

## Title (en)

Membrane switching element to actuate an indicator.

## Title (de)

Membran-Schaltelement zur Betätigung einer Anzeigevorrichtung.

## Title (fr)

Élément commutateur à membrane pour l'actionnement d'un dispositif indicateur.

## Publication

**EP 0044922 A1 19820203 (DE)**

## Application

**EP 81104351 A 19810605**

## Priority

DE 3028858 A 19800730

## Abstract (en)

1. A diaphragm control element for the actuation of a differential-pressure controlled device indicating the excessive contamination of an intake-air filter of an internal-combustion engine (1) and comprising a diaphragm (12) which consists of an elastic material and which is clamped, with its circumferential bead (13), in a housing (9, 10) and separates this housing into two chambers (14, 15) and, in the centre, is hinged to a spring-loaded control rod (19) which is actuatable perpendicularly to the clamping plane and which, if there is a difference in the pressure between the two chambers (14, 15), follows the displacement of the centre of the diaphragm, which results therefrom, with the internal circumferential bead (18) and, if a predetermined pressure differential is exceeded, brings about an indication, characterised by the following features a) the diaphragm (12) is plate-shaped, and in its relaxed state frusto-conical, and is installed in such a way that, if there is no pressure differential between the chambers (14, 15), it is in its end position (12 in Fig. 2) that is opposite to its relaxed end position of rest (12 in Fig. 3) and, if the pressure differential increases, moves, while displacing its centre, with the internal circumferential bead (18) through the clamping plane of its external circumferential bead (13), and while passing through a labile intermediate position, towards its relaxed end position (12 in Fig. 3), b) the spring force (22, 25) applied to the diaphragm (12) has been designed to be such that, at the pressure differential at the exceeding of which the control rod (19) is intended to trigger an indication, the diaphragm (12) is in the labile intermediate position, from which it heads for its relaxed end position of rest (12 in Fig. 3) if the pressure differential continues to increase, due to the support of the potential energy which is then released and is stored in it, c) the control rod (19) hinged to the diaphragm (12) actuates an electric contact (26, 31) to indicate the exceeded preset pressure differential.

## Abstract (de)

Ein Membran-Schaltelement (3) zur Betätigung einer differenzdruckgesteuerten Anzeigevorrichtung für übermäßige Verschmutzung eines Ansaugluftfilters (5) eines Verbrennungsmotors (1) enthält eine tellerförmige federbelastete Membran (12). Vor dem Auslösen des Schaltimpulses ist die Membran (12) gespannt und so eingebaut, daß sie im Schalterpunkt in ihr gespeicherte potentielle Energie in kinetische, den Schaltvorgang unterstützende Energie umwandelt. Dadurch wirkt das Schaltelement (3) wie ein elektrischer Kippschalter, bei dem die elektrischen Kontakte durch schnelles Schließen und Öffnen vor übermäßigem Verschleiß geschützt werden.

## IPC 1-7

**F02M 35/08**

## IPC 8 full level

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## CPC (source: EP)

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## Citation (search report)

- DE 7005833 U 19700521 - VDO SCHINDLING [DE]
- [A] US 3556043 A 19710119 - VAYDA LOUIS L
- [AD] DE 1232788 B 19670119 - BACHARACH IND INSTR COMPANY
- DE 1526668 A1 19700212 - FORD MOTOR CO

## Cited by

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