

Title (en)  
Pump control method

Title (de)  
Verfahren zur Regelung einer Pumpe

Title (fr)  
Procédé de contrôle d'une pompe

Publication  
**EP 1710441 A3 20100526 (DE)**

Application  
**EP 06005255 A 20060315**

Priority  
DE 102005013773 A 20050322

Abstract (en)  
[origin: EP1710441A2] The method involves using a regulator unit (6) for detecting and estimating the rotor phase position and rotor speed of a PMSM (permanent multi-phase synchronous motor) (3) and for determining fluctuations in the estimated rotor speed for pump operation. The pumping or foam or air is controlled based on the estimated rotor phase position and rotor speed.

IPC 8 full level  
**F04D 15/00** (2006.01); **A47L 15/42** (2006.01)

CPC (source: EP US)  
**F04D 15/0066** (2013.01 - EP US); **F04D 15/0209** (2013.01 - EP US); **F04D 15/0236** (2013.01 - EP US)

Citation (search report)

- [X] DE 19736347 A1 19990225 - KUNZ WUNNIBALD [DE]
- [Y] EP 1284540 A2 20030219 - DIEHL AKO STIFTUNG GMBH & CO [DE]
- [Y] DE 4418721 A1 19951130 - LICENTIA GMBH [DE]
- [YD] DE 19617570 C1 19971211 - HANNING & KAHL GMBH & CO [DE]
- [A] EP 0744807 A1 19961127 - PAPST MOTOREN GMBH & CO KG [DE]
- [A] US 5448149 A 19950905 - EHSANI MEHRDAD [US], et al

Cited by  
CN111456933A; DE102009055203B4

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL BA HR MK YU

DOCDB simple family (publication)  
**EP 1710441 A2 20061011; EP 1710441 A3 20100526**; DE 102005013773 A1 20060928; US 2006245931 A1 20061102; US 7595603 B2 20090929

DOCDB simple family (application)  
**EP 06005255 A 20060315**; DE 102005013773 A 20050322; US 38626106 A 20060322