

Innovative Parts



# USB RS232 ADAPTER (URA) CATALOG

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# USB RS232 ADAPTER (URA)

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## Introduction

The USB RS232 Adapter also called URA, is a handheld computer, that communicates with the controller of a reefercontainer. The URA can make trip data downloads, firmware (software) uploads, change container ID, set time & date, control outputs, perform display tests and more.

The URA uses a regular USB memory stick. Any type can be used. On this USB memory stick, you place the reefer manufacturer's firmware. Also, the downloaded trip data is stored on the same USB memory stick. The downloads are stored in original manufacturer's format and named by container number and the date of the download.

All other operations can be performed without a USB stick. New features or manufacturer changes can easily be added to the URA by updating it with AM-Solution firmware. The URA operates on 2x AA batteries. On the back of the handheld we integrated 4 strong magnets for easy mounting on the container's corner post.

By pressing the up & down buttons at the same time, the screen flips 180°. The URA can now be used upside down, which makes it water resistant.





## Controllers and Capabilities

Manufacturer	Controller Type
Daikin	Decos III a
	Decos III b
	Decos III c
	Decos III d/d-1
	Decos III e/f/g/h/j
	Decos V(a) Zestia
Starcool	CIM 5
	CIM 6
Thermo King	MPC2000
	MPC2000id
	MP3000
	MP3000a
	MP4000
	SG+ 3000/ SG+1.5
Carrier	ML2/2i
	ML3
Denso	DEFT1000

Capabilities	Daikin	Starcool	Thermo King	Carrier	Denso
Retrieve Data	☑	☑	☑	☑	☑
Program Software	☑	☑	☑		☑
Send Time	☑	☑	☑	☑	☑
Set ID	☑	☑	☑	☑	☑
Cold Treatment	☑	☑	☑	☑	
Output / Display Test	☑				
Clear Alarms				☑	
Setup	☑	☑	☑	☑	

## Retrieve Data

This function is used to download trip data from the controller.

- Select “Retrieve data” from the main menu.
- Then select a time period for which the data is to be retrieved.
- Press “Select”.

The URA will start downloading the data and show progress at the bottom of the screen.

When the download is completed the files will be saved on the USB stick. It will be in the folder:

<Manufacturer>\DOWNLOAD

These folders are created by the URA.



## Program Software

This function is used to update the firmware of the controller.

This requires the software from the manufacturer of the controller.

### Preparation

- Download the applicable software (firmware) from the manufacturers website.
- Place these files in the appropriate manufacturer folder on the USB memory stick. (This should be “DAIKIN”, “STARCOOL”, “TK”, “CARRIER” or “DENSO” in the root of the stick.)
- For convenience one level of sub folders is allowed. For instance, within the “DAIKIN” folder a subfolder per container or shipping line type may be created (e.g. “DAIKIN\DECOS III d”).
- Remove the USB memory stick from the PC and put it into the URA.

## How to operate

To power on the URA, press the “on” button for a duration of 2 seconds. Upon activation, the URA will initiate an automatic detection process to identify the connected controller type.

During this phase, if no controller is detected, the menu will present a limited range of options. Notably, the options “retrieve data” and “program software” will only become accessible when a USB stick is connected to the URA.

To navigate the menu, utilize the “up” and “down” keys to scroll through available choices. Press the “right” key to confirm your selection and the “left” key to return to the previous menu.

For instances where the unit is installed in an inverted position, you can modify the screen orientation by pressing and holding both the “up” and “down” keys simultaneously while in the main menu. This action will trigger a screen flip, adapting to the unit’s orientation.

Enjoy the efficient functionality of the URA, now simplified with these user-friendly instructions.

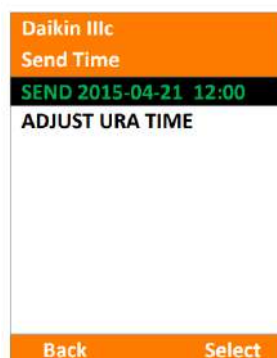


### Programming

- Connect the URA to a running reefer container via the applicable cable. The URA will detect the brand and controller type and connect fully automatic.
- From the main menu select “Program software”.
- A list is shown of available software files on the USB stick.
- Choose the file and press “Select”.
- The URA will start uploading the firmware and show progress at the bottom of the screen.

## Configure controller

These functions are used to change controller settings.



### Set the time of the controller

- Just select “SEND TIME” from the main menu.
- Check that the time shown is correct.
- Select the first option to set the time in the controller.
- If the URA time is incorrect, select “ADJUST URA TIME” to set the time of the URA (see “Setup URA” for details).
- Send the updated time



### Set the container ID

- Select “SET ID” from the main menu. The URA will retrieve the current ID from the controller.
- Use the “left” and “right” keys to select a character and “up” and “down” to change. Long press to repeat.
- The last character is calculated automatically as this is the checksum character.
- Press “right” at the final character to send the ID to the controller.

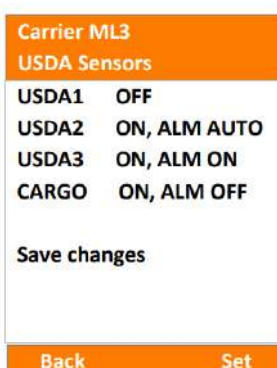
## Cold Treatment

These functions are used to read and calibrate the USDA sensors.



### Calibration

- Select “COLD TREATMENT” from the main menu.
- Select “CALIBRATION”.
- The URA will display the current USDA sensor values and update every second.
- The bottom line will show the current time, a timer and the number of times calibrated.
- Press “CALIBRATE”.
- The URA will instruct the controller to set calibration values.



### USDA sensor management

This function is used to switch individual USDA sensors on or off.

Note: This function is only available for Carrier® controllers.

- Select “COLD TREATMENT” from the main menu.
- Select “USDA SENSORS”.
- Use “up” and “down” to select a sensor and “left” and “right” to change the setting.
- Select “Save changed” and press “right” to update the controller

## Setup URA

The following functions are employed for configuring and setting up the URA:

### Setup Functions



### Date/time

Set the time of the URA. Select “DATE/TIME”. Use “left” and “right”, “up” and “down” to select and change. It is recommended to set the time according to GMT.



### Flip screen

When mounted upside down to the container, the URA is more resistant to water, since all connector openings are at the bottom side. The screen can be flipped to accommodate this.



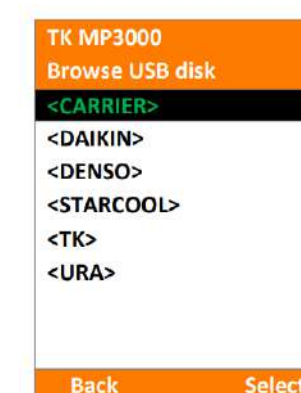
### Version info

Show the current version of the URA firmware and bootloader version.



### Battery

Set the type of battery. Setting the type of battery used, improves the accuracy of the battery charge indicator. Selectable options are NiMH Alkaline. Select NiMH when using rechargeable batteries.



### Browse USB disk

This function can be used to explore the contents of the USB disk.

## Update URA Firmware

For the latest URA firmware updates, it's recommended to visit the AM-Solution website at [www.am-solution.com](http://www.am-solution.com). Firmware updates are periodically released by AM-Solution to enhance performance, introduce new features, or address any issues. Critical updates prompt email notifications to our valued customers.

Here's how to proceed with a firmware update:

- Firmware Download and Preparation:**  
Download the latest firmware file from the website and place it in the "URA" folder on your USB stick.
- Insert USB Stick and Power On:**  
Insert the USB stick into the URA and power it on.
- Access Setup Menu:**  
From the main menu, select "SETUP," and then choose "UPDATE URA FIRMWARE."
- Firmware File Detection:**  
This option will be available only if a firmware file exists in the URA folder. The URA will display the files present in the folder.
- File Selection and Loading:**  
Select the firmware file with the highest version number and press "Select." The URA will load the new firmware from the USB stick and initiate a reboot. Do not power off the URA during this process. Ensure the URA's batteries are adequately charged.
- Verify Update:**  
To confirm the update, navigate to Version Info in the setup menu.
- File Removal (Recommended):**  
After a successful update, it's advisable to remove the firmware file from the USB stick.



## Recovery

If for some reason the firmware gets corrupted or no firmware is installed at all, the URA will start up in recovery mode. The only option presented will be to load a firmware file. Install the file on the USB stick as described above, attach to the URA and load the file. The URA should start up normally after updating. When the URA starts in recovery mode, it will search for a firmware file. If no file is present or the USB stick is not attached, it will show an error indicating what the problem is.



## Extra Features For Particular Controllers



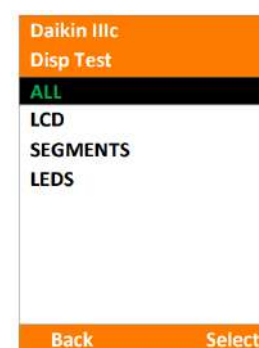
Daikin®

Output test

This function is to be used to switch on and off contactor outputs. Use the "up" and "down" keys to move to your option and press "select".

As long as you press and hold this key, the output will remain ON. When you release the key, the output will go OFF.

There are a total of 16 outputs which you manually can activate to test.



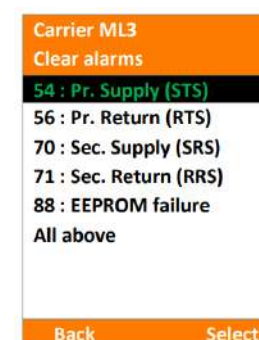
Display test

This function is to be used to test the LCD and LED display.

Use the "up" and "down" keys to move to your option.

Press and hold "Select".

After you have performed all or partial tests, make sure you reboot the controller by switching it off and on.



Carrier®

Clear alarms

This function is used to clear a number of alarms that occur frequently.

Select the alarm type you wish to clear and press "Select".

## URA Self Test

The URA has a self test function. This function is available from firmware version 141201 and up.

The self test function allows for testing the serial interface, the USB interface, the keypad, battery and internal Real Time Clock.

The self test requires a test dongle. This is an optional part with part number AMS3000-005



- To start the self test, insert the test dongle in the serial interface connector of the URA.
- Turn on the URA.

- A set of test functions are shown.

This includes all of the keys on the key pad.

- To test the key pad, press each key once.

- The test function will finish when all tests are done.

- If the URA does not enter the test mode when the dongle is connected, this means that either the serial interface of the URA is defective or the dongle itself. In that case, test the dongle on another (working) URA.



## USB RS232 (URA) Parts List



Handheld USB RS232 Adapter with Bumper

AMS3000-001

Handheld Protection Bumper (Orange)

AMS3000-002



Bag for USB RS232 Adapter and USB Host Adapter

AMS3000-010

This handy bag protects your USB RS232 Adapter (URA) and USB Host Adapters (UHA) There is space for 1 URA, 2 UHAs, and several communication cables that can be attached to your belt or bag.



USB Memory Stick 8Gb with Chain

AMS800-009



USB RS232 Adapter Test Dongle

AMS3000-005

There is a self-test feature on the URA. Firmware versions 141201 and higher support this feature. The serial interface, USB interface, keypad, battery, and internal real-time clock can all be tested using the self-test function. A test dongle is required for the self-test.

## USB RS232 Adapter Kit with Case

AMS3000-004

### Content of the kit:

- 1 x Handheld USB RS232 Adapter AMS3000-001
- 1 x Handheld Protection Bumper AMS3000-002
- 1 x Cable TK Direct DB9 Female AMS700-030
- 1 x Cable Daikin Direct DB9 Male AMS700-031
- 1 x Cable Universal 5-Pole Deutsch AMS700-032
- 1 x USB Memory Stick 8Gb AMS800-009
- 1 x Black Carry Case Medium AMS8200-002



## USB RS232 Adapter Handheld (URA) Optional Cables



URA RS232 Cable Thermo King Direct (DB9 Female)

AMS700-030



URA RS232 Cable Daikin Direct (DB9 Male)

AMS700-031



URA RS232 Cable Universal (5-Pole Deutsch)

AMS700-032



URA RS232 Cable Daikin (3-Pole Deutsch)

AMS700-033

"Explore our online webshop today to discover our range of products and make your purchases with ease."



URA RS232 Cable Carrier ML2i/ML3 Direct

AMS700-034



URA RS232 Cable Daikin JST 3+5 Way Direct

AMS700-035



URA RS232 Cable (5-Pole Cannon)

AMS700-037



URA RS232 Cable StarCool CIM 6 Direct

AMS700-036



URA RS232 Cable Thermo King MP4000 Direct

AMS700-038



URA RS232 RCD Communication Cable

AMS700-041

This option makes the connection between the URA and the Maersk RCD communication modem for updating software

All URA cables come with a Rean connector and are 1.8 meters long. Any kind of cable, including bespoke designs, can be created by us. Simply inform us or send us an email with your requests.

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