

8-Ch. Dry Contact-over-IP Gateway

TC3847-5

- **Extremely Low Latency**
- **VLAN & QoS Support**
- **Temperature & Power Consumption Monitoring**
- **Extreme Temp (-40°C to +80°C) Optional**
- **Meets or Exceeds IEC 61850-3, IEEE 1613 & NEMA TS-2 Standards**
- **Member of the JumboSwitch® Product Family**



TC3847-5 8-Channel Dry Contact-over-IP Gateway

The TC3847-5 is ideal for situations where a user needs to extend dry contacts across existing Layer 2/Layer 3 networks and low latency is important.

The TC3847-5 achieves minimal end-to-end processing delay (latency) by using high performance buffering and forwarding technology. For reliable communications, the TC3847-5 supports VLAN and QoS for packet prioritization.

Key features include Traffic Monitoring and Statistics, Network Time Server (NTP Server), Remote Firmware Upgrade, Temperature and Power Consumption Monitoring.

Setup, diagnostics, and management are accessed via Web, SNMP, Serial Console, and Telnet. Diagnostics include LED indicators and local and remote loop back to assist with troubleshooting and maintenance.

The TC3847-5 interface card can fit into any available JumboSwitch housing option including 2S Standalone chassis and 1U/2U/4U card cages. Power supply options are 12VDC, 24VDC, -48VDC or 115/230VAC. Standard operating temperature is -20°C to +70°C and the extreme temperature version is -40°C to +80°C.

Applications

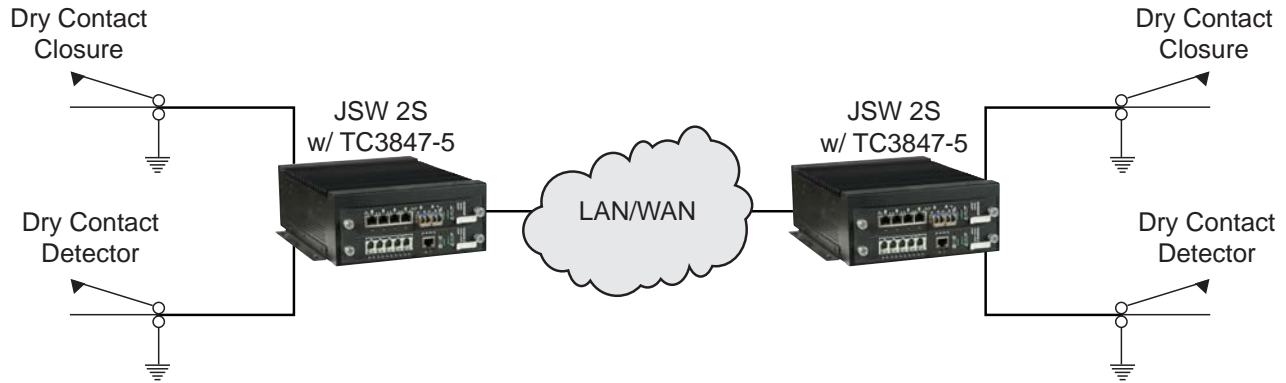
Typical applications include extending dry contact across IP networks.

For example, the TC3847-5 is often used to extend dry contact signals point-to-point across Layer 2/Layer 3 Networks.

Environmental & EMI Compliance

The JumboSwitch product family meets all pertinent industry-specific standards for environmental, performance and security requirements including IEC 61850-3, IEEE 1613, NEMA TS-2 and NERC CIP. Furthermore, future JumboSwitch family products will continue to be compliant with both existing and emerging industry standards and requirements, including developing Ethernet standards. Please refer to the charts below for specific standards compliance information.

	Tests	Industrial Standards	TC Communications - JumboSwitch Type Test and Levels	
			Power Supply Unit (PSU)	RJ-45 & Signal
Temperature/Humidity	Low Temperature Use	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-1; Ae; -40°C; 16 hour	
	Low Temperature Storage	IEC 61850-3, IEEE 1613, NEMA TS-2		
	High Temperature Use	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-2; Be; +80°C; 16 hour	
	High Temperature Storage	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-2; Bd; +85°C; 16 hour	
	Damp Heat	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-30; Db; +55°C; 95%; 96 hours	
Mechanical	Vibration	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-6; Fc; 3 - 150 Hz; 7.5 mm; 2 g; 10 sweeps per axis	
	Shock	IEC 61850-3, IEEE 1613, NEMA TS-2	IEC 60068-2-27; Ea; 30g; 11ms	
ElectroMagnetic Compatibility	Electrostatic Discharge Immunity	IEEE 1613	IEC 61000-4-2; 8kV contact; 15 kV air	
	Radiated RF Immunity	IEC 61850-3, IEEE 1613	IEC 61000-4-3; 80 MHz - 1000 MHz; 20 V/m; AM 80% 1 kHz	
	EFT/Burst Immunity	IEC 61850-3, IEEE 1613	IEC 61000-4-4; 4 kV CM	IEC 61000-4-4; 4 kV CM
	Surge Immunity	IEC 61850-3	IEC 61000-4-5; 4 kV LG; 2 kV LL	IEC 61000-4-5; 4 kV LG; 2 kV LL
	Conducted RF immunity	IEC 61850-3	IEC 61000-4-6; 150 kHz - 80 MHz; 10 V; AM 80% 1 kHz	IEC 61000-4-6; 150 kHz - 80 MHz; 10 V; AM 80% 1 kHz
	Magnetic Field Immunity	IEC 61850-3	IEC 61000-4-8; 50 Hz; 100 A/m cont.; 1000 A/m 1 s	
	Damped Oscillatory Magnetic Field Immunity	IEC 61850-3	IEC 61000-4-10; 100 kHz; 30 A/m	
	Damped Oscillatory Magnetic Field Immunity	IEC 61850-3	IEC 61000-4-10; 1 MHz; 30 A/m	
Power Supply Unit (PSU) Variations	AC Voltage Dips	IEC 61850-3	IEC 61000-4-11; 30% & 100%, 0.5s	NA
	DC Voltage Dips	IEC 61850-3	IEC 61000-4-29; 40% & 70%, 0.1s	NA
	Damped Oscillatory Wave	IEC 61850-3	IEC 61000-4-12; 2.5 kV CM, 1.0 kV DM @1MHz	IEC 61000-4-12; 2.5 kV CM, 1.0 kV DM @ 1MHz
	Conducted PF CM Voltage	IEC 61850-3	IEC 61000-4-16; 50 Hz; 30 V cont.; 300 V 1s	IEC 61000-4-16; 50 Hz; 30 V cont.; 300 V 1s
	Conducted Emission	IEC 61850-3	CE/FCC/CISPR22 class A	CE/FCC/CISPR22 class A
	Conducted emission	IEC 61850-3	CE/FCC/CISPR22 class A	CE/FCC/CISPR22 class A
	Radiated emission	IEC 61850-3	CE/FCC/CISPR22 class A	
Dielectric	Dielectric 50 Hz Test	IEEE 1613	IEC 60255-5; 2 kV	IEC 60255-5; 0.5 kV
	Impulse Voltage Test	IEEE 1613	IEC60255-5; 5 kV	IEC 60255-5; 5 kV



Typical Point-to-Point Application using TC3847-5 Dry Contact

Connection Capacity

Dry Contact.....8 Ports
 Ethernet.....1 Port

Electrical

Dry Contact Interface

Load Voltage (peak AC).....60V
 Load Voltage (DC).....60V
 Continuous load current.....1.5A
 Peak load current.....1.5A
 Max On Resistance.....2.5 Ω
 Output Capacitance.....500pF
 Detector Max input voltage.....9V

Ethernet Interface

Standards.....IEEE802.3,
802.3u, 802.1p&Q
 Connector.....RJ45
 Console Port.....RJ45

System

Bit Error Rate1 in 10¹⁰ or Better

Diagnostic Functions

Local and Remote Loopback for
 Serial and Ethernet

Regulatory Approval

CE, FCC Part 15, CISPR (EN55022)
 CLASS A, IEC 61850-3, IEEE 1613,
 NEMA TS-2

LEDs

Unit Status.....PWR (A, B), Alarm, BU,
PL, Vcc, BP, MGM
 Channel.....Status
 Ethernet.....Link/Act

Power

Standard.....12VDC
 Optional.....24, 48VDC
90-260 VAC, 50/60Hz
 Power Consumption.....<10W

Operating Temperature

Standard Temp.....-20°C to 70°C
 Extreme Temp-40°C to 80°C

Storage

Temperature.....-40°C to 90°C
 Humidity.....95% non-condensing

Physical (rack mount card)

Height.....(3.15cm) 1.24"
 Width.....(17.78cm) 7.0"
 Depth.....(22.86cm) 9.0"
 Weight.....(0.3kg) 0.75lbs



ISO 9001
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Note - Information contained in this data sheet is subject to change without prior notice. 010E