Magnum 14E and 14EH

100 Mb Fiber Media Converters

Features

- Two models, regular for wiring closets and Hardened for Industrial, AC and DC power
- Provides 100Mb Ethernet media conversion between twisted pair and fiber, FDX and HDX, with Link Pass-Through
- Supports IEEE 802.3u auto-negotiation on the RJ-45 port to enable an attached switch port to operate at 100Mb/s FDX for full fiber distance
- Available with fiber connectors for SC, ST, LC, or MTRJ types, multi-mode, single-mode, or 40km "long reach" single mode
- Metal enclosure. Panel mounting, DIN-Rail or Rack-mount tray option

All fiber media types, robust packaging, a selection of extended temperatures, choice of AC and DC power types, ease-of-use features, and energy efficiency are the primary features of the Magnum™ 100 Mb 14E and 14EH Media Converters.

The Magnum 14E regular-package units are for wiring closet environments and offer the choice of external AC power supplies for either 0° to 40°C or the more stressful industrial 0° to 50°C ambient temperature. A heavy duty metal case with convection cooling is featured.

The Magnum 14EH Hardened units feature a sealed metal case which is also used as a heat sink. No internal air flow is required for cooling, so the 14EH resists dust, dirt, moisture, smoke and insects, and is rated for above-the-ceiling "plenum" applications. Choices of models for use with external AC or internal DC power are available. Ambient temperature rating is up to –40°C to +75°C depending on the power source used. The 14EH is suitable for temperature un-controlled "outdoor" applications. Mounting options include stand-alone panel-mounting, DIN-rail, or rack-mount tray.

All models supports both full and half-duplex mode via auto-negotiation so that an attached auto-negotiating RJ-45 switch or hub port operates at its highest performance level. A manual AN/reg switch allows the user to select auto-negotiation, and then the Media Converter transmits applicable auto-negotiation Fast Link Pulses (FLPs) to the attached device at LINK-enable. Operation on both the copper port and the fiber port is at 100 Mb F/H transparent in any case, providing support for full length 100 Mb fiber media distances on all fiber types.

The Link Pass-Through feature is standard so that managed switches can "see through" the Media Converter for LINK indication that includes downstream cable segments. For the installer, a blinking LED on the fiber side shows fiber cable status.

The up-link switch on the TX port allows the unit to gracefully fit into any installation without crossover cables. All models come with two (2) sets of LED indicators, one set on the front for viewing convenience when the Media Converter is wall-mounted, and one LED set mounted in the end adjacent to the media ports for easy viewing when units are in a rack-mount tray. The Magnum 14E and 14EH Media Converters and other Magnum products are designed and manufactured in the USA and backed by a three-year warranty.

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Ethernet at Its Best™

Specifications

100Mb Media Converters
Model 14E and 14EH

PERFORMANCE:
Data Rate: 100Mbps, FDX and HDX mode, transparent.
Auto-negotiation support on the RJ-45 port user selectable.
Link Pass-through feature is standard, see LINK indicators.

NETWORK STANDARDS:
Ethernet IEEE 802.3u; 100BASE-TX, 100BASE-FX
Physical-layer products, operate independent of all software.

OPERATING ENVIRONMENT:
Ambient Temperature - see Matrix below
Cold start down to -25°C
Storage temperature: -40° to 185°F (-40°to 85°C)
Ambient Relative Humidity: 5% - 95% (non-condensing)
Conformal coating (humidity protection) option, request quote.
Designed for NEBS compliance, including vibration, shock, and altitude.

PACKAGING:
Enclosure: Rugged sheet metal (steel)
Dimensions of units: 3.5 in H x 3.0 in W x 1.0 in D
(8.9 cm x 7.6 cm x 2.5 cm)
Weight: Media Converter Units: 4.6 oz (130g)
Power Supply - d, i: 5.8 oz (165g)
Power Supply - Hd, Hi: 3 oz (85g)
Cooling Method: Case used as a heat sink on "H"models

Metal panel mounting clips: included
DIN-Rail mounting option:
Model # DIN-RAIL MC2, illustrated here;
Rack-mount option: Model MC14-TRAY.
Depth: 6.0", Width 17",
Height 2.25"(15 cm D x 43cm W x 5.7cm H)

SWITCHES:
UP-LINK: Thumb-operated slide switch, converts RJ-45 TX port from a regular (= position) user segment port to a crossover (X position) up-link port for connection to a shared or switched hub.
AN /reg: Manually select auto-negotiation on RJ-45 port, or regular operation

CONNECTORS:
RJ-45, 100BASE-TX: shielded 8-Pin female, with up-link switch
"ff" selections of the "fiber flavor" (see table below):
"SC"= 100BASE-FX-SC: fiber optic multi-mode with SC type, 2 km
"ST"= 100BASE-FX-ST: fiber optic multi-mode with ST type, 2 km
"MTRJ"= 100BASE-FX-MTRJ: fiber optic multi-mode w/ MTRJ, 2 km
"SSC"= 100BASE-FX-SSC: fiber optic single-mode with SC, 20 km
"SSCL"= 100BASE-FX-SSCL: fib. op. sgl-m SC, "Long Reach" 40 km
"SST"= 100BASE-FX-SST: fiber optic single-mode with ST type , 20 km
"SLC"- 100BASE-FX-SLC: fiber optic sgl-m with LC-type , 15 km
For specialty connectors such as single strand,

LED INDICATORS (dual, front and end):
POWER: ON for power applied
LINK, per port: Steady ON when both attached cable segments are operational at the other end.
RX/ACT, per port: Activity, blinking when receiving packets.

POWER SUPPLY:
Power Input 9V DC jack is 2.5mm center +ve, with 6ft. DC cord
-d: external, 120V AC at 60Hz.
-i: external, 230V AC at 50hz, IEC receptacle built-in
-Hd: external, 100-240V AC at 50-60Hz (see footnote 1)
-Hi: external, 100-240V AC at 50-60Hz, includes power plug adapters for international receptacles (see footnote 2)

9V DC internal (range of 7.5 to 15V DC), built-in screw terminal block for +, -, ground. The 9V DC jack is also present.
24V DC internal (range of 18 to 36V DC) built-in screw terminal for +, -, ground. The 9V DC jack is also present.
-48V DC internal (range of 30 to 60V DC), built-in screw terminal block for +, -, ground. The 9V DC jack is also present.

Power Consumption, all models: 3 Watts typical. 3.5 Watts max.

AGENCY APPROVALS AND STANDARDS COMPLIANCE:
UL listed (UL60950), cUL, CE, Emissions meet FCC Part 15, Class A.
NEBS L3 and ETSI compliant
H model: IEEE 1613 Env. Std for Electric Power Substations
H model: NEMA TS-2 and TEES for traffic control equipment
H model: designed for UL 2043 above-the-ceiling installation
IEC61850 EMC and Operating Conditions Class C for Power Substations

WARRANTY:
Three years

Made in USA

Footnotes:
1: External 9V 1A power supply, wall plug for North American receptacles, universal AC input at 50-60 Hz, 100-240V AC. *(Order model PSW-9V1A-Hd as a spare part.)*
2: External 9V 1A power supply, wall plug for international receptacles (via non-North American adapters), universal AC input at 50-60 Hz, 100-240V AC (*Order model PSW-9V1A-Hi as a spare part.)*

Model / Typical Application	AMBIENT TEMPERATURE: 0° to 40°C (104°F)	AMBIENT TEMPERATURE: 0° to 50°C (122°F)	AMBIENT TEMPERATURE: -40° to 55°C (131°F)	AMBIENT TEMPERATURE: -40° to 75°C (167°F)	POWER SOURCE: d, i AC external	POWER SOURCE: Hd, Hi AC, external	POWER SOURCE: 9V DC, term.block	POWER SOURCE: 24V DC, term. block	POWER SOURCE: -48V DC, term. block
14E-ff-d, 14E-ff-i Office	X				X				
14E-ff-Hd, 14E-ff-Hi Industrial		X				X			
14EH-ff-Hd, 14EH-ff-Hi Extended Temp. AC			X			X	X		
14EH-ff-9V DC Extended Temp. 9V DC				X			X		
14EH-ff-24V DC Extended Temp. 24V DC				X				X	
14EHR-ff-24V DC Includes DIN-Rail MC2				X				X	
14EH-ff-48V DC Extended Temp. -48V DC				X					X

*"ff" in the model number corresponds to your selection of the desired fiber port connector; "ff" selection, see **CONNECTORS** above.*

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