FP2000 & FP780

SERIAL COMMUNICATION FORMAT

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# INTRODUCTION

## SCOPE

This document defines the Serial Communication Format (protocol) for the inter-communication of the FP2000 and FP780 range of fire panels and related products.

## APPLICABLE DOCUMENTS

1. COM20020 ULANC

Universal Local Area Network Controller with 2K x 8 on-board RAM; Standard Microsystems Corporation.

1. COM20051

Integrated Micro controller and Network Interface; Standard Microsystems Corporation.

1. FP2000 Series Analogue Addressable Fire Panel Reference Guide
2. FP2000 Series Analogue Addressable Fire Panel Installation and Commissioning Manual
3. FP780 Series Fire Panel Reference Guide
4. FP780 Series Fire Panel Installation and Commissioning Manual

## DEFINITIONS

* FP2000 Panel

FP2000 Fire Panel/Repeater Panel

* FP2000 Fire Panel

Any fire panel of the range of FP2000 fire panels.

* FP2000 Repeater (Panel)

A FP2000 Panel without a front end processor (FEP) that is connected (via serial RS232 or ARCNET link ) to one or more FP2000 Fire Panels and enables specified operations to be performed on the FP2000 Fire Panel(s) via it’s (the FP2000 Repeater) front panel. A FP2000 Repeater furthermore displays, on it’s front panel, the status LED’s of the con- nected FP2000 Fire Panel(s).

###### FEP

Front-end processor.

* Global Repeater (Panel)

A FP2000 Repeater that is configured to communicate with more than one FP2000 Fire Panel. A Global Repeater can be configured to work as a Universal Node.

* Local Repeater (Panel)

A FP2000 Repeater that is assigned to only one FP2000 Fire Panel.

###### FR2000

A Global repeater fire panel.

###### UN

Universal Node.

###### PC

Personal Computer.

* ARCNET Protocol Device

Any of the FP2000 Panels or related products communicating via the ARCNET network.

###### NID

Node identification address.

###### TX

Transmission/transmit.

###### RX

Reception/receive.

###### LCD

Liquid crystal display

###### VDU

Video display unit

* FP780 Panel

FP780/FEP780 Fire Panel/Repeater Panel

* Protocol Device

Any system that uses the Serial Communication Format described in this document.

# CONTEXT

FP2000 Panels may be connected in a network configuration using the ARCNET protocol. The same messages that are transferred between

/ these systems via the ARCNET network may also be transferred between two systems via a serial RS232 link using the Serial Communication Format.

The Universal Node interfaces a Protocol Device, communicating via a serial port and using this Serial Communication Format, and the de- vices on the ARCNET network. In other words, a FP2000 Protocol Device can become part of the ARCNET network via the Universal Node. The Universal Node is a Protocol Device as well as an ARCNET Protocol Device.

FP780 Panels may be connected via a serial RS232 link using the Serial Communication Format.

# SERIAL LINK

## SERIAL PROTOCOL

* RS232
* Full duplex
* Eight (8) data bits
* No parity
* One (1) stop bit.
* 9600 baud is the default and recommended setting.
* Protocol Device is DTE (Data Terminal Equipment)

The RTS and CTS lines are used for handshaking during packet transfer while DTR, DSR, DCD and RI are used for presence indication and checking.

## HARDWARE

The serial cable connections to link two Protocol Devices are shown in Figure 1. It is assumed that both devices implement the same hand- shaking convention, if not, the cable must be changed accordingly. The serial connections of the Protocol Devices terminate in male D-type connectors (DTE), the connecting cable is therefore a crossover connection with female connectors at both ends.

The FC700, FC700L, FC780 and FC780RTC do not use the DTR, DCD, DSR and RI pins. The same cable can be used.

RS232 Cable Connections between Protocol Devices “A” and “B”

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Device A** | | | **Direction** | **Device B** | | |
| Pin number | | Signal name | Signal name | Pin number | |
| 9pf | 25pf | 25pf | 9pf |
| 1 | 8 | DCD |  I  -------------------+--------------------   I  ----------------------------------------  -   I   ---------------------+   I   ------------------------------------------  -   ---------------------------------------- | DTR | 20 | 4 |
| 6 | 6 | DSR |
| 9 | 22 | RI |
| 2 | 3 | RX | TX | 2 | 3 |
| 3 | 2 | TX | RX | 3 | 2 |
| 4 | 20 | DTR | DCD | 8 | 1 |
| DSR | 6 | 6 |
| RI | 22 | 9 |
| 5 | 7 | GND | GND | 7 | 5 |
| 7 | 4 | RTS | CTS | 5 | 8 |
| 8 | 5 | CTS | RTS | 4 | 7 |

9pf: 9 pin female D-type 25pf: 25 pin female D-type

# PACKET TRANSFER

## PACKET CONSTRUCTION

### Packet Structure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Section** | **Position** | **Abbreviation** | **Range** | **Description** |
| Header | 1 | STR | 254 (Feh) | Start of packet |
| Header | 2 | TYP | 0-255 (FFh) | TX packet type and number |
| Header | 3 | PKT | 0-63 (3Fh) | RX packet number |
| Header | 4 | DES | 0-255 (FFh) (Note 1) | Destination node identification |
| Header | 5 | SOR | 1-255 (FFh) | Source node identification |
| Data | 6 | MES | 0-255 (FFh) | Command number |
| Data | 7 | DTA | 0-255 (FFh) | First data byte |
| Data | 8 | DTA | 0-255 (FFh) | Second data byte |
| “ | “ | “ | “ |  |
| “ | “ | “ | “ |  |
| Data | 6+n | DTA | 0-255 (FFh) | n’th data byte (Note 2) |
| Footer | 6+n+1 | CKH | 0-255 (FFh) | High byte of checksum |
| Footer | 6+n+2 | CKL | 0-255 (FFh) | Low byte of checksum |
| Footer | 6+n+3 | STR | 254 (Feh) | End of packet |

**Note 1:** Node Number “0” means “all” (See 4.2).

**Note 2:** 0 >= n <= 252. The top limit is in accordance with the ARCNET protocol for short packets. See 1.2.1 and 1.2.2.

Example:

Watchdog message (47/2Fh) from Global Repeater 1 to FP2000 Fire Panel 1. TX packet number is 5 and RX packet number is 23:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 05h | 17h | 80h | 01h | 2Fh | 00h | CCh | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | CKL | STR |

### Descriptions

#### General:

The high byte, or most significant byte, of a word value (two bytes) is transmitted first. There are two special control bytes namely:

STR- 254 (Feh) – start/end byte and NTF- 253 (FDh) – Normal byte to follow.

If any byte of a packet (other than the start and end byte) has a value of 253 (FDh) or 254 (Feh) the NTF byte is inserted just before that byte and that byte’s value is changed to “value – 128 (80h)”. This is referred to as “NTF byte expansion” and the reversal of this process is re- ferred to as “NTF correction”.

Example:

Watchdog message (47/2Fh) from Global Repeater 1 to FP2000 Fire Panel 1. TX packet number is 51 and RX packet number is 27:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh  STR | 33h  TYP | 1Bh  PKT | 80h  DES | 01h  SOR | 2Fh  MES | 00h  CKH | Feh  CKL | Feh  STR | |
| Must be changed to: | | | | | | | | | |
| Feh | 33h | 1Bh | 80h | 01h | 2Fh | 00h | FDh | 7Eh | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | NTF | CKL-80 | STR |

Or if TX packet number is 50:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh  STR | 32h  TYP | 1Bh  PKT | 80h  DES | 01h  SOR | 2Fh  MES | 00h  CKH | FDh  CKL | Feh  STR | |
| Must be changed to: | | | | | | | | | |
| Feh | 32h | 1Bh | 80h | 01h | 2Fh | 00h | FDh | 7Dh | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | NTF | CKL-80 | STR |

#### Header:

**STR** byte: Start of the packet and has a fixed value of 254 (Feh).

**TYP** byte: Consist of two fields:

The first field is made up of the six least significant bits and contains the TX packet number, a sequential number ranging from 0 to 63 (3Fh). A FP2000 Protocol Device allocates TX packet numbers to the packets it transmits and uses the TX packet numbers of the packets it receives to acknowledge these packets. Ac- knowledge (ACK) and not acknowledge (NAK) packets (see second field description below) do not have packet numbers.

The second field comprising the two most significant bits indicates the packet type being transmitted.

|  |  |  |
| --- | --- | --- |
| **BIT 7** | **BIT 6** | **Description** |
| 0 | 0 | Normal message (NRM) packet - 00 |
| 0 | 1 | Acknowledge (ACK) packet – 64 (40h) |
| 1 | 0 | Not acknowledged (NAK) packet – 128 (80H) |
| 1 | 1 | Network message (NET) packet – 192 (C0h) |

**PKT** byte: Consist of two fields:

The first field is made up of the six least significant bits and contains the RX packet number that indicates what packet is being acknowledged. To acknowledge a received packet the TX number of that received packet is put into this field of the packet that is going to be transmitted (see 4.2.1).

It is recommended that the value in this field must always be up to date, meaning the field should contain the packet number of the latest valid received packet even if it means that the packet is acknowledged more than once. On the other hand a packet only have to be acknowledged once, therefore “any” value may be put in this field if a new packet has not been received since the previous one was acknowledged. The cur- rent Universal Node put “00” in this field if a new packet has not been received, but it will be corrected in future versions.

Note also that for a not acknowledge (NAK) packet, the meaning of this field is unchanged — the value in the field must be that of the latest valid received packet. The packet number of the packet that caused the transmission of the not acknowledged (NAK) packet must not be in this field.

The second field comprising the two most significant bits of the PKT byte is reserved for future use and both bits should be made “0”.

**DES** byte: Destination Node identification address ranging from 0 to 255. See also 4.2.5.

Address zero (0) means “all” and is used with network message (NET) packets – see 4.2.

**SOR** byte: Source Node identification address ranging from 1 to 255. See also 4.2.5.

#### Data:

The Data section (MES byte and DTA bytes) contains the message information (see section 5.).

The length of this data is limited to not less than 1 byte and not more than 253 (FDh) bytes. This is to comply with the ARCNET protocol (see 1.2.1 and 1.2.2). In, for example the Universal Node, packets received via the serial port are transmitted to the specified (DES) device via the ARCNET network. The data that gets transmitted via the ARCNET network consist of only this Data section original data – i.e. the packet without the Header and Footer sections and with NTF correction done, if necessary. (The ARCNET protocol firmware puts this information into it’s own packet structure.)

Acknowledge (ACK) and not acknowledge (NAK) packets do not have a Data section. These two packets have no message information and do not have to comply with the ARCNET protocol (they are not transferred between the serial and ARCNET networks as described in the ex- ample above).

**MES** byte: This contains the command number. There are three command types, namely: Normal message (NRM) packet transfer commands ranging from 0 to 127 (7Fh).

Request for normal message (NRM) packet commands ranging from 128 (80h) to 255 (FFh); it is 128 (80h) added to the normal message (NRM) packet transfer commands.

Example:

Global Repeater 1 requesting System delay times – command number 32 (20h) + 128 (80h) = 160 (A0h) – from FP2000 Fire Panel 1:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 01h | 00h | 80h | 01h | A0h | 01h | 22h | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | CKL | STR |

FP2000 Fire Panel 1 responds with message number 32 (20h) with 120 (78h) for data bytes 1 and 2 (the default Sounder and Fire Brigade delay times):

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 01h | 01h | 01h | 80h | 20h | 78h | 78h | 01h | 93h | Feh |
| STR | TYP | PKT | DES | SOR | MES | DTA | DTA | CKH | CKL | STR |

Note that FP2000 Fire Panel 1 acknowledges the received packet at the same time (see 4.2.1). Network message (NET) packet commands ranging from 0 to 13 (Ah) (see 5.2).

**DTA** bytes The data bytes associated with a command. The maximum number of data bytes is 252 (FCh) and the minimum is 0.

#### Footer:

CKH and CKL bytes:

The checksum bytes – CKH the most significant byte and CKL the least significant byte.

The checksum is calculated with the original data (before NTF byte expansions) and is the summation of all the bytes starting from byte number 2, TYP, up to byte number “6 + N”, the N’th data byte, or, in the case of an acknowledge (ACK) or not acknowledge (NAK) packet up to byte number 5, SOR. After the checksum is calculated all packet bytes, excluding only the start and end bytes, must be checked and NTF byte expansion done, if necessary.

**STR** byte: End of the packet and has a fixed value of 254 (Feh).

## PACKET PROTOCOL

### Packet Acknowledging

Each and every normal message (NRM) or network message (NET) packet that is transmitted must be acknowledged.

Such an acknowledge packet indicates that FP2000 Protocol Device “A” (in the SOR byte) acknowledges packet number “m” (in the PKT byte) received from Protocol Device “B” (in the DES byte) with packet “n” (in the TYP byte).

Acknowledgement does not have to be with an acknowledge (ACK) packet, but may be done by putting the correct packet number value in the PKT byte of a normal message (NRM) or network message (NET) packet that was going to be transmitted anyway. It is recommended that the PKT byte must always contain the packet number of the latest valid received packet (see PKT byte description in 4.1.2).

Note that a specific packet gets acknowledged, this means that an acknowledge (ACK) packet must also have the correct value in it’s PKT byte position.

Example (all values in hexadecimal):

Global Repeater 1 sends a watchdog message (47/2Fh) with packet number 04h to FP2000 Fire Panel 1 just before that FP2000 Fire Panel sends a watchdog message (47/2Fh) with packet number 13h to Global Repeater 1.

Watchdog message from Global Repeater 1 to FP2000 Fire Panel 1 –

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 04h | 12h | 80h | 01h | 2Fh | 00h | C6h | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | CKL | STR |

The FP2000 Fire Panel responds with an acknowledge (ACK) packet –

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 40h | 04h | 01h | 80h | 00h | C5h | Feh |
| STR | TYP | PKT | DES | SOR | CKH | CKL | STR |

And transmits the watchdog message –

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 13h | 04h | 01h | 80h | 2Fh | 00h | C7h | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | CKL | STR |

Note that the PKT byte does not have to contain 04h but it is recommended to have it like this.

The following is also valid:

Watchdog message from Global Repeater 1 to FP2000 Fire Panel 1 –

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 04h | 12h | 80h | 01h | 2Fh | 00h | C6h | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | CKL | STR |

The FP2000 Fire Panel responds with the watchdog message with 04h in the PKT byte and thus acknowledging the received packet:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feh | 13h | 04h | 01h | 80h | 2Fh | 00h | C7h | Feh |
| STR | TYP | PKT | DES | SOR | MES | CKH | CKL | STR |

If a packet is not acknowledged within a period of three seconds the packet is retransmitted – without incrementing the TX packet number. If a packet is transmitted a maximum of four times without being acknowledged, or is not acknowledged (NAK) for four times (see 4.2.2), the initialisation sequence (see 5.2.3) is started to try and re-establish communication.

See 4.2.4 for the Universal Node packet acknowledgement.

### Packet negative acknowledging

When a FP2000 Protocol Device receives a faulty packet, for instance wrong destination address (DES) or wrong checksum, the FP2000 Protocol Device may send a not acknowledge (NAK) packet. Such a not acknowledge (NAK) packet’s structure is the same as that of an ac- knowledge (ACK) packet except that the TYP byte must be 80h instead of 40h (see TYP byte description of 4.1.2 and also 4.2.1).

The value of the PKT byte of a not acknowledge (NAK) packet is the value of the latest valid received packet (the same as with any other packet type) and not the packet number of the packet that caused transmission of the not acknowledge (NAK) packet.

Upon reception of a not acknowledge (NAK) packet, the FP2000 Protocol Device must immediately retransmit the packet (the packet with packet number one more than the value of the PKT byte of the received not acknowledged (NAK) packet, because the PKT byte should con- tain the number of the last valid received packet).

Keep in mind that if a packet is not acknowledged (NAK) for 5 times (see 4.2.1), the initialisation sequences (see 5.2.3) is started to try and re-establish communication.

### Network Message (NET) Packets

The network message packet transfer is exactly the same as for normal message (NRM) packets except for the serial initialisation request message.

The packet that transmits the serial initialisation request message contains “0” in it’s DES byte. This is because a FP2000 Protocol Device does not have to know the node identification address of the FP2000 Protocol Device at the other end. The value in the SOR byte of the packet that acknowledges this serial initialisation request message packet is the node identification address of the FP2000 Protocol Device at the other end.

### Node Identification

All FP2000 Protocol Devices must have a non-zero node identification address to be able to communicate with another FP2000 Protocol De- vice. This node identification address is calculated in the same manner as the node identification addresses of the ARCNET Protocol De- vices.

The node identification address of a Protocol Device is a byte value and is determined by the ARCNET network configuration. There are three ARCNET modes namely:

* + - * 15/15,
      * 7/31 and
      * 31/7.

The first number is the panel number and the second number the repeater number. A Protocol Device is allocated a panel number and a re- peater number in accordance with the ARCNET network mode. In, for example, a 15/15 network panel and repeater numbers range from 0 to 15.

These numbers is used to calculate the node identification address as follows:

The panel number is bit reversed – i.e. a byte with binary value “b7 b6 b5 b4 b3 b2 b1 b0” becomes “b0 b1 b2 b3 b4 b5 b6 b7”. This reversed panel number is “OR’ ed” with the repeater number to give the node identification address.

Note that if a device needs to communicate via the serial port with the FP2000 Serial Communication Format or via the ARCNET network, the node identification address cannot be zero.

Example 1 – FP2000 Fire Panel 3:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 15/15 |  |
| Panel number | 3 | 0 – 15 |
| Repeater number | 0 | 0 – 15 |
| Node Identification Address | 192 (C0h) | 1 – 255 |

Example 2 – Global Repeater 3:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 15/15 |  |
| Panel number | 0 | 0 – 15 |
| Repeater number | 3 | 0 – 15 |
| Node Identification Address | 3 | 1 – 255 |

Example 3 – Local Repeater 3 of FP2000 Fire Panel 3:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 15/15 |  |
| Panel number | 3 | 0 – 15 |
| Repeater number | 3 | 0 – 15 |
| Node Identification Address | 195 (C3h) | 1 – 255 |

Example 4 – FP2000 Fire Panel 3:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 7/31 |  |
| Panel number | 3 | 0 – 7 |
| Repeater number | 0 | 0 – 31 |
| Node Identification Address | 192 (C0h) | 1 – 255 |

Example 5 – Global Repeater 29:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 7/31 |  |
| Panel number | 0 | 0 – 7 |
| Repeater number | 29 | 0 – 31 |
| Node Identification Address | 29 (1Dh) | 1 – 255 |

Example 6 – FP2000 Fire Panel 29:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 31/7 |  |
| Panel number | 29 | 0 – 31 |
| Repeater number | 0 | 0 – 7 |
| Node Identification Address | 184 (B8h) | 1 – 255 |

Example 7 – Global Repeater 3:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 31/15 |  |
| Panel number | 0 | 0 – 31 |
| Repeater number | 3 | 0 – 7 |
| Node Identification Address | 3 | 1 – 255 |

Example 8 – Global Panel 27:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 0/31 |  |
| Panel number | 0 | 0 – 0 |
| Repeater number | 27 | 1 – 31 |
| Node Identification Address | 27 | 1 – 255 |

Example 9 – Global Panel 60:

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Range** |
| ARCNET network mode | 0/63 |  |
| Panel number | 0 | 0 – 0 |
| Repeater number | 60 | 1 – 63 |
| Node Identification Address | 60 | 1 – 255 |

# MESSAGE TRANSFER

## OVERVIEW

Messages are divided into two main groups namely:

* Network Messages and
* Normal Messages.

A Protocol Device transfers network messages with network message (NET) packets and normal messages with normal message (NRM) packets (see TYP byte description in 4.1.2).

Messages consist of two parts namely:

* Message Number (MES byte of a packet) and
* Data (DTA bytes of a packet).

Messages do not need to have any data (see also 4.1.2 for a description of a packet’s Data section). The length of the data, as specified in the following sections, is used by the receiving device rather than the transmitting device.

This means that the specified length is actually the minimum length of a message. When a FP2000 Protocol Device receives a packet con- taining message number “m”, specified to have “p” data bytes, it will only process the first “p” data bytes even if “q” data bytes were sent. The restrictions is off course that “q’’ must be larger than “p”, that the checksum is correct, calculated for the data that was transferred – that is for “q” data bytes – and that “q” is not larger than the maximum allowed length (253 bytes).

## NETWORK MESSAGES

### Network Message Overview

Network message are used for initialisation of communication and for communication management.

Although a FP2000 Protocol Device may send any network message to another FP2000 Protocol Device it should be kept in mind that some of these messages can only be used sensibly by an Universal Node or similar device.

Network Messages are transferred with network message (NET) packets – the two most significant bits of the TYP byte must be set (“1”) - see 4.2.3 and 4.2.4 and also the TYP byte description in 4.1.2.

There are 13 network messages as listed below.

|  |  |  |
| --- | --- | --- |
| **Number** | **Data** | **Description** |
| 0 | None | Serial Initialisation Request |
| 1 | None | Reserved |
| 2 | None | Own Node Down |
| 3 | None | Duplicate Node Identification Address |
| 4 | None | New Next Node Identification Address |
| 5 | None | Change in Network Configuration |
| 6 | None | Network Map |
| 7 | None | No Network Map |
| 8 | None | Excessive Not Acknowledge |
| 9 | None | No Response |
| 10 (Ah) | None | Network Map Request |
| 11 (Bh) | None | Network Disconnect Request |
| 12 (Ch) | None | Network Line faulty |
| 13 (Dh) | None | Network Line ok |

### Network Message Descriptions

For a FP2000 protocol device only the following 4 messages are relevant.

Serial Initialisation Request:

Message Number: 0 Data: None

Message length: 1

A serial initialisation request is transmitted by a FP2000 Protocol Device to establish communications. The destination identification address of the packet (DES byte) is always “0” (see 4.2.3).

Network Map

Message Number: 6 Data: Map

Message length: Message Number + 32 Data bytes = 33 (21h) bytes (fixed)

The Network Map message is the only network (NET) message that has data information and is used during the initialisation sequence. The Network Map message is send upon reception of a Network Map Request message (10/Ah) – see also No Network Map message (7).

The network map is a representation of the existing FP2000 Protocol Devices or ARCNET Protocol Devices. A FP2000 Protocol Device cre- ates a Network Map message with only it’s own node identification address.

The FP2000 Protocol Device requesting the map must take into account the time that it takes to build a map and to create a Network Map message (a few seconds).

As described in 4.2.5 the node identification address is calculated using the panel and repeater numbers resulting in a value from 1 to 255 (FFh).

The data of Network Map message is a 32 byte array whose bits are sequentially allocated to node identification addresses. Node identifica- tion address 0 is allocated to the least significant bit of the first byte and node identification address 255 (FFh) to the most significant bit of the 32nd byte. If a device exists on the ARCNET network it’s specific bit will be set (“1”) in this network map. Note that node identification ad- dress 0 is not valid for communication and that it’s bit will never be set.

Example 1:

Node identification address: 1

|  |  |  |
| --- | --- | --- |
| Byte Number: | MES | 00 01 02 03 04 05 06 07 08 09 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 |
| Map Message: | 06 | 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |
| Example 2: |  |  |
| Node identification address: 255 (FFh) | | |
| Byte Number: | MES | 00 01 02 03 04 05 06 07 08 09 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 |
| Map Message: | 06 | 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 80 |

Example 3:

Node identification address: 234 (Eah)

|  |  |  |
| --- | --- | --- |
| Byte Number: | MES | 00 01 02 03 04 05 06 07 08 09 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 |
| Map Message: | 06 | 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 04 00 00 |

Example 4:

Node identification address: 77 (4Dh)

|  |  |  |
| --- | --- | --- |
| Byte Number: | MES | 00 01 02 03 04 05 06 07 08 09 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 |
| Map Message: | 06 | 00 00 00 00 00 00 00 00 00 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 |

Example 5 (More than one device)

Node identification addresses: 1; 255(FFh); 234 (Eah); 77 (4Dh)

Byte Number: MES 00 01 02 03 04 05 06 07 08 09 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Map Message: 06 02 00 00 00 00 00 00 00 00 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 04 00 80

**Network Map Request** Message Number: 10 (Ah) Data: None

Message length: 1

Whenever a FP2000 Protocol Device requires a map from another FP2000 Protocol Device, this message is send to that device. This mes- sage is used during the initialisation sequence. See also Network Map (6) and No Map (7) messages.

**Network Disconnect Request** Message Number: 11 (Bh) Data: None

Message length: 1

Whenever a FP2000 Protocol Device wants to disconnect itself from another FP2000 Protocol Device, this message is sent to that device.

### Network Message Functions

See 4.2 for a description of the packet protocol.

The network messages are used for a higher level of communication management.

Initialisation Sequence

The initialisation sequence establishes communication between two FP2000 Protocol Devices.

Whenever a system is restarted, or if there is a failure in communication, serial initialisation request messages (0) must be transmitted at regular three (3) second intervals in order to establish communication.

Upon acknowledgement of the packet containing the serial initialisation request message the initialisation sequence is complete.

After this FP2000 Panels will transmit a network map request message (10/Ah) upon which a network map message (6) should be received, but this is not part of the initialisation sequence.

Initialisation Sequence:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Direction Packet** | | |
| 1. | B to | A | Serial initialisation request message (Note 1) |
| 2. | A to | B | Serial initialisation request message |
| 3. | B to | A | Acknowledge (ACK) |
| 4. | A to | B | Map request message |
| 5. | B to | A | Acknowledge and Network map message |
| 6. | A to | B | Acknowledge and Network map message (Note 2) |
| 7. | B to | A | Acknowledge (ACK) |

### NORMAL MESSAGES

##### Normal Message Descriptions

Notes and definitions regarding this paragraph:

Definitions:

**Pos.:** The byte positions in the message structure. The message number is always in the first position (“0”) and is transmitted first. The values of the message number for the different message options are shown. With word (two bytes) value Mes- sage Data parameters the higher significant byte always precedes the lower significant byte in the message structure. For example a word parameter with value “ABCD” hexadecimal, contained in position [p] and [p+1] of a message will be split up with “AB” in position [p] and “CD” in position [p+1].

**Message Data:** The information associated with a particular message number. Descriptions of the parameters that are in capital letters will be given with each message description, or the parameter will be referenced to another message. Message Data Pa- rameters is described using the following format:

Length: The parameter’s size – for example: a byte, a word (2 bytes) or a string of bytes. Range: The allowable range of the parameter’s value, where applicable.

Description: Short description of the parameter.

**Message Options:** The three Message Options columns indicate what Message Data parameters are relevant for each option. A “yes” means that the specific parameter is included and a “-“ means that it is not included. In a few cases there are two options for one Message Data parameter, in which case all the options will be shown under the “Message Data” heading and a “yes” will be replaced with the correct option. Where the option names won’t fit into the available space, the different op- tions will be listed and assigned a number that will be displayed in place of a “yes”.

There three Message Options are:

Control: A message that is sent to the panel either to control the panel or to configure the panel or a message that is initiated by the panel.

Request: A message requesting a specific message from the panel. The message number of such a request message is 128 (80h) plus the message number of the required message.

Response: A message that is sent following reception of a Request message.

**Note:** All values in decimal unless stated otherwise. The index number assigned to each message is the same as the message number (the hexadecimal value of the message number Is shown in brackets).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| - | - | - | - - | - | - | - |

##### Access (1, 01h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 1 | 1 1 - | | - | - | - |
| 1,2 | ENTERED ACCESS (hb, lb) | Yes Yes - | | - | - | - |

###### ENTERED ACCESS

Length: 2 bytes

Range: 0...9999

Description: 0: Disconnecting access

1…9999: Possible access codes

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| - | - | - | - - | - | - | - |

##### Clear Non-volatile Memory (3, 03h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 3 | 3 3 - | | - | - | - |
| 1 | BLOCK | Yes Yes - | | - | - | - |

###### BLOCK

Length: Byte

Range: FP2000: 0…23 FP780: 0…24

Description: Numbers assigned to the different memory blocks of a FP2000 Panel software:

|  |  |  |  |
| --- | --- | --- | --- |
| **BLOCK** | **Description** | **FP2000** | **FP780** |
| 0 | Configuration | Yes | Yes |
| 1 | Loop 1 | Yes | - |
| 2 | Loop 2 | Yes | - |
| 3 | Loop 3 | Yes | - |
| 4 | Loop 4 | Yes | - |
| 5 | Loop 5 | Yes | - |
| 6 | Loop 6 | Yes | - |
| 7 | Loop 7 | Yes | - |
| 8 | Loop 8 | Yes | - |
| 9 | Outputs | Yes | Yes |
| 10 | Inputs | Yes | Yes |
| 11 | Zones | Yes | Yes |
| 12 | Areas | Yes | Yes |
| 13 | Events | Yes | Yes |
| 14 | System | Yes | Yes |
| 15 | General | Yes | Yes |
| 16 | Loops | Yes | Yes |
| 17 | Logic | Yes | Yes |
| 18 | Markers | Yes | Yes |
| 19 | Timers | Yes | Yes |
| 20 | Modem | Yes | Yes |
| 21 | - | - | - |
| 22 | LON Devices | Yes | Yes |
| 23 | Pager Configuration | Yes | - |
| 24 | Language | - | Yes |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 4 | 4 4 - | | - | - | - |
| 1 | BLOCK | Yes Yes - | | - | - | - |
| 2 | PARAMETER | Yes Yes | |  |  |  |

**BLOCK** (see message 3)

###### PARAMETER

Length: Byte

Range: 0...255

Description: Defines the default set-up:

Block: 0-19, 21-24

Not used

Block: 20

|  |  |  |
| --- | --- | --- |
| Modem Type | Initialisation String 1 | Initialisation String 2 |
| 0: None | - | - |
| 1: US Robotics | AT&F1M1L1 | S0=1&W0 |
| 2: Fastlink | AT&F0M1L1 | S0=1&W0 |
| 3: Datatronics | AT&F0M1L1 | S0=1&W0 |
| 4: Bausch | AT&F1M1L1 | S0=1&W0 |

##### Clear Volatile Memory (5, 05h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 5 | 5 5 - | | - | - | - |
| 1 | BLOCK | Yes Yes - | | - | - | - |

**BLOCK** (see message 3)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | | Request | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 6 | 6 | 6 | 134 | 134 | 6 | 6 |
| 1 | SENSORS (loop 1) | Yes | Yes | - | - | Yes | Yes |
| 2 | SENSORS (loop 2) | Yes | Yes | - | - | Yes | Yes |
| 3 | SENSORS (loop 3) | Yes | Yes | - | - | Yes | Yes |
| 4 | SENSORS (loop 4) | Yes | Yes | - | - | Yes | Yes |
| 5 | SENSORS (loop 5) | Yes | Yes | - | - | Yes | Yes |
| 6 | SENSORS (loop 6) | Yes | Yes | - | - | Yes | Yes |
| 7 | SENSORS (loop 7) | Yes | Yes | - | - | Yes | Yes |
| 8 | SENSORS (loop 8) | Yes | Yes | - | - | Yes | Yes |
| 9,10 | LOGIC LINES (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 11,12 | INPUTS (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 13,14 | OUTPUTS (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 15,16 | EVENTS (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 17,18 | SENSOR TEXT BYTES (loop 1) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 19,20 | SENSOR TEXT BYTES (loop 2) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 21,22 | SENSOR TEXT BYTES (loop 3) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 23,24 | SENSOR TEXT BYTES (loop 4) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 25,26 | SENSOR TEXT BYTES (loop 5) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 27,28 | SENSOR TEXT BYTES (loop 6) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 29,30 | SENSOR TEXT BYTES (loop 7) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 31,32 | SENSOR TEXT BYTES (loop 8) (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 33,34 | INPUT TEXT BYTES (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 35,36 | OUTPUT TEXT BYTES (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 37,38 | ZONE TEXT BYTES (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 39,40 | AREA TEXT BYTES (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 41 | STORE CONFIGURATION | Yes | Yes | - | - | - | - |
| 42 | ZONES | Yes | Yes | - | - | Yes | Yes |
| 43 | LOOPS | Yes | Yes | - | - | Yes | Yes |
| 44 | START ZONE | Yes | Yes | - | - | Yes | Yes |
| 45 | END ZONE | Yes | Yes | - | - | Yes | Yes |
| 46 | AREAS | Yes | Yes | - | - | Yes | Yes |
| 47 | LON DEVICES | - | Yes | - | - | Yes | Yes |
| 48 | PAGER DEVICES | - | Yes | - | - | Yes | Yes |
| 49,50 | TEXTS (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 51,52 | INPUT EQUIPMENT START (hb, lb) | - | Yes | - | - | - | Yes |
| 53,54 | OUTPUT EQUIPMENT START (hb, lb) | - | Yes | - | - | - | Yes |
| 55 | KEYS FOR SELECTIVE ACCESS | - | - | - | - | Yes | - |
| 56 | PANEL SELECTIONS | Yes | - | - | - | Yes | - |
| 57,58 | CONFIG. VERSION NUMBER (hb, lb) | Yes | - | - | - | Yes | - |
| 59 | UPDATE YEAR | - | - | - | - | Yes | - |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 60 | UPDATE MONTH | - | - | - | - | Yes | - |
| 61 | UPDATE DAY | - | - | - | - | Yes | - |

###### SENSORS

Length: Byte

Range: Apollo: 0...126

Sentrol: 0...128

Description: Highest address of fire detection devices (sensors) on a loop. “0” means that the loop is not installed.

###### LOGIC LINES

Length: 2 bytes

Range: 0...1999

Description: Number of logic lines.

###### INPUTS

Length: 2 bytes

Range: 0...999

Description: Number of inputs available in the logic.

###### OUTPUTS

Length: 2 bytes

Range: 0...999

Description: Number of outputs available in the logic.

###### EVENTS

Length: 2 bytes

Range: 0...1999

Description: Number of events in the event buffer.

###### SENSOR TEXT BYTES

Length: 2 bytes

Range: 0...80

Description: Number of text bytes per device.

###### INPUT TEXT BYTES

Length: 2 bytes

Range: 0…40

Description: Number of input text bytes per input.

###### OUTPUT TEXT BYTES

Length: 2 bytes

Range: 0…40

Description: Number of output text bytes per output.

###### ZONE TEXT BYTES

Length: 2 bytes

Range: 0…40

Description: Number of zone text bytes per zone.

###### AREA TEXT BYTES

Length: 2 bytes

Range: 0…40

Description: Number of area text bytes per area.

###### STORE CONFIGURATION

Length: Byte

Range: 0…1

Description: Determines operation when this message is received:

* + - * 1. - Check configuration
        2. - Store configuration

###### ZONES

Length: Byte

Range: 0...255

Description: Number of zones.

###### LOOPS

Length: Byte

Range: 0...8

Description: Number of loops.

###### START ZONE

Length: Byte

Range: 0…255

Description: Start of zone range.

###### END ZONE

Length: Byte

Range: START ZONE 255

Description: End of zone range.

###### AREAS

Length: Byte

Range: FP2000: 0 99

FP780: 0…128

Description: Number of areas.

###### LON DEVICES

Length: Byte

Range: 0...32

Description: Number of lon device.

###### PAGER DEVICES

Length: Byte

Range: 0...32

Description: Number of pager (ESPA) device.

###### TEXTS

Length: 2 bytes

Range: 0…1500

Description: Number of text lines.

###### INPUT EQUIPMENT START

Length: 2 bytes

Range: n INPUTS

Description: Start of equipment inputs in input table, n is the first equipment input.

###### OUTPUT EQUIPMENT START

Length: 2 bytes

Range: n OUTPUTS

Description: Start of equipment outputs in output table, n is the first equipment output.

###### KEY

Length: Byte

Range: 0…255

Description: Indicates installed software keys.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | **Functionality** | **FP2000** | **FP780** |
| 0 | ESPA | 0: disabled | - |
| 1: enabled |
| 1 | Network | 0: disabled | - |
| 1: enabled |
| 2-7 | - | - | - |

###### PANEL SELECTIONS

Length: byte

Range: 0…255

Description: Selects panel modes.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | **Functionality** | **FP2000** | **FP780** |
| 0 | EN54 screens | 0: disabled | - |
| 1: enabled |
| 1 | Global Panel (from V10) | 0: disabled | - |
| 1: enabled |
| 2-7 | - | - | - |

###### CONFIG.VERSION NUMBER

Length: 2 bytes

Range: 0...9999

Description: Updated when configuration data changes. 0=not configured.

###### UPDATE YEAR

Length: Byte

Range: 0…255

Description: Update Date stamp, 0=not configured.

###### UPDATE MONTH

Length: Byte

Range: 0…12

Description: Update Date stamp, 0=not configured.

###### UPDATE DAY

Length: Byte

Range: 0…31

Description: Update Date stamp, 0=not configured.

##### Non-volatile Sensor Data (7, 07h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Request | | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 7 | 7 | - | 135 | - | 7 | - |
| 1 | LOOP | Yes | - | Yes | - | Yes | - |
| 2 | SENSOR | Yes | - | Yes | - | Yes | - |
| 3 | SENSOR STATUS 0 | Yes | - | - | - | Yes | - |
| 4 | SENSOR TYPE | Yes | - | - | - | Yes | - |
| 5 | SENSOR ZONE | Yes | - | - | - | Yes | - |
| 6 | SENSOR FAULT | Yes | - | - | - | Yes | - |
| 7...88 | SENSOR TEXT | Yes | - | - | - | Yes | - |
| +1 | SENSOR INPUT CONFIGURATION | Yes | - | - | - | Yes | - |
| +2 | SENSOR STATUS 1 | Yes | - | - | - | Yes | - |
| +3 | VIRTUAL SENSOR ADDRESS | Yes | - | - | - | Yes | - |

###### LOOP

Length: Byte

Range: 1...8

Description: Loop number that is addressed.

###### SENSOR

Length: Byte

Range: Apollo: 1...126

Sentrol: 1...128

Description: Fire detection device address.

|  |  |  |  |
| --- | --- | --- | --- |
| **Protocol** | **Device** | **FP2000** | **FP780** |
| Apollo | All | 1…126 | - |
| Sentrol | All | 1…128 | - |

###### SENSOR STATUS 0

Length: Byte

Description: Sensor status. Lower nibble:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | **Functionality** | **FP2000** | **FP780** |
| 0 | Sensor enable | 0: disabled | - |
| 1: enabled | - |
| 1 | Soak Test | 0: disabled | - |
| 1: enabled | - |
| 2 | Alarm Storage (EAS) | 0: disabled | - |
| 1: enabled | - |
| 3 |  | 0 (not used) | - |

Higher nibble: Sensor Day Level

|  |  |  |  |
| --- | --- | --- | --- |
| **Protocol** | | **FP2000** | **FP780** |
| Sentrol | | 1…5 | - |
| Apollo | Sensors | 1…5 | - |
| Sounder tone selection | 1…15 (0=not defined) |

###### SENSOR TYPE

Length: Byte

Range: See table

Description: Type of sensor (device):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Nibble** | | **Apollo Device** | | **Sentrol Device** | |
| **H** | **L** |
| 0 | 0 | None |  | None |  |
| 0 | 1 | MCP | Manual Call Point | MCP | MCP |
| 1 | - | - | ADD | Aspiration Disable Device |
| 2 | MCPM | Manual Call Point Monitor | - | - |
| 3 | GCU2 | Gas Unit (MCP) | - | - |
| 4 | SMI | Switch Monitor Unit with Interrupt | - | - |
| 0 | 2 | OPT | Optical Detector | OPT | Optical Detector |
| 0 | 3 | ION | Ionisation Detector | ION | Ionisation Detector |
| 1 | CO | Carbon Monoxide Detector | - | - |
| 0 | 4 | TEMP | Temperature Detector | TEMP | Temperature Detector |
| 0 | 5 | SND | Sounder | ICC | Indicating Circuit Controller |
| 1 | LPB | Loop powered beacon | - | - |
| 2 | DSB | Discovery Sounder Beacon | - | - |
| 0 | 6 | - | - | 4IO | Four Channel I/O |
| 1 | 1I/O | Single Channel I/O | ASP1 | Aspiration Device activating 1 zone |
| 2 | 3I/O | Three Channel I/O | ASP2 | Aspiration Device activating 2 zones |
| 3 | 1I | Switch Monitor | - | - |
| 4 | GCU1 | Gas Unit (I/O) | - | - |
| 5 | 1O | Single Channel Output | - | - |
| 6 | 2I/1O | Two Input/ One Output Channel I/O | - | - |
| 0 | 7 | - | - | 2I/O | Two Channel I/O |
| 0 | 8 | - | - | 2I/1O | Two Input/ One Output Channel I/O |
| 0 | 9 | - | - | 4I | Four Input Channel I/O |
| 0 | 10 | - | - | SIM | Single Input Module |
| 0 | 11 | ZMU | Zone Monitor Unit | ZMU | Zone Monitor Unit |
| 1 | CUM | Control Unit Monitor | - | - |
| 2 | SMU | Switch Monitor Unit | - | - |
| 3 | SMU+ | Switch Monitor Unit Plus | - | - |
| 0 | 12 | MUL | Multi Sensor | MUL | Multi Sensor |
| 0 | 13 | - | - | LCC | Loop powered LCC with isolator |

###### SENSOR ZONE

Length: Byte

Range: 0…225, (within zone range) Description: Zone the sensor is assigned to.

###### SENSOR FAULT

Length: Byte

Range: 0…255

Description: Defines device fault on supervised inputs of input devices. (Sentrol)

|  |  |  |  |
| --- | --- | --- | --- |
| **Bits** | **Functionality** | **FP2000** | **FP780** |
| 1,0 | Input 1 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |
| 3,2 | Input 2 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |
| 5,4 | Input 3 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |
| 7,6 | Input 4 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |

|  |  |  |  |
| --- | --- | --- | --- |
| **SENSOR TEXT** |  | | |
| Length: | FP2000: | 2…82 Bytes |  |
|  | FP780:  Where: | N/A  Byte 0: | Length of first string (0…n1, n1<40) |
|  |  | Bytes 1…n1: Byte n1+1:  Bytes (n1+2)…n2: | First string (if n1 > 0)  Length of second string (0…n2, n2<40) Second string (if n2 > 0) |

###### SENSOR INPUT CONFIGURATION

Length: Byte

Range: 0…255

Description: Defines device input functionality.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bits** | **Functionality** | **FP2000** | **FP780** |
| 2,1,0 | Device functionality | 000: None | - |
| 001: Fast (input) | - |
| 010: Slow (input) | - |
| 011: MCP (Manual Call Point fire) | - |
| 100: MCPW (Manual Call Point warning) | - |
| 101: Auto (Automatic fire) | - |
| 110: HMO | - |
| 111: - | - |
| 3 | Polarity | 0: N/O normally open | - |
| 1: N/C normally closed | - |
| 4 | Protocol (Apollo only) | 0: S90/XP95 | - |
| 1: Discovery | - |
| 7,6,5 | Aspiration Delay | 000: 1h delay | - |
| 001: 2h delay | - |
| 010: 4h delay | - |
| 011: 8h delay | - |
| 100: 12h delay | - |
| 101: 24h delay |  |
| 110: - |  |
| 111: - |  |

Device functionality Apollo

|  |  |  |
| --- | --- | --- |
| **Device Type** | **Default Setting** | **Other Settings** |
| MCP | MCP | Fast, mcpw |
| MCPM | MCP | Fast, mcpw |
| SMI | Fast | MCP, mcpw, auto |
| 1I/O | Slow | - |
| 3I/O | Slow | - |
| 1I | Slow | - |
| 2I/1O | Slow | - |
| ZMU | Auto | Slow |
| CUM | Auto | Slow |
| SMU | Auto | Slow |
| SMU+ | Auto | Slow |

Device functionality Sentrol

|  |  |  |
| --- | --- | --- |
| **Device Type** | **Default Setting** | **Other Settings** |
| MCP | MCP | Fast, mcpw, HMO |
| 4I/O | Slow | - |
| 2I/O | Slow | - |
| 2I/1O | Slow | - |
| 4I | Slow | - |
| SIM | Fast | Slow, mcp, mcpw, auto |
| ZMU | Auto | Slow |

###### SENSOR STATUS 1

Length: Byte

Description: Sensor status extended.

Lower nibble: Apollo Base selection.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **FP2000** | | **FP780** |
| Bits: 0,1 | 0 | Normal, remote and sensor LEDs are switched together. | | - |
| 1 | Remote LED only is switched. | | - |
| 2 | Base is used as a single output unit. | | - |
| Bit: 2 | | Apollo DSB enabled | 0: Beacon disabled | - |
| 1: Beacon enabled |
| Bit: 3 | | 0 (not used) | |  |

Higher nibble: Sensor Night Level

|  |  |  |  |
| --- | --- | --- | --- |
| **Protocol** | | **FP2000** | **FP780** |
| Sentrol | | 1…5 | - |
| Apollo | Sensors | 1…5 | - |
| Apollo DSB volume | 0…7 |

**VIRTUAL SENSOR ADDRESS** (used for V10 only)

Length: 1…32, (0 = virtual sensor address not used)

Description Used for VdS only.

##### Non-volatile Zone Data (8, 08h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Request | | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 8 | 8 | 8 | 136 | 136 | 8 | 8 |
| 1 | ZONE | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | ZONE STATUS 0 | Yes | Yes | - | - | Yes | Yes |
| 3 | ZONE AREA | Yes | Yes | - | - | Yes | Yes |
| 4...44 | ZONE TEXT | Yes | Yes | - | - | Yes | Yes |
| +1 | ZONE STATUS 1 | Yes | Yes | - | - | Yes | Yes |
| +2, +3 | SYSTEM ZONE (hb, lb) | Yes | - | - | - | Yes | - |
| +4, +5 | ZONE LED (hb, lb) | Yes | - | - | - | Yes | - |

###### ZONE

Length: Byte

Range: START ZONE … END ZONE (see message 6) Description: Zone that is addressed.

###### ZONE STATUS 0

Length: Byte

Description:

|  |  |  |  |
| --- | --- | --- | --- |
| Bit | **FP2000** | | **FP780** |
| **Protocol** |  |
| 0 | Sentrol, Apollo | 0: Zone disabled | 0: Zone disabled |
| 1: Zone enabled | 1: Zone enabled |
| 1 | Sentrol, Apollo | 0: Zone two device mode disabled | 0: Automatic zone |
| 1: Zone two device mode enabled | 1: MCP zone |
| 2 | Sentrol, Apollo | 0: Zone on/off mode disabled | 0: Zone on/off mode disabled |
| 1: Zone on/off mode enabled | 1: Zone on/off mode enabled |
| 3 | Sentrol, Apollo | 0: Zone night mode disabled | 0: Zone night mode disabled |
| 1: Zone night mode enabled | 1: Zone night mode enabled |
| 4 | Sentrol, Apollo | 0: Zone confirmed mode disabled | 0: Zone confirmed mode disabled |
| 1: Zone confirmed mode enabled | 1: Zone confirmed mode enabled |
| 5 | Sentrol, Apollo | 0: Sounder delay disabled | 0: Sounder delay disabled |
| 1: Sounder delay enabled | 1: Sounder delay enabled |
| 6 | Sentrol, Apollo | 0: Fire brigade delay disabled | 0: Fire brigade delay disabled |
| 1: Fire brigade delay enabled | 1: Fire brigade delay enabled |
| 7 | Apollo | 0: Intrinsically save zone disabled | - |
| 1: Intrinsically save zone enabled | - |
| Sentrol | 0: (not used) | - |

###### ZONE AREA

Length: Byte

Range: 0...AREAS (see message 6) Description: Area that zone is assigned to.

###### ZONE TEXT

Length: 1...41 Bytes

Where: Byte 0: Length of string (0...n, n<=40) Bytes 1...n: String (if n > 0)

Description: A text string associated with a zone.

###### ZONE STATUS 1

Length: Byte

Description:

|  |  |  |
| --- | --- | --- |
| Bit | **FP2000** | **FP780** |
| 0 | 0: HMO zone disabled | 0: - |
| 1: HMO zone enabled | 1: - |
| 1 | 0: -Multi-sensor spacing close (heat) | 0: - |
| 1: - Multi-sensor spacing normal (smoke) | 1: - |
| 2 | 0: -Hausalarm disabled | 0: - |
| 1: - Hausalarm enabled | 1: - |
| 3 | 0: -Loeschanlage disabled | 0: - |
| 1: - Loeschanlage enabled | 1: - |
| 4 | 0: -Sprinkler disabled | 0: Zone sounder disabled |
| 1: - Sprinkler enabled | 1: Zone sounder enabled |
| 5 | 0: - | 0: EAS disabled |
| 1: - | 1: EAS enabled |
| 6 | 0: - | 0: - |
| 1: - | 1: - |
| 7 | 0: - | 0: - |
| 1: - | 1: - |

###### SYSTEM ZONE

Length: word

Range: 1...65535 (0=system zone not used)

Description: A zone linked to the panel-zone that is seen by all panels.

###### ZONE LED

Length: word

Range: 0... 65535 (0=no system zone assigned to) Description: Zone LED (zone field) allocated to a system zone.

##### Non-volatile Area Data (9, 09h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 9 | 9 | 9 | 137 | 137 | 9 | 9 |
| 1 | AREA | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | AREA STATUS | Yes | Yes | - | - | Yes | Yes |
| 3 | AREA ADJ. (1) | Yes | Yes | - | - | Yes | Yes |
| 4 | AREA ADJ. (2) | Yes | Yes | - | - | Yes | Yes |
| 5 | AREA ADJ. (3) | Yes | Yes | - | - | Yes | Yes |
| 6 | AREA ADJ. (4) | Yes | Yes | - | - | Yes | Yes |
| 7 | AREA ADJ. (5) | Yes | Yes | - | - | Yes | Yes |
| 8...48 | AREA TEXT | Yes | Yes | - | - | Yes | Yes |

###### AREA

Length: Byte

Range: 1...AREAS (see message 6) Description: Area that is addressed.

###### AREA STATUS

Length: Byte

Description:

|  |  |  |
| --- | --- | --- |
| Bit | **FP2000** | **FP780** |
| 0 | 0: Area disabled | 0: Area disabled |
| 1: Area enabled | 1: Area enabled |
| 1 | 0: Area Coincidence un-logged | 0: Area Coincidence un-logged |
| 1: Area Coincidence logged | 1: Area Coincidence logged |
| 2 | 0: - | 0: Sounders delay disabled |
| 1: - | 1: Sounders delay enabled |
| 3 | 0: - | 0: Fire brigade delay disabled |
| 1: - | 1: Fire brigade delay enabled |
| 4-7 | - | - |

###### AREA ADJ

Length: Byte

Range: 0…AREAS, AREA ADJ cannot be the same value as AREA. Description: Five areas adjacent to addressed area.

###### AREA TEXT

Length: 1...41 Bytes

Where: Byte 0: Length of string (0...n, n<40) Bytes 1...n: String (if n > 0)

##### Non-volatile Loop Data (10, 0Ah)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 10 | 10 | - | 138 | - | 10 | - |
| 1 | LOOP | Yes | - | Yes | - | Yes | - |
| 2 | LOOP STATUS | Yes | - | - | - | Yes | - |
| 3 | LOOP LED | Yes | - | - | - | Yes | - |

###### LOOP

Length: Byte

Range: 1...LOOPS (see message 6) Description: Loop that is addressed.

###### LOOP STATUS

Length: Byte

Description:

|  |  |  |
| --- | --- | --- |
| Bit | **FP2000** | **FP780** |
| 0 | 0: Loop disabled | 0: |
| 1: Loop enabled | 1: |
| 1-7 | - | - |

###### LOOP LED

Length: Byte

Range: Apollo: 0...126

Sentrol: 0...128

Description: The maximum number of LED per loop that can be switched on at any time.

##### Non-volatile Input Data (11, 0Bh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 11 | 11 | 11 | 139 | 139 | 11 | 11 |
| 1,2 | INPUT (hb, lb) | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | INPUT TYPE | Yes | Yes | - | - | Yes | Yes |
| 4 | INPUT TRIGGER | Yes | Yes | - | - | Yes | Yes |
| 5 | INPUT ADR. 0 | Yes | Yes | - | - | Yes | Yes |
| 6 | INPUT ADR. 1 | Yes | Yes | - | - | Yes | Yes |
| 7 | INPUT ADR. 2 | Yes | Yes | - | - | Yes | Yes |
| 8...48 | INPUT TEXT | Yes | Yes | - | - | Yes | Yes |

In the FP780 the input command is used to for the inputs and the equipment inputs. See command 6 for the relevant input numbers. Inputs can be used by the logic, but not to link equipment. Equipment inputs cannot be used by the logic.

###### INPUT

Length: 2 bytes

Range: 1...INPUTS (see message 6) Description: Input that is addressed.

###### INPUT ADR. (0...3)

Length: Byte

Range: See table

Description: Three bytes that are used to expand the INPUT TYPE by specifying the address, where applicable, and assigning a function to the input. The General Description and table below gives a detailed description of the relation between the INPUT TYPE byte and the INPUT ADR. Bytes as well as the associated trigger options.

###### INPUT TYPE

Length: Byte

Range: 1...14

Description:

|  |  |  |
| --- | --- | --- |
| **INPUT TYPE** | **FP2000** | **FP780** |
| 0 | None | None |
| 1 | General | General |
| 2 | Zone | Zone |
| 3 | Area | Area |
| 4 | Adjacent Area | Adjacent Area |
| 5 | Internal | - |
| 6 | Time | Time |
| 7 | Device Input | - |
| 8 | Device | - |
| 9 | Network | - |
| 10 | Action | Action |
| 11 | - | - |
| 12 | Date | Date |
| 13 | LON Device Input | LON Device Input |

|  |  |  |
| --- | --- | --- |
| 14 | Supervised LON Device Input | - |

###### INPUT TRIGGER

Length: Byte

Range: See table

Description: A byte that determines an input’s operation and depends on the INPUT TYPE and INPUT ADR. Bytes:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | **Functionality** | **FP2000 (except LON)** | **FP780 and FP2000 LON** |
| Bit 0 | Input latching | 0: unlatched | 0: unlatched |
| 1: latched | 1: latched |
| Bit 1 | Input shape | 0: continuous | 0: continuous |
| 1: pulse | 1: pulse |
| Bits 4,3,2 | Input state | 000: passive | 000: passive |
| 001: active | 001: active |
| 010: open | 010: open |
| 011: short | 011: short |
| 100: active 1 | 100: - |
| 101: abnormal (open or short) | 101: abnormal (open or short) |
| 111: - | 111: - |
| Bits 7,6,5 | Input logging | 000: un-logged | 000: un-logged |
| 001: logged | 001: logged |
| 010: logged as fire | 010: logged as fire |
| 011: logged as fault | 011: logged as fault |
| 100: logged as condition | 100: logged as condition |
| 101: - | 101: - |
| 111: - | 111: - |

###### INPUT TEXT

Length: 1...41 Bytes

Where: Byte 0: Length of string (0...n, n<40) Bytes 1...n: String (if n > 0)

Note that input types that are “un-logged” (see INPUT TRIGGER byte, bits 5 to 7) are not allowed to have text. Text is allowed for the following input types:

|  |  |  |
| --- | --- | --- |
| **INPUT TYPE** | **FP2000** | **FP780** |
| 5 | Internal | - |
| 6 | Time | Time |
| 7 | Device Input | - |
| 9 | Network | - |
| 12 | Date | Date |
| 13 | LON Device Input | LON Device Input |
| 14 | Supervised LON Device Input | - |

General Description:

The table below gives a detailed description of the relation between the INPUT TYPE byte and the INPUT ADR. Bytes as well as the associated trigger options. It describes the different types of input with their various functions and options.

|  |  |  |
| --- | --- | --- |
| **Function** | **Abbreviation** | **Description** |
| Trigger | Lt | Latched |
| Ult | Unlatched |
| Shape | Cnt | Continuous |
| Pls | Pulse |
| State | P | Passive |
| A | Active |
| O | Open |
| S | Short |
| A1 | Active 1 |
| An | Abnormal |
| Event | Ulg | Un-logged |
| Lg | Logged |
| Fr | Fire |
| Flt | Fault |
| Con | Condition |
| Text | 0/40 | Number of characters allowed |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** |
| 0  None | 0 | 0 | 0 | Ult | Cnt | P | Ulg | 0 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 1  General | 0 - Common Fire | 0 | 0 | Lt | Cnt | A | - | Ulg | 0 |
| 1 - Common Fault | Lt, Ult | A, P |
| 2 - Supply Fault | Lt, Ult | A, P |
| 3 - System Fault | Lt, Ult | A, P |
| 4 - Common  Condition | Lt, Ult | A, P |
| 5 - Disable | Lt, Ult | A, P |
| 6 - Test | Lt, Ult | A, P |
| 7 - Coincidence | Lt | - |
| 8 - Ext. Fire | Lt | - |
| 9 - Ext. Fault | Lt, Ult | A, P |
| 10 - Sounder Fault | Lt | - |
| 11 - Fire Brigade Fault | Lt | - |
| 12 - Fault  Routing Fault | Lt | - |
| 13 - Fire  Protection Fault | Lt | - |
| 14 - Memory  Unlocked | Lt, Ult | A, P |
| 15 - Tamper Switch | Lt, Ult | A, P |
| 16 - Service  Switch | Lt, Ult | A, P |
| 17 - Access Fault | Lt | - |
| 18 - Printer  Disconnected | Lt, Ult | A, P |
| 19 - Emulation  Disconnected | Lt | - |
| 20 - VDU  Disconnected | Lt | - |
| 21 - G-Repeater Fault (FP2000 only) | Lt, Ult | A, P |
| 22 - Panel Fault (FP2000 only) | Lt, Ult | A, P |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 23 - L-Repeater Fault (FP2000 only) | Lt, Ult | A, P |
| 24 - reserved | - | - |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 1  General (cont.) | 25 - Modem Fault | 0 | 0 | Lt | Cnt | A | - | Ulg | 0 |
| 26 - Mains  Disconnected | Lt, Ult | A, P |
| 27 - Battery  Disconnected | Lt, Ult | A, P |
| 28 - Battery Test Failed | Lt, Ult | A, P |
| 29 - Low Battery | Lt, Ult | A, P |
| 30 - Charger Fault | Lt, Ult | A, P |
| 31 - Earth Fault | Lt, Ult | A, P |
| 32 - Ext. supply Fault | Lt, Ult | A, P |
| 33 - Hardware Fault | Lt | - |
| 34 - Sounder  Disabled | Lt, Ult | A, P |
| 35 - Fire Brigade Disabled | Lt, Ult | A, P |
| 36 - Fault Routing Disabled | Lt, Ult | A, P |
| 37 - Fire  Protection Disabled | Lt, Ult | A, P |
| 38 - Soak Test | Lt, Ult | A, P |
| 39 - Zone Test | Lt, Ult | A, P |
| 40 - Sounder Test | Lt, Ult | A, P |
| 41 - Fire Brigade Test | Lt, Ult | A, P |
| 42 - Fault Routing Test | Lt, Ult | A, P |
| 43 - Fire  Protection Test | Lt, Ult | A, P |
| 44 – Maintenance Fault | Lt | - |
| 45 – BFS Disable | Lt, Ult | A, P |
| 46 – Pre Warning | Lt, Ult | A, P |
| 47 – LON Device Fault (FP2000 only) | Lt, Ult | A, P |
| 48 – Hausalarm | Lt, Ult | A, P |
| 49 – LA alarm | Lt, Ult | A, P |
| 50 – Sprinkler al. | Lt, Ult | A, P |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 51 – F/B return | Lt, Ult | A, P |
| 52 – F/B triggert | Lt, Ult | A, P |
| 53 – FSK unlocked | Lt, Ult | A, P |
| 54 – FSK security | Lt, Ult | A, P |
| 55 – FSK open | Lt, Ult | A, P |
| 56 – LA triggert | Lt, Ult | A, P |
| 57 – BFS triggert | Lt, Ult | A, P |
| 58 – FSE triggert | Lt, Ult | A, P |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 2  Zone | ZONE | 0 - Fire | 0 | Lt | Cnt | A | - | Ulg | 0 |
| 1 - Fault | Lt | - |
| 2 - Coinci- dence | Lt | - |
| 3 - Condition | Lt, Ult | A, P |
| 4 - Disable | Lt, Ult | A, P |
| 5 - Pre  Warning | Lt, Ult | A, P |
| 6 - Hausalalm | Lt, Ult | A,P |
| 7 - LA | Lt, Ult | A,P |
| 8 - Sprinkler | Lt, Ult | A,P |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 3  Area | AREA | 0 - Fire | 0 | Lt | Cnt | A | A | Ulg | 0 |
| 1 - Fault | Lt | A |
| 2 - Coinci- dence | Lt | A |
| 3 - Condition | Lt, Ult | A, P |
| 4 - Disable | Lt, Ult | A, P |
| 5 - Pre  Warning | Lt, Ult | A, P |
| 6 - Hausalalm | Lt, Ult | A,P |
| 7 - LA | Lt, Ult | A,P |
| 8 - Sprinkler | Lt, Ult | A,P |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 4  Adj. Area | AREA | 0 - Fire | 0 | Lt | Cnt | A | A | Ulg | 0 |
| 1 - Fault | Lt | A |
| 2 - Coinci- dence | Lt | A |
| 3 - Condition | Lt, Ult | A, P |
| 4 - Disable | Lt, Ult | A, P |
| 5 - Pre  Warning | Lt, Ult | A, P |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 5  Internal | BOARD | BOARD INPUT CHANNEL | 0 | Lt | Lt, Ult | Cnt, Pls | A, P, A1, O, S  An | Ulg, Lg, Fr, Flt, Con | 40 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 6  Time | HOUR | MINUTE | TRIGGER DAY | Lt | Lt, Ult | Cnt, Pls | A, P | Ulg, Lg,  Fr, Flt, Con | 40 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 7  Device Input | LOOP | SENSOR | DEVICE INPUT CHANNEL | Lt | Lt, Ult | Cnt, Pls | A, P, O, S, A2,  An | Ulg, Lg, Fr, Flt, Con | 40 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 8  Device | LOOP | SENSOR | 0 - Fire | Lt | Cnt | A | - | Ulg | 40 |
| 1 - Fault | Lt | - |
| 2 - Condition | Lt, Ult | A |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 9  Network | High byte of OUTPUT | Low byte of OUTPUT | NODE ID | Lt | Lt, Ult | Cnt | A, P | Ulg, Lg, Fr, Flt, Con | 40 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** | |
| **TRG**  **= Lt** | **TRG**  **= Ult** |
| 10  Action | 0 - Day Mode | 0 | 0 | Lt, Ult | Cnt | A | A, P | Ulg | 0 |
| 1 - Zones On | Lt, Ult | A, P |
| 2 - School Bells On | Lt, Ult | A, P |
| 3 - Silence  Buzzer | Lt, Ult | A, P |
| 4 - Key Switch Enabled | Lt, Ult | A, P |
| 5 - Sounder On | Lt, Ult | A, P |
| 6 - Sounder  Silenced | Lt, Ult | A, P |
| 7 - Sounder Delay On | Lt, Ult | A, P |
| 8 - Fire Brigade Signalled | Lt, Ult | A, P |
| 9 - Fire Brigade Stopped | Lt, Ult | A, P |
| 10 - Fire Brigade Delay On | Lt, Ult | A, P |
| 11 - Fault Routing On | Lt, Ult | A, P |
| 12 - Fault Routing Delay On | Lt, Ult | A, P |
| 13 - Fire  Protection On | Lt, Ult | A, P |
| 14 - Fire  Protection Delay On | Lt, Ult | A, P |
| 15 - Restart | Lt | - |
| 16 - Reset | Lt | - |
| 17 - Access  Enabled | Lt, Ult | A, P |
| 18 - Event Buffer Full | Lt | - |
| 19 - Event Buffer Cleared | Lt | - |
| 20 - Maintenance Reminder | Lt | - |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 12  Date | DAY | MONTH | YEAR | Lt | Lt, Ult | Cnt, Pls | A, P | Ulg, Lg, Fr, Flt, Con | 40 |

FP2000 and FP780 Logic inputs

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 13  LON  Device Input | LON NR. | LON INPUT NR. | 0 | Lt | Lt, Ult | Cnt | A, P | Ulg | 0 |

FP780 Equipment inputs

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | **Shape** | **State** |
| 13  LON  Device Input | LON NR. | LON INPUT NR | 00h - None | Ult | **Cnt** | **A** | Ulg | 0 |
| 80h - Fault  Routing Fault |
| 81h - Fbrig  delay  disable |
| 82h - |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | **TRIGGER** | | **MODE** | | **EVENT** | **TEXT** |
| **ADR 0** | **ADR 1** | **ADR 2** | EVENT  = Fr | EVENT  = Ulg, Lg Flt, Con | **Shape** | **State** |
| 14  Sup. LON  Device  Input | LON NR. | LON INPUT NR. | I0 | Lt | Lt, Ult | Cnt | A, P | Ulg | 0 |

###### BOARD

Length: Byte

Range: 0...24

Description: A number that is assigned to a specific board (PCB) in the FP2000 Panel – see also (FP2000 Reference Manual) for a description of the allocation of numbers to the different boards.

###### BOARD INPUT CHANNEL

Length: Byte

Range: 1...8

Description: The input channel number of a FP2000 Panel board (PCB).

###### DEVICE INPUT CHANNEL

Length: Byte

Range: Apollo: 1...3

Sentrol: 1...4

Description: The input channel number of a fire detection device. (Addressed by the LOOP and SENSOR bytes).

###### TRIGGER DAY

Length: Byte

Range: 0...7

Description: The day of trigger for a time input:

|  |  |  |
| --- | --- | --- |
| **TRIGGER DAY** | **FP2000** | **FP780** |
| 0 | Every Day | Every Day |
| 1 | Monday | Monday |
| 2 | Tuesday | Tuesday |
| 3 | Wednesday | Wednesday |
| 4 | Thursday | Thursday |
| 5 | Friday | Friday |
| 6 | Saturday | Saturday |
| 7 | Sunday | Sunday |

**AREA** (See message 9)

**HOUR** (See message 44)

**MINUTE** (See message 44)

**LOOP** (See message 7)

**SENSOR** (See message 7)

**NODE ID** (See message 14)

**OUTPUT** (See message 38)

**CL DEVICE** (See message 63)

**ZONE** (See message 8)

**LON NR.** (See message 74)

**LON INPUT NR.** (See message 74)

##### Non-volatile Output Data (12, 0Ch)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 12 | 12 | 12 | 140 | 140 | 12 | 12 |
| 1,2 | OUTPUT (hb, lb) | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | OUTPUT TYPE | Yes | Yes | - | - | Yes | Yes |
| 4 | OUTPUT TRIGGER | Yes | Yes | - | - | Yes | Yes |
| 5 | OUTPUT ADR. 0 | Yes | Yes | - | - | Yes | Yes |
| 6 | OUTPUT ADR. 1 | Yes | Yes | - | - | Yes | Yes |
| 7 | OUTPUT ADR. 2 | Yes | Yes | - | - | Yes | Yes |
| 8 | OUTPUT ADR. 3 | Yes | Yes | - | - | Yes | Yes |
| 9...49 | OUTPUT TEXT | Yes | Yes |  |  | Yes | Yes |

The output command is used to for the outputs and the equipment outputs. See command 6 for the relevant output numbers. Outputs can be used by the logic, but not to link equipment. Equipment Outputs cannot be used by the logic.

###### OUTPUT

Length: 2 bytes

Range: 1…999

Description: Output that is addressed.

###### OUTPUT TYPE

Length: Byte

Range: 1 14

Description:

|  |  |  |
| --- | --- | --- |
| **OUTPUT TYPE** | **FP2000** | **FP780** |
| 0 | None | None |
| 1 | General | General |
| 2 | Zone | Zone |
| 3 | Area | Area |
| 4 | Internal | - |
| 5 | Device Output | - |
| 6 | Internal supervised | - |
| 7 | Device supervised | - |
| 8 | Network | - |
| 9 | - | - |
| 10 | - | - |
| 11 | Event | Event |
| 12 | Action | Action |
| 13 | LON Output | LON Output |
| 14 | Supervised LON Output | - |

###### OUTPUT TRIGGER

Length: Byte

Range: See table

Description: A byte that determines an output’s operation and depends on the OUTPUT TYPE and OUTPUT ADR.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | **Functionality** | **FP2000** | **FP780** |
| Bit 0 | Output Latching | 0: unlatched | 0: unlatched |
| 1: latched | 1: latched |
| Bit 1 | Output Shape | 0: continuous | 0: continuous |
| 1: pulse | 1: pulse |
| Bit 2 | Output Mode | 0: normal (not inverted) | 0: normal (not inverted) |
| 1: inverted | 1: inverted |
| Bit 3 | Output Shape | 0: continuous | 0: continuous |
| 1: pulsing | 1: pulsing |
| Bit 4 | Output Shape | 0: continuous | 0: continuous |
| 1: two tone | 1: two tone |
| Bits 7,6,5 | Output Logging | 000: un-logged | 000: un-logged |
| 001: logged | 001: logged |
| 010: logged as fire | 010: logged as fire |
| 011: logged as fault | 011: logged as fault |
| 100: logged as condition | 100: logged as condition |
| 101: - | 101: - |
| 111: - | 111: - |

###### OUTPUT ADR. (0...3)

Length: Byte

Range: See table

Description: Three bytes that are used to expand the OUTPUT TYPE by specifying the address, where applicable, and assigning a function to the output. The General Description and table below gives a detailed description of the relation between the OUTPUT TYPE byte and the OUTPUT ADR. Bytes as well as the associated trigger options.

Areas and zones for OUTPUT ADR3 are defined in command 6

|  |  |  |
| --- | --- | --- |
| **OUTPUT TEXT** |  |  |
| Length: | 1...41 Bytes |
|  | Where: Byte 0:  Bytes 1...n: | Length of string (0...n, n<40)  String (if n > 0) |

General Description:

The table below gives a detailed description of the relation between the OUTPUT TYPE byte and the OUTPUT ADR. Bytes as well as the as- sociated trigger options. It describes the different types of input with their various functions and options.

Code Definitions of Table:

|  |  |  |
| --- | --- | --- |
| **Function** | **Abbreviation** | **Description** |
| Trigger | Lt | Latched |
| Ult | Unlatched |
| Mode | Nrm | Norma (not inverted) |
| Iv | Inverted |
| Shape | Cnt | Continuous |
| Cnts | Continuous synchronised |
| Pls | Pulse |
| Psg | Pulsing |
| Psgf | Pulsing fast (LED) |
| Event | Ulg | Un-logged |
| Lg | Logged |
| Fir | Fire |
| Flt | Fault |
| Con | Condition |
| Text | 0/40 | Number of characters allowed |
| Link | Nlk | Linked to general equipment |
| Zlk | Linked to zone equipment |
| Alk | Linked to area equipment |
| Hn | High nibble |
| Ln | Low nibble |
| Equipment | Logic | Logic |
| Snd | Sounder Equipment |
| AutoFbrig | Fire Brigade Equipment (Automatic fire, In non-NEN mode any fire) |
| Fltrt | Fault Routing Equipment |
| Fprot | Fire Protection Equipment |
| MCPFbrig | Fire Brigade Equipment (MCP fire) |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 0  None | 0 | 0 | 0 | 0 | Ult | Nrm | Cnt | Ulg | 0 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 1 | 0 - Fire | 0 | 0 | 0 | Lt | Nrm | Cnt | Ulg | 0 |
| General | 1 - Fault |  |  |  | Lt, Ult |  |  |  |  |
|  | 2 - Condition |  |  |  | Lt, Ult |  |  |  |  |
|  | 3 - Ext. Fire |  |  |  | Lt |  |  |  |  |
|  | 4 - Ext. Fault |  |  |  | Lt, Ult |  |  |  |  |
|  | 5 - Ext.  Supply Fault |  |  |  | Lt, Ult |  |  |  |  |
|  | 6 - Tamper  Switch |  |  |  | Ult |  |  |  |  |
|  | 7 - Service  Switch On |  |  |  | Ult |  |  |  |  |
|  | 8 - Sounder |  |  |  | Ult |  |  |  |  |
|  | Disabled |  |  |  |  |  |  |  |  |
|  | 9 - Fire Brigade Disabled |  |  |  | Ult |  |  |  |  |
|  | 10 - Fault  Routing Disabled |  |  |  | Ult |  |  |  |  |
|  | 11 - Fire  Protection Disabled |  |  |  | Ult |  |  |  |  |
|  | 12 - Sounder |  |  |  | Ult |  |  |  |  |
|  | Test |  |  |  |  |  |  |  |  |
|  | 13 - Fire  Brigade Test |  |  |  | Ult |  |  |  |  |
|  | 14 - Fault  Routing Test |  |  |  | Ult |  |  |  |  |
|  | 15 - Fire  Protection Test |  |  |  | Ult |  |  |  |  |
|  | 16 - Hausalarm |  |  |  | Lt, Ult |  |  |  |  |
|  | 17 - LA |  |  |  | Lt, Ult |  |  |  |  |
|  | 18 - Sprinkler |  |  |  | Lt, Ult |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 2  Zone | ZONE | 0 - Fire MCP | 0 | 0 | Lt | Nrm | Cnt | Ulg | 0 |
| 1 - Fire Auto | Lt |
| 2 - Fault | Lt |
| 3 - Coinci- dence | Lt |
| 4 - Condition | Lt, Ult |
| 5 - Disable | Lt, Ult |
| 6 - Hausalalm | Lt, Ult |
| 7 - LA | Lt, Ult |
| 8 - Sprinkler | Lt, Ult |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 3  Area | AREA | 0 - Fire MCP | 0 | 0 | Lt | Nrm | Cnt | Ulg | 0 |
| 1 - Fire Auto | Lt |
| 2 - Fault | Lt |
| 3 - Coinci- dence | Lt |
| 4 - Condition | Lt |
| 5 - Disable | Lt, Ult |
| 6 - Hausalalm | Lt, Ult |
| 7 - LA | Lt, Ult |
| 8 - Sprinkler | Lt, Ult |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Hn = Link** | **Ln = Equip.** |
| 4  Internal Output | BOARD | BOARD OUTPUT CHANNEL | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1…areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Fbrig |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |
| 0 - Nlk | 4 –LA |
| 5 -Hsalm |
| 6 –Sprink |
| 7 - BFS |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Hn = Link** | **Ln = Equip.** |
| 5  Device Output | Ln = LOOP  Hn = OUTPUT CHANNEL | SENSOR | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1...areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Fbrig | Lt |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |
| 0 - Nlk | 4 –LA |
| 5 –Hsalm |
| 6 -Sprink |
| 7 - BFS |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Hn = Link** | **Ln = Equip.** |
| 6  Internal Super- vised Output | BOARD | BOARD OUTPUT CHANNEL | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1…areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Fbrig |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |
| 0 - Nlk | 4 –LA |
| 5 –Hsalm |
| 6 -Sprink |
| 7 - BFS |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Hn = Link** | **Ln = Equip.** |
| 7  Device Super- vised Output | Ln = LOOP  Hn = OUTPUT CHANNEL | SENSOR | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1…areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Fbrig | Lt |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |
| 0 - Nlk | 4 –LA |  |  |
| 5 –Hsalm |  |
| 6 Sprink |  |
| 7 - BFS |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 8  Network | High byte of INPUT | Low byte of Input | NODE ID | 0 | Ult | Nrm, Iv | Cnt | Ulg, Lg | 40 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 11  Event | 0 | 0 | 0 | 0 | Lt, Ult | Nrm | Cnt | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 12  Action | 0 - Day Mode | 0 | 0 | 0 | Ult | Nrm | Cnt | Ulg | 0 |
|  |
| 1 - Zones On |  |  |  |  |  |  |  |  |
|  | 2 - School  Bells On |  |  |  |  |  |  |  |  |
|  | 3 - Silence  Buzzer |  |  |  |  |  |  |  |  |
|  | 4 - Key Switch Unlocked |  |  |  |  |  |  |  |  |
|  | 5 - Sounder |  |  |  |  |  |  |  |  |
|  | On |  |  |  |  |  |  |  |  |
|  | 6 - Sounder |  |  |  |  |  |  |  |  |
|  | Silenced |  |  |  |  |  |  |  |  |
|  | 7 - Sounder  Delay On |  |  |  |  |  |  |  |  |
|  | 8 - Fire Brigade Signalled |  |  |  |  |  |  |  |  |
|  | 9 - Fire Brigade  Stopped |  |  |  |  |  |  |  |  |
|  | 10 - Fire  Brigade Delay On |  |  |  |  |  |  |  |  |
|  | 11 - Fault  Routing On |  |  |  |  |  |  |  |  |
|  | 12 - Fault  Routing Off |  |  |  |  |  |  |  |  |
| 13 - Fault  Routing Delay On |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 14 - Fire  Protection On |  |  |  |  |  |  |  |  |
| 15 - Fire  Protection Off |
| 16 - Fire  Protection Delay ON |
| 17 - Restart |
| 18 - Reset |
| 19 - Synchro-  nise Time |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | **ADR3** | **Mode** | **Shape** |
| 12  Action (Cont.) | 20 - Call on  Line 1 | 0 | 0 | 0 | Ult | Nrm | Cnt | Ulg | 0 |
| 21 - Call on  Line 2 |
| 22 - Call on  Line 3 |
| 23 - Call on  Line 3 |

FP2000

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Link** | **Equip.** |
| 13  LON  Device Output | LON NR. | LON OUTPUT NR. | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1…areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Fbrig | Lt |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |

FP780

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Link** | **Equip.** |
| 13  LON  Device Output | LON NR. | LON OUTPUT NR. | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1…areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Auto Fbrig | Lt |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |
| 5 - MCP  Fbrig | Lt |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TYPE** | **FUNCTION** | | | | | **TRIGGER** | **MODE** | | **EVENT** | **TEXT** |
| **ADR0** | **ADR1** | **ADR2** | | **ADR3**  **(Link)** | **Mode** | **Shape** |
| **Link** | **Equip.** |
| 14  Super- vised LON  Device Output | LON NR. | LON OUTPUT NR. | 0 | 0 - Logic | 0 | Lt, Ult | Nrm, Iv | Cnt, Pls, Psg | Ulg, Lg, Flt, Con | 40 |
| Lt | Fir |
| 0 - Nlk  1 - Zlk  2 - Alk | 1 - Snd | 0 –0  1 –  1…zones  2 –  1…areas | Lt | Nrm | Cnt | Ulg | 0 |
| 2 - Auto Fbrig | Lt |
| 3 - Fltrt | Ult |
| 4 - Fprot | Lt |

###### BOARD OUTPUT CHANNEL

Length: Byte

Range: 1...128

Description: The output channel number of a FP2000 Panel board (PCB)

###### DEVICE OUTPUT CHANNEL

Length: Byte

Range: Apollo: 1...3

Sentrol: 1...4

Description: The output channel number of a fire detection device

**BOARD** (see message 11)

**INPUT** (See message 38)

**NODE ID** (See message 14)

**SENSOR** (See message 7)

**LOOP** (See message 7)

**ZONE** (See message 8)

**AREA** (See message 9)

**CL DEVICE** (See message 63)

**DAY** (See message 44)

**HOUR** (See message 44)

**MINUTE** (See message 44)

**LON NR.** (See message 74)

**LON OUTPUT NR.** (See message 74)

##### Non-volatile Logic Data (13, 0Dh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 13 | 13 | 13 | 141 | 141 | 13 | 13 |
| 1,2 | LOGIC LINE (hb, lb) | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | LOGIC OP. | Yes | Yes | - | - | Yes | Yes |
| 4 | LOGIC OPR. | Yes | Yes | - | - | Yes | Yes |
| 5 | LOGIC PAR. 0 | Yes | Yes | - | - | Yes | Yes |
| 6 | LOGIC PAR. 1 | Yes | Yes | - | - | Yes | Yes |
| 7 | LOGIC PAR. 2 | Yes | Yes | - | - | Yes | Yes |

###### LOGIC LINE

Length: 2 bytes

Range: 1...1999

Description: Logic line number that is addressed.

###### LOGIC OP

Length: Byte

Range: 0…17

Description:

|  |  |
| --- | --- |
| **LOGIC OP** | **Operation** |
| 0 | None (empty line) |
| 1 | ) = |
| 2 | ) Set-s |
| 3 | ) Reset-s |
| 4 | ) Set-e |
| 5 | ) Reset-e |
| 6 | And |
| 7 | And not |
| 8 | And ( |
| 9 | And not ( |
| 10 | Or |
| 11 | Or ( |
| 12 | Or not ( |
| 13 | ( |
| 14 | Not ( |
| 15 | ) |
| 16 | End |

###### LOGIC OPR.

Length: Byte

Range: 0…8

Description: Logic operand – the two LOGIC PAR bytes extend the operand by specifying the address or location – see the LOGIC PAR. Bytes’ description:

|  |  |
| --- | --- |
| **LOGIC OPR.** | **Operation** |
| 0 | None (empty line) |
| 1 | Input |
| 2 | Output |
| 3 | Marker |
| 4 | Timer |
| 5 | Not Input |
| 6 | Not Output |
| 7 | Not Marker |
| 8 | Not Timer |

###### LOGIC PAR. (0,1,2)

Length: Byte

Range: See table

Description: The two LOGIC PAR bytes are an extension of the LOGIC OPR byte and specify the address or location of the operand.

|  |  |  |  |
| --- | --- | --- | --- |
| **LOGIC OPR.** | **LOGIC PAR. 0** | **LOGIC PAR. 1** | **LOGIC PAR. 2** |
| 0 - | - | - | - |
| 1 - | Higher byte of INPUT | Lower byte of INPUT | 0 |
| 2 - | Higher byte of OUTPUT | Lower byte of OUTPUT | 0 |
| 3 - | 0 | MARKER | 0 |
| 4 - | Higher byte of TIME | TIMER | Lower byte of TIME |
| 5 - | Higher byte of INPUT | Lower byte of INPUT | 0 |
| 6 - | Higher byte of OUTPUT | Lower byte of OUTPUT | 0 |
| 7 - | 0 | MARKER | 0 |
| 8 - | Higher byte of TIME | TIMER | Lower byte of TIME |

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** |  |  | |
| Length: | 2 bytes |
| Range: | FP2000:  FP780: | 1...INPUTS  1...INPUT EQUIPMENT START-1 | (See message 6)  (See message 6) |
| Description: | The assigned input. |  |  |
| **OUTPUT** |  |  |  |
| Length: | 2 bytes |  |  |
| Range: | FP2000: | 1...OUTPUTS | (See message 6) |
|  | FP780: | 1...OUTPUT EQUIPMENT START-1 | (See message 6) |

Description: The assigned output.

###### TIME

Length: Byte

Range: 0…250

Description: The assigned time in seconds.

###### TIMER

Length: Byte

Range: 1…250

Description: The assigned timer.

###### MARKER

Length: Byte

Range: 1 250

Description: The assigned marker.

##### Node Identification (14, 0Eh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 14 | 14 14 142 | | 142 | 14 | 14 |
| 1 | NODE ID | Yes Yes - | | - | Yes | Yes |
| 2…83 | PANEL TEXT | Yes Yes - | | - | Yes | Yes |

###### NODE ID (FP2000)

Length: Byte

Range: FP2000: 0…255 FP780: 1

Description: The node identification address of the FP2000 Panel that is addressed.

The following factors influence the value of the node identification address FP2000 fire panel:

* + - * 1. The FP2000 Panel type. (Fire Panel or a Global Repeater Panel or Local Repeater Panel).
        2. The number assigned to the FP2000 Panel.
        3. The maximum network configuration (see message 36 and MAX. NET. CONFIG.). The format that FP2000 Panel number is displayed is:

p/r, where: p – panel number

r – repeater number

The FP2000 Panel type is determined as follows:

1. Fire Panel: (p > 0) and (r = 0)
2. Global Repeater Panel: (p = 0) and (r > 0)
3. Local Repeater Panel: (p > 0) and (r > 0)

If both the panel and repeater numbers are zero the FP2000 Panel does not have a node identification address. The maximum network configuration determines the maximum amount of devices on the network (ARCNET and serial RS232) by specifying the highest allowable panel and repeater numbers.

There are three options, namely:

1. 15/15

2. 31/7

The calculation is done by performing an “or” operation of the repeater number with the bit reversed value of the panel number.

The following description shows how to interpret the NODE ID byte:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Maximum network configuration – 15/15 |  | | | | | | | |
| Binary representation of NODE ID byte: | “n”- | b7 | b6 | b5 | b4 | b3 | b2 b1 | b0 |
|  |  | p0 | p1 | p2 | p3 | r3 | r2 r1 | r0 |

The lower nibble of the NODE ID byte represents the repeater, the upper nibble the panel number:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Binary representation of repeater number: “r”- | r3: | r2: | r1: | r0 |
| Binary representation of panel number: “p”- | p3: | p2: | p1: | p0 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Maximum network configuration – 31/7 |  | | | | | | | | |
| Binary representation of NODE ID byte: | “n”- | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|  |  | p0 | p1 | p2 | p3 | p4 | r2 | r1 | r0 |
| The lower 3 bits of the NODE ID byte represents the repeater, the upper 5 bits the panel number: | | | | | | | | | |
| Binary representation of repeater number: | “r” - | r2 | r1 | r0 |  |  |  |  |  |
| Binary representation of panel number: | “p” - | p4 | p3 | p2 | p1 | p0 |  |  |  |
| Maximum network configuration – 7/31 |  |  |  |  |  |  |  |  |  |
| Binary representation of NODE ID byte: | “n”- | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|  |  | p0 | p1 | p2 | r4 | r3 | r2 | r1 | r0 |

The lower 5 bits of the NODE ID byte represents the repeater, the upper 3 bits the panel number: Binary representation of repeater number: “r” - r4 r3 r2 r1 r0

Binary representation of panel number: “p” - p2 p1 p0

###### NODE ID (FP780)

Length: Byte

Range: 1

Description: The node identification address of the FP780 Panel that is addressed.

|  |  |  |
| --- | --- | --- |
| **PANEL TEXT** |  |  |
| Length | 2...82 Bytes |
|  | Where: Byte 0:  Bytes 1...n1: Byte n1+1: | Length of first string (0...n1, n1<40) First string (if n1 > 0)  Length of second string (0...n2, n2<40) |
|  | Bytes (n1+2)...n2 | Second string (if n2 > 0) |

##### Access Codes (15, 0fh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 15 | 15 | 15 | 143 | 143 | 15 | 15 |
| 1 | ACCESS | Yes | Yes | Yes | Yes | Yes | Yes |
| 2,3 | ACCESS CODE (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 4 | ACCESS LEVEL | Yes | Yes |  |  | Yes | Yes |

###### ACCESS

Length: Byte

Range: 1...6

Description: The access number that is addressed – see General Description below.

###### ACCESS CODE

Length: 2 bytes

Range: 1...9999

Description: The access code assigned to an access number – see General Description below.

###### ACCESS LEVEL

Length: Byte

Range: 1...2

Description: The access level assigned to an access number. The meaning is as follows (see also General Description below):

1. – limited access
2. – no limit

General Description:

The access number is used to store the access codes of up to six users. The access codes are used to control access to a FP2000 or FP780 Panel menu system. Each access code is assigned an access level that is used to limit the access of some access codes (users). A user with access level of “2” can view and change the access levels and access codes of all access level “1” and other access level “2” us- ers. To enter certain menus of the FP2000 Panel menu system an access level of “2” is required, however, most menus require an access level of “1” (see message number 16).

##### Field Access (16, 10h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 16 | 16 16 144 | | 144 | 16 | 16 |
| 1,2 | ACCESS FIELD (hb, lb) | Yes Yes Yes | | Yes | Yes | Yes |
| 3 | ACCESS LEVEL | Yes Yes - | | - | Yes | Yes |

###### ACCESS FIELD

Length: 2 bytes

Range: 0...255

Description: The access field (menu) number that is addressed. Each menu of the FP2000/FP780 Panel menu system is assigned a (field) number that is used to set the access level required to enter the menu.

The following table gives the field numbers of the FP2000 Panel’s menus. Take note that all the menus exist for a FP2000 fire panel but not for the FP1200, UN2011.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| - | Yes | - | - | 0 – System  10 – Configuration  50 – Hardware  51 – Allocation  52 – ID  53 – Communication  110 – Port Setup  111 – Network  200 – Panels  201 – L-Repeaters  202 – G-Repeaters  112 – Modem  210 – Alarm Report  211 – Maintenance  212 – Setup  113 – Pagers  114 – LON Devices  54 – System Set-up  55 – System Info  220 – Allocation  221 – Panels  222 – L-Repeaters  223 – G-Repeaters  224 – System  225 – Stack  226 – Special Characters  227 – Text Debugging 24 – FEP | | | | | | | | | |
| - | Yes | - | - |
| - | Yes | - | - |
| - | - | Yes | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |

24 – SER

|  |  |  |  |
| --- | --- | --- | --- |
| - | Yes | - | - |
| - | Yes | - | - |

24 – Modem

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| - | Yes | - | - | 24 – ARC 1  24 – ARC 2  24 – LON  24 – LON Characters 11 – Access  60 – Access Codes  61 – Field Access 12 – Clear Site Data  80 – Devices  81- Zones  82 – Areas  83 – Inputs  84 – Outputs  85 – System  86 – Loops  87 – Logic Table  230 – Modem  231 – Pagers  232 – LON Devices  233 – All  13 – Set Default   1. – Devices 2. – Zones 3. – Areas 4. – System 5. – Loops 6. – Configuration 7. – Logic Table 8. – Modem 14 – Set Times   100 – Date & Time  101 – Output Delays  102 – Fbrig Delay off  103 – Sounder Delay off  104 – Zones off  105 – Zones on  106 – Day Mode  107 – Night Mode 15 – Restart  1 – Devices  20 – Setup | | | | | | | | | |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |

21 – Zones

|  |  |  |  |
| --- | --- | --- | --- |
| - | Yes | - | - |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| - | Yes | - | - | 1. – Areas 2. – Zone Graphics 3. – Device Graphics 4. – Zone Range 2 – Input/Output 5. – Inputs 6. – Outputs 7. – Logic 8. – Timers 9. – Markers 10. – LON Devices 3 – Events 11. – Display Events 12. – Clear Events 13. – Clear all Events 4 – Maintenance 14. – Reports     1. – Device Values     2. – Maintenance Dev. 15. – Clear Dev. Stat. 16. – Hardware Test 17. – Maintenance Times 18. – Options 19. – Language 20. – Operation 21. – Protocol 22. – Battery (FP1200) 23. – Fault Masks (FP1200) 24. – Loop Test 25. – Fast Compensation 26. – Device Memory X- Test 27. – Zone Test     1. – Zone Test     2. – Test Report     3. – Clear Test results     4. – Exception Report 28. – Test Devices 29. – Output Test 30. – Lamp Test 31. – Alarm Test | | | | | | | | | |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |

155 – User Log

|  |  |  |  |
| --- | --- | --- | --- |
| Yes | - | - | - |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| Yes | - | - | - | X – Disable   1. – Zones 2. – Devices    1. – Alarm Select    2. – Manual Select 3. – Areas 4. – Reports   190 – Zones  191 – Devices  192 – Areas  124 – Outputs | | | | | | | | | |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |
| Yes | - | - | - |

The following table gives the field numbers of the FP780 Panel’s menus.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| - | Yes | - | - | 0 – System  10 – Configuration  50 – Version  51 – Allocation  53 – Communication  110 – Port Setup  111 – Modem  210 – Alarm Report  211 – Maintenance  212 – Setup  112 – LON  180 – LON Device Setup  181 – Auto Setup  190 – Auto Setup  191 – Auto Setup with Selections  192 – Auto Configure  193 – Auto replace  182 – LON Device Configuration  183 – LON Devices  184 – LON Status  185 – Supervised I/O Masks  186 – LON Test  54 – Options  170 – Language  171 – Operation  172 – Fault Masks  173 – Panel Type  174 – Buzzer  175 – ID  55 – System Info  220 – Allocation  221 – System  222 – Stack  223 – Modem  224 – LON  225 – Special Characters  226 – Text Debugging  227 – LON Characters  240 – FLASH  241 – Network  11 – Access | | | | | | | | | |
| - | Yes | - | - |
| - | Yes | - | - |
| - | - | Yes | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | Yes |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | Yes |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | - | Yes | - |

1. – Access Codes

|  |  |  |  |
| --- | --- | --- | --- |
| - | - | Yes | - |
| - | - | Yes | - |

1. – Field Access

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| - | - | Yes | - | 12 – Clear Site Data   1. – Zones 2. – Areas 3. – Inputs 4. – Outputs 5. – System 6. – Logic Table 7. – Modem 8. – Language   233 – All  13 – Set Default  90 – Zones  91 – Areas  92 – System  93 – Configuration  94 – Logic Table  95 – Modem 14 – Set Times  100 – Date & Time  101 – Output Delays  102 – Fbrig Delay off  103 – Sounder Delay off  104 – Zones off  105 – Zones on  15 – Restart  16 – Update FLASH 1 – Devices  20 – Zones  21 – Areas  2 – I/O  140 – Inputs  141 – Outputs  142 – Logic  143 – LON Device Configuration  144 – Timers  145 – Markers  146 – Input Equipment  147 – Output Equipment 3 – Events  30 – Display Events  31 – Clear Events | | | | | | | | | |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | Yes |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | Yes |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | Yes |
| - | Yes | - | - |
| - | Yes | - | - |
| - | - | Yes | - |
| - | - | Yes | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |

4 – Maintenance

|  |  |  |  |
| --- | --- | --- | --- |
| - | Yes | - | - |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Default Access Level** | | | **Duplication** | **Menu Level** | | | | | | | | | |
| **0** | **1** | **2** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
|  | Yes | - | - | 1. – Reports 2. – Hardware Test 3. – Maintenance Times 5 – Test 4. – Zone Test    1. – Zone Test    2. – Test Report    3. – Clear Test results    4. – Exception Report 5. – Equipment 6. – Zone Equipment 7. – Area Equipment 8. – Alarm Count 9. – User Log 6 – Disable 10. – Zones 11. – Areas 12. – Equipment 13. – Zone Equipment 14. – Area Equipment 7 – Quick Setup 15. – Auto Setup     1. – Auto Setup     2. – Auto Setup with Selections     3. – Auto Configure     4. – Auto replace 16. – Lon Device Configuration 17. – Zones 18. – Output Delays 19. – Supervised I/O Masks 20. – LON Device Setup 21. – Language | | | | | | | | | |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | - |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |
| - | Yes | - | Yes |

###### ACCESS LEVEL

Length: Byte

Range: 0...2

Description: The access level required.

Where: 0: Only key switch required 1: Low level access code 2: High level access code

##### System Times (17, 11h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 17 | 17 17 145 | | 145 | 17 | 17 |
| 1 | SYSTEM TIME | Yes Yes Yes | | Yes | Yes | Yes |
| 2 | HOUR | Yes Yes - | | - | Yes | Yes |
| 3 | MINUTE |  | |  |  |  |

###### SYSTEM TIME

Length: Byte

Range: 0…48

Description: A number specifying which function’s times is addressed as well as the day of the week. Seven numbers are assigned to each function, with the smallest number assigned to Monday, followed by the rest of the week days up to the highest number assigned to Sunday. The allocation of the functions is as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **System Time** | **Function** | **FP2000** | **FP780** |
| 0...6 | Fire brigade delay off times | Yes | Yes |
| 7...13 | Sounder delay off times | Yes | Yes |
| 14...20 | Day mode times | Yes | - |
| 21...27 | Night mode times | Yes | - |
| 28...34 | Zone on times | Yes | Yes |
| 35...41 | Zone off times | Yes | Yes |
| 42...48 | Maintenance report times | Yes | Yes |

###### HOUR

Length: Byte

Range: 0 23

Description: The hour when the function is executed.

###### MINUTE

Length: Byte

Range: 0 59

Description: The minute when the function is executed.

##### Maintenance Date (18, 12h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 18 | 18 | 18 | 146 | 146 | 18 | 18 |
| 1 | YEAR | Yes | Yes | - | - | Yes | Yes |
| 2 | MONTH | Yes | Yes | - | - | Yes | Yes |
| 3 | DAY | Yes | Yes | - | - | Yes | Yes |

###### MONTH

Length: Byte

Range: 1...12

Description: Month for maintenance reminder.

###### DAY

Length: Byte

Range: 1...28,29,30,31

Description: Day of the month for maintenance reminder.

###### YEAR

Length: Byte

Range: 0...99

Description: Year for maintenance reminder.

Where: 94…99: 1994…1999

00…93: 2000…2093

##### Port Set up (19, 13h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 19 | 19 | 19 | 147 | 147 | 19 | 19 |
| 1 | PORT | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | PORT PAR. 0 | Yes | Yes | - | - | Yes | Yes |
| 3 | PORT PAR. 1 | Yes | Yes | - | - | Yes | Yes |
| 4 | PORT ALLOCATION | Yes | Yes | - | - | Yes | Yes |
| 5 | PORT INST. | Yes | Yes | - | - | Yes | Yes |
| 6 | BOARD TYPE | Yes | Yes | - | - | Yes | Yes |

###### PORT

Length: Byte

Range: 0...14

Description: The number of the addressed port. (Se table below)

###### PORT PAR. (0,1)

Length: Byte

Description: Two parameters specifying the port protocol parameters of the ports. The table below shows the relation between PORT, PORT ALLOCATION, and PORT PAR. 0,1. A port can be allocated to only one function and vice versa.

FP780:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PORT** | | **Description** | **PORT PAR. 0** | | **PORT PAR. 1** | **ALLOCATION** | |
| 0,1 | | 0 | 0 | | 0 | 0 | |
| 2,3 - | SER1&2 | RS232 | 0 -  1 -  2 -  3 -  4 -  5 -  6 -  7 - | 300 bps  600 bps  1200 bps  2400 bps  4800 bps  9600 bps  19200 bps  38400 bps | 0 | 0 - | None |
| 1 - | Net |
| 3 - | Event Printer |
| 4 - | Report Printer |
| 6 - | Emulation |
| 8 - | Set-up |
| 10 - Modem | |
| 4-12 | | 0 | 0 | | 0 | 0 | |
| 13 - | LON | ECHELON | 0 | | 0 | 0 - None  12 - LON | |
| 14 | | 0 | 0 | | 0 | 0 | |

FP2000:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PORT** | | **Description** | **PORT PAR. 0** | | **PORT PAR. 1** | | **ALLOCATION** | |
| 0 - | INT | Internal | 0 - | 9600 bps | 0 | | 0 - | None |
| 9 - | FEP |
| 2,3 - | SER1, | RS232 | 0 - | 300 bps | 0 | | 0 - | None |
|  | SER2 |  | 1 - | 600 bps |  | | 1 - | Net1 |
|  |  |  | 2 - | 1200 bps |  | | 2 - | Net2 |
|  |  |  | 3 - | 2400 bps | Printer Type: | | 3 - | Event Printer |
|  |  |  | 4 - | 4800 bps | *Low nibble:* | |  |  |
|  |  |  | 5 - | 9600 bps | 0 - Normal | |  |  |
|  |  |  | 6 - | 19200 bps | 1 - Internal | |  |  |
|  |  |  | 7 - | 38400 bps | 2 - Terminal dump | |  |  |
|  |  |  |  |  | 3 - Thermo | |  |  |
|  |  |  |  |  | *High nibble:* | |  |  |
|  |  |  |  |  | Bit 4: Alarms | |  |  |
|  |  |  |  |  | Bit 5: Faults | |  |  |
|  |  |  |  |  | Bit 6: Conditions | |  |  |
|  |  |  |  |  | Bit 7: Actions | |  |  |
|  |  |  |  |  | Bit set: enabled | |  |  |
|  |  |  |  |  | Bit reset: disabled | |  |  |
|  |  |  |  |  | Printer Type: | | 4 - | Report Printer |
|  |  |  |  |  | 0 - Normal | |  |  |
|  |  |  |  |  | 1 – Internal | |  |  |
|  |  |  |  |  | 2 – not used | |  |  |
|  |  |  |  |  | 3 – Thermo | |  |  |
|  |  |  |  |  | 0 | | 5 - | VDU |
|  |  |  |  |  |  | | 6 - | Emulation |
|  |  |  |  |  |  | | 8 - | Set-up |
|  |  |  |  |  |  | | 10 - Modem | |
|  |  |  |  |  | SDI-A: 0...15 (Ln) | | 11 – CMSI | |
|  |  |  |  |  | SDI-B: 0...15 (Hn) | |  | |
|  |  |  |  |  | 0 - | RS232 | 14 – Pager | |
|  |  |  |  |  | 1 - | RS485 |  | |
| 8 - | ARC | Arcnet | 0 - | 2500 kbps | Topology:   1. – Bus 2. – Dual Bus 3. – Ring Half Duplex 4. – Ring H/D Master 5. – Ring Full Duplex | | 0 - | None |
|  |  |  | 1 - | 1250 kbps | 1 - | Net1 |
|  |  |  | 2 - | 625 kbps | 2 - | Net2 |
|  |  |  | 3 - | 312.5 kbps |  |  |
|  |  |  | 4 - | 156.25 kbps |  |  |
|  |  |  | 5 - | 78.125 kbps |  |  |
| 13 - | LON | LON | 0 | | 0 | | 0 - | None |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  | 12 - LON |
| 14 - COM | Network Printer | Node ID | 0 | 0 - None |
| 4 - Report Printer |
| 1,4-7,9-12 | 0 | 0 | 0 | 0 |

###### PORT ALLOCATION

Length: Byte

Range: 0...14

Description: A byte that allocates a certain communication function to a port – the different options areas follows:

|  |  |  |
| --- | --- | --- |
| **PORT** | **FP2000** | **FP780** |
| 0 - None | - | - |
| 1 - Net1 | Network | Network |
| 2 - Net2 | Network | - |
| 3 - Event Printer | Prints events | Prints events |
| 4 - Report Printer | Prints reports | Prints reports |
| 5 - VDU | Prints event on VDU | - |
| 6 - Emulation | Panel emulation (Use PCE2000) | Panel emulation (Use PCE780) |
| 7 - - | - | - |
| 8 - Set-up | Set-up mode (Use PCC2000) | Set-up mode (Use PCC780) |
| 9 - FEP | FEP communication | - |
| 10 - Modem | Connection to modem | Connection to modem |
| 11 - CMSI | CMSI (French evacuation system) | - |
| 12 - LON | LON communication | LON communication |
| 13 - Trans | - | - |
| 14 - Pager | Connection to pager system | - |

###### PORT INST

Length: Byte

Range: 0...3

Description: Port status byte

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | 0: Port is installed | 0: Port is installed |
| 1: Port is not installed | 1: Port is not installed |
| 1 | 0: Port access disabled | 0: Port access disabled |
| 1: Port access enabled | 1: Port access enabled |

###### BOARD TYPE

Length: Byte

Range: 0...255

Description: Board Id where applicable, else 0.

##### Local Repeater (20, 14h)

A FP2000 Fire Panel can be configured to communicate with Local Repeaters using one or both the network communication functions (Net1/2). A network communication function is assigned to a port (see message 19) as well as to the Local Repeater(s) that are connected to that port.

This message is used for configuration, or reading of the configuration, of a FP2000 Fire Panel’s communication set up, with regard to Lo- cal Repeaters (repeater number specified with L-REPEATER byte). There is no sense in using this message when sending data to, or re- questing data from, Local or Global Repeaters.

A FP2000 Fire Panel can be configured to communicate with any number of other FP2000 Fire Panels, Global Repeaters and Local Re- peaters allowed, by the maximum network configuration. A Global Repeater can be configured to communicate with any number of FP2000 Fire Panels and other Global Repeaters, allowed by the maximum network configuration, but not at all with Local Repeaters. A Local Re- peater can be configured to communicate with only one FP2000 Fire Panel and not at all with Global Repeaters or other Local Repeaters.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 20 | 20 - 148 | | - | 20 | - |
| 1 | L-REPEATER | Yes - Yes | | - | Yes | - |
| 2 | L-REPEATER SET-UP | Yes - - | | - | Yes | - |

###### L-REPEATER

Length: Byte

Range: See Description

Description: The number of the Local Repeater, in the FP2000 Fire Panel’s communication configuration, that is addressed. The range is dependant on the maximum network configuration (see message 36):

|  |  |
| --- | --- |
| **Maximum Network Configuration** | **L-REPEATER** |
| 15/15 | 1…15 |
| 31/7 | 1…7 |
| 7/31 | 1…31 |
| 0/31 | 0 |
| 0/63 | 0 |

###### L-REPEATER SET-UP

Length: Byte

Range: 0...5

Description: A number that allocates one of the network communication functions (Net1/2) to the Local Repeater in the FP2000 Fire Panel’s communication configuration as well as specifying the result of communication failure:

|  |  |  |
| --- | --- | --- |
| **L-REPEATER SETUP** | **Mode** | **Description** |
| 0 | None | No Communication |
| 1 | Net1 check | Allocated to network Net1, with an error in communica- tion producing a fault |
| 2 | Net2 check | Allocated to network Net2, with an error in communica- tion producing a fault |
| 3 | Net1 no check | Allocated to network Net1, with an error in communica- tion producing an action |
| 4 | Net2 no check | Allocated to network Net2, with an error in communica- tion producing an action |

##### Sensor Protocol (21, 15h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 21 | 21 - 149 | | - | 21 | - |
| 1 | PROTOCOL | Yes - - | | - | Yes | - |

###### PROTOCOL

Length: Byte

Range: 0...1

Description: Communication protocol used by the fire detection devices (sensors).

The panel should be restarted after changing the protocol. 0: Sentrol (ARITECH 2000)

1: Apollo (ARITECH 900)

##### Language (22, 16h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 22 | 22 22 150 | | 150 | 22 | 22 |
| 1 | TEMP. LANGUAGE | Yes Yes - | | - | Yes | Yes |
| 2 | LANGUAGE | Yes Yes - | | - | Yes | Yes |
| 3 | LANGUAGE GROUP | - - - | | - | Yes | - |

###### LANGUAGE

Length: Byte

Range: FP2000: 0...4 FP780: 0…1

Description: The default language that is used by the panel’s menu system. Depending on the LANGUAGE GROUP up to 5 different languages can be selected.

FP2000:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **LANGUAGE** | **Group 0** | **Group 1** | **Group 2** | **Group 3** | **Group 4** | **Group 5** |
| **0** | English | English | English | English | English | English |
| **1** | Dutch (Hol- land) | Polish | Danish | Lithuanian | Italian | Romanian |
| **2** | Dutch (Bel- gium) | Hungarian | Swedish | Estonian | Spanish | Greek |
| **3** | French | Czech | Norwegian | Latvian | Portuguese | Luxembourg |
| **4** | German | Slovakian | Finnish | Russian | Brazilian |  |

FP780:

|  |  |
| --- | --- |
| **LANGUAGE** |  |
| **0** | Primary language (English) |
| **1** | Secondary language (See command 77/2) |

###### TEMP. LANGUAGE

Length: Byte

Range: FP2000: See above. The temporary language will only be set if it is different from the default language.

FP780: 0...8 (see command 77/2)

Description: FP2000: The temporary language is set for 72h. After that the panel reverts back to the default language.

FP780: The second language available.

**LANGUAGE GROUP**

|  |  |  |
| --- | --- | --- |
| Length:  Range: | Byte  FP2000: | 0…5 |
| Description: | FP780:  FP2000: | N/A  The language group available. |
|  | FP780: | N/A |

##### Operation (23, 17h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 23 | 23 | 23 | 151 | 151 | 23 | 23 |
| 1 | TEMP. OPERATION | Yes | Yes | - | - | Yes | Yes |
| 2 | OPERATION | Yes | Yes | - | - | Yes | Yes |

|  |  |  |
| --- | --- | --- |
| **OPERATION** |  |  |
| Length: | Byte |
| Range: | FP2000: | 0...4 |
| Description: | FP780:  FP2000: | 0...4  Mode of operation of the panel. |
|  | FP780: | Mode of operation of the panel. |

The operations are:

|  |  |
| --- | --- |
| **OPERATION** | **Standard** |
| 0 | EN |
| 1 | NEN |
| 2 | VdS |
| 3 | EP |
| 4 | BS |

The panel should be rest after changing the mode of operation.

###### TEMP. OPERATION

|  |  |  |
| --- | --- | --- |
| Length:  Range: | Byte  FP2000: | 0...1 |
|  | FP780: | N/A (0) |
| Description: | FP2000:  FP780: | Temporary mode of operation.  N/A (0) |

The options are:

|  |  |
| --- | --- |
| **OPERATION** | **Mode** |
| 0 | Normal operation |
| 1 | Demo mode |

##### Volatile Sensor Data (24, 18h)

The Message Data parameters give information about the status of a specific fire detection device (sensor). Apart from the current state of the device, the message also contains information that was collected over a period of time. See also 1.2.3 (FP2000 Reference Manual) as well as sensor manufacturer documentation.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Request | | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 24 | - | - | 152 | - | 24 | - |
| 1 | LOOP | - | - | Yes | - | Yes | - |
| 2 | SENSOR | - | - | Yes | - | Yes | - |
| 3 | SENSOR ALARM COUNT | - | - | - | - | Yes | - |
| 4 | SENSOR AVERAGE | - | - | - | - | Yes | - |
| 5 | SENSOR COMP. | - | - | - | - | Yes | - |
| 6 | SENSOR COMMS | - | - | - | - | Yes | - |
| 7 | SENSOR LOWEST | - | - | - | - | Yes | - |
| 8 | MONTH (lowest) | - | - | - | - | Yes | - |
| 9 | DAY (lowest) | - | - | - | - | Yes | - |
| 10 | HOUR (lowest) | - | - | - | - | Yes | - |
| 11 | MINUTE (lowest) | - | - | - | - | Yes | - |
| 12 | SENSOR DAY LOW | - | - | - | - | Yes | - |
| 13 | SENSOR HIGHEST | - | - | - | - | Yes | - |
| 14 | MONTH (highest) | - | - | - | - | Yes | - |
| 15 | DAY (highest) | - | - | - | - | Yes | - |
| 16 | HOUR (highest) | - | - | - | - | Yes | - |
| 17 | MINUTE (highest) | - | - | - | - | Yes | - |
| 18 | SENSOR DAY HIGH | - | - | - | - | Yes | - |
| 19,20 | SENSOR ALARM (hb, lb) | - | - | - | - | Yes | - |
| 21 | SENSOR TEST | - | - | - | - | Yes | - |
| 22 | TWO TRY DELAY | - | - | - | - | Yes | - |
| 23 | INPUT STATE | - | - | - | - | Yes | - |
| 24 | OUTPUT STATE | - | - | - | - | Yes | - |
| 25,26 | ASP DELAY (hb, lb) | - | - | - | - | Yes | - |
| 27 | CONTAMINATION | - | - | - | - | Yes | - |
| 28 | SENSOR VALUE | - | - | - | - | Yes | - |
| 29 | SENSOR STATUS BITS | - | - | - | - | Yes | - |
| 30 | SENSOR FIELD TYPE | - | - | - | - | Yes | - |
| 31 | SENSOR OUTPUT BITS | - | - | - | - | Yes | - |
| 32 | SENSOR TEST VALUE | - | - | - | - | Yes | - |
| 33 | COMPENSATED SENSOR VALUE | - | - | - | - | Yes | - |
| 34 | Reserved | - | - | - | - | Yes | - |

###### SENSOR ALARM COUNT

Length: Byte

Range: 0...255

Description: Number of alarm states.

###### SENSOR AVERAGE

Length: Byte

Range: 0...255

Description: Running average value over 20 minutes.

###### SENSOR COMP.

Length: Byte

Range: 0…30

Description: Sensor compensation (in counts) since clearing statistics.

###### SENSOR COMMS

Length: Byte

Range: 0…100

Description: Sensor communication quality (in %) over 20 minutes.

###### SENSOR LOWEST

Length: Byte

Range: 0 255

Description: Lowest sensor reading since clearing the device statistics.

DAY (highest/lowest)

Length: Byte

Range: 1 28,29,30,31

Description: The day of the month of the highest/lowest value since clearing of statistics.

HOUR (highest/lowest)

Length: Byte

Range: 0…23

Description: The hour of the highest/lowest value since clearing of statistics.

MINUTE (highest/lowest)

Length: Byte

Range: 0 59

Description: The minute of the highest/lowest value since clearing of statistics.

MONTH (highest/lowest)

Length: Byte

Range: 1 12

Description: The month of test on/off state since clearing of statistics.

###### SENSOR DAY LOW

Length: Byte

Range: 0 255

Description: Lowest sensor reading for the day.

###### SENSOR HIGHEST

Length: Byte

Range: 0…255

Description: Highest sensor reading since clearing the device statistics.

###### SENSOR DAY HIGH

Length: Byte

Range: 0…255

Description: Highest sensor reading for the day.

###### SENSOR ALARM

Length: 2 bytes

Description: Each bit represents a different alarm:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | Fire | - |
| 1 | No communication | - |
| 2 | Fault | - |
| 3 | Disabled | - |
| 4 | Wrong type | - |
| 5 | Double address | - |
| 6 | Pre condition | - |
| 7 | Maintenance | - |
| 8 | No type | - |
| 9 | Enabled | - |
| 10 | Two set | - |
| 11 | 7 Segment | - |
| 12 | LED | - |
| 13 | 7 Segment continuous | - |
| 14 | Flag | - |
| 15 | Alarm pending | - |

###### SENSOR TEST

Length: Byte

Range: 0...255

Description: Each bit represents a different test:

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | Test on | - |
| 1 | Test off | - |
| 5,4,3,2 | Number of soak test alarms since last reset | - |
| 6 | Disabled | - |
| 7 | Wrong type | - |

###### TWO TRY DELAY

Length: Byte

Range: 0…255

Description: Time delay for two try detection (confirmed mode, two detector dependence).

###### INPUT STATE

Length: Byte

Range: 0 255

Description: Shows the states of the different inputs on an I/O module. Not affected by disablement or zone mode.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bits** | **Functionality** | **FP2000** | **FP780** |
| 1,0 | Input 1 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |
| 3,2 | Input 2 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |
| 5,4 | Input 3 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |
| 7,6 | Input 4 | 00: Normal | - |
| 01: Abnormal (open/short circuit) | - |
| 10: Short circuit | - |
| 11: Open circuit | - |

###### OUTPUT STATE

Length: Byte

Range: 0...255

Description: Shows the states of the different outputs on an I/O module. Not affected by disablement or zone mode.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | **Functionality** | **FP2000** | **FP780** |
| 0 | Output 1 | 0: Passive | **-** |
| 1: Active | **-** |
| 1 | Output 2 | 0: Passive | **-** |
| 1: Active | **-** |
| 2 | Output 3 | 0: Passive | **-** |
| 1: Active | **-** |
| 3 | Output 4 | 0: Passive | **-** |
| 1: Active | **-** |
| 4 | Output 5 | 0: Passive | **-** |
| 1: Active | **-** |
| 5 | Output 6 | 0: Passive | **-** |
| 1: Active | **-** |
| 6 | Output 7 | 0: Passive | **-** |
| 1: Active | **-** |
| 7 | Output 8 | 0: Passive | **-** |
| 1: Active | **-** |

###### ASP DELAY

Length: 2 bytes

Range: 0…1440 minutes

Description: ASP disabling delay.

###### CONTAMINATION

Length: Byte

Range: 0…100

Description: % contamination for optical and ionisation detectors.

###### SENSOR VALUE

Length: Byte

Range: 0…255

Description: The analogue value read from the device.

###### SENSOR STATUS BITS

Length: Byte

Range: 0…255

Description: The bits received from the device.

###### SENSOR FIELD TYPE

Length: Byte

Description: The type information returned from the field:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SENSOR FIELD TYPE** | **Apollo** | | **Sentrol** | |
| 0 | - | None | - | None |
| 1 | MCP | Manual Call Point | MCP | Manual Call Point |
| 2 | OPT | Optical | OPT | Optical |
| 3 | ION | Ionisation | ION | Ionisation |
| 4 | TEMP | Heat | TEMP | Heat |
| 5 | SND | Sounder | ICC | Indicating Circuit Controller |
| 6 | 1I/O | 1-Channel I/O | 4I/O | 4-Channel I/O |
| 7 | - | None | 2I/O | 2-Channel I/O |
| 8 | - | None | 2I/1O | 2-Input/1-Output Channel I/O |
| 9 | - | None | 4I | 4-Input Channel I/O |
| 10 | - | None | SIM | Single I/P mon. |
| 11 | ZMU | Zone Monitor Unit | ZMU | Zone Monitor Unit |
| 12 | MUL | Multi Sensors | - | None |
| 13 | - | None | LCC | Loop Powered ICC with isolator |

###### SENSOR OUTPUT BITS

Length: Byte

Range: 0...255

Description: The current download value for the device.

###### SENSOR TEST VALUE

Length: Byte

Range: 0...255

Description: Self test value.

###### COMPENSATED SENSOR VALUE

Length: Byte

Range: 0...255

Description: The compensated analogue value (Only different from SENSOR VALUE for optical and ionisation devices).

**LOOP** (see message 7)

**SENSOR** (see message 7)

##### Volatile Zone Data (25, 19h)

FP2000:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 25 | - | - | 153 | - | 25 | - |
| 1 | ZONE | - | - | Yes | - | Yes | - |
| 2,3 | ZONE ALARM (hb, lb) | - | - | - | - | Yes | - |
| 4,5 | ALARM COUNT (hb, lb) | - | - | - | - | Yes | - |
| 6,7 | FAULT COUNT (hb, lb) | - | - | - | - | Yes | - |
| 8,9 | CONDITION COUNT (hb, lb) | - | - | - | - | Yes | - |
| 10,11 | COINCIDENCE COUNT (hb, lb) | - | - | - | - | Yes | - |
| 12,13 | ISOLATED COUNT (hb, lb) | - | - | - | - | Yes | - |
| 14 | MONTH (test on) | - | - | - | - | Yes | - |
| 15 | DAY (test on) | - | - | - | - | Yes | - |
| 16 | HOUR (test on) | - | - | - | - | Yes | - |
| 17 | MINUTE (test on) | - | - | - | - | Yes | - |
| 18 | MONTH (test off) | - | - | - | - | Yes | - |
| 19 | DAY (test off) | - | - | - | - | Yes | - |
| 20 | HOUR (test off) | - | - | - | - | Yes | - |
| 21 | MINUTE (test off) | - | - | - | - | Yes | - |
| 22,23 | ZONE STATE (hb, lb) | - | - | - | - | Yes | - |
| 24,25 | ZONE TWO COUNT (hb, lb) | - | - | - | - | Yes | - |
| 26 | ZONE TWO | - | - | - | - | Yes | - |
| 27 | ZONE LEDs | - | - | - | - | Yes | - |
| 28 | ZONE EQUIPMENT SND | - | - | - | - | Yes | - |
| 29 | ZONE EQUIPMENT FBRIG | - | - | - | - | Yes | - |
| 30 | ZONE EQUIPMENT FLTRT | - | - | - | - | Yes | - |
| 31 | ZONE EQUIPMENT FPROT | - | - | - | - | Yes | - |
| 32 | ZONE LED STATUS | - | - | - | - | Yes | - |
| 33,34 | PRE WARNING COUNT (hb, lb) | - | - | - | - | Yes | - |

FP780:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 25 | - | - | - | 152 | - | 23 |
| 1 | ZONE | - | - | - | Yes | - | Yes |
| 2,3 | ZONE ALARM (hb, lb) | - | - | - | - | - | Yes |
| 4 | ALARM COUNT | - | - | - | - | - | Yes |
| 5 | FAULT COUNT | - | - | - | - | - | Yes |
| 6 | CONDITION COUNT | - | - | - | - | - | Yes |
| 7 | ISOLATED COUNT | - | - | - | - | - | Yes |
| 8 | SECURITY ALARM COUNT | - | - | - | - | - | Yes |
| 9 | TEST COUNT | - | - | - | - | - | Yes |
| 10 | PRE WARNING COUNT | - | - | - | - | - | Yes |
| 11 | MAINTENANCE FAULT COUNT | - | - | - | - | - | Yes |
| 12 | MONTH (test on) | - | - | - | - | - | Yes |
| 13 | DAY (test on) | - | - | - | - | - | Yes |
| 14 | HOUR (test on) | - | - | - | - | - | Yes |
| 15 | MINUTE (test on) | - | - | - | - | - | Yes |
| 16 | MONTH (test off) | - | - | - | - | - | Yes |
| 17 | DAY (test off) | - | - | - | - | - | Yes |
| 18 | HOUR (test off) | - | - | - | - | - | Yes |
| 19 | MINUTE (test off) | - | - | - | - | - | Yes |
| 20,21 | ZONE STATE (hb, lb) | - | - | - | - | - | Yes |
| 22 | ZONE COUNT | - | - | - | - | - | Yes |
| 23 | ZONE NODE | - | - | - | - | - | Yes |
| 24 | ZONE INPUT | - | - | - | - | - | Yes |
| 25 | ZONE EQUIPMENT SND | - | - | - | - | - | Yes |
| 26 | ZONE EQUIPMENT FBRIG AUTO | - | - | - | - | - | Yes |
| 27 | ZONE EQUIPMENT FLTRT | - | - | - | - | - | Yes |
| 28 | ZONE EQUIPMENT FPROT | - | - | - | - | - | Yes |
| 29 | ZONE EQUIPMENT FBRIG MCP | - | - | - | - | - | Yes |

###### ZONE

Length: Byte

Range: 1...ZONES, (within zone range) (See command 6) Description: The zone that is addressed.

###### ZONE ALARM

Length: Byte

Description: Each bit represents a different alarm.

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | MCP fire | MCP fire |
| 1 | Fault | Fault |
| 2 | Coincidence | Coincidence |
| 3 | Isolated | Isolated |
| 4 | Test | Test |
| 5 | Condition | Condition |
| 6 | Enabled | Auto fire |
| 7 | Auto fire | Security alarm |
| 8 | Zone Action (for a description of the actions see message 27) | Zone Action (for a description of the actions see message 27) |
| 9 | - | Maintenance |
| 10 | - | Fire test |
| 11 | - | Sounder test |
| 12 | - | Sounder disabled |
| 13 | Pre warning | Pre warning |
| 14 | - | - |
| 15 | - | - |

|  |  |  |
| --- | --- | --- |
| **ALARM COUNT** |  | |
| Length: | FP2000: | 2 bytes |
| Range: | FP780: FP2000:  FP780: | Byte 0...65535  0…255 |

Description: Counts the number of alarms in the selected zone.

|  |  |  |
| --- | --- | --- |
| **FAULT COUNT** |  | |
| Length: | FP2000:  FP780: | 2 bytes  Byte |
| Range: | FP2000:  FP780: | 0...65535  0…255 |

Description: Counts the number of faults in the selected zone.

###### CONDITION COUNT

|  |  |  |
| --- | --- | --- |
| Length: | FP2000: | 2 bytes |
| Range: | FP780: FP2000:  FP780: | Byte 0...65535  0…255 |

Description: Counts the number of conditions in the selected zone.

**COINCIDENCE COUNT** (FP2000 only)

Length: 2 bytes

Range: 0...65535

Description: Counts the number of coincidence alarms in the selected zone.

###### ISOLATE COUNT

Length: FP2000: 2 bytes FP780: Byte

Range: FP2000: 0...65535 FP780: 0…255

Description: Counts the number of isolations in the selected zone.

###### SECURITY ALARM COUNT

|  |  |  |
| --- | --- | --- |
| Length: | FP2000: | 2 bytes |
| Range: | FP780:  FP2000: | Byte  0...65535 |
|  | FP780: | 0…255 |

Description: Counts the number of security alarms in the selected zone.

**SECURITY ALARM COUNT** (FP780 only)

Length: Byte

Range: 0…255

Description: Counts the number of security alarms in the selected zone.

**TEST COUNT** (FP780 only)

Length: Byte

Range: 0…255

Description: Counts the number of test in the selected zone.

**MAINTENANCE FAULT COUNT** (FP780 only)

Length: Byte

Range: 0…255

Description: Counts the number of maintenance faults in the selected zone.

MONTH (test on/off)

Length: Byte

Range: 1 12

Description: The Month of test on/off state.

DAY (test on/off)

Length: Byte

Range: 1 28,29,30,31

Description: The day of the month of test on/off state.

HOUR (test on/off)

Length: Byte

Range: 0 23

Description: The hour of test on/off state.

MINUTE (test on/off)

Length: Byte

Range: 0...59

Description: Minute of test on/off state.

###### ZONE STATE

Length: 2 bytes

Description: Each bit represents a different state that is active in the zone:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | MCP Fire in zone | MCP fire in zone |
| 1 | Fault in zone | Fault in zone |
| 2 | Coincidence in zone | Coincidence in zone |
| 3 | Isolation in zone | Isolation in zone |
| 4 | Zone in test | Zone in test |
| 5 | Condition in zone | Condition in zone |
| 6 | - | Auto fire in zone |
| 7 | Auto fire in zone | Security alarm in zone |
| 8 | - | - |
| 9 | - | Maintenance alarm in zone |
| 10 | - | Fire test in zone |
| 11 | Zone night mode on | Sounder test in zone |
| 12 | Zone security mode on | Sounder test in zone |
| 13 | - | Pre warning in zone |
| 14 | - | - |
| 15 | - | - |

**ZONE LED STATUS** (FP2000 only)

Length: Byte

Range: 0...3

Description: Indicates the status of the zone led.

|  |  |
| --- | --- |
| **ZONE LED STATUS** | **MODE** |
| 0 | Off |
| 1 | On |
| 2 | Blinking |

**ZONE TWO COUNT** (FP2000 only)

Length: Word (2 bytes)

Range: 0...65535 (FFFFh)

Description: Counts the number of detectors in fire in the zone.

**ZONE TWO** (FP2000 only)

Length: Byte

Range: 0...255

Description: A 60s delay.

**ZONE LEDs** (FP2000 only)

Length: Byte

Range: 0...255

Description: Indicates the number of detector LED illuminated in the zone.

###### ZONE EQUIPMENT SND, FLTRT, FPROT, FBRIG AUTO, FBRIG MCP

Length: Byte

Range: 0...255

Description: State of the equipment:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bits** | **Functionality** | **FP2000** | **FP780** |
| 5…0 | ZONE EQUIPMENT | 0: Off | 0: Off |
| 1: On | 1: On |
| 2: Test | 2: Test |
| 3: Silenced | 3: Silenced |
| 4: Evacuated | 4: Evacuated |
| 6 | - | - | - |
| 7 | - | - | - |

###### PRE WARNING COUNT

|  |  |  |
| --- | --- | --- |
| Length: | FP2000: | Word |
| Range: | FP780: FP2000:  FP780: | Byte  0...65535 (FFFFh)  0…255 (FFh) |

Description: Counts the number of pre warnings in the selected zone.

**ZONE COUNT, NODE, INPUT** (FP780 only)

Length: Byte

Range: 0...255

Description: Internal use only.

##### Volatile Area Data (26, 1Ah)

FP2000:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 26 | - | - | - | 154 | 26 | - |
| 1 | AREA | - | - | - | Yes | Yes | - |
| 2 | AREA ALARM | - | - | - | - | Yes | - |
| 3,4 | ALARM COUNT (hb, lb) | - | - | - | - | Yes | - |
| 5,6 | FAULT COUNT (hb, lb) | - | - | - | - | Yes | - |
| 7,8 | CONDITION COUNT (hb, lb) | - | - | - | - | Yes | - |
| 9,10 | COINCIDENCE COUNT (hb, lb) | - | - | - | - | Yes | - |
| 11,12 | ISOLATED COUNT (hb, lb) | - | - | - | - | Yes | - |
| 13 | AREA STATE (lower byte) | - | - | - | - | Yes | - |
| 14 | AREA EQUIPMENT SND | - | - | - | - | Yes | - |
| 15 | AREA EQUIPMENT FBRIG | - | - | - | - | Yes | - |
| 16 | AREA EQUIPMENT FLTRT | - | - | - | - | Yes | - |
| 17 | AREA EQUIPMENT FPROT | - | - | - | - | Yes | - |
| 18 | AREA STATE (higher byte) | - | - | - | - | Yes | - |
| 19,20 | PRE WARNING COUNT (hb, lb) | - | - | - | - | Yes | - |

FP780:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 26 | - | - | 152 | - | - | 26 |
| 1 | AREA | - | - | Yes | - | - | Yes |
| 2,3 | AREA ALARM (hb, lb) | - | - | - | - | - | Yes |
| 4 | ALARM COUNT | - | - | - | - | - | Yes |
| 5 | FAULT COUNT | - | - | - | - | - | Yes |
| 6 | CONDITION COUNT | - | - | - | - | - | Yes |
| 7 | COINCIDENCE COUNT | - | - | - | - | - | Yes |
| 8 | ISOLATED COUNT | - | - | - | - | - | Yes |
| 9 | PRE WARNING COUNT | - | - | - | - | - | Yes |
| 10 | SECURITY ALARM COUNT | - | - | - | - | - | Yes |
| 11 | TEST COUNT | - | - | - | - | - | Yes |
| 12 | MAINTENANCE COUNT | - | - | - | - | - | Yes |
| 13,14 | AREA STATE (hb, lb) | - | - | - | - | - | Yes |
| 15 | AREA EQUIPMENT SND | - | - | - | - | - | Yes |
| 16 | AREA EQUIPMENT FBRIG AUTO | - | - | - | - | - | Yes |
| 17 | AREA EQUIPMENT FLTRT | - | - | - | - | - | Yes |
| 18 | AREA EQUIPMENT FPROT | - | - | - | - | - | Yes |
| 19 | AREA EQUIPMENT FBRIG MCP | - | - | - | - | - | Yes |

###### AREA

Length: Byte

Range: 1...AREAS (See command 6) Description: The Area that is selected.

###### AREA ALARM

Length: FP2000: Byte FP780: Word

Description: Each bit represents a different alarm.

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | Fire | MCP fire |
| 1 | Fault | Fault |
| 2 | Coincidence | Coincidence |
| 3 | Isolated | Isolated |
| 4 | Condition | Condition |
| 5 | Enabled | Automatic fire |
| 6 | Area Action (for a description of the actions see message 27) | Area Action (for a description of the actions see message 27) |
| 7 | - | Test |
| 8 | - | Pre warning |
| 9 | - | Sounder Test |
| 10 | - | Sounder Evacuation |
| 11 | - | Security alarm |
| 12 | - | Sounder disable |
| 13 | - | - |
| 14 | - | - |
| 15 | - | - |

|  |  |  |
| --- | --- | --- |
| **ALARM COUNT** |  | |
| Length: | FP2000:  FP780: | 2 bytes  Byte |
| Range: | FP2000:  FP780: | 0...65535 (FFFFh)  0...255 (FFh) |

Description: Counts the number of alarms in the selected area.

|  |  |  |
| --- | --- | --- |
| **FAULT COUNT** |  | |
| Length: | FP2000: | 2 bytes |
| Range: | FP780: FP2000:  FP780: | Byte  0...65535 (FFFFh)  0...255 (FFh) |

Description: Counts the number of faults in the selected area.

###### CONDITION COUNT

|  |  |  |
| --- | --- | --- |
| Length: | FP2000:  FP780: | 2 bytes  Byte |
| Range: | FP2000:  FP780: | 0...65535 (FFFFh)  0...255 (FFh) |

Description: Counts the number of conditions in the selected area.

###### COINCIDENCE COUNT

|  |  |  |
| --- | --- | --- |
| Length: | FP2000: | 2 bytes |
| Range: | FP780: FP2000:  FP780: | Byte  0...65535 (FFFFh)  0...255 (FFh) |

Description: Counts the number of coincidence alarms in the selected area.

###### ISOLATE COUNT

Length: FP2000: 2 bytes FP780: Byte

Range: FP2000: 0...65535 (FFFFh) FP780: 0...255 (FFh)

Description: Counts the number of isolations in the selected area.

###### PRE WARNING COUNT

Length: Byte

Range: 0...255 (FFh)

Description: Counts the number of isolations in the selected area.

###### SECURITY ALARM COUNT

Length: Byte

Range: 0...255 (FFh)

Description: Counts the number of isolations in the selected area.

###### TEST COUNT

Length: Byte

Range: 0...255 (FFh)

Description: Counts the number of isolations in the selected area.

###### MAINTENANCE COUNT

Length: Byte

Range: 0...255 (FFh)

Description: Counts the number of isolations in the selected area.

###### AREA STATE

Length: 2 bytes

Description: Each bit represents a different state that is active in the area; a “1” means that the state is active:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | Fire in area | Fire in area |
| 1 | Fault in area | Fault in area |
| 2 | Coincidence in area | Coincidence in area |
| 3 | Isolation in area | Isolation in area |
| 4 | - | Condition in area |
| 5 | - | - |
| 6 | - | Automatic fire in area |
| 7 | - | Test in area |
| 8 | Pre warning | Pre warning in area |
| 9 | - | Sounder Test in area |
| 10 | - | Sounder Evacuation in area |
| 11 | - | Security alarm in area |
| 12 | - | Sounder disable in area |
| 13 | - | - |
| 14 | - | - |
| 15 | - | - |

###### AREA EQUIPMENT SND, FLTRT, FPROT, FBRIG AUTO, FBRIG MCP

Length: Byte

Range: 0…255

Description: State of the equipment:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bits** | **Functionality** | **FP2000** | **FP780** |
| 5…0 | AREA EQUIPMENT | 0: Off | 0: Off |
| 1: On | 1: On |
| 2: Test | 2: Test |
| 3: Silenced | 3: Silenced |
| 4: Evacuated | 4: Evacuated |
| 6 | - | - | - |
| 7 | - | - | - |

###### PRE WARNING COUNT

|  |  |  |
| --- | --- | --- |
| Length: | FP2000: | 2 bytes |
| Range: | FP780: FP2000:  FP780: | Byte  0...65535 (FFFFh)  0...255 (FFh) |

Description: Counts the number of pre warnings in the selected area.

##### Volatile Event Data (27, 1Bh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Request | | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 27 | 27 | 27 | 155 | 155 | 27 | 27 |
| 1,2 | EVENT NO. (hb, lb) | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | EVENT CLASS | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | EVENT TYPE | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | EVENT STATUS | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | EMS or EVENT YEAR | EVENT YEAR | EVENT YEAR | EMS | EMS | EVENT YEAR | EVENT YEAR |
| 7 | EVENT MONTH | Yes | Yes | - | - | Yes | Yes |
| 8 | EVENT DAY | Yes | Yes | - | - | Yes | Yes |
| 9 | EVENT HOUR | Yes | Yes | - | - | Yes | Yes |
| 10 | EVENT MINUTE | Yes | Yes | - | - | Yes | Yes |
| 11 | EVENT SECOND | Yes | Yes | - | - | Yes | Yes |
| 12,13 | EVENT COUNT (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 14,15 | EVENT CLASS COUNT (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 16,17 | EVENT PAR 1 (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 18 | EVENT PAR 2 | Yes | Yes | - | - | Yes | Yes |
| 19 | EVENT PAR 3 | Yes | Yes | - | - | Yes | Yes |
| 20 | EVENT PAR 4 | Yes | Yes | - | - | Yes | Yes |
| 21 | EVENT PAR 5 | Yes | Yes | - | - | Yes | Yes |
| 22 | EVENT PAR 6 | Yes | Yes | - | - | Yes | Yes |
| 23 | EVENT ID | Yes | Yes | - | - | Yes | Yes |
| 24...105 | EVENT TEXT | Yes | Yes | - | - | Yes | Yes |
| +1 | VIRTUAL SENSOR ADDRESS | Yes | Yes | - | - | Yes | Yes |
| +2, +3 | SYSTEM ZONE (hb, lb) | Yes | Yes | - | - | Yes | Yes |

###### EVENT NO.

Length: 2 bytes

Range: 0...1999

Description: The number that is allocated to the event.

###### EVENT CLASS:

Length: Byte

Range: 0...4

Description: The event class:

|  |  |  |
| --- | --- | --- |
| **EVENT CLASS** | **FP2000** | **FP780** |
| 0 | Action | Action |
| 1 | Fire | Fire |
| 2 | Fault | Fault |
| 3 | Condition | Condition |
| 4 | All (request only) | All (request only) |

|  |  |  |
| --- | --- | --- |
| 5 | Fire, Fault and Condition (request only) | - |

###### EVENT TYPE

Length: Byte

Range: FP2000: 0...10

FP780: 0...11

Description: The event type (see also in table below):

|  |  |  |
| --- | --- | --- |
| **EVENT TYPE** | **FP2000** | **FP780** |
| 0 | Sensor Soak | - |
| 1 | Area | Area |
| 2 | Zone | Zone |
| 3 | Sensor | - |
| 4 | General | General |
| 5 | Output | Output |
| 6 | Input | Input |
| 7 | Action | Action |
| 8 | Loop | - |
| 9 | Input/Output (request only) | Input/Output (request only) |
| 10 | All (request only) | LON |
| 11 | - | All (request only) |

###### EVENT STATUS

Length: Byte

Range: 0…5

Description: The status of the event:

|  |  |  |
| --- | --- | --- |
| **EVENT TYPE** | **FP2000** | **FP780** |
| 0 | Passive (data not valid) | Passive (data not valid) |
| 1 | Active | Active |
| 2 | Accepted | Accepted |
| 3 | Logged | Logged |
| 4 | Active and accepted (request only) | Active and accepted (request only) |
| 5 | Active and accepted and logged (re- quest only) | Active and accepted and logged (request only) |

###### EMS

Length: Byte

Range: 0 3

Description: The event mode search, that is used when requesting the message:

|  |  |  |
| --- | --- | --- |
| **EVENT TYPE** | **FP2000** | **FP780** |
| 0 | Most recent event | Most recent event |
| 1 | Next event forward (wrap around) | Next event forward (wrap around) |
| 2 | Previous event backward (wrap around) | Previous event backward (wrap around) |
| 3 | Event specified by EVENT NO. | Event specified by EVENT NO. |
| 4 | Highest priority event | Highest priority event |

###### EVENT YEAR

Length: Byte

Range: 0...99

Description: The year when the event occurred.

Where: 94…99: 1994…1999

00…93: 2000…2093

###### EVENT MONTH

Length: Byte

Range: 1...12

Description: The month when the event occurred.

###### EVENT DAY

Length: Byte

Range: 1...28,29,30,31

Description: The day of the month when the event occurred.

###### EVENT HOUR

Length: Byte

Range: 0…23

Description: The hour when the event occurred.

###### EVENT MINUTE

Length: Byte

Range: 0…59

Description: The minute when the event occurred.

###### EVENT SECOND

Length: Byte

Range: 0 59

Description: The second when the event occurred.

###### EVENT COUNT

Length: 2 bytes

Range: 0 65535 (FFFFh)

Description: The number of events.

###### EVENT CLASS COUNT

Length: 2 bytes

Range: 0 65535 (FFFFh)

Description: The number of events in the same class.

***2012-06-06 10:47:11***

--------------------------------------------

7 bytes

###### EVENT PAR (1...6)

Length: 2 bytes

Description: The event parameters are an expansion of the event type (EVENT TYPE byte) and their relation is shown with the table below. The table describes the relation between the EVENT TYPE byte and the EVENT PAR. Bytes.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EVENT TYPE** | | **PAR 1**  (2 bytes, hb, lb) | **PAR 2**  (Byte) | **PAR 3**  (Byte) | **PAR 4**  (Byte) | **PAR 5**  (Byte) | **PAR 6**  (Byte) |
| 0 | Sensor | SENSOR ALARM | LOOP | SENSOR | SENSOR TYPE | ZONE | AREA |
| 1 | Area | AREA ALARM | AREA | AREA ACTION | 0 | 0 | 0 |
| 2 | Zone | ZONE ALARM | ZONE | ZONE ACTION | 0 | 0 | AREA |
| 3 | Sensor | SENSOR ALARM | LOOP | SENSOR | SENSOR TYPE | ZONE | AREA |
| 4 | General | GENERAL ALARM | High byte  GENERAL ALARM NO. | Low byte  GENERAL ALARM NO. | 0 | 0 | 0 |
| 5 | Output | OUTPUT STATUS | High byte OUTPUT | Low byte OUTPUT | 0 | 0 | 0 |
| 6 | Input | INPUT STATUS | High byte INPUT | Low byte INPUT | 0 | 0 | 0 |
| 7 | Action | ACTION | High byte ACTION NO. | Low byte ACTION NO. | 0 | 0 | 0 |
| 8 | Loop | 0 | LOOP | LOOP ALARM | 0 | 0 | 0 |
| 9 | Input/ Output | - | - | - | - | - | - |
| 10 | All | - | - | - | - | - | - |
| 11 | LON | LON ALARM | LON NR. | LON ALARM NR. | 0 | 0 | 0 |

###### EVENT ID

Length: Byte

Range: 1...255

Description: The node identification address of the panel that generates the message – (see also message 14 NODE ID).

###### EVENT TEXT

Length: 2…82 Bytes

Where: Byte 0: Length of first string (0...n1, n1<40) Bytes 1...n1: First string (if n1 > 0)

Byte n1+1: Length of second string (0...n2, n2<40) Bytes (n1+2)...n2 Second string (if n2 > 0)

###### ACTION

Length: Byte

Range: FP2000: 100...200

FP780: 100...224

Description: Action as described below:

|  |  |  |  |
| --- | --- | --- | --- |
| **ACTION** | | **FP2000** | **FP780** |
| 100 | Restart | Used | Used |
| 101 | Reset | Used | Used |
| 102 | Silence buzzer | Used | Used |
| 103 | Sounder on | Used | Used |
| 104 | Sounder silenced | Used | Used |
| 105 | Sounder delay on | Used | Used |
| 106 | Sounder delay off | Used | Used |
| 107 | Sounder enabled | Used | Used |
| 108 | Fire brigade delay on | Used | Used |
| 109 | Fire brigade delay off | Used | Used |
| 110 | Fire brigade enabled | Used | Used |
| 111 | Fire brigade stop | Used | Used |
| 112 | Event buffer cleared | Used | Used |
| 113 | Memory locked | Used | Used |
| 114 | Service mode off | Used | Used |
| 115 | Tamper switch off | Used | Used |
| 116 | Key lock disabled | Used | Used |
| 117 | Mains on | Used | Used |
| 118 | Day mode | Used | Used |
| 119 | Night mode | Used | Used |
| 120 | School bells on | Used | Used |
| 121 | School bells off | Used | Used |
| 122 | Sounder test off | Used | Used |
| 123 | Fire brigade test off | Used | Used |
| 124 | Soak test off | Used | - |
| 125 | Zone test off | Used | Used |
| 126 | Maintenance reminder | Used | Used |
| 127 | Access enabled | Used | Used |
| 128 | Access disabled | Used | Used |
| 129 | Battery connected | Used | - |
| 130 | Battery detected | Used | - |
| 131 | Local Repeater OK | Used | - |
| 132 | Logic enabled | Used | Used |
| 133 | External fault OK | Used | Used |
| 134 | Modem OK | Used | Used |
| 135 | Time changed | Used | Used |
| 136 | Synchronise time | Used | Used |
| 137 | Fire Panel OK | Used | - |
| 138 | Global Repeater OK | Used | Used |

|  |  |  |  |
| --- | --- | --- | --- |
| 139 | Fire brigade signal | Used | Used |

|  |  |  |  |
| --- | --- | --- | --- |
| **ACTION** | | **FP2000** | **FP780** |
| 140 | Low battery OK | Used | - |
| 141 | Charger OK | Used | - |
| 142 | Earth OK | Used | - |
| 143 | Zones on | Used | Used |
| 144 | Zones off | Used | Used |
| 145 | Event buffer full | Used | Used |
| 146 | External supply OK | Used | Used |
| 147 | Fault OK | Used | Used |
| 148 | Condition OK | Used | Used |
| 149 | Key lock enabled | Used | Used |
| 150 | Hardware test start | Used | Used |
| 151 | Hardware test end | Used | Used |
| 152 | Fire Panel disconnected | Used | - |
| 153 | Local Repeater disconnected | Used | - |
| 154 | Global Repeater disconnected | Used | Used |
| 155 | Reserved | - | - |
| 156 | Fault routing on | Used | Used |
| 157 | Fault routing silenced | Used | Used |
| 158 | Fault routing delay on | Used | Used |
| 159 | Fault routing delay off | Used | Used |
| 160 | Fault routing enabled | Used | Used |
| 161 | Fire protection on | Used | Used |
| 162 | Fire protection silenced | Used | Used |
| 163 | Fire protection delay on | Used | Used |
| 164 | Fire protection delay off | Used | Used |
| 165 | Fire protection enabled | Used | Used |
| 166 | Fault routing test off | Used | Used |
| 167 | Fire protection test off | Used | Used |
| 168 | User log | Used | Used |
| 169 | Loop test off | Used | - |
| 170 | Modem test | Used | Used |
| 171 | Printer on | Used | Used |
| 172 | Network Line OK | Used | Used |
| 173 | Auxiliary supply ok | Used | - |
| 174 | Third source ok | Used | - |
| 175 | Fire brigade feedback | Used | Used |
| 176 | Clear all event buffers | Used | - |
| 177 | Call on line 1 | Used | Used |
| 178 | Call on line 2 | Used | Used |
| 179 | Call on line 3 | Used | Used |
| 180 | Call on line 4 | Used | Used |
| 181 | End of call line 1 | Used | Used |
| 182 | End of call line 2 | Used | Used |

|  |  |  |  |
| --- | --- | --- | --- |
| 183 | End of call line 3 | Used | Used |
| 184 | End of call line 4 | Used | Used |
| 185 | BFS enabled | Used | - |
| 186 | FSK locked from EMZ | Used | - |
| 187 | FSK door closed | Used | - |
| 188 | FSK locked | Used | - |
| 189 | Communication with CMSI (SDI A) ok | Used | - |
| 190 | LON device communication ok | Used | - |
| 191 | LON device fault ok | Used | - |
| 192 | LON controller fault ok | Used | - |
| 193 | Communication with CMSI (SDI B) ok | Used | - |
| 194 | Lon device enabled | Used | - |
| 195 | LA reset | Used | - |
| 196 | MCP FB test off (NEN) | Used | Used |
| 197 | MCP FB on (NEN) | Used | Used |
| 198 | MCP FB enable (NEN) | Used | Used |
| 199 | Fault O/P to FB (Finland) | Used | - |
| 200 | Pager communication ok | Used | - |
| 201 | Access enabled (ext) | Used | Used |
| 202 | Access disabled (ext) | Used | Used |
| 203 | - | - | - |
| 204 | - | - | - |
| 205 | - | - | - |
| 206 | - | - | - |
| 207 | - | - | - |
| 208 | - | - | - |
| 209 | - | - | - |
| 210 | - | - | - |
| 211 | - | - | - |
| 212 | - | - | - |
| 213 | - | - | - |
| 214 | - | - | - |
| 215 | - | - | - |
| 216 | - | - | - |
| 217 | - | - | - |
| 218 | - | - | - |
| 219 | - | - | - |
| 220 | Automatic Evacuation | - | Used |
| 221 | Manual Evacuation | - | Used |
| 222 | - | - | - |
| 223 | - | - | - |
| 224 | Evacuation Reset | - | Used |

###### ACTION NO.

Length: 2 bytes

Range: 0…65535 (FFFFh)

Description: The number allocated to an action as described below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ACTION** | | **ACTION NO.** | **FP2000** | **FP780** | **Message** |
| 127 | Access enabled | ACCESS | Used | Used | 15 |
| 131 | Local Repeater OK | L-REPEATER | Used | - | 20 |
| 137 | Fire Panel OK | FIRE PANEL | Used | - | 48 |
| 138 | Global Repeater OK | G-REPEATER | Used | Used | 49 |
| 152 | Fire Panel disconnected | FIRE PANEL | Used | - | 48 |
| 153 | Local Repeater disconnected | L-REPEATER | Used | - | 20 |
| 154 | Global Repeater disconnected | G-REPEATER | Used | Used | 49 |
| 168 | User log | ACCESS CODE | Used | Used | 15 |
| 171 | Printer on | PORT | Used | Used | 19 |
| 190 | Lon device Communication ok | LON NR | Used | - | 74 |
| 192 | Lon device fault ok | LON NR | Used | - | 74 |
| 194 | Lon device enabled | LON NR | Used | - | 74 |

###### GENERAL ALARM

Length: Byte

Range: FP2000: 0…109 FP780: 0…121

Description: General Alarm as described below:

|  |  |  |  |
| --- | --- | --- | --- |
| **GENERAL ALARM** | | **FP2000** | **FP780** |
| 0 | Common fire | Used | Used |
| 1 | External fire | Used | Used |
| 2 | LA triggered | Used | - |
| 3 | Zone allocation fault | Used | - |
| 4 | - | - | - |
| 5 | Common condition | Used | Used |
| 6 | Common coincidence | Used | Used |
| 7 | Maintenance condition | Used | - |
| 8 | Pre Warning condition | Used | - |
| 9 | - | - | - |
| 10 | Common fault | Used | Used |
| 11 | Watchdog time-out | Used | Used |
| 12 | Service mode on | Used | Used |
| 13 | Memory unlocked | Used | Used |
| 14 | - | - | - |
| 15 | - | - | - |
| 16 | Tamper switch on | Used | Used |
| 17 | Mains off | Used | - |
| 18 | Battery disconnected | Used | - |
| 19 | Low battery | Used | - |
| 20 | Charger fault | Used | - |

|  |  |  |  |
| --- | --- | --- | --- |
| 21 | Earth fault | Used | - |

|  |  |  |  |
| --- | --- | --- | --- |
| **GENERAL ALARM** | | **FP2000** | **FP780** |
| 22 | Incomplete NET1 set-up | Used | Used |
| 23 | Printer disconnected | Used | Used |
| 24 | Wrong time/date | Used | Used |
| 25 | Configuration fault | Used | Used |
| 26 | Sounder disabled | Used | Used |
| 27 | Fire brigade disabled | Used | Used |
| 28 | Sounder fault | Used | Used |
| 29 | Fire brigade fault | Used | Used |
| 30 | External fault | Used | Used |
| 31 | External supply fault | Used | Used |
| 32 | Sounder test | Used | Used |
| 33 | Fire brigade test | Used | Used |
| 34 | Checksum fault for non-volatile memory | Used | Used |
| 35 | Local repeater fault | Used | - |
| 36 | Access fault | Used | Used |
| 37 | Battery failed | Used | - |
| 38 | Emulation disconnected | Used | - |
| 39 | Logic disabled | Used | Used |
| 40 | Logic error | Used | Used |
| 41 | Hardware test failed | Used | Used |
| 42 | Checksum fault for protected memory | Used | Used |
| 43 | Fire panel fault | Used | - |
| 44 | Global repeater fault | Used | Used |
| 45 | No checksums calculated | Used | Used |
| 46 | Input fault | Used | Used |
| 47 | Output fault | Used | Used |
| 48 | Fault routing fault | Used | Used |
| 49 | Fire protection fault | Used | Used |
| 50 | No fire brigade feedback | Used | - |
| 51 | Fault routing disabled | Used | Used |
| 52 | Soak test | Used | - |
| 53 | Zone test | Used | - |
| 54 | Fire protection disabled | Used | Used |
| 55 | Fault routing test | Used | Used |
| 56 | Fire protection test | Used | Used |
| 57 | Fault routing return fault | Used | Used |
| 58 | Fire protection return fault | Used | Used |
| 59 | Fire brigade return fault | Used | Used |
| 60 | Modem fault | Used | Used |
| 61 | VDU disconnected | Used | - |
| 62 | Loop test | Used | - |
| 63 | Modem report fault | Used | Used |
| 64 | Fire protection equipment fault | Used | Used |

|  |  |  |  |
| --- | --- | --- | --- |
| 65 | Fault routing equipment fault | Used | Used |
| 66 | Port fault | Used | Used |
| 67 | Incomplete NET2 set-up | Used | - |
| 68 | Network Line faulty | Used | Used |
| 69 | Duplicate Node ID | Used | Used |
| 70 | Auxiliary supply fault | Used | - |
| 71 | Third source fault | Used | - |
| 72 | - | - | - |
| 73 | FSK release | Used | - |
| 74 | FSE input fault | Used | - |
| 75 | FSE input active | Used | - |
| 76 | EMZ FSK door release input fault | Used | - |
| 77 | EMZ FSK door release request | Used | - |
| 78 | - | - | - |
| 79 | FSK door open | Used | - |
| 80 | FSK security fault | Used | - |
| 81 | - | - | - |
| 82 | FSK heater fault | Used | - |
| 83 | BFS disabled | Used | - |
| 84 | External alarm (Hauptmelder) | Used | - |
| 85 | Fire brigade trigger from FBF | Used | - |
| 86 | No communication with CMSI (SDI A) | Used | - |
| 87 | LON device communication fault | Used | - |
| 88 | LON controller fault | Used | - |
| 89 | LON device fault | Used | - |
| 90 | No communication with CMSI (SDI B) | Used | - |
| 91 | LON device disabled | Used | - |
| 92 | 2nd Sounder fault | Used | - |
| 93 | MCP FB fault (NEN) | Used | Used |
| 94 | MCP FB disable (NEN) | Used | Used |
| 95 | MCP FB Test (NEN) | Used | Used |
| 96 | DIP Switch setting error | Used | - |
| 97 | LA input return | Used | - |
| 98 | LA fault | Used | - |
| 99 | LA fault return | Used | - |
| 100 | Pager communication fault | Used | - |
| 101 | Unknown pager address | Used | - |
| 102 | No pager dongle | Used | - |
| 103 | LON redundancy fault | Used | - |
| 104 | - | - | - |
| 105 | - | - | - |
| 106 | - | - | - |
| 107 | - | - | - |
| 108 | - | - | - |
| 109 | - | - | - |

|  |  |  |  |
| --- | --- | --- | --- |
| 110 | - | - | - |
| 111 | - | - | - |
| 112 | - | - | - |
| 113 | - | - | - |
| 114 | - | - | - |
| 115 | - | - | - |
| 116 | - | - | - |
| 117 | - | - | - |
| 118 | - | - | - |
| 119 | - | - | - |
| 120 | Flash memory modified | - | Used |
| 121 | Missing Equipment | - | Used |
| 122 | Invalid LON controller HW revision | - | Used |
| 123 | Invalid LON controller OEM | - | Used |
| 124 | Invalid LON controller PC | - | Used |
| 125 | Invalid LON controller CFG | - | Used |
| 126 | Invalid LON controller SW revision | - | Used |
| 127 | Missing Output Equipment | - | Used |
| 128 | Missing Input Equipment | - | Used |
| 129 |  | - | - |

###### GENERAL ALARM NO.

Length: Byte

Range: 0...65535 (FFFFh)

Description: The number allocated to a general alarm as described below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GENERAL ALARM** | | **GENERAL ALARM NO.** | **FP2000** | **FP780** | **Message** |
| 11 | Watchdog time-out | | | | 15 |
| 0 | Host watchdog time-out | Used | Used |
| 1 | FEP fault input | Used | - |
| 2 | Divide error exception | Used | Used |
| 3 | Array bounds exception | Used | Used |
| 4 | Unused opcode exception | Used | Used |
| 5 | Escape opcode exception | Used | Used |
| 6 | Numeric opcode exception | Used | Used |
| 7 | Restart | Used | Used |
| 8 | FEP communication | Used | - |
| 9 | FEP reply time-out | Used | - |
| 10 | FEP excessive replies | Used | - |
| 11 | LON handshake error | Used | Used |
| 12 | FEP error 1 | Used | - |
| 13 | FEP error 2 | Used | - |
| 14 | FEP error 3 | Used | - |
| 15 | Save memory overflow | Used | Used |
| 16 | Queue overflow | Used | Used |
| 17 | Semaphore overflow | Used | Used |
| 18 | Volatile data access 0 | Used | Used |
| 19 | Non-volatile data access 0 | Used | Used |
| 20 | Protected data access 0 | Used | Used |
| 21 | Text data access 0 | Used | Used |
| 22 | Volatile data access 1 | Used | Used |
| 23 | Non-volatile data access 1 | Used | Used |
| 24 | Protected data access 1 | Used | Used |
| 25 | Text data access 1 | Used | Used |
| 26 | Block access 0 | - | Used |
| 27 | Block access 1 | - | Used |
| 28 | Block type | Used | Used |
| 29 | Volatile data access 2 | Used | Used |
| 30 | Non-volatile data access 2 | Used | Used |
| 31 | Protected data access 2 | Used | Used |
| 32 | Text data access 2 | Used | Used |
| 33 | Restart with forced LON update | - | Used |
| 34 | Restart with new configuration | - | Used |
| 35 | Cold start | Used | - |
| 36 | Volatile data access 2 | Used | - |
| 37 | Non-volatile data access 2 | Used | - |
| 38 | Protected data access 2 | Used | - |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GENERAL ALARM** | | **GENERAL ALARM NO.** | **FP2000** | **FP780** | **Message** |
| 11 | 39 | Text data access 2 | Used | - | 15 |
| 40 | Volatile data access 3 | Used | - |
| 41 | Non-volatile data access 3 | Used | - |
| 42 | Protected data access 3 | Used | - |
| 43 | Text data access 3 | Used | - |
| 44 | Volatile data access 4 | Used | - |
| 45 | Non-volatile data access 4 | Used | - |
| 46 | Protected data access 4 | Used | - |
| 47 | Text data access 4 | Used | - |
| 15 | Printer disconnected | PORT | Used | Used | 19 |
| 23 | Checksum fault for non- volatile memory | BLOCK | Used | Used | 3 |
| 35 | Local repeater fault | L-REPEATER | Used | - | 20 |
| 36 | Access fault | ACCESS CODE | Used | Used | 15 |
| 40 | Logic error | LOGIC LINE | Used | Used | 13 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GENERAL ALARM** | | **GENERAL ALARM NO.** | **FP2000** | **FP780** | **Message** |
| 41 | Hardware test failed | | | | 3 |
| 100 | Host EPROM error | Used | - |
| 101 | FLASH error | - | Used |
| 102 | FLASH error (Default boot loader) | - | Used |
| 103 | FLASH error (Backup boot loader) | - | Used |
| 2XX | Non-volatile block error (XX = BLOCK, see below) | Used | Used |
| 3XX | Protected volatile block error (XX = BLOCK, see below) | Used | Used |
| 4XX | Save memory error  (XX = MODULE NO, see below) | Used | Used |
| 5XX | Configuration error XX = board Position Host 0…15  FEP 16…24 | Used | - |
| 600 | - | - | - |
| 700 | FEP EPROM error | Used | - |
| 800 | FEP RAM error | Used | - |
| 900 | Faulty Modem | Used | Used |
| 43 | Fire panel fault | FIRE PANEL | Used | - | 48 |
| 44 | Global repeater fault | G-REPEATER | Used | Used | 49 |
| 46 | Input fault | INPUT | Used | Used | 11 |
| 47 | Output fault | OUTPUT | Used | Used | 12 |
| 63 | Modem report fault | 1…4 | Used | Used | - |
| 66 | Port fault | PORT | Used | Used | 19 |
| 87 | Lon device communica- tion fault | LON NR | Used | - | 74 |
| 89 | Lon device fault | LON NR | Used | - | 74 |
| 91 | Lon device disabled | LON NR | Used | - | 74 |

###### ZONE ACTION

Length: Byte

Range: FP2000: 0...21

FP780: 0...19

Description: Action (when ZONE ALARM = Zone Action) as described below:

|  |  |  |  |
| --- | --- | --- | --- |
| **ZONE ACTION** | | **FP2000** | **FP780** |
| 0 | Sounder off | Used | Used |
| 1 | Sounder on | Used | Used |
| 2 | Sounder Test on | Used | Used |
| 3 | Sounder silenced | Used | Used |
| 4 | Sounder Test off | Used | Used |
| 5 | Fire brigade off | Used | Used |
| 6 | Fire brigade on | Used | Used |
| 7 | Fire brigade Test on | Used | Used |
| 8 | Fire brigade stopped | Used | Used |
| 9 | Fire brigade Test off | Used | Used |
| 10 | Fault Routing off | Used | Used |
| 11 | Fault Routing on | Used | Used |
| 12 | Fault Routing Test on | Used | Used |
| 13 | Fault Routing stopped | Used | Used |
| 14 | Fault Routing Test off | Used | Used |
| 15 | Fire Protection off | Used | Used |
| 16 | Fire Protection on | Used | Used |
| 17 | Fire Protection Test on | Used | Used |
| 18 | Fire Protection stopped | Used | Used |
| 19 | Fire Protection Test off | Used | Used |
| 20 | Two fire on | Used | - |
| 21 | Two fire off | Used | - |

###### AREA ACTION

Length: Byte

Range: FP2000: 0

FP780: 0...19

Description: Action (when AREA ALARM = Area Action) as described below:

|  |  |  |  |
| --- | --- | --- | --- |
| **AREA ACTION** | | **FP2000** | **FP780** |
| 0 | Sounder off | - | Used |
| 1 | Sounder on | - | Used |
| 2 | Sounder Test on | - | Used |
| 3 | Sounder silenced | - | Used |
| 4 | Sounder Test off | - | Used |
| 5 | Fire brigade off | - | Used |
| 6 | Fire brigade on | - | Used |
| 7 | Fire brigade Test on | - | Used |
| 8 | Fire brigade stopped | - | Used |
| 9 | Fire brigade Test off | - | Used |
| 10 | Fault Routing off | - | Used |
| 11 | Fault Routing on | - | Used |
| 12 | Fault Routing Test on | - | Used |
| 13 | Fault Routing stopped | - | Used |
| 14 | Fault Routing Test off | - | Used |
| 15 | Fire Protection off | - | Used |
| 16 | Fire Protection on | - | Used |
| 17 | Fire Protection Test on | - | Used |
| 18 | Fire Protection stopped | - | Used |
| 19 | Fire Protection Test off | - | Used |

###### LON ALARM

Length: Byte

Range: FP2000: 0

FP780: 0...25

Description: LON device alarm as described below:

|  |  |  |  |
| --- | --- | --- | --- |
| **LON ALARM** | | **FP2000** | **FP780** |
| 0 | Sounder fault | - | Used |
| 1 | Automatic Fire Brigade fault | - | Used |
| 2 | Fire Protection fault | - | Used |
| 3 | Fault Routing fault | - | Used |
| 4 | Earth fault | - | Used |
| 5 | Low Battery fault | - | Used |
| 6 | Mains fault | - | Used |
| 7 | Communication fault | - | Used |
| 8 | Disabled | - | Used |
| 9 | Charger fault | - | Used |
| 10 | Supply fault | - | Used |
| 11 | Fault | - | Used |
| 12 | MCP Fire Brigade fault | - | Used |
| 13 | Output fault | - | Used |
| 14 | Input fault | - | Used |
| 15 | Auxiliary fault | - | Used |
| 16 | 3rd Source fault | - | Used |
| 17 | Battery Test fault | - | Used |
| 18 | Local Evacuation | - | Used |
| 19 | Open Network Ring A | - | Used |
| 20 | Open Network Ring B | - | Used |
| 21 | Invalid Hardware Revision | - | Used |
| 22 | Invalid OEM Code | - | Used |
| 23 | Invalid Product Code | - | Used |
| 24 | Invalid Configuration | - | Used |
| 25 | Invalid Software Revision | - | Used |

###### LON ALARM NO.

Length: Byte

Description: LON device alarm as described below:

|  |  |  |
| --- | --- | --- |
| **LON ALARM** | | **LON ALARM NO.** |
| 0 | Sounder fault | Output No. |
| 1 | Automatic Fire Brigade fault | Output No. |
| 2 | Fire Protection fault | Output No. |
| 3 | Fault Routing fault | Output No. |
| 4 | Earth fault | - |
| 5 | Low Battery fault | - |
| 6 | Mains fault | - |
| 7 | Communication fault | - |
| 8 | Disabled | - |
| 9 | Charger fault | - |
| 10 | Supply fault | - |
| 11 | Fault | - |
| 12 | MCP Fire Brigade fault | - |
| 13 | Output fault | Output No. |
| 14 | Input fault | Input No. |
| 15 | Auxiliary fault | - |
| 16 | 3rd Source fault | - |
| 17 | Battery Test fault | - |
| 18 | Local Evacuation | - |
| 19 | Open Network Ring A | - |
| 20 | Open Network Ring B | - |
| 21 | Invalid Hardware Revision | - |
| 22 | Invalid OEM Code | - |
| 23 | Invalid Product Code | - |
| 24 | Invalid Configuration | - |
| 25 | Invalid Software Revision | - |

###### MODULE NO

Length: Byte

Range: FP2000: 0

FP780: 0...25

Description: Indicates the module where the hardware test fault occurred:

|  |  |  |
| --- | --- | --- |
| **MODULE NO** | **FP2000** | **FP780** |
| 0 | Boo.plm | Nuc0.plm |
| 1 | Nuc0.plm | Nuc1.plm |
| 2 | Sys.plm | Tim.plm |
| 3 | Dis.plm | Sys.plm |
| 4 | Lcd.plm | Ser.plm |
| 5 | Tim.plm | Txt.plm |
| 6 | Rtc.plm | Net.plm |
| 7 | Cio.plm | Pri.plm |
| 8 | Tol.plm | Men.plm |
| 9 | Ser.plm | Dtm.plm |
| 10 | Vdu.plm | Lnk.plm |
| 11 | Pri.plm | Dia.plm |
| 12 | Lip.plm | Alm.plm |
| 13 | Lop.plm | Lon.plm |
| 14 | Txt.plm | Neu.plm |
| 15 | Txteng.plm | Vdu.plm |
| 16 | Txtfre.plm | Fdi.plm |
| 17 | Txtita.plm | - |
| 18 | Txtspa.plm | - |
| 19 | Txtger.plm | - |
| 20 | Txtpor.plm | - |
| 21 | Txtbel.plm | - |
| 22 | Txtdut.plm | - |
| 23 | Txtdan.plm | - |
| 24 | Txtswe.plm | - |
| 25 | Txtnor.plm | - |
| 26 | Men.plm | - |
| 27 | Dtm.plm | - |
| 28 | Alm.plm | - |
| 29 | Lnk.plm | - |
| 30 | Sup.plm | - |
| 31 | Cfg.plm | - |
| 32 | Fep.plm | - |
| 33 | Dia.plm | - |
| 34 | Rel.plm | - |
| 35 | Inp.plm | - |
| 36 | Net.plm | - |
| 37 | Arc.plm | - |
| 38 | Zon.plm | - |

|  |  |  |
| --- | --- | --- |
| 39 | - | - |
| 40 | Mdm.plm | - |

|  |  |  |
| --- | --- | --- |
| **MODULE NO** | **FP2000** | **FP780** |
| 41 | Nuc1.plm | - |
| 42 | Trm.plm | - |
| 43 | Txtczr.plm | - |
| 44 | Txtpol.plm | - |
| 45 | Txtslo.plm | - |
| 46 | Txtlit.plm | - |
| 47 | Cms.plm | - |
| 48 | Txtfin.plm | - |
| 49 | Txtest.plm | - |
| 50 | Txtlat.plm | - |
| 51 | Txtheb.plm | - |
| 52 | Neu.plm | - |
| 53 | Lon.plm | - |
| 54 | Dtx.plm | - |

###### VIRTUAL SENSOR ADDRESS

Length: Byte

Range: 1…32, (0=virtual sensor address not used)

Description: VdS only.

###### SYSTEM ZONE

Length: Word

Range: 1…65535, (0=system zone not used)

Description: VdS only.

**LON NODE** (see message 74)

**AREA** (see message 9) **AREA ALARM** (see message 26) **INPUT** (see message 11) **INPUT STATUS** (see message 31) **LOOP** (see message 10) **LOOP ALARM** (see message 30) **OUTPUT** (see message 12) **OUTPUT STATUS** (see message 34) **SENSOR** (see message 7) **SENSOR ALARM** (see message 24) **SENSOR TYPE** (see message 7) **ZONE** (see message 8) **ZONE ALARM** (see message 25) **BLOCK** (see message 3)

#### Status Event (28, 1Ch)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | | Request | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 28 | 28 | 28 | - | - | - | - |
| 1,2 | NO EVENT COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 3,4 | ALARM COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 5,6 | FAULT COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 7,8 | CONDITION COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 9,10 | COINCIDENCE COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 11,12 | ISOLATED COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 13,14 | DETECTOR COUNT (hb, lb) | Yes | Yes | - | - | - | - |
| 15…46 | LED STATUS | Yes | Yes | - | - | - | - |
| 47,48 | EVENT NO. (hb, lb) (see message 27) | Yes | Yes | - | - | - | - |
| 49 | EVENT CLASS (see message 27) | Yes | Yes | - | - | - | - |
| 50 | EVENT TYPE (see message 27) | Yes | Yes | - | - | - | - |
| 51 | EVENT STATUS (see message 27) | Yes | Yes | - | - | - | - |
| 52 | EVENT YEAR (see message 27) | Yes | Yes | - | - | - | - |
| 53 | EVENT MONTH (see message 27) | Yes | Yes | - | - | - | - |
| 54 | EVENT DAY (see message 27) | Yes | Yes | - | - | - | - |
| 55 | EVENT HOUR (see message 27) | Yes | Yes | - | - | - | - |
| 56 | EVENT MINUTE (see message 27) | Yes | Yes | - | - | - | - |
| 57 | EVENT SECOND (see message 27) | Yes | Yes | - | - | - | - |
| 58,59 | EVENT COUNT (see message 27) | Yes | Yes | - | - | - | - |
| 60,61 | EVENT CLASS COUNT (hb, lb)  (see message 27) | Yes | Yes | - | - | - | - |
| 62,63 | EVENT PAR 1 (hb, lb) (see message 27) | Yes | Yes | - | - | - | - |
| 64 | EVENT PAR 2 (see message 27) | Yes | Yes | - | - | - | - |
| 65 | EVENT PAR .3 (see message 27) | Yes | Yes | - | - | - | - |
| 66 | EVENT PAR 4 (see message 27) | Yes | Yes | - | - | - | - |
| 67 | EVENT PAR 5 (see message 27) | Yes | Yes | - | - | - | - |
| 68 | EVENT PAR 6 (see message 27) | Yes | Yes | - | - | - | - |
| 69 | EVENT ID (see message 27) | Yes | Yes | - | - | - | - |
| 70…151 | EVENT TEXT (see message 27) | Yes | Yes | - | - | - | - |
| +1 | EQUIPMENT STATUS SND | Yes | - | - | - | - | - |
| +2 | EQUIPMENT STATUS FBRIG | Yes | - | - | - | - | - |
| +3 | EQUIPMENT STATUS FLTRT | Yes | - | - | - | - | - |
| +4 | EQUIPMENT STATUS FPROT | Yes | - | - | - | - | - |
| +5 | EQUIPMENT FAULT SND | Yes | - | - | - | - | - |
| +6 | EQUIPMENT FAULT FBRIG | Yes | - | - | - | - | - |
| +7 | EQUIPMENT FAULT FLTRT | Yes | - | - | - | - | - |
| +8 | EQUIPMENT FAULT FPROT | Yes | - | - | - | - | - |
| +9 | ZONE LED STATUS | Yes | - | - | - | - | - |
| +10 | FLAGS | Yes | - | - | - | - | - |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| +11 | VIRTUAL SENSOR ADDRESS | Yes | - | - | - | - | - |
| +12, +13 | SYSTEM ZONE (hb, lb) | Yes | - | - | - | - | - |

###### NO EVENT COUNT

Length: 2 bytes

Range: 0...9999

Description: Counts all events other then fire, fault or condition.

###### ALARM COUNT

Length: 2 bytes

Range: 0…9999

Description: Counts all fires.

###### FAULT COUNT

Length: 2 bytes

Range: 0…9999

Description: Counts all faults.

###### CONDITION COUNT

Length: 2 bytes

Range: 0...9999

Description: Counts all conditions.

###### COINCIDENCE COUNT

Length: 2 bytes

Range: 0...9999

Description: Reserved.

###### ISOLATED COUNT

Length: 2 bytes

Range: 0...9999

Description: Reserved.

###### DETECTOR COUNT

Length: 2 bytes

Range: 0…9999

Description: Reserved.

###### LED STATUS

Length: Byte

Range: FP2000: 0...2

FP780: 0

Description: The status of a common LED. The options are:

|  |  |  |
| --- | --- | --- |
| **LED STATUS** | **FP2000** | **FP780** |
| 0 | Off | - |
| 1 | On | - |
| 2 | Blinking | - |

The LED’s are in the following order:

|  |  |  |
| --- | --- | --- |
| **Position** | **FP2000** | **FP780** |
| 15 | Fire 1 | - |
| 16 | Fire 2 | - |
| 17 | Processor running | - |
| 18 | Supply fault | - |
| 19 | Disabled | - |
| 20 | Fault | - |
| 21 | Supply on | - |
| 22 | - | - |
| 23 | - | - |
| 24 | - | - |
| 25 | Fire Brigade delay off | - |
| 26 | Fire Brigade delay on | - |
| 27 | Fire Brigade stop | - |
| 28 | Fire Brigade fault | - |
| 29 | - | - |
| 30 | Fire Brigade signal | - |
| 31 | Sounder delay on | - |
| 32 | All | - |
| 33 | Panel | - |
| 34 | - | - |
| 35 | Sounder silence | - |
| 36 | Sounder fault | - |
| 37 | - | - |
| 38 | Sounder sounded | - |
| 39 | Sounder delay off | - |
| 40 | System fault test | - |
| 41 | - | - |
| 42 | - | - |
| 43 | Test | - |
| 44 | Disable | - |
| 45 | - | - |
| 46 | Silence buzzer | - |

###### EQUIPMENT STATUS SND, FBRIG, FLTRT, FPROT

Length: Byte

Range: FP2000: 0...4

FP780: 0

Description: State of the equipment:

|  |  |  |
| --- | --- | --- |
| **EQUIPMENT STATUS** | **FP2000** | **FP780** |
| 0 | Off | - |
| 1 | On | - |
| 2 | Test | - |
| 3 | Silenced | - |
| 4 | Evacuation | - |

###### EQUIPMENT FAULT SND, FBRIG, FLTRT, FPROT

Length: Byte

Range: FP2000: 0...2

FP780: 0

Description: Equipment fault status:

|  |  |  |
| --- | --- | --- |
| **EQUIPMENT FAULT** | **FP2000** | **FP780** |
| 0 | Enabled | - |
| 1 | Fault | - |
| 2 | Disabled | - |

###### ZONE LED STATUS

Length: Byte

Range: FP2000: 0...2

FP780: 0

Description: Zone LED status:

|  |  |  |
| --- | --- | --- |
| **ZONE LED STATUS** | **FP2000** | **FP780** |
| 0 | Off | - |
| 1 | On | - |
| 2 | Blinking | - |

|  |  |  |
| --- | --- | --- |
| **FLAGS** |  | |
| Length:  Range: | Byte  FP2000: | 0...255 |
| Description: | FP780:  Flags | 0 |

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | 0: EAS delay off | - |
| 1: EAS delay on | - |
| 1 | 0: Sounder delay off | - |
| 1: Sounder delay on | - |
| 2 | 0: Fbrig delay off | - |
| 1: Fbrig delay on | - |
| 3 | 0: Sounder enable | - |
| 1: Sounder disable | - |
| 4 | 0: Fbrig enable | - |
| 1: Fbrig disable | - |
| 5 | - | - |
| - | - |
| 6 | - | - |
| - | - |
| 7 | - | - |
| - | - |

###### VIRTUAL SENSOR ADDRESS

Length: Byte

Range: 1…32, (0=virtual sensor address not used)

Description: VdS only.

###### SYSTEM ZONE

Length: Word

Range: 1…65535, (0=system zone not used)

Description: VdS only.

###### PROTOCOL

Length: Byte

Range: 0…2

Description: Global Panel only.

##### Volatile General Block Data (29, 1Dh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 29 | - - 157 | | 157 | 29 | 29 |
| 1 | INDEX | - - Yes | | Yes | Yes | Yes |
| 2…101 | DATA | - - - | | - | Yes | Yes |

###### INDEX

Length: Byte

Range: 0...4

Description: A number indicating the required general alarm/sub-alarm memory bank:

|  |  |  |
| --- | --- | --- |
| **INDEX** | **FP2000** | **FP780** |
| 0 | Bank 0 (General Alarms) | Bank 0 (General Alarms) |
| 1 | Bank 1 (Actions) | Bank 1 (Actions) |
| 2 | Bank 2 (Sub-alarms) | Bank 2 (Sub-alarms) |
| 3 | Bank 3 (Sub-alarms) | Bank 3 (Sub-alarms) |
| 4 | Bank 4 (Sub-alarms) | Bank 4 (Sub-alarms) |
| 5 | Bank 5 (Sub-alarms) | - |

###### DATA

Length: 100 bytes

Description: The data associated with the memory bank specified by the INDEX byte.

The following is a description of the general alarms and sub-alarms that can be requested using this message as well as being part of the FP2000 Panel overall status information:

The number allocated to a general alarm is an indication of the position where the alarm (byte) is located in memory bank and also where it is packed in the message structure, starting with the first byte (number 0) in position 2 of the message structure. The sub-alarms are shown with the starting position with the amount shown in square brackets.

|  |  |  |
| --- | --- | --- |
| **INDEX** | **FP2000** | **FP780** |
| 0 | Bank 0 (General Alarms)  (See Message 27, GENERAL ALARM) | Bank 0 (General Alarms)  (See Message 27, GENERAL ALARM) |
| 1 | Bank 1 (Actions)  (See Message 27, ACTION)  Note that actions range from 100...199, index 0...99 of bank 1. | Bank 1 (Actions)  (See Message 27, ACTION)  Note that actions range from 100...199, index 0...99 of bank 1. |
| 2 | Bank 2 (Sub-alarms)  0 - Non-volatile memory check- sum faults  (Block see message 3)  25 - Protected memory checksum fault  (Block see message 3) 50 - Hardware test failed  [Test 0...8]  60 - Emulation failed [VDU 0...13] | Bank 2 (Sub-alarms)  0 - Non-volatile memory check- sum faults  (Block see message 3) 30 - Protected memory  checksum fault  (Block see message 3) 60 - Hardware test failed  [Test 0...9]  70 - Printer faults start [Printer 0...19] |

|  |  |  |
| --- | --- | --- |
|  | 75 - Printer faults start [Printer 0...13]  90 - Modem faults  [Modem 0...13] 95 - FEP faults  [Fault 0...5] | 90 - Modem faults [Line 0...3] |
| 3 | Bank 3 (Sub-alarms)  0 - Local repeater faults [L-Repeater 0...31]  33 - Panel faults  [Panel 0...31]  66 - Global repeater faults [G-Repeater 0...31] | Bank 3 (Sub-alarms) 0 - Controller faults  [L-Repeater 0...19]  20 - Watchdog faults [0...39]  60 - Port initialisation fault [Port 0...19] |
| 4 | Bank 4 (Sub-alarms) 0 - CL-Device faults  [CL-Device 0...15]  40 - Watchdog faults [0...9]  80 - Port initialisation fault [Port 0...13] | Bank 4 (Actions)  (See Message 27, ACTION)  Note that actions range from 200...299, index 0...99 of bank 4. |
| 5 | Bank 5 (Sub-alarms)  0 - LON-Device faults [LON-Device 1...32]  40 - LON-Communication faults [LON-Device 1...32]  80 - LON-Device disable [LON-Device 1…32] | Bank 5 (Actions)  (See Message 27, GENERAL ALARM)  Note that actions range from 100...199, index 0...99 of bank 5. |

##### Volatile Loop Data (30, 1Eh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 30 | - | - | 158 | - | 30 | - |
| 1 | LOOP | - | - | Yes | - | Yes | - |
| 2 | LOOP ALARM | - | - | - | - | Yes | - |
| 3 | LOOP SEGMENTS | - | - | - | - | Yes | - |
| 4 | LOOP LEDs | - | - | - | - | Yes | - |

###### LOOP

Length: Byte

Range: 1...8

Description: Loop number that is addressed.

###### LOOP ALARM

Length: Byte

Description: Each bit represents a different state that is active on the loop; a “1” means that the state is active:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | Overload A | - |
| 1 | Overload B | - |
| 2 | Open loop | - |
| 3 | Loop partially isolated | - |
| 4 | Isolated | - |
| 5, 6, 7 | - | - |

###### LOOP SEGMENTS

Length: Byte

Range: Sentrol: 0...128

Apollo: 0

Description: Counts the number of 7-segment displays permanently switched on. (Limited by protocol setting.)

LOOP LEDs

Length: Byte

Range: Sentrol: 0...128 Apollo: 0…126

Description: Counts the number of detector LED switched on.

(LED + Remote LED = 1 LED, Limited by protocol setting.)

##### Volatile Input Data (31, 1Fh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 31 | - - 159 | | 159 | 31 | 31 |
| 1,2 | INPUT (hb, lb) | - - Yes | | Yes | Yes | Yes |
| 3 | INPUT STATUS | - - - | | - | Yes | Yes |

###### INPUT

Length: 2 bytes

Range: 1...999

Description: Input that is addressed.

###### INPUT STATUS

Length: Byte

Description: Used to indicate the status of the input:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | 0: Input not switched | 0: Input not switched |
| 1: Input Switched | 1: Input Switched |
| 1…7 | - | - |

##### System Delay Times (32, 20h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 32 | 32 | 32 | 160 | 160 | 32 | 32 |
| 1,2 | SOUNDER DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 3,4 | FBRIG DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 5,6 | FLTRT DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 7,8 | FPROT DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 9,10 | INVESTIGATION TIME (hb, lb) | Yes | Yes | - | - | Yes | Yes |

###### FBRIG DELAY

Length: 2 bytes

Range: 0...600

Description: The delay, in seconds, before the fire brigade output is activated.

###### FLTRT DELAY

Length: 2 bytes

Range: 0

Description: The delay, in seconds, before the fault routing output is activated.

###### FPROT DELAY

Length: 2 bytes

Range: 0

Description: The delay, in seconds, before the fire protection output is activated.

###### SOUNDER DELAY

Length: 2 bytes

Range: 0 600

Description: The delay, in seconds, before the sounder output is activated.

###### INVESTIGATION TIME

|  |  |  |
| --- | --- | --- |
| Length:  Range: | 2 bytes  VdS: | 0…600 |
|  | NEN:  Others: | 0…600  180...600 |

Description: The delay, in seconds, which will extend Fire Brigade delay depending on the fire panel mode.

VdS: In this mode the INVESTIGATION TIME is used to prolong the fire brigade delay by the pre-set time.

NEN: In this mode the INVESTIGATION TIME is used as a time-out, within which the buzzer must be silenced.

If the buzzer is not silenced the delay for the automatic fire brigade is overridden.

Others: In this mode the INVESTIGATION TIME is used to prolong the fire brigade delay by the pre-set time in conjunction with the FRD700 panel.

##### System Data (33, 21h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 33 | 33 33 161 | | 161 | 33 | 33 |
| 1 | SYSTEM DATA TYPE | Yes Yes Yes | | Yes | Yes | Yes |
| 2 | SYSTEM DATA | Yes Yes - | | - | Yes | Yes |

###### SYSTEM DATA TYPE

Length: Byte

Range: 0...255

Description: The table below lists the different SYSTEM DATA TYPE values.

###### SYSTEM DATA

Length: Byte

Range: The table below lists the different SYSTEM DATA values.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SYSTEM DATA TYPE** | | **FP2000** | | **FP780** | |
| 1 | Zones on link | 0: | No link | 0: | No link |
| 1: | Linked to external source | 1: | Linked to external source |
| 3 | Product type | - | | 0: | FP780 |
| 1: | FEP780 |
| 2: | FP780VDS |
| 3: | EP780 |
| 6 | LON controller OEM | - | | Read only | |
| 7 | LON controller PC | - | | Read only | |
| 8 | LON controller HW | - | | Read only | |
| 12 | Zones per area | - | | 0…8 | |
| 19 | Day mode link | 0: | No link | - | |
| 1: | Linked to fire brigade |
| 2: | Linked to external source |
| 20 | Sounder delay off link | 0: | No link | 0: | No link |
| 1: | Linked to fire brigade | 1: | Linked to fire brigade |
| 27 | Maintenance Report | 0: | Disabled | 0: | Disabled |
| 1: | Enabled | 1: | Enabled |
| 28 | Sensor seven segment dis- play (Sentrol only) | 0: | Off | - | |
| 1: | On |
| 2: | Blinking |
| 30 | FSK Feedback | 0: | Disabled | - | |
| 1: | Enabled (direct) |

|  |  |  |  |
| --- | --- | --- | --- |
| **SYSTEM DATA TYPE** | | **FP2000** | **FP780** |
| 31 | Buzzer mask | Bit 0: Buzzer for fire | Bit 0: Buzzer for fire |
| Bit 1: Buzzer for fault | Bit 1: Buzzer for fault |
| Bit 2: Buzzer for condition | Bit 2: Buzzer for condition |
| 0: Disabled | 0: Disabled |
| 1: Enabled | 1: Enabled |
| 61 | Time synchronisation | 0: Disabled | - |
| 1: Enabled |
| 63 | LON controller node (re- served) | - | 1 |
| 64 | LON controller branding | - | Read only |
| 65 | LON controller sw (minor) | - | Read only |
| 66 | LON controller sw (major) | - | Read only |
|  |  |  |  |
| 208 | Discovery noise pollution | Bit0: loop1, Bit1: loop 2, … |  |
| 209 | Non-EAS fire |  |  |
| 210 | Discovery blink flag | Bit0: loop1, Bit1: loop 2, … | - |
| 213 | Zone maintenance mask | - | 0: Disabled |
| 1: Enabled |
| 214 | BFS disable by alarm | 0: Disabled | - |
| 1: Enabled |
| 215 | RTC correction | - | Bit 0…4: |
| Bit 7: 0: pos. adj., 1: neg. adj. |
| 216 | Global panel mask | Bit 0: Fire mask | - |
| Bit 1: Fault mask |
| Bit 2: Condition mask |
| Bit 3: Buzzer mask |
| 218 | Sounder allocation | 0: Fire sounder only | - |
| 1: Hausalarm sounder only |
| 2: Fire and Hausalarm sounders |
| 219 | EN-54 screens select | 0: Disabled | - |
| 1: Enabled |
| 220 | Mains status (prod. test) | Bit 0: Mains disconnected Bit 1: Earth fault  Bit 2: Battery disconnected  Bit 3: Low battery voltage | - |
| 221 | Compilation | 0…255 | - |
| 222 | Tamper switch mask | 0: Disabled | - |
| 1: Enabled |

|  |  |  |  |
| --- | --- | --- | --- |
| **SYSTEM DATA TYPE** | | **FP2000** | **FP780** |
| 223 | Finnish fault | 0: Disabled |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | 1: Enabled |  |
| 233 | FSK opens on return signal only (VdS) | 0: Disabled | **-** |
| 1: Enabled |
| 234 | FSK opens as long as return signal is present (VdS) | 0: Disabled | **-** |
| 1: Enabled |
| 239 | EAS mode | 0: Disabled | 0: Disabled |
| 1: Enabled | 1: Enabled |
| 240 | Equipment check mask | - | 0: Disabled |
| 1: Enabled |
| 241 | Earth fault mask | 0: Disabled | 0: Disabled |
| 1: Enabled | 1: Enabled |
| 242 | Battery check mask | 0: Disabled | 0: Disabled |
| 1: Enabled | 1: Enabled |
| 243 | Universal Node ID for setup/NET1/NET2 | 0: All id’s accepted | - |
| 1…31: Only selected id is accepted |
| 246 | Universal Node ID for Mo- dem | 0: All id’s accepted | - |
| 1…31: Only selected id is accepted |
| 248 | Zone range start | 0…255 Zone range end >= Zone range start | - |
| 249 | Zone range end | 0…255 Zone range end >= Zone range start | - |
| 250 | Hauptmelder return timeout (VdS) | 10s…180s | - |
| 251 | Bedienfeld (VdS) | 0: Disabled | - |
| 1: Enabled |
| 252 | Global repeater mode | 0: Global panel repeater | - |
| 1: Global zone repeater |
| 253 | FSK heater mode (VdS) | 0: Off | - |
| 1: On |
| 254 | Hauptmelder mode | 0: Continuous | 0: Continuous |
| 1: Pulse | 1: Pulse |
| 255 | Display I/O conditions | 0: Disabled |  |
| 1: Enabled |  |

##### Volatile Output Data (34, 22h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 34 | - - 162 | | 162 | 34 | 34 |
| 1,2 | OUTPUT (hb, lb) | - - Yes | | Yes | Yes | Yes |
| 3 | OUTPUT STATUS | - - - | | - | Yes | Yes |

###### OUTPUT

Length: 2 bytes

Range: 1...999

Description: Output that is addressed.

###### OUTPUT STATUS

Length: Byte

Description: Used to indicate the status of the output:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | 0: Output not switched | 0: Output not switched |
| 1: Output Switched | 1: Output Switched |
| 1…7 | - | - |

##### Set up Reply (35, 23h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 35 | - - - | | - | 35 | 35 |
| 1 | SET-UP REPLY | - - - | | - | Yes | Yes |

###### SET-UP REPLY

Length: Byte

Range: 0...99

Description: When a panel receives a message, other than a valid request message, it will respond with this message, that indicates whether the message was successfully received or not. The following is a list of the different options. The panel can initiate this message.

|  |  |  |
| --- | --- | --- |
| **SET-UP REPLY** | **FP2000** | **FP780** |
| 0 | OK | OK |
| 1 | Changed | Changed |
| 2 | Acknowledge | Acknowledge |
| 3 | Invalid key | Invalid key |
| 4 | Buzzer silenced | Buzzer silenced |
| 5 | Turn key | Turn key |
| 6 | Sounder disabled | Sounder disabled |
| 7 | Linked to fire brigade | Linked to fire brigade |
| 8 | Sounder active | Sounder active |
| 9 | Sounder faulty | Sounder faulty |
| 10 | Fire brigade active | Fire brigade active |
| 11 | Fire brigade faulty | Fire brigade faulty |
| 12 | Linked to external source | Linked to external source |
| 13 | Open memory lock | Open memory lock |
| 14 | Memory lock locked | Memory lock locked |
| 15 | No printer | No printer |
| 16 | Invalid entry | Invalid entry |
| 17 | No access | No access |
| 18 | No (invalid) command | No (invalid) command |
| 19 | Out of range | Out of range |
| 20 | Memory lock unlocked | Memory lock unlocked |
| 21 | Zone abnormal | Zone abnormal |
| 22 | Nothing found | Nothing found |
| 23 | Not enough memory | Not enough memory |
| 24 | System abnormal | System abnormal |
| 25 | Service switch off | Service switch off |
| 26 | - | - |
| 27 | No device in zone | - |
| 28 | Device disabled | - |
| 29 | No option | - |
| 30 | Busy with auto set-up | - |
| 31 | No port | No port |

|  |  |  |
| --- | --- | --- |
| 32 | No access to port | No access to port |

|  |  |  |
| --- | --- | --- |
| **SET-UP REPLY** | **FP2000** | **FP780** |
| 33 | Language not supported | Language not supported |
| 34 | Printer busy | Printer busy |
| 35 | Invalid type | Invalid type |
| 36 | Fire Panel already assigned | - |
| 37 | Fire Panel not on network | - |
| 38 | Local Repeater already as- signed | - |
| 39 | Global Repeater already as- signed | - |
| 40 | Node down | - |
| 41 | Use dedicated keys for test and disable | - |
| 42 | Fire brigade disabled | Fire brigade disabled |
| 43 | Busy with upload | Busy with upload |
| 44 | End of upload | End of upload |
| 45 | Time could not be set | Time could not be set |
| 46 | Busy with hardware test | Busy with hardware test |
| 47 | Port allocation in use | Port allocation in use |
| 48 | Sounder in test | Sounder in test |
| 49 | Fire brigade in test | Fire brigade in test |
| 50 | Fire Panel already emulated | Fire Panel already emulated |
| 51 | Function not supported | Function not supported |
| 52 | Link down | - |
| 53 | Fault routing active | Fault routing active |
| 54 | Fault routing faulty | Fault routing faulty |
| 55 | Fault routing disabled | Fault routing disabled |
| 56 | Fault routing in test | Fault routing in test |
| 57 | No LON device | No LON device |
| 58 | Fire protection active | Fire protection active |
| 59 | Fire protection faulty | Fire protection faulty |
| 60 | Fire protection disabled | Fire protection disabled |
| 61 | Fire protection in test | Fire protection in test |
| 62 | BFS active | BFS active |
| 63 | Fire protection not silenced | Fire protection not silenced |
| 64 | Fault routing not silenced | Fault routing not silenced |
| 65 | Sounder not silenced | Sounder not silenced |
| 66 | Fire brigade not silenced | Fire brigade not silenced |
| 67 | Only one level 2 | Only one level 2 |
| 68 | - | - |
| 69 | Wait | - |
| 70 | Hardware test ok | Hardware test ok |
| 71 | Busy with fast compensation | - |
| 72 | Function locked on FBF | - |
| 73 | Zone is allocated | Zone is allocated |

|  |  |  |
| --- | --- | --- |
| 74 | Disabled on panel | Disabled on panel |

|  |  |  |
| --- | --- | --- |
| **SET-UP REPLY** | **FP2000** | **FP780** |
| 75 | Disabled by key switch | Disabled by key switch |
| 76 | Incompatible zone range | - |
| 77 | End of fast compensation | - |
| 78 | End of auto set-up | - |
| 79 | Invalid zone | Invalid zone |
| 80 | - | Flash write error |
| 81 | - | Flash modified |
| 82 | - | Press LON configuration switches |
| 83 | No pager access | - |
| 84 | - | In service mode |
| 85 | - | No LON nodes available |
| 86 | - | Invalid module hardware rev. |
| 87 | - | Invalid module OEM code |
| 88 | - | Invalid module program code |
| 89 | - | Invalid module configuration |
| 90 | - | Invalid module software rev. |
| 92 | - | Text too long |
| 93 | - | Insufficient text memory |
| 94 | - | Invalid text sequence |
| 95 | - | - |
| 96 | - | - |
| 97 | - | - |
| 98 | - | - |
| 99 | - | No alarm |

##### Maximum Network Configuration (36, 24h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 36 | 36 - 164 | | - | 36 | - |
| 1 | MAX. NET. CONFIG. | Yes - - | | - | Yes | - |

###### MAX. NET. CONFIG.

Length: Byte

Range: FP2000: 0...4

FP780: 0

Description: The maximum network configuration determines the maximum amount of FP2000 Panels allowed to communicate with each other and how many of those FP2000 Panels are allowed to be FP2000 Fire Panels, FP2000 Global – or FP2000 Local Repeater Panels – (see also messages 20, 48 and 49).

Note that it is the maximum limits for a FP2000 Panel and not for only one of its communication functions or ports. For example, for a FP2000 Panel that communicates via serial port SER1, assigned to network communication function NET1, as well as via ARCNET port ARC1, assigned to network communication function NET2, to other FP2000 Panels, this maximum network configuration parameter limits the total amount of devices communicating on the two networks, in- cluding the FP2000 Panel itself. Configuration 3 and 4 are used for the global-panel only.

The options are:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Maximum network configuration** | **0** | **1** | **2** | **3** | **4** |
| Maximum amount of FP2000: | 15/15 | 7/31 | 31/7 | 0/31 | 0/63 |
| Fire Panels: | 15 | 7 | 31 | 0 | 0 |
| Global Repeaters: | 15 | 31 | 7 | 31 | 63 |
| Local Repeaters: | 15 | 7 | 31 | 0 | 0 |

Note that although the maximum of FP2000 Panels allowed on one network is 255, there are other limitations. The serial ports accommodate only two devices and the RS485 line drivers limit the ARCNET network – the current drivers used can handle only a max of 32 devices. Configuration 4 is not possible in a bus-topology where the individual drops are physically connected together; otherwise it will again exceed the max of 32 devices.

##### Version (37, 25h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 37 | - | - | 165 | 165 | 37 | 37 |
| 1 | VERSION TYPE | - | - | Yes | Yes | Yes | Yes |
| 2 | BLOCK | - | - | Yes | Yes | Yes | Yes |
| 2/3...31 | VERSION DATA | - | - | - | - | Yes | Yes |

###### VERSION TYPE

Length: Byte

Range: FP2000: 0…5 Fp780: 0…7

Description: The version requested:

|  |  |  |
| --- | --- | --- |
| **VERSION TYPE** | **FP2000** | **FP780** |
| 0 | Host software version | Software version |
| 1 | FEP software version | - |
| 2 | Host memory configuration | Memory configuration |
| 3 | PCC2000 version | PCC700 version |
| 4 | Site version | Site version |
| 5 | Block version | Block version |
| 6 | - | Default boot loader version |
| 7 | - | Backup boot loader version |

###### BLOCK

Length: Byte

Range: (see message 3)

Description: The block number for the block version requested:

|  |  |  |
| --- | --- | --- |
| **VERSION TYPE** | **FP2000** | **FP780** |
| 0 | - | - |
| 1 | - | - |
| 2 | - | - |
| 3 | - | - |
| 4 | - | - |
| 5 | (See message 3) | (See message 3) |
| 6 | - | - |
| 7 | - | - |

###### VERSION DATA

Length: 1...30 Bytes

Where: Byte 0: Length of string (0...n) Bytes 1...n: String (if n > 0)

|  |  |  |
| --- | --- | --- |
| **VERSION TYPE** | **FP2000 [n =]** | **FP780 [n =]** |
| 0 | 27 | 29 |
| 1 | 27 FEP is present  0 FEP is not present | - |
| 2 | 1 | 1 |
| 3 | 1 | 1 |
| 4 | 29 | 29 |
| 5 | 29 | 29 |
| 6 | - | 10 |
| 7 | - | 10 |

Description: A string defining the requested version:

|  |  |  |  |
| --- | --- | --- | --- |
| Host & FEP software versions | XX.XX PPPP-CC DD.MM.YY SSSSS | | Byte 0 = 28 |
| XX.XX | Version | Bytes 1…5 |
| PPPP | Product | Bytes 7…10 |
| CC | Customer | Bytes 12…13 |
| 00 = ARITECH |  |
| 77 = FALCK |  |
| FF = ARITECH France |  |
| MP = Tyco |  |
| ES = ELOTEC |  |
| DD | Day | Bytes 15...16 |
| MM | Month | Bytes 18…19 |
| YY | Year | Bytes 21…22 |
| SSSSS | Checksum (Hex) + H | Bytes 24…28 |
| Software Version | XX.XX PPPP-CC DD.MM.YYYY SSSS | | Byte 0 = 29 |
| XX.XX | Version | Bytes 1…5 |
| PPPP | Product | Bytes 7…10 |
| 0000 = FC700L (4MB RAM) |  |
| 0001 = FC700 (1MB RAM) |  |
| CC | Customer | Bytes 12…13 |
| 00 = ARITECH |  |
| DD | Day | Bytes 15...16 |
| MM | Month | Bytes 18…19 |
| YYYY | Year | Bytes 21…24 |
| SSSS | Checksum (Hex) | Bytes 26…29 |
| FP2000 Host memory configuration | CC | | Byte 0 = 1 |
| CC | Configuration | Byte 1 |
| 72: Ver. 8.36, 80: Ver. 10.00 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| FP780 memory configuration | CC | | Byte 0 = 1 |
| CC | Configuration | Byte 1 |
| 33: Ver. 2.01 |  |
| PCC2000 version | CC | Byte 0 = 1 |  |
| CC | Configuration | Byte 1 |
| 4: Ver. 8.00  5: Ver. 9.00  6: Ver. 10.00 |  |
| PCC700 version | CC | Byte 0 = 1 |  |
| CC | Configuration | Byte 1 |
| 1: Ver. 2.01 |  |
| Site/Block versions | VVVVV DD.MM.YY HH.NN.SS CCCCC | | Byte 0 = 29 |
| VVVVV | Version | Bytes 1…5 |
| DD | Day | Bytes 7…8 |
| MM | Month | Bytes 10…11 |
| YY | Year | Bytes 13...14 |
| HH | Hour | Bytes 16...17 |
| NN | Minute | Bytes 19…20 |
| SS | Second | Bytes 22…23 |
| CCCCC | Checksum (Hex) + H | Bytes 25…29 |
| Boot loader versions | XX.XX CCCC | | Byte 0 = 10 |
| XX.XX | Version | Bytes 1…5 |
| CCCC | Checksum (Hex) | Bytes 7…10 |

##### Network I/O (38, 26h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 38 | 38 | 38 | - | - | - | - |
| 1,2 | NETWORK OUTPUT (hb, lb) | Yes | Yes | - | - | - | - |
| 3,4 | NETWORK INPUT (hb, lb) | Yes | Yes | - | - | - | - |
| 5 | NETWORK STATE | Yes | Yes | - | - | - | - |

###### NETWORK INPUT

Length: 2 bytes

Range: 1...999

Description: The number of an input of the receiving device.

###### NETWORK OUTPUT

Length: 2 bytes

Range: 1...999

Description: The number of an output of the transmitting device.

###### NETWORK STATE

Length: Byte

Range: 0…1

Description: The state of the network output, the options are:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | 0: passive | 0: passive |
|  | 1: active | 1: active |
| 1…7 | - | - |

##### Emulation Command (39, 27h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 39 | 39 39 - | | - | - | - |
| 1 | EMULATION CMD | Yes Yes - | | - | - | - |
| 2...n | EMULATION DATA (n: see below) | Yes Yes - | | - | - | - |

###### EMULATION CMD:

Length: Byte

Range: 0...5

Description: The emulation command, the options are:

|  |  |  |
| --- | --- | --- |
| **EMULATION CMD** | | **ASSOCIATED DATA** |
| 0 | Start emulation | No data |
| 1 | Stop emulation | No data |
| 2 | Start acknowledge | No data |
| 3 | Emulation key | See EMULATION DATA |
| 4 | Emulation data | See EMULATION DATA |
| 5 | Disconnect emulation | No data |

See also the General Description and the EMULATION DATA description for the data associated with the different com- mands.

EMULATION DATA (for EMULATION CMD 3)

|  |  |  |  |
| --- | --- | --- | --- |
| Length:  Range: | Word  See Description |  | |
| Description: | Emulation key  Higher byte: | 0 | Key is valid |
|  |  | >0 | Time-out (Key is not valid.) |
|  | Lower byte | 0 | Reserved ctrl @ |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Higher Byte** | **Lower Byte** | **Control Code** | **FP2000** | **FP780** |
| >0 | X | - | Time-out (invalid key) | Time-out (invalid key) |
| 0 | 0 | Ctrl @ | - | - |
| 0 | 1 | Ctrl A | Scroll | Scroll |
| 0 | 2 | Ctrl B | Display Alarm | Display Alarm |
| 0 | 3 | Ctrl C | - | - |
| 0 | 4 | Ctrl D | Print Screen | - |
| 0 | 5 | Ctrl E | Alpha Numeric | Alpha Numeric |
| 0 | 6 | Ctrl F | Right Arrow | Right Arrow |
| 0 | 7 | Ctrl G | - | - |
| 0 | 8 | Ctrl H | Left Arrow | Left Arrow |
| 0 | 9 | Ctrl I | Silence Buzzer | Silence Buzzer |
| 0 | 10 | Ctrl J | Down Arrow | Down Arrow |
| 0 | 11 | Ctrl K | Reset | Reset |
| 0 | 12 | Ctrl L | Disable | - |
| 0 | 13 | Ctrl M | Enter | Enter |
| 0 | 14 | Ctrl N | Test | - |
| 0 | 15 | Ctrl O | Sound Sounder | Sound Sounder |
| 0 | 16 | Ctrl P | Sounder Delay | Sounder Delay |
| 0 | 17 | Ctrl Q | Sounder Disable | Sounder Disable |
| 0 | 18 | Ctrl R | Silence Sounder | Silence Sounder |
| 0 | 19 | Ctrl S | Fire Brigade Disable | Fire Brigade Disable |
| 0 | 20 | Ctrl T | Fire Brigade Delay | Fire Brigade Delay |
| 0 | 21 | Ctrl U | - | - |
| 0 | 22 | Ctrl V | Fire Brigade Stop | Fire Brigade Stop |
| 0 | 23 | Ctrl W | - | - |
| 0 | 24 | Ctrl X | - | - |
| 0 | 25 | Ctrl Y | - | - |
| 0 | 26 | Ctrl Z | Up Arrow | Up Arrow |
| 0 | 27 | Ctrl [ | Exit | Exit |
| 0 | 28 | Ctrl \ | - | - |
| 0 | 29 | Ctrl ] | Panel | - |
| 0 | 30 | Ctrl ^ | All | - |
| 0 | 31 | Ctrl \_ | Fire Brigade Signal | Fire Brigade Signal |

Special Keys (not on keyboard):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Higher Byte** | **Lower Byte** | **Control Code** | **FP2000** | **FP780** |
| >0 | X | - | Time-out (invalid key) | Time-out (invalid key) |
| 0 | 239 | - | External Reset (from Re- peater) | External Reset (from Re- peater) |
| 0 | 238 | - | Sounder Delay on | Sounder Delay on |
| 0 | 237 | - | Sounder Delay off | Sounder Delay off |
| 0 | 236 | - | Sounder Disable | Sounder Disable |
| 0 | 235 | - | Sounder Enable | Sounder Enable |
| 0 | 234 | - | Sounder Test | Sounder Test |
| 0 | 233 | - | Fire Brigade Delay on | Fire Brigade Delay on |
| 0 | 232 | - | Fire Brigade Delay off | Fire Brigade Delay off |
| 0 | 231 | - | Fire Brigade Disabled | Fire Brigade Disabled |
| 0 | 230 | - | Fire Brigade Enabled | Fire Brigade Enabled |
| 0 | 229 | - | Fire Brigade Test | Fire Brigade Test |
| 0 | 228 | - | Fault Routing Delay | Fault Routing Delay |
| 0 | 227 | - | Fault Routing Delay on | Fault Routing Delay on |
| 0 | 226 | - | Fault Routing Delay off | Fault Routing Delay off |
| 0 | 225 | - | Fault Routing Disable | Fault Routing Disable |
| 0 | 224 | - | Fault Routing Disabled | Fault Routing Disabled |
| 0 | 223 | - | Fault Routing Enabled | Fault Routing Enabled |
| 0 | 222 | - | Fault Routing Test | Fault Routing Test |
| 0 | 221 | - | Fault Routing Silenced | Fault Routing Silenced |
| 0 | 220 | - | Fault Routing on | Fault Routing on |
| 0 | 219 | - | Fire Protection Delay | Fire Protection Delay |
| 0 | 218 | - | Fire Protection Delay on | Fire Protection Delay on |
| 0 | 217 | - | Fire Protection Delay off | Fire Protection Delay off |
| 0 | 216 | - | Fire Protection Disable | Fire Protection Disable |
| 0 | 215 | - | Fire Protection Disabled | Fire Protection Disabled |
| 0 | 214 | - | Fire Protection Enabled | Fire Protection Enabled |
| 0 | 213 | - | Fire Protection Test | Fire Protection Test |
| 0 | 212 | - | Fire Protection Silenced | Fire Protection Silenced |
| 0 | 211 | - | Fire Protection on | Fire Protection on |

EMULATION CMD 4 (Emulation data)

Length: Byte array

Description: The data strings consist of the following parameters:

Always starts with an escape character (27), represented by “ESC” (without the inverted commas). Fixed characters, displayed as characters in inverted commas or as decimal values. Parameters, which define the position on the display. A data string can be a sequence of several packed strings! Each string is starting with an escape character. The range for the (position) parameters is also given in the table. The display size is as follows:

Normal (text) mode: 40 x 8; the co-ordinates ranging from (0, 0) to (39, 7).

Graphic mode: 240 x 64; the co-ordinates ranging from (0,0) to (239, 63).

For the graphic mode two bytes are needed for the x-co-ordinate. The way it is done is as follows: one byte will represent the hundreds, ranging from 0 to 2, and one byte the tens and the ones, rang- ing from 0 to 99.

The identifiers for the position parameters are named as follows:

|  |  |  |
| --- | --- | --- |
| Normal mode: |  |  |
| Row Column  Graphic mode: | range: 0…7 range: 0. .39 |
| xl: x-co-ordinate tens and ones byte  xh: x-co-ordinate hundreds byte | range: 0...99  range: 0...2 |
| xls: start x-co-ordinate tens and ones byte | range: 0…99 | (absolute) |
| xhs: start x-co-ordinate hundreds byte | range: 0...2 | (absolute) |
| xle: end x-co-ordinate tens and ones byte | range: 0...99 | (relative) |
| xhe: end x-co-ordinate hundreds byte y: y-co-ordinate byte  ys: start y-co-ordinate byte | range: 0…2 range: 0…63  range: 0…63 | (relative)  (absolute) |
| ye: end y-co-ordinate byte | range: 0…63 | (relative) |

**Note:** The values for these position parameters, both for the normal an graphic modes, are offset by 32 (space character – “ “) and therefore 32 must be subtracted from the position values when this emulation data is re- ceived from a FP2000 Panel or added when this emulation data is sent to a FP2000 Panel (as shown in the table).

In the table below the different parameters are separated by commas.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Description** | | | **Length** | **Parameters** | |
| Set cursor absolute | | | 4 | ESC, ”Y”, row, column  Where: Row: [0+32]...[39+32]  Column: [0+32]...[7+32] | |
| Acknowledge bleep | | | 2 | ESC, 128 | |
| Request test | | | 2 | ESC, ”|” | |
| Clear to end-of-line | | | 2 | ESC, ”K” | |
| Clear screen | | | 2 | ESC, ”+” | |
| Clear graphic screen | | | 2 | ESC, ”?” | |
| Set mode: |  |  | 3 | ESC, ”~”, | |
|  | A | Graphic |  | ”0” | |
| - Normal |  |  |  | ”1” | |
| Draw dot: |  |  | 6 | ESC, ”^”, y, xh, xl, |  |
|  | B | Off |  | ”0” |  |
| - On |  |  |  | ”8” |  |
|  |  |  |  | Where: y: | [0+32]…[63+32] |
|  |  |  |  | xh: | [0+32]…[2+32] |
|  |  |  |  | xl: | [0+32]…[99+32] |
| Draw line: |  |  | 9 | ESC, ”%”, ys, xhs, xls, ye, xhe, xle, | |
|  | C | Off |  | ”0” | |
| - On |  |  |  | ”8” | |
|  |  |  |  | Where: ys: [0+32]...[63+32] | |
|  |  |  |  | xhs: [0+32]...[2+32] | |
|  |  |  |  | xls: [0+32]...[99+32] | |
|  |  |  |  | ye: [0+32]...[63+32] | |
|  |  |  |  | xhe: [0+32]...[2+32] | |
|  |  |  |  | xle: [0+32]...[99+32] | |
| Draw rectangle: |  |  | 9 | ESC, ”&”, ys, xhs, xls, ye, xhe, xle, | |
|  | D | Off, empty |  | ”0” | |
|  | E | On, empty |  | ”8” | |
|  | F | Off, filled |  | ”1” | |
| - On, filled |  |  |  | ”9” | |
|  |  |  |  | Where: ys: [0+32]...[63+32] | |
|  |  |  |  | xhs: [0+32]...[2+32] | |
|  |  |  |  | xls: [0+32]...[99+32] | |
|  |  |  |  | ye: [0+32]...[63+32] | |
|  |  |  |  | xhe: [0+32]...[2+32] | |
|  |  |  |  | xle: [0+32]...[99+32] | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | | | **Length** | **Parameters** |
| Set attribute: |  |  | 3 | ESC, ”G”, |
|  | G | Normal |  | ”0” |
|  | H | Reverse |  | ”4” |
|  | I | Blinking |  | ”2” |
| - Blinking reverse |  |  |  | ”6” |
| Set cursor: |  |  | 3 | ESC, ”`”, |
|  | J | Off |  | ”0” |
|  | K | On |  | ”1” |
|  | L | Steady block |  | ”2” |
|  | M | Blinking line |  | ”3” |
|  | N | Steady line |  | ”4” |
| - Blinking block |  |  |  | ”5” |
| Set backlight (FBP700 only) | | | 3 | ESC, “@”, |
| O Off | | |  | “0” |
| - On | | |  | “1” |
| Set cg-character (FBP700 only) | | | 10 | ESC, nh, nl, b0, b1, b2, b3, b4, b5, b6, b7 Where: nh: character no [0+32]...[99+32]  nl: character no [0+32]…[2+32]  b0...b7 : byte of character map [0..255] |

##### Equipment Control (40, 28h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 40 | 40 | - | - | - | - | - |
| 1 | EQUIPMENT | Yes | - | - | - | - | - |
| 2 | OUTPUT LINK | Yes | - | - | - | - | - |
| 3 | OUTPUT LINK NO. | Yes | - | - | - | - | - |
| 4 | MODE | Yes | - | - | - | - | - |
| 5 | OVERRIDE | Yes | - | - | - | - | - |

###### EQUIPMENT

Length: Byte

Range: FP2000: 0...4

FP780: 0

Description: The equipment to be switched:

|  |  |  |
| --- | --- | --- |
| **EQUIPMENT** | **FP2000** | **FP780** |
| 0 | Sounder | - |
| 1 | Automatic Fire Brigade | - |
| 2 | Fault Routing | - |
| 3 | Fire Protection | - |
| 4 | MCP Fire Brigade | - |

###### OUTPUT LINK

Length: Byte

Range: FP2000: 0...2

FP780: 0

Description: The corresponding link in the output set-up.

|  |  |  |
| --- | --- | --- |
| **OUTPUT LINK** | **FP2000** | **FP780** |
| 0 | None (Equipment only) | - |
| 1 | Zone | - |
| 2 | Area | - |

###### OUTPUT LINK NO

Length: Byte

Range: FP2000: 0…255 FP780: 0

Description: The corresponding number of the OUTPUT LINK in the output set-up.

|  |  |  |
| --- | --- | --- |
| **OUTPUT LINK NO** | **FP2000** | **FP780** |
| 0 | 0 | - |
| 1 | 1…255 | - |
| 2 | 1…99 | - |

###### MODE

Length: Byte

Range: FP2000: 0...4

FP780: 0

Description: The mode of operation:

|  |  |  |
| --- | --- | --- |
| **OUTPUT LINK NO** | **FP2000** | **FP780** |
| 0 | Off | - |
| 1 | On | - |
| 2 | Test | - |
| 3 | Silence | - |
| 4 | Evacuate | - |

###### OVERRIDE

Length: Byte

Range: FP2000: 0...1

FP780: 0

Description: A control to select an operation determined by the settings in the panel or to override any checks.

|  |  |  |
| --- | --- | --- |
| **OVERRIDE** | **FP2000** | **FP780** |
| 0 | Operation determined by panel | - |
| 1 | Override | - |

##### Volatile Zone Block Data (41, 29h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 41 | - | - | 169 | 169 | 41 | 41 |
| 1 | INDEX | - | - | Yes | Yes | Yes | Yes |
| 2...113 | DATA | - | - | - | - | Yes | Yes |
| 114 | ZONES LOW-LIMIT | - | - | - | - | Yes | Yes |
| 115 | ZONES HIGH-LIMIT | - | - | - | - | Yes | Yes |

###### INDEX

Length: Byte

Range: 0…2

Description: The zone block index, the options are: (see message 25)

|  |  |  |
| --- | --- | --- |
| **INDEX Bits 6…7** | **FP2000** | **FP780** |
| 0 | Zones 1…112 | Zones 1…99 |
| 1 | Zones 100…199 | Zones 100…199 |
| 2 | Zones 200…255 | Zones 200…255 |

Range: FP2000: 0…34 FP780: 0…27

Description: The zone block index, the options are: (see message 25)

|  |  |  |
| --- | --- | --- |
| **INDEX Bits 0…5** | **FP2000** | **FP780** |
| 0 | ZONE ALARM (hb) | ZONE ALARM (hb) |
| 1 | ZONE ALARM (lb) | ZONE ALARM (lb) |
| 2 | ALARM COUNT (hb) | ALARM COUNT |
| 3 | ALARM COUNT (lb) | FAULT COUNT |
| 4 | FAULT COUNT (hb) | CONDITION COUNT |
| 5 | FAULT COUNT (lb) | ISOLATED COUNT |
| 6 | CONDITION COUNT (hb) | SECURITY ALARM COUNT |
| 7 | CONDITION COUNT (lb) | TEST COUNT |
| 8 | COINCIDENCE COUNT (hb) | PRE WARNING COUNT |
| 9 | COINCIDENCE COUNT (lb) | MAINTENANCE FAULT COUNT |
| 10 | ISOLATED COUNT (hb) | MONTH (test on) |
| 11 | ISOLATED COUNT (lb) | DAY (test on) |
| 12 | MONTH (test on) | HOUR (test on) |
| 13 | DAY (test on) | MINUTE (test on) |
| 14 | HOUR (test on) | MONTH (test off) |
| 15 | MINUTE (test on) | DAY (test off) |
| 16 | MONTH (test off) | HOUR (test off) |
| 17 | DAY (test off) | MINUTE (test off) |
| 18 | HOUR (test off) | ZONE STATE (hb) |
| 19 | MINUTE (test off) | ZONE STATE (lb) |
| 20 | ZONE STATE (hb) | ZONE COUNT |
| 21 | ZONE STATE (lb) | ZONE NODE |
| 22 | ZONE TWO COUNT (hb) | ZONE INPUT |
| 23 | ZONE TWO COUNT (lb) | ZONE EQUIPMENT SND |
| 24 | ZONE TWO | ZONE EQUIPMENT FBRIG AUTO |
| 25 | ZONE LEDs | ZONE EQUIPMENT FLTRT |
| 26 | ZONE EQUIPMENT SND | ZONE EQUIPMENT FPROT |
| 27 | ZONE EQUIPMENT FBRIG | ZONE EQUIPMENT FBRIG MCP |
| 28 | ZONE EQUIPMENT FLTRT | - |
| 29 | ZONE EQUIPMENT FPROT | - |
| 30 | ZONE LED STATUS | - |
| 31 | PRE WARNING COUNT (hb) | - |
| 32 | PRE WARNING COUNT (lb) | - |
| 33 | SYSTEM ZONE (hb) | - |
| 34 | SYSTEM ZONE (lb) | - |

###### DATA

Length: Byte array

Description: The specified data (see INDEX) for each zone.

##### Volatile Area Block Data (42, 2Ah)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 42 | - - 170 | | 170 | 42 | 42 |
| 1 | INDEX | - - Yes | | Yes | Yes | Yes |
| 2...100 | DATA | - - - | | - | Yes | Yes |

###### INDEX

Length: Byte

Range: FP2000: 0…18 FP780: 0…17

Description: The area block index, the options are: (see message 26)

|  |  |  |
| --- | --- | --- |
| **INDEX** | **FP2000** | **FP780** |
| 0 | AREA ALARM | AREA ALARM (hb) |
| 1 | ALARM COUNT (hb) | AREA ALARM (lb) |
| 2 | ALARM COUNT (lb) | ALARM COUNT |
| 3 | FAULT COUNT (hb) | FAULT COUNT |
| 4 | FAULT COUNT (lb) | CONDITION COUNT |
| 5 | CONDITION COUNT (hb) | COINCIDENCE COUNT |
| 6 | CONDITION COUNT (lb) | ISOLATED COUNT |
| 7 | COINCIDENCE COUNT (hb) | PRE WARNING COUNT |
| 8 | COINCIDENCE COUNT (lb) | SECURITY ALARM COUNT |
| 9 | ISOLATED COUNT (hb) | TEST COUNT |
| 10 | ISOLATED COUNT (lb) | MAINTENANCE COUNT |
| 11 | AREA STATE (lb) | AREA STATE (hb) |
| 12 | ZONE EQUIPMENT SND | AREA STATE (lb) |
| 13 | ZONE EQUIPMENT FBRIG | AREA EQUIPMENT SND |
| 14 | ZONE EQUIPMENT FLTRT | AREA EQUIPMENT FBRIG AUTO |
| 15 | ZONE EQUIPMENT FPROT | AREA EQUIPMENT FLTRT |
| 16 | AREA STATE (hb) | AREA EQUIPMENT FPROT |
| 17 | PRE WARNING COUNT (hb) | AREA EQUIPMENT FBRIG MCP |
| 18 | PRE WARNING COUNT (lb) | - |

###### DATA

Length: AREAS (see command 6)

Byte array (byte 0 = 1st area, byte AREAS-1 = last area) Description: The specified data (see INDEX) for each area.

##### Control Command (43, 2Bh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 43 | 43 43 - | | - | - | - |
| 1 | CONTROL | Yes Yes - | | - | - | - |

###### CONTROL

Length: Byte

Range: FP2000: 0...10

FP780: 4...10

Description: The options are:

|  |  |  |
| --- | --- | --- |
| **CONTROL** | **FP2000** | **FP780** |
| 0 | FP2000 Fire Panel down | - |
| 1 | FP2000 Fire Panel up | - |
| 2 | Local Repeater down | - |
| 3 | Local Repeater up | - |
| 4 | Global Repeater down | Node down |
| 5 | Global Repeater up | Node up |
| 6 | Network line faulty | Network line faulty |
| 7 | Network line OK | Network line OK |
| 8 | Duplicate Node ID | Duplicate Node ID |
| 9 | Modem Initialisation | Modem Initialisation |
| 10 | Two try fire | Two try fire |

##### Set Time (44, 2Ch)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 44 | 44 | 44 | 172 | 172 | 44 | 44 |
| 1 | YEAR | Yes | Yes | - | - | Yes | Yes |
| 2 | MONTH | Yes | Yes | - | - | Yes | Yes |
| 3 | DAY | Yes | Yes | - | - | Yes | Yes |
| 4 | HOUR | Yes | Yes | - | - | Yes | Yes |
| 5 | MINUTE | Yes | Yes | - | - | Yes | Yes |
| 6 | SECOND | Yes | Yes | - | - | Yes | Yes |

###### YEAR

Length: Byte

Range: 0...99

Description: Year. Values of 94 to 99 indicate the twentieth century (19--) and values less than 94 the twenty-first century (20--).

###### MONTH

Length: Byte

Range: 1…12

Description: Month.

###### DAY

Length: Byte

Range: 1 28, 29, 30, 31

Description: The day of the month.

###### HOUR

Length: Byte

Range: 0 23

Description: Hour.

###### MINUTE

Length: Byte

Range: 0…59

Description: Minute.

###### SECOND

Length: Byte

Range: 0…59

Description: Second.

##### Synchronise Time (45, 2Dh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| 0 | 45 | 45 | 45 - | - | - | - |

This command synchronises the times of Panels, Local Repeaters and Global Repeaters.

##### Volatile Sensor Block Data (46, 2Eh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Request | | Response | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 46 | - - 174 | | - | 46 | - |
| 1 | LOOP | - - Yes | | - | Yes | - |
| 2 | INDEX | - - Yes | | - | Yes | - |
| 3-131 | SENSOR BLOCK DATA | - - - | | - | Yes | - |

**LOOP** (see message 24)

###### INDEX

Length: Byte

Range: 0...31

Description: The sensor (fire detection device) block index, the options are: (see message 24)

|  |  |  |
| --- | --- | --- |
| **INDEX** | **FP2000** | **FP780** |
| 0 | SENSOR ALARM COUNT | - |
| 1 | SENSOR AVERAGE | - |
| 2 | SENSOR COMP | - |
| 3 | SENSOR COMMS | - |
| 4 | SENSOR LOWEST | - |
| 5 | MONTH (lowest) | - |
| 7 | HOUR (lowest) | - |
| 8 | MINUTE (lowest) | - |
| 9 | SENSOR DAY LOW | - |
| 10 | SENSOR HIGHEST | - |
| 11 | MONTH (highest) | - |
| 12 | DAY (highest) | - |
| 13 | HOUR (highest) | - |
| 14 | MINUTE (highest) | - |
| 15 | SENSOR DAY HIGH | - |
| 16 | SENSOR ALARM (higher byte) | - |
| 17 | SENSOR ALARM (lower byte) | - |
| 18 | SENSOR TEST | - |
| 19 | TWO TRY DELAY | - |
| 20 | INPUT STATE | - |
| 21 | OUTPUT STATE | - |
| 22 | ASP DELAY (hb) | - |
| 23 | ASP DELAY (lb) | - |
| 24 | CONTAMINATION | - |
| 25 | SENSOR VALUE | - |
| 26 | SENSOR STATUS BITS | - |
| 27 | SENSOR FIELD TYPE | - |
| 28 | SENSOR OUTPUT BITS | - |
| 29 | SENSOR TEST VALUE | - |

|  |  |  |
| --- | --- | --- |
| 30 | COMPENSATED SENSOR VALUE | - |
| 31 | Reserved | - |

###### SENSOR BLOCK DATA

Length: See table above (PAGE)

Description: The specified data (see INDEX) for each fire detection device (sensor) of the specified loop.

##### Network Watchdog (47, 2Fh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| 0 | 47 | 47 | 47 - | - | - | - |

The Watchdog message is a Control message that is used to ensure the prompt notification of loss of communication between communicat- ing devices.

Whenever two or more devices are configured to communicate with one another, using one of the network functions (NET1/2 – see message 19), Watchdog messages must be transferred between these devices. The panels transmit Watchdog messages every 13s and check for re- ception of Watchdog messages every 30s.

##### Panel (48, 30h)

A FP2000 Panel can be configured to communicate with FP2000 Fire Panels using one or both the network communication functions (Net1/2). A network communication function is assigned to a port (see message 19) as well as to the FP2000 Panel(s) that are connected to that port.

This message is used for configuration, or reading of the configuration, of a FP2000 Panel’s communication set up, with regard to FP2000 Fire Panels (panel number specified with PANEL byte).

A FP2000 Fire Panel, a Global Repeater or a Local Repeater can be configured to communicate with any number of other FP2000 Fire Pan- els allowed by the maximum network configuration.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 48 | 48 - 176 | | - | 48 | - |
| 1 | FIRE PANEL | Yes - Yes | | - | Yes | - |
| 2 | FIRE PANEL SET-UP | Yes - - | | - | Yes | - |

###### FIRE PANEL

Length: Byte

Range: See Description

Description: The number of a FP2000 Fire Panel, in the FP2000 Panel’s communication set up, that is addressed. The range is de- pendant on the maximum network configuration (see message 36):

|  |  |  |
| --- | --- | --- |
| **FIRE PANEL** | **FP2000** | **FP780** |
| 15/15 | 1…15 | - |
| 31/7 | 1…31 | - |
| 7/31 | 1…7 | - |
| 0/31 | 0 | - |
| 0/63 | 0 | - |

###### FIRE PANEL SET-UP

Length: Byte

Range: 0...4

Description: A number that allocates one of the network communication functions (Net1/2) to the FP2000 Fire Panel in the FP2000 Panel’s communication configuration as well as specifying the result of communication failure:

|  |  |  |
| --- | --- | --- |
| **FIRE PANEL SET-UP** | **FP2000** | **FP780** |
| 0 | None  No Communication | - |
| 1 | Net1 check  Allocated to network Net1, with an error in communication pro-  ducing an alarm. | - |
| 2 | Net2 check  Allocated to network Net2, with  an error in communication pro- ducing an alarm. | - |
| 3 | Net1 no check  Allocated to network Net1, with an error in communication pro- ducing an action. | - |
| 4 | Net2 no check  Allocated to network Net2, with an error in communication pro-  ducing an action. | - |

##### Global Repeater (49, 31h)

A FP2000 Panel can be configured to communicate with Global Repeaters using one or both the network communication functions (Net1/2). A network communication function is assigned to a port (see message 19) as well as to the Global Repeater(s) that are connected to that port. This message is used for configuration, or reading of the configuration, of a FP2000 Panel’s communication set up, with regard to Global Repeaters (repeater number specified with G-REPEATER byte).

A FP2000 Fire Panel or a Global Repeater can be configured to communicate with any number of other FP2000 Global Repeaters allowed by the maximum network configuration.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 49 | 49 - 177 | | - | 49 | - |
| 1 | G-REPEATER | Yes - Yes | | - | Yes | - |
| 2 | G-REPEATER SET-UP | Yes - - | | - | Yes | - |

###### G-REPEATER

Length: Byte

Range: See Description

Description: The number of the Global Repeater, in the FP2000 Fire Panel’s or Global Repeater’s communication configuration, that is addressed. The range is dependant on the maximum network configuration (see message 36):

|  |  |  |
| --- | --- | --- |
| **FIRE PANEL** | **FP2000** | **FP780** |
| 15/15 | 1…15 | - |
| 31/7 | 1…31 | - |
| 7/31 | 1…7 | - |
| 0/31 | 1…31 | - |
| 0/63 | 1…63 | - |

###### G-REPEATER SET-UP

Length: Byte

Range: 0...4

Description: A number that allocates one of the network communication functions (Net1/2) to the Global Repeater in the FP2000 Fire Panel’s or Global Repeater’s communication configuration as well as specifying the result of communication failure:

|  |  |  |
| --- | --- | --- |
| **FIRE PANEL SET-UP** | **FP2000** | **FP780** |
| 0 | None  No Communication | - |
| 1 | Net1 check  Allocated to network Net1, with an error in communication pro- ducing an alarm. | - |
| 2 | Net2 check  Allocated to network Net2, with an error in communication pro-  ducing an alarm. | - |
| 3 | Net1 no check  Allocated to network Net1, with  an error in communication pro- ducing an action. | - |
| 4 | Net2 no check  Allocated to network Net2, with  an error in communication pro- ducing an action. | - |

##### Network Keys (50, 32h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 50 | 50 50 - | | - | - | - |
| 1 | KEY | Yes Yes - | | - | - | - |

###### KEY

Length: Byte

Description: Keys accepted by the panel.

|  |  |  |
| --- | --- | --- |
| **KEY** | **FP2000** | **FP780** |
| 0 | - | **-** |
| 1 | Scroll | Scroll |
| 2 | Display Alarm | Display Alarm |
| 3 | - | **-** |
| 4 | Print Screen | **-** |
| 5 | Alpha Numeric | Alpha Numeric |
| 6 | Right Arrow | Right Arrow |
| 7 | - | **-** |
| 8 | Left Arrow | Left Arrow |
| 9 | Silence buzzer | Silence buzzer |
| 10 | Down Arrow | Down Arrow |
| 11 | Reset | Reset |
| 12 | Disable | Disable |
| 13 | Enter | Enter |
| 14 | Test | Test |
| 15 | Sounder on | Sounder on |
| 16 | Sounder delay toggle | Sounder delay toggle |
| 17 | Sounder disable toggle | Sounder disable toggle |
| 18 | Sounder off | Sounder off |
| 19 | Fire Brigade disable toggle | Automatic Fire Brigade disable toggle |
| 20 | Fire Brigade delay toggle | Automatic Fire Brigade delay toggle |
| 21 | - | - |
| 22 | Fire Brigade stop | Automatic Fire Brigade stop |
| 23 | - | **-** |
| 24 | - | **-** |
| 25 | - | **-** |
| 26 | Up Arrow | Up Arrow |
| 27 | Exit | Exit |
| 28 | -l | **-** |
| 29 | Panel | **-** |
| 30 | All |  |
| 31 | Fire Brigade start | Automatic Fire Brigade start |

|  |  |  |
| --- | --- | --- |
| **KEY** | **FP2000** | **FP780** |
| 255 | Internal use only | Internal use only |
| 254 | Internal use only | Internal use only |
| 253 | Internal use only | Internal use only |
| 252 | Internal use only | Internal use only |
| 252 | Internal use only | Internal use only |
| 250 | Internal use only | Internal use only |
| 249 | Internal use only | Internal use only |
| 248 | Internal use only | Internal use only |
| 247 | Internal use only | Internal use only |
| 246 | Internal use only | Internal use only |
| 245 | Internal use only | Internal use only |
| 244 | Internal use only | Internal use only |
| 243 | Internal use only | Internal use only |
| 242 | Internal use only | Internal use only |
| 241 | Internal use only | Internal use only |
| 240 | Restart | Restart |
| 239 | Reset | Reset |
| 238 | Sounder delay on | Sounder delay on |
| 237 | Sounder delay off | Sounder delay off |
| 236 | Sounder disable | Sounder disable |
| 235 | Sounder enable | Sounder enable |
| 234 | Sounder test toggle | Sounder test toggle |
| 233 | Fire Brigade delay on | Automatic Fire Brigade delay on |
| 232 | Fire Brigade delay off | Automatic Fire Brigade delay off |
| 231 | Fire Brigade disable | Automatic Fire Brigade disable |
| 230 | Fire Brigade enable | Automatic Fire Brigade enable |
| 229 | Fire Brigade test toggle | Automatic Fire Brigade test toggle |
| 228 | Fault Routing delay toggle | Fault Routing delay toggle |
| 227 | Fault Routing delay on | Fault Routing delay on |
| 226 | Fault Routing delay off | Fault Routing delay off |
| 225 | Fault Routing disable toggle | Fault Routing disable toggle |
| 224 | Fault Routing disable | Fault Routing disable |
| 223 | Fault Routing enable | Fault Routing enable |
| 222 | Fault Routing test toggle | Fault Routing test toggle |
| 221 | Fault Routing off | Fault Routing off |
| 220 | Fault Routing on | Fault Routing on |
| 219 | Fire Protection delay toggle | Fire Protection delay toggle |
| 218 | Fire Protection delay on | Fire Protection delay on |
| 217 | Fire Protection delay off | Fire Protection delay off |
| 216 | Fire Protection disable toggle | Fire Protection disable toggle |
| 215 | Fire Protection disable | Fire Protection disable |
| 214 | Fire Protection enable | Fire Protection enable |
| 213 | Fire Protection test toggle | Fire Protection test toggle |

|  |  |  |
| --- | --- | --- |
| 212 | Fire Protection off | Fire Protection off |

|  |  |  |
| --- | --- | --- |
| **KEY** | **FP2000** | **FP780** |
| 211 | Fire Protection on | Fire Protection on |
| 210 | Display alarm | Display alarm |
| 209 | Reset “All” | Reset “All” |
| 208 | Silence Repeater | Silence Repeater |
| 207 | Clear all events | Clear all events |
| 206 | LON reset | LON reset |
| 205 | BFS disable | BFS disable |
| 204 | BFS enable | BFS enable |
| 203 | - | Automatic |
| 202 | - | MCP Fire Brigade delay toggle |
| 201 | - | MCP Fire Brigade delay on |
| 200 | - | MCP Fire Brigade delay off |
| 199 | - | MCP Fire Brigade disable toggle |
| 198 | - | MCP Fire Brigade disable |
| 197 | - | MCP Fire Brigade enable |
| 196 | - | MCP Fire Brigade test toggle |
| 195 | - | MCP Fire Brigade stop |
| 194 | - | MCP Fire Brigade start |
| 193 | - | LON configuration |
| 192 | - | Reset with forced flash update |
| 191 | FBF Sounder disable | - |
| 190 | FBF Sounder enable | - |
| 189 | FBF Fire Brigade disable | - |
| 188 | FBF Fire Brigade enable | - |
| 187 | FBF fire protection disable | - |
| 186 | FBF fire protection enable | - |

##### Network Time (51, 33h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 51 | 51 | 51 | - | - | - | - |
| 1 | YEAR | Yes | Yes | - | - | - | - |
| 2 | MONTH | Yes | Yes | - | - | - | - |
| 3 | DAY | Yes | Yes | - | - | - | - |
| 4 | HOUR | Yes | Yes | - | - | - | - |
| 5 | MINUTE | Yes | Yes | - | - | - | - |
| 6- | SECOND | Yes | Yes | - | - | - | - |
| 7 | DAY OF WEEK | Yes | Yes | - | - | - | - |

**YEAR** (see message 45)

**MONTH** (see message 45)

**DAY** (see message 45)

**HOUR** (see message 45)

**MINUTE** (see message 45)

**SECOND** (see message 45)

###### DAY OF WEEK

Length: Byte

Range: 0...6

Description: The current day of the week:

|  |  |  |
| --- | --- | --- |
| **DAY OF WEEK** | **FP2000** | **FP780** |
| 0 | Monday | Monday |
| 1 | Tuesday | Tuesday |
| 2 | Wednesday | Wednesday |
| 3 | Thursday | Thursday |
| 4 | Friday | Friday |
| 5 | Saturday | Saturday |
| 6 | Sunday | Sunday |

##### Accept Event (52, 34h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 52 | 52 52 - | | - | - | - |
| 1,2 | EVENT NO. (hb, lb) | Yes Yes - | | - | - | - |
| 3 | Reserved | Yes Yes - | | - | - | - |

###### EVENT NO.

Length: 2 bytes

Range: 0…1999

Description: The number allocated to an event by a panel.

##### Status Request (53, 35h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| 0 | 53 | - | - 181 | 181 | - | - |

This message is a request to initialise a repeater/controller. The panel will answer with the most recent highest priority event (message 28) and where network I/O is used with the output status of the network outputs that are relevant (message 56).

##### Status (54, 36h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 54 | 54 54 182 | | 182 | 54 | 54 |
| 1,2 | NO EVENT COUNT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 3,4 | ALARM COUNT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 5,6 | FAULT COUNT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 7,8 | CONDITION COUNT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 9,10 | COINCIDENCE COUNT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 11,12 | ISOLATED COUNT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 13,14 | DETECTOR COUNT (hb, lb) | Yes - - | | - | Yes | - |
| 15...46 | LED STATUS | Yes - - | | - | Yes | - |

**NO EVENT COUNT** (see message 28)

**ALARM COUNT** (see message 28)

**FAULT COUNT** (see message 28) **CONDITION COUNT** (see message 28) **COINCIDENCE COUNT** (see message 28) **ISOLATED COUNT** (see message 28) **DETECTOR COUNT** (see message 28) **LED STATUS** (see message 28)

##### Summer Time (55, 37h)

When there is different time base for winter and summer, the time must be “advanced” when entering the summer time. The start of the summer time is specified with the MONTH and DAY “on” parameters and the end of summer time with the MONTH and DAY “off” parame- ters. The amount of time that the clock must be advanced is specified with the TIME ADVANCE parameter. The time change occurs at 3:00.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 55 | 55 55 182 | | 182 | 55 | 55 |
| 1 | MONTH (on) | Yes Yes - | | - | Yes | Yes |
| 2 | DAY (on) | Yes Yes - | | - | Yes | Yes |
| 3 | MONTH (off) | Yes Yes - | | - | Yes | Yes |
| 4 | DAY (off) | Yes Yes - | | - | Yes | Yes |
| 5 | TIME ADVANCE | Yes Yes - | | - | Yes | Yes |

MONTH (on, off)

Length: Byte

Range: 1...12

Description: The month to switch the time to or from summer time.

Day (on, off)

Length: Byte

Range: 1...28, 29, 30, 31

Description: The day to switch the time to or from summer time.

###### TIME ADVANCE

Length: Byte

Range: 0...1

Description: The amount of time that the FP2000 Panel’s clock must be advanced, in hours, when the time base change from winter to summer time.

##### Volatile Output Block Data (56, 38h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 56 | 56 56 184 | | 184 | 56 | 56 |
| 1 | INDEX | Yes Yes Yes | | Yes | Yes | Yes |
| 2 | OUTPUT SELECT | Yes Yes Yes | | Yes | Yes | Yes |
| 3...102 | OUTPUT BLOCK DATA | Yes Yes - | | - | Yes | Yes |
| 103 | STATUS | - - - | | - | Yes | Yes |

###### INDEX

Length: Byte

Range: 0...9

Description: The output block index specifying the output range.

|  |  |  |
| --- | --- | --- |
| **INDEX** | **FP2000** | **FP780** |
| 0 | Outputs 0...99, (Output 0 invalid) | Outputs 0...99, (Output 0 invalid) |
| 1 | Outputs 100...199 | Outputs 100...199 |
| 2 | Outputs 200...299 | Outputs 200...299 |
| 3 | Outputs 300...399 | Outputs 300...399 |
| 4 | Outputs 400...499 | Outputs 400...499 |
| 5 | Outputs 500...599 | Outputs 500...599 |
| 6 | Outputs 600...699 | Outputs 600...699 |
| 7 | Outputs 700...799 | Outputs 700...799 |
| 8 | Outputs 800...899 | Outputs 800...899 |
| 9 | Outputs 900...999 | Outputs 900...999 |

###### OUTPUT SELECT

Length: Byte

Range: 0

Description: The output data selection of the specified outputs.

|  |  |  |
| --- | --- | --- |
| **OUTPUT SELECT** | **FP2000** | **FP780** |
| 0 | Outputs status | Outputs status |

###### OUTPUT BLOCK DATA

Length: 100 bytes

Description: The specified data (see OUTPUT SELECT) for each output of the specified range (see INDEX).

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: Outputs false | 0: Outputs false |
| 1: Output true | 1: Output true |
| 1…7 | - | - |

###### STATUS

Length: Byte

Range: 0 255

Description: Set to 0 if all outputs are false, set to 255 if one or several outputs are true.

##### Volatile Input Block Data (57, 39h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 57 | 57 | 57 | 185 | 185 | 57 | 57 |
| 1 | INDEX | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | INPUT SELECT | Yes | Yes | Yes | Yes | Yes | Yes |
| 3...102 | INPUT BLOCK DATA | Yes | Yes | - | - | Yes | Yes |
| 103 | STATUS | - | - | - | - | Yes | Yes |

###### INDEX

Length: Byte

Range: 0...9

Description: The input block index specifying the input range.

|  |  |  |
| --- | --- | --- |
| **INDEX** | **FP2000** | **FP780** |
| 0 | Inputs 0...99, (Input 0 invalid) | Inputs 0...99, (Input 0 invalid) |
| 1 | Inputs 100...199 | Inputs 100...199 |
| 2 | Inputs 200...299 | Inputs 200...299 |
| 3 | Inputs 300...399 | Inputs 300...399 |
| 4 | Inputs 400...499 | Inputs 400...499 |
| 5 | Inputs 500...599 | Inputs 500...599 |
| 6 | Inputs 600...699 | Inputs 600...699 |
| 7 | Inputs 700...799 | Inputs 700...799 |
| 8 | Inputs 800...899 | Inputs 800...899 |
| 9 | Inputs 900...999 | Inputs 900...999 |

###### INPUT SELECT

Length: Byte

Range: 0

Description: The input data selection.

|  |  |  |
| --- | --- | --- |
| **INPUT SELECT** | **FP2000** | **FP780** |
| 0 | Inputs status | Inputs status |

###### INPUT BLOCK DATA

Length: 100 bytes

Description: The specified data (see INPUT SELECT) for each input of the specified range (see INDEX).

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: Inputs false | 0: Inputs false |
| 1: Input true | 1: Input true |
| 1…7 | - | - |

###### STATUS

Length: Byte

Range: 0 255

Description: Set to 0 if all inputs are false, set to 255 if one or several inputs are true.

##### Zone LED Status (58, 3Ah)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 58 | 58 - 186 | | - | 58 | - |
| 1 | BLOCK | Yes - Yes | | - | Yes | - |
| 2…133 | LED STATUS DATA | Yes - - | | - | Yes | - |

###### BLOCK

Length: Byte

Range: 0...2

Description: The zone block options are (the index defaults to 30, see message 41):

|  |  |  |
| --- | --- | --- |
| **BLOCK** | **FP2000** | **FP780** |
| 0 | Zones 1…112 | Zones 1…99 |
| 1 | Zones 100…199 | Zones 100…199 |
| 2 | Zones 200…255 | Zones 200…255 |

###### LED STATUS (0...15)

Length: Byte

Range: 0...2

Description: The status of two LED’s are stored in one byte; in the lower nibble the status of LED “n” (zone fire) and in the higher nibble the status of LED “n + 16” (zone fault) (0 <= n <= 15), that is a total of 32 LED’s per message.

|  |  |  |
| --- | --- | --- |
| **Nibble (h, l)** | **FP2000** | **FP780** |
| 0 | Off | Off |
| 1 | On | On |
| 2 | Blinking | Blinking |

##### Modem Alarm (59, 3Bh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 59 | 59 | 59 | 187 | 187 | 59 | 59 |
| 1 | MODEM FIRE | Yes | Yes | - | - | Yes | Yes |
| 2 | MODEM FAULT | Yes | Yes | - | - | Yes | Yes |
| 3 | MODEM CONDITION | Yes | Yes | - | - | Yes | Yes |
| 4 | MODEM DISCONNECTION | Yes | Yes | - | - | Yes | Yes |
| 5,6 | MODEM FIRE DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 7,8 | MODEM FAULT DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 9,10 | MODEM CONDITION DELAY (hb, lb) | Yes | Yes | - | - | Yes | Yes |
| 11 | MODEM ALARM STATUS | Yes | Yes | - | - | Yes | Yes |

###### MODEM FIRE

Length: Byte

Description: Enabling of fire reports via modem.

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: Disable fire report on line 1 | 0: Disable fire report on line 1 |
| 1: Enable fire report on line 1 | 1: Enable fire report on line 1 |
| 1 | 0: Disable fire report on line 2 | 0: Disable fire report on line 2 |
| 1: Enable fire report on line 2 | 1: Enable fire report on line 2 |
| 2 | 0: Disable fire report on line 3 | 0: Disable fire report on line 3 |
| 1: Enable fire report on line 3 | 1: Enable fire report on line 3 |
| 3 | 0: Disable fire report on line 4 | 0: Disable fire report on line 4 |
| 1: Enable fire report on line 4 | 1: Enable fire report on line 4 |
| 4…7 | - | - |

###### MODEM FAULT

Length: Byte

Description: Enabling of fault reports via modem.

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: Disable fault report on line 1 | 0: Disable fault report on line 1 |
| 1: Enable fault report on line 1 | 1: Enable fault report on line 1 |
| 1 | 0: Disable fault report on line 2 | 0: Disable fault report on line 2 |
| 1: Enable fault report on line 2 | 1: Enable fault report on line 2 |
| 2 | 0: Disable fault report on line 3 | 0: Disable fault report on line 3 |
| 1: Enable fault report on line 3 | 1: Enable fault report on line 3 |
| 3 | 0: Disable fault report on line 4 | 0: Disable fault report on line 4 |
| 1: Enable fault report on line 4 | 1: Enable fault report on line 4 |
| 4…7 | - | - |

###### MODEM CONDITION

Length: Byte

Description: Enabling of condition reports via modem.

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: Disable condition report on line 1 | 0: Disable condition report on line 1 |
| 1: Enable condition report on line 1 | 1: Enable condition report on line 1 |
| 1 | 0: Disable condition report on line 1 | 0: Disable condition report on line 1 |
| 1: Enable condition report on line 1 | 1: Enable condition report on line 1 |
| 2 | 0: Disable condition report on line 1 | 0: Disable condition report on line 1 |
| 1: Enable condition report on line 1 | 1: Enable condition report on line 1 |
| 3 | 0: Disable condition report on line 1 | 0: Disable condition report on line 1 |
| 1: Enable condition report on line 1 | 1: Enable condition report on line 1 |
| 4…7 | - | - |

###### MODEM DISCONNECTION

Length: Byte

Description: The way to terminate the modem connection between a panel/global repeater and a remote station.

|  |  |  |
| --- | --- | --- |
| **MODEM DISCONNECTI ON** | **FP2000** | **FP780** |
| 0 | Disconnect locally after report | Disconnect locally after report |
| 1 | Disconnect remotely | Disconnect remotely |

###### MODEM FIRE DELAY

Length: 2 bytes

Range: 0...600

Description: The time delay, in seconds, before reporting a fire via modem.

###### MODEM FAULT DELAY

Length: 2 bytes

Range: 0...600

Description: The time delay, in seconds, before reporting a fault via modem.

###### MODEM CONDITION DELAY

Length: 2 bytes

Range: 0...600

Description: The time delay, in seconds, before reporting a condition via modem.

###### MODEM ALARM STATUS

Length: Byte

Description: The alarm reporting status of the modem.

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | Alarm reporting disabled | Alarm reporting disabled |
| Alarm reporting enabled | Alarm reporting enabled |
| 1 | - | - |
| 2 | Line test disabled | Line test disabled |
| Line Test enabled | Line Test enabled |
| 3 | Test call enabled | Test call enabled |
| Test call enabled | Test call enabled |

##### Modem Maintenance Alarm (60, 3Ch)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 60 | 60 60 188 | | 188 | 60 | 60 |
| 1 | MAINTENANCE STATUS | Yes Yes - | | - | Yes | Yes |

###### MAINTENANCE STATUS

Length: Byte

Range: 0...1

Description: The status of remote maintenance via modem.

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: Disable maintenance | 0: Disable maintenance |
| 1: Enable maintenance | 1: Enable maintenance |
| 1 | 0: Disable dial-back | 0: Disable dial-back |
| 1: Enable dial-back | 1: Enable dial-back |

##### Modem Set up (61, 3Dh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 61 | 61 61 189 | | 189 | 61 | 61 |
| 1,2 | WAIT (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 3,4 | PAUSE (hb, lb) | Yes Yes - | | - | Yes | Yes |
| 5 | DIALLING ATTEMPTS |  | |  |  |  |

###### WAIT

Length: 2 bytes

Range: 0…600

Description: The time, in seconds, allowed for the modem to make a connection.

###### PAUSE

Length: 2 Bytes

Range: 0 600

Description: The time, in seconds, the modem must pause between calls.

###### DIALLING ATTEMPTS

Length: Byte

Range: 0 99

Description: The amount of dialling attempts for a modem to make a connection.

##### Modem String (62, 3Eh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 62 | 62 62 190 | | 190 | 62 | 62 |
| 1 | MODEM STRING NO. | Yes Yes - | | - | Yes | Yes |
| 2...36 | MODEM STRING | Yes Yes - | | - | Yes | Yes |

###### MODEM STRING NO.

Length: Byte

Range: 1...12

Description: A number that indicates the purpose of the particular modem string (MODEM STRING parameter). The following is a list of the different modem string definitions and the numbers allocated to them:

|  |  |  |
| --- | --- | --- |
| **MODEM STRING NO.** | **FP2000** | **FP780** |
| 1 | Modem alarm telephone number 1 | Modem alarm telephone number 1 |
| 2 | Modem alarm telephone number 2 | Modem alarm telephone number 2 |
| 3 | Modem alarm telephone number 3 | Modem alarm telephone number 3 |
| 4 | Modem alarm telephone number 4 | Modem alarm telephone number 4 |
| 5 | Modem initialisation command 1 | Modem initialisation command 1 |
| 6 | Modem initialisation command 2 | Modem initialisation command 2 |
| 7 | Modem dialling command | Modem dialling command |
| 8 | Modem escape command | Modem escape command |
| 9 | Modem hang-up command | Modem hang-up command |
| 10 | Modem test command | Modem test command |
| 11 | - | - |
| 12 | Modem identification string | Modem identification string |

###### MODEM STRING

Length: MODEM STRING NO: 1...4: 22 Bytes

5…12: 33 Bytes

Where: Byte 0: Length (0...n, n<=Length) Bytes 1...n: Data

Description: Modem AT-command string.

##### Not Used (63, 3Fh)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| - | - | - | - - | - | - | - |

##### Not Used (64, 40h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| - | - | - | - - | - | - | - |

##### Non-volatile Alarm State Count (65, 41h)

An alarm count for the fire brigade that counts how many times the panel enters an alarm state.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 65 | - - 193 | | 193 | 65 | 65 |
| 1,2 | ALARM STATE COUNT (hb, lb) | - - - | | - | Yes | Yes |

###### ALARM STATE COUNT

Length: Word

Range: 0...65535 (FFFFh)

Description: Counts alarm states.

##### Modem ID (66, 42h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 66 | 66 66 194 | | 194 | 66 | 66 |
| 1…35 | MODEM ID | Yes Yes - | | - | Yes | Yes |

String for modem identification. (Same as message 62, string 12)

###### MODEM ID

Length: 1...35 Bytes

Where: Byte 0: Length (0...n, n<35) Bytes 1...n: Data

Description: A string that identifies the modem.

##### Dial Back Command (67, 43h)

Sets the dial-back telephone number the panel has to dial after the current modem session.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 67 | 66 66 194 | | 194 | 66 | 66 |
| 1...23 | DIAL-BACK NO. | Yes Yes - | | - | Yes | Yes |
| 24...26 | Reserved |  | |  |  |  |

###### DIAL-BACK NO.

Length: 1...23 Bytes

Where: Byte 0: Length (0...n, n<22) Bytes 1...n: Data

Description: A string that defines the telephone number.

##### Event Request (68, 44h)

This command is used only by the fire panel to request events. It is identical to the Status Event Data (28) command.

##### Download Mode (69, 45h)

Sets the panel into download mode if the service switch is open. Download mode disables alarm/fault reporting from the FEP.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| 0 | 69 | 69 | - - | - | - | - |

##### Node Data (70, 46h)

Defines additional information for network nodes.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 70 | 70 - 198 | | - | 70 | - |
| 1 | NODE TYPE | Yes - - | | - | Yes | - |
| 2 | NODE | Yes - - | | - | Yes | - |
| 3 | NODE START ZONE | Yes - - | | - | Yes | - |
| 4 | NODE END ZONE | Yes - - | | - | Yes | - |

###### NODE TYPE

Length: Byte

Range: 0...2

Description: Describes the functionality of the node:

|  |  |  |
| --- | --- | --- |
| **NODE TYPE** | **FP2000** | **FP780** |
| 0 | Panel | - |
| 1 | Repeater (N/A) | - |
| **2** | Global Repeater (N/A) | **-** |

###### NODE

Length: Byte

Range: 1...31

Description: Defines panel or repeater number.

###### NODE START ZONE

Length: Byte

Range: 0...255

Description: Start zone of defined panel or repeater.

###### NODE END ZONE

Length: Byte

Range: 0...255, >= NODE START ZONE

Description: End zone of defined panel or repeater.

##### Not used (71, 47h)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
|  |  | FP2000 | FP780 FP2000 | FP780 | FP2000 | FP780 |
| - | - | - | - - | - | - | - |

##### Network Printer (72, 48h)

Reserves and releases a network Printer. Prints a string of data on the network printer.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 72 | 72 - - | | - | 72 | - |
| 1 | PRINT COMMAND | Yes - - | | - | Yes | - |
| 2...42 | PRINT DATA | Yes - - | | - | Yes | - |

###### PRINT COMMAND

Length: Byte

Range: 0...2

Description: Printing command:

|  |  |  |
| --- | --- | --- |
| **PRINT DATA** |  | |
| Length: | 1...41 Bytes  Where: Byte 0: | Length (0...n) |
|  | Bytes 1...n: | String (if n > 0) |

|  |  |  |
| --- | --- | --- |
| **PRINT COMMAND** | **FP2000** | **FP780** |
| 0 | Release Printer | - |
| 1 | Reserve Printer | - |
| **2** | Print Data | **-** |

|  |  |  |
| --- | --- | --- |
| **PRINT COMMAND** | **FP2000** | **FP780** |
| 0 | n = 0 | - |
| 1 | n = 0 | - |
| 2 | n = 0…40 | - |

Description: String to be printed

##### Network Data Exchange (73, 49h)

Reserves and releases a network Printer. Prints a string of data on the network printer.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | **Response** | |
|  |  | FP2000 FP780 FP2000 | | FP780 | FP2000 | FP780 |
| 0 | 73 | 73 - - | | - | - | - |
| 1...129 | NETWORK EXCHANGE DATA | Yes - - | | - | - | - |

**NETWORK EXCHANGE DATA**

|  |  |  |
| --- | --- | --- |
| Length: | 1...129 Bytes |  |
|  | Where: Byte 0: | Length (0…n, n <= 128) |
| Description: | Bytes 1…n  String to be exchanged | String (if n > 0) |

##### LON Data (74, 4ah)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | | **Request** | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 74 | 74 | 74 | 202 | 202 | 74 | 74 |
| 1 | LON NR | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | LON STATUS | Yes | Yes | - | - | Yes | Yes |
| 3 | LON TYPE | Yes | Yes | - | - | Yes | Yes |
| 4 | LON ENCLOSURE | Yes | - | - | - | Yes | - |
| 5 | LON BUCKET | Yes | - | - | - | Yes | - |
| 6 | LON SLOT | Yes | - | - | - | Yes | - |
| 7 | LON VERSION MSB | Yes | Yes | - | - | Yes | Yes |
| 8 | LON VERSION LSB | Yes | Yes | - | - | Yes | Yes |
| 9 | LON NODE ID | Yes | Yes | - | - | Yes | Yes |
| 10…15 | LON NEURON ID | Yes | Yes | - | - | Yes | Yes |
| 16 | LON OEM | Yes | Yes | - | - | Yes | Yes |
| 17 | LON PC | Yes | Yes | - | - | Yes | Yes |
| 18 | LON CFG | - | Yes | - | - | - | Yes |
| 19 | LON PRODUCT | - | Yes | - | - | - | Yes |
| 20 | LON HDW | Yes | Yes | - | - | Yes | Yes |
| 21 | LON CONFIG | Yes | Yes | - | - | Yes | Yes |
| 22 | LON DEVICE MODE | Yes | Yes | - | - | Yes | Yes |
| 23 | LON DEVICE COMMON | Yes | Yes | - | - | Yes | Yes |
| 24 | LON DEVICE PAR 1 | Yes | Yes | - | - | Yes | Yes |
| 25 | LON DEVICE PAR 2 | Yes | Yes | - | - | Yes | Yes |
| 26 | LON DEVICE PAR 3 | Yes | Yes | - | - | Yes | Yes |
| 27 | LON DEVICE PAR 4 | Yes | Yes | - | - | Yes | Yes |
| 28 | LON DEVICE PAR 5 | Yes | Yes | - | - | Yes | Yes |
| 29 | LON DEVICE PAR 6 | Yes | Yes | - | - | Yes | Yes |
| 30 | LON DEVICE PAR 7 | Yes | Yes | - | - | Yes | Yes |
| 31 | LON DEVICE PAR 8 | Yes | Yes | - | - | Yes | Yes |
| 32 | LON DEVICE PAR 9 | Yes | Yes | - | - | Yes | Yes |
| 33 | LON DEVICE OUT 1 | Yes | Yes | - | - | Yes | Yes |
| 34 | LON DEVICE OUT 2 | Yes | Yes | - | - | Yes | Yes |
| 35 | LON DEVICE OUT 3 | Yes | Yes | - | - | Yes | Yes |
| 36 | LON DEVICE OUT 4 | Yes | Yes | - | - | Yes | Yes |
| 37 | LON DEVICE OUT 5 | Yes | Yes | - | - | Yes | Yes |
| 38 | LON DEVICE PAR 10 | Yes | Yes | - | - | Yes | Yes |
| 39 | LON DEVICE PAR 11 | Yes | Yes | - | - | Yes | Yes |
| 40 | LON DEVICE PAR 12 | Yes | Yes | - | - | Yes | Yes |
| 41 | LON DEVICE PAR 13 | Yes | Yes | - | - | Yes | Yes |
| 42 | LON INPUT MASK 1 | - | Yes | - | - | - | Yes |
| 43 | LON INPUT MASK 2 | - | Yes | - | - | - | Yes |
| 44 | LON INPUT MASK 3 | - | Yes | - | - | - | Yes |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 45 | LON OUTPUT MASK 1 | - | Yes | - | - | - | Yes |
| 46 | LON OUTPUT MASK 2 | - | Yes | - | - | - | Yes |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** |  | **Response** | |
| 47 | LON OUTPUT MASK 3 | - | Yes - | - | - | Yes |
| 48…69 | LON TEXT | - | Yes - | - | - | Yes |

###### LON NR

Length: Byte

Range: FP2000: 1...32

FP780: 1...64

Description: Defines LON module.

###### LON STATUS

Length: Byte

Description: Defines LON status.

Bit 0: enable / disable Bit 1…7: not used

###### LON TYPE LSB

Length: Byte

Range: 0...19

Description: Defines LON module type.

|  |  |  |  |
| --- | --- | --- | --- |
| **LON TYPE LSB** | | **FP2000** | **FP780** |
| 0 | - | - | - |
| 1 | FC700 | Used | Used |
| 2 | FCD700 | Used | Used |
| 3 | SD700 | Used | Used |
| 4 | ZI708 | Used | Used |
| 5 | PS700 | Used | Used |
| 6 | SIB716 | Used | Used |
| 7 | OCB724 | Used | Used |
| 8 | SOB708 | Used | Used |
| 9 | FM740 | Used | Used |
| 10 | FBP700 | Used | Used |
| 11 | - | - | - |
| 12 | - | - | - |
| 13 | RB708 | Used | Used |
| 14 | - | - | - |
| 15 | VDS700 | - | Used |
| 16 | - | - | - |
| 17 | ZI708N | Used | Used |
| 18 | NC771 | Used | Used |
| 19 | - | - | - |

###### LON TYPE

Length: Byte

Range: 0

Description: Defines LON module type (FP2000 only, not used in FP780).

###### LON ENCLOSURE

Length: Byte

Range: 0 99

Description: Defines enclosure number (FP2000 only, not used in FP780).

###### LON BUCKET

Length: Byte

Range: 0 99

Description: Defines bucket number in the enclosure (FP2000 only, not used in FP780).

###### LON SLOT

Length: Byte

Range: 0 12

Description: Defines slot number in the bucket (FP2000 only, not used in FP780).

###### LON VERSION MSB

Length: Byte

Range: 0 99

Description: Mayor Version.

###### LON VERSION LSB

Length: Byte

Range: 0 99

Description: Minor version.

###### LON NODE ID

Length: Byte

Range: 1 127

Description: Node identification assigned to the module.

###### LON NEURON ID

Length: 6 Bytes

Range: 0 255

Description: Module specific neuron identification.

###### LON OEM

Length: Byte

Range: 0 3 (see tables below)

Description: OEM code.

###### LON PC

Length: Byte

Range: 0 4 (see tables below)

Description: Product code.

###### LON HDW

Length: Byte

Range: 0...1 (see tables below) Description: Hardware revision of LON module.

The following tables describe the relation between the LON TYPE, LON PC and LON OEM:

Generic

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module** | **Module Code** | **LON TYPE** | **LON HDW** | **LON OEM** | **LON PC** |
| FC700 | FC700 | 1 | 0 | 0 | 0 |
| FCD700 | FCD700 | 2 |
| SD700 | SD700 | 3 |
| ZI708 | ZI708 | 4 |
| PS700 | PS700 | 5 |
| SIB716 | SIB716 | 6 |
| OCB724 | OCB724 | 7 |
| SOB708 | SOB708 | 8 |
| FM740 | FM740 | 9 |
| FBP700 | FBP700 | 10 |
| RB708 | RB708 | 13 |
| VDS700 | VDS700 | 15 |
| ZI708N | ZI708N | 17 |
| NC771 | NC771 | 18 |

**Aritech**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module** | **Module Code** | **LON TYPE** | **LON HDW** | **LON OEM** | **LON PC** |
| FC700 | FC700S | 1 | 0 | 1 | 1 |
| LON2000 | 2 |
| FC700L | 1 | 1 |
| FC780 | 2 | 1 |
| FC780RTC | 3 | 1 |
| FCD700 | FCD700 | 2 | 0 | 1 |
| FCD700R | 2 |
| SD700 | SD700 | 3 | 1 |
| ZI708 | ZI708 | 4 | 1 |
| PS700 | PS700 | 5 | 1 |
| SIB716 | SIB716 | 6 | 1 |
| OCB724 | OCB724 | 7 | 1 |
| SOB708 | SOB708 | 8 | 1 |
| FM740 | FM740 | 9 | 1 |
| FBP700 | FBP70001 | 10 | 1 |
| FBP7000X | 2 |
| FRL700 | 3 |
| FRD7000X | 4 |
| RB708 | RB708 | 13 | 1 |
| VDS700 | VDS700 | 15 | 1 |
| ZI708N | ZI708N | 17 | 1 |
| NC771 | NC771-2 | 18 | 1 |
| NC771-4 | 2 |
| LON2000R-2 | 3 |
| LON2000R-4 | 4 |

###### FALCK

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module** | **Module Code** | **LON TYPE** | **LON HDW** | **LON OEM** | **LON PC** |
| FC700 | FC700S77 | 1 | 0 | 2 | 1 |
| FBP700 | FBP700S77 | 10 | 2 |
| FRD700S77 | 3 |

**ELOTEC**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module** | **Module Code** | **LON TYPE** | **LON HDW** | **LON OEM** | **LON PC** |
| FEP700 | FBP LE-S | 10 | 0 | 3 | 2 |
| FRD LE-X | 3 |

|  |  |  |
| --- | --- | --- |
| **LON PRODUCT** |  | |
| Length:  Range: | Byte  FP2000: | 0 |
|  | FP780: FCD700: | 0…88 |

All other modules: 0

Description: Specifies the FCD configuration. (See table below and table “Repeater Configurations” below)

###### LON CFG

Length: Byte

Range: FP2000: 0 FP780: 0…13

Description: Front module group. (See table below and table “Repeater Configurations” below)

|  |  |  |  |
| --- | --- | --- | --- |
| **LON CFG** | | **FP2000** | **FP780** |
| 0 | - | - | Used |
| 1 | FP700 | - | Used |
| 2 | RP700 | - | Used |
| 3 | FR7000LED | - | Used |
| 4 | RP7000LED | - | Used |
| 5 | FEP700 | - | Used |
| 6 | REP700 | - | Used |
| 7 | EP700 | - | Used |
| 8 | FP700VDS | - | Used |
| 9 | FR700LED | - | Used |
| 10 | FR700 | - | Used |
| 11 | FER700 | - | Used |
| 12 | ER700 | - | Used |
| 13 | FR700VDS | - | Used |

###### LON CONFIG

Length: Byte

Range: FP2000: 0…13 FP780:

###### NC771

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | | **FP2000** | **FP780** |
| 0 | 0: Channel A as bus | Used | Used |
| 1: Channel A as ring | Used | Used |
| 1 | 0: Channel B as bus | Used | Used |
| 1: Channel B as ring | Used | Used |
| 2 | 0: not configured | Used | Used |
| 1: configured | Used | Used |
| 3…7 | - | - | - |

|  |  |
| --- | --- |
| **FCD700** |  |
| FP780: | 0...44 |
| FeP780: | 0...52 |
| FP780VDS: | 0...44 |
| EP780: | 0...52 |

Description: FP2000: Indicates the repeater module type. (See table “Repeater Configurations” below) FP780: NC771: Describes the mode of operation of the bus.

FCD700: Index of the possible combinations of front panels for a product type.

(See table “Repeater Configurations” below)

Repeater Configurations

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **LON PRODUCT** | | **LON CFG** | **LON CONFIG** | | | | | **Slot** | | | | | | | |
| **FP- 780** | **FEP**  **-**  **780** | **FP- 780**  **VdS** | **EP- 780** | **FP- 2000** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 0 | Invalid FCD | 0 | **-** | - | - | - | - | - | - | - | - | - | - | - | - |
| 1 | FP700 | 1 | 1 | - | - | - | - | 1 | 2 | 3 |  |  |  |  |  |
| 2 | FP708 | 1 | 2 | - | - | - | - | 1 | 2 | 3 | 4 |  |  |  |  |
| 3 | FP716 | 1 | 3 | - | - | - | - | 1 | 2 | 3 | 4 | 4 |  |  |  |
| 4 | FP724 | 1 | 4 | - | - | - | - | 1 | 2 | 3 | 4 | 4 | 4 |  |  |
| 5 | FP732 | 1 | 5 | - | - | - | - | 1 | 2 | 3 | 4 | 4 | 4 | 4 |  |
| 6 | FP740 | 1 | 6 | - | - | - | - | 1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 |
| 7 | FR700 | 10 | 7 | - | - | - | - | 1 | 2 | 3 |  |  |  |  |  |
| 8 | FR708 | 10 | 8 | - | - | - | 0 | 1 | 2 | 3 | 4 |  |  |  |  |
| 9 | FR716 | 10 | 9 | - | - | - | - | 1 | 2 | 3 | 4 | 4 |  |  |  |
| 10 | FR724 | 10 | 10 | - | - | - | - | 1 | 2 | 3 | 4 | 4 | 4 |  |  |
| 11 | FR732 | 10 | 11 | - | - | - | - | 1 | 2 | 3 | 4 | 4 | 4 | 4 |  |
| 12 | FR740 | 10 | 12 | - | - | - | 1 | 1 | 2 | 3 | 4 | 4 | 4 | 4 | 4 |
| 13 | RP708 | 2 | 13 | 13 | 13 | 13 | - | 4 |  |  |  |  |  |  |  |
| 14 | RP716 | 2 | 14 | 14 | 14 | 14 | - | 4 | 4 |  |  |  |  |  |  |
| 15 | RP724 | 2 | 15 | 15 | 15 | 15 | 4 | 4 | 4 | 4 |  |  |  |  |  |
| 16 | RP732 | 2 | 16 | 16 | 16 | 16 | 2 | 4 | 4 | 4 | 4 |  |  |  |  |
| 17 | RP740 | 2 | 17 | 17 | 17 | 17 | - | 4 | 4 | 4 | 4 | 4 |  |  |  |
| 18 | RP748 | 2 | 18 | 18 | 18 | 18 | - | 4 | 4 | 4 | 4 | 4 | 4 |  |  |
| 19 | RP756 | 2 | 19 | 19 | 19 | 19 | - | 4 | 4 | 4 | 4 | 4 | 4 | 4 |  |
| 20 | RP764 | 2 | 20 | 20 | 20 | 20 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 21 | FR7000LED | 3 | 21 | 21 | 21 | 21 | - | 5 |  |  |  |  |  |  |  |
| 22 | FR7024LED | 3 | 22 | 22 | 22 | 22 | - | 5 | 10 |  |  |  |  |  |  |
| 23 | FR7048LED | 3 | 23 | 23 | 23 | 23 | 7 | 5 | 10 | 10 |  |  |  |  |  |
| 24 | FR7072LED | 3 | 24 | 24 | 24 | 24 | 12 | 5 | 10 | 10 | 10 |  |  |  |  |
| 25 | FR7096LED | 3 | 25 | 25 | 25 | 25 | - | 5 | 10 | 10 | 10 | 10 |  |  |  |
| 26 | FR7120LED | 3 | 26 | 26 | 26 | 26 | - | 5 | 10 | 10 | 10 | 10 | 10 |  |  |
| 27 | FR7144LED | 3 | 27 | 27 | 27 | 27 | - | 5 | 10 | 10 | 10 | 10 | 10 | 10 |  |
| 28 | FR7168LED | 3 | 28 | 28 | 28 | 28 | 13 | 5 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 29 | RP7024LED | 4 | 29 | 29 | 29 | 29 | - | 10 |  |  |  |  |  |  |  |
| 30 | RP7048LED | 4 | 30 | 30 | 30 | 30 | - | 10 | 10 |  |  |  |  |  |  |
| 31 | RP7072LED | 4 | 31 | 31 | 31 | 31 | 5 | 10 | 10 | 10 |  |  |  |  |  |
| 32 | RP7096LED | 4 | 32 | 32 | 32 | 32 | 8 | 10 | 10 | 10 | 10 |  |  |  |  |
| 33 | RP7120LED | 4 | 33 | 33 | 33 | 33 | - | 10 | 10 | 10 | 10 | 10 |  |  |  |
| 34 | RP7144LED | 4 | 34 | 34 | 34 | 34 | - | 10 | 10 | 10 | 10 | 10 | 10 |  |  |
| 35 | RP7168LED | 4 | 35 | 35 | 35 | 35 | - | 10 | 10 | 10 | 10 | 10 | 10 | 10 |  |
| 36 | RP7192LED | 4 | 36 | 36 | 36 | 36 | 9 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Product** | | **LON CFG** | **LON CONFIG** | | | | | **Slot** | | | | | | | |
| **FP 780** | **FEP 780** | **FP- 780**  **VdS** | **EP- 780** | **FP- 2000** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 37 | FEP700 | 5 | - | 1 | - | - | - | 1 | 2 | 7 |  |  |  |  |  |
| 38 | FEP708 | 5 | - | 2 | - | - | - | 1 | 2 | 7 | 6 |  |  |  |  |
| 39 | FEP716 | 5 | - | 3 | - | - | - | 1 | 2 | 7 | 6 | 6 |  |  |  |
| 40 | FEP724 | 5 | - | 4 | - | - | - | 1 | 2 | 7 | 6 | 6 | 6 |  |  |
| 41 | FEP732 | 5 | - | 5 | - | - | - | 1 | 2 | 7 | 6 | 6 | 6 | 6 |  |
| 42 | FEP740 | 5 | - | 6 | - | - | - | 1 | 2 | 7 | 6 | 6 | 6 | 6 | 6 |
| 43 | FER700 | 11 | - | 7 | - | - | - | 1 | 2 | 7 |  |  |  |  |  |
| 44 | FER708 | 11 | - | 8 | - | - | - | 1 | 2 | 7 | 6 |  |  |  |  |
| 45 | FER716 | 11 | - | 9 | - | - | - | 1 | 2 | 7 | 6 | 6 |  |  |  |
| 46 | FER724 | 11 | - | 10 | - | - | - | 1 | 2 | 7 | 6 | 6 | 6 |  |  |
| 47 | FER732 | 11 | - | 11 | - | - | - | 1 | 2 | 7 | 6 | 6 | 6 | 6 |  |
| 48 | FER740 | 11 | - | 12 | - | - | - | 1 | 2 | 7 | 6 | 6 | 6 | 6 | 6 |
| 49 | REP708 | 6 | - | 45 | - | 45 | - | 6 |  |  |  |  |  |  |  |
| 50 | REP716 | 6 | - | 46 | - | 46 | - | 6 | 6 |  |  |  |  |  |  |
| 51 | REP724 | 6 | - | 47 | - | 47 | - | 6 | 6 | 6 |  |  |  |  |  |
| 52 | REP732 | 6 | - | 48 | - | 48 | - | 6 | 6 | 6 | 6 |  |  |  |  |
| 53 | REP740 | 6 | - | 49 | - | 49 | - | 6 | 6 | 6 | 6 | 6 |  |  |  |
| 54 | REP748 | 6 | - | 50 | - | 50 | - | 6 | 6 | 6 | 6 | 6 | 6 |  |  |
| 55 | REP756 | 6 | - | 51 | - | 51 | - | 6 | 6 | 6 | 6 | 6 | 6 | 6 |  |
| 56 | REP764 | 6 | - | 52 | - | 52 | - | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 57 | EP700 | 7 | - | - | - | 1 | - |  |  |  |  |  |  |  |  |
| 58 | EP708 | 7 | - | - | - | 2 | - |  |  |  |  |  |  |  |  |
| 59 | EP716 | 7 | - | - | - | 3 | - |  |  |  |  |  |  |  |  |
| 60 | EP724 | 7 | - | - | - | 4 | - |  |  |  |  |  |  |  |  |
| 61 | EP732 | 7 | - | - | - | 5 | - |  |  |  |  |  |  |  |  |
| 62 | EP740 | 7 | - | - | - | 6 | - |  |  |  |  |  |  |  |  |
| 63 | ER700 | 12 | - | - | - | 7 | - |  |  |  |  |  |  |  |  |
| 64 | ER708 | 12 | - | - | - | 8 | - |  |  |  |  |  |  |  |  |
| 65 | ER716 | 12 | - | - | - | 9 | - |  |  |  |  |  |  |  |  |
| 66 | ER724 | 12 | - | - | - | 10 | - |  |  |  |  |  |  |  |  |
| 67 | ER732 | 12 | - | - | - | 11 | - |  |  |  |  |  |  |  |  |
| 68 | ER740 | 12 | - | - | - | 12 | - |  |  |  |  |  |  |  |  |
| 69 | FP780VDS | 8 | - | - | 1 | - | - | 9 | 2 | 8 |  |  |  |  |  |
| 70 | FP708VDS | 8 | - | - | 2 | - | - | 9 | 2 | 8 | 4 |  |  |  |  |
| 71 | FP716VDS | 8 | - | - | 3 | - | - | 9 | 2 | 8 | 4 | 4 |  |  |  |
| 72 | FP724VDS | 8 | - | - | 4 | - | - | 9 | 2 | 8 | 4 | 4 | 4 |  |  |
| 73 | FP732VDS | 8 | - | - | 5 | - | - | 9 | 2 | 8 | 4 | 4 | 4 | 4 |  |
| 74 | FP740VDS | 8 | - | - | 6 | - | - | 9 | 2 | 8 | 4 | 4 | 4 | 4 | 4 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Product** | | **LON CONFIG** | **FP 780** | **FEP 780** | **FP- 780**  **VdS** | **EP- 780** | **FP- 2000** | **Slot** | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Product** | | **LON CFG** | **LON CONFIG** | | | | | **Slot** | | | | | | | |
| **FP 780** | **FEP 780** | **FP- 780**  **VdS** | **EP- 780** | **FP- 2000** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 75 | FR700VDS | 13 | - | - | 7 | - | - | 9 | 2 | 8 |  |  |  |  |  |
| 76 | FR708VDS | 13 | - | - | 8 | - | - | 9 | 2 | 8 | 4 |  |  |  |  |
| 77 | FR716VDS | 13 | - | - | 9 | - | - | 9 | 2 | 8 | 4 | 4 |  |  |  |
| 78 | FR724VDS | 13 | - | - | 10 | - | - | 9 | 2 | 8 | 4 | 4 | 4 |  |  |
| 79 | FR732VDS | 13 | - | - | 11 | - | - | 9 | 2 | 8 | 4 | 4 | 4 | 4 |  |
| 80 | FR740VDS | 13 | - | - | 12 | - | - | 9 | 2 | 8 | 4 | 4 | 4 | 4 | 4 |
| 81 | FR700LED | 9 | 37 | 37 | 37 | 37 | - | 5 |  |  |  |  |  |  |  |
| 82 | FR708LED | 9 | 38 | 38 | 38 | 38 | - | 5 | 4 |  |  |  |  |  |  |
| 83 | FR716LED | 9 | 39 | 39 | 39 | 39 | 6 | 5 | 4 | 4 |  |  |  |  |  |
| 84 | FR724LED | 9 | 40 | 40 | 40 | 40 | 10 | 5 | 4 | 4 | 4 |  |  |  |  |
| 85 | FR732LED | 9 | 41 | 41 | 41 | 41 | - | 5 | 4 | 4 | 4 | 4 |  |  |  |
| 86 | FR740LED | 9 | 42 | 42 | 42 | 42 | - | 5 | 4 | 4 | 4 | 4 | 4 |  |  |
| 87 | FR748LED | 9 | 43 | 43 | 43 | 43 | - | 5 | 4 | 4 | 4 | 4 | 4 | 4 |  |
| 88 | FR756LED | 9 | 44 | 44 | 44 | 44 | 11 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

Where the value in the field **Slot** indicates the front sub-module type:

|  |  |
| --- | --- |
| 0 | - |
| 1 | GI700 |
| 2 | CIC700 or CI700 |
| 3 | CB700 |
| 4 | ZE708 |
| 5 | CI700LED |
| 6 | GE708 |
| 7 | CB700FEP |
| 8 | CB700VDS |
| 9 | GI700VDS |
| 10 | ZE724 |

###### LON DEVICE MODE

Length: Byte

Range: 0...3

Description: A byte that indicates the mode of the LON device.

See also the descriptions of the LON DEVICE PAR and LON DEVICE OUT parameters.

|  |  |  |
| --- | --- | --- |
| **LON DEVICE MODE** | **FP2000** | **FP780** |
| 0 | Input / Output | Input / Output |
| 1 | Zone repeater | Zone repeater |
| 2 | Device repeater | Area repeater |
| 3 | Input / Output | None |

FP2000:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module** | **Outputs** | | | | **Inputs** | | **Text Re- peater** | **Common Indication** |
| **Outputs** | **Zone Repeater** | **Device Repeater** | **Area Re- peater** | **Inputs** | **Zones** |
| SD700 | Yes | - | - | - | Yes | - | - | - |
| VDS700 | Yes | - | - | - | Yes | - | - | - |
| SOB708 | Yes | Yes | Yes | Yes | - | - | - | - |
| OCB724 | Yes | Yes | Yes | Yes | - | - | - | - |
| RB708 | Yes | Yes | Yes | Yes | - | - | - | - |
| ZI708 | - | - | - | - | Yes | Yes | - | - |
| ZI708N | - | - | - | - | Yes | Yes | - | - |
| SIB716 | - | - | - | - | Yes | - | - | - |
| FM740 | Yes | Yes | Yes | Yes | Yes | - | - | Yes |
| FBP700 | - | - | - | - | - | - | Yes | Yes |
| FRL700 | - | - | - | - | - | - | Yes | Yes |
| FRD700 | - | - | - | - | - | - | Yes | Yes |
| FP780 | - | Yes | - | - | - | - | - | Yes |
| FR700 | - | Yes | - | - | - | - | - | Yes |
| FEP700 | - | Yes | - | - | - | - | - | Yes |
| FER700 | - | Yes | - | - | - | - | - | Yes |
| EP700 | - | Yes | - | - | - | - | - | Yes |
| ER700 | - | Yes | - | - | - | - | - | Yes |
| FP780VDS | - | Yes | - | - | - | - | - | Yes |
| FR700VDS | - | Yes | - | - | - | - | - | Yes |
| FR700LED | - | Yes | - | - | - | - | - | Yes |
| FR7000LED | - | Yes | - | - | - | - | - | Yes |
| RP700LED | - | Yes | Yes | Yes | - | - | - | - |
| RP7000LED | - | Yes | Yes | Yes | - | - | - | - |
| REP700 | - | Yes | - | - | - | - | - | - |

FP780:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Module** | **I/O** | **Zone repeater** | **Area repeater** | **None** |
| FC700 | - | - | - | Default |
| FCD700 | - | Default | - | - |
| SD700 | Default | Yes | Yes | - |
| ZI708 | Yes | Default | - | - |
| PS700 | - | - | - | Default |
| SIB716 | Default | - | - | - |
| OCB724 | Default | Yes | Yes | - |
| SOB708 | Default | Yes | Yes | - |
| FM740 | Yes | Default | Yes | - |
| FBP700 | - | Default | - | - |
| RB708 | Default | Yes | Yes | - |
| VDS700 | Default | - | - | - |
| ZI708N | Yes | Default | - | - |
| NC771 | - | - | - | Default |

###### LON DEVICE COMMON

Length: Byte

Range: 0...1

Description: Enables or disables the common input and outputs where applicable. For LED repeaters it enables the indication of fire/fault information outside the selected zone range.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bit** | **Functionality** | | **FP2000** | **FP780** |
| 0 | Common I/O | 0: disabled | Used | Used |
| 1: enabled | Used | Used |
| 1 | - | - | - | - |
| 2 | Fire buzzer | 0: disabled | - | Used |
| 1: enabled | - | Used |
| 3 | Fault buzzer | 0: disabled | - | Used |
| 1: enabled | - | Used |
| 4 | Condition buzzer | 0: disabled | - | Used |
| 1: enabled | - | Used |
| 5 | - |  | - | - |
| 6 | - |  | - | - |
| 7 | - |  | - | - |

Default setting:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Module** | **Product** | | **FP2000** | **FP780** |
| FCD700 | 1 | FP700 … FP740 | Disabled | Enabled |
| 2 | RP708LED … RP764LED | Disabled |
| 3 | FR7000LED … RP7169LED | Enabled |
| 4 | RP7024LED … RP7192LED | Disabled |
| 5 | FEP700 … FEP740 | Enabled |
| 6 | REP708 … REP740 | Disabled |
| 7 | EP700 … EP740 | Enabled |
| 8 | FP700VDS … FP740VDS | Enabled |
| 9 | FR700LED … FR756LED | Enabled |
| 10 | FR700 … FR740 | Enabled |
| 11 | FER700 … FER740 | Enabled |
| 12 | ER700 … ER732 | Enabled |
| 13 | FR700VDS … FR740VDS | Enabled |
| FRL700,  FBP700, FRD700 | - | | Disabled | Enabled |
| FM740 | - | | Enabled | Enabled |

###### LON DEVICE PAR (1...13)

Length: Byte

Description: Configuration parameters for the LON device. The meaning of the parameters is dependent on the LON DEVICE MODE.

The following table describes the relation between the LON DEVICE MODE and it’s configuration parameters:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Zone repeater or Zone input** | **Device Repeater (FP2000 only)** | **Input / Output** | **Area Repeater** |
| LON DEVICE PAR 1 | ZONE START | 1st start address LOOP | 0 | AREA START |
| LON DEVICE PAR 2 | ZONES | 1st start address SENSOR | 0 | AREAS |
| LON DEVICE PAR 3 | ZONE OPERATING MODE | 1st number of SENSORS | 0 | 0 |
| LON DEVICE PAR 4 | 0 | 2nd start address LOOP | 0 | 0 |
| LON DEVICE PAR 5 | 0 | 2nd start address SENSOR | 0 | 0 |
| LON DEVICE PAR 6 | 0 | 2nd number of SENSORS | 0 | 0 |
| LON DEVICE PAR 7 | 0 | 3rd start address LOOP | 0 | 0 |
| LON DEVICE PAR 8 | 0 | 3rd start address SENSOR | 0 | 0 |
| LON DEVICE PAR 9 | 0 | 3rd number of SENSORS | 0 | 0 |
| LON DEVICE PAR 10 | Start of I/O | Start of I/O | 0 | Start of I/O |
| LON DEVICE PAR 11 | 0 | 1st PANEL ID  (See message 14) | 0 | 0 |
| LON DEVICE PAR 12 | 0 | 2nd PANEL ID  (See message 14) | 0 | 0 |
| LON DEVICE PAR 13 | 0 | 3rd PANEL ID  (See message 14) | 0 | 0 |

The following FP780 modules are supported:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **LON TYPE** | **Common I/O enabled** | | **Common I/O disabled** | |
| **LON INPUTS** | **LON OUTPUTS** | **LON INPUTS** | **LON OUTPUTS** |
| FC700 | - | - | - | - |
| FCD700 | - | - | - | - |
| SD700 | 1…5: Sup. Prog | 1-2: Non-Sup.  Prog.  3-5: Sup.  Prog. | 1…5: Sup. Prog | 1-2: Non-Sup.  Prog.  3-5: Sup.  Prog. |
| ZI708 | 1…X: Sup. Zone  X+1…8: Sup. Prog | - | 1…X: Sup. Zone  X+1…8: Sup. Prog |  |
| PS700 | - | - | - | - |
| SIB716 | 1...16: Sup.  Prog. | - | 1...16: Sup.  Prog. | - |
| OCB724 | - | 1…24: Sup. Prog | - | 1…24: Sup. Prog |
| SOB708 | - | 1…8: Sup. Prog | - | 1…8: Sup. Prog |
| FM740 | 1...5: Non-Sup.  1: Reset  2: Silence Buzzer  3: LED Test  4: Sounder Start/Stop  5: Key Switch | 1…94: Non-Sup. 1…80: Prog.  81: Fire  82: Fault  83: Disable  84: Sounder  85: Comms.  Fault  86: Prog.  87: Prog.  88: Running  89: Fault  90: Prog.  91: Prog.  92: Prog.  93: Prog.  94: Buzzer | 1...5: Non-Sup.  1: Prog.  2: Prog.  3: Prog.  4: Prog.  5: Prog. | 1…94: Non-Sup. 1…80: Prog.  81: Prog.  82: Fault  83: Prog.  84: Prog.  85: Prog.  86: Prog.  87: Prog.  88: Running  89: Fault  90: Prog.  91: Prog.  92: Prog.  93: Prog.  94: Buzzer |
| FBP700 | - | - | - | - |
| RB708 | - | 1…8: Non-Sup.  Prog. | - | 1…8: Non-Sup.  Prog. |
| VDS700 | - | - | - | - |
| ZI708N | 1…X: Sup. Zone X+1…8: Sup. Prog | - | 1…X: Sup. Zone X+1…8: Sup. Prog | - |
| NC771 | - | - | - | - |

###### ZONE OPERATING MODE

Length: Byte

Range: FP2000: 0...255

FP780: 0

Description: A byte indicating the operating mode for 8 zones. Bit 0 relates to the 1st zone, bit 7 to the 8th zone. This byte is only valid for the FP2000.

|  |  |  |
| --- | --- | --- |
| **Bits** | **FP2000** | **FP780** |
| 0 | 0: MCP mode | - |
| 1: Automatic mode | - |
| 1…7 | - | - |

###### LON DEVICE OUT (1...5)

Length: Byte

Range: 1...128

Description: Parameters for mapping the LON device outputs onto the related Panel status (dependant on the LON DEVICE MODE). An output parameter determines the first LON device output assigned to the output parameter’s specific status; for example the status of four zones will occupy the first 20 outputs of a zone repeater current loop device if:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OUT** | | **Outputs** | **Zone** | **Allocation** |
| OUT 1 | 1 | 1…4 | 1…4 | Fire |
| OUT 2 | 5 | 5…8 | 1…4 | Fault |
| OUT 3 | 9 | 9…12 | 1…4 | Condition |
| OUT 4 | 13 | 13…16 | 1…4 | Test |
| OUT 5 | 17 | 17…20 | 1…4 | Isolated |

Output parameters containing the same offset, the LON device will “or” the status values of those parameters. The following table describes the relation between the LON DEVICE MODE and it’s output configuration:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Zone repeater** | **Device Repeater (FP2000 only)** | **Input / Output** | **Area repeater** |
| LON DEVICE OUT 1 | Fire | Fire | 0 | Fire |
| LON DEVICE OUT 2 | Fault | Fault | 0 | Fault |
| LON DEVICE OUT 3 | Condition | Condition | 0 | Condition |
| LON DEVICE OUT 4 | Test | Test | 0 | Test |
| LON DEVICE OUT 5 | Isolated | Isolated | 0 | Isolated |

###### LON INPUT MASK (1...3)

Length: Byte

Range: 0…255

Description: Mask that enables/disables input fault reporting. If an input is masked the “open circuit” state is interpreted as “passive state” and the “short circuit state” as “active state”. Each bit masks an input. Bit0 of LON INPUT MASK 1 represents input 1.

Bit = 0: Input supervision enabled Bit = 1: Input supervision disabled

|  |  |  |  |
| --- | --- | --- | --- |
| **LON TYPE** | **Maskable Inputs** | | |
| **Total** | **Start** | **Stop** |
| SD700 | 5 | 1 | 5 |
| ZI708 | 8 | 1 | 8 |
| SIB716 | 16 | 1 | 16 |
| VDS700 | ? | ? | ? |
| ZI708N | 8 | 1 | 8 |

###### LON OUTPUT MASK (1 3)

Length: Byte

Range: 0…255

Description: Mask that enables/disables output fault reporting. If an output is masked the “open circuit” state is interpreted as “passive state” and the “short circuit state” as “active state”. Each bit masks an input. Bit0 of LON OUTPUT MASK 1 represents output 1.

Bit = 0: Output supervision enabled Bit = 1: Output supervision disabled

|  |  |  |  |
| --- | --- | --- | --- |
| **LON TYPE** | **Maskable Outputs** | | |
| **Total** | **Start** | **Stop** |
| SD700 | 3 | 3 | 5 |
| OCB724 | 24 | 1 | 24 |
| SOB708 | 8 | 1 | 8 |
| VDS700 | ? | ? | ? |

**LON TEXT** (FP780 only)

Length: FP780: 1 21 bytes

Where: Byte 0: Length of string (0 n, n<(Length-1))

Bytes 1...n: String (if n > 0)

###### ZONE START

Length: Byte

Range: 0, START ZONE … END ZONE (see command 6) Description: Indicates the first zone.

###### ZONES

Length: Byte

Range: 0…END ZONE-START ZONE + 1 (see command 6) Description: Number of zones. Has to be within zone range.

**AREA START** (see command 6, AREAS)

**AREAS** (see command 6, AREAS)

**SENSOR** (see command 6, SENSORS)

**SENSORS** (see command 6, SENSORS)

##### Loop Test Data (75, 4bh)

Test 0:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 75 | 75 | - | 203 | - | 75 | - |
| 1 | LOOP TEST | Yes | - | Yes | - | Yes | - |
| 2 | LOOP TEST PARAMETER | Yes | - | - | - | Yes | - |
| 3 | LOOP TEST DELAY | Yes | - | - | - | Yes | - |
| 4-51 | 0 | Yes | - | - | - | Yes | - |

Tests 1...5:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 75 | 75 | - | 203 | - | 75 | - |
| 1 | LOOP TEST | Yes | - | Yes | - | Yes | - |
| 2 | LOOP TEST PARAMETER | Yes | - | - | - | Yes | - |
| 3 | LOOP TEST DELAY | Yes | - | - | - | Yes | - |
| 4 | LOOP (1) | - | - | - | - | Yes | - |
| 5 | SENSORS ON A SIDE (1) | - | - | - | - | Yes |  |
| 6 | SENSORS ON B SIDE (1) | - | - | - | - | Yes |  |
| 7 | SENSORS ON BOTH SIDES (1) | - | - | - | - | Yes |  |
| 8 | OVERLOAD ON A SIDE (1) | - | - | - | - | Yes |  |
| 9 | OVERLOAD ON B SIDE (1) | - | - | - | - | Yes |  |
| 10 | LOOP (2) | - | - | - | - | Yes |  |
| 11 | SENSORS ON A SIDE (2) | - | - | - | - | Yes |  |
| 12 | SENSORS ON B SIDE (2) | - | - | - | - | Yes |  |
| 13 | SENSORS ON BOTH SIDES (2) | - | - | - | - | Yes |  |
| 14 | OVERLOAD ON A SIDE (2) | - | - | - | - | Yes |  |
| 15 | OVERLOAD ON B SIDE (2) | - | - | - | - | Yes |  |
| 16 | LOOP (3) | - | - | - | - | Yes |  |
| 17 | SENSORS ON A SIDE (3) | - | - | - | - | Yes |  |
| 18 | SENSORS ON B SIDE (3) | - | - | - | - | Yes |  |
| 19 | SENSORS ON BOTH SIDES (3) | - | - | - | - | Yes |  |
| 20 | OVERLOAD ON A SIDE (3) | - | - | - | - | Yes |  |
| 21 | OVERLOAD ON B SIDE (3) | - | - | - | - | Yes |  |
| 22 | LOOP (4) | - | - | - | - | Yes |  |
| 23 | SENSORS ON A SIDE (4) | - | - | - | - | Yes |  |
| 24 | SENSORS ON B SIDE (4) | - | - | - | - | Yes |  |
| 25 | SENSORS ON BOTH SIDES (4) | - | - | - | - | Yes |  |
| 26 | OVERLOAD ON A SIDE (4) | - | - | - | - | Yes |  |
| 27 | OVERLOAD ON B SIDE (4) | - | - | - | - | Yes |  |
| 28 | LOOP (5) | - | - | - | - | Yes |  |
| 29 | SENSORS ON A SIDE (5) | - | - | - | - | Yes |  |
| 30 | SENSORS ON B SIDE (5) | - | - | - | - | Yes |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 31 | SENSORS ON BOTH SIDES (5) | - | - | - | - | Yes |  |
| 32 | OVERLOAD ON A SIDE (5) | - | - | - | - | Yes |  |

Tests 1...5 (continued):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 33 | OVERLOAD ON B SIDE (5) | - | - | - | - | Yes |  |
| 34 | LOOP (6) | - | - | - | - | Yes |  |
| 35 | SENSORS ON A SIDE (6) | - | - | - | - | Yes |  |
| 36 | SENSORS ON B SIDE (6) | - | - | - | - | Yes |  |
| 37 | SENSORS ON BOTH SIDES (6) | - | - | - | - | Yes |  |
| 38 | OVERLOAD ON A SIDE (6) | - | - | - | - | Yes |  |
| 39 | OVERLOAD ON B SIDE (6) | - | - | - | - | Yes |  |
| 40 | LOOP (7) | - | - | - | - | Yes |  |
| 41 | SENSORS ON A SIDE (7) | - | - | - | - | Yes |  |
| 42 | SENSORS ON B SIDE (7) | - | - | - | - | Yes |  |
| 43 | SENSORS ON BOTH SIDES (7) | - | - | - | - | Yes |  |
| 44 | OVERLOAD ON A SIDE (7) | - | - | - | - | Yes |  |
| 45 | OVERLOAD ON B SIDE (7) | - | - | - | - | Yes |  |
| 46 | LOOP (8) | - | - | - | - | Yes |  |
| 47 | SENSORS ON A SIDE (8) | - | - | - | - | Yes |  |
| 48 | SENSORS ON B SIDE (8) | - | - | - | - | Yes |  |
| 48 | SENSORS ON BOTH SIDES (8) | - | - | - | - | Yes |  |
| 50 | OVERLOAD ON A SIDE (8) | - | - | - | - | Yes |  |
| 51 | OVERLOAD ON B SIDE (8) | - | - | - | - | Yes |  |

Tests 6...8:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | | **Request** | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 75 | 75 | - | 203 | - | 75 | - |
| 1 | LOOP TEST | Yes | - | Yes | - | Yes | - |
| 2 | LOOP TEST PARAMETER | Yes | - | - | - | Yes | - |
| 3 | LOOP TEST DELAY | Yes | - | - | - | Yes | - |
| 4 | LOOP (1) | - | - | - | - | Yes | - |
| 5 | SENSOR VALUE (1) | - | - | - | - | Yes |  |
| 6 | SENSOR FIELD TYPE (1) | - | - | - | - | Yes |  |
| 7 | SENSOR (1) | - | - | - | - | Yes |  |
| 8 | SENSOR ALARM STATE (1) | - | - | - | - | Yes |  |
| 9 | SENSOR CHECKSUM (1) | - | - | - | - | Yes |  |
| 10 | LOOP (2) | - | - | - | - | Yes |  |
| 11 | SENSOR VALUE (2) | - | - | - | - | Yes |  |
| 12 | SENSOR FIELD TYPE (2) | - | - | - | - | Yes |  |
| 13 | SENSOR (2) | - | - | - | - | Yes |  |
| 14 | SENSOR ALARM STATE (2) | - | - | - | - | Yes |  |
| 15 | SENSOR CHECKSUM (2) | - | - | - | - | Yes |  |
| 16 | LOOP (3) | - | - | - | - | Yes |  |
| 17 | SENSOR VALUE (3) | - | - | - | - | Yes |  |
| 18 | SENSOR FIELD TYPE (3) | - | - | - | - | Yes |  |
| 19 | SENSOR (3) | - | - | - | - | Yes |  |
| 20 | SENSOR ALARM STATE (3) | - | - | - | - | Yes |  |
| 21 | SENSOR CHECKSUM (3) | - | - | - | - | Yes |  |
| 22 | LOOP (4) | - | - | - | - | Yes |  |
| 23 | SENSOR VALUE (4) | - | - | - | - | Yes |  |
| 24 | SENSOR FIELD TYPE (4) | - | - | - | - | Yes |  |
| 25 | SENSOR (4) | - | - | - | - | Yes |  |
| 26 | SENSOR ALARM STATE (4) | - | - | - | - | Yes |  |
| 27 | SENSOR CHECKSUM (4) | - | - | - | - | Yes |  |
| 28 | LOOP (5) | - | - | - | - | Yes |  |
| 29 | SENSOR VALUE (5) | - | - | - | - | Yes |  |
| 30 | SENSOR FIELD TYPE (5) | - | - | - | - | Yes |  |
| 31 | SENSOR (5) | - | - | - | - | Yes |  |
| 32 | SENSOR ALARM STATE (5) | - | - | - | - | Yes |  |
| 33 | SENSOR CHECKSUM (5) | - | - | - | - | Yes |  |
| 34 | LOOP (6) | - | - | - | - | Yes |  |
| 35 | SENSOR VALUE (6) | - | - | - | - | Yes |  |
| 36 | SENSOR FIELD TYPE (6) | - | - | - | - | Yes |  |
| 37 | SENSOR (6) | - | - | - | - | Yes |  |
| 38 | SENSOR ALARM STATE (6) | - | - | - | - | Yes |  |
| 39 | SENSOR CHECKSUM (6) | - | - | - | - | Yes |  |
| 40 | LOOP (7) | - | - | - | - | Yes |  |

41

SENSOR VALUE (7)

-

-

-

-

Yes

Tests 6...8 (continued):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | | **Control** | **Request** | | | **Response** | |
|  |  | | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 42 | SENSOR FIELD TYPE (7) | | - | - | - | - | Yes |  |
| 43 | SENSOR (7) | | - | - | - | - | Yes |  |
| 44 | SENSOR ALARM STATE (7) | | - | - | - | - | Yes |  |
| 45 | SENSOR CHECKSUM (7) | | - | - | - | - | Yes |  |
| 46 | LOOP (8) | | - | - | - | - | Yes |  |
| 47 | SENSOR VALUE (8) | | - | - | - | - | Yes |  |
| 48 | SENSOR FIELD TYPE (8) | | - | - | - | - | Yes |  |
| 48 | SENSOR | (8) | - | - | - | - | Yes |  |
| 50 | SENSOR ALARM STATE (8) | | - | - | - | - | Yes |  |
| 51 | SENSOR CHECKSUM (8) | | - | - | - | - | Yes |  |

Test 9…11:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 75 | 75 | - | 203 | - | 75 | - |
| 1 | LOOP TEST | Yes | - | Yes | - | Yes | - |
| 2 | LOOP TEST PARAMETER | Yes | - | - | - | Yes | - |
| 3 | LOOP TEST DELAY | Yes | - | - | - | Yes | - |
| 4-51 | 0 | Yes | - | - | - | Yes | - |

Test 0, 12…23:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 75 | 75 | - | 203 | - | 75 | - |
| 1 | PRODUCTION TEST | - Yes | | | - | Yes | - |
| 2 | TEST PARAMETER 1 | - Yes | | | - | Yes | - |
| 3 | TEST PARAMETER 2 | - Yes | | | - | - | - |
| 3 | RESULT 1 |  | - | - | - | Yes | - |
| 4 | RESULT 2 | - | | |  | Yes |  |
| 4…128 | TEXT | - | | |  | Yes |  |

###### LOOP TEST

Length: Byte

Range: 0...11

Description: Loop test:

|  |  |  |
| --- | --- | --- |
| **LOOP TEST** | **FP2000** | **FP780** |
| 0 | Exit loop text | - |
| 1 | General loop test | - |
| 2 | Overload | - |
| 3 | All sensors A side | - |
| 4 | All sensors B side | - |
| 5 | All sensors A+B side | - |
| 6 | Single sensors A side | - |
| 7 | Single sensors B side | - |
| 8 | Single sensors A+B side | - |
| 9 | Power A side | - |
| 10 | Power B side | - |
| 11 | Power A+B side | - |

###### LOOP TEST PARAMETER

Length: Byte

Range: 0…255

Description: Additional test data depending on test.

|  |  |  |
| --- | --- | --- |
| **LOOP TEST** | **FP2000** | **FP780** |
| 0 | - |  |
| 1 | - |  |
| 2 | - |  |
| 3 | - |  |
| 4 | - |  |
| 5 | - |  |
| 6 | Sensor Address (see command 7) |  |
| 7 | Sensor Address (see command 7) |  |
| 8 | Sensor Address (see command 7) |  |
| 9 | LOOP MASK |  |
| 10 | LOOP MASK |  |
| 11 | LOOP MASK |  |

###### LOOP MASK

Length: Byte

Range: 0…255

Description: Loop mask:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | Loop 1 |  |
| 1 | Loop 2 |  |
| 2 | Loop 3 |  |
| 3 | Loop 4 |  |
| 4 | Loop 5 |  |
| 5 | Loop 6 |  |
| 6 | Loop 7 |  |
| 7 | Loop 8 |  |

###### LOOP TEST DELAY

Length: Byte

Range: 0 1

Description: Switching delay.

|  |  |  |
| --- | --- | --- |
| **LOOP TEST DELAY** | **FP2000** | **FP780** |
| 0 | No delay | - |
| 1 | Standard delay | - |

###### LOOP (1 8)

Length: Byte

Range: 0 8

Description: Indicates loop number.

|  |  |  |
| --- | --- | --- |
| **LOOP** | **FP2000** | **FP780** |
| 0 | Not installed | - |
| 1…8 | Loop installed | - |

###### SENSORS ON A/B/BOTH SIDES (1 8)

Length: Byte

Range: (See command 7)

Description: Number of detectors the panel can see on each side of the loop driver.

###### SENSORS OVERLOAD ON A/B SIDE (1 8)

Length: Byte

Range: 0 1

Description: Indicates overload on each side of the loop driver.

|  |  |  |
| --- | --- | --- |
|  | **FP2000** | **FP780** |
| 0 | No overload | - |
| 1 | Overload | - |

###### SENSOR CHECKSUM

Length: Byte

Range: 0...255

Description: Not implemented

**SENSOR VALUE (see command 24) SENSOR FIELD TYPE (see command 24) SENSOR (see command 24) SENSOR ALARM STATE (see command 24)**

###### PRODUCTION TEST

Length: Byte

Range: 0, 12...23

Description: Loop test:

|  |  |  |
| --- | --- | --- |
| **PRODUCTION TEST** | **FP2000** | **FP780** |
| 0 | Enter/Exit Prod. Tests | - |
| 12 | Panel Lamp Test | - |
| 13 | Panel Key Test | - |
| 14 | Arc-net status | - |
| 15 | Switch Test | - |
| 16 | Battery Status | - |
| 17 | Mains Status | - |
| 18 | FEP Input Status | - |
| 19 | Input Status | - |
| 20 | Switch Output State | - |
| 21 | LCD Display | - |
| 22 | Loop Faults | - |
| 23 | Module List | - |

###### TEST PARAMETER 1

Length: Byte

Range: 0…255

Description: Additional test data depending on test.

|  |  |  |
| --- | --- | --- |
| **PRODUCTION TEST** | **FP2000** | **FP780** |
| 0 | 1=Enter Prod. Tests 0=Exit Prod. Tests | - |
| 12 | - | - |
| 13 | - | - |
| 14 | - | - |
| 15 | - | - |
| 16 | - | - |
| 17 | - | - |
| 18 | - | - |
| 19 | - | - |
| 20 | Output number (1…8) | - |
| 21 | - | - |
| 22 | - | - |
| 23 | - | - |

###### TEST PARAMETER 2

Length: Byte

Range: 0…255

Description: Additional test data depending on test.

|  |  |  |
| --- | --- | --- |
| **PRODUCTION TEST** | **FP2000** | **FP780** |
| 0 | Pin=222 | - |
| 12 | - | - |
| 13 | - | - |
| 14 | - | - |
| 15 | - | - |
| 16 | - | - |
| 17 | - | - |
| 18 | - | - |
| 19 | - | - |
| 20 | Output State (0...1) | - |
| 21 | - | - |
| 22 | - | - |
| 23 | - | - |

###### RETURN RESULT1

Length: Byte

Range: 0…255

Description: Additional test data depending on test.

|  |  |  |
| --- | --- | --- |
| **PRODUCTION TEST** | **FP2000** | **FP780** |
| 0 | 1=Enter Prod. Tests 0=Exit Prod. Tests | - |
| 12 | - | - |
| 13 | Depressed Key (Text) | - |
| 14 | Arc Status | - |
| 15 | Switch Status (0=normal) Bit 0: Tamper switch status  1: Memory lock status  2: Service switch status | - |
| 16 | Battery Status (0=normal) Bit 0: Battery disconnected  1: Low battery voltage | - |
| 17 | Main Status (0=normal) Bit 0: No Mains  1: Earth fault | - |
| 18 | FEP input Status (0=passive,  1=active,  2=open, 3=short) | - |

|  |  |  |
| --- | --- | --- |
|  | Bits 0,1: Input 1  Bits 2,3: Input 2  Bits 4,5: Input 3  Bits 6,7: Input 4 |  |
| 19 | Input Status (0=passive,  1=active, 2=open, 3=short)  Bits 0,1: Input 1  Bits 2,3: Input 2  Bits 4,5: Input 3  Bits 6,7: Input 4 | - |
| 20 | - | - |
| 21 | - | - |
| 22 | - | - |
| 23 | Module List (Text: 3 chars / module) | - |

###### RETURN RESULT2

Length: Byte

Range: 0…255

Description: Additional test data depending on test.

|  |  |  |
| --- | --- | --- |
| **PRODUCTION TEST** | **FP2000** | **FP780** |
| 0 | 1=Enter Prod. Tests 0=Exit Prod. Tests | - |
| 12 | - | - |
| 13 | Key Text (6 chars max) see table below | - |
| 14 | - | - |
| 15 | - | - |
| 16 | - | - |
| 17 |  | - |
| 18 | - | - |
| 19 | - | - |
| 20 | - | - |
| 21 | - | - |
| 22 | - | - |
| 23 | Module List (Text: 3 chars / module) see table below | - |

Key values and Texts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 48 | ‘0’ | 5 | ‘Alpha’ | 12 | ‘Dis’ |
| 49 | ‘1’ | 4 | ‘Print’ | 14 | ‘Test’ |
| 50 | ‘2’ | 2 | ‘Events’ | 15 | Snd’ |
| 51 | ‘3’ | 1 | ‘Scroll’ | 16 | SndDel’ |
| 52 | ‘4’ | 27 | ‘Delete’ | 17 | ‘SndDis’ |
| 53 | ‘5’ | 13 | ‘Enter’ | 18 | ‘SilSnd’ |
| 54 | ‘6’ | 26 | ‘Up’ | 19 | ‘FbDis’ |
| 55 | ‘7’ | 10 | ‘Down’ | 20 | ‘FbDel’ |
| 56 | ‘8’ | 8 | ‘Left’ | 22 | ‘FbStop’ |
| 57 | ‘9’ | 6 | ‘Right’ | 29 | ‘Panel’ |
|  |  | 9 | ‘SilBuz’ | 30 | ‘All’ |
|  |  | 11 | ‘Reset’ | 31 | ‘Fb’ |

Module Texts

|  |  |
| --- | --- |
| Zone board | ZON |
| Relay board | REL |
| Sounder boards | SND, SNB |
| Input board | INP |
| Display board | DEN |
| Loop boards | LPA, LPB |
| Supply boards | PSH, PSR, CH1, CH2 |
| FEP board | FEP |
| CPU board | HST |
| LCD board | LCD |
| Keyboard | KBD |
| LED board | LED |
| ARC board | ARC |
| VDS board | FSK |
| LON board | LON |
| Dongle boards | KEY1, KEY2,…,KEY8 |

##### Pager Configuration Data (76, 4ch)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 76 | 76 | - | 204 | - | 76 | - |
| 1 | PAGER | Yes | - | Yes | - | Yes | - |
| 2…9 | ADDRESS | Yes | - | - | - | Yes | - |
| +1 | BEEP CODE | Yes | - | - | - | Yes | - |
| +2 | CALL TYPE | Yes | - | - | - | Yes | - |
| +3 | NUMBER OF TRANSITIONS | Yes | - | - | - | Yes | - |
| +4 | PAGER DISPLAY CHARACTERS | Yes | - | - | - | Yes | - |
| +5 | MESSAGE TYPE | Yes | - | - | - | Yes | - |
| +6…+13 | GROUP-ID | Yes | - | - | - | Yes | - |

|  |  |  |
| --- | --- | --- |
| **PAGER** |  |  |
| Length: | Byte |
| Range: Description: | 1...32  Pager number |
| **ADDRESS** |  |
| Length: | 1…8 bytes  Where: Byte 0: | Length of string (0...n, n<(Length-1)) |
|  | Bytes 1...n: | String (if n > 0) |

Description: A string representing the pager address.

###### BEEP CODE

Length: Byte

Range: 0…9

Description: A number defining a pager system specific beep code.

###### CALL TYPE

Length: Byte

Range: 1…4

Description: Call type:

|  |  |  |
| --- | --- | --- |
| **CALL TYPE** | **FP2000** | **FP780** |
| 1 | Reset call | - |
| 2 | Speech call | - |
| 3 | Standard call | - |
| 4 | Alarm call | - |

###### NUMBER OF TRANSMISSIONS

Length: Byte

Range: 0…99

Description: The maximal number a message is transmitted if unacknowledged.

###### DISPLAY CHARACTERS

Length: Byte

Range: 5…128 (5, 16, 40, 128 default)

Description: The number of characters on the pager display.

###### MESSAGE TYPE

Length: Byte

Range: 0…2

Description: The type of event to be sent to pager.

|  |  |  |
| --- | --- | --- |
| **MESSAGE TYPE** | **FP2000** | **FP780** |
| 0 | Fire | - |
| 1 | Fault | - |
| 2 | Fire and fault | - |

|  |  |  |
| --- | --- | --- |
| **GROUP ID** |  | |
| Length: | 1…8 bytes  Where: Byte 0: | Length of string (0...n, n<(Length-1)) |
|  | Bytes 1...n: | String (if n > 0) |

Description: A string representing the pager group membership.

**Default Settings**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | System 1 | System 2 | System 3 | System 4 | System 5 | System 6 | System 7 | System 8 |
| BEEP CODE |  |  |  |  |  |  |  |  |
| CALL TYPE |  |  |  |  |  |  |  |  |
| NUMBER OF TRANSMISSIONS |  |  |  |  |  |  |  |  |
| DISPLAY CHARACTERS |  |  |  |  |  |  |  |  |
| MESSAGE TYPE |  |  |  |  |  |  |  |  |

##### Pager System Address (77/1, 4Dh/01h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 77 | 77 | - | 205 | - | 77 | - |
| 1 | 1 | 1 | - | 1 | - | 1 | - |
| 2…9 | PAGER SYSTEM ADDRESS | Yes | - | - | - | Yes | - |
| +1 | PANEL MODE | Yes | - | - | - | Yes | - |
| +2 | ZONE/AREA MODE | Yes | - | - | - | Yes | - |
| +3 | DEVICE MODE | Yes | - | - | - | Yes | - |

There is no setting for general fire or fault messages. They are always sent in the following format: Fire – [General Alarm] (General Alarm see message 27)

Fault – [General Alarm] (General Alarm see message 27)

###### PAGER SYSTEM ADDRESS

|  |  |  |
| --- | --- | --- |
| Length: | 1…8 bytes |  |
|  | Where: Byte 0:  Bytes 1...n: | Length of string (0...n, n<(Length-1))  String (if n > 0) |

Description: A string representing the pager system address.

###### PANEL MODE

Length: 1 Byte

Range: 0…1

Description: Defines the way the panel identification is sent to the pager system.

Parts of the string are dependant of the language setting.

|  |  |  |
| --- | --- | --- |
| **Panel Mode** | **Format** | **Description** |
| 0 | Disable | No panel information is sent |
| 1 | Enabled | Panel information is sent to pager system: Panel: P:xx  Global Repeater: G:xx Local Repeater: L:xx  Where: xx is the panel number |

###### ZONE/AREA MODE

Length: 1 Byte

Range: 0…3

Description: Defines the way the zone or area identification is sent to the pager system.

Area information is not sent in a device fire/ fault message. Parts of the string are dependant of the language setting.

|  |  |  |
| --- | --- | --- |
| **Zone Mode** | **Format** | **Description** |
| 0 | Zone:xxx | Zone number is sent to pager system. Xxx is the zone number. |
| 1 | Zone text | Zone text is sent to pager system. See command 8 for text definition |
| 2 | Text-Z:xxx | Zone text and zone number are sent to pager system. See command 8 for text definition.  Xxx is the zone number. |
| 3 | Z:xxx | Abbreviated zone is sent to the pager system. Xxx is the zone number. |
| 4 | Z:xxx, none | Abbreviated zone is sent to the pager system in case of a zone fire. No information is sent to the pager system in case of a device fire.  Xxx is the zone number. |

###### DEVICE MODE

Length: 1 Byte

Range: 0…3

Description: Defines the way the device identification is sent to the pager system.

Parts of the string are dependant of the language setting.

|  |  |  |
| --- | --- | --- |
| **Sensor Mode** | **Format** | **FP2000** |
| 0 | Loop:x-Device:yyy | Loop number and device number are sent to pager system: x is the loop number.  Yyy is the device number. |
| 1 | Text1-Text2 | Device text is sent to pager system. See command 7 for text definition |
| 2 | Text1-Text-L:x-D:yyy | Device text, loop number and device number are sent to pager system.  See command 8 for text definition x is the loop number.  Yyy is the device number. |
| 3 | L:x-D:yyy | Abbreviated loop and device is sent to the pager system: x is the loop number.  Yyy is the device number. |

##### Language Text (77/2, 4Dh/02h)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data** | **Control** | **Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 77 | - | 77 | - | 205 | - | 77 |
| 1 | 2 | - | 2 | - | 2 | - | 2 |
| 2 | LANGUAGE SELECTION | - | - | - | Yes | - | Yes |
| 3,4 | TEXT NO. (hb, lb) | - | - | - | Yes | - | Yes |
| 5 | MAX. TEXT LENGTH | - | - | - | - | - | Yes |
| 6,7 | TEXT VERSION (hb, lb) | - | - | - | - | - | Yes |
| 8...49 | LANGUAGE TEXT | - | - | - | - | - | Yes |

###### LANGUAGE SELECTION

Length: Byte

Range: 0...8

Description: Specifies the language:

|  |  |  |
| --- | --- | --- |
| **LANGUAGE SELECTION** | **FP2000** | **FP780** |
| 0 | - | English |
| 1 | - | Dutch |
| 2 | - | German |
| 3 | - | Dutch (Belgium) |
| 4 | - | French (Belgium) |
| 5 | - | Italian |
| 6 | - | Portuguese |
| 7 | - | Swedish |
| 8 | - | Danish |

**TEXT NO.** (See command 6)

###### MAX. TEXT LENGTH

Length: Byte

Range: 0…40

Description: Specifies the maximal possible length of the word.

###### TEXT VERSION

Length: Word

Range: 0…FFFFh

Description: Specifies the version of the translation. If the uploaded text version is newer than the version in the library, the text needs to be translated.

###### LANGUAGE TEXT

|  |  |  |
| --- | --- | --- |
| Length: | 1...41 Bytes |  |
| Description: | Text string |  |
|  | Where: Byte 0: | Length (0...n) |

Bytes 1…n: String (if n > 0)

##### System Zone Data (78, 4Ehh)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Request | | | Response | |
|  |  | FP2000 | FP780 | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 78 | 78 | - | 206 | - | 78 | - |
| 1 | SUBADR | Yes | - | Yes | - | Yes | - |
| 2, 3 | SYSTEM ZONE (hb, lb) | Yes | - | Yes | - | Yes | - |
| 4 | PARAM 1 | Yes | - | Yes | - | Yes | - |
| 5 | PARAM 2 | Yes | - | - | - | Yes | - |
| 6 | PARAM 3 | - | - | - | - | Yes | - |

###### SUBADR

Length: Byte

Range: see table. Description:

|  |  |
| --- | --- |
| 1 | Test system for duplicate system zones |
| 2 | Find system zone |
| 3 | Find system zone and virtual address |
| 4 | Control system zone status |
| 5 | Control virtual sensor status |
| 6 | Get system zone status |
| 7 | Get virtual device status |
| 8 | Test for sensor fire(s) |
| 9 | System zone test status update |
| 10 | Clear zone test reports |
| 11 | Report isolated / test system zones status |
| 12 | Activate Investigation time |

###### SYSTEM ZONE

Length: Word

Range: 1…65535

Description: System zone.

###### PARAMS

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Param 1** | **Param 2** | **Param 3** |
| **Subadr 1** | Result |  |  |
| **Subadr 2** | Result |  |  |
| **Subadr 3** | Virtual address | Result |  |
| **Subadr 4** | Function |  |  |
| **Subadr 5** | Virtual address | Function |  |
| **Subadr 6** | Mode/ Status | Result |  |
| **Subadr 7** | Virtual address | Status | Result |
| **Subadr 8** | Result |  |  |
| **Subadr 9** | Virtual address | Status | Sensor Type |
| **Subadr 10** | Function |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Subadr 11** | Result |  |  |
| **Subadr 12** | Investigation time hi | Investigation time lo |  |

FUNCTION: Virtual sensor

|  |  |
| --- | --- |
| 0 | Disable sensor at virtual address |
| 1 | Enable sensor at virtual address |
| 3 | Soak test sensor at virtual address on |

System Zone

|  |  |
| --- | --- |
| 0 | Disable system zone |
| 1 | Enable system zone |
| 2 | System zone test off |
| 3 | System zone test on |

Clear Zone Test reports

|  |  |
| --- | --- |
| 0 | Clear all system zone reports |
| 1 | Clear specific system zone report |

STATUS:

|  |  |
| --- | --- |
| 0 | Disabled system zone or virtual device |
| 1 | Enabled system zone or virtual device |
| 2 | System Zone in test mode |
| 3 | Soak virtual device |

Zone test status

|  |  |
| --- | --- |
| 0...255 | Zone test byte |

MODE:

|  |  |
| --- | --- |
| 0 | System zone status |
| 1 | System zone test status |

RESULT:

|  |  |
| --- | --- |
| 0 | System zone or virtual address not found, no fire(s) |
| 1 | Valid system zone or valid virtual address, found fire(s) |
| 3 | Virtual device in soak |

RESULT: Report system zone status

|  |  |
| --- | --- |
| 0 | System zone iso |
| 1 | System zone test |
| 3 | Request |

Activate Investigation time

|  |  |
| --- | --- |
| 0 | Not used |
| 1…600 | Activates Investigation time |

**VIRTUAL ADDRESS**: 1…32

**INVESTIGATION TIME**: 0…600

##### LON Module Configuration (80/2, 50h/02h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 80 | 80 | 80 | 80 | 80 |
| 1 | 2 | 2 | 2 | 2 | 2 |
| 2 = P1 | MODULE IDENTIFICATION LENGTH (L1=41) | - | - | Yes | Yes |
| P1+1 | LON TYPE | - | - | Yes | Yes |
| P1+2 | MESSAGE NO. | - | - | Yes | Yes |
| P1+3 | MORE MESSAGES TO FOLLOW | - | - | Yes | Yes |
| P1+4... P1+9 | LON NEURON ID | - | - | Yes | Yes |
| P1+10... P1+17 | PROGRAM ID | - | - | Yes | Yes |
| P1+18…P1+19 | HARDWARE ID | - | - | Yes | Yes |
| P1+20…P1+21 | LON NODE ID | - | - | Yes | Yes |
| P1+22 | CONFIGURATION STATE | - | - | Yes | Yes |
| P1+23…P1+28 | LOCATION ID | - | - | Yes | Yes |
| P1+29…P1+36 | SECONDARY PROGRAM ID | - | - | Yes | Yes |
| P1+37…P1+38 | CLASS TYPE | - | - | Yes | Yes |
| P1+39…P1+40 | INSTANCE NO. | - | - | Yes | Yes |
| P1+41 | LON CONFIG | - | - | - | Yes |
| P2 = P1+L1+1 | LOCATION TEXT LENGTH (L2) | - | - | - | - |
| ... P2+L2 | LOCATION TEXT | - | - | - | - |
| P3 = P2+L2+1 | MODULE PROPERTIES LENGTH (L3) | - | - | - | - |
| ... P3+L3 | MODULE PROPERTIES | - | - | - | - |

###### MODULE IDENTIFICATION LENGTH

Length: Byte

Range: 40

Description: Length of 1st data set.

###### MESSAGE NO.

Length: Byte

Range: 0 255

Description: Specifies more messages of the same type to follow.

###### MORE MESSAGES TO FOLLOW

Length: Byte

Range: 1 255

Description: Sequence number of this message.

###### PROGRAM ID

Length: 8 Bytes

Range: 0…255

Description: Module program id:

|  |  |  |
| --- | --- | --- |
| **Byte** | **FP2000** | **FP780** |
| 0 | 99h | 99h |
| 1 | 0 | LON CONFIG (see command 74) |
| 2 | LON PC (see command 74) | LON PC (see command 74) |
| 3 | LON OEM (see command 74) | LON OEM (see command 74) |
| 4 | LON TYPE (MSB), LONHDW (see command 74) | LON TYPE (MSB), LONHDW (see command 74) |
| 5 | LON TYPE (LSB) (see command 74) | LON TYPE (LSB) (see command 74) |
| 6 | S/W major version | S/W major version |
| 7 | S/W minor version | S/W minor version |

###### HARDWARE ID

Length: 2 Bytes

Range: 0…255

Description: Hardware id:

|  |  |  |
| --- | --- | --- |
| **Byte** | **FP2000** | **FP780** |
| 0 | Model number | Model number |
| 1 | Firmware version | Firmware version |

###### CONFIGURATION STATE

Length: Bytes

Range: 0…255

Description: Hardware id:

|  |  |  |
| --- | --- | --- |
| **Bit** | **FP2000** | **FP780** |
| 0 | 0: Not configured | 0: Not configured |
|  | 1: Configured | 1: Configured |
| 1 | 0: Communication Error | 0: Communication Error |
|  | 1: Communication ok | 1: Communication ok |
| 2 | 0: Own domain | 0: Own domain |
|  | 1: Foreign domain | 1: Foreign domain |
| 3 | - | - |
| 4 | - | - |
| 5 | - | - |
| 6 | - | - |
| 7 | - | - |

###### LOCATION ID

Length: 6 Bytes

Range: 0…255

Description: Location id:

|  |  |  |
| --- | --- | --- |
| **Byte** | **FP2000** | **FP780** |
| 0 | Enclosure number | - |
| 1 | Container number | - |
| 2 | Container slot | - |
| 3 | - | - |
| 4 | - | - |
| 5 | - | - |

###### SECONDARY PROGRAM ID

Length: 8 Bytes

Range: 0…255

Description: Location id:

|  |  |  |
| --- | --- | --- |
| **Byte** | **FP2000** | **FP780** |
| 0 | - | - |
| 1 | Product code | |
| 0: FP780 | 0: FP780 |
| 1: FP2000 | 1: FP2000 |
| 2: PCU700 | 2: PCU700 |
| 3: PCC700 | 3: PCC700 |
| 4: FP780 | 4: FP780 |
| 2 | OEM | |
| 0: Generic | 0: Generic |
| 1: ARITECH | 1: ARITECH |
| 3 | - | - |
| 4 | - | - |
| 5 | 0…254: Boot loader version 255: invalid | 0…254: Boot loader version 255: invalid |
| 6 | S/W major version | S/W major version |
| 7 | S/W minor version | S/W minor version |

###### INSTANCE NO.

Length: 2 Bytes

Range: 0…255

Description: Identifies the packet sent.

**LON TYPE** (See command 74)

**LON NEURON ID** (See command 74)

**LON NODE ID** (See command 74)

**LON CONFIG** (See command 74)

##### Request LON Module Configuration (81/2, 51h/02h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 81 | 81 | 81 | - | - |
| 1 | 2 | 2 | 2 | - | - |
| 2 | MODE | - | Yes | - | - |

After requesting the LON Module Configuration the panel will answer with the command 80/2.

###### LED STATUS

Length: Byte

Range: 0…1

Description: The LON Module Configuration can be requested with or without foreign controllers::

|  |  |  |
| --- | --- | --- |
| **Mode** | **FP2000** | **FP780** |
| 0 | - | Normal map |
| 1 | - | Extended map (with controllers) |

##### LON Module Configuration LED (82/2, 52h/02h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Control** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 82 | 82 | 82 | - | - |
| 1 | 2 | 2 | 2 | - | - |
| 2 | 7 | Yes | Yes | - | - |
| 3…8 | LON NEURON ID | Yes | Yes | - | - |
| 9 | LED STATUS | Yes | Yes | - | - |

**LON TYPE** (See command 74)

###### LED STATUS

Length: 1 Byte

Range: 0…1

Description: The LON module LED can be switched to the following states:

|  |  |  |
| --- | --- | --- |
| **LED STATUS** | **FP2000** | **FP780** |
| 0 | Off | Off |
| 1 | On | On |

##### LON Configuration Switch (82/3, 52h/03h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Control** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 82 | - | - | 82 | 82 |
| 1 | 3 | - | - | 3 | 3 |
| 2 | 7 | - | - | Yes | Yes |
| 3…8 | LON NEURON ID | - | - | Yes | Yes |
| 9 | SWITCH STATUS | - | - | Yes | Yes |

**LON TYPE** (See command 74)

###### SWITCH STATUS

Length: 1 Byte

Range: 0…1

Description: LON Configuration Switch status:

|  |  |  |
| --- | --- | --- |
| **SWITCH STATUS** | **FP2000** | **FP780** |
| 0 | Off | Off |
| 1 | On | On |

##### LON Direct Bus Access (83/1, 53h/01h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Control** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 83 | 83 | 83 | 83 | 83 |
| 1 | 1 | 1 | 1 | 1 | 1 |
| 2 = P1 | DATA LENGTH (L1) | Yes | Yes | Yes | Yes |
| P1+1…P1+L1 | DATA | Yes | Yes | Yes | Yes |

###### DATA LENGTH

Length: Byte

Range: 0…255

Description: Length of DATA.

###### DATA

Length: Byte

Description: A string of data that is sent to the LON bus or received from the LON bus..

##### Request Hardware Status (84/1, 54h/01h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Request** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 84 | 84 | 84 | - | - |
| 1 | 1 | 1 | 1 | - | - |

After requesting the configuration the panel will answer with the command 84/2.

##### Hardware Status (84/2, 54h/02h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Control** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 84 | - | - | 84 | 84 |
| 1 | 2 | - | - | 2 | 2 |
| 2 | 2 | - | - | Yes | Yes |
| 3 | STATUS 1 | - | - | Yes | Yes |
| 4 | STATUS 2 | - | - | Yes | Yes |

###### STATUS 1

Length: Byte

Range: 0…255

Description: Test data:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | | **FP2000** | **FP780** |
| 0 | RAM Test failed | N/A | N/A |
| 1 | Code checksum failed | N/A | N/A |
| 2 | FDI error | N/A | N/A |
| 3 | Boot checksum failed | N/A | N/A |
| 4 | Echelon interface failed | N/A | N/A |
| 5-7 | - | N/A | N/A |

###### STATUS 2

Length: Byte

Range: 0…255

Description: Test data:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | | **FP2000** | **FP780** |
| 0 | Service mode | 0: off | 0: off |
| 1: on | 1: on |
| 1 | Memory lock | 0: unlocked | 0: unlocked |
| 1: locked | 1: locked |
| 2 | Fault input | 0: passive | 0: passive |
| 1: active | 1: active |
| 3-7 | - | N/A | N/A |

##### Hardware Control (84/3, 54h/03h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pos.** | **Message Data Control** | | | **Response** | |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 84 | 84 | 84 | - | - |
| 1 | 3 | 3 | 3 | - | - |
| 2 | 1 | - | - | Yes | Yes |
| 3 | STATUS 1 | - | - | Yes | Yes |

###### STATUS

Length: Byte

Range: 0…255

Description: Test data:

|  |  |  |  |
| --- | --- | --- | --- |
| **Bit** | | **FP2000** | **FP780** |
| 0 | Fault output | 0: passive | 0: passive |
| 1: active | 1: active |
| 1 | Restart | 0: - | 0: - |
| 1: restart | 1: restart |
| 2-7 | - | N/A | N/A |

##### Panel Access (85/1, 55h/01h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Response | |  |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 85 | 85 | 85 | - | - |
| 1 | 1 | 1 | 1 | - | - |
| 2 | 2 | Yes | Yes | - | - |
| 3,4 | ACCESS TYPE | Yes | Yes | - | - |
| 5 | 4 | Yes | Yes | - | - |
| 6…9 | ACCESS CODE | Yes | Yes | - | - |
| 10 | 0 | Yes | Yes | - | - |

###### ACCESS TYPE

Length: 2 Bytes

Range: 0…2

Description:

|  |  |  |  |
| --- | --- | --- | --- |
| **ACCESS TYPE** | | **FP2000** | **FP780** |
| 0 | Disconnect all access | Yes | Yes |
| 1 | Full access | Yes | Yes |
| 2 | Panel data only | Yes | Yes |

**ACCESS CODE** (See command 15)

##### Bus Access (85/2, 55h/02h)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Response | |  |
|  |  | FP2000 | FP780 | FP2000 | FP780 |
| 0 | 85 | 85 | 85 | - | - |
| 1 | 2 | 2 | 2 | - | - |
| 2 | 1 | Yes | Yes | - | - |
| 3 | BUS ACCESS | Yes | Yes | - | - |

###### BUS ACCESS

Length: Byte

Range: 0…3

Description:

|  |  |  |  |
| --- | --- | --- | --- |
| **ACCESS TYPE** | | **FP2000** | **FP780** |
| 0 | Stop bus access, initialise all LON modules | Yes | Yes |
| 1 | Start bus access | Yes | Yes |
| 2 | Monitor bus | - | - |
| 3 | Stop bus access | - | Yes |

##### Panel Restart Request (85/4, 55h/04h)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pos. | Message Data | Control | Response | |
|  |  | FP2000 FP780 FP2000 | | FP780 |
| 0 | 85 | 85 85 - | | - |
| 1 | 4 | 4 4 - | | - |
| 2 | RESTART MODE | Yes Yes - | | - |

###### RESTART MODE

Length: Byte

Range: 0…1

Description:

|  |  |  |  |
| --- | --- | --- | --- |
| **RESTART MODE** | | **FP2000** | **FP780** |
| 0 | Restart panel in normal mode | Yes | Yes |
| 1 | Restart panel in boot loader mode | - | - |

# UPGRADE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Release** | **Date** | **Command** | **Parameter** | **Comment** |
| A.01 | - | All | All | All command updated to FP2000 ver. 9.01 and FP780 ver. 2.01 |
| A.02 | 07.06.2005 | 6 | SENSORS | Kilsen added |
| 7 | SENSOR | Kilsen added |
| SENSOR INPUT CONFIGURATION | Kilsen added |
| SENSOR TYPE | Kilsen added |
| SENSOR FAULT | Kilsen 24V fault added |
| SENSOR STATUS 0 | Kilsen added |
| SENSOR STATUS 1 | Kilsen added |
| 8 | ZONE STATUS 0 | Kilsen added |
| 11 | SENSOR | Device I/O |
| 12 | SENSOR | Device I/O |
| 16 | ACCESS FIELD | Auto Configure FP780 |
| 17 | SYSTEM TIME | Kilsen added |
| 21 | PROTOCOL | Kilsen added |
| 24 | SENSOR FIELD TYPE | Kilsen added |
| INPUT STATE | Kilsen 24V fault added |
| SENSOR | Kilsen added |
| 27 | SENSOR | Kilsen added |
| SENSOR TYPE | Kilsen added |
| 28 | SENSOR | Kilsen added |
| SENSOR TYPE | Kilsen added |
| 46 | SENSOR FIELD TYPE | Kilsen added |
| SENSOR | Kilsen added |
| BLOCK | New |
| 75 | SENSORS ON (A, B, BOTH) | Kilsen added |
| SENSOR FIELD TYPE | Kilsen added |
| 80, 2 | - | Added |
| 81, 2 | - | Added |
| 82, 2 | - | Added |
| 82, 3 | - | Added |
| 83, 1 | - | Added |
| 84, 1 | - | Added |
| 84, 2 | - | Added |
| 84, 3 | - | Added |
| 85, 2 | - | Added |
| 85, 4 | - | Added |
| 20.06.2005 | 16 | ACCESS LEVEL | Corrected |
| 31 | INPUT | Corrected |
| 40 | - | Corrected |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Release** | **Date** | **Command** | **Parameter** | **Comment** |
| A.02 | 21.06.2005 | 7 | SENSOR TYPE | 1OS |
| 24 | SENSOR TYPE | 1OS |
| 27 | SENSOR TYPE | 1OS |
| 28 | SENSOR TYPE | 1OS |
| 46 | SENSOR FIELD TYPE | 1OS |
| 75 | SENSOR FIELD TYPE | 1OS |
| 22.06.2005 | 7 | SENSOR INPUT CONFIGURATION | Corrected |
| 7 | SENSOR FAULT | Corrected |
| A.03 | 27.06.2005 | 6 | SENSORS | Corrected |
| AREAS | Corrected |
| 8 | ZONE AREA | Corrected |
| ZONE STATUS 1 | Added for FP780 |
| 23 | - | Corrected |
| 9 | AREA | Corrected |
| AREA ADJ | Corrected |
| AREA STATUS | Added features |
| 10 | LOOP LED | Corrected |
| 11 | AREA | Corrected |
| Device Input | Corrected |
| Device | Corrected |
| 12 | AREA | Corrected |
| 23 | - | Corrected |
| 26 | AREA | Corrected |
| AREA ALARM | Corrected (FP780) |
| 27 | AREA | Corrected |
| 28 | AREA | Corrected |
| 42 | DATA | Corrected |
| 74 | AREA START | Corrected |
| AREAS | Corrected |
| SENSOR | Corrected |
| SENSORS | Corrected |
| ZONE START | Corrected |
| ZONE | Corrected |
| A.04 | 15.08.2005 | 8 | ZONE STATUS 1 | EAS added |
| 33 | SYSTEM DATA | EAS added |
| A.05 | 15.08.2005 | 11 | LON INPUT | Inputs added |
| SUP. LON INPUT | Inputs added |
| 9 | AREA STATUS | Corrected |
| 16 | ACCESS FIELD | Added for FP780, 193 |
| 27 | GENERAL ALARM NO. | Corrected |
| 35 | SET-UP REPLY | Added for FP780, 84 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Release** | **Date** | **Command** | **Parameter** | **Comment** |
| A.05 | 10.11.2005 | 27 | GENERAL ALARM NO | Added |
| 27 | GENERAL ALARM NO | Added |
| 35 | SET-UP REPLY | Added for FP780 |
| 11.11.2005 | 27 | GENERAL ALARM | Added for FP780 |
| 28 | GENERAL ALARM | Added for FP780 |
| 33 | SYSTEM DATA | Added for FP780 |
| 12.12.2005 | 7 | SENSOR TYPE | CO Detector added for FP2000 Apollo |
| SENSOR TYPE | LPB added for FP2000 Apollo |
| SENSOR INPUT CONFIGURATION | 12h and 24h added for FP2000 |
| 11 | INPUT TRIGGER | General Input, condition to Lt, Ult |
| INPUT TRIGGER | Zone Input, condition to Lt, Ult |
| INPUT TRIGGER | Area Input, condition to Lt, Ult |
| INPUT TRIGGER | Adj. Area Input, condition to Lt, Ult |
| 48 | Watchdog timeout 30s |  |
| 22.01.2006 | 33 | SYSTEM DATA | Tamper switch mask for FP2000 added |
| Request corrected |
| Finnish Fault |
| 74 | LON HDW | FC780 added |
| 75 | LOOP TEST PARAMETER | Corrected |
| A.06-xx | 20.04.2006 | 8 | ZONE STATUS 1 | Corrected |
| 33 | SYSTEM DATA | Finnish fault corrected |
| 77/1 | PANEL MODE | Added |
| ZONE MODE | Added |
| SENSOR MODE | Added |
| 21.04.2006 | 77/1 | PANEL MODE | Modified |
| ZONE MODE | Modified |
| SENSOR MODE | Modified |
| - | Section 3.2 | Cable for FC700, FC700L and FC780 |
| 04.05.2006 | 76 | ADDRESS LENGTH | Removed |
| ADDRESS | Modified |
| GROPUP ID LENGTH | Removed |
| GROPUP ID | Modified |
| 77/1 | PAGER SYSTEM LENGTH | Removed |
| PAGER SYSTEM ADDRESS | Modified |
| 04.05.2006 | 74 | LON CFG | Corrected |
| LON CONFIG | Corrected |
| 77/1 | ZONE/AREA MODE | 4 Added |
| 08.05.2006 | 19 | PORT PAR 1 | Event Printer Mask added |
| 74 | LON PRODUCT | Added |
| 11.05.2006 | 32 | INVESTIGATION TIME | Changed |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Release** | **Date** | **Command** | **Parameter** | **Comment** |
| A.06-xx | 15.05.2006 | 12 | OUTPUT TRIGGER | Corrected for linked to Fltrt |
|  | OUTPUT ADR3 | Corrected: Areas for FP2000 = 99 Corrected: Zones for FP780 = 128 |
| 74 | LON DEVICE COMMON | Corrected |
| 18.05.2006 | 74 | LON DEVICE MODE | Corrected |
| 26.05.2006 | 27 | GENERAL ALARM NO. | Watchdog 33 added |
| 50 | KEY | 192 added |
| 29.05.2006 | 27 | GENERAL ALARM NO. | Watchdog 34 added |
| 12.06.2006 | 27 | MODULE NO | Added |
| 10.11.2006 | 8 | Status1 | MSS, Hausalarm, LA, Sprinkler added |
| 11 | General inputs | Added 48…57 |
| 11 | Zone inputs | Added 6…8 |
| 11 | Area inputs | Added 6…8 |
| 12 | General outputs | Added 16…18 |
| 12 | Zone outputs | Added 6…8 |
| 12 | Area outputs | Added 6…8 |
| 7 | Type | Added SIM for Sentrol |
| 33 | Data Type | Added 216…220 |
| 58 | Block, Led Data | Updated |
| 13.11.2006 | 7 | Virtual Sensor Address | Added |
| 8 | System Zone | Added |
| 41 | System Zone Block | Added |
| 46 | Virtual Sensor Address | Added |
| 27 | Virtual Sensor Address | Added |
| 27 | System Zone | Added |
| 28 | Virtual Sensor Address | Added |
| 28 | System Zone | Added |
| 78/1 | All Parameters | Added new command |
| 78/2 | All Parameters | Added new command |
| 16.11.2006 | 7 | Sensor status1 | Added Apollo base function |
| 8 | Virtual address start and virtual addresses | Added |
| 29.11.2006 | 11 | Trigger | Condition latched / unlatched |
| 74 | LON HDW | FC780RTC added |
| 37 | - | Corrected request and response addresses |
| 05.12.2006 | 12 | Trigger | Condition latched / unlatched |
| 12.12.2006 | 33 | System data | Added 215 |
| 13.12.2006 | 75 | Test | Added Production tests 12…23 |
| 15.12.2006 | 78/3..7 | All Parameters | Added new commands |
| 10.01.2007 | 8 | Virtual address start and virtual addresses | Removed |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Release** | **Date** | **Command** | **Parameter** | **Comment** |
| A.06-xx | 16.11.2006 | 7 | Sensor status1 | Added Apollo base function |
| 8 | Virtual address start and virtual addresses | Added |
| 29.11.2006 | 11 | Trigger | Condition latched / unlatched |
| 74 | LON HDW | FC780RTC added |
| 37 | - | Corrected request and response addresses |
| 05.12.2006 | 12 | Trigger | Condition latched / unlatched |
| 12.12.2006 | 33 | System data | Added 215 |
| 13.12.2006 | 75 | Test | Added Production tests 12…23 |
| 15.12.2006 | 78/3..7 | All Parameters | Added new commands |
| 10.01.2007 | 8 | Virtual address start and virtual addresses | Removed |
| 25.01.2007 | 27 | Action | Updated |
|  | GENERAL ALARM | Updated |
| 33 | SYSTEM DATA | Updated |
| 77/2 | LANGUAGE SELECTION | Languages added |
|  | 6 | Event | Changed to 0…1999 |
|  | 8 | Zone LED | Changed to 0…65535 |
|  | 6 | Mode | Added |
|  | 35 | Set-up reply | Deleted 29, 72 for FP780 |
|  | 36 | Max Network configuration | Added configuration 3 and 4. |
|  | 20, 48, 49 | 1 | Updated |
| 29.01.2007 | 6 | Event | Changed to 0…1999 |
| 30.01.2007 | 8 | Zone LED | Changed to 0…65535 |
| 15.02.2007 | 6 | Mode | Added |
| 16.02.2007 | 35 | Set-up reply | Deleted 29, 72 for FP780 |
| 20.02.2007 | 36 | Max Network configuration | Added configuration 3 and 4. |
| 21.02.2007 | 20, 48, 49 | 1 | Updated |
| 05.03.2007 | 12 | Adr2 | Added type=Internal: LA, Sprinkler, Hausalarm |
| 14.03.2007 | 11 | Input Trigger | Included: open, short and abnormal. |
| 20.03.2007 | 11 | LON Device Input | 81h added for FP780/FEP780 |
| 27.03.2007 | 11 | LON Device Input | 00h defined |
| 04.05.2007 | 11 | Input Type | Added type=FSE triggert |
| 08.05.2007 | 12 | Adr2 | Added type=internal: BFS |
| 14.05.2007 | 78 | Function | Added off test/soak |
| 29.05.2007 | 78 | Param1 | Mode/Status |
| 06.06.2007 | 50 | Key | Added keys 186…191 |
| 29.06.2007 | 78 | Function | Corrected: System zone test on/off |
| 06.07.2007 | 12 | Adr2 | Added type=sup.o/p: LA, Sprinkler, Hausalarm |
| 24.07.2007 | 12 | Adr2 | Added: lnk O/p dev. To LA, Sprink, Hsal, BFS |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Release** | **Date** | **Command** | **Parameter** | **Comment** |
| A.06-26 | 30.07.2007 | 8 | ZONE1 STATUS | Zone Sounder Enable/disable removed for FP780/FEP780 |
| 22 | LANGUAGE, TEMP LANGUAGE | Corrected for FP780/FEP780 |
| A.06-27 | 21.08.2007 | 27 | Event Class | Added selector 5. |
| 23.08.2007 | 78 | Sub-address | Added sub-address 8 |
| 24.08.2007 | 33 | System Data | Added 214, 216…219 for FP2000 |
| 03.09.2007 | 78 | Sub-address | Added sub-address 9 |
| 11.09.2007 | 33 | System Data | Added 213 for FP780 |
| 12.09.2007 | 78 | Sub-address | Added sub-address 9, 10 |
| 20.09.2007 | 33 | System Data | Description for 213, FP780 |
| A.06-28 | 26.11.2007 | 33 | System Data | Added 211, 212 for FP2000 |
| 28.01.2008 | 78 | Sub-address | Added sub-address 11 |
| 26.02.2008 | 19 | Board type | Missing parameter. |
| 04.04.2008 | 78 | Sub-address | Added sub-address 12 |
| 07.04.2008 | 28 | Flags | Added SND and Fbrig delay status |
| 15.05.2008 | 6 | Configuration data Version-number/date | Added Configuration version / Date |
| 16.09.2008 | 33 | System Data | Added sub-address 211 |
| A.09-29 | 05.02.2009 | 7 | Sub-Type | Added Discovery Sounder Beacon |
| 05.02.2009 | 7 | Sensor Status 2 | Added new parameter |
| 26.05.2009 | 19 | Par1 | Added Thermo printer for event and report |
| 03.07.2009 | 7 | Sensor Status0, Sensor Status1 | Added Tone and Volume settings for DSBs |
| 07.07.2009 | 7 | Sensor Status1 | Added bit 2 Apollo Discovery Beacon Status |
| A.06-30 | 30.10.2009 | 19 | Par 1 | Changed ‘Event String’ to Terminal dump |
| 29.12.2009 | 33 | System Data | Added 208 for FP2000 |
|  |  |  |  |
| A.06-31 | 07.01.2010 | 33 | System Data | Removed 217 |
| 22 | LANGUAGE | Added for control for FP2000 |
| LANGUAGE GROUP | Added for response for FP2000 |
| 23 | OPERATION | Added for control for FP2000 |
| 21 | PROTOCOL | Added for control for FP2000 |
| 27 | GENERAL ALARM NO. | Watchdog 35 added |
| 33 | System Data | Removed 211 |
| 33 | System Data | Removed 212 |
| 6 | Configuration | LON DEVICES max. 32 |
| 6 | Configuration | PAGER DEVICES max. 32 |
| 07.01.2010 | 76 | Pager Configuration Data | PAGER max 32 |
| 15.01.2010 | 37 | FEP and Host version format | Extended format |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A.06-32 | 10.11.2010 | 6 | SENSORS | Kilsen removed |
| 7 | SENSOR | Kilsen removed |
| SENSOR STATUS0 | Kilsen removed |
| SENSOR TYPE | Kilsen removed |
| SENSOR TYPE | Kilsen removed |
| SENSOR FAULT | Kilsen removed |
| SENSOR INPUT CONFIGURATION | Kilsen removed |
| SENSOR STATUS1 | Kilsen removed |
| 8 | ZONE STATUS0 | Kilsen removed |
| 10 | LOOP LED | Kilsen removed |
| 11 | DEVICE INPUT CHANNEL | Kilsen removed |
| 12 | DEVICE OUTPUT CHANNEL | Kilsen removed |
| 17 | SYSTEM TIMES | Kilsen removed |
| 24 | INPUT STATE | Kilsen removed |
| SENSOR FIELD TYPE | Kilsen removed |
| 30 | LOOP SEGMENTS | Kilsen removed |
| LOOP LEDs | Kilsen removed |
| 46 | PAGE | Kilsen removed |
| VIRTUAL SENSOR ADDRESS | removed |
| 27 | GENERAL ALARM | 104-110 removed |
| WATCHDOG | Watchdogs added |