NP3-series PT Replacement Procedures

This document explains the procedures and precautions regarding the replacement of the NP3-series Programmable Terminals (or PT) into NV3Q-series PT.

This is the recommended replacement of NP3-series PTs.

Before

Series	Model
NP3	NP3-MQ000(B) NP3-MQ001(B)

3 function keys
NP3-MQ000(B)

6 function keys
NP3-MQ001(B)

After

Series	Model (Communications standard)
NV3Q	NV3Q-MR21 (RS-232C)
	NV3Q-MR41 (RS-422A / 485)

NV3Q-MRx1

Section 1 Major Specifications and Inheritability from NP3 to NW3Q

【NP3】 Hardware and Software			Inheritability	【NV3Q】 Hardware and Software
Appearance & Dimensions	Outer dimensions		partly	NV3Q is smaller
	Panel-cut dimensions		partly	NV3Q is smaller. (By using the NV3Q-ATT02 Mounting Attachment, the NV3V can be fit in the NP3 panel-cut.)
	Function switch		NG	None
	Frame color (silver, black)		partly	Black only
Communi-cations interface of connected device	Serial 2 ports (RS-232C, RS-422A /485)		NG	Serial 1 port only (RS-232C and RS-422A /485 are the different type.)
	Compliant with RS-232C (9-pin D-SUB, female connector)		NG	Different connector (8-pin terminal block)
	Compliant with RS-422A /485 (10-pin terminal block)		NG	Different connector (8-pin terminal block)
	Connector position		NG	Different
Connected device	Communication of 2 systems (Possible to connect to 2 ports simultaneously)		NG	1 system only
	OMRON	SYSMAC C-series	partly	Not connectable via NT Link. If you use NT Link, change the serial port communications setting on PLC to host link. This enables connection.
		SYSMAC CV-series		
		SYSMAC CS/CJ-series		
		SYSMAC CP-series		
		Temperature Controller EJ1	NG	
	Others	Bar code reader	NG	Not connectable to a bar code reader.
General specifica-tions	Rated power supply voltage (24 VDC)		OK	Equivalent
	Power consumption (12 W max)		OK	NV3Q needs less energy.
	Ambient operating temperature (0 to 50°C)		OK	Equivalent
	Enclosure rating (IP65 Oil resistant)		NG	IP65
	Compliant Standards (EC Directives, UL508)		OK	Equivalent
Display specifica-tions	Display device (Monochrome, STN LCD)		OK	Equivalent
	Effective display area (W 78.8 × H 59.6 mm, 3.8”)		NG	Smaller in width and height. (W 73.0 × H 55.2 mm, 3.6”)
	Resolution (320×240 dot)		OK	Equivalent
	Display color (Monochrome, 8-grayscal levels)		NG	Two-color
Touch panel	Touch switch type (Analog resistive)		OK	Equivalent
Others	Programmable Controller Function		NG	None
	Battery (included in the main package)		NG	Different battery type. Operable without battery. (To be purchased separately from the main body.)
	External memory (USB flash memory)		NG	SD memory card
Data	Screen data		NG	Not compatible with NP3.
	Ladder program (Control area, State area)		NG	PLC area that is fixedly occupied to allow PLC’s screen control is not compatible with NP3 in function specification and number of points.
Peripheral tool	Screen designer (NP-Designer)		NG	Needs separate software, NV-Designer.
	PC connection interface (RS-232C or USB)		partly	USB only

Precautions for Correct Use

This document explains the major differences that the users must be aware when they replace the NP3 PT. Be sure to read the product operation manual for the usage restrictions.

Section 2 About Hardware

2.1 Smaller in outer dimensions and panel-cut dimensions.

The NV3Q PT has the smaller panel-cut than the NP3 PT. A dedicated Mounting Attachment (NV3Q-ATT02) is required when an NV3Q PT is mounted onto the NP3 panel-cut.

* The Attachment is neither water-proof nor oil-resistant.

Series	NP3	NV3Q
Outer dimensions	W 130.1 × H 104.8 × D 55.4 mm	W 110.0 × H 92.2 × D33.8 mm
Panel-cut dimensions	W118.5 $^{+1}_{0}$ × H 92.5 $^{+1}_{0}$ mm	W 99.2 $^{+1}_{0}$ × H 85.2 $^{+1}_{0}$ mm
Conforming panel thickness	1.6 to 2.5 mm	1.6 to 4.8 mm

2.2 No function switch provided.

The NV3Q does not have function switches. The functions switches shall be replaced to other objects in the screen data such as touch switches.

2.3 Case color in black only.

The NV3Q case is only in black. When you use the silver-colored NP3, you must be aware that the appearance will change.

2.4 There is one PLC communications port.

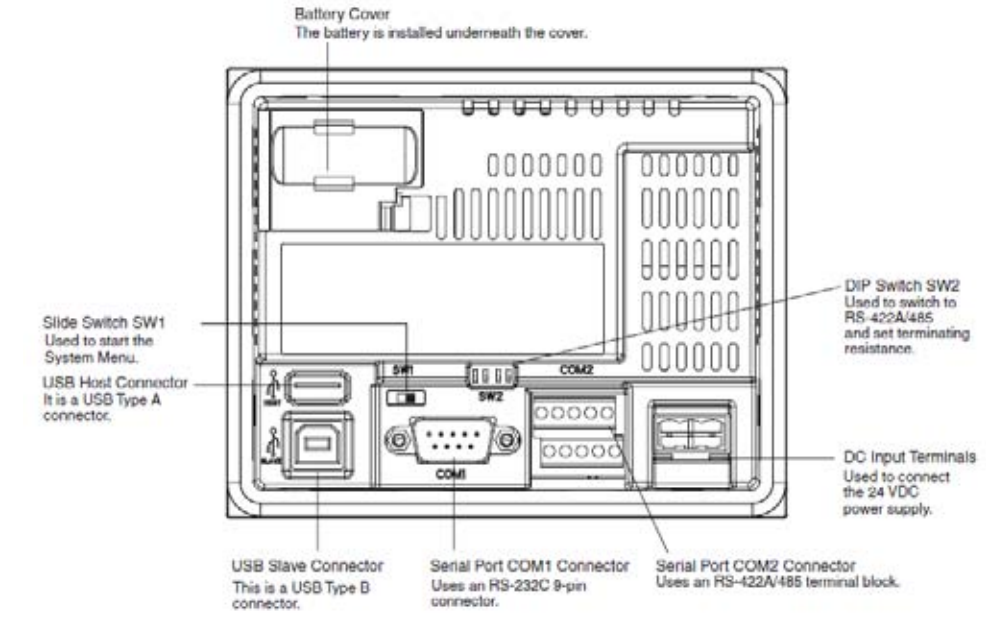
The NP3 has two serial communications ports (RS-232C and RS-422A /485). The NV3Q has either one port of RS-232C or RS-422A /485. The port type is determined by the models.

Model	NP3-MQ000(B) NP3-MQ001(B)	NV3Q-MR21	NV3Q-MR41
Number of ports	2	1	1
Communications Standard	RS-232C RS-422A /485	RS-232C	RS-422A /485

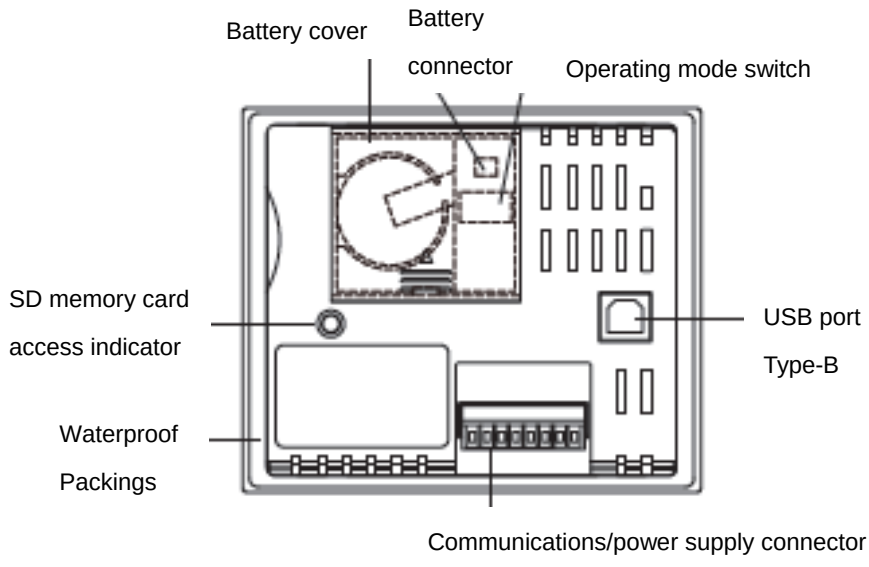
2.5 Different serial port connector

2.5.1 Position of connectors

NP3



NV3Q

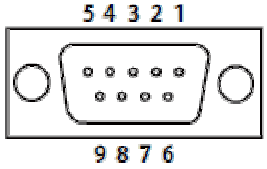


2.5.2 Layout of connectors pin location has been changed

The connectors to RS-232C and RS-422A /485 communications ports will change. Especially the great change lies in the connector to RS-232C port. The connector on the NP3 is the D-SUB 9-pin (female) type, while that on the NV3Q is the 8-pin terminal block.

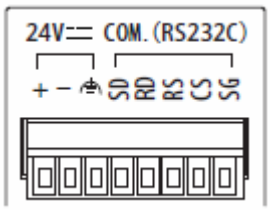
2.5.3 RS-232C port

【 NP 3-series 】



Pin number	Symbol	Single name
1	NC	Unused
2	SD	Send data
3	RD	Receive data
4	RS	Send request
5	CS	Send enabled
6	DC+5V	+5-VDC output (250mA max)
7	NC	Unused
8	NC	Unused
9	SG	Signal ground

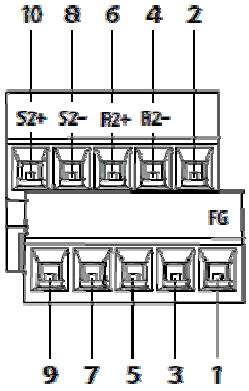
【 NV3Q - MR 21 】



Pin number	Signal name	Symbol	Signal direction
1	+24 V	+	---
2	0 V	−	---
3	Functional ground	FG	---
4	Send data	SD	PT to external device
5	Receive data	RD	External device to PT
6	Request to send	RS	PT to external device
7	Clear to send	CS	External device to PT
8	Signal ground	SG	---

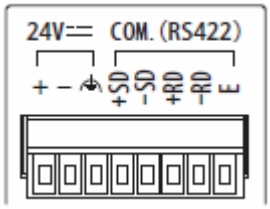
2.5.3 RS-422A / 485 port

【 NP 3-series 】



Pin number	Symbol	Single name
1	FG	Functional groud
2	SG	Signal ground
3		Unused
4	RDA(-)	Receive data
5		Unused
6	RDB(-)	Receive data
7		Unused
8	SDA(-)	Send data
9		Unused
10	SDB(-)	Send data

【 NV3Q - MR 41 】



Pin number	Signal name	Symbol	Signal direction
1	+24 V	+	---
2	0 V	–	---
3	Functional ground	FG	---
4	Send data	+SD	PT to external device
5	Send data	–SD	PT to external device
6	Receive data	+RD	External device to PT
7	Receive data	–RD	External device to PT
8	Terminating resistance	E	---

2.6 Different in LCD size and number of colors.

The LCD size of NV3Q is 3.6 inches and smaller than that of NP3 which is 3.8.

(Resolution is QVGA or 320 × 240 dot. It is same as NP3.)

The number of colors in the NP3 is monochrome and 8-grayscale levels. That of NV3Q (monochrome type) is two-color of black-white. The grayscale level of NP3 is not available. (Use the NV3Q (color type) to show the grayscale levels.)

2.7 Operable without battery (Battery must be purchased separately.)

The NV3Q is operable without battery. However, the a special battery (NV-BAT01) must be purchased separately. It is used for the alarm function, the hold memory function and the internal clock function in the NV PT.

In the NV3Q, the clock data to refer can be selective between the built-in clock and the external clock data. No battery is required when the external clock data is referenced.

Section 3 Compatibility with Host

◆ **Connections that were available in NP3 series are partially not supported.**

The table below shows the connection protocol to NP3 and NV3Q. The "NG" in the table means it is not supported. Therefore you cannot replace it to a lone NV Programmable Terminal.

Manufacturer (type)		Support	Connection protocol to NV3Q
OMRON	Host link (C/CPM/CQM)	OK	OMRON SYSMAC-C/CV-series
	Host link (CS/CJ/CP1/CV/CVM)	OK	OMRON SYSMAC-CS/CJ/CP-series
	NT link (1:N)	partly	*Connectable after changing to the host link.
	NT link (1:1)	partly	*Connectable after changing to the host link.
	EJ1	NG	
Allen-Bradley	Micro Logix	OK	Allen-Bradley SLC500 MicroLogix-series
	SLC 5	OK	Allen-Bradley SLC500 MicroLogix-series
GE Funac	90-series SNP	NG	
Keyence	KV/KZ-series	partly	Keyence KV-10/16/24/40 -series Keyence KV700 -series Keyence KV1000 -series Keyence KV3000/5000 -series *Above models of KV –series are connectable. * KZ –series are not connectable.
LG (LS)	Master-K120S/200S	NG	
	Glofa GM6 CNET	NG	
	Master-K CNET	OK	LG MASTER-K(Cnet)-series
	XGT CNET	NG	
Panasonic	FP-series	OK	Panasonic FP-series
Mitsubishi Electric	FX-series CPU port	OK	Mitsubishi MELSEC-FX-series
	FX2N CPU port	OK	Mitsubishi MELSEC-FX2N-series
	FX3U CPU port	OK	
	FX-series Computer Link	NG	
	A-series Computer Link	OK	Mitsubishi MELSEC-A (Computer Link)-series
	A2A/A2AS/A2USH A1SH/A3N/A2ASH CPU port	NG	
	Q-series CPU port	OK	Mitsubishi MELSEC-Q(CPU)-series
	Q-series Computer Link	OK	Mitsubishi MELSEC-Q (Serial communications)-series
Modbus	ASCII (Master)	NG	
	984 RTU (Master)	OK	Modbus (RTU mode)
	RTU 2W (Master)	NG	
	ASCII Hex Address (Master)	NG	
	RTU Hex Address (Master)	NG	
	ASCII nW (Master)	NG	
	RTU nW (Master)	NG	
	ASCII (Slave)	NG	
	RTU (Slave)	NG	
Modicon	TSX Micro (Uni-Telway)	NG	
	NEZA (Uni-Telway)	NG	
	TWIDO	OK	Modbus (RTU mode | modicon PLC)
Siemens	S7-200	OK	Simens S7-200-series
	S7-300 (with PC adapter)	NG	
	S7-300 (without PC adapter)	NG	
NULL	NULL driver	NG	

3.1 NT Link 1 to 1 and 1 to N cannot be used on NV series

NT link 1 to 1 and 1 to N which are protocol for OMRON PLC is not available to NV series. If NT Link is used for NP series, please change the connection protocol to Host Link.

Note) At the same time, please change the Stop Bit of Host Link communication from "2" to "1" because NV series supports only ONE Stop Bit at serial communication.

Section 4 About Software

4.1 Screen data cannot be reused.

Screen data between the NV3Q and the NP3 are not compatible. Therefore you cannot reuse the screen data of NP3 for NV3Q. In addition, the NV-Designer must be provided as the screen designing software.

4.2 PLC area that is fixedly occupied to control screen from PLC

The NP3 has the Control Block and the Status Block, which are used by PLC to control the basic operation such as switching screens. In the NV3Q, the similar functions are provided as the system memory. However, the two are different and incompatible in terms of the allocated functions and the number of occupying words. When you use a ladder program to control the screens, you have to confirm the difference between the NP3 and the NV3Q. Then change the read and write addresses on the ladder program and the other ladder programs that refer to these addresses.

※ Difference between NP3-series and NV3Q-series

In both of the NP3 and NV3Q, the basic operations (or functions) such as switching the screens, turning on or off the backlights functions, and sounding the buzzers are controlled in this area. However, on the NP3 the functions of data log, data block (recipe), and alarm are controlled in this area, while on the NV3Q the control area address for each of above function is allocated individually.

4.3 No programmable controller function provided.

The NV3Q is not equipped with the programmable controller function.

Section 5 Screen Data Replacement Specifications

This section explains the replacement specifications of screen data from NP3 to NV3Q.

Item		【NP3】	【NV3Q】
Screen structure	Project type	1 file (###.npp)	1 folder that is in the same level as files (###.nvp, and### foler)
	Number of registerable screens	300 screens	approx. 240 screens *Depends on the content to register.
	Registerable screen No.	1 to 65535	Base screen: No.0 to1023 Keyboard screen: No.0 to 7 Logon screen: No.0 to 15
	Screen type	Base screen, Pop-up screen, Sheet	Base screen, Keyboard screen, Logon screen *No pop-up screens usable.
Display language	Displayable font type	Fixed: 8, 10, 12, 14, 16, 18, 20, 24, 28, 32, 40, 48 and 64 Windows(R)：8 to 70 dots (Transverse magnification: 33%, 50%, 100%, 150% and 200%)	Fixed：1/4 width (8×8), half-width (16×8), full-width (16×16), (Displayable in 1x, 2x, 4x and 8x scales vertically and horizontally) True Type：10 to 240 dots Windows(R)：10 to 240 dots
	Displayable character type	All languages supported by Windows fonts	Japanese, English, Korean, German, French, Italian, Spanish, Simplified Chinese, Traditional Chinese and Turkish
	Languish switch function	Switchable among 8 patterns	Switchable among 16 patterns
Common setting	Data block (recipe)	Entire data size: 65536 words (Number of fields [1-65535] × Number of records [1-65535]) *One group only	Entire data size: approx. 3600 words (Number of fields [1-100] × Number of records [1-100] × Number of groups [1-100])
	Alarm	Number points to watch: 512 bits in total of alarming and alarm history	Number of points to watch: 128 bits for alarming, 256 bits for alarm history *History function needs battery.
	Data Log	Number points to monitor: 96 points per project, (Breakdown) 8 points per groups, 12 groups per project	Number of points to monitor: 40 points per project, (Breakdown) 8 points per group, 5 groups per project
	System Macro	Startup macro Project resident macro Project periodic macro	Not settable
Screen attribute	Pop-up attribute	Settable	Not settable
	Screen macro	Settable	Not settable
Object	*See the Replacement specification table below.		
Internal memory	Internal address	$: 65535 words $M: 1024 words *Word access and Bit access are supported to both areas.	GDT: 2048 words (Word access) GR: 256 words (Bit access) *Specify the WGR name to make a word access to GR.
	Data backup capacity by a battery	$M：1024 words	GDT：0 to 2048 words GR：0 to 256 words *Need a separate battery.

<Object replacement specifications>

Object type	Object name	Replacement possibility	Replacement	Remark
Common	Address Setting	OK	**Basic Setup** tab of each object	
	Label	OK	**Label** tab of each object	
	Flicker	partly	**Reverse/Blink** tab of each object	Standard switches and lamps are not settable. Customized switches and lamps are settable.
	Push Time	NG		
	User Security level	OK	**Operation Security** tab of each object	
	Set Low Security	NG		
	Interlock	OK	**Valid Condition** tab of each object	
	Macro	NG		
	Trigger (Function to turn on the specified bit address before or after writing values)	partly	**Input** tab of each object → Output Trigger	Enabled before writing values. Disabled after writing values.
Button	Set	OK	Switch object → Set	
	Reset	OK	Switch object → Reset	
	Momentary	OK	Switch object → Momentary	
	Alternate	OK	Switch object → Alternate	
	N-State	partly	Replacement differs by data length. Bit: Button → Alternate Word：Function Switch object → Add/Sub LSB：Unusable	N-State in words is 2 to 16. In NP3, it is settable between 2 and 256.
	Assign Value	NG		
	Assign Constant	OK	Function Switch object → Value Set	
	N-Increment	OK	Function Switch object → Add	
	N-Decrement	OK	Function Switch object → Subtract	
	Change Screen	OK	Function Switch object → Change Screen	
	Back Screen	OK	Function Switch object → Previous Screen	
	Previous View	OK	Function Switch object → Previous Screen	
	System Date & Time	OK	Function Switch object → System Menu → Clock Setting	
	Password Table Setup	OK	Function Switch object → Operation security function (Password change)	
	Enter Password	OK	Function Switch object → Operation security function (Password entry)	
	Contrast & Brightness	OK	Function Switch object → System Menu → Contrast Setting	
	Low Security	OK	Function Switch object → Operation security function (Log-out)	
	System Menu	OK	Function Switch object → System Menu → NV Configuration	

Analog Meter	Meters (1) to (7)	NG		
Level Meter	Level Meter	OK	Level Meter	
	Deviation	NG		
Pipe	Pipes (1) to (7)	NG		
Lamp	N-State Lamp	partly	Replacement differs from data length. Bit：Lamp object Word：Message object LSB：Unusable	N-State in words is 2 to 16. In NP3, it is settable between 2 and 256.
	Range Lamp	NG		
	Simple Lamp	NG		
Data Display	Numeric Display	OK	Data object	
	String Display	OK	Set the data object and the format in “ASCII”.	
	Date Display	OK	Clock object	
	Time Display	OK	Clock object	
	Week Display	OK	Clock object	
	Message Bank	partly	Replacement differs from data length. Bit：Lamp object Word：Message object LSB：Unusable	N-State in words is 2 to 16. In NP3, it is settable between 2 and 256.
	Banner	NG		
Draw	State Image	NG		
	Animated	NG		
	Variable Line	NG		
	Variable Rectangle	NG		
	Variable Ellipse	NG		
Input	Numeric Input	OK	Data object	
	String Input	OK	Set the data object and the format in “ASCII”.	
Line Graph	Broken-Line	OK	Line graph object → Broken-line graph	
	X-Y Distribution	NG		
Data Log	Trend Chart	OK	Line graph object → Data log	
	Data Log Table	NG		
	Event Log Table	NG		
Alarm	History List	OK	Alarm List Object → Alarm History (Time Order)	
	Latest List	OK	Alarm List Object → Alarming List	
	Frequency List	OK	Alarm List Object → Alarm History (Frequency Order)	
	Message Banner	NG		With Flowing Text Function, you can show the message flow on the bottom of any screens.
Fixed Objects	Line	OK	Line	
	Rectangle	OK	Rectangle	
	Circle	OK	Pie/Oval	
	Polygon	OK	Polygon	
	Sectors	OK	Sector	
	Text	OK	Text	
	Scale	NG		
	Table	NG		

5.1 The number of registerable projects will be reduced to 240.

The maximum number of projects you can create by NP3 is 300. It is reduced to 240 in NV3Q.

5.2 Cannot create pop-up menus.

By NV3Q, you cannot create pop-up menus, which show over a base screen. When you use any pop-up menus on NP3, you have to replace them to base screens.

5.3 Range of settable screen No. changes to 0 to 1023.

On NP3, you can select a screen from No. 1 to 65535. On NV3Q the range is narrowed to 0 to 1023. You have to change the screen No. specified on the ladder program.

5.4 Macro function

NP3 supports the Macro function. You can set a series of complicated operations to a macro, and execute them periodically or when you press the switch. However, NV3Q does not support the function. You have to replace the macro functions by ladder programs.

NV3Q has the Address Write Function that writes values for screen No. and address states from the NV to the PLC. Some macros are replaceable to the Address Write Function.

5.5 Push Time

NP3 has the Push Time Function that accepts a switch input only when it is pressed for a few seconds or certain duration. NV3Q does not support this function. You have to replace the function by ladder program.

5.6 Analog Meters are not replaceable.

NV3Q does not support the Analog Meter function. The function can be substituted by the Level Meter Function that may make a different show on the screen.

5.7 About replacement of Message banner

NV3Q does not support the Message banner function such as display the flow of strings in any place. For alternative, please use Flow Display function which display the flow of strings at the bottom of the screen.

Section 6 Control of display data from Ladder program

The following is the specifications of NP3-series and NV3Q-series.

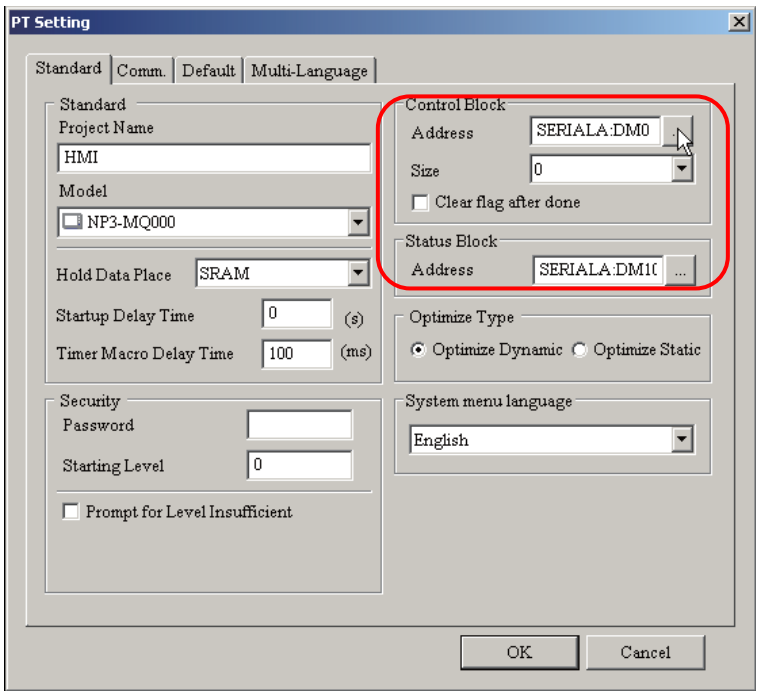
6.1 NP 3-series

In the NP3-series PT, the area to control the NP3 by a PLC is referred to as “Control Block”, while the area to notify the NP3 status to the PLC is referred to as “Status Block”.

The following section explains the PT menu to allocate the Control Block and the Status Block to PLC, as well as functions of these blocks.

6.1.1 Allocation area

The allocation area can be set on the **Standard setting** tab of **PT Setting** menu.



6.1.2 Control Block

When you specify the host address in the **Control Block** field, you can control the NP from the host. The Control Block is a sequential word address. A data can be 0 to 8 words long.

The tables below show the functions and words in detail.

Word	Function
+0	Address to specify a screen number※*BIN
+1	Control flag address
+2	Broken-line control address
+3	Data log buffer sampling address
+4	Data log buffer clearing address
+5	Data block (recipe) control address
+6	Address to specify a data block (recipe) group number
+7	System control flag address

※* +1: Control flag address (in detail)

Bit	Function
0	Communications enabled or disabled
1	Backlight on or off
2	Siren sound
3	Alarm buffer clear
4	Alarm counter clear
5 to 7	Reserved
8	User security level setting (Bit0)
9	User security level setting (Bit1)
10	User security level setting (Bit2)
11 to 15	Reserved

※* +7: System control flag address (in detail)

Bit	Function
0	Multi-language setting value (Bit0)
1	Multi-language setting value (Bit1)
2	Multi-language setting value (Bit2)
3	Multi-language setting value (Bit3)
4	Multi-language setting value (Bit4)
5	Multi-language setting value (Bit5)
6	Multi-language setting value (Bit6)
7	Multi-language setting value (Bit7)
8 to 15	Reserved

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6.1.3 Status Block

When you specify the host area (or host address) in the Status Block frame, you can monitor the status of NP main body from the host. When the control area size is set to 0, the control area function is invalid. When the size is not set to 0, the data is 8 words long.

The tables below show the functions and words in detail.

Word	Function
+0	General control status address
+1	Screen number status address※*BIN
+2	Broken-line control status address
+3	Data log buffer sampling status address
+4	Data log buffer clearing status address
+5	Data block (recipe) status address
+6	Data block (recipe) number status address
+7	General control status address 2

※ * +0: General control status address (in detail)

Bit	Function
0	Screen switch status
1 to 2	Reserved
3	Alarm buffer clear status
4	Alarm buffer counter clear status
5 to 7	Reserved
8 to 10	User security level status (Use 3 bits.)
11 to 15	Reserved

※ * +7: General control status address 2 (in detail)

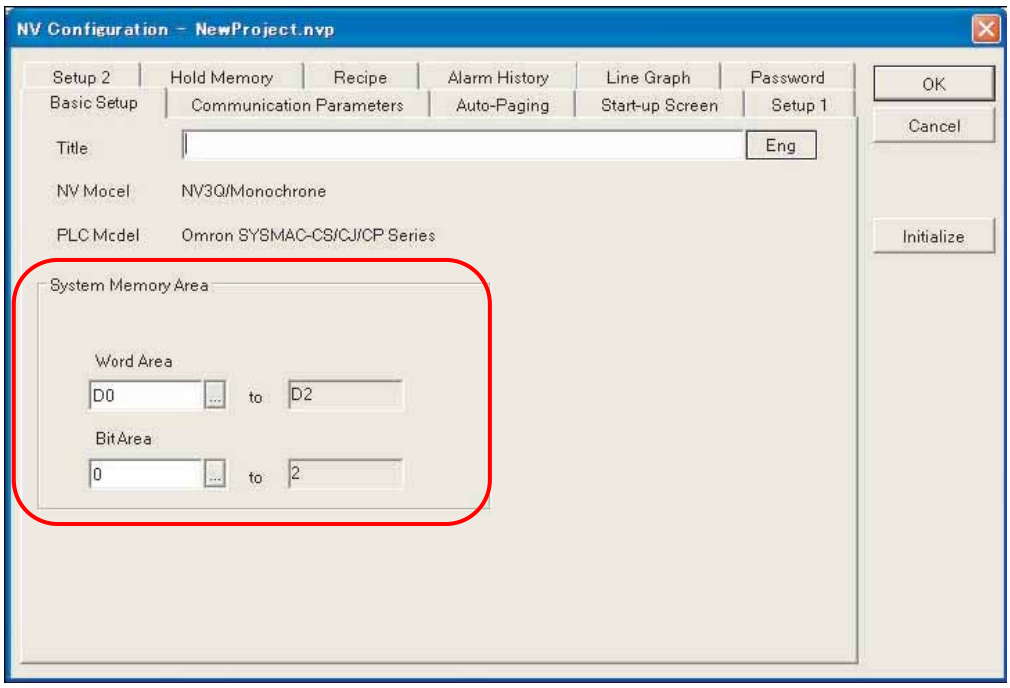
Bit	Function
0 to 7	Multi-language status value (Use 8 bits.)
8 to 15	Reserved

6.2 NV3Q-series

On the NV3Q −series PT, the area to control the system functions such as specifying a screen number and a backlight is referred to as the **System Memory**. There are two areas in the system memory. The area, which word-by-word data such as a screen number is read from and written in, is referred to as the **Word area**. The memory, which bit-by-bit data such as automatic backlight off is read from or written to, is referred to as the **Bit area**. The following descriptions explain the allocation of Word and Bit areas to PLC as well as their functions.

6.2.1 Allocation

The allocation can be set on the **New Project Wizard**. The setting can be changed on the **NV Configuration** menu as shown below.



6.2.2 Word area

This is the memory to read and write the word-by-word data such as screen numbers. The memory is located in the system memory that is used when the NV PT communicates with the PLC. A data can be 3 words long.

This table elaborates the functions and the words.

Word	Function
+0	Screen No. specified by PLC (Area that PLC specifies to NV3Q)※*BIN
+1	Use prohibited
+2	Screen No. now in view (Area that PLC reads from NV3Q) ※*BIN

6.2.3 Bit area

This is the memory to read and write the bit-by-bit data such as automatic backlight off. The memory is located in the system memory that is used when the NV communicates with PLC. The data can be 3 words long.

This table elaborates the functions and the words.

Word	Function
+0	PLC to NV3Q control area
+1	Use prohibited
+2	NV3Q status notification area to PLC

※ +0: PLC to NV3Q control area

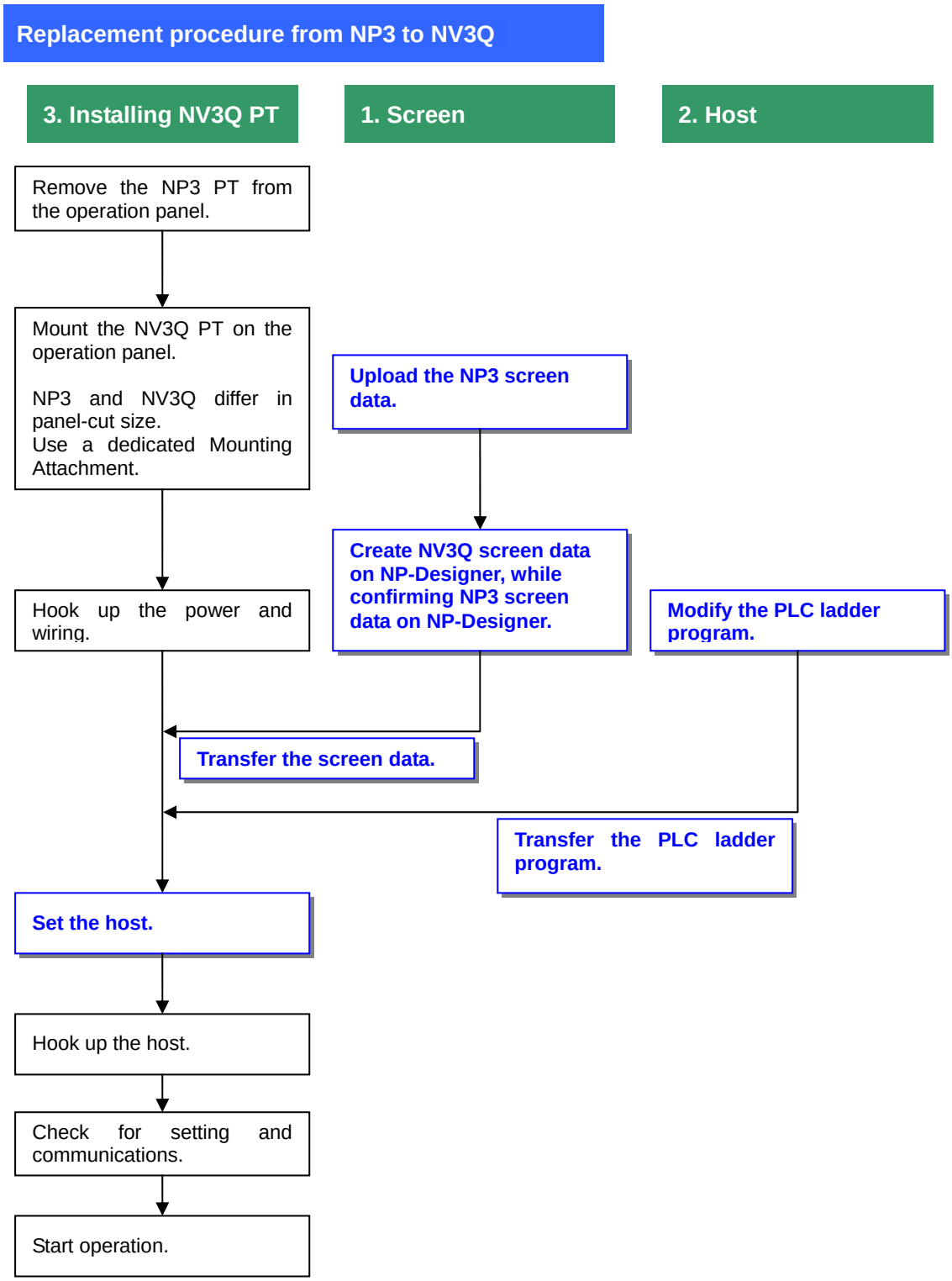
Bit	Function
0 to 9	Reserved
10 to 11	Backlight color (Use 2 bits)
12	Backlight on or off
13	Backlight control enabled
14	Forced display flag
15	Buzzer

※ +2: NV3Q status notification area to PLC

Bit	Function
0	Data now inputting flag
1	Battery backup failure flag
2	Battery low flag
3	Logon screen now in view flag
4	Password change screen now in view flag
5 to 15	Reserved

Section 7 NP3-series Replacement Procedures

7.1 This section illustrates the steps to replace the NP3.



7.2 Equipment and Materials Required for Replacement

■ For hardware replacement

Item	Name	Remark
PT	NV3Q-MR21(RS-232C) NV3Q-MR41(RS-422A/ 485)	Select a model from display colors and communication standard.
Special Mounting Attachment	NV-ATT02	Special attachment to mount an NV3Q PT onto an NP3 panel-cut
PT power supply	Pre-installed 24-VDC power supply	Not problem as an NV3Q consumes less power than an NP3.
PLC	Pre-installed PLC	
PLC connection cable [for RS-232C]	- Pre-installed cables are remodeled to discrete wires on the part of PT connection - Self-produced cable - Omron Product XW2Z-200T-3(2m) XW2Z-500T-3(5m)	The connector specification on PT changes from 9-pin D-sub connector to 8-pin terminal block. Existing cable cannot be used as it is. See *the NV-series Programmable Terminals Setup Manual*, Doc. # V103. Modify the existing cable on PT side into discrete wires.
PLC connection cable [for RS-422A]	- Pre-installed cables are remodeled. - Self-produced cable	Signal wires of existing cables can be used as they are. See the *NV-series Programmable Terminals Setup Manual*, Doc # V103. Process the existing cable shields. Short the pin 7 and pin8 of the connector to set the terminals.
Battery	NV-BAT01	A separate battery (NV-BAT01) must be purchased to use the NV main body functions such as the built-in clock, alarm history and memory hold.

■ For software conversion

Item	Name	Remark
Screen designing software for NP3	NP-Designer	Used to confirm data which is replaced.
Screen designing software for NV	NV-Designer	Included in the packages of CX-One Ver.3.2, and of CX-One Lite Ver.4.0.
PC connection cable	USB cable (A connector mail - B connector female)	Used to transfer the screen data to NV3Q main body. Commercially available product

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