



User's guide ver 1.9

ProUnit

By Swegon AB

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Chapter 1 General

Before beginning

ProUnit is a calculation programme for dimensioning and selecting air handling units. In the programme you will receive the technical performance for Swegons air handling units GOLD and Compact there are possibilities to perform energy calculations and to calculate the life cycle costs for the units. If you use AutoCAD, it is possible to transfer the unit to a drawing with an AutoCAD connection which is integrated in the programme. For users of AutoCADLight there is a possibility to make DXF-files which can be inserted to the drawing.

Swegon AB retains the right to upgrade the programme and there too connected documentation without advance notice.

ProUnit is developed by and owns of Swegon AB and is protected by European copy right laws and international agreements. The programme should be treated as all other documentation that is shielded by copy right laws.

All types of questions about the programme are to be answered by Swegon AB.

Internet readers as support

Microsoft Internet Explorer 5.5

Microsoft Internet Explorer 6.x

Microsoft Internet Explorer 7

Hardware requirement (minimum)

Screen resolution 1024*768

Colour 256

The Windows program requires at least 25 Mb of free disc space.

Internet connection

Broadband with at least 0,5Mbit/sek or better.

Support for Java Script and Images must be on

Starting ProUnit web

When the programme starts fill in your log-in name and password.

Chapter 2 Menu's

Files

A new object is created under Files there you also open existing object, add to an object which you are working on and save object. You can even make your own installation example which can be used when you make new objects.

Email project

To be able to send the object to another person choose "Email project". The programme creates a copy of the file and emails it to your own email box. There you have the possibility to adjust the message and file before sending it further.

Print out

You can choose which unit or units you want to print out. If you so wish you can choose each units print out for both the dimensioned case and the alternative case if you have calculated one.

There are several print outs to choose from, x mark the windows required. Under the button "Technical print out details" you can remove the x mark on the choices you do not want printed. The same applies to the button " Sketch details" and the button "Control system printout details". Also choose if the print out should be printed to Acrobat Reader as a pdf-file or as an rtf-file for, for ex. Word.

Export to DXF

Here you choose if the unit is to be exported to a DXF file that can be imported into an AutoCAD drawing.

Edit

Here you created a new unit in the object you are working with, copy the unit or remove the active unit.

External part

See chapter "Special"

If you want an accessory that is to be delivered from Kvänum, the first choice is to be taken. This generates a code called GOLDDIV which can be price indicated in the offer programme.

The second alternative, "External product bought and delivered from the sales department", is chosen when you have a product that is to be delivered directly to the purchaser. **This alternative is for Sweden only.** There are several suppliers to choose between and each choice generates it's own article number. When the supplier has been chosen a purchase order is generated automatically.

The third alternative is used if you know the exact product code that can be found in our Movex system. Write it in and the price will be inserted in the offer.

Product list (unit codes)

Here the programme writes the code for the product that has been chosen. You can remove an external part from this window if it is not required. If you want to edit an external part just double-click the line in the window.

Energy comparison

When comparing energy in one or more units, use this function. The energy calculation is made with similar operation factors regarding temperature and time for all the marked units. A maximum of three units can be compared at the same time.

ProUnit 3 / 2006.12 - Energy comparison - test41.pru* - Microsoft Internet Explorer provided by Swegon-Energizing Indoor Climat

Information Value of life cycle costs compared to offer price

Please select at least one unit to compare energy. Maximum amount of units is three.

	Dimensioning data	Calculation
<input type="checkbox"/> 1: Heating coil	Dimensioning data	Calculation OK
<input checked="" type="checkbox"/> 2: GOLD 50	Dimensioning data	Calculation OK
<input type="checkbox"/> 3: Roof fan	Dimensioning data	Not calculated
<input checked="" type="checkbox"/> 4: GOLD SD 50	Dimensioning data	Calculation OK
<input type="checkbox"/> 5: Other unit: Other unit	Dimensioning data	Calculation OK

Offer price 1 SEK
Offer price 2 SEK
Offer price 3 SEK

Energy calculation

Supply air Summer °C Extract air, LCC energy 20°C
Winter °C 22°C

Increase of moisture content from supply air to extract air g/kg

Operation time

7 days/week, 24 hours
 5 days/week, 24 hours
 Yearly operation time h
 Other operation time

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Start	<input type="text" value="0"/>						
Stop	<input type="text" value="0"/>						

Calculation options

Swegon's energy calculation
 Comparison without heat exchanger
 Energy costs
 Life cycle costs

Life cycle costs to LCC energy
 Energy diagramme

PDF Use this language in printouts
 RTF

Klar Internet

Input for other units

You can even compare data from other units than the ones calculated in the ProUnit. Press the button “Insert other unit” and add the requested data. If the programme is to calculate the affect the freezing has on the plate heat exchanger or the coil heat exchanger, feed in the temperature when it begins to freeze and the temperature after the heat exchanger at the lowest outdoor temperature (LOT). If there is a pre-heater before the exchanger the outdoor temperature can be set at another value than the LOT.

ProUnit 3 / 2006.12 - Input data other unit - test41.pru* - Microsoft Internet Explorer provided by Swegon-Energizing Indoor Cl

Other unit indata

Information: Unit with plate hex

	Supply air	Extract air	
Air flow	2.400	2.400	m ³ /s
Selection of heat exchanger	Plate		
Total pressure rise	590	504	Pa
Fan position in relation to the heat exchanger	After	After	
Electric power to fan motor	2.73	2.39	kW
Extract air temperature in winter		22.0	°C
Pressure drop, heat exchanger	122	185	Pa
Temperature efficiency of supply air	54		%
LOT without freezing	-9.3		°C
Outdoor air before heat exchanger	-20.0		°C
Supply temp. after heat exchanger with the LOT	-5.8		°C

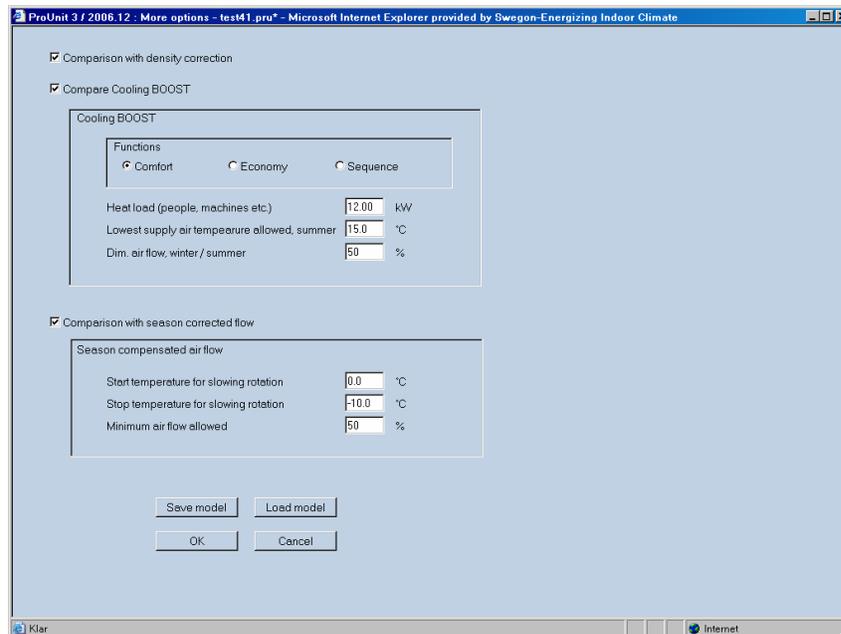
Should be filled in if the freezing should be taken into consideration

Buttons: Save model, Load model, OK, Cancel

Taskbar: Klar, Internet

Calculation alternative “More options”

See the following for a description of the different choices. The choice should be seen as three separate functions, as it is not possible to put together the effect of several choices for the one calculation.



Compare with density correction

In the Gold unit there is a function that keeps the extract air flow constant throughout the year. For other units without this function the extract air flow will be higher during the winter when the density of the air increases over the exhaust fan. This is due to the fan is being positioned on the cold side of the heat exchanger. This function calculates the size of the energy saving of the heating energy in the building due to the reduced infiltration.

Compare with Cooling Boost

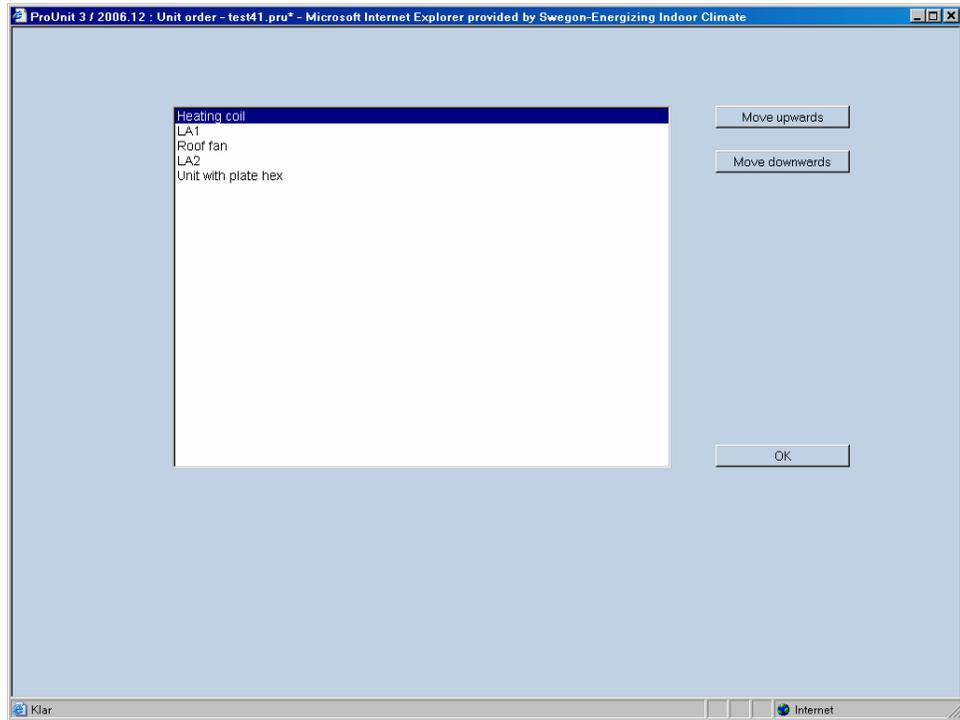
Cooling Boost is a function in the Gold unit. When there is a cooling requirement, the air flow is increased and the temperature of the air is lowered to bring in more cooling. There are three different functions to choose from “Comfort”, “Economy” and “Sequence”. “Comfort” is used when a high cooling capacity is needed and the cooling machine is started before the air flow is increased. “Economy” is used when you first increase the flow to use the colder outdoor air and then starts the cooling machine. “Sequence” is used when the temperature is reduced at the same time as the flow is increased. For a more complete description of the different functions see Swegons Catalogue. The size of the heat load in the room and the lowest allowed supply air temperature summer time is given. You also give the relation between the size of the flow required to keep the comfort level winter time and the dimensioned flow summer time. The energy calculation compares the two cases, the unit being operated on the dimensioned cooling flow all year and the flow only being increased when the cooling requirement is necessary.

Comparison with season corrected flow

This function in the Gold unit reduces the flow under a part of the year to save energy. The flow is reduced when the temperature goes under “Start temperature for slowing rotation” and reduces continuously until “Stop temperature for slowing rotation” The flow is then held at this level until the lowest temperature is achieved. The size of the allowed flow reduction is written-in, the hygienic requirement has naturally to be met.

Unit order

If the objects in the file are not in the correct order, they can be changed in this window.



Alternative

Settings

Here you specify all the settings to be valid in the programme.

The screenshot shows a web-based settings interface for ProUnit 3. The window title is "ProUnit 3 / 2006.12 - Settings - test41.pru* - Microsoft Internet Explorer provided by Swegon-Energizing Indoor Climate". The main content area is titled "Settings" and is divided into several sections:

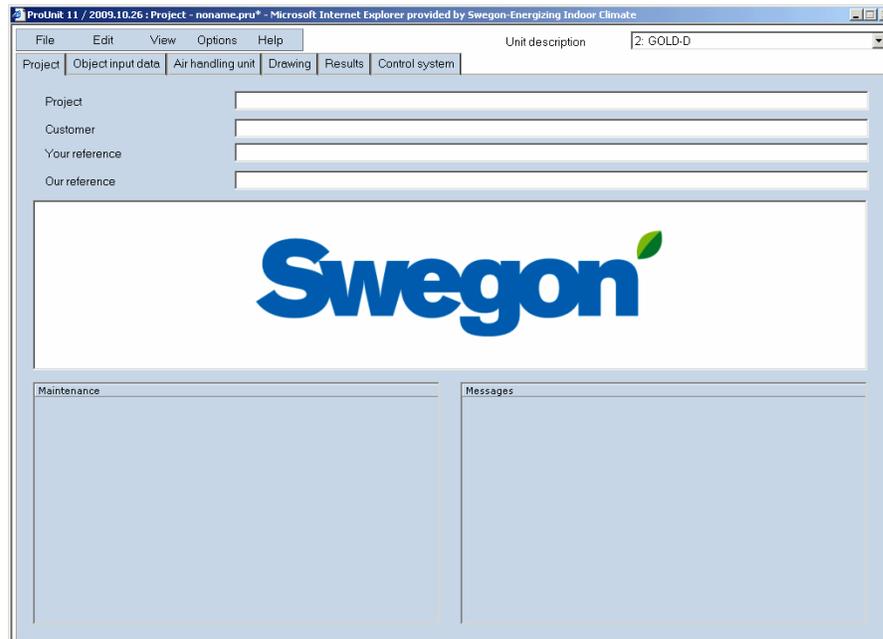
- Language:** Two dropdown menus. The first is "Use this language in the program" with "English" selected. The second is "Use this language in printouts" with "Svenska" selected.
- Show dimension lines:** Four checked checkboxes: "Total dimension", "Module dimension", "Duct connection dimensions", and "Duct connection position dimensions".
- Installation examples and models:** A dropdown menu labeled "Installation examples and models according to" with "Swedish standard" selected.
- Other settings:** A checkbox "Save automatically" is unchecked. Below it is a "Time period" input field with "1" and "Minute". Another checkbox "Show textID numbers as prefix" is unchecked.
- Print:** Three dropdown menus: "Use this type of font for printing" (Arial), "Example" (Arial), and "Printout logo" (None).
- Printout footer information:** Several text input fields: "Company name" (Swegon AB), "Company address" (Box 300, 535 23 Kvanum), "Telephone" (0512-322 40), "Facsimile" (0512-323 02), "E-mail address" (camilla.pettersson@swegon.se), and "www address" (www.swegon.se).
- Unit of the input data:** Two dropdown menus: "Air flow" (m³/s) and "Temperature / relative humidity" (Temperature and relative humidity).

At the bottom of the dialog are four buttons: "OK", "Cancel", "Save model", and "Load model". The status bar at the bottom left shows "Klar" and the bottom right shows "Internet".

Chapter 3 Main window

Object information

The first window you come to in the programme is the Object information.



Fill in project, Customers name and references.

If you only want to calculate a unit without saving it go to the next step in the programme. You do not have to create a file to make a calculation. If you want to save the object it is important that you go directly to File and save then give the object a name.

Maintenance; this window contains planned operation stops on the server.

Messages; here is written news and information that affects the programme.

Object input data

ProUnit 3 / 2006.12 - Object input data - test41.pro - Microsoft Internet Explorer provided by Swegon-Energizing Indoor Climat

File Edit Options Help Unit description 2: LA1

Object Object input data Unit Drawing Results Control system

Atmosphere

Pressure 101325 Pa

Air density 1.200 kg/m³

Outdoor air

	Summer	Winter	
Temperature	25.1	-2.4	°C
Relative humidity	55	90	%

Energy and LCC

Country Great Britain

City London

Max outdoor temp. with reheating 15.0 °C

Operating life 20 year

Calculated interest rate 6 %

LCC energy

Average annual temperature 10.4 °C

Energy price

Currency SEK

	Electricity	Heating	Cooling	
Current energy price	0.540	0.480	0.540	SEK/kWh
Estimated annual price increase	2.000	2.000	2.000	%
LCC energy: Spec. at present for yearly consumed kWh	0.000	0.000		SEK/kWh
Subscription costs	0.000	0.000	0.000	SEK/kWh/year
Inst. charges with increased max.capacity	0.000	0.000	0.000	SEK/kWh

Save model Load model

Klar Internet

Here you fill in the values for the whole project (all units). These are atmospheric pressure, air density, outdoor air data and power supply, even data for the energy calculation. If you do not want an energy calculation you do not need to fill in the data for "Energy and LCC" or "Energy price". Note the programme does not calculate with yearly mean temperature other than when calculating LCC energy.

Values from the climate data are automatically written in when you choose the City.

The dimensions for the summer and winter temperatures are taken from the 50 hour point. You can therefore have colder/warmer temperatures than these temperatures during 50 hours per year.

The years mean temperatures are calculated from the mean values of all the temperatures throughout the year. If you do not wish to use the pre-chosen values, fill in your own, they can be saved in the model. The dimensioning summer and winter temperatures are used for dimensioning the coils. The energy calculation is made from the information of the City chosen and the time values that are programmed for the temperature and relative humidity

Unit input data

Here you write in the values for the actual unit such as air volume, pressure drop in the ducts, show the choice of the rotary heat exchanger and data to enable an energy calculation. *Note that data for summer and winter temperature must be filled in manually for each object depending upon which temperature you receive after the cooling – respective heating coil. This is to receive the correct energy calculation.*

After you have written the air volume you choose the size of the unit or choose “All sizes”. If “All sizes” is chosen a calculation is made for all sizes and the correct size is chosen in the result window.

The pressure drop that is put in must be given for each duct. If no value is put in for the outdoor and exhaust air duct then no pressure drop for these ducts will be calculated. If there is no value given in the project description you should add 50Pa of the indicated duct pressure drop to the outdoor respective exhaust air ducts when using a rotary heat exchanger. This is to correct calculated the extra pressure drop required to ensure the correct leakage direction in the exchanger.

XZone; Is used to control a unit with two zones. If the accessory “Control cubicle for XZone” is chosen, you can put in the amount of the units volume that will be used in zone 1. Under tab Drawing you can then put in and dimension the two coils per zone. The programme will then dimension the coils after the volume in each zone.

If you want to calculate with cooling recovery the box “cooling recovery” must be marked.

If there is a lot of humidity in the outdoor air you can get condensation in the air cooler. If you want to dimension the fan for the higher pressure drop caused over the coil when it is wet mark “Calculate the fan for wet pressure drop (on coils)”

To be able to make an energy calculation the programme must know which supply air temperature is required for summer and winter cases. If you have moisture that is added somewhere in the building then it can be indicated how much in g/kg dry air and the programme will take it into account. The humidity calculation is used in the energy calculation only, not to calculate the extract air condition when dimensioning. It is used when calculating the cooling recovery with the hygroscopic treated rotor. If you want to

make a calculation according to LCC energy the temperature on the extract air is chosen as 20°C or 22°C.

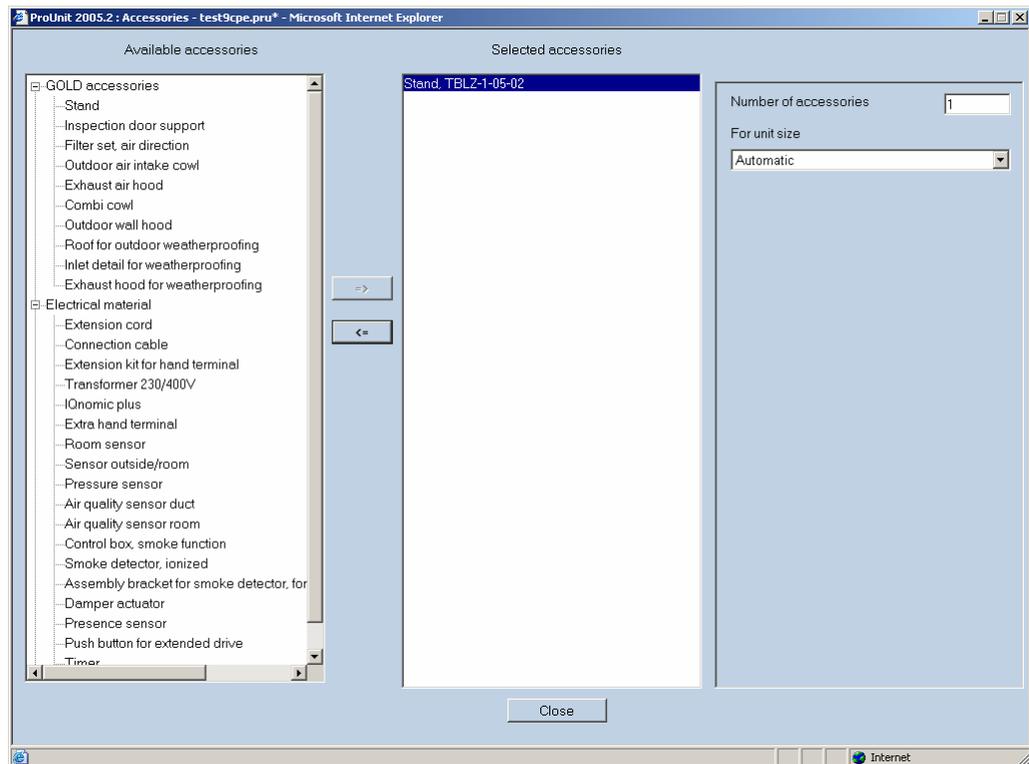
The operating times can be given as continuous operation 7 or 5 days per week or a given operation time per year. The times the unit starts and stops can be given under "Other operating time". If different air volumes and temperatures for two different operating times per day are to be calculated, see below "Alternative operating times". This can for example be used if you operate high speed during the day and low speed at night or if the unit is dimensioned for an air flow and then via VAV runs at another. If the calculation should be done for both dimensional and alternative case together, just mark this option. This option can for example be used if you want a summary of the energy consumption for high and low speed. The printout will then include one column for each case and one for both calculated together.

In the window there are buttons that are described below.

Alternative operating times

If you press this button the same window opens but with some options blanked. Alternative operating times can be used for example to change volumes night time or with VAV when you suppose the unit works on another volume for part of the year. There is a possibility to change air volume, temperature and operating times. If you want to calculate the rest of the year other than the stated time in the dimensioned case choose "Time outside normal operation". Be aware that the program calculation depends on the operation times given for each case without controlling the logic between the two. You go back to the case you are dimensioning by pressing the same button once more.

Accessories



The accessories are chosen by first opening the choices by pressing the plus-sign. Then mark an accessory and move to the middle column. You can also specify the accessory in the right column for size amount etc.

Special input data

See chapter "Special"

Special

Special on the Unit

Special unit data

Special unit

Insulation, E130

Stainless steel drain tray below outdoor air filter (cluding guide rails)

External painted finish

Black (RAL 9005 Polyester)

Grey (RAL 7040 Polyester)

Other special features

Item description

External text

(Visible text, shown in the order acknowledgement)

OK Cancel

GOLD units (except SD) can now be delivered with some special items. Price is available for the isolation E130, stainless steel tray under the outdoor air filters and external painting (black and grey). If some other special item is required on the unit (not controls) for ex. inside lighting or inspection windows then they can be chosen by marking the box “Other special”. Other specials generate a code that can be priced in the offer program. The price can be obtained from OSS in Kvänum.

Special on coils

ProUnit 11 / 2009.10.26: Special coil input data - noname.pru* - Microsoft Internet Explorer provided by Swegon-Energizing Ind

Design special coil data

Alternate input data

Special coil

Special accessory (delivered from Kvänum)

External product (purchased and delivered from the sales department)

Supplier: AirCoil, Arjäng

Dimensions (LxWxH): [] x [] x [] mm

Case length: [] mm

Duct connection (WxH): 315 x [] mm

Air flow: 0 m³/h

Total pressure drop, supply air: 0 Pa

Temperature downstream of coil, supply air: 0.0 °C

Rel. humidity downstream of coil, supply air: 0 %

Liquid temperature, inlet: 0.0 °C

Liquid temperature, outlet: 0.0 °C

Flow of liquid: 0.000 l/s

Liquid pressure drop: 0.0 kPa

Weight: 0 kg

Capacity: 0.00 kW

Item description: []

External text: []
(Visible text, shown in the order acknowledgement)

Internal text: []
(Hidden text, not shown in the order acknowledgement)

OK Cancel

The first choice "Special accessories delivered from Kvänum" is used when the OSS department in Kvänum order and organise the delivery of special coils.

The second choice "External product (purchased and delivered from the sales department)" is only for Sweden and is used only when the coil is purchased and delivered directly to the customer.

Other specials

External component input data

Choice for external component

Special accessory (delivered from Kvänum)

External product (purchased and delivered from the sales department)

Supplier: Danfoss, Linköping

Product code (upper case letters without delimiters)

Quantity: 1

Item description:

External text (Visible text, shown in the order acknowledgement)

Internal text (Hidden text, not shown in the order acknowledgement)

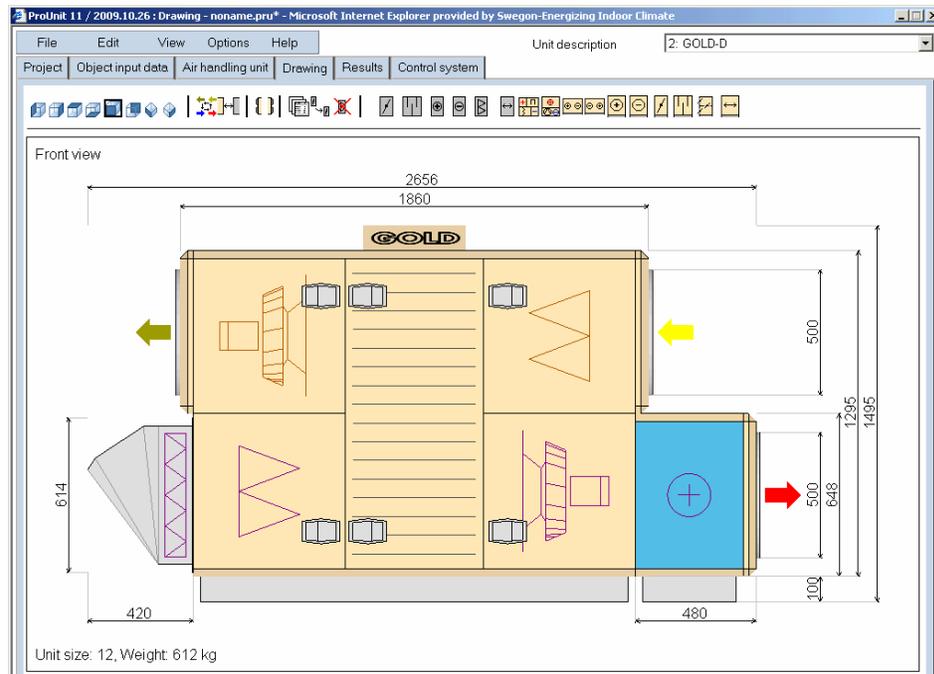
OK Cancel

Specials that are not for the unit or coils are put in under “add external component”. First choice “Special component delivered from Kvänum” is used when you have a special component that does not affect the unit physically.

The second choice “External product (purchased and delivered from sales department) is only for Sweden and is used for all products for re-sale except coils which are shown directly under special coils.

The third alternative “Product code” should be used when you have an article number from M3 (Movex) and you order it from the programme (the price is obtained from the offer program).

Drawing window



In this window you build up the unit and choose which functions you require.

Furthest up on the right is the unit name, here you choose between the different units you have in the object.

When you position the marker on the different symbols in the row you get a pop-up text which tells you the function. You can for example choose a heating coil by marking the symbol for heating coil. Then you position the coil by clicking on one of the installation points that pop-up. Put in all the ingoing parts before you put in the data in the parts

Dimensioning parts

When you have positioned all the parts required mark one of them and click once more or choose the button "Properties". The following window is shown:

ProUnit 11 / 2009.10.26 : Heating coil input data - noname.pru* - Microsoft Internet Explorer provided by Swegon-Energizing Ind

Design heating coil data

Coil type: Water coil
 Size: Automatic
 Connection side: Automatic
 Casing only
 In casing
 Case length: mm
 Valve kit: Automatic
 Version: Standard

Information about the coil

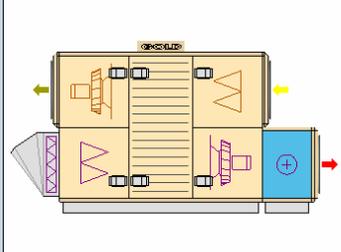
Accessories Special input data
 Save model Load model

Air side

Max. face velocity: 4.50 m/s
 Air flow: m³/h
 Inlet coil temperature: °C
 Inlet coil relative humidity: %
 Outlet coil temperature: 20.0 °C
 Coil capacity: kW
 Transmission losses: 0.00 kW
 Surface margin: 0 %
 Minimum air velocity: 1.00 m/s

Liquid side

Max. pressure loss: 20.0 kPa
 Inlet liquid temperature: 60.0 °C
 Outlet liquid temperature: 30.0 °C
 Type of liquid: Water
 Glycol content: 0 %



Please select part by clicking it
 Return to drawing by clicking OK/Cancel.

Alternate input data
 Calculate unit
 OK Cancel

Calculation results		
Heating coil in casing	TCLA-1-12	
Version	1	
No. of tube rows	1	
No. of circuits	4	
Connection number	20	ext.
Fin spacing	2.0	mm
Pressure drop	12	Pa
Air velocity	1.8	m/s
Air temperature	17.7 20.0	°C
Relative humidity	18.0 16.0	%
Required coil capacity	2.35	kW
Excess capacity of the coil	62	%

Unit calculation warnings

Calculation OK

Here you can dimension all the parts. Change between the parts by marking the part in the window above to the right. To some parts there are accessories, these are chosen under the button "Accessories". If you choose an alternative operating time you may also have parts that differ from the dimensioned unit data. These are put in when you press the button "Alternative operating times". The parts are locked but you may for ex. change air temperatures or other temperatures for the ingoing fluids.

There is a possibility to dimension the coil for a different air flow then the unit. This can for example be used if a unit is dimensioned for an air flow at summer conditions but runs on an other air flow part of the year. The air heater can then be dimensioned at a lower air flow. In the print out the air pressure drop is given for the dimensional air flow of the unit but all other data is given for the air flow on the coil. Be aware of that an air flow just needs to be given if it differs from the unit's air flow. Even if you have XZone the program knows how much of the air flow located in each zone and dimension the coils for this.

Result window

The screenshot shows the ProUnit 3 software interface. The title bar reads "ProUnit 3 / 2006.12 : Results - test41.pru* - Microsoft Internet Explorer provided by Swegon-Energizing Indoor Climate". The main window has a menu bar (File, Edit, Options, Help) and a toolbar (Object, Object input data, Unit, Drawing, Results, Control system). The "Results" tab is active, showing a unit description "2: LA1".

Summary data:

- Supply air: 2.400 m³/s
- Extract air: 2.400 m³/s
- Total coil capacity: Heating 5.58 kW, Cooling 27.30 kW

Table of calculated parameters for size 30:

Size	Heat exchanger efficiency (%)	SFPv (kW/(m ³ /s))	Dp, supply air (Pa)	Dp, extract air (Pa)	P, el, supply air (kW)	P, el, extract air (kW)	Speed dim/max supply (%)	Speed dim/max extract (%)	Sound level, supply air 250 Hz (dB)	Sound level, extract air 250 Hz (dB)
30	79	2.7	770	713	3.54	3.50	89	89	79	76

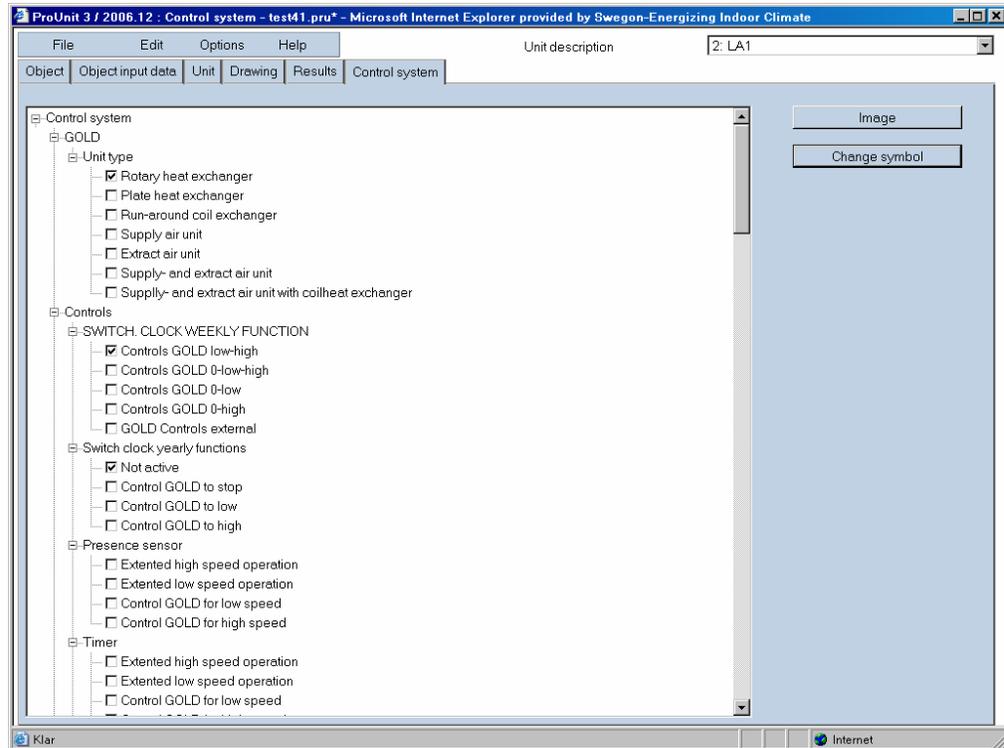
Below the table is an "Information" section with a table:

Size	Information
30	Calculation OK

If you have chosen a size then you only get data for the chosen unit but if you have chosen "All sizes" in the unit window then you can see all the calculated sizes. The units that are white marked can be used with the chosen input data. Choose one of these by marking the size, so that a yellow border surrounds it, then press the button "Choose". When you have chosen the size you can go back to the drawing window and see the size of the unit and parts. If you want to print out the unit press button "Print"

It is possible to change the width of the column to get more data onto the screen. Set the marker on the line between the columns and adjust to the required width.

Control system



The control system can be specified depending on which parts and accessories are chosen to the unit in this page. If any alternative is unlabelled it can not be chosen. In some cases it is an accessory that is missing for instance temperature sensor or air quality sensor. These can be chosen in page "Unit" by pressing the button "Accessory". Below is described how you choose functions and which accessories are required.

Air flow

Pressure regulation; Can only be chosen if you have chosen a pressure sensor in the accessories (put 2 sensors in if you want pressure regulation in both supply- and extract air)

Cooling function

CoolDX- Comfort; Requires an outdoor sensor (TBLZ-1-25) or a duct temperature sensor (TBLZ-1-30)

Cooling min. flow; If the units flow goes below this limit the cooling function is blocked. This can be chosen as soon as you have chosen a cooling machine or cooling coil.

Outdoor temp. limited start; Can be chosen with DX cooling, this can be chosen if the cooling machine is to start at a given outdoor temperature.

Functions

Seasonal compensated flow regulation; Can be chosen if the air flow is to be reduced during the winter to save energy.

Outdoor temperature compensated supply air temperature; Can be chosen if supply air regulation is chosen.

Outdoor temperature compensated extract air/rooms temperature; Can be chosen if extract air/room temperature regulation is chosen.

Summer night cooling; Can always be chosen if you wish the unit to start night time to cool down the building.

De-frosting rotary heat exchanger; Pressure sensor (TBLZ-1-23) must be chosen to be able to choose this function.

Intermittent night heating; The unit will start at night to heat the building. You must have a heating coil and preferably a re-circulation section, this is not a must. However, a room temperature sensor (TBLZ-1-24) or a sensor outdoor/room (TBLZ-1-25) must be chosen. The sensor outdoor/room must be specified to position in the room.

Return air mixing in sequence, heating; Re-circulation damper in outdoor/exhaust air duct should be chosen or mixing section (Gold SD).

Return air mixing in sequence, cooling; Re-circulation damper in outdoor/exhaust air duct should be chosen or mixing section (Gold SD).

Mixing section; Chosen together with the Gold SD.

Morning Boost; Intermittent night heating should be chosen.

Heating Boost; Extract/room regulation should be chosen.

De-humidifying supply air; The cooling coil must be placed before the heating coil and also a humidity sensor – supply air duct (TBLZ-1-31-1) must be chosen.

Fire-/smoke equipment

Extract air upon fire; Smoke function unit cubicle should be chosen.

Adjustable speed, extract fan upon fire; Extract air upon fire must be chosen to be able to choose this function.

Swegon Factory/Shopping centre

Damper control Booster, To enable this function an IQnomic plus module (TBIQ-1-1-aa) and an external extract air/rooms temperature sensor (TBLZ-1-24, TBLZ-1-25 or TBLZ-1-30) should be chosen under accessories. If the temperature value is given from an external communication module the temperature sensor is not required.

Swegon office

Cooling water control; To enable this function an IQnomic plus module (TBIQ-1-1-aa) and a wrap-on sensor (TBLZ-1-32) should be chosen under accessories.

Rooms system LUNA; Can always be chosen if required.

Chapter 4 AutoCAD Connection

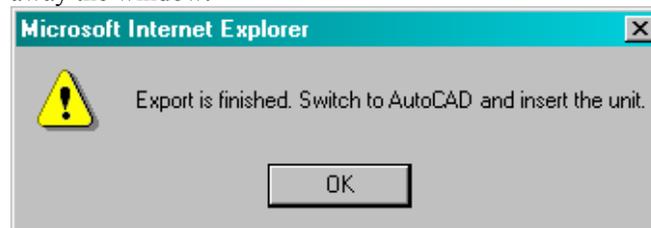
ProUnit web version

To be able to transport the unit to for example an AutoCAD drawing, you can in ProUnit make a dxf-file which transports the whole unit as a file. A better way is however to use an additional program, ProUnitCAD, which is on Swegon's home page. The installation file is called "ProUnit MagiCAD connection x32 web.exe". If you have a 64-bit operating system, then please use "ProUnit MagiCAD connection x64 web.msi" instead. ProUnitCAD is a program which gives the user greater possibilities to import the units and accessories in a better way.

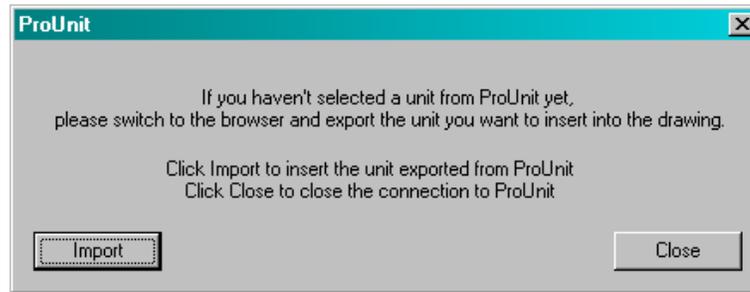
You can choose if the unit should have the accessories, such as coils or dampers, attached to the unit or if they should be placed separate. This must be done in ProUnit before the unit is saved and transferred to CAD.

Bellow there is a description how the program is used.

1. Install the program on to the computer by using the file mentioned above. Make sure you have the rights to install the program to the computer.
2. Make sure you have an object that has been produced in ProUnit. ProUnit should then be **closed**.
3. Start AutoCAD.
4. The first time the program is used you must load a toolbox. Write "menuload" in Command row. Load the file "ProUnitCAD.mnu" under C:/Program files/Swegon/ProUnit.
5. Click the fan symbol "Draw unit" in ProUnitCAD toolbar to start ProUnit and load the unit.
6. Login to ProUnit with your user name and password.
7. Open the file (*.pru) you want to transport the unit from and choose the unit to be imported. When you have marked the unit press "Export to ACAD". The window bellow will appear which tells you the unit has been transported, press OK to take away the window.



8. Change to AutoCAD without closing ProUnit.
9. The window below will appear in AutoCAD. Press "Import" in this window. Click on the screen to position the unit in the correct place and specify the direction (press button "Enter" only if you do not want to change direction).



10. After the first unit has been installed the same window will come up again. If you do **not** want to import more units answer **"Close"** but if you want to import more units **change to ProUnit** without taking any action in the window. Do as step 6-7 and then answer **"Import"** in the window in AutoCAD. The other units are transported in the same way. When you have finished answer **"Close"** to the question and AutoCAD can be used as usual.
11. Close ProUnit.
12. For showing the data of the unit click on the toolbar **"Show the data of the unit"**. If connection points should be shown choose the button **"Show the connection locations"**. If connection points are not visible then please turn on DefPoints-layer.

ProUnit windows version

To be able to transport the unit to for example an AutoCAD drawing, you can in ProUnit make a dxf-file which transports the whole unit as a file. A better way is however to use an additional program, ProUnitCAD. The program is included in ProUnit Windows installation, no extra installation is needed for 32-bit computer. If you have a 64-bit operating system, then please install **"ProUnit - 64-bit CAD Plugin for Win version.msi"** after ProUnit Windows version is installed. ProUnitCAD is a program which gives the user greater possibilities to import the units and accessories in a better way.

You can choose if the unit should have the accessories, such as coils or dampers, attached to the unit or if they should be placed separate. This must be done in ProUnit before the unit is saved and transferred to CAD.

Bellow there is a description how the program is used.

1. Start AutoCAD.
2. The first time the program is used you must load a toolbox. Write **"menuload"** in Command row. Load the file **"ProUnitCAD.mnu"** under **C:/Program files/Swegon/ProUnit**.
3. Click the fan symbol **"Draw unit"** in ProUnitCAD toolbar to insert a unit from the program. Fetch the file were the units are saved and chose which unit to import.
4. Click on **"Export to ACAD"** and then add the unit to the drawing. It shows how many blocks are to be imported in the command row. Load the unit and choose the direction, just press **"Enter"** if the direction is not to be changed.
5. For showing the data of the unit click on the toolbar **"Show the data of the unit"**. If connection points should be shown choose the button **"Show the connection locations"**. If connection points are not visible then turn on DefPoints-layer.

MagiCAD Connection

ProUnit has a direct connection to MagiCAD. The connection insert ducts and transfer sound power data for the calculation direct to the connection frame on the unit. This MagiCAD connection is installed automatically together with ProUnitCAD if MagiCAD is installed on the computer. To get the sound power data it has to be MagiCAD version 2006.11 or later. For earlier versions of MagiCAD the duct connections are drawn on the unit.

1. Start a MagiCAD drawing and add a unit see chapter AutoCAD connection and read the instruction for either web or windows version.
2. Click on the puzzle part in MagiCAD:s tool box or write the command "SWEGON_MCCONN". The program then draws a duct part on each connection frame. Each duct part contains sound power levels that are used later in the sound calculation. The sound data can be visualized by using MagiCAD's command "Part Properties" (write command MAGIPPR or click Part properties-button in MC-HP&V Edit toolbar).

ProUnitCAD - Unit data

Description: Lufbehandlingsystem GOLD

	SUPPLY		EXTRACT	
Unit size	08		08	
Air flow	0.7 m ³ /s		0.7 m ³ /s	
Total pressure rise	552 Pa		461 Pa	

Unit dimensions

Total length	1600 mm
Total width	990 mm
Total height	1085 mm
Weight	446 kg

Sound

	Hz	63	125	250	500	1k	2k	4k	8k	dB(A)
To supply air duct		84	79	76	72	70	70	66	54	76
To outdoor air duct		82	81	75	70	57	53	46	38	71
Surroundings, supply		74	66	55	53	39	40	35	26	55
To exhaust air duct		85	80	78	74	72	73	69	57	79
To extract air duct		82	81	75	70	57	53	46	38	71
Surroundings, extract		74	66	55	53	39	40	35	26	55
Surroundings, both		77	69	58	56	42	43	38	29	58

DUCT CONNECTIONS

Duct connection (mm): 400

Diagram showing connections between OUTDOOR and ROOM. Labels include Exhaust air, Outdoor air, Extract air, and Supply air.

OK