DYMEC
AMERICAN INDUSTRIAL



DY-D6041T

Industrial Fast Ethernet Switch Datasheet (Miltary Grade / Temperature Hardened) UL Class 1 Division 2

DYMEC, LLC

For further information, please visit our website at: DYMEC.com
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Kansas City, Missouri, USA

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Product Overview

The **DYMEC** Industrial Series is a range of rugged and compact Industrial Ethernet switches designed to power and connect various industrial applications in a highly reliable - non-stop network. The **DYMEC** Industrial Series products, offer a variety of features not found in lesser switch products. The DYMEC series has a wide temperature range (-40~+85C), line rate switching, non-blocking switch fabric, vibration resistance, IP40 Rated and is designed to survive harsh environments. These military grade devices are ideal for SCADA, ITS, Railway, Transportation, Telco and OSS networks. Designed for network flexibility, resiliency, reliability and security.

Product Features

Advanced Hardware Architecture

- Advanced hardware design: Dymec Industrial Series features Military Grade Aluminum casing, mainstream industrial chips, high-performance CPU, non-blocking switch fabric and an industrial-level power module to meet the demanding requirements across industrial networks.
- Designed tough for industrial use. Supports fanless cooling, -40 to 85ºC operating temperature range, IP40 class protection, lightning protection power>=6KV, power supply with anti-vibration feature, electromagnetic interference 4-class standard, shock and vibration resistance.

Complete Set of Network and Security Features

- DYMEC Clean Code Technology: Prevents viruses and unwanted code from being enbedded on the device. Used for clean silicon paths to insure network security and safety.
- IEEE802.3x: Flow Control and Back Pressure
- Auto MDI / MDI-X function. Full & Half Duplex
- EN50155 / EN60068-2-6 Vibration
- EN55022 / 24 - ITE Equipment
- EN50155 / EN60068-2-27 Shock
- EN50155 / EN60068-2-32 FreeFall
- Redundant Power Inputs NEMA TS-2, RoHS
- EN50155 - Railway Application Electronics Equipment used on Rolling Stock
- EN50121-3-2 - Railway Applications Electromagnetic Compatibility / Part 3-2
- EN55011 - Industrial, Scientific and Medical (ISM) Equipment
- EN60950-1 - Safety
- EN50121-4 - Railway Applications Electromagnetic Compatibility Part 4
- FCC Part 15, Subpart B, Class A CE EN 55022 Class A
- EMC / EMS - CE, FCC, VCCI

Flexible Deployment and Management

- Plug and Play UnManaged Industrial Ethernet Devices
- Full Line Rate Forwarding on All Ports
- Best price to performance ratio, includes easy installation.
- Flexible network deplyment & installation
- Supports both Copper and Optical (Fiber Ports)
- Supports both Fast Ethernet and Gigabit Ports
- Supports both SFP and SC Optical (Fiber) Connections
- Supports both Multimode & Singlemode Fiber Connections
- Supports both single and dual Optical (Fiber) Ports (SFP & SC)
- Full Five Year DYMEC Warranty

Technical Specifications

Model	Description
Fixed Ports	5 x 10/100 BaseT(X) RJ-45 (Military Grade / Temperature Hardened)
Data Processing	Store & Forward
Switching Capacity	16 Gbps / Non-Blocking
Forwarding Rate	1.3.Mpps
MAC Address Table	1048 Entries
Environment	Operating temperature: -40 to 85°C
	Operating Humidity: 5 to 97% RH
	Protection Class: IP40
	MTBF: >30 years
Electromagnetic Interference	ESD (IEC 61000-4-2) Level 4 (8K/15K) RS (IEC 61000-4-3) Level 3 (10V/m) EFT (IEC 61000-4-4) Level 3 (1V/2V) CS (IEC 61000-4-6) Level 3 (10V/m) PFMF (IEC 61000-4-8) Level4 (30A/m) Surge (IEC 61000-4-5) Level 4+ (6KV/2KV) DIP (IEC 61000-4-11) Level3 (10V)
L2 Protocols	IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x, Clean Code Technology, American Certified Ethernet
MTBF & Housing	Mean Time Between Failure - Calculated by (MIL-HDBK-217F) Calculation Temperature of +25C MTBF Hours - 510,304 Military Grade Aluminum with Structural Reinforcement Dimensions: 142mm x 36.2mm x 105mm (L x W x D) Cooling Diffusion Technology via Housing (Patent Pending) Removable Terminal block UL/cUL Class1, Div 2, CE
IPv6	Pass-through Support for IPv6. Priority queue: 8
Security Features	Clean Code Technology American Certified Ethernet Filter rogue code pass through Carrier Detect LED Dual Power Inputs Parity Check Supports ARP Support for speed limitation on packet transmission Supports broadcast storm suppression Small form factor Clean Code Technology / Secure Video Technology Jumbo Frame Support 9KB

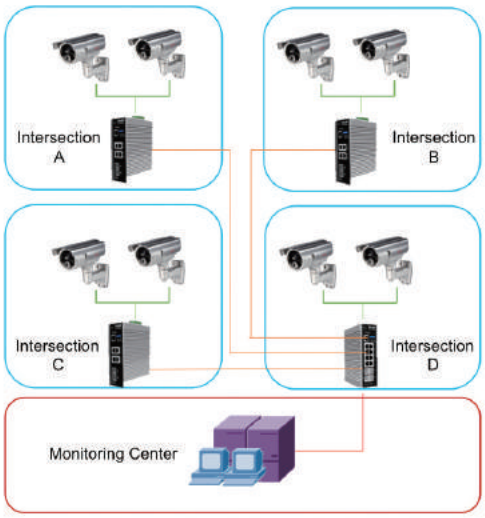
Model	Description
Switch Architecture	Non-blocking Switch Fabric - 16 Gbps Store and Forward
MAC Address Table Packet Buffer Size	1048 Entries 1 MB
Power Relay Contact	6 Pin Molex Connector for PWR1, PWR2, and Alarm Relay Contact
Hardware Architecture	Military Grade Aluminum Housing
	Installation Mode: DIN rail-mount, wall-mount, or shelf mount
Power	DC Input: Rated voltage range: 12 ~ 56 Volts DC Dual Power Inputs / Polarity Protected Alarm Relay contact: 1A @ 24 Volts DC Rated current: 0.5A / Overload Protected
Power Consumption	≤6W (Full forwarding Rate)
Convection Cooling	Fanless design with high efficiency internal cooling fins

Typical Application

Intelligent Layer 2 Flat IP Network Surveillance System

Each intersection is deployed with four PZT cameras (each respectively pointing north, south, east and west). Three DYMEC switches supply channels with images and videos to three HDTV monitors. Video and Data is reliably transmitted over the network to the intersection via Gigabit optical fiber. The DYMEC switch aggregates and transmits traffic lights control details, environmental monitoring data and video data to the control branch through optical fiber. Such data are finally sent to the traffic control and maintenance center via the core network.

Use **DYMEC** Switches or DYMEC Traffic Switches



Intelligent IP Surveillance System
for Security & Intelligent Traffic Systems

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PoE Switch Ordering Information

Model Number	Product Description
DY-6041SC	5-port Industrial - 4 x 10/100 BaseT(X) RJ-45 & 1 x 100 Mbps SC, MM, 2Km
DY-6041SC-30	5-port Industrial - 4 x 10/100 BaseT(X) RJ-45 & 1 x 100 Mbps SC, SM, 30Km
DY-6041T	5-port Industrial - 5 x 10/100 BaseT(X) RJ-45 (Military Grade)
DY-6042SC	6-port Industrial - 4 x 10/100 BaseT(X) RJ-45 & 2 x 100 Mbps SC, MM, 2Km
DY-6042SC-30	6-port Industrial - 4 x 10/100 BaseT(X) RJ-45 & 2 x 100 Mbps SC, SM, 30Km
DY-D8041C (Gig)	5-port Industrial - 4 x 10/100/1000 BaseT(X) RJ-45 & 1 x 1000 Mbps TX / SFP Combo
DY-D8080 (Gig)	8-port Industrial - 8 x 10/100/1000 BaseT(X) RJ-45 (Military Grade)

Power Supply, Surge Protection & SFP Ordering Information

Model	Description
KY-PS48-120W (Din Rail / PoE)	48 Volts DC - 120 Watt Power Supply, 110/220 VAC 50/60Hz (PoE / Temperature Hardened / Military Grade)
KY-PS48-240W (Din Rail / PoE)	48 Volts DC - 120 Watt Power Supply, 110/220 VAC 50/60Hz (PoE / Temperature Hardened / Military Grade)
KY-SPD-GRJ45PoE SPD	Mini, Gigabit, RJr5, Heavy Duty, Industrial, Fast Clamping SPD (PoE / Temperature Hardened / Military Grade)
KY-PS24-18W	24 Volts DC - 18 Watt Power Supply, 110/220 VAC
	SFP with Diagnostics (SM Only)
KY-CGSFP-TXRJ	1000BASE-TX, SFP Transceiver (100m) (Supports CAT5-7)
KY-MGSFP-550M	1000BASE, SFP Transceiver, MM (850nm, 550m, LC)
KY-MGSFP-LR2KM	1000BASE, SFP Transceiver, MM (1310nm, 2Km, LC)
KY-SGSFP-LX10K	1000BASE, SFP Transceiver, SM (1310nm, 10Km, LC)
KY-SGSFP-LX20K	1000BASE, SFP Transceiver, SM (1310nm, 20Km, LC)
KY-SGSFP-LX40K	1000BASE, SFP Transceiver, SM (1310nm, 40Km, LC)
KY-SGSFP-ZX80K	1000BASE, SFP Transceiver, SM (1550nm, 80Km, LC)

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American Certified Ethernet

Dymec Products are American Certified Ethernet and are guaranteed to not contain counterfeit chips or assemblies from China, or Asia. Counterfeit IC's and assemblies result in slower performance and degraded product lifetimes. Premature failure and hazardous ignition can occur with the use of counterfeit ic assemblies.

American Certified Ethernet guarantees only first quality materials, subject to stringent ISO, IEC, MIL-STD, MIL-PRF, ISO9001 and IEEE standards are used.



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