Using STRINGs on NB HMI with Sysmac NJ

Information

When using STRING Data Type on Sysmac NJ with HB HMI, please note the following restrictions:-
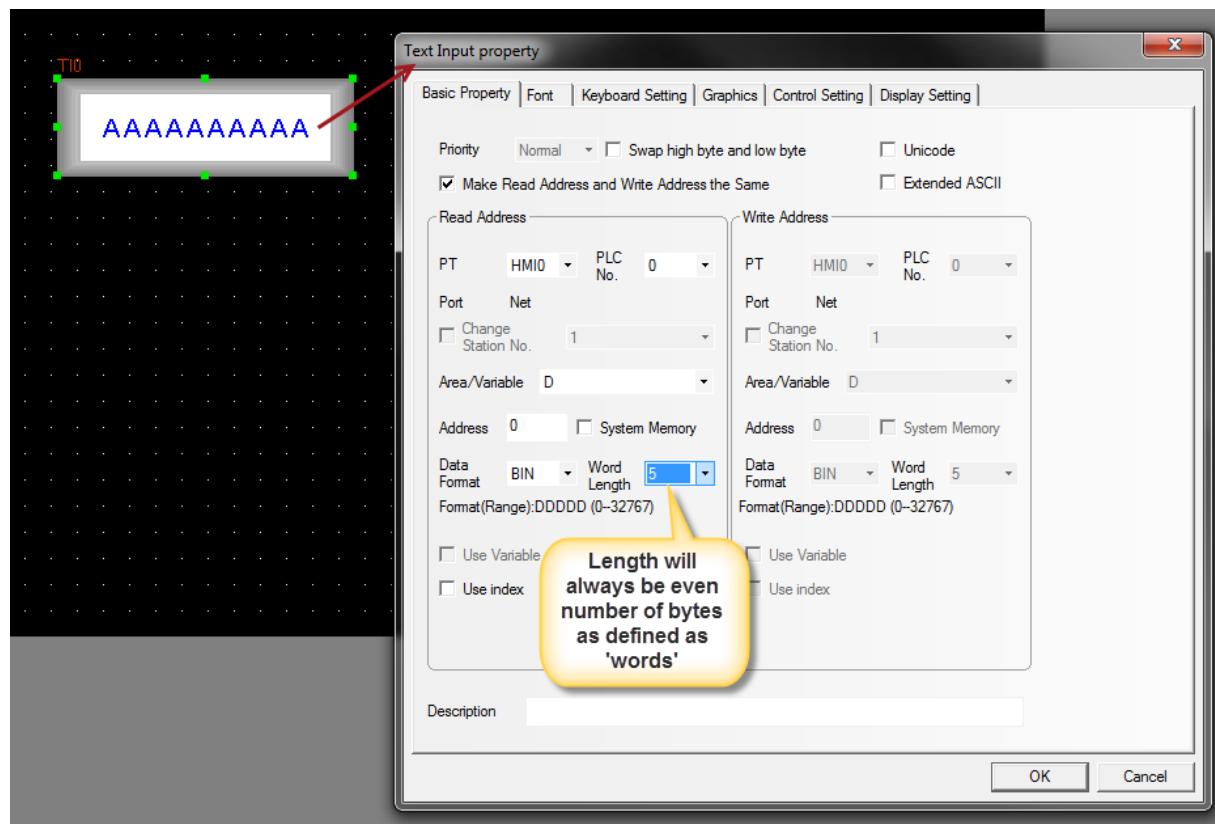
The NB 'Text Display' and 'Text Input' 'parts' enable a user to display and enter STRINGs. However, the NB HMI will always pad any remaining characters with the space character (ASCII - 0x20, or 32 Decimal).

The Sysmac NJ terminates its strings with a NULL (ASCII 0x00) character. This is the 'c' standard of termination for STRINGs.

The length of an NB String can only be defined as a number of words in length – meaning that the length of the data will always be an even number of characters.

If the Sysmac NJ is made to exactly the same number of characters as the NB, then it will fail to read correctly in the NJ. This is because there will be a runtime fault due to there being no NULL terminator. Sysmac NJ must see a NULL to know where the STRING is terminated. Therefore always define the STRING in the Sysmac NJ one byte longer than defined in the NB.

For example In NB – a Text Input is defined as 5 words (10 characters in length).

Using STRINGs on NB HMI with Sysmac NJ

In the NJ, define the length of the STRING one character longer than in NB.

Name	Data Type	Initial Value	AT	Retain
LocalString	STRING[11]			☐
NbHmiString	STRING[11]		%D0	☑
NbHmiStringAsBytes	ARRAY[0..49] OF BYTE		%D0	☑

NbHmiString is defined AT D0 (%D0) and length 11 characters. So code that works with the STRING entered on the NB HMI will always be terminated correctly (assuming that no other data butts up to the end of the data in %D0).

Conclusion

When using STRINGs/Text with NJ/NB, always make the NJ STRING at least one character longer than the NB definition.

Date: November 2014
NB-Designer V1.34
Sysmac Studio V1.11
NJ Firmware V1.09