

## Multimode to Single Mode Optical Fiber Media Converters

### KGC-311 Series Installation Guide

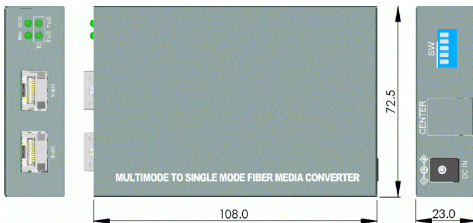


DOC.070808-KGC311

#### General

The KGC-311 is a mode to mode optical fiber converter series which provide the following conversions:

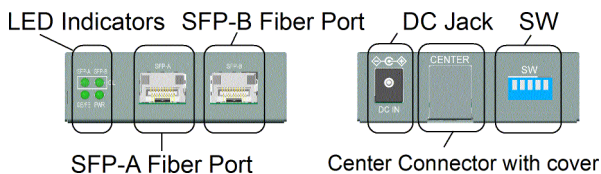
- 100BASE-SX MM fiber to/from 100BASE-LX SM fiber
- 100BASE-FX MM fiber to/from 100BASE-FX SM fiber



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#### Specifications



##### Fiber Optic Interfaces (SFP-A & SFP-B Ports)

|                       |  |
|-----------------------|--|
| Compliance            | IEEE 802.3z 1000BASE-SX/LX std.<br>IEEE 802.3u 100BASE-FX std.         |
| Connectors            | SFP for pluggable fiber transceiver                                    |
| Data Speed            | 1000Mbps, full duplex (SW1-3: Off)<br>100Mbps, full duplex (SW1-3: On) |
| Cable Types           | SFP-A MMF - 50/125, 62.5/125 $\mu$ m<br>SFP-B SMF - 9/125 $\mu$ m      |
| Eye Safety compliance | IEC825 Class 1   |

##### Center Interface

|           |                             |
|-----------|-----------------------------|
| Interface | For center chassis mounting |
| Connector | FutureBus                   |

##### DC Power Input

|                    |                           |
|--------------------|---------------------------|
| Interface          | DC Jack (-D6.3mm/+D2.0mm) |
| Operating Voltages | DC input +5V ~ +12V       |
| Power consumption  | max 2W @+7.5VDC input     |

##### SW (Configuration Switches)

|           |  |
|-----------|--|
| SW1       | ON - Gigabit Ethernet MM to SM<br>OFF - Fast Ethernet MM to SM |
| SW2 ~ SW5 | Reserved   |

#### Features

- Complies with IEEE 802.3z 1000Base-SX/LX and IEEE 802.3u 100Base-FX standard
- Provides media conversion between single mode and multimode optical fiber media types
- Supports both 1000Mbps Gigabit Ethernet fiber and 100Mbps Fast Ethernet fiber applications
- Provides two SFP slots to support standard SFP fiber transceivers
- Transparent conversion to any type of packet frame
- No packet length limitation
- Provides LEDs for easy network monitoring
- Center chassis installation : support installation in a center chassis rack with benefits of central software management, central power and redundant power backup.
- Diversified mounting support : desktop mounting, wall mounting, optional Din-Rail support
- Support wide range of single mode fiber options: short reach up to long reach, Bi-directional single fiber, and CWDM
- Low power consumption

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##### Mechanical

|                  |                             |
|------------------|-----------------------------|
| Dimension (base) | W 108mm x D 72.5mm x H 23mm |
| Housing          | Enclosed metal with no fan  |
| Weight           | 206g                        |

##### LED Indicators

|          |     |                                    |
|----------|-----|------------------------------------|
| PWR      | ON  | Power on                           |
|          | OFF | Power off                          |
| GE/FE    | ON  | GE MM to GE SM                     |
|          | OFF | FE MM to FE SM                     |
| SFP-A OL | ON  | SFP-A port optical signal detected |
|          | OFF | No optical signal                  |
| SFP-B OL | ON  | SFP-B port optical signal detected |
|          | OFF | No optical signal                  |

##### Environmental

|                       |            |
|-----------------------|------------|
| Operating Temperature | -5 ~ 55°C  |
| Storage Temperature   | -20 ~ 85°C |
| Relative Humidity     | 10% ~ 70%  |

##### Design Compliance

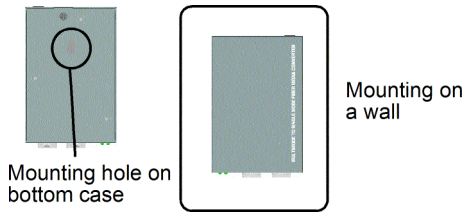
FCC Part 15 Class B, CE / CISPR 22 Class B, IEC60950 Safety

#### Desktop Mounting

The device can be mounted on a desktop or shelf. Make sure that there is proper heat dissipation from and adequate ventilation around the device. Do not place heavy objects on the device.

#### Wall Mounting

The device provides a mounting hole on the bottom case as shown in the figure. Use the hole for a wall mounting.



## Applying Power

Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the device should have the AC voltage matching the commercial power voltage in your area. The DC power input of the converter is: DC IN 0.24A min. @ 7.5V

## Installing SFP Fiber Transceiver

To install an fiber transceiver into an SFP slot, the steps are:

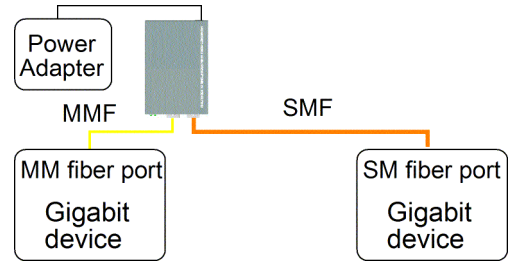
1. Turn off the power to the device unit.
2. Insert the SFP fiber transceiver into the slot. Normally, a bail is provided for every SFP transceiver. Hold the bail and make insertion.
3. Until the SFP transceiver is seated securely in the slot, place the bail in lock position.

Note that SFP-A is reserved for MM transceiver and SFP-B is reserved for Single mode transceiver.

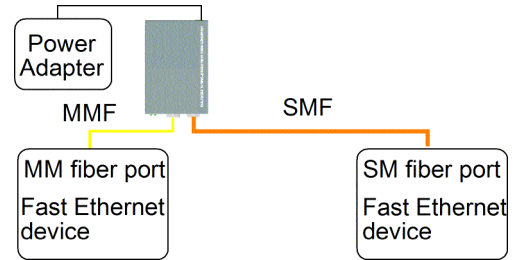
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## Typical Applications

### Gigabit Ethernet 1000Mbps MMF to 1000Mbps SMF



### Fast Ethernet 100Mbps MMF to 100Mbps SMF



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## DIN-Rail Mounting

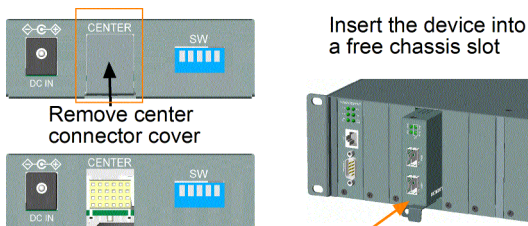
For a Din-Rail chassis, the media converter can support mounting on a Din-Rail. An optional Din-Rail bracket, KC-3DR can be purchased separately. Consult your dealer for details. The following figures show an example after bracket installation:



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## Center Chassis Installation


The media converter can also be installed in KC-1300 center chassis. The center chassis provides the power supply to the converter also with optional power redundancy. Up to 16 units can be installed in one chassis. Unscrew and remove the cover of the center connector before inserting the converter into the chassis. Refer to the operation manual of center chassis KC-1300 for more information.



## FCC NOTICE

This device complies with Part 15 Class B the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including the interference that may cause undesired operation.

## CE NOTICE

Marking by the symbol  indicates compliance of this equipment to the EMC directive of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards:

|              |                |
|--------------|----------------|
| EMC Class B  |                |
| EN61000-6-3  | IEC61000-6-1   |
| EN55022      | CISPR22        |
| EN61000-3-2  | IEC61000-3-2   |
| EN61000-3-3  | IEC61000-3-3   |
| EN61000-6-1  | IEC61000-6-1   |
| EN55024      | CISPR24        |
| EN61000-4-2  | IEC 61000-4-2  |
| EN61000-4-3  | IEC 61000-4-3  |
| EN61000-4-4  | IEC 61000-4-4  |
| EN61000-4-5  | IEC 61000-4-5  |
| EN61000-4-6  | IEC 61000-4-6  |
| EN61000-4-8  | IEC 61000-4-8  |
| EN61000-4-11 | IEC 61000-4-11 |

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## Trademarks

Ethernet is a registered trademark of Xerox Corp.

## KGC-311 Series Model Optical Specifications

DOC.070808-KGC311

### Fast Ethernet MM to SM (KGC-311-Fxxx)

| <u>Model</u> | <u>SFP-A (MM)</u> | <u>SFP-B (SM)</u>                                |
|--------------|-------------------|--|
| -FSL3        | LC 1310nm MM 2km  | LC 1310nm SMF 30km                               |
| -FSL6        | LC 1310nm MM 2km  | LC 1310nm SMF 60km                               |
| -FSL10       | LC 1310nm MM 2km  | LC 1310nm SMF 100km                              |
| -FW3520      | LC 1310nm MM 2km  | BiDi LC single fiber 20km<br>Tx 1310nm Rx 1550nm |
| -FW5320      | LC 1310nm MM 2km  | BiDi LC single fiber 20km<br>Tx 1550nm Rx 1310nm |

\* BiDi: Model -FWxxxx use SM single fiber for bi-directional transmission.

| <u>Model</u> | <u>SFP-A (MM)</u> |                 | <u>SFP-B (SM)</u> |                 |
|--------------|-------------------|-----------------|-------------------|-----------------|
|              | <u>Tx power</u>   | <u>Rx sens.</u> | <u>Tx power</u>   | <u>Rx sens.</u> |
| -FSL3        | -20 ~ -14         | -31             | -15 ~ -8          | -34             |
| -FSL6        | -20 ~ -14         | -31             | -5 ~ 0            | -35             |
| -FSL10       | -20 ~ -14         | -31             | -5 ~ 0            | -35             |
| -FW3520      | -20 ~ -14         | -31             | -14 ~ -8          | -32             |
| -FW5320      | -20 ~ -14         | -31             | -14 ~ -8          | -32             |

### Gigabit Ethernet MM to SM (KGC-311-xxxx)

| <u>Model</u> | <u>SFP-A (MM)</u> | <u>SFP-B (SM)</u>                         |
|--------------|-------------------|---|
| -LX          | LC 850nm MM 500m  | LC 1310nm SMF 10km                        |
| -LX20        | LC 850nm MM 500m  | LC 1310nm SMF 20km                        |
| -LX30        | LC 850nm MM 500m  | LC 1310nm SMF 30km                        |
| -LX50        | LC 850nm MM 500m  | LC 1550nm SMF 50km                        |
| -LX70        | LC 850nm MM 500m  | LC 1550nm SMF 70km                        |
| -W3510       | LC 850nm MM 500km | BiDi LC SM SF 10km<br>Tx 1310nm Rx 1550nm |
| -W5310       | LC 850nm MM 500km | BiDi LC SM SF 10km<br>Tx 1550nm Rx 1310nm |
| -W3410       | LC 850nm MM 500km | BiDi LC SM SF 10km<br>Tx 1310nm Rx 1490nm |
| -W4310       | LC 850nm MM 500km | BiDi LC SM SF 10km<br>Tx 1490nm Rx 1310nm |

| <u>Model</u> | <u>SFP-A (MM)</u> |                 | <u>SFP-B (SM)</u> |                 |
|--------------|-------------------|-----------------|-------------------|-----------------|
|              | <u>Tx power</u>   | <u>Rx sens.</u> | <u>Tx power</u>   | <u>Rx sens.</u> |
| -LX          | -9.5 ~ -4         | -18             | -9.5 ~ -3         | -20             |
| -LX20        | -9.5 ~ -4         | -18             | -8 ~ -2           | -23             |
| -LX30        | -9.5 ~ -4         | -18             | -4 ~ +3           | -23             |
| -LX50        | -9.5 ~ -4         | -18             | -4 ~ +1           | -23             |
| -LX70        | -9.5 ~ -4         | -18             | 0 ~ +5            | -23             |
| -W3510       | -9.5 ~ -4         | -18             | -9 ~ -3           | -21             |
| -W5310       | -9.5 ~ -4         | -18             | -9 ~ -3           | -21             |
| -W3410       | -9.5 ~ -4         | -18             | -9 ~ -3           | -21             |
| -W4310       | -9.5 ~ -4         | -18             | -9 ~ -3           | -21             |

All models listed are shipped with a pre-installed SFP fiber transceiver.

## Free Manuals Download Website

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