

Title (en)  
PUMP UNIT WITH PUMP AND ELECTRIC MOTOR

Title (de)  
PUMPENEINHEIT MIT PUMPE UND ELEKTROMOTOR

Title (fr)  
UNITÉ DE POMPE AVEC POMPE ET MOTEUR ÉLECTRIQUE

Publication  
**EP 3869038 A1 20210825 (EN)**

Application  
**EP 21157945 A 20210218**

Priority  
US 202016796177 A 20200220

Abstract (en)  
Pump unit 26 for pressurising a hydraulic actuating system 21 including a pump housing 261 with a pump chamber 264 for housing a pump and an electric motor 3 for driving the pump. The electric motor, a brushless DC motor, comprises a motor rotor 31 with several magnets 33 at an outer surface, and a field coil positioned opposite the magnets for rotationally driving the motor rotor. The pump unit further comprises a control unit 29 including a printed circuit board PCB for controlling the electric motor. The control unit and a closure 29, 265 form a subassembly which is mountable as a module to close the pump chamber. The control unit comprises at least one Hall sensor 34 to detect a rotational position of the motor rotor. The at least one Hall sensor is positioned on the printed circuit board being positioned opposite a motor rotor end face 612.

IPC 8 full level  
**F04B 1/047** (2020.01); **F04B 1/1071** (2020.01); **F04B 17/03** (2006.01); **F04B 49/06** (2006.01)

CPC (source: CN EP)  
**F04B 1/047** (2013.01 - EP); **F04B 1/1071** (2013.01 - EP); **F04B 17/03** (2013.01 - EP); **F04B 17/04** (2013.01 - CN); **F04B 49/06** (2013.01 - CN); **F04B 49/065** (2013.01 - EP); **F04B 53/16** (2013.01 - CN); **F04B 2201/1208** (2013.01 - EP); **F04B 2203/02** (2013.01 - EP)

Citation (applicant)  
• EP 2662568 A1 20131113 - JTEKT CORP [JP]  
• US 6168393 B1 20010102 - HUBER GERHARD [DE], et al  
• GB 812812 A 19590429 - FRANCIS HENRY WOODCOCK  
• EP 0544856 A1 19930609 - TEVES GMBH ALFRED [DE]

Citation (search report)  
• [Y] US 2019154036 A1 20190523 - NIEUWENHUIS MARCEL GERARDUS MARIA [NL]  
• [Y] WO 2019081011 A1 20190502 - PIERBURG PUMP TECHNOLOGY GMBH [DE]  
• [A] WO 2018091101 A1 20180524 - PIERBURG PUMP TECHNOLOGY GMBH [DE]  
• [A] US 2001051098 A1 20011213 - KENNEY THOMAS [US], et al

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3869038 A1 20210825**; CN 113279934 A 20210820

DOCDB simple family (application)  
**EP 21157945 A 20210218**; CN 202110193538 A 20210220