

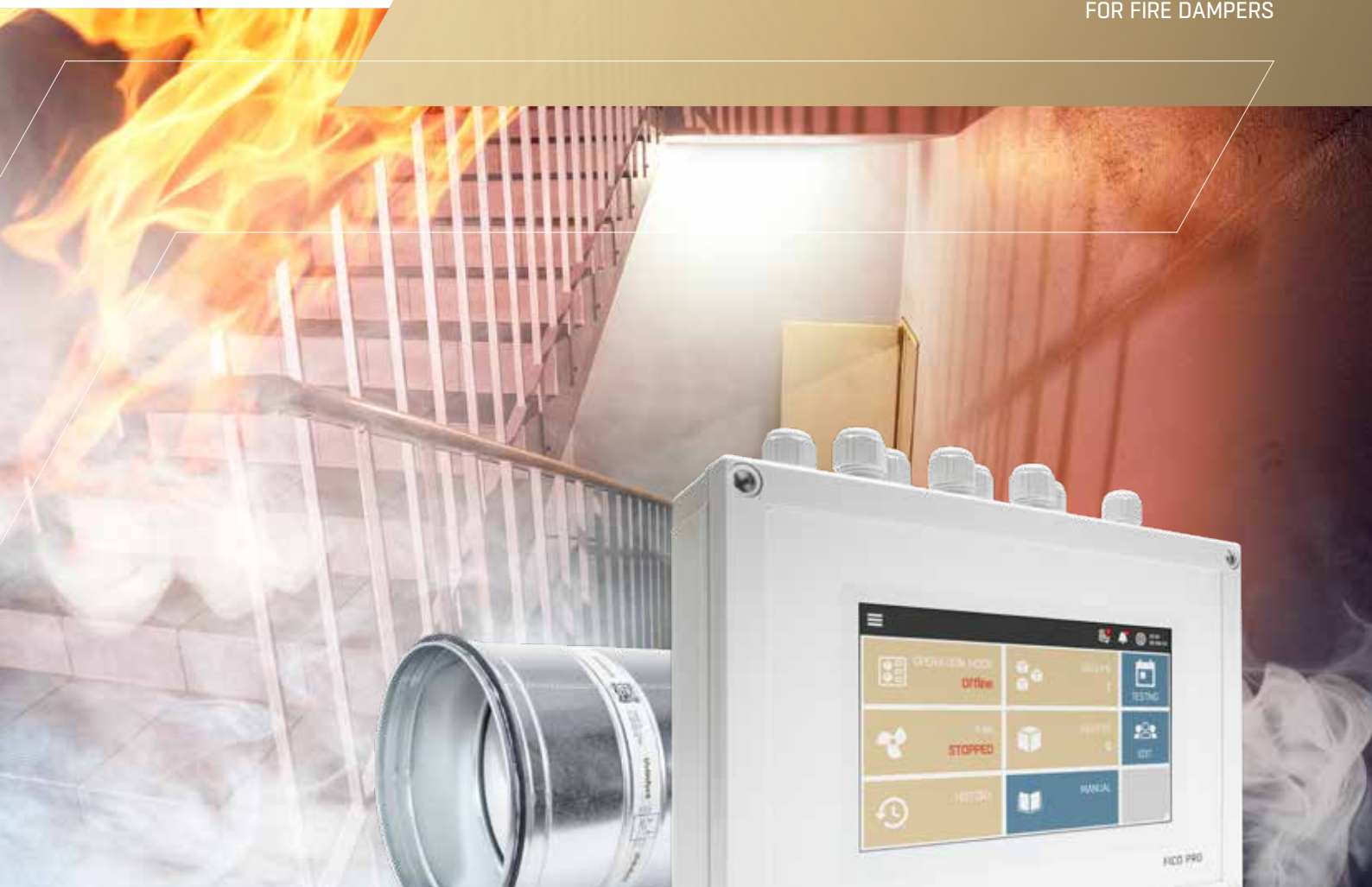


CONTROLS

ISYteq FICO

ISYteq FICO

» FIRE SAFETY CONTROL SYSTEM
FOR FIRE DAMPERS



FläktGroup

FICO PRO

SAFETY AND RELIABILITY IN CRITICAL SITUATIONS

Fire dampers are essential building components which are used to prevent smoke and fire spread via ductwork in buildings. This passive fire protection device is used in heating, ventilation and air conditioning ducts for the prevention of the spread of fire inside the duct work. They are required to be installed within the ductwork system at the point of fire-resistance rated walls and ceilings. In the event of a fire, the mechanical fire damper will close as it is activated by the thermal element. This melts as a rise in temperature occurs due to a fire, allowing the springs to close the damper blade.

This form of traditional mechanical fire damper is the most common in use; however more people are recognising the benefits of motorised fire dampers. These are electrically charged devices and will (in addition to a thermal sensing element) operate under a signal from either a smoke detector installed in the duct work or in a room; they can also be triggered by a signal from the building fire alarm system. The motorised fire damper will operate quicker under fire conditions, because the smoke will be detected earlier than a rise in temperature.





A tradition of Fire Safety Solutions for a wide range of applications

FläktGroup is a pioneer in indoor air management in case of fire and smoke. We have built up over 20 years applicational knowledge through involvement in many major construction projects, such as offices, hotels, airports, commercial buildings but also demanding applications like car parks, cruise ships and oil & gas platforms. The ability to offer a full range of products, coupled with our vast experience of HVAC systems, makes FläktGroup the ideal provider of Fire Safety solutions.





1

BENEFITS

Feature packed ISYteq FICO has tangible benefits for all stakeholders

2

STEADFAST

Reliable quality for critical fire safety systems, from a single source

3

CONSERVE TIME

Simple, quick and intuitive

4

FLEXIBILITY

Test single, multiple or all dampers

5

ENHANCEMENTS

Continuous developments to ease installation and information access

6

TECHNICAL INFORMATION

Products and systems description

BENEFITS

Decisive benefits for all stakeholders

1



DEVELOPERS & BUILDING OWNERS

- Check that your estate is being cared for, with remote access.
- Review fire damper test information.
- Safety assurance with the test data stored in the FläktGroup cloud.
- Utilise a flexible and modular system that can be reconfigured and extended at any time in the future.
- Speed up installation time by using a system with auto addressing features.
- For more competitive applications, utilise the ISYteq FICO MINI for up to 12 fire dampers.
- Utilise the ISYteq FICO PRO and the I/O Jack to monitor existing mechanical fire dampers.



DESIGNERS

- Reliable and cost effective fire safety solution.
- Flexible and modular control system from 1 fire damper to 256 fire dampers.
- Fast installation with the automatic addressing and QR code reader.
- Clear display with 7" touch screen with tiled format for easy navigation and remote connection to view on any mobile device and a 1.5" screen for the ISYteq FICO MINI.
- Utilise the I/O Jack for monitoring mechanical fire damper operational status.
- Connection to building management system via Modbus RTU.
- Safety assurance with test data history stored in the FläktGroup cloud.



INSTALLERS

- Flexible and modular control system from 1 fire damper to 256 fire dampers. Mix and match 2 and 4 damper multi boxes on network.
- Fast installation with the automatic addressing and QR code reader.
- Utilise the discovery sounder to locate multi-boxes and dampers in the building.
- 7" touch screen with tiled format for easy navigation and remote connection to view on any mobile device for the FICO PRO and a 1.5" screen for the FICO MINI
- Connection to most building management systems via Modbus RTU or BACnet (available at end of 2020).
- Safety assurance with test data history stored in the FläktGroup cloud.
- ISYteq FICO MINI, a very competitively priced solution up to 12 fire dampers.



FACILITY MANAGER

- Reliable solution proven supplier for fire safety control systems.
- Flexible and modular control system from 1 to 256 fire dampers. Utilise both 2 and 4 damper multi-boxes
- Fast find with the discovery sounder in the multi-boxes.
- Clear display with 7" touch screen with tiled format navigation and remote connection to view on any mobile device via the APP. The ISYteq FICO MINI has a 1.5" screen.
- Utilise the ISYteq FICO PRO with the I/O Jack to monitor the operational performance of your mechanical fire dampers.
- Connection to most building management systems via Modbus RTU or BACnet (available at end of 2020).
- Safety assurance with test data history stored in the FläktGroup cloud.

2

STEADFAST

Critical fire safety solutions from a reputable manufacture

EASIER TESTING WITH MOTORISED DAMPERS

Fire dampers should be CE marked and in accordance with EN 1366-2. These indispensable pieces of equipment are out of sight and generally out of mind, sitting in the ductwork in an open position for the majority of time. However, this critical barrier still must operate effectively when called upon. The purpose of the fire damper is for the protection of life of the building occupants, the fire service and the building by offering an active barrier past which the fire and smoke cannot penetrate for a period of time. As a safety device, there is a legal requirement that the mechanical fire dampers are tested every six months. This can be an expensive exercise as individuals are employed to visit site to walk the building closing and opening the fire dampers to confirm the device is still operational.

With the introduction of motorised fire dampers, the regulations have not changed but from a manufacturer perspective we would recommend more regular testing as a building fire alarm system is tested at least once a week. This is possible when the motorised fire dampers are managed with a control system. With early iterations of these control systems and with the many still being offered, there is a requirement for the air handling units to be shut down while the testing is being carried out. In future, this disruption to the building operation or expensive out of office time testing does not need to happen as with some systems.



BENEFITS

- We can reduce on-going costs for testing, increase the flexibility for testing and prove proof of testing with our new ISYteq FICO control system.
- Whether it is circular or rectangular fire dampers or an innovative fire safety control system, you can find them all at FläktGroup, one reliable quality manufacture for all your fire safety requirements.

CONSERVE TIME

Auto addressing with
ISYteq FICO PRO & MINI is
simple, quick and intuitive

3

FICO PRO



FICO MINI



**ONLINE &
DETECTED**

From a small system, up to 12 fire dampers or something larger up to 256 fire dampers or even if you want to monitor your existing mechanical fire dampers, our new FICO system has a solution for you.

The new FICO system utilises the Modbus protocol connectivity for devices, what's more is we have made this automatic. With the Modbus addresses already set in the devices, when they are connected and powered up, the system automatically recognises them, an instant plug & play feature of the new ISYteq FICO PRO & FICO MINI. No setting up addresses or using dip switches, meaning the installation time is reduced considerably.

You may be wondering what is this Modbus? This is the communication protocol we use to connect the main controller to the multi-boxes. More information is available in our single sheet communication protocols for ISYteq FICO on our website. The ISYteq FICO PRO and MINI also allows the installer to insert unique location identification information for each damper.

BENEFITS

- Creating an interconnected and intelligent network, which is flexible intuitive and modular
- As a specifier or installer of this equipment, especially in larger installations, the time saving during the install process will be great

The new ISYteq FICO PRO is compatible with your existing multi-box, making this is a great upgrade solution.

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FLEXIBILITY

Compile zones for testing, test all or test individual dampers, for a more modular approach

An advantage of mechanical fire dampers is that you can walk the building and test each one individually, without the need to shut down the air handling unit. Of course, the disadvantage of this system is the length of time it takes to carry out the testing, the disruption to the clients and the costs involved for the testing this makes the whole life cost expensive when compared to the whole life cost of a motorised system.

However, you don't want to shut down the AHU, to test the fire dampers, you would like to group certain fire dampers together in to a zone for testing. There may be certain dampers or zones, which you would prefer to test at certain times of the day or night or to be able to check and test from a remote location. With FläktGroup ISYteq FICO we have a solution to all these issues.

FLEXIBLE TESTING SCENARIOS

- Standard type setup for ISYteq FICO PRO could be to test all dampers every Tuesday at 10 a.m. shutting down the AHU. The scheduling function in the controller will manage this, recurring every Tuesday.
- If the building layout is more complicated, with different zones needed to be tested at different times, you can programme each zone to have the fire dampers tested at different intervals, for instance in a school or college to fit in with classroom changes. The programming can be altered at any time along with the configuration of the zones.
- Single dampers can be set for testing using the calendar also, facilitating the same process as available for mechanical dampers but at a lot less cost. If a damper issue occurs, you have the option to commit to a retest, before investigating.





ISYteq FICO PRO

The ISYteq FICO PRO offers a 7-inch graphical touch screen, with tile format for quick & easy navigation. This system utilises 2 and 4 fire damper multi-boxes to accommodate up to 256 fire dampers in total and you can connect up to 4 x 24 V fire dampers directly to the FICO PRO. A Modbus RTU connection is included for connection to the building management system, along with a BACnet protocol which will be introduced at the end of 2020.



ISYteq FICO MINI

Where a less erudite or smaller solution is required this is the perfect match. Capable of controlling up to 12 fire dampers with the ability to use 2 and 4 fire damper connection units. This system offers the benefits of auto addressing with a smaller 1.5" screen and 4 navigation buttons for setup & operation. The ISYteq FICO MINI can also connect to the building management system via a Modbus RTU connection but will only accept a maximum of 2 multi-boxes. Also, this system will only test all the fire dampers at the same time, sending a signal to the air handling unit to shut down.



I/O MODULE FOR ISYteq FICO PRO

By utilising the FICO I/O module in conjunction with the ISYteq FICO PRO, we can offer the monitoring of the operational performance of the mechanical fire dampers.



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CONTINUOUS ENHANCEMENTS

Always moving forward to ease installation & retrieve information

The normal procedure for recording test information has until now been conducted on a manual basis, with this information retained in a management office or with the facility management company. If this information is lost in an actual fire where is the supporting information to confirm that the fire dampers had been tested and maintained regularly and in accordance with EN 12001.

The FICO PRO can offer two levels of data storage. The first is limited to 30 days at the controller, which will provide historical information on the testing that has been carried out by the

system. Anomalies will be highlighted and can be investigated accordingly, plus a re-test instigated to ensure the issue has been resolved.

The second set of data storage is in the FläktGroup cloud, which will be launched in the 4th quarter of 2020. All systems purchased before then will have the capability to be upgraded. The testing and other information will be stored in the cloud to be accessed and reviewed whenever you need. This paid for service will also store the opening and closing operation time of each fire damper from the first installation.



FLÄKTGROUP CLOUD – SECURITY AND CONVENIENCE IN A FEW SIMPLE STEPS

Set up of the FläktGroup cloud solution is easy. Tailored to individual and projects, it will be possible to set up all your details and all the sites you are responsible for.

The installer, can register their details and sign-up to use the service. Each individual site can be set up and everything is password protected, we will not share your information with anyone else. A prompt for site information to be completed such as the address, the size of the system, installation date, and client information if known (occupier, building owner or developer). Then you are ready to go.

As a facility manager, you can also register, with some basic information such as above. Then you will be able to utilise the remote access to the system, change the test schedule from a remote location, review and download historical data and use the discovery sounder. The ISYteq FICO MINI system will also have 30 days of storage capability.

Sounder feature for quicker installation with FICO PRO



If you have ever been to an installation, which has been started by someone else or perhaps been searching an installation for a connection-box and associated dampers to action a maintenance issue you know only too well how time consuming this can be.

SAVE TIME EVERYTIME YOU NEED TO FIND A CONNECTION BOX OR DAMPER

With ISYteq FICO PRO you set of a buzzer in the connection unit with in the building. This allows the identification of the location of the connection box which you can find by walking the building. Once you have located the multi-box you are able to access a reset button in the enclosure and you are ready to carry out your maintenance actions.

FIND THE RIGHT CONNECTION BOX QUICKLY AND EASILY WITH OUR UNIQUE SOUNDER FEATURE

In the future we aim to make the location identification process even quicker by introducing an app for your mobile device. This will speed up the location process of the multi-boxes and dampers.



Sounder can be reset with press of a button in multi-box or via app.

Technical information

ISYteq FICO MINI (Product Code FCMB 4)



The control unit is suited for direct mounting on air ducts, walls, ceilings, or in control panels. The units can be mounted with a maximum distance of 50 m from a fire damper. ISYteq FICO MINI has an in built 1.5-inch graphical display and 4 buttons on the front panel for configuration of all settings. There are also 4 status LED's located on the front panel and 4 potential free inputs. The user interface has clear graphics for a simple installation.

This new system operates on a 230 V supply meaning that it should be installed by a certified electrician to local regulations. After installation, there is no need to open the enclosure as all functions can be accessed from the front panel.

There is the potential to connect 3 FICO MINI controllers together for a complete system of 12 24V Fire dampers; they each share their operational information with one unit able to display this to the user. When the units are linked together the auto addressing function will identify each of the connected units by their unique identification number and acknowledge them as part of one complete system. Likewise, a FICO MINI can be connected with either the 2 or 4 fire damper multi-boxes up to a maximum of 12 fire damper actuators can be configured in the system. It is possible to mix 2 and 4 damper multi-boxes in one system solution.

CABLE CONNECTION:

Maximum cable lengths are; dampers 50 m, detectors 25 m and Modbus communication 1000 m Utilising a FQAR-PG 2x2x0.5 or equivalent.

COMMUNICATION:

Modbus RTU for BMS connection

SMOKE DETECTORS:

RDKS Duct smoke detector
Calectro: EVC-PY-DA Room smoke detector

POWER:

230V ac (+/-20%) 50/60 Hz

ENCLOSURE DIMENSIONS:

180x130x75 mm

PROTECTION CLASS:

IP54 (Ingress Protection)

Technical information

ISYteq FICO PRO (Product Code FCLB 256)



The control unit of the ISYteq FICO PRO is also suitable for direct mounting on air ducts, walls, ceilings, or in control panels. The units can be mounted with a maximum distance of 50m from a fire damper.

The ISYteq FICO PRO has a 7- inch full colour touch screen, where by the menu structure can be accessed and all configuration of the system can be instigated.

This new system operates on a 230 V supply meaning that it should be installed by a certified electrician to local regulations. After installation, there is no need to open the enclosure as all functions can be accessed from the touch screen.

There is the potential to connect up to 256 24V Fire dampers in a serial system with the main controller being able to manage 4 fire damper actuators directly; the multi-boxes connect the individual fire damper actuators to the main controller and are linked together using a FQAR type cable or equivalent. The auto addressing function will identify each of the connected units by their unique identification number and acknowledge them as part of one complete system. Likewise, a FICO PRO main controller can be connected to a mixture of 2 and 4 damper multi-boxes to the maximum of 256 fire dampers.

CABLE CONNECTION:

Maximum cable lengths are; dampers 50m, detectors 25m and Modbus communication 1000m Utilising a FQAR-PG 2x2x0.5 or equivalent.

COMMUNICATION:

Modbus RTU for BMS connection
(Future connection via BACnet Q4 2020)

SMOKE DETECTORS:

RDKS Duct smoke detector
Calectro: EVC-PY-DA Room smoke detector

POWER:

230V AC (+/-20%) 50/60 Hz

ENCLOSURE DIMENSIONS:

256 x 180 mm x 75 mm

PROTECTION CLASS:

IP54 (Ingress Protection)



PRODUCT CODE FCBB-2

A 2 fire damper actuator connection box for connection to either the FICO PRO or FICO MINI main controllers.

ATTRIBUTES:

- Supply connection 230V AC
- Input for external fire alarm
- Input for external interlocking.
- External test
- Connection of damper actuator 1, 24V AC, limit position for closed and open damper.
- Connection of damper actuator 2, 24V AC, limit position for closed and open damper.
- Connection of smoke detector of RDKS
- Connection of smoke detector of manufacturer Calectro (UG-3-O or EVC-PY-DA) or Siemens (Röküga)



PRODUCT CODE FCBB-4

A 4 fire damper actuator connection box for connection to either the FICO PRO or FICO MINI main controllers.

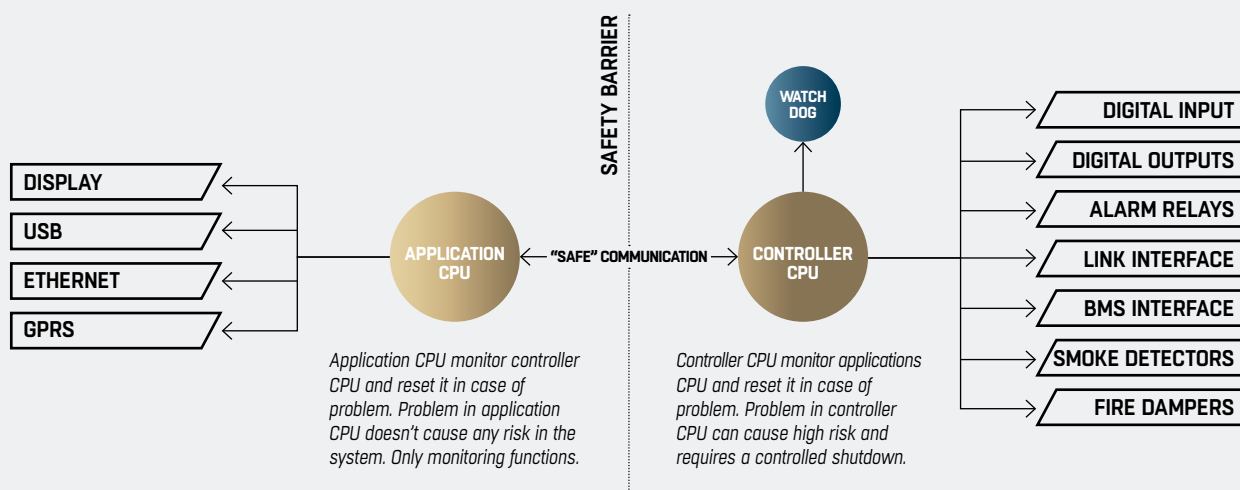
ATTRIBUTES:

- Supply connection 230V AC
- Input for external fire alarm
- Input for external interlocking.
- External test
- Connection of damper actuator 1, 24V AC, limit position for closed and open damper.
- Connection of damper actuator 2, 24V AC, limit position for closed and open damper.
- Connection of damper actuator 3, 24V AC, limit position for closed and open damper.
- Connection of damper actuator 4 24V AC, limit position for closed and open damper.
- Connection of smoke detector 1, RDKS
- Connection of smoke detector 2, UG-3-O or EVC-PY-DA

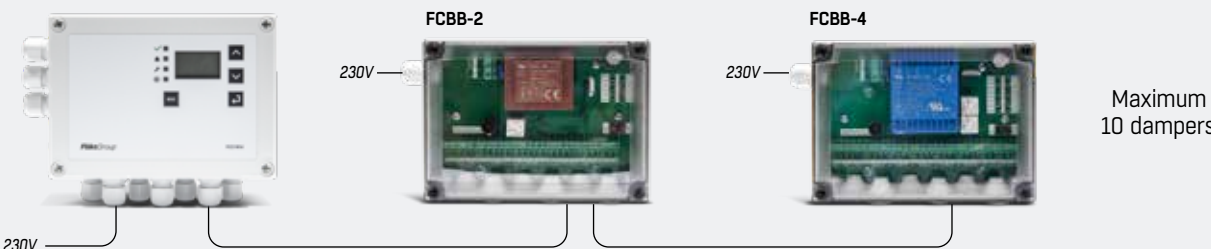
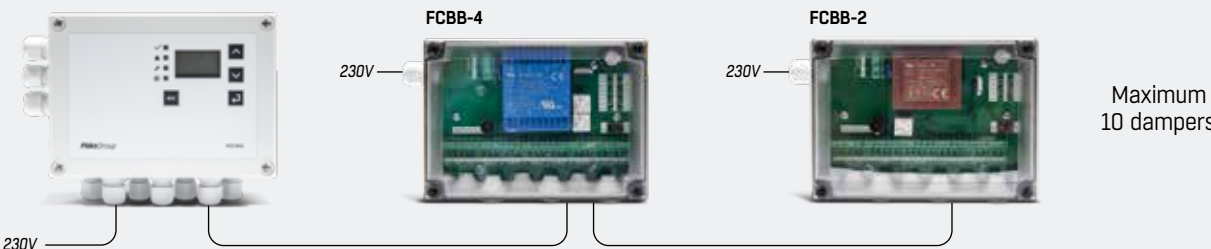
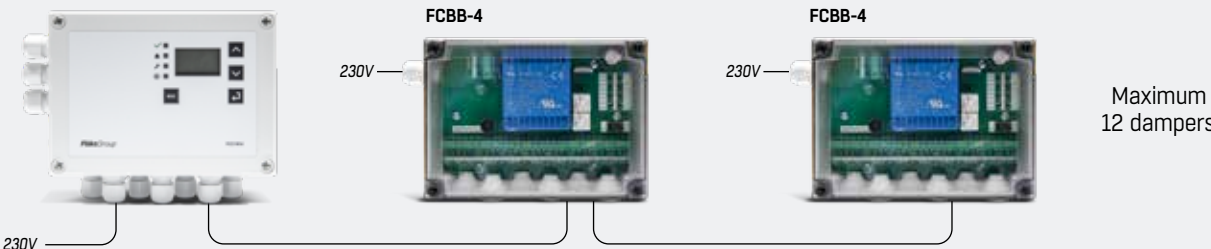
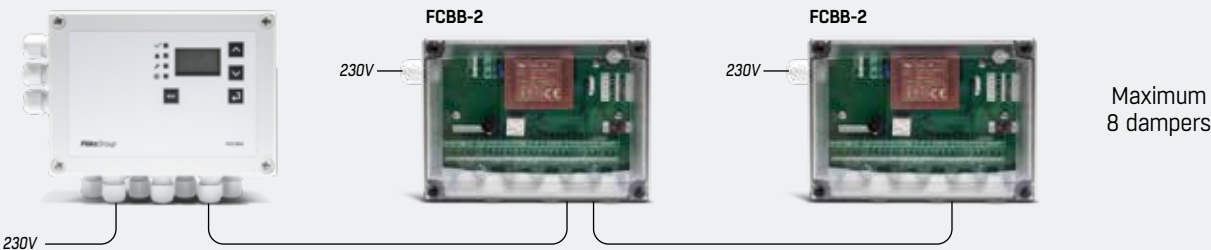
SIL and FCBB Multi-boxes

SIL requirement is implemented using both hardware and software. An external watchdog circuit is used to make sure the micro controller executes reset cycle if a hardware fault or a critical software fault happens. This is done without any control

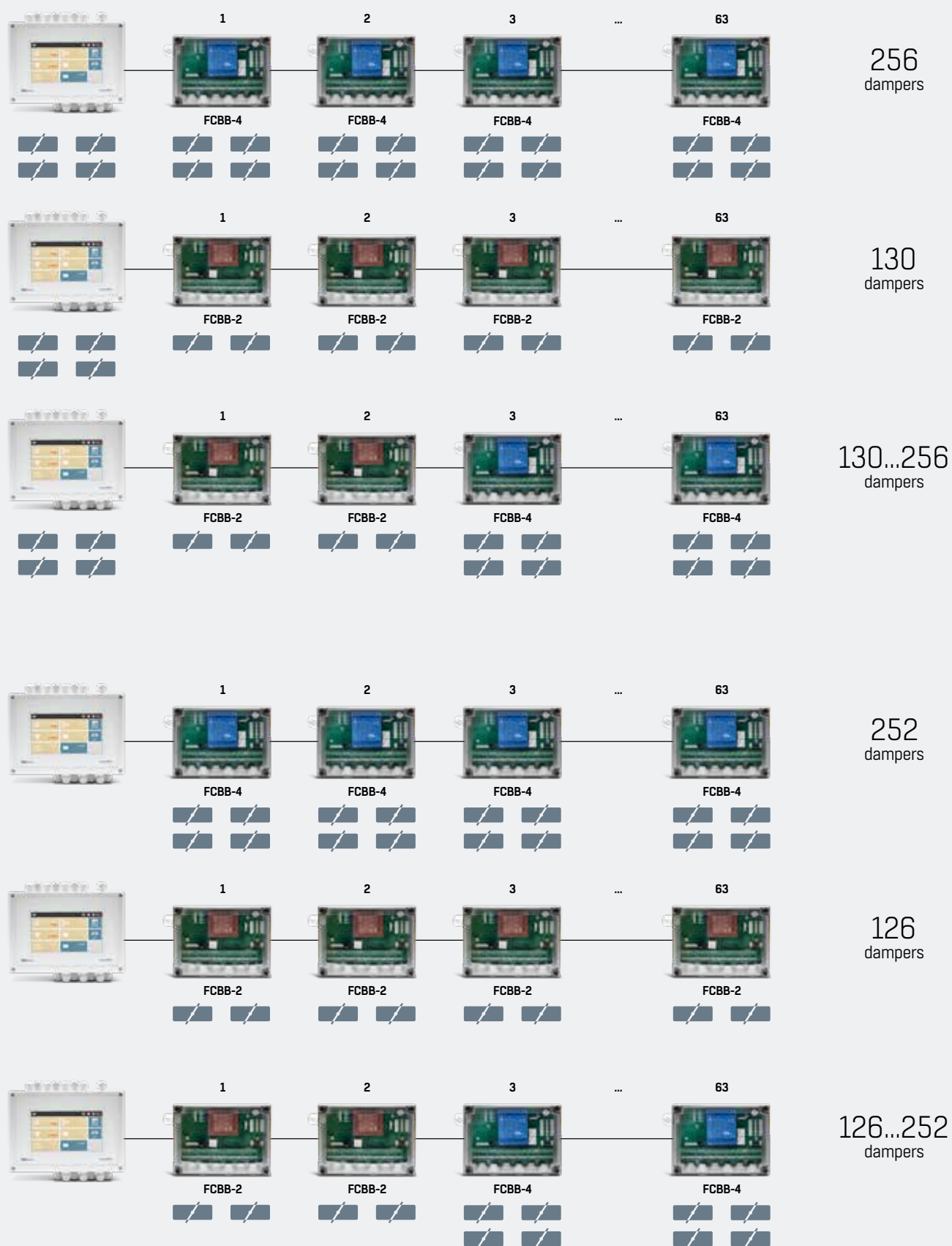
from the microcontroller. The function is implemented by forcing the microcontroller to toggle an IO pin at a rate of 5 on/off cycles per second. If this doesn't happen the watchdog circuit will trigger a reset.



Topology of the ISYteq FICO MINI



Topology of the ISYteq FICO PRO



EXCELLENCE IN SOLUTIONS

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FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

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