SCHMERSAL

Tech Briefs:
SCHMERSAL System Solutions

System Features

- Scalable safety solution for different machine sizes

- Simple, fail-safe installation

- Drag & Drop configuration of the system through the "ASIMON" software

- Complete diagnostics of the entire safety circuit by the control system

- High operational safety through individually configurable safety monitoring modules

- Safety functions can be effortlessly changed or extended at a later date.

- Certified up to PLe or SIL3

- The AS-I system interfaces with popular field bus systems

- Cost effective alternative to parallel wiring

- Availability of a wide variety of safety components with integrated AS-I

Available Literature

AS-I System Solutions
40 pages

Overview

AS-Interface Safety at Work is a safety bus system based upon the open standard of AS-International. It is a simple yet flexible solution to quickly, efficiently and cost-effectively integrate a vast safety system.

The basis of all AS-Interface installations is an AS-Interface master, a power supply, and the distinctive AS-Interface yellow cable. Safety components are connected to the central AS-I cable, which carries both power and system signals, which eliminates the need to run parallel wires to each component. Connections are made by an Insulation Displacement Connection (IDC) so there is no cutting and stripping of wires during installation. Once connected to the system, components are configured in the safety monitor using a drag and drop software. No settings are required at each of the safety devices. This central cable, IDC connectors, and easy programming means that the safety circuit can easily be configured, and in the future can be reconfigured, adding or removing components without having to rewire the whole system.

The communication protocol for safety relevant applications is based on the AS-Interface Standard transmission. With each AS-Interface master call, each safety device answers in return with a preset data telegram. A safety monitor analyses all transmitted information from each safety device on the AS-Interface network and in case of a deviation from the pre-set values such as a safety device being activated or a fault in one of the safety devices, the safety monitor immediately opens enabling paths to create a safe condition. The maximum response time for a safe shutdown is 40 ms.

AS-Interface supports the user with integrated system diagnosis. It provides detailed information about the cause and place of the failure, and enables the user to quickly find and analyze a malfunction and therefore minimize machine downtime. An AS-I system can stand alone or be connected via Safety Gateways to conventional field bus interfaces such as PROFIBUS, PROFINET, EtherNet/IP or ModbusTCP. AS-Interface fulfils the safety requirements to the highest standards - up to PLe/category 4 in accordance with EN ISO 13849-1 or SIL 3 in accordance with IEC 61508.

The AS-Interface is an open system, allowing integrators to realize individual safety solutions with components from multiple suppliers. SCHMERSAL offers a diverse range of compatible safety devices with integrated AS-Interface. Included are a variety of keyed interlocks, solenoid interlocks, safety sensors, E-Stop button, control panels, emergency cable pull switches, limit switches, and safety foot switches.

AS-I Integrated Devices

The AS-Interface is an open system, allowing integrators to realize custom safety solutions with components from multiple suppliers. SCHMERSAL offers a diverse range of compatible safety devices with integrated AS-Interface:

AZ16 AS	Keyed interlock
AZ200 AS	Keyed interlock
AZM161 AS	Solenoid interlock
AZM170 AS	Solenoid interlock
AZM200 AS	Solenoid interlock
AZM300 AS	Solenoid interlock
MZM100 AS	Electromagnetic lock
RSS36 AS	RFID Safety sensor
RSS260 AS	RFID Safety sensor
BNS260 AS	Magnetic sensor
BNS36 AS	Magnetic sensor
BNS16 AS	Magnetic sensor
ZQ900 AS	Cable pull switch
ZQ700 AS	Cable pull switch
BDF200 AS	Control station
NAS311AS	Emergency Stop
Z/T 235 AS	Limit switches
Z/T 236 AS	Limit switches
Z/T 335 AS	Limit switches
Z/T 336 AS	Limit switches
TFH232 AS	Safety foot switches
SLC440 AS	Safety light curtain
SLG440 AS	Safety light grid

These AS-I versions are installation ready due to their integrated connector and internal AS-i logic. Simply connect the safety device to a node along any length of the AS-i cable.

Safety devices which are not available with integrated AS-i Safety interface can be incorporated into the AS-i Safety circuit through an external input module.

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