

IFD9502

Instruction Sheet

安裝說明

DeviceNet Slave Communication Module

DeviceNet 從站通訊模組

DeviceNet 从站通讯模块



Communication

Message type	I/O polling; explicit
Series transmission speed	125kbps; 250kbps; 500kbps
Equipment type	12
Company ID	799 (Delta Electronics, Inc.)

Electrical Specifications

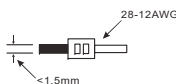
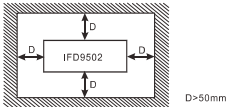
Voltage	11 ~ 25V DC (offered by the power cable in the network)
Current	28mA (typical), 125mA impulse current (24V DC)

Environment

Standards	IEC 61131-2, UL508
Storage/Operation	Storage: -25°C~70°C (temperature), 5~95% (humidity) Operation: 0°C~55°C (temperature), 5~95% (humidity); pollution degree 2
Shock/Vibration immunity	International Standards: IEC 61131-2, IEC 68-2-6 (TEST Fc)/IEC 61131-2 & IEC 68-2-27 (TEST Ea)
Interference immunity	RS (IEC 61131-2, IEC 61000-4-3): 80MHz~1,000MHz, 1.4GHz~2GHz, 10V/m EFT (IEC 61131-2, IEC 61000-4-4): Analog & Communication I/O: 1KV ESD (IEC 61131-2, IEC 61000-4-2): 8KV Air Discharge
Certificates	CE, UL

Installation & Wiring

- Install IFD9502 in an enclosure with sufficient space around it to allow heat dissipation (see the figure).
- DO NOT place the I/O signal wires and power supply wire in the same wiring circuit.



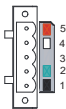
- Use 28-12AWG (1.5mm) single or multiple core wire on I/O wiring terminals. See the figure for its specification.
- The terminal screws shall be tightened to 4.75 kg-cm (4.12 in-lbs).
- Use 60°C /75°C copper wires only.

Components

DeviceNet Connector

To connect to the DeviceNet network, use the connector enclosed with IFD9502 or any connectors you can buy in the store for wiring.

PIN	Signal	Color	Description
1	V-	Black	0V DC
2	CAN_L	Blue	Signal-
3	SHIELD	---	Shielded cable
4	CAN_H	White	Signal+
5	V+	Red	24V DC



Warning

Please read this instruction carefully before use and follow this instruction to operate the device in order to prevent damages on the device or injuries to staff.

Switch off the power before wiring.

This instruction sheet only provides introductory information on electrical specification, functions, wiring, trouble-shooting and peripherals for IFD9502. Details of DeviceNet protocol are not included in this sheet. For more information on DeviceNet Protocol, please refer to relevant reference or literatures.

IFD9502 is an OPEN-TYPE device and therefore should be installed in an enclosure free of airborne dust, humidity, electric shock and vibration. The enclosure should prevent non-maintenance staff from operating the device (e.g. key or specific tools are required to open the enclosure) in case danger and damage on the device may occur.

IFD9502 is to be used for controlling the operating machine and equipment. In order not to damage it, only qualified professional staff familiar with the structure and operation of it can install, operate, wire and maintain it.

DO NOT connect input AC power supply to any of the I/O terminals; otherwise serious damage may occur. Check all the wiring again before switching on the power and DO NOT touch any terminal when the power is switched on. Make sure the ground terminal is correctly grounded in order to prevent electromagnetic interference.

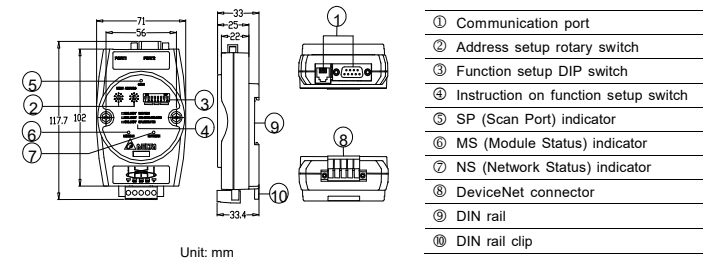
Introduction

Thank you for choosing Delta IFD9502 DeviceNet Slave Communication Module. IFD9502 can be applied to the connection between DeviceNet and Delta's programmable logic controllers, AC motor drives, servo drives, temperature controllers and human machine interfaces. In addition, IFD9502 offers custom function, which can be applied to the connection between DeviceNet and self-defined equipment with Modbus protocol.

Functions

- Supports Group 2 only servers
- Supports explicit connection in the pre-defined master/slave connection group
- Supports polling
- Supports EDS files in DeviceNet network configuration tools

Product Profile & Outline



Specifications

DeviceNet Connector

Type	Removable connector (5.08mm)
Transmission method	CAN
Transmission cable	2 communication cables, 2 power cables and 1 shielded cable
Electrical isolation	500V DC

PORT 1

PORT 1 Sketch	Terminal No.	Description
	1	N.C.
	2	GND
	3	DATA-
	4	DATA+
	5	N.C.
	6	N.C.

Note: PORT 1 supports RS-485 communication mode only.

PORT 2

PORT 2 Sketch	Terminal No.	RS-232	RS-485
	1	N.C.	N.C.
	2	RXD	N.C.
	3	TXD	DATA-
	4	N.C.	N.C.
	5	GND	GND
	6	N.C.	N.C.
	7	N.C.	N.C.
	8	N.C.	DATA+
	9	N.C.	N.C.

Note: PORT 2 supports RS-232 and RS-485 communication mode only.

LED Indicators & Troubleshooting

There are 3 LED indicators on IFD9502, Network Status LED, Module Status LED and Scan Port LED, for displaying the connection status of the communication.

Network Status LED

LED status	Indication	How to deal with it?
OFF	Device is not on-line. - The device has not completed the Dup_MAC_ID test yet. - The device may not be powered.	1. Check the power of IFD9502 and see if the connection is normal. 2. Check if the node communication on the BUS is normal. 3. Make sure at least 1 node is normally communicating with the network through IFD9502.
Green light flashes	Device is on-line but has no connections in the established state. - The device has passed the Dup_MAC_ID test, is on-line, but has no established connections to other nodes. - This device is not allocated to a master.	---
Green light ON	The device is on-line and has connections in the established state. - The device is allocated to a Master.	---
Red light flashes	I/O Connections are in the timed-out state.	---

LED status	Indication	How to deal with it?
Red light ON	Failed communication device. The device has detected an error that has rendered it incapable of communicating on the network (Duplicate MAC ID fail, or Bus-off).	1. Make sure all the node addresses on the BUS are not repeated. 2. Check if the network installation is normal. 3. Check if the communication speed of IFD9502 is consistent with that of the BUS. 4. Check if the station No. of IFD9502 is valid. 5. Check if your choice of switch on IFD9502 is consistent with the actual connected the equipment. 6. Check if IFD9502 is correctly wired with the equipment.

Module Status LED

LED status	Indication	How to deal with it?
OFF	There is no power applied to the device.	Check the power of IFD9502 and see if the connection is normal.
Green light flashes	The device needs commissioning due to configuration missing, incomplete or incorrect. The device may be in the standby state.	-
Green light ON	The device is operating in a normal condition.	-
Red light flashes	Recoverable fault	1. Reset parameters in IFD9502. 2. Check if IFD9502 is correctly wired with the equipment.
Red light ON	The device has an unrecoverable fault; may need replacing.	Send back to factory for repair.

Scan Port Status LED

LED Status	Indication	How to deal with it
OFF	Power is off	Check the power of IFD9502 and see if the connection is normal.
Green light flashes	IFD9502 is reading the preset value in the equipment. IFD9502 obtains the parameters from the equipment and initializes some of the attributes.	-
Green light ON	Communication between IFD9502 and the equipment is normal.	-
Red light flashes	CRC check fails, or the equipment sends back error information.	1. Check if the communication format of the equipment is correctly set up. 2. Check carefully if the installation is correct.
Red light ON	Connection fails, or no connection.	1. Check if IFD9502 is correctly connected with the equipment. 2. Restart the connection and make sure the communication cable meets the specification.

注意事項

- 使用前請務必仔細閱讀本使用手冊，並依照本手冊指示進行操作，以免造成產品受損或人員受傷。
- 配線時請務必關閉電源。
- 本使用說明書僅提供電氣規格、功能規格、安裝配線、故障排除及周邊裝置部分說明，本使用說明書僅作為 IFD9502 操作指南和入門參考，DeviceNet 協定的詳細內容這裏不作介紹。如果讀者想瞭解更多 DeviceNet 協定的內容，請參閱相關專業文章或書籍資料。
- 本機為開放型 (OPEN TYPE) 機殼，因此使用者使用本機時，必須將之安裝於具防塵、防潮及免於電擊 / 衝擊意外之外殼配線箱內。另必須具備保護措施 (如：特殊之工具或鑰匙才可打開)，防止非維護人員操作或意外衝擊本體，造成危險及損壞。
- 本產品用來控制運轉中的機械及設備。為避免損壞本產品，只有合格且熟悉本產品結構及操作的專業人員才可進行本產品之安裝、操作、配線及維護。
- 交流輸入電源不可連接於輸入 / 輸出信號端，否則可能造成嚴重損壞。請在上電前再次確認電源配線，且請勿在上電時觸摸任何端子。本體上之接地端子務必正確的接地，以提高產品抗雜訊能力。

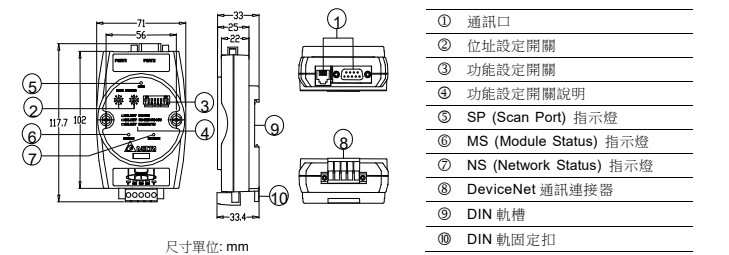
產品簡介

謝謝您使用台達 IFD9502 模組，IFD9502 定義為 DeviceNet 從站通訊模組，可用于 DeviceNet 網路和台達可程式控制器、台達變頻器、台達伺服驅動器、台達溫控器以及台達人機介面的連接。此外，IFD9502 還提供自定義功能，該功能用於連接 DeviceNet 網路和符合 Modbus 協定的自定義設備。

支援的功能

- 支援 Group 2 only servers
- 支援輪詢連接
- 在預定義的主/從連接組中支援顯性連接
- 在 DeviceNet 網路配置工具中支援 EDS 文件檔

產品外觀及各部介紹



尺寸單位: mm

功能規格

DeviceNet 連接器

接頭	可插拔式連接 (5.08mm)
傳輸方式	CAN

傳輸電纜	2 條通訊線、2 條電源線、1 條遮蔽線
電氣隔離	500V DC

通訊

資訊類型	I/O 輪詢 顯性
串列傳輸速率	支援 125kbps; 250kbps; 500kbps (位元 / 秒)
設備類型	12
廠商 ID	799 (台達電子)

電氣規格

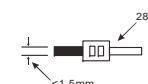
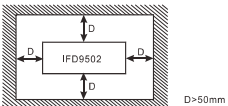
電壓規格	11 ~ 25V DC (由網路中之電源線提供)
電流規格	28mA (典型值) , 125mA 衝擊電流 (24V DC)

環境規格

標準	IEC 61131-2,UL508 標準
操作 / 儲存環境	儲存 : -25°C ~ 70°C (溫度) , 5 ~ 95% (濕度) 操作 : 0°C ~ 55°C (溫度) , 5 ~ 95% (濕度) , 污染等級 2
耐振動 / 衝擊	國際標準規範 IEC 61131-2, IEC 68-2-6 (TEST Fc)/IEC 61131-2 & IEC 68-2-27 (TEST Ea)
雜訊免疫力	RS (IEC 61131-2, IEC 61000-4-3): 80MHz ~ 1,000MHz, 1.4GHz ~ 2GHz, 10V/m EFT (IEC 61131-2, IEC 61000-4-4): Analog & Communication I/O: 1KV ESD (IEC 61131-2, IEC 61000-4-2): 8KV Air Discharge
認證項目	CE 認證、UL 認證

盤內安裝及配線

- IFD9502 在安裝時，請裝配于封閉式之控制箱內，其周圍應保持一定之空間 (如右圖所示)，以確保 IFD9502 散熱功能正常。
- 在配線時請勿將輸入點信號線與輸出點或電源等動力線置于同一線槽內。



- 輸出/入配線端請使用 28-12AWG (1.5mm) 單芯裸線或多芯線，端子規格如左所示。
- IFD9502 端子螺絲扭力為 4.75 kg-cm (4.12 in-lbs)。
- 只能使用 60°C/75°C 的銅導線。

Communication Ports on IFD9502

The communication ports on IFD9502 are used for the connection to equipment (Delta PLC, Delta AC motor drive, Delta temperature controller, Delta servo drive, Delta human machine interface and custom equipment)

