With your personal PIN for the individual switch:

OpenRail.

- Individually configured switches (1000 versions)
- Gigabit technology
- Software range that can be expanded significantly
- Short delivery times and absolute flexibility

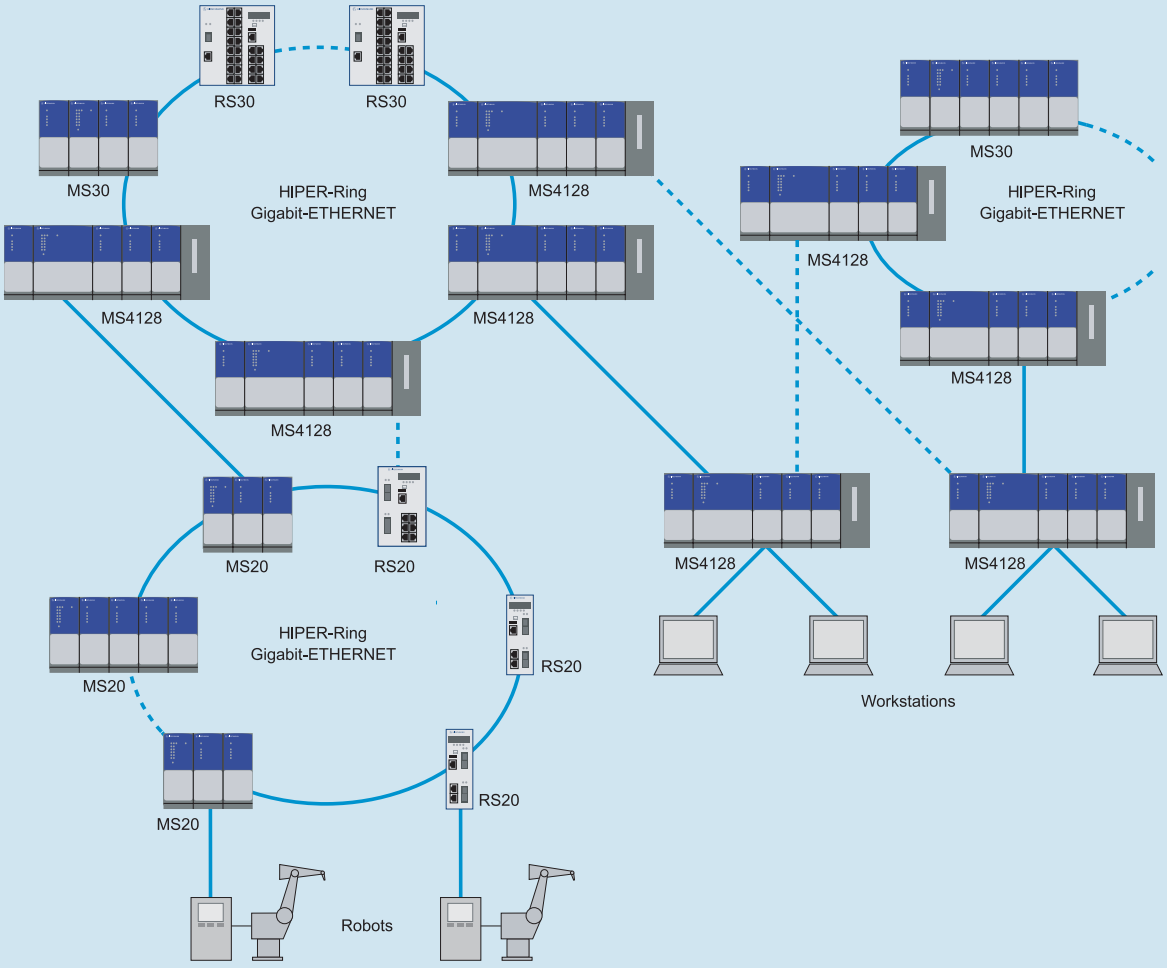
HIRSCHMANN

OpenRail: A made-to-measure switch that pays off every time.

Requirements and Solutions

In practice there are very many different requirements for Industrial ETHERNET: From the economical, small, integrated ETHERNET solution up to complex Fast-ETHERNET solutions with management functions, high availability, Gigabit capability and many more functions. Here most standard switches do not offer suitable features and thus cause unnecessary costs. Therefore tailor-made solutions are required, in other words, individually designed, configured switches that comply exactly with the customer's requirements.

With **OpenRail** Hirschmann has now started to offer Rail and MICE series switches manufactured to the customer's specifications and suitable for almost any application. These can have specific parameters set quickly and easily by a web configurator and can be ordered in a total of 1000 different versions. All this is available at the same price and delivery conditions as series products – and with the customary high Hirschmann quality.



For its managed switches Hirschmann offers the option of two different software packages.

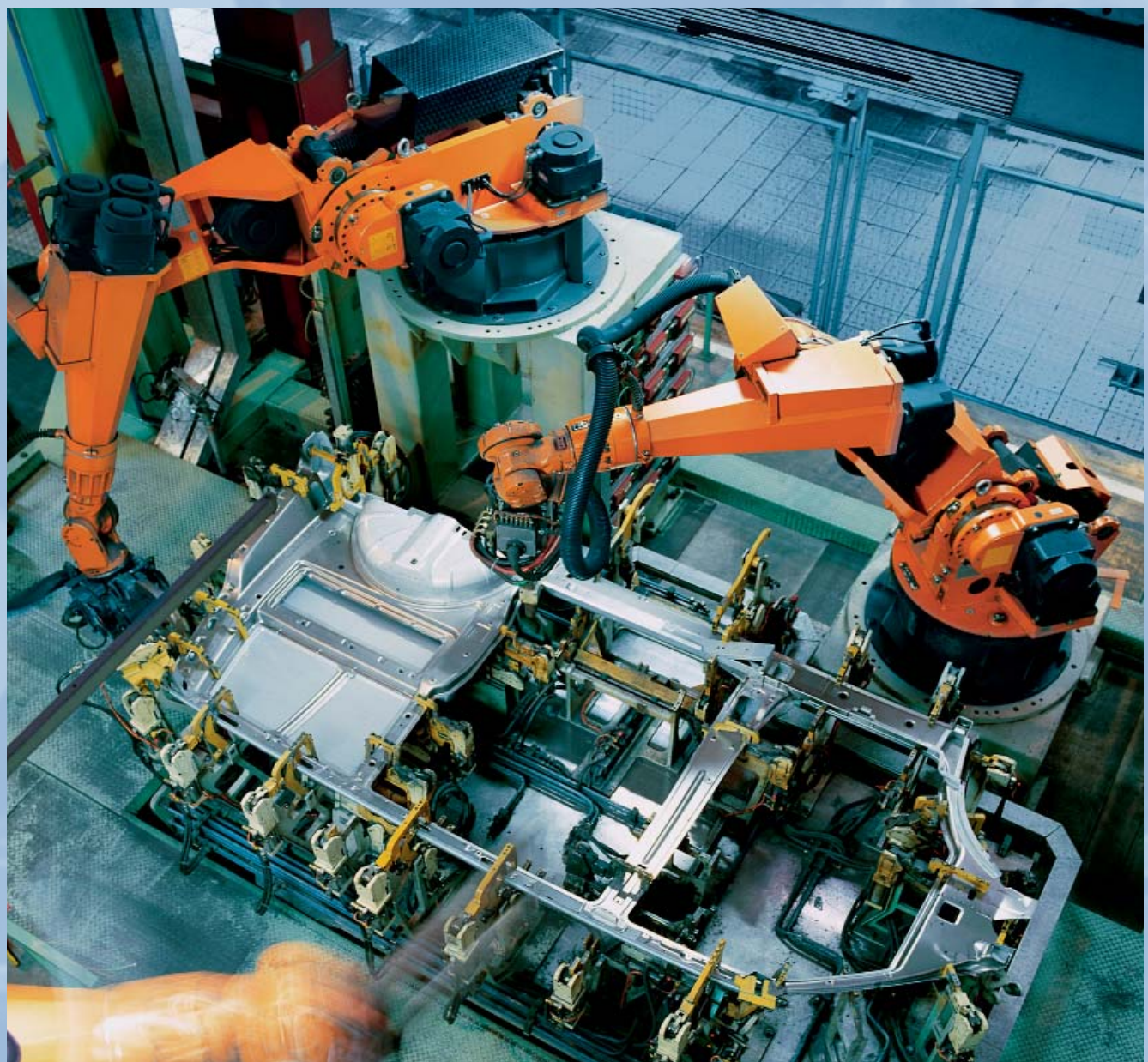
Software options

Enhanced software

The software with a wide range of management and diagnosis functions, that is easy to configure and offers a large number of filter functions. Fast redundancy mechanisms and security features are also supported such as real-time applications. Thus it is ideally suited to standard industrial applications. It is not possible to upgrade from “Enhanced” to “Professional” later.

Professional software

The “Professional” software contains the full range of “Enhanced” software functions plus extended diagnosis and filter properties. The extensions in the security and redundancy areas leave nothing to be desired. The powerful hardware has enough reserves for additional features. A software package for applications where great value is placed on uncompromising plant safety and the highest level of availability.



12 parameters, 1000 versions:
The Hirschmann managed switch range for maximum

The core of your order:

RS 30	24	02	T1	O6	S
Design	FE ports	GE ports	Type 1 uplink port	Type 2 uplink port	Temperature

Compact switch (Rail)

- **RS 20** Fast-ETHERNET uplinks
- **RS 30** Gigabit-ETHERNET uplinks

Modularer Switch (MICE)

- **MS 20** Fast-ETHERNET uplinks
- **MS 30** Gigabit-ETHERNET uplinks

Number of Fast-ETHERNET ports

- **04** 4 x 100 Mbit
- **08** 8 x 100 Mbit
- **16** 16 x 100 Mbit
- **24** 24 x 100 Mbit

Number of Gigabit-ETHERNET ports

- **00** 0 x 1000 Mbit
- **02** 2 x 1000 Mbit

Type 1 uplink port (only for RS 20/RS 30)

- **T1** Twisted-Pair/RJ 45
- **T5** Twisted-Pair/M12 (100 Mbit)
- **M2** Multimode/SC (100 Mbit)
- **M4** Multimode/ST (100 Mbit)
- **S2** Singlemode/SC (100 Mbit)
- **L2** Singlemode LH/SC (100 Mbit)
- **O6** SFP slot (1000 Mbit)

Type 2 uplink port (only for RS 20/RS 30)

- **T1** Twisted-Pair/RJ 45
- **T5** Twisted-Pair/M12 (100 Mbit)
- **M2** Multimode/SC (100 Mbit)
- **M4** Multimode/ST (100 Mbit)
- **S2** Singlemode/SC (100 Mbit)
- **L2** Singlemode LH/SC (100 Mbit)
- **O6** SFP slot (1000 Mbit)

Compact switch, Rail

= Compulsory field = Optional

individuality.

The order code that contains all the important options for us and using which you can track your order at any time (online tracking).

D	B	P	H	H	02.0.
Power supply	Approvals	Software	Configuration	OEM type	Software release

Software release

02.0. Software release 2.0.

OEM type

H Standard

X Customer specific

Configuration

H Standard

X Customer specific

Software version

E Enhanced: Remote access, diagnosis, filters, redundancy

P Professional: Enhanced software plus security, extended diagnosis and redundancy

Approvals

A cUL508 · cUL1604 Class1 Div.2

H cUL508 · cUL1604 Class1 Div.2
GL: German Lloyd · IEC 61850-3: Substation
IEEE1613: Substation · EN 50121-4: railway (along track)

B cUL508 · cUL1604 Class1 Div.2
GL: German Lloyd · IEC 61850-3: Substation
IEEE1613: Substation · EN 50121-4: railway (along track)
ATEX 100a, Zone 2: Hazardous Location

Power supply

A 24 V (18 – 32) V DC MICE

C 24/48 V (18 – 60) V DC MICE

D 9,6 – 60 V DC and 18 – 30 V AC Rail

Temperature range

S 0 °C up to + 60 °C

T – 40 °C up to + 70 °C

E – 40 °C up to + 70 °C inclusive Conformal Coating

Modular switch, MICE

OpenRail Information and Facts

Product description	**Fast-ETHERNET**		**Gigabit-ETHERNET**	
Description	Managed Industrial ETHERNET Switch ETHERNET (10 Mbit/s) and Fast-ETHERNET (100 Mbit/s)		Managed Industrial ETHERNET Switch ETHERNET (10 Mbit/s) and Fast-ETHERNET (100 Mbit/s) and Gigabit-ETHERNET (1000 Mbit/s)	
	modular		modular	
Type	MS20xx	RS20xx	MS30xx	RS30xx
Technical data				
Port type and quantity	4 – 24 ports Fast-ETHERNET		8 – 24 ports Fast-ETHERNET and 2 ports Gigabit-ETHERNET, 1000Base fiber with SFP modules, or 10/100/1000Base-TX	
	media modules	integrated	media modules	integrated
Operating voltage	24/48 V DC (18 – 60) V or 24 V DC (18 – 32) V	24/48 V DC (9.6 – 60) V and 24 V AC (18 – 30) V	24/48 V (18 – 60) V DC or 24 V DC (18 – 32) V	24/48 V DC (9.6 – 60) V and 24 V AC (18 – 30) V
Operating temperature	S 0 °C to + 60 °C T – 40 °C to + 70 °C E – 40 °C to + 70 °C (including conformal coating)			
Approvals				
A	cUL 508 (pending) cUL1604 Class1 Div 2 hazardous locations (pending)			
H includes A, plus	German Lloyd, shipbuilding (pending) IEC 61850-3, IEEE 1613 substation EN 50121-4, train standard (railway track)			
B includes H, plus	ATEX 100a, Zone 2, hazardous locations (in preparation) EN 50155, train standard (in train) (in preparation)			
Software Enhanced				
Network topologies	Any line/star topology, ring structure (HIPER-Ring, RSTP)			
Management	Serial interface, web interface, SNMP v1/v2, HiVision, HTTP/TFTP file transfer			
Diagnostics	LEDs (power, link status, data, 100 Mbit/s, auto-negotiation, full duplex, error, Redundancy Manager, ring port, LED test), log file, syslog, signaling contacts, RMON (statistics, history, alarms, events), Port Mirroring, Topology Discovery 802.1AB			
Configuration	Command Line Interface (CLI), TELNET, BootP, DHCP, DHCP Option 82, HiDiscovery, auto-configuration adapter (ACA21-USB)			
Security	Port Security (MAC based and IP based), SNMP V3 (no encryption)			
Redundancy functions	HIPER-Ring (ring structure), RSTP 802.1w, redundant network/ring coupling, dual homing, redundant 24 V DC power supply, redundant signal contact (MICE)			
Other services	QoS 4 classes, prioritization (IEEE 802.1D/p), VLAN (802.1Q), multicast (IGMP Snooping/Querier), multicast detection/unknown multicast, broadcast limiter, fast aging			
Real-time	SNTP server, PTP/IEEE 1588, hardware support with media module			
Flow Control	Flow Control 802.3x, port priority 802.1D/p, priority (TOS/DIFFSERV)			
Software Professional > Consists of Software Enhanced and additional functionality				
Diagnostics	Cable diagnostics			
Security	SNMP V3, SSH, authentication (802.1x)			
Filtering services	Multicast GMRP IEEE 802.1D			
Flow Control	Prio (MAC/IP), prio mapping (TOS Layer 2), traffic shaping (unicast, multicast, broadcast) Ingress/Egress			
Other services	Real-time clock with energy buffer			
Software Professional prepared for				
Diagnostics	Loop detection			
Redundancy functions	Trunking Trunking with HIPER-Ring Link aggregation dynamic and static (max. 8 trunks, 8 ports/trunk, LACP) Link aggregation with HIPER-Ring MSTP 802.1s			
Filtering services	VLAN GVRP 802.1D			

Product features

- 100 % flexible due to its standard basic circuit board
- Gigabit capable for industrial use
- Optional 4 – 26 port switches
- Extended range of use due to its freely selectable temperature ranges and different software versions
- Meets all relevant industry standards
- Selectable uplink ports
- Remote diagnosis via signalling switches
- Time-saving commissioning using auto negotiation, auto polarity, auto crossing and diagnosis displays
- Compatible with PROFINET, EtherNet/IP, Modbus TCP etc.

Applications

It doesn't matter whether it is being designed for small, medium or large networks, whether it is for entry level or management level, whether it is for mining, automobile production, mechanical engineering, process or transport automation, the extreme variability of **OpenRail** offers a tailor-made solution for all areas of use. Therefore **OpenRail** switches can be used in economic automation applications such as in networks in harsh industrial environments, or in highly complex applications that require high port density or the highest availability and reliability. Hirschmann's **OpenRail** offers individuality in series production – for almost any area of use.

Ordering with the OpenRail system

OpenRail – is an ordering system that can cope with any customer requirement and offers a simple, transparent ordering option. It doesn't matter which of the 1000 versions you or your customers opt for. Step by step you are asked for the parameters by means of which an order code with all the required information is generated. After we have received your order, your individual switches are manufactured in our specific customer requirement production unit. There is no simpler and more economical solution.

HIRSCHMANN

Hirschmann. Simply a good Connection.

Hirschmann Automation and Control GmbH

Industrial ETHERNET
FiberINTERFACES
Industrial Connectors
Test & Measurement
Electronic Control Systems

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