

GETBIT Function

GETBIT T22

DESCRIPTION

The GETBIT function treats a group of adjacent data table locations as a one dimensional array of bits. This block of tables is referred to as a GROUP. The elements within an Array are referenced by a bit number, commencing at bit 0.

The GETBIT function provides OFF(0) or ON(-1) as output depending on the state of a bit in the input Group.

FEATURES

- Input Group location specified by the user
- User programmable Group length

SPECIFICATION

Control language:-

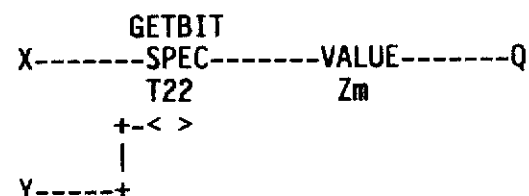


Table 1 Program rung data

Sym	Location	Use	Range
X	Rung input (upper branch)	Internal GEM 80 address of 1st input Group	Address of data table location obtained by LOCATE
Y	Rung input (lower branch)	Position of bit to be extracted	0 to 16*GL-1
Zm	Value location	Start of parameter list (2 locations)	Any write-enabled table usable by special function
Q	Rung output	Value of selected bit	-1 for no errors

Table 2 Value data

Sym	Location	Use	Range
EC	Zm	Error code	See table 3
GL	Zm + 1	Group length	1 to 128 data table locations

Table 3 Fault conditions

Condition	Result Q	Code in Zm Numeric Value	States ON
Programming error. Group length invalid.	0	3	0 & 1
Programming error. Invalid Group address:- (a) Input Group not in table usable by special. (b) Input Group extends beyond end of data table area.	0	5	0 & 2
Programming error Start bit position not within Group.	0	33	0 & 5

APPLICATION NOTES

Extraction of state of a bit from a group defined by G100-G102.

```

      LOCATE      GETBIT
--<AND>--SPEC--VALUE--SPEC--VALUE--(OUT)
   0   S20   G100   T22   G0   G10
                        +<  >
                        |
--<AND>-----+
   G11

```

Initial values:-

G100 = @0002, G101 = @0000, G102 = @5A00
G1 = 3

To extract the state of G102.12 set G11 to 44. The outputs would then be:-

G0 = 0
G10 = -1



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