

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)
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

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

DOCDB simple family (application)
EP 12732411 A 20120104; CN 201280004608 A 20120104; JP 2012050035 W 20120104; JP 2012551867 A 20120104; US 201213978292 A 20120104