

LAN Control Protocol for SQE2/CQE2

Contents

<u>1.</u>	<u>LAN control protocol [NTCONTROL]</u>	<u>2</u>
1.1.	When Command Protect is On (Protect mode).....	2
1.2.	When Command Protect is Off (Non-Protect mode).....	3
<u>2.</u>	<u>Username / Password change procedure</u>	<u>4</u>
<u>3.</u>	<u>Record of changes</u>	<u>5</u>

1. LAN control protocol [NTCONTROL]

Command communication via LAN is available after Administrator Account is set.

1.1. When Command Protect is On (Protect mode)

● Connection procedure

- 1) Verify the IP address and port number of the display and carry out TCP connection.
- 2) After a successful TCP connection, there is a response from the display.

Table 1-1 Response from the display (Protect mode)

Data section	Blank	Mode	Blank	Random number section	Terminal symbol
"NTCONTROL" (ASCII character string)	" " 0x20	"1" 0x31	" " 0x20	"zzzzzzz" (ASCII code hexadecimal notation)	(CR) 0x0d
9 bytes	1 byte	1 byte	1 byte	8 bytes	1 byte

Mode = 1 (Fixed)

- 3) Using the MD5 algorithm, generate a 32-byte hash value from the following data. The generated hash value will be used in the next command transmission.

"xxxxxx:yyyyy:zzzzzzz"

xxxxxx : [Network & Internet] – [Administrator Account] – [Current Username]

yyyyy : [Network & Internet] – [Administrator Account] – [Current Password]

zzzzzzz : 8-byte random number obtained in step 2)

● Sending commands

Send commands in the following formats:

Table 1-2 Transmitted data

Header		Data section		Terminal symbol
Hash value (Refer to "Connection procedure" above)	'0' 0x30	'0' 0x30	Command [Control / Query] (ASCII character string)	(CR) 0x0d
32 byte	1 byte	1 byte	Unfixed length	1 byte

● Command response

Command responses are in the following formats:

Table 1-3 Received data

Header		Data section	Terminal symbol
'0' 0x30	'0' 0x30	Response data (ASCII character string)	(CR) 0x0d
1 byte	1 byte	Unfixed length	1 byte

● Error response

When errors occur, responses are in the following formats:

Table 1-4 Error response

Error message (response data)		Terminal symbol
"ERR1"	Undefined control command	(CR)
"ERR2"	Parameter out of range	0x0d
"ERR3"	Busy state or unavailable period	
"ERR4"	Time out or unavailable period	
"ERR5"	Invalid data length	
"ERRA"	Mismatching state of a password	
"ER401"	Error occurred on processing command	
4 bytes or 5 bytes		1 byte

1.2. When Command Protect is Off (Non-Protect mode)

● Connection procedure

- 1) Verify the IP address and port number of the display and carry out TCP connection.
- 2) After a successful TCP connection, there is a response from the display.

Table 1-5 Response from the display (Non-Protect mode)

Data section	Blank	Mode	Terminal symbol
"NTCONTROL"	" "	0	(CR)
(ASCII character string)	0x20	0x30	0x0d
9 byte	1 byte	1 byte	1 byte

Mode: 0 = Non-protect mode

● Sending commands

Send commands in the following formats:

Table 1-6 Transmitted data

Header		Data section	Terminal symbol
'0'	'0'	Command [Control / Query]	(CR)
0x30	0x30	(ASCII character string)	0x0d
1 byte	1 byte	Unfixed length	1 byte

● Command response

Command responses are in the following formats:

Table 1-7 Received data

Header		Data section	Terminal symbol
'0'	'0'	Command [Control / Query]	(CR)
0x30	0x30	(ASCII character string)	0x0d
1 byte	1 byte	Unfixed length	1 byte

● Error response

When errors occur, responses are in the following formats:

Table 1-8 Error response

Error messages (response data)		Terminal symbol
"ERR1"	Undefined control command	(CR)
"ERR2"	Parameter out of range	0x0d
"ERR3"	Busy state or unavailable period	
"ERR4"	Time out or unavailable period	
"ERR5"	Invalid data length	
"ER401"	Error occurred on processing command	
4 bytes or 5 bytes		1 byte

2. Username / Password change procedure

Refer to the user's manual for the display you are using.

Open Display Settings > Network & > Administrator Account menu, then change Username and Password.

3. Record of changes

Date of change	Version	Description
2023/5/25	1.00	• First edition
		•
		•
		•
		•
		•
		•
		•

Reasons for changes

Newly created / Change in specifications / Clarification of specifications / Addition or correction of incomplete or erroneous information /