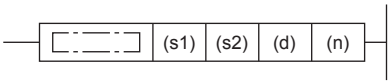
Subtracting 32-bit binary block data

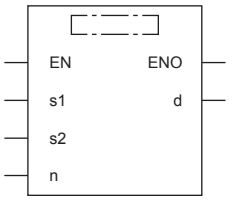
DBK-(P)(_U)

FX5S FX5UJ FX5U FX5UC

These instructions subtract (n) point(s) of 32-bit binary data from the device specified by (s1) and the (n) point(s) of 32-bit binary data from the device specified by (s2), and store the results of subtraction in the device specified by (d).

Ladder diagram	Structured text*1	
	ENO:=DBKMINUS(EN,s1,s2,n,d); ENO:=DBKMINUSP(EN,s1,s2,n,d);	ENO:=DBKMINUS_U(EN,s1,s2,n,d); ENO:=DBKMINUSP_U(EN,s1,s2,n,d);

FBD/LD



("DBKMINUS", "DBKMINUSP", "DBKMINUS_U", "DBKMINUSP_U" enters □.)

*1 Supported by engineering tool version "1.035M" and later.

Setting data

■Descriptions, ranges, and data types

Operand		Description	Range	Data type	Data type (label)
(s1)	DBK-(P)	Head device where the data from which another is to be subtracted is stored	-2147483648 to +2147483647	32-bit signed binary	ANY32_S
	DBK-(P)_U		0 to 4294967295	32-bit unsigned binary	ANY32_U
(s2)	DBK-(P)	Subtrahend data or the head device where the data to be subtracted from another is stored	-2147483648 to +2147483647	32-bit signed binary	ANY32_S
	DBK-(P)_U		0 to 4294967295	32-bit unsigned binary	ANY32_U
(d)	DBK-(P)	Head device for storing the operation result	—	32-bit signed binary	ANY32_S
	DBK-(P)_U		—	32-bit unsigned binary	ANY32_U
(n)		Number of subtraction data	0 to 65535	16-bit unsigned binary	ANY16
EN		Execution condition	—	Bit	BOOL
ENO		Execution result	—	Bit	BOOL

■Applicable devices

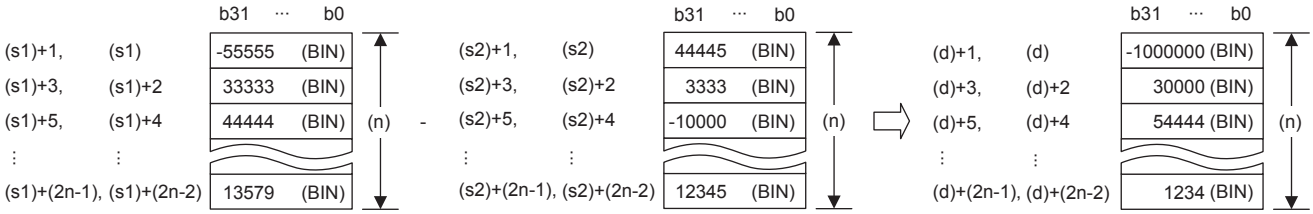
Operand	Bit	Word			Double word		Indirect specification	Constant			Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(s1)	—	○	—	—	○	—	○	—	—	—	—
(s2)	—	○	—	—	○	—	○	○	—	—	—
(d)	—	○	—	—	○	—	○	—	—	—	—
(n)	○	○	○	○	—	—	○	○	—	—	—

Processing details

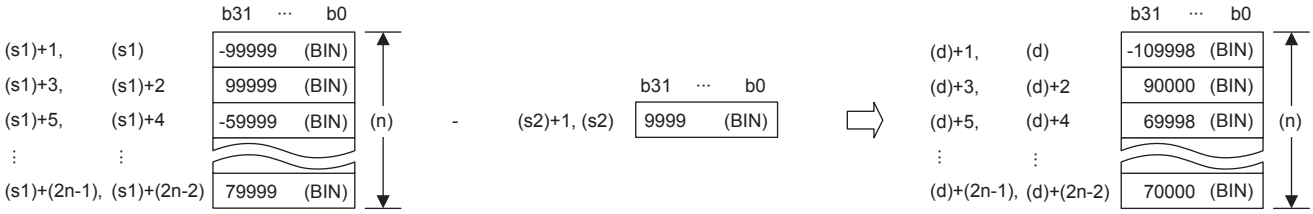
- These instructions subtract (n) point(s) of 32-bit binary data from the device specified by (s1) and the (n) point(s) of 32-bit binary data from the device specified by (s2), and store the results of subtraction in the device specified by (d).
- Block subtraction is performed in 32-bit units.

Ex.

If device is specified for (s2) (signed)



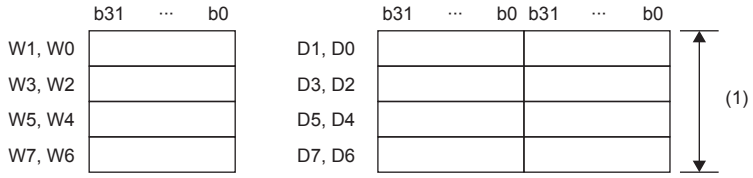
If constant is specified for (s2) (signed)



- Operation is enabled when (s1) or (s2) have been specified by same device as (d) (perfect match). An error occurs if the device range of (n) point(s) from (s1) or (s2) partially matches (overlaps) the device range of (n) point(s) from (d).

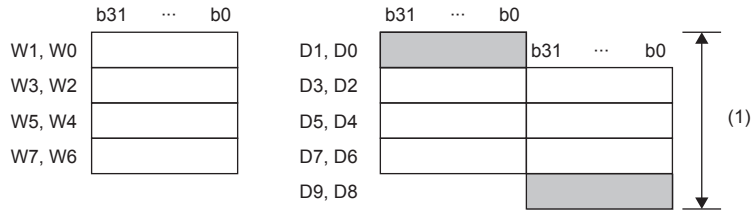
Ex.

If 4 points of the device from (s2) and (d) match



(1)Because it is a perfect match, operation is possible.

If 4 points of the device from (s2), (d) match partially



(1)An operation error occurs if they partially match.

- If the value specified for (n) is 0, processing is not performed.
- If an underflow or overflow occurs for operation result, the result will be as follows. In this case, the carry flag (SM700) does not turn ON.

If signed is specified	If unsigned is specified
K2147483647 (7FFFFFFFH) - K-2 (FFFFFFFEH) → K-2147483647 (80000001H) K-2147483647 (80000001H) - K2 (00000002H) → K2147483647 (7FFFFFFFH)	K0 (00000000H) - K1 (00000001H) → K4294967295 (FFFFFFFFH)

Operation error

Error code (SD0/SD8067)	Description
2820H	The range of (n) point(s) of data starting from the device specified by (s1), (s2), or (d) exceed the corresponding device range.
2821H	The device range for (n) point(s) beginning from (s1) overlaps with that of (n) point(s) starting from (d). (Does not apply when same device has been specified for (s1) and (d).)
	The device range for (n) point(s) beginning from (s2) overlaps with that of (n) point(s) starting from (d). (Does not apply when same device has been specified for (s2) and (d).)