



# KSC-200



## Industrial Optically Isolated Serial RS-232 to Fiber Converter

### Product Highlights:

- Transparent conversion
- Surge protection
- High ESD protection
- Optical isolation
- Versatile optical cables support
- DIN-rail mounting
- Wide temperature range
- Wide power voltage range

The converter is designed to provide the most versatile connection possible between 2 RS-232 serial equipment using fiber optic cable. It allows any two pieces of serial equipment to communicate full-duplex over typical duplex fibers, or over optional single fiber up to 20km. The converter supports transparent conversion for not only RS-232 data lines, but also all RS-232 control signals. It also supports all RS-232 baud rates with no need for user configuration. The Din-rail mountable design makes it ideal for industrial cabinets and enclosures. Further, more designs such as signal protection, wide operating temperature range, wide power voltage range are also provided to suit for more industrial applications.

### Key Features:

- Transparent conversion for all RS-232 signals
- Supports RS-232 baud rate higher than 115.2Kbps
- Auto adaptation and conversion to any RS-232 baud received
- Operation with no required configuration
- Extending all RS-232 signals over long optical cables
- Supports versatile optical cables:
  - ST/SC multimode duplex fibers
  - SC single mode duplex fibers
  - SC single mode single fiber
- Provides surge protection (transient voltage) on RS-232 signals
- Provides high ESD protection on RS-232 signals
- Provides optical isolation between RS-232 and main circuitry
- Designed for industrial environments with:
  - RS-232 surge, ESD, and isolation protection
  - DIN-rail and panel mounting support
  - Wide power voltage range support
  - Terminal block and Jack-type power connectors
  - Wide operating temperature range
  - Alarm relay output for device power failure
  - Industrial-rated emission and immunity performance

### Specifications:

#### RS-232 Interface

Connector	DB9 Female
Pin Assignments	DCE
Signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
Data Rate	0 ~ 115.2Kbps
Surge Protection	Transient Overvoltage outside +/-28V
Line ESD Protection	+/-15KV
Isolation	Optical isolation between RS-232 and main circuit, 3000 VDC rms



## Ordering Informations:

Model KSC-200-X	Fiber Mode	Connector	Ref. Distance
-T	MMF	Duplex ST	2km
-C	MMF	Duplex SC	2km
-SL2	SMF	Duplex SC	20km
-W3515	SMF	Bi-Di SC	15~20km
-W5315	SMF	Bi-Di SC	15~20km

MMF: Multimode Fiber  
SMF: Single Mode Fiber

## EMI EMS Safety Environmental Tests:

Test	Standard	Specifications
FCC/EMI	FCC Rule Part 15	Class B
CE/EMC/EMI	EN55022, CISPR 22	Class B
CE/EMC/Harmonic	EN 61000-3-2	< 75 W
CE/EMC/VFF	EN 61000-3-3	Clause 5
CE/EMC/EMS	EN 55024	
ESD Test	IEC 61000-4-2	Contact: +/-8KV Air: +/-16KV
RS Test	IEC 61000-4-3	Strength:10V/m
EFT/BURST	IEC 61000-4-4	Power: 4KV Signals: 2KV
Surge Immunity	IEC 61000-4-5	Power: 4KV
CS Test	IEC 61000-4-6	10V Level 3
Magnetic Field Imm.	IEC 61000-4-8	50Hz 40A/m
Voltage Dips Imm.	IEC 61000-4-11	Interruption: C Dips: B
Safety	EN 60950, IEC 60950	
Dielectric Voltage	IEEE 802.3	TP, 1500VAC/60sec.
Insulation Resistance	IEEE 802.3	TP, 500VDC/10Mohm
Cold Test	IEC 68-2-1 Test Ad	-20°C, 96hrs
Dry Heat Test	IEC 68-2-2 Test Bd	+70°C 40%RH 96hrs
Damp Heat Test	IEC 68-2-3	+60°C 90%RH 96hrs
Storage Test	IEC 68-2-48	-20°C 96hrs +85°C 40%RH 96hrs
Vibration Test	IEC 68-2-34	5~30Hz, 0.5g Operating



FCC Part 15, Class B  
CISPR 22 Class B

### Katron Technologies Inc.

15F-7, No. 79, Sec. 1, Hsin Tai Wu Rd.,  
Hsi-chih, Taipei Hsien, Taiwan.  
Tel: 886-2-2698-3878  
Fax: 886-2-2698-3873  
E-mail: kt@ktinet.com.tw  
URL: http://www.ktinet.com.tw

### KTI Networks Inc.

10415-A Westpark Drive, Houston,  
TX 77042. U.S.A.  
Tel: 1-713-266-3891  
Fax: 1-713-914-0555  
E-mail: contact@ktinet.com  
URL: http://www.ktinet.com

Trademarks: All brand names are trademarks or registered trademarks of their respective holders.  
This information is subject to change without prior notice.

## Optical Interface

Connector	Duplex ST, Duplex SC, single SC (model dependent)
Fiber Cables	Multimode (MMF): 50/125µm, 62.5/125µm, Single mode (SMF): 9/125µm
Link Distance	Up to 20km (model dependent)
LEDs	Power status, RX-232 Tx, RS-232 Rx, Optical link status
DC Power Input	Screwed terminal block: 2 pairs of +/- contacts 1 pair of power alarm relay output contacts DC jack: -D 6.3mm / +D 2.0mm Operating voltage range: +7 ~ +30VDC
Dimension	28 x 82 x 95 mm (WxDxH), Weight: 240g
Housing	Enclosed metal with no fan
Mounting Support	DIN-Rail mounting, Panel mounting
Environment	Operating Temperature: -20°C ~ 70°C Storage Temperature: -20°C ~ 85°C Relative Humidity: 5% ~ 95% non-condensing
Approval	FCC Class B, CE/EMC Class B, EN60950 safety

## Fiber Optical Specifications:

Model	Connector	Wavelength	Tx Power	Rx Sens.	Rx. Max
KSC-200-T	Duplex ST	1310nm	-19 ~ -14dBm	-31dBm	-14dBm
KSC-200-C	Duplex SC	1310nm	-19 ~ -14dBm	-31dBm	-14dBm
KSC-200-SL2	Duplex SC	1310nm	-15 ~ -7dBm	-32dBm	-3dBm
KSC-200-W3515	Bi-Di SC	Tx 1310nm Rx 1550nm	-14 ~ -8dBm	-31dBm	0dBm
KSC-200-W5315	Bi-Di SC	Tx 1550nm Rx 1310nm	-14 ~ -8dBm	-31dBm	0dBm

\* Duplex SC: 2 SC for TX and RX  
\* Bi-Di SC: single SC for TX and RX

