



VISONIK®

## Building Process Station BPS/NetBPS

## PRV2...

Basic units, no cards

The Building Process Station, short BPS (or NetBPS if equipped with an Ethernet card), is a programmed DDC station for building automation and control featuring the following properties:

- Three basic units, tailored to the respective I/O module load
- Plug-in program and communication cards
- Local operation and display via operating cards, terminal, or PC

Variant without P-bus connection for use as a master unit to integrate L&S room control systems and RWI controllers or third-party systems.

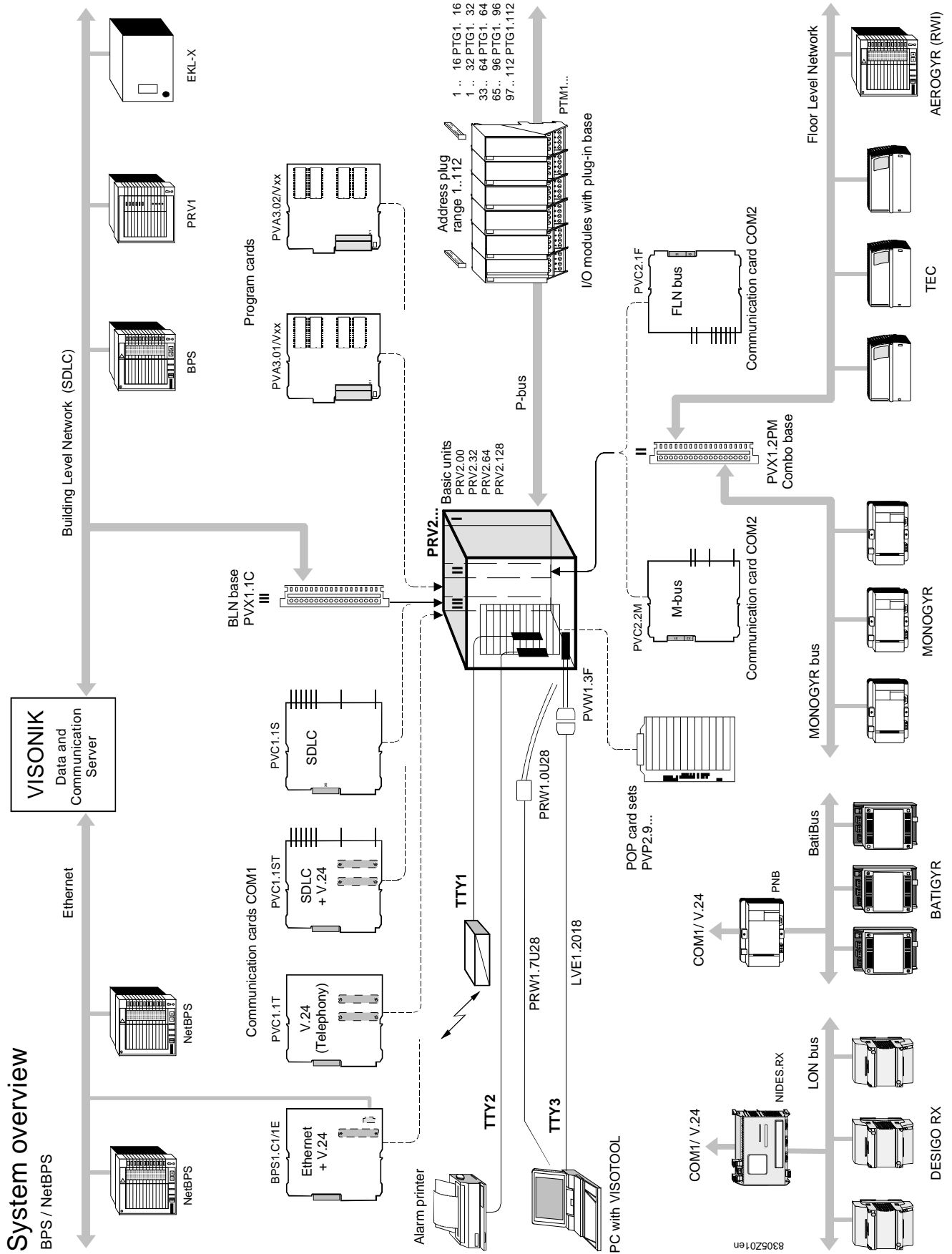
### Use

Section	<p>Both the BPS and the NetBPS are used in commercial buildings to execute sophisticated HVAC and related tasks:</p> <ul style="list-style-type: none"> <li>• As autonomous process stations, local or remote via telephony (BPS only).</li> <li>• Together with other process stations on either Building Level Network (SDLC ring) or Ethernet with superposed VISONIK Data and Communication Server.</li> </ul> <p>As a master or Communication Front End (CFE) to integrate L&amp;S room control systems and standard process units (RWI) as well as third-party system.</p>
VISONIK system family	<p>The BPS can be used in VISONIK systems from DCS V12. The NetBPS requires a DCS from V20.</p>

# System overview

## Structure and devices

The following illustration shows the BPS/NetBPS in the VISONIK system and provides an overview of the device types, pins and connections, and accessories:



## Type summary

Basic units	PRV2. ...	Designation	Type
		Basic unit for P-bus and I/O modules, max. 32 LU *)	PRV2.32
		Basic unit for P-bus and I/O modules, max. 64 LU *)	PRV2.64
		Basic unit for P-bus and I/O modules, max. 128 LU *)	PRV2.128
		Basic unit without P-bus connection As a master or CFE to integrate L&S room control systems and RWI controllers as well as third-party system.	PRV2.00

\*) LU = Load unit, 1 LU = 12.5 mA.

The PRV2.32, 64, and 128 have power supplies allowing for I/O modules up to a total load of 32 LU, 64 LU, or 128 LU.

### Ordering

Each basic unit accommodates a main circuit board and a power supply for the respective type designation. Terminal block I is added. The unit is supplied for flush panel mounting without base plate required for wall mounting/control cabinet integration.

Order the required program and communication cards as well as the accessories separately—delivery occurs separately.

A PVA3... program card is required for the BPS or NetBPS.

### Cards

Designation	Type
Communication Card COM1 for Building Level Network (SDLC)	PVC1.1S
COM1 communication card for V.24 on TTY1 and TTY2.	PVC1.1T
COM1 communication card for BLN + V.24 on TTY1 and TTY2.	PVC1.1ST
COM1 communication card for Ethernet + V.24 on TTY1.	BPS1.C1/1E
COM2 communication card for Floor Level Network (FLN).	PVC2.1F
Communication cards COM2 for Monogyr bus (M-bus).	PVC2.2M
Program card, small, with system software.	PVA3.01/Vxx *)
Program card, big, with system software.	PVA3.02/Vxx *)

\*) The version designation /Vxx is a part of the ASN number and must be indicated on ordering; for example PVA3.01/V14 (/Vxx corresponds to the current version).

### Accessories

Designation	Type
Terminal block II for FLN and M-bus (10 items)	PVX1.2PM
Terminal block III for SDLC and field telephone (4 items)	PVX1.1C
Base plate for wall mounting (10 items)	PRM1.1W
SDLC ring terminating resistor (10 items)	PVR1.180
Address plug 1 ... 16 for I/O modules.	PTG1.16
Address plug 1 ... 32 ditto	PTG1.32
Address plug 33 ... 64 ditto	PTG1.64
Address plug 65 ... 96 ditto	PTG1.96
Address plug 97 ... 112 ditto	PTG1.112
Modem cable with D-sub plug 25-pin, int/ext, RXD/TXD straight.	LVE1.2009
Tool cable for V24/V28 and BLN/FLN on ISDN plug.	PRW1.7U28
Adapter with RJ45 plug on tool interface TTY3.	PRW1.0U28
Adapter with D-sub plug 25-pin/int. on tool interface TTY3	PVW1.3F

### Operating cards

Designation	Type
POPcard operation (service cards VISONIK BPS) in German.	PVP2.9D
POPcard operation (service cards VISONIK BPS) in English.	PVP2.9E
Preprinted POPcards for project cards, paper (250 sheets)	PUP1.1
Preprinted POPcards for project cards, plastic (100 sheets)	PUP2.1
Card holder (100 items)	PUP1.2

## Functions

Standard DDC functions

The BPS/NetBPS together with the PVA3... program card contains all common DDC standard functions for the planned application range:

Functions	Description
Basic functions	When processing the plant operating program, the BPS/NetBPS executes the basic functions together with the connected I/O modules: Signalling, measuring, counting, switching, positioning.
Processing functions	The BPS/NetBPS processing functions comprise all required building automation functions such as: – Supervising – Controlling – Processing/optimising/statistics
System functions	The BPS/NetBPS system functions contain the general automation station services such as: – Operation and display, local or via telephony (BPS only) – Communication via the various interfaces – Running of plant operating programs

Refer to the data sheets on the VISONIK BPS; see overview N8880E.

Plant operating programs

The plant operating programs are created with the aid of the VISOTOOL AUTOGEN or European Tool Set software tools by combining predefined and tested function blocks stored in the program library. Free programming by using COLBAS \*) is also possible. This also allows for customising solutions to meet special requirements.

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

Master functions

The BPS/NetBPS master functions depend on the integrated system:

System	Functions
L&S room control systems	Master functions for MONOGRYR, TEC, AEROGYR/RWI, BATIGYR, and DESIGO RX such as: – Preset operating states for rooms and room groups. – Read actual values and write setpoints of individual units. – Summer-winter changeover, etc.. The documentation on basics for the various systems provide information on the specific scope of the master functions.
Third-party systems	The CFE functionality must be specified and implemented for each project.

Operation and display

The dialog containing the unit's functions from operating cards and associated displays and operating buttons is described in section "Mechanical design".

Service and diagnostic functions

The BPS/NetBPS supports service and diagnostic functions as follows:

- Tool connection for commissioning, configuration changes, and service.
- Service and diagnostic cards for service.

Function reliability

The unit's response with regard to function reliability and system safety is described in section "Technical design".

## Equipment combinations

### Cards

The following cards can be inserted in the PRV... basic unit to form a BPS or NetBPS. The type of card required depends on the planned application. The system overview in this document as well as the respective cards' data sheets provide help for selection.

Card	BPS	NetBPS	Type	Data sheet
Program card	Yes	Yes	PVA3...	N8317
Communication card COM1	Yes	No	PVC1...	N8311
Communication card COM1	No	Yes	BPS1.C1/1E	N8313
Communication cards COM2	Yes	Yes	PVC2...	N8312

### I/O modules

The I/O module range can be connected to the basic units with P-bus in accordance with the following data sheets:

Unit	Type	Data sheet
I/O modules with basic functions for signalling, measuring, counting, switching, or positioning.	PTM1...	N8111 .. N8171

### Partner stations

The system overview in this data sheet shows the partner stations with which the BPS can communicate via the Building Level Network (SDLC ring) or the NetBPS via Ethernet. The number and composition of partners are project-specific.

#### Notes:

- The BPS can also exchange data with the listed stations via modem (telephony).
- Process stations on the Ethernet (NetBPS) can communicate only with a superposed, operational VISONIK Data and Communication Server (DCS).

### Integration of L&S room control systems

The following table shows the units required to integrate L&S room control systems in the BPS/NetBPS:

System	Bus	Units	Data sheet
MONOGR	MONOGR bus	Communication card PVC2.2M	N8312
TEC/RWI	FLN	Communication card PVC2.1F	N8312
BATIGR	BATIBUS	Interface PNB + card COM1/V.24	N8942 N8311
DESIGO RX	LON/LONMark	Interface NIDES.RX + card COM1/V.24	N3299 N8311

The system overview in this data sheet shows the controllers that are able to communicate with the BPS/NetBPS. The respective product range overviews and the documentation on basics for system integration provide detailed information.

### Integration of third-party systems

Third-party systems are integrated in the BPS/NetBPS via a COM1 communication card on V.24 and a possible interface. Remember to clarify the hours required in terms of software (for each project).

## Technical design

Operating voltage AC 24 V      The PRV2... basic unit uses AC 24 V safety extra-low voltage "SELV" or protection by extra-low voltage "PELV" as per HD 384.

I/O module supply      The basic units with P-bus connection supply DC 24 V to the connected I/O modules via the P-bus. The basic unit's load by one I/O module is indicated with load units at 12.5 mA each. The maximum load for the basic unit types with P-bus is available in section "Type summary".

System reliability      Measures pertaining to functional and system safety of the BPS/NetBPS:

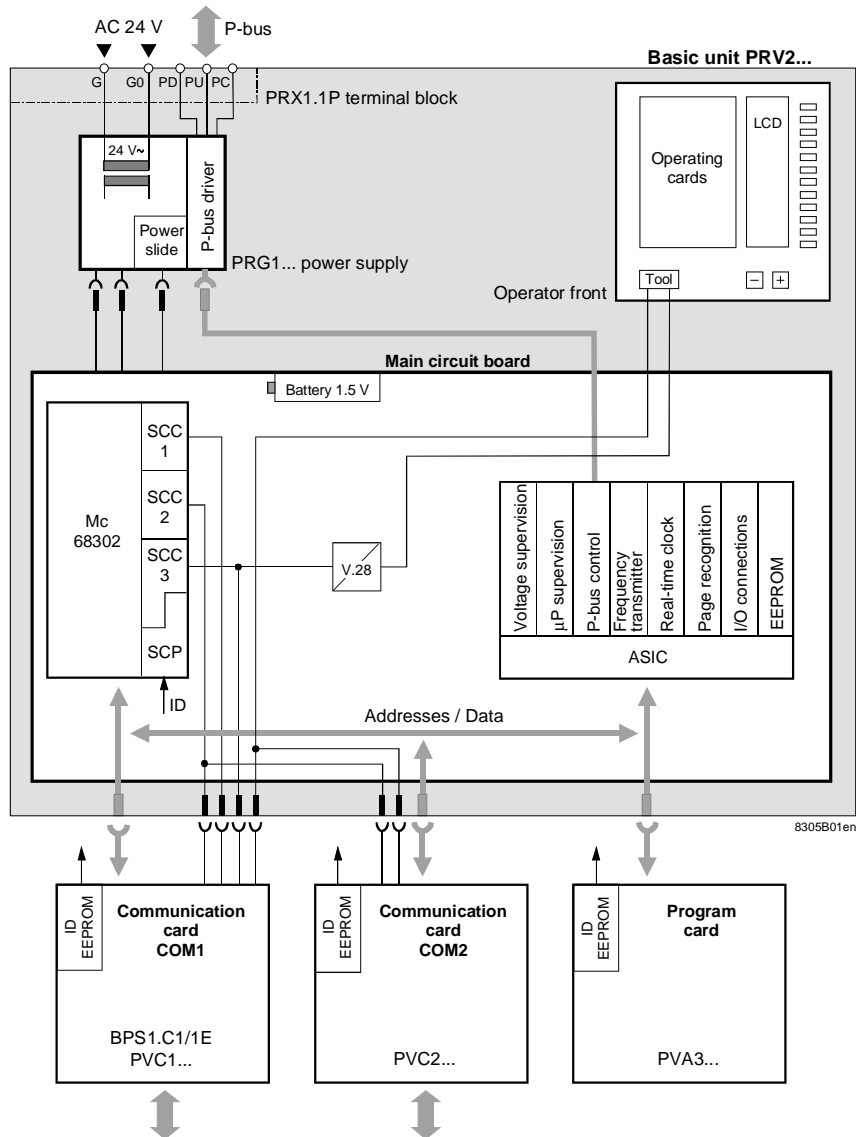
Type	Property
System clock	The system clock is independent of the processor and integrated in ASIC (real-time clock). In the event of operating voltage failure, a battery continues to supply the clock.
Switch-on response	Following activation of the supply voltage, the BPS/NetBPS is ready for operation after 5 seconds.
Data storage in the event of voltage failure	The following functions are maintained for at least 60 days by means of a battery in the case of a voltage failure: <ul style="list-style-type: none"> <li>– Time and date.</li> <li>– Microprocessor supervision (watchdog).</li> <li>– Page recognition of the operating cards.</li> </ul> Plant application programs, configuration and process data.
Processor supervision	The microprocessor's operation is supervised via a watchdog. If the microprocessor is blocked by any event, the supervision function triggers a restart of the processor system (software reset).
Response in the event of faulty operation	In the case of low voltage or voltage failure, the processor system of the BPS/NetBPS executes a controlled reset. The P-bus and any communication lines become passive, i.e., all sending functions are deactivated. After operating voltage restoration, a restart occurs to reload all previously defined functions.
BPS failure	The connected I/O modules turn passive.
Response without program card	Without a program card, the BPS/NetBPS neither issues commands via the P-bus nor the COM cards.
Removing the electronics unit	Do not remove the electronics unit from the housing while voltage is applied. If you must do so, however, construction and switching technology measures are designed to prevent data loss or damages to the unit's electronics.
Short-circuit strength	The P-bus is short-circuit proof.
Protection from false wiring	Interchanging P-bus lines does not damage the unit. Inadvertent supply of AC 24 V to the P-bus connecting terminals does not result in unit damages.

Data exchange with I/O modules

Data exchange with the I/O modules occurs via the three-core P-bus (process bus). This bus is described in detail in data sheet 8022 "Process Bus". I/O modules on the same P-bus have their own address in the number range of 1 to max. 255. The addresses are set using address plugs in the I/O modules. Refer to "Basic Data of the I/O Module System", data sheet 8102.

System architecture

The following illustration shows the basic unit with power supply (here: 1 P-bus connection) and main circuit board as well as the possible cards:



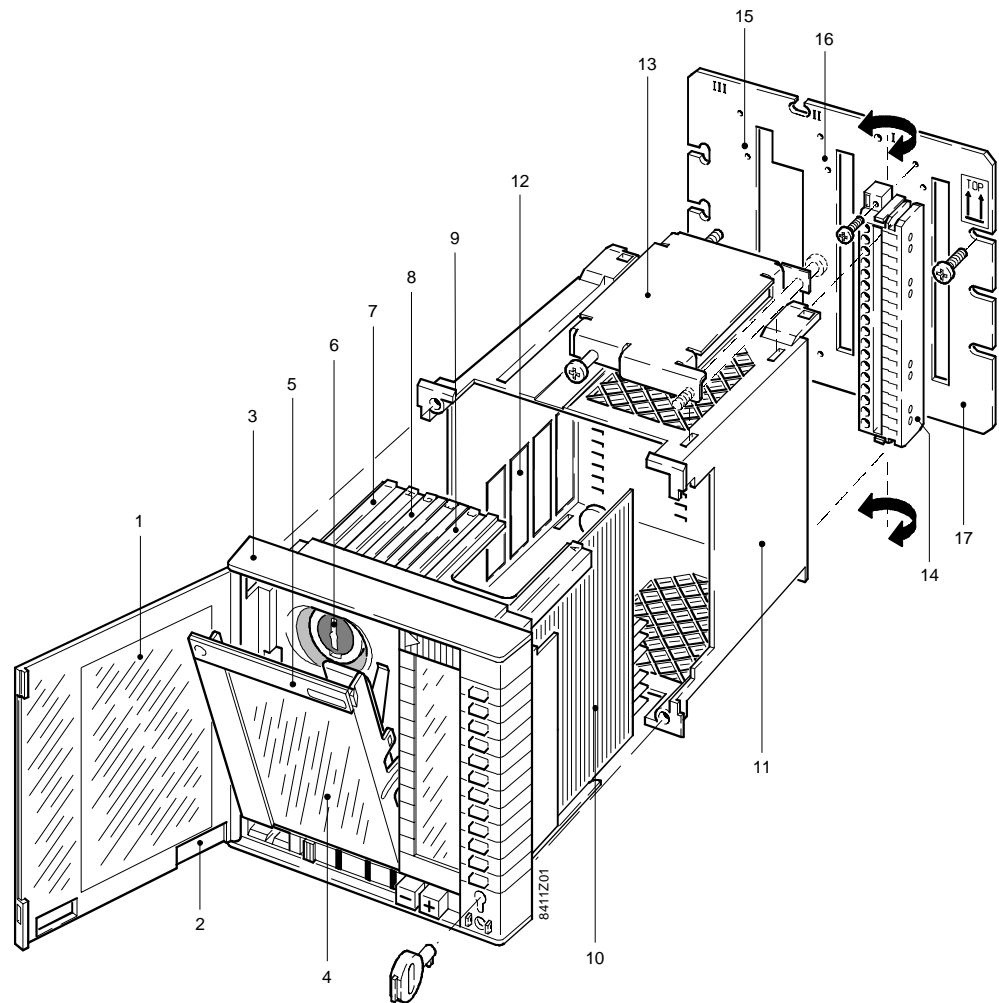
Elements of the main circuit board

The elements on the main circuit board are:

Element	Meaning
MC68302	16/32 bit microprocessor (16 data lines, 32 bit internal processing) with integrated SCC and SPC communication blocks. Runs the operating system software and the plant operating programs. Controls the LCD displays and the external communication ports.
SCC 1..3	Serial communication controller with direct memory access (DMA).
SCP	Serial SPC communication port. This port also helps identify the cards and their versions (ID).
ASIC	Application-Specific Integrated Circuit: Checks and controls the periphery.

### Front view

The following illustration shows the mechanical structure of the basic unit consisting of electronics unit, housing, and terminal block as well as an optional base plate for wall mounting:

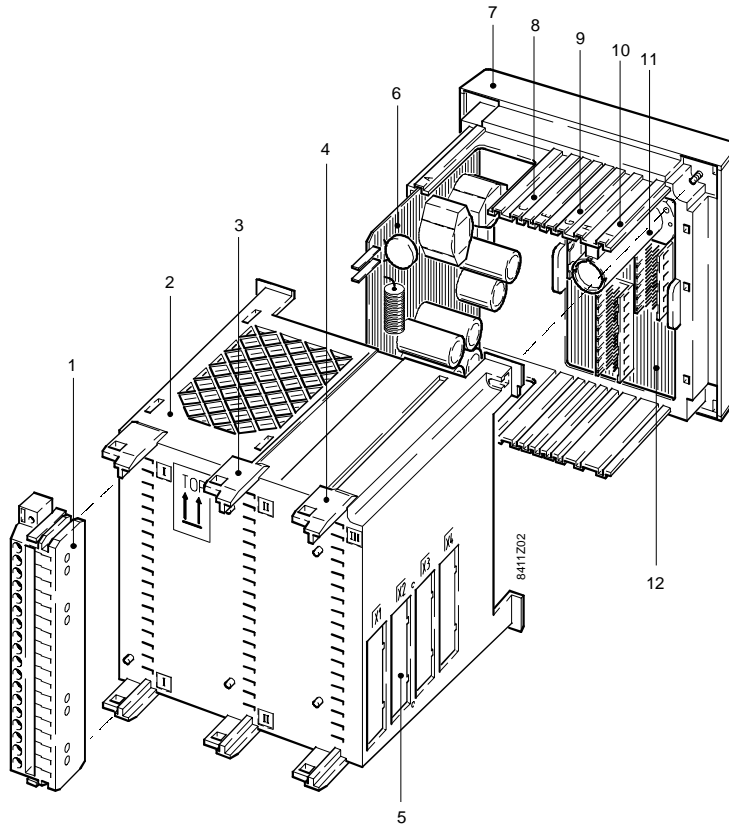


- 1 Transparent front cover with slots for cover card
- 2 Removable insert for tool connection on closed front cover
- 3 Electronics unit
- 4 Swing-out compartment
- 5 Exchangeable system label
- 6 Battery compartment for batteries of type Mignon 1.5 V
- 7 Slot "I" for COM1 communication cards
- 8 Slot "G" for program cards
- 9 Slot "C" for COM2 communication cards
- 10 Power supply with P-bus connection, slot "A"
- 11 Housing
- 12 Recess for side plugs on the COM1 communication card
- 13 Mounting bracket for housing, top or bottom
- 14 Terminal block for power supply, terminal slot I, snap-on holders  
(Terminal blocks are turned by 180° on flush panel mounting = ex-factory)
- 15 Terminal slot for COM1 communication card (optional)
- 16 Terminal slot for COM2 communication card (optional)
- 17 Base plate PRM1.1W for wall mounting (separate accessory)



Rear view

The following picture shows the mechanical structure from the rear:



- 1 Terminal block PRX1.1P (PVX1.2P for PRV2.128) for power supply, terminal slot I
- 2 Housing
- 3 Terminal slot II for COM2 communication cards
- 4 Terminal slot III for COM1 communication cards
- 5 Break-off recesses for connecting plug and displays for COM1 communication cards
- 6 Power supply with P-bus connection, slot "A"
- 7 Electronics unit
- 8 Slot "G" for program cards
- 9 Slot "C" for COM2 communication cards
- 10 Slot "I" for COM1 communication cards
- 11 Battery compartment
- 12 Main circuit board with plug connections for the cards

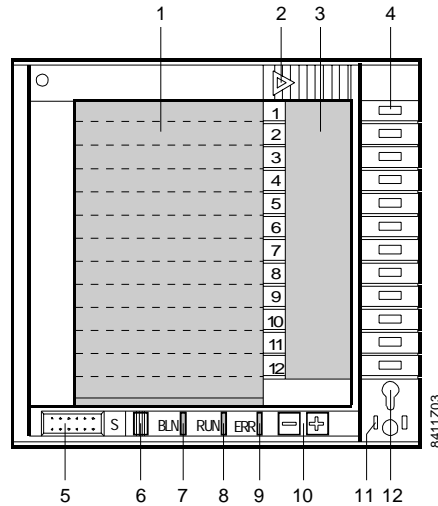
Basic concept

The unit has been designed for control cabinet front panel mounting or wall mounting in the cabinet by means of an additional base plate. Elements and features:

Element	Feature
Housing	Plastic housing with standard dimensions as per DIN 43 700.
Electronics unit	Plug-in unit. Two screws in the corners for attaching it to the housing and sealing facility to prevent unauthorised removal. Components: <ul style="list-style-type: none"> <li>– Operating and display front. Cover can be opened with key only.</li> <li>– Main circuit board and power supply insert.</li> <li>– Three slots for program and communication cards.</li> </ul>
Label	Neutral label on compartment. Exchangeable against a system family label. The labels are part of the accessories.
Terminal blocks	Snap-on facility at the rear wall of the housing on three predefined terminal slots: Terminal block I for power supply and P-bus, terminal block II and III for communication cards. The terminal blocks can be turned by 180° for wall mounting.

Operating and display elements

The illustration below shows the front of the basic units and the respective operating and display elements:



- 1 Compartment for operating cards
- 2 Slider to open the cassette
- 3 12 line, four characters LCD display
- 4 Operating buttons to retrieve and save parameters
- 5 Plug connection for tool cable with V.24/V.28 interface for PC tool and RS-485 interfaces for BLN and FLN networks
- 6 Slider to reset the operating system (any position, activation through position change)
- 7 Operating display for communication on the BLN bus (orange, flashing)
- 8 Operating display for BPS/NetBPS with two functions: Normal operation (green). If the program card is missing or during RESET (red)
- 9 Common fault indicator (red), if programmed
- 10 +/- buttons to change parameters and settings
- 11 Option to seal the electronics unit
- 12 Keyhole to open the front cover

Operating concept

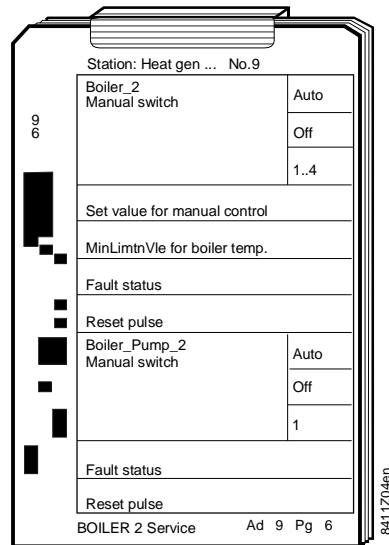
The primary elements for operation are the operating cards (POPCards) with project-specific printed operating cards for one or several plant elements. The cards are located in the swing-out compartment. Operation includes the following elements and functions:

Element	Function
Operating card	One operating card contains a maximum of 12 lines, whereby specific displays and operating buttons are assigned to each line. Each operating card has an individual, optical black-and-white code.
Operating card reader	The topmost card is decoded and read by the operating card reader when the card is inserted in the compartment. Speed and type of insertion of the operating cards are irrelevant.
Displaying	The BPS/NetBPS links the operating card information to the plant operating program; the operating card contents are then displayed accordingly.
Operating buttons	The assigned buttons can be used to change the displayed values and run the associated plant functions.

The operating card contents are created during engineering with the aid of a software tool, printed on perforated pre-prints, and summarised to form an operating card set (POPCard set).

## Operating cards

The following illustration shows an operating card set with an example for an application-specific printed operating card:



## Service and diagnostic cards

The accessories also include service and diagnostic cards for service. Both format and structure are the same as for the plant-specific operating cards. The service cards are available in German and English; see the respective product range overview.

## Engineering notes



The following documents and references contain fundamental engineering information on the BPS/NetBPS and the system level. Carefully study these documents before proceeding to the sections below and pay special attention to all safety-related information:

- "Basic Data of the I/O Module System", data sheet 8102.
- "Process Bus" (P-bus), data sheet 8022.
- Data sheets on cards and periphery used system- and plant-specifically together with the BPS/NetBPS: see "Equipment combinations" in this data sheet.

## Intended use

Use the BPS/NetBPS only for applications as described in section "Use". Observe all conditions and restrictions imposed as per the sections "Engineering notes" and "Technical data" in this data sheet.



Sections marked with a warning as shown to the left contain technical safety requirements and restrictions. Observe all of these warnings as they relate immediately to the protection of personnel and equipment.



AC 24 V  
operating voltage

Operate the BPS/NetBPS and any connected I/O modules as well as other units in the system only on safety extra-low voltage (SELV) or protection by extra-low voltage (PELV) as per HD 384.

## Transformer sizing

In the case of central supply, size the transformer output for operating voltage for the entirety of the connected units. These are:

- Process station(s)
- I/O modules requiring in addition to power AC 24 V via the P-bus.
- Field devices with AC 24 V operating voltage, e.g., actuators, active sensors, transducers, etc.

Load units of I/O modules

The PRV... basic units with P-bus connection supply DC 24 V to the connected I/O modules via the P-bus. The I/O module load units are available in the following documents:

- N8102: "Basic Data of the I/O Module System"
- N8111 ... N8171: data sheets on the individual I/O modules

The maximum number of load units for the basic unit types with P-bus is available in section "Type summary".

P-bus connections for PRV2.128

In this variant having two P-bus connections, distribute the I/O modules to be connected so that the load units are equally divided between the two P-bus connections.

P-bus connection

The P-bus interface is **not electrically isolated** from the unit's electronics.

Station type selection

The following rules apply to selecting the station type:

Station type	Use	Rule
PRV2.32 PRV2.64 PRV2.128	BPS/NetBPS with P-bus and I/O modules	The sum of the load units LU of all connected I/O modules (see section "Type summary") determines the type. <sup>1)</sup>
PRV2.00	FLN or MONOGR master, CFE applications <b>without</b> I/O module connection	If, in addition, a P-bus with I/O module is connected, use types PRV2.32, 64, 128 <sup>2)</sup> .

<sup>1)</sup> If a VISONIK system is engineered using the European Tool Set ETS, the tool suggests the appropriate station type.

<sup>2)</sup> We recommend separate stations.

Program card

The PVA3...program card depends on the required functionality. Refer to data sheet N8317 for detailed information.

I/O module points

Number: Up to 224 I/O module points can be generated in the BPS.  
 Addressing: Via address plugs 1 to 112.  
 Note: Order I/O modules and address plugs separately.

## Mounting notes

Space requirements

Observe both mounting depth and side distance for flush panel mounting or mounting inside the cabinet. Remember to include space requirements for COM1 communication card connections on the side; see "Dimensions".



Do not touch electrical contacts and components on the open unit; electrostatic discharges may destroy sensitive components.

Label

The basic unit is delivered with a neutral label on the compartment. The label bearing the system name VISONIK is an accessory that can be exchanged when mounting the BPS/NetBPS.

Mounting instructions

The basic unit is delivered with mounting instructions.

## Commissioning notes

---



Observe all country-specific safety regulations to prevent injuries and equipment damages.

### Battery

The battery is inserted in the unit upon delivery, but separated from the electrical circuit with an isolating strip expanding at the upper compartment corner. After opening the compartment, pull off the strip from the closed battery compartment.

### Front card

The cover card for VISONIK inserted in the front has four symbols at the right margin explaining basic information (unit type, software version, time, and date). This information is displayed when the program card is inserted and the front door is closed.

### I/O module addresses

The BPS/NetBPS can communicate with the I/O modules only if the address plug is inserted and matches the addresses configured through software.



### Service cards

Prior to using the service cards, read the notes in document B8301E "Building Process Station BPS User's Guide", Chapter "Important safety notes".

When the service card of the service set is inserted, you can check and conduct the following via the displays and operating buttons:

- Test of the BPS/NetBPS (error messages, setting and resetting the clock).
- Query values and states at the inputs and outputs of the I/O modules.
- Change states and positioning values at the inputs and outputs of the I/O modules.

These service functions are available only if a program card is inserted. However, the program card does not need to be configured for this purpose.

### Local operation

The BPS/NetBPS can locally be operated in two ways:

- Directly at the operating front via the plant-specific printed operating cards.
- By using the software programs "VISOTOOL Editor" or "New VISOTOOL Editor" via the tool plug at the front of the unit.

## Maintenance notes

---

### Battery life

The battery life is at least 4 years.

The battery status is monitored and insufficient load is indicated via the collective error display (if the front cover is closed and if programmed).

Insufficient load does not impair the BPS/NetBPS functions provided sufficient operating voltage is applied.

## Technical data

---

### General data

⚠ Supply	Operating voltage	AC 24 V $\pm$ 20 %
	Safety extra-low voltage "SELV" or protection by extra-low voltage "PELV" as per	HD 384
	Transformer sizing as per	EN 60 742
	Secondary fusing (external)	10 A max. slow
	Frequency	50 Hz / 60 Hz
	Power consumption	
	PRV2.00	10 VA
	PRV2.32 *	30 VA *
	PRV2.64 *	55 VA *
	PRV2.128 *	100 VA *
	* at max. P-bus load	
	P-bus supply in basic unit	DC 24 V (against G0)
	Number of load units at 12.5 mA	
	PRV2.32	32
	PRV2.64	64
	PRV2.128	128 (2 x 64)

### Function data

Microprocessor	
MC 68302	16/32 bit
CPU frequency	16 MHz
Time basis (real-time clock)	
Time resolution	1 sec
Time deviation per month	max. 100 sec
Backup on voltage failure	
Battery type	1.5 V (Mignon)
Standard IEC size	LR 6
Battery life during normal operation	min. 4 years
Battery life during backup operation	min. 60 days

### Protection of housing

IP protection as per EN 60 529	
Flush panel mounting	IP40
Wall mounting	IP20
Degree of protection as per EN 60 950	
Protection against electric shock	III

### Environmental conditions

Transport	IEC 721-3-2
Climatic conditions	class 2K3
Temperature	-25 °C...+70 °C
Humidity	<95 % r.h.
Mechanical conditions	class 2M2
Operation	IEC 721-3-3
Climatic conditions	class 3K5
Temperature	-5 °C...+50 °C
Humidity (non-condensing)	<95 % r.h.
Mechanical conditions	class 3M2

### Connecting terminals

For connecting wires of	min. 0.5 mm dia.
	to max. 2x1.5 mm <sup>2</sup> or 1x2.5 mm <sup>2</sup>

Standards	Product standards	
	Safety of information technology equipment	EN 60 950
	Electromagnetic compatibility (EMC)	
	Emissions	EN 50 081-1
	Immunity	EN 50 082-2
	<b>CE</b> Conformity	
	Electromagnetic compatibility	89/336/EEC

Weight and dimensions	Weight without packaging and cards	1.15 kg
	Dimensions	see "Dimensions"

### Bus interfaces

Tool plug on unit front	Tool interface	
	Signal definition	V.24 as per CCITT
	Signal level	V.28 as per CCITT
	Supported signals	RXD and TXD
	Format	
	Start bit	1
	Data bit	7 or 8
	Stop bit	1 or 2
	Parity	none, odd, even and force
	Baud rates	300 baud to 19.2 kilobaud

P-bus (process bus)	Connection location for bus lines on basic unit	terminal block I
	Rate of transmission	62,500 bps (fixed)
	Read/write cycle for all I/O points	0.5 sec
	Signal level	DC +24 V and 0 /-5 V
	Line length:	
	On wiring with 3-pin round cable	unscreened
	Length of all sections, 1.5 mm <sup>2</sup>	max. 50 m
	Length of all sections, 1.0 mm <sup>2</sup>	max. 30 m
	On wiring with 1-pin coaxial cable	cable type RG-62 A/U
	(one cable each for data PD and clock PC, both shields for reference voltage PU)	
Length of all sections at max. 50 I/O modules	max. 200 m	
Topology	form: line, star, tree	
Detailed information on the P-bus	Data sheet 8022	

### Interfaces for optional cards

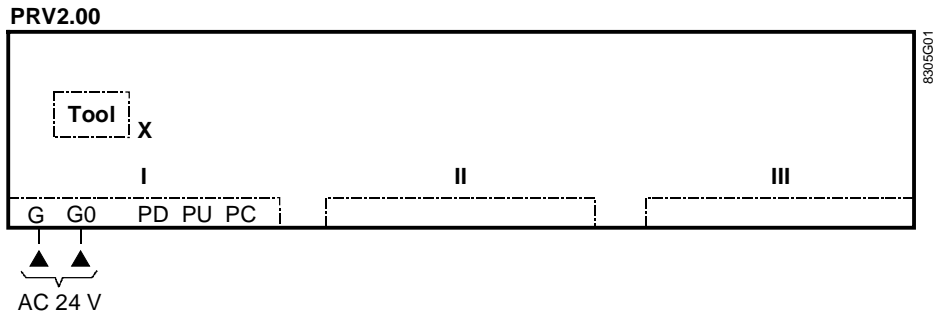
The respective data sheets provide the technical data for the interfaces at the communication cards:

Interface	Card	Data sheet
Building Level Network (SDLC)	PVC1...	N8311
V.24 on TTY1/TTY 2	PVC1...	N8311
Floor Level Network (FLN)	PVC2.1F	N8312
MONOGR bus	PVC2.2M	N8312
Ethernet	BPS1.C1/1E	N8313

**Internal diagrams**

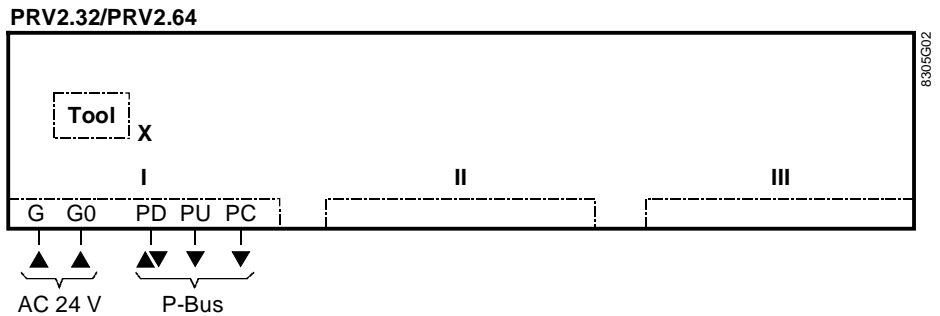
PRV2.00

Basic unit without P-bus connection:



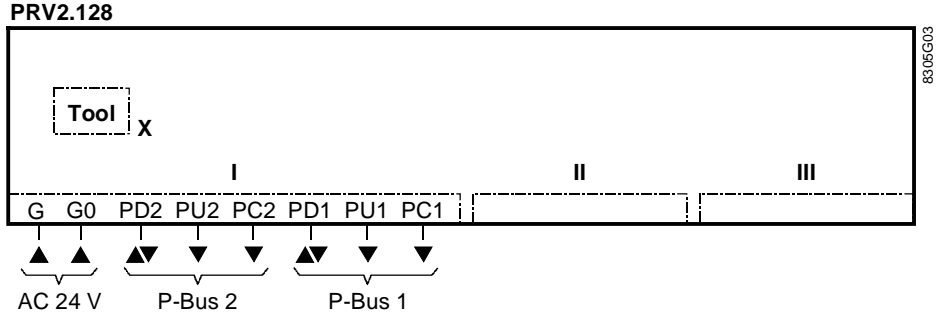
PRV2.32 and PRV2.64

Basic units with P-bus connection:



PRV2.128:

Basic unit with two P-bus connections:



- I** **Terminal block I:** PRX1.1P (PVX1.2P for PRV2.128)
- AC 24 V operating voltage:**
- G System potential
- G0 System neutral
- Process bus (P-bus):**
- PC, PC1, PC2 Synchronisation line
- PD, PD1, PD2 Data line, bi-directional
- PU, PU1, PU2 Reference voltage DC 23 V (against G0)
- II** **Terminal block II** (optional)  
for COM2 communication cards or further cards
- III** **Terminal block III** (optional)  
for COM1 communication cards
- X** **Tool connection**  
on the front, with interface V.24/V.28 for tool PC (via tool adapter and interfaces  
(RS = Building Level Network, FLN = Floor Level Network)

Internal diagrams for optional cards

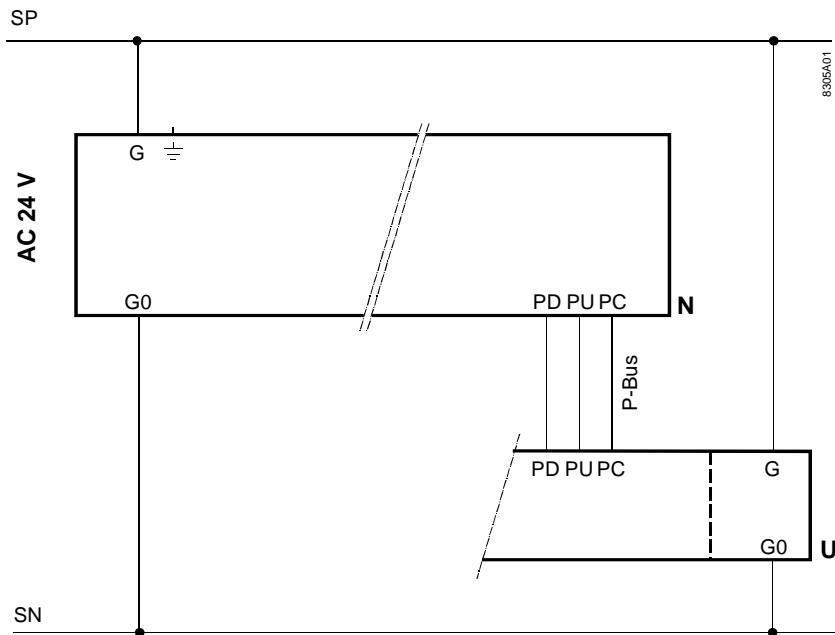
Refer to the respective data sheets as per the information in sections "Technical data", "Interfaces for optional cards".



## Connection diagrams

Basic unit PRV2... and I/O modules

The following illustration shows the principal wiring: See the mounting and installation guide M8017E and data sheet N8022E for details.



**N** Basic unit PRV2...  
**U** I/O modules  
 SP System potential of the operating voltage AC 24 V  
 SN System neutral

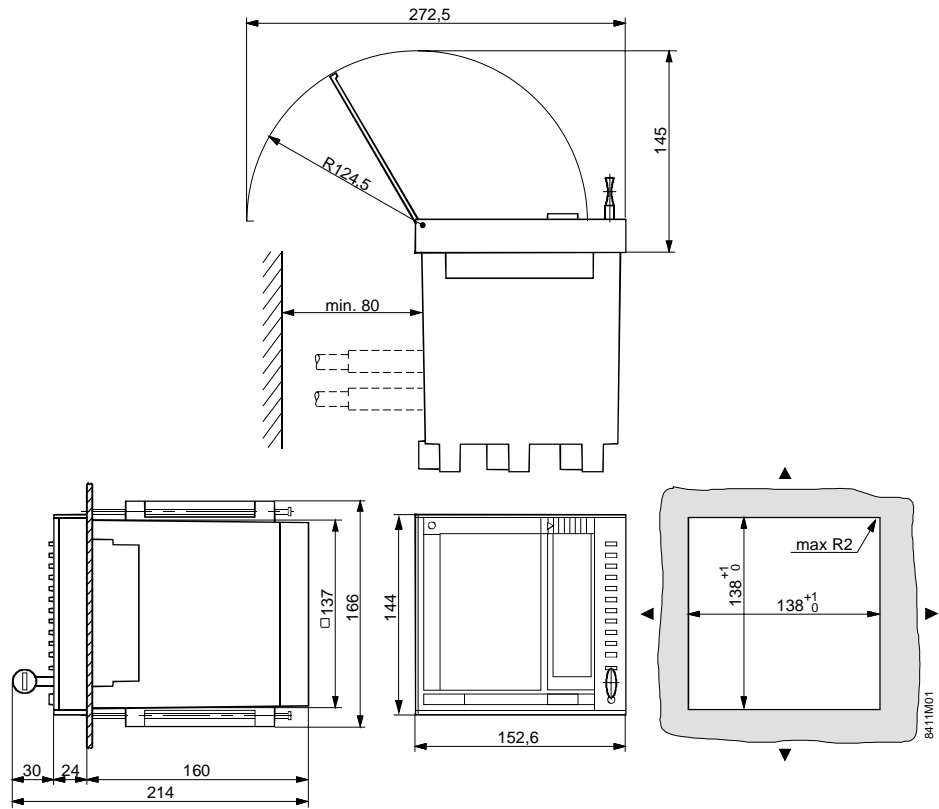
Connection diagrams for optional cards

Refer to the respective data sheets as per the information in sections "Technical data", "Interfaces for optional cards".

**Dimensions**

Front mounting PRV...

Standard mounting as per DIN 43 700 (138x138 mm):



Minimum distance to the next recess: Top and bottom: 40 mm; vertical: 80 mm

Wall mounting PRV...

Base plate PRM1.1W is required for wall mounting:

