



SYNERGYR®

Pulse Adapter

AEW2.1

The AEW2.1 pulse adapter acquires and stores the pulses from any commercially available meters, monitors the links to them and delivers the cumulated consumption data, fault status messages, etc., to the building bus.

Use

The pulse adapter is a component of the SYNERGYR® control and billing system. It is required when, in addition to heating energy, more than 1 consumption variable is to be acquired per apartment (1 consumption variable is acquired by the WRI80 control and heat meter interface or the WRV... control and heat cost allocation valve). The pulse adapter is capable of handling pulses from gas, DHW, chilled water, electricity or hours run meters.

For the field of use of the SYNERGYR® system, refer to Data Sheets N2800 to N2803 (System Overview).

Functions

- Acquisition and storage of consumption data such as DHW, electricity, chilled water, gas, etc.
- Delivery of the stored data
 - via the building bus to the central unit, or
 - to the service unit for further handling
- Monitoring the links to the meters, in the case of pulse sources with Reed contacts and Namur circuitry
- Delivering fault status messages to the building bus

- Hours run meter
- In connection with the OZW30 central unit:
 - Acquisition and storage of meter readings on the set day
 - Acquisition and storage of meter readings at the end of the month

Ordering

When ordering, please give type reference **AEW2.1**.

Equipment combinations

A maximum of 2 AEW2.1 pulse adapters can be used in each apartment. Since each pulse adapter can handle pulses from 2 meters, and the WRI80 control and heat meter interface or the WRV... control and heat cost allocation valve pulses from 1 meter, each apartment can have 5 meters - in addition to heat cost allocation.

Technical design

The pulse adapter has been designed to acquire the following pulses:

- Reed contact
- Reed contact with Namur circuitry

Depending on the parameter settings, the pulses are converted to consumption data, which are then cumulated and stored.

The consumption data are stored as follows:

- In a dynamic memory: It cumulates consumption data and always shows the current reading
- In a set day memory: It stores the annual consumption data once a year; the set day is freely selectable; the value of the previous year is always available
- In a monthly memory: It acquires the meter reading at the end of the month and stores it for 1 year; the oldest value will be deleted

The pulse adapter monitors itself and, in the case of a Reed contact with Namur circuitry, also the wiring to the meters. If a fault occurs, the respective fault status message is delivered via the building bus and indicated by an LED on the unit front:

- LED steady on: Fault
- LED flashing: Normal operation

If consumption data shall also be recorded during plant off times, the pulse adapter can be optionally equipped with a battery. The battery is continually charged and delivers the operating voltage in the event of a power failure.

For environmental reasons, the battery should be fitted only if there is a need for it. A commercially available DC 9 V battery (IEC 6F22) can be used.

Mechanical design

The pulse adapter consists of a base, which carries the printed circuit board, and a cover.

The base is suitable for wall mounting with the help of screws and also allows snap-on DIN rail mounting.

For wiring, the rear and the underside of the unit are provided with knockout holes for cable entry glands PG11 or rubber grommets.

The printed circuit board carries the terminals, the interface for connecting the service unit and the address plug. This service plug is used to give the pulse adapter a number (address) when the plant is commissioned.

The electronic components are protected by a transparent cover.

If the pulse adapter requires a battery, it is to be inserted in the appropriate opening in the transparent cover.

Engineering notes

The operating voltage of AC 24 V is supplied by an isolating transformer which powers the whole SYNERGYR[®] system and which must be installed near the central unit. When sizing the transformer, the power consumption of all units connected to the building bus must be taken into consideration. The secondary side of the transformer must not be earthed.

Mounting notes

When choosing the mounting location, the environmental conditions must be observed. The pulse adapter is suitable for mounting on a

- flat surface such as a wall, inside a control panel, etc.
- DIN rail

Above the pulse adapter, there must be a clearance of at least 50 mm to make certain the address plug can be fitted (refer to "Dimensions").

Commissioning notes

The parameters will be set by Siemens staff.

The pulse adapter offers the following choices in terms of entries, measured values and measuring ranges:

<i>Parameter settings:</i>	<i>Available:</i>
2 pulse valencies (entry as a fraction)	Numerator: 0...10,000 per pulse Denominator: 1...10,000 per pulse
2 units	Liter, m ³ , W, kW, MW
2 media	Oil, gas, steam, DHW, other
2 pulse source	Reed contact or Reed contact with Namur circuitry
2 meter readings	0.0...9,999,999.9
2 arbitrary numbers*	0...99,999,999
2 service dates	Date
1 subaddress	1 or 2

* E.g. customer number, production number, object number, etc.

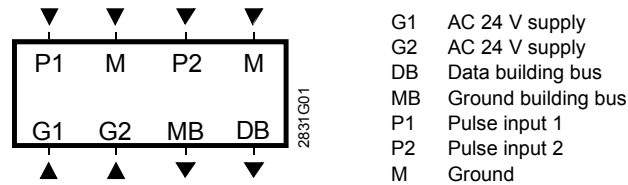
Technical data

General unit data

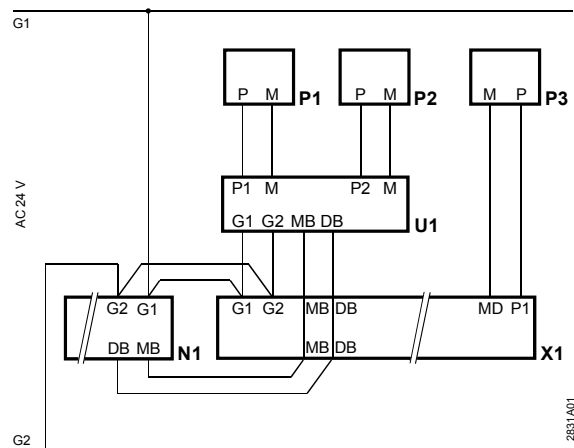
Operating voltage	SELV / PELV AC 24 V ± 20 %
Rated voltage	AC 24 V
Frequency	50 Hz
Power consumption	1.2 VA
Battery	DC 9 V (IEC 6F22)
Pulses	
Max. input frequency	25 Hz
Min. duration	20 ms
Perm ambient temperature	
Transport and storage	-25...+65 °C
Normal operation	0...55 °C
Battery-powered	0...35 °C
Length of pulse source cable	max. 10 m, twisted
Weight (incl. battery)	0.35 kg

Safety data	Degree of protection on a flat, vertical wall	IP54 to EN 60529
	Safety class	III to EN 60730
Standards	Product standard	EN 60730-1
	Electromagnetic compatibility	
	Immunity (residential)	EN 61000-6-1
	Emissions (residential)	EN 61000-6-3
CE conformity to EMC directive		2004/108/EC

Connection terminals

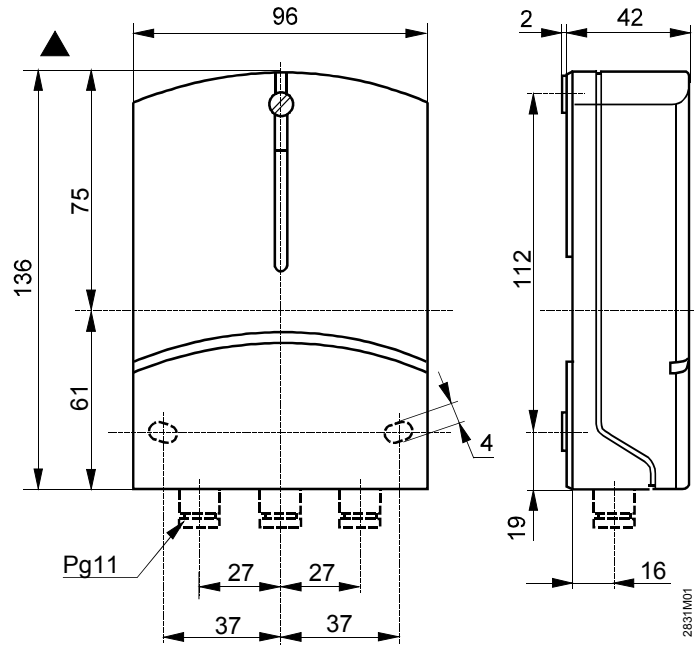


Connection diagram



- N1 Central unit OZW30
- P1 Any type of meter, e.g. for DHW
- P2 Any type of meter, e.g. for electricity
- P3 Any type of meter, e.g. for chilled water
- U1 Pulse adapter AEW2.1
- X1 Conduit box ALW84 or ALW30

Dimensions



Minimum clearance:

▲ = 50 mm