

**3onedata**<sup>®</sup>

**IMC101GT-1GF**

**Industrial gigabit Ethernet**

**Media converter**

**User manual**

**3onedata**

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## 【Introduction】

IMC101GT-1GF is a kind of industrial gigabit media converter, it support 1 10Base-T/100Base-TX/1000 Base-TX port and 1 1000Base-X port (SC/ST). It support LFP function, it is easy to check the network connection status,, it also support CE,FCC standard, IMC101GT-1GF adopt industry standard design, IP40 protection, rugged high-strength metal case, power supply input(12V~48VDC), -40 to 85°C working temperature.

## 【Packing list】

Please check the package and all the components inside are in good condition before you use the switch.

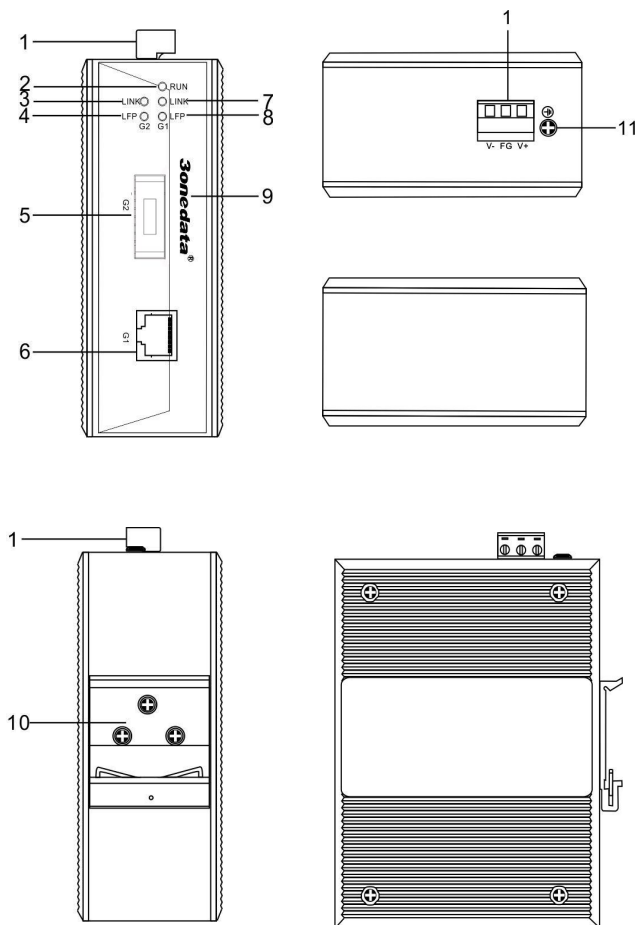
- IMC101GT-1GF-1GF x1
- User manual x1
- Warranty card x1
- DIN rail x1

The equipment built-in precision devices, please note gently, avoiding excessive vibration to avoid affecting device performance. If you find the equipment was damaged in transit or any parts are missing, please inform our company or the dealer, we will give you proper solution as soon as possible.

## 【Features】

- Support 1 port 10/100/1000 Base-TX and 1 port 1000Base-X (SC/ST)
- Support IEEE802.3/802.3u/802.3x/802.3z store and forward
- Ethernet port support 10/100/1000M self-adaption
- Support LFP(Link Fault Pass-Through)
- DC12~48V power input
- IP40 protect grade, high strength iron shell, DIN Rail installation.

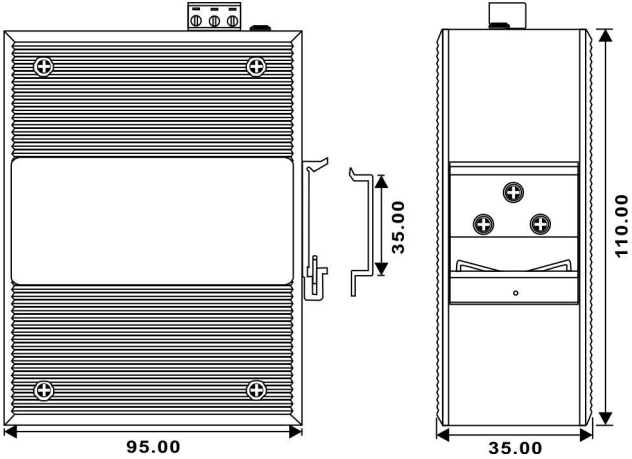
## 【Panel Layout】



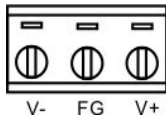
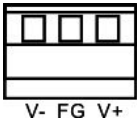
1. PWR power input (3 bots terminal block)
2. Working status indicator
3. Fiber port connection indicator
4. Remote fiber port alarm indicator
5. 1000Base-X SC port
6. 10Base-T/100Base-TX/1000 Base-TX port
7. Ethernet port connection indicator
8. Remote Ethernet port alarm indicator

- 9. Company name and Product name label
- 10. DIN-Rail
- 11. Grounding screw

**Unit (mm)**



**【Power Input】**



12~48VDC

IMC101GT-1GF provides 3 bits terminal block (V-, FG, V+), V-, V+ is 12VDC~48VDC power input. It can also work if connection opposite.

**【DIP switch】**



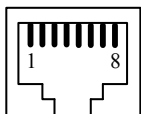
Top panel provided 4 bits DIP switch to do function configure(OFF is default factory), 1 is flow control, 2 is compel 100M, 3 is remote alarm, 4 is add huge packet mode.

## 【Communication Interface】

### 10Base-T/100Base-TX/1000 Base-TX Ethernet port

10Base-T/100Base-TX/1000 Base-TX Ethernet port use in front panel, It is RJ45 port, the PIN define of RJ45 is as follows: connection adopt UTP or STP, the distance is no more than 100m, 1000Mbps use cat5e, 100Mbps use cat5, 10Mbps use cat3,4, 5.

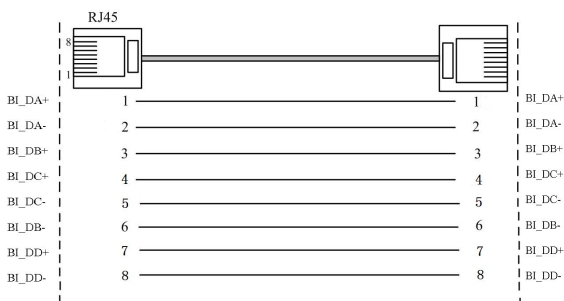
RJ45 port support MDI/MDI-X self-adaption. In (MDI), PIN1, 2, 3, 4, 5, 6, 7, 8 connect corresponding, in (MDI-X) PIN1→3, 2→6, 3→1, 6→2, 4→7, 5→8, 7→4, 8→5. In MDI/MDI-X, 1000 Base-TX PIN define is as follows:



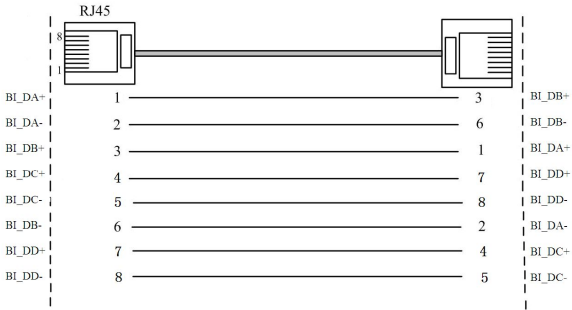
PIN	MDI	MDI-X
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB-/RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/-	BI_DD+/-
5	BI_DC-/-	BI_DD-/-
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/-	BI_DC+/-
8	BI_DD-/-	BI_DC-/-

Note : 10Base-T/100Base-TX , “TX±”transmit data±, “RX±”receive data±, “—”not use.

MDI:



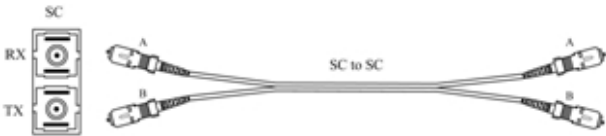
## MDI-X:



## 1000Base-X SC port

1000Base-X port support full-duplex SC/ST Multi mode or Single mode, fiber port support LFP function.

Suppose: If you make your own cable, we suggest labeling the two sides of the same line with the same letter(A-to-A and B-to-B, shown as below, or A1-to-A2 and B1-to-B2).



## 【LED Indicator】

LED indicator in front panel of IMC101GT-1GF monitor working status, the function of each LED is described in the table as below.

<b>System indication LED</b>		
<b>LED</b>	<b>State</b>	<b>Description</b>
<b>RUN</b>	ON/OFF	Switch is unwonted
	Blinking	Switch is active
<b>LINK(G1)</b>	ON	Local Ethernet port connection regular.
	Blinking	Local Ethernet port connection active
	OFF	Local Ethernet port had no connection.
<b>LINK(G2)</b>	ON	Local Fiber port connection regular and active.
	OFF	Local fiber port had no connection.
<b>LFP(G1)</b>	ON	Remote Ethernet port had no connection or unwonted
	OFF	Remote Ethernet port connection regular.
<b>LFP(G2)</b>	ON	Remote fiber port had no connection or unwonted
	OFF	Remote fiber port connection regular.

### **Installation:**

Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

#### **Installation require as below**

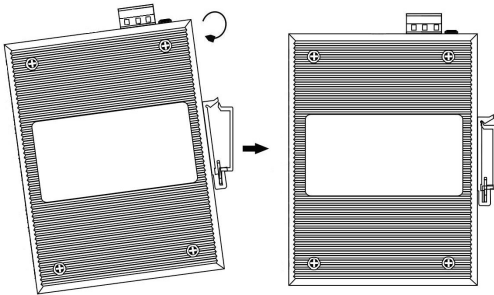
1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.
2. Examine the cables and plugs that installation requirements.

3. Examine whether the cables be seemly or not (less than 100m) according to reasonable scheme.
4. Screw, nut, tools provide by yourselves.
5. Power need: power inputs(12~48DC)
6. Environment: -40°C to 85°C  
Storage Temperature: -40°C to 85°C  
Relative humidity 10% to 95%

### **DIN-Rail Installation**

In order to use in industrial environments expediently, IMC101G adopt 35mm DIN-Rail installation, the installation steps as fellows:

1. Examine the DIN-Rail attachment
2. Examine DIN Rail whether be firm and the position be suitability or not.
3. Insert the top of the DIN-Rail into the slot just below the stiff metal spring.
4. The DIN-Rail attachment unit will snap into place as shown below.



### **Wiring Requirements**

Wiring need to meet the following requirements:

- It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;
- It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable



laying;

- The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;
- All the cable cannot have break-down and terminal in the middle;
- Cables should be straight in the hallways and turning;
- Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banded and fixed when they are out of the groove;
- User cable should be separated from the power lines. Cables, power lines and grounding lines cannot be overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down other cable, but structure in the middle of alignment rack;
- Pigtail cannot be tied and swerved as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). Its banding should be moderate, not too tight, and should be separated from other cables;
- It should have corresponding simple signal at both sides of the cable for maintaining.

## 【Specification】

### Technology:

Standard: IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3z

Flow control: IEEE802.3x, back pressure control

### Interface:

Gigabit Ethernet port: 10/100/1000Base-TX Self-adaption

Gigabit fiber port: 1000Base-X SC/ST

**Transmission:**

Twisted pair: 100M (Standard CAT5/CAT5e cable)

Multi mode fiber: 500m

Single mode fiber: 20-120Km

**Exchange of attribute:**

100M forward speed: 148810pps

1000M forward speed: 1488100pps

Transmission: Store and forward

Memory: 2.075Mbits

MAC address: 1K

Exchange delay time: <10 $\mu$ s

**Indicator:**

System: RUN

Ethernet port: G1 LINK

Fiber port: G2 LINK

Remote Ethernet port alarm: G1 LFP

Remote Fiber port alarm: G2 LFP

**Power supply:**

Power input: 24VDC(12~48VDC)

Terminal block: 3 bits 7.62mm terminal block

No-load power consumption:1.032W@24VDC

Full-load power consumption: 1.232W@24VDC

Support reverse connection protection

**Mechanical:**

Shell: IP40, high strength iron shell.

Installation: DIN Rail

Weight: 346.6g

Dimension(W×H×D): 110mm×35mm×95mm

## Environmental

Operating Temperature: -40 to 85°C

Storage Temperature: -45°C to 85°C

Ambient Relative Humidity:

10 to 95% (non-condensing)

## Standard:

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: EN61000-4-2 (ESD), Level 1

EN61000-4-4 (EFT), Level 4

EN61000-4-5 (Surge), Level 3

Shell: IEC 60068-2-27

## Warranty:

Warranty time: 5 years

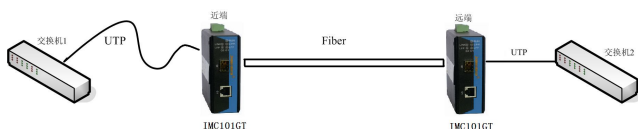
## Certification:

CE, FCC, RoHS, PAL, UL508(pending)

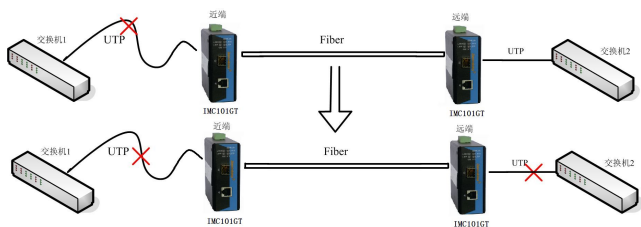
## Appendix:

Link Fault Pass-Through(LFP): If one side link had failure, this side fiber port will send a failure alarm to remote connection, the remote fiber port will force the Ethernet port disconnect when it got the alarm, data packets will never send. The function description is as follows:

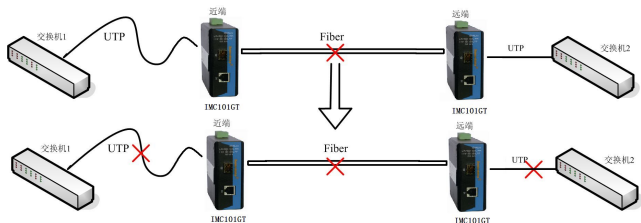
(1) Link working steadily, all indicator in regular.



(2) One Ethernet port unplug, Fiber port send the alarm, force another Ethernet port disconnect, communication interrupt, indicator OFF.



(3)When side fiber port disconnect, force all communication port interrupt, stop to communication, all indicator OFF



IMC101GT-1GF'LFP function is fore to close the connection when detected network connection failure.