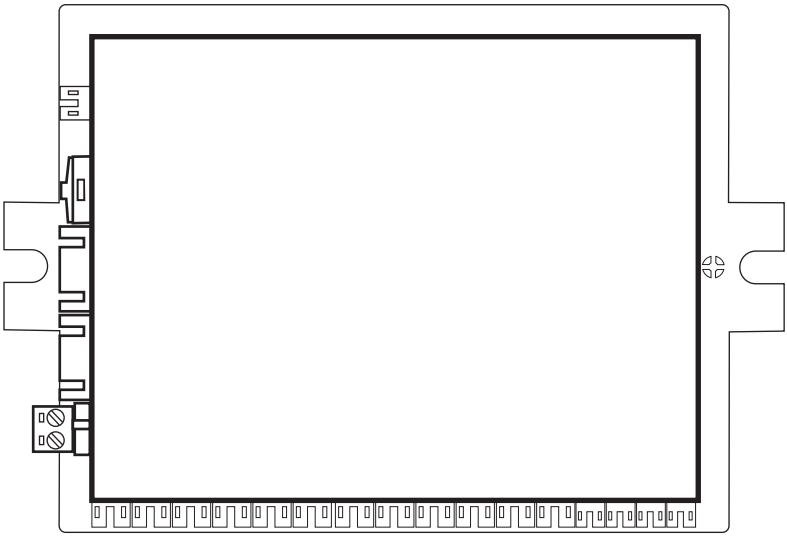
SafeLine

OCTAN manual



OCTAN
www.safeline-group.com

Innovation brought to you from **Tyresö**, Sweden

06.2025
SafeLine OCTAN 1.1.0 EN

General information

This unit was built with state-of-the-art technology and to generally recognised safety related technical standards currently applicable. These installation instructions are to be followed by all people working with the unit, in both installation and maintenance.

It is extremely important that these installation instructions are made available at all times to the relevant technicians, engineers or servicing and maintenance personnel. The basis prerequisite for safe handling and trouble free operation of this system is a sound knowledge of the basic and special safety regulations concerning conveyor technology, and elevators in particular. The unit may only be used for its intended purpose. Note in particular that, no unauthorised changes or additions may be made inside the unit or individual components.

Exclusion of liability
The manufacturer is not liable with respect to the buyer of this product or to third parties for damage, loss, costs or work incurred as a result of accidents, misuse of the product, incorrect installation or illegal changes, repairs or additions. Claims under warranty are likewise excluded in such cases. The technical data is the latest available. The manufacturer accepts no liability arising from printing errors, mistakes or changes.

Declaration of conformity
Download "The declaration of conformity" at our website: www.safeline-group.com

Safety Precautions!
- Only trained professionals, who are authorised to work on the equipment, should install and configure this product.

- This quality product is dedicated for the lift industry. It has been designed and manufactured to be used for its specified purpose only. If it is to be used for any other purpose, SafeLine must be contacted in advance.

- It should not be modified or altered in any way, and should only be installed and configured strictly following the procedures described in this manual.

- All applicable health and safety requirements and equipment standards should be considered and strictly adhered to when installing and configuring this product.

- After installation and configuration this product and the operation of the equipment should be fully tested to ensure correct operation before the equipment is returned to normal use.

Electrical and electronic products may contain materials, parts and units that can be dangerous for the environment and human health. Please inform yourself about the local rules and disposal collection system for electrical and electronic products. The correct disposal of your old product will help to prevent negative consequences for the environment and human health.

Content

General information 2

Overview 6
OCTAN 6
System description 8
Lift controller using Binary/Gray/Dec 8
IPS wiring 8
LED indicators & component list 8

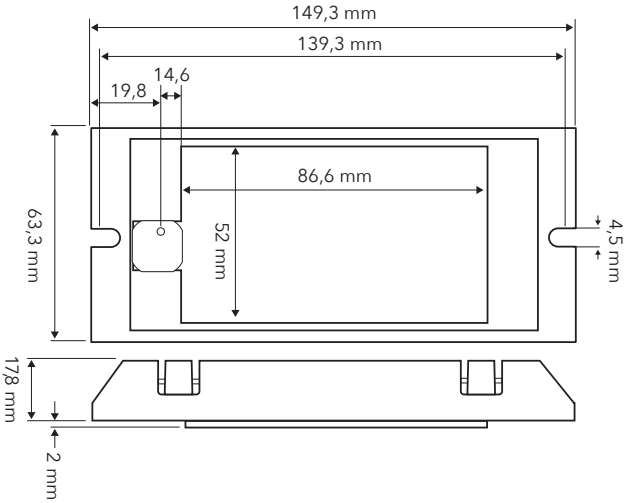
Installation 11
Inputs 11
Wiring diagram Octan 12
Wiring diagram Octan - IPS 14
SafeLine Octan Software 16
Program features description 17
Sound 18
Floor texts 19
Resource files 19

Start-up 20
Configuration 22
Learning mode with IPS 22
Memory card 22
Sound files 23
Checklist before deployment of IPS and Octan 23

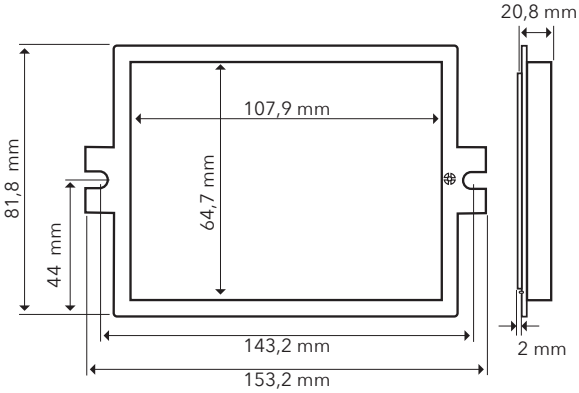
Technical data

Micro-SD:	max 32 GB (FAT/FAT32)
Loudspeaker:	8 ohm, 1-3 W
Display:	OCTAN 4: 4 tum, 800x480 pixels, 24 bit colour depth OCTAN 5: 5 tum, 800x480 pixels, 24 bit colour depth OCTAN 7: 7 inch, 1024x800 pixels, 24 bit colour depth
Bluetooth:	BLE 5
Supply voltage:	20-28 VDC
Supply current:	24VDC typical 30 mA, maximum 120 mA
Inputs and outputs:	OCTAN 4: 4 I/O OCTAN 5: 12 I/O, 3 endast ingång och 1 endast utgång OCTAN 7: 24 I/O
	Input voltage: 20-28 VDC
	Input current: 3.1 mA to 4.2 mA, @24VDC 3.5 mA
	Output current: max 200 mA (PTC protected)

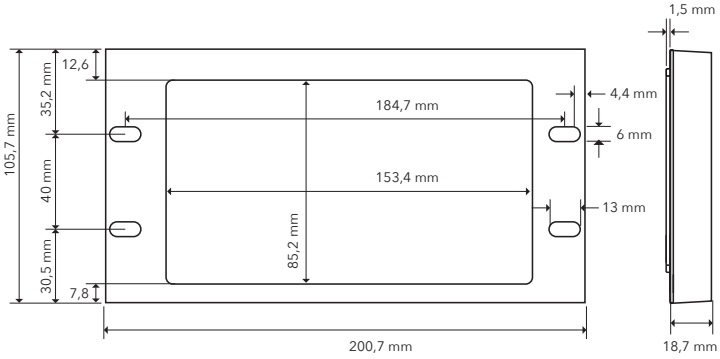
OCTAN 4



OCTAN 5

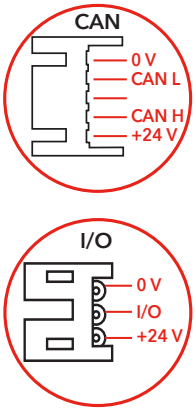


OCTAN 7



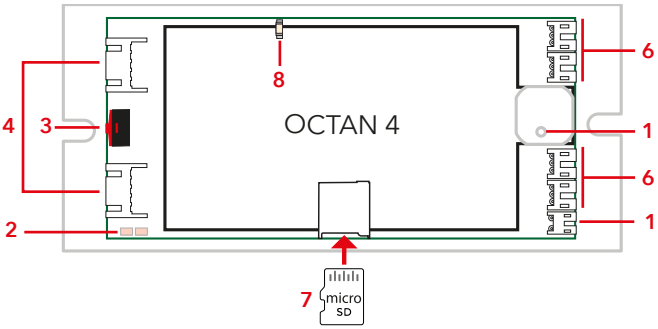
Overview

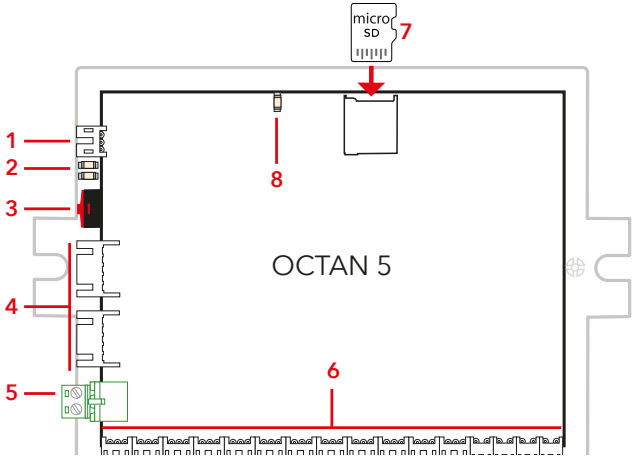
OCTAN
Fig. 1

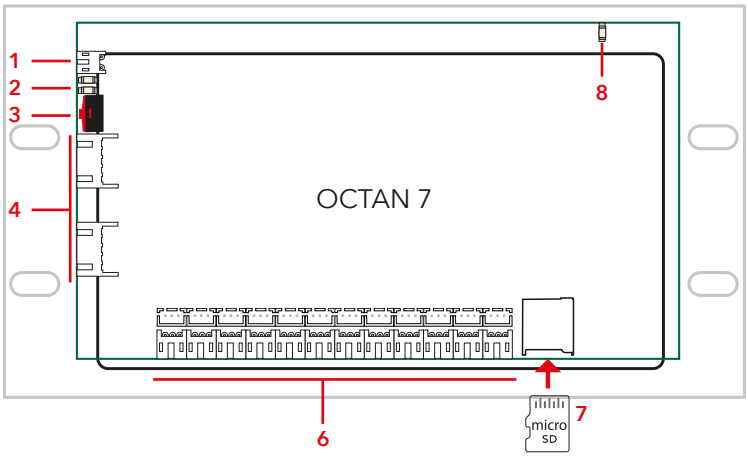


1. **Loudspeaker**
   This connector is used for an optional loudspeaker, used for floor speech, button acknowledgment or other sounds.
2. **CAN LED's:**
   Two LED's indicating the current status of the CAN bus. They also flicker back and forth during the CAN bus auto baud rate detect.
3. **CAN Termination**
   Slide switch used for setting the termination resistor, either on or off.
4. **CAN port / CAN-Bus**
   The connectors are used for CAN bus connection and power supply.
5. **Optional power**
   Only Octan 5: Connector that can be used as a power supply if the CAN connectors cannot supply power to the device. NOTE: the +24V of this connector is not connected directly to the +24V of the CAN connectors (diode protected).
6. **Inputs and outputs**
   The SafeLine Octan range has different quantities of I/O. Octan 4 have 4 I/O, Octan 5 has a total of 16 (12 I/O, 3 input only and 1 output only) and Octan 7 has 24 I/O.
7. **SD-card**
   Stores the optional graphic and sound files. May also be used for upgrading the built-in software.
8. **Breather LED:**
   Early during the boot process, the breather LED is lit, and it remains fully lit until the SafeLine Octan application takes over and the LED begins to "breathe".

Fig 1


OCTAN 4
8
6
4
3
1
6
2
1
7
micro SD


micro SD
7
OCTAN 5
1
2
3
8
4
5
6


OCTAN 7
1
2
3
8
4
6
7
micro SD

System description Fig. 2

Each unit must be programmed with a unique unit ID (unit address) and a working mode. Also assure that only one unit control the floor position.

OCTAN is a system consisting of floor and car displays. The system is wired together via CAN bus.

The floor position information can be set directly at the unit's input or from external source. External source can be a hardwired absolute encoder or a hardwired position unit.

The OCTAN unit system may contain:

- Floor unit (up to 63 floors)
- Car unit (up to 2 units)
- System unit (none or 1 unit)
- External position unit (none or 1 unit)

It is also possible to use only one display without any connection to the CAN bus (standalone).

Lift controller using Binary/ Gray/Dec Fig. 3

Use the SafeLine LYNX application to configure.

After connecting (Fig. 3) the device, it can be configured:

1. Connect to Octan and enter configuration
2. Set Root > System > Unit > Main operation mode > SafeLine proprietary CAN
3. Set SPC unit > CAR1
4. Set main mode > Binary/Gray/Dec
5. Set root > Floors
6. Exit configuration of the Octan device.

IPS wiring Fig. 4

IPS, independent positioning system

Use SafeLine LYNX application to configure (note: NOT applicable to Octan 7).

1. Connect to Octan and enter configuration.
2. Set Root > System > Unit > Main operation mode > SafeLine proprietary CAN.
3. Set SPC unit > CAR1.
4. Set main mode > External position CAN.
5. Set root > Floors.
6. Exit the Octan display.
7. Connect to IPS, enter learning trip.

LED indicators & component list

All connections have to be in place before powering up the installation. Changes in the wiring with a powered installation is not allowed.

LED	
Green CAN BUS detect	Flashing when valid CAN message detected.
Red CAN BUS error	Lit or flashing when BUS error detected (auto recovery).
Yellow SD LED	Constantly lit (for 2 minutes) when SD card is inserted and working. After 2 minuter the LED-indicator turns off.
Green power	Constantly lit when powered up.

Fig 2

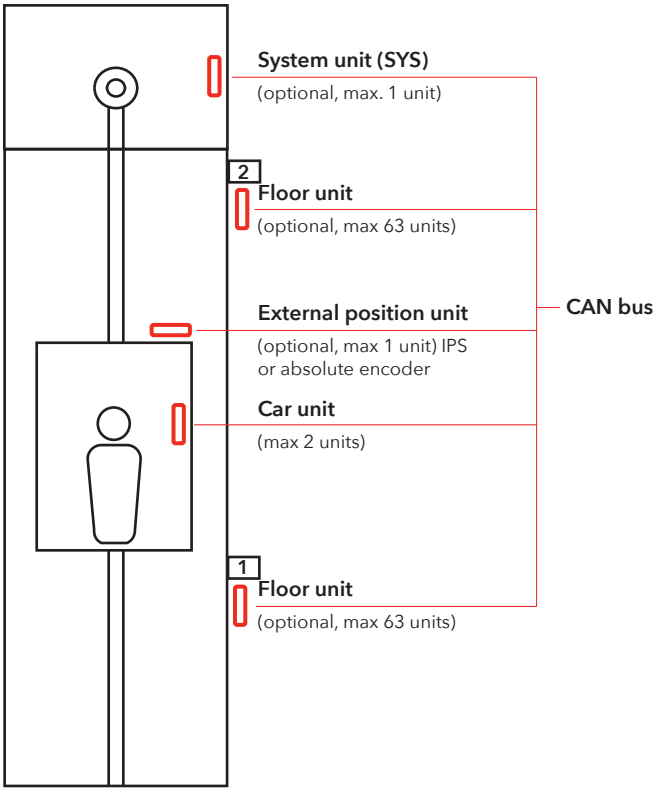

System unit (SYS)
(optional, max. 1 unit)
2
Floor unit
(optional, max 63 units)
External position unit
(optional, max 1 unit) IPS
or absolute encoder
Car unit
(max 2 units)
CAN bus
1
Floor unit
(optional, max 63 units)

Fig 3

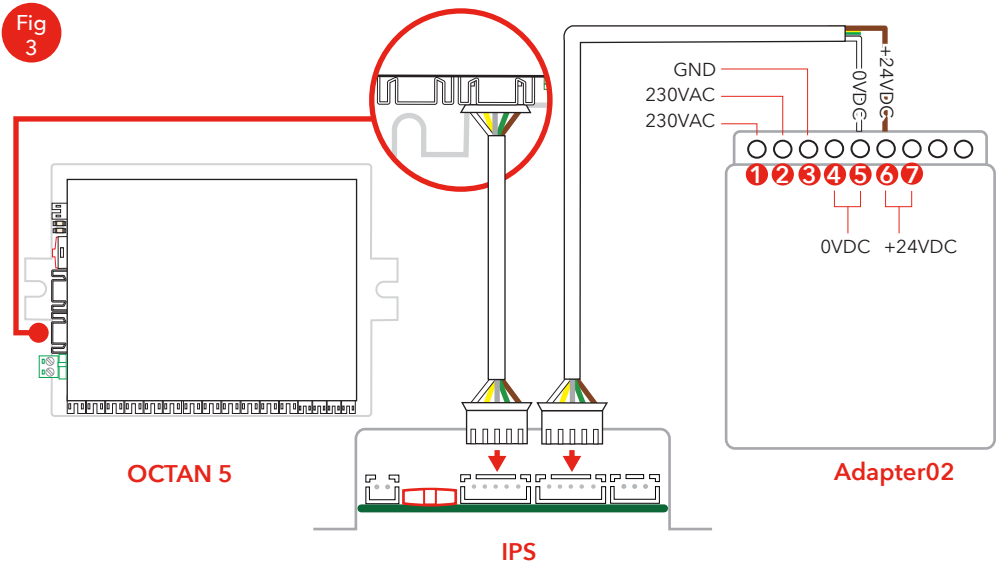
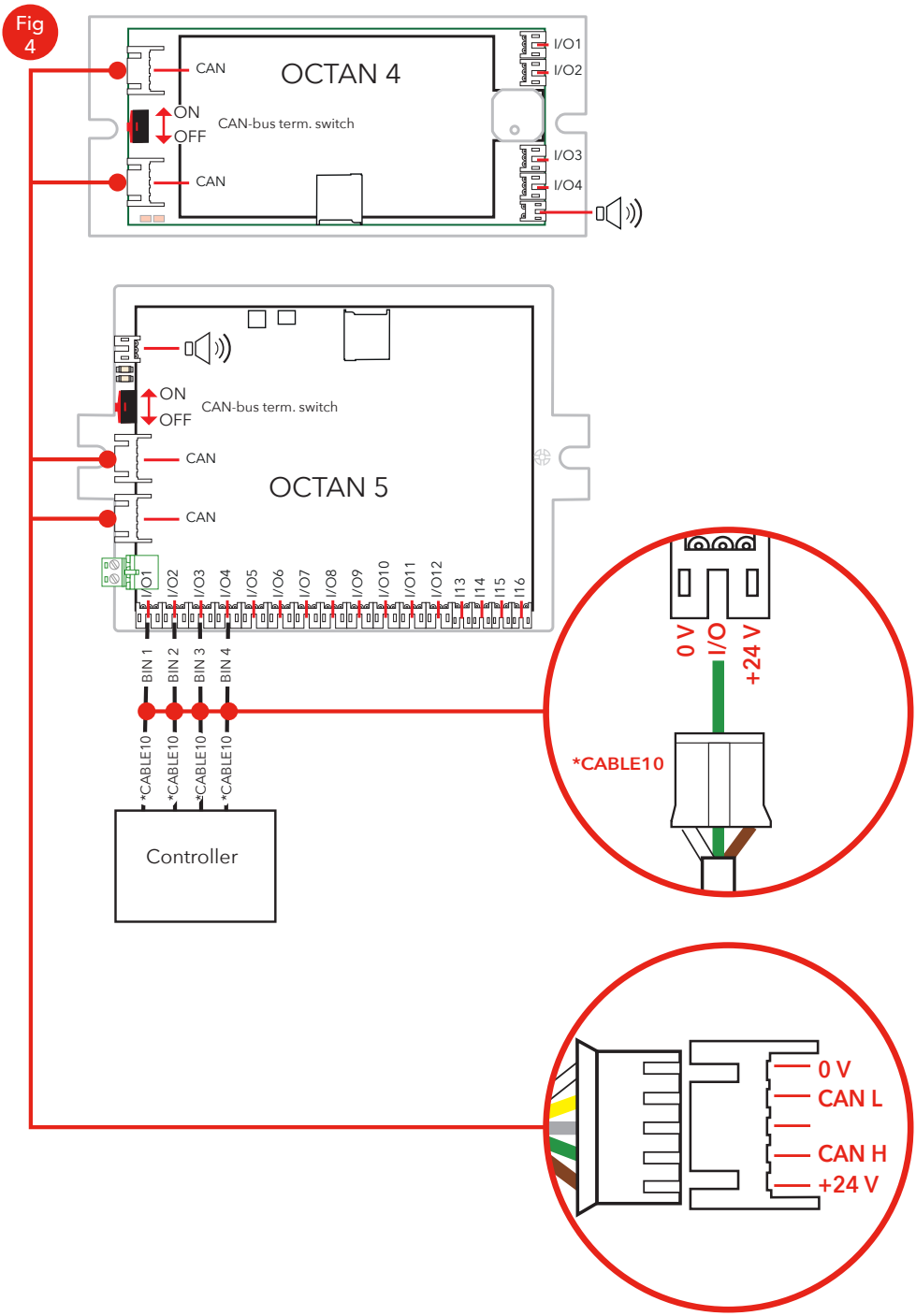

GND
230VAC
230VAC
+24VDC
0VDC
1 2 3 4 5 6 7
0VDC +24VDC
OCTAN 5
Adapter02
IPS

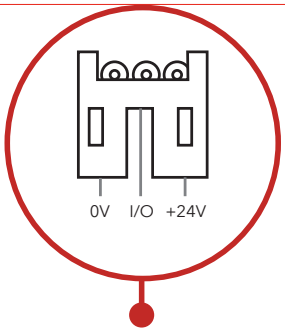
Fig 4


OCTAN 4
CAN
CAN
ON
OFF
CAN-bus term. switch
I/O1
I/O2
I/O3
I/O4
OCTAN 5
ON
OFF
CAN-bus term. switch
CAN
CAN
I/O1
I/O2
I/O3
I/O4
I/O5
I/O6
I/O7
I/O8
I/O9
I/O10
I/O11
I/O12
I13
I14
I15
I16
BIN 1
BIN 2
BIN 3
BIN 4
*CABLE10
*CABLE10
*CABLE10
*CABLE10
Controller
0 V
I/O
+24 V
*CABLE10
0 V
CAN L
CAN H
+24 V

Installation

Inputs

OCTAN can handle different signals from a controller, these can be sourced from +24 VDC or 0 VDC.



Binary signals

Binary code is a standardized way to control outputs that are used for floor displays.

Default binary inputs (for 15 floors)

OCTAN 5

Input 1	Binary 1
Input 2	Binary 2
Input 3	Binary 4
Input 4	Binary 8
Input 5-12	Programmable

Gray code signals

Gray code is an uncommon way to control floor displays. You only change one input at a time, which minimizes the risk of error. It is often used on older controllers.

Default gray code inputs (for 15 floors)

Input 1	Graykod 1
Input 2	Graykod 2
Input 3	Graykod 3
Input 4	Graykod 4
Input 5-12	Programmable

Decimal signals (one-floor-per-pin)

The old way to control floor displays are called decimal or one-floor-per-pin.

Default decimal inputs (floor 1-8)

Input 1	Floor 1	**Input 5**	Floor 5	**Input 9**	Floor 9
Input 2	Floor 2	**Input 6**	Floor 6	**Input 10**	Floor 10
Input 3	Floor 3	**Input 7**	Floor 7	**Input 11**	Floor 11
Input 4	Floor 4	**Input 8**	Floor 8	**Input 12**	Floor 12

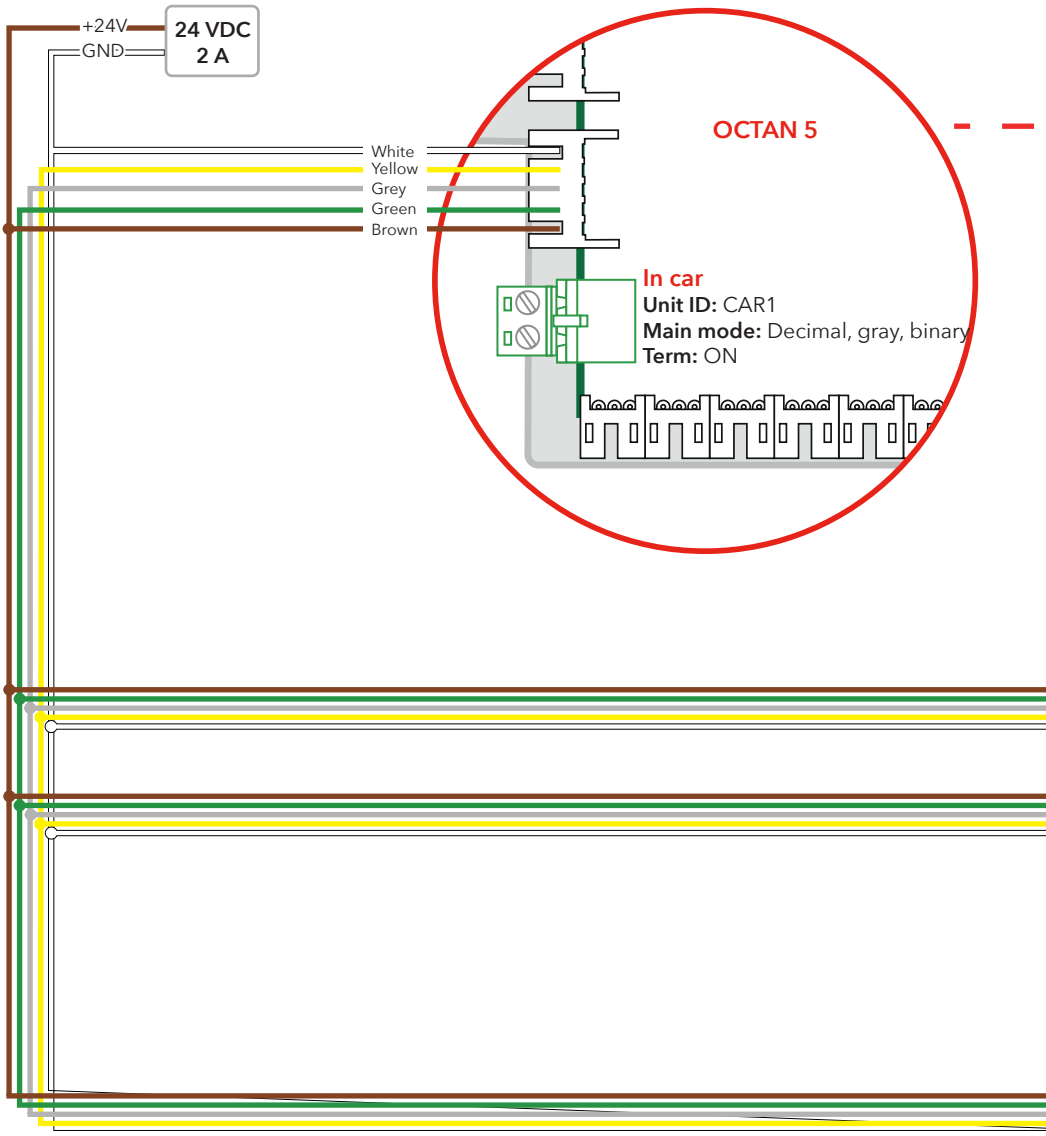
Default decimal inputs (floor 9-16)

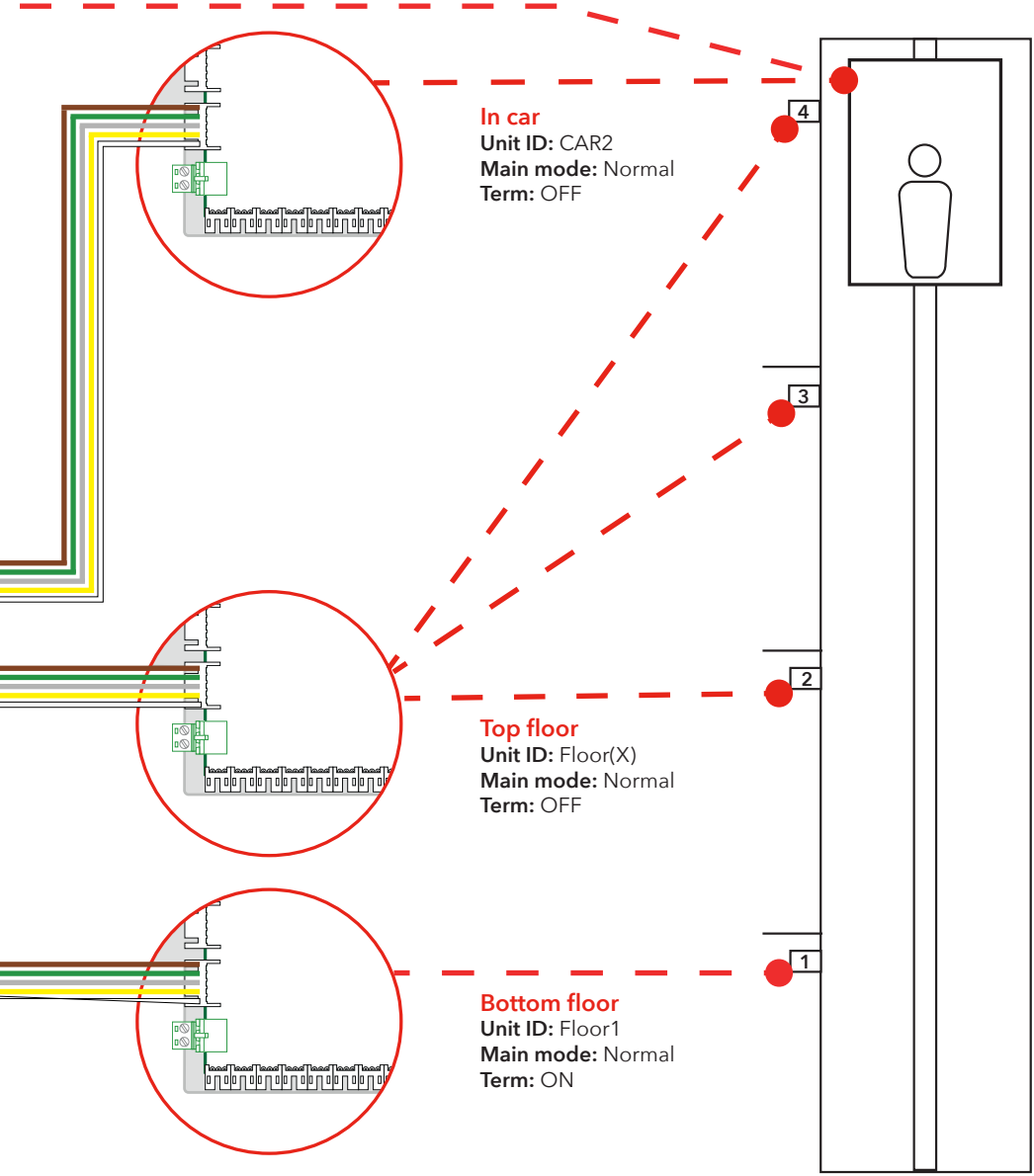
Note: two Octan units need to be installed to address floors 9-16

Input 1	Floor 13	**Input 5**	Floor 17	**Input 5**	Floor 21
Input 2	Floor 14	**Input 6**	Floor 18	**Input 6**	Floor 22
Input 3	Floor 15	**Input 7**	Floor 19	**Input 7**	Floor 23
Input 4	Floor 16	**Input 8**	Floor 20	**Input 8**	Floor 24

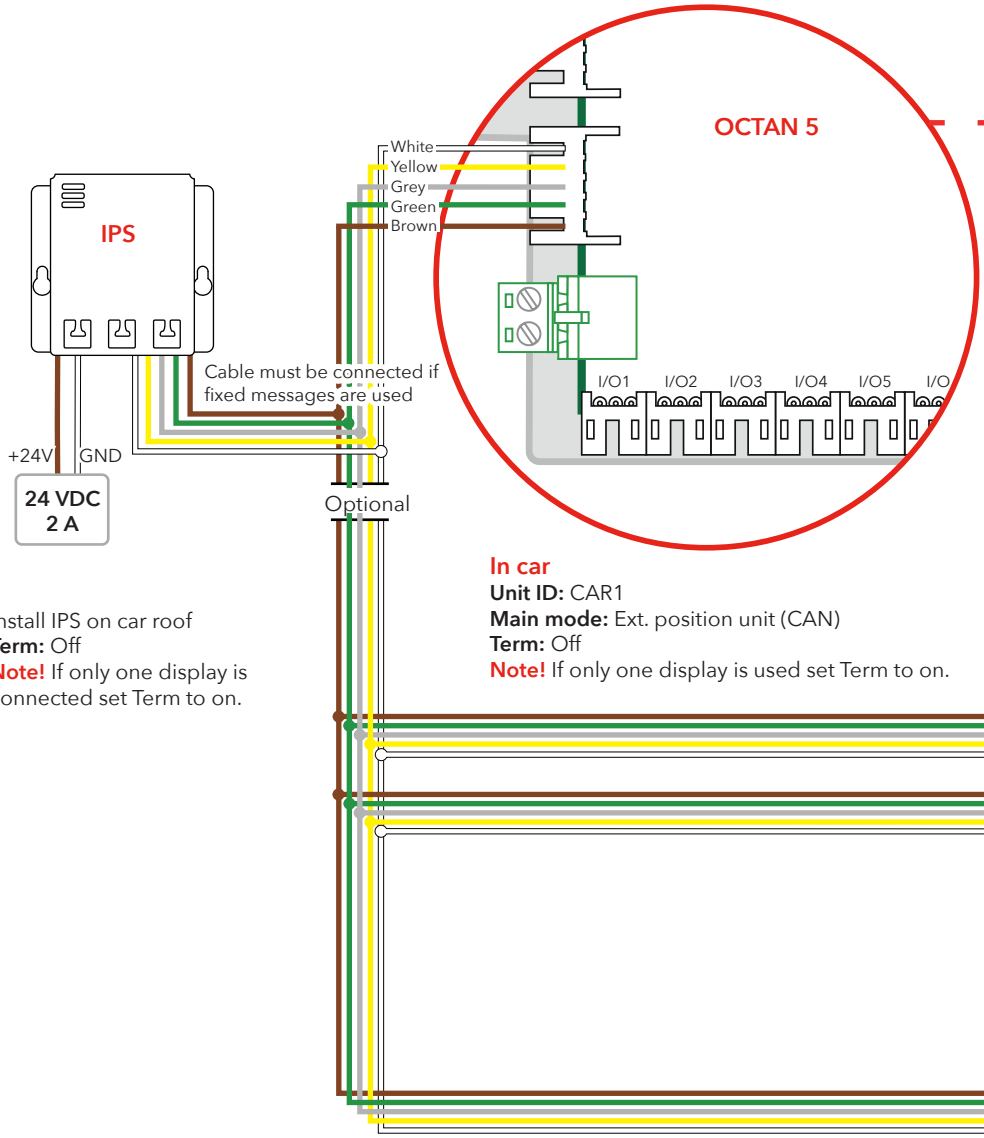
Wiring diagram Octan

Binary, decimal and gray decoding



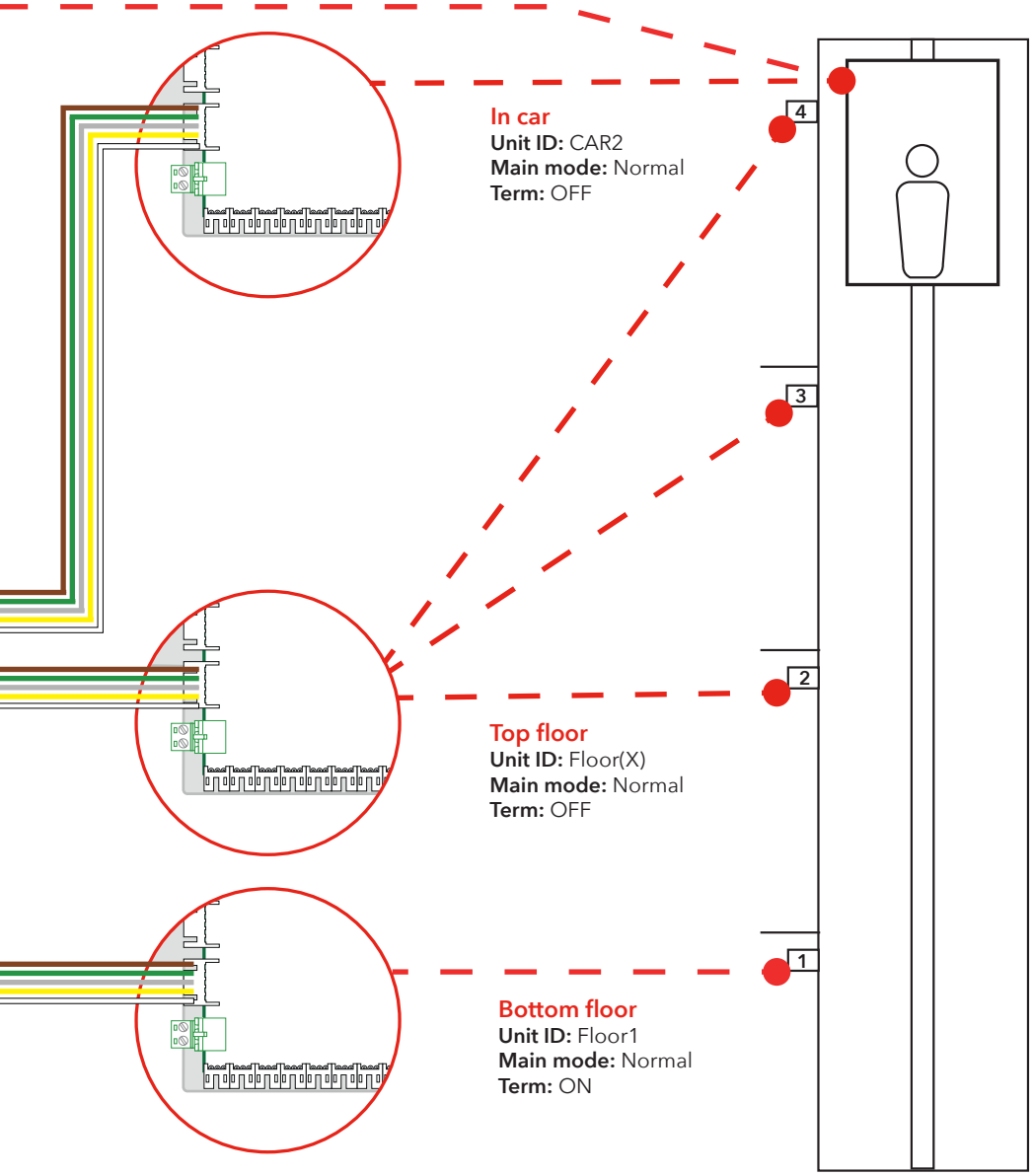

In car
Unit ID: CAR2
Main mode: Normal
Term: OFF
Top floor
Unit ID: Floor(X)
Main mode: Normal
Term: OFF
Bottom floor
Unit ID: Floor1
Main mode: Normal
Term: ON
4
3
2
1

Wiring diagram
Octan - IPS



Install IPS on car roof
Term: Off
Note! If only one display is connected set Term to on.

In car
Unit ID: CAR1
Main mode: Ext. position unit (CAN)
Term: Off
Note! If only one display is used set Term to on.


In car
Unit ID: CAR2
Main mode: Normal
Term: OFF
Top floor
Unit ID: Floor(X)
Main mode: Normal
Term: OFF
Bottom floor
Unit ID: Floor1
Main mode: Normal
Term: ON
4
3
2
1

SafeLine Octan Software

If any special setting/ feature is needed, please contact your local SafeLine support.

The software for SafeLine Octan handles different hardwares and operation modes. The programming is done using either a CANopen connection or via an optional BLE connection.

- 2 operation modes (CiA417, IPS)
- Programmable via CANopen or BLE

Many of the following features are optional and may be selected as on/off. The actual active features depends on the programming and the used lift controller in the CAN network.

Special features IPS display *

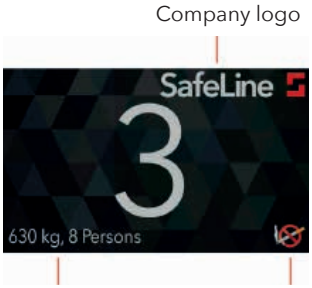
- Direction arrows (static and moving)
- Hall lantern arrows
- Voice announcer for floor

The software:

- Can be updated via SD card

* Not applicable for Octan 7

Program features description



Operation modes
The main operation mode of the display is “IPS". If the operation mode must be changed it is only possible through the SafeLine LYNX app

Display rotation
The display may be mounted in four directions, giving a versatile installation where the connectors, SD card and LED’s may be in the the optimal direction. Recommended installation is pointing the JST connectors downward.

Company logo
A company logo may be added to the visuals of the display. The SafeLine logo is factory default. Any custom made logo must be added to the SD card.

Static text (like “8 Persons, 630 kg”)
The static text is freely definable, and may be used for static information. The text is always visible, and can never be defined longer than room for in the display (this text never rolls/scrolls).

Special text messages
Special text messages for fire, overload, service etc. are free to be defined by the user. Only text with highest priority (lowest number) is shown on screen, the rest are idle, and are activated as soon as they get the highest priority.

Icons
Up to three static icons may be visible in the display. Some commonly used icons are already installed in the display. Any custom icons must be installed on the SD card.

All icons are 16 bit colour and in three sizes, small (72x72), medium (128x128) and big (256x256). Icons must be standard “PNG” files, 16 bit colour depth. Sounds must be 16kHz sample rate / 8 or 16bit / mono.

Hall lantern arrows

Voice announcer special messages
Special speech messages are also user-definable. As opposed to the special text messages, there is no priority. The speech message that is triggered first is also played first (FIFO). If more speech messages are active at the same time, they are all played in loop, as long as they are active.

Direction arrows (static and moving)
Direction arrows are normally only used in car displays to visualize the direction of travel, also showing a moving arrow when the lift is moving. Optionally: it is possible to show the moving arrow also on the floor displays.

Hall lantern arrows
The hall lantern mode (big arrows) is shown at the floors where the display is installed on floor.

Voice announcer for floor
When arriving at a floor it is possible to get an audio (speech) announcement of the floor. If other speech messages are active, this floor announcement is “pushed” in between and played as soon as possible.

Background music
For background music it is possible to set up two time intervals when music is active. The two intervals are typically one for week days, and one for weekends. The intervals may also be used for the same days, but different time intervals (i.e. morning and evening).

Sound

Application sounds *
The application and used Linux driver supports multiple sample rates and channels, but it is recommended to use: 16kHz sample rate/8 or 16 bit/mono.

Start-up *
At start-up the unit can play a sound or jingle.

Announcement *
All sounds for floors, arrival and special messages must be placed on the SD card.

Floor names *
With CAR displays, the announcement of arrival to floor may be used. The sound of each individual floor can be set and freely selected by the user in any language (given the right language is available on the SD card).

Special messages *
Sounds for special messages, if used, can be set freely to any sounds that are available on the SD card.

Arrival sound *
Floor arrival sounds are normally used on FLOOR displays, and can freely be set to any sound or voice output. Alternatively an internally generated “gong” may be used.

Floor texts

The fixed messages always show the complete text, even if the input that triggered the text is inactive before text has rolled minimum one round.

Floor texts are user programmable and holds up to 4 characters.

Long floor text

If a long text is wanted, a user message can be assigned and used as a floor text. Write "!1" to "!10" in the floor text field, and write the desired text in the according user text field.

Fixed messages

Fixed messages are handled as one, but actually divided in two parts. First part (and highest priority) is the system messages. System messages are fixed and cannot be changed. System messages automatically change depending on the selected language.

Second part is the user messages and is set up via external programming tool. It is also possible to select if message has to roll once in display, or it has to be active as long as the input is activated. Highest priority is "System message 1", lowest priority is "User message 10"

Symbol instead of text

It is also possible to get some fixed symbols instead of floor text. Following symbols are defined:

"SYMBOL" Value	"!E4" Not in use
"!E0" Not in use	"!E5" symbol "1/2"
"!E1" STOP sign	"!E6" symbol "2/3"
"!E2" Not in use	"!E7" symbol "3/4"
"!E3" Not in use	"!E8" symbol "4/5"

Resource files

When a resource file like an icon, logo or sound file is searched for, the resource is searched for on the SD card and then internally. That means that a resource file with same name, both internally and externally, is taken from the SD card. The SD card has the highest priority.

It is not necessary to include the file extension in the resource names. Remember that the Linux ® file system do care about if letters are capital or not, meaning that "File.txt" is not the same as "file.txt". Icons and logos must be standard "PNG" files, 16 bit colour depth.

Sounds must be either wave files 16, 22.05 or 44.1 kHz sample rate, and 8-16 bit mono/stereo, or MP3 files with bitrate 64-256 kbit mono/stereo. If using MP3 files: recommended bit rate is 128 kbit.

Icons and logos

Placed in: "/PIC/".

Sound files

Placed in: "/WAV/".

Music files

Placed in: "/WAV/MUSIC/.

External resources (SD card)

Customer/user files on the SD card used for icons, logos and speech announcements, must be placed according to requirements below.

Music files requirements

The music files are all stored in "/WAV/MUSIC/" folder. All files in this directory are played in a loop as long as the music is enabled. Don't install one large music file with all the music. Divide the file in natural segments or melodies. Keep the size of the individual music files smaller than 20 MB.

Start-up

If no floor trigger is received or generated, the display shows the user settable error text. This text may also be a symbol (i.e. the STOP symbol).

The display starts "empty" with no text on the display. After internal initializtion, functionality starts and sends status for any active inputs to other connected display.
If a speaker is connected it is possible to hear the start-up sound.

- No sound = no memory card inserted or recognized
- Two short beeps = memory card recognized and usable
- One long beep = memory card inserted, but unusable (try removing and re-insert)

Error codes

When an exception or internal fault is detected, the display shows an error code. The error code is always two characters, starting with the full stop punctuaction mark ".".

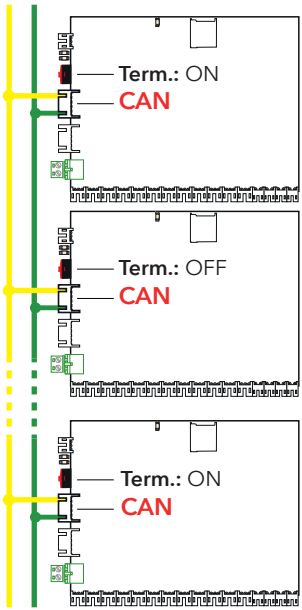
The following error codes are defined

.0	undefined error
.1	more than one unit is set as floor generator
.2	a unit with same ID exists *
.3	main mode not set (or out of bounds)
.4	position too high
.5	position too low
.6	no positions set (or learned)
.7	ID not valid (out of bounds) *
.8	encoder heartbeat fault (encoder lost)
.T	IPS not ready for learning trip.
.A	program mode active.

* If conflicting ID's one or more units may exist with same ID. All ID's must be unique, and it is up to the installer to ensure the system integrity. When these errors are detected, a reset or power cycle must be performed to clear the error.

CAN bus

CAN bus speed is fixed at 125 kBit/s. The CAN BUS must be terminated in each end. When the bus is active and connected, two units have enabled the termination. All other units connected to the bus have termination disabled. If a CAN absolute position encoder or an external CAN position unit (i.e. IPS unit) is used, also check and set bus termination of these units.



Configuration

Learning mode with IPS

The SLPro Octan need to be used in order to access all of the installation options.

Download SLPro from: www.safeline-group.com

SafeLine Proprietary CAN:
The only way to configure the IPS with the SafeLine Octan is through the SafeLine LYNX app. See app settings for actual programming possibilities.

Learning is started with SafeLine LYNX app

1. Start shaft loading (learning trip). Start the learning trip at the lowest level. Drive to the next level.
2. Make a stop at all levels. The position is saved automatically at each stop.
3. When the highest level is reached and the lift is changing direction, the learning trip is finished.
4. The IPS returns to normal functions.

Memory card

Expected directory structure:

X:\CFG = configuration directory
X:\WAV = wave files directory
X:\FIRMWARE = directory for firmware update

CFG directory
This directory holds a copy of the configuration, and also a copy of the sound index file.

WAV directory
This directory holds all sound files, including user sound files.

FIRMWARE directory
This directory holds the firmware. Place the files directly in the root directory.

Sound files

If the lift is travelling through sub-floors or basement, this naming is still used. The file "FLOOR 1.WAV" can of course say for instance: "Next stop basement"

All available sound files in all languages are packed together in the directory "WAV" on the SD card.

User sound files

If the user want to use own sound files, the files can be added by following these rules:

Floor announcement files are placed in directory \WAV\USER\ FLOORS, and general message and other announcements are placed in directory: \WAV\USER\MESSAGES.

User floor files naming

User floor files are always named "FLOOR 1.WAV" to "FLOOR 63. WAV". If other names are used the files cannot be found by Octan.

User message files naming

User general messages are always named "MESSAGE 1.WAV" to "MESSAGE 20.WAV". If other names are used the files cannot be found by octan.

Sound files requirements

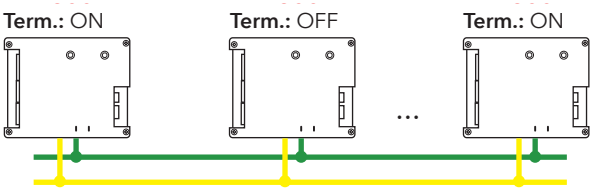
Octan do support a limited number of sampling rates, and it is recommended to use 16kHz sampling / 16bit / MONO.

Checklist before deployment of IPS and Octan

If you're having trouble with deployment – please call your local SafeLine support.

Please check the following before deployment:

- The display doesn't show ".T". When showing this, the IPS is conducting self tests. This can take up to 15 minutes after voltage is connected.
- The installation is wired according to wiring instructions.
- The termination switch 120 ohm on the Octan is activated (ON) at the beginning and end of the CAN BUS.



- In "Main Mode", the car unit should be programmed as "Ext. Position CAN".
- If Octan has been installed on the floor levels, all of the floor units under the menu "UNIT ID" should be programmed as for instance Floor 1, Floor 2 etc.
- "Main Mode" must be set as "Normal".
- If voice messages are requested, the correct audio file need to be chosen on each respective floor in the car unit.
- The learning trip has been performed.

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