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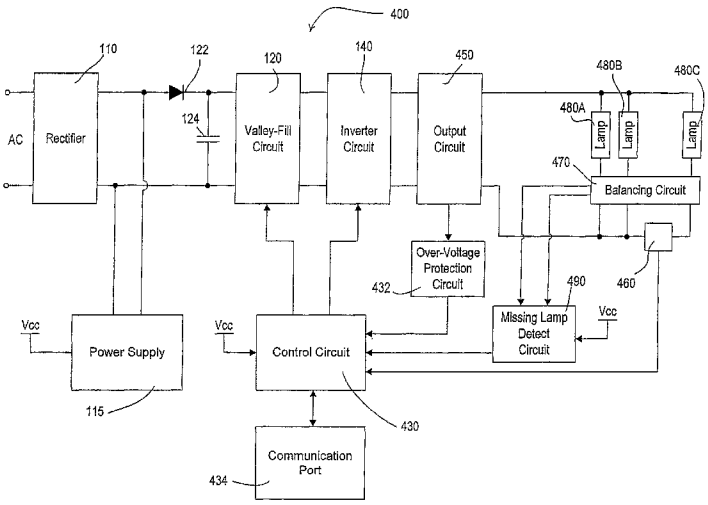
(54) Title: ELECTRONIC BALLAST HAVING MISSING LAMP DETECTION



(57) Abstract: An electronic ballast for driving a plurality of gas discharge lamps in parallel includes a rectifier to convert an AC mains input voltage to a rectified voltage, a filter circuit to convert the rectified voltage to a substantially DC bus voltage, an inverter to convert the DC bus voltage to a high-frequency AC voltage for driving the lamp, and an output stage for coupling the high-frequency AC voltage to the lamps. The ballast also includes a plurality of balancing transformers coupled to the lamps for balancing the currents in the lamps. When one of the parallel lamps is missing or faulty, a substantially large voltage is produced across one or more of the balancing transformers. This large voltage is detected by a missing-lamp detect circuit that provides a control signal to a ballast control circuit. In response to a detected missing-lamp condition, the control circuit stops the ballast from driving the lamps. Optionally, the ballast control circuit can transmit a message regarding the missing-lamp condition via an external communication link.

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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER
IPC: **H05B 41/16**(2006.01)

USPC: 315/277
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 315/246, 276, 277, 312

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P --- Y,P	US 2005/0225261 A1 (JIN) 13 October 2005 (13.10.2005), see entire document.	11-14 --- 1-10
X,P --- Y,P	US 2005/0093472 A1 (JIN) 05 May 2005 (05.05.2005), see entire document.	11-14 --- 1-10

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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