



DISTRICT HEATING SUBSTATIONS

AMARC DHS DESIGNS AND MANUFACTURES A COMPLETE RANGE OF PRODUCTS TO SATISFY ALL NEEDS OF DISTRICT HEATING AND COOLING.



WiFi M-Bus GPRS GSM EtherNet/IP

CE PED ASPECT INAIL

DISTRICT HEATING SUBSTATIONS





The cover shows an image of New York, where, at the end of 1800, was installed the first district heating network.

The company was established in 1998, under the name of Amarc technologie, its aim being to harness the considerable experience gained in the industrial heating and process control industry since 1950, and to consolidate and turn this expertise into reproducible scientific and technological principles.

A tribute to the origins of our industry that our company has greatly contributed to develop in Italy offering reliable products of high quality, technology and design setting the standard in the domestic and foreign markets.

More recently, the company became involved, for some applications, in district heating - a technology which was barely known or developed, at least in Italy. After several years of testing and operations, the company decided to invest heavily in this sector, and above all in technical product and production process development, as well as in automatic control and supervision systems.

During this time, the company partnered leading Italian and foreign companies in developing research projects, up to the construction and installation of components, machines and plants, which also involved the registration of some international patents.





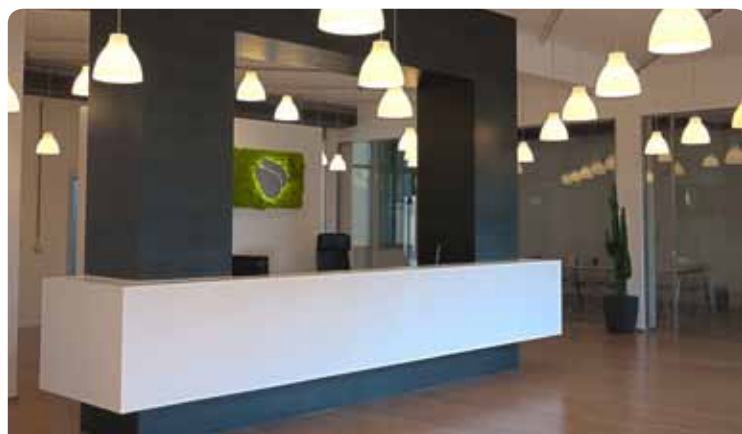
Today Amarc DHS (District Heating Substations) engineers, manufactures and installs district heating substations, with a product portfolio of over 300 models, featuring standard district heating substations with a capacity from 10 to 6,000 kW, as well as remote cooling stations with a capacity from 50 to 2,500 kW, plus optionals and accessories, for one of Europe's most extensive ranges in the industry:

- **User Satellites Units** for central heating systems
- **Single living unit wall substations** from 10 to 40 kW.
- **Wall Substations** from 10 to 150 kW.
- **Base Substations** for hot and superheated water certified CE/PED, from 50 to 6.000 kW.
- **Drainage Bag filters** for secondary circuit and district

heating network from 15 to 40 m³/h, from PN10 to PN25, for hot and superheated water, max135°C.

- **Management System** to optimize district heating plant, remote setting, telemetering and telecontrol for user substation.
- **Remote control** and hardware tools for communication network specific for district heating plants.

More than 10 years of experience in the industry have created a management and optimisation computer system that can integrate network and substation requirements and functions in one software application, which can make all the difference in terms of profitability for district heating systems.

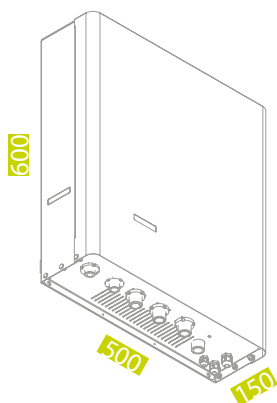


ULTRA COMPACT USER SATELLITES



SATBASE | SATPLUS | SATDESIGN | SATINCASSO

- 18÷35 kW for heating and 10÷50 kW for domestic hot water (DHW).
- Versions: base, plus, incasso and design.
- Equipped with ultrasonic heat meter compliant with EN 1434/MID, setting and security organs.
- Connected to district heating substation and boilers.
- PN 10 for 1° circuit.
- Individual setting and accounting management.
- Production of instantaneous domestic hot water.
- Ready for setting, telemetering and remote control.
- Remote control with thermostat.
- Streamlined and thrifty versions.
- Small dimension.



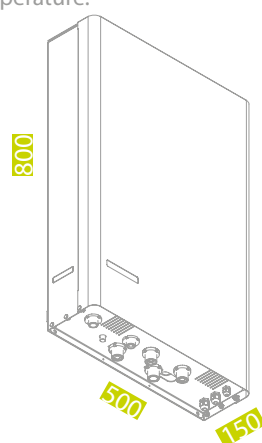
10÷50 kW

ULTRA COMPACT SINGLE LIVING UNIT WALL SUBSTATIONS



MONOBASE | MONOPLUS MONODESIGN | MONOINCASSO

- 18÷40 kW for heating and 10÷50 kW for domestic hot water (DHW).
- Versions: base, plus, incasso and design.
- Equipped with ultrasonic heat meter compliant with EN 1434/MID, setting and security organs.
- PN 25 for 1° circuit.
- For hot and superheated water network.
- For heating and domestic hot water.
- Automatic group load.
- Remote control with thermostat.
- Big expansion vase.
- Certified CE/PED.
- Ready for setting, telemetering and remote control.
- Setting for flow rate limitation, power and return temperature.
- Regulation of fixed-point temperature or compensated outdoor temperature.



10÷50 kW

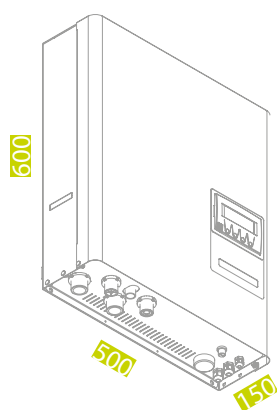


ULTRA COMPACT WALL SUBSTATIONS SINGLE AND MULTIPLE LIVING UNIT



BOLZANOBASE | BOLZANOPLUS **BOLZANOINCASSO**

- 10÷60 kW for heating in standard configuration and max 180 kW for domestic hot water (DHW).
- Equipped with ultrasonic heat meter compliant with EN 1434/MID, setting and security organs.
- PN 25 for 1° circuit.
- For hot and superheated water network.
- For heating or domestic hot water.
- Customizable.
- Certified CE/PED.
- Ultra compact dimension.
- Ready for setting, telemetering and remote control.
- Setting for flow rate limitation, power and return temperature.
- Regulation of fixed-point temperature or compensated outdoor temperature.
- Easy to upkeep.



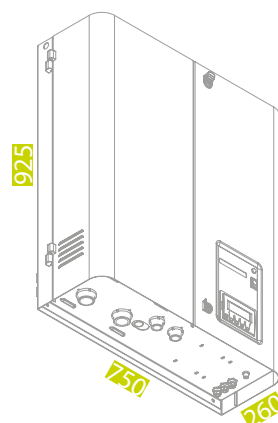
10÷80 kW

COMPACT WALL SUBSTATIONS SINGLE AND MULTIPLE LIVING UNIT



FONDOD.H.W. | FONDOHEATING **FONDOCOMBI**

- 30÷150 kW for heating in standard configuration and max 180 kW for domestic hot water (DHW).
- Equipped with ultrasonic heat meter compliant with EN 1434/MID, setting and security organs.
- PN 25 for 1° circuit.
- For hot and superheated water network.
- For heating and/or domestic hot water.
- Customizable.
- Certified CE/PED.
- Compact dimension.
- Ready for setting, telemetering and remote control.
- Setting for flow rate limitation, power and return temperature.
- Regulation of fixed-point temperature or compensated outdoor temperature.
- Easy to upkeep.



30÷180 kW

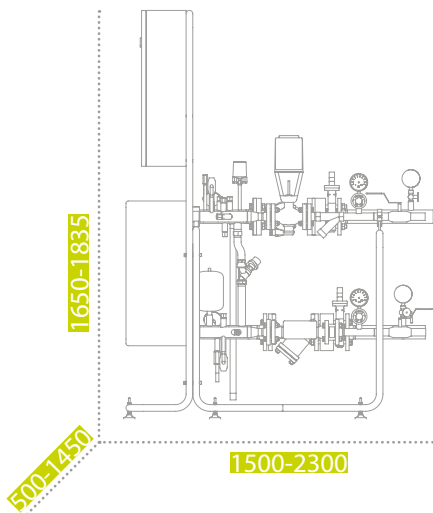


BRAZED HEAT EXCHANGER BASE SUBSTATIONS



MILANOC-S-D

- 50÷5,000 kW for heating in standard configuration.
- Equipped with ultrasonic heat meter compliant with EN 1434/MID, setting and security organs.
- PN 25 for 1° circuit.
- Version with double heat exchanger (max 5,000 kW).
- For hot and superheated water network.
- Version for cooling, heating or DHW.
- Customizable.
- Certified CE/PED.
- Small dimension.
- Designed for disassembly.
- Ready for setting, telemetering and remote control.
- Setting for flow rate limitation, power and return temperature.
- Regulation of fixed-point temperature or compensated outdoor temperature.



50 ÷ 5.000 kW

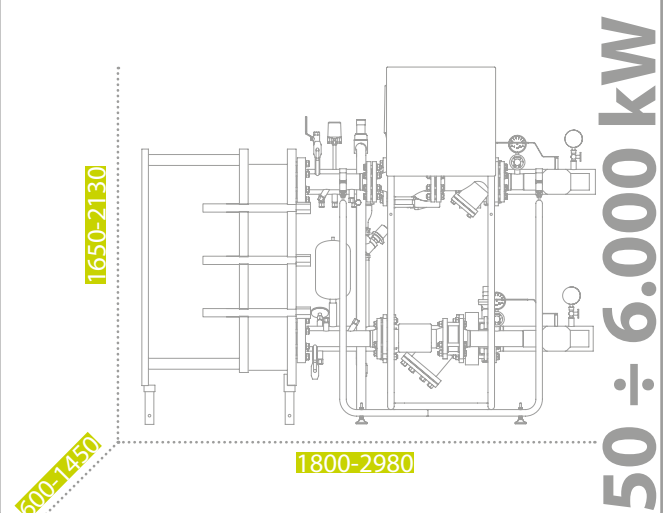
GASKETED PLATE HEAT EXCHANGER BASE SUBSTATIONS



TORINO C-S-D

VARESEC C-S-D

- 50÷6,000 kW for heating in standard configuration.
- Equipped with ultrasonic heat meter compliant with EN 1434/MID, setting and security organs.
- PN 25 for 1° circuit.
- Version with double heat exchanger (max 6,000 kW).
- For hot and superheated water network.
- Version for cooling, heating or DHW.
- Customizable.
- Certified CE/PED.
- Small dimension.
- Designed for disassembly.
- Ready for setting, telemetering and remote control.
- Setting for flow rate limitation, power and return temperature.
- Regulation of fixed-point temperature or compensated outdoor temperature.



50 ÷ 6.000 kW



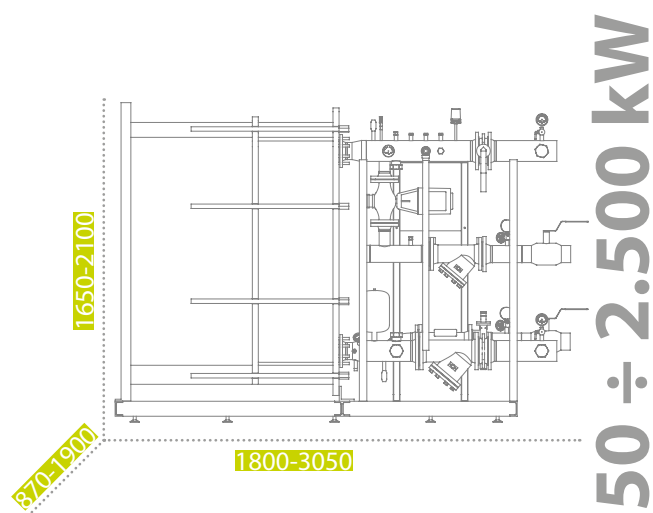
DISTRICT COOLING NETWORK BASE SUBSTATIONS



BIELLA BIELLAD



- 50÷2,500 kW with brazed and gasketed plate exchanger.
- Equipped with cooling meter, setting and security organs.
- PN 25 for 1° circuit.
- Version with double exchanger (max 2500 kW).
- For district cooling network.
- Customizable.
- Certified CE/PED.
- Small dimension.
- Designed for disassembly.
- Ready for setting, telemetering and remote control.
- Setting for flow rate limitation, power and return temperature.
- Regulation of fixed-point temperature or compensated outdoor temperature.

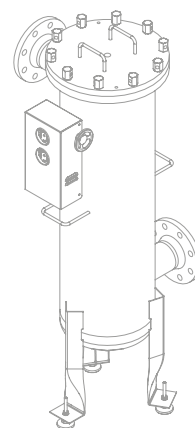


BAG FILTERS



COLOGNO C-S

- 1° and 2° circuit easy to be cleaned.
- Temporary or permanent installation.
- Work to make efficient the heat exchanger and reduce costs.
- 15÷40 m³/h.
- PN 10÷PN 25.
- For hot and superheated water network. Max 135°C.
- 4 filtration levels (Super Soft, Soft, Medium, Hard) minimum 0,5 micron.
- Measuring system to manage pressure and stoppage.
- Remote signal for maximum dirt level.
- Certified CE/PED.
- Volume: 20-55-80 liter
- In/out: DN65-DN80-DN100



15 - 25 - 40 m³/h



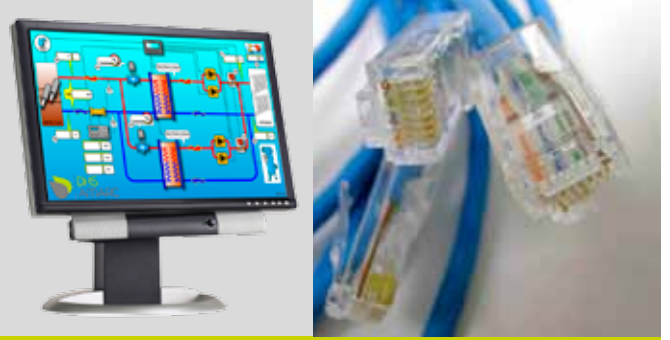
PROGRAMMABLE PID REGULATOR



AVD500

- Programmable PID regulator.
- Daily and weekly schedule with time slots setting.
- Perpetual calendar with automatic management of summer time clock change (BST) and leap year.
- 20 typologies of schemes already preloaded.
- Setting with compensation criterion base on external temperature.
- Possibility to activate antifreeze, antilimestone, antilegionella functions.
- Suitable for many type of thermal probes.
- Contemporary management of flow rate limit, power and temperature at 1° circuit.
- Management of circulator and single or tween pump.
- Ready for remote control via Meter-Bus.

MANAGEMENT SOFTWARE FOR DISTRICT HEATING SYSTEM



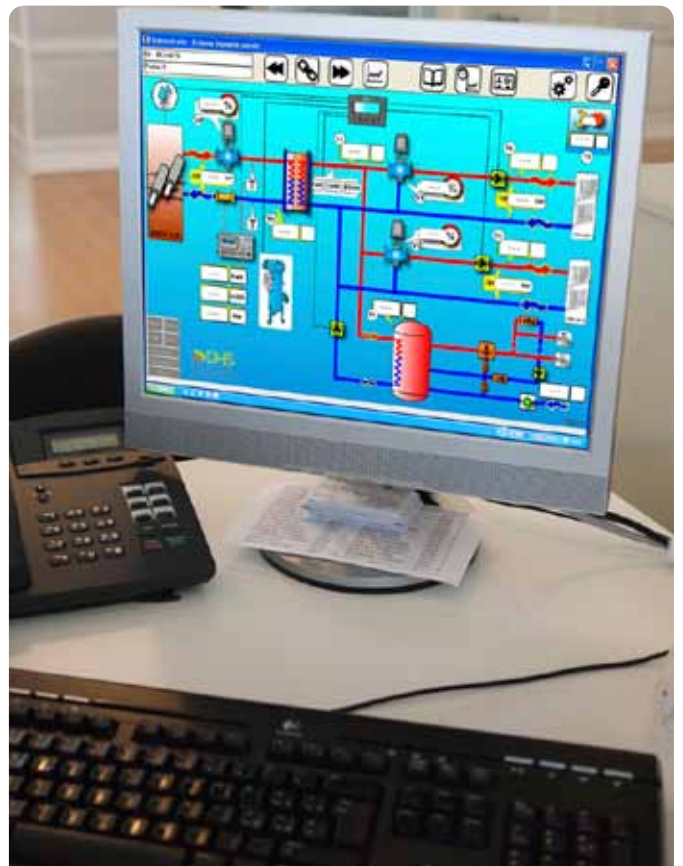
LIBERO500

- Management system to manage, set and optimize district heating system.
- Automatic telemeter of thermal energy use.
- Substations remote control.
- Monitoring Δp in significant points.
- By-pass valve management and control.
- Pumping units management and optimization for district heating power plant.
- Management and monitoring alarms.
- Continuous monitoring of network parameters, data storage and trend management.
- Invoice with customized forms.





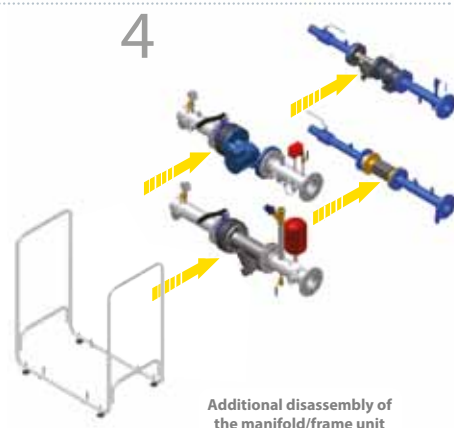
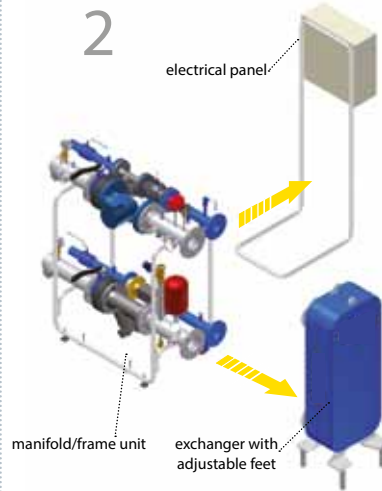
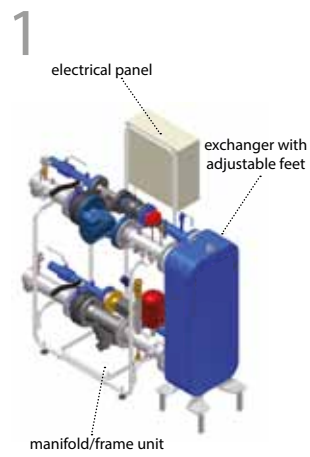




TYPICAL OPERATING CONDITIONS FOR DISTRICT HEATING SUBSTATION

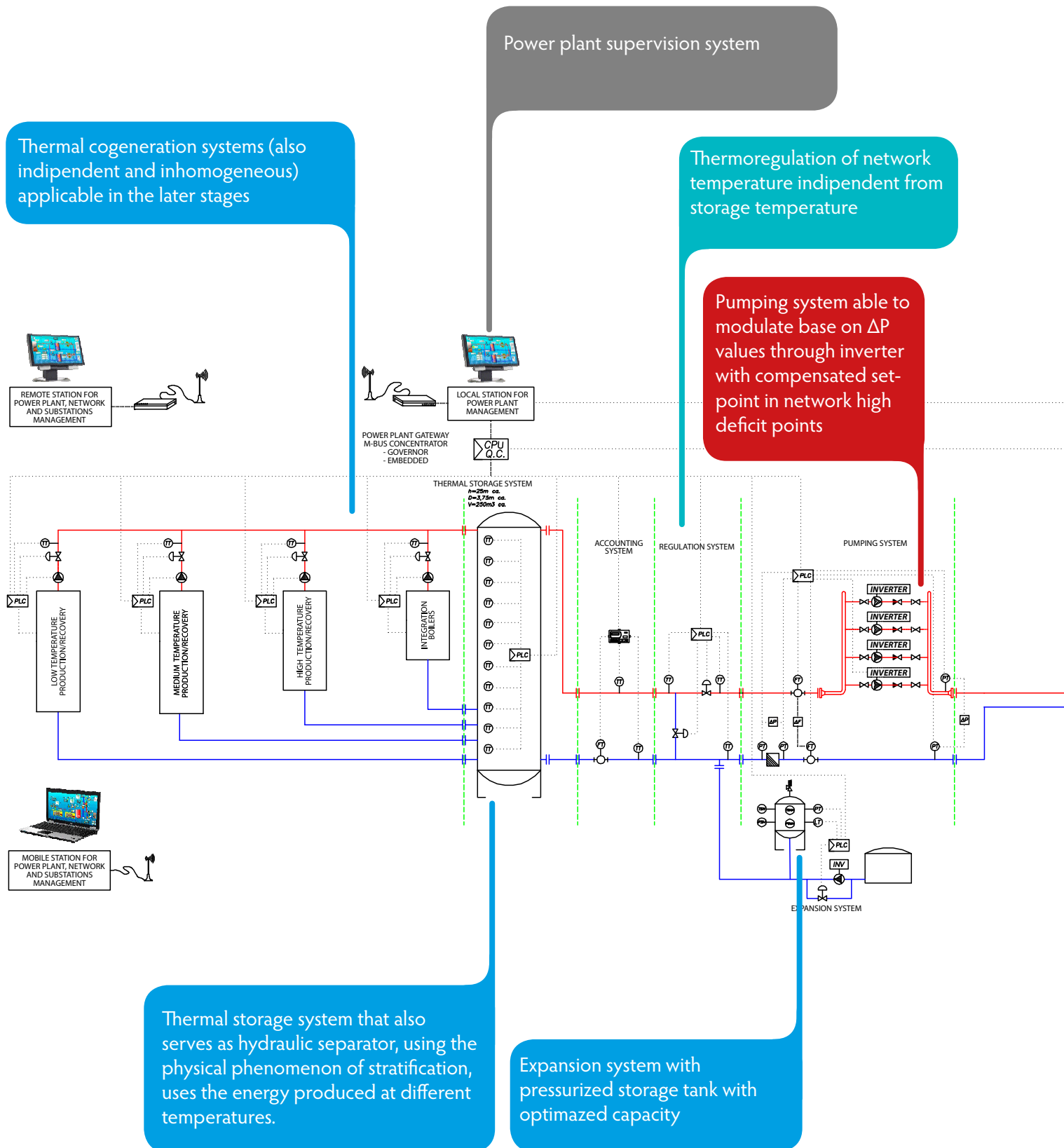
	HOT WATER	SUPERHEATED WATER	COOLING	DIRECT D.H.W.	INDIRECT D.H.W.
PRIMARY CIRCUIT THERMAL PROJECT	90/65°C	115/65°C	7/11°C	85/55°C	85/55°C
SECONDARY CIRCUIT THERMAL PROJECT	60/75°C	60/75°C	14/8°C	25/50°C	30/55°C
LOSS OF LOAD (Δp) AT NOMINAL CONDITION 1° AND 2° CIRCUIT	< 10 w.c.m. (1°) < 3 w.c.m. (2°)	< 10 w.c.m. (1°) < 3 w.c.m. (2°)	< 15 w.c.m. (1°) < 6 w.c.m. (2°)	< 10 w.c.m. (1°) < 3 w.c.m. (2°)	< 10 w.c.m. (1°) < 3 w.c.m. (2°)

ALL AMARC DHS SUBSTATIONS ARE DESIGNED AND BUILT BASED ON DIFFERENT NEED LIKE TRANSPORTATION, ASSEMBLING AND INSTALLATION.



FUNCTIONAL DIAGRAM OF A DISTRICT HEATING SYSTEM

The functional diagram of the management system so as outlined below represents the consolidation of over 10 years of experience in the design, implementation and management of district heating plants. Using a standard design and construction facilitates all the operations related to the implementation of district heating systems like the cost of investment and the speed of embodiment, the operating cost and the certification process. It's still possible to integrate existing plants or change functionality based on specific customer needs.



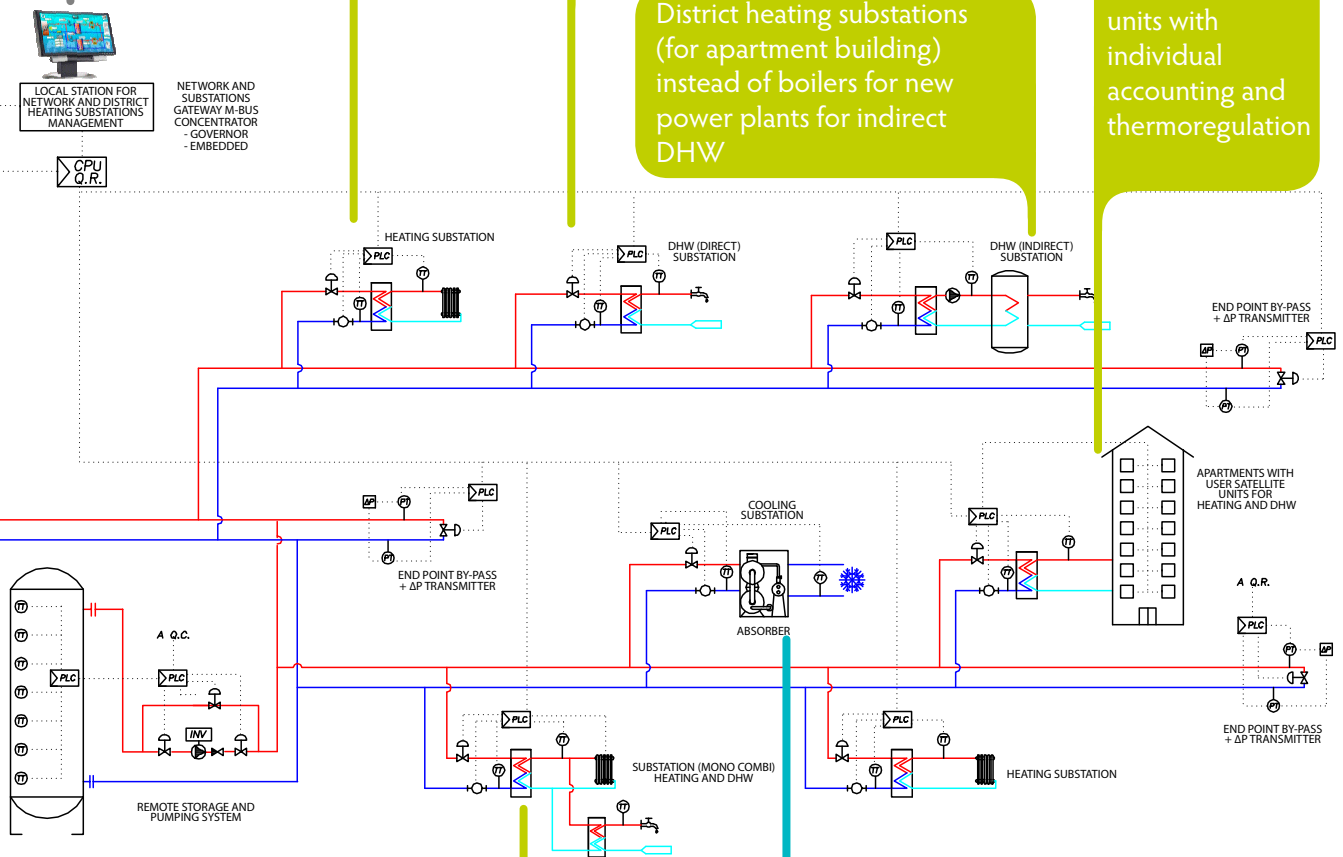
Remote control system and telemetering for district heating substations

District heating substations (for apartment building) instead of boilers for new power plants.

District heating substations (for apartment building) instead of boilers for new power plants for direct DHW

District heating substations (for apartment building) instead of boilers for new power plants for indirect DHW

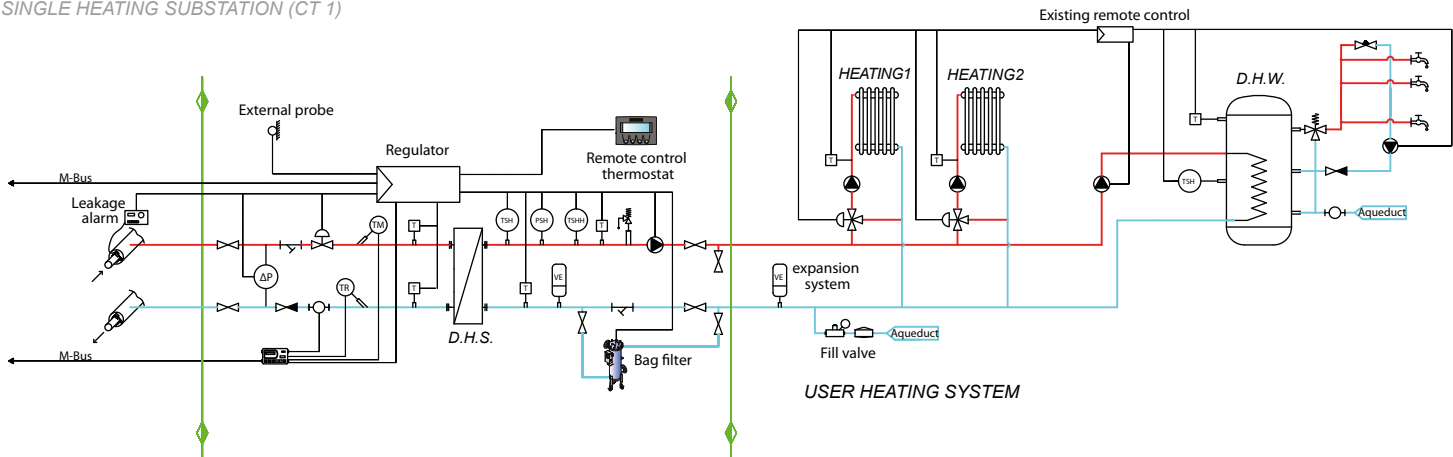
District heating substation with user satellite units with individual accounting and thermoregulation



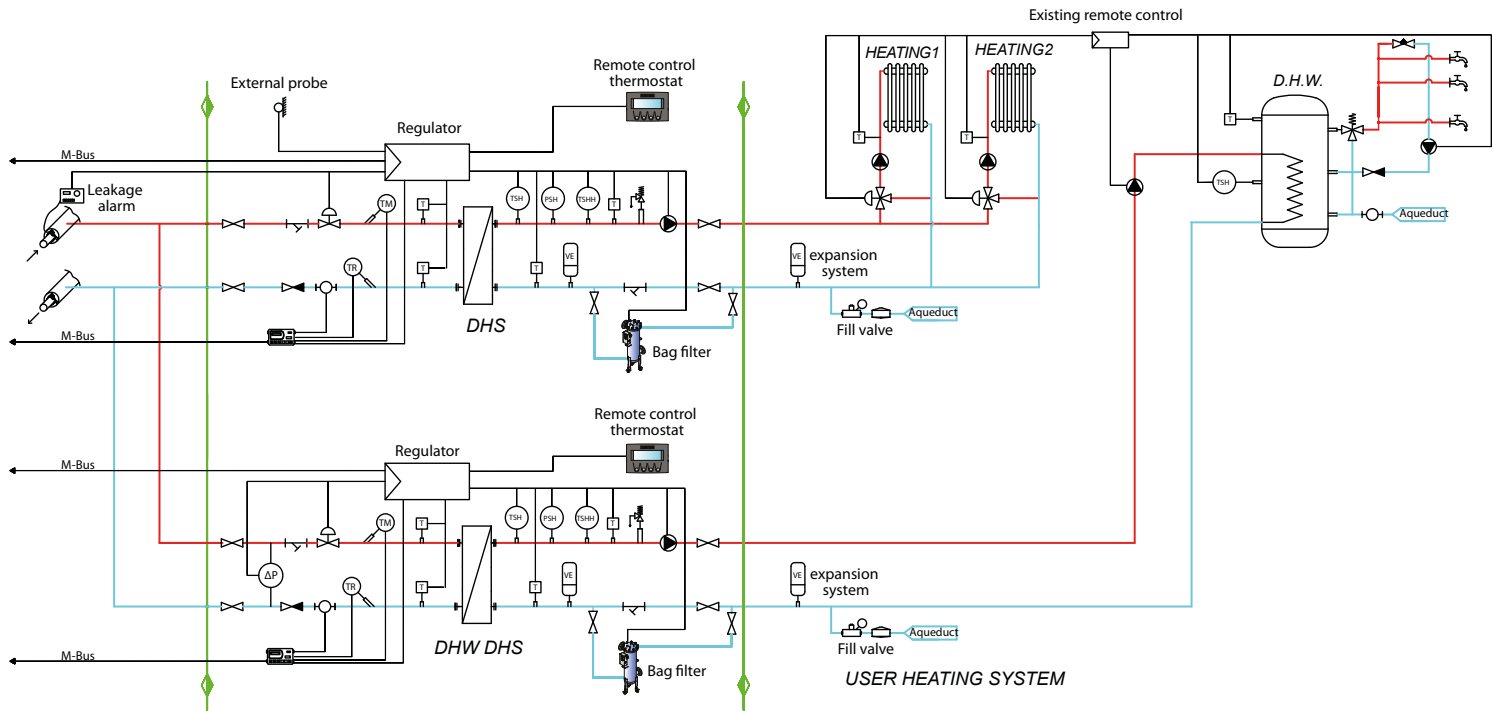
District heating substations (for one flat only) 15-120 kW for heating and/or DHW.

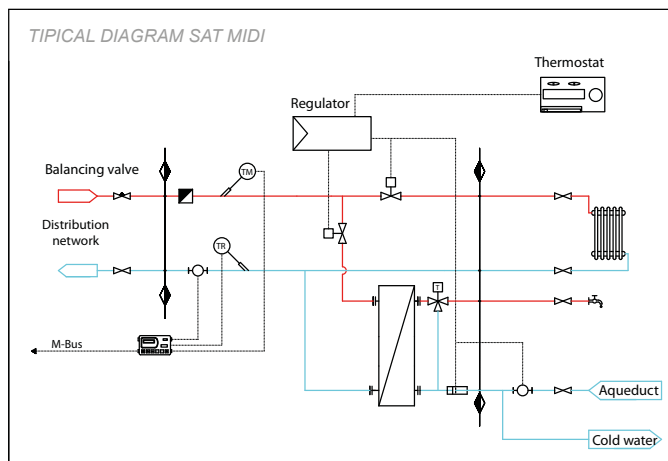
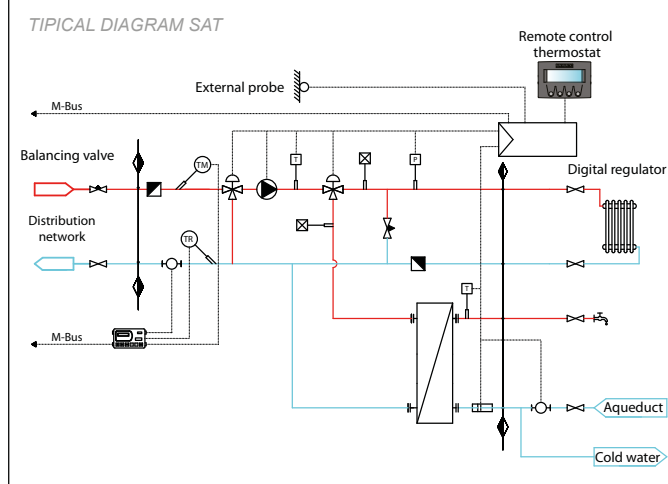
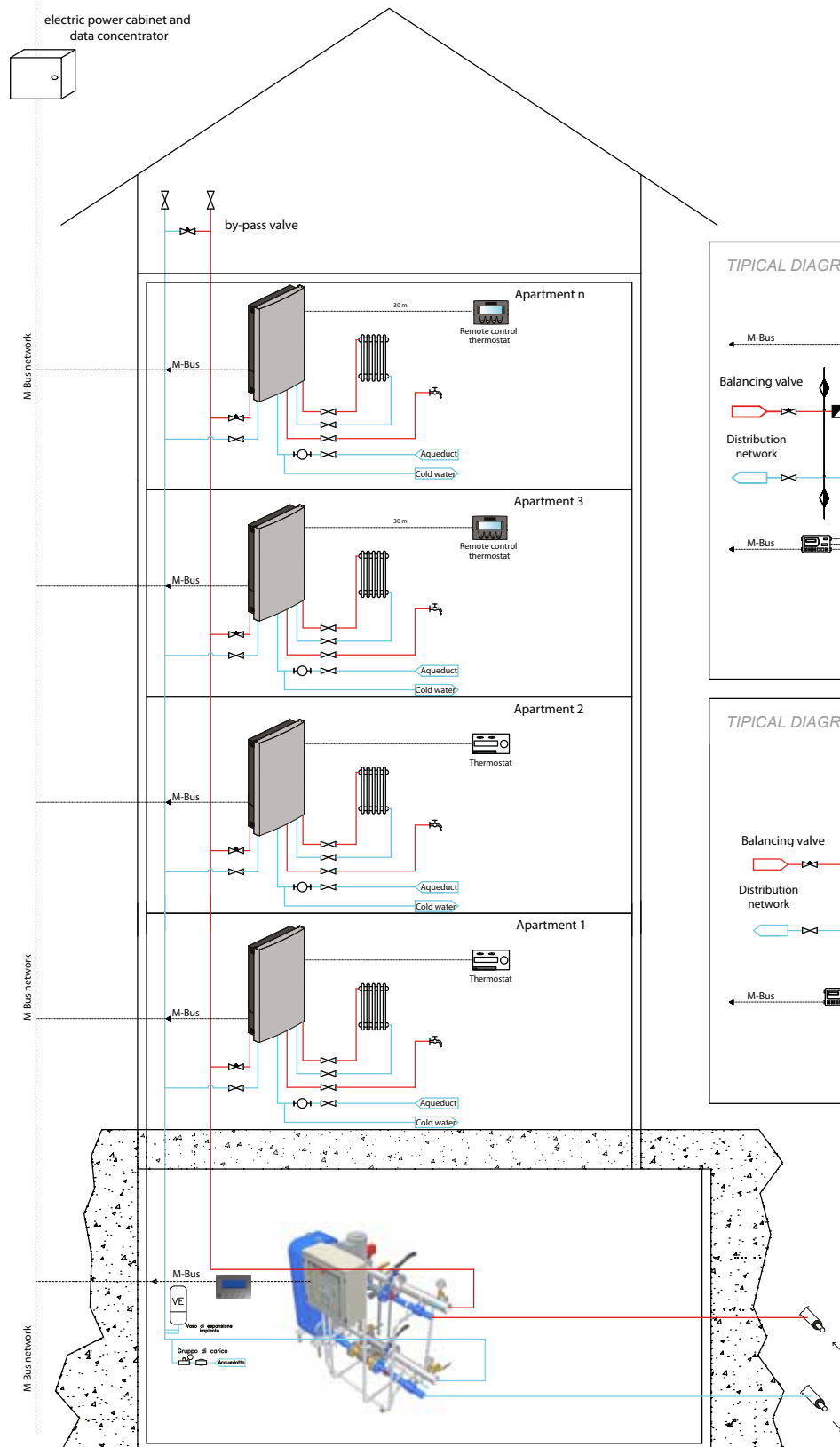
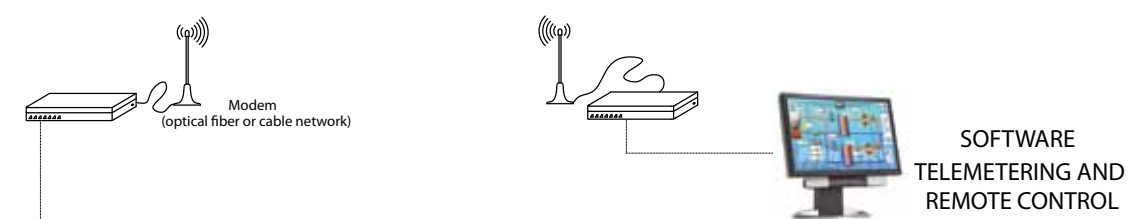
Absorbers for individual cooling systems or cooling substations for networks with 4 pipes.

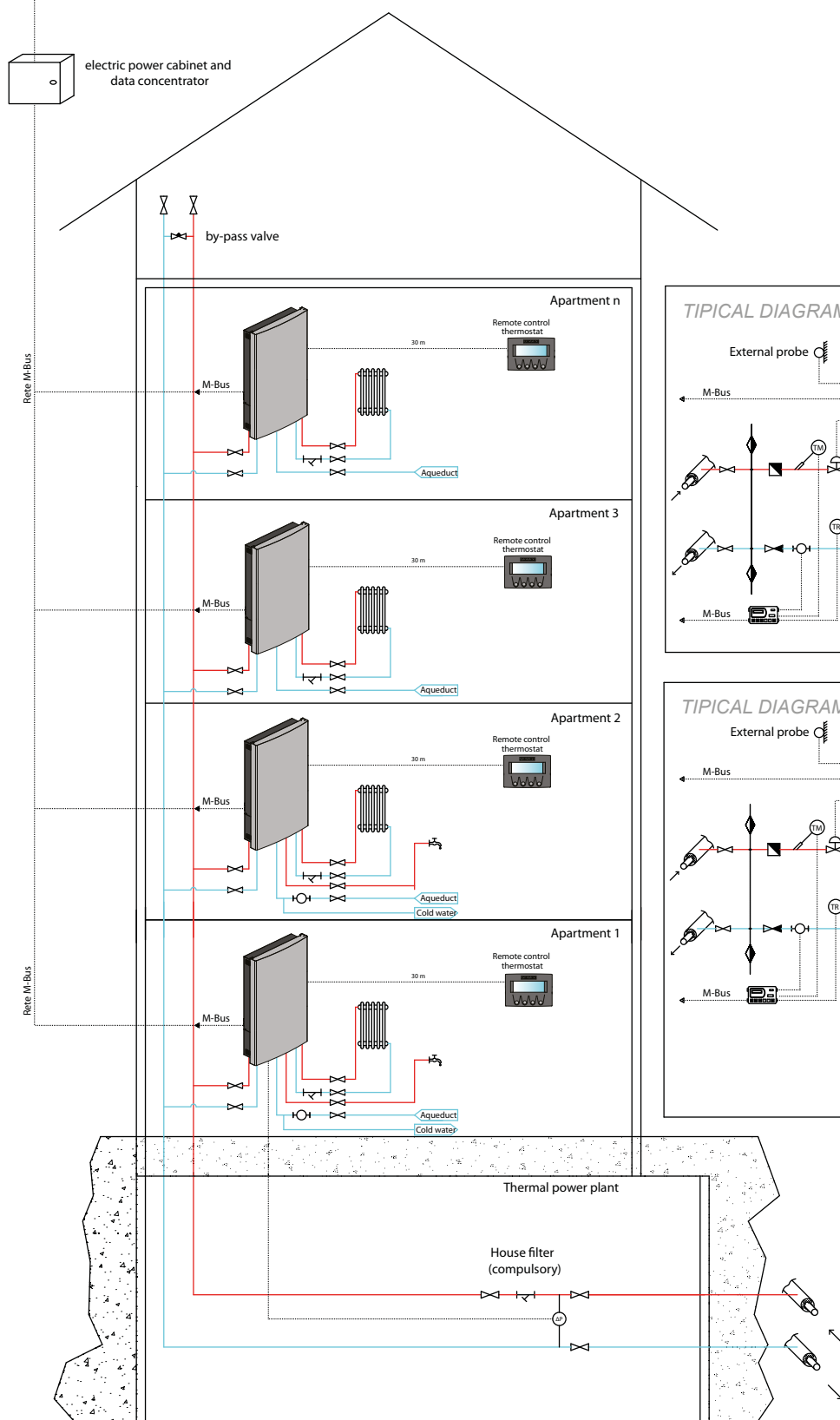
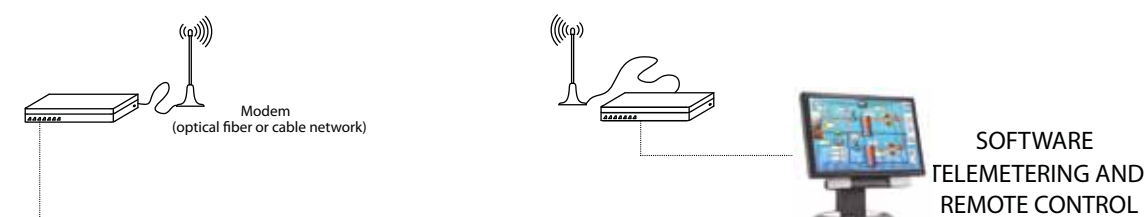
SINGLE HEATING SUBSTATION (CT 1)



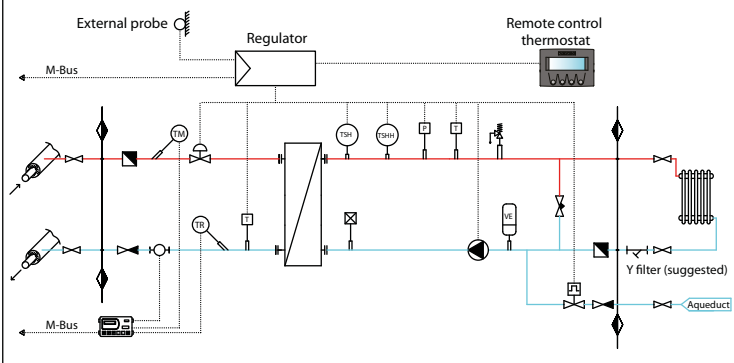
DOMESTIC HOT WATER (DHW) AND HEATING SINGLE SUBSTATION (CT 2)







TYPICAL DIAGRAM MONO SUBSTATION



TYPICAL DIAGRAM SST MONO COMBI SUBSTATION

