# Industrial

# Gigabit Media Converter

# 10/100/1000Base-T to 100/1000Base-FX

# DF101G

## Production Descriptions

DF101G is an industrial gigabit media converter allows one Ethernet 10/100/1000Base-T UTP RJ-45 port to be inter-changeably connected to one 100/1000BASE-FX Fiber SFP port. It can be operated for the scenario under the temperature range from -40°C to 75°C. With auto negotiation and auto MDI/MDIX, the UTP RJ45 port is compatible to Gigabit Ethernet 10/100/1000Base-T interfaces. For the fiber SFP port, the port speed of 100Mbps / 1000Mbps can be set by the dip switch on the front panel.

DF101G supports both switch mode and converter mode for user applications. In switch mode, it utilizes the “store & forward” architecture to handle packet transfer. It begins to forward a packet to a destination port after the entire packet is received. A received packet will be forwarded to the destination port only if it is error free. Otherwise, it will be discarded. In converter mode, the DF101G directly forward packet to the destination port without checking CRC for lowest latency requirement. If the speeds of the RJ45 and the SFP ports are not the same, the converter mode will automatically switch to the “store and forward” architecture to handle packets.

With the Link Fault Pass-through (LFP) function, the DF101G can monitor both the fiber and copper RX ports for loss of signal. In case of a loss of RX signal on one media port, the converter will automatically disable the TX signal to the other media port, thus passing through the link fault. It then sends out the far end fault (FEF) signal to stop sending link pulse to the link partner once a loss of the fiber RX signal is encountered. Then the link partner will synchronously stop sending data. FEF prevents loss of valuable data transmitted over invalid link. Combining the LFP and FEF troubleshooting features of DF101G, both end devices can be notified of a loss of fiber link.

## Key Features

- Supports one 10/100/1000Base-T Gigabit Ethernet UTP RJ45 port and one 100/1000Base-FX Gigabit Ethernet Fiber SFP port
- Supports Full/Half Duplex with Auto Negotiation
- Supports auto MDI/MDIX for RJ45
- Supports jumbo frame (9Kbyte) pass thru for streaming video applications
- Support auto Switch and Converter mode
- Supports Local Fault Pass through (LFP)

- Supports SFP multi-mode/single-mode fiber plugs with different distances.
- 2 DIP switches settings
  - DIP 1: To select SFP for 100Base-FX or 1000base-FX
  - DIP 2: To enable LFP function
- RESET push button to activate new DIP Switches settings
- Operating Ambient Temperature: -40°C ~ +75°C
- DIN Rail bracket

## Technical Specifications

- Standards
  - IEEE802.3 10Base-T
  - IEEE802.3u 100ase-TX
  - IEEE802.3z/ab 1000Base-T, 1000Base-FX
  - IEEE802.3x full-duplex flow control
  - Cable
    UTP：Cat. 5e cable up to 100m
  - Fiber：
    multi-mode for 1~2km
    single-mode for 10~50km
- Power Input :
  - DC Jack: 5VDC ~ 18VDC
- Power Consumption :
  - 2.0 Watts for 5V/12VDC input
- Ambient Temperature：-40˚C ~ +75˚C
- Humidity：10~90％
- Dimensions：28 (H) x 73 (W) x 75 (D) mm
- Certification：FCC Part 15 Class A, CE Mark

## Network Interfaces:

| Category | Connector | Transmission | Max. Cable/Fiber Length |
|---|---|---|---|
| 10/100Base-TX | RJ-45 | Full/Half Duplex | 100M |
| 1000Base-T | RJ-45 | Full Duplex | 100M |
| 100Base-FX | SFP | Full Duplex | Multi-Mode 2km<br>Single-Mode 50km |
| 1000Base-FX | SFP | Full Duplex | Multi-Mode 2km<br>Single-Mode 50km |

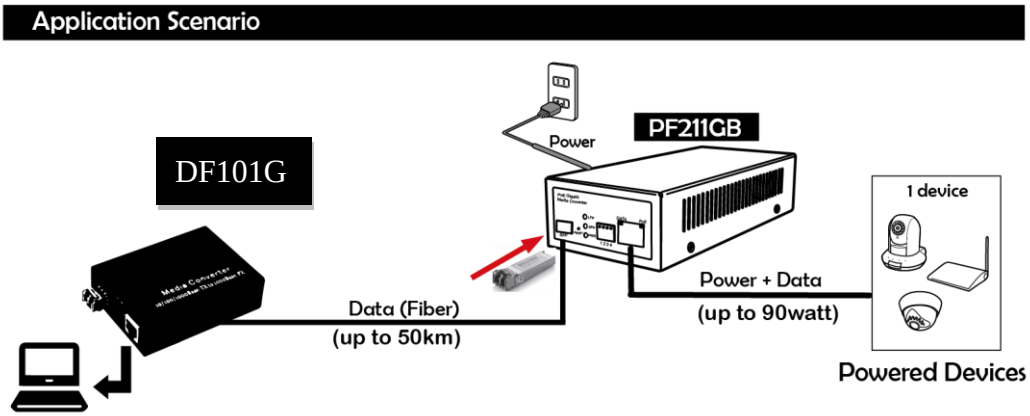
## DIP Switches:

| Dip Switch # | Function | Function | Descriptions |
|---|---|---|---|
| 1 | SFP | OFF | Select 100Mbps for SFP Connection |
| | | ON | Select 1000Mbps for SFP Connection |
| 2 | LFP | OFF | Disable LFP & FEF Function |
| | | ON | Enable LFP & FEF Function |

## LED Indicators:

| LED | Color | Function |
|---|---|---|
| PWR | Green | Lit when DF101G power is ON |
| SFP | Green / Amber | Lit Green for fiber connection at 1000Mbps,<br>Lit Amber for fiber connection at 100Mbps,<br>Blinking for SFP fiber data activity |
| LFP | Amber | Lit when LFP/FEF Link Loss event occurred,<br>When DS#2 setting is ON (LFP enabled). |
| DATA | Green / Amber | Lit Green for UTP link at 1000Mbps<br>Lit Amber for UTP link at 10/100Mbps<br>Blinking for UTP data activity |

## Application Scenario:




# Quick Guide

## Step 1: DF101G Connections

A. Connect DF101G RJ45 LAN port to the other Gigabit Ethernet Port with a Category 5e LAN cable as the above connections.
B. Connect the Fiber cable to the DF101G SFP Fiber port with an SFP Plug.

## Step 2: DF101G Dip Switch Settings

C. For Gigabit Fiber connection, set “ON” the Dip Switch1 to select 1000Base-FX.
D. To enable the LFP function, set “ON” the Dip Switch 2.

## Step 3: Power ON and Run

E. Connect the AC Power Adaptor 5V/12V to the DF101G DC Jack (back panel). Turn ON the AC Power. The LEDs SFP, DATA will be blinking and lit on.
F. The DF101G will connect the IP CAM at Gigabit fiber link.

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