



modul a

Revolutionary housing system





modul a

PERFECT IN EVERY DETAIL



Air conditioning made to measure

The high quality sandwich panel is made as standard from a galvanised sheet steel outer shell with an external coating (similar to RAL 7035, corrosivity category C4). In combination with polyurethane foam or mineral wool insulation, this guarantees maximum robustness and strength. The heat insulation characteristics are outstanding.

Thermal separation

Intelligent construction means there are hardly any thermal bridges. This prevents condensation forming on the housing, even when there is a large difference between the inside and outside temperature – and especially at critical points. What's in it for you? Our modular **modul a** housing system is able to operate under the most extreme conditions with the minimum amount of heat loss, so it offers exceptional energy efficiency.

Unique profile

The newly developed door area profiles provide an optimum contact surface for the door seals.

Hygienically smooth

To facilitate cleaning, all surfaces and joints are completely smooth on the inside. This means that even the most stringent hygiene and cleanliness demands (as per VDI 6022 and H 6020) are met with ease.

Flexibility for the future

Doors can be easily fitted, allowing threshold-free access to all unit components. All doors can be opened to the left or right, or can be removed completely in just a few steps. The special design of the panel joint makes installation simple while guaranteeing optimal air tightness of the housing (air tightness class L1 as per EN 1886).

modul @

BENEFITS AT A GLANCE

*Proven quality, full compliance and leading edge technology: **modul @** from bösch.*

Complete thermal separation

Even in the event of significant temperature differences, barely any condensation forms on the housing as there are **hardly any thermal bridges** (thermal bridge factor TB2 as per EN 1886). The 35 mm thick sandwich panels, filled with either polyurethane foam or mineral wool, also guarantee a **low heat transfer factor** (heat transfer coefficient T2 as per EN 1886). The polyurethane foam panels are also very light and resistant to humidity.

Modular construction

There are almost no limits to the way the housing can be constructed. The various elements, all built to the relevant standards, can be combined in many different ways. We have retained our tried and tested 310 x 310 mm module grid and have therefore kept all the benefits of the frameless housing.

Flexible and robust

The housings are **accessible at any point**. The newly developed doors can open in either direction or be removed altogether. This means that in the future we can offer you **even more flexibility**, together with maximum **surface stability** and **torsional stiffness**. The frameless housing can also withstand **heavy point loads** and can be walked on both inside and outside (housing class D1 as per EN 1886). The fitments can also be positioned as required.

Hygienic and safe

All internal surfaces are **completely smooth** – for optimal air flow and hygienic areas that are easy to clean. These are the best hygiene conditions under VDI 6022 and H 6020. We were awarded the highest level of classification for our perfectly matched filter units (Filter bypass leakage F9).

Easiest possible installation

We can supply the entire unit conveniently in one piece, or deliver it in **segments** or **individual components**, for straightforward on-site installation in every situation. In the case of repairs and conversions, too, installation is flexible and easy.

Numerous material combinations

modul @ Panels are available in numerous material combinations, e.g. galvanised, coated or in stainless steel.

Air conditioning made to measure

The modular design enables exactly the right solution to be constructed, on a building-block principle.

Thermal separation

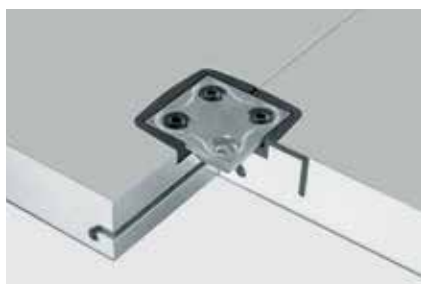
Intelligent construction means no thermal bridges.



Thermally separated modul a panel with polyurethane foam.



Thermally separated modul a panel with mineral wool.



Special panel joint.





Unique door seal.

Unique profile

Newly developed door panels for perfect sealing.

Hygienically smooth

With smooth surfaces on the inside and outside, dirt has no chance to settle (lotus effect).



Flexible corner joint.

Flexibility for the future

Individual panels can be removed with ease at a later date, which increases the flexibility of the ventilation housing.



Door hinge adjustable in 3 dimensions and with emergency function.

The **modul a** unit housing has been tested by the German certifying body TÜV® in accordance with EN 1886 (07/2009). It gained top marks in all areas.

THERMAL BRIDGING IN HOUSING

TB2 – modul a 35

Temperature readings taken at 120 points on all relevant parts of the housing confirm that each individual measurement point achieves the standard value for TB2.

$$K_b = 0.63$$

TB1 – modul a 70

$$K_b = 0,75$$

HEAT LOSSES THROUGH HOUSING

T2 – modul a 35

To determine the heat loss through the housing walls, the temperature differential between the housing interior and exterior was established under standard conditions. The heat output emitted in the housing resulted in a heat transfer coefficient of 0.9 W/m²K.

T1 – modul a 70

$$0,5 \text{ W/m}^2\text{K}$$

AIR TIGHTNESS OF HOUSING

L1 – modul a 35

The flow rate of air leakage from the housing was ascertained for two different test pressures (-400 Pa 0.05 l/sm² and +700 Pa 0.08 l/sm²). Again, the best possible score as defined in the standard was achieved.

L1 – modul a 70

-400 Pa 0.03 l/sm² and +700 Pa 0.05 l/sm²

DEFLECTION OF HOUSING

D1 – modul a 35

When the standard housing is subjected to pressure conditions of between -2500 Pa and +2500 Pa, only minimal deflection may occur to the housing cover (no permanent deformation). **modul a 35** excelled on test with 0.7 mm/m deformation at +1000 Pa and 1.2 mm/m at -1000 Pa.

D1 – modul a 70

1.1 mm/m at +1000 Pa and 1.2 mm/m at -1000 Pa

modul a 70

BEST RATINGS WITH TB1, T1, L1 AND D1



Unique

The **modul a 70** is one of the few housing components to be classified with the highest ratings. It has been tested to the EN 1886 standard.

The **modul a 70** passed these tests with top marks throughout. The future-orientated demands set by the Swiss SIA 382/1 standard for ventilation and air conditioning equipment have been well and truly satisfied with this product. It is outstanding results such as these that make our housing the ideal choice for passive houses and buildings with low energy consumption.

TB1 – the best of the best

Thermal bridges don't stand a chance. Even with extreme temperature differences between the interior and exterior of the housing, no condensation occurs. For this reason the **modul a 70** has been awarded the highest level of classification, TB1.

T1 – no heat loss

The 70 mm thick polyurethane foam panels allow the best possible results to be achieved. A heat transfer coefficient of $0.5 \text{ W/m}^2\text{K}$ as defined by EN 1886 has been confirmed. Few models can demonstrate this value.

L1 – tighter than tight

The **modul a 70** panel also scored highly in the air tightness test. An air leakage rate of $0.03 \text{ l/(sm}^2\text{)}$ was obtained under negative pressure of -400 Pa . An air leakage rate of $0.05 \text{ l/(sm}^2\text{)}$ was obtained under positive pressure of $+700 \text{ Pa}$.

D1 – no risk of bending with the modul a 70

The deflection of the housing was tested for a given pressure. With a result of 1.1 mm/m at a pressure of $+1000 \text{ Pa}$, the **modul a 70** yet again scored the highest possible marks.

F9 – no leaks present

If there are leaks in the filter mount or in the housing, supply air can bypass the filter. Such leaks can be detected with the filter bypass leakage test. In this test, a value of $<0.1 \%$ leakage was ascertained at a pressure of 400 Pa .



A PARTNER YOU CAN TRUST

AUSTRIA

Walter Bösch GmbH & Co KG

6890 Lustenau, Industrie Nord 12

T +43(0)5577/8131

info@boesch.at

www.boesch.at

Regional offices

6020 Innsbruck, Valiergasse 60

T +43(0)512/268820-0

tirol@boesch.at

5101 Bergheim/Sbg., Oberndorferstr. 16

T +43(0)662/454509-0

salzburg@boesch.at

4060 Linz/Leonding, Gerstmayrstr. 44

T +43(0)732/672186-0

oberoesterreich@boesch.at

1230 Wien, Eitnergasse 5a

T +43(0)1/8659536-0

wien@boesch.at

8073 Feldkirchen, Hans-Roth-Str. 3

T +43(0)316/691701-0

steiermark@boesch.at

9020 Klagenfurt, Schaußgasse 5

T +43(0)463/318960-0

kaernten@boesch.at

GERMANY

Walter Bösch GmbH & Co KG

89312 Günzburg, Violastraße 9

T +49(0)8221/2016160

info@walterboesch.de

www.walterboesch.de

Nothern Germany

T +49(0)170/3828502

info@tkh-net.de

SWITZERLAND

Walter Bösch AG

9430 St. Margrethen/SG, Bahnhofplatz 12

T +41(0)44/7874018

info@walterboesch.ch

www.walterboesch.ch

CZECH REPUBLIC

Bösch - technika pro objekty, spol. s r.o.

627 00 Brno, Olomoucká 704/174

T +420/571166222

info@boesch.cz

www.boesch.cz

