

03



Automation



Remote control



Electronic control cabinet



Wiring



Functional start-up



Control system

Since 1994 our air handling units have been fitting with the necessary control equipment. Thus, we offer the complete air handling unit function.

Overview

Control system

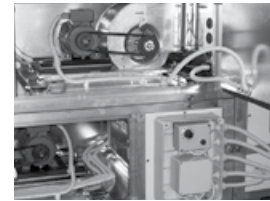
Since 1994 our air handling units have been fitted with the necessary control equipment. Thus, we offer the complete air handling unit function.

Apart from designing and supplying control equipment, control system programme includes the following:

- remote control,
- designing and constructing electric control cabinets,
- designing building management system (BMS),
- electric cable installation, connecting the external control equipment, air handling unit (or other devices) and the electric control cabinets,
- final functional start-up of the entire system, complete with all the measurements.



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Control system

■ Automation

To ensure the optimum operation of HVAC systems, we use control equipment by two world renowned manufacturers, Carel and Siemens, with which we integrate our own software. This provides the greatest possible flexibility and is thus a solution for even the most complex and comprehensive HVAC systems for ensuring comfort or meeting precise criteria. This adjustability and rich experience in Slovenia and abroad make it possible for us to issue unique functional warranties that guarantee that the buyer will meet their project parameters.

As peripheral equipment, we also install elements by top manufacturers, e.g. Belimo, Danfoss, Alfaco, Carel, IndustrieTechnic etc.



Control equipment by renowned manufacturers with our own software integrated

■ Remote operation

The simple and user-friendly operation of air handling units and comprehensive HVAC systems is provided by functionally faultless remote control units that make it possible to operate from one (PGD 1) to 32 (PGD3 – colour touchscreen) HVAC systems with just one operation unit.



Touch screen

■ Electric control cabinets

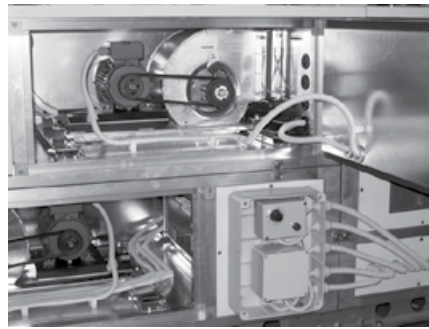
Our own design and manufacture of electric control cabinets provide complete adaptability to the client's or project's requirements. We manufacture internal or external versions of cabinets with an appropriate degree of protection from environmental impact and also explosion-safe versions. The cabinets contain all the power, control, regulating and signalization elements. During production, each electric control cabinet goes through a power and functional test.



Electric control cabinet

■ Wiring in a Facility or in Production

The wiring between the peripheral equipment that is integrated into the air handling unit, canal distributions and pipe installations and the electric control cabinets with integrated controller is implemented in accordance with the prepared electric design. At the request of the client, the assembly of peripheral elements and wiring in production is also possible. The wiring between the individual modules of an air handling unit and an electric control cabinet is implemented using special connector joints with the IP 67 degree of protection. Every air handling unit is physically constructed, wired and functionally initiated during the production process, therefore wiring in the facility is not necessary, which enables additional time savings during the realization of the project.



Wiring in production

■ Control Track

As part of the supply of functionally comprehensive air handling units, it is also possible to manufacture an entire control track in the air handling unit encompassing the installation of control valves, circulation pumps, stop valves and restriction valves, manometers, cleaning parts and the implementation of a suitably sealed transition from the air handling unit. Thus, the client only needs to provide an external connection to a hot or cold water supply.



Control track

■ Functional Start-up

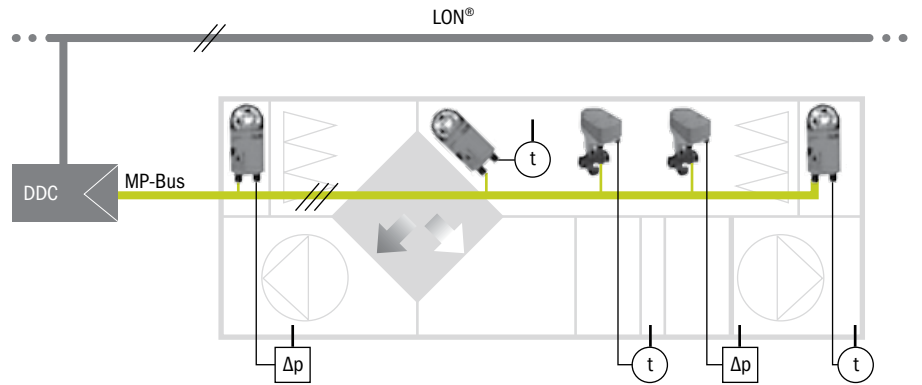
The last phase of the realization of the project is a functional start-up, which encompasses the setting of all project parameters, measurements of the intake and exhaust volume air flow rate and electric current consumption measurements. Upon completing the start-up, we give the buyer the entire documentation describing the system's operation and all warranty statements.



Functional start-up

MP bus communication

The use of MP-Bus communication drives of blinds, valves and electronic flow controllers provides an additional reduction of the costs of wiring and more detailed monitoring of the device's operation.



MP Bus communication

The Continuous Management of Cooling Power

The optimal achievement of a comfortable temperature in systems with direct expansion is provided by electronically controlled valves or with the continuous management of the compressor's frequency controller, which indirectly reduces the cost of energy. Even greater savings are provided with the integration and continuous management of digital screw compressors that are used to change the cooling power (and thus the electricity) from 20 % to 100 %. The management of cooling power via the digital compressor, which enables the variation of cooling power from 10 % to 100 %, is a novelty.



Compressor

■ Building management system (BMS)

If the facility has many different installations in various remote locations, the CCS provides the user or the maintenance personnel with complete and transparent control over the operation of these systems, which allows rapid intervention in the event of failures. Based on data obtained with the control system, a detailed analysis can be made from the viewpoint of energy conservation, which is the basis for taking measures for optimizing the operation of the individual subsystems.

The software provides:

- a user friendly graphical overview of the system as a whole,
- the management of a database of events, alarms,
- overview of alarms,
- overview of trends,
- overview of events,
- the management of alarms and events,
- calendar and scheduled operation,
- reports editor,
- right of access system,
- communication over a modem or the internet.

The software provides the integration of all communications protocols used in the area of air conditioning, namely:

- Modbus,
- BacNet,
- Lon Works,
- Konex (KNX),
- an option of integrating over OPC.

Alarming with GSM is an additional option.

SCADA by the manufacturers Citect and Carel is used for software.



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