

Title (en)

Thermal-magnetic tripping mechanism of a circuit breaker made of shape memory effect material.

Title (de)

Magnetothermischer Auslöser aus einem Gestaltsspeichereffekt-Material, eingebaut in einen Schutzschalter.

Title (fr)

Déclencheur magnétothermique en matériau à mémoire de forme, associé à un mécanisme de disjoncteur.

Publication

**EP 0147278 A2 19850703 (FR)**

Application

**EP 84402508 A 19841205**

Priority

FR 8320898 A 19831226

Abstract (en)

1. Thermal-magnetic trip device with a mechanism (40) of an electric circuit breaker comprising : - a stationary core (18) associated with a movable core (20) sliding by means of an air-gap (22), - a tubular control coil (12) surrounding coaxially said stationary and movable cores (18, 20), the air-gap (22) being crossed by a magnetic flux due to the passage of the current in the coil (12), - a spring (36) resetting the movable core (20) in spreaded position when the current intensity for excitation of the coil (12) is lower than the electromagnetic trip threshold, - a thermomechanical sensor (44) of shape memory effect alloy, sensitive for the temperature rise of the control coil (12), - and unlocking means cooperating with the movable core (20) and the thermomechanical sensor (44) to ensure the automatic tripping of the mechanism (40), characterized by the fact that the thermomechanical sensor (44) of shape memory effect alloy comprises a helical spring (46) arranged in a closed space (42) insides the insulating duct (14) supporting the coil (12), and that the ampere-turn number of the coil (12) is constant for all sizes of a range.

Abstract (fr)

L'invention concerne un déclencheur magnétothermique en matériau à mémoire de forme. Le déclencheur (10) comporte un noyau fixe (18) associé à un noyau mobile (20) coulissant par l'intermédiaire d'un entrefer (22) axial. Une bobine (12) tubulaire entoure coaxialement les noyaux (18,20) et un capteur thermomécanique (44), formé par un ressort (46) hélicoïdal en alliage à mémoire de forme est logé dans l'espace clos (42) du fourreau (14) isolant de support de la bobine (12). Un ressort (36) de compression est associé à un poussoir (32) de déverrouillage, et sert simultanément de rappel au noyau mobile (20) et d'organe de polarisation du ressort (46) à mémoire de forme. Le nombre d'ampères -tours de la bobine (12) est constant pour tous les calibres d'une gamme. Application : disjoncteurs à basse tension.

IPC 1-7

**H01H 71/14**; **H01H 71/40**

IPC 8 full level

**H01H 71/14** (2006.01); **H01H 71/40** (2006.01)

CPC (source: EP)

**H01H 71/145** (2013.01); **H01H 71/40** (2013.01); **H01H 2061/0115** (2013.01); **H01H 2071/407** (2013.01)

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Designated contracting state (EPC)

AT BE CH DE GB IT LI NL SE

DOCDB simple family (publication)

**EP 0147278 A2 19850703**; **EP 0147278 A3 19850821**; **EP 0147278 B1 19871223**; AT E31590 T1 19880115; DE 3468290 D1 19880204; FR 2557353 A1 19850628; FR 2557353 B1 19860411

DOCDB simple family (application)

**EP 84402508 A 19841205**; AT 84402508 T 19841205; DE 3468290 T 19841205; FR 8320898 A 19831226