CEILING MOUNTED RADIANT PANELS

2020

CASA PLAN

LYNGSON

HEAT IN VARIOUS FORMS

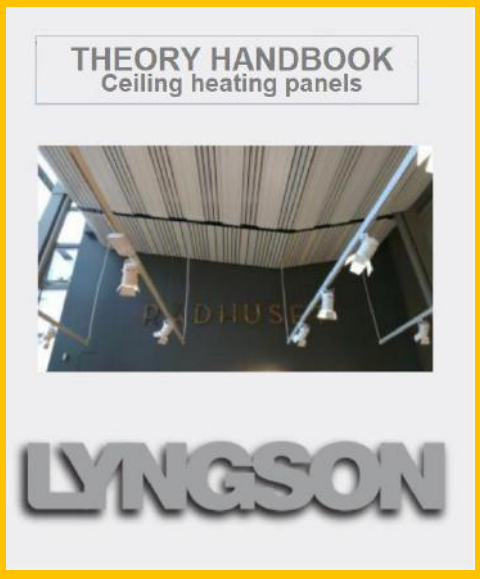
CEILING MOUNTED RADIANT HEATING PANELS

Ceiling heating panels heat up the surfaces of the room with radiant heat. Surfaces that in turn heat it up air and creates a draft-free and comfortable room climate. The heat source on the ceiling also makes the interior designer's work much easier and more flexible,there is no obstructing heating installation needed on the walls or floor.

Want to know more?

Download our theory handbook on ceiling panel heating.

LYNGSON.LV



TECHNICAL DATA

Material	1mm aluminum sheet, 10mm or 12mm copper tubes
Insulation	Insulation installed at the factory. Mineral wool, λ = 0,036 W/m °C
Coating	Painted
Colour	Standard colour RAL 9003 gloss 12. Other colors available on special order..
Max. preasure	10 bar.
Max. temperature	90 ºC
Connections	2 x 10mm or 12mm cooper pipe ends for press, push-fit or compression joints.
Quality	Production according to EN ISO 9001.

MagiCAD

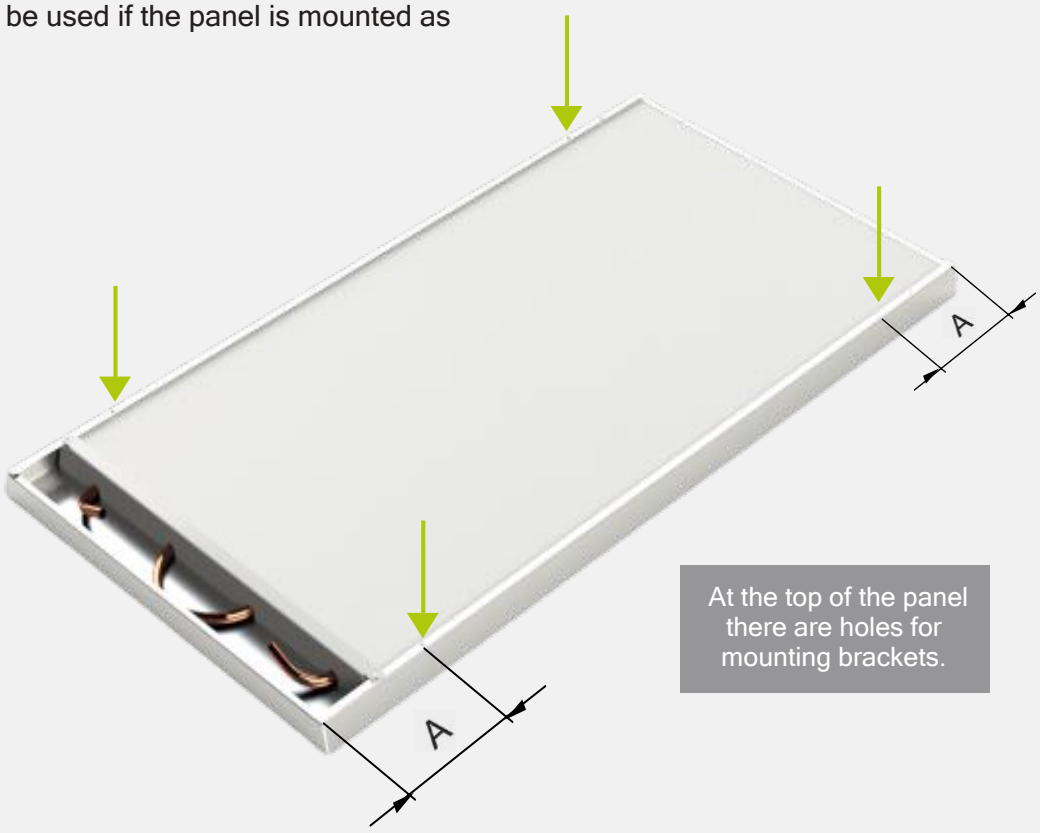
Mounting

Casa Plan is specially designed for installation in a suspended ceiling system. The dimensions of the panels have been adapted to replace the 600 mm wide suspended ceiling modules. With its slim size of only 40 mm, the panel meets any installation requirements. When it is built in this way, it is connected advantage as individual panels. The ceiling heating panel always comes insulated from the factory with bent pipe ends for easy connection.

Hangers

The Casa Plan always comes with adjustable hangers and it is of course possible to mount free-hanging. This allows you to use a common system with a suspended ceiling. The same fasteners can also be used if the panel is mounted as a separate element.

Adjustable mounting



At the top of the panel there are holes for mounting brackets.

Mounting points on the panel

Panel lenght	L1200	L1800	L2400	L3000
A (mm)	160	260	360	360

Casa Plan can be found in **MagiCAD** under the product group **Climate Beam.**

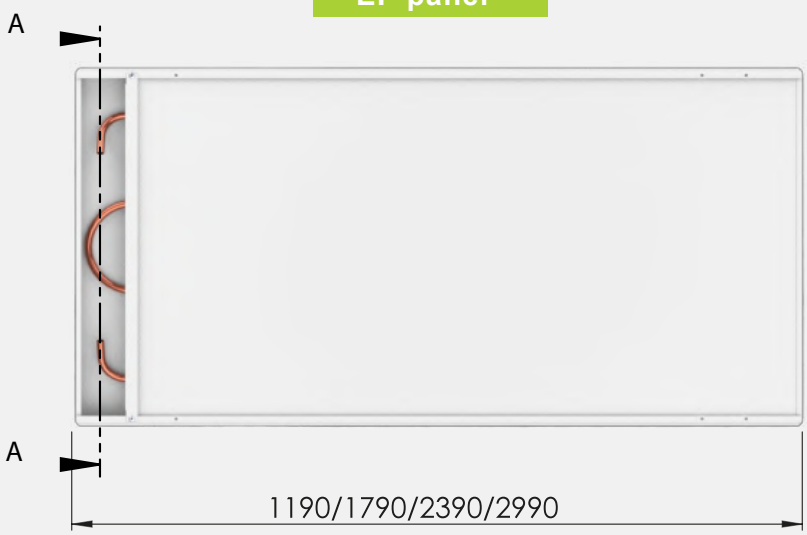
MagiCAD

MODELS AND CONNECTIONS

Single connected or string end panel

The panels are available in lengths of 1200, 1800, 2400 and 3000 mm to exactly match the suspended ceiling system. We can also make a panel shorter than 600 mm, but the heat output will be significantly reduced. The panel has a built-in heating pipe loop and can be connected for both heating and cooling. If it is to be used for cooling, the temperature must be above the dew point to avoid condensation. 10 mm copper pipes are used for the standard panel a more accurate turbulent flow, taking into account the pressure drop and system temperatures. If several panels have to be connected in series, a model with a pipe size of 12 mm must be chosen.

EP panel



The direction of connection in the panel is irrelevant and does not affect the total heat release from the panel. However, if possible, the flow connection should be attached to the part of the panel facing the coldest side of the room. The panel is best connected with a push-fit or crimp connection, but a compression connection can also be used. Connecting pipes the tip should not be soldered as this will damage the panel

Panel size adapted for mounting
in the standard sizes of the suspended ceiling

Weight and volume

Casa Plan	Weight (kg) without insulation	Volume (l)
L1200 mm	4,0	0,24
L1800 mm	6,0	0,37
L2400 mm	8,0	0,50
L3000 mm	10,0	0,63

PRODUCT CODE

Product — Pipe diameter (mm)

Casa Plan B600-L2400-10

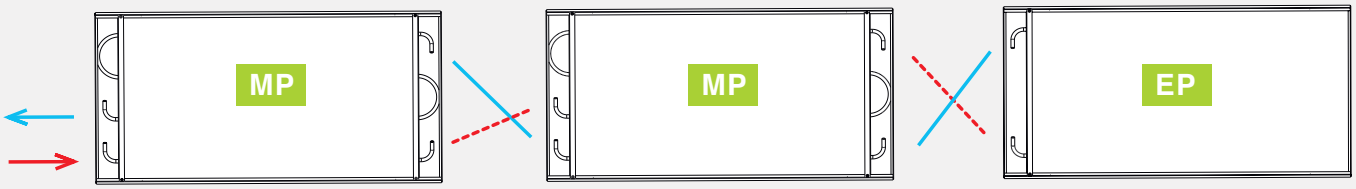
Width (mm) — Lenght (mm)

MODELS AND CONNECTIONS

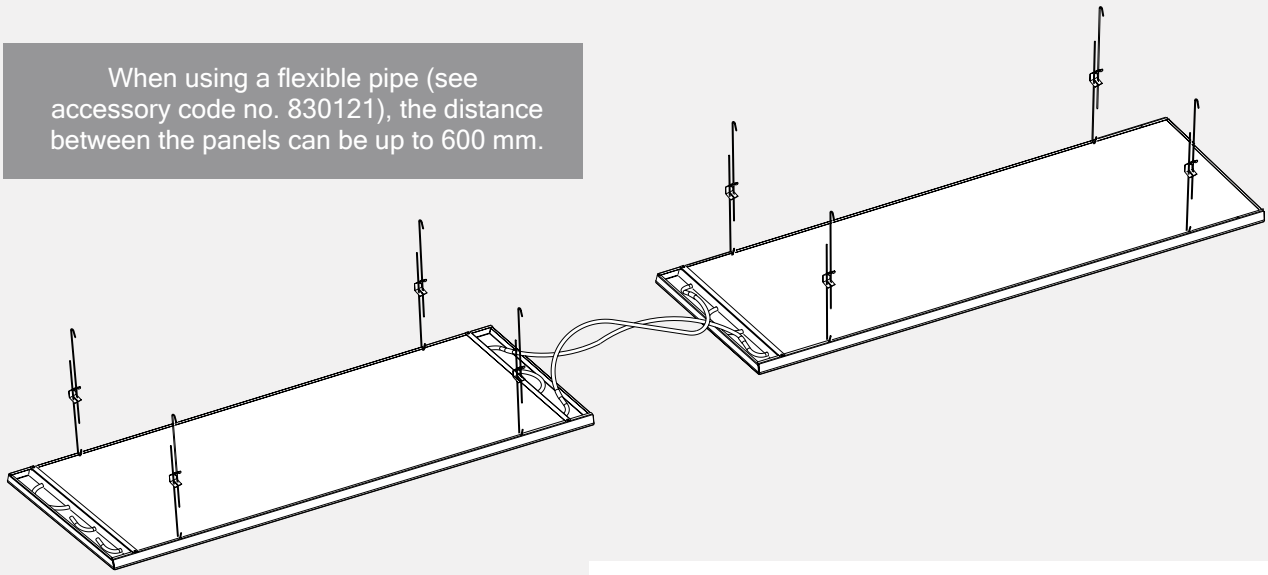
Serial panels

MP panel

If you want to connect two or more Casa Plan in series, choose a panel with 12 mm pipes. To connect a series, two types of panels are required: the middle or start panel (MP) and the end panel (EP). Below is an example of how they should be connected. The panels can be installed as close to each other as possible, but the distance between them is also possible. Lyngson offers a flexible connecting pipe with a push-fit connection, which allows the panels to be installed up to 600 mm apart. When the panels are mounted close to each other, the pipe must be placed in the arch at the top of the panel. This prevents the formation of air pockets. The ends of the panel connections are specially folded for easy installation. If a greater distance between the panels is desired, it is recommended to use a fixed pipe.



When using a flexible pipe (see accessory code no. 830121), the distance between the panels can be up to 600 mm.



Weight and volume

Casa Plan	Weight (kg) without insulation	Volume (l)
L1200	4,2	0,33
L1800	6,3	0,52
L2400	8,5	0,71
L3000	10,6	0,9

PRODUCT CODE

Product | Width (mm) | Pipe diameter (mm)

Casa Plan B600-MP-L3000-12

Type (MP= middle panel, EP= end panel) | Lenght (mm)

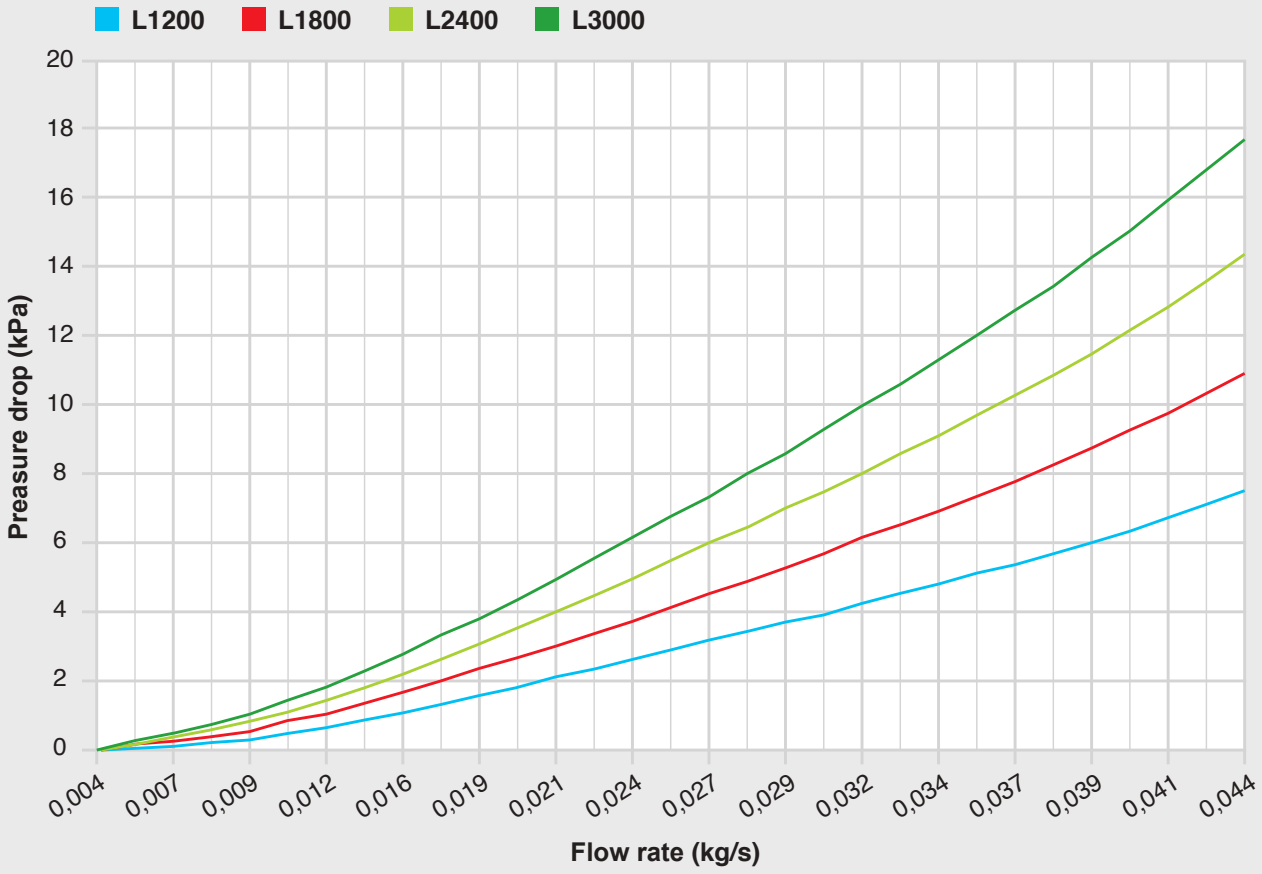
TECHNICAL DATA

Casa Plan, as protection against the cold zone, installed freely suspended.

PREASURE DROP

Pressure drop diagram Casa Plan with 10 mm pipe.

Pressure drop diagram for four Casa Plan model lenghts with 10 mm pipes. To ensure turbulent flow and thus the best heat transfer, the flow should not be less than 0.015 liters per second. Pressure drops are indicated at an average water temperature of 50°C. At lower temperatures, the pressure drop increases, for example, at an average temperature of 20°C the pressure drop is about 20% higher. The pressure drop for a series of connected panels is given in the power simulation.



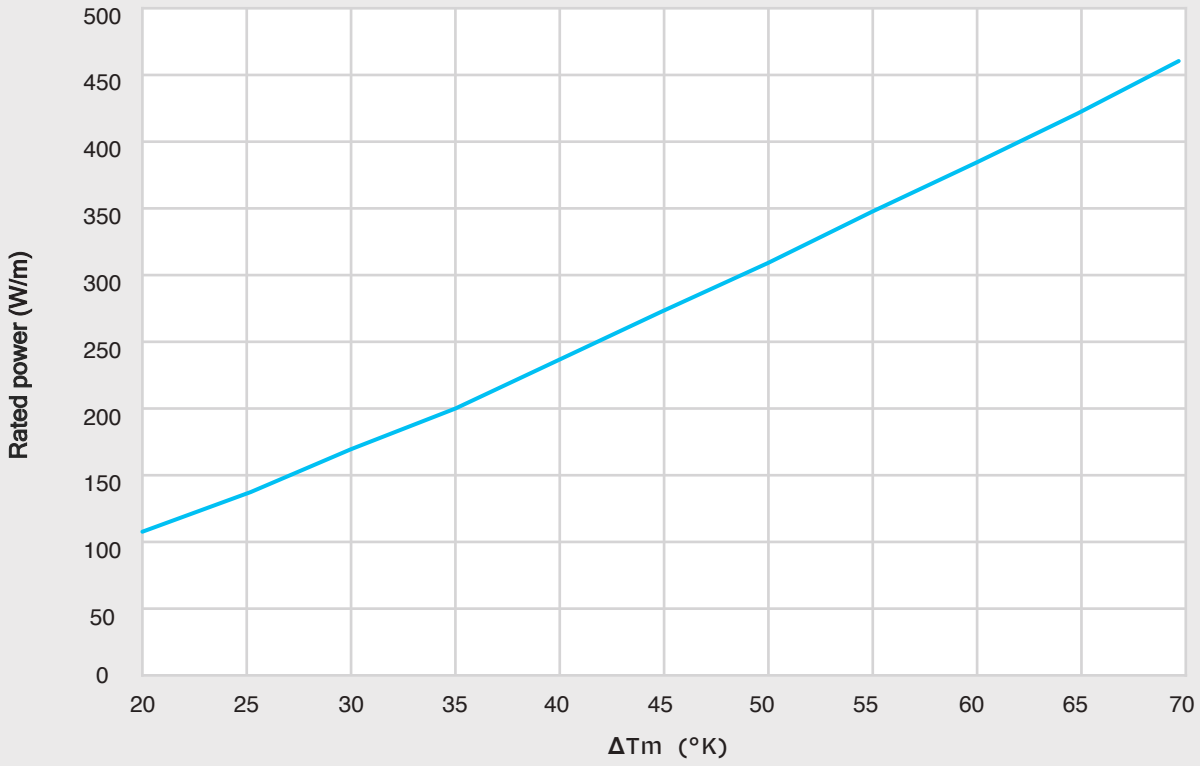
Heat output is specified according to the standard EN 14037-1:2016

The heat output is calculated according to the formula $\Phi_D = K_m \times (\Delta T_m)^n$

Φ_D	Heating output, W/m
K_m	Heat coefficient for the model, 3,0288 W/K^n
ΔT_m	The difference between the average water temperature and the room temperature, °K
n	Model heat exponents, 1,1813

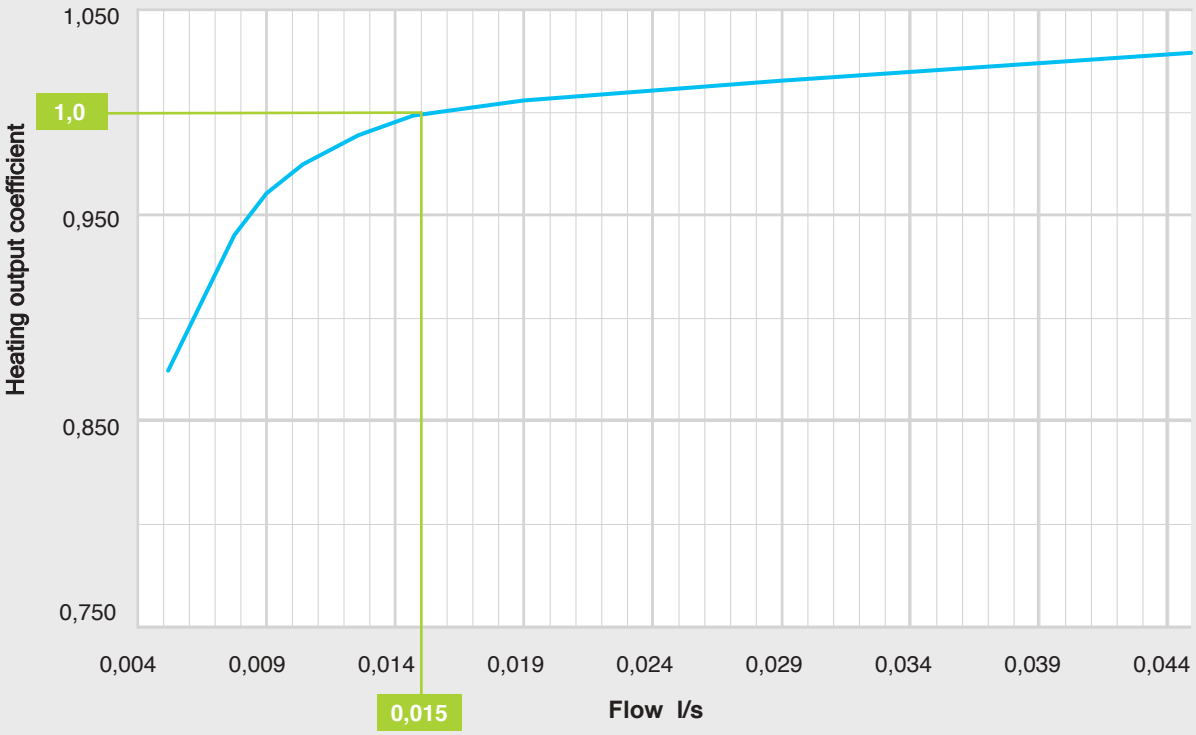
Rated power for 1 current meter panel with turbulent flow

The specified nominal effects are applied at a turbulent flow of 0.015 l/s. For a series of connected panels, a minimum flow rate of 0.02 l/s is required to ensure turbulent flow. If the flow is lower, the heat output will decrease and the calculated power will be reduced according to the power factor diagram on page 9. To calculate the required tar flow and power parameters faster, use the calculation tool on the website: https://lyngson.lv/casa-plan/



HEATING OUTPUT

Heating output coefficient Casa Plan with 10mm pipe



Example

Casa Plan in length 2400mm at 55°/45°-20°C gives the follow result: The power output calculated according to EN 14037 is 404W/m, which corresponds to a flow of 0.01 l/s.

As the flow is less than 0,015 l / s, a power factor of 0,965 at 0,01 l/s shall be applied. The actual heat output of the panel is
404 x 0.965 = 390 W / m.

The adjusted flow is reduced as follows:
$\dot{m} = Q / (Cp \times \Delta T)$,390 / (4190 x (55-45)) = 0,009 l/s
For the Casa Plan series connection, the power factor is calculated from the 12 mm pipe curve.

Then a flow of 0.02 l/s corresponds to a power factor of 1.0. The calculation of the Casa Plan series is shown in the power simulation.

You can view the power simulation tool, in which the heat output is indicated by the applicable power factor according to the curve shown above.

lyngson.lv/casa-plan/

CONNECTION AND TEMPERATURE CONTROL

Control of one or serial panels with control-balance valve and thermoelectric actuator

Control the entire area with only one control valve and thermoelectric actuator. Addition with shut-off valves.

The accessories in the examples are from several different manufacturers.

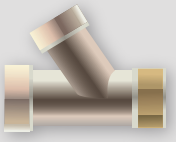
Room termostat

Room thermostat with capillary

Wireless room termostat

Control-balanse valve

Actuator

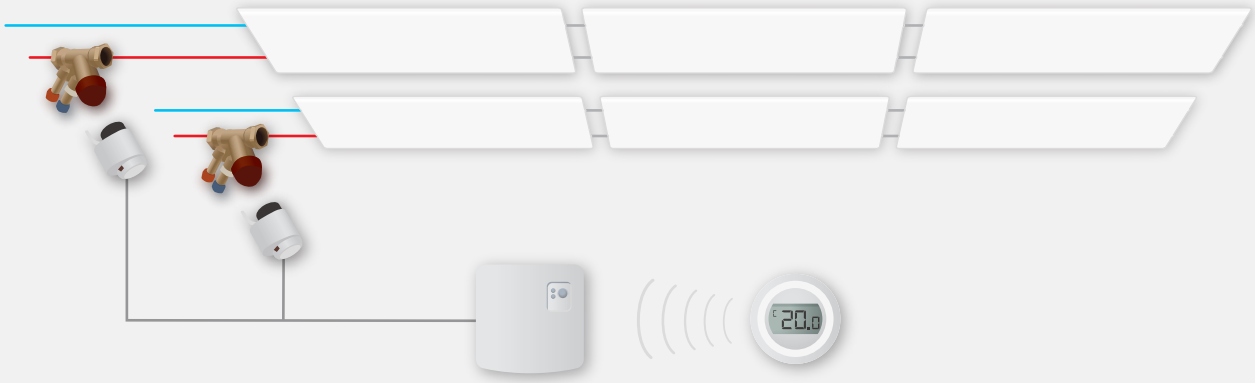


Shut-off valve

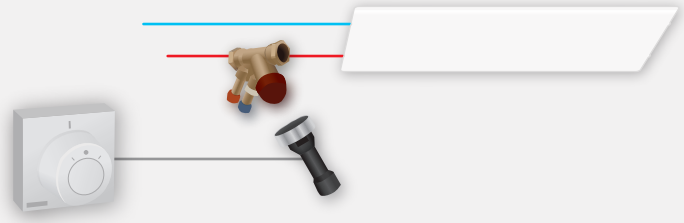
Wireless receiver

CONNECTION AND TEMPERATURE CONTROL

One or more panel series control with thermoelectric actuators and wireless room temperature controller.



Control of a series of one or more panels with a zone-valve connected to a mechanical room temperature controller.



Control of the whole area using only one zone-valve and thermoelectric actuator. Tichelmann pipeline connection.

ACCESSORIES

Casa Plan can be ordered with connection and control accessories that simplify installation and system assembly to control the room temperature. Lyngson can supply the following products from various leading manufacturers. Contact us by email for more information.

540205

IMI thermostat with capillary 0-27C, 5 m.

540208

IMI thermostat with capillary 0-27C, 8 m.

540210

IMI thermostat with capillary 0-27C, 10 m.

549030

IMI room thermostat for on / off control, 230V.
Max 10 pcs EMO T per 1 controller (for heating).

830110

Tectite PushFit connection 10mm - ½ "internal thread.

830120

Connecting flexible hose 10mm.

830122

Connecting flexible hose 12mm.

Connecting flexible pipe Tectite. Connection 10 or 12 mm Push-fit to ½ ”internal thread, length 1200mm. Simplifies panel connection to the above pipelines. Each panel requires two pipes.

830121

Flexible tube Tectite. Push-fit connection 12-12 mm, length 900 mm. The Casa Plan series connection allows the panels to be connected at a distance of up to 600 mm.

549034

Actuator IMI EMO T, 230 V, NO.

549035

Actuator IMI EMO T, 230 V, NC.

Thermoelectric actuator with ON / OF function.

549110

IMI TBV-C DN15, LF.
Kv: 0,05-0,9.

549111

IMI TBV-C DN15, NF.
Kv: 0,22-1,8.

549112

IMI TBV-C DN20.
Kv: 0,4-3,4.

549113

IMI TBV-C DN25.
Kv: 0,8-7,2.

Zone balancing valve. Can be used for larger flows, such as string assembly and multi-panel control.

549084 + 539052

IMI TRV-3 valve, Calypso, DN10 + MAH ½ ”. Kv: 0.01-0.52. Can be used for individual control of Casa Plan panels. Use the half-screw MAH ½ ”to connect to the Push-fit adapter 830110.

HEAT IN VARIOUS FORMS

At Lyngson's wide range you will find a variety of heating elements, such as ceiling heating panels, convectors, fan air heaters, air curtains and radiators.

We work on the principle of always being better. We are constantly developing and improving our products, logistics and work processes to always provide the highest quality to the customer.

We offer everything from standard radiators to a wide range of convectors. We have the largest range of panel radiators on the market so far. We produce them in our most modern factory in Latvia.

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