

## Solution F1

Fire Control Panels –  
the new generation



# ■ The Fire Alarm Control Panel Solution F1



## ■ The Concept

The "Solution F1" Fire Control Panel range is a new generation, modular and ultra modern Fire Control Panels. These have been developed to meet international standards and to satisfy specific international requirements at the highest level.

These panels contain numerous new features – several are unique in the security business – and they convince by their comprehensive equipment. Many optional (at extra cost) features in other panels are included in the "Solution F1" standard configuration.

This range has been designed to be a universal and flexible product in terms of both the different configuration possibilities as well as the front fascia design. It thus meets the requirements for all possible applications. By the outstanding modularity of this panel it can be perfectly adapted to all anticipated user requirements.

connect nearly all conventional detectors of the market but very remarkable:

The "Solution F1" panels are compatible to the newest analogue addressable detectors of Hochiki and Apollo – two of the biggest and best known players in the detector market worldwide.

Flexibility – especially for connecting different detectors – was one of the most important aims during the development of this new Fire Control Panel. Obviously it is a standard for this panel to





- **Modular, intelligent Hybrid Fire Control Panel range**
- **Supports Hochiki ESP and Apollo XP95 / Discovery detectors**
- **2 – 18 loops in one standard housing**
- **Brand new touch control panel**
- **Graphics LCD module 240 x 64 as standard included on basic model**
- **Integral Power supply 24 V DC with max. 6.7 A or 4.2 A as standard included**
- **32 bit high performance CPU**
- **Flash memory up to 8 MB and RAM memory up to 8 MB**
- **Many powerful features included**
- **Configuration software operated via Modem or USB interface**
- **Full redundant main board and full redundant loop cards as options**

## ■ The Reliability

If for certain applications a higher reliability as EN-54 and VdS standards is required – that will be no problem for the “Solution F1” control panel: the Control Processing Unit can be doubled as well as the system boards which are responsible for the communication with the sensors and which passes the information from the detectors to the CPU. So the end user gets a 100% redundancy of the whole system.

But the R&D people did not stop the ambitious aims for reliability there: They created a brand new

control panel technology – with absolutely no mechanical parts any longer – which is unique in the security business and which has a lot of advantages for the installer as well as for the end user. It contains a pressure sensitive piezo lacquer and doesn't have to be adjusted. The surface makes a worthwhile impression because of its glass like design.

This material is resistant against cleansing, there is absolutely no attrition over years and moreover it is very stable against EMC influences.

## ■ Solution F1: So many ways to extend



Solution F1-18  
in B2 enclosure



Solution F1-6  
in A1 enclosure

### ■ The product range

The "Solution F1-6" panel has as standard a 24 V DC power supply with max. current of 4.2A. The user can connect up to 6 loops – each with 254 loop devices (127 detectors / modules plus 127 loop soun-der) – to this panel and can organize a max. of 512 zones. There are three standard housings which should be chosen depending on battery backup requirements.

The bigger model "Solution F1-18" has a 24V DC power supply with max. current of 6.7A fitted as standard. This panel can control 18 loops as its maximum. Again there are 3 standard housings available.

The selection is dependent on battery space and number of loops needed. This "Solution F1-18" has several more standard features compared with the smaller panel: 1,024 programmable zones, USB host interface, metal rack for 2nd assembly level, interface for optional TFT display, slot for SD card memory and interface for audio codec module.

Both models can be supplied in a 19" rack mounting version instead of a standard housing. There are no special adapters or frames necessary because the "Solution F1" is generally compatible to 19" housings.

The pluggable wiring terminals will be greatly appreciated because the installation will be done very quickly and effectively.

For software configuration or data analysis by telephone line the technician can connect the panels via modem (analogue or ISDN) with his PC. Therefore you will find a slot at the main board which not only handles the data communication but it pro-vides the power supply for these modems too.

Alternatively the "Soliton F1" control panels can be equip-ped by a Web server.



Solution F1-18  
in C1 enclosure

## ■ Standard Configuration

The standard configuration is impressively equipped, unlike almost all other models on the market. Some of the standard features included are:

- Graphics LCD module with 240 x 64 dots
- Integral power supply with 4.2 A or alternative 6.7 A
- Steel housing with brand new touch control panel
- Interface for German Fire Brigade Control Panel
- 3 separate power outputs for transmission device / sounders / strobes
- USB interface for configuration by PC
- Up to 8 programmable push buttons
- Redundant RS-485 interface
- 3 x RS-232 interfaces
- 2 monitored conventional zones
- 16 digital outputs, programmable
- 8 digital inputs, monitored for "open-circuit"
- 4 relay change over contacts, programmable
- Earth fault detection
- Event log with max. 10,000 messages

These standard features are included at no extra cost.

## ■ Most important features

- 2 to 18 loops are possible in one standard wall-mounted housing. Analogue addressable detectors and conventional detectors can be mixed in one Fire Control Panel.
- User-friendly housings because of hinged frames which gives easy access for the technician to the wiring terminals.
- 32 Bit advanced CPU core – supplied as an upgradeable PCB module! This gives the possibility for smart software solutions and the possibility to change the micro processor very easily in the event of a new – higher performed – model in future or if one model become obsolete. In such a case the main board PCB of the "Solution F1" panel need not be exchanged or upgraded.
- Generous memory space with 8 MB-Flash and 8 MB-RAM to allow convenient programming of links and customer specified texts.
- Numerous running modes and detection algorithms are programmable at this new panel. In combination with analogue addressable detectors it can be perfectly adapted to every application of the market.
- Multi protocol loop cards are available, which means that different analogue addressable detectors can be easily connected. These PCBs are able to check the loop for short circuit and wire break and detect a possible earth fault of the shielding.
- Guaranteed 100% compatibility to Hochiki ESP protocol as well as to Apollo XP95 / Discovery protocol.
- Network by ARCNET. This BUS system distinguishes by multi master ability which leads to a continuously running network even if the master node fails.
- 8 programmable push buttons allow a user-friendly handling of certain user defined operations. The user can store several operating steps into the memory and then he can program them on one of the push button S1 to S8.
- Auto dynamic operating mode by the graphics display with assigned functional push buttons.
- The texts on front fascia are easy to change for international versions of the "Solution F1".

# ■ The main components for F1



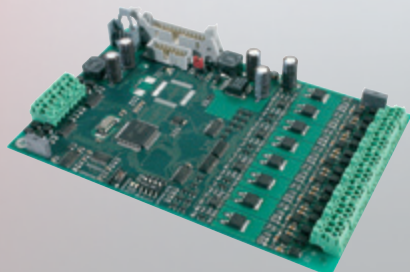
## **Loop card for "Solution F1" with 2 loops / 4 stub lines**

- 2 loops – each maximum 254 detectors / modules (Apollo: 2 x 126) – or alternative 4 stub lines
- cable length max. 3,500 m (2 x 2 x 0.8)
- 8 user programmable open collector outputs
- up to 127 loop sounders per loop can be activated at the same time
- cable shielding monitored for open and short circuit
- Earth fault detection



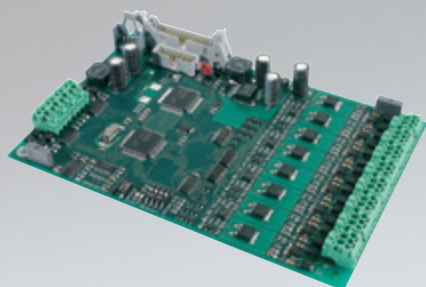
## **Redundant Loop card for "Solution F1" with 2 loops / 8 stub lines**

- As Loop card for "Solution F1" with 2 loops / 8 stub lines but additionally with 100 % redundancy. This means the micro processor, the RAM and the operating system memory are doubled on this card. So there will be no failure in case of micro processor fault.



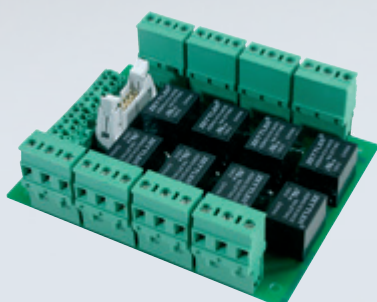
## **Conventional detector card for 8 stub lines**

- compatible to almost all conventional detectors on the market
- 32 detectors per line according German standards
- 8 programmable open collector alarm outputs
- Earth fault detection
- Failure mode in case of micro-processor fault



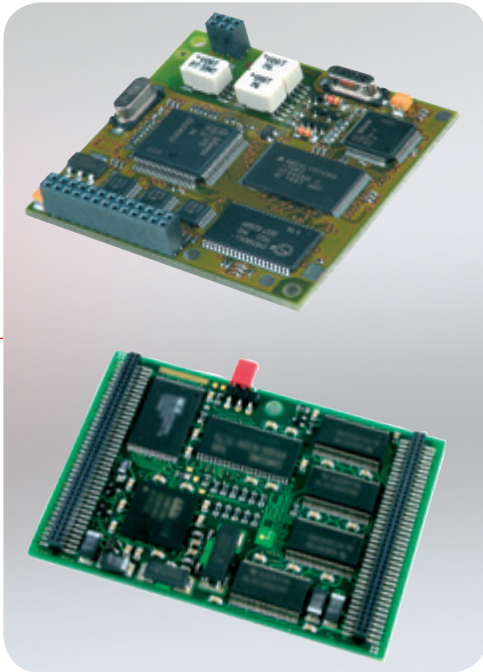
## **Conventional detector card with 100 % redundancy for 8 stub lines**

- as Conventional detector card for 8 stub lines but with 100%. That means the micro processor, the Ram and the operating system memory are doubled on this card. So there will be no failure in case of micro processor fault.



## **Relay card with 8 change over contacts**

- compatible to F1 fire detection system but usable as a universal device in other systems too
- 8 programmable change over contacts, each 250 V AC / 5 A



### Analogue or ISDN modem for operating the configuration software via telephone line

- The modules can be plugged into a slot in the "Solution F1" Fire Control Panel. Data speed up to 64,000 bps and they use the Fire Control Panel battery backup in case of mains failure.

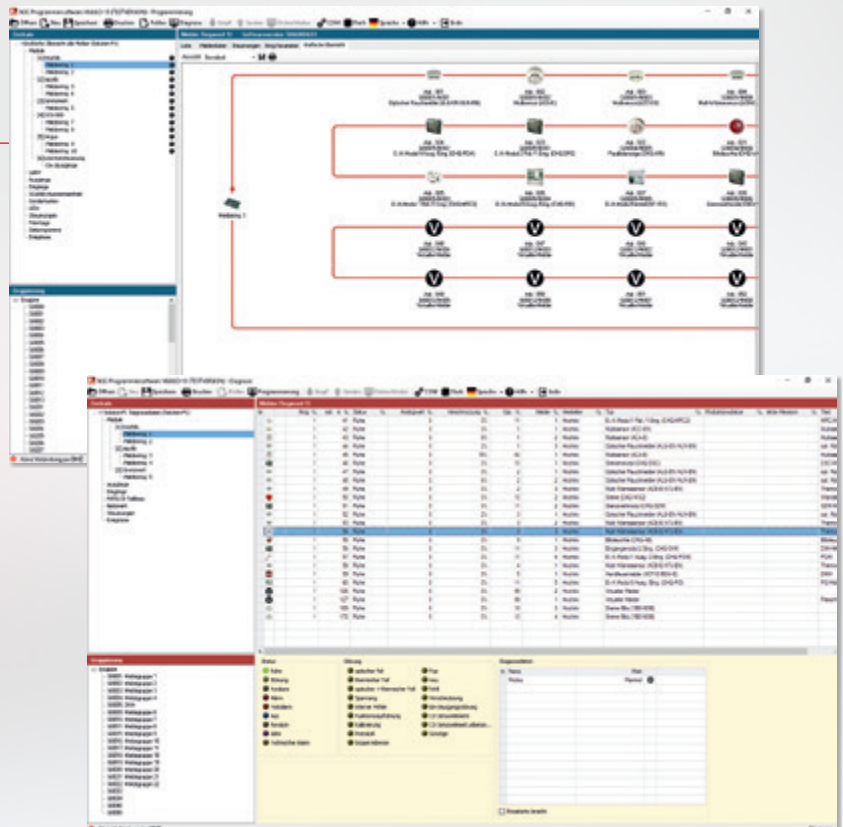
### Full Redundant CPU Module

- Additional plug-in module to achieve a full redundant main board
- According to EN54 standard necessary if more than 512 detectors are connected
- VdS approval G 205 024

## Software

### Configuration software for Solution F1 panels

- Windows Explorer based software and so it is very easy and fast to handle
- Implemented by Windows.NET
- For configuration of detectors, zones, inputs, outputs, loops and spurs
- For analysing of analogue values / cable resistors / statistics / event memory
- Drag- and drop functionalities
- For use with analogue or ISDN modem as well



## ■ Networking technology

### ARCNET Interface card

- To plug into a slot of the FCP main board
- Connecting to the multi master communications system with a maximum of 128 panels
- Can be plugged into the FCP twice to realize a **full redundant network**
- Very high reliability

#### Technical specifications:

Operating voltage: 24 V DC

Current consumption: 30 mA

ARCNET Interface:

up to 128 nodes

Cable length:

max. 1,200 m

Weight: 0.1 kg

Dimensions:

80 x 48 x 20 mm



### NSC Webserver Module

- Permits the access to NSC Fire Control Panels via the Internet without special software
- Use of the www infrastructure → e.g. by means of Internet Explorer, Firefox, Safari etc.
- User administration for 30 users
- Access by user name and password
- 9 different access authorizations
- Indicates all messages / status of the FCP
- Shows the complete event log
- Online control of the Fire Alarm Panel front facia
- Complete operation of the FCP Plug-in module



#### Technical specifications:

Quiescent current: 38 mA (24 V DC)

Linux O / S Software with 2.6.24 kernel

10 / 100 Mbps Ethernet LAN interface

ARM9 CPU 192 MH

32 MB SDRAM, 32 MB NOR Flash

3.3 V / 300 mA

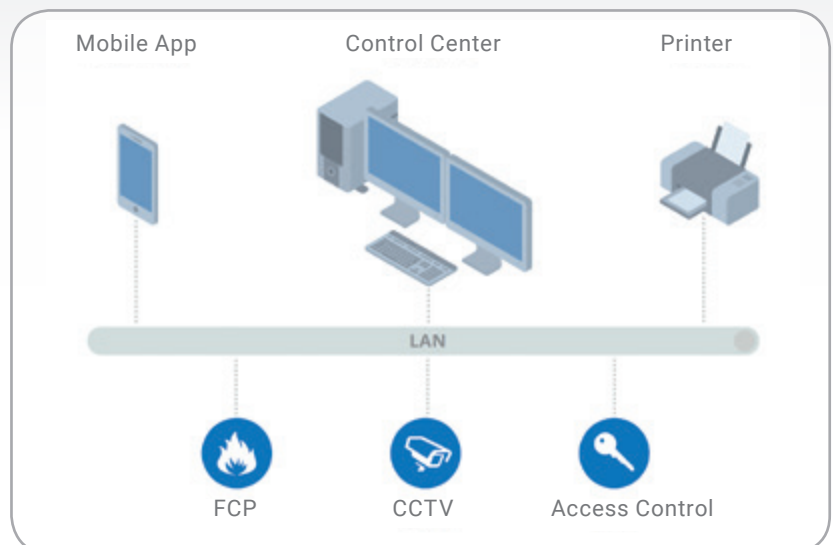
Dimensions: 56 x 56 x 20 mm

## ■ Integrated Building Management System

### WINGUARD for Windows / Server

Software for event management and controlling of facilities via Windows® PC/ Server

The open structure philosophy provides flexible organisation of users, events and control actions by only one system. The system is also able to assimilate messages from several systems by different gateways in real time. All messages / events are saved in an eventlog and are retrievable at all time.





## Full operational Remote Control Panel for the Solution F1 system

- Remote Control Panel for the ARCNET communications system
- Full operation and indication of all "Solution F1" Fire Control Panels in the network
- Connecting to the multi master communications system with a maximum of 128 nodes
- Including touch technology and graphics LC module
- including ARCNET network card
- Event log 10,000 messages
- Access codes for operating this panel according EN54, part 2
- 3 separate and monitored outputs, each 24 V / 500 mA (fused)
- including 3 x RS-232 / RS-485 interfaces
- 16 programmable inputs & outputs
- 8 programmable push buttons
- supplied in surface mounted housing
- Interface for optional remote control modem (I-Module); data transfer via analogue modem, ISDN modem or Webserver

### Technical specifications:

Operating voltage: 24 V DC  
 Current consumption: 80 mA  
 ARCNET interface: up to 128 devices in one network  
 Cable length: max. 1,200 m  
 Weight: 4.9 kg  
 Dimensions (W x H x D):  
 495 x 176 x 75 mm



Remote Control Panel B01500-00



- Standalone- or Network Systems (Client / Server)
- Upgrade / Update Possibilities
- Data points depending on Project (expandable in steps of 100 or 1000 Datapoints)
- more than 200 different interfaces available, optimal for NSC Fire Control Panels
- Easy and Reliable Data import from the NSC FCP Tool
- Dual-Screen-Operation available as an option
- User specific designed surface
- predefined Users
- integrated graphics editor to import wmf, bmp and jpg files (Import of CAD files as an option)
- separated log file for each interface
- Event handling included
- Mobile App
- Optical and acoustic alerts
- Possibilities for redundancy

## ■ Compatible analogue addressable detectors

### ■ The Hochiki ESP detector range

#### Optical smoke detector ALN-EN with Flat Response Technology

- Photoelectric smoke detector which is fully compatible to the Hochiki ESP protocol.
- The ESP protocol is immune to noise and other communication problems such as loop cross-talk and data corruptions
- The ALN-EN incorporates Hochiki's unique 'Flat Response Technology' removing the need to use Ionisation Sensors in the majority of applications and this also allows the sensor threshold level to be increased, thereby improving the signal to noise ratio and reducing susceptibility to false alarms.
- 254 detectors / modules can be controlled per loop. In addition each address can support up to 16 sub-addresses.
- Sensitivity selection by software configuration of Fire Control Panel "Solution F1".
- Automatic drift compensation.
- Sensitivity selection by software configuration of Fire Control Panel "Solution F1".
- Low power mode in case of mains AC fault.
- Detector address is electronically stored in a non-volatile memory within the sensor.
- Twin fire alarm LEDs give 360° viewing in case of alarm condition.
- Detector test by "Solution F1" software
- VdS approval no. G 21 30 82 / 0832-CPD-2163



#### Multi Sensor ACC-EN with Flat Response and Dual Channel Technolog

- Multi Sensor which is fully compatible to the Hochiki ESP protocol.
- The ESP protocol is immune to noise and other communication problems such as loop cross-talk and data corruptions
- Several detection modes / algorithm programmable by the "Solution F1" Fire Control Panel (Photoelectric smoke sensor, heat sensor, combined sensor) and can be combined with timed cause and effects events.
- The ACC-EN incorporates Hochiki's unique 'Flat Response Technology' removing the need to use Ionisation Sensors in the majority of applications and this also allows the sensor threshold level to be increased, thereby improving the signal to noise ratio and reducing susceptibility to false alarms.
- Incorporates high performance optical sensor as well as two heat sensors (Adjustable rate of rise sensor and adjustable fixed temperature sensor).
- Other features like photoelectric smoke detector above.
- VdS approval no. G 21 30 80 / 0832-CPD-2161



#### Analogue addressable Heat Sensor ATJ-EN

- Heat detector which is fully compatible to the Hochiki ESP protocol.
- The ESP protocol is immune to noise and other communication problems such as loop cross-talk and data corruptions
- Fixed temperature detector and rate of rise detector according EN-54, part 5, with accurate temperature measurement.
- Sensitivity selection by software configuration of Fire Control Panel "Solution F1".
- Other features like photoelectric smoke detector above.
- VdS approval no. G 21 30 81 / 0832-CPD-2162



## ■ The Apollo range XP95 / Discovery

### Analogue addressable Optical smoke detectors type XP95 / Discovery

- The "Solution F1" Fire Control Panel supports 100% Apollo's protocols XP95 and Discovery.
- Automatic drift compensation.
- Sensitivity selection by software configuration of Fire Control Panel "Solution F1".
- 126 sensors / modules per loop can be controlled by the panel software.
- Addressing by unique XPERT cards.
- All detectors VdS and CPD approved.

### Analogue addressable Multi-Sensor type XP95 / Discovery

- Multi-Sensor comprises optical smoke and thermistor temperature sensors whose outputs are combined to give the final analogue value.
- Other features like optical smoke sensor above.

### Analogue addressable Heat Sensor type XP95 / Discovery

- Heat Sensor which has a thermistor element to measure exactly the surrounding air temperature.
- Distinguishable by the low airflow resistant case.
- Other features like optical smoke sensor above.

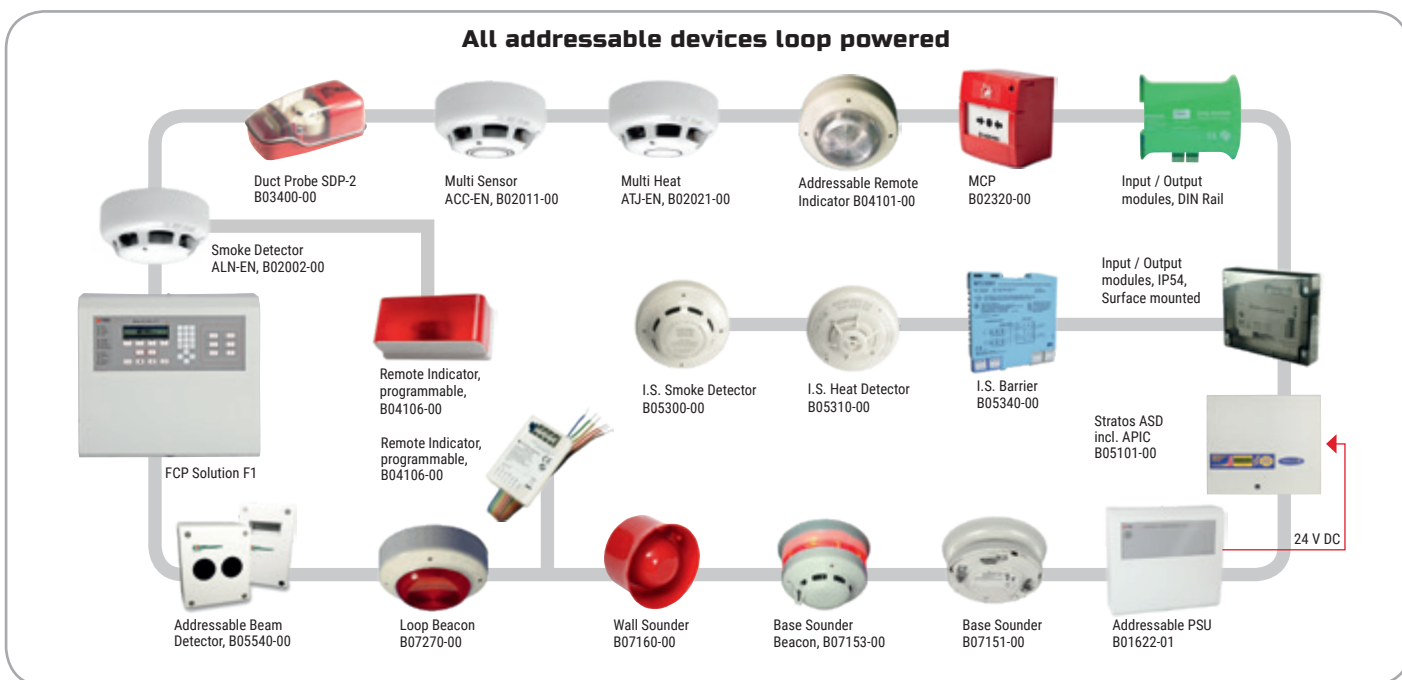


### Addressable Manual Call Points

- Fully compatible with Hochiki's ESP Analogue Addressable Protocol. ESP is immune to noise and other communication problems such as loop crosstalk and data corruptions.
- ABS housing with integrated alarm LED.
- With interrupt mode for quick alarm response.
- Manual call point address is electronically stored in a non-volatile memory.
- In-built dual isolator



## ■ Typical loop configuration



## ■ Technical specifications Solution F1

Supply voltage:	230 V AC +10 / -15 %, 50 / 60 Hz
Output voltage:	24 V DC
Power supply:	4,2 A ("F1-6") / 6,7 A ("F1-18")
Operating temperature:	-5 °C ~ +40 °C
Battery charging:	10 Ah-65 Ah (24 V DC)
Humidity:	Max. 95 %
Loops:	2-18
Detector cable:	JY-(ST)Y 2 x 2 x 0,8 / max. 3,500 m
Protocols:	Hochiki ESP / Apollo XP95
Detectors / modules per loop:	254 Hochiki / 126 Apollo
Graphics display:	240 x 64 dots
Event log:	10,000 messages
Relay outputs:	Max. 30 V DC / 1 A
Open Collector outputs:	Max. 30 V DC / 60 mA
Monitored power outputs:	3 x 24 V DC / 500 mA
Dimensions housing A (W x H x D):	540 x 490 x 158 mm
Dimensions housing B (W x H x D):	540 x 540 x 243 mm
Dimensions housing C (W x H x D):	760 x 540 x 265 mm
Approvals:	VdS G 205 024 0786-CPD-20907 EN54-13 VdS S 205 024

## ■ Ordering information

Description	Art.-Nr.
Fire Control Panel "Solution F1-6" for 2 to 6 loops	B01050-00
Fire Control Panel "Solution F1-6" for 2 to 18 loops	B01060-00
4U front plate to keep Zone LED PCBs	B01200-00
PCB with 32 Zone LEDs	B01220-00
Built-In Printer	B01230-00
Loop card with 2 loops supporting Hochiki ESP protocol	B01262-00
Loop card with 2 loops supporting Apollo protocols	B01267-00
Redundant loop card with 2 loops supporting Hochiki ESP protocol	B01272-00
Redundant loop card with 2 loops supporting Apollo protocols	B01277-00
Conventional detector card with 8 stub lines	B01300-00
Redundant conventional detector card with 8 stub lines	B01310-00
Relay card with 8 change over contacts	B01330-00
ARCnet interface card	B01350-00
Analogue telephone modem module for configuration software	B01370-00
ISDN telephone modem module for configuration software	B01373-00
Webserver Module	B01380-00
Configuration software	B01395-00
Housing A1, 490 x 540 x 158 mm (H x W x D)	B01400-00
Housing A2, 490 x 540 x 158 mm (H x W x D)	B01405-00
Housing B1, 540 x 540 x 243 mm (H x W x D)	B01410-00
Housing B2, 540 x 540 x 243 mm (H x W x D)	B01415-00
Housing C1, 760 x 540 x 265 mm (H x W x D)	B01420-00
Housing C2, 760 x 540 x 265 mm (H x W x D)	B01425-00
Remote Control Panel incl. ARCnet card	B01500-00