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(54) **DRIVER AND SENSOR CIRCUITRY FOR POWER SEMICONDUCTOR SWITCHES USING OPTICAL POWER SUPPLIES**

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(57) **ABSTRACT**

A system includes a sensor circuit configured to sense a parameter of a power system having an operating voltage greater than a voltage rating of the sensor circuit, an optical communications circuit configured to receive a sensor signal from the sensor circuit and to generate an optical communications signal therefrom, and an optical power supply circuit configured to receive an optical input, to generate electrical power from the received optical input and to supply the generated electrical power to the sensor circuit and the optical communications circuit. A driver circuit may be configured to generate a first control signal applied to a control terminal of the power semiconductor switch, and the optical power supply circuit may be configured to supply the generated electrical power to the sensor circuit, the optical communications circuit and the driver circuit.