

# BX-MDI8

## Input module for SecuriLine eXtended

Beginning with edition number 20-2100017-01-03

The BX-MDI8 has 8 monitored inputs for connecting detection zones or for polling potential-free contacts. The module requires a redundant, external power supply for operation. It meets the SecuriLine eXtended specification for operation on the addressable loop of the SecuriFire fire detection system.



Fig. 1 BX-MDI8

### Description

The BX-MDI8 can be connected to the SecuriLine eXtended addressable loop of the SecuriFire fire detection system.

Addressing and parameter assignment for the BX-MDI8 is performed with PC software via the fire alarm control panel.

The module includes a short-circuit isolator. In the event of wire breakage or a short-circuit, this functionality ensures that the fault is localised and at the same time maintains the full operability of the addressable loop.

### BX-MDI8 features

- External power supply galvanically separated from SecuriLine eXtended
- Each of the 8 inputs is individually plannable
- Jumpers for setting the mode of operation
- Addressing and parameter assignment with PC software via SecuriLine eXtended
- Up to 32 modules per loop can be connected
- Connectable detectors per input:
  - \* Detector series SecuriStar 52x/563
  - \* MCP 521/525
  - \* MMD130Ex-i via GTW
  - \* HX130
  - \* HX130Ex-i via GTW
- The monitoring of the detector lines complies with EN 54-13 (interruption and short-circuiting of the transmission path).
- Integrated short circuit isolator
- Robust plastic housing

### Interfaces

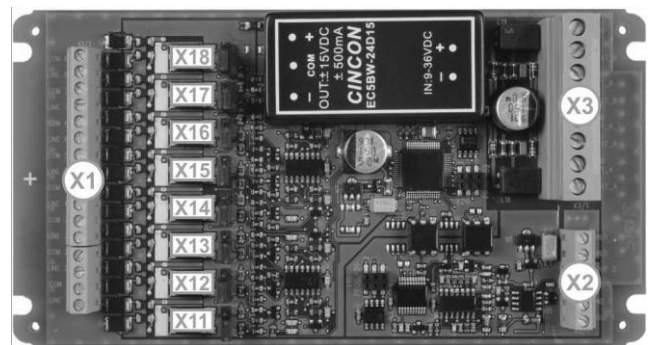


Fig. 2 BX-MDI8 interfaces

### SecuriLine eXtended (X2)

Terminal	Designation	Description
1	L1	Data A
2	GND	GND A
3	GND	GND B
4	L2	Data B
5	SHLD	Screen support point
6	SHLD	Screen support point

### External power supply (X3)

Terminal	Designation	Description
1	VEXT_A	+24 V A „INCOMING“
2	GND EXT_A	GND A „INCOMING“
3	VEXT_A	+24 V A „OUTGOING“
4	GND EXT_A	GND A „OUTGOING“
5	VEXT_B	+24 V B „INCOMING“
6	GND EXT_B	GND B „INCOMING“
7	VEXT_B	+24 V B „OUTGOING“
8	GND EXT_B	GND B „OUTGOING“

# Data Sheet




## Connectors for detection zones and inputs (X1)

Detection zones and surveyed inputs can be connected to the X1 interface. Every input / line has its own current -limited output driver which supplies the connected peripheral devices with power.

The operation mode and subtype selection is carried out individually for each detection zone and input. This is accomplished by means of software planning (SecuriFire Studio) and with jumper settings X11 to X18 on the module. If the jumper setting does not match the planning, a fault is reported on the SCP after startup.

Input no.	Designation	Function	Jumper no.
8	COM 8	GND	X18
	LINE 8	+24 V	
7	COM 7	GND	X17
	LINE 7	+24 V	
6	COM 6	GND	X16
	LINE 6	+24 V	
5	COM 5	GND	X15
	LINE 5	+24 V	
4	COM 4	GND	X14
	LINE 4	+24 V	
3	COM 3	GND	X13
	LINE 3	+24 V	
2	COM 2	GND	X12
	LINE 2	+24 V	
1	COM 1	GND	X11
	LINE 1	+24 V	

The following applies to all jumpers from X11 to X18:

	<b>“Detection zone” mode of operation</b> <ul style="list-style-type: none"> <li>• Detection zones</li> <li>• SecuriStar 521 / 523 / 563</li> <li>• Conventional MCP</li> <li>• MMD130 Ex-i</li> <li>• HX 130</li> <li>• HX 130 Ex-i (NOT VdS compliant!)</li> </ul>
	<b>“Surveyed input” mode of operation</b> <ul style="list-style-type: none"> <li>• Surveyed input 26K7</li> </ul>
	<b>“VDS” mode of operation</b> <ul style="list-style-type: none"> <li>• Surveyed input 3K</li> <li>• VdS extinguishing input</li> <li>• Valve monitoring</li> </ul>

## How the modes of operation work

All modes of operation supported by the BX-MDI8 function in accordance with the current increase principle. A defined resistance at the end of each stub line serves as line monitor. In the event of actuation, a defined alarm resistance must be switched parallel to the terminal resistor.

The terminal resistor is monitored for creeping wire breakage and short-circuit when quiescent.



### Notice

The following information about the number of detectors per zone is based on the technical system limits and may be restricted by directives and regulations.

## “Detection zone” mode of operation

Detector	Number of detectors per alarm line	Detector-base	Termination resistance 0,5 W 5%
SCD 563 TCD 563	max. 32	USB 501-x	3 kΩ
MCP 521 MCP 525	max. 10		
MMD130 Ex-i	max. 10	USB 501-7 Ex-i (via safety barrier GTW)	4,7 kΩ

ORM130 Ex-i	max. 10	143 Ex-i (via safety barrier GTW)	4,7 kΩ
WDM 215 Ex-i			
WMM 216 Ex-i			
SSD 521 UTD 521	max. 32	USB 501-x	3 kΩ
ORM 130 A/Y ORM 130 A/K WDM 215 A WMM 216 A	max. 30	143, 143 K	3 kΩ
UFM 840	max. 4	143, 143 K	3 kΩ
DFM 435 Wx	max. 10		3 kΩ

## “Surveyed input” mode of operation

	Termination resistance	Alarm resistance
Surveyed input 26K7	26,7 kΩ ±5 %; 0,5 W	18,2 kΩ ±5 %; 0,5 W

## “VDS” mode of operation

	Termination resistance	Alarm resistance
VdS- extinguishing input	3,3 kΩ ±5 %; 0,5 W	680 Ω ±5 %; 1 W
Surveyed input 3K	3 kΩ ±5 %; 0,5 W	1,5 kΩ ±5 %; 0,5 W
Valve monitoring	3 kΩ ±5 %; 0,5 W	1,5 kΩ ±5 %; 0,5 W (1,5 kΩ pre-alarm)
Input DFG-60 BLK3	3 kΩ ±5 %; 0,5 W	1,5 kΩ ±5 %; 0,5 W

## Power requirement

When both detectors and modules are operated on an addressable loop, note that the BX-MDI8 has a higher power consumption than a detector. For security reasons a maximum of 32 BX-MDI8s are permitted per addressable loop.

A tool is available for calculating the maximum possible loop length and the maximum number of participants.

## Planning and projection

**Notice**

Planning is to be carried out in accordance with the applicable standards and directives.  
According to EN54 a max. of 32 detectors are permitted per BX-MDI8.  
Automatic and non-automatic detection zones cannot be combined on a stub line due to regulations.

The BX-MDI8 can be operated in the SecuriLine as well as in the SecuriLine eXtended mode.

The desired function can be assigned to each input with SecuriFire Studio. Also, the mode of operation of each input on the module must be set with the appropriate jumper.

An external power supply compliant with EN 54-4 is required to operate the BX-MDI8.

If the BX-MDI8 and power supply are mounted at separate locations, the power supply line must be redundantly implemented with separate fusing.

The external power supply must be dimensioned to the maximum power consumption of the connected peripheral devices, dimensioned to the bridging time and the maximum lengths of the power supply line.

Supplying power to multiple BX-MDI8 modules from the same power supply is permitted only if all detectors and inputs are located in the same fire sector.

Due to the high power consumption, a length calculation must be performed for the BX-MDI8 power supply lines.

## Connection examples

### Connection principle

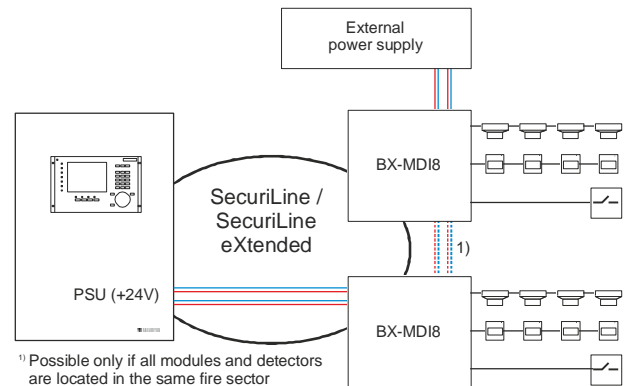


Fig. 3 Connection principle

### Connection the SecuriLine eXtended and the external power supply

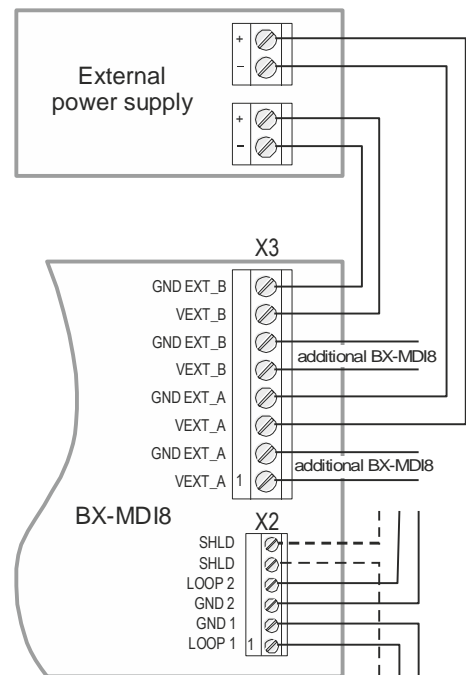


Fig. 4 Connection the SecuriLine eXtended and the external power supply

# Data Sheet

## Connecting the detector series 521 / 523 / 563 and MCP 521 / 525

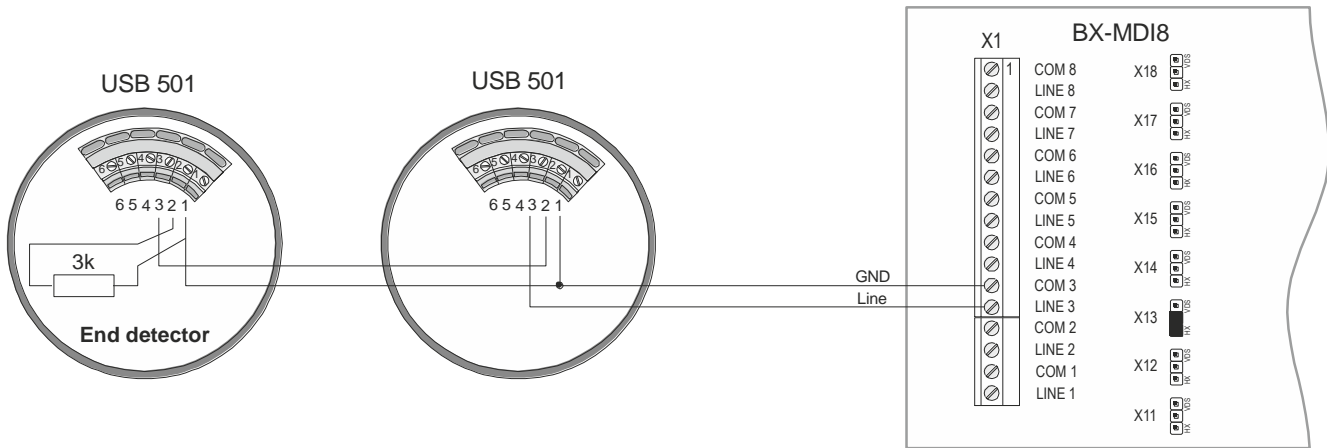
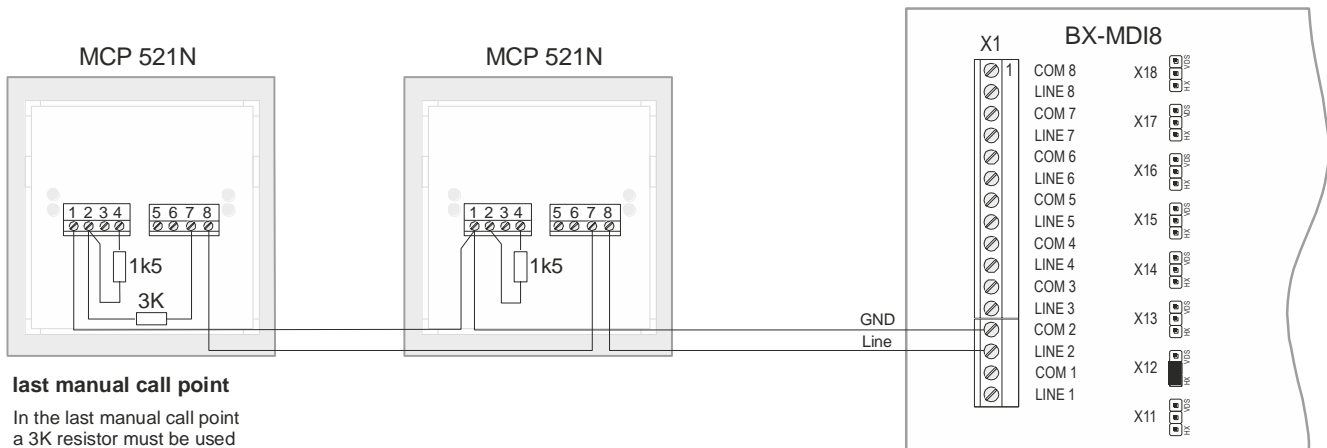


Fig. 5 Connecting detector base USB 501



**last manual call point**

In the last manual call point a 3K resistor must be used

Fig. 6 Connecting MCP 521N manual call points

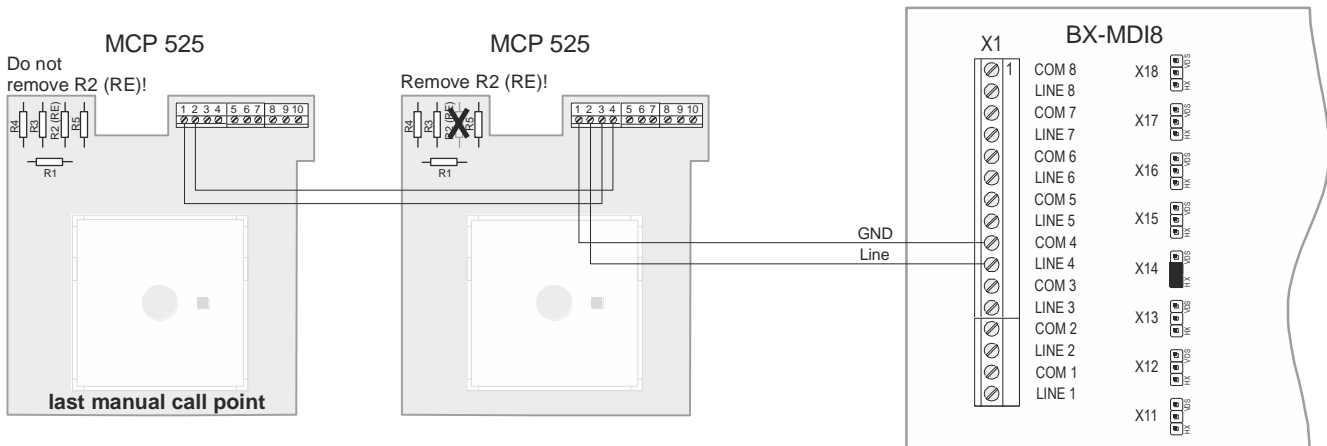



Fig. 7 Connecting MCP 525 manual call points

Connecting the detector series MMD130 Ex-i with direct current isolating transformer GTW 01

 **Notice**  
 This connection does **NOT** fulfil the requirements of VdS Directive 2489.

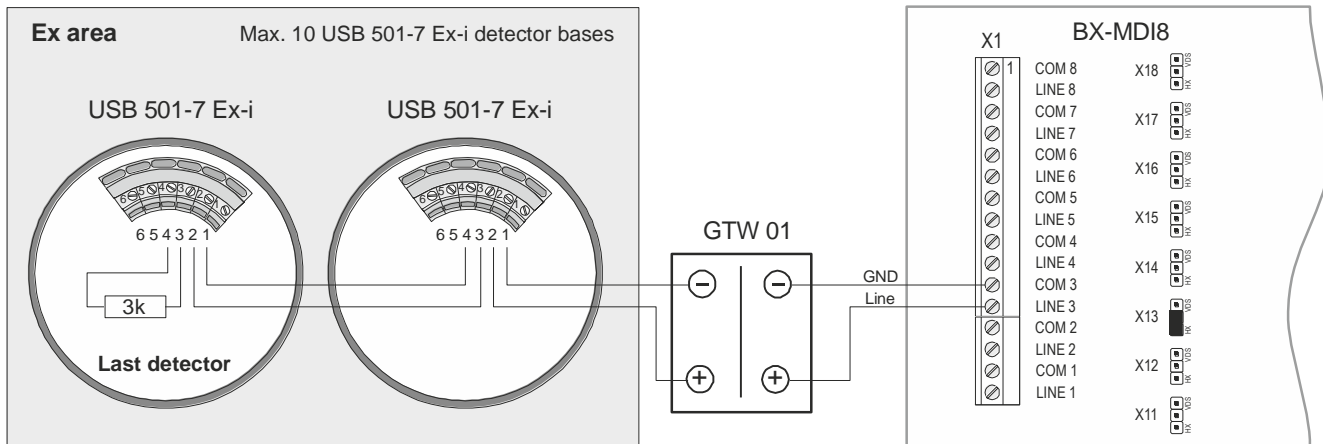



Fig. 8 Connecting detector base USB501-7 Ex-i with direct current isolating transformer GTW 01

Connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01

 **Notice**  
 This connection does **NOT** fulfil the requirements of VdS Directive 2489.

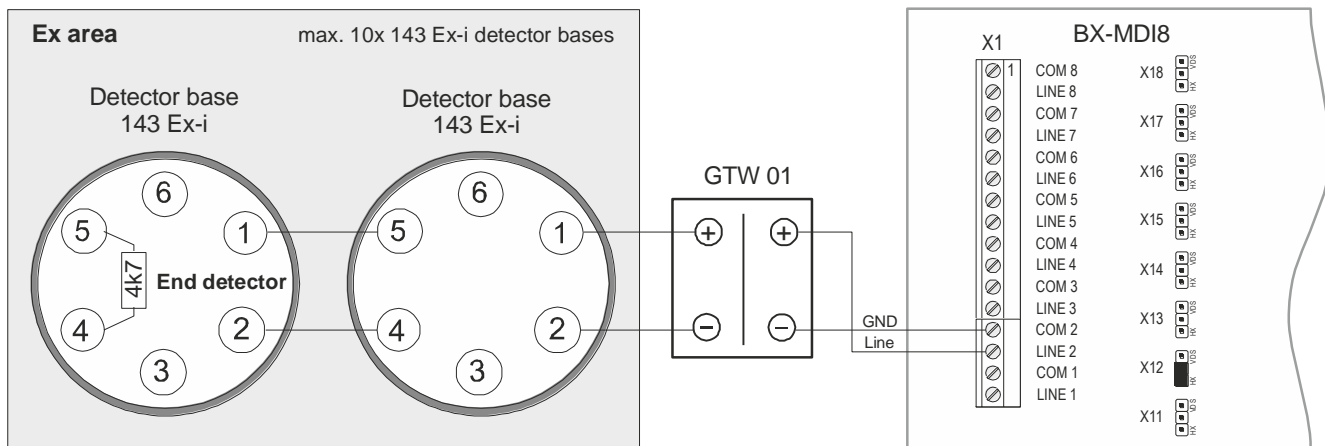


Fig. 9 Connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01

## Connecting surveyed inputs

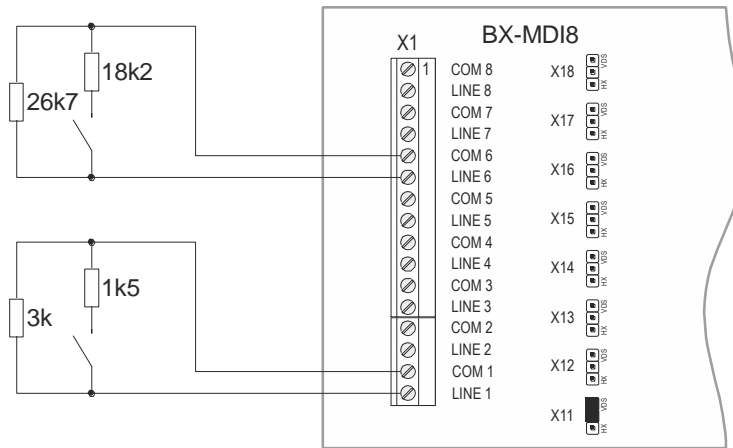


Fig. 10 Connecting surveyed input 26K7 / surveyed input 3K

## Connecting extinguishing systems

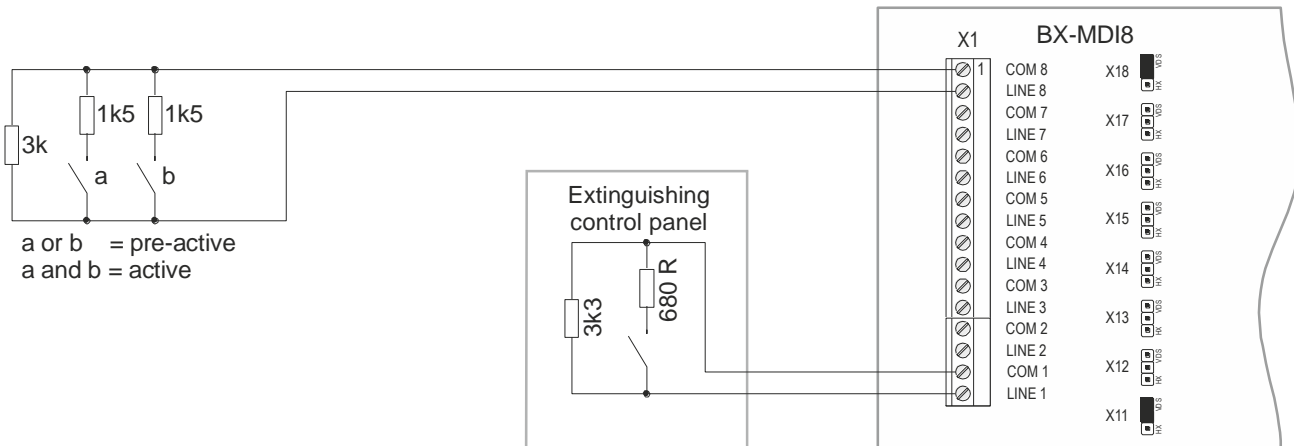


Fig. 11 Valve monitoring / Extinguishing input in accordance with VdS

## Article numbers / spare parts

Short designation		Art. number CH	Art. number
BX-MDI8	Input module	115.249 081	20-2100017-01-03
MOD 3 IP66	Map case for BX-MDI8	403.249 078	20-4000550-01-01

## Technical data

**SecuriLine eXtended (X2)**

Function	Input module
Operating voltage	12 to 30 V-DC
Power consumption (module's power consumption only)	6 mA
Signal transmission	Serial data transmission, 2-line technology
Connection	Screw terminals max. 1.5 mm <sup>2</sup>

**Monitored inputs (X1)**

	8
Output voltage	30 V-DC
Short circuit current	125 mA
Line resistance	max. 50 Ω
Line length	max. 1000 m
Connection	Screw terminals max. 1.5 mm <sup>2</sup>

**External power supply (X3)**

	8
Operating voltage	12 to 30 V-DC
Power consumption	dependent on the input voltage and the number of used inputs, max. 1A
	@12 V @24 V @30V
Operating current BX-MDI8	70 mA 45 mA 40 mA
Per activated line (fault WB)	2 mA 1,5 mA 1 mA
Per activated line (normal operation)	20 mA 14 mA 10 mA
Per activated line (pre-alarm)	40 mA 25 mA 20 mA
Per activated line (alarm)	80 mA 50 mA 40 mA
Line resistance	max. 4 Ω
Line length	@2,5 mm <sup>2</sup> max. 280 m
Connection	Screw terminals max. 2.5 mm <sup>2</sup>

**General**

Protection type	66 with map case	IP
Ambient temperature	-20 to +60	-°C
Humidity ambient conditions	5 to 95 %, without condensation	rel.h
VdS approval	applied for	
Declaration of performance	CPR-20-13-015-DE-EN	
Dimensions (H x W x D)	80 x 151 x 20	mm
Dimensions with map case (H x W x D)	94 x 180 x 57	mm
Weight	approx. 125	g