

SIEMENS



Sinorix™ al-deco STD

**Translation of the original
Operating Handbook**

**Machine tools in the
metal working industry**

Building Technologies

Fire Safety

Technical specifications and availability subject to change without notice.

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1 General Safety Instructions

1.1 General information



Danger to life!


- If there is a fire, and the extinguisher system is triggered, you must immediately leave the room, or must keep at least 5 metres away from the area! Carbon dioxide (CO₂) flows out of the installation, and you must therefore protect yourselves and other persons, as this is deadly in high doses!
- Keep the area to be protected closed for the time being. Where necessary, hold a suitable fire extinguisher ready for extinguishing any remaining fires, and call the fire brigade.
- Always ventilate the rooms thoroughly after the extinguisher system has been tripped! You should ventilate lower lying rooms also, as carbon dioxide is heavier than air and will flow downwards.
- Before you or any other person enter the protected area of the machine tool to carry out maintenance work, the extinguisher system must first be **deactivated** by authorised personnel! If the detection tube is accidentally damaged, carbon dioxide (CO₂) will flow out of the extinguisher system, and you must then protect yourself and other persons, as this is deadly in high doses!



Warning!

- The pneumatic detection tube Lifdes™ must not be damaged under any circumstances! It must not be kinked or crushed! If this happens, the extinguisher system may not switch on in case of fire, which could lead to serious damage to property and injury to persons.
- Do not expose the pneumatic detection tube Lifdes™ within the machine tool to any direct source of heat!
- The activation and deactivation of the extinguisher system may only be carried out by authorised personnel. After deactivation, these persons will be responsible for ensuring that the extinguisher system is reactivated once again before the start of production (see *Chapter „3.3 Deactivating / Activating the system“*).
- Once the extinguisher system has been activated, no second fire will be able to be extinguished in the same machine tool until the extinguisher system has been serviced again. This servicing may only be carried out by **Siemens** or by one of the partners authorised by **Siemens**.
- The valve protection cap must **always** be fitted when transporting or storing extinguisher cylinders. In general, the directives regarding the „Use and Storage of Gas Cylinders“ will apply. **Never store extinguisher cylinders without the valve sealing nut!**
- Work on the extinguisher lines may only be carried out when the extinguisher cylinders are firmly mounted. The extinguisher system must be deactivated before the extinguisher line is disconnected from the valve, and the valve sealing nut must be fitted immediately after disconnection from the extinguisher line. On the other hand, the valve sealing nut should only be removed immediately before connecting to the extinguisher line. The valve sealing nut is secured to the valve with a retention chain, and is therefore always available.

**Important!**

- When filled with CO₂, the extinguisher cylinder is under a pressure of approx. 55 bar at 20° C.
- The extinguisher is only suitable for use on inflammable materials of the fire class  „inflammable liquid materials“.
- The sealing nut for closing off the extinguisher line may only be removed when the extinguisher cylinder is firmly connected to the machine tool (see Maintenance and Repair Instructions).
- Any work on the communication interface, such as the replacement of the batteries, switching on the interface on the circuit board and changing the fuses, may only be carried out by authorised persons (see Maintenance and Repair Instructions).
- The laws and regulations that apply in the respective country for the transport, handling and testing of pressure vessel devices must always be followed.

When refilling extinguisher vessels, which usually takes place 10 years or longer after the initial filling (the date stamped on the pressure vessel will apply), the pressure vessel must first be checked by a specialist (according to §10 Pressure Vessel Ordinance).

- The manufacturer and installer of the extinguisher system cannot be held liable for damage to goods or injuries to persons that arise as a result of the non-compliance of the operator with the valid laws and regulations.

**Note!**

- This operating manual presupposes that the system has been installed by a licensed and authorised installer or by the manufacturer. The installer will carry out the work within the framework of the valid regulations and directives, and is liable for the quality of the installation. This operating manual contains an Handover and Instruction Protocol (see Chapter 8), which must be completely filled in by the installer and must be legally signed by the operator. This protocol serves as a certification of the correct installation, commissioning and handover of the extinguisher system to the operator.
- For reasons of liability, the switching off of the alarm functions must be carried out on-site by the machine installer or a certified electrician. The installer will not be liable for any damage arising from fires in machines whose extinguisher system is not interconnected with the machine EMERGENCY STOP.
- The correct inspection of the extinguisher system in accordance with the Handover and Instruction Protocol is the precondition for the safe and problem-free operation of the extinguisher system (see Chapter 8).
- Carbon dioxide (CO₂) is harmless in concentrations up to 5% by volume in the ambient air. Higher concentrations, however, represent danger to life to yourself and other persons.
- Always keep this operating manual in the vicinity of the extinguisher system throughout its service life.
- Observe the instructions and information attached to the extinguisher system, and comply strictly with these instructions.

1.2 Who is responsible for what?

1.2.1 The manufacturer

The manufacturer of the automatic CO₂ extinguisher system of the type Sinorix™ al-deco STD is **Siemens**, who has constructed the product for the extinguishing system in accordance with the standards, guidelines and regulations listed in the Declaration of Conformity.

If the standards and directives cannot be complied with, the procedure will be adapted to the respective technical state-of-the-art.

The manufacturer has drawn up installation instructions and directives for the installer. These installation instructions are subject to the above-mentioned directives and regulations.

1.2.2 The installer

The „installer“ is the company that is responsible for the correct installation of the extinguisher system (in accordance with the directives for EC pressure devices) and who is licensed and authorised by Siemens.

During installation, it must be ensured that:

- this product is installed in compliance with the accident prevention regulations and national regulations in force,
- this product is used as intended,
- any danger is avoided,
- Siemens requirements are met (assembly instructions, technical instructions, commissioning, and operating instructions),
- the operators and the personnel have received and understood the information related to this product.

At commissioning, he must ensure compliance with the legislation in force, technical regulations and safety instructions.

In all other respects, the installer is obliged to draw up a Handover and Instruction Protocol. When completed, this will serve as a certification of the correct installation, commissioning and handover of the extinguisher system. This protocol must carry the legal signature of the installer, and be handed over to the operator.

1.2.3 The operator

The „operator“ is the company that has had an extinguisher system installed in their machine tool. The operator is responsible for the correct handover of the Handover and Instruction Protocol (see *Chapter 8*) and is obliged to sign this form. The original will be handed over to the installer and the copy to the operator.

He is obliged to operate and maintain the extinguisher system in accordance with the operating manual.

Inform your personnel about possible dangers that could arise from the extinguisher system and of the safety measures to be taken. Also fit warning signs on the machine tool.

1.2.4 Personnel

The „personnel“ describes the employees of the company who work on the machine tool. They must have been informed by the operator about the possible dangers that could arise from the extinguisher, and about the safety measures to be taken. Observe the warning signs on the machine tool. Immediately report any unusual incidents to your operator.

1.3 Definition of Object Protection with Sinorix™ al-deco STD

This definition relates to the protection of machine tools in the metalworking sector. The goal of the protection is to smother any liquid fire that arises from cooling or lubricating oil (turning, milling, grinding) or from an inflammable dielectric (cavity erosion) within the first seconds of its appearance. In principle, the intended protection goal when using an object protection installation with Sinorix™ al-deco STD is to limit the fire to this object. Any spread of the fire to neighbouring objects and/or to the room in which the object is located must be effectively prevented. Minimal damage to the object or part of the object will be accepted in individual cases.

The rapid deployment of an Sinorix™ al-deco STD object protection installation in case of fire makes the re-use of the object possible after minor and reasonable repair work. The Lifdes™ detection tube is positioned according to the fire risk, so that it lies as close as possible to an expected source of the fire. If there are other plastic components, such as cables and hoses, in the immediate vicinity, these could suffer light burn marks. If there are no such components in the vicinity of the fire, the fire will be extinguished without any damage.

The installation of a pressure relief valve is recommended for machines that work at high speeds and thereby cause an oil mist with very small droplet size. For the dimensioning of this pressure relief valve, a standard value of an opening of 10 dm² per 1 m³ processing space volume can apply (depending on the opening pressure or the technical implementation in light assembly).

The Sinorix™ al-deco STD fire extinguisher system is not intended for use with processing materials such as magnesium, aluminium or their alloys, which react in an extreme way in case of a fire.

1.4 Proper usage

The extinguisher system is only intended for use as an object extinguisher system to combat fires in metal working machine tools for which there is a fire risk. Any use going beyond this will be regarded as improper.

Proper usage includes the observation of and compliance with the safety rules in this operating manual and the maintenance and repair instructions. The extinguisher system may only be operated by instructed and authorised personnel. The manufacturer and the installer will accept no liability for damage that is caused by improper operation or by persons who have not been instructed in the use of the system.

When instructing the personnel, the operator must place special importance on instructions regarding the related dangers and the corresponding safety measures.

Any faults or the incorrect initiation of the extinguisher system must be immediately reported to the installer. Modifications, additions or conversions to the extinguisher system that could impair safety are not to be carried out. The manufacturer and the installer will accept no liability for damage caused by a fire as a result of modifications to the extinguisher system.

2 Description of the extinguisher system

2.1 Description of operation

The automatic CO₂ extinguisher system of the type Sinorix™ al-deco STD is a compact automatic detection and object extinguisher system for combating fire in metalworking machine tools for which there is a fire risk. A communication interface and an online measurement system monitor the extinguisher and provide information regarding the amount of extinguisher that is present in the extinguisher cylinder.

The communication interface indicates all relevant conditions acoustically and optically, such as

- Operational status
- System active/inactive
- System triggered (Fire alarm)
- Extinguisher quantity.

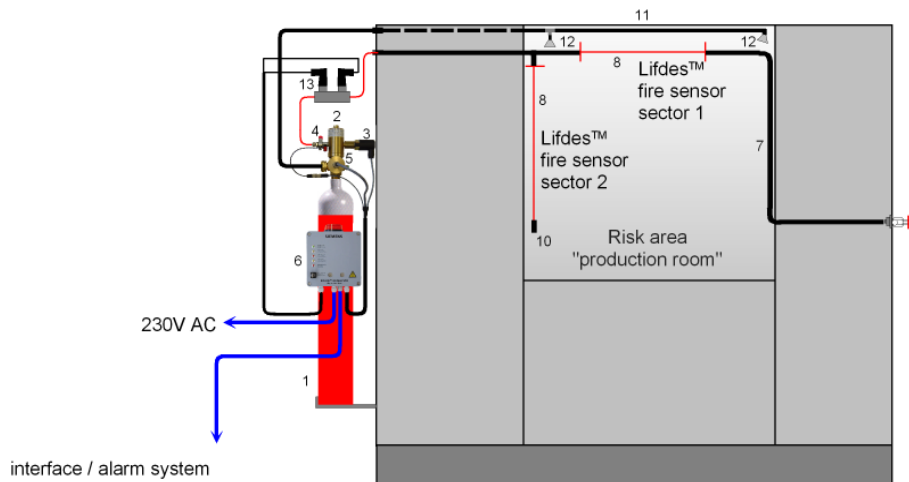
All data that is relevant to safety will be recorded in a data storage unit (Black-Box) and can be read out with a laptop at any time using a USB interface.

No energy is required for the detection and extinguishing procedure. In case of a power failure, the communication interface and the online measurement system will continue to be supplied with voltage for a maximum of 12 hours from a power supply unit using a battery.

Apart from the connection of the EMERGENCY STOP command, the extinguisher system requires no other integration to the existing controller of the machine tool.

2.2 System concept

Installation example of an Sinorix™ al-deco STD extinguisher system:



Key to the major components:

- | | |
|--|---|
| 1 Extinguisher container CO ₂ | 7 Detection line steel, D=6x4 |
| 2 CO ₂ valve (IHP) | 8 Pneumatic detection tube LIFDES |
| 3 Pressure switch 1 | 9 Manual start with pressure gauge |
| 4 Ball valve for activation / deactivation of the extinguisher system | 10 Detection line end adapter |
| 5 DIMES measurement probe (integrated into valve) for the CO ₂ volume control | 11 Extinguisher line |
| 6 Communication interface | 12 Extinguisher nozzles |
| | 13 Distributor block with pressure switches 2 and 3 |
| | 14 Valve protection cap |



2.3 Components of the extinguisher system

Detection tube (Lifdes™)



Warning!

- The Lifdes™ pneumatic detection tube must not be damaged under any circumstances! It must not be kinked or crushed! If this happens, the extinguisher system may not switch on in case of fire, which could lead to serious damage to property and injury to persons.
- Do not expose the Lifdes™ pneumatic detection tube within the machine tool to any direct source of heat!



Note!

The pneumatic detection tube bears the inscription “LIFDES – do not cut kink crush”.



The heart of the extinguisher system is a special high-tech polymer tube. It is positioned in the object to be protected according to the fire risk, and is connected to the extinguisher cylinder via a valve, and is permanently under pressure. It serves as a detection tube, i.e., as a linear sensor. As soon as the ambient temperature rises above 110 °C, the tube will burst. As a result, there is a pressure drop in the system and the valve of the extinguisher container will open at virtually the same time.

Valve



The Sinorix™ al-deco STD extinguisher system is fitted with a specially developed high-pressure valve. When the detection tube bursts, the valve opens and starts the extinguishing procedure. (See Chapter „5 What happens when there’s a fire?“).

DIMES



A DIMES (Digital Measuring System) is integrated into the valve. It ensures the constant monitoring of the quantity of extinguisher in the extinguisher container and passes this data on to the communication interface.

The sensor also indicates the status of the extinguisher container via an LED, as follows:

- Filling level > 80% (green)
- Technical alarm/fault (blinking red)
- Extinguisher container empty or filling level < 80% (red)

Ball valve



A ball valve is fitted directly on the valve. This can be used to activate or deactivate the extinguisher system (see Chapter „3.3 Deactivating/activating the system“). The position of the ball valve will be forwarded to the Communication Interface.

The improper opening of the ball valve is prevented by a locking pin.

Pressure switch 1



A pressure switch is mounted on the valve, which is tripped when the pressure in the detection tube falls, the ball valve is opened or extinguishing procedure is initiated. The pressure switch can only be brought back to its initial position when the extinguisher container has been refilled or replaced (see *Maintenance and Repair Instructions*). Pressure switch 1 (DS1) only drives Relay 1 (fire alarm). This alarm is made available as 2 NC contacts on Terminals 22/23 and 24/25. These outputs are intended for additional functions such as alarming the fire alarm centre, and should not be used for the Machine Emergency Stop.

Pressure switches 2 + 3



Pressure switches 2 + 3 are bolted onto a common distributor block. This distributor block is normally mounted on the extinguisher container bracket or, in individual cases, on the machine housing in the immediate vicinity of the extinguisher container. Pressure switch 2 (DS2) takes over the „Machine EMERGENCY STOP“ function and is connected directly from the input terminals 10/11 to the output terminals 12/13 within the Alarm interface. Pressure switch 3 (DS3) is responsible for the alarm (optical/acoustic) and data recording functions. Both pressure switches are tripped when the pressure in the detection tube falls. The pressure switches can only be brought back to their initial position when the extinguisher container has been refilled or replaced (see *Maintenance and Repair Instructions*).

Extinguisher line including the extinguisher nozzles



If the valve of the extinguisher container is opened, the extinguisher flows through a separate extinguisher line and the correspondingly positioned extinguisher nozzles, and floods the machine tool (see *Chapter „5 What happens when there's a fire?“*).

Communication Interface



The communication interface is mounted on the extinguisher container or on the machine tool. It is supplied by the 115 VAC, 230 VAC or 24 VDC and is connected to the DIMES, the ball valve monitoring and den the pressure switches DS1 + DS3.

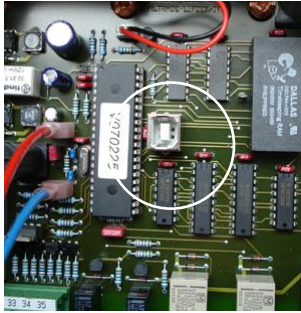
It indicates the status of the extinguisher system by means of various optical and acoustic signals (see *Chapter „3.1 Communication Interface“*). If there is a power failure, a battery ensures the problem-free operation of the communication interface for up to 12 hours (see *Chapter „3.5 Loss of mains power“*).

Flashing light/ Acoustic alarm



If the systems starts to extinguish a fire, the flashing light (1) on the communication interface lights up and an acoustic signal (2) sounds. If the remaining amount of extinguisher falls below 70% of the full level, the flashing light will light up every 60 minutes for 8 seconds (see Chapter „5 What happens when there’s a fire?“).

Data storage unit + USB



The data specific to the system and data regarding services and refills is stored in the Communication Interface. In addition, all safety relevant data is recorded in a data storage unit (Black-Box). All this data can be read out with a laptop at any time using a USB interface

Manual start with pressure indicator

































In order to also be able to start the extinguisher system manually, a Manual Start is fitted near the operating panel of the machine tool (see „System started (fire alarm)“).

3 Extinguisher system

3.1 Communication Interface

The following table gives you an overview of the various states that your extinguisher system can be in.

Key	Incidents					
	Operation	Battery operation	System tripped (fire alarm)	System inactive	Loss of extinguisher	Reset alarm after tripped
Operation (green)						
Battery operation (yellow)						
System tripped (red)						
System inactive (yellow)						
Extinguisher loss (red)						
Reset alarm (key switch)	Key removed	Key removed	Key removed	Key removed	Key removed	Key inserted in horizontal position (locked)
Flashing light			constant.	every 10 min. for 6 sec.	every 60 min. for 8 sec.	
Acoustic signal			constant	every 10 min. for 6 sec.	every 60 min. for 8 sec.	

 blinking LED  illuminated LED  LED off

3.2 Operational status



Note!

- This operating manual presupposes that the system has been installed by a licensed and authorised installer or by the manufacturer. The installer will carry out the work within the framework of the valid regulations and directives, and is liable for the quality of the installation. This operating manual contains an Handover and Instruction Protocol (see *Chapter 8*), which must be completely filled in by the installer and must be legally signed by the operator. This protocol serves as a certification of the correct installation, commissioning and handover of the extinguisher system to the operator.
- The correct inspection of the extinguisher system in accordance with the Handover and Instruction Protocol is the precondition for the safe and problem free operation of the extinguisher system.

Checking the extinguisher system



Warning!

The activation of the extinguisher system may only be carried out by authorised personnel.



- ▶ The ball valve must point parallel to the tube direction.
- ✓ It is opened, and the extinguisher system is activated.



- ▶ The key on the Communication Interface must be pulled out.
- ▶ The Communication Interface indicates the active state as follows:



- ✓ The system is now in operation.

3.3 Deactivating/activating the system



Danger to life!

Before you or any other person enter the protected area of the machine tool to carry out maintenance work, the extinguisher system must first be **deactivated** by authorised personnel! If the pneumatic Lifdes™ detection tube is accidentally damaged, carbon dioxide (CO₂) will flow out of the extinguisher system and you must protect yourself and other persons, as this is deadly in high doses!



Warning!

The activation and deactivation of the extinguisher system may only be carried out by authorised personnel. They are responsible for ensuring that the extinguisher system is reactivated again before the start of the production.

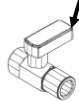
Deactivating the extinguisher system



- ▶ Pull out the interlock (1).
- ▶ Turn the ball valve through 90° (2).



- ✓ The ball valve is closed, and the extinguisher system is deactivated.



- ▶ The communication interface indicates the inactive state as follows:

Operation (green)	○
Extinguisher system inactive (yellow)	☀
Acoustic signal	Every 10 minutes for 6 seconds.
Flashing light	Every 10 minutes for 6 seconds.

- ✓ The Lifdes™ pneumatic detection tube is still under pressure. If there is damage to the tube, however, the loss of pressure will not initiate an extinguishing procedure.

Reactivating the extinguisher system



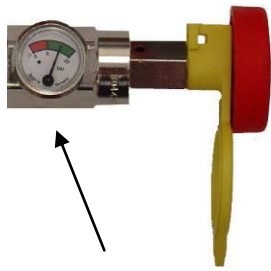
Warning!

The activation of the extinguisher system may only be carried out by authorised personnel. The latter is responsible for ensuring that the extinguisher system is activated again before the start of the production.



Important!

Check the pressure in the pneumatic Lifdes™ detection tube. A pressure gauge (manometer) is mounted on the manual start.



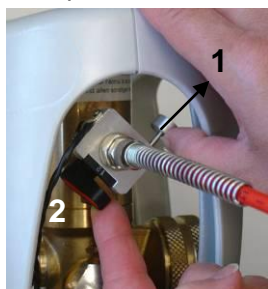
- ▶ Check that the indicator of the gauge is in the green area.



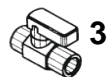
Danger to life!

If the pressure indicator is outside the green area of the gauge, you must not reactivate the extinguisher system under any circumstances! If it is nevertheless activated, the fire extinguishing operation will be started and the cylinder will be emptied. The system can then only be switched active again after the container has been replaced (see *Maintenance and Servicing Instructions*).

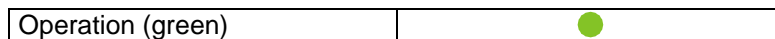
If the pressure indicator is in the green area of the gauge,



- ▶ Pull out the locking pin (1).
- ▶ Turn the ball valve through 90° (2), so that it points parallel to the direction of the tube (3).
- ✓ The ball valve is opened, and the extinguisher system is activated again.



- ▶ The communication interface indicates the active state as follows:



- ✓ The system is in operation.





Important!

Maintenance and repair work may only be carried out by authorised personnel.

3.4 Loss of extinguisher

If extinguisher leaks from the extinguisher container, and the level of extinguisher falls below the value of 80%, this loss will be indicated by optical and acoustic signals.

The communication interface indicates the loss of extinguisher as follows:

Operation (green)	
Extinguisher loss (red)	
Flashing light	every 60 min. for 8 sec.
Acoustic signal	every 60 min. for 8 sec.

The optical and acoustic signals can only be deactivated by the complete refilling of the extinguisher container (100%). Consult the „*Maintenance and Repair Instructions*“ document.

3.5 Loss of mains power (Power failure)





Important!

Any work on the communication interface, such as the replacement of the batteries, switching on the interface on the circuit board and changing the fuses may only be carried out by authorised persons (see *Maintenance and Repair Instructions*).

In case of a power failure, the function of the communication interface will be maintained for 12 hours by a battery. The detection and the fire extinguishing functions will not be affected by the power failure, as this part of the extinguisher system works purely mechanically or pneumatically.

The communication interface indicates the current state as follows:

Operation (green)	
Batter operation (yellow)	
Flashing light	every 60 min. for 8 sec.
Acoustic signal	every 60 min. for 8 sec.

4 Reading out the data storage unit

4.1 General information

The Sinorix™ al-deco STD Com-interface has an electronic storage unit that makes various recordings possible. In addition, all data regarding the extinguisher system installed on a machine tool in another object is read into the interface by inputting with a PC. Both the extinguisher system data and the data of the protected object are recorded.

The input process starts with the preparation of the system at the manufacturer's site, and is continued up to the commissioning, service and refilling.

All incidents will be recorded in a directory that can process up to 1,000 incidents.

The input processes are carried out using a password management. All persons who have been authorised by altrade ag to carry out entries must be in possession of a password, which will be communicated to them personally by the company management of Siemens.

For the read-out of the data by the user, a software is installed on the CD-Rom (user handbook) a software that has to be loaded onto a PC by the user when necessary.

This software can also be downloaded over the Internet using the user password.

The interface must be connected to the PC via the USB interface.

The following description explains the entries of the user interface in detail, and explains how to handle the input process.

It assumes that the corresponding software has been loaded onto a PC and that this is connected to the interface by means of a USB cable.

4.2 File

Login:

In order to initialise the contact with the interface, a log-in is required, and a password is necessary in order to complete the log-in.

This password will be provided by the manufacturer. The password is unique, and, if it is forgotten, a new password will have to be generated by the manufacturer.

- Click on Login, and wait until the new window appears with the password
- Enter the user (family name) and the corresponding password (6 alphanumeric characters).
- Click on OK

You are now logged in and should see your name on the top information bar.

The forms that can be printed out are listed below.

When you want to exit the program, use „Close“, but note that all data that has not been saved will thereby be lost.

4.3 Languages

The language can be selected in the Language field.

All screens then appear in the selected language.

The entries to the fields takes no account of the selected language.

4.4 Operator interface and fields

4.4.1 Operator interface password

General information:

The operator interface has already been configured at the factory, and must therefore not be operated by the user. The following comments are therefore for information only.

The passwords have already been issued to the individual users.

A total of three user groups have been defined:

Manufacturer User passwords from the manufacturer

End user The end user only has access to the data.

He can read or print out the data. No password is necessary for this.

4.4.2 Initialising the operator interface

General information:

The initialisation of the units is carried out by the manufacturer.

Press the Save button after entering all the fields.

- Field 1 System type
Requires the system model: e.g. Sinorix™ al-deco STD
- Field 2 System number
Is provided by the manufacturer.
- Field 3 Customer number
Is provided by the manufacturer.
- Field 4 Serial number of the interface
Is provided by the manufacturer.
The serial number is noted on the interface.
- Field 5 Cylinder data
Is provided by the manufacturer
The cylinder number and the valve batch number are recorded
- Field 6 Remarks
Can only be used by the manufacturer.
For free use, maximum 16 characters
- Field 7 Date
This field is configured by the manufacturer.

When saving, the family name of the user who last worked on the system will be automatically recorded.

4.4.3 Commissioning

General information:

The registration of the data will be carried out by the commissioning technician after installation at the customer's premises.

- Field 1 Date
This field is configured by the manufacturer.
- Field 2 Machine type
The type and the manufacturer of the machine and/or a specific designation will be recorded.
The registration is carried out by the commissioning technician.
- Field 3 Machine number
The manufacturer and the serial number of the machine will be recorded by the commissioning technician.
- Field 4 Filling pressure test measurement (bar)
The current filling pressure of the Lifdes™ with the ball valve closed. An electronic pressure gauge (manometer) is used for this. The entry will be carried out by the commissioning technician.
- Field 5 Filling pressure after 20 minutes (bar)
The filling pressure after 20 min from the Lifdes™ with the ball valve closed are recorded . An electronic pressure gauge (manometer) is used for this.
The recording is carried out by the commissioning technician.
- Field 6 Filling level in %
The filling level is recorded by the commissioning technician according to the measurement with DIMES (three characters before the decimal point and tow characters after).
- Field 7 Remarks
For free use
Length of the field Max. 16 characters
Use of this field is not obligatory

4.4.4 Service

General information:

The registration of the data will be carried out by the commissioning technician after installation at the customer's premises

Field 1 Datum

This field is configured by the manufacturer.

Field 2 Machine type

The type and the manufacturer of the machine and/or a specific designation will be recorded.

The registration is carried out by the commissioning technician.

Field 3 Machine number

The manufacturer and the serial number of the machine will be recorded by the commissioning technician.

Field 4 Filling pressure test measurement (bar)

The current filling pressure of the Lifdes™ with the ball valve closed. An electronic pressure gauge (manometer) is used for this. The entry will be carried out by the commissioning technician.

Field 5 Filling pressure after 20 minutes (bar)

The filling pressure after 20 min from the Lifdes™ with the ball valve closed are recorded. An electronic pressure gauge (manometer) is used for this. The recording is carried out by the commissioning technician.

Field 6 Filling level in %

The filling level is recorded by the commissioning technician according to the measurement with DIMES (three characters before the decimal point and two characters after).

Field 7 Remarks

For free use

Length of the field Max. 16 characters

Use of this field is not obligatory.

4.4.5 Refilling

This screen must always be filled in if a refill takes place.

If the DIMES module inside the valve is changed, it will be necessary to register the new number. The input takes place using a separate mask, which is opened up after the "New entry" button is operated. After the data has been entered, click on the „OK“ button to confirm and wait until the entry appears in the table. Exit the mask by pressing "Cancel" if necessary.

The „Load“ button displays the data already registered.

The „Edit data“ button allows corrections to the data, but only to those of the user who is currently logged in.

After completing the correct entries, save all the data by pressing the „Save“ button .

The registration of the data will be carried out by the service technician.

Field 1 Date

This field has been configured by the manufacturer.

Field 2 Serial number DIMES

The serial number will be recorded by the service technician on the DIMES module.

Field 3 Cylinder data

The cylinder number and the valve batch number are recorded by the service technician.

Field 4 Filling pressure test measurement (bar)

The current filling pressure of the Lifdes™ with the ball valve closed will be recorded by the service technician.

Field 5 Filling pressure after 20 minutes (bar)

The filling pressure after 20 min from the Lifdes™ with the ball valve closed are recorded by the service technician.

An electronic pressure gauge (manometer) is used for this.

Field 6 Filling level in %

The filling level is recorded by the service technician according to the measurement with DIMES.

Field 7 Remarks

For free use

Length of the field Max. 16 characters

Use of this field is not obligatory

4.5 Incident

The incidents will be automatically recorded with sequential numbers and the date and time. The highest number always represents the latest incident and is displayed as the first field.

The normal conditions are shown with a green background, and the abnormal conditions with red.

The page is provided with a scroll mode that always shows the latest status.

Non-current states will be pushed into the background, but will be taken into account when printing out.

The „Load“ button shows the current status in each case.

No password is needed to read or print out the incidents.

4.6 Extras

The Time and Date window indicates the last incident.

By actuating „Update“, the time will be set to the „Actual status“.

Resetting the Time and Date requires access by the Administrator.

5 What happens when there's a fire?



Danger to life!

- If there is a fire, and the extinguisher system is triggered, you must immediately leave the room, or must keep at least 5 metres away from the area! Carbon dioxide (CO₂) flows out of the installation and you must therefore protect yourselves and other persons, as this is deadly in high doses!
- Keep the area to be protected closed for the time being. Where necessary, hold a suitable fire extinguisher ready for extinguishing any remaining fires, and call the fire brigade.



Important!

Inform the security officer of your company.

5.1 System tripped (fire alarm)

If a fire occurs on the machine tool, the following sequence takes place:

- As soon as the ambient temperature rises above 110 °C, the pneumatic Lifdes™ detection tube bursts.
- As a result, there is a pressure drop in the Lifdes™ pneumatic detection tube and the valve of the extinguisher container opens at virtually the same time.
- The extinguisher flows through a separate extinguisher line and the correspondingly positioned extinguisher nozzles to the source of the fire and floods the protected area of the machine tool.
- The EMERGENCY STOP of the machine is switched by a pressure switch using a potential-free changeover contact.



Note!

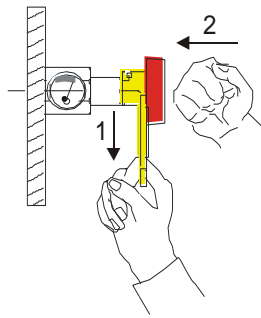
The connection to the machine stop and/or EMERGENCY STOP must always take place.

The communication interface indicates the current status as follows:

Operation (green)	
System tripped (fire alarm) (red)	
Loss of extinguisher (red)	
Flashing light	constant
Acoustic signal	constant

5.2 Manual Start

If you see a fire in the machine tool before the fire alarm has been tripped, you can start the extinguisher system manually using the Manual Start.



- ▶ Rip off the yellow seal downwards (1).
- ▶ Firmly hit the red button with your fist (2).
- ✓ The fire alarm is started.

The communication interface indicates the current status as follows:

Operation (green)	
System tripped (fire alarm) (red)	
Loss of extinguisher (red)	
Flashing light	constant
Acoustic signal	constant

5.3 Acknowledging the fire alarm



Danger to life!

Always ventilate the rooms thoroughly after the extinguisher system has been tripped! Also ventilate lower-lying rooms, as carbon dioxide is heavier than air and will flow downwards.

After a fire, the fire alarm must be acknowledged on the communication interface.

- ▶ Insert the key into the key switch and turn it to the right.
- ▶ The LED of the fire alarm blinks.
- ✓ The acoustic signal and the flashing light stop.
- ✓ The EMERGENCY STOP signal for the machine tool is reset, and the machine can continue operation.

The key can no longer be removed in this position. If you turn the key back to the left, the signals are activated and the machine is again switched to EMERGENCY STOP.

The communication interface indicates the current status as follows:

Operation (green)	
System tripped (fire alarm) (red)	
Loss of extinguisher (red)	
Flashing light	
Acoustic signal	



Warning!

Once the extinguisher system has been activated, no second fire will be able to be extinguished in the same machine tool until the extinguisher system has been serviced again. This servicing may only be carried out by **Siemens** or by one of the partners authorised by **Siemens**.

You can only remove the key if the system has been serviced, and the pressure switch can only be returned to its initial position when the extinguisher container is full again (see *Maintenance and Repair Instructions*). Only then is the communication interface reset.

5.4 Information to the installer

Following an initiation or fault on the extinguisher system, you, as the operator, must immediately inform the installer (see *Maintenance and Repair Instructions*).

6 Technical data

6.1 Lifedes™ pneumatic detection tube

Tube material	Specially developed, high molecular polymer with two decisive core characteristics: <ul style="list-style-type: none"> • Minimal (negligible) loss of extinguisher thanks to a diffusion rate of almost zero • Defined burst behaviour for a defined internal pressure
Dimensions	Standard diameter external 6 mm, internal 4 mm
Trip temperature	Above 110° C at 12 - 20 bar internal pressure
Operational temperature	Constant temperature up to max. 80° C
Operating pressure	Permanent 12 - 20 bar
Burst pressure	At approx. 50 bar (20° C)
Bending radius	Min. 40 mm, recommended > 60 mm
Resistant against	UV-radiation, diesel, all commercial cooling lubricants, detergents and most commonly-used chemicals

6.2 Communication interface

Power supply	Mains voltage 115/230 VAC, or 24 VDC, must be taken after the main switch of the machine.
Current consumption	Max. 40 mA, fused with 63mAT
UPS	Battery 12 VDC/1.3 Ah, secure against total discharge, gas-tight, 12-hours independence from the mains supply. Manufacturer: Panasonic Type LC-R121R3PG
Optical alarm	Flashing light 12 VDC/85 mA/1 W
Acoustic alarm	Two-tone piezo buzzer, sound pressure 95 dB (3m distance)
Outputs	The signals from all three monitored states (operation, fire alarm, leakage alarm) are available to the operator in the form of potential-free relay contacts. Maximum load 48 VDC /0.2A
Housing	Aluminium injection-moulded housing with lid
Temperature	Ambient -5 ... +35°C Storage -20.. +60°C
interface	A USB interface is available. The system data can be read out using a laptop.

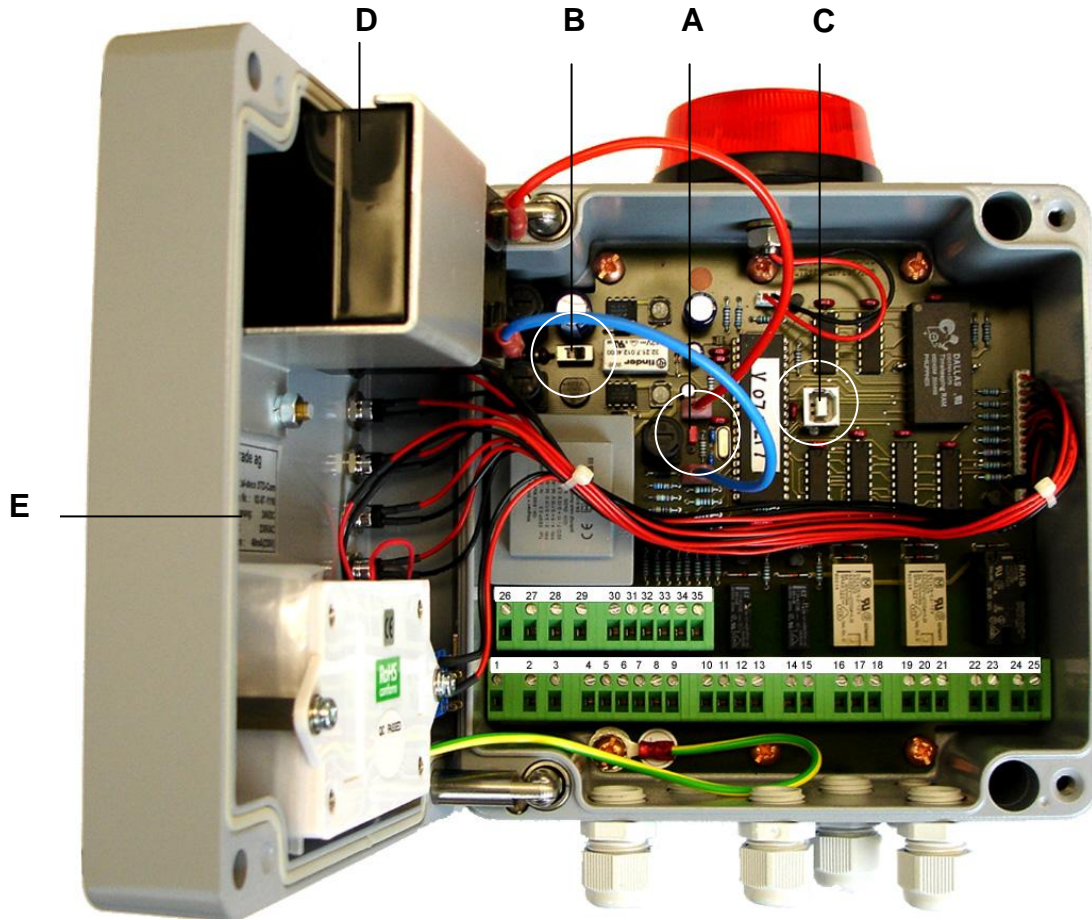
6.3 Disposal



The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

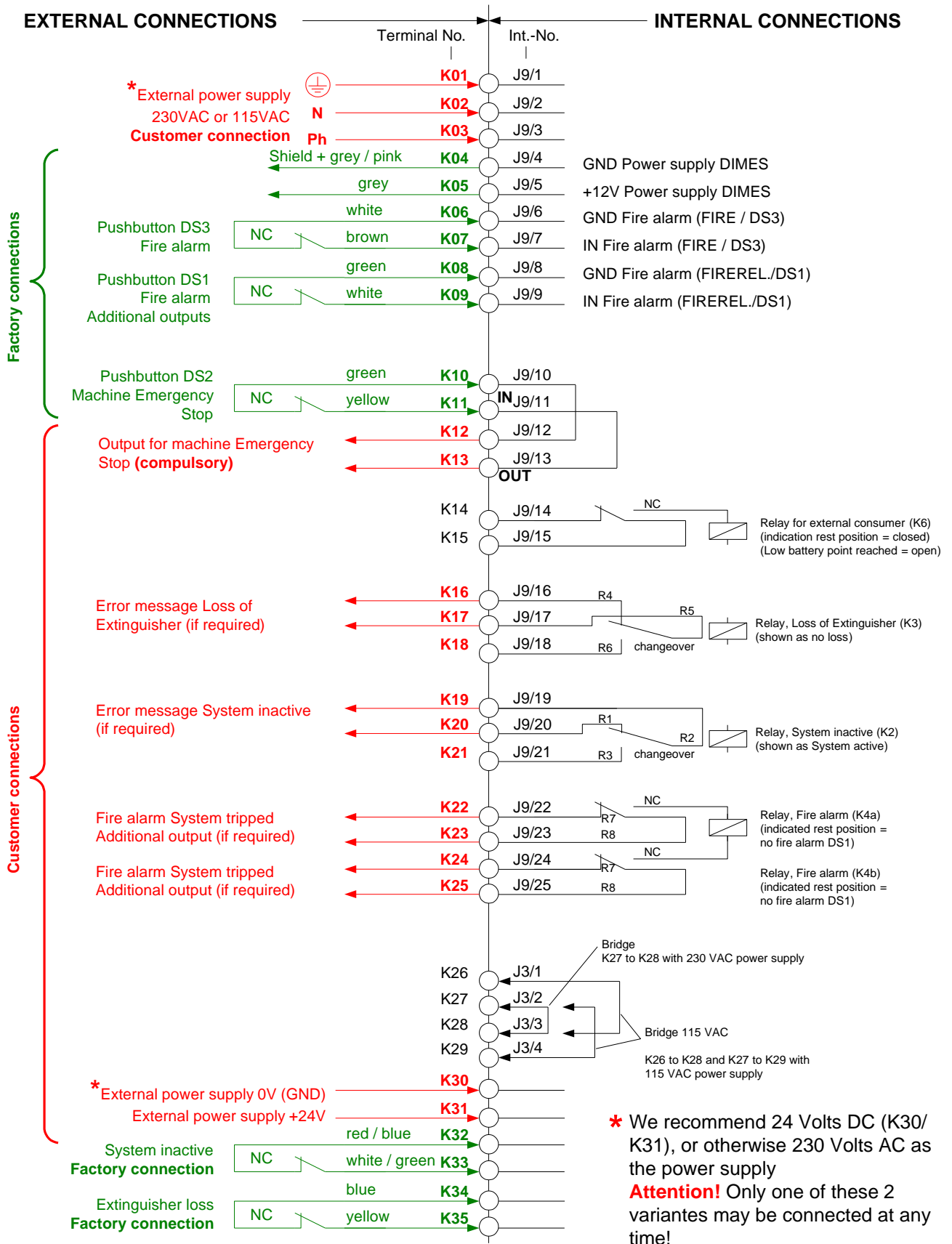
- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Interface connections



- A** For storage and transport, the red plug-in bridge (BR1) is fitted to just one pin. This protect the battery from being unnecessary discharged. After commissioning, the red plug-in bridges (BR1) must be fitted to both pins so that the battery will go into operation.
- B** The power supply to the communication interface is switched on and off with the slider switch.
Switch right = switched on
Switch left = switched off
- C** USB plug for the read-out of the system data.
- D** Battery for bridging over losses of the mains supply for up to 12 hours. (Refer to the Maintenance and Repair Instructions for the replacement of the battery)
- E** Rating plate with all the information required by the regulations

The terminal configuration can be seen from connection diagram on the following page.



7 Maintenance / Guarantee

7.1 Maintenance of the Sinorix™ al-deco STD fire extinguisher systems

The system has been designed so that it can be operated without external maintenance. This means that, supported by the document „*Maintenance and Repair Instructions*“, the operator should be able to carry out routine checks and put the machine back into service after a fire himself.

In order to be able to guarantee the operational reliability of the extinguisher system, the extinguisher system must be serviced every 12 months.

7.2 Guarantee / Warranty

The guarantee period commences with the handover of the extinguisher system to the operator.

8 Handover and Instruction Report for the Operator

To Company: _____

Person responsible: _____

Street: _____

Post Code/Town: _____

Tel. / Fax No.: _____

Extinguisher system data		Installation check	Checked	Remarks
Day of Installation:		Fittings of the detection line:		
Application:		Fittings of the extinguisher line:		
Extinguisher system No.:		Function of the pressure switch:		
Number of container:		Alarm interface connected:		
Weight of container:		Manual Start mounted:		
Serie No. of Interface:		Ventilation shut-off valve locked:		
Serie No. Lifdes™		Sealing of the system:		
Batch No. Valve:		Information/Warning notices:		
		System activated:		
		Operating Handbook delivered:		
		„Alarm reset“ key handed over:		
		230 VAC & ⊕ connected:		
		EMERGENCY STOP connected:		

The operator hereby confirms the following points for the manufacturer of the extinguisher system and/or the machine manufacturer:

- The instruction course for the employees of the operator regarding the extinguisher system was carried out according to the Operating Handbook. The instruction course was completely understood and the information will be passed on to the respective superiors and colleagues who were not present.
- That he has taken over the extinguisher system installed by the manufacturer/installer, including any agreed deviations from the Directives for the Planning and Installation.
- That the installation took place on the machine stated in the report.
- That the manufacturer/installer of the extinguisher system will accept no liability for modifications, improper damage or repair work on the extinguisher system that is carried out by non-authorized persons.
- That the manufacturer/installer also accept no liability for damage caused by an improper release of the "EMERGENCY STOP" of the machine and the ventilation when the extinguisher system is tripped by fire
- That the connection of the alarm function must be carried out by machine manufacturer.
- That the legal signatory of the operator has received the Operating Handbook (A54475-A1-A2.doc), together with all the relevant oral and written instructions that are necessary for the proper operation of the extinguisher system. They have noted that the relevant reports are an integral component of the Operating Handbook (Chapter 8).
- The legal signatory of the operator have taken note of the information regarding the oxygen concentration and know that this relates to a component part of DGUV Rule 105-001.
- The guarantee period starts after the hand-over of the system to the operator.

Confirmation of the extinguisher system manufacturer/installer:

- The manufacturer/installer of the extinguisher system hereby confirms that the extinguisher system has been designed and constructed according to the valid statutory directives based on DIN 14497 and according to the latest state-of-the-art.
- The extinguisher system has been handed over in a fully functional condition (up to the interface for the alarm interface).

Calculation of the oxygen concentration according to DGUV Rule 105-001:

The CO₂ concentration of the breathable air in the installation area may not exceed 5%.

The currently measured room volume in the installation area amounts to approx. _____ m³

The total gas concentration at the tripping of the extinguisher system in the installation area currently amounts to _____ Volume %

Formula for the calculation of the CO₂ concentration in %

$$\text{CO}_2 \text{ gas volume} = \frac{\text{Total weight of CO}_2}{2} = \text{CO}_2 \text{ gas volume in m}^3$$

$$\text{CO}_2 \text{ proportion} = \frac{\text{CO}_2 \text{ gas volume (m}^3\text{)} \times 100 (\%)}{\text{Room volume (m}^3\text{)}} = \text{CO}_2 \text{ concentration in \%}$$

1 kg CO₂ corresponds to approx. 0.5 m³ CO₂. The actual weight of CO₂ is quoted on the extinguisher container.

If the calculation of the oxygen concentration according to DGUV Rule 105-001 cannot be carried out, the room volume must be quoted as the length, width and height. The calculation will be subsequently carried out by the manufacturer of the extinguisher system.

Length: _____ Width: _____ Height: _____

Remarks:

Place / Date

Stamp + Signature of Operator

Place / Date

Signature of Manufacturer/Installer

Handover executed by (company):

Place / Date

Stamp & Name in block capitals and signature

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