

Title (en)  
ELECTRIC PUMP APPARATUS

Title (de)  
ELEKTRISCHE PUMPVORRICHTUNG

Title (fr)  
APPAREIL DE POMPE ÉLECTRIQUE

Publication  
**EP 2662568 B1 20180418 (EN)**

Application  
**EP 12732411 A 20120104**

Priority  
• JP 2011000123 A 20110104  
• JP 2012050035 W 20120104

Abstract (en)  
[origin: EP2662568A1] [Problem] An electrical pump apparatus is provided in which a situation where a failure detection circuit becomes inoperative before detection of a failure of an electric system can be avoided, and the certainty of failure detection can be enhanced. [Means for Resolution] An attaching portion 63 which is to be attached to a vehicle body 61 is formed so that, in a state where an electrical pump apparatus 1 is attached to the vehicle body 61, a circuit board 51 of a control device 5 is perpendicular to the horizontal direction. A control IC chip 53 which constitutes a microcomputer 72 for detecting a failure of the electric system is placed on a circuit board 51 so as to be higher in the direction of gravity from a lowest water level Hmin at which flooding in a housing 2 causes the electric system to be short-circuited.

IPC 8 full level  
**F04B 17/03** (2006.01); **F01C 21/00** (2006.01); **F04B 49/06** (2006.01); **F04B 51/00** (2006.01); **F04B 53/16** (2006.01); **F04C 2/10** (2006.01); **F04C 14/28** (2006.01); **F04C 15/00** (2006.01)

CPC (source: EP US)  
**F04B 17/03** (2013.01 - EP US); **F04B 49/06** (2013.01 - EP US); **F04B 51/00** (2013.01 - EP US); **F04B 53/16** (2013.01 - EP US); **F04C 2/10** (2013.01 - EP US); **F04C 14/28** (2013.01 - EP US); **F04C 15/008** (2013.01 - EP US); **F01C 21/007** (2013.01 - EP US); **F04C 2240/51** (2013.01 - EP US); **F04C 2240/808** (2013.01 - EP US); **F04C 2270/10** (2013.01 - EP US); **F04C 2270/60** (2013.01 - EP US); **F04C 2270/86** (2013.01 - EP US)

Citation (examination)  
• US 2006222527 A1 20061005 - KURITA HIROTAKE [JP], et al  
• US 7508149 B2 20090324 - PATEL NITINKUMAR R [US]

Cited by  
DE102014111721A1; EP3869038A1

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 2662568 A1 20131113**; **EP 2662568 A4 20160803**; **EP 2662568 B1 20180418**; CN 103314215 A 20130918; CN 103314215 B 20151223; JP 5994638 B2 20160921; JP WO2012093678 A1 20140609; US 2014037472 A1 20140206; WO 2012093678 A1 20120712

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**EP 12732411 A 20120104**; CN 201280004608 A 20120104; JP 2012050035 W 20120104; JP 2012551867 A 20120104; US 201213978292 A 20120104