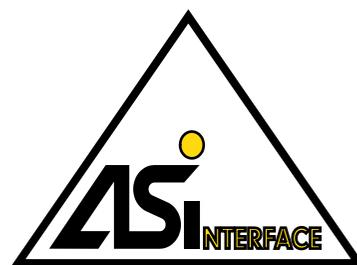




Project:

Accident hospital in Murnau



in building services automation

The integrative concept of the accident hospital in Murnau



Aerial picture of the accident hospital in Murnau

The treatment approach in the accident hospital in Murnau is holistic and includes right from the start all medical and surgical wards. Emergency, intensive care and operating room units as well as physical therapy are run in cooperation with all senior doctors. The treatment of in-patients is adapted to their injuries and illness, if required there is consultation between doctors.

Information about the hospital

Legal entity:	Berufsgenossenschaftlicher Verein für Heilbehandlung Murnau e.V
Foundation:	19.September 1950
Laying of the foundation stone:	25. May 1951
Opening:	29. April 1953
Members:	30 industrial and 4 agricultural associations 1 insurance associations 1 seamen's association
Institutions:	general meeting board of directors 3 employer's representatives 3 insurance representatives 3 managing directors
Financing:	voluntary non-interest bearing participations from reserve funds of the members

Figures of the hospital	1990	1995	1997	1999
Planned beds	371	425	425	425
Number of treated patients	4341	6514	7553	8337
Duration of hospital stay (days)	31	22	20	18
Operation/anesthesias	9269	16173	19967	18770
Helicopter landings	192	507	685	1032

Requirements in the hospital



The medical and technical utilisation of a hospital is an extremely difficult task for building automation. Quick and safe commissioning as well as low level of input for a flexible further development of the system are the main requirements. Modifications and further development must not interfere with the hospital work and should be carried out with as little dirt and noise as possible. Wiring complexity must be as low as possible as the regulations for the fire-hazardous materials in such buildings are very strict.

AS-Interface as a solution

Tenders for building automation projects increasingly specify the wiring concept of AS-Interface, a bus system for the connection of sensors and actuators! Why?

For the project planning with conventional wiring commissioning is one major problem. In building technology, especially smoke and fire dampers, input of time and cost is often immense. This is so for many reasons:

- ✦ In most cases more fire dampers (seldom fewer) are used than specified in the planning.
- ✦ The dampers are not properly wired, there are many wiring faults and the cables are enclosed in fireproof bulkheads.

To ensure flexibility and low cost for implementation, commissioning and modifications **AS-Interface** has been used in the accident hospital in Murnau. The fire damper technology from **TROX Technik GmbH** is networked with AS-i from **ifm electronic gmbh** and connected to the building services management system from **Sauter Cumulus GmbH** via Profibus-DP.

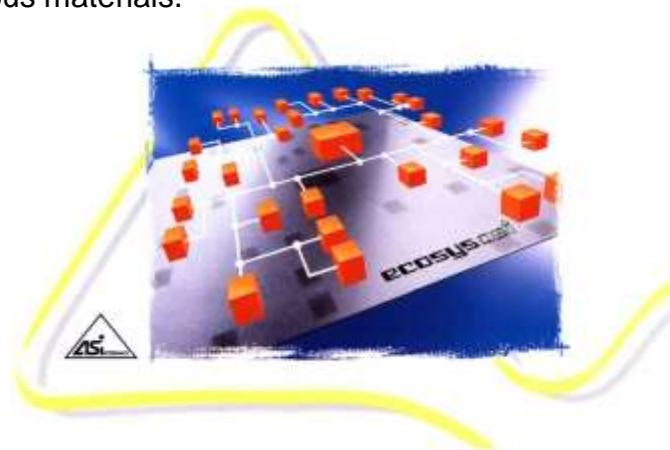
The important role of cost/benefits becomes obvious when some technical features of this bus system are listed:

- ✦ Data and supply of the inputs via **one** yellow 2-wire cable.
- ✦ Length 100 m up to 500 m with repeaters.
- ✦ Easy mechanical connection of the components (= slaves) to the bus cable.
- ✦ Terminal boxes and terminals belong to the past.
- ✦ Diagnosis via the master and slaves.
- ✦ Easy and shorter commissioning (commissioning of sections possible) and easy repair due to fault diagnosis.
- ✦ Quick and flexible projecting.
- ✦ Much fewer documents required.
- ✦ Smaller control cabinets (master replaces the I/O modules).

Field bus system in buildings?

In the past technical systems in buildings lagged many years behind industrial technical systems. Even in large building complexes conventional parallel wiring for electrical installation is often still used today for building renovation and new wiring. But especially for the modernisation of buildings it is important to use a (field bus) system which enables use of the existing wiring ducts in the building with minimum wiring. A system which saves wiring ducts and decreases fire-hazardous materials by reducing wiring up to 80% is increasingly called for for new buildings.

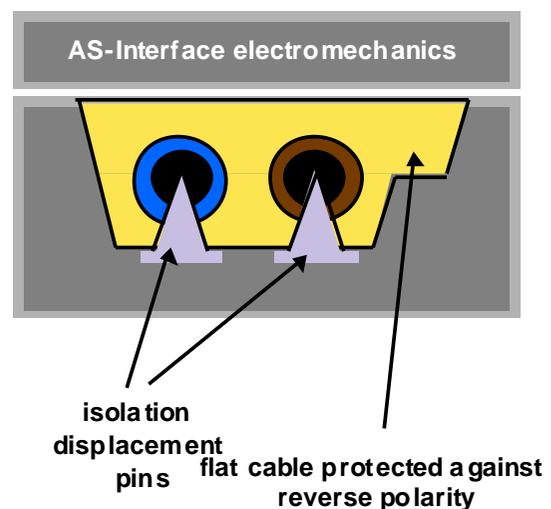
AS-Interface (AS-i) is such a field bus system which considerably decreases fire-hazardous materials and helps make considerable cost savings. AS-Interface is used worldwide in automation technology which is shown by 2 million mounted slaves. This system has been used in small and large installations for almost 10 years, especially in areas which are very prone to interference. AS-i can show its advantages especially in building services management systems: low-cost, easy to use and considerable decrease of fire-hazardous materials.



Simple electromechanics

Wiring without tool

- ☺ direct simple connection of sensors/actuators or modules
- ☺ keyed flat cable protected against reverse polarity
-> data and energy via one cable
- ☺ isolation displacement technology/piercing
-> simple and safe contacting
-> high protection rating IP67, even after removal of the connection
- ☺ cutting to size and stripping not necessary
- ☺ problem-free displacement of the connection possible thanks to self-healing cable depending on the type of cable



Company involved:

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Accident hospital in Murnau
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