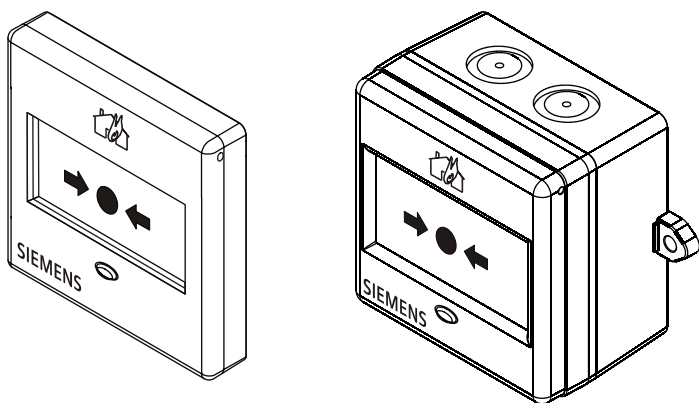


SIEMENS



FDM225, FDM226

Manual call point

Technical manual

Technical specifications and availability subject to change without notice.

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1 About this document

Goal and purpose

This document contains all the necessary information on the manual call points FDM225 and FDM226. Consistent compliance with the instructions guarantees correct and safe use.

Target groups

The information in this document is intended for the following target groups:

Target group	Activity	Qualification
Product Manager	<ul style="list-style-type: none"> ● Is responsible for information passing between the manufacturer and regional company. ● Coordinates the flow of information between the individual groups of people involved in a project. 	<ul style="list-style-type: none"> ● Has attended suitable specialist training for the function and for the product range. ● Has attended the training courses for Product Managers.
Project Manager	<ul style="list-style-type: none"> ● Coordinates the use of all persons and resources involved in the project according to the schedule. ● Provides the information required to run the project. 	<ul style="list-style-type: none"> ● Has attended suitable specialist training for the function and for the product range. ● Has attended the training courses for Project Managers.
Installation personnel	<ul style="list-style-type: none"> ● Assembles and installs the product components at the place of installation. ● Carries out a performance check following installation. 	<ul style="list-style-type: none"> ● Has received specialist training in the area of building installation technology or electrical installations.
Commissioning personnel	<ul style="list-style-type: none"> ● Configures the product at the place of installation according to customer-specific requirements. ● Checks the product operability and releases the product for use by the operator. ● Searches for and corrects faults. 	<ul style="list-style-type: none"> ● Has obtained suitable specialist training for the function and for the products. ● Has attended the training courses for commissioning personnel.
Maintenance personnel	<ul style="list-style-type: none"> ● Carries out all maintenance work. ● Checks that the products are in perfect working order. ● Searches for and corrects malfunctions. 	<ul style="list-style-type: none"> ● Has attended suitable specialist training for the function and for the product range.

Document identification

Location	Information
Title page	<ul style="list-style-type: none"> ● Short name ● Name in full ● Document purpose
Last page, bottom left-hand side	<ul style="list-style-type: none"> ● Document ID ID_ModificationIndex_Language_COUNTRY ● Edition date
Last page, bottom right-hand side	<ul style="list-style-type: none"> ● Manual ● Register


Conventions for text marking

Markups

Special markups are shown in this document as follows:

▷	Requirement for a behavior instruction
⇒	Intermediate result of a behavior instruction
⇨	End result of a behavior instruction
'Text'	Quotation, reproduced identically
<Key>	Identification of keys

Supplementary information

The  symbol identifies supplementary information such as tips demonstrating easier methods of working.



Supplementary information is labeled with the 'i' symbol.

Technical terms

Term	Explanation
FDnet	Addressed detector line
MC-Link	Maintenance and Commissioning Link; interface to the detector exchanger and tester

Reference documents

Document ID	Title
009371	Installation of the manual call point FDM225-xx/FDM226-xx (these instructions are always supplied with the detector)
008331	List of compatibility
007227	FDUD292 detector exchanger and tester
009718	FDUD293 intelligent detector tester

Document history

Document ID	Edition date	Brief description
009757_c_en_--	08.2008	New housing FDM226; protection category IP66. New chapters: 'Connections', 'Display elements', 'Danger levels', 'Line separators', 'Test mode', 'Interface to service devices', 'Status query', 'Replacing broken glass insert', 'Spare parts' and 'Index'.
009757_b_en_--	08.2007	Included VdS/LPCB approvals. Changed air humidity. Diagnosis levels: Changed display texts. Types available for order included in chap. 'Overview'.
009757_a_en_--	11.2006	New chap. Diagnosis levels and Degraded mode in FDnet. Technical specifications: 4 values corrected / new line separator.

2 Safety


2.1 Safety notices

The safety notices must be observed in order to protect people and property.

The safety notices in this document contain the following elements:







- Symbol for danger
- Signal word
- Nature and origin of the danger
- Consequences if the danger occurs
- Measures or prohibitions for danger avoidance

Symbol for danger

	This is the symbol for danger. It warns of risks of injury . Follow all measures identified by this symbol to avoid injury or death.
-----------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------

Additional danger symbols

These symbols indicate general dangers, the type of danger or possible consequences, measures and prohibitions, examples of which are shown in the following table:

	General danger		Explosive atmosphere
	Voltage/electric shock		Laser light
	Battery		Heat


Signal word

The signal word classifies the danger as defined in the following table:

Signal word	Danger level
DANGER	DANGER identifies a dangerous situation, which will result directly in death or serious injury if you do not avoid this situation.
WARNING	WARNING identifies a dangerous situation, which may result in death or serious injury if you do not avoid this situation.
CAUTION	CAUTION identifies a dangerous situation, which could result in slight to moderately serious injury if you do not avoid this situation.
<i>NOTICE</i>	<i>NOTICE</i> identifies possible damage to property that may result from non-observance.


Design for risk of injury

Information about the risk of injury is shown as follows:

	⚠ WARNING
	Nature and origin of the danger Consequences if the danger occurs <ul style="list-style-type: none"> ● Measures / prohibitions for danger avoidance

Design for possible damage to property

Information about possible damage to property is shown as follows:


	<i>NOTICE</i>
	Nature and origin of the danger Consequences if the danger occurs <ul style="list-style-type: none"> ● Measures / prohibitions for danger avoidance

2.2 Safety regulations for the method of operation

National standards, regulations and legislation

Siemens products are developed and produced in compliance with the relevant European and international safety standards. Should additional country-specific or local safety standards or regulations concerning the project planning, assembly, installation, operation or disposal of the product apply at the place of operation, then these must also be taken into account together with the safety regulations mentioned in the product documentation.

Electrical installations

	<p>⚠ WARNING</p> <p>Electrical voltage</p> <p>Electric shock</p> <ul style="list-style-type: none"> ● Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.
-----------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

- If possible de-energize products on which commissioning, maintenance or repair work is being undertaken.
- Lock areas that have been de-energized so that they cannot be switched back on by mistake.
- Label connection terminals with an external source of voltage using a 'DANGER external source of voltage' board.
- Separately route feeders to products and fuse these with their own, clearly marked fuses.
- Fit an easily accessible disconnecting device in accordance with IEC 60950-1: 2005 outside of the installation.
- Earth according to local safety regulations.

Assembly, installation, commissioning and maintenance

- If you need aids like a ladder, the aids must be safe and suitable for the work to be carried out.
- When starting the fire control panel ensure that unstable statuses cannot occur.
- Ensure that all points listed in the following section 'Testing the product operability' are observed.
- You may only set controls to normal function when the product operability has been completely tested and the system has been handed over to the customer.

Testing the product operability

- Prevent the remote transmission from triggering for no reason.
- When testing building installations or controlling devices from external companies, you must work with the responsible people.
- The activation of fire control installations for test purposes must not cause injury or damage to the building installations. The following instructions must be observed:
 - Use the correct potential for activation; this is generally the potential of the building installation.
 - Only check controls up to the interface (relay with blocking option).
 - Make sure that only the controls to be tested are activated.
- Inform people before testing alarming equipment and allow for any potential panic responses.
- Inform people of any noise or mist that may be produced.
- Inform the relevant points that will receive alarms and faults before testing remote transmission.

Modifications to the system layout and products

Modifications to the system and to individual products may lead to faults, malfunctioning and safety risks. The written consent of Siemens and the relevant safety bodies must be obtained for modifications or additions.

Modules and spare parts

- Components and spare parts must comply with the technical specifications defined by Siemens. Only use products which have been specified or recommended by Siemens.
- Only use fuses with the specified fuse characteristics.
- Wrong battery types and improper battery changing lead to a risk of explosion. Only use the specified battery type or an equivalent battery type recommended by Siemens.
- Batteries must be disposed of in an environmentally friendly manner. Observe national directives and specifications.

Disregard of the safety regulations

Before they are delivered, Siemens products are tested to ensure they function correctly when used properly. Siemens disclaims all liability for injury or damage caused by misuse or the disregard of the instructions or danger warnings contained in the documentation. This applies in particular to:

- Personal injuries or damage to property caused by improper use and incorrect application
- Personal injuries or damage to property caused by disregarding safety instructions in the documentation or on the product
- Personal injuries or damage to property caused by poor maintenance or lack of maintenance

Exclusion of liability

We have checked the content of this document for compliance with the described hardware and software. Nevertheless, deviations cannot be excluded, therefore we do not offer any guarantee for complete compliance. The information in this document is regularly checked and necessary corrections are included in subsequent editions.

We are grateful for suggestions for improvements.

2.3 Standards and directives complied with

A list of the standards and directives complied with is available from your Siemens contact.

3 Setup and function

3.1 Overview

The two manual call points FDM225 und FDM226 are for manual alarm activation in the case of fire. They comprise a cover and a switching unit. The FDM226 has a higher protection category than the FDM225.

For surface-mounted supply leads, an optional housing bottom is available for the FDM225. The FDM226 comes with a waterproof housing bottom as standard.

The activation button can either be actuated using a resettable plastic insert or a breakable glass insert.

A protective cover can be optionally used to prevent unintentional alarm activation.

The manual call points have the following characteristics:

- Individual detector addressing
- Indication of the alarm status via LED
- Integrated line separation function
- Communication via FDnet

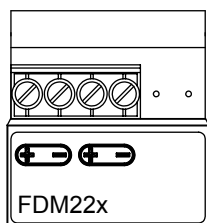
The manual call points can be ordered in the following versions:

Type	Order no.	Designation
FDM225-RG	A5Q00013434	Manual call point with glass insert (IP44)
FDM225-RP	A5Q00012020	Manual call point with plastic insert (IP44)
FDM225-RG (F)	A5Q00020274	Manual call point with glass insert for 'France' (IP44)
FDM225-RP (F)	A5Q00020273	Manual call point with plastic insert for 'France' (IP44)
FDM226-RG	A5Q00013435	Manual call point with glass insert incl. housing bottom (IP66)
FDM226-RP	A5Q00013436	Manual call point with plastic insert incl. housing bottom (IP66)

3.2 Setup

3.2.1 Connections

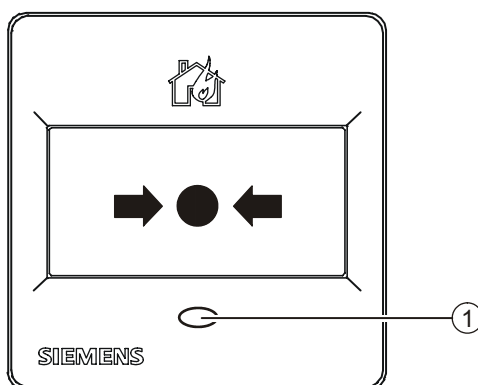
The back of the manual call points is fitted with 4 screw terminals for the detector line.



Connection terminals

3.2.2 Indication elements

The manual call points have a red LED. Only the optical fiber can be seen from the outside.



LED in the manual call point

1 Red LED for 'Alarm'

LED red	Meaning
off *	Normal operation
flashes brightly in 1 s intervals or is permanently on *	'Test'
flashes brightly in 1 s intervals or is permanently on *	'Alarm'

* depending on the control panel

3.3 Function

3.3.1 Danger levels

Manual call points can transmit the following danger levels to the control panel:

Danger level	Meaning	Comment
0	No danger	Normal condition
3	Alarm	Fire

Comment

The evaluation of the danger level and the decisions to be taken (e.g. activation of remote transmission) are configured in the control panel.

3.3.2 Diagnosis levels

The detector monitors its operation largely autonomously.

The following diagnosis levels are derived from the different control measurements:

- Normal
- Exchange necessary
- Fault

For details, see table below.

A fault message is signaled in the case of a fatal error that makes the proper function of the detector impossible. To correct the cause of the fault, additional information is available in the detector. This information may be displayed, for example, by the detector exchanger and tester FDUD29x (for details see the operating instructions of the detector exchanger and tester, documents 007227 and 009718).

Information displayed on the detector exchanger and tester	Meaning	Actions
'No deviation'	Normal, no fault is present The detector is fully functional	None
'needed excha.' *	Exchange necessary Key monitoring outside the tolerance range	Renew detector
Any fault message	Fault present <ul style="list-style-type: none"> ● Alarming no longer guaranteed ● Key monitoring outside the tolerance range or malfunctioning due to external influences. 	Renew detector
	Supply fault	<ul style="list-style-type: none"> ● Check detector line voltage ● Renew detector
	Software error (watchdog error)	Renew detector
	Memory error	Renew detector
	Communication error between detector and control panel	Remedy cause

Comment

The status 'Any fault message' can be displayed together with other statuses, e.g. 'needed excha.' (exchange necessary).

* The information displayed on the detector exchanger and tester is always in English; no translation into the corresponding language.

3.3.3 Degraded mode in FDnet

If the main processor of the fire control panel fails, the control panel is in degraded mode operation. Depending on the control panel type, the fire control panel can continue to perform the most important alarming and signalling functions in degraded mode operation.

Characteristics of degraded mode operation on control panels supporting degraded mode operation:

Alarming is still ensured in degraded mode operation. However, in degraded mode operation only collective alarming is possible. This means that in the case of an alarm, it is possible to identify the detector line but not the exact location of the detector triggering the alarm.

Degraded mode operation on the FDnet is not supported by all control panels in the same way. During planning, observance of the information in document 008331 'List of compatibility' and the respective control panel documentation is therefore mandatory.

3.3.4 Line separator

All FDnet devices are equipped with a line separator.

The FDnet device is equipped with electronic switches which isolate the defective part in case of a short-circuit on the detector line. The rest of the detector line remains serviceable. On a loop line all FDnet devices remain fully functional after a simple fault.

3.3.5 Test mode

A test mode can be set on the control panel to test the manual call points. When in test mode, alarms from the manual call points are not forwarded by the control panel.

The manual call points can be tested using the key.

See also

 Testing detectors [→ 23]

3.3.6 Interface to service devices

The switching unit for FDnet has a proximity interface to the detector exchanger and tester FDUD29x (service device for commissioning and maintenance). The detector exchanger and tester communicates via this interface (MC link) with the manual call point for FDnet. For detailed information, please refer to the operating instructions of the detector exchanger and tester (document 007227 and 009718).

See also

 Status retrieval [→ 22]

3.4 Accessories

Type	Designation	Order no.
FDMH295-R	Housing bottom	A5Q00013437
FDMH295-S	Housing bottom with holes and grommets	A5Q00013438
FDMC295	Protective cover	A5Q00013440
FDMG295	Glass insert 'UK'	A5Q00013442
FDMG295-F	Glass insert 'France'	A5Q00013443
FDMG295-S	Glass insert 'Sweden'	A5Q00013444
FDMP295	Plastic insert 'UK'	A5Q00013445
FDMP295-F	Plastic insert 'France'	A5Q00013446
FDMP295-S	Plastic insert 'Sweden'	A5Q00013447
FDMK295	Key	A5Q00013448
DBZ1190-AB	Connection terminal	4942340001
–	Metal cable gland M20 x 1.5	A5Q00004478
–	Counter nut M20 x 1.5	A5Q00004479

4 Project planning

4.1 Compatibility

Compatible with all control panels that support the FDnet detector line. See document 008331 'List of compatibility' for details.

4.2 Ranges of application

The manual call points are intended for use in places where a fire can be detected by people who can manually trigger an alarm.

4.3 Installation site

The detectors must be installed in easily accessible places at a height of 1.3 ... 1.6 m.

4.4 Environmental influences

If the detectors are used in industrial applications, consultation with the project manager is required, since plastics do not withstand certain environmental conditions.

The following factors must be taken into consideration:

- Chemicals
- Temperature
- Moisture

5 Mounting / Installation

Preparation

FDM225:

If you use a housing bottom, you have to determine the positions of the lead-in openings. If the lead-in openings are on the top or bottom, you must specify the holes with the drilling jig.

FDM226:

The housing bottom has removable plastic parts for cable glands at the top and bottom, as well as the fastening tabs supplied:

1. Install the required cable glands.
2. Cut out the openings for both fastening tabs from the sides of the housing bottom.
3. Mount the fastening tabs from behind onto the rear wall of the housing bottom using the screws supplied.

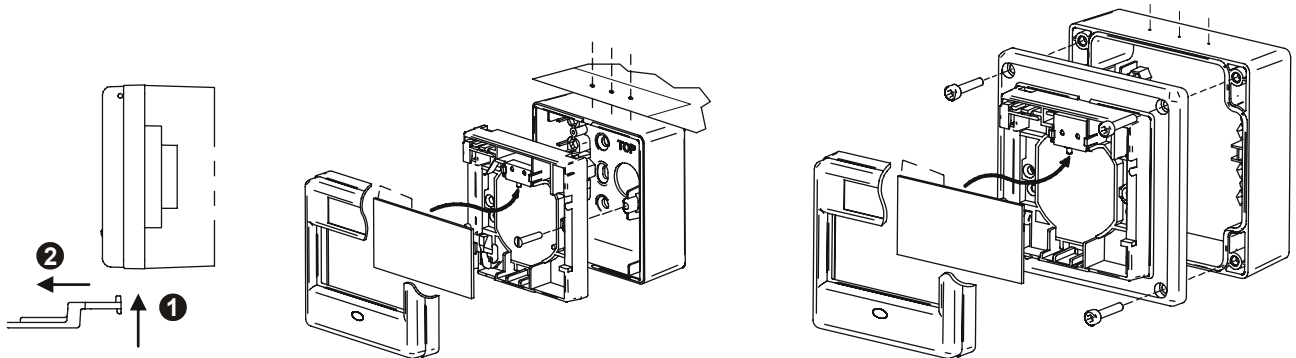


⚠ WARNING

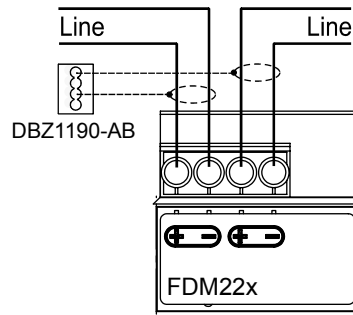
Leaks in the housing

The FDM226 must be installed using the fastening tabs. Do not drill any holes through the rear wall of the housing bottom!

Procedure



Installation of FDM225/FDM226



Connection diagram detector line (connection terminal DBZ1190-AB is optional)



Note the positive and negative poles!

1. Mount the housing bottom at a height of 1.3 ... 1.6 m on a flat surface.
2. If the detector line cables are shielded, connect the shieldings to a connection terminal DBZ1190-AB (to be ordered separately). Place the connection terminal inside the housing bottom without fastening. The shieldings must not touch any other potentials or metal parts in the device.
3. Connect the detector line.
4. Remove the cover using the key (movements A and B). Keep the key in a safe place.
5. Fix the switching unit to the housing bottom. The required screws can be found under the cover in the case of the FDM225, while for the FDM226 they are included in the package.
6. Assemble the manual call point.



⚠ WARNING

Deactivating the manual call points prevents alarms from being forwarded.

Alarming does not take place.

- Deactivated manual call points must be labeled with the 'NOT IN USE' label!



'NOT IN USE' label

6 Commissioning

The device is commissioned via the control panel. The exact procedure is described in the control panel documentation.

7 Maintenance/Repair

7.1 Status retrieval

The manual call point for FDnet is fitted with an interface to the detector exchanger and tester. With this interface, proximity data exchange is possible between the detector and the detector exchanger and tester FDUD29x. Depending on the authorization level of the user and the control panel type, the following actions can be performed:

- Device test (Go / No Go or detailed by status polling)
- Activation of a test alarm
- Reading out the identification number, customer text and measure text
- Localizing and setting the parameters of the detector
- Switching off the detector

For detailed information, please refer to the operating instructions of the detector exchanger and tester (documents 007227 and 009718).

7.2 Function check

The devices are automatically subjected to a performance check during the self-test. Nevertheless, it is necessary to check the devices on site at regular intervals.

Recommendation:

- Check the devices every year.
- Replace heavily soiled or damaged devices.

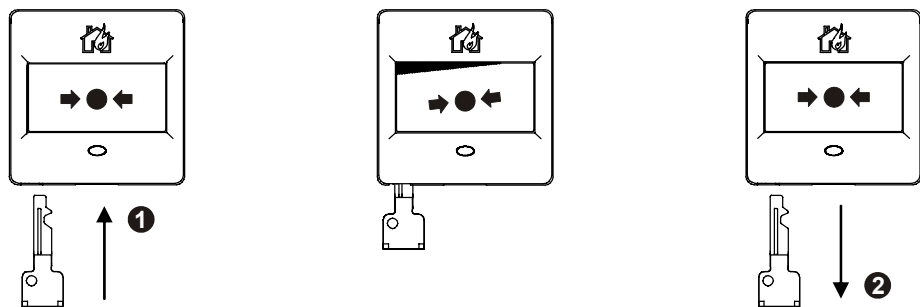
No other special maintenance work is necessary.

7.3 Testing detectors

7.3.1 Testing the detector with the key

!	NOTICE
	False alarm Switch the manual call point to 'Test' on the control panel.

Procedure



Testing

1. Insert the key into the manual call point until the switching unit moves.
⇒ The detector is triggered.
2. To arm the manual call point, pull out the key again.
⇒ The switching unit is in a straight position and the detector is armed.

	⚠ WARNING
	Deactivating the manual call points prevents alarms from being forwarded. Alarming does not take place. <ul style="list-style-type: none"> ● Deactivated manual call points must be labeled with the 'NOT IN USE' label!



'NOT IN USE' label

7.3.2 Testing detectors with the detector exchanger and tester

The manual call points can also be tested with the detector exchanger and tester FDUD29x.

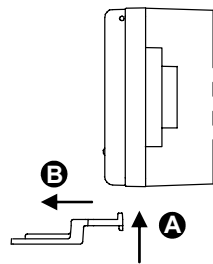
To ensure correct communication between the detector exchanger and tester and the manual call point, the alarm indicator on the manual call point must be aligned with the sensor on the detector exchanger and tester. For this, turn the detector exchanger and tester 45 degrees and push it down by approx. 1 cm.

More information is available in the operating instructions of the detector exchanger and tester (document 007227 or 009718).

7.4 Replacing broken glass insert

The glass insert is covered by a film. This holds the glass splinters together when the glass insert is pushed in, enabling trouble-free removal of the glass insert.

Procedure



Removing cover

1. Remove the cover of the manual call point using the key (movements A and B).
2. Remove the broken glass insert from the switching unit.
3. Insert a new glass insert. Be sure to tension the spring with the glass insert.
4. Refit the cover.

7.5 Spare parts

Spare part details can be found in the 'Accessories' chapter.

See also

 Accessories [→ 17]

8 Specifications

8.1 Technical data

Detector line	Operating voltage	13 ... 33 VDC
	Operating current (quiescent)	0.18 mA
	Maximum current connection factor	1
	Quiescent current connection factor	1
	Address connection factor	1
	Separator connection factor	1
	Protocol	FDnet
	Compatibility	See document 008331 'List of compatibility'
Line separator	Line voltage:	
	● nominal	32 VDC (= V_{nom})
	● minimum	12 VDC (= V_{min})
	● maximum	33 VDC (= V_{max})
	Voltage at which the separator opens:	
	● minimum	7.5 VDC (= $V_{SO min}$)
	● maximum	10.5 V DC (= $V_{SO max}$)
	Permanent current when switches are closed	max. 0.5 A (= $I_{C max}$)
	Switching current (e.g. in case of short-circuit)	max. 1 A (= $I_{S max}$)
	Leakage current when switches are open	max. 1 mA (= $I_{L max}$)
Serial impedance when switches are closed	max. 0.5 Ω (= $Z_{C max}$)	
Connections	Detector line:	
	● Design	Screw terminals
	● Cable cross section	0.28 ... 1.5 mm ²
	MC-Link	proximity interface
Ambient conditions	Permitted ambient temperature	-25 ... +70 °C
	Storage temperature	-30 ... +75 °C
	Air humidity	≤95 % rel.
	Protection categories acc. to EN 60529 / IEC 60529:	
	● FDM225	IP44
	● FDM226	IP66
	Electromagnetic compatibility:	
	● 10 MHz ... 1 GHz	50 V/m
	● 1 GHz ... 2 GHz	10 V/m

Specifications

Mechanical data

Dimensions (L x W x H):

- FDM225 87 x 87 x 20 mm
- FDM226 87 x 113 x 57 mm

Weight:

- FDM225 0.116 kg
- FDM226 0.200 kg

Color RAL 3000 (red)

Material ABS PC ASA

Standards

Standards EN 54-11, EN 54-17

VdS approvals:

- FDM225-RP G207092
- FDM225-RG G207092

LPCB approvals:

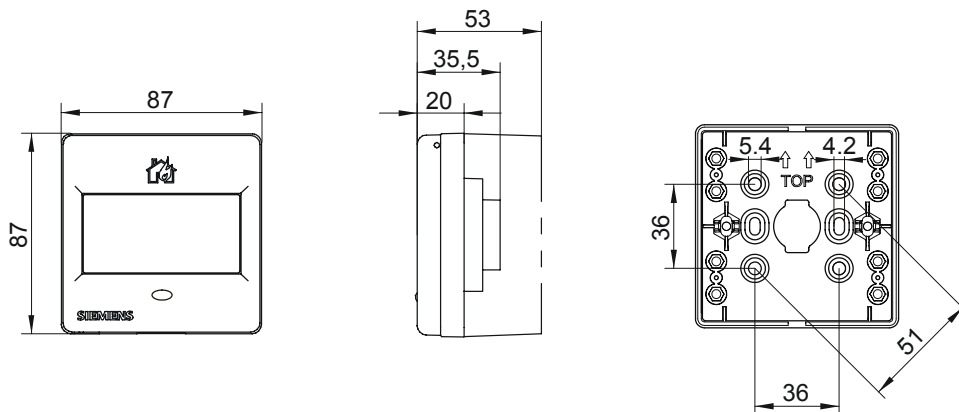
- FDM225-RP 126ap/01
- FDM225-RG 126ap/02
- FDM226-RP 126ap/03
- FDM226-RG 126ap/04

CE conformity mark yes

QA Standards Siemens Standard SN 36350
ISO 9001, ISO 9004

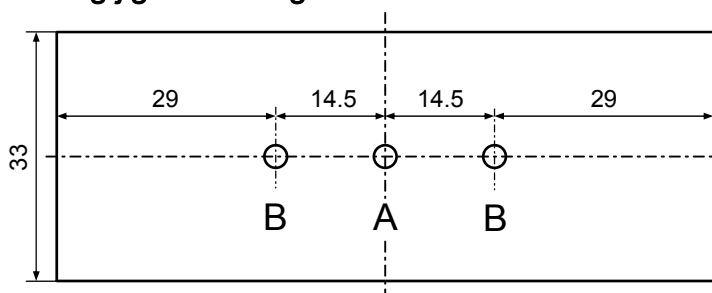
8.2 Dimensions

FDM225



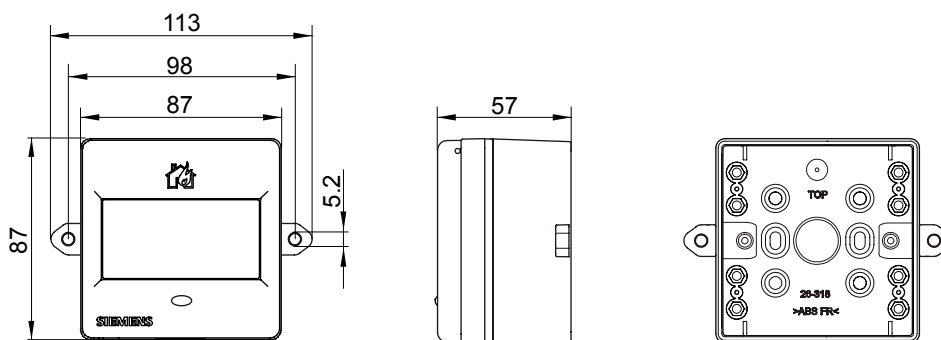
Dimensional drawing FDM225

Drilling jig for cable glands for FDM225



Drilling jig for FDM225

FDM226



Dimensional drawing FDM226

8.3 Environmental compatibility

Electronic components and synthetic materials can be separated.

The plastic parts are marked and can be disposed of correspondingly.

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Issued by
Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41-724 24 24
Fax +41 41-723 35 22

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