

Electronic Pressure switch with high breaking capacity and high vibration resistance

By customer request PINTER should develop a powerful and precise yet small electronic pressure switch.

Requirements

The electronic pressure switch is to be used to monitor supply air pressure for different systems, whereas following criteria needed particular attention:

- 1) high vibration resistance (7G constant load)
- 2) high breaking capacity (7A PNP - output)
- 3) compact dimensions
- 4) economical

Realization

The pressure switch is primarily used on engines and machines with more than 1000 KW. High vibrations up to a frequency range of about 300 Hz with a constant load of 7G are usually encountered. The special design of the switch allows for use in this environment without an assembly with vibration isolation.



This is achieved by a special construction of the enclosure of the pressure switch, e.g. bolted connections have been largely omitted.

The output is a special PNP-transistor for switching loads up to 7 A. In addition, the output can handle a peak current of up to 14 A.

These characteristics are necessary because during a switching operation different other consumers will be activated and for a period of up to 10s peak currents occur, that flow through the transistor.

Regarding the little installation space near engines and machines, high ambient temperature of up to 80°C as well as high heat generation during switching with high currents, the challenge was to keep thermal load within reasonable limits without additional cooling elements.

Cost of development and construction of the pressure switch has been reduced to a minimum despite the high technical requirements.

Basis for cost-effective development were the long-time know-how in Pressure Measurement, the existing product base as well as the extensive network of partners, in particular in the field of electronics development.

In order to take into account different environmental conditions, the pressure switch has also been optimized to prevent damage from seawater, so for example enclosure parts are made of seawater resistant aluminum.

By customer request, the switch does not have a display or any operation keys. Instead it is delivered completely factory-set in order to rule out any manipulation. The switching states are visualized by two LEDs (red and green). The switching points are within the low

mbar range, which requires a high accuracy and repeatability of the switch.

PINTER developed this switch in only 4 weeks ! Serial delivery started already 2 weeks after initial sample release by the customer.

Contact Person

Peter Schwindt, Dipl.-Ing (FH), Sales Director
 Phone +49-6262-92670-75
 E-Mail peter.schwindt@pinter-gmbh.de