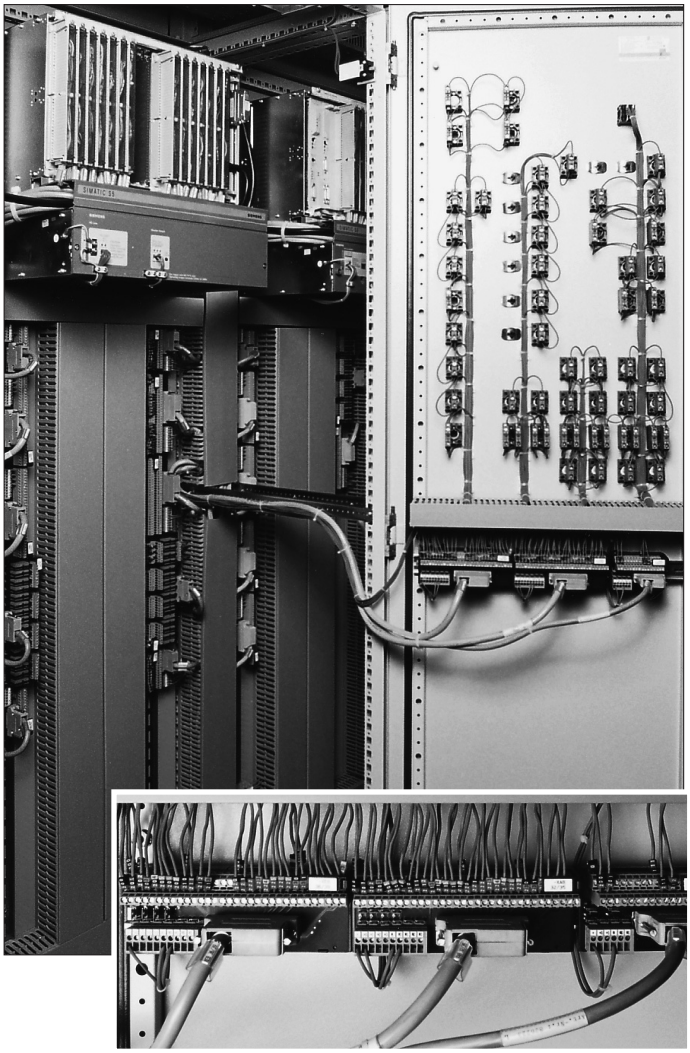
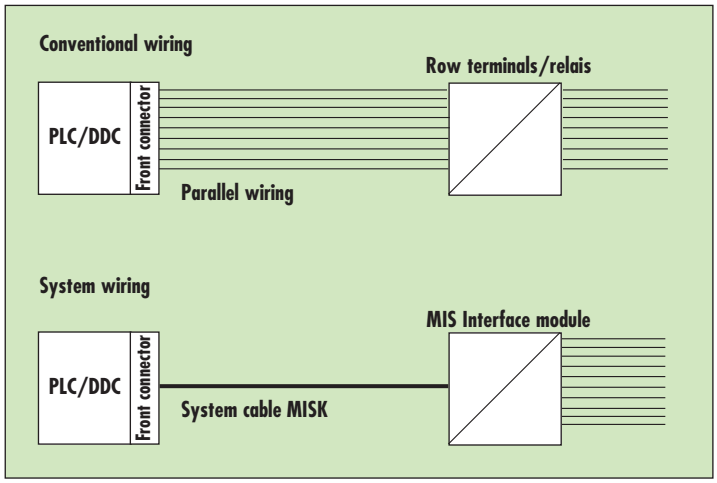


Transfer module built in the front door of a control panel

The price of the control panel must be reduced! – but how?

In modern process manufacture, more and more control systems are being used. The control system must have the ability to communicate with the individual process peripherals, in other words control and measurement signals must be swapped back and forth. To achieve this, there are three distinctive ways of wiring, either conventional wiring, system wiring (MIS) and field bus systems.

In conventional wiring the whole connection from I/O at PLC/DCC to interface section (series terminals, relays) are installed with single wires. In contrast of this, the system wiring MIS fits with only one cable.
Murrelektronik system MIS offers all components, which are necessary for an easy wiring to raise quality.



Advantage:

- Standard solution in the planning stage for both hard- & software, planning using the building block principle.
- Time saving in control panel manufacture (3 min. per wire is replaced by 3 min. per module [BG]).
- Pre-tested modules reduce the chance of faults, service and set-up costs are therefore reduced.
- The modular system makes the control system very clear and accessible. It also allows for unplanned alterations or additional I/O making it service-friendly.
- By using this system wiring, the quality remains at a constant high. The control panel will become a respected calling card for your company.
- After initial decision making, it is possible for the production and planning department to work in parallel.
- Machine can easily be split up for transportation, re-wiring on site is kept to absolute minimum and another source of fault is greatly reduced.

System wiring MISK

For connecting modules, there is a wide range of system cables available. The cables are pre-wired with I/O card connector or other connector of the desired PLC type in lengths from 0.5…25 m. Already received connections from the manufacturer can be pre-wired, too.
This greatly simplifies the job of wiring a control panel.

- I/O card connectors as well as SUB-D connectors can be plugged simply on to the transfer module
- A circuit diagram no longer forms the basic layout for the control panel, the construction drawings are enough
- The control panel assembly time can at last be calculated
- High quality panels, due to the reduction in possible fault sources

Interface modules MIS

The most important difference in the product range is between active MISR-XX and passive MISP-XX interface modules. In addition to this, is the difference between digital input/output (DI/DO) and analog input/output (AI/AO).

Passive interface module MISP-XX

The passive interface modules are most commonly used, when the PLC signal, irrespective of digital or analog, is transferred directly to the control panel terminals. The modules feature terminal blocks with a typical number of terminals to that found on PLCs.

MISP – X DI/DO/AI/AO

- Analog input/output
- Digital input/output
- Number of channles per module (8-, 16-, 32-way)
- **M**urrelektronik **I**nterface **S**ystem **P**assive

Practical features:

- Separate byte-wise voltage input for the I/O via the module
- Clearly visible separation due to the terminal layout of the module between the PLC side as well as the peripherals/field side
- The power supply is via top mounted terminals, allowing the modules to be situated up against the cable channel (connections towards the controller)
- Via jumpers, it is possible to separate or join individual circuit loops. Modules with the "with opp. potential" option, also enable the byte-wise switching off by the opposite potential, irrespective of whether input or output modules.
- Labelling plate on each module.

Active interface module MISRX

The active interface modules are used when it is necessary to split the I/O galvanically from the field peripherals, to equalise power ratings within the system or in larger process systems a clear change in power between the control level and the wiring. The module are constructed along similar lines as the passive modules.
Module definition are made as follows:

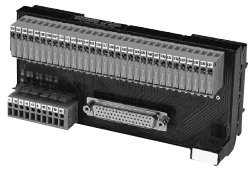
MISR-X DI	**MISR-X DO**
active input module	active output module
digital INPUT	digital OUTPUT

- Versions with relay or opto-couplers are available (voltage or power rating dependent)
- 8 or 16-channel options
- LED status indicators
- Internal suppression prevents inductive spikes from the relay
- Minimum space usage
- Byte-wise PLC power input is possible

Interface modules

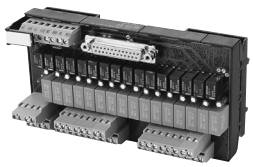
System cable MISK
– wide product range
– complete wiring of I/O plug to MIS connector
– customized cable length from 0.5…25 m

page 3.6.3



Passive interface modules
– direct convertion of PLC signals onto terminals
– analog and digital signals
– 8-, 16- and 32-way modules

page 3.6.4



Active interface modules
– galvanical separation of I/O and field peripherals
– level and power adaption possible
– assembly optional with relays or opto-coupler

page 3.6.13