

Title (en)  
Relay with integrated safety circuit

Title (de)  
Relais mit integrierter Sicherheitsbeschaltung

Title (fr)  
Relais doté d'une commutation de sécurité intégrée

Publication  
**EP 2383765 B1 20200115 (DE)**

Application  
**EP 11002955 A 20110408**

Priority  
DE 102010018755 A 20100429

Abstract (en)  
[origin: EP2383765A1] The relay (10) has a coil housing (14) comprising a movable armature (24) allowing or disconnecting current flow over two main contact terminals (16.1, 16.2) by magnetic flow that is generated in a coil arrangement (22) using coil current. A control unit (26) is provided on the coil housing for controlling the coil current, and is formed on a round board. Spring-mounted contact pins (28.1) are provided for contacting the control unit, and are electrically connected with control electrodes (20.1, 20.2), where coil unloading is examinable by the control unit.

IPC 8 full level  
**H01H 50/02** (2006.01); **H01H 47/22** (2006.01)

CPC (source: EP US)  
**H01H 47/22** (2013.01 - EP US); **H01H 50/02** (2013.01 - EP US)

Citation (examination)

- DE 19744396 A1 19990415 - HEINRICH KISSLING GMBH & CO KG [DE]
- EP 0017129 A1 19801015 - SAUER HANS [DE], et al
- DE 602005002015 T2 20080515 - INTERNAT CONTROLS AND MEASUREM [US]

Citation (opposition)  
Opponent : E-T-A Elektrotechnische Apparate GmbH

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- DE 4415929 A1 19951109 - SIEMENS AG [DE]
- DE 3306019 C2 19841213
- DE 2405383 A1 19750807 - BOSCH GMBH ROBERT
- DE 1514099 A1 19691002 - KIENINGER & OBERGFELL
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- EP 1341202 A1 20030903 - BOSCH GMBH ROBERT [DE]
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- EP 0789378 A1 19970813 - ASEA BROWN BOVERI [SE]
- DE 69618090 T2 20020711 - VALEO EQUIP ELECTR MOTEUR [FR]
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- US 5914849 A 19990622 - PERREIRA G STEPHEN [US]
- US 2010033276 A1 20100211 - NIIMI MASAMI [JP], et al
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- DE 10105205 A1 20020814 - MAERKLIN & CIE GMBH GEB [DE]
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- US 2004240140 A1 20041202 - MALLER DENNIS A [US], et al
- DE 3152626 C1 19930429 - ASEA BROWN BOVERI
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- DE 1105062 B 19610420 - KELLER SPEZIALTECHNIK G M B H
- DE 1965805 A1 19701203 - LANDIS & GYR AG

Opponent : Layher AG

- EP 1353348 A1 20031015 - MATSUSHITA ELECTRIC WORKS LTD [JP]
- US 2004240140 A1 20041202 - MALLER DENNIS A [US], et al
- EP 2019454 A2 20090128 - BOSCH GMBH ROBERT [DE]
- DE 19744396 A1 19990415 - HEINRICH KISSLING GMBH & CO KG [DE]
- EP 0017129 A1 19801015 - SAUER HANS [DE], et al
- DE 602005002015 T2 20080515 - INTERNAT CONTROLS AND MEASUREM [US]
- US 2010033276 A1 20100211 - NIIMI MASAMI [JP], et al
- WO 0113395 A1 20010222 - SIEMENS AG [DE], et al
- US 2008218928 A1 20080911 - BAEK SEUNG MOON [KR]
- US 2005135040 A1 20050623 - SUZUKI HIROHISA [JP], et al

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
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US 2011267158 A1 20111103

DOCDB simple family (application)

