

Title (en)
METHOD FOR OPERATING A FAIL-SAFE DEVICE OF A FLAME SENSOR

Title (de)
VERFAHREN ZUM BETRIEB EINER AUSFALLSICHERUNGSVORRICHTUNG EINES FLAMMENSSENSORS

Title (fr)
PROCÉDÉ DE FONCTIONNEMENT D'UN DISPOSITIF DE PROTECTION CONTRE LES PANNES D'UN DÉTECTEUR DE FLAMME

Publication
EP 3916693 A1 20211201 (DE)

Application
EP 21174882 A 20210520

Priority
GB 202008032 A 20200528

Abstract (en)
[origin: GB2595499A] A method 10 for operating a failure protection device (12 Fig.1) of a flame sensor (14 Fig.1) in which an optical sensor element 16 detects both a monitoring signal 18 and a signal indicative of the status of a flame (22 Fig.1), e.g. flame presence or flame absence. The method includes correlation between signals from both the monitoring signal and the flame status signal as detected by the optical sensor element, and the correlation indicates if the flame sensor is functioning properly. The signal from the optical sensor may be processed 44 and analysed 46 prior to evaluation 48, and the monitoring signal may be generated by a light emitter element 40 such as a light-emitting diode. The flame is fuelled by hydrogen or a fuel supply 32 with a substantial hydrogen content, and a control unit (28 Fig.1) may produce a control signal 50 to control the light emitter element. The control unit tries to detect the monitoring signal in the sensor signal, and if the control unit can detect the monitoring signal in the sensor signal, it indicates that the flame sensor is functioning properly. If the control unit cannot detect the monitoring signal in the sensor signal, it indicates that the flame sensor is not functioning properly, regardless of whether the optical sensor element or the emitter element is not functioning properly.

Abstract (de)
Die Erfindung geht aus von einem Verfahren zum Betrieb einer Ausfallsicherungs Vorrichtung eines Flammensensors, insbesondere eines Wasserstoff-Flammensensors, welcher zumindest ein optisches Sensorelement (16) umfasst, wobei in zumindest einem Verfahrensschritt ein Kontrollsignal (18) in Richtung des optischen Sensorelements (16) ausgesandt wird, wobei in zumindest einem Verfahrensschritt in Abhängigkeit einer signaltechnischen Korrelation zwischen dem Kontrollsignal (18) und einem von dem optischen Sensorelement (16) abgegriffenen Sensorsignal (20) auf eine Funktionstüchtigkeit des Flammensensors geschlossen wird. Es wird vorgeschlagen, dass das Kontrollsignal (18) während eines regulären Betriebs des Flammensensors zur Überwachung einer Flamme (22) ausgesandt wird.

IPC 8 full level
G08B 17/12 (2006.01); **F23N 5/00** (2006.01); **G08B 29/18** (2006.01)

CPC (source: EP GB)
F23D 14/16 (2013.01 - EP); **F23N 5/082** (2013.01 - EP GB); **F23N 5/242** (2013.01 - EP GB); **G08B 17/12** (2013.01 - EP); **G08B 29/185** (2013.01 - EP); **F23C 2900/9901** (2013.01 - EP); **F23D 2212/10** (2013.01 - EP); **F23D 2212/20** (2013.01 - EP); **F23N 2223/10** (2020.01 - GB); **F23N 2229/04** (2020.01 - EP); **F23N 2229/06** (2020.01 - GB); **F23N 2229/20** (2020.01 - EP); **F23N 2231/10** (2020.01 - EP GB)

Citation (applicant)
US 9746181 B2 20170829 - MORI RAITA [JP]

Citation (search report)
• [X] US 5495112 A 19960227 - MALONEY PATRICK D [US], et al
• [X] EP 0047421 A1 19820317 - LUMMUS CREST SARL [FR]

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EP4397907A1; EP4194752A1; WO2023104827A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3916693 A1 20211201; GB 202008032 D0 20200715; GB 2595499 A 20211201

DOCDB simple family (application)
EP 21174882 A 20210520; GB 202008032 A 20200528