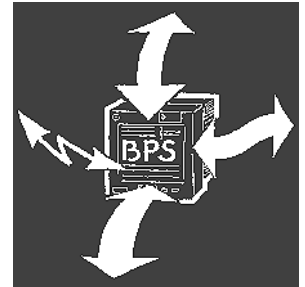


VISONIK®

BPS communication

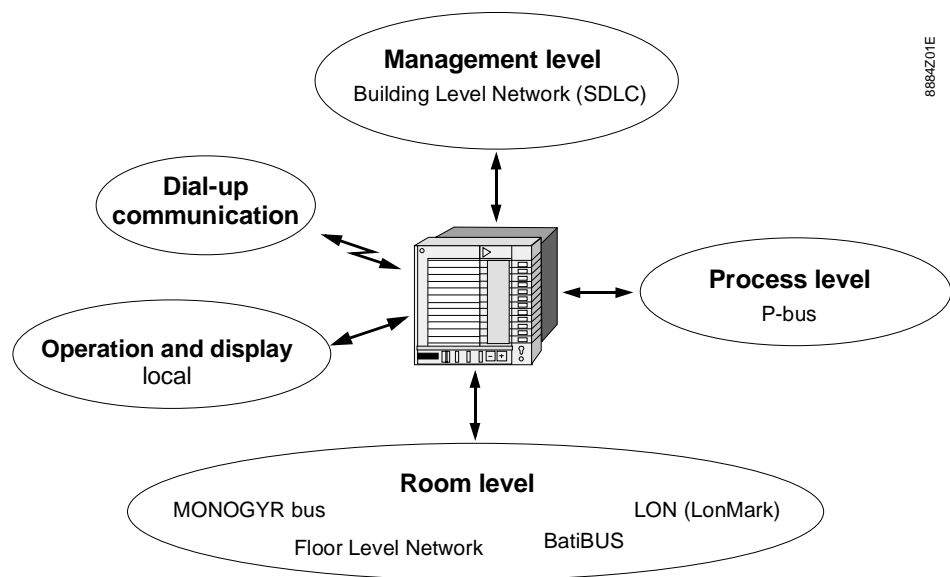
Function sheet



The VISONIK BPS uses its own interfaces to communicate with various partners and transfer media. This function sheet provides an overview of the individual communication ranges and of more detailed references.

Use

The illustration below shows the communication ranges of the VISONIK BPS:



Ranges and partners

In the above ranges, the following partners communicate with the VISONIK BPS:

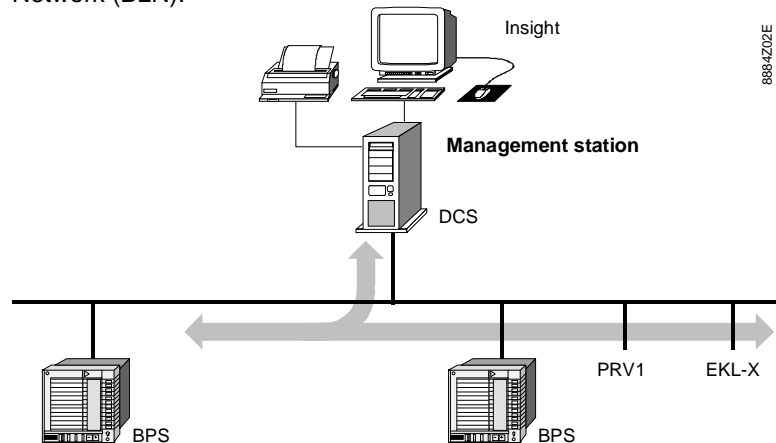
Range	Communication partner/medium
Management level	Management station via the Building Level Network (SDLC)
Process level	Field devices in the plants via I/O modules and P-bus
Room level	Room controller product ranges via the respective bus systems (FLN, LON, etc.)
Local operation and display	Operator using operating cards (POP Cards), terminal, or PC with VISOTOOL Editor
Dial-up communication	Remotely located VISONIK devices (DCS, BPS, etc.) via modem

The pages below contain a brief description of each of these ranges.

Management level

Building Level Network

The VISONIK BPS on the management level communicates via the Building Level Network (BLN):



Involved elements

The following elements are involved in the Building Level Network:

Element	Description
Management station	The management station in its simplest build contains a Data and Communication Server (DCS) with Insight for graphical display and operation, and a printer for alarms and reports.
BLN (SDLC)	In VISONIK, the Building Level Network (BLN) is an SDLC ring. SDLC stands for "Synchronous Data Link Control" and denotes the type of data transfer protocol. Data transfer is event-oriented. As a result, process values of a BPS can be made available to other stations and processed. A maximum of 32 process stations can be connected to an SDLC ring with DCS (BPS, PRV, EKL-X).
COM1	Communication card COM1 is used for connecting the VISONIK BPS to the Building Level Network (order separately).

BLN functions

The Building Level Network assumes the following two functions:

- Data exchange between the management station and the individual process stations (BPS, PRV, EKL-X)
- Data exchange between the individual process stations

Vice master function

The process stations on the same SDLC ring can exchange data without a superposed DCS (peer-to-peer communication). In this case, the BPS with the smallest address assumes the task of communication master. This ensures data exchange between the process stations.

Additional information

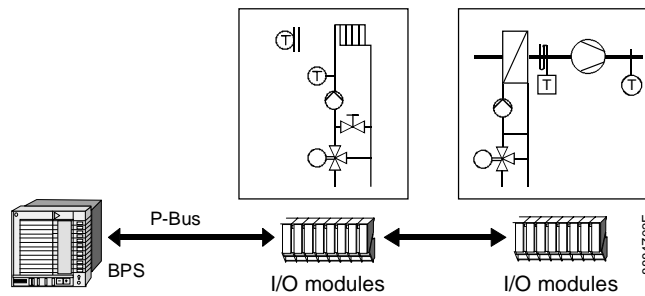
Refer to the following documents for more information on the SDLC ring:

Document no.	Title
CM2N8301E	Building Process Station, overview
CM2N8311E	Communication cards COM1, data sheet
CM2T8336E	Information on the SDLC ring (expert document)

Process level

P-bus

The VISONIK BPS communicates with the building services systems by means of the process bus, short P-bus:



Elements and functions

The communication elements and functions on the process level are:

Element	Description/Function
P-bus	<p>The P-bus is a proprietary data bus of Landis & Staefa. It has been designed as a control cabinet bus and, in its standard version (max. 50 m), consists of a 3-pin round cable.</p> <p>This bus connects the VISONIK BPS with the I/O modules.</p> <p>The VISONIK BPS per default has a P-bus connection at terminal block I (excepting station type PRV2.00).</p>
I/O modules	<p>The I/O modules are connected to the building services systems by means of field wiring. They convert the VISONIK BPS's uniform signal to the various signals for the plant components and vice versa.</p> <p>The VISONIK PBS cyclically transfers the data via the P-bus.</p>

Additional information

Further information on the P-bus as well as process level communications is available in the following documents:

Document no.	Title
CM2N8301E	Building Process Station, overview
CM2N8022E	Process bus, data sheet

BPS interfaces

The following table provides an overview of the VISONIK BPS communication interfaces:

Port	Interface	Connection for....
COM1	TTY1/V.24	Modem or local operation (main interface)
	TTY2/V.24	Printer or local operation (secondary interface)
	BLN	SDLC ring
COM2	FLN/MONOGYR	FLN bus or MONOGYR bus
Tool	TTY3/V.24	PC with VISOTOOL Editor (via tool adapter)

Third-party system couplings

Third-party system couplings are made via an interface on COM1, whereby the interface can be configured to TTY1 or TTY2. The VISONIK BPS then serves as a CFE device (**C**ommunication **F**ront **E**nd). Communication occurs by imaging the data points of the third-party system as VISONIK data points. Each third-party system coupling is an individual coupling. Below are two examples for third-party system couplings.

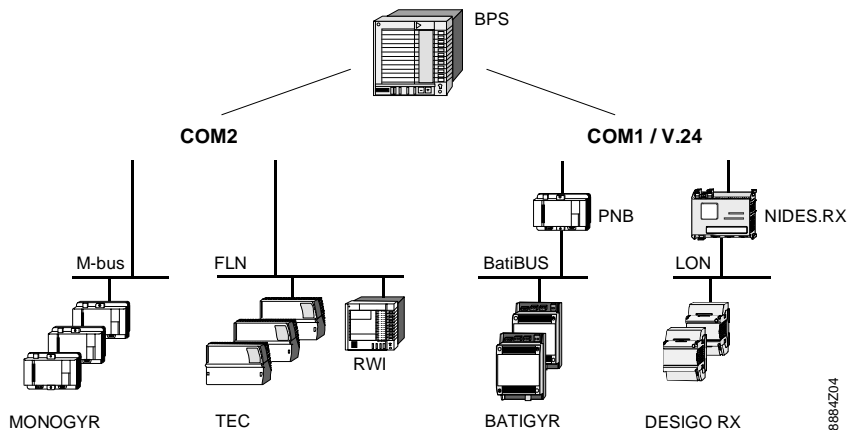
Room level

Two different couplings

Depending on the type of room control, we differentiate between two different types of couplings for communication between the VISONIK BPS and the room level:

- Directly at the communication card COM2
- By means of an interface at communication card COM1/V.24

The illustration below shows both variants:



Room control systems

One each of the following room control systems can be integrated into the VISONIK BPS via its own bus:

Control system	Interpretation
MONOGRYR	Room control system with MONOGRYR bus, directly on COM2
TEC/RWI	Room control system TEC or AEROGYR ventilation controller RWI on the Floor Level Network (FLN), directly on COM2
BATIGYR	Room control system, via BatiBUS node PNB on COM1
DESIGO RX	Room control system based on LON-bus/LonMark, via LON interface NIDES.RX on COM1

Note: COM1 and COM2 communication cards must be ordered separately.

Communication functions

As a rule, all main functions for local operation are available at the VISONIK BPS:

- Displaying
- Operating
- Printing

The individual functionality depends on the respective system and the type of integration. Refer to the specific function sheets for more detailed information.

Additional information

Refer to the following documents for more information on communication with the room control system:

Document no.	Title
CM2N8301E	Building Process Station, overview
CM2N8311E	Communication cards COM1
CM2N8312E	Communication cards COM2
CM2N8879E	Communication with MONOGRYR, function sheet (planned)
CM2N8899E	Communication with TEC, function sheet (planned)
CM2N8878E	Communication with BATIGYR, function sheet (planned)
CM2N8877E	Communication with DESIGO RX, function sheet (planned)

Local operation and display

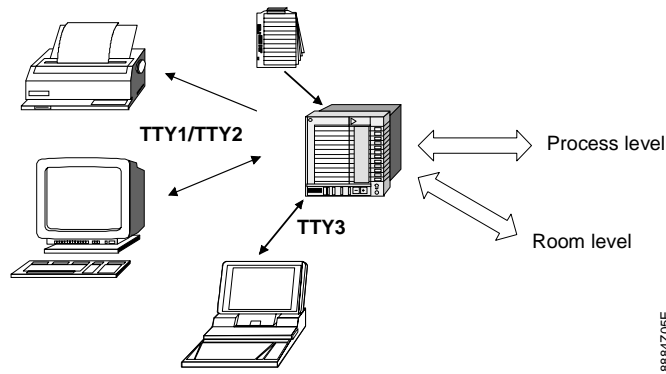
Functions

Local operation and display primarily is used for autonomous process stations. It comprises the following functions:

- Indicating operating and error statuses
- Changing setpoints, timeswitch entries, etc.
- Printing alarms and reports

Interfaces and devices

The illustration below shows the involved interfaces and devices:



Explanations (illustration)

The interfaces and devices for local operation and display are:

Interface	Unit
POP Cards	The integrated card reader and the 12-line display and key field allows for operating the building services systems at the BPS. <i>Note:</i> The plant-specific POP Cards must be ordered separately.
TTY1/TTY2	The two V.24 interfaces at communication card COM1 enable connection of a local printer and terminal. <i>Notes:</i> – Order the associated COM1 card separately – For dial-up communication, TTY1 is reserved for the modem – TTY1/TTY2 are also used to connect third-party systems
TTY3	The tool plug at the front of the BPS allows for connecting a PC with VISOTOOL Editor for subsequent operation, program download and editing.

Local operation at the subsystem

Local operation is not restricted to just the autonomous VISONIK BPS. It is possible also in process stations which

- are connected to a VISONIK Data and Communication Server or
- are integrated in an SDLC ring of an Enhanced Communication Unit (ECU).

Access protection

The BPS has 3 hierarchical access levels with separate passwords for each level. This prevents unauthorised access to the processes.

Additional information

Refer to the following documents for more information on operation:

Document no.	Title
CM2N8885E	BPS operation and display, function sheet
CM2B8301E	Building Process Station BPS, operating instructions

Dial-up communication

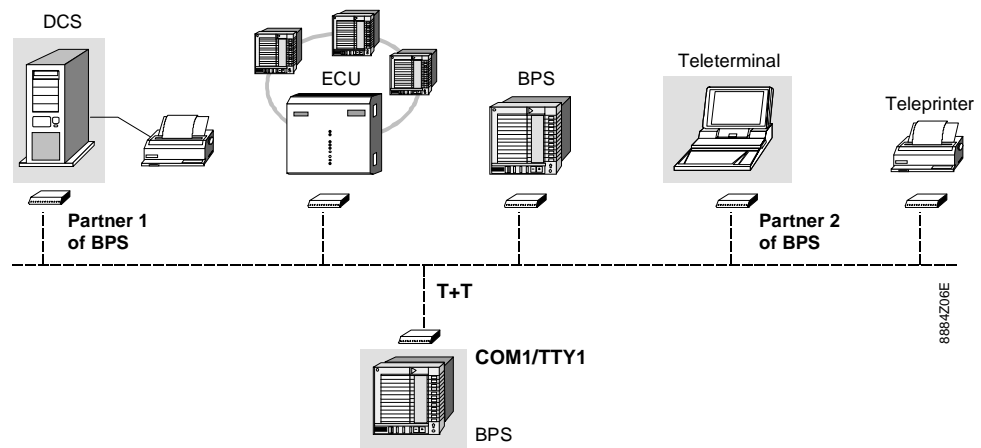
Functions

Dial-up communication with the VISONIK BPS occurs via the BPS's interface COM1/TTY1 and a modem. It comprises the following functions:

- Establish and terminate connections
- Signal events
- Collect operating data
- Transmit process data
- Operation

Dial-up communication partners

The VISONIK devices shown below can be used as dial-up communication partners for an autonomous BPS. In applications, two devices can be defined in the BPS as partner 1 and partner 2, for example, DCS and teleterminal:



Explanations (illustration)

These are the dial-up communication partners of a VISONIK BPS:

Partner	Interpretation
DCS	Data and Communication Server of a local VISONIK system. The DCS may be used for a separate BPS as: <ul style="list-style-type: none"> – own DCS with BPS process image or – foreign DCS without BPS process image
ECU	Enhanced Communication Unit of a separate SDLC ring with several process stations. The ECU, for instance, connects the stations with a higher DCS.
BPS	Another autonomous BPS
Teleterminal	PC with VISOTOOL Editor for remote BPS operation and monitoring
Teleprinter	Separate printer for BPS alarm and error messages

Setting up dial-up communication

Dial-up communication must be set up in all partners. In the BPS, this is done by:

- configuring the dial-up communication parameters
- defining the message types
- making entries in the text catalogues

Additional information

Refer to the following documents for more information on dial-up communication:

Document no.	Title
CM2N8889E	BPS dial-up communication, function sheet
CM2T8332E	Telephone operation with VISONIK BPS (expert documentation)