

Communication with SafeEthernet

Additional superior structures are no longer necessary - the investment can be reduced

Ever more complex automation tasks in connection with shorter planning-and initial start-up phases increasingly require flexible and open systems. Even the safety systems which were up to now separately constructed, should in the future be able to be simply integrated into one system.

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In order to save time and costs in the long-term regarding the life cycle of a facility, the number and variation of the components and bus systems employed must be reduced. At the same time, the requirement automatically arises for the transference of safe and non-safe data via a collective standard network. This was not possible up to now because of the high specifications such as reaction time to the safety-relevant data.

The press automation put one of the superlative requirements at the safety and reaction time of the automation system. The dangers prevention in a press is almost impossible, the safety system must detect and avoid the danger within the safety time, for protection of human, plant and environment.



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Therefore, in the current automation machines, the networks for safe and non-safe plant components are constructed separately.

This problem is solved through the innovative safe communication technology of the HIMA Company. Fast applications inclusive of the whole emergency-off interlocking mechanism and danger zone safeguarding become possible with a single facility-wide network.

Through the adjustable network profile, the SafeEthernet can exchange safety-related data between the certified HIMA systems across each Ethernet- and FastEthernet Network in accordance with IEEE802.3. On a standard Ethernet Network, therefore, safe and non-safe data are transferred in a parallel way. Consequently, a dual operation of non-

safety-related systems on the same network without restriction of safety is possible.

The safety solution has been certified in accordance with the future safety standards of industrial automation IEC61508 up to SIL3, with the already existing DIN19250 up to AK6 and with EN954 up to cat. 4.

The performance can additionally be enhanced through the expansion of a switched FastEthernet Network. On the basis of the high performance, additional su-

wiring and cable installation of various networks as well as a uniform network concept in the whole facility.

The user will profit from these savings during the entire life span of his machine, i.e. planning, design, installation, initial start-up, maintenance and expansion of the unit.

The communication of the safe systems for the supervisor level or the visualisation is undertaken via the Ethernet Protocol OPC. If required the data transfer between

the control level can be realised via a fieldbus.

The application of the programming Software ELOP-II Factory is possible by any network node or via data remote transfer (Teleservice). With it, all the decentralised safety control systems



The junction of safe and non-safe components in a network.

superior structures are no longer necessary! Hence, new economic paths of integration are made available. The ever more complex automation tasks can, in the future, be solved via control systems, which support decentralised concepts. Such control systems help introducing safety where it is necessary, and simultaneously reduce wiring and switch cabinet volumes to the requisite minimum.

Advantages arising from this include the saving of parallel

systems can be programmed, configured and monitored across the plant via the existing Ethernet Network.

The certified operating system of the "HIMatrix" system family contains a secure user management (Security-Tool) in order to guarantee access protection against non-authorized persons or systems. The application of SafeEthernet paves the way for the open automation- and network systems of the future.