

VISONIK[®] DDC

Function sheet

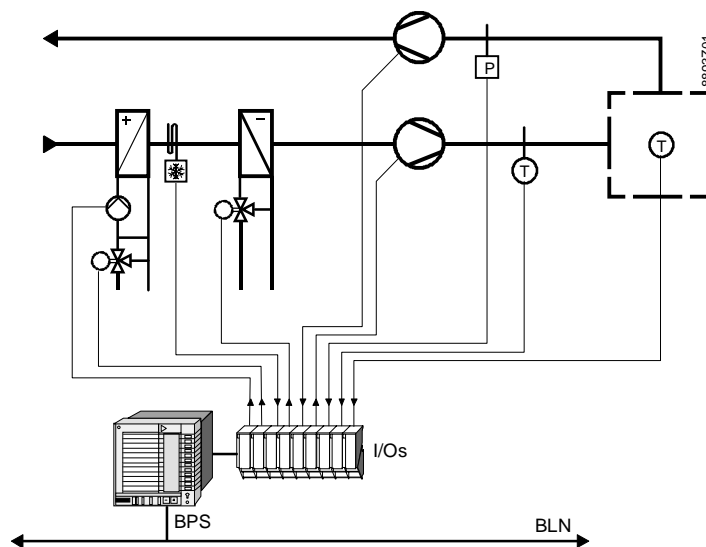


DDC stands for "Direct Digital Control". In building automation and control, this term normally is used in connection with an automation station. DDC automation stations in brief DDC stations have a digital computer. This computer directly implements the control functions for the assigned building services system via the connected inputs and outputs.

Use

Example

The following illustration shows a simple building services system which is controlled by means of a DDC station of the VISONIK system:



Explanations
(illustration)

The primary elements relative to DDC are:

Element	Explanation
BPS	Building Process Station: DDC station of the VISONIK system
I/Os	Inputs and outputs from and to the building services system. Connected to the BPS via I/O modules.
BLN	Building Level Network: Connects the individual DDC stations with each other and with the superposed management station via the VISONIK Data and Communication Server (DCS). This is done for communication, operation, and data security purposes.

DDC stations: description

Properties

DDC stations similar to the VISONIK BPS normally are located in areas with a high concentration of information points of the building services system. They have the following properties:

Properties	Explanation
Digital process data processing	The signals from the building services system that are digitised by the I/O modules are acquired and processed. Where appropriate, signals such as switching and positioning commands are issued to the system. The information can be transferred across the entire system.
Freely programmable	The functions can be freely arranged in terms of software to suit the requirements of the system.
Multitasking/real-time operation	Several tasks are processed in parallel and in real-time.
Possible autonomous operation	Sufficient operation of the building services system is guaranteed even if communication to the other levels of the building automation and control system is impossible.

Functions

DDC stations primarily provide the following functions:

- All physical basic functions: Signalling, measuring, counting, switching, positioning.
- Extended processing functions: Monitoring, controlling, time-dependent switching, calculating/optimizing, statistics
- Communication to other DDC stations, to integrated individual room control systems, and to the superposed system
- Operation and display both local and on the superposed system

Benefits

In DDC stations, control and auxiliary functions are implemented in terms of software. As a result, DDC stations offer the following benefits as compared to conventional control systems:

Benefit	Reason
Space requirement and wiring efforts	Both are lower because of less hardware: Control devices, reference value transmitters, priority control, limiters, locking relays, timers, registration and other auxiliary equipment are no longer needed.
Data security	Application libraries containing tested function blocks for control, monitoring, and optimisation are available to the DDC stations. The plant operating programs of all DDC stations can be saved to the DCS's hard disk or to external PCs as a backup and reloaded as needed.
Efficiency and flexibility	The plant operating programs are generated using computer-aided tools and predefined function blocks. Customised solutions for special applications can easily be implemented due to the COLBAS programming language's problem-oriented set of instructions.

Additional information

Refer to the following function sheet for more information on the VISONIK BPS:

Document No. Title
CM2N8883E Building Process Station