

Title (en)  
STARTER DEVICE FOR AN INTERNAL COMBUSTION ENGINE

Title (de)  
STARTVORRICHTUNG FÜR EINE BRENNKRAFTMASCHINE

Title (fr)  
DISPOSITIF DE DEMARRAGE POUR MOTEUR A COMBUSTION INTERNE

Publication  
**EP 1446576 A2 20040818 (DE)**

Application  
**EP 02796497 A 20021108**

Priority

- DE 0204162 W 20021108
- DE 10155111 A 20011109

Abstract (en)  
[origin: WO03040551A2] The invention relates to a starter device (160) for an internal combustion engine, comprising a starter motor (140) and a switching control device for controlling the starter motor (140). The latter comprises a power switching module (165, 170, 175, 180) connecting the starter motor (140) to a voltage source (130). The switching control device also comprises a control electronics system (195) used to control the power switching module (165, 170, 175, 180), and an actuating device (135) used to activate the control electronics system (195). The control electronics system (195) is configured in such a way that it can be operated with a supply voltage which is less than 5V, thereby ensuring safe operation of the starter device even if the supply voltage falls off in the wake of the starting process.

IPC 1-7  
**F02N 11/08**

IPC 8 full level  
**F02N 11/08** (2006.01); **F02D 41/22** (2006.01); **F02D 41/30** (2006.01)

CPC (source: EP)  
**F02N 11/087** (2013.01); **F02D 41/22** (2013.01); **F02D 41/266** (2013.01); **F02D 41/3005** (2013.01); **F02N 11/0862** (2013.01); **F02N 11/103** (2013.01); **F02N 2011/0874** (2013.01); **F02N 2300/30** (2013.01); **F02N 2300/302** (2013.01)

Citation (search report)  
See references of WO 03040551A2

Cited by  
DE102010005683A1

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

DOCDB simple family (publication)  
**WO 03040551 A2 20030515**; **WO 03040551 A3 20030814**; AT E400737 T1 20080715; DE 10155111 A1 20030522; DE 50212484 D1 20080821; EP 1446576 A2 20040818; EP 1446576 B1 20080709

DOCDB simple family (application)  
**DE 0204162 W 20021108**; AT 02796497 T 20021108; DE 10155111 A 20011109; DE 50212484 T 20021108; EP 02796497 A 20021108