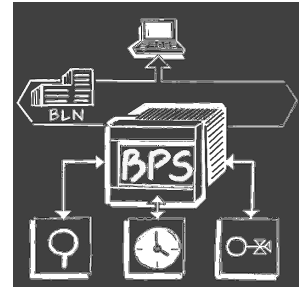


VISONIK®

Building Process Station

Function sheet



The VISONIK Building Process Station, in short VISONIK BPS, is a programmable DDC station used for building automation. Thus, the BPS contains all required

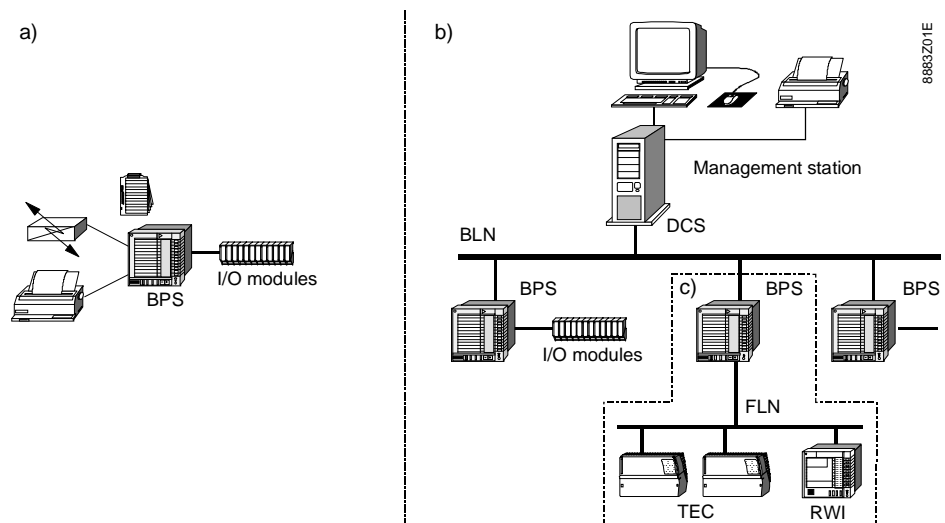
- Basic functions
- Processing functions
- System functions

This document provides an overview of these functions.

Use

The illustration below shows three typical VISONIK BPS applications:

- a) As an autonomous station with I/O modules and local operation by means of operating cards (POP Cards), equipped with printer and modem for dial-up communications
- b) In a linked system with several substations on a Building Level Network (BLN) with superposed Data and Communication Server (DCS)/management station
- c) As a master unit to integrate subsystems such as individual room controllers (TEC) and AEROGYR ventilation controllers (RWI) via the Floor Level Network (FLN).



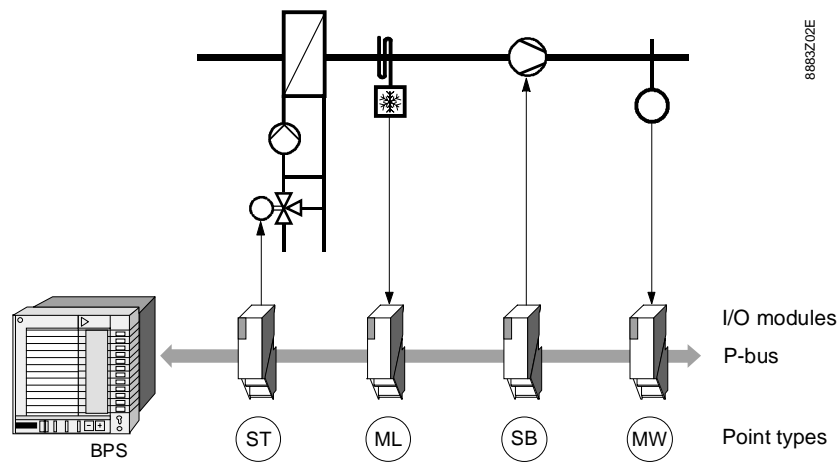
Notes on the above terms

The description of the BPS functions follows the building automation terminology as applied in VDI 3814, but includes also corporate, system-specific terms.

Basic functions

Physical basic functions

The physical basic functions in VISONIK systems are closely related to I/O module points and I/O modules. They physically connect the BPS via the P-bus (process bus) and field wiring to the inputs and outputs of the devices in technical installations as shown below (simplified illustration):



Explanations (illustration)

The I/O modules transform the various signals of the plant components to uniform signals of the VISONIK BPS and vice versa. The I/O module range comprises modules to cover all basic building automation functions. Each basic function is assigned the associated point type in the VISONIK BPS:

Basic function	Point type	Example
SIGNALLING	ML	Signalling contact, continuous signal (normally open contact/normally closed contact)
MEASURING	MW	Sensor, e.g., with Ni1000 element
COUNTING	ZW	Counting pulse transmitter for electric and gas demand
SWITCHING	SB	Relay output, continuous command, mono-stable
POSITIONING	ST	Positioning signal 3-point or continuous for mixing valve

Number of I/O module points

In the VISONIK BPS, up to 224 I/O module points with the respective basic functions can be generated. Addressing at the I/O modules occurs via address plugs.

Virtual basic functions

In accordance with VDI 3814, virtual basic functions represent information derived or generated from physical or processing functions. These functions are available in the form of information points for further processing similar to the physical basic functions.

Example for measuring:

The virtual basic function MEASURING is the result of the physical basic function MEASURING and the processing function "Convert raw measured value to physical unit"; e.g., analog input AI of VISONIK BPS: AI is the current, converted measured value (°C) in point type MW.

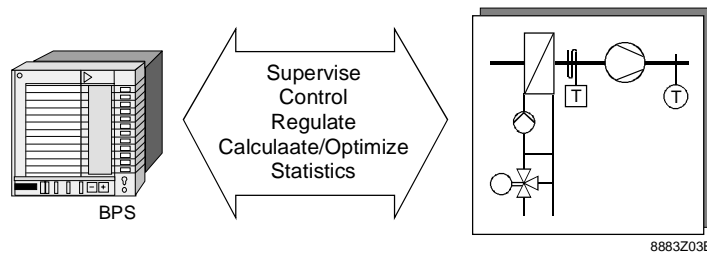
Communication with management level

The values of all physical and virtual basic functions in the VISONIK BPS can be communicated to the management level where they are processed and displayed. Access to the basic functions from the management level is possible, but it is subject to the required functionality and the assigned access rights.

Processing functions

General tasks

Processing functions are used mainly for building installation processes. The tasks are:



BPS functions

The table below contains the processing functions that are available in the VISONIK BPS for the above tasks:

Task	Processing functions
Supervising	<ul style="list-style-type: none"> - Execution check on switching commands (feedback) - Limit value supervision (measuring and counting values) - Operating hours count (e.g., for pumps and fans) - Event-oriented reaction programs (event processing) - Signalling functions: Fault and alarm messages to local printer, to superposed system level, or to a tele printer (remote alarming)
Control	<ul style="list-style-type: none"> - Plant control with the associated plant points (PLT) - DISPATCH function (selecting and distributing of values)
Regulating	<ul style="list-style-type: none"> - P, PI, PID controller block - SEQ function (sequence and cascade controller) - STR function (self-tuning-regulator)
Processing/optimizing	<ul style="list-style-type: none"> - Timeswitch program with weekday, exception day, and special day catalogues - Daylight saving/standard time changeover as per EU standards or programmable - Definition of time zones in linked systems - Optimum Start/Stop Program OSTP - Network return program
Statistics	<ul style="list-style-type: none"> - Output of system, alarm, error reports, etc. - Statistics messages on temperatures, energy values, etc. - Recording of process data from the technical installations (DP-BPS)

Additional information

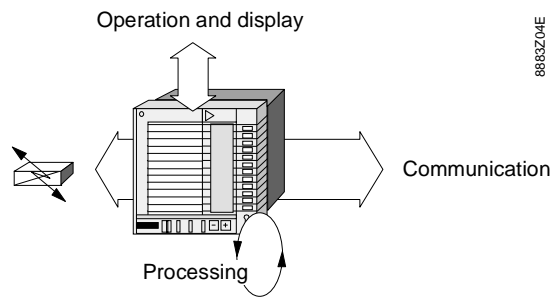
In addition to this function sheet, the following documents contain further information on the VISONIK BPS:

Document no.	Title
CM2N8880E	BPS function sheets, overview
CM2N8301E	Building Process Station, data sheet
CM2B8301E	Building Process Station, operating instructions
CM2Z8567E	VISIONIK Point Types and Parameters (expert documentation)
CM2T8567E	VISIONIK System Basics (expert documentation)

System functions

General tasks

The system functions govern the general functions of the automation station. These include the following tasks:



In the VISONIK BPS, the system functions primarily are ensured by their respective operating system. This operating system works in real time and allows for multi-tasking (simultaneous processing of different tasks). It is permanently saved in EPROM on the VISONIK BPS's program card.

BPS functions

The table below contains the system functions that are available in the VISONIK BPS for the respective tasks:

Task	System functions
Operation and display	<ul style="list-style-type: none">– Selection and display of processing values via keyboard and LCD display at the VISONIK BPS– Execution of manual commands, in accordance with the active POP Card (Personal Operating Process Card)– Operating and display via dial-up communication
Communication	<p>Data exchange via the VISONIK BPS interfaces using:</p> <ul style="list-style-type: none">– directly connected peripheral devices for initialization, downloading programs, operation and data output– I/O modules via the P-bus– partner stations on the Building Level Network (peer-to-peer)– a superposed management station on the BLN– integrated room management systems/third-party systems– distributed stations via a modem (dial-up communication)
Processing	<p>Processing of functions and links defined in the plant operating program as per the stored processing rules (DDC standard functions)</p>

Plant operating program

The plant operating program includes project-specific basic, processing, and system functions for the respective technical installations. This program consists of a combination of predefined and tested function blocks from program libraries. The combination is made by using the following software tools:

- VISOTOOL Autogen or
- European Tool Set

Free programming by using COLBAS *) is also possible. These tools allow for creating customized solutions for special applications.

*) COLBAS = **C**ontrol-**O**riented **L**anguage for **B**uilding **A**utomation **S**ystems

The complete plant operating program is loaded to the program card (RAM) of the VISONIK BPS on commissioning with the VISOTOOL Editor.