6	6	6	10	10	10	12
T 2	Denitrification	2	[min]	0	0	30	0	0	30	0
T 3	off		[min]	0	0	9	0	0	9	0
T 4	on		[sek]	0	0	30	0	0	30	0
T 5	Aeration	2	[min]	250	250	220	240	240	210	240
T 6	on		[min]	4	5	6	4	5	6	5
T 7	off		[min]	6	5	4	6	5	4	5
T 8	Sedimentation		[min]	90	90	90	90	90	90	90
T 9	Discharging	3	[min]	6	6	6	10	10	10	12
T 10	on		[min]	6	6	6	10	10	10	12
T 11	off		[min]	0	0	0	0	0	0	0
T 12	Sludge return	4	[sek]	60	60	60	60	60	60	60
T 13	break of cycle off	2	[min]	15	15	15	15	15	15	15
T 14	break of cycle on		[min]	2	2	2	2	2	2	2
T 15	Holiday on		[min]	2	2	2	2	2	2	2
T 16	Holiday off		[min]	15	15	15	15	15	15	15
T 17	duration of one cycle		[min]	353	353	353	351	351	351	355
T 18	aeration time		[h/d]	*6,7	8,3	8,8	6,4	8,0	8,4	8,0
T 19	complete runtime		[h/d]	7,5	9,2	9,7	7,8	9,4	9,8	9,7

Number of cycles:

Starting time

01:30
07:30
13:30
19:30

* $250 / 10 \times 4 = 100 \text{ min.}$
 $100 \text{ min.} \times 4 \text{ cycles}$
 $= 400 \text{ min.} / 60 \text{ min}$
 $= 6,7 \text{ h / day}$

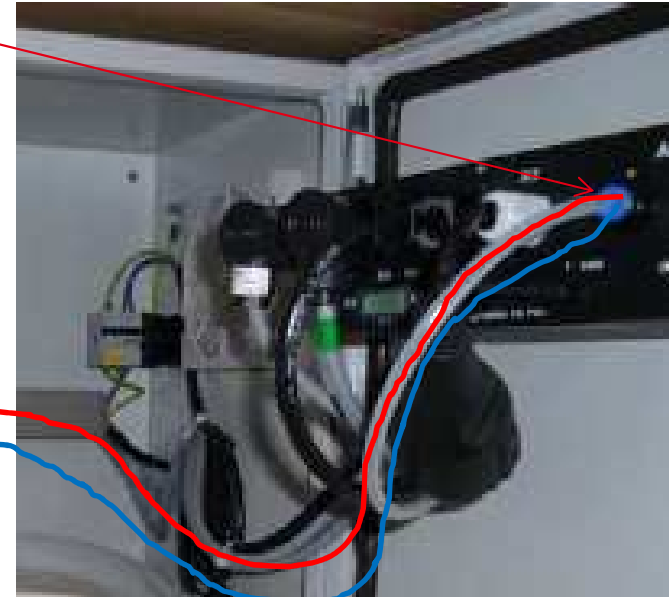
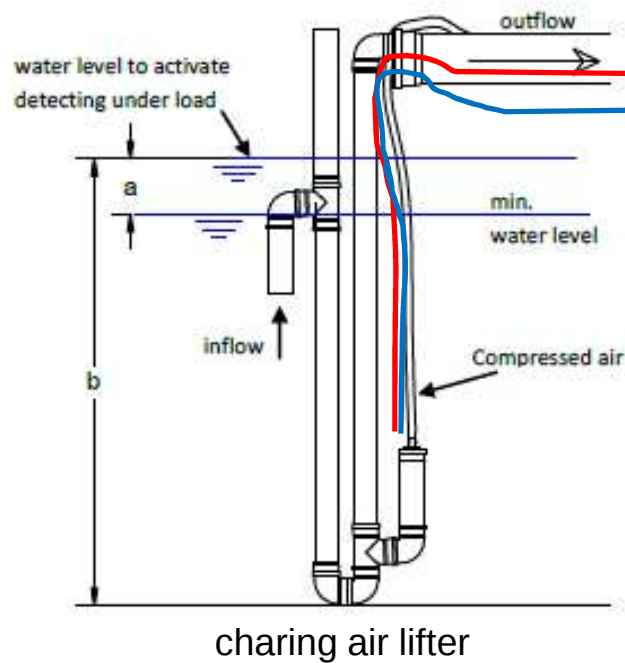
EPro

Underload detection



Air pressure will be given during the charging phase to charging air lift.

Due to the back pressure the water level inside the first chamber may be calculated.

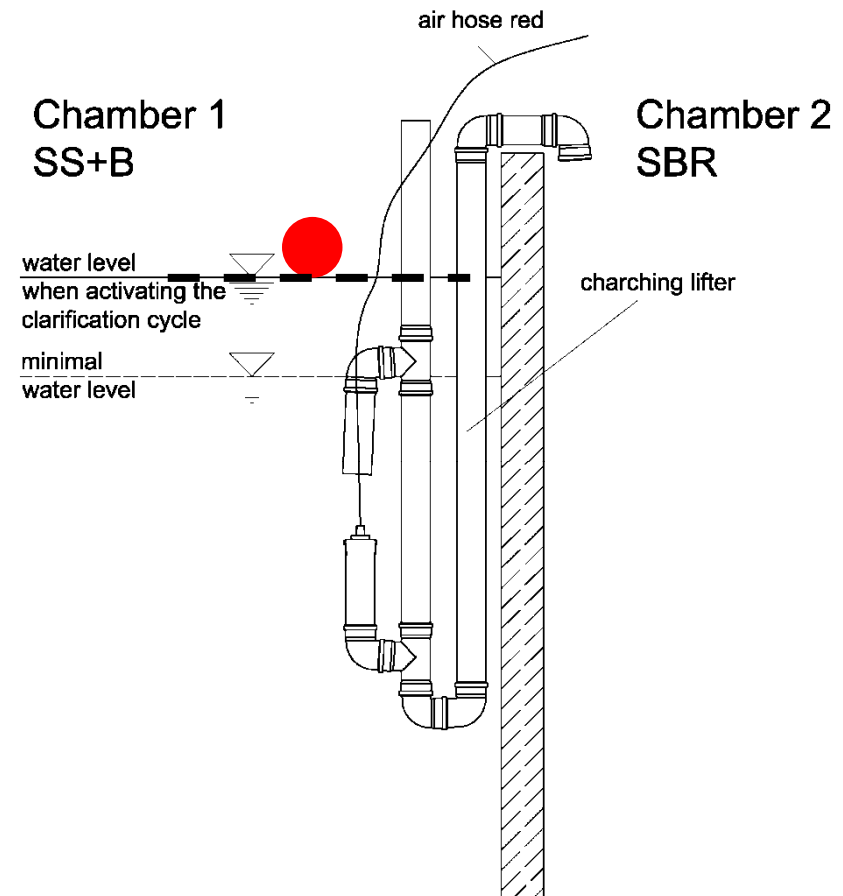


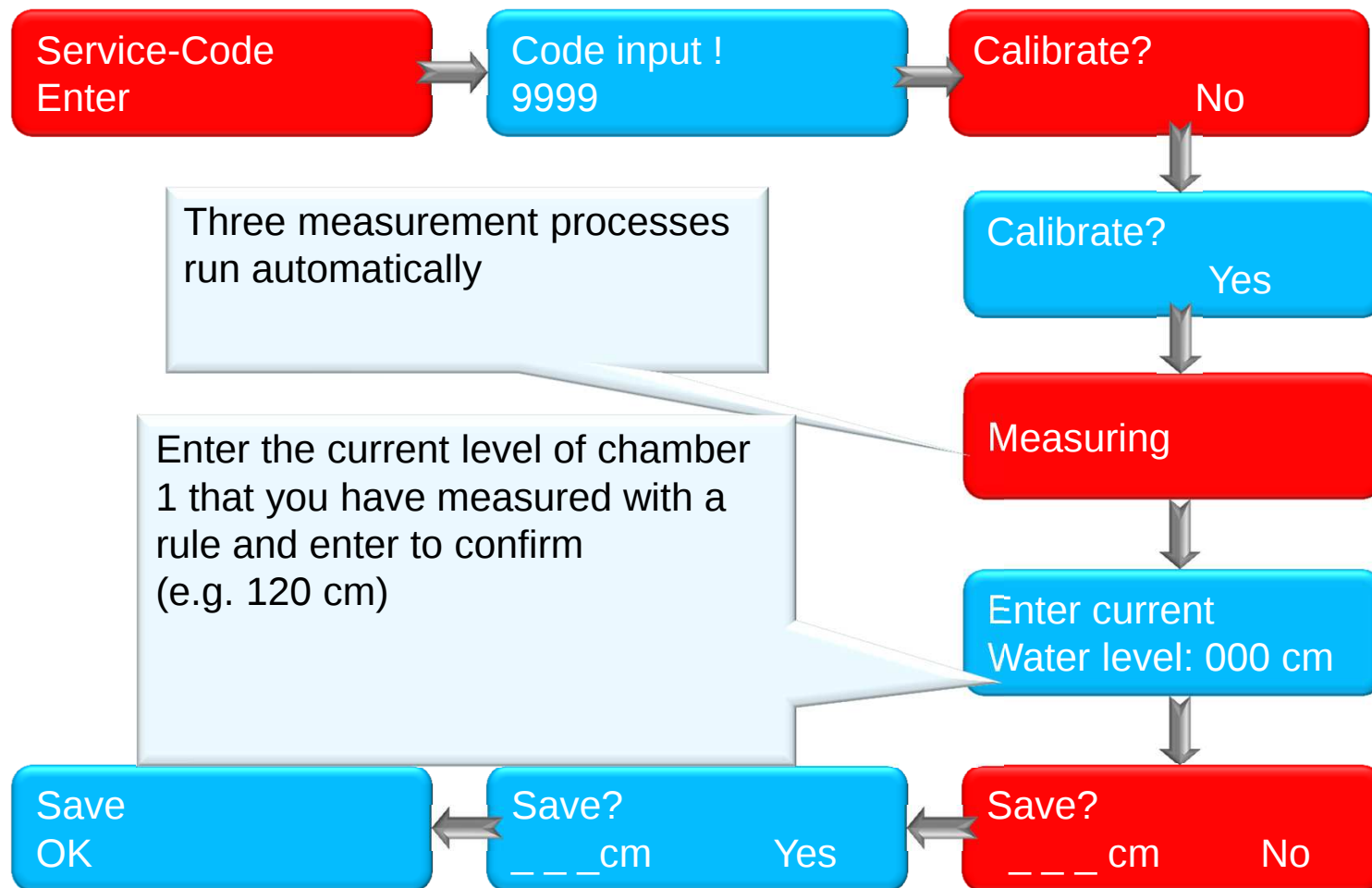


- When supplied the detecting underload is not activated.
- Detecting underload has to be calibrated locally
- The first chamber (SS / buffer), where you will find the air lift (charging), must be filled with water up to the point at which a cleaning cycle is to be triggered.

Advantages

- Clear energy saving possible
- Reduced operating time
- Lower maintenance cost

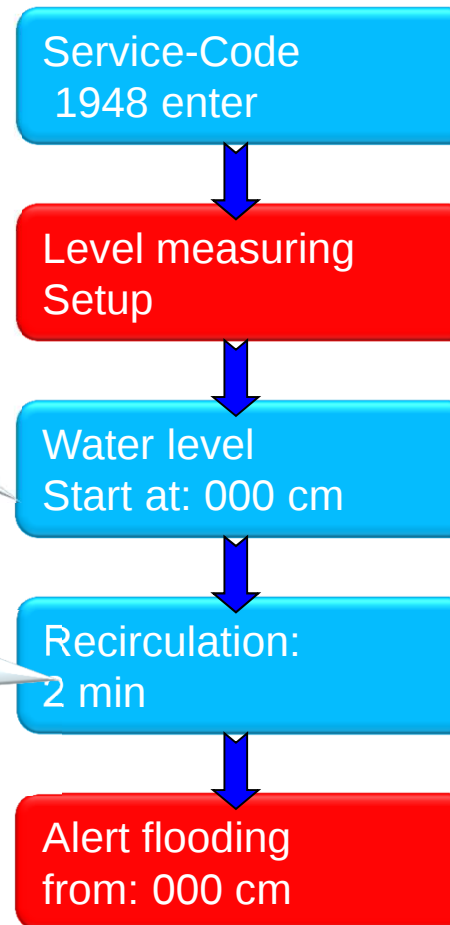






Recommended:
minimal water level + $\frac{1}{4}$ daily volume.
→ Enter the water level from which a
clarifying cycle is to be started.
Enter to 000 cm.

To adjust the recirculation for 2 min. in
Detecting underload.



Auxiliary controller

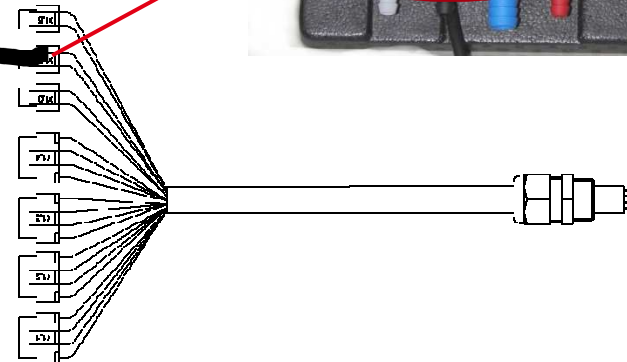


- control of the effluent pump
- centralized fault indication by KL24plus control unit
- high water alarm from pump shaft

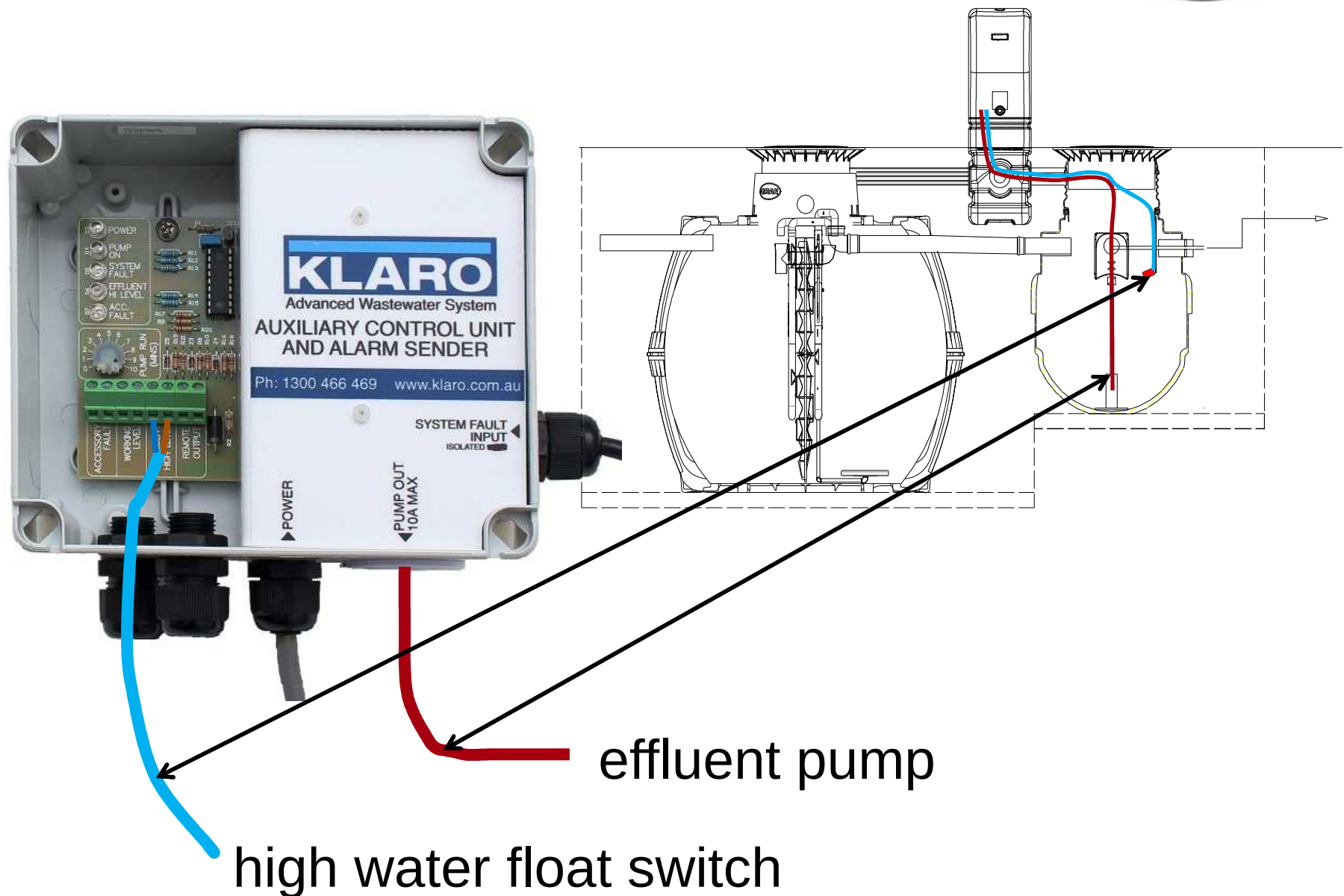
Auxiliary controller wire connection – system fault



X1.5



Auxiliary controller wire connection – effluent pump



Auxiliary controller wire connection – alarm plate



bridge J2 to
activate alarm