

Chapter 3

Main internal components, hydraulic circuit and electric circuit

Main internal components

- **Tank (3.6 litres)**



- **2 instant containers (0.8 kg)**



- **Flowmeter**
DIGMESA Ø 1.8 mm



- **ULKA EP5 220V pump (15 bar)**
Thermal protector 100°C



- **Two 2-3-way solenoid valves (24V)**



- **Dispensing unit**
Valve 6 ± 1 bar



- **Thermoblock 1300 W**
2 Clickson 127°C



- **CPU/Power board**



- **Display Board**

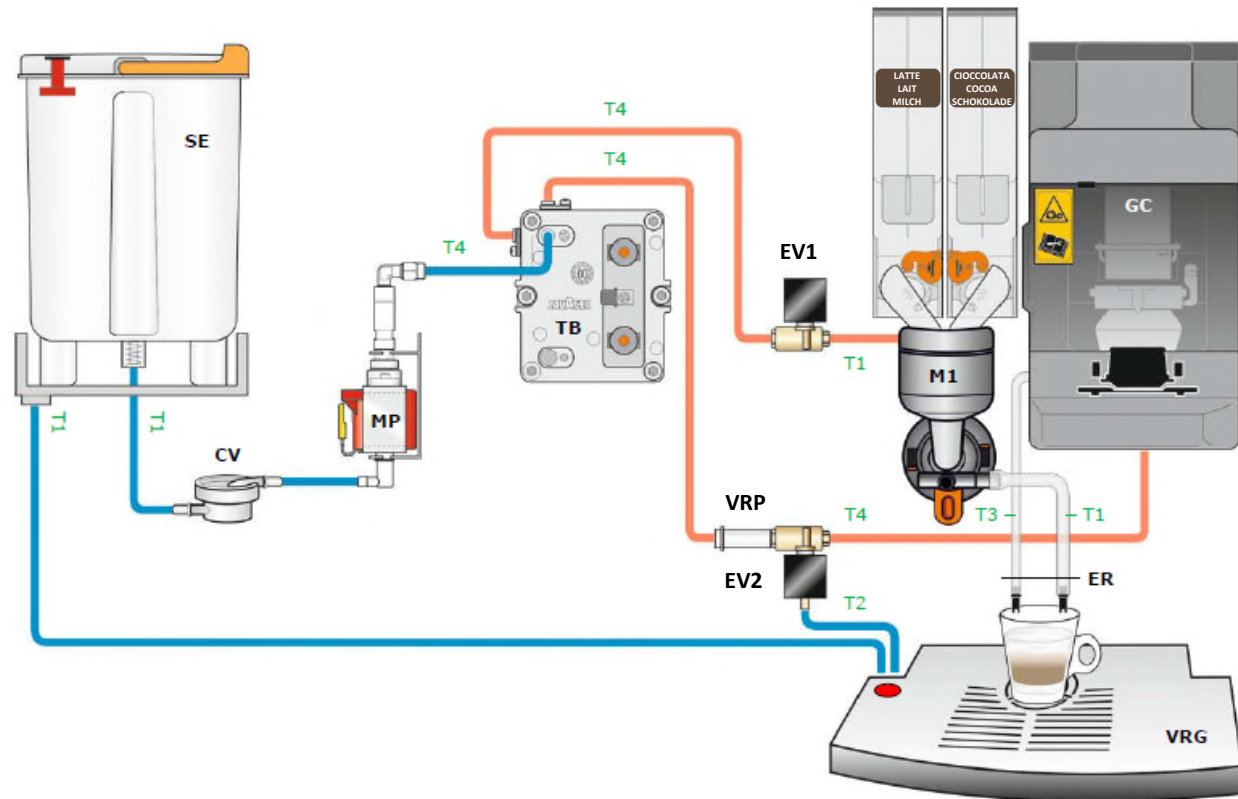


The safety devices

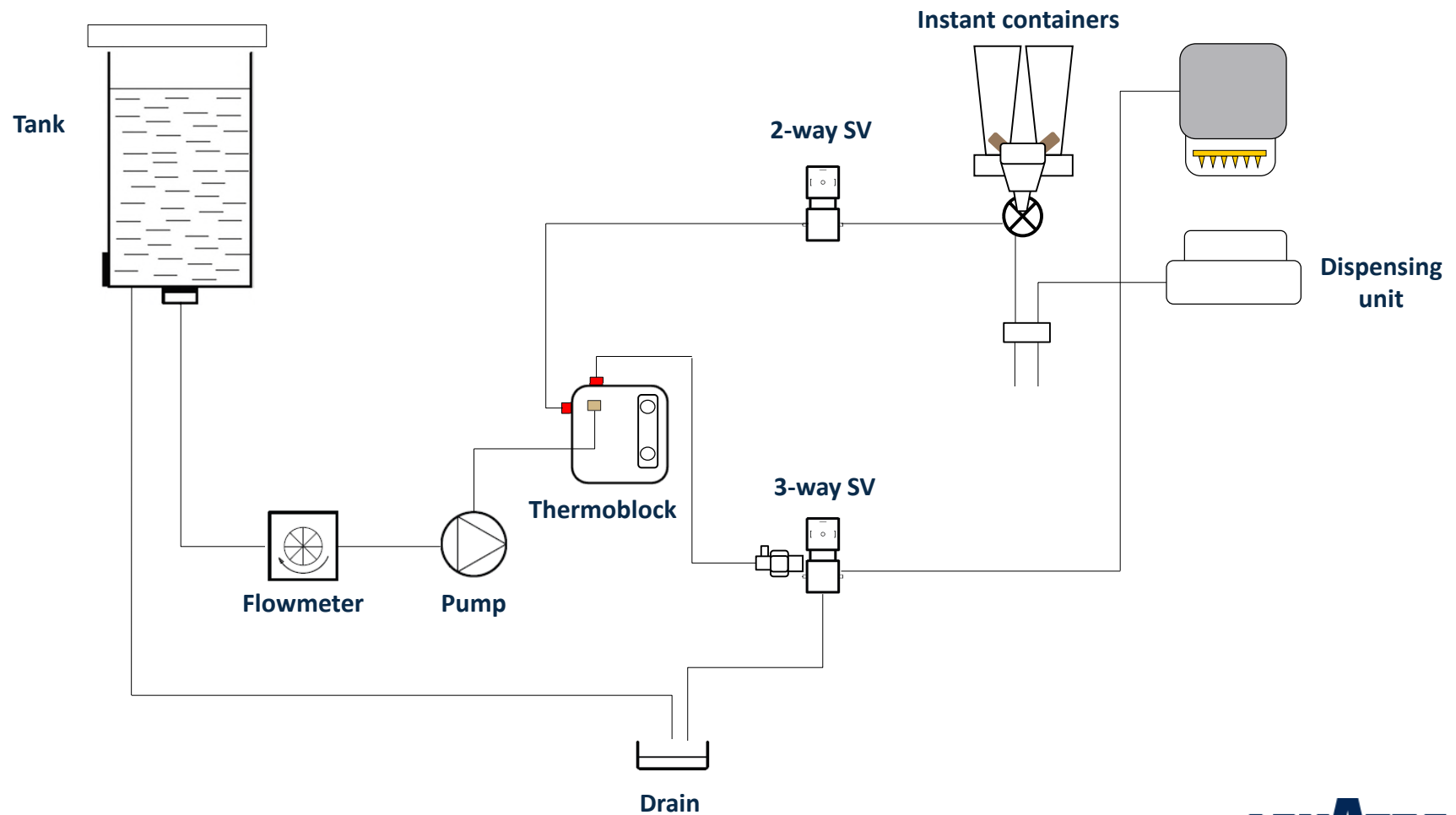
- **2 Clickson 127°C** manual reset
- **PUMP thermal protector** calibrated at **110°C**
- **2 mains fuses** 6.3 x 32 mm 12 A delayed
- **Capsule drawer presence micro-switch**
- **No water in the tank** detected by the capacitive sensor
- **Capsule insertion door closing sensor**
- **Used capsules counting** system
- **SW control of water dispensing time**

The hydraulic circuit

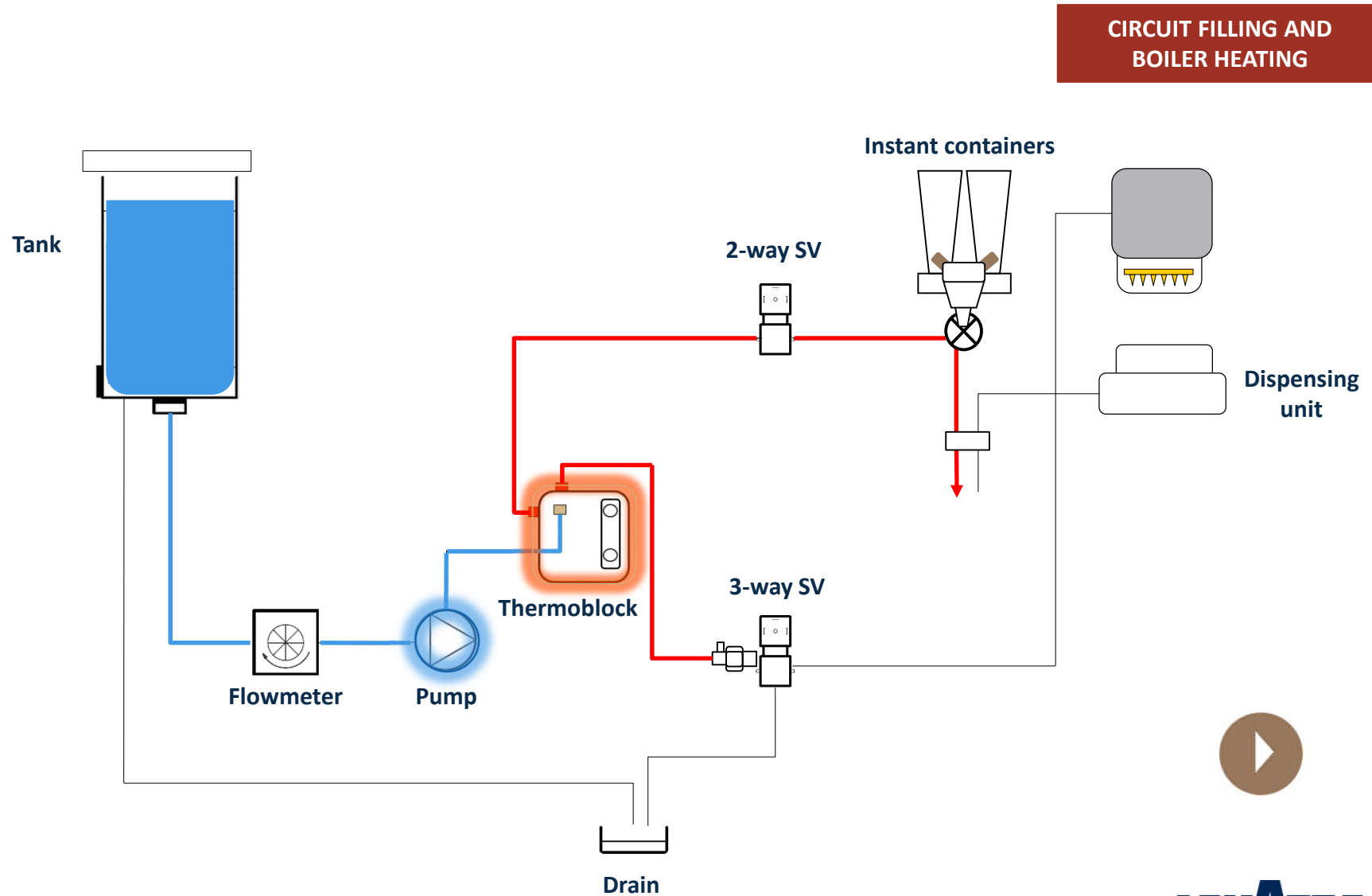
Key	
SE	Tank
CV	Volumetric counter
MP	EP5 Pump
TB	Thermoblock
EV1	2-way solenoid valve
M1	Mixer
GC	Coffee unit
VRP	Pressure regulating valve
EV2	3-way solenoid valve
ER	Dispensing nozzles
VRG	Drip tray
T1	06/09T silicone tube
T2	07/11T silicone tube
T3	04/06T silicone tube
T4	02/04T silicone tube



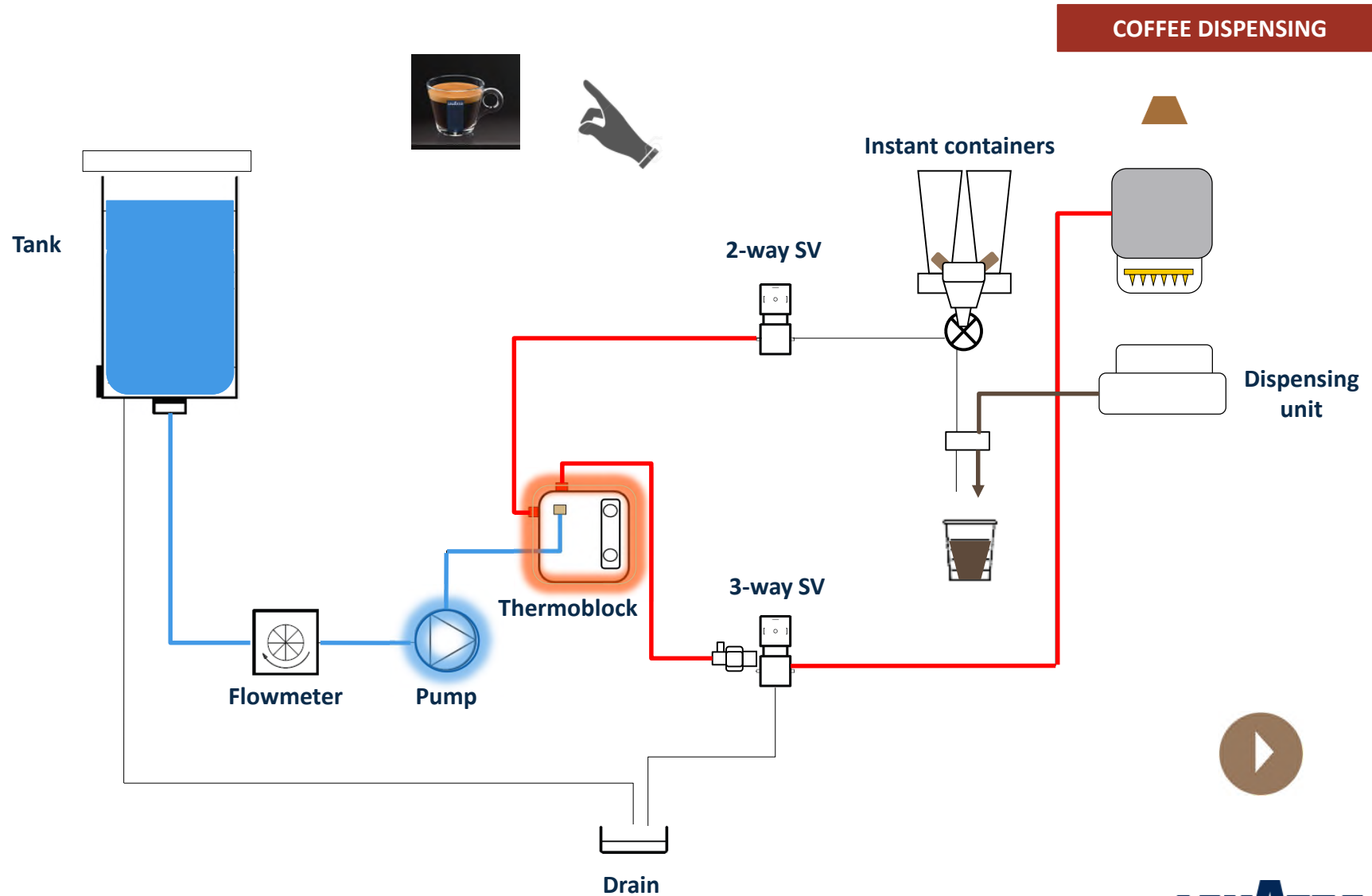
The hydraulic circuit



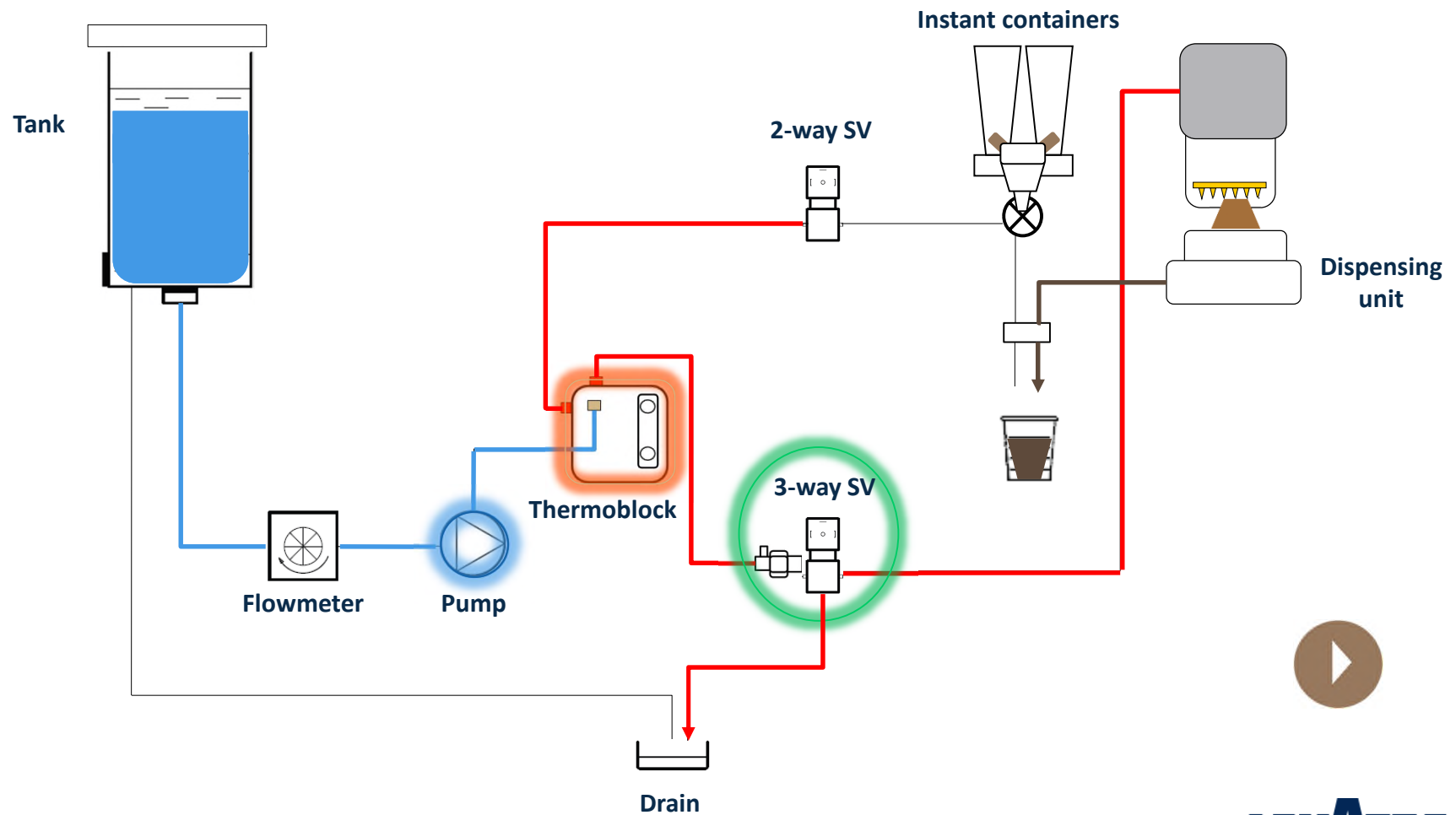
The hydraulic circuit



The hydraulic circuit

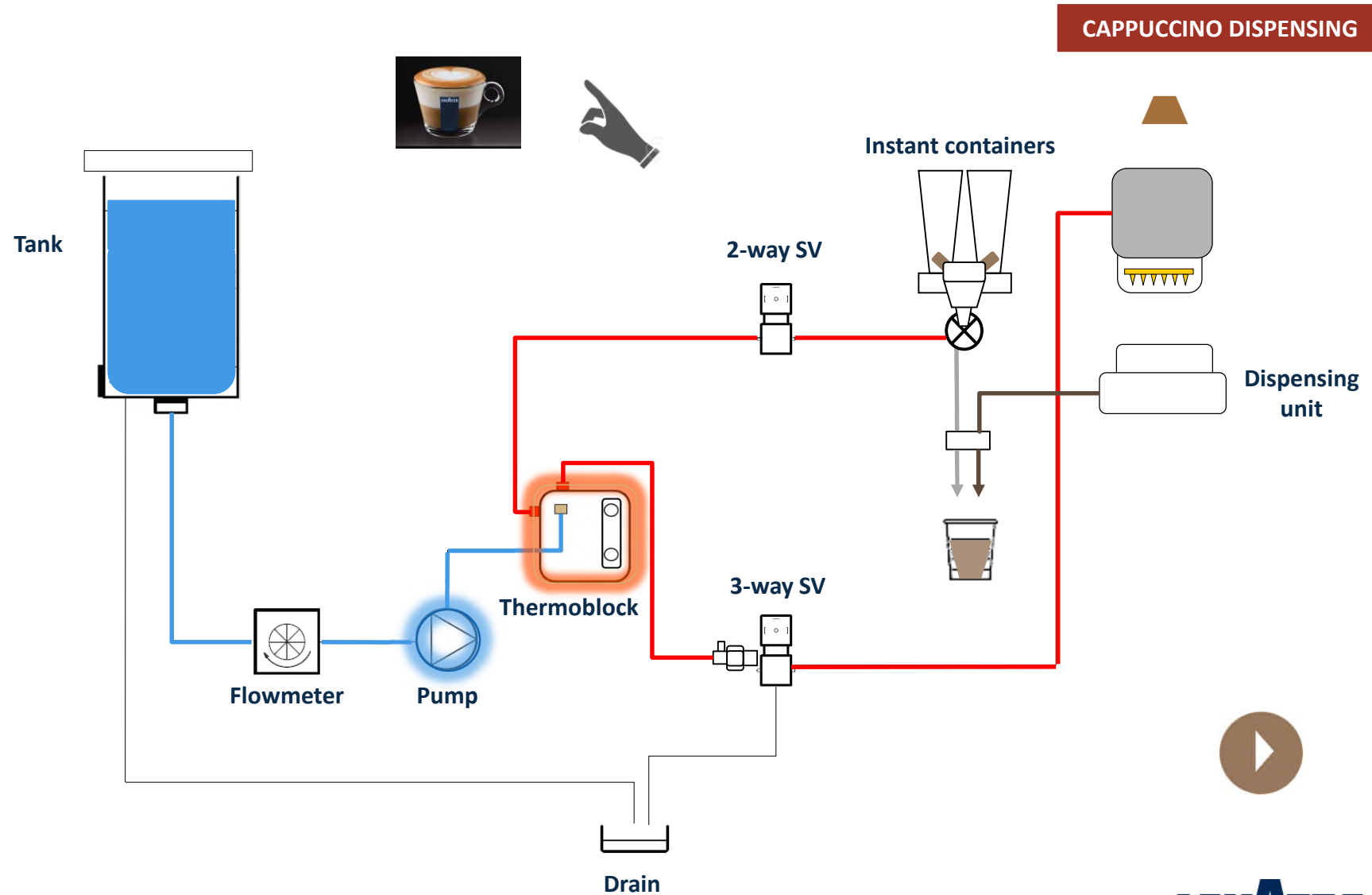


The hydraulic circuit

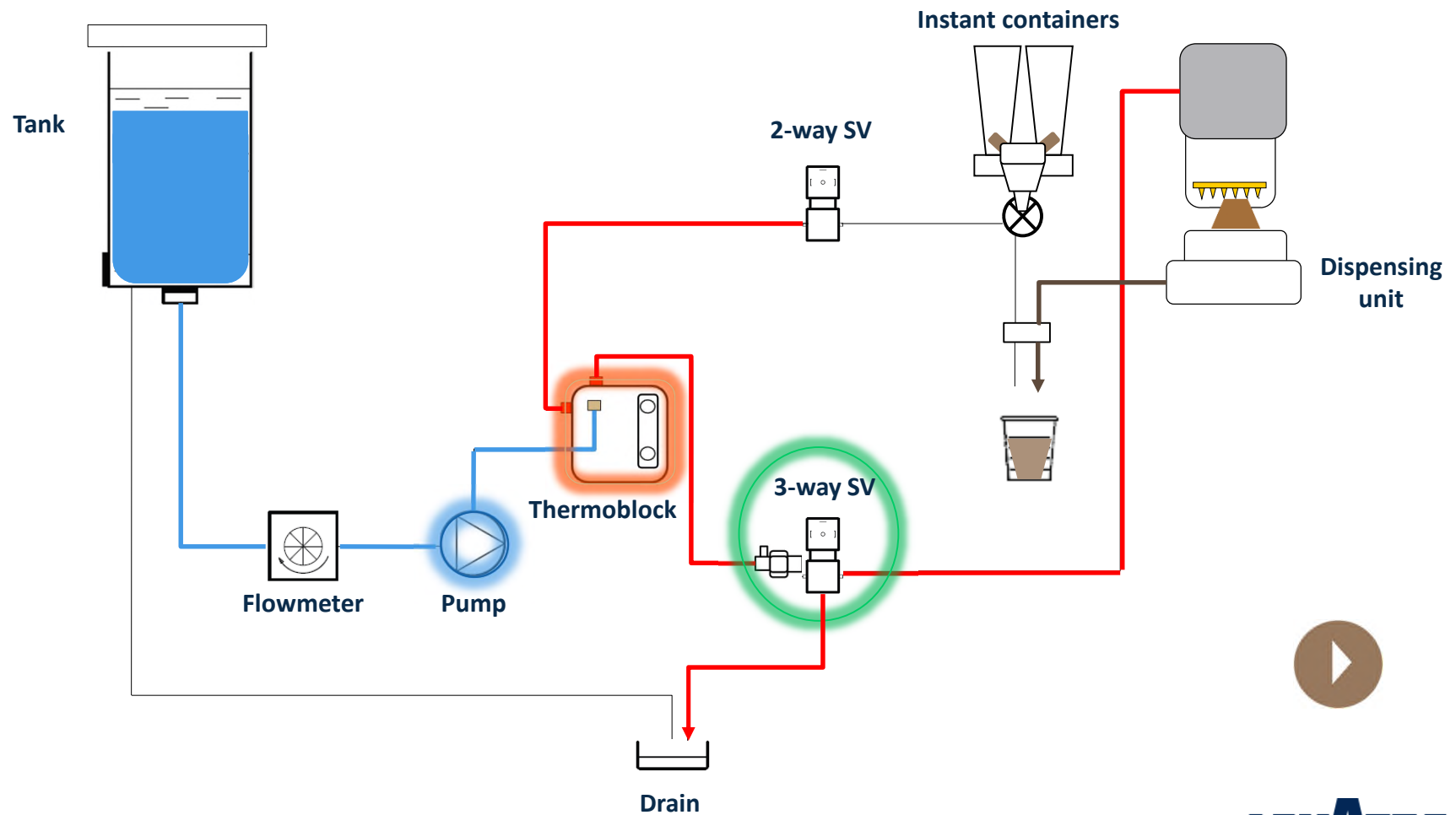


DISPENSING END

The hydraulic circuit

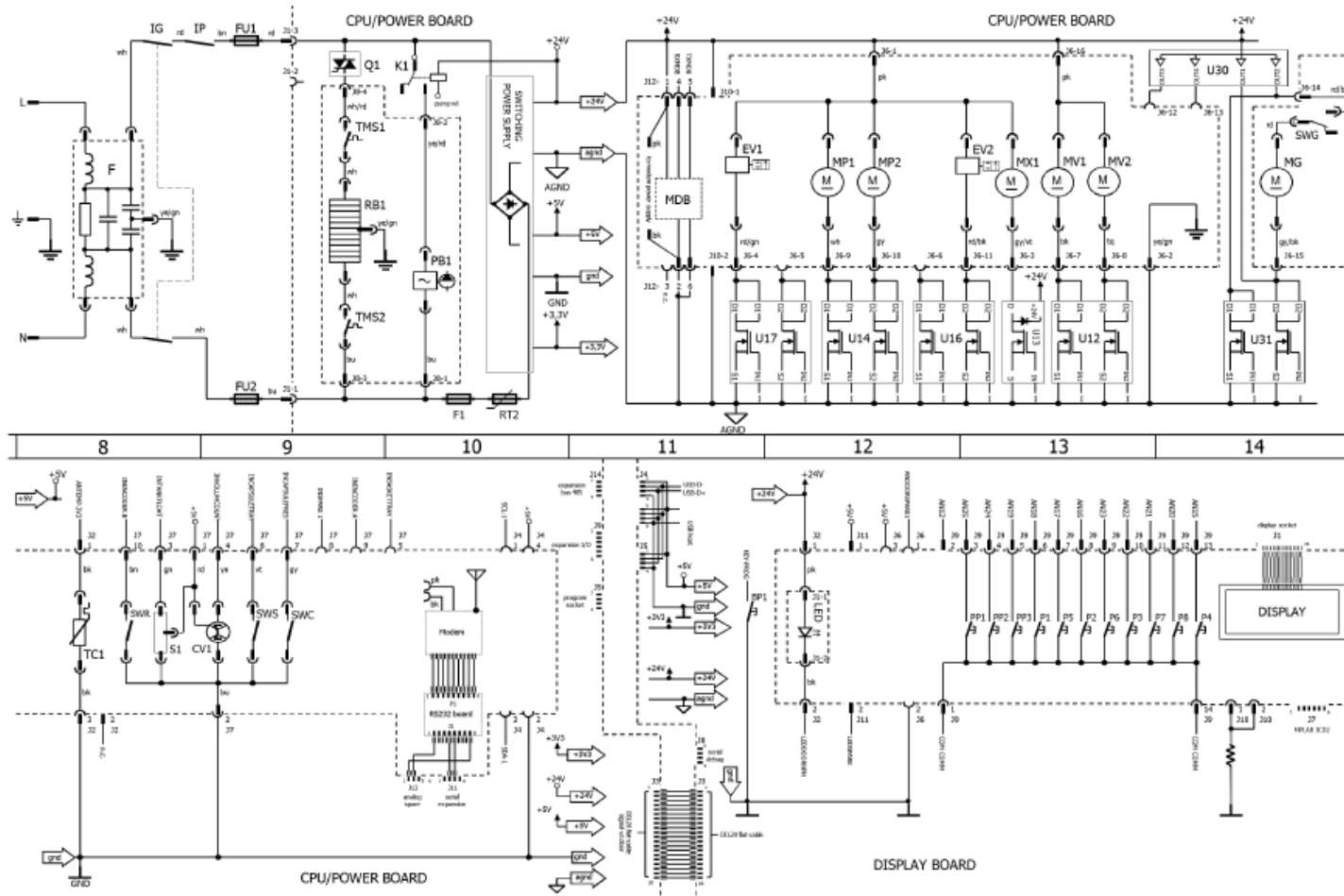


The hydraulic circuit



DISPENSING END

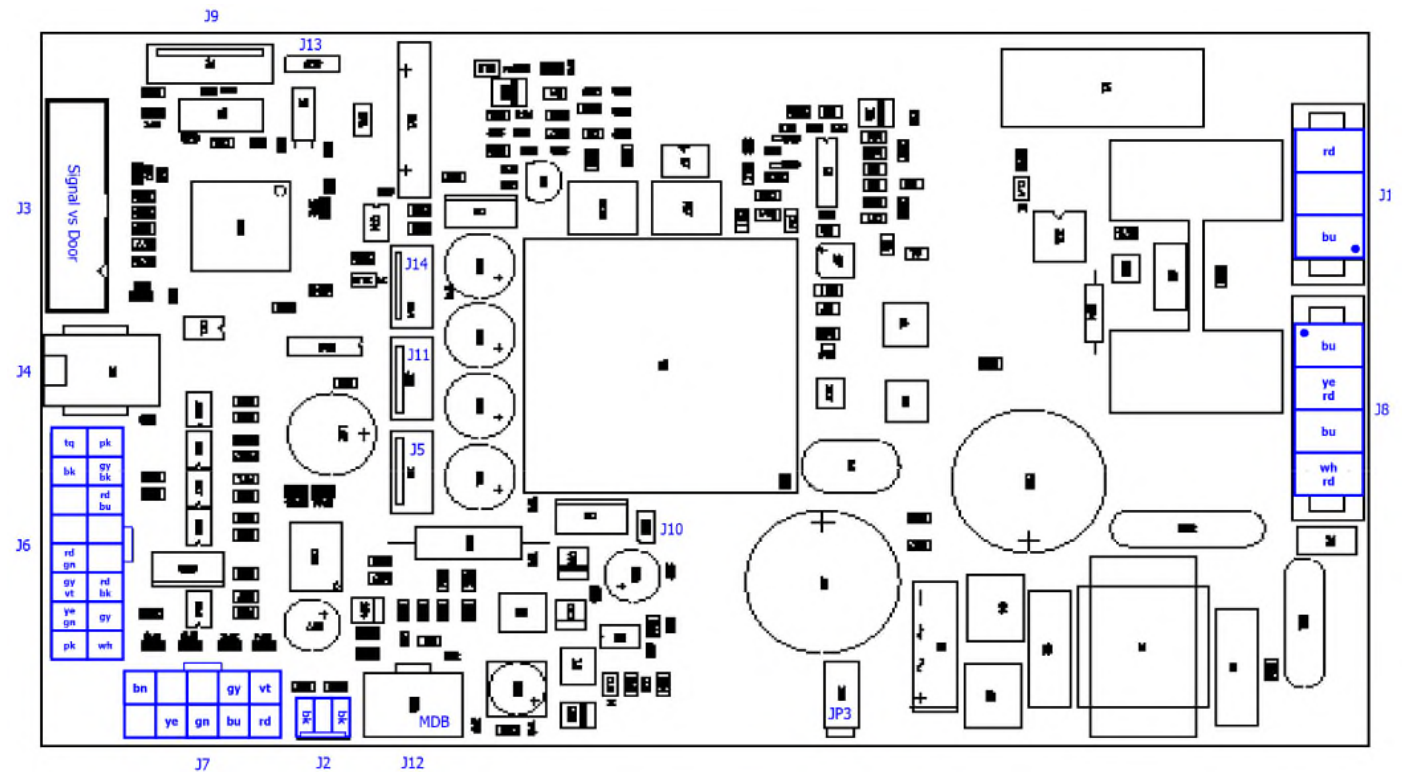
The electric circuit



- BP1 = programming mode button
- CV1 = coffee water volumetric counter
- EV1 = solenoid valve
- EV2 = coffee infusion water solenoid valve
- F = anti-noise filter
- F1 = fuse 4A delayed
- FU1/2 = fuses 12A delayed
- IG = general switch
- IP = door safety switch
- K1 = relay for boiler pump
- MG = coffee brewer motor
- MP1/2 = products motor
- MV1/2 = aspirator motor
- MX1 = mixer motor
- P1...8 = drinks selection buttons
- PB1 = boiler pump
- PP1...3 = preselection buttons
- Q1 = boiler thermostat
- RB1 = boiler resistance
- RT2 = ptc device
- S1 = water tank level sensor
- SWC = insertion capsules switch
- SWG = safety switch for coffee brewer motor
- SWR = waste container presence switch
- SWS = capsule drawer locking switch
- TC1 = boiler water temperature sensor
- TMS1/2 = boiler interruption thermal device
- U12...17 = drivers for actuators 24V
- U30...31 = drivers for coffee brewer

CPU Wiring diagram

Connectors	
J1	230V power supply
J2	Water temperature probe
J3	Flat-cable for connection to the Display board (machine door)
J4	RS232 Port
J5	Microprocessor programming
J6	24V actuators command
J7	Sensors and micro-switches command
J8	Pump and boiler command
J9	I/O
J10	Restricted for internal use
J11	Serial expansion for PC
J12	MDB port
J13	<i>Not used</i>
J14	485 expansion bus
JP3	Power supply voltage set-up jumpers (off > 230V ; on > 120V)



DISPLAY Wiring diagram

