

Climate  
Control

IMI Heimeier

# TA-COMFORT radiant heating interface unit with Dynacon Eclipse



## Floor heating manifolds

Heating interface unit for radiant heating with  
automatic flow control

# TA-COMFORT radiant heating interface unit with Dynacon Eclipse

Factory prefabricated underfloor heating station including Dynacon Eclipse manifold with automatic flow controllers per heating circuit. With distributor strip for up to 8 zones (rooms).

Dynacon Eclipse adjusts the flow rate in the individual heating circuits directly in l/h. This means hydraulic balancing is achieved in one simple operation. The set flow rate is constantly adapted, i.e. if the rate becomes too high, e.g. due to closing adjacent circuits, Dynacon Eclipse controls the flow automatically to the set value. The control cartridge always ensures a constant flow. This makes Dynacon Eclipse heating circuit manifolds a time and cost-saving solution especially for system commissioning.



## Key features

### Complete systems for decentralised heat distributio

Provides the dwelling with heat, controlling the heat requirements and/or producing hot water via the heat exchanger.

### Automatic hydraulic balancing

Due to integrated flow controller inside each thermostatic insert

### Flow indicator for each heating circuit

For functional check

### Actuator EMOTec First-Open

Normally closed version with First-Open function. Simple functional testing by means of position indicator.

### With distributor strip

For up to 8 zones (rooms)

## Technical description

### Application:

Floor heating systems

### Function:

Individual room temperature control with actuator or thermostatic head with remote dial  
 Flow limitation  
 Shut-off  
 Filling  
 Draining  
 Flushing  
 Venting  
 Measuring (ball valves with connection for direct measurement in supply and return)

### Pressure class:

PN 6

### Flow range:

The flow can be stepless pre-set within the range: 30-300 l/h.  
 Delivery setting: Commissioning setting.  
 Max. 2,5 m<sup>3</sup>/h per heating circuit manifold.

### Differential pressure ( $\Delta p_V$ ):

Max. differential pressure:  
 60 kPa (<30 dB(A))  
 Min. differential pressure:  
 30 – 150 l/h = 17 kPa  
 150 – 300 l/h = 25 kPa

### Temperature:

Max. working temperature: 70°C  
 Min. working temperature: -5°C

### Material:

Manifold: Stainless steel 1.4301  
 Connection fittings: Nickel-plated brass

Thermostatic insert: Brass  
 O-rings: EPDM  
 Valve disc: EPDM  
 Spring: stainless steel  
 Thermostatic insert: Brass, PPS (polyphenylsulphide) and SPS (syndiotactic polystyrene)  
 Spindle: Niro-steel spindle with double O-ring seal

Flow meter: Heat-resistant plastic and stainless steel. Brass. EPDM seals.

Filling, draining, flushing and venting device: Nickel-plated brass and plastic. EPDM seals.

Ball valves: Brass, PTFE and EPDM seals.  
 Heat meter piece: Steel  
 Couplings: Brass

Distribution cabinet: Sheet steel galvanized. Frame and door powder-coated, white RAL 9016.

### Marking:

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### Pipe connection:

Internal thread Rp3/4 (ball valves DN 20).  
 Heating circuit connection G3/4 adaptor with Eurocone suitable for compression fittings for plastic, copper, precision steel and multi-layer pipe.  
 See also accessories.

**Actuator:**

EMOtec First-Open  
 230 VAC (+10%/-10%), 50-60 Hz, currentless closed (NC),  
 First-Open function, wired to a channel of the distributor strip.  
 Power consumption:  
 Starting: ≤ 70 W (VA)  
 During operation: ≤ 2 W (VA)  
 More information on EMOtec First-Open – see separate  
 technical leaflet.

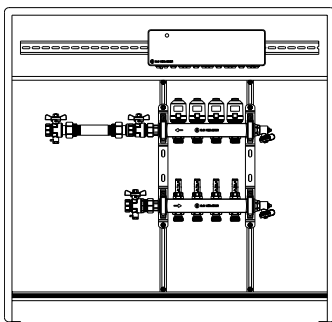
**Distributor strip:**

230 VAC, 50Hz, (10VA).  
 For up to 8 zones (rooms).  
 The number of actuators per channel can be increased by  
 bridging the terminals (see operating instructions).  
 Ingress protection IP 40.  
 Protection class II.

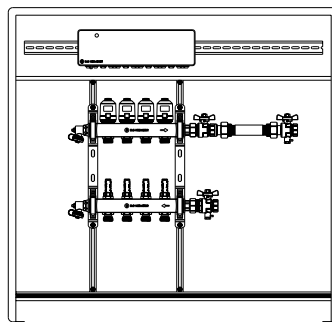
**Construction**

**Connection set**

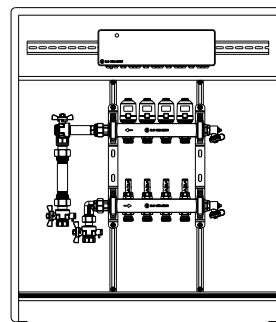
straight, left



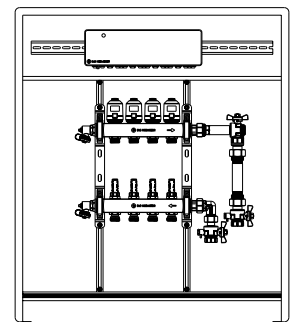
straight, right



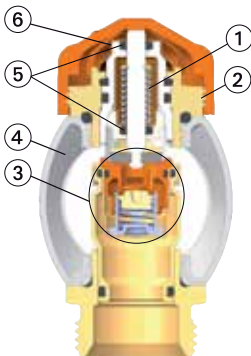
angle, left



angle, right



**Eclipse thermostatic insert with automatic flow control**



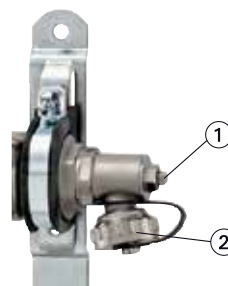
1. Strong return spring in combination with high locating force ensures that the valve does not slacken off over time
2. IMI Heimeier M30x1.5 connection for thermostatic heads and actuators
3. Automatic flow limiter
4. Manifold
5. Long-life double O-ring sealing
6. Flow setting

**Flow indicator**



1. Viewing glass
2. Shut-off handwheel
3. Manifold
4. Connection nipple

**Filling, draining, flushing and venting device**



1. Venting
2. Filling-, draining and flushing, 3/4" connection, swivelling

## Function

### Eclipse flow limiter

A regulating part is set to the calculated control rate by turning the digit cap with the setting key or an 11 mm end wrench. If the flow rate increases at the valve the rising pressure moves the sleeve, thus constantly limiting the flow to the set value. The set flow rate is therefore never exceeded. If the flow rate drops below the set value a spring presses the sleeve back to its original position.

### EMOtec Fist-Open, closed when currentless (NC model)

Initiating operating voltage heats up the expansion system of the actuator. After the time lag, a uniform opening process ensues. If the voltage is cutoff, the actuator closes via the cooling of the expansion system after the time lag.

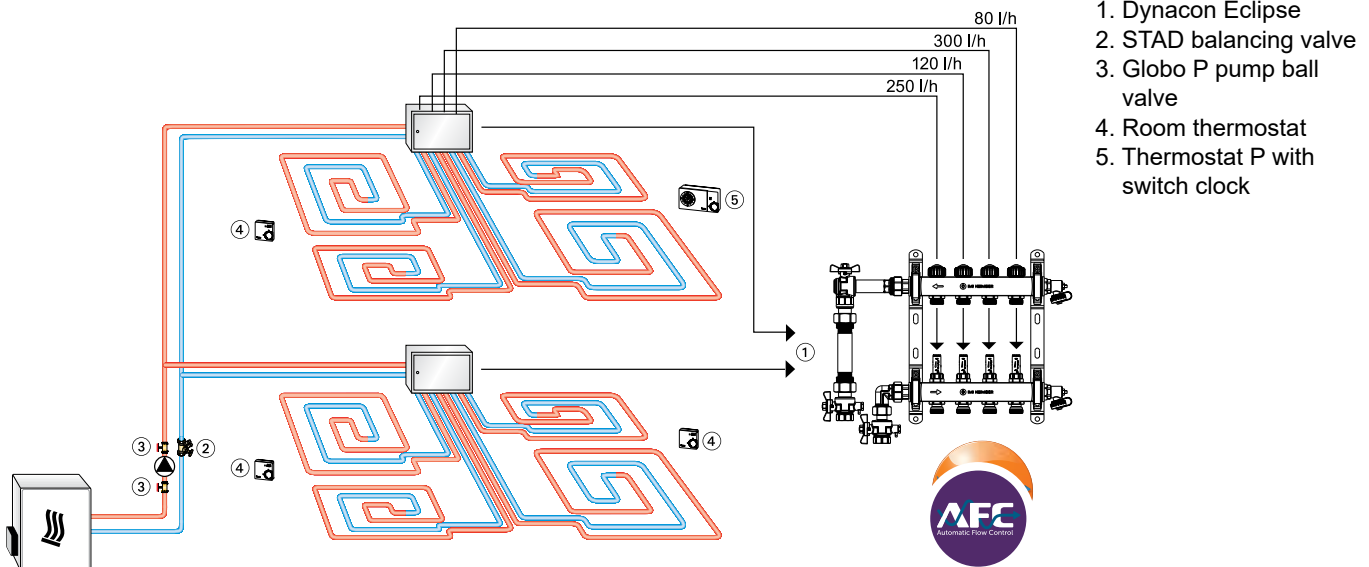
The first-open function keeps the actuator open until the individual room control is commissioned. This not only reduces the effort required during assembly, but also enables heating operation while the new building is drying. When the individual room control is started up for the first time, the first-open function is automatically unlocked after approx. 6 minutes and the actuator goes into normal operation.

## Application

Dynacon Eclipse adjusts the flow rate in the individual heating circuits directly in l/h. This means hydraulic balancing is achieved in one simple operation. The set flow rate is constantly adapted, i.e. if the rate becomes too high, e.g. due to closing adjacent circuits, Dynacon Eclipse controls the flow automatically to the set value. The control cartridge always ensures a constant flow. This makes Dynacon Eclipse heating circuit manifolds a time and cost-saving solution especially for system commissioning. With conventional heating circuit manifolds with throttle valves and flow indicators setting the required water quantities is a time-consuming affair. The setting required at the throttle valves must either be calculated or set using flow indicators at the manifold. However, the quantities of water distributed in this way only correspond to maximum requirements. When individual heating circuits are turned off, the quantity of water no longer required is distributed over the adjacent circuits resulting in an oversupply in these circuits.

The automatic hydraulic balance with Dynacon Eclipse avoids this oversupply in individual heating circuits. This ensures optimum temperature distribution, saves energy and increases comfort.

### Sample application



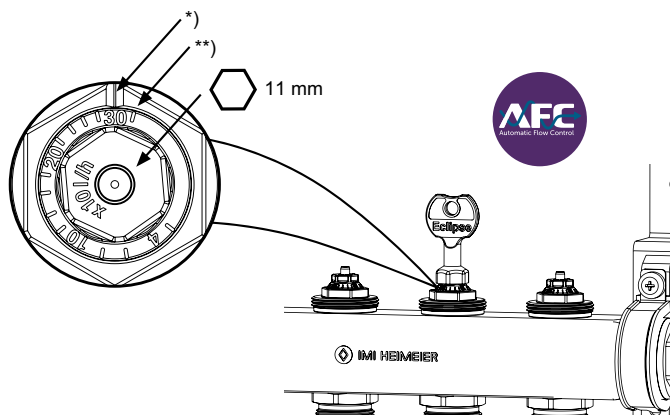
## Operation

### Flow setting

Stepless setting between 3 to 30 (30 to 300 l/h).  
The setting is changed using a special setting key (article No. 3930-02.142) or an 11 mm end wrench, to ensure tamper proof setting.

- Place the setting key on the valve insert.
- Turn the setting tool so that desired setting value is pointing at the index\* of the valve body (see fig.).
- Remove the key or 11 mm end wrench. The valve is now set.

### Front-end and lateral visibility



- \*) Index
- \*\*) Commissioning setting

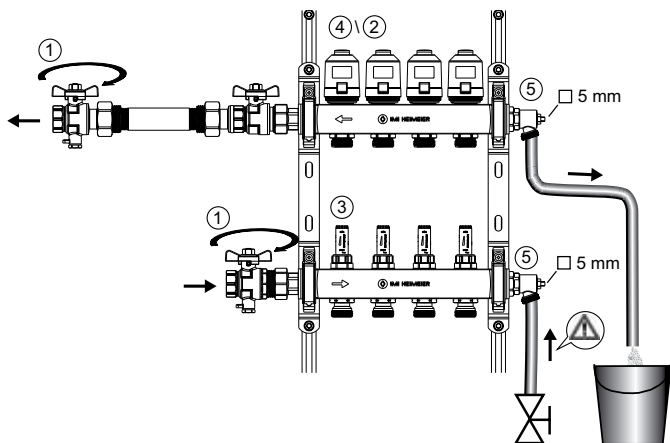
Setting	1	4	1	1	10	1	1	1	1	20	1	1	1	1	30
l/h	30	40	60	80	100	120	140	160	180	200	220	240	260	280	300

### Filling, flushing and venting

Product lifetime and system performance strongly depend on proper commissioning. We refer to technical standards EN 14336, VDI2035 and ON H5195-1 to be carefully attended. Each heating circuit must be individually filled, flushed and vented:

- Close the ball/shut-off valves (1). Close all thermostatic inserts with the protection caps (4). All flow controllers (2) or flow meters (3) must be completely open!
- Connect the fill- and drain hose and open the filling, draining, flushing and venting device (5).
- Fill/Flush the circuits each by each.
- Open the thermostatic insert of the 1. heating circuit with the protection cap (4) completely. After flushing the 1. circuit close the corresponding thermostatic insert and fill/flush the next circuit.

Setting of the flow controller or flow meter: See „Installation and operating instruction“.



### Pressure test

Pressure test duration before and during screed laying.  
The test pressure is 1.3 times of the permissible operating pressure.

### Thermal fluid

To stop any damage and scale in hot water heating systems, the composition of the thermal fluid is to conform to VDI Directive 2035. For industrial and longdistance energy systems, see applicable codes VdTÜV and 1466/AGFW FW 510. Mineral oil in the thermal fluid and/or all kinds of lubricants containing mineral oil lead to considerable swelling and, in most cases, to the failure of EPDM seals. When using nitrite-free antifreeze and anti-corrosive based on ethylene glycol, technical advice – especially on additive concentration – is to be taken from the anti-freeze/anti-corrosive manufacturer’s documentation.

### Functional heating

Carry out functional heating of heating screed conforming to standards in keeping with EN 1264-4.

### Earliest start for functional heating:

- Cement screed: 21 days after laying
  - Anhydrite screed 7 days after laying
- Begin 20 °C - 25 °C flow temperature and maintain for 3 days. Then set maximum design temperature and maintain for 4 days. Flow temperature can be regulated by controlling the heat generator.  
Refer to the screed manufacturer’s information!

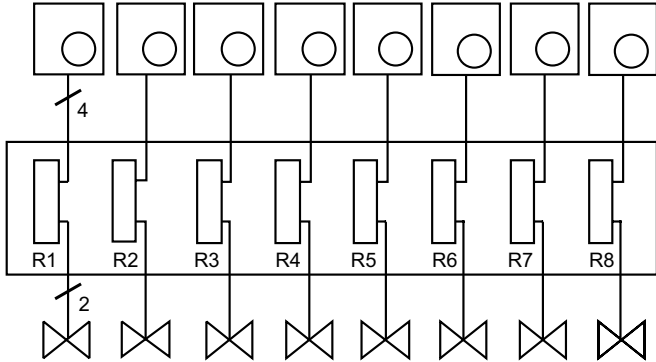
### Do not exceed maximum floor temperature at the heating pipes:

- Cement and anhydrite screed: 55 °C
- Poured asphalt screed: 45 °C
- according to screed manufacturer’s technical advice!

## Connection diagram

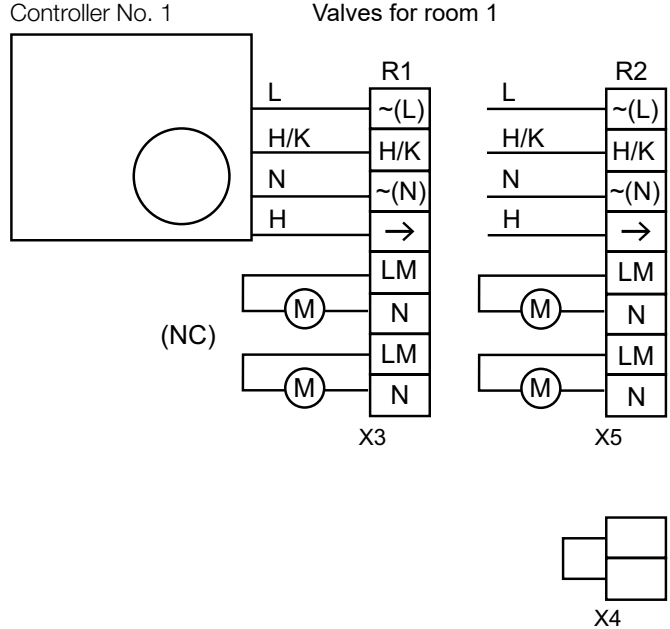
### Distributor strip

Overview



### Room switches in parallel

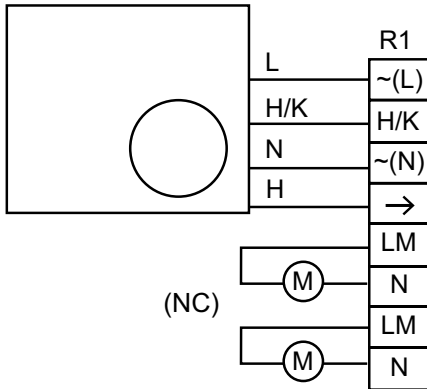
Expansion of the terminals for actuators, e.g. with terminal X4. The valves in a room can always be assigned to the previous room (e.g. room 1 (R1) and room 2 (R2)) by bridging the two-pole terminal.



### Connection of controller and actuator (230 V)

Controller No. 1

Valves for room 1



L = Power supply

H/K = Heating/cooling

H = Heating

N = Power supply, neutral

LM = Power supply motor (actuator)

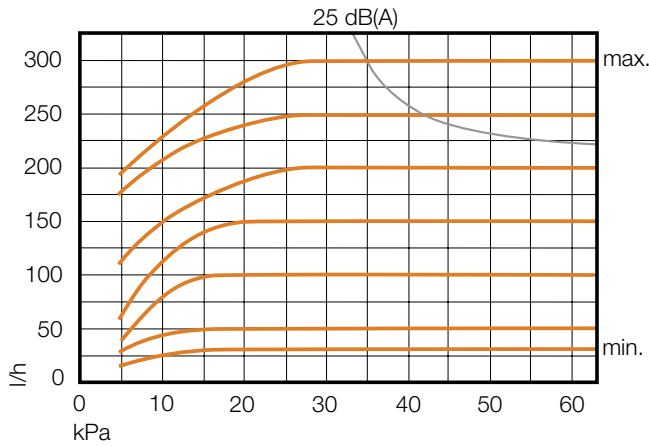
X4 = Additional valves for room 1 by bridging e.g. terminal X4.

### Notes:

- Suitable room thermostats (Change-Over) are required for the H/K function (heating and cooling).
- No room thermostat should be connected to the extended channels.

## Technical data

**Flow rate range per heating circuit: 30 - 300 l/h**



$\Delta p$  min. 30 – 150 l/h = 17 kPa  
 $\Delta p$  min. 150 – 300 l/h = 25 kPa  
 $\Delta p$  max. 60 kPa

### Sample calculation

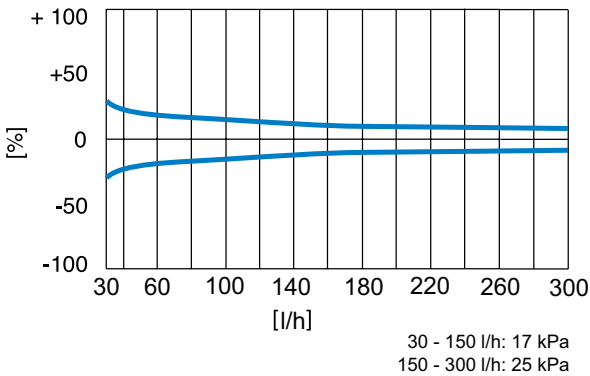
**Target:**  
 Set value of Dynacon Eclipse flow controller

**Given:**  
 Heat flow, heating circuit  $Q = 1120 \text{ W}$   
 Temperature spread  $\Delta t = 8 \text{ K (44/36}^\circ\text{C)}$

**Solution:**  
 Mass flow  $m = Q / (c \cdot \Delta t) = 1120 / (1.163 \cdot 8) = 120 \text{ kg/h}$

Flow regulator setting at Dynacon Eclipse manifold: = **12**

### Lowest flow tolerances



### Setting values with different heating performances and system differential temperatures

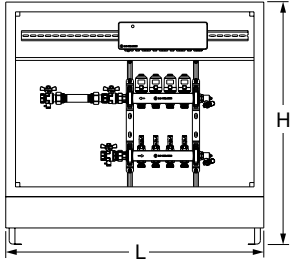
Q [W]	200	250	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4800	5200	
$\Delta t$ [K]																												
5	3	4	5	7	9	10	12	14	16	17	21	24	28															
8			3	4	5	7	8	9	10	11	13	15	17	19	22	24	26	28										
10				3	4	5	6	7	8	9	10	12	14	16	17	19	21	22	24	26	28	29						
15					3	3	4	5	5	6	7	8	9	10	12	13	14	15	16	17	18	20	21	22	23	28	30	

$\Delta p$  min. 30 – 150 l/h = 17 kPa  
 $\Delta p$  min. 150 – 300 l/h = 25 kPa

Q = Heating performance  
 $\Delta t$  = System differential temperature  
 $\Delta p$  = Differential pressure

**Sample:**  
 $Q = 1000 \text{ W}$ ,  $\Delta t = 15 \text{ K}$   
 Setting value: **6** ( $\approx 60 \text{ l/h}$ )

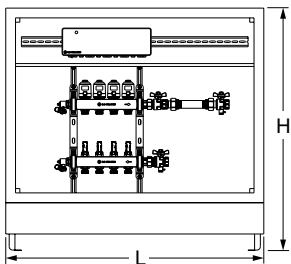
## Articles – Flush mounted cabinet



### TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Straight, left

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	FMC HS 3	748	842	110-150	4024052056224	9340-02.830
3	FMC HS 3	748	842	110-150	4024052056323	9340-03.830
4	FMC HS 4	898	842	110-150	4024052056422	9340-04.830
5	FMC HS 4	898	842	110-150	4024052056521	9340-05.830
6	FMC HS 4	898	842	110-150	4024052056620	9340-06.830
7	FMC HS 5	1048	842	110-150	4024052056729	9340-07.830
8	FMC HS 5	1048	842	110-150	4024052056828	9340-08.830
9	FMC HS 5	1048	842	110-150	4024052056927	9340-09.830
10	FMC HS 6	1198	842	110-150	4024052057023	9340-10.830
11	FMC HS 6	1198	842	110-150	4024052057122	9340-11.830
12	FMC HS 6	1198	842	110-150	4024052057221	9340-12.830

T = Depth of the complete cabinet

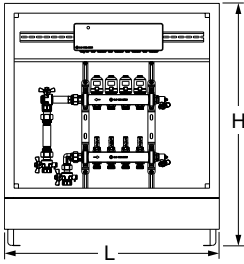


### TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Straight, right

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	FMC HS 3	748	842	110-150	4024052057320	9340-02.832
3	FMC HS 3	748	842	110-150	4024052057429	9340-03.832
4	FMC HS 4	898	842	110-150	4024052057528	9340-04.832
5	FMC HS 4	898	842	110-150	4024052057627	9340-05.832
6	FMC HS 4	898	842	110-150	4024052057726	9340-06.832
7	FMC HS 5	1048	842	110-150	4024052057825	9340-07.832
8	FMC HS 5	1048	842	110-150	4024052057924	9340-08.832
9	FMC HS 5	1048	842	110-150	4024052058020	9340-09.832
10	FMC HS 6	1198	842	110-150	4024052058129	9340-10.832
11	FMC HS 6	1198	842	110-150	4024052058228	9340-11.832
12	FMC HS 6	1198	842	110-150	4024052058327	9340-12.832

T = Depth of the complete cabinet

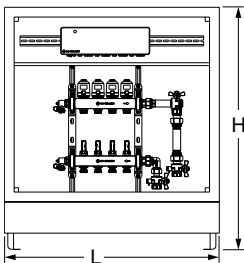




**TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Angle, left**

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	FMC HS 2	598	842	110-150	4024052058426	9340-02.831
3	FMC HS 2	598	842	110-150	4024052058525	9340-03.831
4	FMC HS 3	748	842	110-150	4024052058624	9340-04.831
5	FMC HS 3	748	842	110-150	4024052058723	9340-05.831
6	FMC HS 3	748	842	110-150	4024052058822	9340-06.831
7	FMC HS 4	898	842	110-150	4024052058921	9340-07.831
8	FMC HS 4	898	842	110-150	4024052059027	9340-08.831
9	FMC HS 4	898	842	110-150	4024052059126	9340-09.831
10	FMC HS 5	1048	842	110-150	4024052059225	9340-10.831
11	FMC HS 5	1048	842	110-150	4024052059324	9340-11.831
12	FMC HS 5	1048	842	110-150	4024052059423	9340-12.831

T = Depth of the complete cabinet

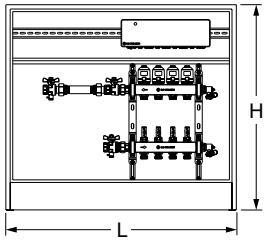


**TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Angle, right**

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	FMC HS 2	598	842	110-150	4024052059522	9340-02.833
3	FMC HS 2	598	842	110-150	4024052059829	9340-03.833
4	FMC HS 3	748	842	110-150	4024052059928	9340-04.833
5	FMC HS 3	748	842	110-150	4024052060023	9340-05.833
6	FMC HS 3	748	842	110-150	4024052060122	9340-06.833
7	FMC HS 4	898	842	110-150	4024052060221	9340-07.833
8	FMC HS 4	898	842	110-150	4024052060320	9340-08.833
9	FMC HS 4	898	842	110-150	4024052060429	9340-09.833
10	FMC HS 5	1048	842	110-150	4024052060528	9340-10.833
11	FMC HS 5	1048	842	110-150	4024052060627	9340-11.833
12	FMC HS 5	1048	842	110-150	4024052060726	9340-12.833

T = Depth of the complete cabinet

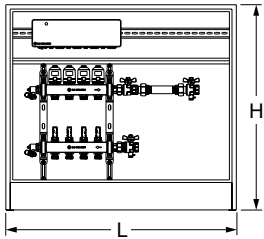
## Articles – Wall mounted cabinet



### TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Straight, left

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	WMC HS 3	802	714	125	4024052065820	9340-02.834
3	WMC HS 3	802	714	125	4024052065929	9340-03.834
4	WMC HS 3	802	714	125	4024052066025	9340-04.834
5	WMC HS 4	952	714	125	4024052066124	9340-05.834
6	WMC HS 4	952	714	125	4024052066223	9340-06.834
7	WMC HS 4	952	714	125	4024052066322	9340-07.834
8	WMC HS 5	1102	714	125	4024052066421	9340-08.834
9	WMC HS 5	1102	714	125	4024052066520	9340-09.834
10	WMC HS 5	1102	714	125	4024052066629	9340-10.834
11	WMC HS 6	1252	714	125	4024052066728	9340-11.834
12	WMC HS 6	1252	714	125	4024052066827	9340-12.834

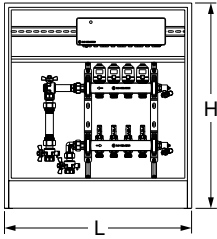
T = Depth of the complete cabinet



### TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Straight, right

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	WMC HS 3	802	714	125	4024052066926	9340-02.836
3	WMC HS 3	802	714	125	4024052067022	9340-03.836
4	WMC HS 3	802	714	125	4024052067121	9340-04.836
5	WMC HS 4	952	714	125	4024052067220	9340-05.836
6	WMC HS 4	952	714	125	4024052067329	9340-06.836
7	WMC HS 4	952	714	125	4024052067428	9340-07.836
8	WMC HS 5	1102	714	125	4024052067527	9340-08.836
9	WMC HS 5	1102	714	125	4024052067626	9340-09.836
10	WMC HS 5	1102	714	125	4024052067725	9340-10.836
11	WMC HS 6	1252	714	125	4024052067824	9340-11.836
12	WMC HS 6	1252	714	125	4024052067923	9340-12.836

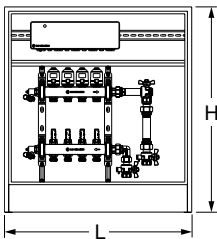
T = Depth of the complete cabinet



**TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Angle, left**

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	WMC HS 2	652	714	125	4024052068029	9340-02.835
3	WMC HS 2	652	714	125	4024052068128	9340-03.835
4	WMC HS 2	652	714	125	4024052068227	9340-04.835
5	WMC HS 3	802	714	125	4024052068326	9340-05.835
6	WMC HS 3	802	714	125	4024052068425	9340-06.835
7	WMC HS 3	802	714	125	4024052068524	9340-07.835
8	WMC HS 4	952	714	125	4024052068623	9340-08.835
9	WMC HS 4	952	714	125	4024052068722	9340-09.835
10	WMC HS 4	952	714	125	4024052068821	9340-10.835
11	WMC HS 5	1102	714	125	4024052068920	9340-11.835
12	WMC HS 5	1102	714	125	4024052069026	9340-12.835

T = Depth of the complete cabinet

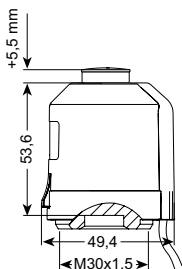


**TA-COMFORT radiant heating interface unit with Dynacon Eclipse – Angle, right**

Heating circuits	Cabinet size	L	H	T	EAN	Article No
2	WMC HS 2	652	714	125	4024052069125	9340-02.837
3	WMC HS 2	652	714	125	4024052069224	9340-03.837
4	WMC HS 2	652	714	125	4024052069323	9340-04.837
5	WMC HS 3	802	714	125	4024052069422	9340-05.837
6	WMC HS 3	802	714	125	4024052069521	9340-06.837
7	WMC HS 3	802	714	125	4024052069620	9340-07.837
8	WMC HS 4	952	714	125	4024052069729	9340-08.837
9	WMC HS 4	952	714	125	4024052069828	9340-09.837
10	WMC HS 4	952	714	125	4024052069927	9340-10.837
11	WMC HS 5	1102	714	125	4024052070022	9340-11.837
12	WMC HS 5	1102	714	125	4024052070121	9340-12.837

T = Depth of the complete cabinet

**Actuator**



**EMOTec, First-Open**

Type	EAN	Article No
<b>230 V</b>		
Currentless closed (NC), First-Open	4024052038824	1806-15.500

More information on EMOTec First-Open – see separate technical leaflet.

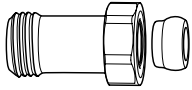
## Accessories



### Setting key

for Eclipse. Color orange.

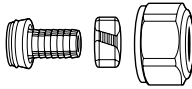
EAN	Article No
4024052937714	3930-02.142



### Length adjustment fitting

For connecting to plastic, copper, precision steel or multi-layer pipes. For valves with external thread connection G3/4. Brass nickel-plated.

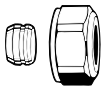
	L	EAN	Article No
G3/4 x G3/4	25	4024052298310	9713-02.354
G3/4 x G3/4	50	4024052298419	9714-02.354



### Compression fitting

for plastic pipe according to DIN 4726, ISO 10508. PE-X: DIN 16892/16893, EN ISO 15875; PB: DIN 16968/16969. Connection external thread G3/4 according to DIN EN 16313 (Eurocone). Nickel-plated brass.

Ø Pipe	EAN	Article No
12x1,1	4024052136018	1315-12.351
14x2	4024052134618	1311-14.351
16x1,5	4024052136117	1315-16.351
16x2	4024052134816	1311-16.351
17x2	4024052134915	1311-17.351
18x2	4024052135110	1311-18.351
20x2	4024052135318	1311-20.351



### Compression fitting

for copper or precision steel pipe according to DIN EN 1057/10305-1/2. Connection external thread G3/4 according to DIN EN 16313 (Eurocone). Metal-to-metal joint. Nickel-plated brass. With a pipe wall thickness of 0.8-1 mm insert supporting sleeves. Heed pipe manufacturer's technical advice.

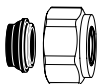
Ø Pipe	EAN	Article No
12	4024052214211	3831-12.351
14	4024052214310	3831-14.351
15	4024052214617	3831-15.351
16	4024052214914	3831-16.351
18	4024052215218	3831-18.351



### Support sleeve

for copper or precision steel pipe with a 1 mm wall thickness. Brass.

Ø Pipe	L	EAN	Article No
12	25,0	4024052127016	1300-12.170
15	26,0	4024052127917	1300-15.170
16	26,3	4024052128419	1300-16.170
18	26,8	4024052128815	1300-18.170



### Compression fitting

for copper or precision steel pipe according to DIN EN 1057/10305-1/2 and stainless steel pipe. Connection external thread G3/4 according to DIN EN 16313 (Eurocone). Soft sealed, max. 95°C. Nickel-plated brass.

Ø Pipe	EAN	Article No
15	4024052515851	1313-15.351
18	4024052516056	1313-18.351



**Compression fitting**

for Alu/PEX multi-layer pipe according to DIN 16836.  
 Connection external thread G3/4 according to DIN EN 16313 (Eurocone).  
 Nickel-plated brass.

Ø Pipe	EAN	Article No
16x2	4024052137312	1331-16.351



**Double connection fitting**

For clamping plastic, copper, precision steel or multi-layer pipes.  
 Brass, nickel-plated.

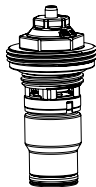
L	EAN	Article No
G3/4 x R1/2 26	4024052308415	1321-12.083



**Double nipple**

Both sides for clamping plastic, copper, precision steel or multi-layer pipes.  
 Brass nickel-plated.

EAN	Article No
G3/4 x G3/4 4024052136315	1321-03.081



**Replacement thermostatic insert**

with automatic flow limiter for Dynacon Eclipse.

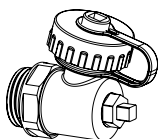
EAN	Article No
4024052966714	9340-00.300



**Dynacon Eclipse flow indicator**

Spare insert.

EAN	Article No
4024052979615	9340-00.101

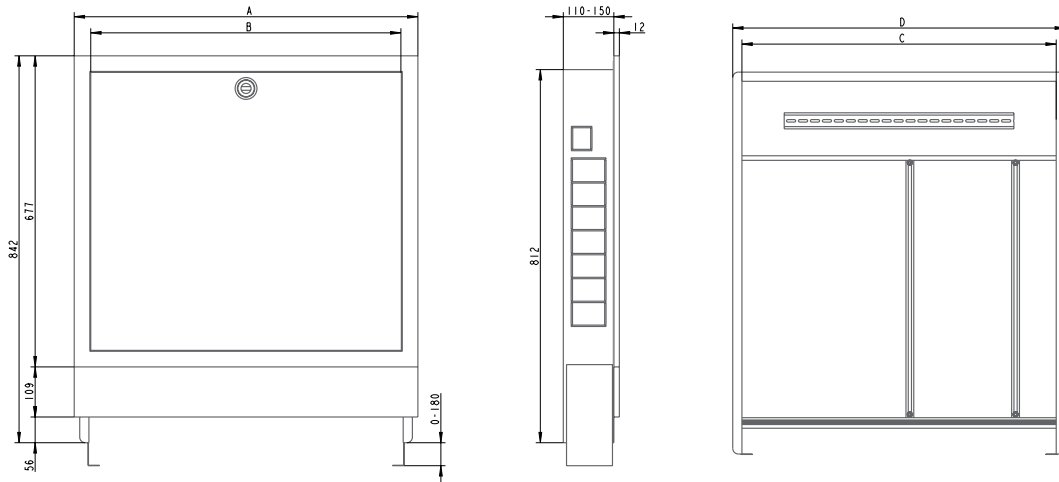


**Replacement filling, draining, flushing and venting device 1/2"**

EAN	Article No
1/2" 4024052989218	9321-00.102

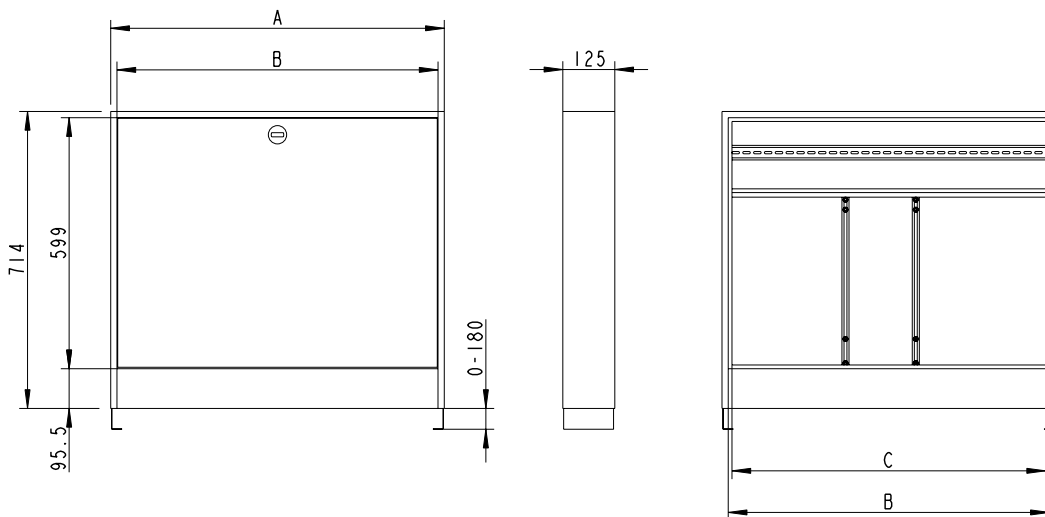
## Dimensions – Cabinets

### Flush mounted cabinet (FMC HS)



	A	B	C	D
FMC HS 2	598	526	534	554
FMC HS 3	748	676	684	704
FMC HS 4	898	826	834	854
FMC HS 5	1048	976	984	1004
FMC HS 6	1198	1226	1134	1154

### Wall mounted cabinet (WMC HS)



	A	B	C	D
WMC HS 2	652	618,4	604	622
WMC HS 3	802	768,4	754	772
WMC HS 4	952	918,4	904	922
WMC HS 5	1102	1068,4	1054	1072
WMC HS 6	1252	1218,4	1204	1222