

SIEMENS



Cerberus® DT1131, DT1132 Heat detectors, AnalogPLUS

Technical description

Fire & Security Products

Siemens Building Technologies Group

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1 Application

- **DT1131** class A1R heat detector with wide application range, operating range up to a temperature of 50°C.

The ThermoRex® DT1131 is especially suitable for monitoring rooms and installations in which in the event of fire, a rapid increase in temperature can be expected, or where other types of detector cannot be used because work processes cause smoke, dust, exhaust gases etc.

- **DT1132** reliable heat detector with maximum temperature activation for increased ambient temperatures, operating range up to a temperature of 70°C.

The ThermoRex® DT1132 is especially suitable for monitoring rooms and installations in which rate-of-rise heat detectors are unsuitable, e.g. with transient vapour or heat development.

– Common features

The detectors are highly immune to against environmental influences such as temperature, humidity, corrosion and electrical interference fields, thanks to its optimally located temperature sensor and his specially developed circuit board coating.

1.1 Compatibility

Fire detection system: S11 AlgoRex AnalogPLUS®
CS1115 / CS1140 (E3M110/111)
Base: DB1131A

1.2 Application guidelines

See application guidelines for AlgoRex® detectors, document e1225, manual DS11, section 10.

1.3 Adjustment functions / sensitivity choice

On the detector itself there are no mechanical and electrical adjustments.

- The self holding of the alarm signals is effected in the control unit until its resetting.

1.4 Installation

- The installation is usually executed with **twisted two-wire line** from base to base.
- Parallel leaded lines and screened cabling from prevailing installations are also allowed.
- Loop and stub lines are admissible.
- T-branches are only possible with the T-branch module DC1135.
- To a T-branch a maximum of 20 detectors can be connected.
- Maximum 128 smoke detectors ThermoRex DT1131/DT1132 can be connected to a detection line.

Further informations concerning installation of the bases, see mounting instructions x1243, manual DS11, section 9.

2 Function / Design

DT1131

The ThermoRex DT1131 works according to the differential heat measuring principle. The temperature sensor consists of two precision NTC thermistors. The absolute and the relative change of ambient temperature are measured. The open protective housing means that the ambient temperature has an almost unhindered effect on the sensor and protects it against mechanical damage.

DT1132

The ThermoRex DT1132 works according to the maximum temperature alarm activation. The temperature sensor consists of a precision NTC thermistor. The absolute ambient temperature is measured. The open protective housing means that the ambient temperature has an almost unhindered effect on the sensor and protects it against mechanical damage.

Common features

The detectors are installed in an impact-resistant plastic housing and are secured in the base with a vibration-proof bayonet fitting. The base does not contain any electronic components. A comprehensive range of base accessories is available for special applications such as installation in humid environments, protection against unauthorized removal, etc.

The detectors are equipped with a response indicator (red LED) to indicate alarm. Each detector is equipped with a short-circuit proof output for connecting an external response indicator.

2.1 Emergency operation

If a μP failure appears in the control unit, nevertheless a danger signal is triggered by the evaluation electronics in the control unit interface.

2.2 Line separation function

If a short circuit occurs on the detector bus, total bus failure is prevented by separator switches in each AnalogPLUS detector.

In the event of a short circuit the «electronic switches» (FET) open automatically and the short-circuited section between two detectors will be isolated. Because of this all detectors keep the full functioning

The FET's reclose by acknowledging in the control unit when the short circuit is remedied.

3 Technical data

Normal ambient conditions unless otherwise mentioned:

Temperature T_a = 20°C (293K)

Air pressure p = 1'000hPa (1'000mbar)

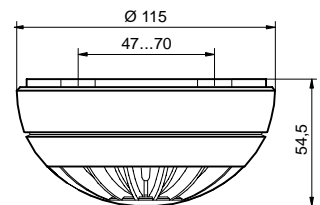
Parameters	Symbol	Value			Conditions	
		Unit	min.	typ.		max.
Operating voltage	U_b	V	16.0		28.0	modulated
Operating current (quiescent cond.)	I_b	μ A			200	FET's closed
Baud rate		Bd		167		
Response sensitivity DT1131 EN 54-5: class A1R temperature increase	dT	°C	20		40	$dT/dt = 10K/min.$
max. release temperature	T_a	°C	54		62	$dT/dt = 0.2K/min.$
DT1132 EN 54-5: range 1						
max. release temperature	T_a	°C		90		$dT/dt = 10K/min.$
Response indicator: Flashing interval times: bright dark		ms s		32 1.5		
Response indicator current		mA		15		
External response indicators		pieces			2	
Elektromagnetic compatibility		V/m	50			1MHz ... 1GHz
Operating temperature DT1131 DT1132	T_a T_a	°C °C	-25 -25		+50 +70	
Humidity $\leq 34^\circ\text{C}$ $> 34^\circ\text{C}$					$\leq 100\%$ rel. $\leq 35g/m^3$	
Storage temperature (continuous)	T_l	°C	-30		+75	
Connection factor	APMK			1		

Colour: white ~RAL9010

Classification

	DT1131	DT1132
Standards	EN 54-5 class A1R	EN 54-8, range 1
Application category IEC 60721-3	3K6	3K8H
Test category IEC 60068-1	25/050/42 (EN 54-5)	25/070/42 (EN 54-8)
Protection category IEC 60529	IP44	IP44

Dimensions



incl. base DB1131A

4 Commissioning

To prevent unnecessary soiling during the construction phase, the detectors should be inserted into the bases just before the system is put into service.

Each detector ThermoRex DT1131/DT1132 is connected in parallel to the two-wire detector bus. The address of the individual detectors is determined by the order in which the detectors are inserted or are checked with the detector tester.

5 Maintenance

5.1 Diagnostic possibilities

A detector DT1131/DT1132 can transmit 3 events to the control unit:

- Normal condition (quiescent value)
- Function state «impairment»
- Danger signal «normal sensitivity»

Function state «impairment»:

- If a detector responds with «impairment», the correct detector function is no longer ensured.
- Among the reasons are:
 - Line voltage at the detector location too low
 - Component failure in the detector etc.
- Such impairments must be remedied forthwith!

5.2 Functional check / overhaul

Through the detector self-test the DT1131/DT1132 are subjected automatically to an extensive electrical function check. However, it is still necessary to conduct a physical function test on site in regular intervals.

Recommendation: A visual check of the detectors must be performed periodically (usually **once per year**). Detectors that do not respond or which are mechanically damaged must be replaced.

All detectors should be jointly replaced and factory overhauled in intervals of **6 to 12 years**, depending on the environmental conditions and the severity of contamination.

A physical functional check of the detectors can be performed by means of a suitable testing device RE6T.

An electrical functional check of the detectors can be performed by means of the suitable detector testing device DZ1194.

If mechanically damaged detectors must be scrapped, the plastic materials can be sorted out based on the embossed code.

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