

# OUMAN OUFLEX M BA

Compact freely programmable automation unit

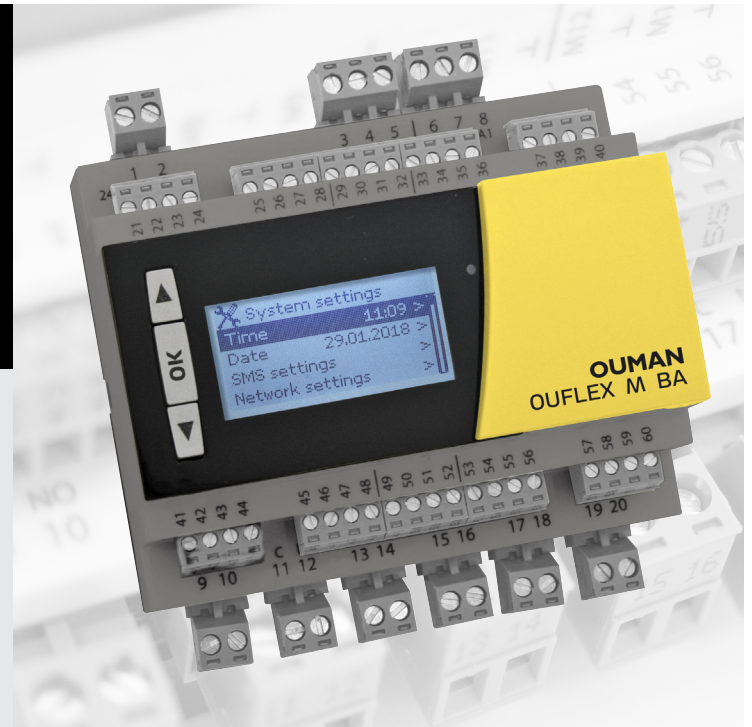
## USER MANUAL

- Application and user interface are freely programmable with Ouflex BA Tool.
- You can load the application to the controller by using SD-card, USB-port or remotely via the M-LINK.

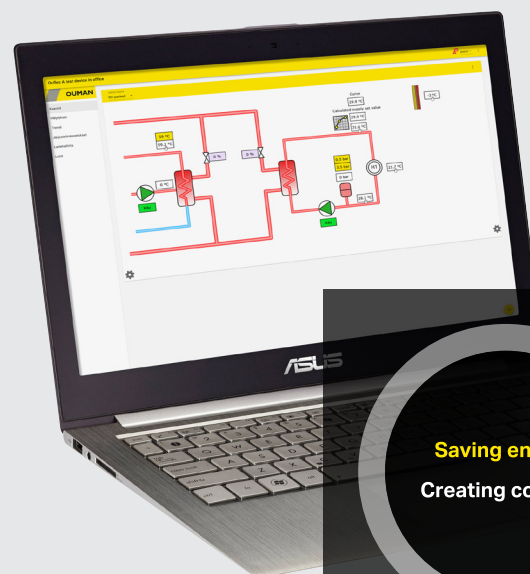
**Ouflex M BA has SMS support.** Use of a text messages requires that the GSM modem (optional) is connected to the controller. You can communicate with the controller by text message using key words.

### KEY WORDS

Key words:  
Active alarms  
Alarm history



- DIN rail-mounted module casing (6M)
- Detachable strip connectors make installation easier.
- Can be as a master device and slave device in the Modbus bus.



Saving energy  
Creating comfort

# REMOTE UPDATE

via M-LINK

# Web UI

via M-LINK

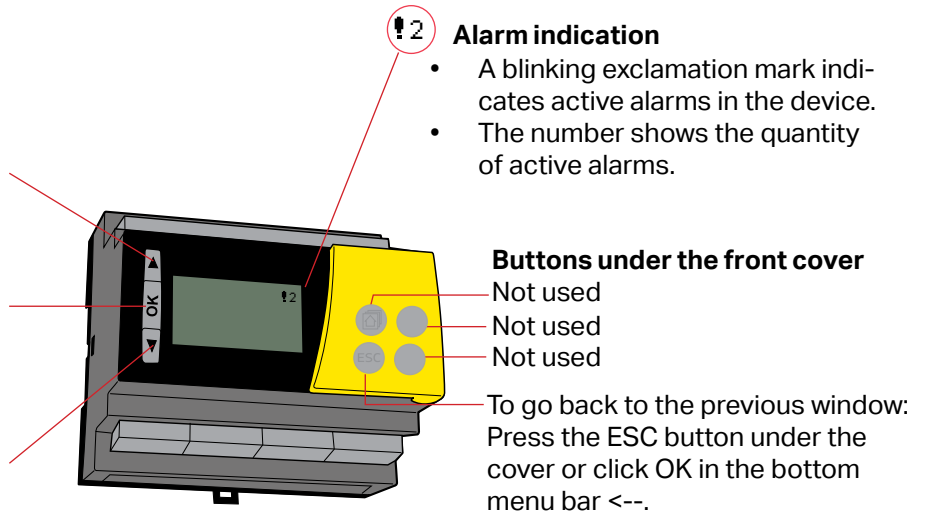
YM0015D: Versio 2.9->

# OUFLEX M BA

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

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

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



**Alarm acknowledgement:** 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

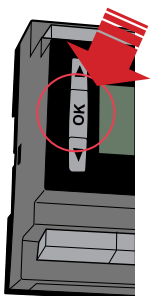
The Ouman Ouflex M BA controller may emit alarms. Alarm details are highlighted on the screen in failure mode, and the beeper sounds.

When there are more than one unacknowledged alarms in the controller, information on the most recent alarm is highlighted on the screen. After all active alarms are acknowledged, 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". Unacknowledged 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 BA 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

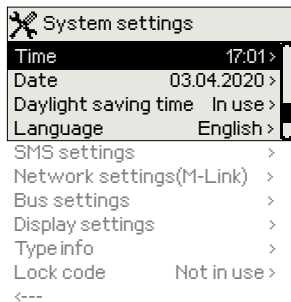


There may be a maintenance code in use in your Ouflex M BA device. In this case, you can see the information even when it's locked, but you can't make changes to settings without entering the maintenance code. Normally, you lock the most critical settings behind the maintenance code, or settings that require expertise.

There is a  symbol in front of a setting that requires maintenance code.

|   |           |
|---|-----------|
| <b>1 System settings</b> .....                        | <b>4</b>  |
| 1.1 Setting date, time and language .....             | 4         |
| 1.2 Text message (SMS) settings .....                 | 5         |
| 1.3 Network settings .....                            | 6         |
| 1.4 Bus settings .....                                | 8         |
| 1.5 Display settings .....                            | 8         |
| 1.6 Type information .....                            | 9         |
| 1.7 Lock code .....                                   | 9         |
| 1.8 Restore settings and updates .....                | 10        |
| <b>2 Alarms</b> .....                                 | <b>11</b> |
| <b>3 Point info</b> .....                             | <b>13</b> |
| 3.1 Wiring info .....                                 | 13        |
| 3.2 Bus points .....                                  | 13        |
| 3.3 Time programs .....                               | 13        |
| <b>4 Settings</b> .....                               | <b>15</b> |
| <b>5 Measuring point control/manual control</b> ..... | <b>16</b> |
| <b>6 Naming</b> .....                                 | <b>16</b> |
| <b>7 Remote use</b> .....                             | <b>17</b> |
| <b>Optional accessories</b> .....                     | <b>18</b> |
| <b>Ouflex M BA structure</b> .....                    | <b>19</b> |
| <b>Technical information</b> .....                    | <b>20</b> |

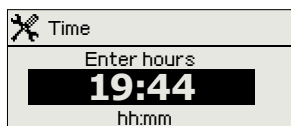
# 1 System settings



System settings include date and time, language, SMS and network settings, bus 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 BA clock takes daylight savings and leap years into account automatically. The clock has a backup for power outages up to three days.

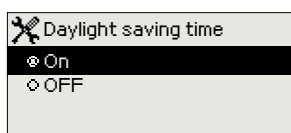
1. Set hours and press OK to accept.
2. Set minutes and press OK to accept.
3. To exit without saving and changes press Esc.

System settings > Date



1. Set day and press OK to accept.
2. Set month and press OK to accept.
3. Set year and press OK to accept.
4. To exit without saving and changes press Esc.

System settings > Daylight saving time



This setting is hidden setting. You can hide/show these settings by pressing OK for a few seconds. The controller will automatically be switched to to daylight saving time and to standard time, if the selection "On" 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 Ouflex M BA is connected to a GSM modem (additional equipment).**

**Take the GSM modem into use:**

1. Enter your SIM card PIN, if your SIM card has a PIN code request enabled.
2. Switch the device off.
3. Connect the modem.
4. Switch the power on. 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 the modem from controller display.

6. Enter Device ID (optional).
7. Test the SMS communication. Send a message to Ouflex M BA: Keywords. If the controller replies with a message containing a list of key words, text message communication is ok. If the controller doesn't reply, switch power off and on again. You can check the validity of the subscription using a mobile phone. Insert the SIM card in a mobile phone, send a text message to another phone and reply. If the messages go through, the subscription is OK. Insert the SIM card back to the GSM modem and test SMS communication again. If controller still does not reply, check that the message center number has not been inserted manually. Press OK button for a few seconds to display hidden menus. Remove message center number: clear the first digit and press OK button for a few seconds. Switch power off and back on. Controller retrieves the message center number automatically (the message center number is not visible on the display).
8. Retest the text message communication.



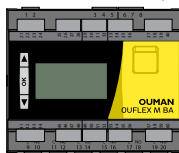
### SMS PIN:

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

### Entering the code:

1. Use arrow buttons and press OK to accept each number. Press ESC to return to the previous digit.
2. Press OK for a number of seconds to accept the code. Press ESC for a number of seconds to cancel.

RJ-45 -connector to the GSM-modem  
Attention! This is RS232 serial port not ethernet



### Signal strength:

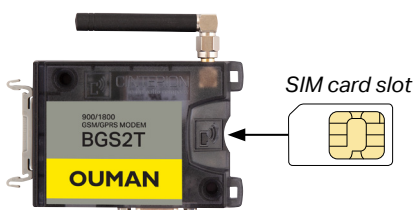
Signal strength is expressed with the following descriptions: "Excellent", "Good", "Moderate", "Low", "Very low" and "Initialization failed". If signal strength is "Very low" or "No network", try changing the modem's location or use an external antenna. If the unit displays "Initialisation failed," check that the SIM card is correctly installed.

### Modem status:

When Ouflex M BA device starts up, it will automatically detect whether the modem is connected or not and then initialises modem.

| Modem status         | Explanation / Instructions                                 |
|----------------------|--|
| <b>Ok</b>            | The modem is ready for use.                                |
| <b>Not connected</b> | The modem is not connected or the connection is incorrect. |

### SIM card status:

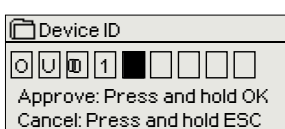


Set the SIM card to SIM-slot that is in the side of the modem, so that circuit of the SIM-card is facing towards the sticker that is on the top of the modem. Press the SIM-card until the slot snaps and card is properly attached to slot. The SIM-card can be removed by using a flat object such as a screwdriver with flat-head.

To be able to use the SMS-connection, the PIN code has to be installed in the controller. Note. The controller is given the same PIN as that of the SIM card. The SIM card's PIN query must be on.

| Mode                | Explanation / Instructions   |
|---------------------|--|
| <b>Unregistered</b> | The subscription agreement is not valid.                               |
| <b>Registered</b>   | The SIM card is ready for use.   |
| <b>PIN error</b>    | Incorrect PIN code. Enter the SIM card PIN code in Ouflex M BA device. |
| <b>PUK</b>          | The SIM card is locked (PUK code).                                     |

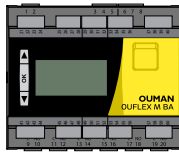
### Device ID:



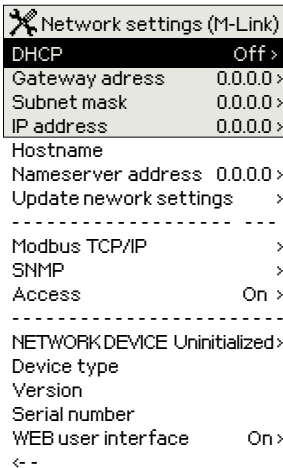
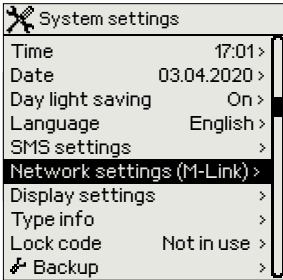
You may give your Ouflex M BA device a device ID. In SMS communication, always type the device ID in front of the keyword (e.g. OU01 MEASUREMENTS). Note the empty digit between device ID and the keyword.

# 1.3 Network settings (M-Link)

RJ-45 -connector to the GSM-modem  
 Attention! This is RS232 serial port not ethernet



If you want to connect the Ouflex M BA unit to an Ethernet network, you will need an M-LINK adapter (additional equipment). M-Link is connected to COM3 port (RJ45) located in the side of the controller. The maximum length of the RJ45 ethernet cable between Ouflex M BA and M-Link is 10m and all 4 pairs must be connected. If you have changed your network settings, select "Update Network Settings".



## System settings > Network settings (M-LINK)

There are two alternative ways to set the Ouflex M BA 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.

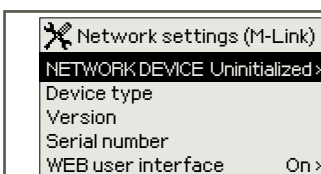
Device has fixed Hostname. Hostname can be used to connect to device from Ouflex tool or Ounet.

### Setting the IP address via DHCP function:

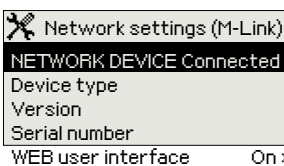
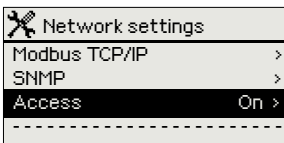
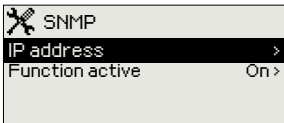
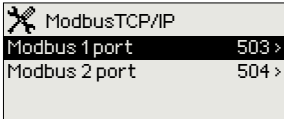
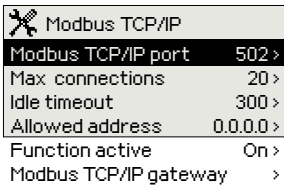
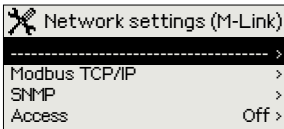
1. Go to DHCP and press OK.
2. Select "On" and press OK to accept selection.
3. Select "Update network settings" and press OK to accept selection.\*
4. Wait approximately one minute.
5. The network settings are now assigned to Ouflex M BA by DHCP server (new settings should appear automatically in the 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 OK.
3. Select "Off" and press OK 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 (M-LINK device) can be purchased from Ouman. It offers a secured connection to automation equipment using an existing internet connection. If an internet connection is not available, it is possible to use some 3G/4G modem, for example, to establish a ready-to-use connection to the subject.



## System settings > Network settings (M-LINK)->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 BA device. Information of Modbus registers of Ouflex M BA device are read and written 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 active:

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 BA 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 (M-LINK)-> 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 (M-LINK)-> Access

### Access

M-Link supports Ouman Access-service which gives you a secure remote connection to the Ouflex M BA-device. With this setting you can activate the ACCESS-service in order to be able to use it.

Ouflex M BA receives Access IP address from M-Link device.

## System settings > Network settings (M-LINK)-> NETWORK DEVICE

From network settings you can see a status of network device (uninitialized/ error/ connected), device type, version and serial number. If all the settings are correct, the status of the device is "Connected".

If Ouflex M BA is connected in the network, but you want to prevent browser connection, for example for data security reasons, select "Off" of WEB user interface.

# 1.4 Bus settings

|                                   |        |
|-----------------------------------|--------|
| ✖ Modbus RTU slave (COM2 (A1/B1)) |        |
| <b>A1; B1</b>                     |        |
| Address                           | 1 >    |
| Baudrate                          | 9600 > |
| Data bits                         | 8 >    |
| Stop bits                         | 1 >    |
| Parity                            | None > |

## System settings -> Bus settings -> Modbus RTU slave (COM2 (A1/B1))

Ouflex M BA unit can be connected to a Modbus RTU as a slave device. The first row shows to which bus Ouflex M BA is connected as a slave device. Set Ouflex M BA 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, stopbits and parity.

|                                     |        |
|-------------------------------------|--------|
| ✖ Modbus RTU master 1 (COM4(A2/B2)) |        |
| <b>A2; B2</b>                       |        |
| Baudrate                            | 9600 > |
| Data bits                           | 8 >    |
| Stop bits                           | 1 >    |
| Parity                              | None > |
| Delay between packages              | >      |

## System settings -> Bus settings -> Modbus RTU master (COM4 (A2/B2))

Ouflex M BA device can be a master device in two Modbus RTU. It is shown in the first line in which the bus Ouflex M BA 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, stopbits and parity. If a device is unstable on the bus, it may be possible to get the bus traffic stable by increasing the delay between the packets.

# 1.5 Display settings

## System settings > Display settings

|                    |                |
|--------------------|----------------|
| ✖ Display settings |                |
| Display version    | xxxxxx         |
| <b>Contrast</b>    | <b>75 &gt;</b> |
| External display   | In use >       |

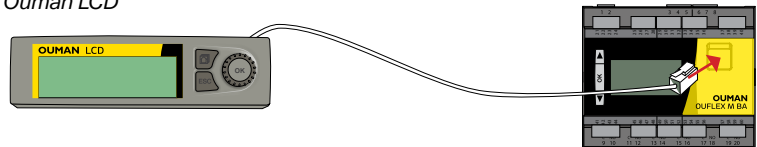
### Contrast:

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 BA's RJ12 connector. Use a Ouman special cable (LCD CABLE M).

Ouman LCD





# 1.6 Type information

## System settings > Type information

|                    |           |
|--------------------|-----------|
| ✂ Type information |           |
| Serial number      | xxxxxxx   |
| Application        | x.x.x     |
| Device version     | x.x.x 2MB |
| Display            | x.x.x 2MB |
| Platform SW        | x.x.x 2MB |

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.

# 1.7 Lock code

## System settings > Lock code

|                   |              |
|-------------------|--------------|
| ✂ System settings |              |
| Network settings  | >            |
| Display settings  | >            |
| Type info         | >            |
| Lock code         | Not in use > |

When lock code is taken in use, it's not possible 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                             |  |
| <input checked="" type="radio"/> In use |  |
| <input type="radio"/> Not in use        |  |

| Lock code function | Description   |
|--------------------|---|
| <b>Not in use</b>  | You can read Ouflex M BA device information and change settings.  |
| <b>In use</b>      | You can read Ouflex M BA 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

|                            |  |
|----------------------------|--|
| ✂ Give lock code           |  |
| 0000                       |  |
| Approve: Press and hold OK |  |
| Cancel: Press and hold ESC |  |

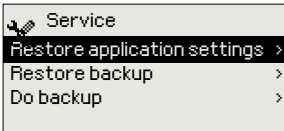
### If you have taken lock code into use, you may change the code.

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

**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, and 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.

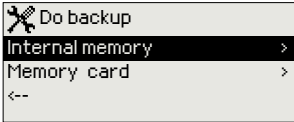
# 1.8 Restore settings and updates

## Restore application settings



Restore Application settings function returns to the device the settings it had when the application was downloaded to the device.

## Do backup

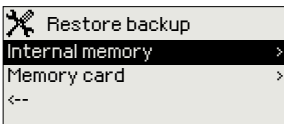


Create a backup, when Ouflex M BA has been configured and the device-specific settings have been set.

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.

Memory card is not included in the delivery.  
Technical requirements to microSD memory card:  
Standard micro SDHC, UHS  
Capacity 512 MB...32 GB  
File system FAT 32  
Class: 4...10+

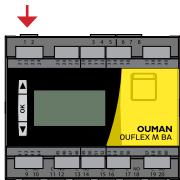
## Restore backup



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

memory card

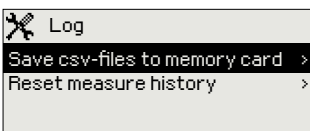


It is recommended to create a backup of the system before software update.

The software update is done with following steps:

1. Insert microSD memory card which includes new software to controller
2. Ouflex M BA asks: "Would you like to restart device?"
3. Select: "Yes"
4. Ouflex M BA reboot to start the update of the new software. The updating of the software takes few minutes.

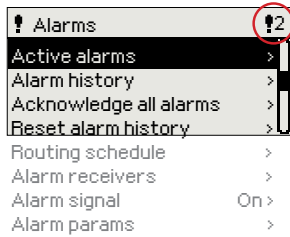
## Log



You can save the csv-files to the memory card. You can also reset the measurement history from the device internal memory.

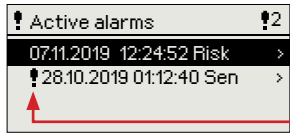
# 2 Alarms

## Active alarms



In the alarm menu of Ouflex M BA 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.

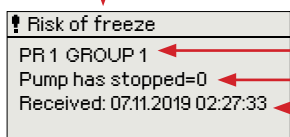
Every active alarm is shown in a separate row, where you can see when the alarm has become active. Press OK to get more information about the alarm.



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.

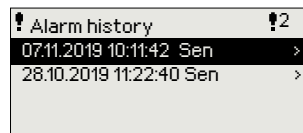
Time the alarm was received

### 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 (07.11.2019 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 BA requests confirmation before deleting alarm history.

## Routing schedule

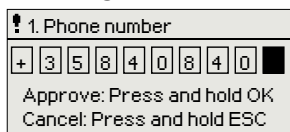
See following page.

## Alarm receivers



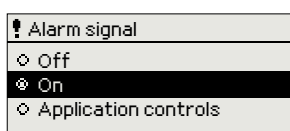
A GSM modem can be connected to the Ouflex M BA for sending an alarm as text message to the alarm team. The alarms are sent to correct team according to alarm routing schedule. When alarm is activated, the controller sends alarm messages automatically to phone numbers defined in team. If the alarm isn't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

### Entering the telephone numbers:



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

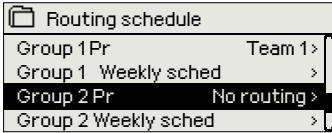
## Alarm signal



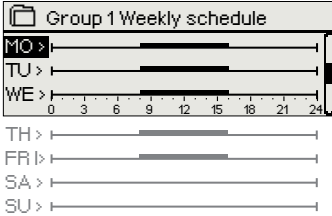
You can take the alarm sound off, if you want.

## Routing schedule

### Alarms > Routing schedule

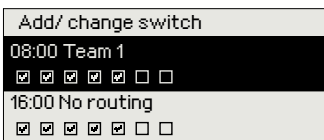
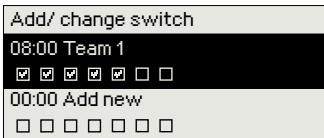
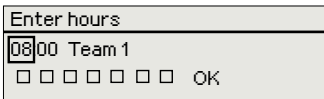
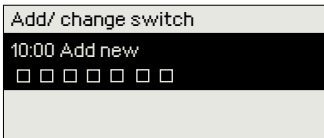


### Graph



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 BA 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.

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

### Editing a weekly schedule:

1. Use ▼ or ▲-knob to navigate to the value you wish to change and press OK.
2. Use arrow buttons to make the time and alarm team changes. Press OK to accept.
3. Press the OK button to change the day of the week.
4. Press Esc to exit.

### Deleting a switch time:

1. Use ▼ or ▲-knob to navigate to the switch time you wish to delete and press OK.
2. Press OK at the alarm team and select "Delete switch time"
3. Press OK 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 BA.

# 3 Point information

|               |   |
|---------------|---|
| i Point info  |   |
| Wiring info   | > |
| Bus points    | > |
| Time programs | > |

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

## 3.1 Wiring info

Point info -> Wiring info

|                     |            |
|---------------------|------------|
| i Wiring info       |            |
| INPUTS:             |            |
| M1: Outdoor temp.   | -10.3 °C > |
| M2: H1 Supply water | 23.5 °C >  |
| M3: H1 Return water | 22.3 °C >  |

Point information shows all the inputs and outputs of the Ouflex M BA 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 beginning of the line. Ouflex M BA 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

|                      |   |
|----------------------|---|
| i Bus points         |   |
| Modbus RTU 1 (RJ45)  | > |
| Modbus RTU 2 (A1,B1) | > |
| Modbus RTU 3 (A2,B2) | > |
| Modbus TCP Master    | > |

|                       |   |
|-----------------------|---|
| i Modbus RTU 1 (RJ45) |   |
| C203_1_4_0            | > |
| Wireless              | > |

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

|                       |       |
|-----------------------|-------|
| i Time programs       |       |
| H1 Heating temp. drop | Off > |
| H2 Heating temp. drop | Off > |
| Light control         | On >  |
| El. group 1 control   | On >  |

In Ouflex M BA, weekly programs can be added to different functions - such as temperature drops, car heating and control of lights. In your Ouflex MBA 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

|                               |       |
|-------------------------------|-------|
| i Heating H1 Temperature drop |       |
| Present value                 | Off > |
| Weekly schedule               | >     |
| Exception schedule            | >     |
| Special days                  | >     |

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.

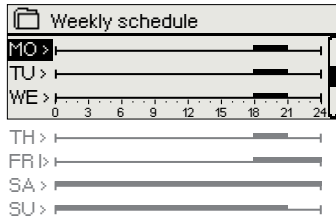
|                               |       |
|-------------------------------|-------|
| i Heating H1 Temperature drop |       |
| Present value                 | Off > |
| Weekly schedule               | >     |
| Exception schedule            | >     |
| Special days                  | >     |

When you press the "Present value" line OK, Ouflex M BA-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.

### Edit

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 OK with the cursor on the line for the corresponding day of the week.

### Add new switch time:

1. Press the OK key on the "00:00 Add new" line.
2. Press the OK key, set the switch time for the desired control mode (hours and minutes are set separately), and confirm the new time by pressing the OK key.
3. Press the OK key to proceed to control mode selection (on / off). Confirm your choice by pressing OK.
4. Select the days of the week for the control command (modes on/off) by pressing OK 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 OK 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 29 January 2021, 11:30 to 5 February 2021, 16:00

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 OK. The "Add new" caption will appear on the screen. Press OK.
2. Press the OK 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."

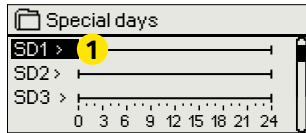
### Deleting a switch time from an exception schedule:

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."

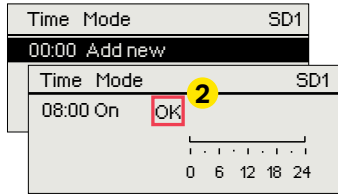
**NOTE!** Remember to also set the end time for the exception schedule! When you set the date and time, the mode will change to "Automatic". In this case, the control returns back to the weekly schedule. If you selected that the start time "Repeats every month or every year", you have to do same selection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

AHU control -> Time programs -> Special days

Graph



Editing view

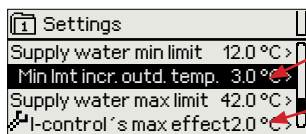
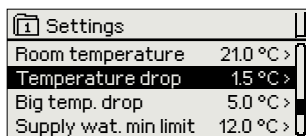


You can enter special day programs as exceptions to normal weekly schedule. You can designate a maximum of 7 special day programs (SD). A special day program is typically created for each holiday. When the special day program will be applied it is set in the exception schedule.


Adding a new switch time:

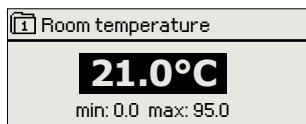
1. Navigate to "Special days" and press OK. Select an unused special day and press OK.
2. Place the cursor on "Add new" and press OK. Set the time for the program (hours and minutes are set separately). Select the mode to be switched to at the time specified. Accept the program by pressing OK when the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

# 4 Settings



In Ouflex M BA, 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 ▲ button. Press OK to go to the view where editing is possible. Change the setting by using the ▼ or ▲ button. Press OK 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 BA 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.

H1 SETTINGS

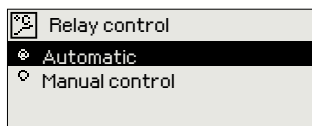
H1 Settings:  
Room temperature = 21.5°C/  
Temp.drop = 3.0°C/

H2 SETTINGS

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.

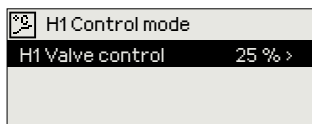
# 5 Measuring point control/manual control



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 BA 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

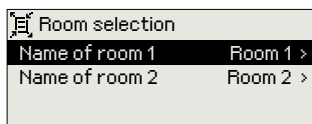
R1 relay control

R1 RELAY CONTROL:  
 \*Automatic / ON /OFF

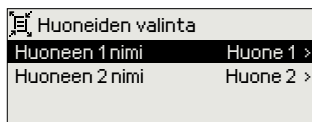
### Send a message: R1 Relay control

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.

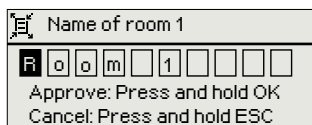
# 6 Naming



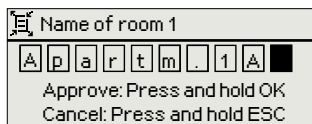
There may be fields that you can rename in your Ouflex device. You often download an application where general names have been given to the controls, and you may want to rename them more accurately.



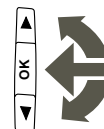
In heating control, for example, the rooms have typically been named "Room 1", "Room 2", etc. You may want to give them more accurate names. In control of electric groups, you may want to rename "Electric group 1" and "Electric group 2" more accurately, depending on what you actually control with the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



Move to the title you wish to rename and press OK. A naming view opens. Use the ▼ or ▲ button 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 OK 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 BA 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 ?).

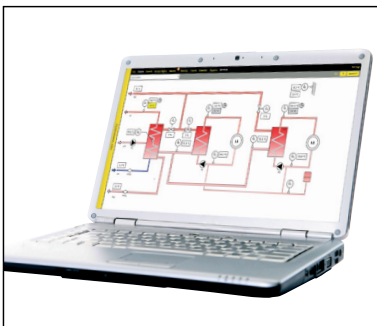
Capital and small letters are different characters in the device ID!

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.             |
| Active 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



If M-LINK device (optional) is connected to the Ouflex M BA, you will get a Modbus TCP / IP interface to the Ouflex M BA.

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

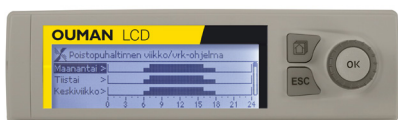
# Optional accessories



## M-LINK

M-Link is an Ouflex M BA adapter that is providing Modbus TCP/IP interface to Ouflex M BA

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



## Additional Control panel, Ouman LCD

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

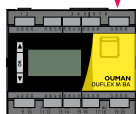


## GSM-modem

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

Ouman's GSM modem is connected to the COM3 port (RJ45) of Ouflex M BA 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 -connector to the GSM-modem  
Attention! This is RS232 serial port not ethernet

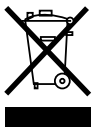


## Inserting the SIM card

Set the SIM card to SIM-slot that is in the side of the modem, so that circuit of the SIM-card is facing towards the sticker that is on the top of the modem. Press the SIM-card until the slot snaps and card is properly attached to slot. The SIM-card can be removed by using a flat object such as a screwdriver with flat-head.

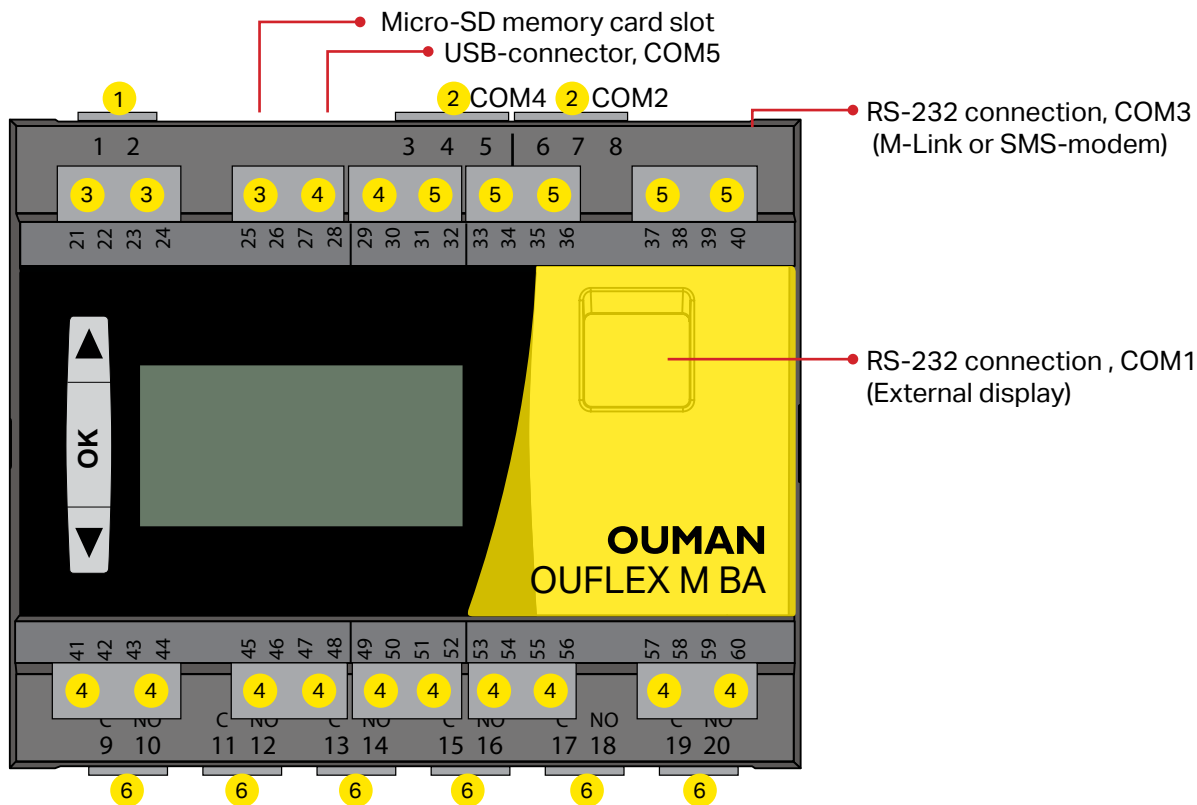
To be able to use the SMS-connection, the PIN code has to be installed in the controller. Note. The controller is given the same PIN as that of the SIM card. The SIM card's PIN query must be on.

## 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 BA structure



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

1 24 Vac operation voltage output  
2  $\perp$  GND

- 2** Detachable strip connectors (RS-485-bus connectors)  
Not optoisolated. Connector labels:

COM4  
3  $\perp$  GND  
4 RS-485-bus connection B2  
5 RS-485-bus connection A2

COM2  
6  $\perp$  GND  
7 RS-485-bus connection B1  
8 RS-485-bus connection A1

- 3** Detachable strip connectors (passive sensors, digital inputs and pulse inputs):

21 M1  
22  $\perp$  GND

23 M2  
24  $\perp$  GND

25 M3  
26  $\perp$  GND

- 4** Detachable strip connectors (passive sensors, digital inputs and active sensors 0-10V or 0/4-20mA).

27 M4  
28  $\perp$  GND

29 M5  
30  $\perp$  GND

41 M6  
42  $\perp$  GND

43 M7  
44  $\perp$  GND

45 M8  
46  $\perp$  GND

47 M9  
48  $\perp$  GND

49 M10  
50  $\perp$  GND

51 M11  
52  $\perp$  GND

53 M12  
54  $\perp$  GND

55 M13  
56  $\perp$  GND

57 M14  
58  $\perp$  GND

59 M15  
60  $\perp$  GND

- 5** Detachable strip connectors (analog outputs and PWM).

Connector labels:

31 0...10 V output (Y4)  
32  $\perp$  GND

33 0...10 V output (Y3)  
34  $\perp$  GND

35 0...10 V output (Y2)  
36  $\perp$  GND

37 0...10 V output (Y1)  
38  $\perp$  GND

39 PWM (act parallel with output Y1)  
40  $\perp$  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

|   |  |
|---|--|
| <b>Dimensions</b>                             | width 105 mm, height 110 mm, depth 70 mm<br>DIN rail-mounted module casing, 6 modules.   |
| <b>Weight</b>                                 | 0.28 kg  |
| <b>Protection class</b>                       | IP 20  |
| <b>Operating temperature</b>                  | 0 °C...+50 °C  |
| <b>Storing temperature</b>                    | -20 °C...+70 °C  |
| <b>Power supply</b>                           |  |
| Operating voltage                             | 24 VAC-33VAC (50-60 Hz) or 20 – 48VDC  |
| Power requirement 24VAC                       | 9VA With the optional accessories (M-LINK/GSM and external display) 12VA   |
| Power requirement 24VDC                       | 4W With the optional accessories (M-LINK/GSM and external display) 6.5W  |
| <b>Measurement inputs:</b>                    | 15 pcs, programmable   |
| passive sensors (Inputs M1...M15)             | Measurement channel accuracy in the measuring range -50 ... 130 ° C:   |
| - NTC10:                                      | Measurement channels 1-3 +0.1 °C<br>Measurement channels 4-15 +0.1 °C between -20 °C...+120 °C,<br>+0.3 °C between -50 °C...-20 and +0.2 °C between +120 ...130 °C                           |
| - NTC-20:                                     | Measurement channels 1-3 +0.1 °C<br>Measurement channels 4-15 +0.1 °C between 0 °C...-120 °C,<br>+0.7 °C between -50 °C...0 °C and +0.2 °C between +120 °C...+130 °C                         |
| -NTC 1.8 and NTC 2.2:                         | +0.2 °C between -50°C...+100 °C, +0.5 °C between +100 °C...+130 °C   |
| -Ni1000LG/DIN:                                | +0,3 °C between -50 °C...+130 °C   |
| -Pt1000:                                      | +0,3 °C between -50 °C...+130 °C   |
|   | Also sensor tolerances and the effect of cables must be considered when calculating total accuracy.  |
| <b>Digital inputs (Inputs M1...M15)</b>       | Contact voltage 5 Vdc, Switching current 0.5 mA<br>Transfer resistance max. 1,9 Ω (closed), min. 11 k Ω (open).  |
| <b>Active sensors (Inputs M4...M15)</b>       | Voltage measurement 0-10 V, meas. accuracy 0,5 %<br>Current measurement 0/4...20mA, meas. accuracy 1,5 % .   |
| <b>Pulse inputs (Inputs M1...M3)</b>          | Minimum pulse length 30ms  |
| <b>Analog outputs (Y1...Y4)</b>               | 4 pcs. Output voltage range 0...10 V. Output current max 7 mA /output.   |
| <b>PWM output:</b>                            | 1 piece that works in parallel with the Y1 output . The open circuit voltage of 15V.<br>Output current is max. 50 mA, when output voltage is 10V   |
| <b>Relay outputs</b>                          | 6 pcs relays normally open contacts, 230V, 5A max,   |
| <b>Data transfer connections</b>              |  |
| <b>RS-485 connections (A1, B1 and A2, B2)</b> | 2 pcs, not optoisolated (Modbus RTU master or 1 RTU slave)<br>COM2 and COM4.   |
| <b>RS-232</b>                                 | 1 , support to the external display (Ouman LCD), COM1/ RJ-12 connector   |
| <b>RS-232</b>                                 | 1 , support to the GSM modem or M-LINK COM3/RJ-45 connector.<br>NOTE! GSM modem and M-LINK can not be used simultaneously.   |
| <b>USB device connector</b>                   | 1, Ouflex BA Tool online connection, COM5  |
| <b>MicroSD memory card</b>                    | Memory card is not included in the delivery.<br><br>Technical requirements to microSD memory card: Standard micro SDHC, UHS,<br>Capacity 512 MB ...32 GB, File system FAT 32, Class: 4...10+ |
| <b>Freely programmable</b>                    | Yes, with Ouman's Ouflex BA Tool   |
| <b>Ouman ACCESS security solution</b>         | yes with M-LINK  |
| <b>Options</b>                                |  |
| <b>M-LINK</b>                                 | M-LINK network adapter provides Modbus TCP / IP interface for Ouflex M BA device   |
| <b>GSM modem</b>                              | By connecting the Ouman GSM modem to the Ouflex M BA, you can communicate with text messages to device and receive alarms to GSM phone.  |
| <b>Additional Control panel</b>               | The Ouman LCD external display is connected to the flap cover over the RJ12 jack.<br>Use Ouman cable LCD CABLE M.  |
| <b>APPROVALS</b>                              |  |
| <b>EMC-directive</b>                          | 2014/30/EU   |
| <b>Interference tolerance</b>                 | EN 61000-6-1   |
| <b>Interference emissions</b>                 | EN 61000-6-3   |

