



■ Device Network adapters

DeviceNet

Before using the units

To use the units safely and effectively, please read this document and refer to GFK-2745 & GFK-2801 user manuals for further details.

Warnings and Cautions

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use. In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Warning!

- Installing or removing modules or wiring with power applied to the system or field wiring can cause an electrical arc. This can result in unexpected and potentially dangerous action by field devices. Arcing is an explosion risk in hazardous locations. Be sure that the area is non-hazardous or remove power appropriately before installing or removing modules or wiring.
- Potentially dangerous voltages are present on a module's terminals, even when system power is turned off. Field power must be turned off when installing or removing a Terminal Block assembly.
- Personnel who install, operate and maintain automation systems that contain these products must be trained and qualified to perform those functions.
- Overloading power modules or Network adapter can result into electric arc & damage to modules.

Caution notices are used where equipment might be damaged if care is not taken.

Caution!

- Check the rated voltage and terminal array before wiring.
- Ensure that specified environmental conditions are not exceeded. Avoid placing the module in direct sunlight.
- Review module specifications carefully, and ensure that input and output connections are made in accordance with the specifications.
- Use specified cables for wiring.
- Field Power Isolators must be used according to the requirements of the 5VDC/24VDC/48VDC or AC Voltage modules used in the system.
- If system power consumption exceeds the power limits, use system power expansion modules.
- System power and field power must be supplied from separate sources.

1. STXDNS001 Specifications *

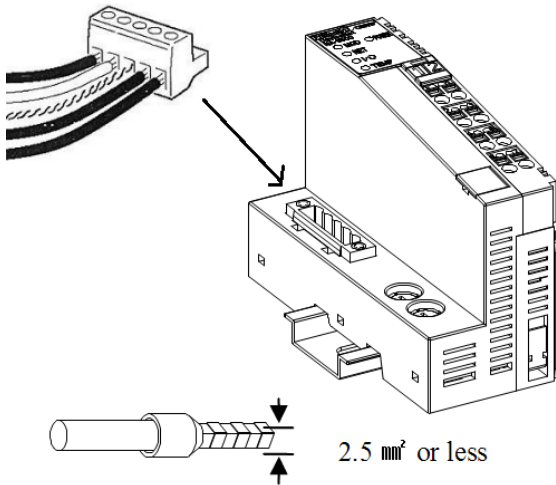
ITEM	SPECIFICATION	ITEM	SPECIFICATION
Surrounding Air Temp./ Ambient Temp.	-20°C to 55°C for UL applications ; -20°C to 60°C for non-UL applications ; Storage - 40°C to 85°C	Network Type	DeviceNet
Relative Humidity	5% ~ 90% without condensation	Cable	Dedicated DeviceNet Cable 5pin
Durable-vib./impact	IEC 60068-2-6:1995	Cable Length(m)	100m~500m (depends on the baud rate)
Mount Position	First module of RSTi system	Comm. Sp(Kbps)	125Kbps, 250Kbps, 500Kbps
Atmosphere	No excessive dust ; No corrosive gases	IO module	Max. 32 module
Field Supp.Volt.	Class II**, 24VDC 24VDC (11VDC ~ 28.8VDC)	Max. node	64 Nodes
		Max. Digital I/O	In/Out : 2,016 points
Field Supply Current	Max. 10A	Max. Analog I/O	In/Out : 126Ch
I/O bus 5Vdc current	Max. 1.2A@5Vdc	Max. Byte size	In/Out : 252Byte
System Power Range	24Vdc nominal	Operationing Mode	Bit Strobe, Polling, Cyclic, COS
Baud rate set	Auto-negotiation	Station No.	Rotary Switch (x10, x1)
Size	42mm × 99mm × 70mm	Power Dissipation	30mA typical @24Vdc
Weight	155g	Certification	cUL _{us} / CE

* Specifications and designs may be changed without advance Notice.

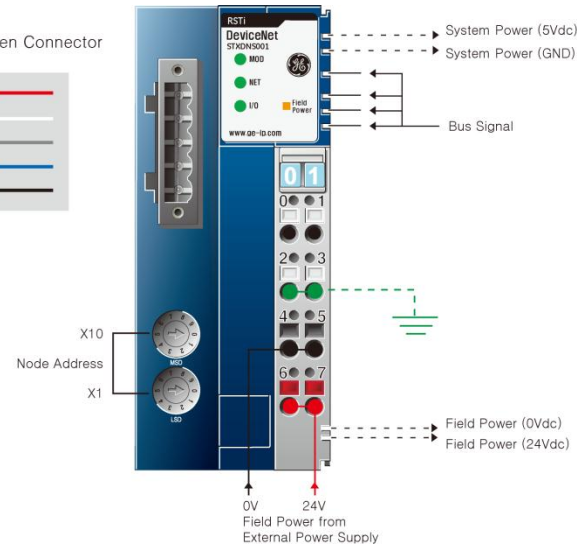
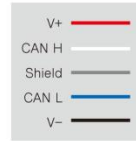
**Class II, adjacent to voltage rating (30V/max.)

2. Cable wiring and Station Setting

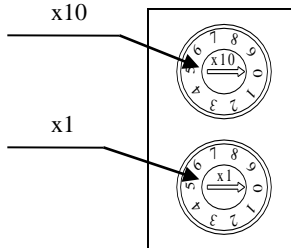
Wiring of communication & System power line for DeviceNet



DeviceNet Open Connector



Switch for Node Address (MAC ID)



* Directions for setting Node No(Station No)

1. Select address within the range of 00 to 63 (Station no. 00~63)
2. Station number setting out of the range will cause communication error .
3. Duplicating Station No. will cause communication error .

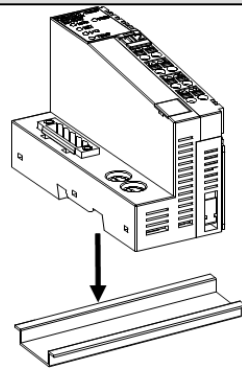
Directions for DeviceNet connection for field bus network interface power & I/O field power wiring

1. For safety, supply system power and field power should be separated
 - 1) System Power : for System & DeviceNet communications
 - 2) Field Power : for I/O field device connections
2. Make sure power supplies for system power and field power are supplied separately .
3. Use DeviceNet certified cables only.
4. Do not insert any other devices such as converter into the connector besides DeviceNet products.
5. To avoid a short circuit, tape the unshielded wire.

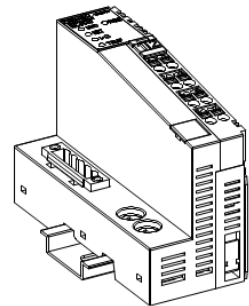
3. Module Mounting

3-1. How to mount on Din-Rail

- ① Press down the module lightly on the Din-Rail until it clicks .

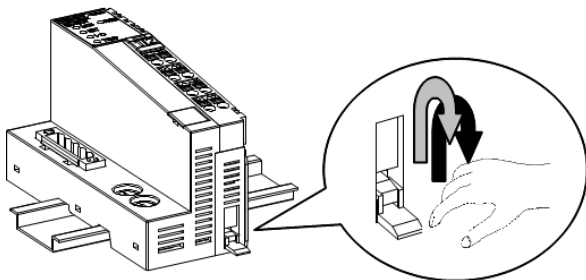


- ② Press down till you can hear "click" for complicated mount.

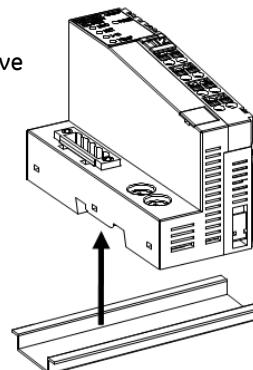


3-2 How to dismount from Din-Rail

- ① Pull down the locking mechanism by using (-) screw driver as the following pictures ;








- ② Pull up the module to remove from the din rail .



4. LED Status Display

RST1
DeviceNet
 STXDNS001

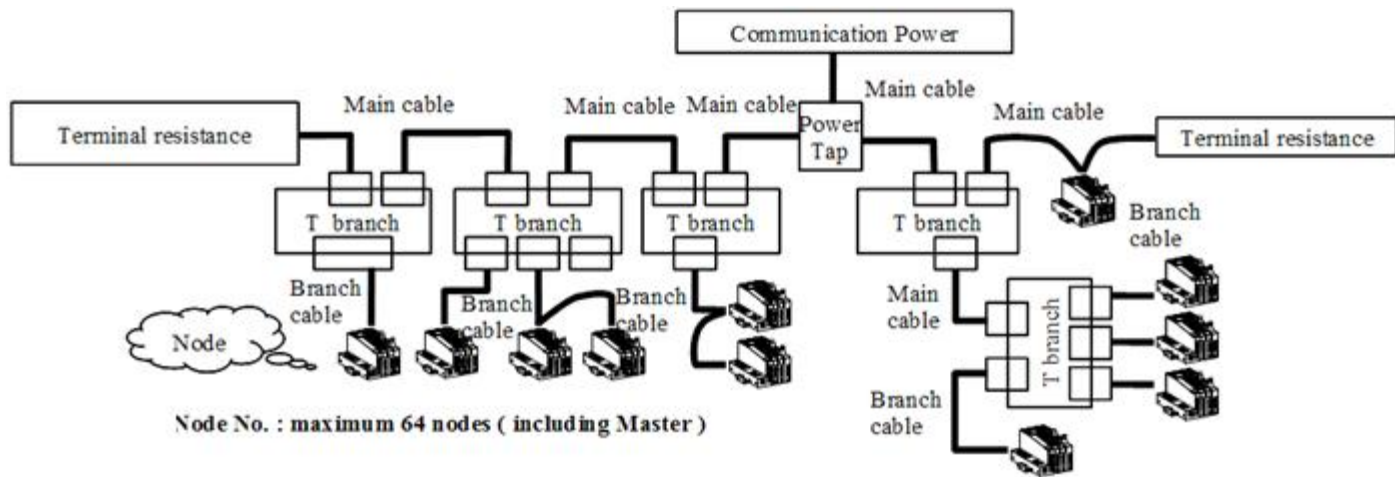
 MOD
 NET
 I/O

 Field Power


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Item	LED is:	State	To indicate:
MOD : Module Status LED	Off	No Power	No power is supplied to the unit
	Solid Green	Device Operational	The unit is operating in normal condition
	Flashing Green	Device in Standby	The EEPROM parameter is not initialized yet Serial Number is zero value (0x00000000)
	Flashing Red	Minor Fault	The unit has occurred recoverable fault in self-testing - Too many expansion slot - Overflow IO size - IO configuration failure - EEPROM checksum fault
	Solid Red	Unrecoverable Fault	The unit has occurred unrecoverable fault in self-testing - Invalid Module ID - Firmware fault
NET : Network Status LED	Off	No Power Not On-line	Device is not on-line or may not be powered - Not completed the Dup-MAC_ID test yet
	Flashing Green	On-line, Not connected	Device is on-line but has no connections in the established state - Passed the Dup-MAC_ID test - Not allocated to a master
	Solid Green	On-line, Connected	Device is on-line and allocated to a master
	Flashing Red	Connection Time-out	One or more I/O connections are in the time-out state
	Solid Red	Critical Communication Failure	Failed communication - Duplicate MAC ID - Bus-off
I/O : Module Status LED	Off	No Power No IO Module	Device has no IO module or may not be powered
	Solid Green	Bus Connection Run Exchanging I/O	Normal Operation
	Flashing Red	IO Module Configuration Failed	Failed to initialize IO module - Detected invalid module ID - Overflowed Input/Output Size - Too many IO module - Initial protocol failure
	Solid Red	Bus Connection Fault During Exchanging I/O	One or more IO module in fault state - Changed IO module configuration - Bus communication failure
Field Power : Field Power Status LED	Off	No Field Power	24Vdc field power not supplied
	Solid Green	Field Power supplied	24Vdc field power supplied

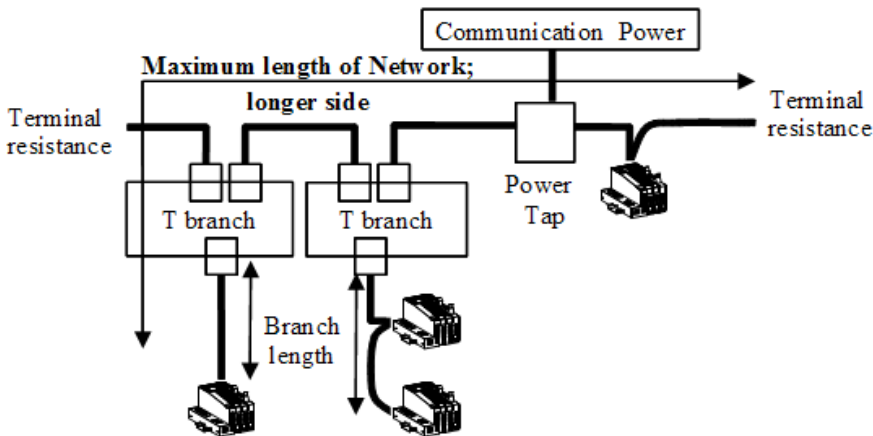
5. DeviceNet Configuration



Cable	- Main cable : the cable with terminal resistance at the both ends - Branch cable : the cable branched from the main cable (max. 6m)
Node Connection	There are 2 ways for node connection •T branch •multi branch. It is possible to connect above node connections individually or mixed.
Terminal Resistance	To reduce undesired reflection of signal and to stabilize communication, terminal resistances have to be installed at the both ends. (Terminal resistance : 120Ω)

Maximum length of Network :

Maximum length between nodes or terminal resistance at both ends can be 500 meters.



Cable Type	Maximum Length for Network
Thick cable(5 lines)	500m
Thin cable (5 lines)	100m

6. Important Product Information

Release Information

Part Number	STXDNS001-AA
HW Version	20.00
Firmware Release	20.000

Upgrades

NA

Compatibility Issues

NA.

Problems Resolved in this Release

NA.

New Features and Enhancements in this Release

NA.

Restrictions and Open Issues

Subject	Description
Slice IO node system power up sequence issue.	<p>If the Network Adapter and ST-7xxx Power modules on the same Slice IO node are power cycled at different times, the Network Adapter may power up in fault mode.</p> <p>To recover from the fault, power cycle the node such that Network Adapter and Power modules are power cycled together or the node is powered up following the sequence such that the power module farthest from the Network Adapter is powered up first.</p> <p>For example in a node having modules as below: STXDNS001+IO Module+ST-7511+IO Modules ... +ST-7511+IO Modules</p> <p>In the above system power cycle the STXDNS001 and the two ST-7511 modules together or power OFF the entire node and then power ON the second ST-7511 and then the first ST-7511 and then the STXDS001.</p>
STXDNS001 NET LED Status Indications when network communication is removed.	<p>RSTi STXDNS001 is configured for Cyclic/COS mode of operation and connected with IC693/IC694DNM200 or Quick Panel DeviceNet Master card, the NET LED remains Solid Green when network cable is disconnected, however status LED of connected IO modules will be blinking. To re-establish the communications, reconnect network cable and power cycle RSTi node.</p>

Operational Notes

NA