# 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

DIN-Rail Mounting

Panel Mounting Bracket
C03-4006-101

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 | Connec-tor | Ref. Distance |
|---|---|---|---|
| -T | MMF | Duplex ST | 2km |
| -C | MMF | Duplex SC | 2km |
| -SL2 | SMF | Duplex SC | 20km |
| -SL4 | SMF | Duplex SC | 40km |
| -SL6 | SMF | Duplex SC | 60km |
| -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**


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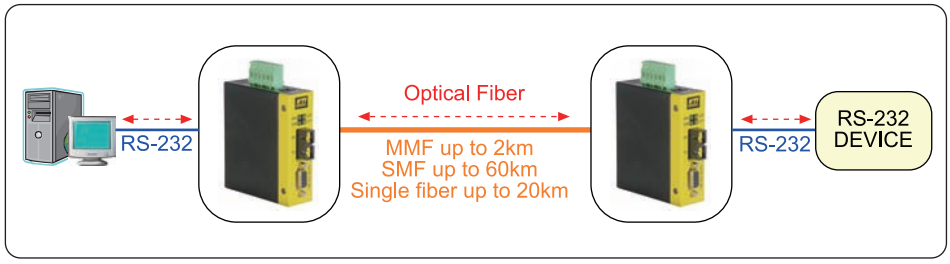
### Optical Interface

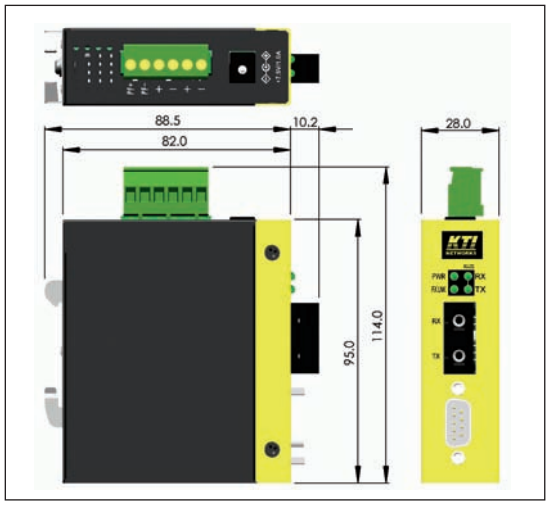
| | |
|---|---|
| Connector | Duplex ST, Duplex SC, single SC (model dependent) |
| Fiber Cables | Multimode (MMF): 50/125µm, 62.5/125µm, Single mode (SMF): 9/125µm |
| Link Distance | Up to 20km (model dependent) |
| LEDs | Power status, RX-232 Tx, RS-232 Rx, Optical link status |
| DC Power Input | Screwed terminal block: 2 pairs of +/- contacts<br>1 pair of power alarm relay output contacts<br>DC jack: -D 6.3mm/+D 2.0mm<br>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<br>Storage Temperature: -20˚C ~ 85˚C<br>Relative Humidity: 5% ~ 95% non-condensing |
| Approval | FCC Class B, CE/EMC Class B, EN60950 safety |

## Fiber Optical Specifications:

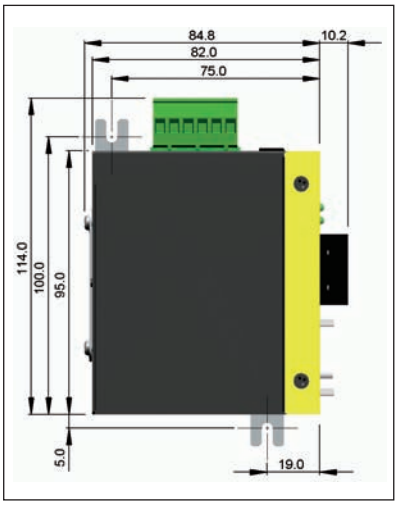
| Model | Connector | Wavelength | Tx Power | Rx Sens. | Rx. Max |
|---|---|---|---|---|---|
| KSC-200-T | Duplex ST | 1310nm | -19 ~ -14dBm | -31dBm | -14dBm |
| KSC-200-C | Duplex SC | 1310nm | -19 ~ -14dBm | -31dBm | -14dBm |
| KSC-200-SL2 | Duplex SC | 1310nm | -15 ~ -7dBm | -32dBm | -3dBm |
| KSC-200-SL4 | Duplex SC | 1310nm | -5 ~ 0dBm | -34dBm | 0dBm |
| KSC-200-SL6 | Duplex SC | 1310nm | -5 ~ 0dBm | -35dBm | 0dBm |
| KSC-200-W3515 | Bi-Di SC | Tx 1310nm<br>Rx 1550nm | -14 ~ -8dBm | -31dBm | 0dBm |
| KSC-200-W5315 | Bi-Di SC | Tx 1550nm<br>Rx 1310nm | -14 ~ -8dBm | -31dBm | 0dBm |

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




DIN-Rail Dimension




Panel Dimension

100730