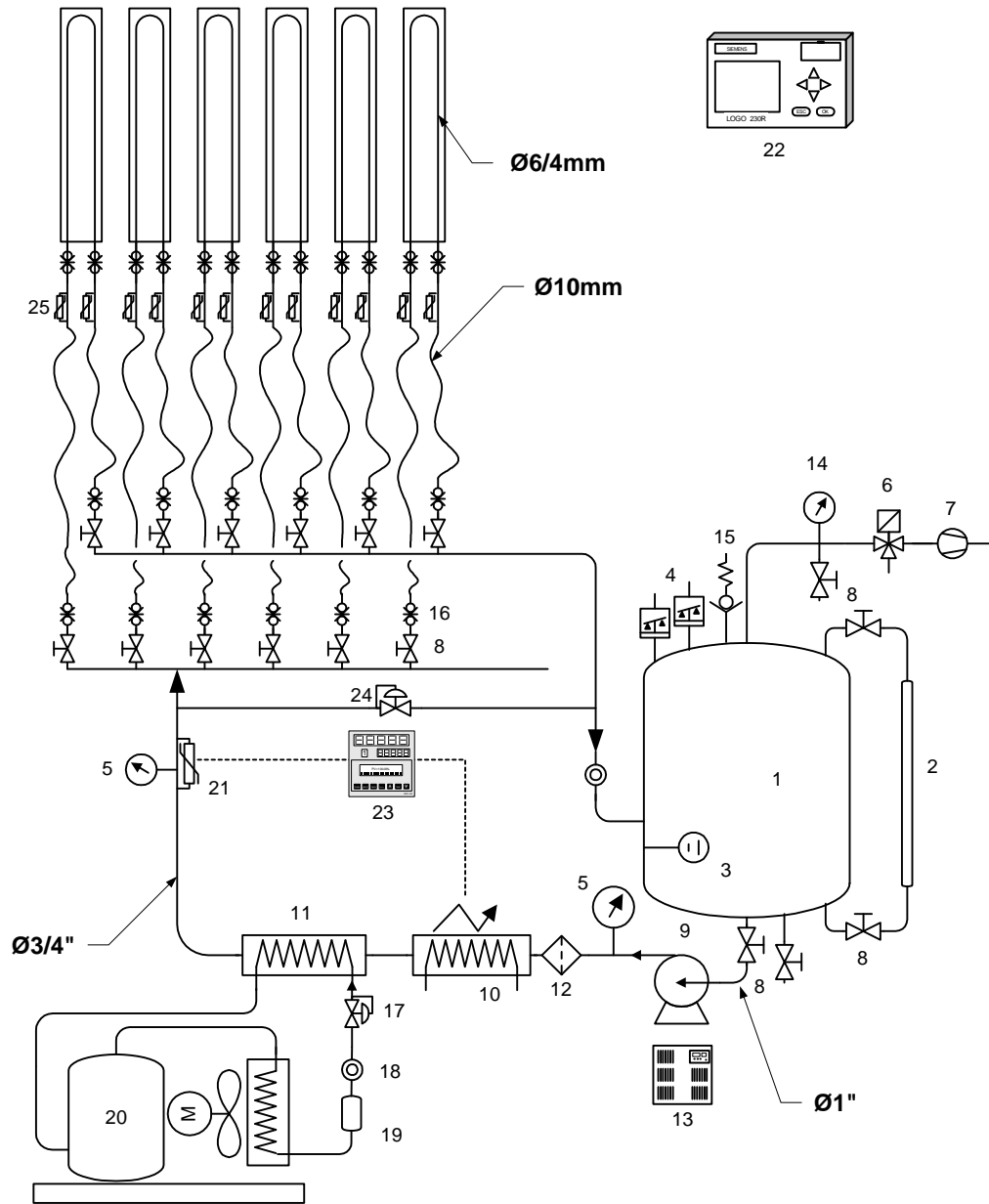
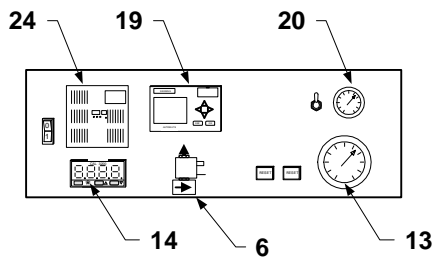
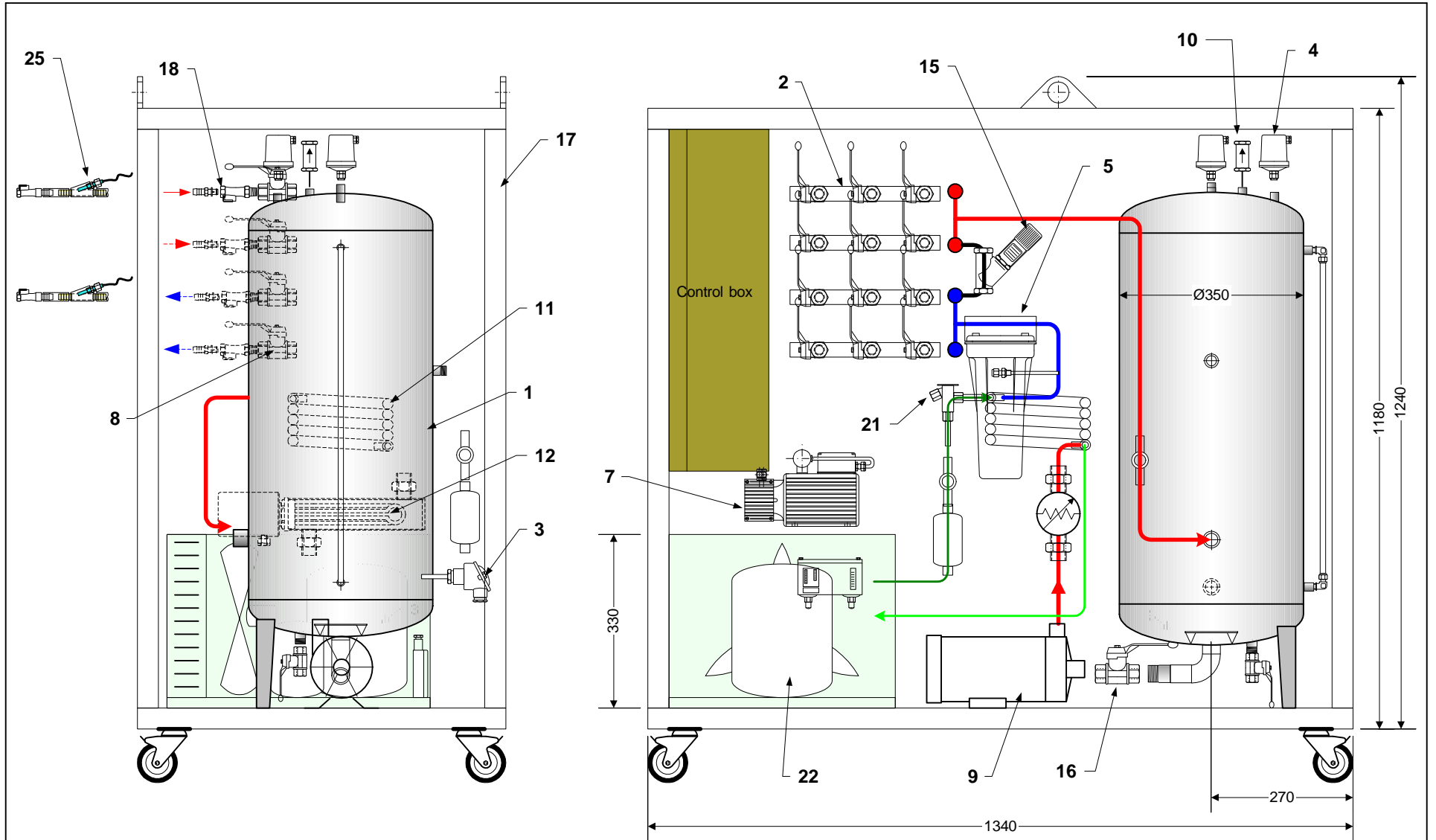


		>2000	±2	
		>1000	±1.2	±4
		>315	±0.8	±3
		>120	±0.5	±2
		>30	±0.3	±1
		>1	±0.2	±0.8
			±0.5	±0.4
DIMENSION				
MACHINING				
SHEET METAL WORK / WELDING				
GENERAL TOLERANCES				

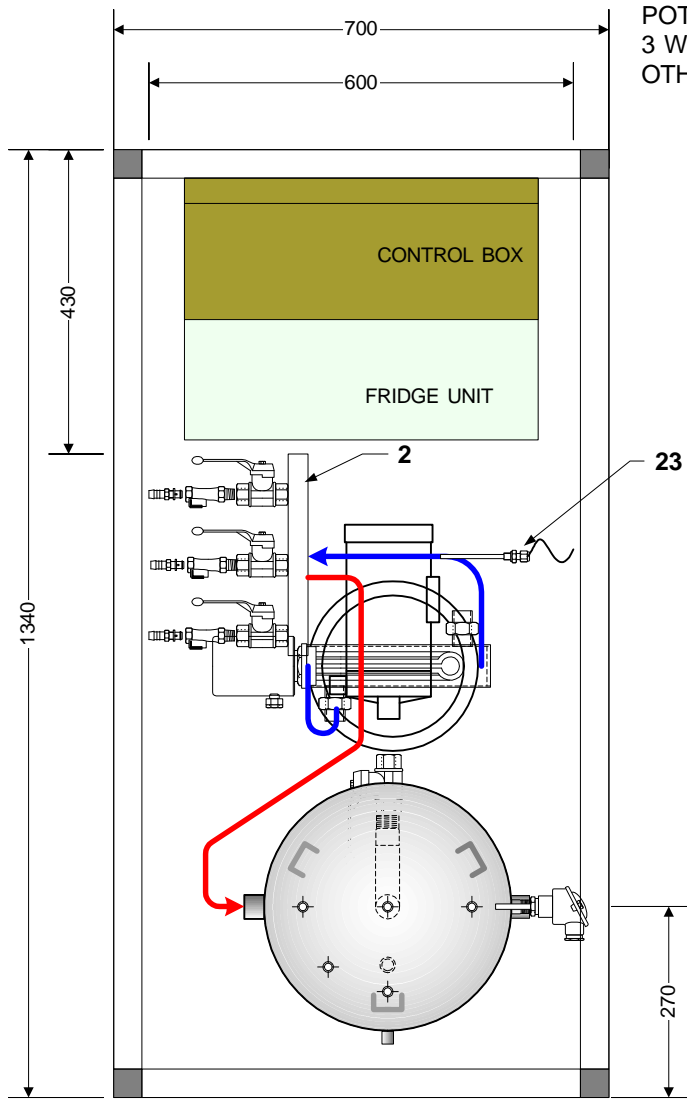


ITEM	QTY.	PART NO.	DESCRIPTION
25	12	CAREL	NTC Temperature sensor
24	1	Danfoss	Discharge valve
23	1	CAL3300	Temperature controller
22	1	Logo!	Programmable Logical Controller
21	1	Pt100	Temperature sensor
20	1	Unite Hermetique	Air cooled fridge unit - 2kW @ +10°C
19	1	Danfoss	Dryer
18	2	ST/CV	Liquid showglass
17	1	Danfoss	Refrigerant pressure regulator
16	24	CPC	Quick disconnect no return valve
15	1	Cern Stores	Relief Valve 10mmCE
14	1	Cern Stores	Manometer -1 / 0 bar
13	1	Omron	Variable speed drive
12	1	Cern Stores	Filter
11	1	Wieland	Coaxial evaporator
10	1	186.9a.02	Electrical heater 3kW
9	1	Iwaki MD70R	Magnetic drive pump - 1m3/h@0.6bar
8	16	Cern Stores	Hand valve
7	1	KNF	Vacuum pump
6	1	Lucifer	3 ways electrovalve
5	1	Cern Stores	Manometer -1 / +1 bar
4	2	Huba Control	Pressure switch
3	1	Elitec	Switch float level
2	1		Water level indicator
1	1	186.9a.04	Tank 80 liters
ATLAS / TILE - TEST BEAM COOLING UNIT			BONNEAU - P
<p align="center">CIRCUIT PRINCIPLE 6 drawers / 1.8 kW</p>			
			SCALE -
			05/04/2001
CERN/EST/SM/SF			186.9c.01



COMPONENTS INSIDE THE CONTROL BOX:

- LOGO 24V + POWER SUPPLY
- FREQUENCY CONTROLLER OMRON SYSDRIVE 0.55 kW
- TEMPERATURE CONTROLLER CAL 3300
- MANOMETER -1/0 Ø42MM
- MANOMETER -1/+3 Ø100MM
- MAIN SWITCH
- VACUUM SWITCH
- POTENTIOMETER TO CONTROL CIRCULATOR SPEED
- 3 WAYS ELECTROVALVE
- OTHER SWITCHES AND ALARM FLASH



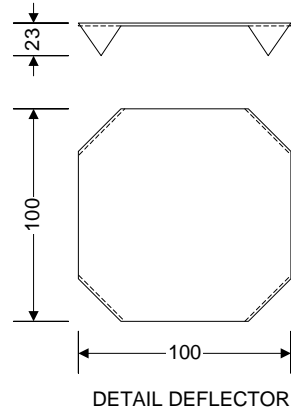
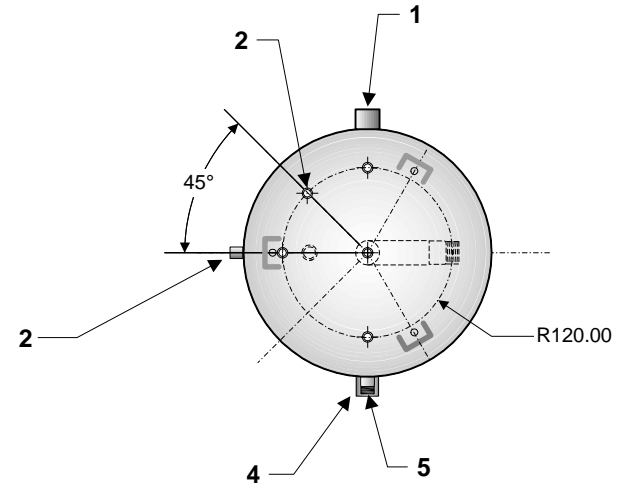
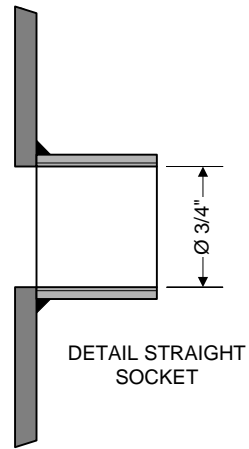
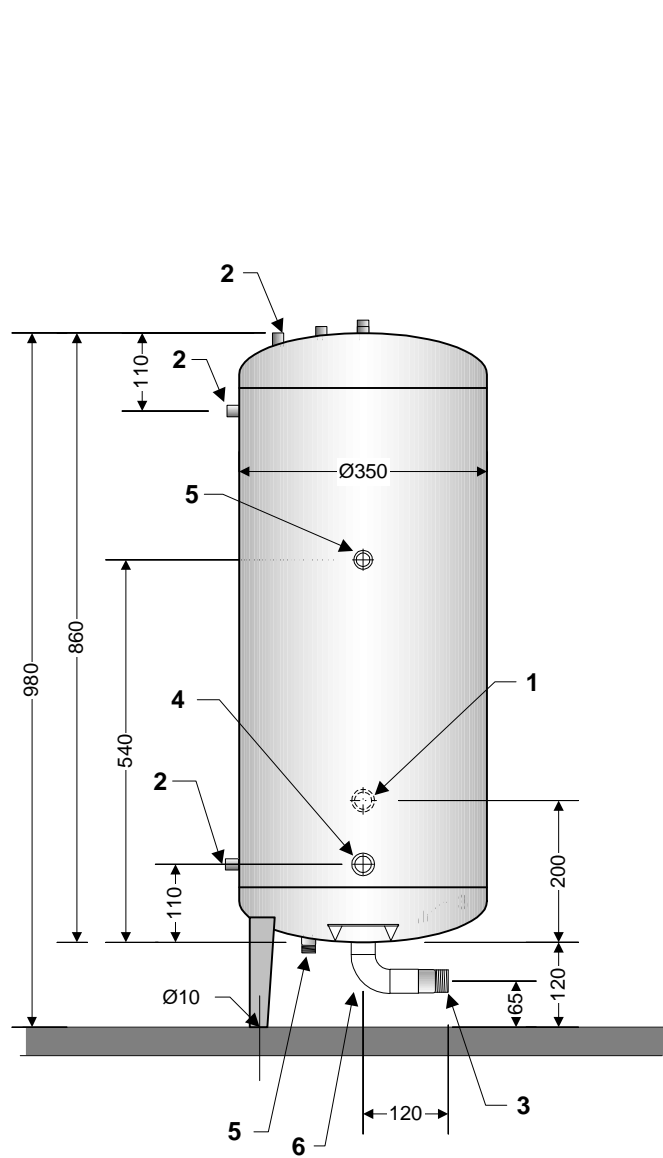
DIMENSION	>30	>120	>315	>1000	>2000
MACHINING	±0.3	±0.5	±0.8	±1.2	±2
SHEET METAL WORK / WELDING	±0.5	±1	±2	±3	±4

GENERAL TOLERANCES

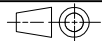
ITEM	QTY.	PART NO.	DESCRIPTION
25	12	186.9.20	NTC Temperature sensor - CAREL
24	1	0.4 kW	Variable speed drive - OMRON
23	2	Pt100	Temperature sensor
22	1	CAJ 4476Y HR	Air cooled fridge unit 2 kW - PAULUS
21	1		Pressure regulator - R134a
20	1	111.12.040	Manometer Wika -1/0 b - Manometer AG
19	1	329-5497	Automate LOGO!24RCL - Radiospares
18	12	3/8" X Ø 10	Quick disconnect shut off valve - CPC
17	1	1340X1240X700	Frame square tube Ø40
16	1	40.40.64.216.6	Ball valve 1"
15	1	AVDO 15	Discharge valve 1/2" - Danfoss
14	1	CAL3300	Temperature controller - CAL control
13	1	22.41.21.350.9	Manometer -1/+1bar
12	1	186.9a.02	Liquid Heater Unit 3 kW
11	1	WKE 10	Coaxial heat exchanger - Wieland
10	1	40.10.30.104.5	Check valve 1mbar
9	1	MD-70RM-1"	Magnetic drive pump - IWAKI
8	20	40.40.64.206.8	Ball valve 3/8"
7	1	N026KNE	Vacuum pump - KNF
6	1	131M14	3 ways electrovalve Lucifer - Bachofen
5	1	40.15.08.200.9	Filter cartridge body - R3/4"
4	2	625.64301121	Pressure switch -50/-600mbar - Huba
3	1	891P3/8 PNP	Capacitif switch float level 3/8" - Elitec
2	10m	39.39.05.026.6	304L round tube Ø 24/27
1	1	186.9c.04	Tank 80 liters-DEPOSITOS COBALLES

ATLAS / TILE - TEST BEAM COOLING UNIT		BONNEAU - P
LAYOUT RACK		
1.5kW - 6 channels		SCALE 1:10
		06/04/2001
CERN/EST/SM/SF		186.9c.02

DIMENSION	>315	>1000	>2000
	>120	>30	>1
	>30	>1	
MACHINING	±0.5	±0.8	±1.2
	±0.3	±0.5	±0.8
SHEET METAL WORK / WELDING	±1	±2	±3
	±0.5	±1	±4
GENERAL TOLERANCES			



TANK 80 liters
 ALL PARTS IN STAINLESS STEEL
 OPERATING PRESSURE -0.5 / + 3 bars
 OPERATING TEMPERATURE +10/ + 30 °C

ITEM	QTY.	PART NO.	DESCRIPTION
6	1		90 GRADES 3D ELBOW DN25
5	2		NIPPLE 1/2"
4	1		STRAIGHT SOCKET 3/8"
3	1		NIPPLE 1"
2	7		STRAIGHT SOCKET 1/4"
1	1		STRAIGHT SOCKET 3/4"
ATLAS / TILE - TEST BEAM COOLING UNIT			BONNEAU - P
TANK 80 I - SPEC.			
			SCALE 1:10
			17/11/2000
CERN/EST/SM/SF			186.9c.04

186/9c
Atlas / Tile - Test Beam
cooling unit

- COOLING SYSTEM -



186/9c

Atlas / Tile - Test Beam cooling unit

Sommaire:

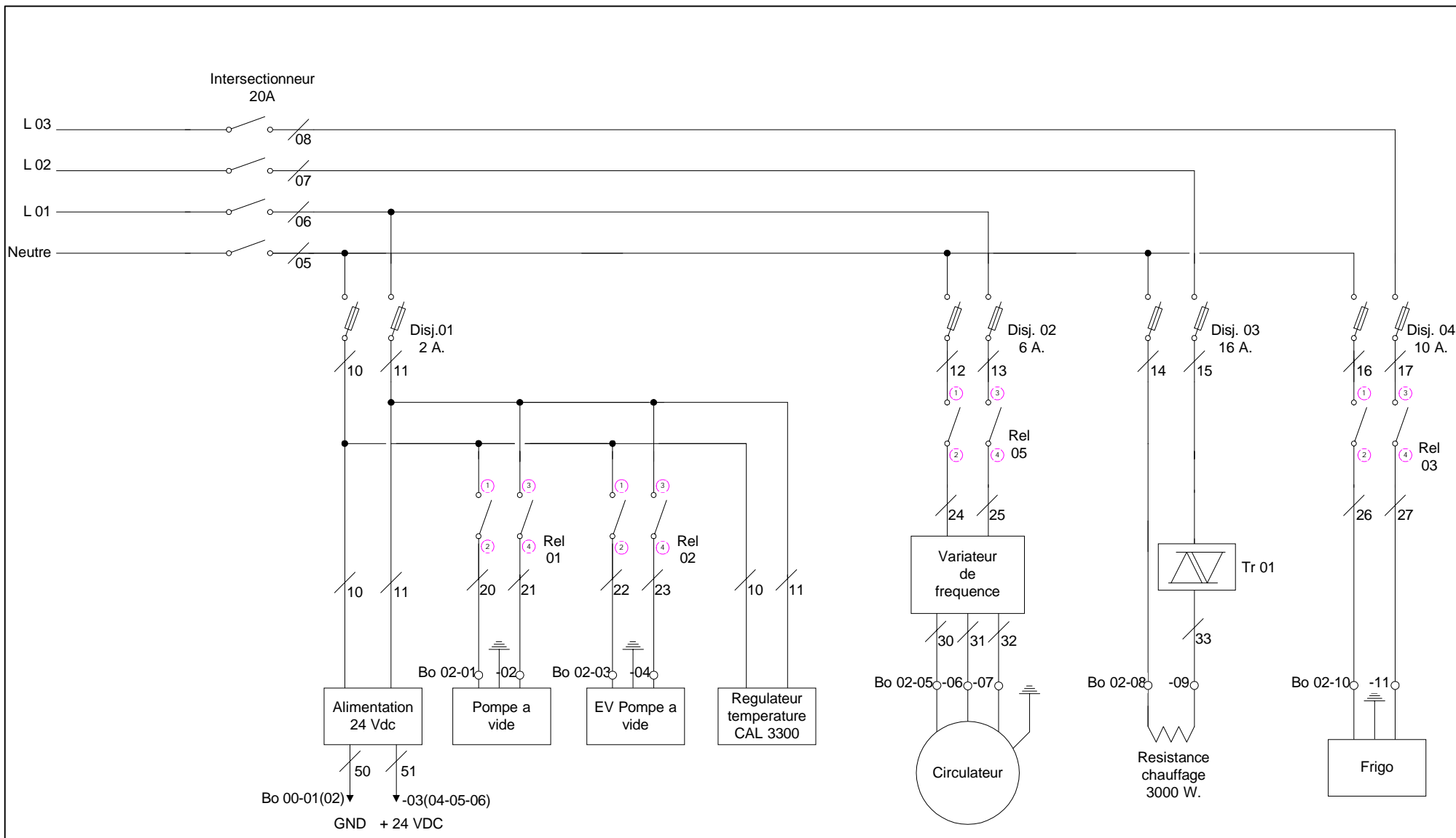
- 1/ Schémas électrique
- 2/ Programmation.
- 3/ Documentation.

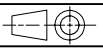
186/9c
Atlas / Tile - Test Beam
cooling unit

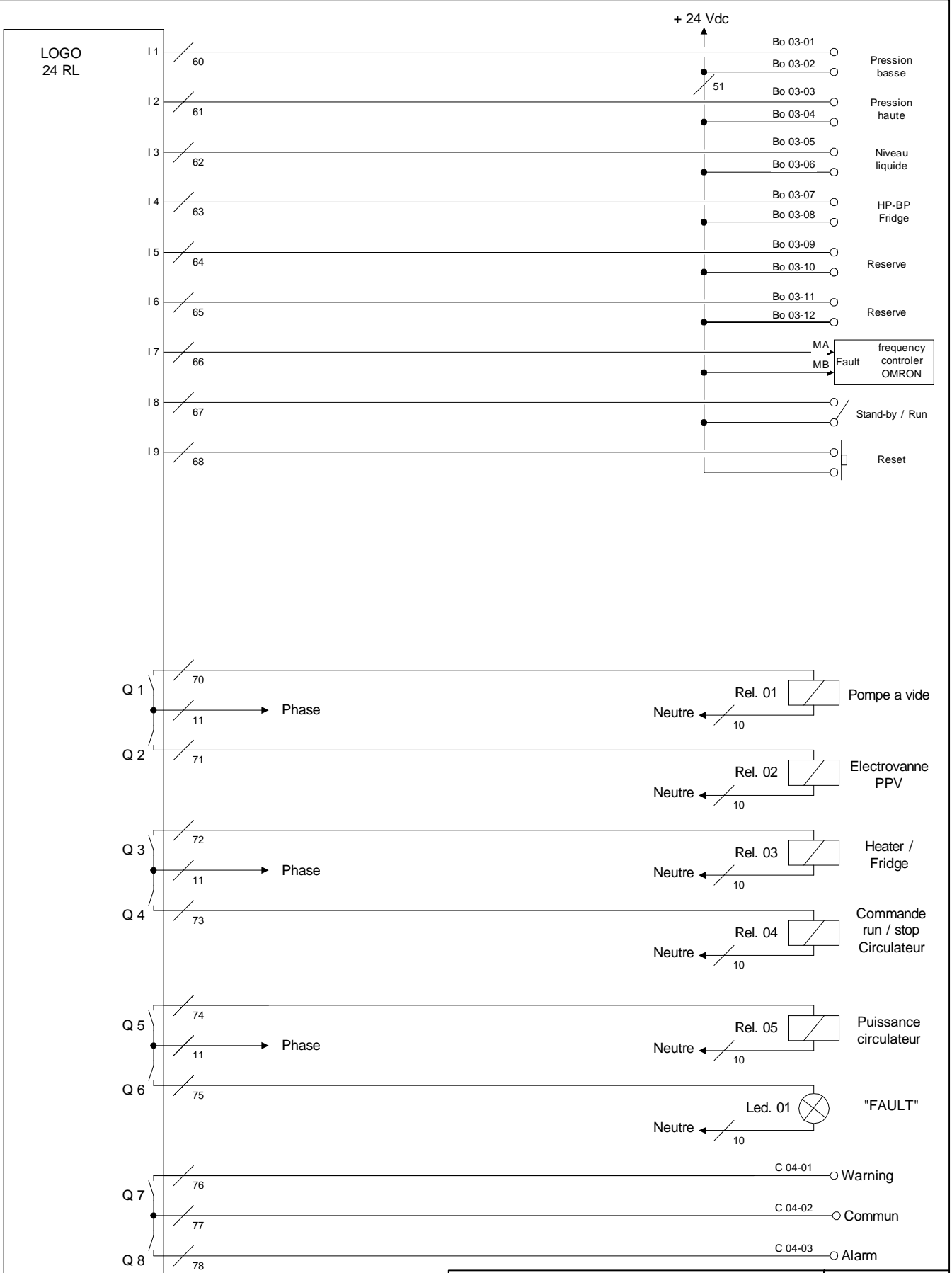
- COOLING SYSTEM -

SCHEMAS

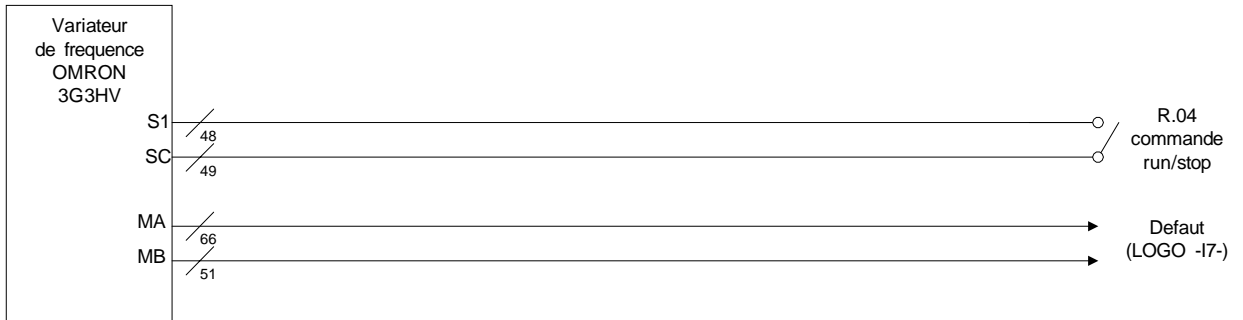
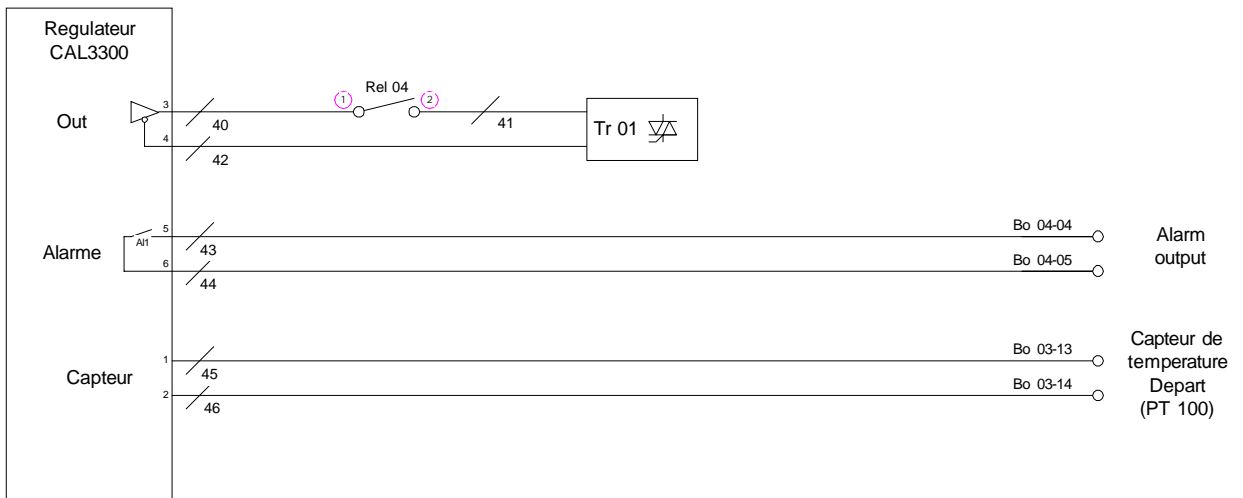
ELECTRIQUE





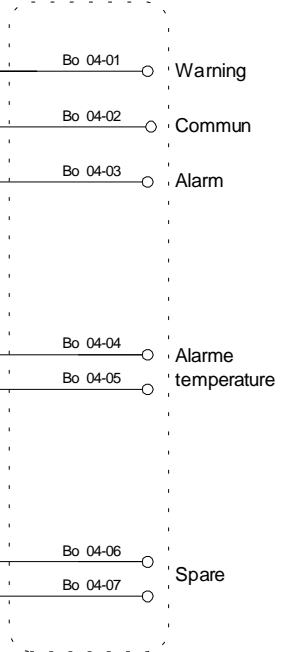
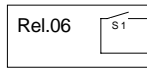
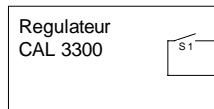
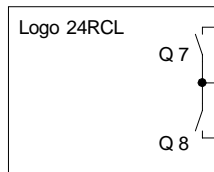
Atlas / Tile- Test beam EHN1	BERRY S.
Schema electrique puissance	
	SCALE 1:1
	07/12/2000
CERN/EST/SM/SF	186/9c.0200





Atlas / Tile-Test beam EHN1	BERRY S.
Raccordement LOGO	
	SCALE 1:1
	06/12/2000
CERN/EST/SM/SF	186/9c.0202



Atlas / Tile-Test beam EHN1	BERRY S.
Cablage Regulateur CAL 3300 & Variateur de frequence	 SCALE 1:1
	06/12/2000
	186/9c.0203
 CERN/EST/SM/SF	



Atlas / Tile-Test beam EHN1	BERRY S.
Signalisation	
	SCALE 1:1
	07/12/2000
 CERN/EST/SM/SF	186/9c.0205

186/9c
Atlas / Tile - Test Beam
cooling unit

- COOLING SYSTEM -

PROGRAMMATION

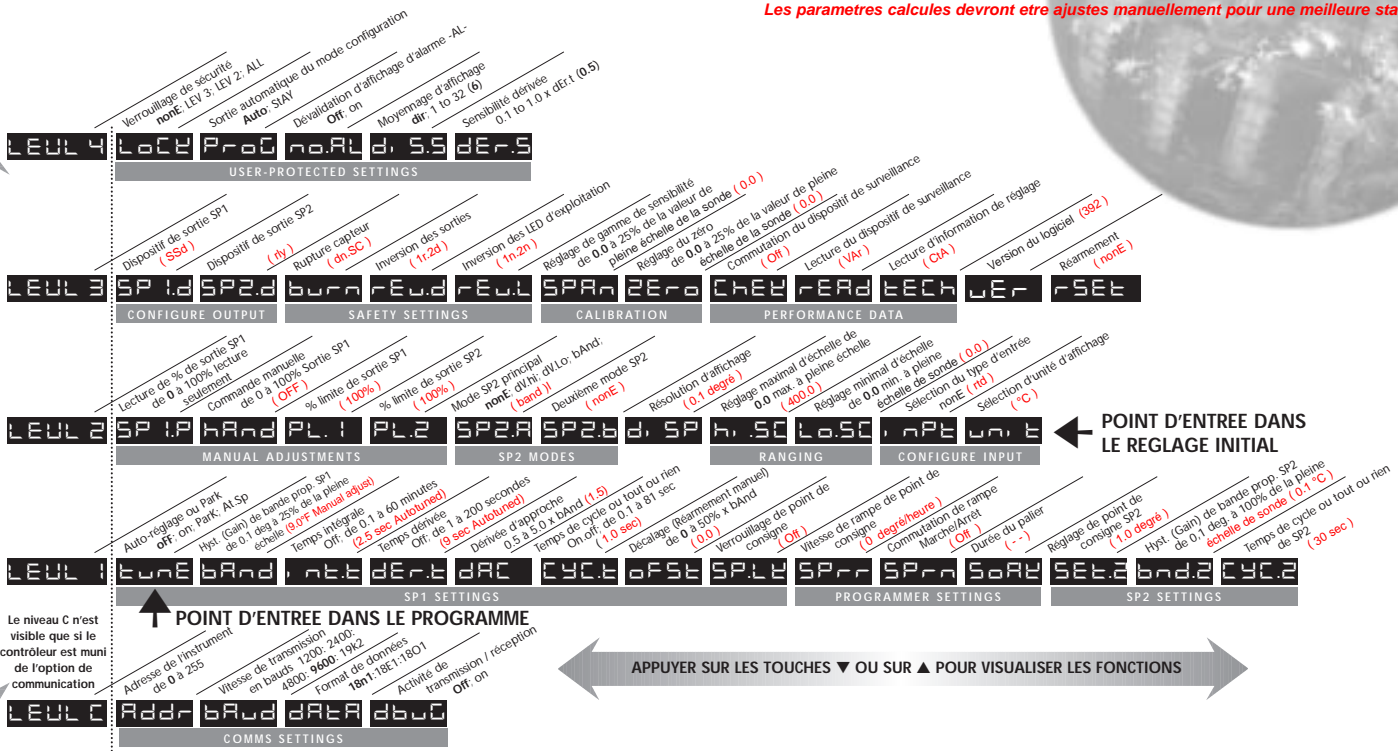
! 186-9c ATLAS - Tile Beam cooling
 Config. du regulateur de temperature
 ■ en rouge: Parametrage du 27/04/2001
 sb, ST-CV

note: l'autotuning ne donne pas un resultat optimum sur cette application,
 S'il est necessaire de relancer la procedure, donner d'abord une valeur faible
 a la variable "Band" (entre 0.1 et 0,5) puis enclencher l'autotuning At sp

Les parametres calcules devront etre ajustes manuellement pour une meilleure stabilite.

F r a n ç a i s

APPUYER SIMULTANEMENT SUR * ET SUR ▼ OU SUR * ET SUR ▲ POUR MODIFIER LES NIVEAUX OU LES OPTIONS



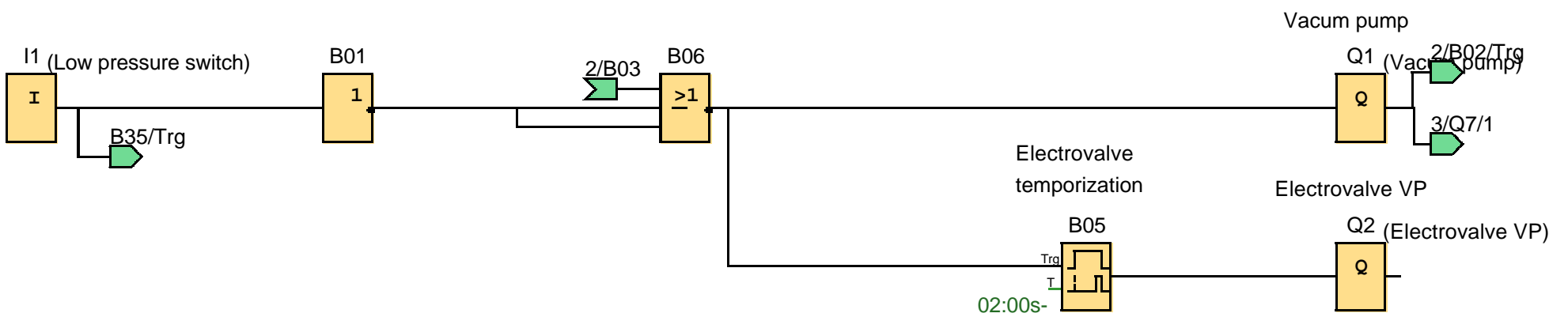
Vacum pump & Electrovalve control:

"Vacum pump" (Q1) is ON if:

"Low pressure switch" (I1) is ON & "Vacum pump protection" (Bo3=10mn) is OFF.

"vacum pump electrovalve" (Q2) is ON if:

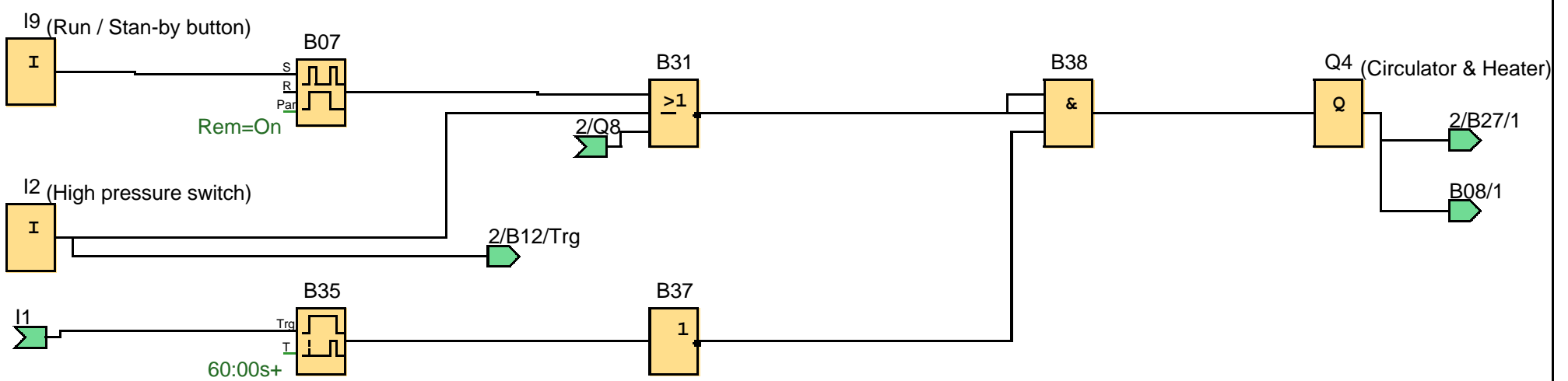
After 2 seconds (Bo5) when "Vacum pump" (Q1) goes ON.



Circulator & Heater control:

"Circulator & Heater" (Q4) are ON if:

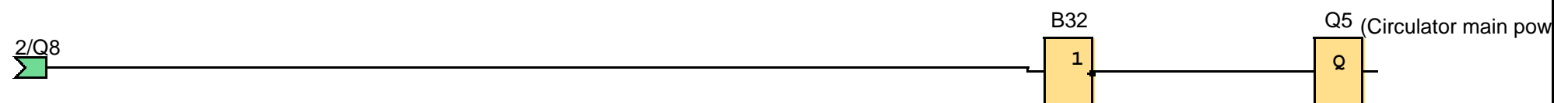
Pulse on "run/stand-by button" (I9) & "High pressure switch" (I2) is OFF, and "Low pressure switch" (I1) is OFF or ON from less than 60 seconds (B35).



Circulator control (main power):

"Circulator Main power" (Q5) is ON if:

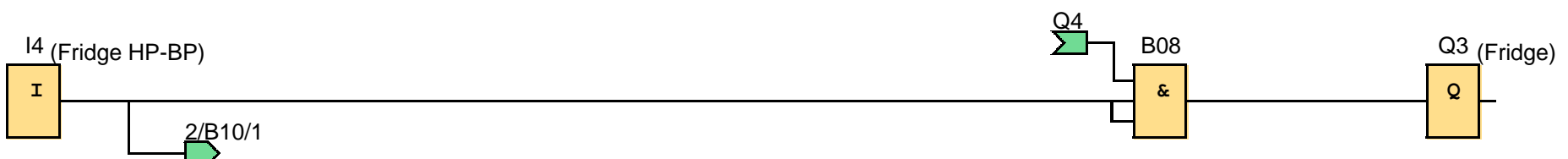
"Alarm" (Q8) is OFF.



Fridge control:

"Fridge" (Q3) is ON if:

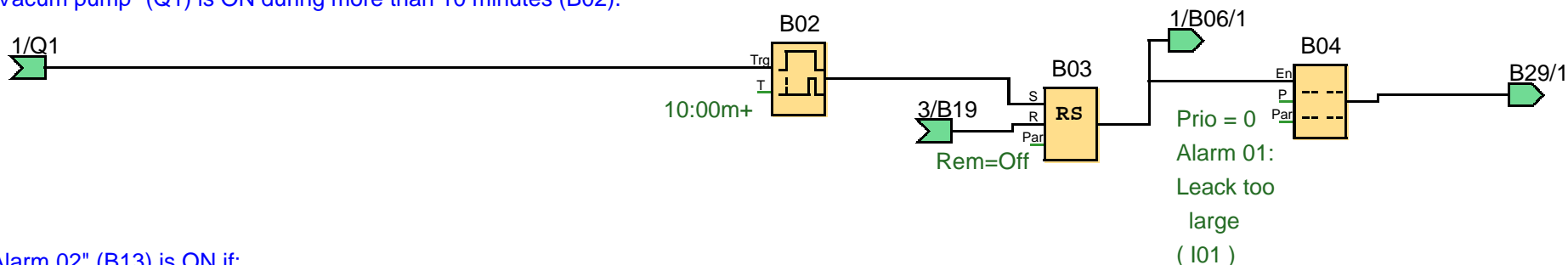
"Fridge HP-BP" (I4) is ON and "Circulator & Heater" (Q4) is ON.



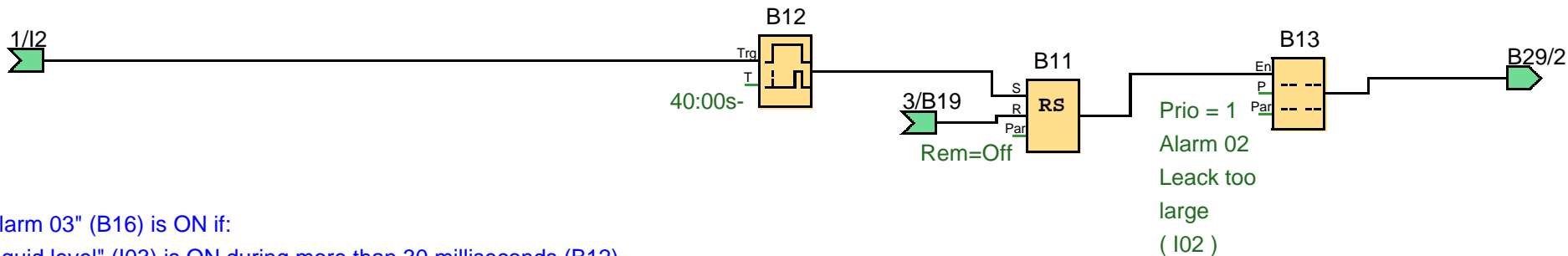
Alarms acquisition:

"Alarms 01 to 05: Alarms & Messages maintained, manual reset required (I8) to restart the system.

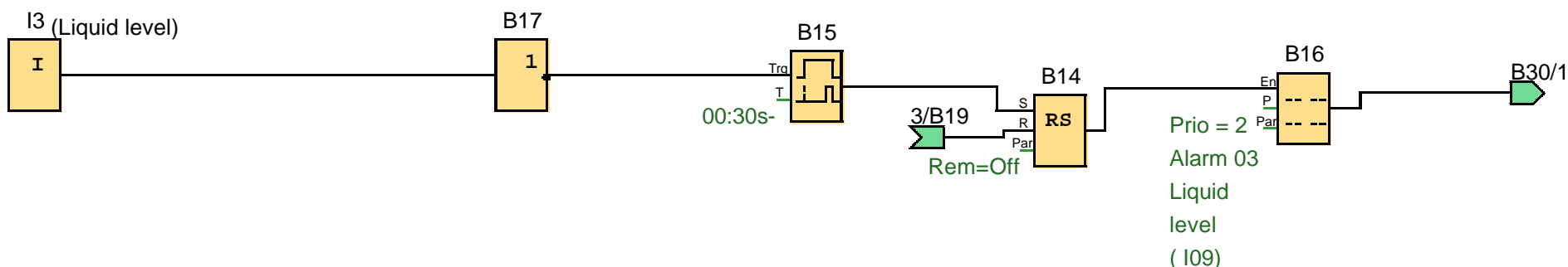
"Alarm 01" (B04) is ON if:
 "Vacum pump" (Q1) is ON during more than 10 minutes (B02).



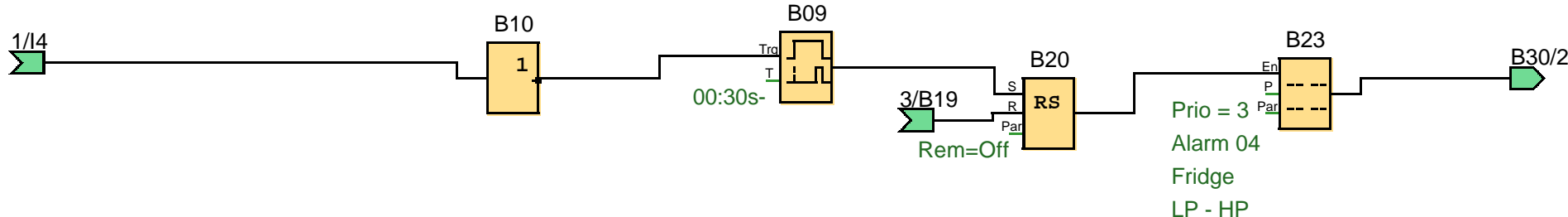
"Alarm 02" (B13) is ON if:
 "High pressure switch" is ON during more than 40 seconds (B12).



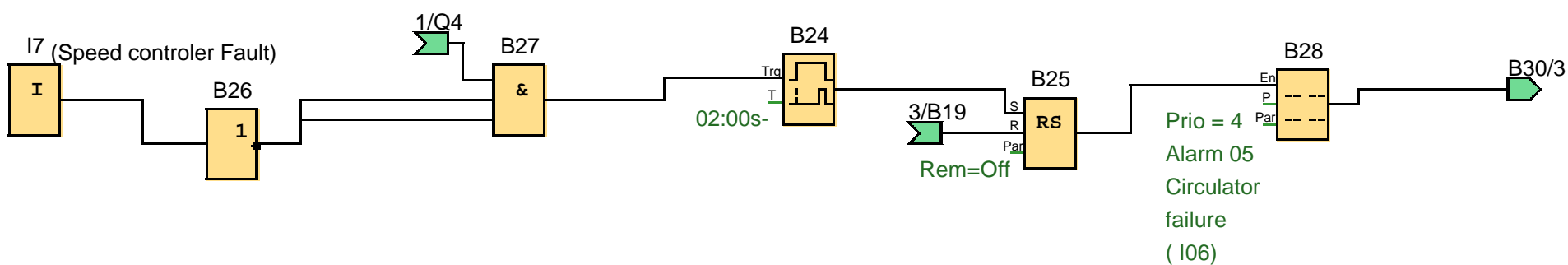
"Alarm 03" (B16) is ON if:
 "Liquid level" (I03) is ON during more than 30 milliseconds (B12).



"Alarm 04" (B23) is ON if:
 "Fridge HP-BP" (I04) is ON during more than 30 milliseconds (B09).



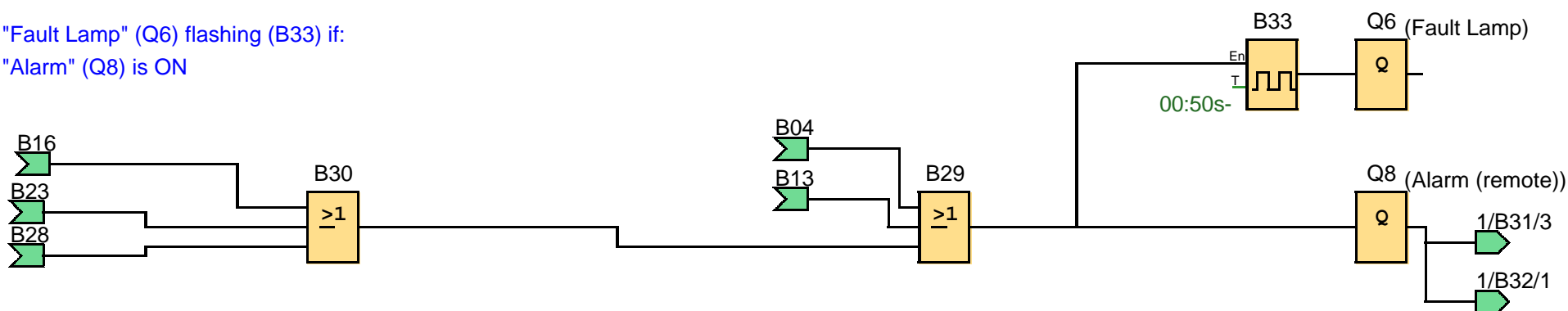
"Alarm 05" (B28) is ON if:
 "Speed controller Fault" (I7) is ON and "Circulator & Heater" (Q4) is ON during more than 2 seconds (B24).



Alarm & Fault lamp:

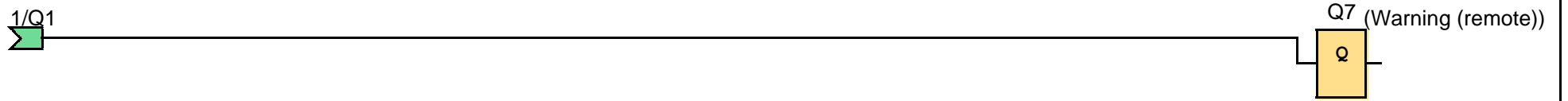
"Alarm" (Q8) is ON if:
 "Alarm 01" (B04), or "Alarm 02" (B13), or "Alarm 03" (B16), OR "Alarm 04" (B23), or "Alarm 05" (B28) is ON.

"Fault Lamp" (Q6) flashing (B33) if:
 "Alarm" (Q8) is ON

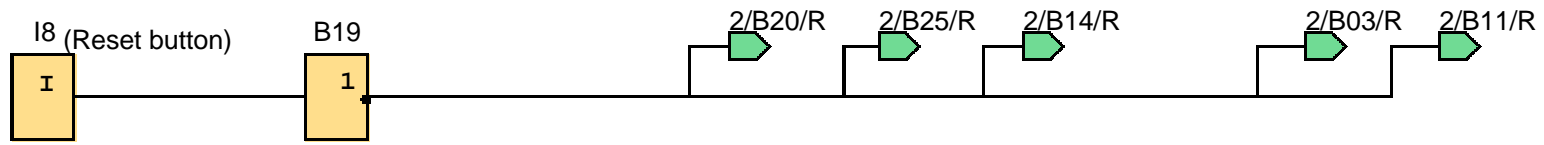


Warning :

"Warning" (Q7) is ON if:
"Vacum pump" (Q1) is ON.

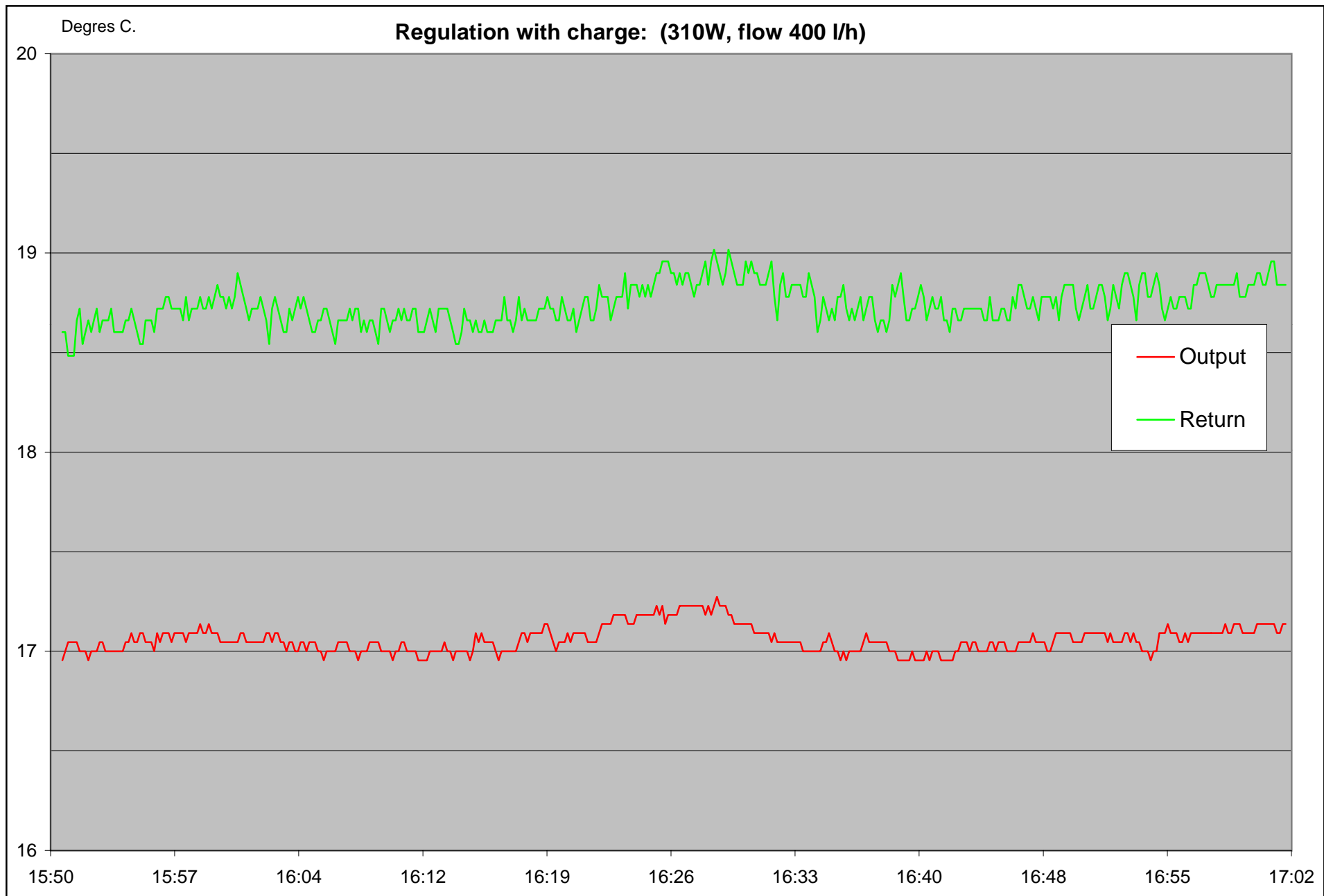


Reset :



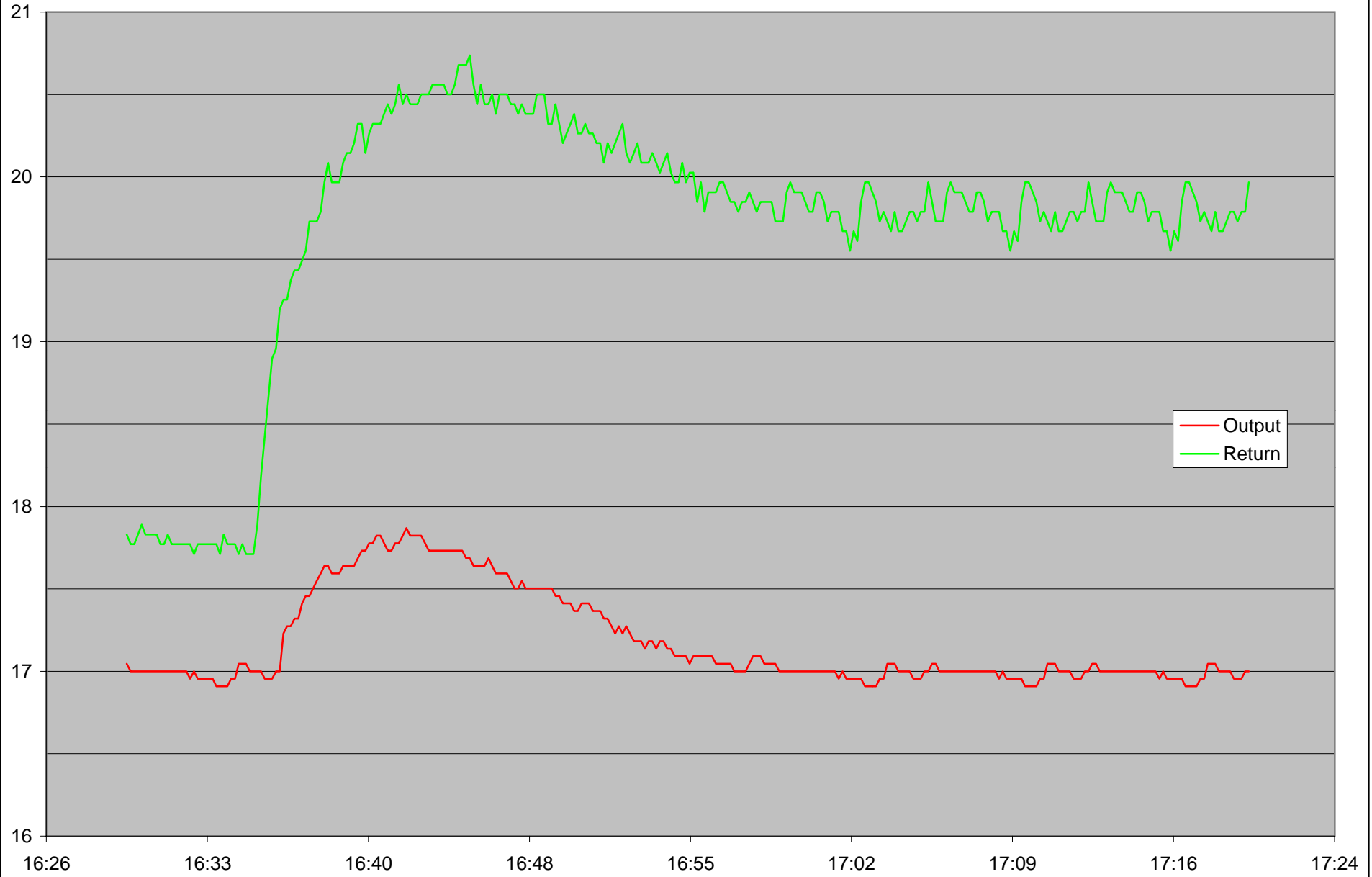
186/9c
ATLAS / Tile- Test beam
cooling unit

Tests de fonctionnement



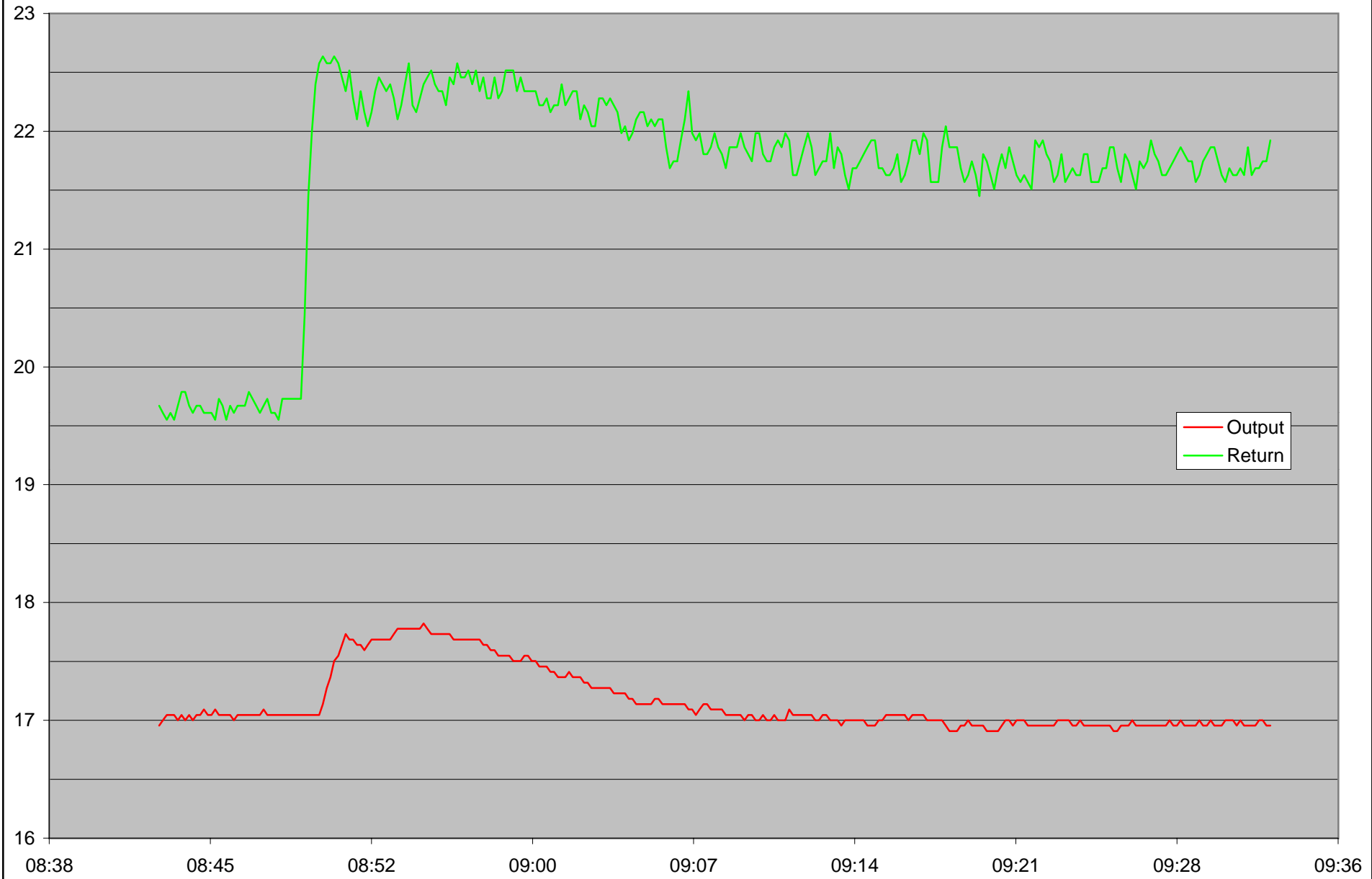
Degres C.

Regulation with charge: (1kW, flow 400 l/h)



Degres C.

Regulation with charge: (1,8kW, flow 400 l/h)



Stabilite sur 5 jours (610Watts)

