

DESIGO™ I/O modules

Status display unit

PHM1.36TL

with P-bus connection

Status display unit

- for connections to automation stations with P-bus
- for status indication of up to 24 messages
- for remote control of up to 12 operating points in plants or in plant elements

Use

- Optical status indication for individual operational and/or fault status signals on the control panel front or outside of the control panel.
Examples for status signals:
 - fire protection dampers
 - burners
 - fans
 - pumps
 - chillers
 - elevators, etc.
- Remote control to switch plants or plant elements, for example:
 - operating mode switch
 - acknowledge button
 - temporary button to extend business hours
- The status display unit can be connected to automation stations with P-bus, which support the status display unit on the software side. Refer to "Equipment combination".

Type summary

	Status display unit	PHM1.36TL
Delivery	The status display unit is delivered separately. The delivery contains a mounting bracket for control panel face mounting.	
Accessory	Bar for en-suite mounting of status display units panel face (order separately).	PHZ1.01

Equipment combinations

Automation stations	The status display unit can be connected to automation stations with P-bus, which support the I/O functions on the software side. Refer to document Z8102, "Basics of the I/O module system" or to data sheet N8100 "I/O module range".
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Functions

Status indication	Conversion of the P-bus signals from the automation station into signals for the LED's. Assignment of status signals to the LED's is accomplished via the automation station's software configuration.
Remote control	Conversion of push button activation at the status display units to P-bus telegrams for further processing in the automation station. The push buttons' function is determined via the automation station's software configuration.
LED test	Testing of all LED's by pushing the LED test button. Other functions and time-related processes are not affected during an LED test.
LED indication	LED indication and the associated operating statuses:

Green (Plant operation)	Red (Plant fault)	Yellow (P-bus traffic)	Statuses (Signal status unit / Plant)	
OFF	OFF	Steady light	Display unit status: Plant status:	Normal OFF
Steady light	OFF	Steady light	Display unit status: Plant status:	Normal Operation, step 1
Flashing light (1 Hz)	OFF	Steady light	Display unit status: Plant status:	Normal Operation, step 2 or higher
OFF	Flashing light (1 Hz)	Steady light	Display unit status: Plant status:	Normal Faulty, unacknowledged*
OFF	Steady light	Steady light	Display unit status: Plant status:	Normal Faulty, acknowledged*
Flashing light for ca. 3s, then acc. to plant status	According to plant status	Steady light	Key of the associated function line activated	
Flashing light (4Hz)	Flashing light (4Hz)	Flashing light (4Hz)	Display unit status: (telegram failure)	Faulty
OFF	OFF	OFF	Display unit status: (voltage failure)	Faulty
OFF	OFF	ON, flashing light after timeout	Display unit status: (until reception of valid telegram)	Switch-on status
Steady light	Steady light	Steady light	Lamp test	

* Only if "Fault phases" was selected through configuration.

Technical design

Data traffic via P-bus The status signals are logged via I/O modules or I/O compact units, requested by the automation station and transmitted to the status display unit via the P-bus. Information on activated pushbuttons is (similar to the status signals) requested by the automation station via P-bus and processed in accordance with the software configuration.

Addressing The status display unit must have an address enabling the automation station to identify it. The address is set with the aid of the address switch on the rear of the unit. Note that only specific addresses are permitted.

Assignment of permitted addresses and setting positions on the unit:

Setting position	Address	Setting position	Address
0	1	8	129
1	17	9	145
2	33	A	161
3	49	B	177
4	65	C	193
5	81	D	209
6	97	E	225
7	113	F	241

Non-used addresses can be used for I/O module or I/O compact unit addressing (avoid double assignments!)

Behaviour in the event of faults If data traffic on the P-bus is interrupted for more than 4 seconds, all LED's are lit. But, the last known status of all LED's is stored and re-displayed following reception of the next valid P-bus telegram.

Notes The entire functionality of the status display unit comprises the unit itself (hardware) as well as signal handling in the automation station (software). To fully understand the module functions, the associated process sequences and configuration options for the user program must be considered.

Further application requirements as, for instance, make / break contacts, storage, and suppression of first-up signal of fault indications are implemented with supplemental function blocks.

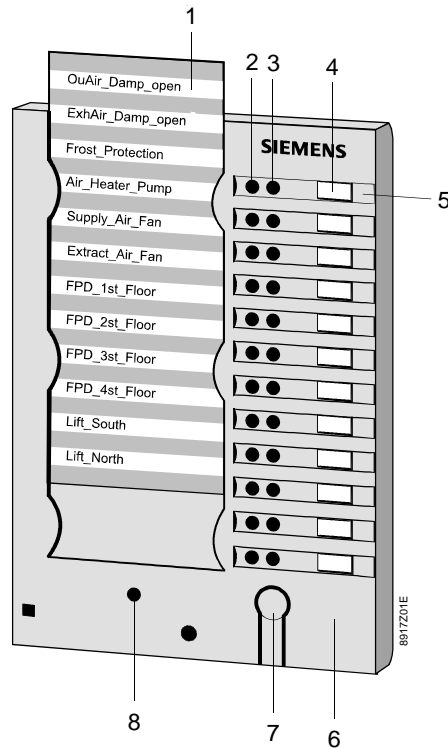
Mechanical design

- Metal housing with plastic face
- Housing for front or wall mounting with surface mounting or flush-type box
- Address switch and connection terminals on the rear of the unit
- Mounting bracket for front mounting provided

Unit face The status display unit's face contains one yellow, 12 green, and 12 red LED's, 12 pushbuttons and one lamp test button. One green and one red LED and one pushbutton belong to one function line. To mount a project-related label, the housing provides a recess.

Project-related labelling

These specifically prepared and perforated labels are marked with the help of the engineering tool for the building automation and control system. The printed label is then inserted in the recess on the unit's face. The label contains application-related information for each function line.



- 1 Label
- 2 Green LED row
- 3 Red LED row
- 4 Pushbutton row
- 5 Function line
- 6 Unit face
- 7 LED to test all LED's
- 8 Yellow LED for P-bus communication (Com)

Engineering notes



The documents listed below contain engineering basics for the device and system level of building automation systems. Read the information provided in these documents and observe all safety-related information:

- "P-Bus (Process Bus)", data sheet N8022
- "Basics of the I/O-module system", document Z8102
- Function block descriptions for automation stations

Proper use

Use this unit in a system only for applications as described in the brief description on the title page (bold print) and in the chapters "Use", "Engineering notes", and "Technical data".

System neutral

The system neutral terminals (G0) for the automation station, I/O devices, and status display unit must be linked via a "joint system neutral" (SN), see "Connection diagrams".

System integration

The system integration of the status display unit has been illustrated in the application example. Several status display units can be connected to one automation station.


Mounting notes

Mounting instructions	Each unit comes with mounting instructions describing the various mounting options. Refer also to "Dimensions" in this data sheet.
Wall mounting	For wall mounting, the unit face must be separated from the metal housing. Additionally, the address must be set at the address switch on the rear of the unit prior to re-attaching the unit face.

Commissioning notes

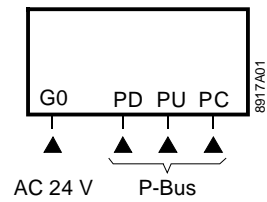
Addressing	The correct, system-dependent address for identification by the automation station must be set at the address switch on the rear of the unit (see "Technical design - Addressing"). If the set address is changed at a later time, the status display unit's power supply must briefly be interrupted, e.g., by disconnecting the P-bus, to adopt the new address.
Required software	The required function software must be loaded in the associated automation station.

Technical data

Voltage supply	Via P-bus Load units: Automation station	DC 24 V (against G0) 4 (12.5 mA each)
Protection	As per EN 60 529	IP 30
Environmental conditions	Transport Climatic conditions Permissible ambient temperatures Humidity Operation Climatic conditions Permissible ambient temperatures Humidity	IEC 721-3-2 Class 2K3 -25 ... +70°C ≤ 95% r. h. IEC 721-3-3 Class 3K5 -5 ... +50°C ≤ 95% r. h.
 Conformity	In accordance with European Union directives: Electromagnetic compatibility - Emissions - Immunity	89/336/EEC EN 50 081-1 EN 61 000-6-2
Connection terminals	Line diameter	min. Ø 0,5 mm max. 2 x 1.5 mm or 1 x 2.5 mm
Permissible P-bus line length	For standard bus For remote P-bus (with screened cable)	max. 50 m max. 200 m
Dimensions, Weight	Dimensions Weight	see Dimensions 0.3 kg
Note	For wiring of standard P-bus and remote P-bus refer to data sheet N8022 "P-bus".	

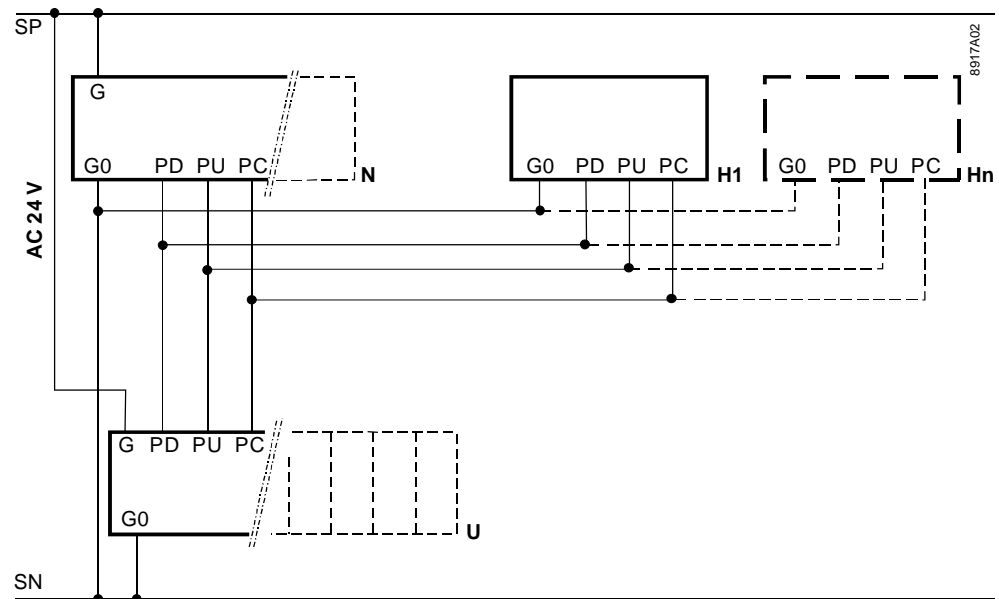
Connection diagrams

Connection terminals



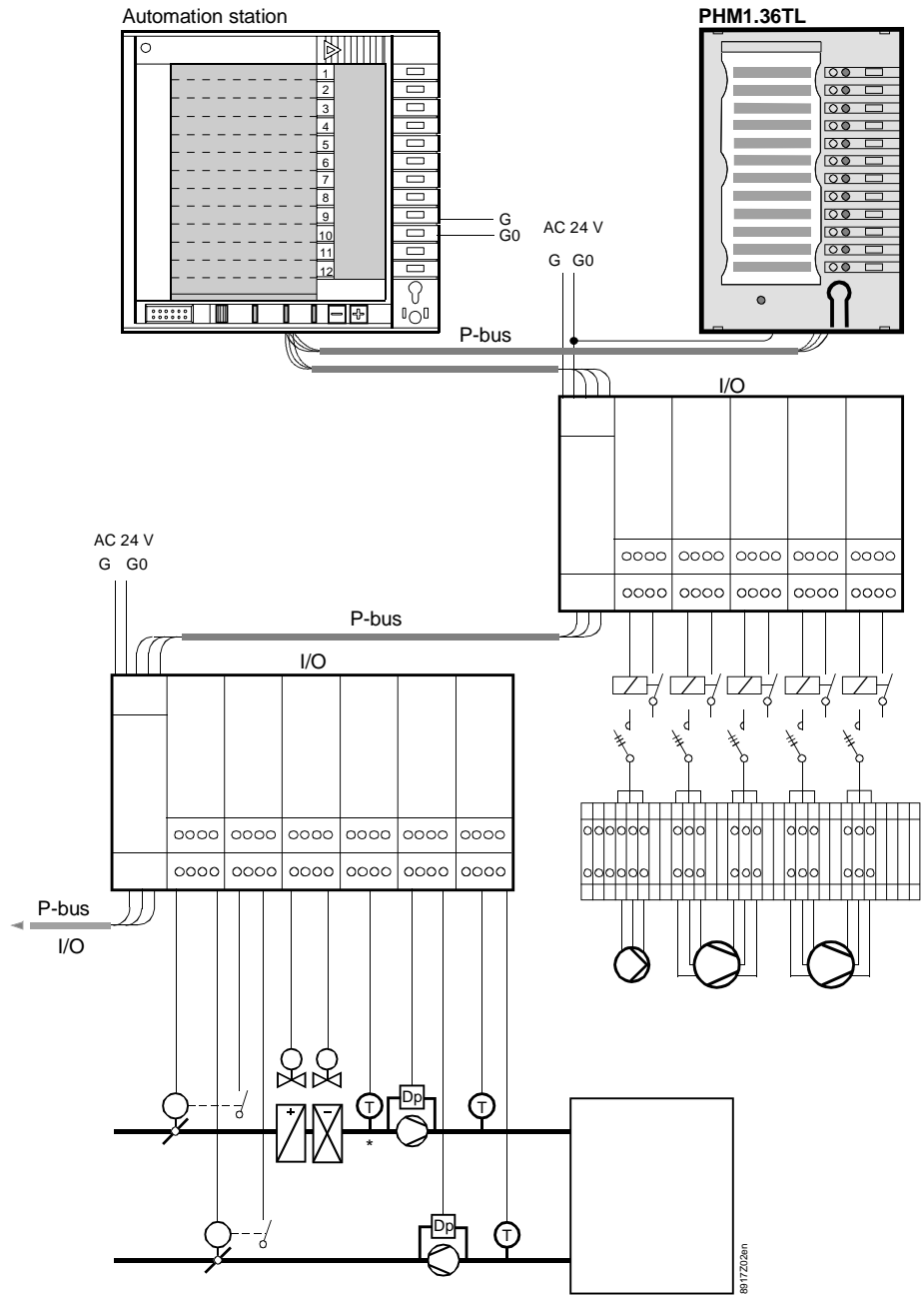
- G0 Operating voltage neutral AC 24V
- PD Data signal
- PU Reference voltage (DC 24 V against G0)
- PC Synchronisation signal (Clock)

Connection diagram (standard P-bus)



- H1...Hn** Status display units PHM1.36TL
- N** Automation station with P-bus connection
- U** I/O devices (I/O modules, I/O compact units)
- SP System potential AC 24 V
- SN System neutral

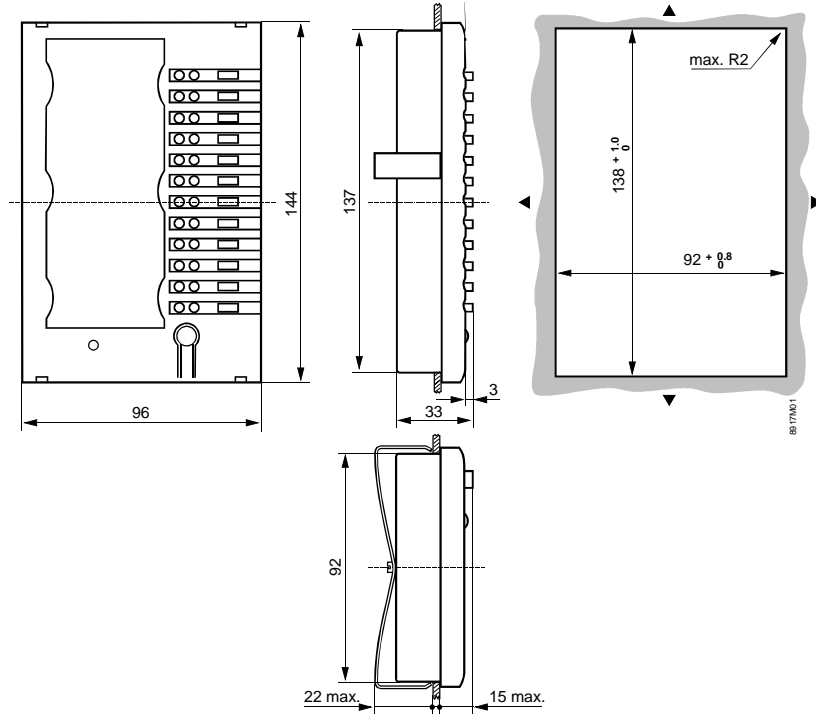
Example



- PHM1.36 TL Status display unit
- G System potential
- G0 System neutral
- AC 24 V Operating voltage
- P-bus Process bus
- I/O I/O devices

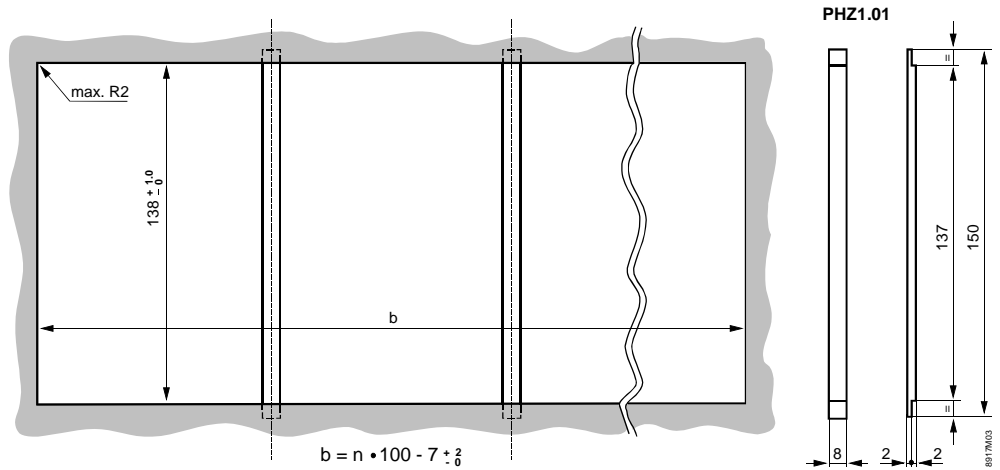
Dimensions

Front mounting
(single unit)

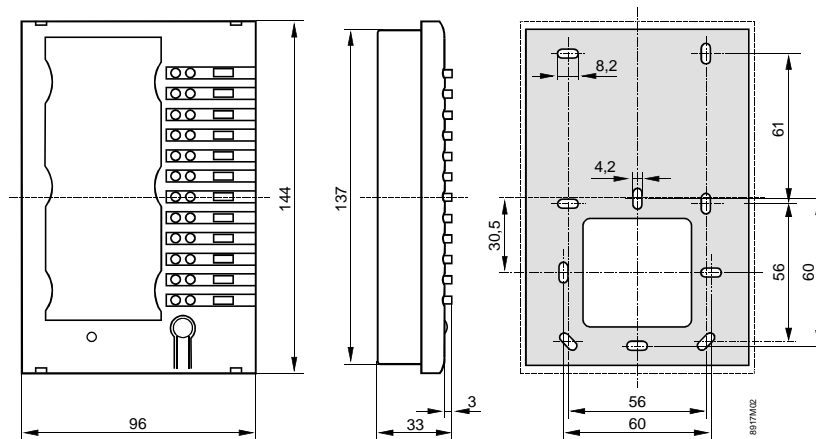


► The minimum clearance to the next cut-out for further status display units is 20 mm.

Front mounting
(suite of units)



Wall mounting



Dimensions in mm