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THYRISTOR CONVERTER FOR DRIVING ELECTROMAGNETIC VIBRATORY FEEDER

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Abstract: *In this paper will be proposed a possible solution for a thyristor converter for electromagnetic vibrators. This electromagnetic vibrators are used it the systems for scraped material. Electromagnetic vibrators are better than other. The propulsions with electromagnetic vibrators are displaced all other types (hydraulics, pneumatics, mechanics). They have flexibility in use, especially with semiconductor converter. The thyristors and the triacs with phase angle control are at the output. Vibrator systems called DC or unidirectional use only one half wave of main voltage. The second type called bi-directional type or AC use other both positive and negative half wave. Unidirectional converters with phase angle control have some defects: they have poor power factor, they produce a harmful harmonics that have influence in other systems in main power network. The realised frequency of vibration from the converter depends on main power network. The better solution is to use transistors that have power factor correction and possibility to eliminate a harmful harmonics.*

Key words: Electromagnetic vibrator, vibrating path, frequency of vibration, thyristor

TIRISTORSKI PRETVARAČ ZA POGON ELEKTROMAGNETNIH VIBRATORA

Sadržaj rada: *U radu će biti predstavljeno jedno moguće rešenje tiristorskog pretvarača za pobudu elektromagnetnih vibratora koji se koriste u sistemima za doziranje rasutih materijala. Pogoni sa elektromagnetnim vibratorima su u potpunosti istisnuli sve ostale (hidrauličke, pneumatske, mehaničke...). Oni poseduju vrlo značajnu osobinu fleksibilnosti u eksplataciji što je naročito došlo do izražaja upotrebom poluprovodničkih pretvarača. Kao izlazni stepeni snage se koriste pretežno tiristori i trijaci sa faznom kontrolom. Jedan tip ovih pretvarača - unidirekcioni ili DC pretvarači, koriste samo jednu poluperiodu mrežnog napona, dok drugi tip - bidirekcioni ili AC pretvarači, koriste obe poluperiode. Unidirekcioni pretvarači sa faznom kontrolom imaju dosta nedostataka: jako loš faktor snage, unos štetnih harmonika u napojnu mrežu, koji nepovoljno utiču na rad ostalih potrošača. Rad elektromagnetnog vibratora u smislu ostvarene učestanosti vibracija je zavistan od mrežnog napona. Ovi nedostatci se otklanjaju korišćenjem tranzistorskih pretvarača koji u sebi sadrže korekciju faktora snage i otklanjaju štetne harmonike.*

Ključne reči: Elektromagnetni vibrator, vibraciona širina, učestanost vibracija, tiristor