ECL Apex 10

A configurable controller for district heating

ECL Apex 10

Dedicated to district heating. Preprogrammed. Easy to extend

The ECL Apex 10 controller and extension modules enable flexible solutions within district heating

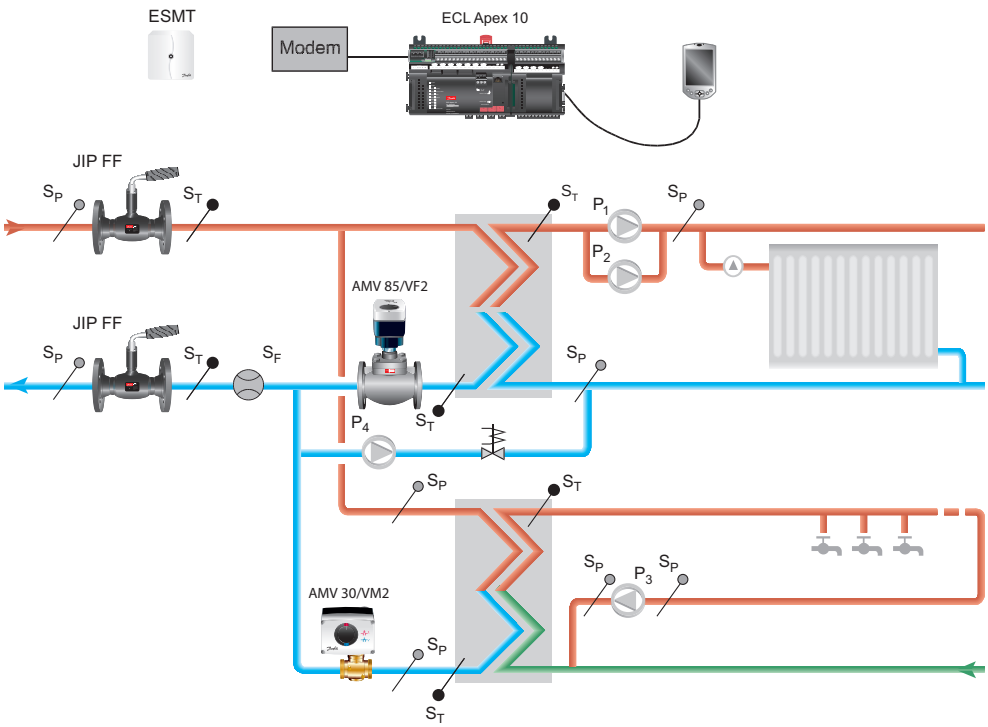
The ECL Apex 10 is a dedicated district heating controller preprogrammed with all relevant control functions and applications. We have integrated many years of experience with electronics design and control engineering in the product.

ECL Apex 10 is applicable in large substations and distributor stations and can be connected as stand alone or in a network.

As a consequence it can be used in supervisory control and data acquisition systems (SCADA). The controller can be extended with a number of modules to fit any heating application with up to 5 circuits within heating and domestic hot water (DHW).

Advantages

- Pressure, flow and temperature control
- Data logging facilities
- Alarm functions associated to either system, application or monitoring failures
- Control of makeup water and sequential pump control
- Easy and cost-effective commissioning and service; a variety of application templates are ready for use
- Back up/restore function; specific application programming can be stored and used in another similar application
- Flexible as to hardware and software and easy to extend according to necessary inputs and outputs
- Easy communication with SCADA systems and remote access via modem
- Boolean Logic as free programmable part
- Different user levels for simple controlling or programming



Years of experience in electronics design and control engineering integrated in one product

Advanced controlling in a simple user interface

Flexible user interface and user level

The controller and its service tool can be operated with the help of a PDA or a PC and either on-site or remote via modem.

The service tool offers four different user levels: supervisor, service user, daily user and default user.

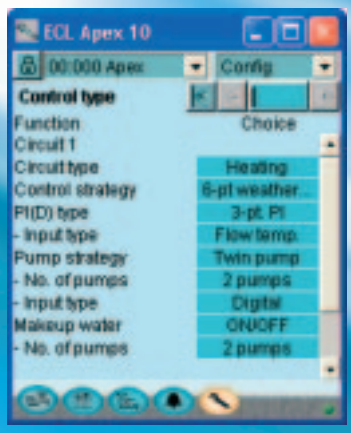
Like a PC the PDA contains programs and functions. Hereby installation guidelines as well as data sheets, new applications and application statistics (data logging) can be downloaded or stored.

Control functions

The required flow temperature is controlled with influence mainly from the outdoor temperature (weather compensation) but can also be influenced by:

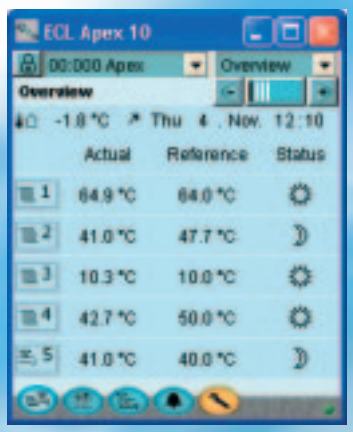
- Time schedule (comfort/setback)
- Optimized time control
- Boost function
- Maximim and minimum flow temperature limitations
- Return temperature-, flow- and energy limitation
- Wind and sun intensity- and universal limiter
- Anti-bacteria function (domestic hot water circuit)
- Frost protection function

Adjustment of control parameters where each parameter has a short description and the actual value is shown. The primary values of the heating circuit are shown in the top of the window.

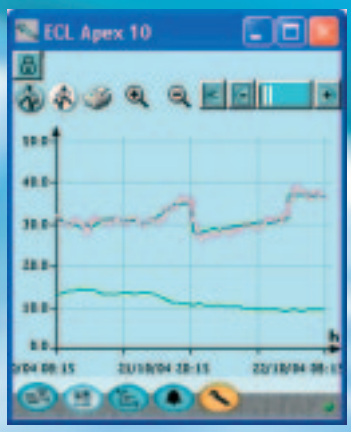


Configuration of control functions where the functionality of each heating circuit can be configured for individual control functions.

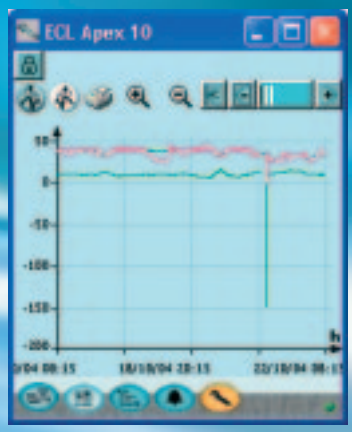
The primary parameters and sensor values of the heating circuit.



Overview of all circuits; heating and domestic hot water.



12 hours of data logging in a heating circuit. The log probes are: Outdoor temperature, flow temperature and flow reference.



One week of data logging in a heating circuit. The log probes are: Outdoor temperature, flow temperature and flow reference.

Controller and extension modules

Type	Analog inputs (AI)	ON/OFF outputs (DO)		ON/OFF inputs (DI), opto		Analog outputs (AO)	Module with switches	Code no.
	For sensors, pressure, flow and energy transmitters, etc.	Relay (SPDT)	Triac	Low voltage (max 80 V)	High voltage (max 260 V)	0-10 V d.c.	For override of relay outputs	
ECL Apex 10	11	4	4	-	-	-	-	087B2500
Extension modules								
ECA-XM 101A	8							087B2610
ECA-XM 102A				8				087B2620
ECA-XM 102B					8			087B2621
ECA-XM 204A		8						087B2740
ECA-XM 204B		8					x	087B2741
ECA-XM 205A	8	8						087B2750
ECA-XM 205B	8	8					x	087B2751
ECA-XM 210A*	7	3		2		2		087B2760
The following extension module must be placed on the base part in the controller. There is only room for one module.								
ECA-OB 003A						2		087B2530

**) ECA-XM 210A is equipped with the M-Bus communication acc. to EN1434-3 and pulse input for frequencies up to 200Hz.*

ECL Apex 10 in SCADA systems

ECL Apex 10 can communicate with components and systems through RS232 communication or modem connection.

The controller operates with a standard interface supporting an OPC data access server (OLE for Process Control).

The OPC is used to move data from the ECL Apex 10 to the SCADA system enabling network monitoring.

Danfoss district heating solutions

A sound choice whenever district heating systems are planned, installed or upgraded

The ECL Apex 10 is part of our range of electronic controllers also including ECL Comfort. In addition, Danfoss offers a comprehensive range of self-acting controllers for differential pressure, flow and temperature control, actuators and valves, ball valves as well as heat exchangers. Danfoss also offers substations in various sizes according to customer requirements.

Our controllers and substations ensure a high level of comfort and optimum energy utilization. Danfoss is therefore a sound choice whenever district heating systems are to be planned, installed or upgraded.

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