SIEMENS

2851

SYNERGYR®

Bus-compatible Temperature Measuring Unit

QAB30

Temperature measuring unit with bus connection facility for acquiring the zone's flow temperature and a second temperature using a Ni sensor.

Use

The QAB30 temperature measuring unit is a component of the SYNERGYR® control and billing system.
It is required

- in plant equipped with the WRV82 / WRV85 / WRV86 control and heat cost allocation valve
- where the outside temperature is to be fed to the building bus as a measured value (in connection with the WRI80 control and heat meter interface or the WRV81 / WRV83 / WRV84 control and heat cost allocation valve and the QAW20 room unit)

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

Type summary

Description	*Type reference*
Temperature measuring unit	**QAB30**
Protection pocket for nominal pipe sizes DN20…40	**ALT35**
Protection pocket for nominal pipe sizes DN50…80	**ALT65**

Ordering

When ordering, please give type reference QAB30 and that of the required protection pocket.
The scope of delivery comprises the measuring unit complete with immersion temperature sensor and protection pocket.

Equipment combinations

The immersion temperature sensor for acquiring the zone's flow temperature and the measuring unit form a single calibrated unit. The sensor may not be replaced.
It is also possible to connect a QAC22 outside sensor (refer to Data Sheet N1811).

Technical design

The QAB30 temperature measuring unit acquires the zone's flow temperature and, optionally, the outside temperature. The temperatures are periodically transmitted via building bus.

- The zone's flow temperature is measured with the ready connected immersion temperature sensor. The WRV82 / WRV85 / WRV86 control and heat cost allocation valves of the relevant zone use the flow temperature for determining the amount of heat consumed
- The outside temperature is acquired if a QAC22 outside sensor is connected. The OZW central unit uses the outside temperature for calculating the number of heating degree days and as a diagnostic value.
  The outside temperature is displayed on the QAW20… room units

On applications without zone temperature measurements (when using the WRI80 or WRV81 / WRV83 / WRV84), the immersion temperature sensor can be disconnected.

Mechanical design

The QAB30 consists of the actual measuring unit and the immersion temperature sensor.

Measuring unit

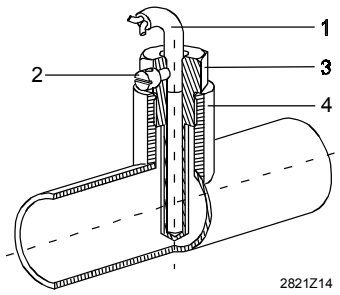
The measuring unit is comprised of base, terminal block and cover.
The base has 3 fixing holes for wall mounting. DIN rail mounting is made possible by a snap-on facility at the rear. For wiring, there are

- 3 knockout holes for cable glands PG11 or plastic grommets on the underside
- 5 knockout holes at the rear when using a recessed conduit box

The immersion temperature sensor for measuring the zone's flow temperature is supplied with a cable of 1.5 m, ready connected to the measuring unit. Connection terminals are provided for the other connections (power supply, building bus and outside sensor).

Immersion temperature sensor

The sensor acquires the temperature of the medium with a Ni sensing element located at the end of the immersion rod. The rod is immersed in the protection pocket and secured with a sealable screw.
To mount the immersion temperature sensor, an ALT… protection pocket and a $^3/_8$" sleeve are required. The sleeve is welded into the pipe which then accommodates the protection pocket.



1. Sensor with connecting cable
2. Sealable adjusting screw
3. Protection pocket
4. Sleeve

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.

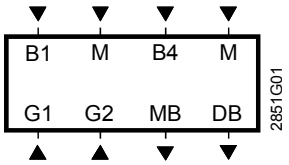
Mounting notes

When choosing the mounting location, the environmental conditions must be observed.
The sleeve for mounting the ALT… protection pocket is to be fitted on site. The required length depends upon the pipe size (see table under "Dimensions“).
Above the temperature measuring unit, there must be a clearance of at least 50 mm to make certain the address plug can be fitted.
The temperature measuring unit is supplied complete with Mounting Instructions.

Technical data

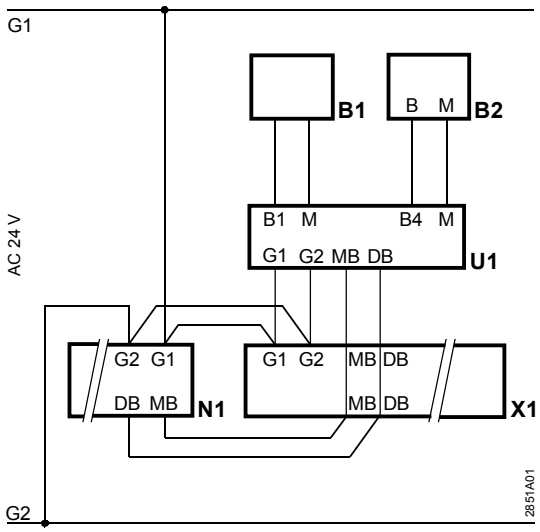
General unit data	Operating voltage	SELV / PELV AC 24 V ± 20 %
	Rated voltage	AC 24 V
	Frequency	50 Hz
	Power consumption	0.75 VA
	Temperature range of immersion sensor	5…90 °C
	Length of sensor cable	1.5 m
	Perm. ambient temperature	
	Transport and storage	–25…+65 °C
	Operation	0…50 °C
	Weight (incl. battery)	0.3 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



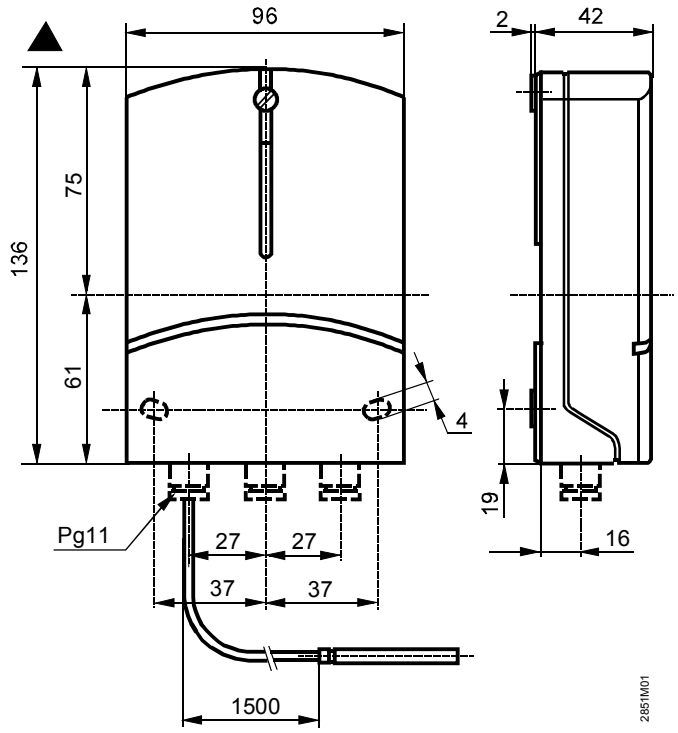
B1 Flow temperature sensor
B4 Outside sensor QAC22
M Ground for sensor
G1 AC 24 V supply
G2 AC 24 V supply
MB Ground building bus
DB Data building bus

Connection diagram



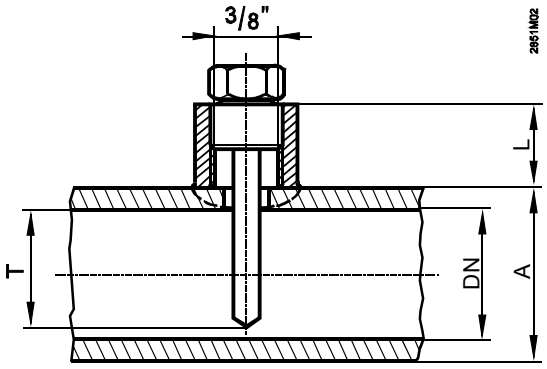
B1 Flow temperature sensor
B2 Outside sensor QAC22
N1 Central unit OZW30
U1 Temperature measuring unit QAB30
X1 Conduit box ALW30 or ALW84

Dimensions



Minimum clearance:

▲ = 50 mm



Pipe		***Protection pocket ALT…***		***Sleeve***
*Nominal size **DN***	*Outer diameter **A***	*Type reference*	*Imm. length **T***	*Length **L***
DN20 / ¾"	26.9 mm	**ALT35**	22 mm	20 mm
DN25 / 1"	33.8 mm	**ALT35**	26 mm	16 mm
DN32	42.4 mm	**ALT35**	30 mm	12 mm
DN40	48.3 mm	**ALT35**	30 mm	12 mm
DN50	60.3 mm	**ALT65**	53 mm	20 mm
DN65	76.1 mm	**ALT65**	53 mm	20 mm
DN80	88.9 mm	**ALT65**	53 mm	20 mm