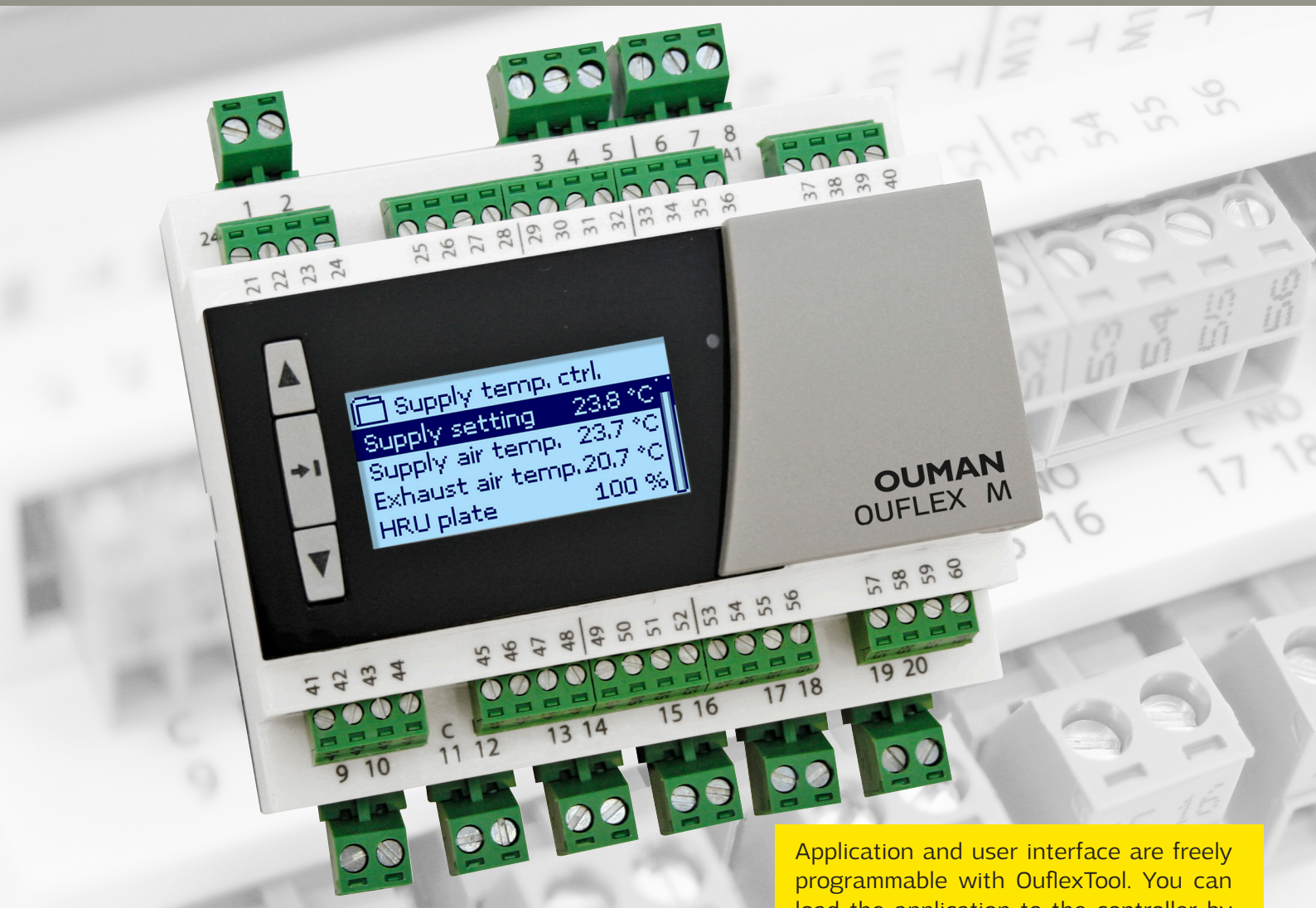
OUMAN OUFLEX M

Compact freely programmable automation device

USER MANUAL



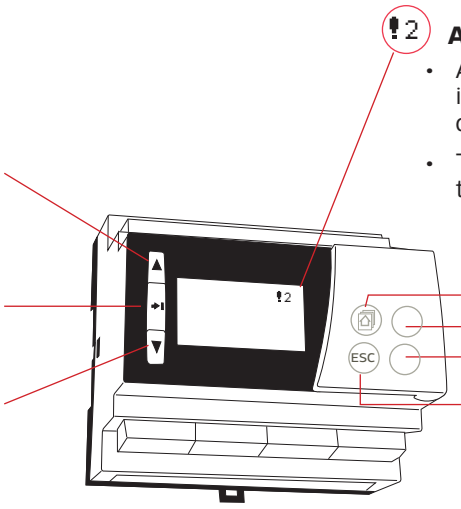
Application and user interface are freely programmable with OuflexTool. You can load the application to the controller by using SD-card.

- Ouflex M is a DIN-rail-attachable, monitoring-, controlling- and regulating device.
- Ouflex M can be as a master device and slave device in the Modbus bus.
- The DIN-standard-compatible structure of the Ouflex M device enables installation to most common cabinets.
- Detachable strip connectors make installation easier.

You can use this button move up through the menu or to increase a setting value.

You can use button to switch to editing settings for the currently selected function or to confirm changes to setting values.

You can use this button move down through the menu or to decrease a setting value.



Alarm indication

- A blinking exclamation mark indicates active alarms in the device.
- The number shows the quantity of active alarms.

Buttons under the front cover

Not used (service function)
Not used (service function)
Not used (service function)

To go back to the previous window: Press the ESC button under the cover or click OK in the bottom menu bar ←-.

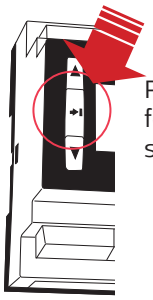
Alarm reset: press the (OK) button. The beeper will be turned off. If the cause of the failure is not fixed, the exclamation mark in the upper right corner of the display will keep blinking.

Alarm notice

The Ouman Ouflex M controller may emit alarms when digital inputs are triggered. Alarm details are highlighted on the screen in failure mode, and the beeper sounds. When there are more than one reset alarms in the controller, information on the most recent alarm is highlighted on the screen. After all active alarms are reset, the display quits the failure highlight mode and the beeper stops.
The beeper can be turned off with active alarms present by pressing the ESC button. When you do so the window with details of the most recent alarm on the screen will close.

To view active alarms, go into the menu "Alarms → Active alarms". Uncleared alarms are marked with an exclamation mark at the start of the line.

Hidden menus



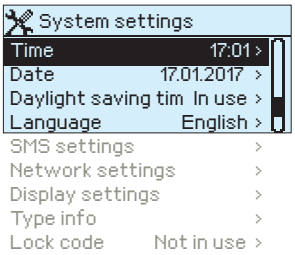
Press OK for a few seconds

Some of the information in your Ouflex M device may be hidden. You can see the hidden menus by pressing OK for a few of seconds. Similarly, you can hide them again by pressing OK for a few of seconds. Hiding information that you seldom need to change or look into makes the UI simpler. When visible, this information is shown indented.

Maintenance code

There may be a maintenance code in use in your Ouflex M device. In this case, you can see the information even when it's locked, but you can't make changes to settings without entering the maintenance code. Normally, you lock the most critical settings behind the maintenance code, or settings the changing of which requires expertise.
There is a symbol in front of a setting the changing of which requires maintenance code.

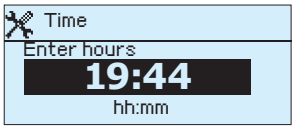
1 System settings



System settings include date and time, language, SMS and network settings, display settings and device type information.

1.1 Setting date, time and language

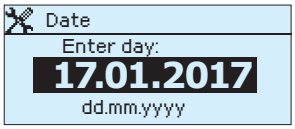
Service → System settings > Time



It is important that date and time are correct. The date and time are used e. g. in time programs as well as alarm indication and routing. The Ouflex M clock takes daylight savings and leap years into account automatically. The clock has a backup for power outages lasting at least three days.

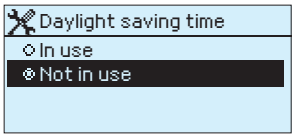
1. Set hours and press ⏭ to accept.
2. Set minutes and press ⏭ to accept.
3. To exit without saving and changes press Esc.

System settings > Date



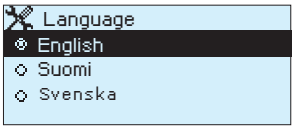
1. Set day and press ⏭ to accept (name of weekday is updated automatically).
2. Set month and press ⏭ to accept.
3. Set year and press ⏭ to accept.
4. To exit without saving and changes press Esc.

System settings > Daylight saving time



The controller will automatically be switched to to daylight saving time and to standard time, if the selection “In use” is made.

System settings > Language



The language of the user interface can be changed here.

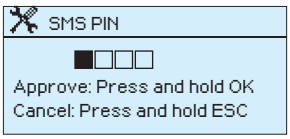
1.2 Text message (SMS) settings

System settings > SMS settings

Use of text messaging requires that the GSM modem (optional accessory) is connected to a Ouflex M.

Take the GSM modem into use:

1. Enter your PIN
2. Make a blackout.
3. Connect the modem.
4. Switch the power on and the controller initializes the modem and detects the message center (the message center number is not visible on the display).
5. Check the signal strength and status of modem from Ouflex M display
6. Enter Device ID, if you want.
7. Test the sms communication. Send to Ouflex M a message: Key words. If the Ouflex M sends a message where is a list of key words, text message communication is ok.

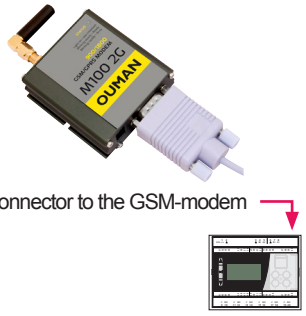


SMS PIN:

If the SIM card has PIN inquiry in use, Ouflex M device asks you to enter the PIN.

Entering the code:

1. Turn the control knob and press to accept each number. Press ESC to return to the previous digit.
2. Press for a number of seconds to accept the code. Press ESC for a number of seconds to cancel.

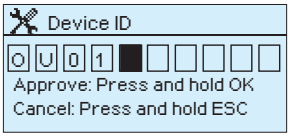


Signal strength:

Signal strength is expressed with the following descriptions: "Excellent", "Good", "Moderate", "Low", "Very low" and "Initialization failed". If signal strength indicates "No network," try changing the modem's location or use an additional antenna. If the signal strength is "Very low" you should also move the modem to another location to try to improve signal strength. If "Initialisation failed" is stated, check that the SIM card is correctly installed.

Modem and SIM card status:

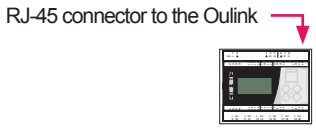
Modem status	Explanation / Instructions
Ok	The modem is ready for use.
Not connected	The modem is not connected or the connection is incorrect.
SIM card status	**Explanation / Instructions**
Unregistered	The subscription agreement is not valid.
Registered	The SIM card is ready for use.
PIN error	Enter Ouflex M controller the same PIN as as the GSM modem's SIM card PIN.
PUK	Use the SIM card in your phone and check if the SIM card is locked (PUK code).



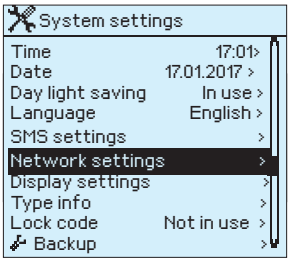
Device ID:

It's possible to define device ID to Ouflex M. Device ID works as a password for SMS communication. When device ID (e.g. TC01) is in use, it should be added in front of the keyword in every SMS (e.g. TC01 INPUTS).

1.3 Network settings



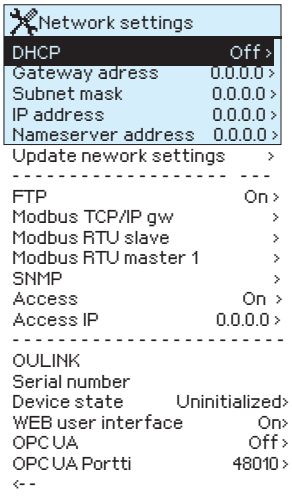
If you want to connect the Ouflex M unit to an Ethernet network, you will need an Oulink Ethernet adapter (additional equipment). Oulink Eth is connected to COM3 port (RJ-45) located in the side of the controller. The maximum length of the RJ45 ethernet cable between Ouflex M and Oulink is 10m and all 4 pairs must be connected.



System settings > Network settings

There are two alternative ways to set the Ouflex M device IP address and network settings:

1. IP address is retrieved via DHCP function. This requires that DHCP service is in use in the network and network cables have been connected.
2. IP address is set manually.

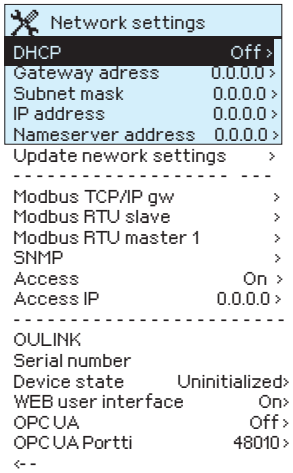


Setting the IP address via DHCP function:

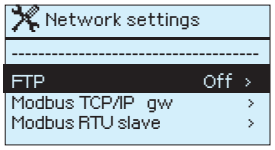
1. Go to DHCP and press .
2. Select "On" and press to accept selection.
3. Select "Update network settings" and press to accept selection.
4. Wait approximately one minute.
5. The network settings are now assigned to Ouflex M by DHCP server (new settings should appear automatically in the user interface)
   Otherwise check the network connections and ensure that DHCP-server is available in the network.

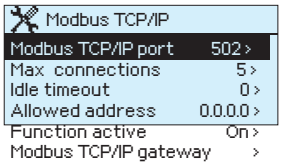
Setting the IP address manually:

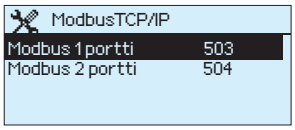
1. Request correct network settings (IP address, Gateway address, Subnet mask, Nameserver address) from the network administrator.
2. Go to "System settings" -> "Network settings" -> "DHCP" and press .
3. Select "Off" and press to accept selection.
4. Enter all network settings (IP address, Gateway address, Subnet mask, Nameserver address) provided by the network administrator.
5. Select "Update network settings" .

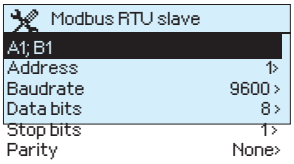


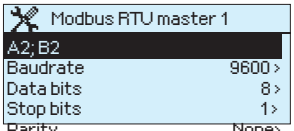
The Ouman Access service offers a secured connection to automation equipment using the in-house internet connection. Buy equipped with a data interface SIM card

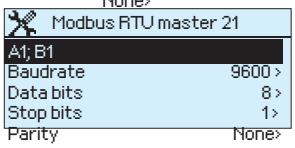


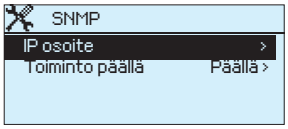












System settings > Network settings→Modbus TCP/IP

ModbusTCP / IP settings are used to change ModbusTCP (slave) server settings.

Modbus TCP/IP port (internal registers): Port number 502 is reserved for communication of Ouflex M device. Information of Modbus registers of Ouflex M device are read and write through this port.
Max connections: It is possible to decrease server load by changing this setting that defines the maximum number of simultaneous connections from different IP addresses to the server.

Idle timeout: This setting defines the time after which the server closes an inactive connection.
Allowed address: It is possible to improve the information security of the system by taking permitted connection address into use. If the value is 0.0.0.0, connections to the server are permitted from any IP address. If you define one permitted connection address, connections to the server are not permitted from any other IP address.
Function on: This selection either enables or disables the Modbus/TCP communication.
Modbus TCP/IP gateway →Modbus 1 port: It is possible to connect a Modbus/RTU bus to Ouflex M controller. The bus has its own port address that is used to communicate with bus devices via Modbus/TCP interface. Port 1 setting defines the TCP/IP port that functions as a gateway to Modbus RTU-bus.

System settings → Network settings → Modbus RTU slave

Ouflex M unit can be connected to a Modbus RTU as a slave device. It will be shown in the first row which one of bus Ouflex M device acts as a slave device. Set Ouflex M bus address. Note. Two devices may not have the same bus address. All devices in the bus should be set to the same setting value of the baud rate, data bits, stopbitteihin and parity.

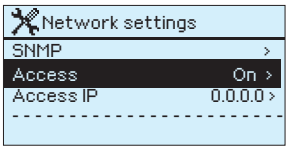
System settings → Network settings → Modbus RTU master

Ouflex M device can be a master device in two Modbus RTU. It is shown in the first line, where the bus Ouflex M is the master device. All the devices in the same bus should be set to the same setting value of the baud rate, data bits, stopbitteihin and parity.

System settings > Network settings→ SNMP

SNMP: SNMP function can be used to send notifications about alarms activating, inactivating and being acknowledged via SNMP protocol to a desired server.
IP address: The IP address of the target server to which messages are sent. Ounet IP address is a default.
Active: This selection either enables or disables the entire SNMP function.

If the Ouman Access is taken into use, the sent SNMP alarm message will include the Access IP-address. In this case, Access IP address must be entered as local IP-address in Ounet.



System settings > Network settings→ Access

Access

Oulink supports Ouman Access-service which gives you a secure remote connection to the Ouflex M-device. With this setting you can activate the ACCESS-service in order to be able to use it.
OUMAN ACCESS- service is "off" by default in Ouflex M. OUMAN ACCESS- service is taken in use in following way: Ouman salesperson feeds in the target and billing information to the Ouman system and activates the service based on the serial number of the Oulink. After that, you have to activate the ACCESS service from the device. OUMAN ACCESS- device can be connected to LAN if following conditions are fulfilled:

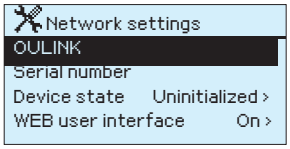
1. LAN is routed to internet
2. The VPN ports used by ACCESS are not blocked

1. LAN is routed to internet

Access –service requires internet connection. Therefore it is available only if the local LAN has connection to internet. ACCESS-device examines the availability internet connection once per minute by sending a ping-package to a server in internet.
Network has to allow ICMP towards internet and also allow the response message to come back to Ouflex M.

2. The VPN ports used by ACCESS are not blocked

ACCESS-service is using VPN to the internet connection.
Network has to allow UDP communication from any port towards port 1194 in internet and the responces from that port back to Ouflex M device.

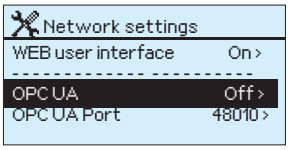


v. 1.5

System settings > Network settings→ OULINK

OULINK

From network settings you can see OULINK ETH-device serial number and version number. If all the settings are correct, the status of the device is "OK".



System settings > Network settings→ OPC UA

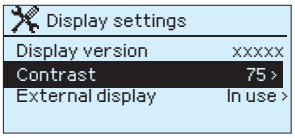
By connecting the Oulink (optional) to the Ouflex M, you can use the OPC UA interface. By using OPC UA you can read data of the measurement point, collect trend data and change the settings.

System settings > Network settings→ OPC UA Portti

The port address can be changed. Enter the port address. Enter number at a time, and at the end press and hold the OK.

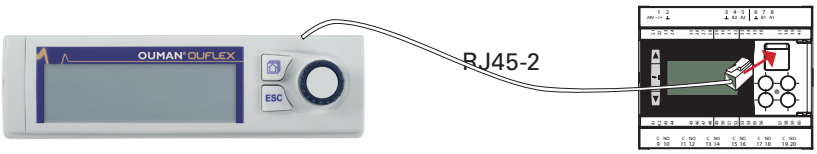
1.4 Display settings

System settings > Display settings



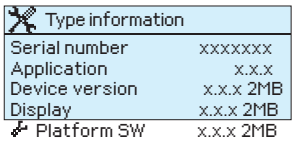
Contrast: You can adjust the contrast of the display. If you wish the display to be brighter, set a smaller numerical value. The setting range is 50... 100. New setting is taken in use after confirmation is done.

External display: The external display is connected to Ouflex M's RJ12 connector. Use a Ouman special cable (LCD CAMBLE M).



1.5 Type information

System settings > Type information



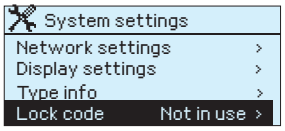
Type information shows the hardware and software versions. This information is useful especially in case of maintenance or upgrade.

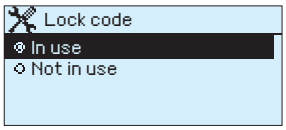
TYPE INFORMATION

Send message: Type information.
The reply message will show information about the device and software.

1.6 Lock code

System settings > Lock code

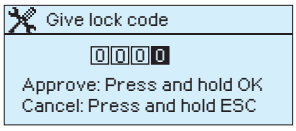




When lock code is taken in use, it's not possibel to change any settings without entering lock code. It is recommended that you take lock code into use if the device is located so that anyone could reach it and change settings (e.g. deactivate burglar monitoring). Locking the device and changing the lock code prevents unauthorized use of the device.

Lock code function	Description
Not in use	You can read Ouflex M device information and change settings.
In use	You can read Ouflex M device information but you can not change settings without entering the lock code. The factory setting of lock code is 0000. If you take lock code into use, change the code for security reasons.

System settings > Change lock code



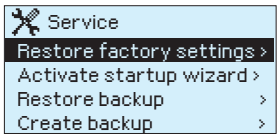
NOTE! When you enter a locking code when changing the default, the code will not be required again until the unit has been untouched for 10 minutes, when the display goes into idle state. You can also set the display in idle state by pressing the ESC button for a long period of time.

If you have taken lock code into use, you may change the code. The factory setting of lock code is 0000.

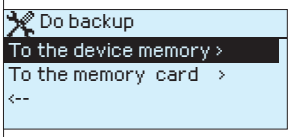
1. Ouflex M device asks you to enter the current code. The factory setting of lock code is 0000.
2. Select number by using ▼ or ▲-knob and press ⏭ to accept each number. Press ESC to return to the previous square.
3. Press ⏭ for a number of seconds to accept the code. Press ESC for a number of seconds to cancel.

1.7 Restore settings and updates

Restore factory settings



Do backup

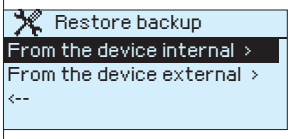


Create a backup, when Ouflex M has been configured and the device-specific settings have been set.

If desired, also the factory settings can be restored to the device.

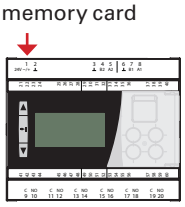
All the parameters which are saved in the non-volatile memory will be included in the backup. Such parameters are e.g. all the setting values and time programs. The backup can be saved to the internal memory or to micro SD memory card. Memory card backups can be copied from one device to another.

Restore backup



If you created a backup, you can restore the backup by pressing OK. You can restore the backup from the memory card (device external memory) or from the internal memory.

Software updates



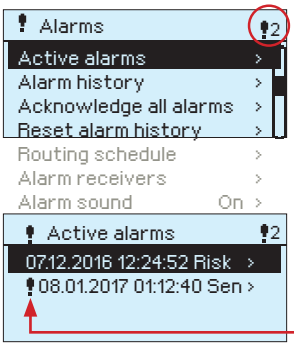
It is recommended to create a backup of the system before software update. The software update is done with following steps:

1. Remove microSD memory card from Ouflex M.
2. Wait until error message “Memory card error!” is shown in the display
3. Insert new microSD memory card which includes new software to Ouflex M.
4. Ouflex M asks if you want to save existing device configuration to be taken in use after the update.
5. Ouflex M requests reboot to start the update of the new software. The updating of the software takes few minutes. The display will flash during the update process.

Reset meas. history

2 Alarms

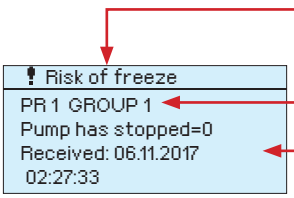
Active alarms



In the alarm menu of Ouflex M device, you can check the active alarms and what alarms have been active. The number of active alarms will be shown in the right corner of the main view.

Every active alarm is shown in a separate row, where you can see when the alarm has become active. Press ⏭ to get more information about the alarm.

An exclamation mark in front of the date shows that the alarm has not been acknowledged.



The reason for the alarm is shown in the heading.

You can also see, what is the alarm priority (1 = Emergency, 2=Danger, 3=Fault, 4= Service, 5=Info) and what alarm group it belongs to (Group 1 has urgent alarms, group 2 malfunction alarms and group 3 service alarms).

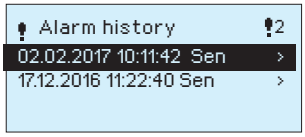
Source of the alarm.

Time the alarm was received

ACTIVE ALARMS

Send message: Active alarms
The controller sends a message with information about all active alarms. The message is for informational purposes.

Alarm history



The reason, source and inactivation time (02.02.2017 10:11:42) is shown for every alarm in alarm history. The last 10 alarms can be seen in inactive alarms.

ALARM HISTORY

Send message: Alarm history
The controller sends a message with information about the 10 most recent alarms. The message is for informational purposes.

Acknowledge all alarms

You can acknowledge all alarms by pressing OK.

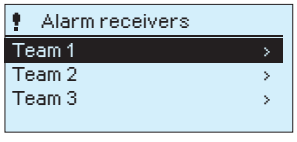
Reset alarm history

Ouflex M requests confirmation before deleting alarm history.

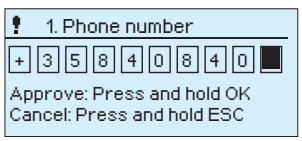
Reset alarm history

See following page.

Alarm receivers



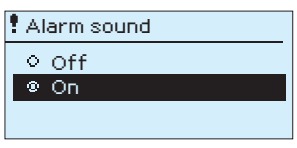
Entering the telephone numbers:



A GSM modem can be connected to the Ouflex M for alarm sending a text message to the alarm team. The alarms are sent to correct team according to alarm routing schedule. When alarm is activated, the controller sends alarm messages automatically to phone numbers defined in team. If the alarm isn't acknowledged within 5 minutes, the alarm message will be re-sent to same recipients and also to backup number. The Ouflex M sends max. 100 within one day.

1. Browse by using ▼ or ▲-knob. Press ⏭ to accept a number/sign.
2. Press ⏭ to move to the next square.
   Press Esc to return to the previous square. OK
3. Press ⏭ for a number of seconds to accept the number. Press Esc for a number of seconds to cancel

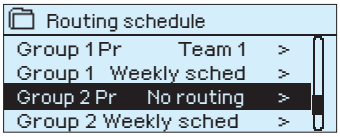
Alarm sound



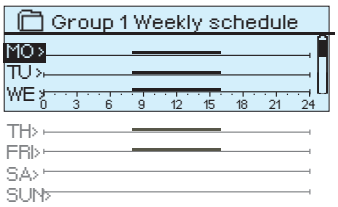
You can take the alarm sound off, if you want.

Routing schedule

Alarms > Routing schedule

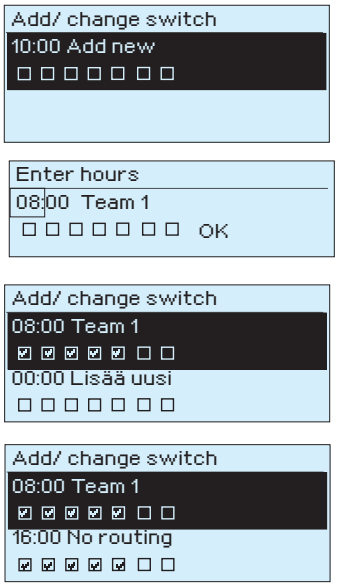


Graph



This example shows that group 1 alarms are always forwarded. During business hours (Monday - Friday 8:00 a.m. - 4:00 p.m.) alarms are forwarded to different teams than during evenings and weekends. More detailed information is shown in the "Editing view".

Editing view



Ouflex M default alarm groups are:

- **Group 1:** Urgent alarm that should always be immediately routed.
- **Group 2:** Malfunction alarms than can be routed during business hours.
- **Group 3:** Service alarms or non-urgent alarms.

You can see where alarms are currently being routed from the routing schedule menu. You can also set up a routing schedule for each alarm group.
You can create a weekly schedule for each alarm group. Weekly schedule have a general graphic view and an editing view, where you can see to which alarm team each alarm is sent at different times. In the graph, alarm teams are distinguished from each other by the bars with different thickness.

Turn the control knob to browse a weekly schedule. If you wish to see the exact switch times and names of alarm teams, or if you wish to edit, remove or add switch times, press ⏭ at any weekday.

Browsing a weekly schedule:

An editing view opens, and it shows all the switch times and also to which alarm teams alarms are routed at these times on the chosen days.

Adding a new switch time:

1. Press ⏭ at the "Add new" row.
2. Press ⏭. Set the switch time for alarm routing (set hours and minutes separately) and press ⏭.
3. Press OK and then turn the control knob to set the alarm team or the "No routing" option. (No routing option means that alarms will not be sent.) Accept by pressing ⏭.
4. Press ⏭ at desired weekdays you wish to choose.
5. Press ⏭ at the end of the row to accept the created schedule.
6. Press Esc to exit.

Editing a weekly schedule:

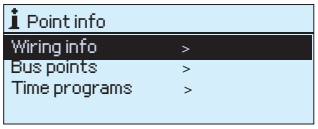
1. Turn the control knob to navigate to the value you wish to change and press ⏭.
2. Turn the control knob to make the time and alarm team changes. Press ⏭ to accept.
3. Press the ⏭ button to change the day of the week.
4. Press Esc to exit.

Deleting a switch time:

1. Turn the control knob to navigate to the switch time you wish to delete and press ⏭.
2. Press ⏭ at the alarm team and select "Delete switch time"
3. Press ⏭ at the end of the row.
4. To exit edit mode, press ESC.

If the alarms are routed, alarms are forwarded as text message to alarm team according to the routing schedule. You can acknowledge an alarm by forwarding the same message to the Ouflex M.

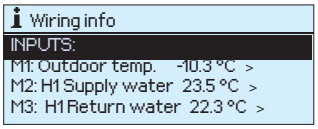
3 Point information



In the point info you can see wiring info, bus points and time programs.

3.1 Wiring info

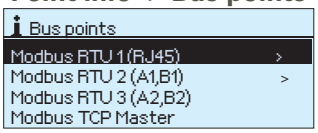
Point info -> Wiring info

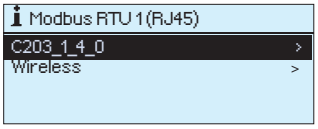


Point information shows all the inputs and outputs of the Ouflex device and where the inputs and outputs have been connected.It also shows the measurement value or state of the point. If you want to set input or output to manual control, press ok that row, enter the service code, select the "Manual control" and finally enter a fixed value. If any of the input or output is a manual operation, the palm image appears on the begining of the line. Ouflex M device has temperature sensor, which measures the circuit board temperature. The outputs have a "Sounder" selection, which allows you to set the alarm sound off if you want.

3.2 Bus points

Point info -> Bus points

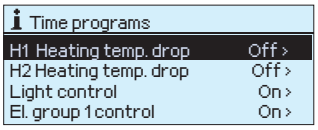




In the bus points menu, you can see those devices which are connected to the bus. By pressing OK in the row of a specific bus device, you will see those points which has been taken into use of the bus device.
Points are grouped in such a way that the first sample of a universal inputs, followed by the analog and digital outputs.

3.3 Time programs

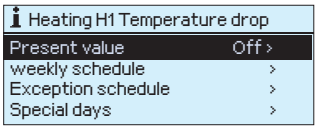
Point info -> Time programs

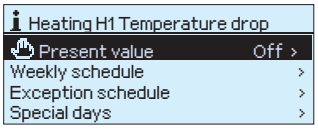


In Ouflex, weekly programs can be added to different functions - such as temperature drops, car heating and control of lights. In your Ouflex device, you can find time programs under the clock symbol and/or under the function that a time program has been made for (e.g. heating control, car heating, control of lights, control of electric groups, routing of alarms).

Present value

Point info -> Time programs -> Present value





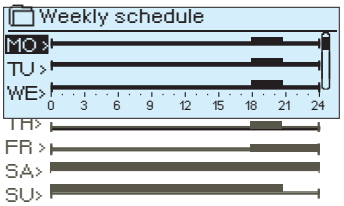
The present value shows what is the status of the control just now. When the automatic control is in use, it is shown in the display, what is state of the control according to the time program at the moment. Control command can be either a weekly schedule or exception schedule.

When you press the "Present value" line OK, Ouflex-device asks for a service code. After entering the service code, you can change the control mode (automatic/ manual). This way you bypass time program and force the control to the desired mode. When the manual control is in use, the hand symbol appears on the front of the line.

Weekly schedule

Point info ->Time programs -> Weekly schedule

Graphic view

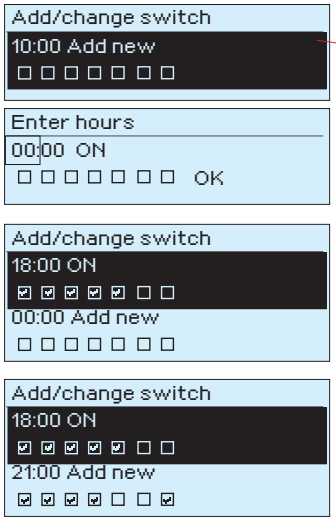


The picture example shows the time program status is ON each weekday from Monday to Thursday from 18:00 to 21:00, and at the weekend from Friday, 18:00 to Sunday, 21:00.

Weekly schedules include graphic views (in general view mode and edit mode) with data on the exact time that new control commands are received. Different control modes are shown graphically as columns of varying height.

View weekly schedule:
Graphical view of the weekly program. In order to display exact activation time, or to edit, delete or add switch time values, press the ⏭ with the cursor on the line for the corresponding day of the week.

Edit

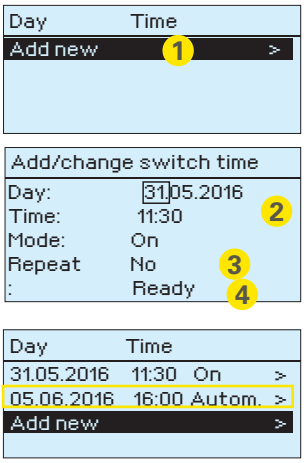


Add new switch time:

1. Press the ⏭ key on the "00:00 Add new" line.
2. Press the ⏭ key, set the switch time for the desired control mode (hours and minutes are set separately), and confirm the new time by pressing the ⏭ key.
3. Press the ⏭ key to proceed to control mode selection (on / off). Confirm your choice by pressing ⏭.
4. Select the days of the week for the control command (modes on/off) by pressing ⏭ on the line for the corresponding day of the week. You can press ▼ to skip the day. Confirm your choice of the new time program by pressing ⏭ at the end of the line. Attention! Control modes must have a closed cycle, i.e. you must set the time of return to the normal control mode (automatic). Press ESC to quit the programming mode.

Exception schedule

Point info ->Time programs →Exception schedule



The picture shows an exception schedule. Control mode is "ON" from 31 May 2016, 11:30 to 5 June 2016, 16:00

NOTE! Remember to also set the end time for the exception schedule! When you set the date and time, the mode will change to "Automatic". In this case, the control returns back to the weekly schedule. If you selected that the start time "Repeats every month or every year", you have to do same selection to the end time.

You can easily make changes that differ from normal routine use by using the exception schedule. The date, time and mode to which control will be changed in the period in question are entered in the exception schedule. To switch from an exception schedule to weekly schedule mode, select automatic mode.

Adding a new switch time:

1. Move to the "Exception schedule" line and press ⏭. The "Add new" caption will appear on the screen. Press ⏭.
2. Press the ⏭ key, set the start time (date) for the control mode, then set the time and the control mode.
   - one day schedule from the weekly schedule (Monday - Sunday)
   - special day from the special day program (SD1 - SD7)
   - Mode On, Off or
   - "automatic."
3. Select, if the exception schedule repeats or not. If you select repeat, it can be repeated every month same time or every year same time.
4. Accept the exception schedule you created by pressing "Ready."

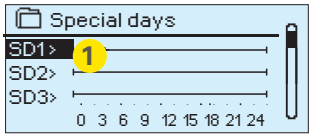
Deleting a switch time from an exception schedule:

1. Navigate to the row with the switch time you want to delete.
2. Select "Delete switch time."
3. Accept the deletion by pressing "Ready."

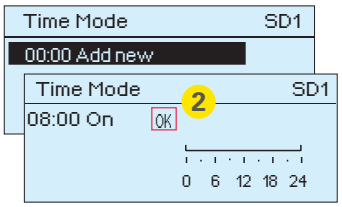
Special days

AHU control →Time programs → Special days

Graph



Editing view

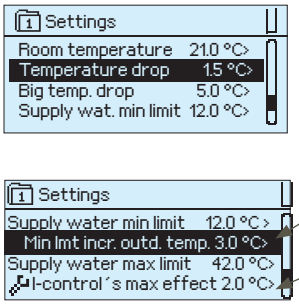


You can enter special day programs as exceptions to normal weekly schedule. You can designate a maximum of 7 special day pograms (SD). A special day program is typically created for each holiday. When the special day program will be applied it is set in the exception schedule.

Adding a new switch time:

1. Navigate to "Special days" and press ⏭. Select an unused special day and press ⏭.
2. Place the cursor on "Add new" and press ⏭. Set the time for the program (hours and minutes are set separately). Select the mode to be switched to at the time specified. Accept the program by pressing ⏭ when the cursor is on ⏭.
3. Navigate to the "Add new" row. Set the time for the mode to deactivate and the device to return to standard control mode. Accept the program by pressing ⏭. You can set several different AHU control modes within one special day.

4 Settings

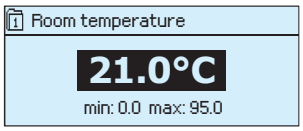


In Ouflex M, settings can be classified into the following categories:

- **Main settings**
- **Hidden settings**
  You can hide/show these settings by pressing OK for a few seconds. When visible, these settings are shown slightly indented.
- **Settings that require maintenance code**
  There is a 🔧 symbol in front of these settings. If you try to change one of these settings, your Ouflex device asks you to enter the maintenance code.

Changing a setting:

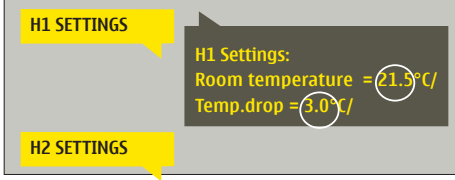
Choose the desired setting by using the ▼ or ▲ knob. Press ⏭ to go to the view where editing is possible. Change the setting by using the ▼ or ▲ knob.
Press ⏭ to accept the change.
Press Esc to exit the editing view.
You can see the setting range (minimum and maximum value), if there is one, in the editing view.



Locking the settings:

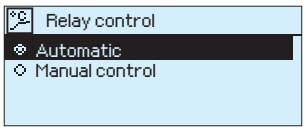
Lock the settings to prevent unauthorized persons from changing them. The device will then ask for lock code before it let's you change the settings. You can lock the settings in Ouflex device system settings.

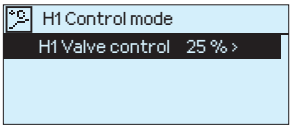
If a GSM modem is connected to Ouflex M device and the setting values have been brought into SMS interface, you can edit settings by text message. Send a message " Key words". The reply message shows you which key words are in use in the application. The example below describes the communication principle.



Send a message: H1 Settings.
The controller sends the main settings to your mobile phone. Editing the setting values: write the new setting in place of the old setting and send a message back to the controller. The controller sends the setting as a return message.

5 Measuring point control/manual control





Automatic control is the mode that is normally used. If your application allows the change of control mode, you may change automatic control to manual control here.

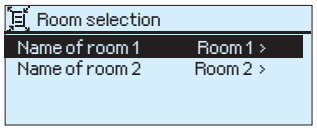
When you are in the manual control mode, the hand symbol appears.

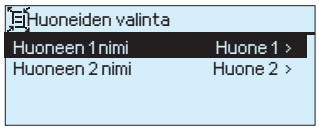
If a GSM modem is connected to Ouflex M device and the setting values have been brought into SMS interface, you can edit settings by text message. Send a message " Key words". The reply message shows you which key words are in use in the application. The example below describes the communication principle.

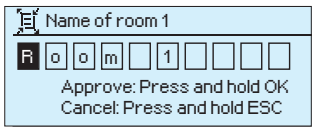
Example

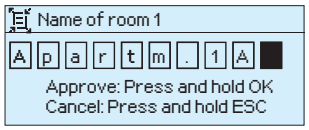
Send a message: R1 Relay control
The controller sends a return message in which a * appears in front of the control mode in use. If you want to change the control mode, move the *
in front of the desired control mode and send the message back to the controller. The controller
will then send a return message showing that it has switched to the desired control mode.

6 Naming







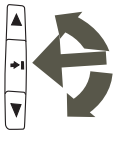


There may be fields that you can rename in your Ouflex device. You often download an application where general names have been given to the controls, and you may want to rename them more accurately.

In heating control, for example, the rooms have typically been named "Room 1", " Room 2", etc. You may want to give them more accurate names. In control of electric groups, you may want to rename "Electric group 1" and "Electric group 2" more accurately, depending on what you actually control with the relay in question.

Move to the title you wish to rename and press OK. A naming view opens. Turn the control knob and accept each letter by pressing OK. Move to the next square by pressing OK.

Return to the previous square by pressing ESC. Accept the name by pressing for a number of seconds. Cancel by pressing ESC for a number of seconds.



7 Remote use

Communication via a mobile phone

If a GSM modem is connected to the Ouflex M you can communicate with the controller by text messages using command words.

Send the following text message to the controller: KEY WORDS.

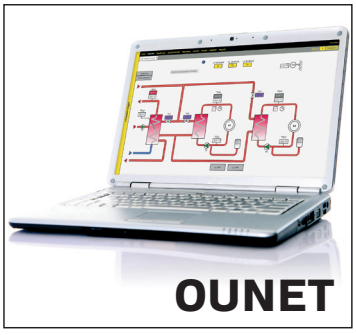
If the controller has a device ID in use, always write the device ID in front of the key word (example. Ou01 KEY WORDS or Ou01 ?). Capital and small letters are different characters in the device ID!

The controller sends a list of key words as a text message that gives you information about the controllers' functions and state. The key word is separated by a /. You can write the key word using capital or small letters. Write only one key word per message. Store the key words into your phone's memory.

Key word	Explanation
?	Reply message shows all key words in the language that has been selected for the controller.
Key words	If the controller is set up in English, the regulator sends a list of key words.
Acitve alarms	The reply message will show all active alarms.
Alarm history	The reply message will show information about the latest alarms.

Attention! If the controller has a device ID in use, always write the device ID in front of the key word

Internet-based on-line control room



Internet-based on-line control room for professional remote control and monitoring (optional).

Optional accessories

OULINK

Adapter for Ouflex M for networking OULINK is an Ouflex M adapter that is providing Modbus TCP/IP interface to Ouflex M

- Integrated Ouman Access connection
- Modbus TCP/IP
- Modbus TCP/IP ◄► RTU Gateway
- SNMP alarm transfer

Additional Control panel, Ouflex C LCD

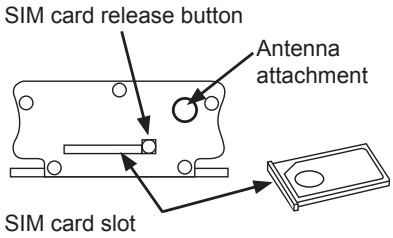
The external display is connected to the flap cover over the RJ12 jack. Use Ouman cable LCD CABLE M.

GSMMOD5

By connecting the modem to the Ouflex M you can communicate with SMS's to the controller and have information of activated alarms to GSM phone.

Ouman's GSM modem (GSMMOD5) is connected to the COM3 port (RJ45) of Ouflex M unit. The modem has a fixed antenna that can be changed to an external antenna with a 2,5m cord (optional equipment) if needed. The modem's indicator light shows what mode it is in.

RJ-45 connectori to the modem



Led indicator light	Modem mode/instructions
LED is not lit:	Modem is not on. Connect network device to modem.
LED is lit:	Modem is on, but it is not ready for use. Make sure that Ouflex M and GSM modem SIM card have the same PIN code, if PIN inquiry is in use.
LED is blinking slowly:	Modem is ready for use.
LED is blinking rapidly:	Modem is either sending or receiving a message.

Inserting the SIM card

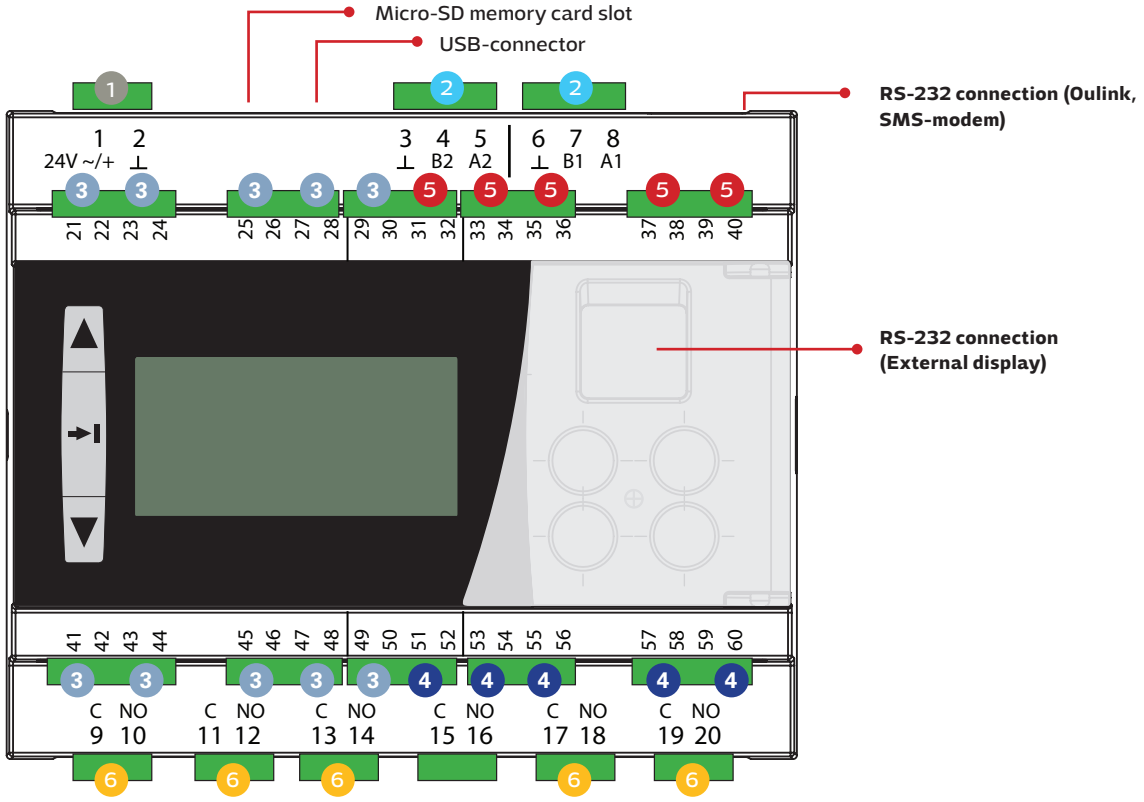
Press the small black SIM card release button with, for example, a pen tip. Part of the SIM card slot will stick out of the modem. Pull the slot out of the modem. Do not pull the slot out of the modem without pressing the SIM card release button first!

Insert SIM card into the slot and make sure it settles properly. Push the slot back to its place. Set the SIM card PIN code as Ouflex M device PIN code. Make sure PIN inquiry is in use in the SIM card.

Product disposal

The enclosed marking on the additional material of the product indicates that this product must not be disposed of together with household waste at the end of its life span. The product must be processed separately from other waste to prevent damage caused by uncontrolled waste disposal to the environment and the health of fellow human beings. The users must contact the retailer responsible for having sold the product, the supplier or a local environmental authority, who will provide additional information on safe recycling opportunities of the product. This product must not be disposed of together with other commercial waste.

Ouflex M structure



1 Detachable strip connectors (operation voltage).
Connector labels:

1	24 Vac operation voltage output
2 ⊥	GND

2 Detachable strip connectors **(RS-485-bus connectors)**
Connector labels:

3	⊥	GND
4	RS-485-bus connection	B2
5	RS-485-bus connection	A2
6	⊥	GND
7	RS-485-bus connection	B1
8	RS-485-bus connection	A1

3 Detachable strip connectors **(passive sensors and digital inputs).**

21	M1	
22	⊥	GND
23	M2	
24	⊥	GND
25	M3	
26	⊥	GND
27	M4	
28	⊥	GND
29	M5	
30	⊥	GND
41	M6	
42	⊥	GND
43	M7	
44	⊥	GND
45	M8	
46	⊥	GND
47	M9	
48	⊥	GND
49	M10	
50	⊥	GND

4 Detachable strip connectors **(passive sensors, active sensors and digital inputs).**

51	M11	
52	⊥	GND
53	M12	
54	⊥	GND
55	M13	
56	⊥	GND
57	M14	
58	⊥	GND
59	M15	
60	⊥	GND

5 Detachable strip connectors **(analog outputs and PWM).**
Connector labels:

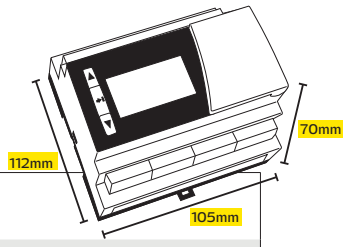
31	0...10 V output	(Y4)
32	⊥	GND
33	0...10 V output	(Y3)
34	⊥	GND
35	0...10 V output	(Y2)
36	⊥	GND
37	0...10 V output	(Y1)
38	⊥	GND
39	PWM	
40	⊥	GND

6 Detachable strip connectors **(relays with normally open contact max 230 Vac, 5 A).**
Connector labels:

9	Relay 1 C
10	Relay 1 NO
11	Relay 2 C
12	Relay 2 NO
13	Relay 3 C
14	Relay 3 NO
15	Relay 4 C
16	Relay 4 NO
17	Relay 5 C
18	Relay 5 NO
19	Relay 6 C
20	Relay 6 NO

Technical information OUFLEX M

Compact freely programmable automation unit



Dimensions	width 105 mm, height 112 mm, depth 70 mm **DIN rail-mounted module casing, 6 modules.**
Weight	0.28 kg
Protection class	IP 20
Operating temperature	0 °C...+50 °C
Storing temperature	-20 °C...+70 °C
Power supply	
Operating voltage	22 VAC - 33 VAC (50-60 Hz,) or 20 – 48VDC
Power requirement 24VAC	9 VA. With the optional accessories (Oulink /GSM and external display) 12VA
Power requirement 24VAC	4W. With the optional accessories (Oulink/GSM and external display) 6.5W
Measurement inputs	15 pcs, programmable
Sensor measurement (inputs M1...M15)	15 pcs passive sensors (NTC10, Pt1000, Ni1000) Measurement channel accuracy: - NTC10 element: ±0,1 °C between -50 °C...+100 °C, ±0,25 °C between +100 °C...+130 °C - Ni1000 and Pt1000 element: ±0,5 °C between -50 °C...+130 °C - Also sensor tolerances and the effect of cables must be considered when calculating total accuracy
Digital inputs (inputs M1...M15)	**15 pcs.** Contact voltage 5 Vdc, Switching current 0.5 mA Transfer resistance max. 1,9 Ω (closed), min. 11 k Ω (open).
Voltage measurement (inputs M11...M15)	5 pcs active sensors 0-10 V (M11...M15, from HW ver. 1.0)
Analog outputs (Y1-Y4)	4 pcs. Output voltage range 0...10 V. Output current max 10 mA /output
PWM output	**1 piece that works in parallel with the Y1 output . The open circuit voltage of 15V.Output current is max. 50 mA, when output voltage is 10V**
Relay outputs NO R1-R5	6 pcs, 230V 5A
Data transfer connections	
RS-485-bus (A1, B1 and A2, B2)	2 pcs, unisolated, supported protocols Modbus-RTU (Modbus RTU master or RTU slave) COM2 and COM4
RS-232	1, support to the Oulink and GSM modem. COM3 (RJ45). Note GSM modem and Oulink can not be at same time.
RS-232	1, support to the additional control panel (Ouflex C LCD) COM1
USB-device	OuflexTool online connection, COM5
Freely programmable with Ouman's Ouflex tool	yes
Ouman ACCESS security solution (option)	yes with Oulink
OPC-UA server (option, release 2017)	yes, with Oulink2
Optional accessories	
OULINK-ETH	OULINK ETH adapter provides Modbus TCP / IP interface for V15 device.
GSMMOD 5	By connecting the GSM modem to the Ouflex M, you can communicate with text messages to device and receive alarms to GSM phone.
Additional Control panel	The Ouflex C LCD external display is connected to the flap cover over the RJ12 jack. Use Ouman cable LCD CABLE M.

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