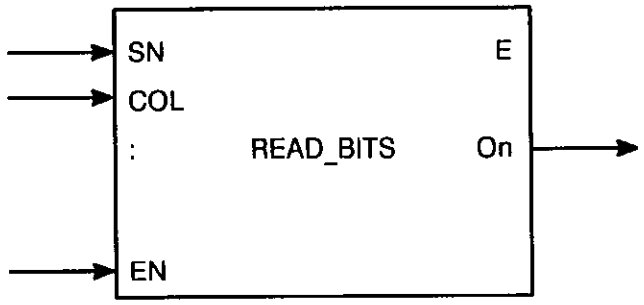
23.0 READ BITS

This function can be used in AutoMax Control Block tasks only. It cannot be used in UDC Control Block tasks.



Maximum 'n' = 8

Function

This function reads data from a column in the specified BOOLEAN data structure.

Program Statement

```
CALL READ_BITS(STRUCTURE_NAME=structure_name@,          &
    COLUMN=column%, ENABLE=enable@,                     &
    ERROR=error@,                                       &
    OUTPUT1=output1%,...OUTPUTn=outputn%)
```

Inputs

SN (STRUCTURE_NAME) =

Name of the BOOLEAN data structure where data is to be read from. This parameter must be specified by name only (literal value not accepted). The data structure name is limited to a maximum length of 15 characters and must be type BOOLEAN. The specified data structure must be created by a control block within the task. Refer to the SHIFT_BITS block for an example of a control block that creates a BOOLEAN data structure.

COL (COLUMN) =

Selects a column within the specified BOOLEAN data structure, type INTEGER. This parameter is required. The columns are numbered from 0 to MCOL - 1, where MCOL is equal to the number of columns (depth) that were defined by the control block that created the data structure.

EN (ENABLE) =

Enable input, type BOOLEAN. This parameter is required. The state(s) read from the column specified by COLUMN are written to the output(s) when ENABLE is TRUE. If this parameter is FALSE, the state(s) at the outputs will remain unchanged from the previous scan.

Outputs

E (ERROR) =

Error output, type BOOLEAN. This is an optional parameter. The output is TRUE if the value of COLUMN selects a non-existent column for the specified data structure. Valid values for COLUMN range from 0 to MCOL - 1. See COLUMN above.

On (OUTPUTn) =

Data output n, type BOOLEAN. The outputs can be specified in any order.

Notes

1. The READ_BITS block must reference a BOOLEAN data structure that was created by a control block within this task. A minimum of one output must be programmed. The order in which the outputs (output1...output8) are programmed is not important. However, all of the outputs programmed by the READ_BITS block must also be defined by the control block that created the data structure. If these requirements are not met, a compilation error will occur.
2. If the value of COLUMN selects a non-existent column, the output ERROR is set TRUE, the output (s) of the READ_BITS block are set FALSE, and the appropriate run time error is logged.
3. When ENABLE is FALSE, the output(s) are not updated. Therefore if an output is forced and then unforced, it will not return to its original value.