

(51) International Patent Classification:
H02M 3/335 (2006.01)(21) International Application Number:
PCT/EP2011/068643(22) International Filing Date:
25 October 2011 (25.10.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1018262.4 28 October 2010 (28.10.2010) GB
61/407,466 28 October 2010 (28.10.2010) US(71) Applicant (for all designated States except US): **ELTEK VALERE AS** [NO/NO]; P. O. Box 2340 Strømsø, N-3003 Drammen (NO).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROJAS, Roberto** [EC/SE]; Torsten Alms Gata 22, 3 tr, Hägersten, S-126 51 Stockholm (SE). **BÄCKMAN, Nils** [SE/SE]; Lundagatan 44 C, S-117 27 Stockholm (SE).(74) Agents: **WOLDSTAD, Endre** et al.; **ONSAGERS AS**, P. O. Box 6963, St. Olavs plass, N-0130 Oslo (NO).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
21 June 2012

(54) Title: METHOD FOR CONTROLLING A SERIES RESONANT DC/DC CONVERTER

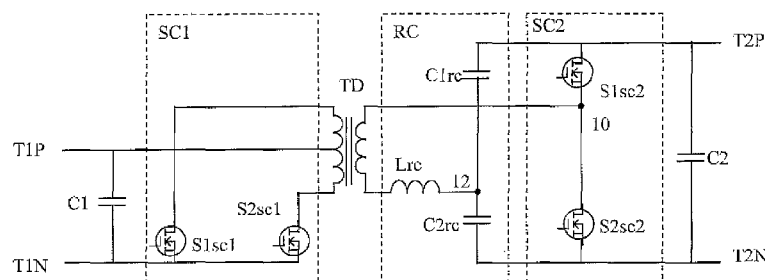


Fig. 2

(57) Abstract: The invention relates to a method for controlling a series resonant DC/DC converter. The method comprises the steps of: defining a switching period TP having a first half period TA and a second half period TB and defining a subsequent switching period TP+1 after the switching period TP. In a next step, a first set (S1sc1; S1sc1, S4sc1) of switches of a first switching circuit (SC1) is controlled to be ON from the beginning Tstart of the first half period TA minus a time interval $\Delta TAE1$, where the time interval $\Delta TAE1$ is provided at the end of the first half period TA and a second set (S2sc1; S2sc1, S3sc1) of switches of the first switching circuit (SC1) is controlled to be ON from the beginning Tcenter of the second half period TB minus a time interval $\Delta TBE1$, where the time interval $\Delta TBE1$ is provided at the end of the second half period TB. A first set (S1sc2; S1sc2, S4sc2) of switches of a second switching circuit (SC2) is controlled to be ON in the first half period TA minus a time interval $\Delta TAS1$ and minus a time interval $\Delta TAE2$, where the time interval $\Delta TAS1$ is provided at the beginning of the first half period TA and where the time interval $\Delta TAE2$ is provided at the end of the first half period TA and a second set (S2sc2; S2sc2, S3sc2) of switches of the second switching circuit (SC2) is controlled to be ON in the second half period TB minus time interval $\Delta TBS1$ and minus time interval $\Delta TBE2$, where the time interval $\Delta TBS1$ is provided at the beginning of the second half period TB and where the time interval $\Delta TBE2$ is provided in the end of the second half period TB. Time intervals Tscloff1 and Tsc2off1, and time intervals Tscloff2 and Tsc2off2, where the sets of the first and second switching circuits all are off, are at least partially overlapping.