

Title (en)
Radiation smoke alarm.

Title (de)
Strahlungsrauchmelder.

Title (fr)
Détecteur de fumée à rayons dispersés.

Publication
EP 0105199 A1 19840411 (DE)

Application
EP 83108590 A 19830831

Priority
DE 3233368 A 19820908

Abstract (en)

1. A radiation smoke alarm which comprises a radiation source and a radiation receiver, wherein the radiation source transmits its radiation, via a focussing element, in the form of a sharply defined beam (15) into a measuring space (25), and wherein the radiation receiver receives any change in radiation produced by smoke particles and measures the intensity thereof, and wherein the radiation receiver is connected to an analysis device which analyses the measured values, where the measuring space (25) contains diaphragms (8) which are not located in the beam path (14, 15) but intercept scattered radiation, whereby between the measuring space (25) and the receiver, there is a focussing element which laterally defines the field of vision of the receiver in a direction towards the area of the greatest intensity of the beam (15) transmitted to the measuring space (25), the two focussing elements being precisely fixed in their mutually relative positions and in relation to the diaphragms (8) contained in the measuring space (25), characterised in that the radiation source and the radiation receiver are accommodated in separate chambers insulated from one another in respect of radiation, and that the radiation source and the radiation receiver are connected to the measuring space (25) via radiation conductors (23, 24), where the radiation source and the radiation receiver are arranged in the vicinity of the corresponding end faces of the radiation conductors (23, 24) without special means for position adjustment, and where the focussing elements are formed by curved surfaces (26, 27) of the radiation conductors (23, 24) which face towards the measuring space (25), and where at least one beam defining diaphragm (22) is arranged between the radiation conductors (23, 24) and the measuring space (25).

Abstract (de)

Ein gegen Umwelteinflüsse unempfindlicher und einfach aufgebauter Strahlungsrauchmelder wird dadurch erreicht, dass einem Messraum die Strahlung einer Strahlungsquelle über einen Lichtleiter (1) zugeführt und das zu messende Signal über einen anderen Lichtleiter (4) zu einem Strahlungsempfänger geleitet wird, dass im Strahlengang der beiden Lichtleiter (1, 4) fokussierende Elemente (6) vorhanden sind, die im Messraum ein scharf begrenztes Strahlungsbündel (15) erzeugen und dass die Lichtleiter (1, 4) und die fokussierenden Elemente (6) in ihrer gegenseitigen Lage und zu den im Messraum befindlichen Blenden (8) genau fixiert sind, während die Strahlungsquelle und der Strahlungsempfänger ohne besondere Lagejustierung in der Nähe der entsprechenden Endfläche der Lichtleiter (1, 4) angeordnet sind. Die Erfindung ist zur Anwendung bei optischen Rauchmeldern, die sowohl nach dem Funktionsprinzip der Durchlicht- als auch der Streulicht-Methode aufgebaut sein können, geeignet.

IPC 1-7
G08B 17/10; **G01N 21/53**

IPC 8 full level
G01N 21/53 (2006.01); **G08B 17/10** (2006.01); **G08B 17/107** (2006.01)

CPC (source: EP)
G08B 17/107 (2013.01); **G08B 17/113** (2013.01)

Citation (search report)

- [AD] DE 2951459 A1 19810702 - HEIMANN GMBH [DE]
- [YD] DE 7617247 U1
- [Y] DE 2011733 A1 19701015
- [A] DE 2630843 A1 19770120 - MATSUSHITA ELECTRIC WORKS LTD
- [A] DE 2116512 A1 19711118 - ENVIRONMENT ONE CORP
- [A] DE 2630645 A1 19770120 - COMMISSARIAT ENERGIE ATOMIQUE
- [A] DE 1472134 B2 19700409
- [A] Patent Abstracts of Japan Band 6, Nr. 148, 7. August 1982 & JP-A-57 069230

Cited by
EP0919970A1; EP0880118A3; GB2270157B; DE4328671B4; DE102008009213A1; WO03087791A1; DE102008009213B4; EP3832616A1

Designated contracting state (EPC)
AT BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)
EP 0105199 A1 19840411; **EP 0105199 B1 19880622**; AT E35336 T1 19880715; DE 3233368 A1 19840308; DE 3377172 D1 19880728

DOCDB simple family (application)
EP 83108590 A 19830831; AT 83108590 T 19830831; DE 3233368 A 19820908; DE 3377172 T 19830831