Efento Transport user manual (ver. 2.0. or newer)
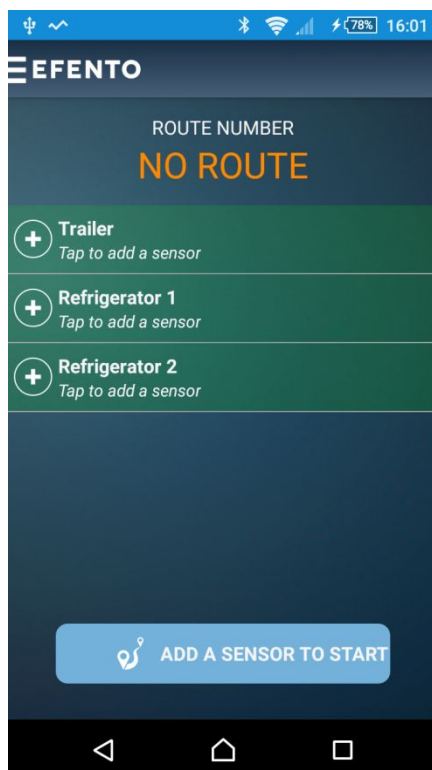
Installation

Download and install *Efento Transport* application from Google Play. The application is free of charge and is compatible with devices running Android 4.4 or newer and equipped with Bluetooth 4.0. **Warning!** To run the application stably it is necessary to choose a mobile device equipped with Qualcomm Snapdragon processor, used in many popular smartphone models (e.g. Samsung, LG, HTC, Motorola, Sony). Devices equipped with MediaTek processors do not work stably with other Bluetooth Low Energy devices. It is caused by incorrect drivers implementation in this kind of processors. We also recommend to use the application on devices with screen diagonal of 4,3" or larger.

Application configuration

Creating an e-mail account

E-mail account is used in the application to send automatic reports and e-mail notifications. You can use any e-mail account (e.g. your company's e-mail). If you do not have an e-mail account, create a free Google account for your device. Google account can be created on **www.gmail.com**. Note down created login and password, as they will be necessary in further configuration.

Note: If you want to use Google account, after creating it go to account setting, then to *Sign-in & security* and enable option *Allow less secure apps.*
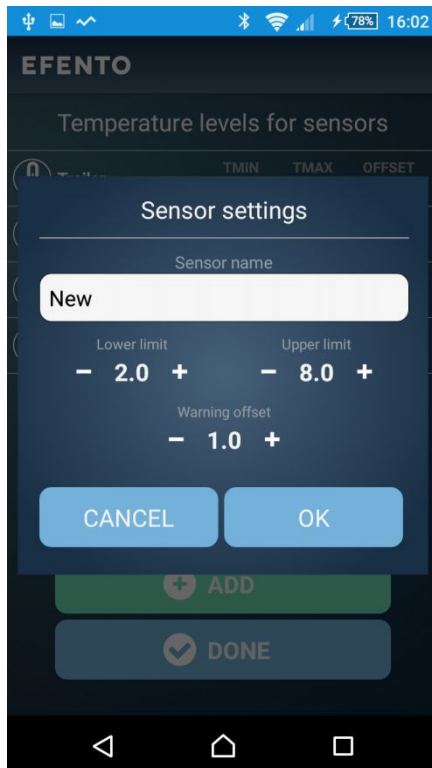

Adding the sensors

After starting the application you will see a screen with three slots named *Trailer, Refrigerator 1* and *Refrigerator 2.* To add sensors to selected slot, tap on the slot and wait a few seconds until the application finds all available sensors. Tap on sensor's serial number you wish to add. Sensor can be added to one slot only, therefore you will not see it again in search results, if it has been already added to a slot.

Slots settings

Application allows you to add any number of slots to the list in the main screen. Additionally it is possible to set different alarm levels (lower threshold and upper threshold) and intervention levels (lower lower threshold and higher upper threshold) for each slot. You can also change slots' names (names are displayed in the main screen and in reports from the route).

In order to edit a slot go to main menu (tap on Efento logo in upper left corner of the screen), and choose *Settings*, then *Sensors*. You will see a list of slots with their names, lower and upper thresholds and alarm offset (difference between alarm and intervention thresholds). To edit the settings of specific slot tap it and change its name, thresholds and offset in the popup window. Save the changes by tapping *OK.* To add new slot tap on *Add* button and edit its settings as you wish. In order to delete a slot press and hold it. Save the changes by tapping *Done* button.

Alarms

The application allows you to define two lower and two upper temperature thresholds. Violating the thresholds results in activating the sound and optical alarm. In order to turn the alarm off, user has to press and hold the red button on the screen. For safety reasons (the application is used during driving) the alarm turns on with low volume which rises in time.

● Alarm thresholds - lower threshold and upper threshold. Violating the alarm thresholds results in highlighting the sensor on the main screen in yellow, until the temperature gets back to the safe range.
● Intervention thresholds - lower lower threshold and higher upper threshold. Violating the intervention thresholds results in highlighting the sensor on the main screen in red and activating sound and optical alarm until the temperature gets back to the safe range.

The application allows you to configure the following parameters of the alarms:

● **Minimal and maximal temperature** - minimal and maximal thresholds which activate alarms if violated (you can configure them in *Settings -> Sensors*, described in section *Slots settings*);

● **Offset** - the difference between alarm and intervention thresholds. For example if you have set the alarm thresholds to 2 and 8 degrees and the offset to 1 degree, then intervention thresholds are 1 and 9 degree (you can configure them in *Settings -> Sensors*, described in section *Slots settings*);

● **Warning screen -** screen which informs the user about violation of alarm / intervention thresholds. In case of violating the thresholds the screen will turn on automatically and the rising sound signal will be enabled. Application allows you to set reminding warning screen - if after alarm occurrence the temperature has not got back to the safe range in selected period of time, then the warning screen will enabled again. To change the period of time after which the warning screen turns on again, go to main menu (tap on Efento logo in the left upper corner) and then go to *Settings -> Notifications -> Warning screen reminder.* From the list choose the time period after which the warning screen should be enabled again (do not remind, 5, 15, 30, 60 minutes);

● **Notifications** - the application allows you to send text message / e-mail notification to any recipient about happenings such as:
- violation of alarm threshold,
- violation of intervention threshold,
- lost of connection with sensor,
- power blackout.
In order to add a notification recipient go to main menu (tap on Efento logo in the left upper corner), and then go to *Settings -> Notifications -> Notifications*. To add a phone number or e-mail, which will receive notifications tap "+" in the upper right corner of the screen, choose the type of notification, type in the phone number or e-mail address of the recipient and save the changes by tapping *OK* button. Added recipient will appear on the list. In order to change the type of notifications, tap recipient's phone number or e-mail address. Choose the notifications you wish to be send to selected user. By default, only notifications about intervention threshold violation are enabled. To delete a recipient press and hold his / her phone number or e-mail address. From the bar in the upper part of the screen choose delete icon.

E-mail account

The configuration of e-mail account allows you to send reports during transportation, send automatic reports after finishing the route and send e-mail notifications (described in section *Alarms*). In order to configure e-mail account, go to the main menu (tap Efento logo in the upper left corner of the screen), and choose *Settings -> E-mail account configuration.* Type in login and password and key in information about the e-mail server from which the reports and notifications are going to be send, and tap *Test login information*. If the data you have entered is valid, you will see a prompt with text "Login correct". Save the changes with *OK* button.

Automatic reports

After configuring an e-mail account, it is possible to configure automatic reports - after finishing the route, the application will automatically generate a report, which will be send to a previously configured recipient. In order to add an automatic report recipient, go to the main menu (tap on Efento logo in the upper left corner of the screen) and then choose *Settings -> Notifications -> Export e-mail address.* Key in an e-mail address, which will receive automatic reports and save the changes with *OK* button. If you wish to add several recipients, separate their addresses with a comma (e. g. abc@abc.com,xyz@xyz.com).

Data storage

Each Efento sensor measures the temperature every 3 minutes and sends the measurements wirelessly to the smartphone with the application installed. Additionally, sensors are equipped with built in memory, which can store up to 28 000 measurements. In case of temporary connection lost, the missing data is automatically resend to the mobile device after the resumption of communication. The data from historical routes is also stored in smartphone's memory and can be viewed / exported at any time. The application allows you to configure following storage settings:

● **Measurements frequency -** Sensors measure and send the measurements to the application every 3 minutes, but in order to make route reports clear it is possible to set different period of saving measurements. By default the saving interval is set to 15 minutes. The application allows you to choose 3, 15, 30 and 60 minutes interval. In case of violation of alarm thresholds, there will be an additional measurement with date and time of violation occurrence and with the temperature value. To change the measurement saving interval go to *Settings* and then to *Data storage -> Measurements frequency.*

● **Chart time frame -** after selecting a sensor from the list, it is possible to view its measurements on a chart. In order to change the time frame of presented data, go to *Settings* and select *Data storage -> Chart time frame.*

● **Storing period -** by default the application stores data from the last 30 days. All historical routes are visible in the application and it is possible to: check temperature measurements including min. and max. values; check the number of alarm and

intervention thresholds violation; export measurements as pdf / csv report. In order to change storing period go to *Settings* and then choose *Data storage -> Storing period*.

Security

Access to some of the application features can be protected with password. As a result, application users will not be able to make unwanted changes in configuration or finish the route, if any of measurements is missing. Efento Transport allows you to set following passwords:

- **Settings password** - required to enter application settings. By default this password is disabled. In order to set it go to *Settings -> Security -> Settings password*. Key in a new password twice and save changes by tapping *OK.*
- **Sensor change password -** required to add or delete a sensor. By default this password is disabled. In order to set it go to *Settings* and then to *Security -> Add/delete sensor password*. Type in a new password twice and save changes by tapping *OK.*
- **Service code -** the application will not allow to finish a route, if there are measurements missing. In case of measurements missing, pressing the *Finish route* button will display a prompt with information about missing data. If for some reason the user will still want to finish route (e.g. a sensor has been lost or damaged) it will be necessary to key in random part of the service code (e.g. 1st, 3rd, 5th and 9th number of the code). By default the service code is set to 123456789. In order to change it go to *Settings -> Security -> Service code.* Key in the old service code (default 123456789) and then twice a new one. Save the changes with *OK* button.
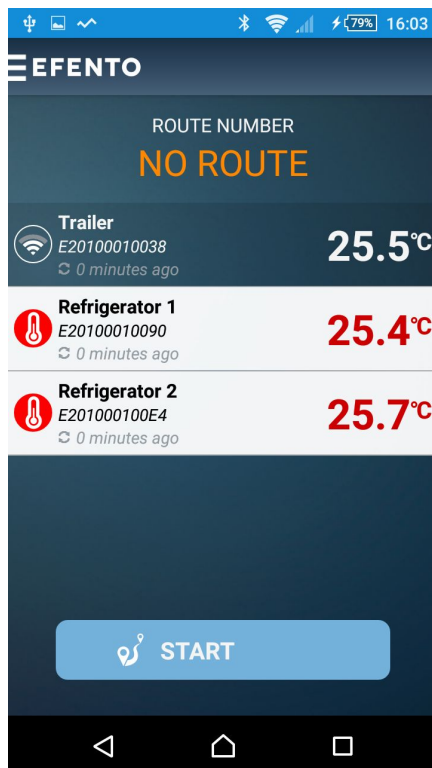
Setting the application as a Launcher

We highly recommend using this feature. The Efento Transport can work as Android Launcher, which means it will be the main screen of Android operating system. When the device switches on, the application will start automatically and it will be impossible to close it or turn it off. To set Efento Transport as the Launcher, after installing it, tap on the Home button in the central bottom part of your screen (huge physical button in the bottom of the device or home symbol on the screen). You will then be asked to choose the main screen. Choose Efento Transport and then tap on *Always.*

Preventing accessing system settings / starting another application

We highly recommend usign this feature. If you want the user to use the smartphone with Efento Transport only to monitor the temperature, go to *Settings* and then to *Security* and enable option *Prevent application exit*. This function requires enabling Android function called *accessibility.* In order to enable it go to smartphone settings, then go to *Accessibility* tab and enable *accessibility* function.
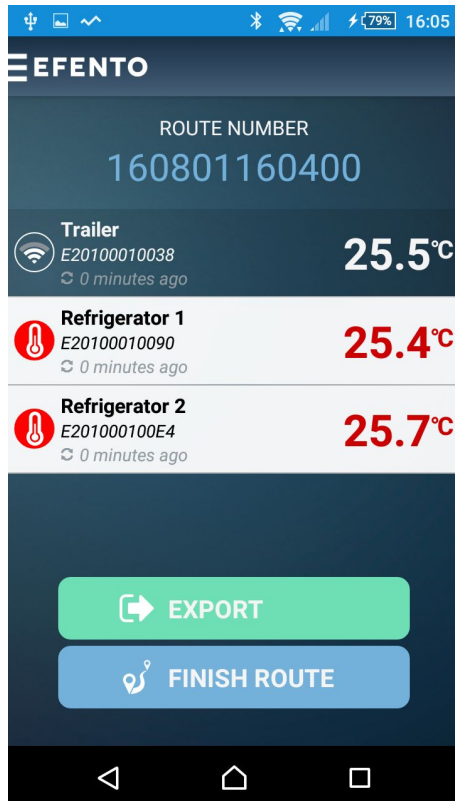
How to use Efento Transport

After starting the application you will see the main screen which displays current measurements from all connected sensors. Depending on the measured value the sensors on the list will have following colours:

● No highlighting, the icon next to sensor's name is white - the temperature is in safe range

● White highlighting, the icon next to sensor's name is orange - the alarm threshold has been violated

● White highlighting, the icon next to sensor's name is red - the intervention threshold has been violated

● No highlighting, the icon next to sensor's name is violet - the smartphone has lost a connection with sensor. After regaining connectivity the temperature will be updated and missing measurements will be downloaded automatically

Starting the measurements

1. In order to start monitoring the temperature tap *Start* button.

2. The application will ask you to enter Car ID and Driver ID / surname. This data will be visible on the report from the route. Type in or scan required data and tap *Next.*

3. Add waybills numbers of the parcels you are transporting by tapping *Add* (manual typing of the number) or *Scan* (scanning the waybills numbers with smartphone camera). If you have finished adding the waybills tap *Next*. Adding waybills is not required by the application. Added waybills will be shown in the report from the route. If you do not want to add any waybills, tap *Next* to go to next window.

4. The application will display summary screen of the route:

       a. route number,

       b. car ID,

       c. driver ID,

       d. the number of added waybills,

       e. current measurements from all added sensors

Check all the information and, if they are correct, tap *Start* to start monitoring the temperature. If you wish to edit previously entered data, tap *Back* button.

ROUTE NUMBER
160801160400

Trailer
E20100010038
0 minutes ago
25.5℃

Refrigerator 1
E20100010090
0 minutes ago
25.4℃

Refrigerator 2
E201000100E4
0 minutes ago
25.7℃

EXPORT

FINISH ROUTE

Active route

ID number of the active route is displayed above the list of the sensors. This means that measurements are being registered and in case of thresholds violation the sound and optical alarm will be activated. To close the alarm window press and hold the red button on the screen (*Click and hold to confirm alarms*)*.* Because of safety reasons (the application is used during driving) the alarm will turn on with low volume and will rise in time. Violation of thresholds will be registered in report from the route. During the route you are able to:

● Export all measurements from all sensors - tap *Export* button, and then key in recipient's e-mail address.

● Display sensor's measurements on a chart by tapping selected sensor on the list.

● Export measurements from selected sensor - tap the selected sensor on the list and then choose *Export*. Key in report recipient's e-mail address and then tap *Send.*

● Browse the route statistics - min. and max. temperature registered by all sensors, date and time of route start, etc. Tap the route number in the upper part of the screen.

Finishing the route

In order to finish monitoring the temperature tap *Finish route*. If all measurements has been registered, the route will be finished (on the main screen you will see *No route*). If there were a sensors that has not sent all measurements, then after tapping *Finish route* you will see a prompt saying that the route cannot be finished. In this case get closer to the sensor in order to download missing measurements (the data will be downloaded automatically) or if downloading the data is impossible (e.g. sensor has been lost or damaged) enter required digits of the service code.

Historical routes

After finishing the route, the measurements gathered during it, are saved in smartphone's memory for at least 30 days. In order to get access to finished routes, go to menu by tapping Efento logo in the upper left corner and choose tab *Routes*. Select the route you are interested in and tap it. You will see its statistics (min. and max. temperature with date and time of its occurrence; the number of alarm and added waybills). You will also be able to

export the data by tapping *Export* and typing in an e-mail address, which shall receive the report.