Scheda

12

BiSwitch

Safety angular sensor

BiSwitch is a safety angular sensor based on a pair of biaxial accelerometers. It processes gravity acceleration data to calculate the planarity angle on two orthogonal axes. The redundant processing performed by two separate microprocessors on two different accelerometers, as well as some functions for evaluating the information, allow to get a device with high intrinsic safety. It is available in 3 different versions: **Standard**, **CAN-Bus** and **5 outputs**. The **Standard** version has a simple safety contact or in exchange.
The **CAN-Bus** version has a safety contact and provide all the angle information on a CAN line; it runs with the **CANopen Safety** (**CiA 304**) **protocol**, published as european standard EN 50325-5, which assures PL “e” and SIL 3. The angle value is transmitted on two different Id, on the first as it is and on the second with reverse bits, and assessed by both the microprocessors, the first conveys it to the controller and the second inhibits the conveyance if the value found by it is discordant with that found by the first.
The **5 outputs** version has 4 digital outputs on the 4 semiaxis X-Y and a fifth digital output, which repeats the main switch function, but t is calibratable on a different threshold. The **5 outputs** version can be used to convey maximum 100 mA signals to an HMI (Human Machine Interface) or to an electronic control unit or to convey information when a CAN line is not available.
The device is based on automotive technology and can operate with supply voltages between 6 and 36 V. The calibration parameters of the output snap values and the operational modes, as well as the CAN parameters of the CAN-Bus version, are totally configurable through the serial door, using a simple terminal software like Hyperterminal or a specific software for pc named EsaTiltManager made available by Esagon. Its dressing in a resinated container grants an IP68 protection degree.



BiSwitch

- Safety angular sensor based on a pair of biaxial accelerometers.
- Redundant processing of gravitational acceleration data performed by two separate microprocessors on two different accelerometers.
- Three different versions available: Standard, CAN-Bus and 5 outputs.
- Main parameters totally configurable through a serial door, using a simple terminal software like Hyperterminal or a specific software for pc named EsaTiltManager made available by Esagon.
- IP68 protection degree.

Working conditions

Operational supply voltage:	**+8V - +30V**
Operational absorption logic circuit:	**< 0,5A**
Working temperature:	**-20°C - +85°C**
Dimensions:	**83x71x38 mm**

Inputs and outputs

Configurable contacts normally closed or normally open:	**2**
Contacts maximum capacity:	**7A**
In the 5 outputs version, digital outputs:	**5**

CAN-Bus and communication door

CAN-Bus channel:	**FULL CAN 2.0 A e B**
Protocol standard:	**SAE J1939**
Maximum speed:	**500 Kbit / sec.**
Communication door:	**RS 232**

Processing

Microprocessor:	**16 bit**
Operational rate:	**32 MHz**
Microprocessor:	**8 bit**
Operational rate:	**16 MHz**
Maximum angle detection:	**+/- 90°**
Resolution of angle detection:	**0,5°**
PL (Performance Level) EN ISO 13849-1:	**E**
SIL (Safety Integrity Level) EN 62061:	**3**
MTBF (Mean Time Between Failures) Siemens SN29500-1 Ground Mobile:	**564,01**

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