DN301 Instruction Manual

DeviceNet communication expansion card

V 1.01

This instruction manual is only for the Shihlin communication expansion card DN301. Please refer to ODVA DeviceNet specification for the detailed description on DeviceNet communication.

Content

1、OVERVIEW

This chapter includes a brief description on DeviceNet bus topology and the relative information on DN301 expansion card.

1.1 DeviceNet bus topology

The DeviceNet network has a linear bus topology. Terminating resistors are required on each end of the trunk line. Drop lines as long as 6 metres (20 feet) each are permitted, allowing one or more nodes to be attached. DeviceNet allows branching structures only on drop lines. An example of an allowable topology is shown in Figure 1.

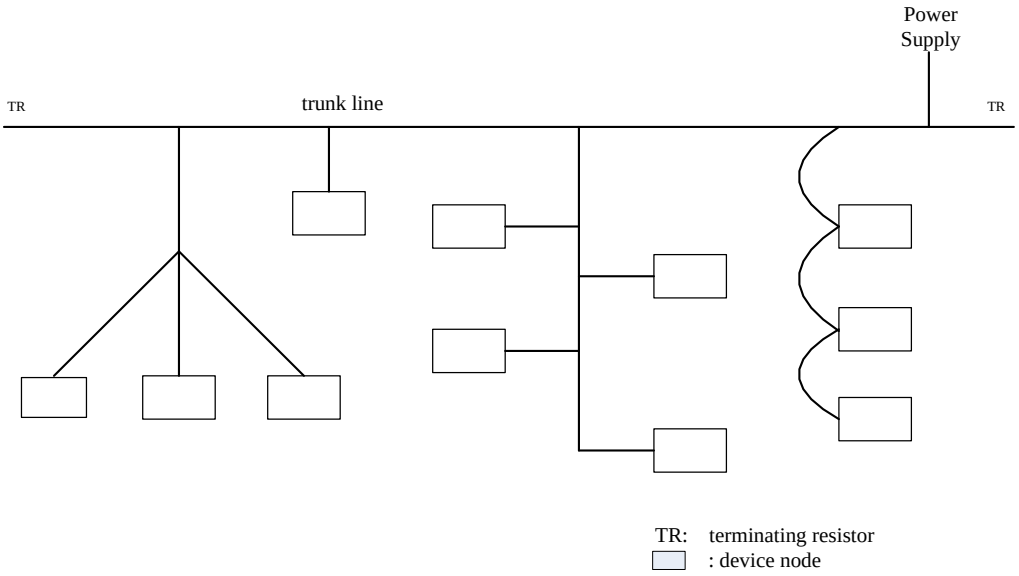


Figure 1　DeviceNet bus topology

For more information on DeviceNet, please refer to www.ODVA.org.

1.2 Shihlin inverter communication expansion card DN301

DN301 is an optional communication expansion equipment for Shihlin electric new type inverter SA3. It enables the connection of the inverter to DeviceNet. The Shihlin inverter is considered as a slave in the DeviceNet network. Through the DN301 it is possible to:

1、Give control commands to the inverter(such as start, stop, target frequency and forward/reverse rotation).
2、Send the target frequency.
3、Read status information and actual values from the inverter.
4、Read and modify the inverter parameter values.
5、Reset at inverter fault.

The DN301 acts as a Class 2 DeviceNet slave only with predefined master-slave connection set services. These include the Explicit Messaging and the Poll Messaging. The DeviceNet commands and services supported by the DN301.

2、PRE-OPERATION INSTRUCTIONS

2.1 Delivery check

Each communication adapter has been checked thoroughly before delivery, and is carefully packed to prevent any mechanical damage. The package should contain the following objects:

- ✓ A DN301;
- ✓ A simple installation guide;
- ✓ Two screws.

Note: If the adapter is different from the objects above, please contact with the agent or distributor.

2.2 Specification

Item	Specification
Power supply	External power input Input voltage: 11 to 28V Consumption current: 90mA maximum
Standard	Conforms to ODVA DeviceNet Specification Release 2.0 (Class 2 Only Device)
Network topology	DeviceNet (linear bus with drop lines)
Communication cable	DeviceNet standard thick or thin cable (For a drop cable, use a thin cable.)
Maximum cable length	500m (125kbps) 250m (250kbps) 100m (500kbps)
Communication speed	125kbps, 250kbps, 500kbps
Amount of the connected inverter	64 (including master) The number of inverters connectable is 64 - 1 = 63 when a minimum of one node as a master is connected.
Response time	Refer to 6.7 DN301 response time

3、INSTALLATION

3.1 Pre-installation instructions

Make sure that the input power of the inverter is off.

Note: With input power on, do not install or remove the plug-in option. Otherwise, the inverter and plug-in option may be damaged.

3.2 Node address setting

Set the node address between "0 to 63" by using node address switches on the DN301. The setting is reflected only when power turns on next time. The switch number 3-8 bit is the address setting switch, No.8 is the communication lowest bit, and No.3 is the communication highest bit.

Switch number(3-8)	Actual physical address
1111111	63
……	……
000010	2
000001	1
000000	0

Note: The number is "0" when pressing the switch.

3.3 Node communication baud rate setting

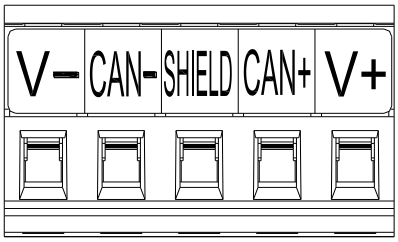
Set the node communication baud rate between "125kbps", "250kbps" and "500kbps" by using communication baud rate switches on the DN301. The setting is reflected only when power turns on next time. The switch number 1-2 bit is the communication baud rate setting switch.

Switch number(1-2)	Actual baud rate
11	500kbps
10	500kbps
01	250kbps
00	125kbps

4、WIRING

4.1 Terminal arrangement

DN301 adopts the standard 5-hole wiring terminal, shown as the following figure.



When connecting DeviceNet to DN301, please refer to the following wiring port arrangement.

Terminal type	Terminal name	Function name	Function and description
DeviceNet communication interface	V+	V+	Isolated 24V power supply
	CAN+	CAN_H	Positive signal line
	SH	SHIELD	Ground line
	CAN-	CAN_L	Complex signal line
	V-	V-	0V

4.2 Connection to network

4.2.1 Check instructions

Be sure to check the following before connecting the inverter to the network:

1、Check that the DN301 is snugly inserted into the inverter.

2、Check that the correct node address and communication baud rate is set.

3、Check that a drop cable is firmly connected to the DN301.

4.2.2 Terminal resistor

Make sure that the terminal resistor is installed at each end (between CAN+ and CAN-) of the trunk cable. These resistors must meet the following requirements.

Requirements for terminal resistor		
R(resistance value) = 121Ω	1%metal film	0.25 W

4.2.3 Drop cables

Connect drop cables to the trunk cable:

1、If the trunk connector is a DeviceNet sanctioned pluggable or sealed connector, the connection to the active network can be made at any time whether the inverter is on or off. The option unit automatically detects when the connection is completed.

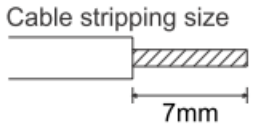
2、If connecting to the network with free wires, power to the network and inverter should be shut off as a safety precaution.

3、In case two or more signal wires are accidentally shorted together.

4.3 Wiring

(1) Strip the insulation back about 40mm on the free wire end of the drop cable to expose the four colored signal wires and the silver shield wire.

(2) Strip the insulation back of each signal cable to use. If the length of the sheath pealed is too long, a short circuit may occur among neighboring wires. If the length is too short, wires might come off.



Wire the stripped cable after twisting it to prevent it from becoming loose. In addition, do not solder it. Use a bar type terminal as required.

(3) Loosen the terminal screw and insert the cable into the terminal. Tighten each cable with fixing screws to the recommended tightening torque.

Screw size	Tightening torque	Cable size	Screwdriver
M2	0.22N·m-0.25N·m	0.3mm^2-0.75mm^2	Small flat-blade screwdriver (Tip thickness: 0.4mm / tip width: 2.5mm)

Caution:

1. Undertightening can cause cable disconnection or malfunction. Overtightening can cause a short circuit or malfunction due to damage to the screw or unit.
2. After wiring, wire offcuts must not be left in the inverter. They may cause an error, failure or malfunction.

5、INVERTER SETTING

5.1 Parameter setting

After connecting DN301 to the inverter correctly, DN301 can't work immediately. User should first confirm the parameter value below.

Parameter number	Name	Setting range	Factory value	Remarks	Setting value
00-16 P.79	Operation mode selection	0-8, 99999	0		Valid
07-41 P.826	Expansion communication card number of communication retries	0-10	1		Valid
07-42 P.827	Expansion communication card communication error handling	0, 1	1	0: Warn and call to stop. 1: No warning and keep running.	Valid
07-43 P.828	Expansion communication card communication interval allowed time	0-999.8s、9999	9999	0-999.8: Use the set value for the communication overtime test. 9999: No communication overtime test.	Valid

5.2 Operation mode setting

Communication control mode setting description:

(1) To control the inverter operation by communication commands, you should select the mode which operation signal is derived from communication, such as 00-16(P.79)= 3;

(2) To set the target frequency of the inverter by communication commands, you should select the mode which the target frequency is derived from communication, such as 00-16(P.79)= 3.

Before switching the operation mode, check that:

(1) The inverter is at a stop.

(2) The 00-16（P.79）Operation mode selection setting is correct.

(3) 00-16（P.79） cannot be modified during communication.

5.3 Operation at communication error occurrence

(1) Expansion communication card number of communication retries

07-41 (P.826) can set the allowable times that the communication abnormality detected by the inverter when a communication circuit abnormality occurs.

Parameter number	Name	Setting range	Initial value
07-41 P.826	Expansion communication card number of communication retries	0 ~ 10	1

(2) Expansion communication card communication error handling

07-42 (P.827) can set the processing method of the inverter after detecting a communication error. You can set this value to 0 if you want the inverter to stop when a communication error occurs.

Parameter number	Name	Setting range	Initial value
07-42 P.827	Expansion communication card communication error handling	0,1	1

(3) Expansion communication card communication interval allowed time

07-43 (P.828) can set the communication waiting time between the external expansion communication card and the inverter. After the waiting time is spent, the inverter will make corresponding treatment

Parameter number	Name	Setting range	Initial value
07-43 P.828	Expansion communication card communication interval allowed time	0-999.8s、9999	9999

6、COMMUNICATION FUNCTION

6.1 Overview

This chapter describes the DeviceNet communication protocol for the DN301 and the configuration. For detailed information on DeviceNet communication, refer to ODVA DeviceNet Specifications Release 2.0.

6.2 Introduction to DeviceNet

DeviceNet is a protocol based on CAN technology. CAN specifies the physical layer interface. DeviceNet specifies the wiring, and the data transfer through CAN.

The DN301 is a device acting as a Group 2 only Server realizing the Predefined Master Slave Connection Set functionality. The Off-line Connection Set functionality and UCMM are not supported.

One of the main features of DeviceNet is object modelling. A group of objects can be described with a Functional Profile.

6.3 Assembly object

I/O Assembly Instances may also be referred to as Block Transfer of data. In DN301, if transmitting more than one object once, I/O data assembly can be used. Since it is not possible to transmit more than one object data through a single connection, it is practical and more efficient to group attributes from different objects into a single I/O connection using the Assembly object. The Assembly object acts as a tool for grouping these attributes.

6.3.1 Run order assembly

Run order assembly is defined by the Shihlin electric. User cannot read or change through the displaying information. The following tables are the format definition of the predefined input and output assembly.

The format of the output assembly is:

<table>
<tr><th>Byte</th><th>Bit 7</th><th>Bit 6</th><th>Bit 5</th><th>Bit 4</th><th>Bit 3</th><th>Bit 2</th><th>Bit 1</th><th>Bit 0</th></tr>
<tr><td>0</td><td colspan="8" rowspan="2">Operation command(refer to inverter Modbus bits 0x1001)</td></tr>
<tr><td>1</td></tr>
<tr><td>2</td><td colspan="2" rowspan="2">Target frequency
(0x1002)</td><td colspan="6">Speed (Low Byte)</td></tr>
<tr><td>3</td><td colspan="6">Speed (High Byte)</td></tr>
</table>

The format of the input assembly is:

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	State monitor(refer to inverter Modbus bits 0x1001)							
1								
2	Operation frequency (0x1003)		Speed (Low Byte)					
3			Speed (High Byte)					
4	Output current (0x1004)		Low Byte					
5			High Byte					
6	Output voltage (0x1005)		Low Byte					
7			High Byte					

6.4 Parameter object, class 0x0F

With DN301, the inverter parameters can also be accessed. (Accessing to the parameter should be supported by EDS). The function is implemented by employing the so-called Explicit Messaging properties of the DeviceNet protocol. Explicit Messaging makes use of objects consisting of three parts: Class, Instance and Attribute.

6.4.1 Parameter object class attribute

The following table displays the characters of the object class attribute in DN301. Through reading Instance0 and Attribute2, we can know at present the total number of the parameters of the inverters connected to DN301.

Attribute ID	Access principle	Name	Data type	Description
1	Get	Revision	UINT	Object version
2	Get	MaxInstance	UINT	The maximum number of instances created by equipment in the class level objects at present
8	Get	ParaClassDescriptor	WORD	Bit to describe the parameter
9	Get	ConfAssemblyInst	UINT	Configuration combination instance No.
10	Get	NativeLanguage	USINT	Language access to all characters array

6.4.2 Parameter object instance attribute

The number of parameter instance is determined by the inverter connected to DN301. The number of the inverter parameters equals to the number of the instances.

Instance No.	Description
1	Inverter parameter P.0
2	Inverter parameter P.1
3	Inverter parameter P.2
…	…
N	Inverter parameter P(N-1)

6.5 DN301 object

6.5.1 Identity object, Class 0x01

This object provides identification of and general information about the device. The following are the details about identity object used in DN301.

Class attributes (instance 0)

#	Access principle	Name	Data type	Description
1	Get	Revision	UINT	Object version
2	Get	Max Instance	UINT	The device allowed maximum number of instances
3	Get	Number of Instances	UINT	The number of instances in device at present
6	Get	Maximum ID Number Class Attributes	UINT	The last attribute ID No. of the class attribute
7	Get	Maximum ID Number Instance Attributes	UINT	The last attribute ID No. of the instance attribute

Instance attributes (Instance 1)

#	Access principle	Name	Data type	Description
1	Get	Vendor ID	UINT	Identification of the device vendor.
2	Get	Device Type	UINT	Identification of the general equipment type
3	Get	Product Code	UINT	Identification of the vendor assigned product
4	Get	Revision	STRUCT	Revision of the item the identity object represents
5	Get	Status	WORD	Summary status of the device

#	Access principle	Name	Data type	Description
6	Get	Serial Number	UDINT	Serial number of the DeviceNet device
7	Get	Product Name	SHORT_ STRING	Product identification

Common Services

Service code	Execution condition		Service name	Service description
	Class	Instance		
0x05	No	Yes	Reset	Adjust the reset service of device
0x0E	Yes	Yes	Get_Attribute_Single	Return to assigned attribute item

6.5.2 Information routing object, Class 0x02

The information router object provides a connection for information transmission. Through this connection, client can ask any object class or instance in the physical device for service address. The following are the details about information routing object used in DN301.

Class attributes (instance 0)

#	Access principle	Name	Data type	Description
1	Get	Revision	UINT	Version
6	Get	Maximum ID Number Class Attributes	UINT	The last attribute ID No. of the class attribute
7	Get	Maximum ID Number Instance Attributes	UINT	The last attribute ID No. of the instance attribute

Instance attributes (Instance 1)

#	Access principle	Name	Data type	Description
2	Get	NumAvailable	UINT	Support the maximum number of connections
3	Get	NumActive	UINT	Number of connection at the present system

Common Services

Service code	Execution condition		Service name	Service description
	Class	Instance		
0x0E	Yes	Yes	Get_Attribute_Single	Return to assigned attribute item

6.5.3 DeviceNet object, Class 0x03

The DeviceNet Object provides the configuration and status of a DeviceNet port. Each DeviceNet product must support one (and only one) DeviceNet object per physical connection to the DeviceNet communication link. The following are the details about DeviceNet object used in DN301.

Class attributes (instance 0)

#	Access principle	Name	Data type	Description
1	Get	Revision	UINT	Revision of the DeviceNet Object Class Definition

Instance attributes (Instance 1)

#	Access principle	Name	Data type	Description
1	Get	MAC ID	USINT	Node address
2	Get	Baud Rate	USINT	The baud rate of the device
3	Get/Set	Bus-off Interrupt	BOOL	Bus-off and interrupt
4	Get/Set	Bus-off Counter	USINT	The number of CAN entering into offline
5	Get	Allocation Information Allocation Choice Byte Master's MAC ID	STRUCT	Arrangement information
6	Get	MAC ID Switch Changed	BOOL	Node address has changed since the power on/reset recently.
7	Get	Baud Rate Switch Changed	BOOL	The baud rate switch has changed since the power on/reset recently.
8	Get	MAC ID Switch Value	USINT	The actual value of node address switch
9	Get	Baud Rate Switch Value	USINT	The actual value of baud rate switch

Common Services

Service code	Execution condition		Service name	Service description
	Class	Instance		
0x0E	Yes	Yes	Get_Attribute_Single	Read DeviceNet object attribute value
0x10	No	Yes	Set_Attribute_Single	Change DeviceNet object attribute value

Object classify special service

Service code	Execution condition		Service name	Service description
	Class	Instance		
0x4B	No	Yes	Allocate_Master/Slave_ Connection_Set	Ask for the use of predefined master-slave connection set
0x4C	No	Yes	Release_Group_2_ Identifier_Set	Shows that the assigned connection in the predefined master-slave connection set is not needed. These connections will be released (deleted).

6.5.4 DeviceNet connection object, Class 0x05

The Connection Class allocates and manages the internal resources associated with both I/O and Explicit Messaging Connections. The following are the details about DeviceNet connection object used in DN301.

Class attributes (instance 0)

#	Access principle	Name	Data type	Description
1	Get	Revision	UINT	Revised edition of connection object class definition

Display message connection attributes (Instance 1)

#	Access principle	Name	Data type	Description
1	Get	State	USINT	State of the object
2	Get	instance_type	USINT	Connection type
3	Get	transportClass_trigger	BYTE	Defines the behavior of the connection.
4	Get	produced_connection_id	UINT	Placed in CAN Identifier Field when the connection transmits
5	Get	consumed_connection_id	UINT	CAN Identifier Field value that denotes message to be received
6	Get	initial_comm_characteristics	BYTE	Defines the Message Group(s) across which productions and consumptions are associated in this connection.
#	Access	Name	Data type	Description

	principle			
7	Get	produced_connection_size	UINT	Maximum number of bytes transmitted across this connection
8	Get	consumed_connection_size	UINT	Maximum number of bytes received across this connection
9	Get/Set	expected_packet_rate	UINT	Defines timing associated with this connection.
12	Get/Set	watchdog_timeout_action	USINT	Defines how to handle Inactivity/ Watchdog overtime.
13	Get	produced_connection_path_ length	UINT	Number of bytes in the produced_connection_path attribute
14	Get	produced_connection_path	EPATH	Specifies the application object(s) that are to receive the data produced by this connection object.
15	Get	consumed_connection_path_ length	UINT	Number of bytes in the consumed_connection_path attribute
16	Get	consumed_connection_path	EPATH	Specifies the application object(s) that are to receive the data consumed by this connection object.

I/O message connection attributes (Instance 2)

#	Access principle	Name	Data type	Description
1	Get	State	USINT	State of the object
2	Get	instance_type	USINT	Connection type
3	Get	transportClass_trigger	BYTE	Defines the behavior of the connection.
4	Get	produced_connection_id	UINT	Placed in CAN Identifier Field when the connection transmits
5	Get	consumed_connection_id	UINT	CAN Identifier Field value that denotes message to be received
6	Get	initial_comm_characteristics	BYTE	Defines the Message Group(s) across which productions and consumptions are associated in this connection.

#	Access principle	Name	Data type	Description
7	Get	produced_connection_size	UINT	Maximum number of bytes transmitted across this connection
8	Get	consumed_connection_size	UINT	Maximum number of bytes received across this connection
9	Get/Set	expected_packet_rate	UINT	Defines timing associated with this connection.
12	Get/Set	watchdog_timeout_action	USINT	Defines how to handle Inactivity/ Watchdog overtime.
13	Get	produced_connection_path_ length	UINT	Number of bytes in the produced_connection_path attribute
14	Get	produced_connection_path	EPATH	Specifies the application object(s) that are to receive the data produced by this connection object.
15	Get	consumed_connection_path_ length	UINT	Number of bytes in the consumed_connection_path attribute
16	Get	consumed_connection_path	EPATH	Specifies the application object(s) that are to receive the data consumed by this connection object.

Common Services

Service code	Execution condition		Service name	Service description
	Class	Instance		
0x0E	Yes	Yes	Get_Attribute_Single	To read a connection object attribute
0x10	No	Yes	Set_Attribute_Single	To modify a connection object attribute

6.5.5 Parameter object, Class 0x0F

Parameter object can provide a well-known common connector for DeviceNet device configuration data. In addition, this object also provides all the information on the definition and description for each device configuration parameters. The following are the details about parameter object used in DN301.

Class attributes (instance 0)

#	Access principle	Name	Data type	Description
1	Get	Revision	UINT	Version
2	Get	Max Instance	UINT	The maximum number of instances
8	Get	ParaClass Descriptor	WORD	Bit to describe the parameter
9	Get	ConfAssemblyInst	UINT	Configuration combination instance No.
10	Get	Native Language	USINT	Language ID access to all characters array

Instance attributes (Instance 1~N)

#	Access principle	Name	Data type	Description
1	Get/Set	Parameter Value	--	The actual value of the parameter
2	Get	Link Path Size	USINT	Link path length
3	Get	Link Path	--	Provides the DeviceNet path of the restored parameter value object
4	Get	Descriptor	WORD	Parameter description
5	Get	Data Type	USINT	Data type code
6	Get	Data Size	USINT	Number of bytes of parameter value

Common Services

Service code	Execution condition		Service name	Service description
	Class	Instance		
0x05	No	Yes	Reset	Restore all attribute values to factory default values
0x0E	Yes	Yes	Get_Attribute_Single	Return to assigned attribute item
0x10	No	Yes	Set_Attribute_Single	Modify an attribute value

6.6 EDS file

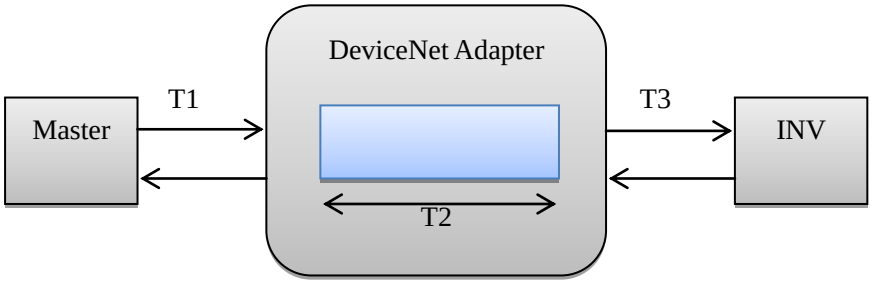
Electronic Data Sheet (EDS) file is used in DeviceNet network configuration tool(Ex: RSNetWorx® of RA). EDS file is needed when the configuration tool wants to identify which kind of device is connected to and to modify the parameters of the device.

For the correct use of EDS file, please first confirm the inverter type, and then select the corresponding EDS file.

The corresponding EDS file can be downloaded on the Shihlin network.

6.7 DN301 response time

There are three parts of DN301 response (refresh) time:



T1 time is decided by the actual transmission speed and the master station type in use.

T2 time is decided by the internal time of the adapter. Every 50 ms timer trigger to transfer data to the inverter, the user cannot change the interval time.

T3 time is decided by the adapter and the inverter Modbus communication rate.

So the complete response(refresh) time is: the maximum response(refresh) time = T1 + T2 + T3

In fact, the actual response(refresh) time is less than the maximum response(refresh) time. When the data reaches DN301, it will restore the data into the Data Buffer. If the timer is just time-out action, the data will immediately be sent to the inverter.

7、DIAGNOSTICS AND TROUBLESHOOTING

7.1 LED indications

There are three types of LED lights in DN301 which indicate the working state of DN301; they are NET LED, MOD LED and SP LED.

7.1.1 NET LED

The state of NET LED shown as the table below:

State	Function	Improvement and measures
OFF	No power supply	1. Check the power of DN301 2. Check whether the connection correct or not. 3. Check whether the terminal for power connection is loosened.
Flickering Green	Finish connecting, but not connect to the master	---
Lit Red (ON)	Not connect to the network or the network error cannot be restored.	1. Check whether the network installation is normal. 2. Check whether the master station is normally run.
Lit Green (ON)	Connect to the master already.	---

7.1.2 MOD LED

The state of MOD LED shown as the table below:

State	Function	Improvement and measures
Lit Red	Internal module error	Re-power on
Lit Green (ON)	During I/O data exchanging	---
Flickering Green	No I/O data exchange	---

7.1.3 SP LED

State	Function	Improvement and measures
Flickering Red	1、CRC check error 2、Inverter return error code	Check whether the parameter read and write is correct.
Lit Red	Connection failure or no connection.	1. Check whether the inverter is connected to RS-485 of DN301 correctly. 2. Re-connect and ensure the wire specification is right
Lit Green	Normal	---

7.2 INV fault indications

When a communication error occurs between the inverter and DN301, and the communication cannot be performed normally, a CBE alarm will occur on the inverter panel. At this time, it is necessary to check whether the communication between the inverter and the adapter is disturbed, or whether the communication lines are abnormal.

8、DEVICENET LINK SPECIFICATION

Compatible devices: Any following ODVA DeviceNet specification to Group 2 only Slaves device.

Medium:

- Termination: 121 Ω, 1%, Metal film, 1/4 W
- DeviceNet cables:

  YR-29790 (Thick DeviceNet cable)

  YR-29832 (Thin DeviceNet cable)
- Maximum bus length: 1200 m

Topology: Multi-drop

Serial Communication Type: Asynchronous, half Duplex

Transfer Rate: 125, 250 or 500 kbit/s

Protocol: DeviceNet

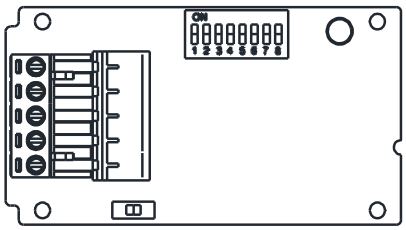
DeviceNet communication expansion Card (DN301) User Manual

✧ DeviceNet is the registered trademark of ODVA(Open Device Vendor Association).

✧ Please read this manual carefully before using to ensure using the product in a safe and right way.

✧ Shihlin electric reserves the right to modify this user manual. For the latest version, please consult the dealer or refer to website for downloading: http://www.sseec.com.cn/Content/Goods/Download.aspx?SiteID=1071446047664162345&MmmID=1071446063210005132

I. Product appearance



1) SP LED: Connection state indication between the inverter and DN301.
2) MOD LED: Polling information exchange indication
3) NET LED: Network connection state indication between DN301 and DeviceNet.
4) Address setting switch: Set the communication address of DN301 on DeviceNet.
5) Baud rate setting switch: Set the communication baud rate of DN301.
6) Five-hole port: Connect DeviceNet network.

II. User setting

1) Inverter parameter setting

Please set the parameter as the following steps.

00-16 (P.79) can set the corresponding parameters according to the using mode.

2) Address setting

DN301 provides six-bit switch (# 3 - #8) to set the address. The effective values are 0-63, and the lowest bit is the No.8 switch.

3) Baud rate setting

DN301 provides two-bit switch(#1 - #2) to set the baud rate. 00 is 125kbps，01 is 250kbps，10 and 11 is 500kbps.

III. Power supply

DN301 adopts DeviceNet network power supply.

IV. EDS file using

EDS file is needed by DeviceNet network configuration tool. It describes the device function of DN301. Different EDS files may be distinct. User can download EDS file for the corresponding inverter type from Shihlin website.

http://www.sseec.com.cn/Content/Goods/Download.aspx?SiteID=1071446047664162345&MmmID=1071446063210005132

Note:

1. *Before connecting DN301, please ensure the inverter power is totally off.*
2. *This manual is a brief installation guide. For the functions in detail, please refer to DN301 instruction manual.*