IMF204 series
Redundancy ring network
RS-485 to optic fiber converter
User Manual

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【Summarize】

IMF204 series is a high performance, unmanaged, redundancy ring RS485 to fiber converter, it used in industry application.

The series included IMF204-2F-4DI(RS-485)-P(5VDC), IMF204-2F-4DI(RS-485)-P(12/48VDC) and IMF204-2F-4DI (RS-485)- P(100/240VAC). It supports point to point two fiber port backup for each other, Fiber line(Ring) transmission, supports 4 channel RS-485(RS-485 adopted 5 bits terminal block) and 2 port 100Base-FX fiber port, meantime, 2 fiber port support redundancy ring function, network fault recovery time＜20ms, it can easy and convenience manage the disperse serial device, main engine through serial port, take the intelligent redundancy for your network.

It has high performance exchange engine, low consumption design, 3 different type power supply input and overload current and voltage protection. It special designed for industry high available data communication in power automation, industry automation, transportation, telecommunication area etc.

It supported wall mounting and DIN--Rail mount installation, easy to use for your projects.

【Packing List】

The first time use this product, please check the packaging is intact or not and the attachment is complete or not at first.

- IMF204 x1
- User manual x1
- 5VDC power adapter x1 or 100/240VAC power cable x1
- CD x1
- Din rail kits x1
- Certificate card x1
- Warranty card x1

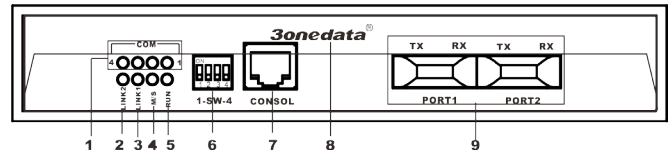
If you find that the device is damaged or any parts of it is missing during transportation, please notify the Company or the Company's distributor, we will give you proper solution as soon as possible.

【Feature】

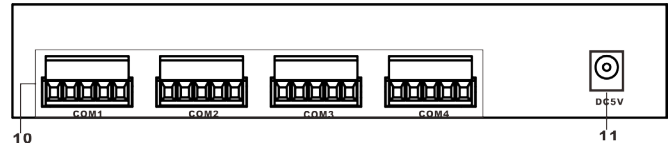
- Support 4 channel RS-485
- Support 2 port 100Base-FX Fiber
- Support dual(single) Ring line, ST/SC/FC optional
- Support Redundancy ring, recovery time＜20ms
- Support 0bps~115200bps
- Support Windows serial driver procedure format
- Provide Windows configuration tools, easy to use and install in bath
- Support 3 types power supply input
- Industry grade design, IP30 protection level
- No fan, low consumption design
- Working temperature:-10℃-70℃
- Storage temperature: -10℃-70℃

【Panel layout】

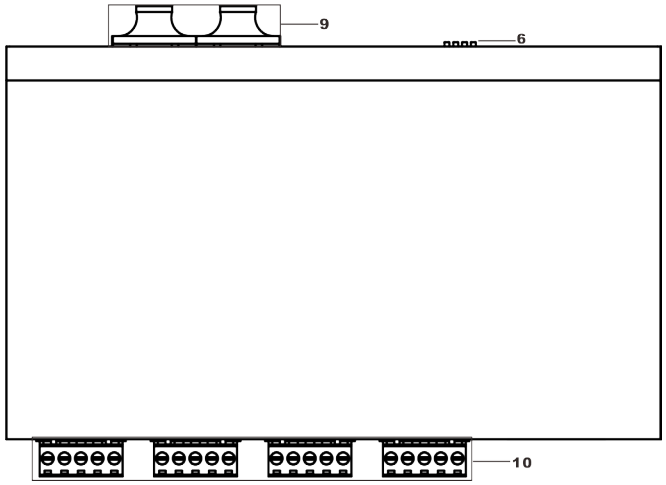
IMF204-2F-4DI（RS-485）-P(5VDC)：



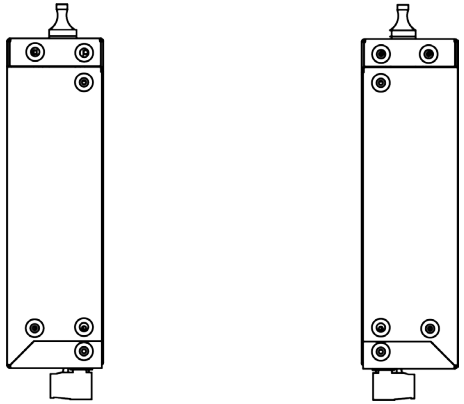
Front view



Back view



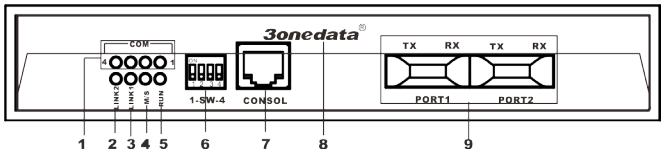
Vertical view



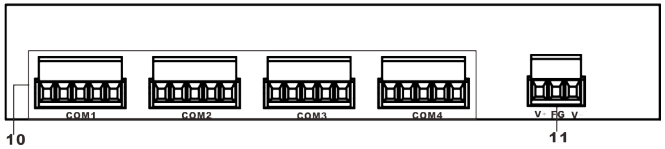
Left view Right view

1. COM1~COM4 running LED indicator
2. Optic fiber 2 connection statue LED indicator
3. Optic fiber 2 connection statue LED indicator
4. Master/slave statue LED indicator
5. Device running statue LED indicator
6. 4 bit DIP switch
7. CONSOL port
8. Company logo
9. Optic fiber port: PORT1, PORT2
10. RS-485 -port: COM1~COM4
11. Power supply plug

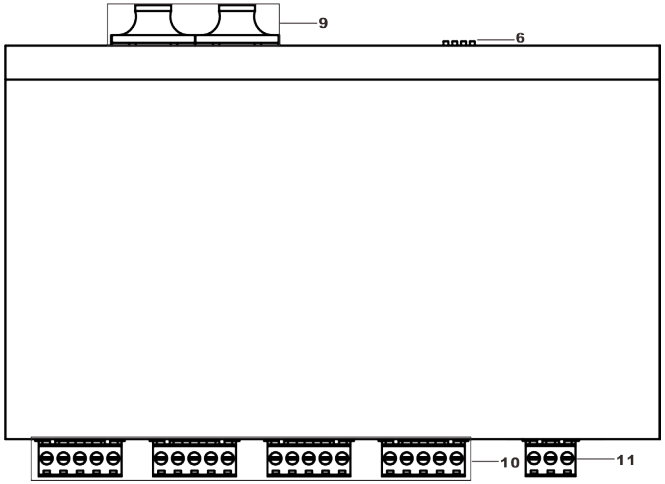
IMF204-2F-4DI（RS-485）-P(12/48VDC)：



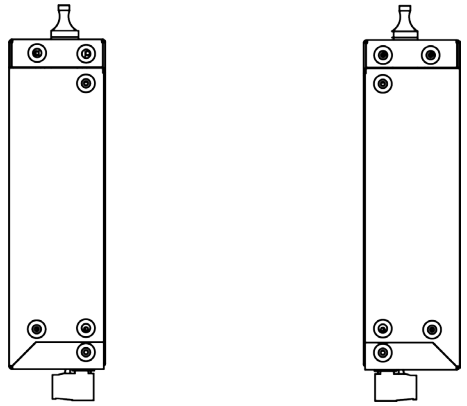
Front view



Back view



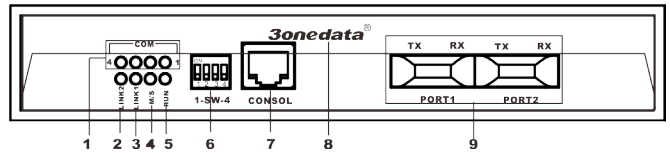
Vertical view



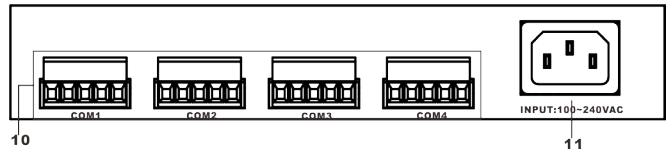
Left view Right view

1. COM1~COM4 running LED indicator
2. Optic fiber 2 connection statue LED indicator
3. Optic fiber 2 connection statue LED indicator
4. Master/slave statue LED indicator
5. Device running statue LED indicator
6. 4 bit DIP switch
7. CONSOL port
8. Company logo
9. Optic fiber port: PORT1, PORT2
10. RS-485 -port: COM1~COM4
11. Power supply plug

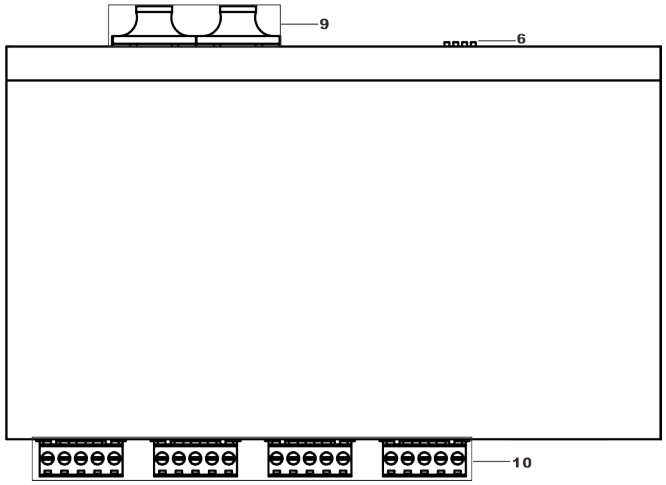
IMF204-2F-4DI（RS-485）-P(100/240VAC)：



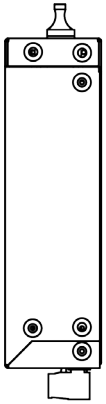
Front view



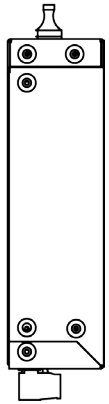
Back view



Vertical view



Left view

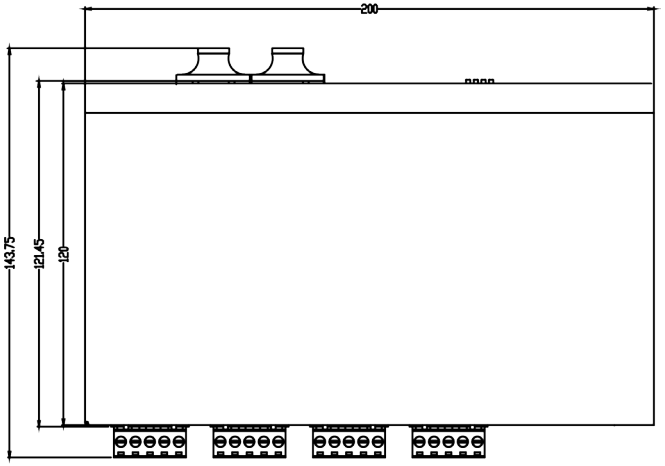


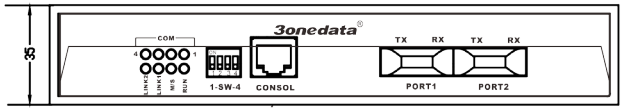
Right view

1. COM1~COM4 running LED indicator
2. Optic fiber 2 connection statue LED indicator
3. Optic fiber 2 connection statue LED indicator
4. Master/slave statue LED indicator
5. Device running statue LED indicator
6. 4 bit DIP switch
7. CONSOL port
8. Company logo
9. Optic fiber port: PORT1, PORT2
10. RS-485 -port: COM1~COM4
11. Power supply plug

【Appearance and dimension】

Unit（mm）





【Power supply input】

IMF204 series included 3 different type power supply input, the power interface located in back panel, input power supply: 5VDC, 12 VDC ~48VDC, 100 VAC ~240VAC。

IMF204-2F-4DI（RS-485）-P(5VDC)：



Power supply input: 5VDC, please use DC power adapter: internal diameter, 2.5mm, external diameter, 5.5mm.

IMF204-2F-4DI（RS-485）-P(12/48VDC)：



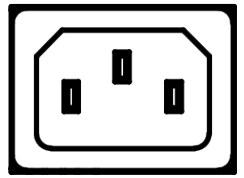
Back view



Vertical view

Power supply input: 12 VDC ~48VDC, it supported non-polar, if connect reverse, it can also work steadily.

IMF204-2F-4DI（RS-485）-P(100/240VAC)：



Power supply input range: 100VAC~240VAC, please use 220VAC power supply input.

Important notice:

1. Power ON operation: first of all, insert power cable's terminal block into device's power port, then insert power supply plug into power source
2. Power OFF operation: First off all, unpin power plug, then strike the terminal block, please take care of operation sequence.

【DIP switch】



Front panel provides 4 bit DIP switch to do function configuration(default factory is ON). 1 configure master/salve device, if in "ON", it is master, if in "OFF", it is salve, 2, 3, 4 bit keep for future function.

【Communication Connector】

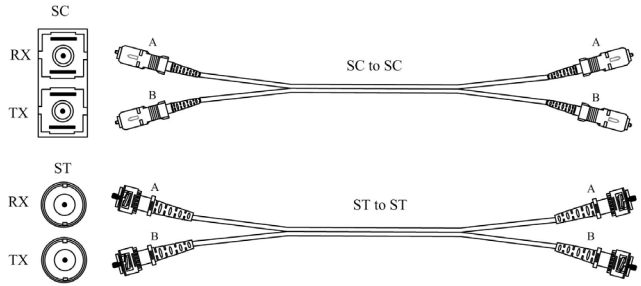
IMF204 series provides 2 100Base-FX fiber port and 4 channel RS-485

100Base-FX Fiber port

100Base-FX full-duplex SM or MM port, SC/ST type .The fiber port must be used in pair, TX (transmit) port connect remote switch's RX(receive) port; RX(receive) port connect remote switch's TX(transmit) port.

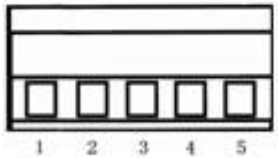
The optical fiber connection supports the line to instruct enhance the reliability of network effectively.

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).



RS-485 PORT

IMF204 series back panel provides 5 bits terminal block with 5.08mm separation distance. The PIN define is as follows:



PIN	Define
1	D+(A)
2	D-(B)
3	GND
4	hold
5	hold

【LED indicator】

IMF204 series front panel has LED indicator, the function of each LED is described in the table as below:

System status LED		
LED	Indicator	Description
COM1~COM4	Blinding	RS-485 receive/transmit data regularly
	OFF	RS-485 receive/transmit data un-regularly
RUN	Blinding	System running regularly
	OFF	System running un- regularly or did not running
	ON	System running un- regularly
M/S	ON	Master device
	OFF	Slave device
LINK1	ON	PORT1 established effective connection
	OFF	PORT1 did not established effective connection
LINK2	ON	PORT2 established effective connection
	OFF	PORT2 did not established effective connection

【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.

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, tool provide by yourself.
5. Power supply: 5VDC or 12VDC~48VDC or 100VAC~240VAC
6. Environment: working temperature -10～70℃ Relative humidity 5%～95%
7. Installation way: wall mount or DIN-Rail mount

Wiring Requirements

Cable laying need to meet the following requirements,

1. It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;
2. It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;
3. The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;
4. All the cable cannot have break-down and terminal in the middle;
5. Cables should be straight in the hallways and turning;
6. 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;
7. 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;

8. 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;

9. It should have corresponding simple signal at both sides of the cable for maintaining.

【Specification】

RS-485

Channel of RS-485: 4

RS-485 signal: D+（A）,D-(B)

Parity: None,Even,Odd,Space,Mark

Data bits: 5bit,6bit,7bit,8bit

Stop bits: 1bit,1.5bit,2bit

Baud rate: 0bps～115200bps

Direction: Automatic detect data control

Loading: 32 nodes

Transfer distance: 1200m

Protection: 1.5KVAC isolation

Connection: 5 bit terminal block

Connector

RS-485: 5 bit 5.08mm separation distance terminal block

Optic fiber port: 100Base-FX, SC/FC/ST optional

Transmission

RS-485: 1200m

Multi-mode: 1310nm, 2Km

Single mode: 1310nm, 20/40/60Km

1550nm, 20/40/60/80/100/120Km

LED indicator

COM1~COM4 running: COM1~COM4

Device running: RUN

Master/slave statues: M/S

Optic fiber port (PORT1，PORT2) connection statues: LINK1, LINK2

Power supply

IMF204-2F-4DI（RS-485）-P(5VDC)：

Power supply input:5VDC

No-load consumption: 2.38W@5VDC

Full-load consumption: 2.595W@5VDC

IMF204-2F-4DI（RS-485）-P(12/48VDC)：

Power supply input: 12VDC~48VDC

No-load consumption: 2.76W@24VDC

Full-load consumption: 2.928W@24VDC

IMF204-2F-4DI（RS-485）-P(100/240VAC)：

Power supply input: 100VAC~240VAC

No-load consumption: 3.4W@220VAC

Full-load consumption: 3.7W@220VAC

Mechanical characteristic

Shell: IP30, metal case

Installation: Wall mount or DIN-Rail mount

IMF204-2F-4DI（RS-485）-P(5VDC):

Weight: 597.8g

IMF204-2F-4DI（RS-485）-P(12/48VDC):

Weight: 603g

IMF204-2F-4DI（RS-485）-P(100/240VAC)：

Weight: 690g

Dimension(L×W×H): 200mm×120mm×35mm

Environment

Working temperature: -10℃～70℃

Storage temperature: -10℃～70℃

Working humidity：5%～95%(no condensation)

Standard

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Shake: IEC 60068-2-6

Warranty

Warranty time: 3 years

Certification

CE, FCC, RoHS, UL508(Pending)