

IOT

HIDRA Industrial Switch



ESA provides a wide range of industrial ethernet switches that feature industrial grade reliability, network redundancy, embedded security features, easy management.

The ESA portfolio includes unmanaged, managed Layer2, managed Layer3, PoE and IP67 switches specially designed for outdoor and harsh applications.

- + Redundancy through ITU-T G.8032 ERPS ring, RSTP, STP, MRP (client) compatible ring
- + CE, UL, NEMA, Atex zone-2, IP67 certified
- + Virtual LAN segmentation
- + Modbus, Profinet and Ethernet Ip support
- + IEC62443 Cybersecurity standard compliant

FEATURES

- + 10/100/1000 RJ45 ports and 100/1000 BASE-X SFP slots
- + Power over Ethernet ports with 24V DC power supply (ESNET08UG8P800V). No need of a specific power supply.
- + Redundant DC power input
- + Reverse Polarity Protection
- + DIN-Rail, slim-size metal housing
- + Wide temperature operations, from -40°C to 70°C
- + Support IEEE 802.3/802.3u/802.3x
- + Powerful Layer2 and Layer3 management

APPLICATIONS

- + Packaging Machine
- + Handled
- + Life & Science
- + Industrial automation
- + Automotive

HIDRA Industrial Switch

Unmanaged

MODEL	HIDRA05U000000X	HIDRA05UG50000A	HIDRA08U000000X
Ethernet			
Connector	RJ45	RJ45	RJ45
Ports	5	5	8
Transmission rate	10/100 Mbps	10/100/1000 Mbps	10/100 Mbps
PoE support	NO	NO	NO
PoE voltage booster	NO	NO	NO
Standards	IEEE802.3, 802.3u, 802.3x	IEEE802.3, 802.3u, 802.3x, 80.3z	IEEE802.3, 802.3u, 802.3ab
Flow control	IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.1q/p for VLAN Tagging and Class of Service IEEE 802.3az for Energy Efficient Ethernet	IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.1q/p for VLAN Tagging and Class of Service IEEE 802.3az for Energy Efficient Ethernet	IEEE802.3X flow control, back-pressure flow control
Jumbo frame Size	9216 byte	10K Bytes	9216 byte
Auto MDI/MDI-X	Yes	Yes	Yes
Power			
Input voltage	12 - 48 VDC	12 - 48 VDC	9-48 VDC
Power Consumption	4.0 Watts Max	4.0 Watts Max	4.05 Watts
Connector	Lockable 5-pin terminal blocks	Lockable 5-pin terminal blocks	5.08mm 5 pin Terminal Block
Redundancy	YES	YES	YES
Reverse Polarity Protection	YES	YES	YES
Physical characteristics			
Housing	SPCC Black	SPCC Black	Alluminium
Protection level	IP30	IP30	IP30
Installation	DIN Rail	DIN Rail	DIN Rail
Dimension (WxHxD)	Slim type, 23mm x 94mm x 72mm	Slim type, 23mm x 94mm x 72mm	45.2 x 90 x 78 mm
Weight	420g	420g	255g
Led indicators	PWR1, PWR2, Alarm, ALM, LAN	PWR1, PWR2, Alarm, ALM, LAN	PWR1, PWR2
Environmental			
Operating Temperature	-40 to 70°C	-40 to 70°C	-10°C~70°C
Storage Temperature	-40 to 85°C	-40 to 85°C	-40°C~85°C
Ambient Relative Humidity	5 to 95%, 55°C (non-condensing)	5 to 95%, 55°C (non-condensing)	5 to 95%, 55°C (non-condensing)
Certifications			
Safety	UL/IEC 62368-1, UL/IEC(CB) 60950-1	UL/IEC(CB) 61010-2-201	UL60950-1 2nd Ed. / CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC62368-1 / IEC62368-1)
FCC (EMI)	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A
CE (EMI)	EN 55032:2013 EN 61000-3-2: 2014, Class A EN 61000-3-3: 2013 EN 61000-6-4: 2007 + A1: 2011	EN 55032:2015/AC:2016 Class A EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 61000-6-4: 2007 + A1: 2011	European Standard EN55032:2012+AC:2013 Class A. EN61000-3-2:2014, EN 61000-3-3:2013
CE (EMS)	EN 55024: 2010 EN 61000-6-2:2005 + AC: 2005 IEC 61000-4-2: 2008 IEC 61000-4-3: 2010 IEC 61000-4-4: 2012 IEC 61000-4-5: 2014 IEC 61000-4-6: 2013 IEC 61000-4-8: 2009 IEC 61000-4-11: 2005	EN 55024: 2010 EN 61000-6-2:2005 + AC: 2005 IEC 61000-4-2: 2008 IEC 61000-4-3: 2010 IEC 61000-4-4: 2012 IEC 61000-4-5: 2014 IEC 61000-4-6: 2013 IEC 61000-4-8: 2009 IEC 61000-4-11: 2005	EN55024:2010(IEC 61000-4-2:2008) IEC61000-4-3:2006/A1:2007/A2:2010, IEC 61000-4-4:2012 IEC 61000-4-5:2014, IEC 61000-4-6:2013 IEC 61000-4-8 :2009, IEC 61000-4-11:2004
ATEX	NO	NO	NO
Rail Traffic	NO	NO	NO
Testing report			
Shock	IEC 60068-2-27	MIL-STD-810F Method 516.5	IEC 60068-2-27
Drop	IEC 60068-2-32	MIL-STD-810F Method 516.5	IEC 60068-2-32(ISTA Test Procedure 2A)
Vibration	IEC 60068-2-6	MIL-STD-810F Method 514.5 C-1 & C-2	IEC 60068-2-64
RoHS	YES	YES	YES
MTBF	20 years	20 years	30 years

MODEL	HIDRA08UG80000X	HIDRA08UG8P800V	HIDRA05UG50000X	HIDRA05UG500007
Ethernet				
Connector	RJ45	RJ45	RJ45	M12 connector (A or X coding)
Ports	8	8	5	5
Transmission rate	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
PoE support	NO	YES (8)	NO	NO
PoE voltage booster	NO	Yes (Max support 120W)	NO	NO
Standards	IEEE802.3, 802.3u, 802.3ab	IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE802.3x	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASE-FX IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.3x Flow Control	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT
Flow control	IEEE802.3X flow control, back-pressure flow control	IEEE 802.3x for Flow Control, back pressure flow control IEEE 802.3af/at for Power-over-Ethernet IEEE 802.3az Energy Efficient Ethernet IEEE 802.1Q for VLAN Tagging IEEE 802.1p for CoS	IEEE802.3X flow control, back-pressure flow control	IEEE 802.3x for Flow Control, Back pressure and pause frame based flow control schemes
Jumbo frame Size	9217 byte	10K Bytes	10K bytes	10k bytes
Auto MDI/MDI-X	Yes	Yes	Yes	Yes
Power				
Input voltage	9-48 VDC	12~57 VDC	12-52 VDC	12-48 VDC
Power Consumption	4.05 Watts	12~23VDC, max total 60W 24~57VDC, max total 120W	6 Watts	5 W
Connector	5.08mm 5 pin Terminal Block	Terminal block	Terminal block	-Pin A-Code Male M12
Redundancy	YES	NO	NO	NO
Reverse Polarity Protection	YES	YES	YES	YES
Physical characteristics				
Housing	Aluminium	Metal	SECC	Aluminum Housing
Protection level	IP30	IP30	IP30	IP67 protection according to EN 60529
Installation	DIN Rail	DIN Rail	DIN Rail	Wall mount
Dimension (WxHxD)	45.2 x 90 x 78 mm	54 x 145 x 113 mm	32 x 90 x 110 mm	105.7 x 196 x 48.3 mm
Weight	255g	700g	420g	650 g
Led indicators	PWR1, PWR2	P1, P2, Fault, SFP1-2, PoE LED	PWR1, PWR2, Alarm, RJ45 Act/Link	PWR1, PWR2, LAN1, LAN2, LAN3, LAN4, LAN5
Environmental				
Operating Temperature	-10°C~70°C	-40°C~70°C	-40°C~70°C	-40°C~75°C
Storage Temperature	-40°C~85°C	-40°C~85°C	-40°C~85°C	-40°C~85°C
Ambient Relative Humidity	5 to 95%, 55°C (non-condensing)	5 to 95%, 55°C (non-condensing)	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)
Certifications				
Safety	UL60950-1 2nd Ed. / CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC62368-1 / IEC62368-1)	UL62368-1:2014(2nd Ed.) CB/IEC60950-1:2005(2nd Ed.) CB/IEC62368-1:2014(2nd Ed.)	UL 61010-2-201, UL C1D2	EN 60950-1:2006 UL/IEC(CB) 61010-2-201
FCC (EMI)	FCC Part 15, Subpart B, Class A	FCC Part 15, Subpart B, Class A	NO	FCC Part 15 Subpart B Class A
CE (EMI)	European Standard EN55032:2012+AC:2013 Class A. EN61000-3-2:2014, EN 61000-3-3:2014	EN 55032:2015 +AC:2016 Class A EN 61000-3-2: 2014, Class A EN 61000-3-3: 2013 EN 61000-6-4: 2007+ A1: 2001 EN 55024: 2010+ A1:2015 EN 61000-6-2:2005+ AC : 2005	EN 55032 EN 61000-6-4 EN 55024 EN 61000-6-2	EN 55032 EN 55024 EN 61000-3-3 EN 61000-6-2 EN 61000-6-4
CE (EMS)	EN55024:2010(IEC 61000-4-2:2008) IEC61000-4-3:2006/A1:2007/ A2:2010, IEC 61000-4-4:2012 IEC 61000-4-5:2014, IEC 61000-4-6:2013 IEC 61000-4-8 :2009, IEC 61000-4-11:2005	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8
ATEX	NO	NO	ATEX Zone 2	NO
Rail Traffic	NO	NO	EN50155 / EN50121-4	NO
Testing report				
Shock	IEC 60068-2-27	MIL-STD-810F Method 516.5	MIL-STD-810F Method 516.5	MIL-STD-810G Method 516.5
Drop	IEC 60068-2-32(ISTA Test Procedure 2A)	MIL-STD-810F Method 516.5	MIL-STD-810F Method 516.5	MIL-STD-810F Method 516.5
Vibration	IEC 60068-2-64	MIL-STD-810F Method 514.5 C-1 & C-2	MIL-STD-810F Method 514.5 C-1 & C-2	MIL-STD-810F Method 514.5 C-1 & C-2
RoHS	YES	YES	YES	YES
MTBF	30 years	20 years	20 years	20 years

MODEL	HIDRA16UG20000X
Ethernet	
Connector	RJ45
Ports	16
Transmission rate	2 x 10/100 Mbps 14 x 10/100/1000 Mbps
PoE support	NO
PoE voltage booster	NO
Standards	IEEE802.3, 802.3u, 802.3ab
Flow control	IEEE802.3X flow control, back-pressure flow control IEEE802.1p packet prioritization (for profinet CC-A)
Jumbo frame Size	9216 byte
Auto MDI/MDI-X	Yes
Power	
Input voltage	12~48 VDC
Power Consumption	7.4 Watts
Connector	Terminal block
Redundancy	YES
Reverse Polarity Protection	YES
Physical characteristics	
Housing	Alluminium
Protection level	IP30
Installation	DIN Rail
Dimension (WxHxD)	54 mm x 113mm x 145mm
Weight	700g
Led indicators	PWR1, PWR2
Enviromental	
Operating Temperature	-10°C~60°C
Storage Temperature	-20°C~70°C
Ambient Relative Humidity	5 to 95%, 55°C (non-condensing)
Certifications	
Safety	EN60950-1:2006, UL/IEC(CB) 60950/62368
FCC (EMI)	FCC Part 15, Subpart B, Class A
CE (EMI)	FCC Part 15, Subpart B, Class A EN 55032 EN 55024 EN 61000-6-4 EN 61000-6-2
CE (EMS)	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
ATEX	NO
Rail Traffic	NO
Testing report	
Shock	IEC 60068-2-27
Drop	IEC 60068-2-32
Vibration	IEC 60068-2-6
RoHS	YES
MTBF	20 years

Managed

MODEL	HIDRA08MG8000X	HIDRA08MG8P800X	HIDRA08MG8P4F4X	HIDRA08MG800007
Interface				
Connector	8	8	8	8
Ethernet Ports	8 x RJ45	8 x RJ45	4 x RJ45	8 x M12
SFP Ports	NO	NO	4 x SFP	NO
Transmission rate	10/100/1000BASE-T(X) auto negotiation speed	10/100/1000BASE-T(X) auto negotiation speed	10/100/1000BASE-T(X) auto negotiation speed	10/100/1000BASE-T(X) auto negotiation speed
Fiber Ports	NO	NO	100BASE-FX / 1000BASE-X SFP slot	NO
PoE support	NO	YES	YES	NO
PoE voltage booster	NO	YES	YES	NO
Console	RS232 (RJ45 connector)	RS232 (RJ45 connector)	RS232 (RJ45 connector)	RS232 (A-coding M12 connector)
Relay Output	2 relay outputs with current carrying capacity of 2A @30VDC	2 relay outputs with current carrying capacity of 2A @30VDC	2 relay outputs with current carrying capacity of 2A @30VDC	2 relay outputs with current carrying capacity of 1A @ 24 VDC (through A-coding M12 connector)
DIP Switches	Ring Control	Ring Control	Ring Control	NO
Reset button	YES	YES	YES	NO
Technology				
Standards	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X	IEEE802.3af / 802.3at for Power-over-Ethernet IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X	IEEE802.3af / 802.3at for Power-over-Ethernet IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X
Flow control	IEEE802.3x for Flow Control IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1w for Rapid STP IEEE802.1Q for VLAN Tagging IEEE802.1p for Class of Service IEEE8021X for Authentication IEEE802.3ad for Port Trunk with LACP	IEEE802.3x for Flow Control IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1w for Rapid STP IEEE802.1Q for VLAN Tagging IEEE802.1p for Class of Service IEEE8021X for Authentication IEEE802.3ad for Port Trunk with LACP	IEEE802.3x for Flow Control IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1w for Rapid STP IEEE802.1Q for VLAN Tagging IEEE802.1p for Class of Service IEEE8021X for Authentication IEEE802.3ad for Port Trunk with LACP	IEEE 802.1d-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, NTP Server/Client, SNMP, SMTP, SMTP(Gmail), RMON, HTTP, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Modbus/TCP, UDLD, Security, Trunk,LACP, MLD, 802.1Q VLAN, Port Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ,802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, NTP Server/Client, SNMP, SMTP, SMTP(Gmail), RMON, HTTP, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Modbus/TCP, UDLD, Security, Trunk,LACP, MLD, 802.1Q VLAN, Port Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ,802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Relay/Client, BootP, TFTP, NTP Server/Client, SNMP, SMTP, SMTP(Gmail), RMON, HTTP, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Modbus/TCP, UDLD, Security, Trunk,LACP, MLD, 802.1Q VLAN, Port Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ,802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping,GARP,GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNMP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PTP V1/V2, IEEE 1588 Hardware E2E Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring
Automation profiles	Profinet CC-B v2.33 certified, GSDML file provided	Profinet CC-B v2.33 certified, GSDML file provided	Profinet CC-B v2.33 certified, GSDML file provided	Modbus/TCP status registers
MIB	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2674
Switch Properties				
Priority Queues	8	8	8	8
Max. Number of Available VLANs	256	256	256	4096
VLAN ID Range	VID 1 to 4094	VID 1 to 4094	VID 1 to 4094	VID 1 to 4094
Static IGMP Groups	256	256	256	128
Dynamic IGMP Groups	256	256	256	256
MAC Table Size	16K	16K	16K	16k
Packet Buffer Size	12 Mbit	12 Mbit	12 Mbit	1.5Mb

MODEL	HIDRA08MG8000X	HIDRA08MG8P800X	HIDRA08MG8P4F4X	HIDRA08MG80007
Power				
Input voltage	9-48 VDC	9-48 VDC	9-48 VDC	12~57 VDC
Input current	3.0A @24V	3.0A @24V	3.0A @24V	1.19A @24V
Connector	Removable 5-pin Terminal Block	Removable 5-pin Terminal Block	Removable 5-pin Terminal Block	2 x S-Coding M12 connectors (4 Pin)
Redundancy	YES	YES	YES	YES
Reverse Polarity Protection	YES	YES	YES	YES
Physical characteristics				
Housing	Metal	Metal	Metal	Aluminium, IP67 protection according to EN 60529
Protection level	IP30	IP30	IP30	IP67
Installation	DIN-Rail	DIN-Rail	DIN-Rail	Wall-mount
Dimension (WxHxD)	60.3mm x 137.9mm x 164mm	60.3mm x 137.9mm x 164mm	60.3mm x 137.9mm x 164mm	216mm x 232mm x 72mm
Weight	1200g	1200g	1200g	2000 g
Led indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, PoE	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, PoE	PWR1, PWR2, Alarm, Ethernet Act/Link, Ring
Environmental				
Operating Temperature	20°C~70°C	20°C~70°C	20°C~70°C	-40°C~75°C
Storage Temperature	-40°C~85°C	-40°C~85°C	-40°C~85°C	-40°C~85°C
Ambient Relative Humidity	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)	5%~95%, 55°C (Non-condensing)
Certifications				
Safety	UL60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC/EN62368-1 & IEC/EN60950-1)	UL60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC/EN62368-1 & IEC/EN60950-1)	UL60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / CB (IEC/EN62368-1 & IEC/EN60950-1)	EN 60950-1:2006, UL/IEC(CB) 61010-2-201
EMC	FCC Part 15, Subpart B, Class A / EN 61000-6-4:2007+A1:2011 / EN 61000-6-2:2005	FCC Part 15, Subpart B, Class A / EN 61000-6-4:2007+A1:2011 / EN 61000-6-2:2005	FCC Part 15, Subpart B, Class A / EN 61000-6-4:2007+A1:2011 / EN 61000-6-2:2005	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4,
Rail traffic	NO	NO	NO	EN50155, EN50121-4, IEC60571, EN45545-2
Test	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
Testing report				
Shock	IEC 60068-2-27	IEC 60068-2-27	IEC 60068-2-27	MIL-STD-810G Method 516.5
Drop	IEC 60068-2-32	IEC 60068-2-32	IEC 60068-2-32	MIL-STD-810F Method 516.5
Vibration	IEC 60068-2-64	IEC 60068-2-64	IEC 60068-2-64	MIL-STD-810F Method 514.5 C-1 & C-2
Traffic control	NEMA TS-2	NEMA TS-2	NEMA TS-2	NO
RoHS	YES	YES	YES	YES
MTBF	11 years	11 years	11 years	20 years

Layer 3

MODEL	HIDRA083G80000X
Interface	
Connector	8
Ethernet Ports	8 x RJ45
SFP Ports	NO
Transmission rate	10/100/1000BASE-T(X) auto negotiation speed
Fiber Ports	NO
PoE support	NO
PoE voltage booster	NO
Console	RS232 (RJ45 connector)
Relay Output	2 relay outputs with current carrying capacity of 1A @24VDC
DIP Switches	Ring Control and Profinet settings
Reset button	NO
Technology	
Standards	IEEE802.3 for 10BASE-T IEEE802.3u for 100BASE-T(X) and 100BASEFX IEEE802.3ab for 1000BASE-T(X) IEEE802.3z for 1000BASE-X
Flow control	IEEE802.3x for Flow Control IEEE 802.3x for Flow Control IEEE 802.1d-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 8021x for Authentication IEEE 802.3ad for Port Trunk with LACP
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client),LLDP,802.1x,EAP,RADIUS,TACACS+,Mirror port, QoS, ACL
Layer-3 Protocols	Routing: IPv4 Unicast static routing, RIP v1/v2, OSPFv2, Multicast: IGMPv1/v2/v3, DVMRP, PIM-DM, PIM-SM, PIM-SSM Routing Redundancy: VRRP (Virtual Router Redundancy Protocol)
Redundancy	ITU-T G.8032 ERPS Ring, STP, RSTP, MSTP, Compatible Ring/Chain, U-Ring
Time Synchronization Network Synchronization	Precision Network Synchronization
Time Synchronization NTP Server/Client, SNTP	IEEE1588v1 OC/BC (Software) IEEE1588v2 E2E TC (Hardware) - ns acc. IEEE1588v2 OC/BC (Software)
Automation profiles	Modbus/TCP status registers
SNMP MIB	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2674
Switch Properties	
Priority Queues	8
VLAN Table	4096
MAC based VLAN	512
VLAN ID Range	VID 1 to 4094
Trunk Group	4
Static IGMP Groups	256
Dynamic IGMP Groups	256
MAC Table Size	16K
Packet Buffer Size	1.5MB
Jumbo frame	9216 Byte
Power	
Input voltage	9-57 VDC
Input current	1.4A
Connector	5-Pin 5.08mm Lockable Terminal Block
Redundancy	YES
Reverse Polarity Protection	YES

MODEL	
Physical characteristics	
Housing	Aluminium
Protection level	IP30
Installation	DIN-Rail
Dimension (WxHxD)	54mm x 113mm x 145 mm
Weight	800g
Led indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed
Enviromental	
Operating Temperature	-20°C~70°C
Storage Temperature	-40°C~85°C
Ambient Relative Humidity	5%~95%, 55°C (Non-condensing)
Certifications	
Safety	UL 60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / EN 60950-1 / CB
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4
Traffic Control	NEMA TS-2
Rail traffic	EN50155 - EN50121-4
Test	IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
Testing report	
Shock	MIL-STD-810G Method 516.5
Drop	MIL-STD-810F Method 516.5
Vibration	MIL-STD-810F Method 514.5 C-1 & C-2
High Altitude	Certified for altitudes up to 4,000m, according to IEC 60068-2-13
RoHS II	YES
MTBF	20 years