Sheet

10

Switch 10

Safety angular switch

Switch 10 is a safety angular switch based on a pair of redundant accelerometers and a pair of assessment channels, one analogical and one digital, combined between them. It uses a comparison circuit with two distinct and adjustable thresholds operating one for positive angles, with respect to the perpendicular line of the earth surface, and one for negative angles. A relay contact is tied to each of the two angles and, in this way, it is possible to create a double switch with two switching points and two separate circuits for two separate corners. A calibration, by using trimmers, allows a fine adjustment around the corner set values in production. The two angles can be set in production, if necessary, in a much wider range than that permitted by trimmers, anywhere between the perpendicular line the earth surface and the parallel line to the earth surface, by covering the entire angle of 180°. The two angles can be set even in overlapping areas, allowing the creation of keep-in or keep-out logics of the two safety functions derived from the two snap points. From the electrical point of view, the system is suitable to operate with the battery voltages available on board of vehicles. Its connection is made through a five-pin cable.



Switch 10

- Safety angular switch based on a pair of redundant accelerometers.
- Comparison circuit with distinct and adjustable thresholds (settable by trimmers).
- Angles regulation between 0 and 10° (possibility of range changing on demand).
- Relay output (free contacts) for each of the two angles.
- Power supply system of automotive type.
- Connection made through a five-pin cable.

Working conditions

Operating voltage:	**+8V - +30V**
Maximum operating voltage:	**+6V - +36V**
Current absorption at 12V with closed contacts:	**170mA**
Current absorption at 12V with open contacts:	**76mA**
Maximum capacity termally limited for each contact:	**5A**
Whole maximum capacity of both contacts:	**5A**
Working temperature:	**-20°C - +85°C**
Maximum working temperature:	**-40°C - +105°C**

Inputs and outputs

Relay outputs 5A:	**2**

Processing

Microprocessor:	**8 bit**
Operational rate:	**16 MHz**
PL (Performance Level) EN ISO 13849-1:	**D**
SIL (Safety Integrity Level) EN 62061:	**2**
MTBF (Mean Time Between Failures) Siemens SN29500-1 Ground Mobile:	**128,28**

This document is ESAGON S.r.l.'s property. The total or partial reproduction of its contents is forbidden.

ESAGON S.r.l.
Via della Motorizzazione 4
Loc. Madonna dell'Olmo
Cuneo
Tel. 0171-417690 - Fax 0171-411879
www.esagon.com info@esagon.com