

CNSEISK 5, 8 & 16- Port Copper and Fibre Sub Miniature Ethernet 10/100 Switches

Datasheet

Features



- ◆ Compact Size
- ◆ 10BASE-T/100BASE-TX compliant
- ◆ Copper only and Copper/Fibre mix
- ◆ Fibre MultiMode and SingleMode 1300nm
- ◆ Fibre ST and SC style connectors
- ◆ Up to 2Km MultiMode and 15Km SingleMode
- ◆ Auto-MDIX ports on all copper ports
- ◆ Auto-negotiated data rate, duplex and flow control on all copper ports
- ◆ DIN-rail mountable
- ◆ Powered from an unregulated DC power source (10-36V) or from an AC power source (8-24V, 47-63 Hz). Power is provided through a quick-disconnect terminal strip.
- ◆ Broadcast storm control
- ◆ Full or half-duplex on copper ports
- ◆ Activity/link and data rate LEDs

- ◆ EMC rated for Building and Industrial environments
- ◆ CE Mark and RoHS Compliant
- ◆ UL 508 Listed, C-UL Listed Industrial Control Equipment

Description

CNSEISK switches provide Plug and Play Ethernet connectivity for industrial automation systems which have unique requirements—convenient mounting, simple and dependable operation, low-voltage input power and especially cost-effective. These needs are met by the compact and rugged CNSEISK5, CNSEISK8 and CNSEISK16 family.









Utilising state-of-the art switching technology, CNSEISK switches provide five or eight 10/100 Mbps shielded RJ-45 ports. Each port supports the auto-negotiation protocol in order to select data rate, duplex and flow control. For half-duplex links, the Backpressure scheme is used. For full-duplex links, the PAUSE scheme is supported. All ports are Auto-MDIX compliant, allowing any port to operate as an uplink port to another switch, eliminating the need for crossover cables in the field. All these features require no operator intervention.

Fibre ports are used when distances exceed the 100 meter limit of copper, when immunity to EMI/RFI is important or for additional communication security. ST or SC connectors are available for use with 1300 nm multimode fibre cable to span to 2000 meters or SC connectors with single-mode 1300 nm fibre cable to extend segment lengths to 15,000 meters. All fibre ports operate at 100 Mbps full-duplex.

These Switches address the problem of convenient mounting in control panels where DIN-rail space is at a premium. Office-grade equipment is intended for desktop operation and requires a separate power supply that needs to be powered from a 120/230 Volt AC mains circuit. In this case, a shelf should be constructed to mount the unit and a duplex receptacle to be installed inside the control panel. They are intended for sub-panel mounting inside the control panel and can be powered from the same control transformer that is used to power the industrial automation system equipment. These Switches can be powered from a low-voltage, wide range AC or DC power source as well. The activity LEDs on these units face the technician, thus easing troubleshooting. The label on the unit can be written upon so port connections can be documented as to the location of connected equipment.

The auto-negotiation protocol allows these Switches to link with any compatible 10BASE-T or 100BASE-TX device. They will function with any application layer that works with Ethernet, including Lon/IP 852b, Modbus/TCP or Ethernet/IP. These units have built-in broadcast storm control to prevent excess broadcasts from degrading network performance.

Typical Applications

-  Building Management and Supervision including LonWorks™, Bacnet, oBix, ModBus/TCP or any TCP based protocol.
-  Ethernet I/O
-  Machine Monitoring
-  Environmental Control
-  Test and Measurement
-  Process Control
-  Remote Data Acquisition
-  Communications Gateway

Specifications

Electrical		
Input Voltage	10 – 36 VDC	24VAC (±10%)
Input Power		
EISK5 – All versions	5W	5VA
EISK8– Copper version	6W	6VA
EISK8-Fibre versions	7W	7VA
EISK16	10W	10VA
Input Frequency	N/A	47 – 63Hz

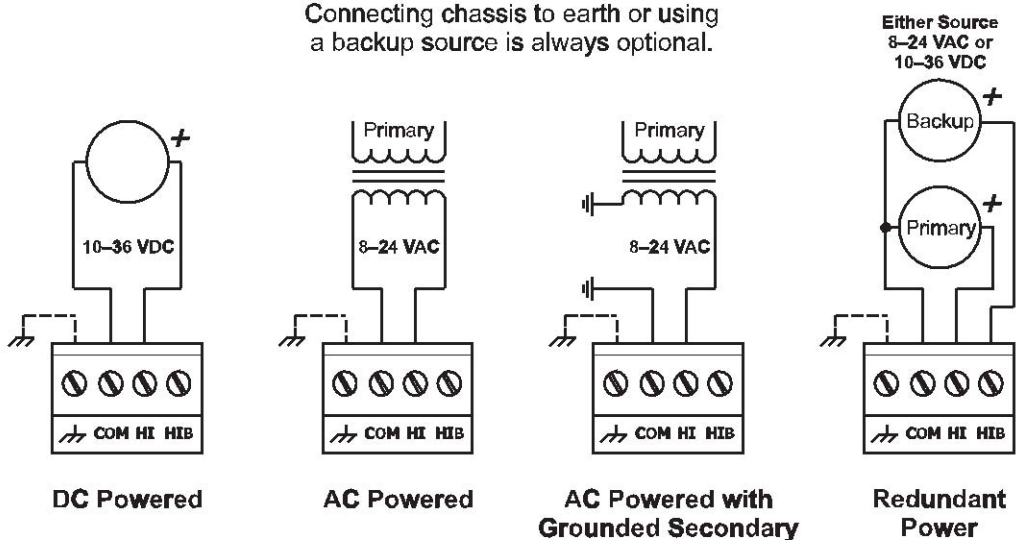
Environmental		
Operating Temp	0C to 60C	0C to 60C
Storage Temp	-40C to +85C	-40C to +85C
Relative Humidity	10 - 95%, Non condensing	10 - 95%, Non condensing
Protection	IP30	IP30
Functional		
Standards	IEEE 802.3	IEEE 802.3
Process Type	Store and Forward	Store and Forward
Ports	Copper	Fibre
Interface	10BASE-T/100BASE-TX	100BASE-FX
	10/100Mbps	100Mbps
	Auto-negotiated data rate, flow control, full- or half-duplex mode and Auto-MDIX cable connection	Full-duplex
Connectors	Shielded RJ-45	SC on Multi and Singlemode available or ST on option only on Multimode versions
Maximum segment lengths	100m	2Km (Multimode), optical budget of 13dB, 15Km (Singlemode), optical budget of 19dB
Signal LEDs	Link (L)	Link (L)
	Yellow: 10Mbps Green: 100Mbps Flashing: Activity	Green: 100Mbps Flashing: Activity
	Duplex (D)	
	Off: Half-duplex Green: Full-duplex	
Power LED	Green = Power	Green = Power
Flow Control	Half-duplex (back pressure) Full-duplex (PAUSE)	Full-duplex (PAUSE)

MDI-X* 10BASE-T/100BASE-TX Port Assignments	
RJ-45	Usage
1	TD+
2	TD-
3	RD+
4	Not Used
5	Not used
6	RD-
7	Not Used
8	Not Used

*The EISK Switch implements the internal crossover function allowing straight-through cables to connect to network interface modules

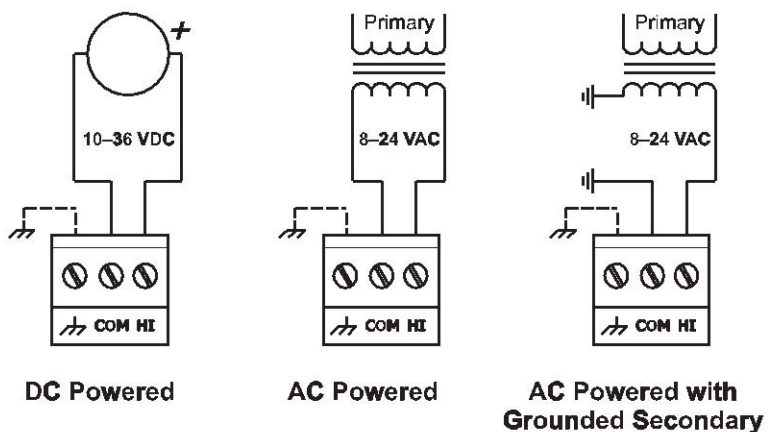
Power Supply Options-

Connecting chassis to earth or using a backup source is always optional.



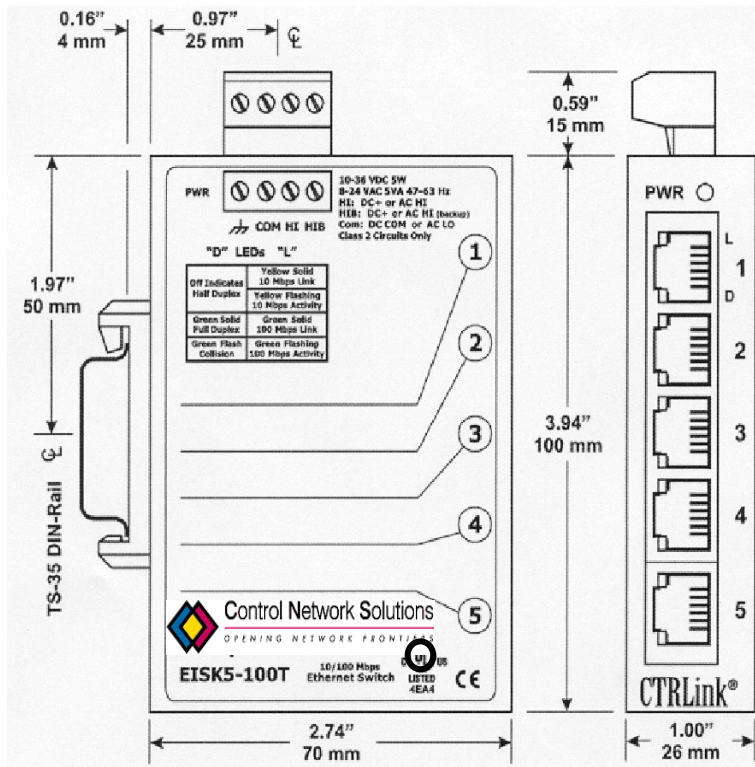
EISK5 fibre models and EISK8 all models

Connecting chassis to earth or using a backup source is always optional.

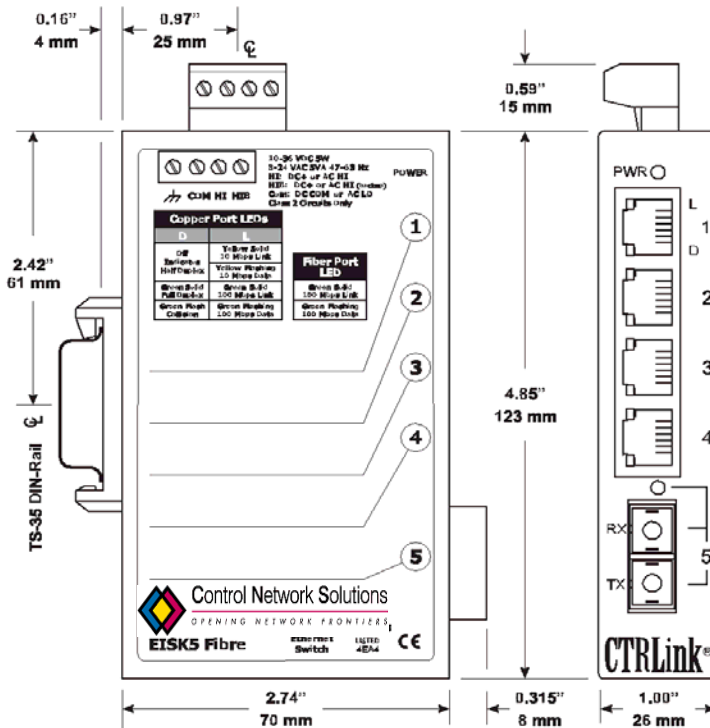


EISK5 -100T Model

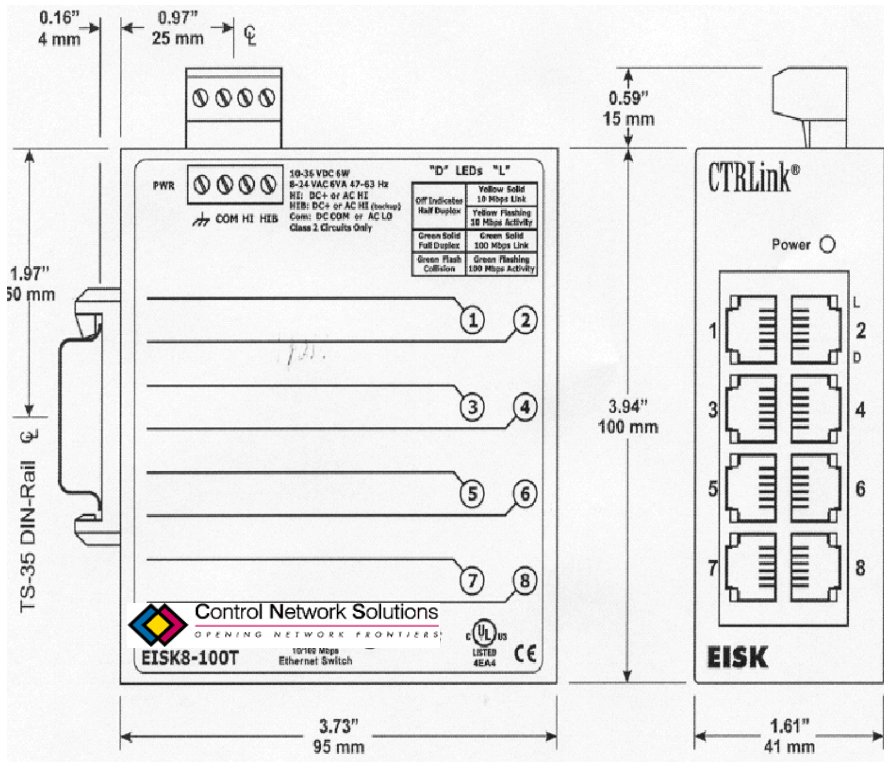
**Mechanical Drawing –
Standard EISK Packaging**



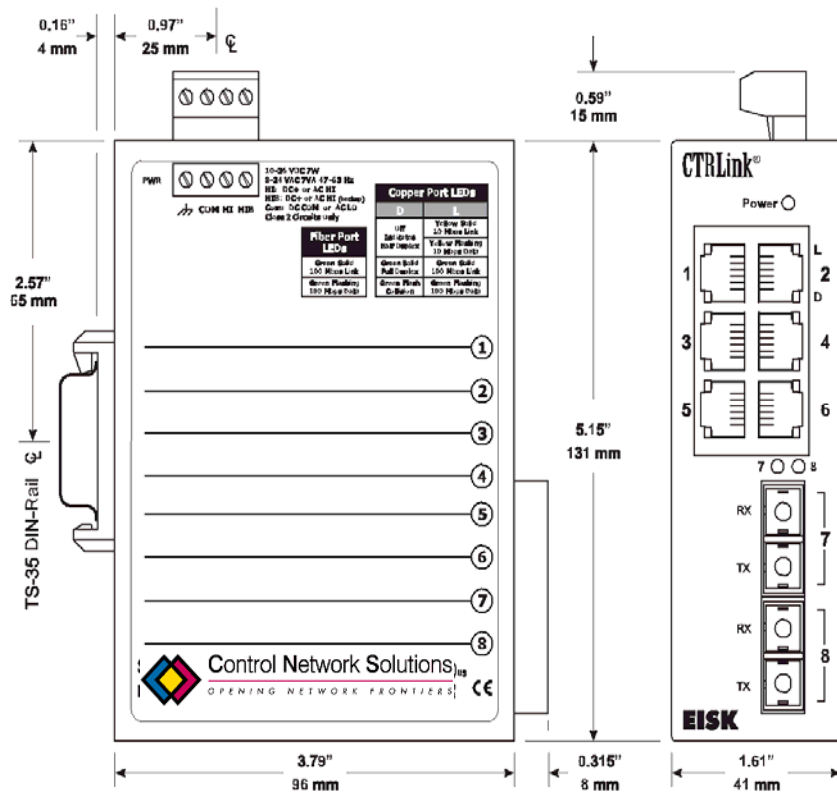
EISK 5 - Switch Copper Only



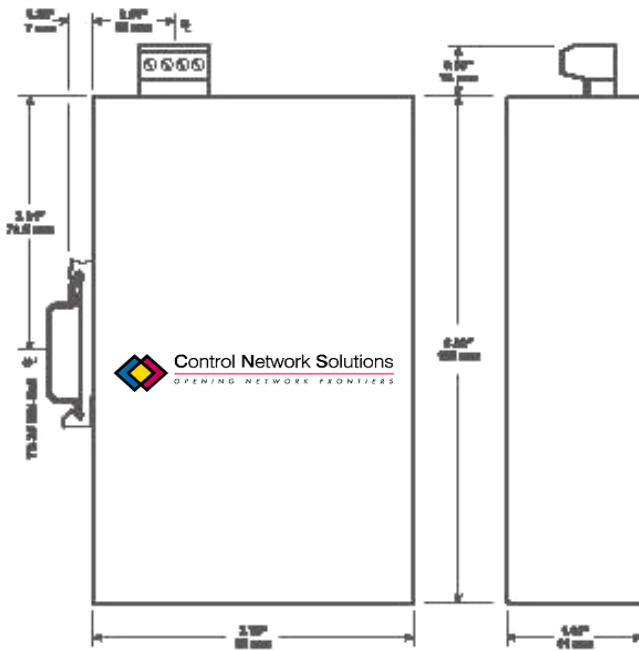
EISK5 – Copper and Fibre



8-Port Switch Copper Only



EISK8 Copper and Fibre



EISK16 Copper

All models are of compact size:

5-Port Copper (3.94"/100mm H x 2.74"/70mm D x 1.00"/26mm W)

8-Port Copper (3.94"/10mm H x 3.73"/95mm D x 1.61"/41mm W)

16-Port Copper (6.02"/153mm H x 3.79"/ 96mm D x 1.61"/41mm W)

5-Port Fibre (4.85"/123mm H x 2.74"/70mm D x 1.00"/ 26mm W)

8-Port Fibre (5.15"/131mm H x 3.79"/96mm D x 1.61"/41mm W)

Electromagnetic Compatibility			
Standard	Test Method	Description	Test Levels
EN 55024	EN 61000-4-2	Electrostatic Discharge	6 kV Contact & 8 kV Air
EN 55024	EN 61000-4-3	Radiated immunity	10 V/m 80 MHz to 1 GHz
EN 55024	EN 61000-4-4	Fast Transient Burst	1 kV Clamp & 2 kV Direct
EN 55024	EN 61000-4-5	Voltage Surge	1 kV L to L & 2 kV L to Earth
EN 55024	EN 61000-4-6	Conducted Immunity	10 Volts (rms)
EN 55024	EN 61000-4-11	Voltage Dips & Interruptions	1 Line Cycle to 5 sec. @ 100% dip
EN 55022	CISPR 22	Radiated Emissions	Class A
EN 55022	CISPR 22	Conducted Emissions	Class B
CFR 47, Part 15	ANSI C63.4	Radiated Emissions	Class A

Ordering Information

Model	Description
CNSEISK5-100T	5- Port 10BASE-T/100BASE-TX , DIN Rail mount
CNSEISK5-100T/FT	4- Port 10BASE-T/100BASE-TX + 1- Port 100Mbps MultiMode fibre (1300nm) with ST connectors, switching hub, DIN Rail mount
CNSEISK5-100T/FC	5- Port 10BASE-T/100BASE-TX + 1- Port 100Mbps MultiMode fibre (1300nm) with SC connectors, DIN Rail mount
CNSEISK5-100T/FCS	5- Port 10BASE-T/100BASE-TX + 1- Port 100Mbps SingleMode fibre (1300nm) with SC connectors, DIN Rail mount
CNSEISK8-100T	8 -Port 10BASE-T/100BASE-TX switch, DIN Rail mount
CNSEISK8-100T/FT	6 -Port 10BASE-T/100BASE-TX + 2- Port 100Mbps MultiMode fibre (1300nm) with ST connectors, DIN Rail mount
CNSEISK8-100T/FC	6 -Port 10BASE-T/100BASE-TX + 2- Port 100Mbps MultiMode fibre (1300nm) with SC connectors, DIN Rail mount
CNSEISK8-100T/FCS	6 -Port 10BASE-T/100BASE-TX + 2- Port 100Mbps SingleMode fibre (1300nm) with SC connectors, DIN Rail mount
CNSEISK16-100T	16-Port 10BASE-T/100BASE-TX switch

Contact

Control Network Solutions Ltd

Studio 7,

Intec 2,

Intec Business Park,

Wade Road,

BASINGSTOKE,

Hampshire, RG24 8AG, England

Tel: +44 (0) 1256 818700

Fax: +44 (0) 1256 812520

Email: cns@control-network-solutions.co.uk

Web: www.control-network-solutions.co.uk

CTRLink is a registered trademark of Contemporary Control Systems, Inc.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, in part or in whole, without prior permission of Control Network Solutions. We reserve the right to make changes without notice to any products herein as part of its continued product development and improvements. We do not assume any liability arising out of the application or use of any product or circuit described herein.