

Heat Interface Units & M-BUS Metering System



System Description

The Heat Interface Units are especially designed for two-pipe systems, to produce DHW and Heating to meet the highest standards for energy efficiency, hygiene, individual comfort and energy billing. The units can be supplied from any individual energy source like district heating, central heating, solar heating/heat pumps and Biomass/CHP systems. HIUs can be extended with a distribution system for floor heating. The distribution can be custom made and installed separately or directly assembled to the unit. Thereby you get an easy and flexible solution for domestic hot water and heating water for radiators and/or floor heating.

System Advantages

Planning and Installation:

- applicable for new buildings and renovation works
- Individual heating solutions and combination
- low space requirements, integration in wall construction and shafts
- reduced expenditure in installation time, 2 pipe system
- one central heat source in the basement
- no inefficient and cost intensive storage of DHW

In Operation:

- reduced energy loss
- Increased energy efficiency
- exact and individual energy billing
- one unit per apartment
- minimized risk of legionella and bacteria
- reduced maintenance costs

Specification

It is our intention to combine all required components in the HIU unit cabinet to provide pressure and temperature control and energy metering. This has the benefit of making installation and commissioning easier. This will also make future maintenance/adjustments effortless.

Each HIU will be supplied with an assembled fixing manifold unit, which will allow the first fix pipework to be installed to precise required dimensions. The manifold will then be „looped“ out and the complete 1st fix installation can be pressure tested. Subsequently, the final installation of the HIUs will become a simple 2nd fix task.

Comfort Double Heat Exchanger Unit

The HIU listed below are based on the latest architect s apartment schedule. Our HIU design proposals are based on energy meters for heating to be factory fitted, with internal controls for volume flow differential pressure control and thermostatic control of the HWS.

A second stainless steel plate heat exchanger will be used for heating. Integral thermostatic control valves (TWR) for heating and DHW, DN 20 differential pressure control valve and primary flow balancing valve will provide temperature, pressure and flow rate regulation. BCWS double check valve & 7,5 litre expansion vessel. Drain points, air vent & pressure test points, stainless steel 316 internal pipe work, circuits for heating & DHW supplies to apartments with factory fitted M-BUS enabled energy meter for primary DHW circuit with pulsed data output module pre-wired for remote data collection via building M-BUS system to local plant room PC. (see schematic !)
Complete unit with steel cabinet Dimensions 600W x 800H x 250D mm

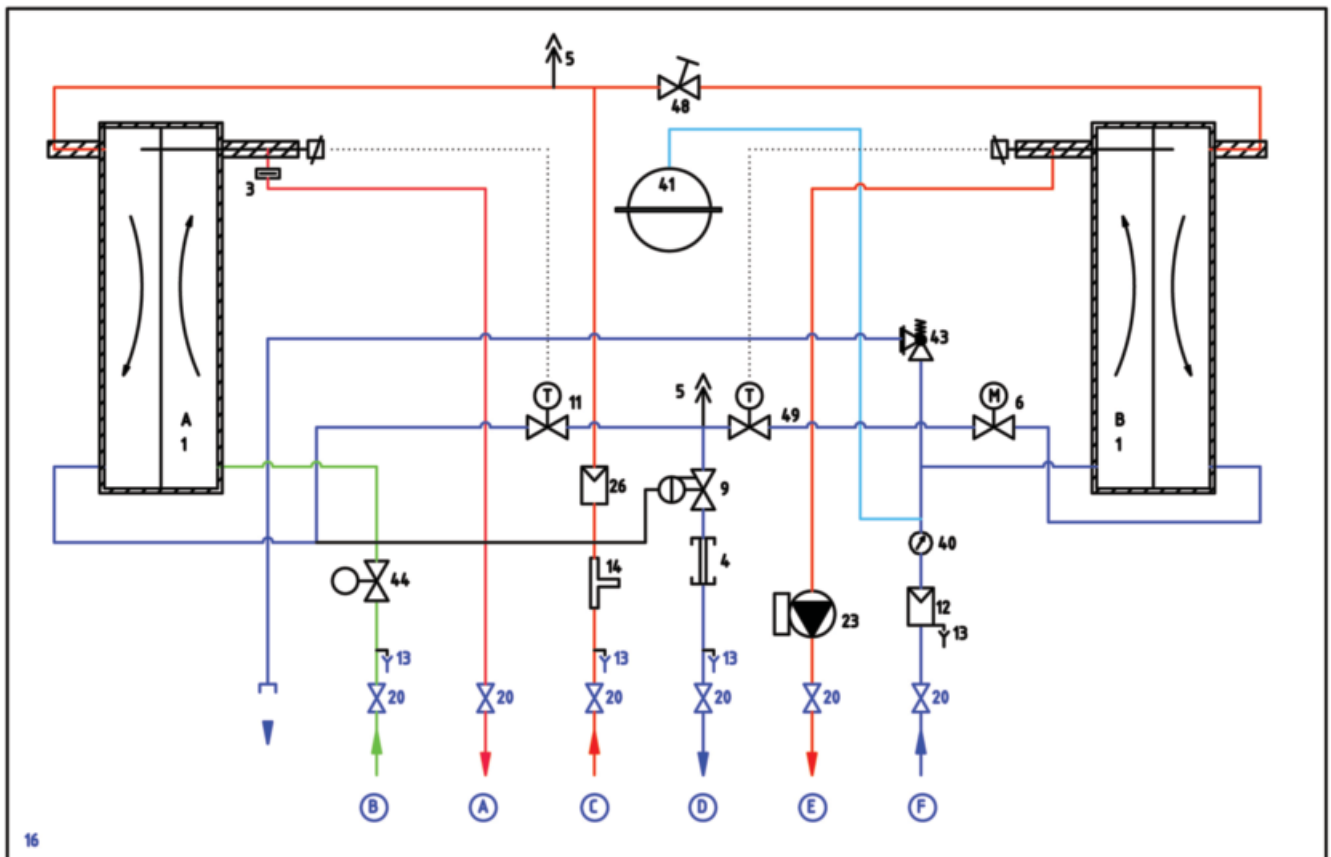
Sample Unit

Similar HIU samples are ready to view in the show rooms of our sales partner. Additional description is available on request. Working samples which exactly reflect this submission have been installed in mock-up cupboards and are ready to view by the interested parties.

Compatibility With Architectural Cupboard Dimensions

We have established that the HIUs fit in the cupboard spaces provided. It has become apparent from our detailed design of apartment services layouts that no co-ordination issues within the HIU cupboards.

Different Applications



Legend:

- 1a Heat exchanger WP 24-14 (insulated)
- 1b. Heat exchanger WP 22-22 (insulated)
- 3. Water restriction plate
- 4. Section for heat meter $\frac{3}{4}$ " x 110 mm
- 5. Deaeration of the unit
- 6. Zone valve (if required incl. actuator)
- 9. Differential pressure control valve
- 11. Thermostatic DHW control valve
- 12. Strainer secondary return
- 13. Bleed / drain valve with hose connector $\frac{3}{4}$ "
- 14. Sensor pocket for heat meter
- 16. Base plate
- 20. Ball valve $\frac{3}{4}$ "
- 23. Pump UPS 15-40
- 26. Strainer
- 40. Pressure gauge
- 41. Expansion vessel 7,5 l
- 43. Safety valve 3 bar
- 44. Shock arrestor
- 48. Control coupling
- 49. Thermostatic heating control valve

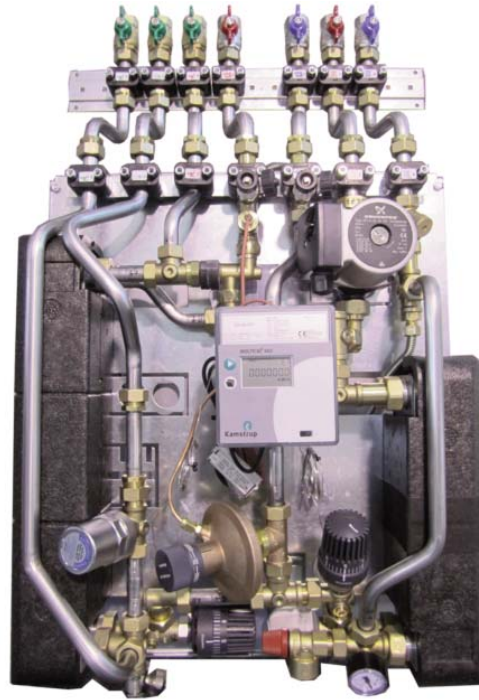
- A DHW to the apartment
- B DCW from the pipe
- C Primary flow
- D Primary return
- E Secondary flow
- F Secondary return



Comfort HIU with 6/7 bottom connection
4 top/2 bottom connection on request



Comfort HIU with PM valve for DHW priority with top or bottom connection



Comfort HIU with 6/7 top connection incl. heat meter/water meter



Comfort HIU allows heating or/and cooling + addition heating circuit while summer operation i.e. for bathroom towel heater



New KaMo development:

Comfort HIU with add on heater grants always DHW supply and makes any DHW-cylinder unnecessary
 "safe space - safe money"

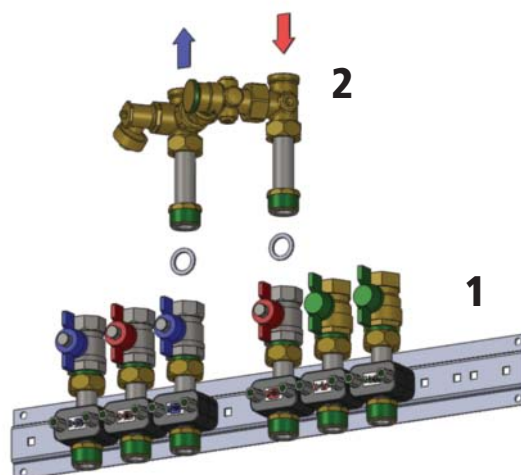
Accessories

1. Sub Assembled Fixing Manifold Unit

Supplied as a loose item for top or bottom entry connection of pipe work to DN 20 ball valves (included) prior to installation of unit. This is shown on the attached drawing **1**. The fixing manifold is also available with solder fittings to connect copper pipes

2. Sub Assembled Flushing bypass with high capacity

Sub Assembled together with the fixing manifold. Equipped with stop valve and drain/air vent. Allows to flush primary supply/return line with high flushing capacity.

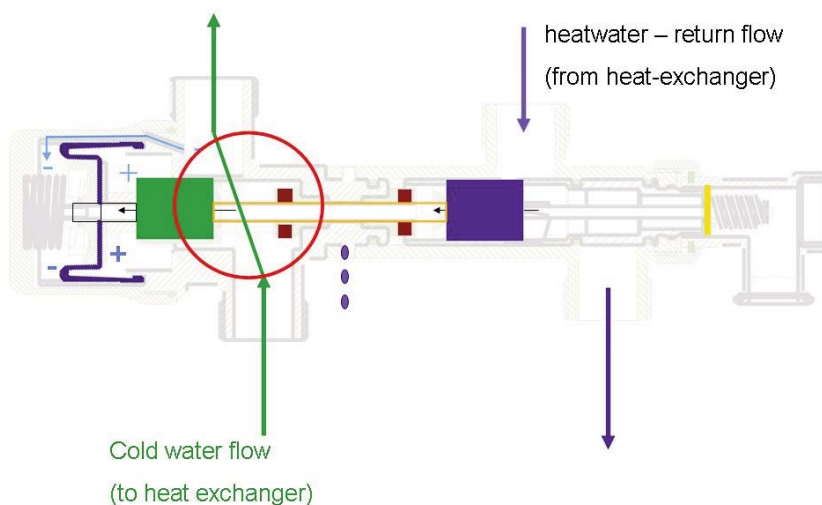


3. PM valve for DHW priority

Proportional quantity control valve (PM valve) opens the way to the DHW heat exchanger proportionally according to the cold water input and closes the secondary heating return. Priority is given to the production of DHW.

DVGW/KTW-approval (without auxiliary energy). No calcification thanks to teflon coated valve spindle.

- Gives priority to produce DHW
- High flow capacity
- No calcification – Teflon coated
- Self operated controller



4. Energy meter (M-Bus)

We only recommend compact ultrasonic energy meters which registers the exact consumption due to its supreme measuring accuracy. The meter is maintenance-free and has a long lifetime which guarantees minimum yearly operating costs. Our heat meters are used for heat, cooling and combined heat/cooling measurement in all water-based systems with temperatures from 2 to 160°C. The energy meter has been developed for measurement of energy consumption in family and multiple occupancy housing, housing associations, blocks of flats and small industry.

Our heat meters are optionally equipped with two M-Bus modules. The modules are used for remote reading via an M-Bus master. Selected settings can also be configured via the M-Bus module. The modules are either fitted with two pulse inputs for reading e.g. water meters, or two pulse outputs with energy (CE) and volume (CV) values. The modules are galvanically separated from the meter. M-Bus ID number, date/time and preset of pulse inputs (VA and VB) can be configured. Both primary and secondary M-Bus addresses can be shown in the display. The primary address as well as the pulse input presets can be changed via the two push buttons.



5. Pre-payment System on request

Heat meters can also be used in conjunction with pre-payment systems, allowing customers to pay for heat on an actual consumption basis.

Based on smart card technology, our Pre-Payment Unit (PPU) allows customers to budget their energy expenditure by charging a smart card at a local shop and transferring this to a Domestic Credit Meter (DCM) connected to the HIU.

From our clients' point of view, the Pre-Payment system has helped to reduce bad debt among its customers, because once any credit and emergency credit has been exhausted then an additional motorised valve on the HIU will shut off the primary heat supply.

As with our recommended meters, the system can be remotely read reducing the need to visit premises to physically take meter readings.

This type of technology also benefits customers by allowing them to save up heat units during summer month.

Pre-payment meters are available as a managed service from Kamo Systemtechnik

Datasheet

Item Number	
Type	Type 1 / Double Heat Exchanger Unit
Application	DHW & heating
Connection type	indirect
Pressure class	PN 16
Max. DHW supply temp.	90°C
Capacity DHW	s. below
Control type DHW	Flow/thermostat
Static pressure DCW	250 Kpa
Temp. range DHW	10/60° C
Circulation DHW	on request
Capacity heating	10 KW
Control Type Heating	Thermostat/electric
Connection SIZES	¾" female (1" for 103 kW)
Fixing rail	Yes – bottom or top connection + flushing bypass optional
Cover	yes
Dim. without cover	555 W x 707 H x 240 D
Dim. with cover	600 W x 800 H x 250 D
Steel quality	AISI316 (Ø 22 mm for 103 kW)
Expansion vessel	7,5 l

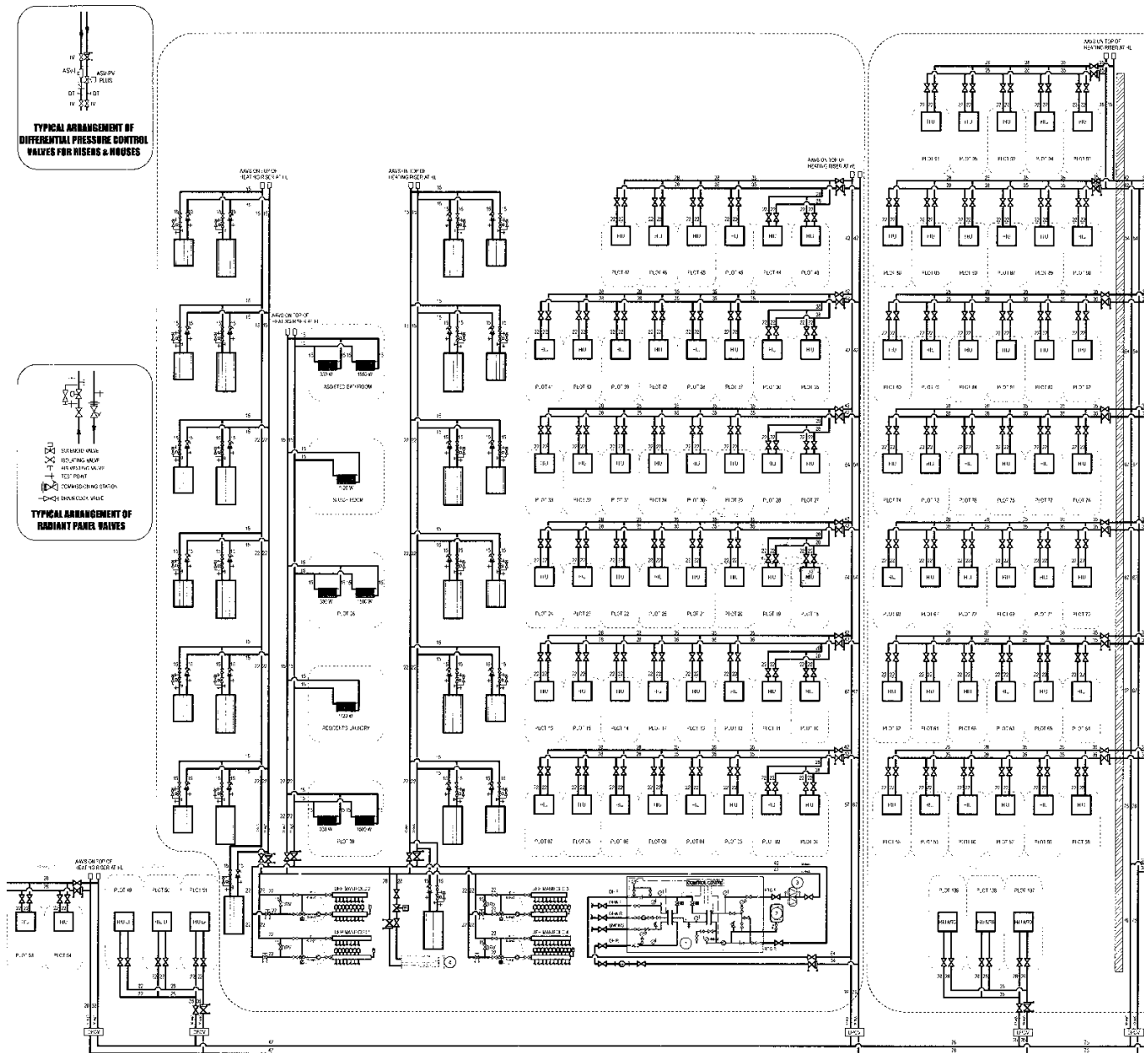
KW	Type heat exchanger	Supply temp, primary °C	Return temp, primary °C	flow rate primary l/h	DHW load l/min.	Pressure loss primary mPa
41	WP 24-14	70	35	1026	12	0,524
41	WP 24-14	80	28	691	12	0,511
41	WP 24-14	90	23	536	12	0,491
51	WP 24-20	70	32	1177*	15	0,537
51	WP 24-20	80	25	814	15	0,524
51	WP 24-20	90	20	637	15	0,503
60	WP 24-30	70	28	1206*	17	0,556
60	WP 24-30	80	21	856	17	0,542
60	WP 24-30	90	17	695	17	0,515
72	WP 24-30	70	29	1526*	21	0,551
72	WP 24-30	80	23	1098	21	0,553
72	WP 24-30	90	19	882	21	0,507
103	WP 24-30	70	33	2415*	30	0,533
103	WP 24-30	80	26	1656	30	0,520
103	WP 24-30	90	21	1296	30	0,499

* out of flow capacity

Heating: capacity examples

KW	Type heat exchanger	Heating circuit primary	Heating circuit secondary	Pressure loss primary KPa	Flow rate primary l/h	
10	WP-22-22	70/43	36/60	0,73	320,4	
10	WP-22-22	90/58	50/80	0,52	270,0	
10	WP-22-22	70/31	30/35	0,37	219,6	Floor heating
10	WP-22-22	90/31	30/35	0,17	147,6	Floor heating

Sample application for KaMo Comfort HIU



Can be adapted to any individual requirements

Please send us your enquiry!

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Subject to technical modifications – 10/11