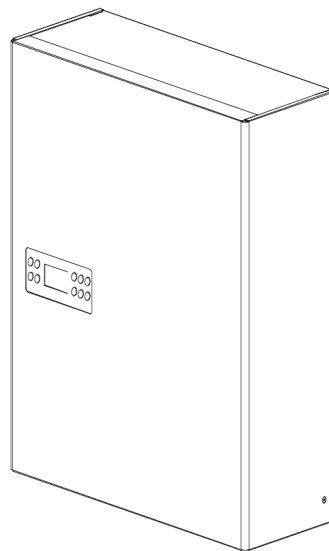


WALL-MOUNTED SUBSTATION FOR HEATING & DOMESTIC HOT WATER PRODUCTION (Configured using two heat exchangers in series)

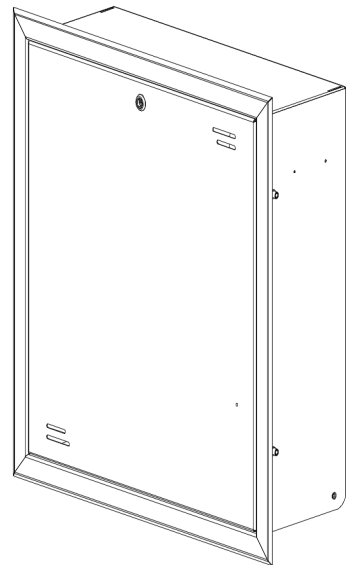
When Central Heating or Domestic Hot Water is required for buildings with Multi rooms or areas such as Hotels, Multi story apartments, Hospitals, Office blocks etc it is now common to install an individual AEL substation in or near that specific area to efficiently serve the individual demand required at different times of the day or week.

The primary hot water to each substation comes from a boiler (or similar) via the main central heating plant room rather than individual boilers being installed throughout a building or the plant room just working to heat the whole building inefficiently.

Not only is it more efficient to control the Heat and DHW demand to individual areas or apartments but it also makes financial sense when looking at maintaining the individual sub stations.



Mounted Panel (Standard)



Recessed Panel (Optional)
Check Prior to Ordering

Technical Features

Maximum operating pressure DHS network 16 bar (optional PN25)

Maximum operating pressure Central Heating side 2.7 bar

Maximum operating pressure DHW side 6 bar (where applicable)

Maximum differential pressure on primary side 12 bar (for some models optional 3.5 bar)

Minimum differential pressure on primary side close to substation 2 bar

Maximum pressure drop on primary side 1bar

Test pressure (differential) 1.43 times design pressure.

Minimum guaranteed residual head on the Central Heating side 2.5 m.c.a.

Protection Class IP54

Electrical supply voltage 230 V

Electrical supply frequency 50 Hz

The district heating substation is a fully pre-assembled, pre-cabled unit for heat transmission, featuring high yield and maximum operating safety. The structure consists of a zinc-plated frame covered with protective jackets in painted sheet metal which define the overall dimensions of the substation and houses:

* Braze welded **plate heat exchangers**

* **Safety accessories:**

- Safety valves, ISPEL certified (PED)
- Expansion tank o **Monitoring accessories:**
- Pressure gauges
- Thermometers
- High-sensitivity immersion sensors o **Protection accessories:**
- Safety thermostats
- Safety dual thermostat for superheated water and single thermometer for hot water

Control accessories:

- Two-way seated poppet valves
- Electrical servo control for the above-mentioned valves

• **Automatic control accessories:**

- Thermal regulation station for monitoring temperatures at various points and programming and defining parameters for the physical and electrical values to be managed.

• **Main electrical control panel**

The wall-mounted district heating substations are available in two installation versions: □ wall-hung

- recessed

The wall-mounted district heating substations are available:

- for heating only
- for heating and DHW production

On request, the wall-mounted district heating substations can be supplied fully insulated, with a shell installed inside the frame.

This type of substation is suitable for **small capacity** systems supplied by **superheated water** (or by hot water at sufficiently high temperature). It is designed for **heating** (via radiators, fan coils, floor panels, etc.) and **production of domestic hot water**.

This type of substation is recommended for systems in which independent management of the heating and domestic hot water circuits is not required (hot water production always takes precedence over heating).

This type of substation is equipped with the **AEL-TS TSRE 010** temperature-control system.

With this type of substation, users can:

- Directly set the heating set-point using easy-access dedicated pushbuttons.
- Read the heating delivery, DHW, and recirculation (if applicable) temperatures directly on the controller display.
- Manage heating and DHW production independently, with separate on board timers and weekly programs.
- Manage heating by external thermostat/timer-thermostat or on the basis of a weekly schedule programmed in the controller (on/off settings at half-hour intervals).
- Set SUMMER or WINTER parameters (DHW only activated in SUMMER mode, DHW and heating activated in WINTER mode).
- Manage heating temperature by the fixed-point or climate-curve method.
- Set the set-points for heating, DHW, and recirculation (if applicable) independently.
- Lock the heating-side set-point for systems serving floor panels.

- Set an ANTI-SCUFF cycle for the HEATING side pump (if installed) when system is in SUMMER mode.
- Set an ANTIFREEZE cycle with minimum threshold.
- Maintain temperature in the primary circuit managed by the regulator (with times, intervals, and quantities set via the on board calendar) or on request with by-pass through the ball valve.
- Connect a safety thermostat on the heating side (for floor-panel systems) featuring cut-in signal (by acoustic alarm and display message).
- Connect a safety thermostat on the DHW side (for protection against scalding) featuring cut-in signal (by acoustic alarm and display message).
- Signal sensor malfunction by acoustic alarm and display message.
- Signal excessive pressure in the heating circuit by acoustic alarm and display message and signal low water level in the heating circuit (and shutdown of the heating side pump, if applicable) by acoustic alarm and display message).
- Reset the values to factory defaults.
- Integrate into other systems with accumulators, traditional boilers, and solar panels.

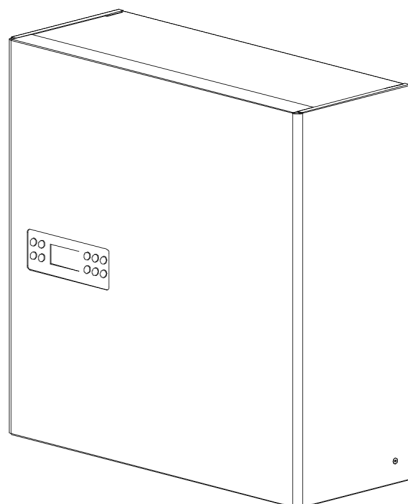
Additionally, this type of substation is prepared for installing devices for:

- Managing recirculation via PID with set-point independent of DHW.
- Managing an ANTI-LEGIONELLA thermal disinfection cycle via on board calendar (the system must comprise recirculation).
- Limiting the flow rate on the DHS side.
- Limiting the return temperature on the DHS side, with sensor malfunction signal (by acoustic alarm and display message).
- Remote reading of the thermal energy meter.
- Managing remote control.
- Managing a GSM or PSTN modem connection, which permits sending SMSs or e-mails for notifying alarms or malfunctions.

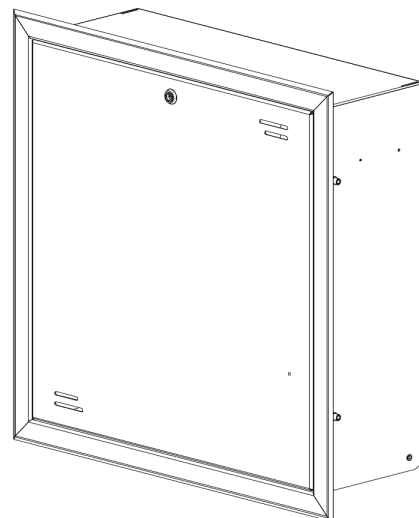
Capacities and Dimensions

Model	Heating Capacity (kW)	Overall dimensions (mm) Length x Height x Width	Connections on Primary Side	Connections on Heating Side	Connections on DHW Side	Empty Weight (kg)
AEL-RI34T.S	34	580x685x220	G 3/4"	G 3/4"	G 1/2"	32

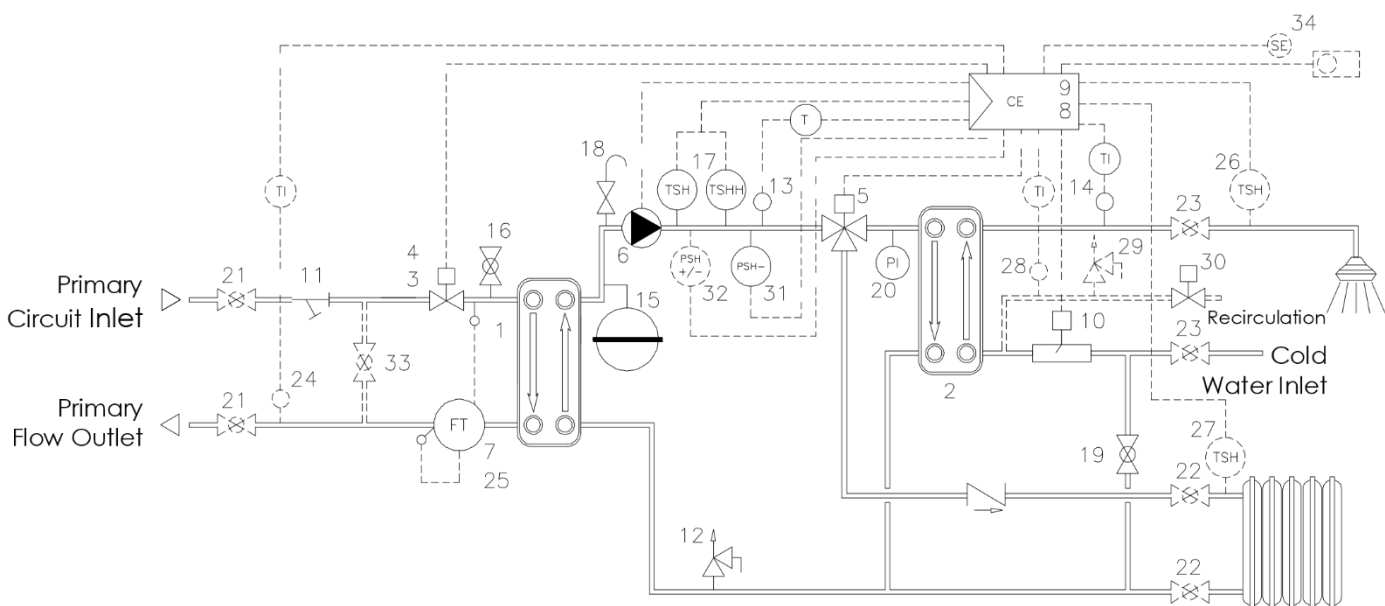
NOTE: the dimensions reported are purely indicative and refer to wall-hung substations constructed in accordance with AEL-TS European & UK standards (dimensions may differ in the case of the recessed version).



Mounted Panel (Standard)



Recessed Panel (Optional) Check Prior to Ordering



COMPONENTS

- 1 Interface plate heat exchanger
- 2 Plate heat exchanger for DHW
- 3 Servo-controlled valve
- 4 Servomotor
- 5 3-way valve
- 6 Circulation pump
- 7 Thermal energy meter
- 8 Controller
- 9 Electrical panel
- 10 Flow switch
- 11 Filter
- 12 Safety valve
- 13 Temperature sensor on HEATING side
- 14 Temperature sensor on DHW side
- 15 Expansion tank
- 16 Vent ball valve on PRIMARY side
- 17 Dual thermostat
- 18 Vent valve on HEATING side
- 19 Filling ball valve
- 20 Pressure gauge
- 31 Minimum pressure switch

OPTIONALS

ON/OFF VALVE SET

- 21 On/off ball valve on PRIMARY side
- 22 On/off ball valve on HEATING side
- 23 On/off ball valve on DHW side

TEMPERATURE LIMITER SET, PRIMARY SIDE

- 24 Limit temperature sensor for PRIMARY side

DELIVERY LIMITER SET, PRIMARY SIDE

- 25 Thermal energy meter with pulse counter card

TEMPERATURE SAFETY SET HEATING SIDE FOR FLOOR PANEL SYSTEM

- 26 Thermostat on HEATING side
- 27 Thermostat on DHW side

RECIRCULATION SET

- 28 Temperature sensor on RECIRCULATION side
- 29 Safety valve on DHW side
- 30 On/off valve on DHW side

PRESSURE SAFETY SET HEATING SIDE

- 32 Maximum/Minimum pressure switch

MISCELLANEOUS

- 33 Bypass ball valve
- 34 External sensor