

OUMAN

BUILDING AUTOMATION

Price list

2019

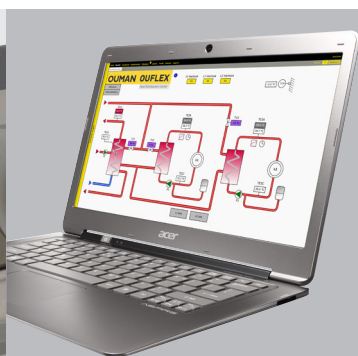


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PRODUCT CATEGORIES:



Heating and air handling unit controllers

Price EUR
Vat 0%

EH-800 AND EH-800B HEATING CONTROLLER FOR SMALL HOMES

A new heating controller with one heating circuit, which is also possible to expand to have two heating circuits or alternatively to control two heating sources simultaneously. The controller can be used either with a home network or an internet web browser (not EH-800B). It is also possible to connect it to GSM.

With EH-800 it is delivered the heating controller and the actuator as a compact device, supply water sensor (TMS), outdoor temperature sensor with a plug-connection, power supply and the necessary adapter for the most common control valve (e.g. Termomix). It is possible also to order the adapters for Esbe VRG, VRB and Belimo R4-series valves. The controller is easy to install and use. It has 3 years warranty.



| | | | |
|------------------|--|-----------|------------|
| EH-800 | Heating controller | B1 | 510 |
| EH-800B | Heating controller without Internet option | B1 | 433 |
| SOV-ESBE2 | Adapter for Esbe VRG and VRB valves | B1 | 26 |

EXP-800 EXPANSION PACKAGE FOR THE EH-800 CONTROLLERS

Another heating circuit / for parallel control of another source of heat

Product package content: Pre-connected expansion unit, connecting cable, Belimo HTC24-SR valve engine, adapter for the most common mixing valve, TMS-3M surface temperature sensor and the introduction of the necessary instructions.



| | | | |
|----------------|--|-----------|------------|
| EXP-800 | Expansion package for the EH-800 controllers | B1 | 304 |
|----------------|--|-----------|------------|

EXU-800 EXTERNAL UNIT FOR EH-800 AND EH-800B

External unit EXU-800 makes it possible to control a second valve actuator, another relay and also add two measurement information to the EH-800 heating controller.

EXU-800 product packaging containing the encapsulated control card, RJ45 cord and the coupling guide.



| | | | |
|----------------|--------------------------------------|-----------|-----------|
| EXU-800 | External unit for EH-800 and EH-800B | B1 | 66 |
|----------------|--------------------------------------|-----------|-----------|

OPTIONAL EQUIPMENT

| | | | |
|----------------|---|-----------|------------|
| TMR | Room sensor (NTC10) | A1 | 41 |
| TMR/SP | Room sensor with fine-tuning knob | A1 | 48 |
| TMS-4M | Surface sensor (NTC10), connection cable 4 m | A1 | 27 |
| C01A | Thermostat, surface mounting, 20 ... 90 °C, differential range 7 °C | A2 | 58 |
| GSMMOD8 | OUMAN GSM/GPRS -modem for EH-800 | C1 | 169 |

Heating and air handling unit controllers

Price EUR
Vat 0%

OUMAN S203 HEATING CONTROLLER FOR THREE CIRCUITS

Ouman S203 is a new generation wall-mounted heating controller. Its versatility, intelligence and openness make it an ideal heating controller for all water circulation heating systems. Ouman S203 is really easy to use - informative display panel and GSM Control - feature enable reliable use anytime, anywhere. S203 can be connected to Ounet-service via Oulink-ETH-adapter (TCP/IP, optional) or other monitoring systems using a Modbus RTU.

- Operating voltage: 230 VAC, 50 Hz
- The internal 24 V power source, total load capacity of max. 1 A/23 VA
- Dimensions W230 x H160 x D60



| | | | |
|--------------|--|-----------|------------|
| S203 | Heating controller for three circuits (2 heating circuits, 1 domestic hot water circuit) | A1 | 837 |
| RB-40 | External relay unit in casing, 4 pcs changeover relays (24V, 250VAC/16A), IP66 | A1 | 88 |

OUMAN C203 HEATING CONTROLLER FOR THREE CIRCUITS

Ouman C203 is a new generation DIN-rail mounted heating controller. Its versatility, intelligence and openness make it an ideal heating controller for all water circulation heating systems. Ouman C203 is really easy to use - informative display panel and GSM Control - feature enable reliable use anytime, anywhere! C203 can be connected to Ounet-service via Oulink-ETH-adapter (TCP/IP, optional) or other monitoring systems using a Modbus RTU.

- Operating voltage: 230 VAC, 50 Hz
- The internal 24 V power source, total load capacity of max. 0.4A/10VA
- Dimensions W214 (13M) x H90 x D94



| | | | |
|-------------|--|-----------|------------|
| C203 | Heating controller for three circuits (2 heating circuits, 1 domestic hot water circuit) | A1 | 867 |
|-------------|--|-----------|------------|

OUMAN H23 HEATING CONTROLLER FOR THREE CIRCUITS

Ouman H23 is suitable for every house with central water heating. H23 is open to different types of remote monitoring solutions. House heating can now be monitored and controlled from the display of a GSM-phone, PC, and from the controller. Alarm messages can be received as text messages into a GSM-phone. H23 can be connected to Ounet-service via Oulink-ETH-adapter (TCP/IP, optional) or other monitoring systems using a Modbus RTU.

- Operating voltage: 230 VAC, 50 Hz
- The internal 24 V power source, total load capacity of max. 1A/23VA
- Dimensions W230 x H160 x D60
- Three switches on the cover for circulation pumps



| | | | |
|------------|--|-----------|------------|
| H23 | Heating controller for three circuits (2 heating circuits, 1 domestic hot water circuit) | A1 | 847 |
|------------|--|-----------|------------|

EH-200 SERIES HEATING AND DOMESTIC HOT WATER CONTROLLERS

OUMAN EH-200 is a heating controller whose versatility, intelligence and clarity have made it the favourite controller for water circulation heating systems. From the beginning, user friendliness has been one factor in making Ouman EH-200 a success; it has an informative display and a clear menu structure. EH-200-series controllers can be used by browser via EH-net server (an accessory). EH-201/L also have a GSM control feature (GSM modem as an accessory).



| | | | |
|-----------------|---|-----------|------------|
| EH-201/L | 1-circuit heating controller | A1 | 521 |
| EH-201/V | 1-circuit domestic hot water controller | A1 | 521 |

EH-105 AIR HANDLING UNIT CONTROLLER

Ouman EH-105 is an intelligent air handling unit controller that is suitable for all kinds of applications. The controller's diverse and innovative control solutions are as easy to use as the other Ouman controllers that have a reputation for user friendliness. An informative display with built-in help and intelligent solutions makes the EH-105 easy to install and commission and make changes during use. The controller can be used locally, by browser via EH-net server (an accessory) and GSM feature needs a GSM modem (an accessory).

- 5 control sequences
- Yearly clock
- Bus connection
- Controller configuration by PC
- Versatile alarm functions
- Built-in AC adapter



| | | | |
|---------------|-----------------------------|-----------|------------|
| EH-105 | Air conditioning controller | A1 | 786 |
|---------------|-----------------------------|-----------|------------|

GSM modems

Price EUR
Vat 0%

OUMAN GSM MODEMS

Delivery includes GSM modem, DIN bracket, AC adapter, a separate power cable, data cable, and accessory bag attachment.



| | | | |
|----------------|--|-----------|------------|
| GSMMOD7 | OUMAN GSM/GPRS modem for EH-105 and EH-200 series controllers | C1 | 169 |
| GSMMOD8 | OUMAN GSM/GPRS modem for EH-800, Ouflex M and Ouflex C controllers | C1 | 169 |
| GSMMOD9 | OUMAN GSM/GPRS modem for Ouman Plus and Ouman Ouflex | C1 | 185 |

ANT1 EXTERNAL ANTENNA

- Magnet antenna
- Antenna cable 2,5 m, interface FME
- Antenna extension cable ANT-C-10M, see page 9.



| | | | |
|-------------|---------------------------------------|-----------|-----------|
| ANT1 | External antenna for Ouman GSM-modeem | C1 | 34 |
|-------------|---------------------------------------|-----------|-----------|

Casing packages

K118 CASING PACKAGE, 18 MODULES

Contents:

- casing (enclosure rating IP 54), 1 x 18 modules, size: 403 x 333 x 129 [mm]
- transformer (230/24 VAC, capacity 10 VA)
- master switch



| | | | |
|-------------|--|-----------|------------|
| K118 | Casing package 18 modules (one DIN rail) | C2 | 121 |
|-------------|--|-----------|------------|

K212 CASING PACKAGE, 24 MODULES

Contents:

- casing (enclosure rating IP54); 12 + 3 modules, size: 295 x 457 x 129 [mm]
- transformer (230 / 24 VAC, capacity 40 VA)
- master switch

| | | | |
|-------------|---|-----------|------------|
| K212 | Casing package 24 modules (two DIN rails) | C2 | 133 |
|-------------|---|-----------|------------|

K218 CASING PACKAGE, 36 MODULES

Contents:

- casing (enclosure rating IP 54), 2 x 18 modules, size: 403 x 483 x 129 [mm]
- transformer (230/24 VAC, capacity 40 VA)
- master switch



| | | | |
|-------------|---|-----------|------------|
| K218 | Casing package 36 modules (two DIN rails) | C2 | 183 |
|-------------|---|-----------|------------|

K312 CASING PACKAGE, 36 MODULES

Contents:

- casing (enclosure rating IP54); 12 + 12 + 2 modules, size: 295 x 457 x 129 [mm]
- transformer (230 / 24 VAC, capacity 63 VA)
- master switch

| | | | |
|-------------|---|-----------|------------|
| K312 | Casing package 36 modules (three DIN rails) | C2 | 169 |
|-------------|---|-----------|------------|

K318 CASING PACKAGE, 54 MODULES

Contents:

- casing (enclosure rating IP54); 18 + 12 + 11 modules, size: 403 x 630 x 129 [mm]
- transformer 24 VAC, capacity 63 VA, 12 VDC 24W
- master switch

| | | | |
|-------------|---|-----------|------------|
| K318 | Casing package 54 modules (three DIN rails) | C2 | 247 |
|-------------|---|-----------|------------|

K412 CASING PACKAGE, 48 MODULES

Contents:

- casing (enclosure rating IP54); 12 + 12 + 12 + 2 modules, size: 665 x 295 x 129 [mm]
- transformer 230 / 24 VAC, capacity 63 VA
- master switch

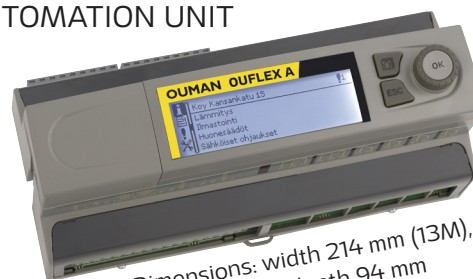
| | | | |
|-------------|---|-----------|------------|
| K412 | Casing package 48 modules (three DIN rails) | C2 | 224 |
|-------------|---|-----------|------------|

Freely programmable automation units

Price EUR
Vat 0%

OUMAN OUFLEX A FREELY PROGRAMMABLE AUTOMATION UNIT

Ouflex A is a freely programmable and DIN-rail-attachable building automation system for control and monitoring. Ouflex A includes 34 I/O-points, and also versatile data transfer and field bus connections. In addition, the device contains 24 Vac and 15 Vdc outputs. Display unit is detachable, and can be relocated. It is possible to increase the number of I/O-points with external I/O-modules via bus connections. The DIN-standard-compatible structure of the Ouflex A device enables installation to most common cabinets. Detachable strip connectors make installation easier.



Dimensions: width 214 mm (13M),
height 90 mm, depth 94 mm

Ouflex A I/O-points

- 16 pcs universal measurements (UI)
- 2 pcs digital inputs (DI)
- 6 pcs 0...10V analog outputs (AO)
- 2 pcs change-over contact relays (DO)
- 4 pcs normally open contact relays (DO)
- 4 pcs 24 VAC Triac-outputs (TR)

Data transfer connections

- 3 pcs RS-485 bus connections
- USB-host-connection
- Ethernet

Operating voltage

- 24 VAC, 50 Hz

Access-functionality option is built-in to the all Ouflex-devices. Activation as an option.

Ouman Access is flexible way to get remote connection to the automation device. Access can use internet connection that already exists in the building. That's why internet connection is immediately ready to use. Access remote connection is device-specific and the service is available the whole life cycle of the automation device.

| | | | |
|-----------------|-------------------------------------|-----------|-------------|
| OUFLEX A | Freely programmable automation unit | A1 | 1503 |
|-----------------|-------------------------------------|-----------|-------------|

OPTIONS

| | | | |
|----------------------|------------------------------------|-----------|------------|
| GSMMOD9 | OUMAN GSM/GPRS -modem for Ouflex. | C1 | 185 |
| OUFLEX LCD FR | Wall installation frame for Ouflex | A1 | 26 |
| OUFLEX LCD | Display for Ouflex | A1 | 255 |

OUMAN OUFLEX M BA FREELY PROGRAMMABLE AUTOMATION UNIT

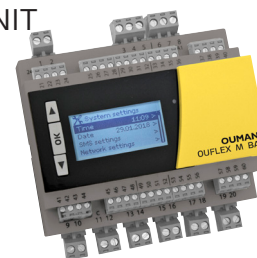
Operating voltage 24 VAC or 24 VDC, local display 132 x 64 px.

Ouflex M BA I/O points

- 15 pcs. universal inputs (UI)
- 4 pcs. 0...10 V analog outputs (AO)
- 6 pcs. relay outputs NO, 230V 5A
- 1 PWM output (heating control)

Data transfer connections

- 2 pcs. RS-485 bus
- 2 pcs. RS-232 bus
- 1 USB device
- Ethernet with M-LINK



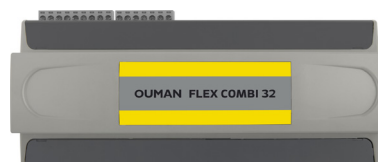
| | | | |
|----------------------|--------------------------------------|-----------|------------|
| OUFLEX M BA | Freely programmable automation unit | A1 | 765 |
| OUFLEX C LCD | Display for Ouflex M | A1 | 255 |
| OUFLEX M LCD | Ouflex M LCD with cable and frame | A1 | 150 |
| OUFLEX LCD FR | Wall installation frame for Ouflex M | A1 | 26 |
| LCD CABLE M | RJ-12 - RJ-45 display cable | A1 | 21 |

I/O-EXTENSION UNITS

I/O-extension units are used to increase I/O capacity of the Ouflex device. Units are DIN-rail attachable and possible to connect to bus. They are easy to decentralize as needed. I/O-extension units have the necessary 24 VAC power supply connectors for field devices.

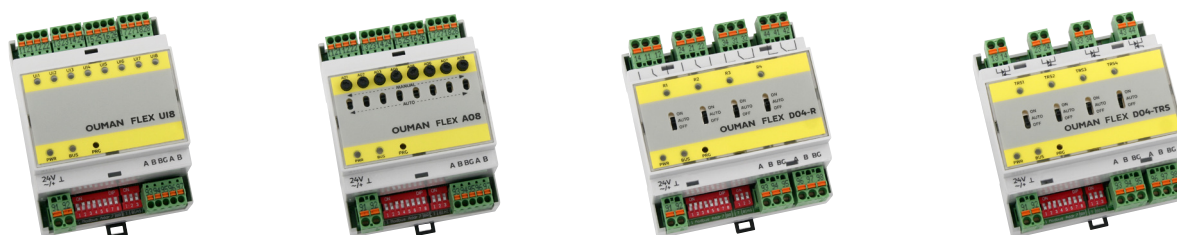
Operating voltage

- 24 VAC, 50 Hz



Measurements: width 213,5 mm
(13M), height 90 mm, depth 93,3 mm

| | | | | |
|----------------------|---|---|-----------|------------|
| FLEX COMBI 32 | 16 pcs universal inputs (UI) 6 pcs 0...10V analog outputs (AO) | 2 pcs change-over contact relays (DO) 4 pcs normally open contact relays (DO) 4 pcs 24 Vac Triac-outputs (TR) | A1 | 590 |
| FLEX COMBI 21 | 9 pcs universal inputs (UI) 2 pcs 0...10V analog outputs (AO) | 2 pcs change-over contact relays (DO) 4 pcs normally open contact relays (DO) 4 pcs 24 Vac Triac-outputs (TR) | A1 | 387 |
| FLEX UI 16 | 16 pcs universal inputs (UI) | | A1 | 269 |

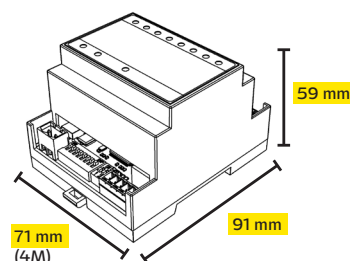


FLEX UI8 is a DIN-rail-attachable Modbus RTU input module which can be connected to RS-485 bus. It has 8 configurable universal inputs.

Supported signals and sensor types are:

- Transmitters 0-10 V or 0/4-20 mA
- Supported passive sensors: NTC10, NTC1.8, NTC2.2 ja NTC20 Ni 1000 LG, Ni 1000 DIN 43760, Pt 1000
- Potential free digital contact
- Potential free pulse counter (min 30ms)

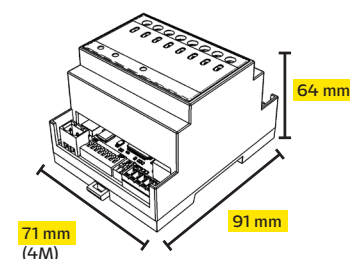
Operating voltage: 24 VAC/VDC (-10%...+20%), 50/60 Hz



FLEX A08 is a DIN-rail-attachable Modbus RTU output module which can be connected to RS-485 bus. It has 8 analog outputs.

- Output voltage range 0...10V
- Output current max. 7mA/output
- Each output has AUTO-MANUAL switch.
- Manual position is controlled via potentiometer in each channel separately

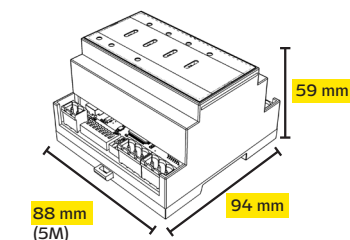
Operating voltage: 24 VAC/VDC (-10%...+20%), 50/60 Hz



FLEX D04-R is a DIN-rail-attachable Modbus RTU relay unit which can be connected to RS-485 bus. It has 4 relay controls.

- In each relay control it is possible to choose either the automatic control or forced ON or OFF control (ON - AUTO- OFF).
- Change-over contact relay 230 Vac/ 4A or 24 Vdc/4A
- Easy to install in electrical cabinet

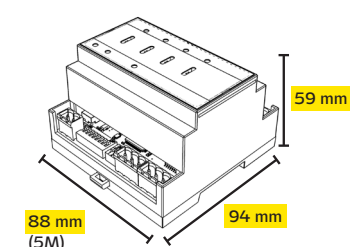
Operating voltage: 24 VAC/VDC (-10%...+20%), 50/60 Hz



FLEX D04-TRS is a DIN-rail-attachable Modbus RTU triac module which can be connected to RS-485 bus. It has 4 AC triac switches.

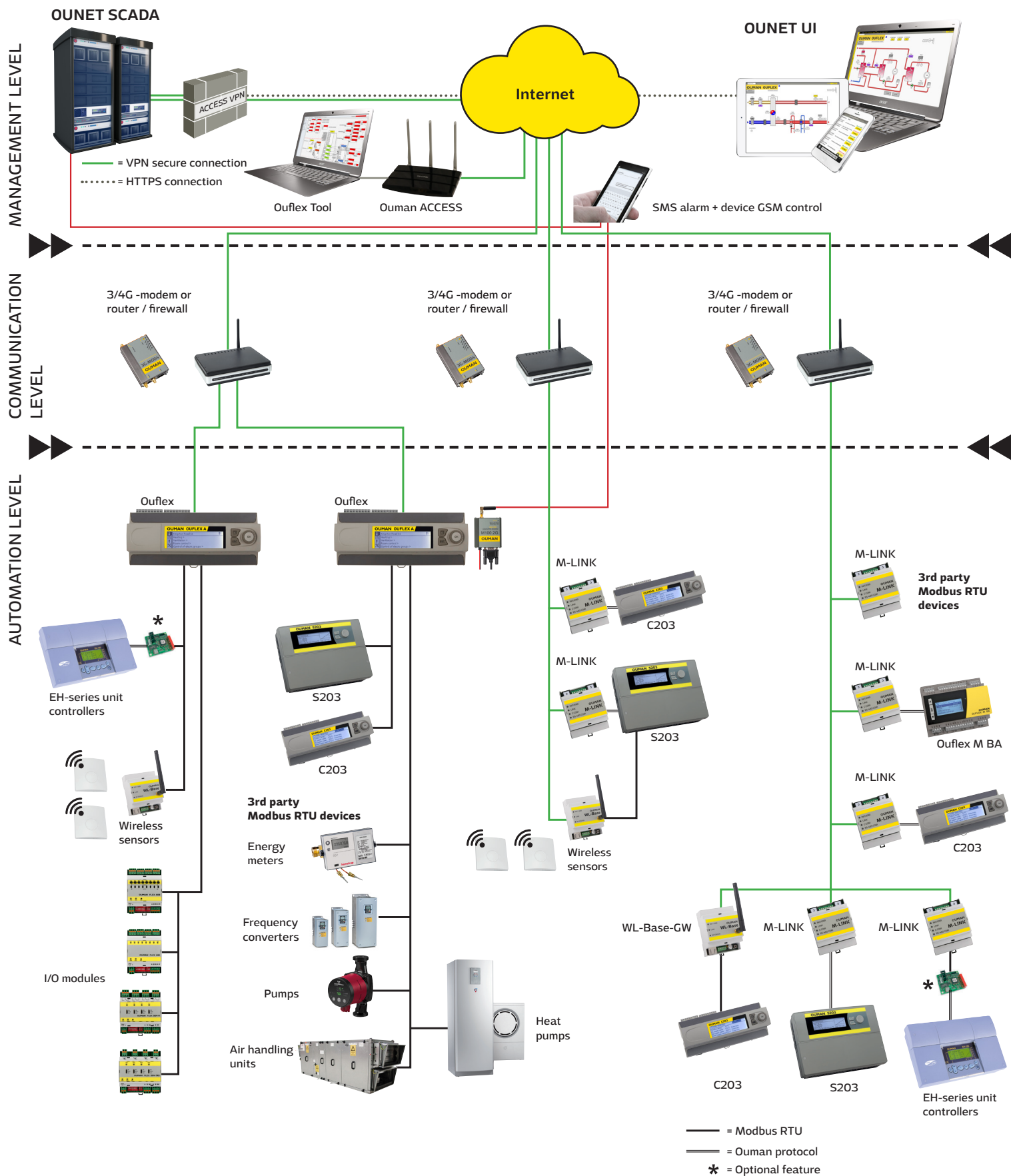
- Each triac control has 3 stage switch for selection between automatic control, forced ON or OFF (ON - AUTO - OFF).
- 24...230Vac, max 1A/output
- Potential-free AC switch
- DC controls require a supplementary relay in installation

Operating voltage: 24 VAC/VDC (-10%...+20%), 50/60 Hz



| | | | |
|---------------------|-------------------------|-----------|------------|
| FLEX UI8 | Universal input module | A1 | 225 |
| FLEX A08 | Universal output module | A1 | 225 |
| FLEX D04-R | Universal relay module | A1 | 175 |
| FLEX D04-TRS | Universal triac module | A1 | 175 |

Building automation system topology



Ouman system components

MANAGEMENT LEVEL

Ouman Access server



- Secure VPN connection
- Plug & play connectivity
- Including name server (DHCP)
- Creating easy access and secure connection to devices.
- Customer register functionality for OEMs offers capability to connect devices securely to internet and gives possibility to create own solution based web interface for specific service

Ouflex Tool



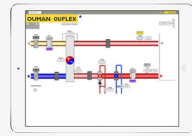
- Uses secure VPN connection to devices in the field
- Remote plug & play connection to devices
- Upload/download of applications
- Online process monitoring
- Automatic updates
- Free trial for 14 days
- Software license available on demand for certified users

OUNET SCADA solution in cloud service

- Cloud solution offers maintenance free usage
- Use your OUNET from any location by using web browser
- Only one login is needed to access all your facilities/targets
- Enables easy process management and system fine tuning
- Alarm routing by using email and SMS. Also alarm groups available.
- Target calendar with diary function for easy follow up of tasks
- Trend data is stored to cloud for further analysis and reports
- Flexible report generation for all stored trend data
- Automated report sending to selected receivers



OUNET browser UI (HTML5)



OUNET in mobile or tablet (HTML5)



COMMUNICATION LEVEL



3G-MOD3

- Compact and meets industry level requirements
- Easy installation
- Optional external antenna available
- Suitable for any operator SIM card which supports mobile data connection



Ouman Access device

- Built-in OUMAN Access functionality
- Router can connect up to 15 OUMAN automation devices to Access service.
- ACCESS 2.4 product enables connection to devices in the field which have Access connection.
- Enables download and upload of applications to OUFLEX devices



2G GSM SMS Modem

- Compact and meets industry level requirements
- Easy installation
- Optional external antenna available
- SMS alarm and device GSM control via SMS

AUTOMATION LEVEL



Ouflex

Programmable controller platforms

- Three device platforms available (A,C and M)
- Platform specific template available in Ouflex Tool library
- Easy and fast forward programming with ready made library components
- Built-in Access and TCP/IP modbus -with C and M platforms M-LINK device is required
- Remote device management
- Read/Write functions trough controller gateway
- Easy to connect new Modbus devices (TCP/IP and RTU)
- External display available for C & M platforms – A platform comes with detachable display



Ouflex M BA



Ouman Wireless

- Easy and fast installation
- Any browser can be used to access base station data
- Good radio coverage with 868Mhz mesh network
- Built-in secure Access VPN functionality in WL-base
- Sensors can be used as routers with external power supply
- Sensors are providing temperature, humidity and additional auxiliary measurement
- Sensors are powered with standard AA batteries
- Modbus TCP/IP and RTU communication
- Intelligent calculation of collected data in base station
- Automated average calculation of measurements e.g. for heating curve optimization



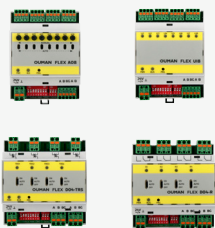
M-LINK



M-LINK – new model with more functions

- Can be used similarly like previous Oulink model
- Provides remote tool management for C & M platforms
- Modbus TCP/IP to Modbus RTU gateway converter for any 3th party RTU slave device
- OPC UA communication protocol

Ouflex I/O modules



- These I/O modules can be used to expand controller IO capabilities
- Modules are compatible with any systems supporting Modbus RTU
- UI8 is configurable input module with resistive sensors, digital contacts, pulse counters and transmitters with voltage and mA outputs
- AO8 is analog output module with 8 pcs of 0-10V outputs. Selection between automatic and manual state with switches.
- DO4-R module includes four bistable relays.
- DO4-TRS is module with four triac switches from 24VAC up to 240VAC

3rd party Modbus RTU devices



Heat pumps



Energy meters



Pumps



Air handling units



Frequency converters

S203



C203



OUMAN unit controllers

- New generation controllers based on Ouflex platform
- Built-in Modbus RTU bus
- Easy configuration with setup wizard
- Software version can be updated by using SD memory card
- With OULINK device optional Modbus TCP/IP connection and Access VPN functionality for secure connection and easy integration to OUNET SCADA system.

Ouman Ounet

Price EUR
Vat 0%

OUNET WEB BASED SCADA FOR BUILDING AUTOMATION

Ounet is a modern web-based SCADA for building automation. It enables fluent control of technical building services from any location and whenever needed. Ounet provides effective, easy-to-use tools for property management and maintains the appropriate conditions.

| | | |
|--------------|---|------------------------------------|
| OUNET | Web based SCADA for building automation | 174/year/target/1500 points |
|--------------|---|------------------------------------|



Technical details

| | |
|--------------------------|---|
| Languages: | Finnish, English, Swedish, Estonian |
| Tehnology: | HTML5 |
| Browsers: | Internet Explorer/Edge, Chrome, Firefox, Safari |
| Alarm forwarding: | SMS and email |
| Adress: | www.ounet.fi |
| Customer devices | |
| Operating systems: | Windows, Android, IOS, Linux |
| Rekommended screen size: | 3,2" and larger |
| Screen technology: | Passive screens or touchscreens |
| Display modes: | Mobile and desktop |

M-LINK interface converter

Price EUR
Vat 0%

The M-LINK interface converter can be used to connect Ouman controllers and 3rd party equipment via the RTU interface to the Ounet SCADA solution. Device can be also used to convert Modbus RTU protocol to Modbus TCP/IP protocol. This enables connectivity to other SCADA systems by using Modbus TCP/IP protocol. Maximum quantity of connected RTU devices is 10 units.

By connecting device to internet connection, secure VPN connection is established between M-LINK device and Ounet SCADA solution. VPN connection is built up by using OUMAN Access solution, which is secure M2M connection, which is provided for all OUMAN devices using internet connection.

If local area network connection does not exist, device can be connected to internet by using the 3G-MOD4 Modem.

Internal WEB-server enables easy connectivity to OUMAN unit controllers. For example S203, C203, H23, EH-203 and EH-105 controllers can be configured by using ready made templates which can be selected from M-LINK WEB-server interface. Server can also provide point transfer between devices within same IP network and buffering of trend data. With OUFLEX TOOL server can be programmed to use Modbus description files to be used for 3rd party devices.

M-LINK can be connected to one OUMAN controller through C-serial RJ45 connector and this enables updating of applications for example to OUFLEX M BA unit.

Communication protocols:

- Modbus RTU
- Modbus TCP / IP



| | | | |
|---------------|--|-----------|------------|
| M-LINK | Interface converter with ACCESS-function | C1 | 556 |
|---------------|--|-----------|------------|

Ouman 3G-internet product

WIRELESS 3G-COMMUNICATION

3G-MOD4 is a wireless connection to Access -devices or for their verification. You can buy the subscription from your preferred operator.

| | | | |
|----------------|----------|-----------|------------|
| 3G-MOD4 | 3G modem | C1 | 368 |
|----------------|----------|-----------|------------|

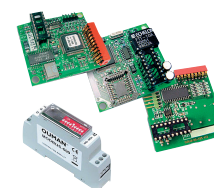
3G ADDITIONAL PRODUCTS

| | | | |
|------------------|--|-----------|------------|
| ANT2 | Omnidirectional 3G-antena with 8 meter cable | C1 | 156 |
| ANT3 | Directional 3G-antenna 7 meter cable | C1 | 156 |
| ANT-C-10M | 10 meter extension cable for GSM- and 3G-antenna | C1 | 43 |

Channel adapter cards

MODBUS AND EH-485 CHANNEL ADAPTER CARDS

Modbus- and EH-485 cards are channel adapter cards with which controllers traffic route are made to be compatible with an Modbus or RS-485 field channel.



| | | | |
|----------------------|---|-----------|------------|
| MODBUS-100 | Modbus adapter card for EH-105 controller | A1 | 142 |
| MODBUS-200 | Modbus adapter card for EH-200 controller | A1 | 142 |
| MBUS-MODBUS-1 | M-Bus/Modbus converter | C1 | 189 |

Casing solutions

Price EUR
Vat 0%

LM1-LH 3G Automation solution for heat distribution center with 3G internet connection (Ounet description pictures included)

Content of casing:

- Casing package K312
- Ready programmed Ouflex device (controls of heat distribution center)
- 3G-MOD4-modem (inside of the casing)
- 3G-subscription (monthly fee not included)
- Space reservation for WL-Base gateway unit

Passive sensors for district heating:

- 1 pc TMO outdoor sensor
- 1 pc TMW-100 (NTC10) water sensor
- 3 pcs TMS-3M (NTC10) surface sensor
- 2 pcs TMS-4M (NTC10) surface sensor



NOTE!

- WL-Base and wireless sensors are sold separately
- Ounet contract 174€/year not included
- FORECA service contract is available for 114€/year. Not included in the price of product.
- 3G-L3 subscription 12€/kk not included

| | | | |
|------------------|--|-----------|-------------|
| LM1-LH 3G | Automation solution for heat distribution center with 3G internet connection (Ounet pics included) | A1 | 2990 |
|------------------|--|-----------|-------------|

LM1-HC 3G Remote monitoring solution for unit controllers (Ouman C203, S203, H23 and EH-203)

Content:

- M-LINK interface converter pre programmed for Ounet remote control and monitoring, room compensation also included
- Space reservation for WL-Base gateway unit
- 3G modem
- Casing package with power supply
- Ounet SCADA setup



NOTE!

- WL-Base and wireless sensors are sold separately
- Ounet contract 174€/year not included
- 3G-L3 subscription 12€/kk not included

| | | | |
|-------------------|--|-----------|-------------|
| LM1-LH GSM | Automation solution for heat distribution center with SMS connection | A1 | 1290 |
|-------------------|--|-----------|-------------|

Temperature sensors and room units

Price EUR
Vat 0%

TMO-LUX TEMPERATURE AND BRIGHTNESS SENSOR

Housing has weatherproof and light-permeable cover. The sensor is available in three different temperature measurement element.



| | | | NTC10 | Pt1000 | Ni1000 |
|----------------|-----------------------------------|-----------|-----------|-----------|-----------|
| TMO-LUX | Temperature and brightness sensor | A1 | 50 | 53 | 58 |

TMO OUTDOOR SENSOR

Outdoor sensor measures the outside air temperature. The sensor color is white-gray, so the measuring difference caused by solar radiation is as small as possible. The sensor comes with a cable gland.



NTC10: For Ouman controllers
Pt1000: For Danfoss and Honeywell controllers
Ni1000: For Siemens controllers

| | | | NTC10 | Pt1000 | Ni1000 |
|------------|----------------|-----------|-----------|-----------|-----------|
| TMO | Outdoor sensor | A1 | 29 | 31 | 36 |

ROOM SENSORS

The room sensor can be used with Ouman air handling unit controller EH-105 as well as the EH-200 and EH-800 series heating controllers. Position the room sensor so that it measures the facility's average temperature.

TMR/SP is equipped with temperature measurements and fine-tuning knob. It can change the EH-105 and EH-800 equipment room temperature setpoint -5 ... 4 °C.



| | | | NTC10 | Pt1000 | Ni1000 |
|--------------|-----------------------------------|-----------|-----------|-----------|-----------|
| TMR | Room sensor | A1 | 41 | 43 | 45 |
| TMRSP | Room sensor with fine-tuning knob | A1 | 48 | - | - |

TMS SURFACE SENSOR

The surface sensor is used to measure the temperature of the liquid flowing in the pipe. The sensor is installed on the surface of the pipe with a fastening strap. Suitable for pipe sizes DN 20...80.



| | | | NTC10 | Pt1000 | Ni1000 |
|---------------|--------------------------------------|-----------|-----------|-----------|-----------|
| TMS | Surface sensor | A1 | 23 | - | - |
| TMS-2M | Surface sensor, connection cable 2 m | A1 | 24 | 36 | 45 |
| TMS-3M | Surface sensor, connection cable 3 m | A1 | 25 | - | - |
| TMS-4M | Surface sensor, connection cable 4 m | A1 | 27 | 39 | 48 |

Temperature sensors

Price EUR
Vat 0%



NTC10: For Ouman controllers

Pt1000: For Danfoss and Honeywell controllers

Ni1000: For Siemens controllers

TMW WATER SENSOR

The water sensors installed on the water pipes are suitable for heating and domestic hot water control. Sensors are made of stainless steel (AISI 304), but the TMW-300 sensors thread nipple is made of brass. Sensors come with immersion tube of different lengths as follows (Ø 4 mm). TMW-50, -100 and -210 are suitable for pressure class PN16 and TMW-300 for PN10.

| | | | NTC10 | Pt1000 | Ni1000 |
|----------------|---|----|-------|--------|--------|
| TMW-50 | Water sensor, 50 mm, thread R1/2" | A1 | 50 | 59 | 64 |
| TMW-100 | Water sensor, 100 mm, thread R1/2" | A1 | 51 | 60 | 65 |
| TMW-210 | Water sensor, 210 mm, thread R1/2" | A1 | 54 | 62 | 67 |
| TMW-300 | Water sensor, 300 mm (adjustable), thread R1/2" | A1 | 57 | 65 | 71 |

TMW-ST WATER SENSOR WITH PROTECTIVE POCKET

The water sensors installed on the water pipes are suitable for heating and domestic hot water control (also with aggressive water). Immersion tubes are made of stainless steel (AISI 304) and the thread nipple is made of same material. Sensor's tube is a diameter of 4 mm and protection tube 5 mm. Sensors are suitable for pressure class PN16.



| | | | NTC10 | Pt1000 | Ni1000 |
|------------------|---|----|-------|--------|--------|
| TMW-81ST | Water sensor and protection pocket 80 mm, thread R1/2" | A1 | 76 | 86 | 92 |
| TMW-121ST | Water sensor and protection pocket 120 mm, thread R1/2" | A1 | 77 | 87 | 93 |
| TMW-201ST | Water sensor and protection pocket 200 mm, thread R1/2" | A1 | 81 | 91 | 96 |

TMI ICE FROST SENSOR

Ice frost sensors are used to measure the air conditioning ice frost function and return water regulation temperature. The sensor is made of stainless steel (AISI 304). A sensor has 2 m long immersion pipe, which has a diameter of 4 mm.



| | | | NTC10 | Pt1000 | Ni1000 |
|------------|--------------------------|----|-------|--------|--------|
| TMI | Ice frost sensor, R 1/4" | A1 | 51 | 59 | 64 |

TMD DUCT SENSOR

Duct sensor is used for air conditioning duct temperature measurements. Brassy protection tube has a diameter of 8 mm and a length of 250 mm.



| | | | NTC10 | Pt1000 | Ni1000 |
|------------|-------------|----|-------|--------|--------|
| TMD | Duct sensor | A1 | 39 | 48 | 54 |

| NTC10 | |
|-----------------------------|----------|
| Tol. $\pm 0,2$ °C (0-70 °C) | |
| Temperature / Resistance | |
| °C | Ω |
| -50 | 672 600 |
| -40 | 337 270 |
| -30 | 177 210 |
| -25 | 130 540 |
| -20 | 97 140 |
| -15 | 72 990 |
| -10 | 55 350 |
| -5 | 42 340 |
| 0 | 32 660 |
| 5 | 25 400 |
| 10 | 19 900 |
| 15 | 15 710 |
| 20 | 12 490 |
| 25 | 10 000 |
| 30 | 8 055 |
| 35 | 6 531 |
| 40 | 5 325 |
| 45 | 4 368 |
| 50 | 3 602 |
| 55 | 2 987 |
| 60 | 2 488 |
| 65 | 2 084 |
| 70 | 1 753 |
| 75 | 1 482 |
| 80 | 1 257 |
| 85 | 1 072 |
| 90 | 917,4 |
| 95 | 788,2 |
| 100 | 679,8 |
| 110 | 511,0 |
| 120 | 389,4 |
| 130 | 300,5 |
| 140 | 234,7 |

| Ni 1000 LG | |
|---|----------|
| Tol. $\pm 0,4$ °C (0 °C) DIN EN43760 tcr 5000 ppm / K | |
| Temperature / Resistance | |
| °C | Ω |
| -50 | 790,9 |
| -40 | 830,8 |
| -30 | 871,7 |
| -25 | 892,5 |
| -20 | 913,5 |
| -15 | 934,7 |
| -10 | 956,2 |
| -5 | 978,0 |
| 0 | 1000,0 |
| 5 | 1022,3 |
| 10 | 1044,8 |
| 15 | 1067,6 |
| 20 | 1090,7 |
| 25 | 1114,0 |
| 30 | 1137,6 |
| 35 | 1161,5 |
| 40 | 1185,7 |
| 45 | 1210,2 |
| 50 | 1235,0 |
| 55 | 1260,1 |
| 60 | 1285,4 |
| 65 | 1311,1 |
| 70 | 1337,1 |
| 75 | 1363,5 |
| 80 | 1390,1 |
| 85 | 1417,1 |
| 90 | 1444,4 |
| 95 | 1472,0 |
| 100 | 1500,0 |
| 110 | 1557,0 |
| 120 | 1615,4 |
| 130 | 1675,2 |
| 140 | 1736,5 |

| Pt 1000 | |
|---|----------|
| Tol. $\pm 0,3$ °C (0 °C) DIN EN60751 B tcr 3850 ppm / K | |
| Temperature / Resistance | |
| °C | Ω |
| -50 | 803,1 |
| -40 | 842,7 |
| -30 | 882,2 |
| -25 | 901,9 |
| -20 | 921,6 |
| -15 | 941,2 |
| -10 | 960,9 |
| -5 | 980,4 |
| 0 | 1000,0 |
| 5 | 1019,5 |
| 10 | 1039,0 |
| 15 | 1058,5 |
| 20 | 1077,9 |
| 25 | 1097,3 |
| 30 | 1116,7 |
| 35 | 1136,1 |
| 40 | 1155,4 |
| 45 | 1174,7 |
| 50 | 1194,0 |
| 55 | 1213,2 |
| 60 | 1232,4 |
| 65 | 1251,6 |
| 70 | 1270,8 |
| 75 | 1289,9 |
| 80 | 1309,0 |
| 85 | 1328,0 |
| 90 | 1347,1 |
| 95 | 1366,1 |
| 100 | 1385,1 |
| 110 | 1422,9 |
| 120 | 1460,7 |
| 130 | 1498,3 |
| 140 | 1535,8 |

Energy meter and transmitters

Price EUR
Vat 0%

DPT DIFFERENTIAL PRESSURE TRANSMITTER

The DPT is an electronic differential pressure transmitter used for measuring low pressures of air and non-aggressive gasses in order to monitor and control pressures in building automation, HVAC and clean room systems. Measuring range can be selected from -100 Pa and 2500 Pa between. Transmitter has an automatic reset.



| | | | |
|--------------|--|-----------|------------|
| DPT | Differential pressure transmitter | A1 | 146 |
| DPT/D | Differential pressure transmitter with display | A1 | 177 |

PDI PRESSURE DIFFERENCE MANOMETER, IP 54

- Measuring range 0 - 600 Pa
- Operating temperature -40°C...+60°C



| | | | |
|------------|---|-----------|-----------|
| PDI | Pressure difference manometer MM 200600 | A2 | 32 |
|------------|---|-----------|-----------|

PDS PRESSURE DIFFERENCE SWITCH, IP 54

- Different measuring ranges
- Connection difference 30 Pa
- Operating temperature -20°C...+60°C



| | | | |
|----------------|--|-----------|-----------|
| PDS-200 | Pressure difference switch, 20 - 200 Pa, PS200 | A2 | 26 |
| PDS-300 | Pressure difference switch, 30 - 300 Pa, PS300 | A2 | 26 |
| PDS-600 | Pressure difference switch, 40 - 600 Pa, PS600 | A2 | 26 |

Ouman wireless sensor system

Price EUR
Vat 0%

The wireless Ouman sensor system enables quick and easy collection of precise room temperature data in a building without laborious laying of cables and drilling of walls. The sensor system comprises a gateway unit, wireless sensors in router mode that are connected to the mains, and battery-operated wireless sensors. A predefined description file makes it easy to connect the wireless sensors to a SCADA system. In the event of failure, a damaged sensor can be replaced without changing the template file. This makes the installation of the replacement sensor quicker and easier.

WL-BASE GATEWAY UNIT

- Linux based
- Access feature
- Built-in Web server to facilitate installation
- Separate installation mode with a short 10 s. measurement interval
- Measurement interval freely adjustable (1-240 min)
- Ethernet, Modbus TCP/IP
- RS-485, Modbus



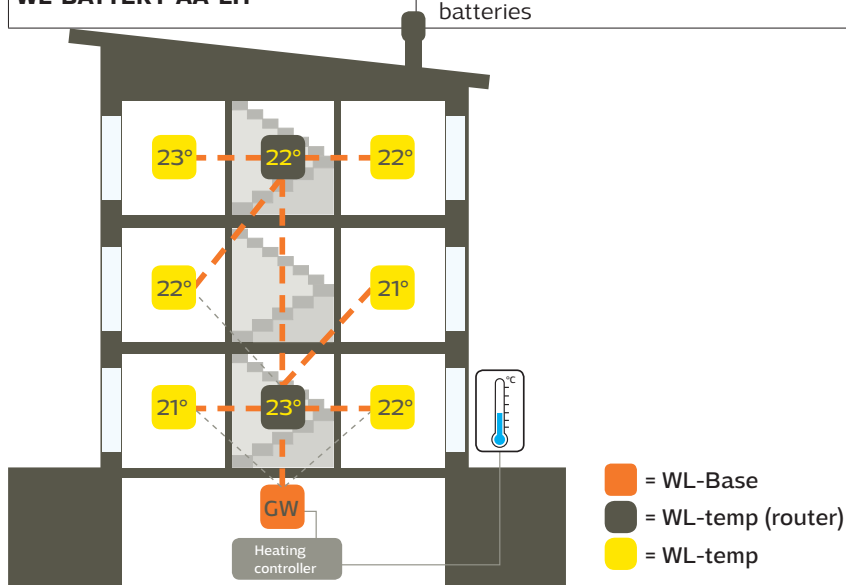
| | | | |
|--------------------|--------------|-----------|------------|
| WL-BASE 2.1 | Gateway unit | A1 | 350 |
|--------------------|--------------|-----------|------------|

WL-TEMP-RH 2.1 WIRELESS TEMPERATURE AND HUMIDITY SENSOR

- Built-in antenna
- 2 x AA batteries (does not include)
- In addition to serving as a measuring sensor, the same antenna also serves a router if connected to the mains (5-12V DC, 20 mA)
- Measuring accuracy $\pm 0.2^{\circ}\text{C}$ (the same as Ouman controllers)
- Operating temperature: $0-50^{\circ}\text{C}$
- Thanks to advanced system circuit the covering range of the sensors is not impaired when the battery is low.
- 868 MHz Mesh technology
- Connector for outdoor temperature sensor (with a fixed cable connection to outside)



| | | | |
|---------------------------------------|---|-----------|------------|
| WL-TEMP-RH 2.1 | Wireless temperature and humidity sensor | A1 | 125 |
| WIRELESS - SOCKET - ROUTER 2.1 | Fixed mounting router in staircase (on top of the present electric socket) | A1 | 290 |
| WL-TEMP-RH-WHIP 2.1 | Wireless temperature and humidity sensor with 1.8m whip sensor | A1 | 205 |
| WL-TEMP-RH-CO2 2.1 | Wireless temperature and humidity sensor with CO2 measuring. Needs outer power source. | A1 | 279 |
| WL-TEMP-RH-VOC 2.1 | Wireless temperature and humidity sensor with VOC measuring. Needs outer power source. | A1 | 269 |
| WL-TEMP-RH-PD 2.1 | Wireless temperature and humidity sensor with pressure difference measuring. Outer power source is recommended. | A1 | 238 |
| WL-ROUTER POWER | Power unit for temperature sensor 5 VDC (needed when operating as a router) | A1 | 21 |
| WL-BASE-POWER | Power unit for WL-Base, 24 VDC plug | C1 | 36 |
| WL-ANT | Antenna for WL-Base, 4m cable, magnetic fixing | C1 | 36 |
| WL-BATTERY-AA-LIT | Battery package for wireless temperature sensors. Includes 10 pcs. AA lithium batteries | | 20 |



2-way valves

Price EUR
Vat 0%

VD 2-WAY VALVES FOR DISTRICT HEATING

These valves are designed especially for flow control in hydraulic systems with high temperatures and pressures, such as district heating systems. Can be used in combination with actuators M31C150 (heating) and M41A15 (domestic hot water)

Note. Connections set must be ordered separately. Is not included in the price.



CONNECTION SETS:

| | | | | | | *) |
|-------------------|-------|---------|---|---------------------|-----------|------------|
| VD215-0.25 | DN 15 | Kv 0.25 | External thread R 3/4", flush surface with seal | L15HI tai L15UK | A1 | 150 |
| VD215-0.4 | DN 15 | Kv 0.4 | External thread R 3/4", flush surface with seal | L15HI tai L15UK | A1 | 150 |
| VD215-0.63 | DN 15 | Kv 0.63 | External thread R 3/4", flush surface with seal | L15HI tai L15UK | A1 | 150 |
| VD215-1.0 | DN 15 | Kv 1.0 | External thread R 3/4", flush surface with seal | L15HI tai L15UK | A1 | 150 |
| VD215-1.6 | DN 15 | Kv 1.6 | External thread R 3/4", flush surface with seal | L15HI tai L15UK | A1 | 150 |
| VD220-2.5 | DN 20 | Kv 2.5 | External thread R 1", flush surface with seal | L20HI tai L20SK | A1 | 215 |
| VD220-4.0 | DN 20 | Kv 4.0 | External thread R 1", flush surface with seal | L20HI tai L20SK | A1 | 215 |
| VD225-6.3 | DN 25 | Kv 6.3 | External thread R 1 1/4", flush surface with seal | L25HI tai L25SK | A1 | 288 |
| VD232-10 | DN 32 | Kv 10 | External thread R 1 1/2", flush surface with seal | L32HI tai OUAC-25TF | A1 | 374 |

OUV5016... 2-WAY VALVE FOR DISTRICT HEATING

Cast iron, T max 150 °C, stroke length 20 mm, PN 16,

Pressure balanced district heating valve.

Can be used in combination with actuators: OUML6420..., OUML6425..., OUML7420..., OUML7425...



| | | | | | | *) |
|---------------------|-------|---------|--|--|-----------|-------------|
| OUV5016A1010 | DN 15 | Kv 0,4 | Flanged (length 130 mm) | | A1 | 462 |
| OUV5016A1028 | DN 15 | Kv 0.63 | Flanged (length 130 mm) | | A1 | 462 |
| OUV5016A1036 | DN 15 | Kv 1.0 | Flanged (length 130 mm) | | A1 | 462 |
| OUV5016A1044 | DN 15 | Kv 1.6 | Flanged (length 130 mm) | | A1 | 462 |
| OUV5016A1051 | DN 15 | Kv 2.5 | Flanged (length 130 mm) | | A1 | 462 |
| OUV5016A1069 | DN 15 | Kv 4.0 | Flanged (length 130 mm) | | A1 | 462 |
| OUV5016A1007 | DN 20 | Kv 6.3 | Flanged (length 150 mm) | | A1 | 482 |
| OUV5016A1085 | DN 25 | Kv 10 | Flanged (length 160 mm) | | A1 | 492 |
| OUV5016A1093 | DN 32 | Kv 16 | Flanged (length 180 mm) | | A1 | 579 |
| OUV5016A1101 | DN 40 | Kv 25 | Flanged (length 200 mm) | | A1 | 787 |
| OUV5016A1119 | DN 50 | Kv 40 | Flanged (length 230 mm) | | A1 | 997 |
| OUV5016A1127 | DN 65 | Kv 63 | Flanged (length 290 mm) | | A1 | 1328 |
| OUV5016A1135 | DN 80 | Kv 100 | Flanged (length 310 mm), no stock product) | | A1 | 1572 |

OUV5832B... 2-WAY VALVE

For the control of hot or chilled water for fan coil units, small reheaters/recoolers in electric/electronic temperature control systems. Can be used in combination with actuators M31C150 and M41A15.

Note. Connections sets must be ordered separately. Do not include in the price.



CONNECTION SETS:

| | | | | | | *) |
|---------------------|-------|--------|---|------------------|-----------|------------|
| OUV5832B2083 | DN 25 | Kv 6.3 | External thread R 1 1/2", flush surface with seal | OUAC-25TF | A1 | 156 |
| OUV5832B2091 | DN 25 | Kv 10 | External thread R 1 1/2", flush surface with seal | OUAC-25TF | A1 | 156 |
| OUV5832B2109 | DN 32 | Kv 16 | External thread R 2", flush surface with seal | OUAC-32T / ...TF | A1 | 207 |
| OUV5832B2117 | DN 40 | Kv 25 | External thread R 2 1/4", flush surface with seal | OUAC-40T / ...TF | A1 | 276 |

*) We reserve the right to change the prices according to Belimo.

*) We reserve the right to change the prices according to Honeywell.

2-way valves

Price EUR
Vat 0%

OUVSMF-2... 2-WAY VALVE

Red metal, T max 120 °C, stroke 6,5 mm, PN16

Applications: Toisiopuolen lämmitys ja ilmastointi

Suitable for motors: M31C150 ja M41A15

Note. Connections sets must be ordered separately. Do not include in the price.



CONNECTION SETS:

*)

| | | | | | | |
|------------------------|-------|---------|---|-----------|-----------|------------|
| OUVSMF-215-0.25 | DN 15 | Kv 0.25 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 38 |
| OUVSMF-215-0.4 | DN 15 | Kv 0.4 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 38 |
| OUVSMF-215-0.63 | DN 15 | Kv 0.63 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 38 |
| OUVSMF-215-1.0 | DN 15 | Kv 1.0 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 39 |
| OUVSMF-215-1.6 | DN 15 | Kv 1.6 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 39 |
| OUVSMF-220-2.5 | DN 20 | Kv 2.5 | External thread R 3/4", flush surface with seal | L15UK | A1 | 59 |
| OUVSMF-220-4.0 | DN 20 | Kv 4.0 | External thread R 3/4", flush surface with seal | L15UK | A1 | 60 |
| OUVSMF-225-6.3 | DN 25 | Kv 6.3 | External thread R 1 1/4", flush surface with seal | L25UK | A1 | 142 |
| OUVSMF-225-8.0 | DN 25 | Kv 8.0 | External thread R 1 1/4", flush surface with seal | L25UK | A1 | 144 |

OUV5011R 2-WAY VALVE

For heating, ventilation and domestic hot water. Can be used in combination with actuators OUML6420..., OUML6425..., OUML7420... and OUML7425...



*)

| | | | | | |
|---------------------|-------|--------|-----------------|-----------|------------|
| OUV5011R1026 | DN 15 | Kv 1,6 | Internal thread | A1 | 164 |
| OUV5011R1034 | DN 15 | Kv 2,5 | Internal thread | A1 | 164 |
| OUV5011R1042 | DN 15 | Kv 4 | Internal thread | A1 | 164 |
| OUV5011R1059 | DN 20 | Kv 6,3 | Internal thread | A1 | 174 |
| OUV5011R1067 | DN 25 | Kv 10 | Internal thread | A1 | 186 |
| OUV5011R1075 | DN 32 | Kv 16 | Internal thread | A1 | 222 |
| OUV5011R1083 | DN 40 | Kv 25 | Internal thread | A1 | 269 |
| OUV5011R1091 | DN 50 | Kv 40 | Internal thread | A1 | 366 |

R20... 2-WAY BALL VALVES

For ventilation, heating systems and for the control of hot or chilled water for fan coil units. Can be used in combination with actuators HRYD24-SR, HRYD24-3 and HRC24-3.



*)

| | | | | | |
|---------------------|-------|--------|--|-----------|-----------|
| R2015-1-S1 | DN 15 | Kv 1,0 | Internal thread 1/2", replace the valve R210 | A2 | 68 |
| R2015-1P6-S1 | DN 15 | Kv 1,6 | Internal thread 1/2", replace the valve R211 | A2 | 68 |
| R2015-2P5-S1 | DN 15 | Kv 2,5 | Internal thread 1/2", replace the valve R212 | A2 | 68 |
| R2020-4-S2 | DN 20 | Kv 4,0 | Internal thread 3/4", replace the valve R217 | A2 | 81 |
| R2020-6P3-S2 | DN 20 | Kv 6,3 | Internal thread 3/4", replace the valve R218 | A2 | 81 |
| R2020-8P6-S2 | DN 20 | Kv 8,6 | Internal thread 3/4", replace the valve R219 | A2 | 81 |
| R2025-10-S2 | DN 25 | Kv 10 | Internal thread 1", replace the valve R223 | A2 | 97 |
| R2025-16-S2 | DN 25 | Kv 16 | Internal thread 1", replace the valve R224 | A2 | 97 |

*) We reserve the right to change the prices according to Belimo.

*) We reserve the right to change the prices according to Honeywell.

3-way valves

Price EUR
Vat 0%

OUVSMF-3... 3-WAY VALVE

Red metal, T max 120 °C, stroke length 6,5 mm PN 16

Applications: For heating and ventilation

Suitable for motors: M31C150, M31A150 ja M41A15

Note. Connections sets must be ordered separately. Do not include in the price.



| | | | | | | |
|------------------------|-------|---------|---|-----------|-----------|------------|
| OUVSMF-315-0.4 | DN 15 | Kv 0,4 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 51 |
| OUVSMF-315-0.63 | DN 15 | Kv 0,63 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 54 |
| OUVSMF-315-1.0 | DN 15 | Kv 1,0 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 57 |
| OUVSMF-315-1.6 | DN 15 | Kv 1,6 | External thread R 1/2", flush surface with seal | OUAC-15FT | A1 | 57 |
| OUVSMF-320-2.5 | DN 20 | Kv 2.5 | External thread R 3/4", flush surface with seal | L15UK | A1 | 61 |
| OUVSMF-320-4.0 | DN 20 | Kv 4 | External thread R 3/4", flush surface with seal | L15UK | A1 | 62 |
| OUVSMF-325-6.3 | DN 25 | Kv 6.3 | External thread R 1 1/4", flush surface with seal | L25UK | A1 | 159 |
| OUVSMF-325-8.0 | DN 25 | Kv 8.0 | External thread R 1 1/4", flush surface with seal | L25UK | A1 | 161 |

OUV5833A... 3-WAY VALVE

Red metal, T max 120 °C, stroke length 6,5 mm, PN 16

Applications: For heating, ventilation and domestic hot water

Suitable for motors: M31C150 and M41A15

Note. Connections sets must be ordered separately. Do not include in the price.



CONNECTION SETS:

*)

| | | | | | | |
|---------------------|-------|--------|---|------------------|-----------|------------|
| OUV5833A2084 | DN 25 | Kv 6.3 | External thread R 1 1/2", flush surface with seal | OUAC-25TF | A1 | 145 |
| OUV5833A2092 | DN 25 | Kv 10 | External thread R 1 1/2", flush surface with seal | OUAC-25TF | A1 | 145 |
| OUV5833A2100 | DN 32 | Kv 16 | External thread R 2", flush surface with seal | OUAC-32T / ...TF | A1 | 179 |
| OUV5833A2118 | DN 40 | Kv 25 | External thread R 2", flush surface with seal | OUAC-40T / ...TF | A1 | 240 |

OUV5013R... 3-WAY VALVE

Red metal, T max 170 °C, stroke length 20 mm, PN 16

Applications: For heating, domestic hot water and ventilation

Suitable for actuators: OUML6420... , OUML6425..., OUML7420... and OUML7425...



*)

| | | | | | | |
|---------------------|-------|--------|-----------------|--|-----------|------------|
| OUV5013R1032 | DN 15 | Kv 2.5 | Internal thread | | A1 | 174 |
| OUV5013R1040 | DN 15 | Kv 4 | Internal thread | | A1 | 174 |
| OUV5013R1057 | DN 20 | Kv 6.3 | Internal thread | | A1 | 183 |
| OUV5013R1065 | DN 25 | Kv 10 | Internal thread | | A1 | 196 |
| OUV5013R1073 | DN 32 | Kv 16 | Internal thread | | A1 | 234 |
| OUV5013R1081 | DN 40 | Kv 25 | Internal thread | | A1 | 282 |
| OUV5013R1099 | DN 50 | Kv 40 | Internal thread | | A1 | 366 |

R30... 3-WAY BALL VALVE

Nickel-plated brass, T max 100 °C, PN 16

Applications: For heating and ventilation

Suitable for motors: EH-800 models + SOV BELIMO, HRC24-3, HRYD24-SR, HRYD24-3



*)

| | | | | | | |
|---------------------|-------|--------|--|--|-----------|------------|
| R3015-1-S1 | DN 15 | Kv 1.0 | Internal threaded connect, thread 1/2", replace the valve R310 | | A2 | 120 |
| R3015-1P6-S1 | DN 15 | Kv 1.6 | Internal threaded connect, thread 1/2", replace the valve R311 | | A2 | 120 |
| R3015-2P5-S1 | DN 15 | Kv 2.5 | Internal threaded connect, thread 1/2", replace the valve R312 | | A2 | 120 |
| R3020-4-S2 | DN 20 | Kv 4.0 | Internal threaded connect, thread 3/4", replace the valve R317 | | A2 | 136 |
| R3020-6P3-S2 | DN 20 | Kv 6.3 | Internal threaded connect, thread 3/4", replace the valve R318 | | A2 | 136 |
| R3025-10-S2 | DN 25 | Kv 10 | Internal threaded connect, thread 1", replace the valve R323 | | A2 | 172 |
| R3032-16-S3 | DN 32 | Kv 16 | Internal threaded connect, thread 1 1/4", replace the valve R331 | | A2 | 242 |

*) We reserve the right to change the prices according to Belimo.

*) We reserve the right to change the prices according to Honeywell.

3-way valves

Price EUR
Vat 0%

OUV5329... 3-WAY VALVE

Cast iron, T max 170 °C, stroke length 20 mm, PN 16

Applications: For heating, domestic hot water and ventilation

Suitable for actuators: OUML6420..., OUML6425..., OUML7420... and OUML7425...



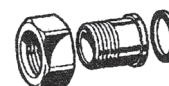
*)

| | | | | | |
|---------------------|-------|--------|---------|-----------|-------------|
| OUV5329A1061 | DN 50 | Kv 40 | Flanged | A1 | 604 |
| OUV5329A1079 | DN 65 | Kv 63 | Flanged | A1 | 697 |
| OUV5329A1087 | DN 80 | Kv 100 | Flanged | A1 | 1056 |

Connection sets

EXTERNAL THREADED CONNECTIONS

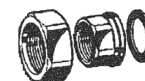
All connection sets made of zinc covering durability brass.



| | | | | |
|------------------|-------|---|-----------|-----------|
| OUAC-15FT | DN 15 | External threaded R 3/8", Internal thread to valve R 1/2" | A1 | 8 |
| L15UK | DN 15 | External threaded R 1/2", Internal thread to valve R 3/4" | A1 | 5 |
| L20UK | DN 20 | External threaded R 3/4", Internal thread to valve R 1" | A1 | 13 |
| L25UK | DN 25 | External threaded R 1", Internal thread to valve R 1 1/4" | A1 | 22 |
| OUAC-32T | DN 32 | External threaded R 1 1/4", Internal thread to valve R 2" | A1 | 35 |
| OUAC-40T | DN 40 | External threaded R 1 1/2", Internal thread to valve R 2 1/4" | A1 | 47 |

INTERNAL THREADED CONNECTIONS

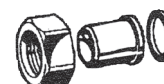
All connection sets made of zinc covering durability brass.



| | | | | |
|-------------------|-------|---|-----------|-----------|
| L20SK | DN 20 | Internal thread R 1/2", Internal thread to valve R 1" | A1 | 14 |
| OUAC-25TF | DN 25 | Internal thread R 1", Internal thread to valve R 1 1/2" | A1 | 15 |
| L25SK | DN 25 | Internal thread R 1", Internal thread to valve R 1 1/4" | A1 | 14 |
| 3OUAC-32TF | DN 32 | Internal thread R 1 1/4", Internal thread to valve R 2" | A1 | 24 |
| OUAC-40TF | DN 40 | Internal thread R 1 1/2", Internal thread to valve R 2 1/4" | A1 | 32 |

WELDINGS

The nut made of zinc covering durability brass, the welded part made of steel.

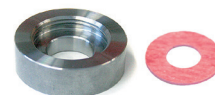


| | | | | |
|--------------|-------|---|-----------|-----------|
| L15HI | DN 15 | Welding 1/2", Internal thread to valve R 3/4" | A1 | 9 |
| L20HI | DN 20 | Welding 3/4", Internal thread to valve R 1" | A1 | 14 |
| L25HI | DN 25 | Welding 1", Internal thread to valve R 1 1/4" | A1 | 16 |
| L32HI | DN 32 | Welding 1 1/4", Internal thread to valve R 1 1/2" | A1 | 18 |

Valve adapters

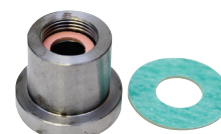
Price EUR
Vat 0%

ADAPTER FOR VD-VALVES



JATKE EXTENSION The VD-valve with the adapter JATKE replaces the VS-valve of Satakunnan Valu.

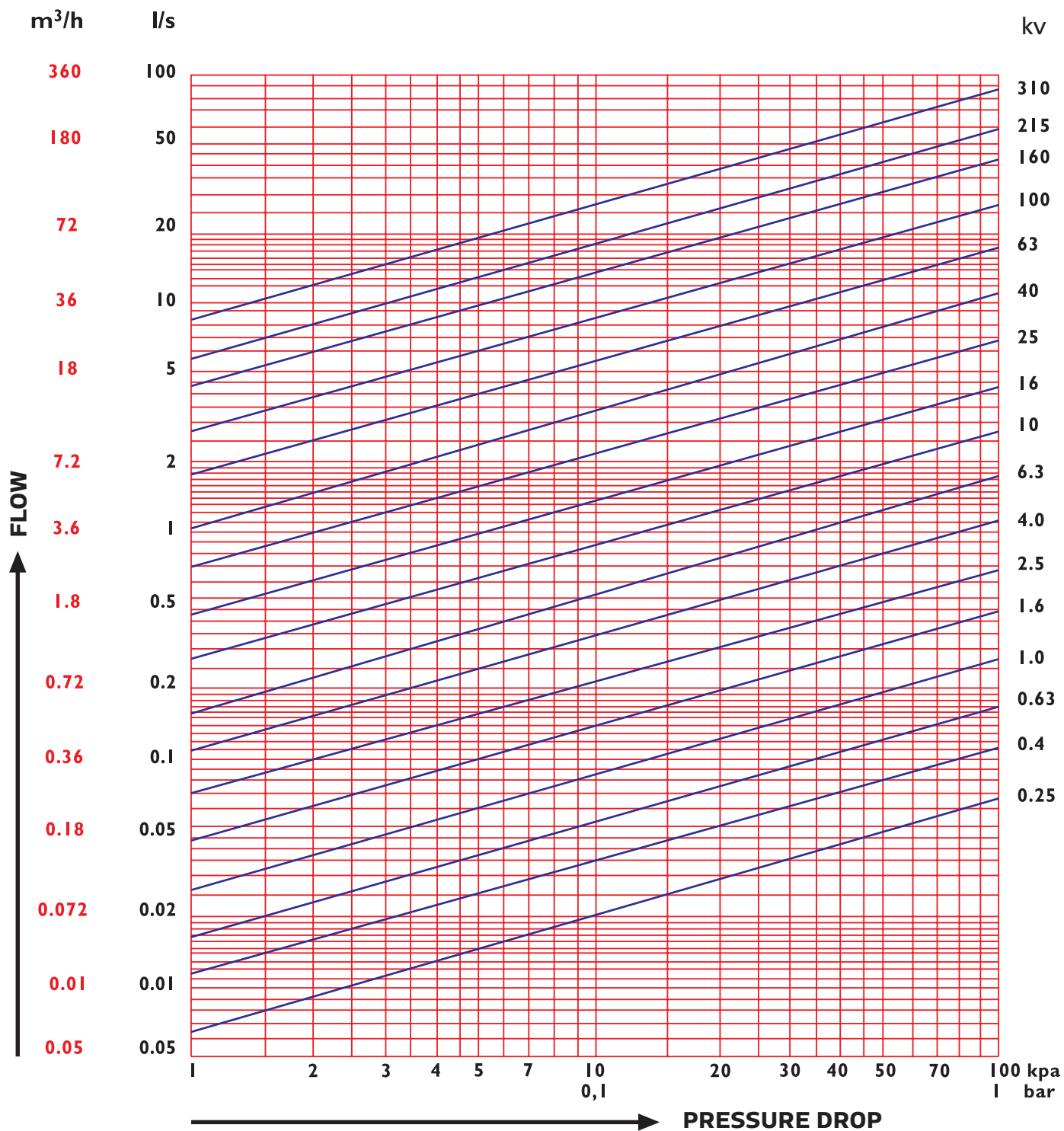
| | | | |
|----------------------|--|-----------|-----------|
| JATKE 215/215 | Pair of flange VD215 / SV 215, total length 75 mm | A1 | 45 |
| JATKE 220/215 | Pair of flange VD220 / SV 215, total length 75 mm | A1 | 45 |
| JATKE 220/220 | Pair of flange VD220 / SV 220, total length 100 mm | A1 | 57 |
| JATKE 225/220 | Pair of flange VD225 / SV 220, total length 100 mm | A1 | 57 |
| JATKE 225/225 | Pair of flange VD225 / SV 225, total length 115 mm | A1 | 57 |
| JATKE 232/225 | Pair of flange VD232 / SV 225, total length 115 mm | A1 | 79 |



JATKE VD EXTENSION JATKE VD replaces the Osby 2SB valves or tai Siemens VVF valve

| | | | |
|-----------------------|---|-----------|-----------|
| JATKE VD15-130 | Pair of flange for Osby 2SB and Siemens VVF valves, total length 130 mm | A1 | 79 |
| JATKE VD20-130 | Pair of flange for Osby 2SB and Siemens VVF valves, total length 130 mm | A1 | 83 |
| JATKE VD20-140 | Pair of flange for Osby 2SB valves, total length 140 mm | A1 | 83 |
| JATKE VD20-160 | Pair of flange for Siemens VVF valves, total length 160 mm | A1 | 83 |
| JATKE VD25-140 | Pair of flange for Osby 2SB valves, total length 140 mm | A1 | 83 |
| JATKE VD25-150 | Pair of flange for Osby 2SB valves, total length 150 mm | A1 | 83 |
| JATKE VD25-160 | Pair of flange for Siemens VVF valves, total length 160 mm | A1 | 83 |
| JATKE VD32-150 | Pair of flange for Osby 2SB valves, total length 150 mm | A1 | 95 |
| JATKE VD32-160 | Pair of flange for Siemens VVF valves, total length 160 mm | A1 | 95 |

Valve dimensioning table



Actuators for valves, 3-point control

Price EUR
Vat 0%

M31C150, OUM6410C4037, OUM6410L2031... VALVE ACTUATORS

Suitable for valves with 6,5 mm stroke length.

Applications: For heating regulation in district heating exchangers and boiler plants, for cooling circuit regulation.

OUM6410C4037 is equipped with a micro switch - also suitable for serial control.



| | | | | | | |
|---------------------|--------------|----------------|----------------------|-----------------------------|-----------|------------|
| M31C150 | Power: 300 N | Speed: 2,5 min | Stroke length: 6,5mm | Consumption: 0,7 VA 24 VAC | A1 | 130 |
| OUM6410C4037 | Power: 300 N | Speed: 2,5 min | Stroke length: 6,5mm | Consumption: 0,7 VA 24 VAC | A1 | 194 |
| OUM6410L2031 | Power: 300 N | Speed: 2,5 min | Stroke length: 6,5mm | Consumption: 0,7 VA 230 VAC | A1 | 169 |

*)

OUM6420A... VALVE ACTUATORS

Suitable for valves with 20 mm stroke length.

Applications: For heating, domestic hot water and ventilation



| | | | | | | |
|----------------------|--------------|-------------|----------------------|--------------------------|-----------|------------|
| OUML6420A3007 | Power: 600 N | Speed: 60 s | Stroke length: 20 mm | Consumption: 4 VA 24 VAC | A1 | 426 |
| OUML6420A3023 | Power: 600 N | Speed: 30 s | Stroke length: 20 mm | Consumption: 6 VA 24 VAC | A1 | 426 |
| OUML6420A3015 | Power: 600 N | Speed: 60 s | Stroke length: 20 mm | Operat.voltage: 230 V | A1 | 483 |

*)

OUM6421B3004 VALVE ACTUATOR

Suitable for valves with 38 mm stroke length.

Applications: For heating



| | | | | | | |
|----------------------|---------------|----------------|----------------------|---------------------------|-----------|------------|
| OUML6421B3004 | Power: 1800 N | Speed: 3.5 min | Stroke length: 38 mm | Consumption: 13 VA 24 VAC | A1 | 833 |
|----------------------|---------------|----------------|----------------------|---------------------------|-----------|------------|

*)

NR-SI AND NR-HW ACTUATOR FOR RENOVATION, SIEMENS- AND HONEYWELL -VALVES

Suitable for Siemens and Honeywell valves with 5,5 mm stroke length.

Applications: For heating, domestic hot water and ventilation



| | | | | | | |
|--------------------|--------------|--------------|-----------------------|-----------------------------|-----------|------------|
| NRD230-3-SI | Power: 500 N | Speed: 35 s | Stroke length: 5,5 mm | Consumption: 2,5 VA 230 VAC | A2 | 158 |
| NRD24-3-SI | Power: 500 N | Speed: 35 s | Stroke length: 5,5 mm | Consumption: 1,5 VA 24 VAC | A2 | 158 |
| NRD24-3-SI | Power: 500 N | Speed: 140 s | Stroke length: 5,5 mm | Consumption: 1,5 VA 24 VAC | A2 | 146 |
| NRD230-3-SI | Power: 500 N | Speed: 140 s | Stroke length: 5,5 mm | Consumption: 2,5 VA 230 VAC | A2 | 146 |
| NRD230-3-HW | Power: 500 N | Speed: 35 s | Stroke length: 6,5 mm | Consumption: 2,5 VA 230 VAC | A2 | 158 |
| NRD24-3-HW | Power: 500 N | Speed: 35 s | Stroke length: 6,5 mm | Consumption: 1,5 VA 24 VAC | A2 | 158 |

*)

HT AND HR... VALVE ACTUATORS

Suitable for R2-, R3- and R4..D(K) ball valves

Applications: For heating, domestic hot water and ventilation



| | | | | | |
|-----------------|-------------|--------------|---------------------------------|-----------|------------|
| HTC24-3 | Power: 5 Nm | Speed: 70 s | Consumption: 1.5 VA 24 VAC / DC | A2 | 151 |
| HTC230-3 | Power: 5 Nm | Speed: 70 s | Consumption: 2.5 VA 230 VAC | A2 | 149 |
| HTD24-3 | Power: 5 Nm | Speed: 140 s | Consumption: 1.5 VA 24 VAC / DC | A2 | 147 |
| HTD230-3 | Power: 5 Nm | Speed: 35 s | Consumption: 1.5 VA 24 VAC / DC | A2 | 147 |

*)

ADAPTERS FOR VALVE ACTUATORS

| | | | |
|----------------|--|-----------|-----------|
| MS-NRE | Adapter for the valves Esbe and Termomix | A2 | 11 |
| MS-NRE6 | Adapter for the valves: VRG, VRB | A2 | 11 |
| WNR | Adapter between NR-actuator and ball valve | A2 | 20 |

*) We reserve the right to change the prices according to Belimo and Honeywell.

0 - 10 V controlled actuators

Price EUR
Vat 0%

M41A15 VALVE ACTUATOR

Suitable for valves with 6,5 mm stroke length.

Applications: For heating regulation in district heating exchangers and boiler plants, for cooling circuit regulation.



| | | | | | | |
|---------------|--------------|-------------|--------------------|--------------------------|-----------|------------|
| M41A15 | Power: 400 N | Speed: 15 s | Stroke length: 6.5 | Consumption: 5 VA 24 VAC | A1 | 235 |
|---------------|--------------|-------------|--------------------|--------------------------|-----------|------------|

*)

M31A150 VALVE ACTUATOR

Suitable for valves with 6,5 mm stroke length.

Applications: For heating and ventilation.



| | | | | | | |
|----------------|--------------|--------------|--------------------|----------------------------|-----------|------------|
| M31A150 | Power: 300 N | Speed: 150 s | Stroke length: 6.5 | Consumption: 1.4 VA 24 VAC | A1 | 159 |
|----------------|--------------|--------------|--------------------|----------------------------|-----------|------------|

*)

OUML7420A6017 VALVE ACTUATOR

Suitable for valves with 20 mm stroke length.

Applications: For heating, domestic hot water and ventilation



| | | | | | | |
|----------------------|--------------|-------------|----------------------|--------------------------|-----------|------------|
| OUML7420A6017 | Power: 600 N | Speed: 30 s | Stroke length: 20 mm | Consumption: 7 VA 24 VAC | A1 | 560 |
|----------------------|--------------|-------------|----------------------|--------------------------|-----------|------------|

*)

OUML7421... VALVE ACTUATORS

Suitable for valves with 20 or 38 mm stroke length.

Applications: For heating



| | | | | | | |
|----------------------|---------------|--------------|----------------------|---------------------------|-----------|------------|
| OUML7421B3003 | Power: 1800 N | Speed: 210 s | Stroke length: 38 mm | Consumption: 14 VA 24 VAC | A1 | 962 |
| OUML7421A3004 | Power: 1800 N | Speed: 114 s | Stroke length: 20 mm | Consumption: 14 VA 24 VAC | A1 | 989 |

*)

HTC24-SR VALVE ACTUATOR

Connection cable 1 m. The control voltage 0 (2) -10 V. Suitable with WNR-adapler for R-serie ball valves and with MS-NRE6-adapler for Esben VRG and VRB valves.

Applications: For heating



| | | | | | | |
|------------------|-------------|--------------|--|-------------------------------|-----------|------------|
| HTC24-SR | Power: 5 Nm | Speed: 70 s | | Consumption: 3 VA 24 VAC / DC | A2 | 180 |
| HTYD24-SR | Power: 5 Nm | Nopeus: 35 s | | Consumption: 3 VA 24 VAC / DC | A2 | 195 |

*)

NR... VALVE ACTUATOR

Applications: For heating, domestic hot water and ventilation



| | | | | | | |
|--------------------|--------------|-------------|----------------------|-------------------------------|-----------|------------|
| NRD24-SR-HW | Power: 500 N | Speed: 35 s | Stroke length 6,5 mm | Consumption: 3 VA 24 VAC / DC | A2 | 231 |
| NRD24-SR-SI | Power: 500 N | Speed: 35 s | Stroke length 5,5 mm | Consumption: 3 VA 24 VAC / DC | A2 | 231 |

*)

*) We reserve the right to change the prices according to Belimo

*) We reserve the right to change the prices according to Honeywell.

Damper actuators

Price EUR
Vat 0%

Honeywell damper actuators

- Suitable for all sizes of shafts
- Very easy to install and connect
- Does not require separate casing for power supply

N05010, N0524, N10010, N1024 DAMPER ACTUATOR, IP54

- 5 Nm For 1 m2 dampers
- 10 Nm For 2 m2 dampers



| | | | | | | |
|---------------|-----------------|--------------|--------------|--------------------------|-----------|------------|
| N05010 | Control: 0-10 V | Power: 5 Nm | Speed: 90 s | Consumption: 6VA, 24 VAC | A3 | 150 |
| N0524 | Control: On/Off | Power: 5 Nm | Speed: 110 s | Consumption: 6VA, 24 VAC | A3 | 108 |
| N10010 | Control: 0-10 V | Power: 10 Nm | Speed: 90 s | Consumption: 6VA, 24 VAC | A3 | 178 |
| N1024 | Control: On/Off | Power: 10 Nm | Speed: 110 s | Consumption: 6VA, 24 VAC | A3 | 183 |

N20010, N2024 DAMPER ACTUATOR, IP54

- For 4 m2 dampers



| | | | | | | |
|---------------|-----------------|--------------|--------------|--------------------------|-----------|------------|
| N20010 | Control: 0-10 V | Power: 20 Nm | Speed: 95 s | Consumption: 6VA, 24 VAC | A3 | 264 |
| N2024 | Control: On/Off | Power: 20 Nm | Speed: 110 s | Consumption: 6VA, 24 VAC | A3 | 252 |

S03 / S05... DAMPER ACTUATOR, IP54

- Spring return 25 s
- For 1 m2 dampers



| | | | | | | |
|--------------------|-----------------|-------------|-------------|----------------------------|-----------|------------|
| S0524-2POS | Control: On/Off | Power: 5 Nm | Speed: 45 s | Consumption: 8VA, 24 VAC | A3 | 194 |
| S03010 | Control: 0-10 V | Power: 3 Nm | Speed: 90 s | Consumption: 7VA, 24 VAC | A3 | 252 |
| S03230-2POS | Control: On/Off | Power: 3 Nm | Speed: 45 s | Consumption: 13VA, 230 VAC | A3 | 178 |

S10... ja S20... DAMPER ACTUATOR, IP54

- Spring return 20 s
- 10 Nm For 2 m2 dampers
- 20 Nm For 4 m2 dampers



| | | | | | | |
|--------------------|-----------------|--------------|-------------|-------------------------------|-----------|------------|
| S10010 | Control: 0-10 V | Power: 10 Nm | Speed: 90 s | Consumption: 5/14VA, 24 VAC | A3 | 280 |
| S1024-2POS | Control: On/Off | Power: 10 Nm | Speed: 45 s | Consumption: 8/30VA, 24 VAC | A3 | 226 |
| S10230-2POS | Control: On/Off | Power: 10 Nm | Speed: 45 s | Consumption: 13/45VA, 230 VAC | A3 | 264 |
| S20010 | Control: 0-10 V | Power: 20 Nm | Speed: 90 s | Consumption: 5/16VA, 24 VAC | A3 | 317 |
| S2024-2POS | Control: On/Off | Power: 20 Nm | Speed: 45 s | Consumption: 8/40VA, 24 VAC | A3 | 275 |
| S20230-2POS | Control: On/Off | Power: 20 Nm | Speed: 45 s | Consumption: 13/60VA, 230 VAC | A3 | 306 |

Damper actuators

Price EUR
Vat 0%

NM..A DAMPER ACTUATOR, IP 54

- 10 Nm
- For 2 m2 dampers
- The drive time 150 s



| | | | | | |
|-----------------|-------------------------------|--------------|-------------------------------|-----------|------------|
| NM24A | 3-point control / open-closed | Power: 10 Nm | Consumption: 4 VA 24 VAC / DC | A2 | 150 |
| NM230A | 3-point control / open-closed | Power: 10 Nm | Consumption: 6 VA 230 VAC | A2 | 155 |
| NM24A-SR | 2-10 V-control | Power: 10 Nm | Consumption: 4 VA 24 VAC / DC | A2 | 217 |

*)

SM..A DAMPER ACTUATOR, IP 54

- 20 Nm
- For 4 m2 dampers
- The drive time 150 s



| | | | | | |
|-----------------|-------------------------------|--------------|-------------------------------|-----------|------------|
| SM24A | 3-point control / open-closed | Power: 20 Nm | Consumption: 4 VA 24 VAC / DC | A2 | 173 |
| SM230A | 3-point control / open-closed | Power: 20 Nm | Consumption: 6 VA 230 VAC | A2 | 176 |
| SM24A-SR | 2-10 V-control | Power: 20 Nm | Consumption: 4 VA 24 VAC / DC | A2 | 246 |

*)

LF... DAMPER ACTUATOR, IP 54

- 4 Nm
- For 0,8 m2 dampers
- The drive time 75 - 150 s
- Spring return 20 s

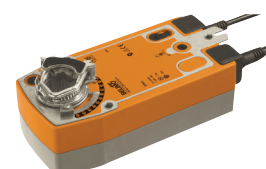


| | | | | | |
|----------------|----------------|-------------|-------------------------------|-----------|------------|
| LF24 | Open-closed | Power: 4 Nm | Consumption: 7 VA 24 VAC / DC | A2 | 195 |
| LF230 | Open-closed | Power: 4 Nm | Consumption: 7 VA 230 VAC | A2 | 212 |
| LF24-SR | 2-10 V-control | Power: 4 Nm | Consumption: 7 VA 24 VAC / DC | A2 | 264 |

*)

NF... DAMPER ACTUATOR

- 10 Nm
- For 2 m2 dampers
- The drive time 75 s, NF24A-SR 150 s
- Spring return 20 s



| | | | | | |
|-----------------|---------------------|--------------|---|-----------|------------|
| NF24A | Open-closed control | Power: 10 Nm | Consumption: 5,5 VA 24 VAC / DC | A2 | 243 |
| NFA | Open-closed control | Power: 10 Nm | Consumption: 9,5 VA 24-240 VAC / 24-125 VDC | A2 | 289 |
| NF24A-SR | Control 2...10 V | Power: 10 Nm | Consumption: 5,5 VA 24 VAC / DC | A2 | 292 |

*)

SF... DAMPER ACTUATOR, IP 54

- 15 Nm
- For 4 m2 dampers
- The drive time 75 s, SF24A-SR 150 s
- Spring return 20 s



| | | | | | |
|-----------------|----------------|--------------|--|-----------|------------|
| SF24A | Open-closed | Power: 20 Nm | Consumption: 7,5 VA 24 VAC / DC | A2 | 300 |
| SFA | Open-closed | Power: 20 Nm | Consumption: 18 VA 24-240 VAC / 24-125 VDC | A2 | 345 |
| SF24A-SR | 2-10 V-control | Power: 20 Nm | Consumption: 7 VA 24 VAC / DC | A2 | 347 |

*)

*) We reserve the right to change the prices according to Belimo

Other field devices

Price EUR
Vat 0%

EXU-800 EXPANSION UNIT FOR EH-800 AND EH-800B

External unit EXU-800 makes it possible to control a second valve actuator, another relay and also add two measurement information to the EH-800 heating controller.

EXU-800 product packaging containing the encapsulated control card, RJ45 cord and the coupling guide.



| | | | |
|----------------|--------------------------------------|-----------|-----------|
| EXU-800 | External unit for EH-800 and EH-800B | B1 | 66 |
|----------------|--------------------------------------|-----------|-----------|

C01A THERMOSTAT



| | | | |
|-------------|--|-----------|-----------|
| C01A | Thermostat, surface mounting 20...90 °C, differential range 7 °C | A2 | 58 |
|-------------|--|-----------|-----------|

JVA24 FROST PROTECTION THERMOSTAT

JVA 24 is security component, which monitors and adjusts AHU's water radiator return temperature if needed. It is designed to prevent freezing of water radiator. Suitable sensors Ouman TMI Pt 1000 and Ni 1000.



| | | | |
|--------------|--|-----------|------------|
| JVA24 | Anticipating frost protection thermostat | A2 | 146 |
|--------------|--|-----------|------------|

EHC VOLTAGE DIVIDER

- Operating voltage 24 VAC
- Input 0-10 VDC
- Output 0-10 V / 10-0 V



| | | | |
|------------|-----------------|-----------|-----------|
| EHC | Voltage divider | A1 | 68 |
|------------|-----------------|-----------|-----------|

EHR VOLTAGE-CONTROLLED RELAY, IP 55

- Operating voltage 24 VAC
- Input 0 - 10 V
- 2 kpl output, exchange contact 8 (1) A / 230 VAC



| | | | |
|------------|--------------------------|-----------|-----------|
| EHR | Voltage-controlled relay | A1 | 74 |
|------------|--------------------------|-----------|-----------|

TI DUCT THERMOMETER Ø 100 MM

- Length 200 mm
- Temperature range -40 °C ... +60 °C



| | | | |
|-----------|------------------|-----------|-----------|
| TI | Duct thermometer | A2 | 20 |
|-----------|------------------|-----------|-----------|

Other field devices

Price EUR
Vat 0%

LAP 5 INDULGE BUTTON

- 1...5 hours extra running time for the fan by pressing the button.



| | | | |
|--------------|----------------|-----------|-----------|
| LAP 5 | Indulge button | A2 | 97 |
|--------------|----------------|-----------|-----------|

PWR POWER UNITS

- Four different outputs power source.



| | | | |
|---------------|---|-----------|-----------|
| PWR 10 | Power unit 24 VAC / 10 VA, width 35,5 mm (2M) | C2 | 20 |
| PWR 24 | Power unit 24 VAC / 24 VA, width 54 mm (3M) | C2 | 22 |
| PWR 40 | Power unit 24 VAC / 40 VA, width 54 mm (3M) | C2 | 32 |
| PWR 63 | Power unit 24 VAC / 63 VA, width 106 mm (6M) | C2 | 47 |

VAK-POWER UNITS



| | | | |
|---------------|--|-----------|-----------|
| PWR130 | Protective voltage transformer with thermal prot. 230VAC / 24 VAC, 130 VA. DIN-rail mounting W90,L84,H110 | C2 | 40 |
| PWR180 | Protective voltage transformer with thermal prot. 230VAC / 24 VAC, 180 VA. W105,L89,H115 | C2 | 53 |
| PWR250 | Protective voltage transformer with thermal prot. 230VAC / 24 VAC, 250 VA. W130, L115, H119 | C2 | 64 |

Ouman Oy - General Terms of Delivery and Warranty

SCOPE OF APPLICATION

These Terms of Delivery shall apply to any retail of components and equipment between Ouman Oy and the customer, unless other agreements are signed (excluding deliveries involving customised products or deliveries that involve a significant amount of installation).

PRICING

Pricing is based on Ouman Oy's pricelist valid on the day the order is placed. All prices are indicated without value added tax. The taxes are calculated according to the prevailing legislation. In the event that any changes take place in payments related to customs, freight, VAT or other general payments before the date of delivery, the seller shall have the right to adjust the pricing of the articles in the same proportion as the changed pricing or payments have impacted the price of the articles.

OFFER

The price indicated in the offer is a net price for a given unit (excluding VAT) for the indicated quantity located in the seller's warehouse. Any offer provided by the seller is binding and valid for 30 days, unless otherwise indicated. If the seller's offer is subject to goods still remaining unsold at the time of buyer's order, the goods can be sold to a third party during the period of the offer and the seller does not guarantee that there is stock.

AGREEMENT

An agreement is formed between the seller and the buyer once the parties to the agreement have signed a written agreement (Procurement Agreement); the buyer has, in writing or verbally, agreed a binding agreement (order), or the seller has, in writing or verbally, confirmed an order, which is not based on an offer or differs from an offer, per se (order confirmation).

DIAGRAMS AND DESCRIPTIONS

Any price, measurement, weight and performance-related information indicated in descriptions, figures, diagrams, lists and pricelists are provided without guarantees, unless the offer specifically refers to such information. Any drawings and technical documents required for the manufacturing of the goods or their components, delivered, prior to or after entering into an agreement, from one party to another party to an agreement, shall remain in the possession of the supplier. The recipient shall not have the right to use, duplicate, deliver or otherwise provide any related information to a third party.

TERMS OF DELIVERY

The terms of delivery is FCA (Incoterms 2010), unless other agreements are signed.

PACKAGE

Any prices indicated in the pricelists and catalogues refer to unpacked goods.

DELIVERY TIME

The seller shall deliver the goods as agreed. In the event that no delivery time is agreed upon, the seller shall deliver the ordered products immediately, or as soon as stock is available. In the event that the seller has receivables due from the buyer, the seller, after informing the buyer, shall have the right to delay agreed deliveries until due payments are remitted. In such event it is considered that the agreed delivery time is delayed accordingly, and the buyer shall not have the right to make claims related to such delay. The goods are considered to be delivered once they are dispatched or reported as ready for delivery and the buyer is contractually obligated to retrieve the goods from the seller or from a location indicated by the seller.

DELAY NOTIFICATIONS

The buyer and the seller must immediately inform one another in the event that a delivery or reception of delivery may be delayed. Once either party receives notification of a delay, they must immediately inform the other party, stating the reason for the delay and the estimated new delivery date.

DELIVERY AND INSPECTION OF GOODS

Liability for risk is transferred to the buyer upon delivery of the goods. The goods must be equipped with a delivery note. Upon receiving the delivery, the buyer must confirm that the delivery is in accordance with the order and the delivery note and free of external damages. The goods must be appropriately inspected by the buyer once more before commissioning, mounting or installation. Any reclamation related to quantities or type of goods shall be done in writing within 8 business days of receipt of goods. Failure to do so will void the buyer's right to claims related to deficiencies or inadequacies.

Ouman Oy - General Terms of Delivery and Warranty

FORCE MAJEURE

The seller is not obligated to fulfil their contractual obligations in the event of a force majeure, or if the fulfilment of the contractual obligations would require sacrifices that are disproportionate in terms of the resulting benefit to the buyer. In the event that the force majeure ceases within a reasonable timeframe, the buyer shall have the right to demand the seller to meet their contractual obligations. In the event that the manufacturer or supplier, who the seller has procured the goods from, neglects their contractual obligations, resulting in a delay in a delivery by the seller, the seller shall not be liable for damages incurred by the buyer in such event. If the seller is affected by a force majeure described herein, the buyer shall not have the right to demand a new delivery to replace defective goods. In the event that the fulfilment of contractual obligations within a reasonable timetable is impossible due to a force majeure, both parties to the agreement shall have the right, without incurred liability, to terminate the agreement by notifying the other party in writing.

PAYMENT

Payment term begins from the date of the invoice. In the event that a payment is delayed, the buyer shall be liable to pay interest on overdue payments according to the current interest rates applied by the seller, as well as any costs resulting from the recovery of overdue payments.

WARRANTY

The seller provides a 24-month warranty for the quality of the materials and workmanship of all delivered goods. The warranty period begins on the date of purchase. In the event that material or workmanship defects are detected and the goods are sent, without delay or no later than by the end of the warranty period, back to the seller, the seller agrees to address the defect at their own discretion either by repairing the damaged goods or by delivering a new, defect-free goods, free of charge, to the buyer. The buyer is responsible for the costs resulting from delivering the goods to the seller for warranty repairs, while the seller is responsible for the costs resulting from returning the goods to the buyer. The warranty shall not cover damages resulting from accidents, lightning, floods or other natural events, normal wear and tear, inappropriate, negligent or unusual use of the goods, overloading, incorrect maintenance, or reconstruction, alteration and installation work which is not carried out by the seller (or their authorised representative). The buyer shall be responsible for selecting material of equipment susceptible to corrosion, unless other agreements are signed. In the event that the seller alters the structure of their equipment, they shall not be obligated to make similar changes to previously procured equipment. The validity of the warranty requires that the buyer has fulfilled their contractual obligations related to the delivery. The seller shall provide a new warranty for goods replaced or repaired under the original warranty. However, the new warranty shall only be valid until the expiration of the warranty period of the original goods. For any repairs not covered by the warranty shall be subject to a 3-month maintenance warranty covering the material and workmanship.

INDIRECT DAMAGES

The seller shall not be liable for any indirect damages incurred by the buyer as a result of delays or inadequacies related to the delivery. Furthermore, the seller shall not be liable for indirect damages resulting from a defective product in the event that the defect is caused by damages indicated in the warranty section as not covered by the warranty. Subject to the terms of the product liability insurance, the seller's insurance company shall reimburse any indirect material damages or physical injuries resulting from a defective product, provided that the defect could not be discovered at the factory under normal testing conditions.

RETURNS

The transaction is binding and irreversible, and the seller shall not be obligated to accept any product returns. In the event, however, that the seller as explicitly agreed to a return, any goods delivered under this agreement shall be received and reimbursed up to 70% of the retail price. Such goods can only be received and reimbursed in the event that they are returned in the original packing and condition.

NOTIFICATIONS

The sender is responsible for ensuring that notifications sent to the other party are delivered.

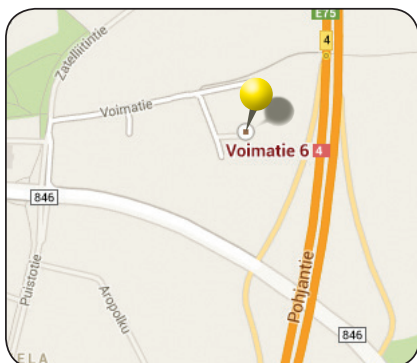
OWNERSHIP

The ownership of the goods is transferred to the buyer upon remittance of the entire purchase price.

DISAGREEMENTS

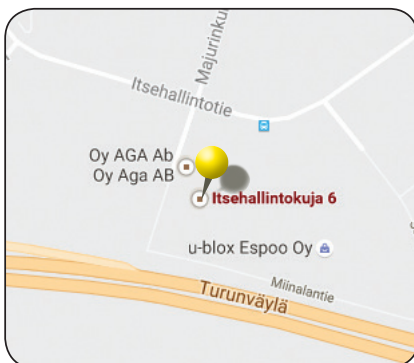
Any disagreements resulting from the agreements and their terms should be primarily resolved through bilateral negotiations. In the event that the disagreement cannot be resolved, the disagreement shall be resolved through arbitration in Finland according to current legislation. The arbitration court consists of one (1) member.

The factory and sales office



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