

Hydra ^{IP} MR Series

Digital Video Systems MR3060-4 / MR3060-6 / MR3080-8



System Configuration

Version 1.0.0

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Document Version History

Version	Date	Information	Person
1.0.0	2011-01-17	Creation Version 1.0	Peter Schüßler, PM

1 General information

This document describes the configuration of the HydraIP DVR. There is a brief description of the different configuration methods at the beginning, which are used to configure the systems.

This is followed by a detailed description of the procedure, the configuration options and their parameters.



NOTE:

Currently, the configuration of the system is possible with a USB flash drive (offline configuration). The configuration of one or more systems through a direct network connection (online configuration) is expected to be available in April 2011

1.1 Supported systems

These instructions apply for the following HydraIP series systems:

- MR3060-4 Single Unit, Master
- MR3060-6 Single Unit, Master, Slave
- MR3080-8

1.1 Basic configuration methods

While the online method needs an existing TCP/IP network connection (through a direct cable connection, mobile 3G/HSPA/UMTS/GPRS or WiFi) between the configuration PC and the DVR (Digital Video Recorder), only a USB flash drive is needed for the offline method. The following is a brief overview of the configuration methods:

1.1.1 Offline configuration



NOTE:

Currently, the configuration of the system is possible with a USB flash drive (offline configuration). The configuration of one or more systems through a direct network connection (online configuration) is expected to be available in April 2011.

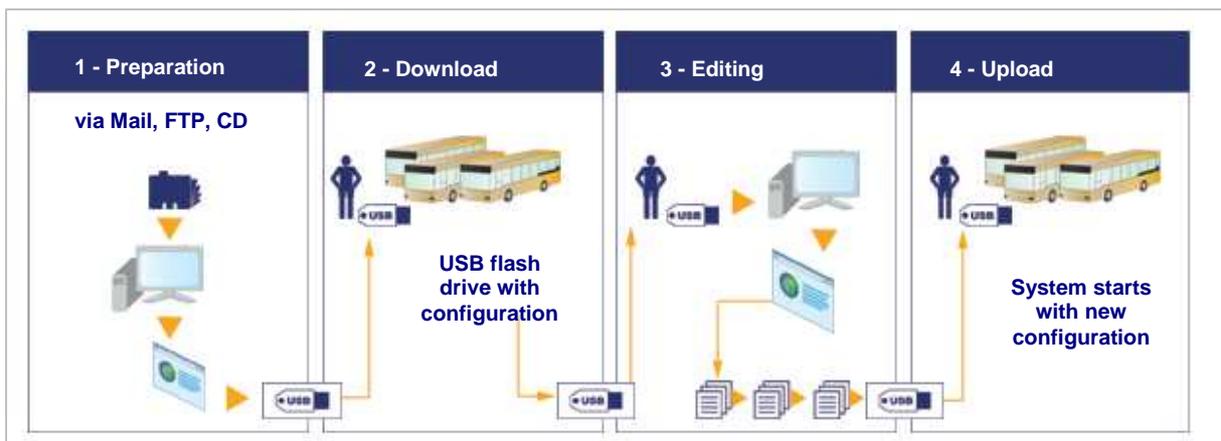
Carrying out the offline configuration procedure:

Step 1: You will receive a package (per CD, Mail or FTP) with default configurations for all system types - it also contains the configuration application. Extract the archive and prepare a USB-configuration flash drive therewith.

Step 2: Download the configuration for one or more systems to the USB flash drive.

Step 3: Editing the configuration on the PC – the application manages 3 sets of configurations for every system (Original, Editing, Release), followed by release and storage of edited/created configuration sets.

Step 4: Importing the configuration to the system.



1.1.2 Online configuration



NOTE:

An online configuration of one or more systems through a direct network is expected to be available in April 2011.

With this method, there has to exist a direct network connection between the configuration PC and the DVR. This can be achieved through a direct cable connection (e.g. during the installation in the vehicle), mobile 3G/HSPA/UMTS/GPRS¹ or WiFi².

¹ System has to be equipped with transmission components (WiFi and/or Mobile)

² System has to be equipped with transmission components (WiFi and/or Mobile)

1.2 Required accessories

The following conditions are necessary, to configure one or more HydraIP systems:

For Offline Configuration:

- HydraIP System(s)
- PC with XP, Vista or Windows 7 and a USB-Port
- Web browser (Mozilla Firefox Ver. 3.0 or higher, Microsoft Internet Explorer Ver. 7.0 or higher)
- a USB flash drive (2 GB or more) prepared as a configuration flash drive

For Online Configuration:

- An existing and stable network connection between the PC and HydraIP system (this can exist through a cable connection or a different connection technology e.g. 3G/UMTS, WiFi or fleet management FMS)
- PC with XP, Vista or Windows 7
- Web browser (Mozilla Firefox Ver. 3.0 or higher, Microsoft Internet Explorer Ver. 7.0 or higher)



NOTE:

Please take into account, that the configuration of the system is only possible, if all the mentioned conditions are met. This includes that the system has the appropriate equipment and is properly configured (e.g. an online configuration of the system over WiFi is only possible, if the necessary infrastructure (WiFi Access points) is working, the necessary network access is given (permissions, firewall) and the software of the systems is properly configured (equipping of the system with WiFi components, activation in the configuration)).

1.3 Internationalization – Language versions of the configuration application

The configuration application is currently available in German and English. The language changes automatically:

Internet Explorer: If the language settings (Regional and Language Options in Control Panel) are set to German, the German version starts. If it is set to English or another language, the English version starts.

Mozilla Firefox: The language of the configuration application depends on the browser version. If you are using a German version of Firefox, the application starts in German. If another version is installed, the application starts in English.

2 System configuration

The configuration's graphical user interface is identical for both online and offline methods, they merely differ in procedure. While there is direct access to the system through the online method, the offline method uses a USB flash drive to transfer data to the configuration PC.

**NOTE:**

The systems configuration files consists of a set of different files, which will be referred to as set or configuration set. A configuration set includes, along with system specific configuration files, other files that are needed for configuration.

Don't ever manually change single files of a set – it is possible that the system will not load the configuration or a fatal system error can occur. In worst case, the system will fail to start and has to be sent to the system integrator or manufacturer for repair. Such system errors are recorded in the system's log files and are identifiable during analysis.

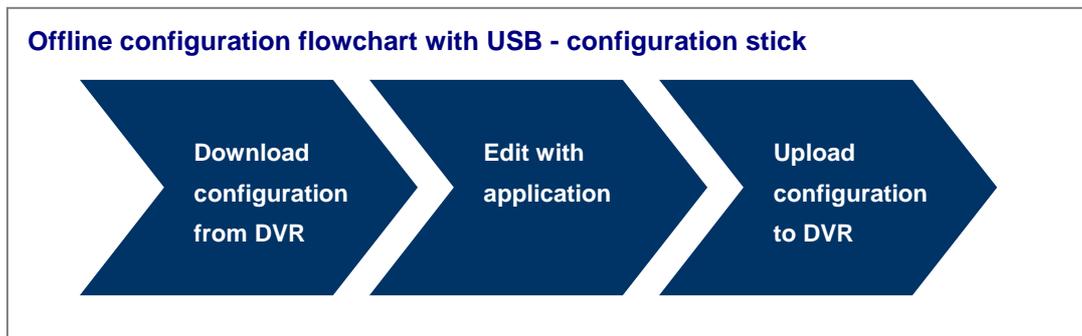
Such cases result in an automatic loss of all guarantee or warranty claims – any repairs of the system will be charged and billed.

2.1 System configuration through offline method

2.1.1 Offline configuration flowchart

**NOTE:**

You will need a USB flash drive prepared as a configuration flash drive. Please make sure that the flash drive has sufficient storage capacity – minimum 2 GB. Use a USB flash drive with LED display – data transfer between the DVR and USB flash drive is visible therewith.

**NOTE:**

Preparation of the USB flash drive is only necessary for the first use. You can use the same drive, for configuration of all video systems in the entire fleet. The configuration tool is a web application and requires an installed web browser such as Microsoft Internet Explorer (Version 7.0 or higher) or Mozilla Firefox (Version 3.0 or higher).

Enable JavaScript in your web browser and confirm access to the file system at the start of the application, as well as the execution of ActiveX components.

2.1.2 Preparing a USB flash drive for configuration:

- Format a commercial USB flash drive (at least 2 GB)
- Download the configuration application (*.zip or self-extracting *.exe) and save it locally on the configuration PC
- Extract the file and copy the folder to the flash drive.
- The USB flash drive has now been prepared as a configuration flash drive.

**NOTE:**

The data package is going to create a folder with all the necessary files during extraction – DO NOT rename this folder! Otherwise the system will NOT recognize the configuration flash drive and it will not be possible to Down/Upload the configuration set.

2.1.3 Down and upload of the configuration set to/from the system

Download the configuration set from the system

After successfully downloading the configuration set, the process can begin on the configuration PC. To download the configuration set from the DVR, do the following:

- Take the configuration flash drive and connect it to the DVR
- Wait until download has finished (LED lights flash green)
- Remove the flash drive from the DVR and connect it to the configuration PC
- Start the configuration application (**configApp.html**). You will find the file in the root folder of the flash drive.

Upload of configuration set to the system

- The edited configuration set will be saved automatically on the flash drive, after RELEASE and prepared for upload to the system. Remove the USB flash drive from the configuration PC and connect it to the system
- The system will automatically recognize the configuration set and start the upload
- Remove the flash drive after the upload process has finished. The system will reboot, load the new configuration set and start with the new settings

**NOTE:**

If the system signals a configuration error after reboot (LED STATE = red, ERROR = orange flash), the new configuration set failed to load. Possible causes could be: An outdated firmware version (firmware and configuration are incompatible) or the configuration set contains incorrect entries.

In this case, try to edit the configuration again, save it and reload it to the system. At the same time, you should do a firmware update with the most current firmware. If the problem persists, contact customer service

2.1.4 Launching the configuration application and editing the configuration set

After you have downloaded the configuration set from the system, you can begin to edit it. Insert the configuration flash drive into the configuration PC and launch the configuration application on the flash drive:

- Remove the flash drive after successful download (see LED codes) from the system
- Connect the flash drive to your PC and open the file **configApp.html** with a web browser (confirm access to the file system, as well as the execution of ActiveX components)
- Choose a configuration and open it for editing



NOTE:

You have to confirm access to the file system through the browser, during the start of the configuration application (configApp.html). It is necessary to enable the execution of ActiveX components, if Internet Explorer is used. Note that the Java Script functions of your web browser have to be enabled.

An overview of all systems will open after the launch of the configuration application. You will find a list of default configurations for all DVR systems, after the creation of a new configuration flash drive. If you are using an existing configuration flash drive, all systems will be listed that have been edited with this flash drive.

Every system functions with an internally stored configuration set. Three different configuration sets are managed by the configuration application:

ORIGINAL	This is the configuration set stored on the DVR. It is automatically saved to the USB flash drive (download) when connected to the system.
EDITING	The configuration set to be edited. This set is provided as an editable version after selection of a DVR configuration (a copy of the ORIGINAL set). This set can be changed at will.
RELEASE	This set is released for upload, upon completion of changes. Only this set is transferred to the device, when connecting the configuration flash drive to the DVR.



Group	Description
1	Tabs for „DVR Overview“and interface for the selected configuration set. All DVRs that have already been configured with the USB-configuration flash drive are listed in the overview (Download or Upload of a configuration set to or from the DVR). After selection of a DVR configuration and the action to be taken (duplicate, edit, release or delete), a view of the selected configuration set opens automatically
2	Button for creation of a fleet configuration Following the selection of a configuration set (as starting basis), a special set named globalConfig is created.
3	Button for duplicating, editing, releasing and deleting single configuration sets and/or an entire entry.
4	Label and serial number of a DVR with an existing configuration set. In the view above are default configurations of different DVRs that can be used as a basis for the creation of new configurations. If there aren't any device names assigned in the configuration of the DVR, the serial number is shown as label.
5	Configuration set ORIGINAL – this stems from the DVR and was saved to the configuration flash drive with download. The green icon signals the presence of the set, the red icon shows that there hasn't been any set of this type generated for this for entry
6	Configuration set EDITING – this must be explicitly generated from an existing set. This is the version to be edited and can be edited at will. After edit is completed, the set RELEASE is generated from this set, which is loaded to the DVR.
7	Configuration set RELEASE – this has to be explicitly created and is the configuration that is saved to the DVR after editing (Upload).
8	Date and time of modification for every configuration set (Original, Editing and Release) is saved in these three columns.
9	These two columns are used for orientation. You can identify which DVR the configuration stems from and on what device it was later transferred to.

2.2 System configuration through online method



NOTE:

Please note that the online configuration function will not be available until April 2011. Until then, all systems will have to be configured with the offline configuration method.

To load, edit or save a system configuration, there has to be a TCP/IP connection established between the configuration PC and the system.

Direct cable connection between the system and PC

- Use a CAT5 patch cable with a RJ45 connector and a M12 connector
- Connect the PC to the system

Connection over Wi-Fi or mobile radio

- There has to be a wireless TCP/IP connection between the System and PC. The system has to be equipped with broadcast functionality (Wi-Fi/3G)
- Should the system not be accessible, there are several possible causes for this:
 - The vehicle and its system are in an area with no coverage
 - Misconfiguration of the system
 - SIM card is blocked
 - Network congestion or other problems with the provider, or within the Wi-Fi range

To connect to the system, use one of the supported web browsers and enter the IP-Address of the system. After establishing a successful connection, the configuration set will load into the browser and can be edited and saved. The system will reboot after saving. A new connection is only possible after a successful reboot.

You can start the system configuration over the graphic user interface of the Fleet Management System (FMS). There is a detailed description in the user manual of the FMS.

2.3 Creating a configuration for multiple systems (fleet configuration)



NOTE:

It is possible to configure multiple systems with the same configuration parameters through the fleet configuration option. Be aware that a uniform configuration can only be applied to systems of the same device type. Should you have different systems installed in your vehicle fleet (e.g. MR3060-6 and MR3080-8), there has to be a separate fleet configuration created for every device type.

To create a configuration that is to be installed on all DVRs of a vehicle fleet, you have to apply a fleet configuration. Default configurations or other DVR configurations are available as a basis. Take the following steps (the depiction of the screenshots follows – these are marked with step-IDs):

Step	Description
1	Choose the configuration that will be loaded to the DVR. This can be any configuration set (Original, Editing, Release) from any DVR, of which its configuration has been saved to the USB flash drive and appears in the overview. Alternatively, a default configuration can be selected. Please take notice, that there has to be a separate fleet configuration for every system type. If you are using, for example, the MR3060-6 and MR3080-8 within a vehicle fleet, each of these systems has to have its own fleet configuration created.
2	Create an editable set by activating the fleet configuration button.
3	The new set can now be opened for editing – activate therefore the edit button and select the set Editing from the menu – the set will then open in editing modus and the parameters can now be changed and saved. (See instructions in chapter 3)
4	After completing the modification process, the set Editing has to be made public, by generating the set Release . For this, you have to click on the release button. The configuration is now prepared for upload to the DVR. The fleet update can be initiated by connecting the configuration stick to all DVRs of the fleet and thus transferring the configuration set per upload unto all devices.

1

Selection of any configuration, followed by creating the set Editing on the configuration (fleet configuration, globalConfig)

			ORIGINAL (from DVR)	EDITING (for release)	RELEASE (to DVR)	ORIGINAL downloaded:	EDITING saved:	released:	uploaded to DVR:	stored by:
<input type="radio"/>	1	mr3060-4								
<input type="radio"/>	2	mr3060-8								
<input checked="" type="radio"/>	3	mr3060-MS	mr3060-MS				2011-01-25 16:15:31	2011-01-25 16:15:44		
<input type="radio"/>	4	mr3080-8								

2

Open and edit parameters. A file set will be generated automatically.

	DVR label	DVR serial number	Configuration set ORIGINAL	Configuration set EDITING	Configuration set RELEASE	RELEASE	ORIGINAL	EDITING	released:	uploaded to DVR:	stored by:
<input type="radio"/>	1	mr3060-4	mr3060-4	✓	✗	✗			2011-01-25 15:07:48	2011-01-25 16:14:47	
<input type="radio"/>	2	mr3060-6	mr3060-6	✓	✗	✗					
<input type="radio"/>	3	mr3060-MS	mr3060-MS	✓	✓	✓			2011-01-25 16:15:31	2011-01-25 16:33:02	
<input type="radio"/>	4	mr3080-8	mr3080-8	✓	✗	✗					
<input checked="" type="radio"/>	5	Fleet_configuration	globalConfig	✗	✓	✗			2011-01-25 16:30:08		

3

The set Editing has now been created. It is ready to be uploaded to the DVR, after completion of editing.

	DVR label	DVR serial number	ORIGIN (from DVR)	EDITING (for release)	RELEASE (to DVR)	ORIGINAL downloaded:	EDITING saved:	released:	uploaded to DVR:	stored by:	
<input type="radio"/>	1	mr3060-4	mr3060-4	✓	✗	✗					
<input type="radio"/>	2	mr3060-6	mr3060-6	✓	✗	✗					
<input type="radio"/>	3	mr3060-MS	mr3060-MS	✓	✓	✓			2011-01-25 16:15:31	2011-01-25 16:33:02	
<input type="radio"/>	4	mr3080-8	mr3080-8	✓	✗	✗					
<input checked="" type="radio"/>	5	Fleet_configuration	globalConfig	✗	✓	✗			2011-01-25 16:30:08		

4

Set Release is generated. Update of the entire fleet can now be started therewith.

	DVR label	DVR serial number	ORIGINAL (from DVR)	EDITING (for release)	RELEASE (to DVR)	ORIGINAL downloaded:	EDITING saved:	released:	uploaded to DVR:	stored by:
<input type="radio"/>	1	mr3060-4	mr3060-4	✓	✗	✗				
<input type="radio"/>	2	mr3060-6	mr3060-6	✓	✗	✗				
<input type="radio"/>	3	mr3060-MS	mr3060-MS	✓	✓	✓			2011-01-25 16:15:31	2011-01-25 16:33:02
<input type="radio"/>	4	mr3080-8	mr3080-8	✓	✗	✗				
<input checked="" type="radio"/>	5	Fleet_configuration	globalConfig	✗	✓	✓			2011-01-25 16:30:08	2011-01-25 16:37:02

3 Setting the configuration parameters

After selecting a system from the overview (offline method), followed by selection of a configuration set with the **[EDIT]** button, the configuration set (every set of a configuration can be selected for edit) is opened. Using the online method, the interface is opened directly after selecting the device. Please notice that only one set at a time can be opened for edit.



The two main tabs from the top row cannot be closed. The configuration of the system is built around a logical sequence (from left to right):

- General parameter settings
- Audio and Video configuration
- Recording mode configuration
- Video output to monitor configuration
- Digital input/output configuration
- System communication interface configuration
- Requirements for the system during events and errors (error management)

The data can be saved at any time with the **Save Configuration** button. Any changes can be deleted, by selecting the **Configuration Reset** button. Thereby the last saved state will be loaded (if any data was saved during the modification of a set, it will be restored to the last saved state). Only after changing a parameter, are both buttons activated.



NOTE:

The application does not do any plausibility tests. To avoid any configuration errors in the system, the parameters should be set with the utmost care. However, the graphic interface supports the parameterization with tool tips and entry checks (not all boxes). Use only supported characters during input: digits (0-9), letters (a-z, A-Z), spaces, dot, dash, etc. Avoid special characters (like ` , \$, etc), umlauts and other characters.

3.1 General

General parameters can be set in this section. Furthermore, relevant information concerning the system will be shown at a later date.

Overview all DVR | DVR configuration - mr3060-4

General | Video/Audio inputs | Recordings | Video output | GPIO settings | Communications | Error management

Save Configuration | Reset Configuration

General device properties

DVR Label:

Configuration created by application version:

DVR follow-up time (minutes):

Parameter	Description
DVR Label	Any label can be chosen for the system - you can enter a logical vehicle number or vehicle registration number. Please consider that the label should be kept as unspecific as possible, during the creation of the fleet configuration, since the configuration will be saved on different DVRs.
Version	This is the version of the configuration application that was used to make this set. The field is not editable.
System follow-up time	Set a follow-up time for the system. This should be enabled, if the system is to record for a certain time after being shut off (after deactivation of the ignition signal).

3.2 Video/Audio input



Note :

Please note that there aren't any separate profiles for alarm and ring recordings (available March 2011).

Configurable cameras at the video inputs. In this illustration, the configuration of a Master/Slave system MR306-6 is opened. In this case, the cameras of the slave, on the right, are configurable. (Only with M/S)

Video input	Label	Active (connected)	Video out	Recording profile
vin/1	Kamera 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
vin/2	Kamera 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
vin/3	Kamera 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
vin/4	Kamera 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
vin/5	Kamera 5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
vin/6	Kamera 6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1

Video input	Label	Active (connected)	Mirror video out	Recording profile
S/vin/1	Kamera 7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
S/vin/2	Kamera 8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
S/vin/3	Kamera 9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
S/vin/4	Kamera 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
S/vin/5	Kamera 11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1
S/vin/6	Kamera 12	<input type="checkbox"/>	<input type="checkbox"/>	VideoProfile 1

Label	Frame rate	Video format	quality	Bitrate	Fix bits
VideoProfile 1	6	2CIF	70	1000000	<input checked="" type="checkbox"/>
profile: profile/10	3	2CIF	70	1000000	<input type="checkbox"/>

Profiles for audio and video recordings. It is possible to set up multiple profiles that can be then assigned to the cameras in the camera definition selection.

Parameter	Definition of cameras und video inputs
Source	The audio and video inputs correspond to physically existing interfaces. There is an individual view for every system – depending on the amount of inputs. This value is not editable.
Label	The labels for the cameras can be set here. You should choose a camera label that can be clearly assigned. The label is shown in the analysis software.* Avoid special characters and umlauts. Should a label be changed, it is updated in the following tabs. .
Active (connected)	This parameter identifies if a camera is physically connected to the video input. Only active cameras are considered for the configuration.
Monitor mirroring	With this parameter you determine if the camera signal is to be mirrored for the monitor display. It should be noted that during recording the camera signals are always recorded unmirrored, even if mirroring is enabled on the monitor.
Standard profile	Here a profile is chosen, with which you select the values (frame rate, quality, etc.) that are used for recording the camera signal and audio signal respectively. If there aren't any recordings to be made from the camera, select "no recording" here. The profiles that have been created in the lower section are shown in the selection list. There is a standard profile for both audio and video available per default.

* Currently the labels aren't displayed in the ImageFinderNX

Parameter	Recording profiles
Label	Define here a label for the profile (e.g. standard profile, high quality, etc.)
Frame rate	Here you can set what frame rate is used to capture with. Attention: The GUI allows entry of meaningless numerical values – always enter a meaningful value between 1 and 25 fps. Recommended setting: 4,6,8 or 12 frames)
Video format	Setting the video format. Choices: quarter frame CIF (288 x 352 Px), half frame 2CIF (720 x 352 Px) as well as full frame 4CIF (720 x 576 Px). Recommended setting: 2CIF
Video quality	Setting the video quality. The system works internally with a default setting of 50% - the system is using default settings, if a 0 or <i>invalid</i> is displayed. Here you can enter the value range: 0 – 100 (in %, the value controls the compression method of the system). It is not allowed to enter any values that are negative or out of range. Recommended setting: 50
Bitrate	Bit rate setting that the system uses to capture with.
Using fixed bitrates	If this field is enabled, the system captures with fixed bitrates. If this field is deactivated, the video system captures continually with the selected quality level (0-100%).

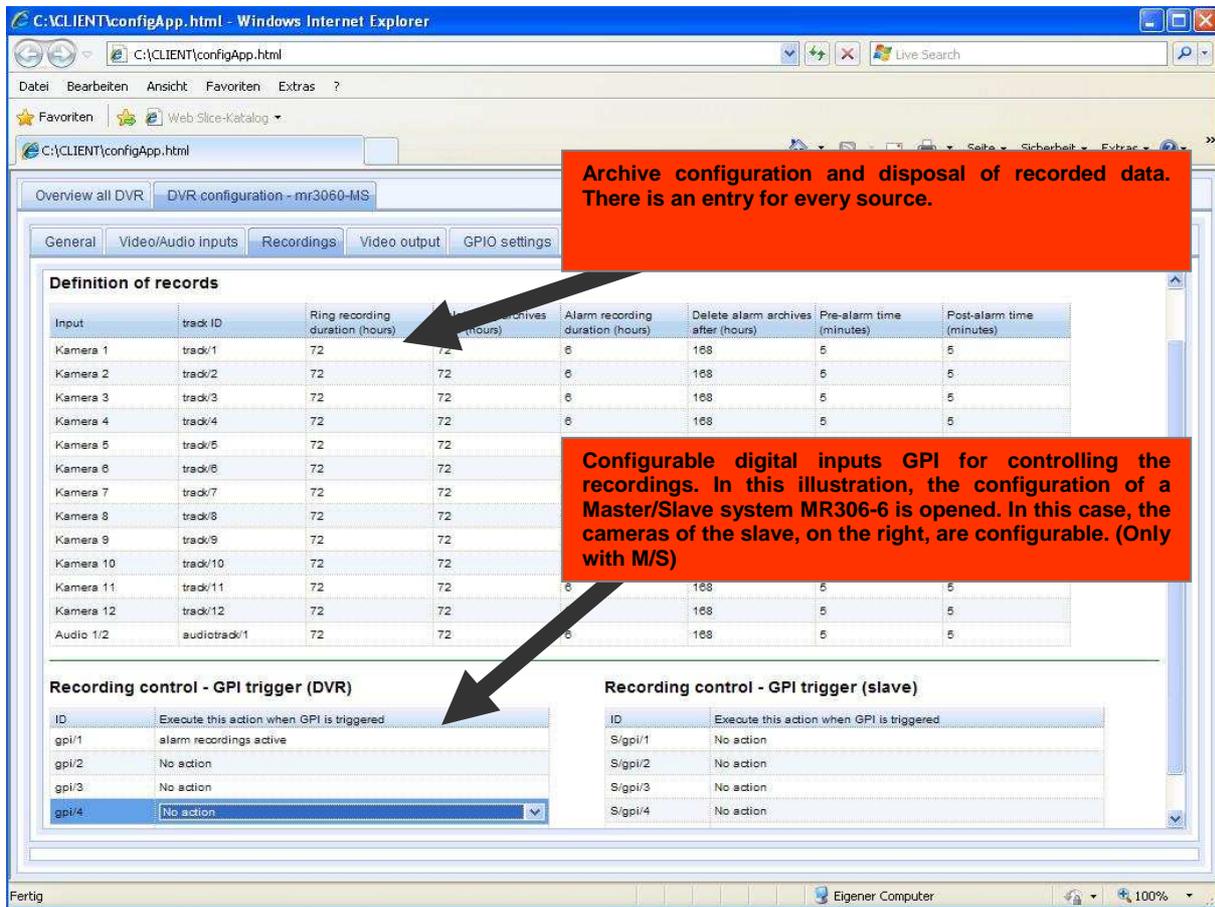
**NOTE:**

The right parameter values should be chosen, so that there is no waste of storage capacity or poor system performance (permanent overload). In principle, the quality selection should allow the identification of individuals.

Recommendation of the manufacturer:

Video format 2CIF, 6 frames per second (fps), 50% quality or Bitrate of 100.000 Bit/s.

3.3 Recording

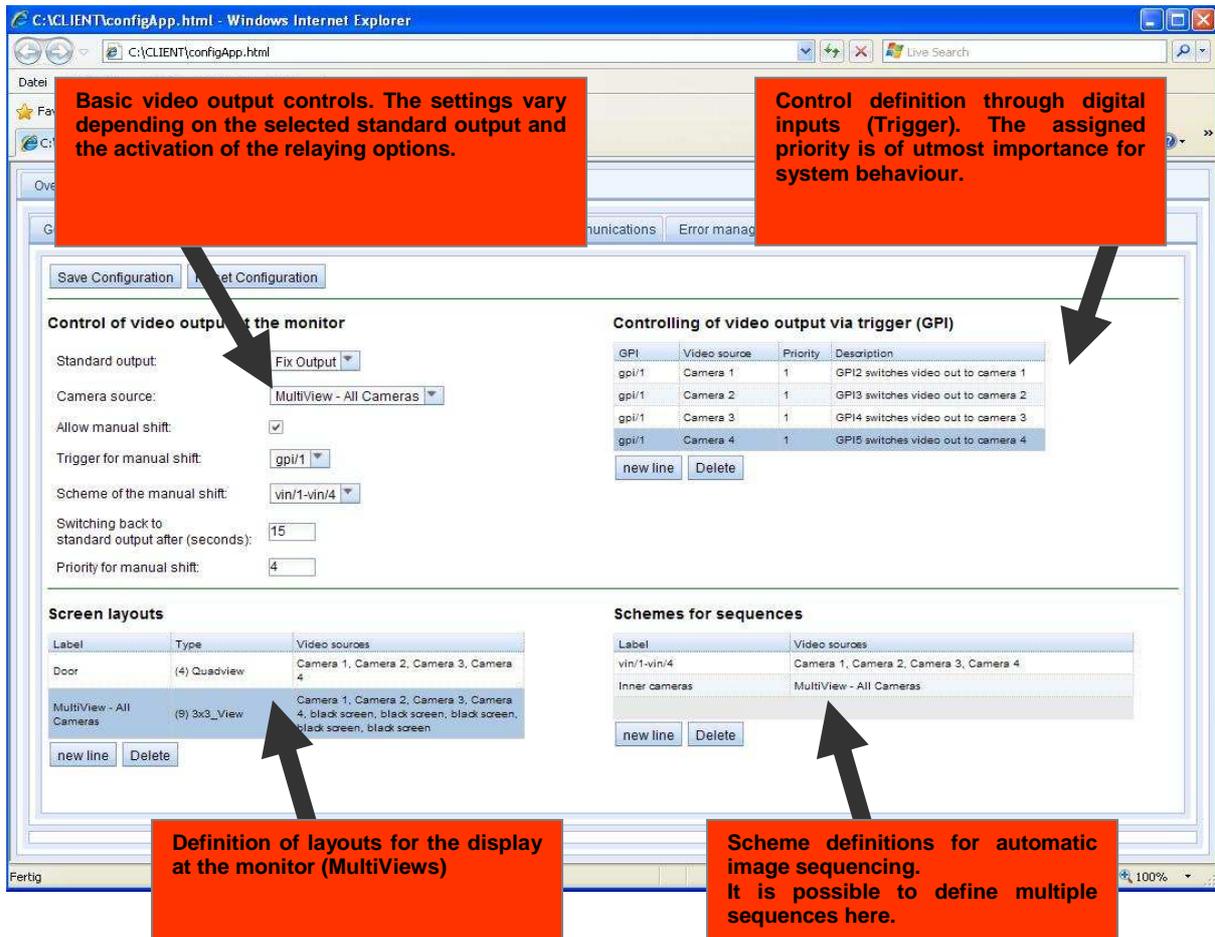


Parameter	Recordings – Definition of records
Camera/Source	The source of data (camera, microphones) that is used to record single tracks (Archive) with. This field is not editable. The labels can be changed through the previous tab
Track ID	The tracks that are used for the system internal recording. This field is not editable.
Video input	The physical interface that the source is connected to. This field is not editable.
Ring recording duration	Setting the duration for the ring recording. The recording duration is given in hours and refers to the actual recording time of the system. 72 hours is the default value. The oldest data is automatically overwritten should the specified value be higher and the capacity of the data storage medium not sufficient. Recommended setting: 72 hours

Parameter	Recordings – Definition of records
Delete ring archives after	The recordings are deleted after lapse of time (real time 24h = 1 day). This setting is especially important for the implementation of information privacy. The data is deleted accordingly, should the value be lower than the previous one. Recommended setting: 72 hours
Alarm recording duration	Setting the duration for alarm recording. The recording duration is given in hours and refers to the actual recording time of the system. Default value is 72 hours. The oldest data is automatically overwritten should the specified value be higher and the capacity of the data storage medium not sufficient - automatic overwrite has to be enabled. Recommended setting: 6 hours
Delete alarm archives after	The recordings are deleted after lapse of time (real time 24h = 1 day). Automatic deletion should always be enabled, otherwise the alarm archives will be filled to 100% and it will not be possible to record any new alarm data. This setting is especially important for the implementation of information privacy. The data is deleted accordingly, should the value be lower than the previous one. Recommended setting: 168 hours
Pre-alarm time	Setting how much data (in minutes) will be recorded in alarm mode, before the alarm is triggered. Recommended setting: 5 min
Post-alarm time	Setting how much data (in minutes) will be recorded in alarm mode, after the alarm is triggered. Recommended setting: 5 min

Parameter	Recording control - GPI trigger
ID	Label for the digital input that is used for the recording control of the system. The labels can be changed in the tab „GPIO settings“. Note: This action is triggered, as long as there is a trigger signal. Should a button be used as trigger, the signal will only be present as long as the button is pressed. Please follow the installation instructions, for connecting the trigger, carefully.
Action	Select the action that should be executed upon activation of the trigger (no action, start/stop of ring and/or alarm mode). The recordings can be centrally started and stopped for all active cameras. Cameras that are not labelled as active are principally not recorded from.

3.4 Video output



Parameter	Video out - Controlling the display on a monitor
Standard output	Selecting the standard output, that is enabled after system start: No VideoOut defined: there should occur no video output Automatic sequence: the DVR should automatically enable a specific switching sequence of cameras and/or MultiView. Frequency, Schemes and Layout can be defined freely in the previous section. Additionally, manual sequencing can be defined. Manual shift: automatic sequencing is disabled, specific cameras or layouts (MultiView) are shown. A GPI has to be chosen for control, which has a trigger connected to it. Fix output: a specific image is to be shown (camera or black screen). Additionally, manual sequencing can be defined.
Schemes for sequencing	Selecting the scheme for sequencing (bottom right). Prior to that, a scheme for sequencing has to be created. Therein you can define camera and MultiView.
Frequency	Once the time expires (in seconds), a switch to the next camera i.e. MultiView occurs.
Manual shift	Once this field is enabled, an automatic switching sequence through a trigger signal can be interrupted, in order to switch to other cameras/MultiViews.

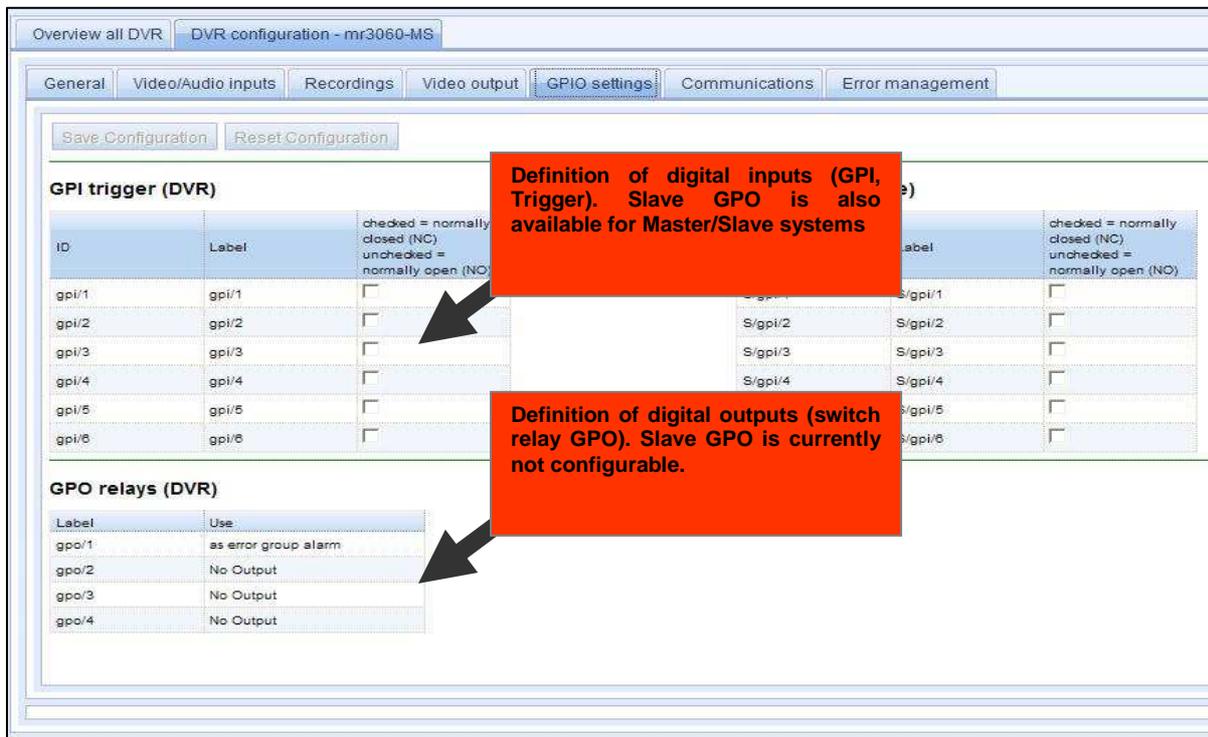
Parameter	Video output – Output control to monitor
Trigger for manual shift	Here you specify the digital input, which will be used for the manual shift. Make sure to set the required priority, otherwise the system will not react as expected.
Scheme of the manual shift	Selecting the scheme for manual shift (bottom right). Prior to that, a scheme for manual shift has to be created. Therein you can define camera and MultiView This can be a different scheme as the one for standard output.
Switching back to standard output	Once this time expires (in seconds), the system switches back from manual shift to standard output.

Parameter	Video output – Control of Video output with through trigger (GPI)
The new rules for controlling the system with over a Trigger/GPI, can be created with the “new line” button. The list is automatically updated.	
GPI	Here you specify the digital input, which will be used for the action. Make sure to set the required priority for this GPI, otherwise the system will not react as expected.
Video source	Selection of the video image that will be shown when the GPI is triggered. Options for selection are all active cameras, black screen or a MultiView that was defined earlier (layout)
Priority	The system operates according to the rules of priority set forth herein. The higher the priority, the higher the system will prioritize this rule (a GPI with Priority of 5 will be prioritized higher than a rule with a GPI and priority of 2). Should the system not react as expected, check here if the priorities are blocking the expected behaviour.
Description	Field for additional information and commentary.

Parameter	Video output – Layouts for preview monitor
The new layouts can be created with the “new line” button. A window opens in which you can choose a basic layout (QuadView, 6-, 8-, and 9-View), assign a label for the layout and the corresponding camera positions. After the window is closed, a new layout appears in the listing	
Label	Label of the layout (MultiViews)
Type	The basic layout used for this specific layout.
Video sources	Selection of cameras and/or MultiViews, that is shown in sequence on the monitor

Parameter	Video output – Schemes for Video sequencing
New sequencing schemes can be created with the „new line“button. A window opens in which you can assign the labels for the schemes and select the corresponding camera signals and/or a MultiView (layout), that are to be shown in the switch sequence. After the window is closed, a new layout appears in the listing	
Label	Label of Schemes
Video sources	Selection of cameras and/or MultiViews, that is shown in sequence on the monitor

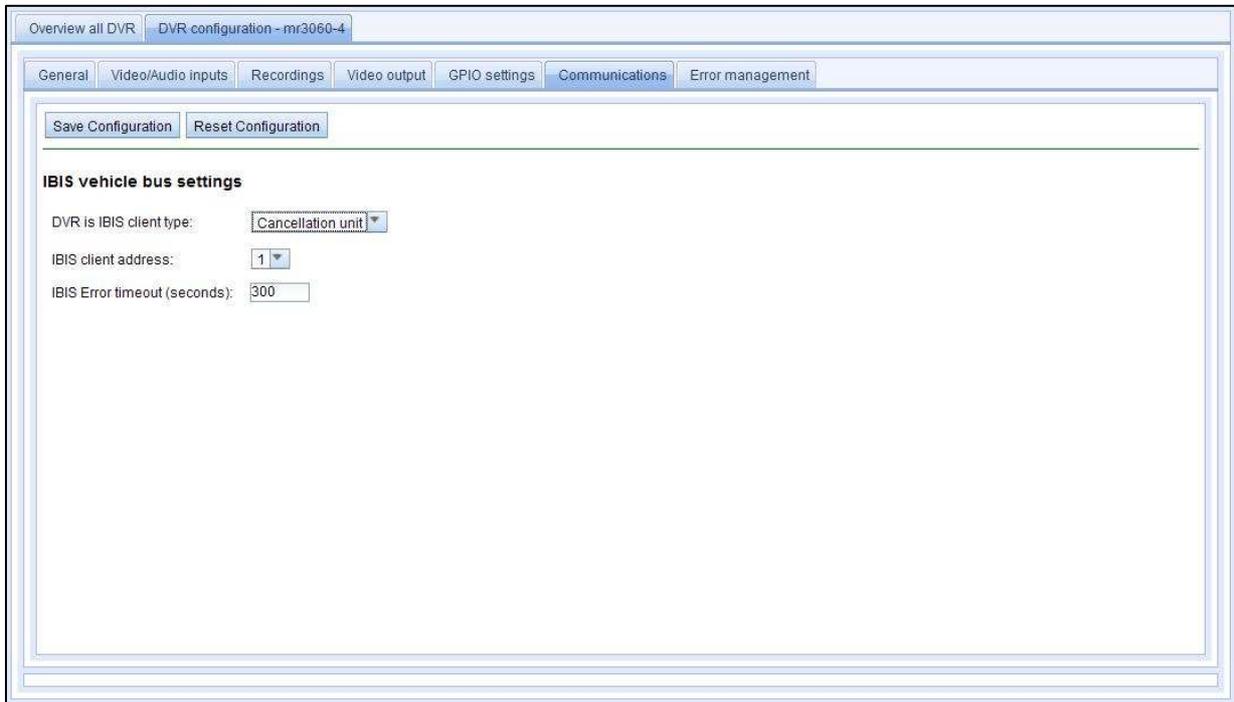
3.5 GPIO Settings



Parameter	GPIO-Settings – GPI Trigger
	The general purpose inputs (GPI) are configurable as opener and closer. You should clarify which trigger signal (low, high, level, impulse) is a switch signal and which trigger (button, switch, opener and closer) is used.
ID	The physical ID of the GPI. This field is not editable.
Label	The label of the GPI can be freely defined. The labels are identical with the ID per default.
NC - NO	Determines if the GPI should be configured as an opener (normally Open NO) or as a closer (normally closed NC).

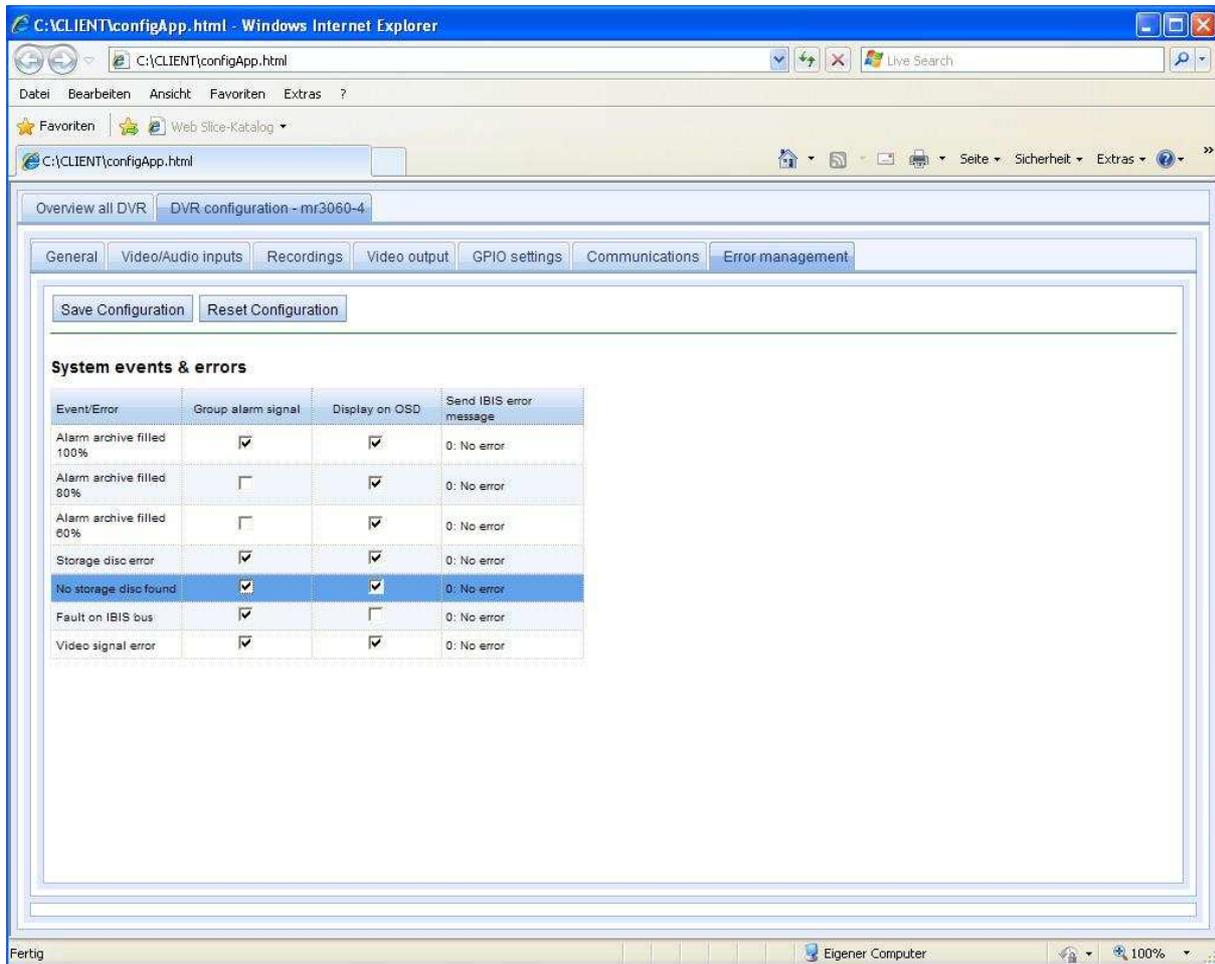
Parameter	GPIO-Settings – GPO Relay
	The general purpose outputs (GPO) are configurable as switch relays for external devices or as group alarm signals for the output of switch signals, in case of an error. The signalled errors and/or events are defined in the "Error management" tab.
Label	The physical ID of the GPI. This field is not editable.
Use	Currently only the output of group alarms signal for system errors and events is supported

3.6 Communications



Parameter	Communication – Configuration IBIS vehicle bus
Currently, only the communication over the IBIS vehicle bus is configurable at this point. At a later time, the configuration for data transfer and GPS-data recording will be provided in this part.	
DVR is a IBIS Client	The system works in accordance with the IBIS Standard VDV300 and can be integrated as a cancellation unit, display unit or announcement unit into the vehicle bus (020, 030, 070).
IBIS Client Address	Specification of the client-address that the system contains within the IBIS-Bus. It should be clarified which IBIS-Addresses are available for use in the vehicles. The possible choices depend on the specified client-type.
IBIS Error Timeout	Time interval (in seconds) in which, after the start of the system, IBIS-Errors are not interpreted and/or reported. Usually the HydraIP systems start a lot faster than the IBIS-Board computer of the vehicle. In this case, the system would document an IBIS error, if the board computer hasn't sent any data yet. The error messages can be disabled in this time period. Recommended setting: 300 Seconds

3.7 Error management



Parameter	Error management
	Output possibilities for system errors and events are the LED-Block (not freely configurable), a digital output (GPO) that can be configured as group alarm signal, the video output with monitor, as well as the IBIS-vehicle bus, providing the system is connected to the IBIS-system of the vehicle.
Event Error	Description of the error i.e. event. Only these are signalled over the error output. This field is not editable.
Group alarm signal	Here you can set if the event or error is issued over the group alarm signal.
Display on OSD	Here you can set if the error/event is shown on the preview monitor per OSD. Errors are blended in as icons and text messages.
Send IBIS error message	Setting for error messages that are sent to the IBIS-control device of the vehicle. The reply messages (120, 130, and 170) are in accordance with the IBIS standard VDV300. The choices depend on the IBIS-Client type, that has been configured for the DVR under "Communications"

4 Possible problems and how to troubleshoot them

4.1 Possible problems with the down and upload of the

Problem	Possible reasons	Troubleshooting
Configuration download from system with USB-Flash drive does not work.	<ul style="list-style-type: none"> ▪ System is off/disconnected ▪ System indicates fatal error ▪ USB-Flash drive has not been prepared as configuration drive ▪ Storage capacity of the USB-flash drive is not sufficient ▪ System does not recognize the USB-Flash drive as a valid configuration drive ▪ The folder with the configuration app was renamed before or during unpacking. 	<ul style="list-style-type: none"> ▪ Turn off the system and retry download ▪ Try to reboot, if the system indicates an error. Contact customer service if the problem is not resolved. ▪ Check if the flash drive was correctly prepared as a configuration flash drive, if not, make the necessary preparations. ▪ Check if there is enough storage capacity; use a drive with more capacity if necessary. ▪ Unpack the data package again and do not change the name of the folder with the configuration files ▪ Check if there are other files on the drive that could be blocking recognition for the system ▪ Prepare a different flash drive as a configuration drive and see if the system accepts it
Configuration application cannot be started with the web browser	<ul style="list-style-type: none"> ▪ Application is not supported by web browser 	<ul style="list-style-type: none"> ▪ Make sure that you are using a supported browser with the proper version.
The system indicates an error (LED STATE = red and ERROR = orange) after upload of the configuration files	<ul style="list-style-type: none"> ▪ General system error ▪ An invalid configuration was uploaded ▪ Firmware and configuration are incompatible. 	<ul style="list-style-type: none"> ▪ Check if the system is connected to a power supply and turned on ▪ Carry out a firmware-update using the most current firmware ▪ Check the configuration, if necessary, edit the set again and try another upload to the system

4.2 Possible problems connecting to the system

Problem	Possible reasons	Troubleshooting
Connection to system cannot be established	<ul style="list-style-type: none"> ▪ The system is turned off ▪ System is currently not accessible (out of mobile radio or WiFi range) ▪ Incorrect configuration of the connection settings ▪ Incorrect configuration settings ▪ Insufficient access privileges within the company network ▪ Access denied through security measures (e.g. firewalls) by the administrator 	<ul style="list-style-type: none"> ▪ Turn off the system and re-establish a connection ▪ The system is possibly inside a tunnel or another location that is not covered by the mobile radio network ▪ The system is possibly out of the WiFi range ▪ Check if the system has been configured correctly – the wireless connection (3G/HSPA/UMTS or WiFi) has possibly not been enabled ▪ Check if required access privileges are given and the firewall has been configured accordingly ▪ Contact customer service if the problem is not resolved
Connection to system is disconnected	<ul style="list-style-type: none"> ▪ The system was turned off (through the driver of the vehicle, service employees, etc.) ▪ The mobile radio network is not consistently covered ▪ WiFi range is not sufficient ▪ Network (mobile/WiFi) doesn't have enough bandwidth 	<ul style="list-style-type: none"> ▪ Make sure the system is turned on (if necessary, locate the vehicle on site and check if the system is turned on) ▪ Check if there is network coverage; test the connection if the system is located elsewhere
The system indicates an error (LED STATE = red and ERROR = orange) after upload of the configuration files	<ul style="list-style-type: none"> ▪ Configuration indicates internal errors ▪ There was an attempt to upload an outdated or invalid configuration set 	<ul style="list-style-type: none"> ▪ Check the configuration set by loading it again and editing it, if necessary ▪ Try to create a new configuration set and load it
	<ul style="list-style-type: none"> ▪ 	

4.3 Possible problems while editing a configuration set

Problem	Possible reasons	Troubleshooting
Configuration download from system with USB-Flash drive does not work.	<ul style="list-style-type: none"> ▪ System is turned off ▪ System indicates fatal error ▪ USB-Flash drive has not been prepared as configuration drive ▪ Storage capacity of the USB-flash drive is not sufficient 	<ul style="list-style-type: none"> ▪ Turn off the system and retry download ▪ Try to reboot, if the system indicates an error. Contact customer service if the problem is not resolved ▪ Check if the flash drive was correctly prepared as a configuration drive, if not, make the necessary preparations. ▪ Check if there is enough storage capacity; use a drive with more capacity if necessary.
Configuration application cannot be started with the web browser	<ul style="list-style-type: none"> ▪ Application is not supported by web browser ▪ JavaScript and/or ActiveX is disabled 	<ul style="list-style-type: none"> ▪ Make sure that you are using a supported browser with the correct version and enable JavaScript and/or execution of ActiveX components
The system indicates an error (LED STATE = red and ERROR = orange) after upload of the configuration files	<ul style="list-style-type: none"> ▪ The system cannot load the configuration – it is corrupted, inconsistent or invalid 	<ul style="list-style-type: none"> ▪ Create a new configuration or load the present one. Change any critical value, if necessary and save. Try upload again. Contact customer service if the problem is not resolved

4.4 Problematic behaviour after changing the configuration

Problem	Possible reasons	Troubleshooting
System does not start (no LED lights)	<ul style="list-style-type: none"> ▪ System is turned off ▪ Missing power supply or another hardware malfunction ▪ The System cannot load a corrupt configuration set 	<ul style="list-style-type: none"> ▪ Try to reboot, if the system indicates an error. Contact customer service if the problem is not resolved. ▪ Check if the configuration was successfully uploaded, without error. If necessary, try to reboot the system and load a different configuration, provided the system starts.
The system does not respond to control signals	<ul style="list-style-type: none"> ▪ Hardware related changes ▪ Misconfiguration 	<ul style="list-style-type: none"> ▪ Check if there have been any changes to the installation and reverse these. Make sure that the switch/control signals reside at the system? ▪ Check if the correct configuration was really loaded to the system (re-download with USB-flash drive and check on PC) ▪ Check if the configuration has the correct settings ▪ The wrong priority was possibly given to a GPI – Check if entries are correct.
System immediately starts the alarm recordings	<ul style="list-style-type: none"> ▪ False trigger used ▪ Misconfiguration of GPI 	<ul style="list-style-type: none"> ▪ Check if the trigger in use is conforming to the settings of the configuration. ▪ If necessary, change the GPI type (normally open/normally closed)

Comments:



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