

Title (en)  
GAS SENSOR

Title (de)  
GASSENSOR

Title (fr)  
CAPTEUR DE GAZ

Publication  
**EP 3387418 A1 20181017 (DE)**

Application  
**EP 16787441 A 20161026**

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Abstract (en)  
[origin: WO2017097491A1] The invention relates to a gas sensor for determining at least one constituent or at least one property of a measurement gas, in particular an exhaust gas of an internal combustion engine, comprising a sensor element (14), which is installed in a housing (11) and has a gas-sensitive end segment (141), which distally protrudes from the housing (11) in a longitudinal direction (78) of the gas sensor (1) and is exposed to the measurement gas, and comprising a protective tube module (20), which covers the gas-sensitive end segment (141) and is fastened to the housing (11), wherein the protective tube module (20) has an inner protective tube (21), which surrounds the end segment (141) at a radial and an axial distance, such that an inner chamber (121) is formed between the housing (11) and the inner protective tube (21), in which inner chamber the gas-sensitive end segment (141) is located, wherein the protective tube module (20) has an outer protective tube (22), which surrounds the inner protective tube (21), such that an outer chamber (122) is formed inside the protective tube module (20) between the outer protective tube (22) and the inner protective tube (21), wherein the outer protective tube (22) has at least one inlet opening (221) for measurement gas to enter the outer chamber (121), wherein the at least one inlet opening (221) of the outer protective tube (22) has at least one swirl element (221a) for forming a vortex (red) about the longitudinal direction (78) in the outer chamber (122) and the outer protective tube (22) additionally has at least one outlet opening (222) for measurement gas to exit the protective tube module (20) from the outer chamber (122), wherein the inner protective tube (21) has at least one inlet opening (211) for measurement gas to enter the inner chamber (121) from the outer chamber (122) and additionally has at least one outlet opening (212) for measurement gas to exit from the inner chamber (121) into the outer chamber (122), characterized in that the outer chamber (122) extends beyond the housing (11) distally in the longitudinal direction (78) by an outer-chamber longitudinal extent (lex) and that the inner chamber (121) extends beyond the housing (11) distally in the longitudinal direction (78) by an inner-chamber longitudinal extent (lin) and that the outer-chamber longitudinal extent (lex) is at least twice as large as the inner-chamber longitudinal extent (lin).

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