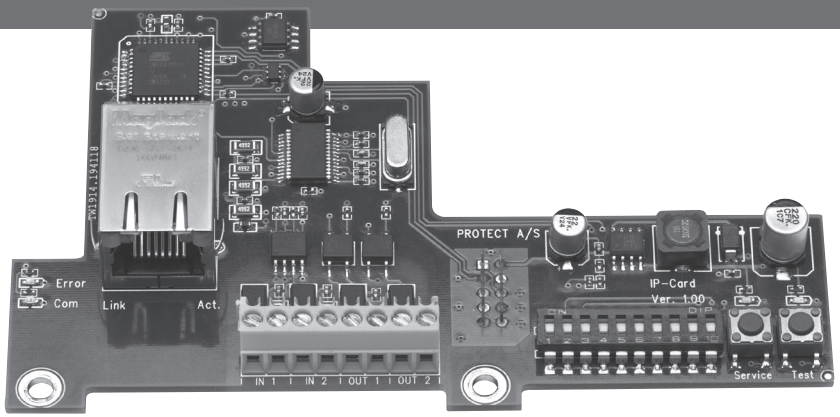
IPCard™

Manual for installation and use



Version 1.3

PROTECT®

SECURED IN SECONDS

Item no.: 21681_0001IPC

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1. Introduction to PROTECT IPCard™

This refers to PROTECT IPCard™ hardware version 1.1 and software version 1.02.

The IPCard in combination with PROTECT IntelliSuite™ adds the following functionality to the Fog Cannon™:

- General networking capability
- Remote real time monitoring of faults, fluid level, battery state etc.
- Remote full report generation - including event log, settings, state of I/O etc.
- Remote testing (test shot, relay test, acoustical annunciation)
- Remote reset
- Service Disable functionality (Blocking) by push-button or by remote control
- The level of what is allowed when connecting over network can be specified during installation by setting individual network permissions
- Pump test/priming by push-button
- "Panic" release functionality
- ATM protection mode on PROTECT 600i™, PROTECT 1100i™ and PROTECT 2200i™

The IPCard™ also adds the general possibility of delivering customer specific application solutions with networking capability on request.

1.1. Basic networking skills
Please note that introduction to basic networking skills are beyond the scope of this manual! The installer is assumed to have acquired the necessary skills before attempting to install the IPCard™.

In general PROTECT™ will not support basic networking problems since networking issues can be very complex and depends on local IT-planning, IT-politics and the way things are done in individual installations.

As a rule of thumb **always consult the local network administrator** before even considering the installation of networking capable devices. Such installation usually requires planning, permissions and setting up of local routers and switches in the network and you may not be allowed access to do this yourself.

1.2. Networking security and safety
The communication protocol used between the IPCard™ and IntelliSuite™ is designed **for use on secure networks only.**
Access is controlled by use of a 10 digit password. No form of encryption is used on this specific communication protocol.

If communication between the IPCard™ and the computer running IntelliSuite™ is supposed to be routed over insecure networks (e.g. the Internet), then some form of external security measures should be taken. It is suggested to use e.g. VPN protected communication between the PC and the secure network where the Fog Cannon™ equipped with the IPCard™ is installed. Commercial routers including VPN capability is readily available on the marked.

A cheaper, but more labor intensive way to raise the security level, could be to remotely manage the local router, to only open a communication channel when needed. After finishing the remote monitoring/control of a Fog Cannon™, the communication channel could then again be closed for security.

It should also be considered what specific actions should be permitted when working on a remote connection.

Should it for instance be allowed to perform testing and priming of the Fog Cannon™ pump, if this could potentially set of fire alarm systems and be a nuisance to people working in the building.

Network permissions could be set during installation to only allow passive monitoring actions, which would increase the safety level of the installation.

It is also strongly advised to set up the location identification text in the IPCard™ during installation. In this way it will be possible, by using the real time monitoring facility, to ensure that the fog cannon that you are actually connected to is in fact the Fog Cannon™ you expected to connect to.

2. Installation and use of IntelliSuite™

Before you can proceed with the installation of the IPCard™ you will need to install the latest version of IntelliSuite™.

IMPORTANT NOTICE!
IntelliSuite™ versions before 2.40.3 will not support the IPCard™.

Also you must acquire an IntelliConnector™ cable for connecting the PC running IntelliSuite™ with the service interface of the Fog Cannon™.

The installation and general use of IntelliSuite™ is beyond the scope of this manual, and only specific issues relevant to the installation and use of the IPCard™ will be dealt with in this manual.

3. Fog Cannon™ setup and installation

The installation and setup of the Fog Cannon™ itself is covered by its own manual. Please follow the instruction enclosed with the Fog Cannon™.

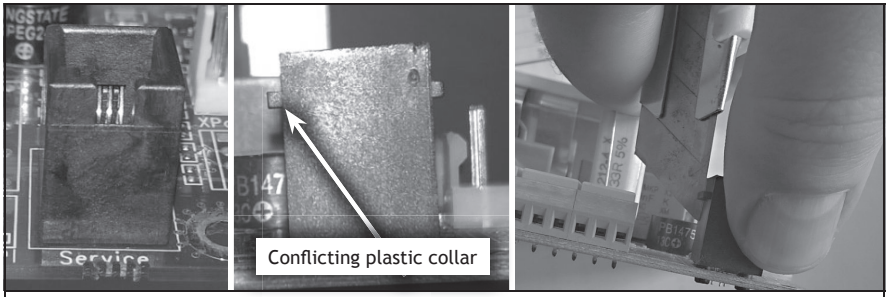
IMPORTANT NOTICE!
The IPCard™ will not operate with Fog Cannon™ units software before version 2.70.

Different software features are available, depending on the software version of the Fog Cannon™ and the software version of the IPCard™. See notes on this for each individual program function listed in this document.

Software in your Fog Cannon™ may be upgradable to accommodate the use of the IPCard™. Please consult your local PROTECT™ distributor for directions on this.

4. Mechanical installation

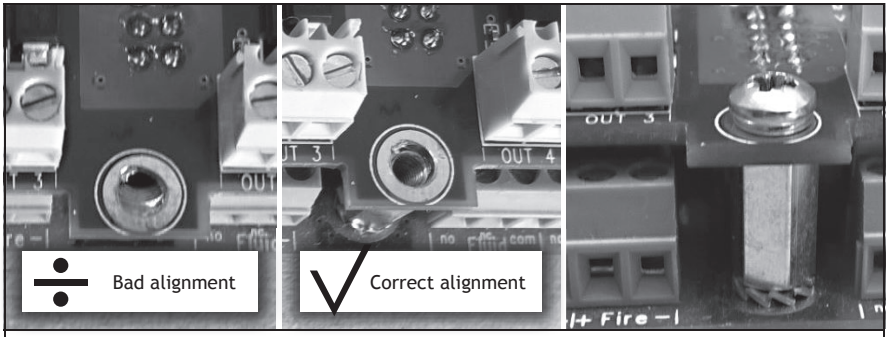
4.1. Prepare the main PCB



On some Fog Cannon™ units a service connector on the main PCB may have to be modified to give space enough to install the IPCard™.

If this is the case use a work knife to remove the conflicting plastic collar.

4.2. Make sure to install the IPCard™ securely using supplied washers, spacers and screws

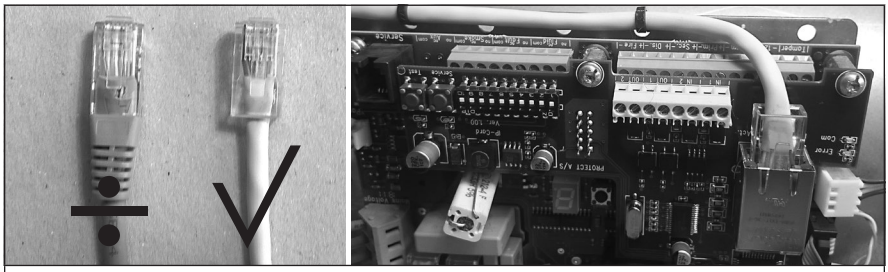


The connector on the IPCard™ MUST align properly with the connector on the main board, and mounting holes in the IPCard™ must align with spacers before attempting to install the screws.

4.3. Cabling

When installing the network cable, please make sure to use the correct type of RJ45 connector.

Some prefabricated cables come with a strain relief that extends behind the connector. This type of connector (as shown on the left) will not fit inside the cabinet of the PROTECT 600i™ fog machine since it will conflict with the top cover of the Fog Cannon™. Please use RJ45 connectors as shown to the right.



Route the networking cable as shown in the picture to make sure cable will not conflict with any internal part of the Fog Cannon™. Let the network cable exit the hole in the cabinet used for any other normal signal cable to and from the alarm system.

5. Technical data

Inputs:

Type	Optically isolated Bidirectional DC input
Activation level (guaranteed ON)	7 - 30VDC (Max)
Not activated (guaranteed OFF)	0 - 1VDC
Current	2mA@12V, 4mA@24V

Outputs:

Type	Optically isolated Bidirectional output
Overload protected solid state relay	
Max Rating	120mA continuous / 30VDC (20VAC)
ON resistance	Typical 28 Ohm (Max 35 Ohm)

Buttons:

Service	Toggles Blocking mode (service mode)
Test	For priming/testing pump at very low flow and for 3 seconds at a time max

LED's on PCB:

Green	**Flashing slow:** Not connected – starting up **Constantly on:** Connected to main PCB – Communicating OK **Flashing fast:** Test shot is running
Blue	**Flashing:** Machine is in Blocking mode (service mode)
Yellow	**Flashing:** Indicates network communication with this unit
Red	Flash: Confirmation from IntelliCloud has been received (from firmware v. 1.07)

Under power up the LED's will flash in an alternating pattern (Blue-Green-Blue .... Blue-Green-Blue ....) for approximately 5-10 seconds, and will then start indicating the states as listed above.

Network adapter:

LAN connection Speed	10Mb

LED's on RJ45 network connector:

Green	Connected to network
Yellow	Network traffic indicator

Please note that dipswitch settings, on the IPCard™, may be manipulated during normal operation.
This will however reset program flow on the IPCard™ back to its initial stage for that particular setting.
Also, precautions should be taken to prevent unwanted fog release that may be caused by dipswitch manipulation.

6. Setting up the IPCard™

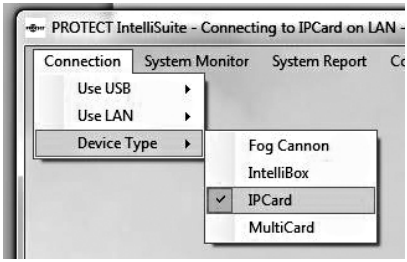
Before the IPCard™ can be used for monitoring and controlling the Fog Cannon™, the IPCard™ must be set up for the specific use.

Start up the Fog Cannon™ with the installed IPCard™, connect it to your computer using an IntelliConnector™ cable.

Then start up the IntelliSuite™ setup and monitoring program.

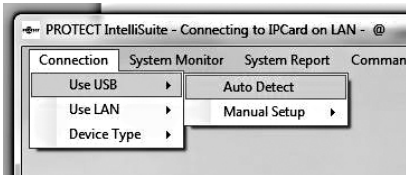
1

From the top menu select [Connection], [Device type], **[IPCard™].**



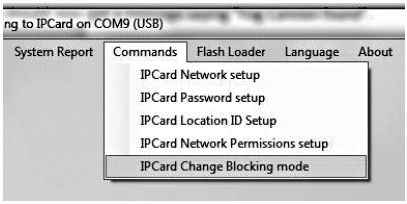
2

Then next from the top menu select [Connection], [Use USB], **[Auto detect].** You should now get a message saying "Fog Cannon™ found…".



Then use the top menu **[Commands]** to select different options for things to do on the IPCard™ while connected over the service interface.

3

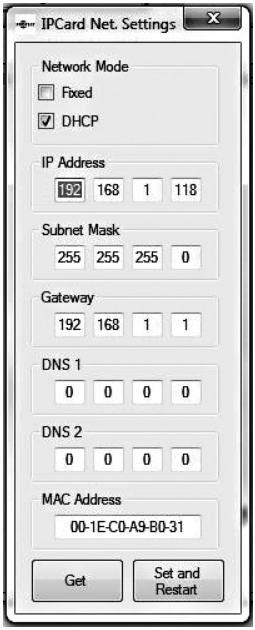


6.1. Network settings

Under the menu item **[IPCard™ Network Setup]** you will be able to setup all basic networking parameters and get information on MAC-address, current IP-address etc.
Remember to use the button “Set and restart” to store any changes you make.

By default network setting is “DHCP”.

4

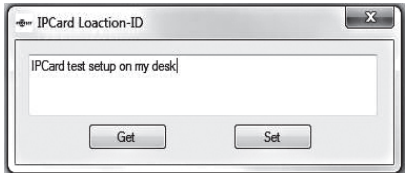


5

In the menu item **[IPCard™ Password setup]** you will be able to view and set a new password, for accessing the Fog Cannon™ over network. Default password is "1234000000".

6

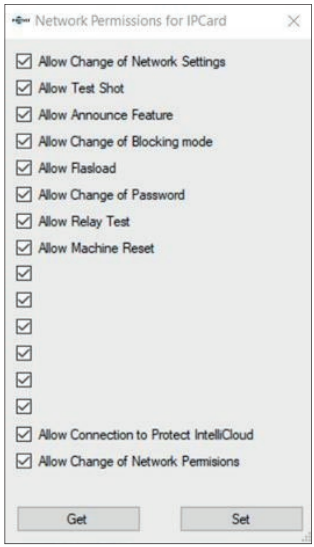
In the menu item **[IPCard™ Location ID setup]** you can type in a text identifying this particular Fog Cannon™. The Location ID will be visible in the system monitor when remotely monitoring the Fog Cannon™.



7

In the menu item **[IPCard™ network permissions setup]** you can specify what actions are allowed when operating over network. Remember to use the button **"Set"** to store any changes you make.

By default everything is allowed.



7. Using IntelliSuite™ for monitoring and controlling the Fog Cannon™

After correct setup of the IPCard™ you will be able to connect to the Fog Cannon™ over network by using IntelliSuite™.

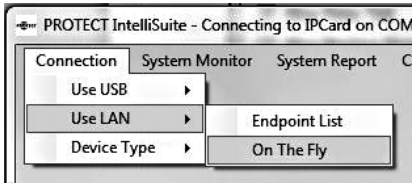
8

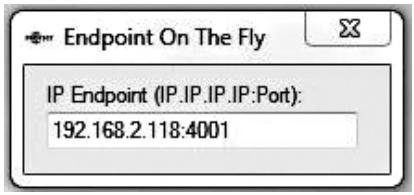
Connect your computer to the network and select [Connection], [Use LAN], **[On The Fly]** to type in the IP-address of the IPCard™ to connect to.

Type in the IP-address followed by Port number, separated by ":" as shown in the picture.

Port number for IntelliSuite™ access is fixed to 4001 when connecting directly to the IPCard™ on the local network.

Port forwarding performed in routers etc. may affect the port number you will have to type in from a remote network.





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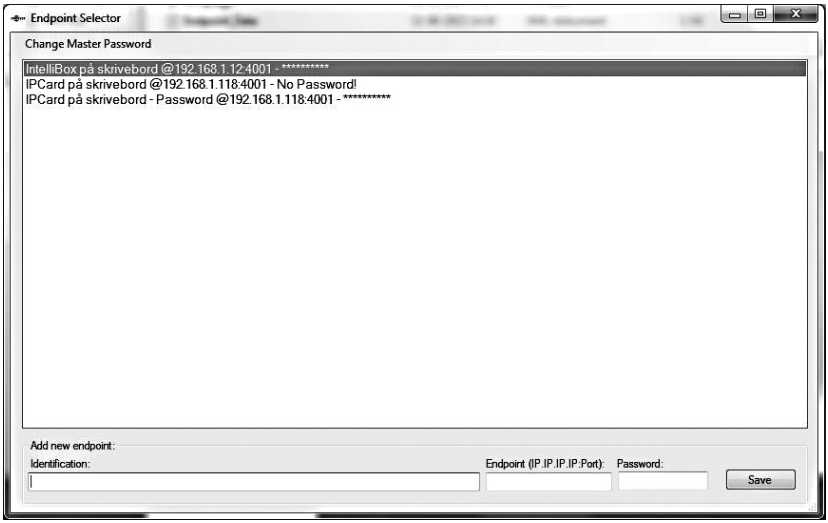

For more convenience you may also try out [Connection], [Use LAN], **[Endpoint Selector].**

Here you may enter several endpoints with accompanying passwords for later use, and give them an identifying name so they will be easy to use. You may select any given endpoint by double clicking.

You may edit or copy any endpoint in the list by right clicking it and selecting the action you want.

You may also password protect you endpoint list by changing the master password. This will encrypt any information specified in the endpoint list. If you have specified a password to be used, you will be asked to type in your password before gaining access to the endpoint list following any close down of IntelliSuite™.

Please make sure to also safe keep a list of your endpoints somewhere else as a backup.
Do not rely entirely on IntelliSuite™ to store your endpoints for the future.

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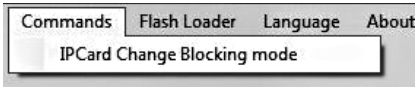
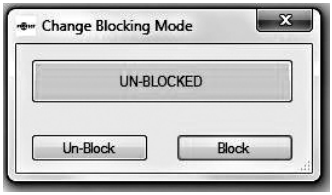
Now that you have selected your endpoint, you may connect to the IPCard™ or Fog Cannon™ connected to it.
To select IPCard™ options please select [Connection], [Device type], **[IPCard™].**
To select Fog Cannon™ options please select [Connection], [Device type], **[Fog Cannon™].**

In IPCard™ mode you will be able to remotely enable or disable the Blocking facility, to prevent unintentional fog release during service of the alarm system attached to the Fog Cannon™.

Select from the top menu [Commands], **[IPCard™ Change Blocking Mode]** (Blocking is a feature on the IPCard™, not the Fog Cannon™).

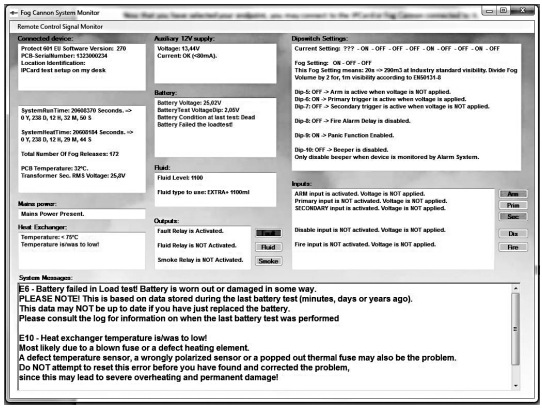




7.1. Options

In **Fog Cannon™ mode** you will be able to utilize several options.

Select from the top menu **[System Monitor]** to get a real time overview of the condition of the Fog Cannon™.
Any relevant information on fault conditions, fluid level, battery condition, Fog Cannon™ settings etc. are available.
Clear text information in the "System messages" window will tell you what may cause any problems.



Select from the top menu **[System Report]** to get a complete and comprehensive text report, including all relevant information possible for identification of any problems present or in the near past.
The report also includes a log of the last 300 events, which normally covers 2-3 months of operation time.
Reports may be saved on your computer as simple text files, and can be e-mailed to relevant personnel for further investigation.

Select from the top menu [Commands], **[Reset Device]** to reset the Fog Cannon™.

Select from the top menu [Commands], **[Test shot]** to perform simple testing and priming of the Fog Cannon™ pump.

Select from the top menu [Commands], **[Announce On/Off]** identifying a specific Fog Cannon™ in the installation by sound and flashing of the LEDs on the front.

Select from the top menu [Commands], **[Relay Test]** to test the connection between the Fog Cannon™ and the alarm system by briefly changing the state of signaling output relays one by one.

This list of IntelliSuite™ features is not a complete list, and the options and functionality will change over time, as software evolves, so please check regularly for updated of the IntelliSuite™ software and stay in contact with your local PROTECT™ distributor for up to date information.

8. Operational modes of the IPCard™ selectable by dipswitch

8.1. Panic function mode

Software requirements Fog Cannon™: Software version 2.70 or higher.
Software requirements IPCard™: Software version 1.02 or higher.
Device requirements: This program will run on any type of PROTECT Fog Cannon®.

Dipswitch settings:

1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0

Inputs functionality:

IN-1	Panic button (normally open)
IN-2	Disable button (this Disable input allows Panic to work - will not turn off heat), (normally open)

Outputs functionality:

OUT-1	Panic release active
OUT-2	No function in this program mode

The Panic function is a special feature allowing two different uses for the same Fog Cannon™ in the same installation:

- It allows normal protection triggered by the alarm system during periods when the alarm system is set
- It allows the use of the Fog Cannon™ as a personal attack protection system during the normal day hours
  when the alarm system is normally un-set. The Panic fog release relies on the activation of only one single input

For the Panic Release function to work, the following conditions must be met:

- **The Disable input on the Fog Cannon™ main board must be inactive**
  - Use the Disable input on the IPCard™ instead since this input will not influence the Panic signal
- **The Fire Alarm input on the Fog Cannon™ main board must be inactive**
  - The Fire Alarm input IS DESIGNED TO STOP AND BLOCK ALL FOG immediately
  - This is a mandatory function demanded by national and local fire authorities, when used in premises monitored by fire alarm systems, and hence may not and cannot be overruled
  - **If service disable functionality is requested, for servicing attached alarm system, please use the Service button on the IPCard™, or the remote Blocking over network instead.**
    It was designed specifically with this purpose in mind
- **Dipswitch 9 on the Fog Cannon™ mainboard must be set to ON to enable Panic functionality**

8.2. ATM protection mode on PROTECT 600i™

Software requirements Fog Cannon™ : Software version 2.70 or higher.
Software requirements IPCard™: Software version 1.02 or higher.
Device requirements:
This program is specially designed for **PROTECT 600i™ ONLY!**
Attempts to use this feature on other machines may result in unpredicted behavior.

Dipswitch settings:

1	2	3	4	5	6	7	8	9	10
1	0	0	0	0	0	Fog 2	Fog 2	Fog 3	Fog 3

Inputs functionality:

IN-1	ATM shutter manipulation (normally closed)
IN-2	Seismic, glass break and/or Gas sensor (normally closed)

Outputs functionality:

OUT-1	Fog has been activated (will stay closed until Disable is activated on mainboard)
OUT-2	No function in this program mode

This program functionality has been specially tailored for protection of ATM machines.
It combines three different trigger methods with individual fog settings.

Input 1 is intended for connection to detectors that detect attempts to manipulate the ATM shutter.
If it is activated it will fire a preselected **warning shot** to deter anyone from manipulating the shutter mechanism.
A limit of maximum 3 shots is possible. This will be reset by Disable signal on the mainboard.
A minimum break of 5 minutes (blocking timer) between such “warning activations” is required.
This feature is to limit the amount of fog fluid that may be wasted due to this type of manipulation.
This input is fixed “normally closed” (activates when NO voltage is applied).

Possible settings are:

Dip setting Dip 7 & 8	Shot type	Fog volume
0,0	5 S turbo	85 m^3
1,0	10 S turbo	170 m^3
0,1	20 S normal	290 m^3
1,1	40 S normal	540 m^3

Retrigger blocking is for this input limited to only 5 seconds, following any other fog release.

Input 2 is intended for connection to seismic detectors, glass break, and/or detectors that detect introduction of gas into the ATM machine.
If it is activated it will fire a preselected protection shot to deter anyone from breaking the ATM by brute force, or by introduction of air/gas mix to be detonated. There are no limits to the number of such shots possible (besides limits on fluid content).
This input is fixed “normally closed” (activates when NO voltage is applied).

Possible settings are:

Dip setting Dip 9 & 10	Shot type	Fog volume
0,0	20 S normal	290 m^3
1,0	40 S normal	540 m^3
0,1	60 S normal	700 m^3
1,1	30 S turbo	600 m^3

Retrigger blocking is for this input limited to only 5 seconds, following any fog release.

The third trigger method is intended for the event that the ATM door is forced open.
In this case a large amount of initial fog may be required to fill the premises, and a series of pulses may be required to keep the premises filled until security personnel arrives.
The third trigger method is controlled entirely by inputs and settings on the mainboard like in any other fog protection application without the use of an IPCard™.

Retrigger blocking is for this input limited to 30 seconds, following any fog release.

Please note that **fluid warning level** will correspond to the fog settings on the mainboard!

Output 1 is in this mode a dedicated "fog has been activated" output, that will activate (close) when the fog is released. It will stay activated (closed) until "Disable" on the main board has been activated.
This will indicate to staff weather the fog protection system was activated or not.
Note: the "Fog" relay output on the main board will still indicate when fog is active, but will release once fog production stops again.

Please note that all trigger **inputs are edge triggered,** and that retriggering after a fog release depends on signals returning to their normal level (closed) before again being activated (opened).

8.3. ATM protection mode on PROTECT 1100i™

Software requirements Fog Cannon™: Software version 2.70 or higher.
Software requirements IPCard: Software version 1.02 or higher.
Device requirements: This program is specially designed for **PROTECT 1100i™!** Attempts to use this feature on other machines may result in unpredicted behavior.

Dipswitch settings:

1	2	3	4	5	6	7	8	9	10
0	1	0	0	0	0	Fog 2	Fog 2	Fog 3	Fog 3

Inputs functionality:

IN-1	ATM shutter manipulation (normally closed)
IN-2	Seismic, glass break and/or Gas sensor (normally closed)

Outputs functionality:

OUT-1	Fog has been activated (will stay closed until Disable is activated on mainboard)
OUT-2	No function in this program mode

This program functionality has been specially tailored for protection of ATM machines.
It combines three different trigger methods, with individual fog settings.

Input 1 is intended for connection to detectors that detect attempts to manipulate the ATM shutter.
If it is activated, it will fire a preselected **warning shot,** to deter anyone from manipulating the shutter mechanism.
A limit of maximum 3 shots is possible. This will be reset by Disable signal on the mainboard.
A minimum break of 5 minutes (blocking timer) between such “warning activations” is required.
This feature is to limit the amount of fog fluid that may be wasted due to this type of manipulation.
This input is fixed “normally closed” (activates when NO voltage is applied).

Possible settings are:

Dip setting Dip 7 & 8	Shot type	Fog volume*
0,0	7 S	250 m^3
1,0	15 S	500 m^3
0,1	20 S	687 m^3
1,1	30 S	875 m^3

*Please note that numbers on fog settings and fog volumes may differ slightly on low voltage models (115V/127V).

Retrigger blocking is for this input limited to only 5 seconds, following any other fog release. The short fog times indicated are minimum guide lines only. Actual fog volume may be larger than indicated.

Input 2 is intended for connection to seismic detectors, glass break, and/or detectors that detect introduction of gas into the ATM machine.
If it is activated it will fire a preselected protection shot to deter anyone from breaking the ATM by brute force, or by introduction of air/gas mix to be detonated. There are no limits to the number of such shots possible (besides limits on fluid content).
This input is fixed “normally closed” (activates when NO voltage is applied).

Possible settings are:

Dip setting Dip 9 & 10	Shot type	Fog volume*
0,0	30 S	875 m^3
1,0	45 S	1200 m^3
0,1	60 S	1300 m^3
1,1	60 S + 4 min.	1700 m^3

*Please note that numbers on fog settings and fog volumes may differ slightly on low voltage models (115V/127V).

Retrigger blocking is for this input limited to only 5 seconds, following any fog release.

The third trigger method is intended for the event that the ATM door is forced open.
In this case a large amount of initial fog may be required to fill the premises, and a series of pulses may be required to keep the premises filled until security personnel arrives.
The third trigger method is controlled entirely, by inputs and settings on the main-board, like in any other fog protection application without the use of an IPCard™.

Retrigger blocking is for this input limited to 30 seconds, following any fog release.

Please note that **fluid warning level** will correspond to the fog settings on the mainboard!

Output 1 is in this mode a dedicated "fog has been activated" output, that will activate (close) when the fog is released. It will stay activated (closed) until "Disable" on the main board has been activated.
This will indicate to staff weather the fog protection system was activated or not.
Note: the "Fog" relay output on the main board will still indicate when fog is active, but will release once smoke production stops again.

Please note that all trigger **inputs are edge triggered,** and that retriggering after a fog release, depends on signals, returning to their normal level (closed) before again being activated (opened).

8.4. ATM protection mode on PROTECT 2200i™

Software requirements Fog Cannon™: Software version 2.91 or higher.
Software requirements IPCard™: Software version 1.04 or higher.
Device requirements: This program is specially designed for **PROTECT 2200i™!** Attempts to use this feature on other machines may result in unpredicted behavior.

Dipswitch settings:

1	2	3	4	5	6	7	8	9	10
1	1	0	0	0	0	Fog 2	Fog 2	Fog 3	Fog 3

Inputs functionality:

IN-1	ATM shutter manipulation (normally closed)
IN-2	Seismic, glass break and/or Gas sensor (normally closed)

Outputs functionality:

OUT-1	Fog has been activated (will stay closed until Disable is activated on mainboard)
OUT-2	No function in this program mode

This program functionality has been specially tailored for protection of ATM machines.
It combines three different trigger methods, with individual fog settings.

Input 1 is intended for connection to detectors that detect attempts to manipulate the ATM shutter.
If it is activated, it will fire a preselected **warning shot,** to deter anyone from manipulating the shutter mechanism.
A limit of maximum 3 shots is possible. This will be reset by Disable signal on the mainboard.
A minimum break of 5 minutes (blocking timer) between such “warning activations” is required.
This feature is to limit the amount of fog fluid that may be wasted due to this type of manipulation.
This input is fixed “normally closed” (activates when NO voltage is applied).

Possible settings are:

Dip setting Dip 7 & 8	Shot type	Fog volume*
0,0	5 S	225 m^3
1,0	10 S	450 m^3
0,1	20 S	900 m^3
1,1	40 S	1800 m^3

*Please note that numbers on fog settings and fog volumes may differ slightly on low voltage models (115V/127V).

Retrigger blocking is for this input limited to only 5 seconds, following any other fog release. The short fog times indicated are minimum guide lines only. Actual fog volume may be larger than indicated.

Input 2 is intended for connection to seismic detectors, glass break, and/or detectors that detect introduction of gas into the ATM machine.
If it is activated it will fire a preselected protection shot to deter anyone from breaking the ATM by brute force, or by introduction of air/gas mix to be detonated. There are no limits to the number of such shots possible (besides limits on fluid content).
This input is fixed “normally closed” (activates when NO voltage is applied).

Possible settings are:

Dip setting Dip 9 & 10	Shot type	Fog volume*
0,0	20 S	900 m^3
1,0	40 S	1800 m^3
0,1	70 S	2875 m^3
1,1	60 S + 10 min.	3700 m^3

*Please note that numbers on fog settings and fog volumes may differ slightly on low voltage models (115V/127V).

Retrigger blocking is for this input limited to only 5 seconds, following any fog release.

The third trigger method is intended for the event that the ATM door is forced open.
In this case a large amount of initial fog may be required to fill the premises, and a series of pulses may be required to keep the premises filled until security personnel arrives.
The third trigger method is controlled entirely, by inputs and settings on the mainboard, like in any other fog protection application without the use of an IPCard™.

Retrigger blocking is for this input limited to 30 seconds, following any fog release.

Please note that **fluid warning level** will correspond to the fog settings on the mainboard!

Output 1 is in this mode a dedicated "fog has been activated" output, that will activate (close) when the fog is released. It will stay activated (closed) until "Disable" on the main board has been activated.
This will indicate to staff weather the fog protection system was activated or not.
Note: the "Fog" relay output on the main board will still indicate when fog is active, but will release once smoke production stops again.

Please note that all trigger **inputs are edge triggered,** and that retriggering after a fog release, depends on signals, returning to their normal level (closed) before again being activated (opened).

PROTECT A/S is the world's largest supplier and the only producer of Fog Cannon™ in Scandinavia.
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