

Use the Hirschmann OpenRail system to configure your substation switch.

MAR1030-CCMMMMMMVVZZTTTTTTTTTTTT99UGCHPHH03.0.

MAR1030-	Model	MAR1020	Fast-ETHERNET Uplinks
		MAR1030	Gigabit-ETHERNET Uplinks
CC	Ports GE	Gigabit-ETHERNET Ports 1 & 2	
		99	not assembled
MM 1+2		CC	2 x SFP Combo Port 1000 Mbit RJ 45/SFP
MM 3+4	FE Dual port type	1+2 · 3+4 · 5+6 · 7+8 · 9+10 · 11+12 · 13+14 · 15+16 · 17+18 · 19+20 · 21+22 · 23+24	
MM 5+6		99	not assembled
VV 7+8		TT	2 x Twisted pair (TX) 10/100 Mbit RJ 45
ZZ 9+10		MM	2 x Multimode 100 Mbit SC
TT 11+12		JJ	2 x Multimode 100 Mbit MTRJ
TT 13+14		NN	2 x Multimode 100 Mbit ST
TT 15+16		VV	2 x Singlemode 100 Mbit SC
TT 17+18		UU	2 x Singlemode 100 Mbit ST
TT 19+20		LL	2 x Singlemode LH 100 Mbit SC
TT 21+22		GG	2 x Singlemode LH+ 100 Mbit SC
99 23+24		ZZ	2 x SFP Slot 100 Mbit SFP
U	Temperature range	S	0° C up to +60° C
G		U	-40° C up to +85° C
C		F	-40° C up to +85° C with Conformal Coating
H	Power supply 1	C	24/36/48 VDC
P		G	110/250 V DC / 110/230 V AC
H	Power supply 2	C	24/36/48 VDC
H		G	110/250 V DC / 110/230 V AC
03.3.		9	empty
	Approvals	H	UL508, GL, IEC 61850-3, IEEE 1613
	Software version	P	Professional: Enhanced software plus security, extended diagnostic and redundancy
	Configuration	H	Standard
		X	Customer specific
	OEM-type	H	Standard
		X	Customer specific
	Software release	03.0.	Software release 3.0

Compulsory field Optional

Enjoy the benefits of direct, hassle-free configuration with our online tool at configurator.hirschmann.com

The new MACH1000 devices at a glance.

The MACH1000 family

Product name	ETHERNET/Fast-ETHERNET switch	ETHERNET/Fast-/Gigabit-ETHERNET switch
Product description		
Description	modular, managed, industrial switch for 19" cabinet, store-and-forward-switching, fanless design, Software Layer 2 Professional	
Port type and quantity	Fast-ETHERNET ports in total: up to 24 24 x FE modular, granularity 2	Gigabit-ETHERNET ports in total: 2; 2 x combo ports (10/100/1000BASE TX RJ45 plus related FE/GE-SFP slot) Fast-ETHERNET ports in total: up to 24 24 x FE modular, granularity 2
Type	MAR1020-xx	MAR1030-xx
More interfaces		
V.24 interface	1 x RJ11 socket	
USB interface	1 x to connect autoconfiguration adapter ACA21-USB	
Gigabit-ETHERNET Network size – length of cable		
Twisted pair (TP)	0–100 m	
Multimode fiber (MM) 50/125 μm	0–550 m, 7.5 dB link budget (with M-SFP-SX/LC)	
Multimode fiber (MM) 62.5/125 μm	0–275 m, 7.5 dB link budget (with M-SFP-SX/LC)	
Singlemode fiber (SM) 9/125 μm	0–20 km, 11 dB link budget (with M-SFP-LX/LC)	
Singlemode fiber (LH) 9/125 μm	16–80 km, 6–22 dB link budget (with M-SFP-LH/LC) 44–120 km, 13–32 dB link budget (with M-SFP-LH+/LC)	
Fast-ETHERNET Network size – length of cable		
Twisted pair (TP)	0–100 m	
Multimode fiber (MM) 50/125 μm	0–5000 m, 8 dB link budget	
Multimode fiber (MM) 62.5/125 μm	0–4000 m, 11 dB link budget	
Singlemode fiber (SM) 9/125 μm	0–32.5 km, 16 dB link budget	
Singlemode fiber (LH) 9/125 μm	24–87 km, 7–29 dB link budget	
Network size – cascadiability		
Line/star topology	any	
Ring structure (HIPER-Ring)	100 switches	
Fault recovery time	typ. 50 ms (fiber)	
Power requirements		
Operating voltage	24/36/48 V DC (9,6–60 V), or 120/250 V DC (77–320 V) and 110/230 V AC (90–265 V)	
Current consumption 24 VDC	1250 mA max, if all ports are equipped with fiber	1400 mA max, if all ports are equipped with fiber
Current consumption 48 VDC	625 mA max, if all ports are equipped with fiber	700 mA max, if all ports are equipped with fiber
Current consumption 230 VAC	140 mA (32 W) max, if all ports are equipped with fiber	150 mA (35 W) max, if all ports are equipped with fiber
Power output in Btu (IT) h	110 max	120 max
Software		
Management	Serial interface, web-interface, SNMP V1/V2, HiVision file transfer SW HTTP/TFTP	
Diagnostics	LEDs, log-file, syslog, signal relay, RMON, port mirroring, topology discovery 802.1AB, cable tester (TX)	
Configuration	Command line interface (CLI), TelNet, BootP, DHCP, DHCP option 82, HIDiscovery, autoconfiguration adapter (ACA21-USB, ACA11 read support)	
Security	Port security (IP and MAC), SNMP V3, SSH, authentication (802.1x)	
Redundancy functions	HIPER-Ring (ring structure), RSTP 802.1w, redundant network/ring coupling, link aggregation, redundant power supplies	
Filter	QoS 4 classes, port priority (IEEE 802.1D/p), VLAN (IEEE 802.1Q), multicast (IGMP snooping/querier), unknown multicast detection, broadcast-, unicast-, multicast limiter, fast aging, GMRP IEEE 802.1D	
Realtime	SNTP server, PTP/IEEE 1588	
Flow control	Flow control 802.3x	
Ambient conditions		
Operating temperature	–40° up to +85° C	
Storage/transport temperature	–40° up to +85° C	
Protective paint on PCB	optional conformal coating	
Relative humidity (non-condensing)	10 % up to 95 %	
Mechanical construction		
Dimensions (W x H x D)	445 mm x 44 mm x 308 mm	
Mounting	19" cabinet	
Weight	appr. 5 kg	
Protection class	IP 30	
Mechanical construction		
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks	
IEC 60068-2-6 vibration	1 mm, (2–13,2 Hz), 90 min.; 0.7 g, (13,2–100 Hz), 90 min.; 3.5 mm, (3–9 Hz), 10 cycles, 1 octave/min.; 1 g, (9–150 Hz), 10 cycles, 1 octave/min.	
EMC interference immunity		
EN 61000-4-2 electrostatic discharge (ESD)	8 kV contact discharge, 15 kV air discharge	
EN 61000-4-3 electromagnetic field	35 Vpp/m (80–2700 MHz); 1 kHz, 80 % AM	
EN 61000-4-4 fast transients (burst)	4 kV power line, 4 kV signal- and data line	
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line) IEEE 1613: power line: 5 kV (line/earth)	
EN 61000-4-12 damped oscillatory wave	2,5 kV line/earth, 1 kV line/line (1 MHz)	
EN 61000-4-16 mains frequency voltage	30 V; 50 Hz continuous; 300 V, 50 Hz 1 s	
EMC emitted immunity		
FCC CFR47 Part 15	FCC CFR47 part 15 class A	
EN 55022	EN 55022 class A	
Approvals		
Safety of industrial control equipment	cUL 508 (pending)	
German Lloyd	GL (pending)	
Substation	IEEE 61850-3, IEEE 1613	