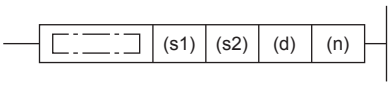
Comparing 32-bit binary block data

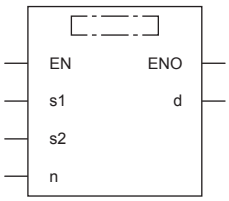
DBKCMP□(P)(_U)

FX5S FX5UJ FX5U FX5UC

These instructions perform a comparison operation between the (n) point(s) of 32-bit binary data starting from the device specified by (s1) and the (n) point(s) of 32-bit binary data starting from the device specified by (s2), and store the operation result in the device specified by (d).

Ladder diagram	Structured text*1	
	ENO:=DBKCMP_□(EN,s1,s2,n,d); ENO:=DBKCMP_□P(EN,s1,s2,n,d);	ENO:=DBKCMP_□_U(EN,s1,s2,n,d); ENO:=DBKCMP_□P_U(EN,s1,s2,n,d);
("DBKCMP=(P)(_U)", "DBKCMP<>(P)(_U)", "DBKCMP>(P)(_U)", "DBKCMP<=(P)(_U)", "DBKCMP<(P)(_U)", "DBKCMP>=(P)(_U)" enters □.)	("EQ", "NE", "GT", "LE", "LT", "GE" enters □.)*2	

FBD/LD



("DBKCMP_EQ(P)(_U)", "DBKCMP_NE(P)(_U)", "DBKCMP_GT(P)(_U)", "DBKCMP_LE(P)(_U)", "DBKCMP_LT(P)(_U)", "DBKCMP_GE(P)(_U)" enters □.)*2

*1 Supported by engineering tool version "1.035M" and later.
*2 EQ is =, NE is <>, GT is >, LE is <=, LT is <, and GE is >=.

Setting data

■Descriptions, ranges, and data types

Operand		Description	Range	Data type	Data type (label)
(s1)	DBKCMP□(P)	Comparison data or the head device where the comparison data is stored	-2147483648 to +2147483647	32-bit signed binary	ANY32_S
	DBKCMP□(P)_U		0 to 4294967295	32-bit unsigned binary	ANY32_U
(s2)	DBKCMP□(P)	Head device where the comparison source data is stored	—	32-bit signed binary	ANY32_S
	DBKCMP□(P)_U		—	32-bit unsigned binary	ANY32_U
(d)		Head device storing comparison result	—	Bit	ANY_BOOL
(n)		Number of data to be compared	0 to 65535	16-bit unsigned binary	ANY16
EN		Execution condition	—	Bit	BOOL
ENO		Execution result	—	Bit	BOOL

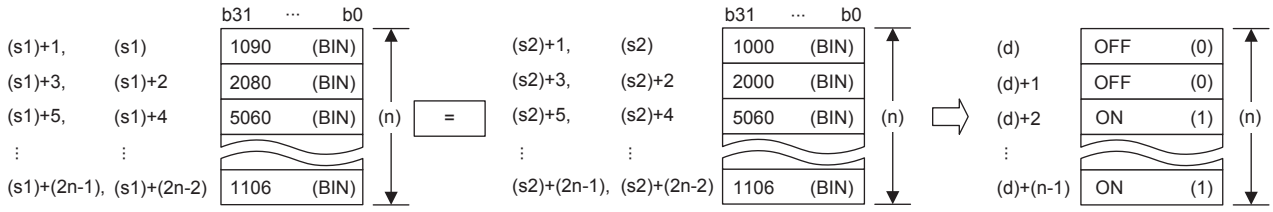
■Applicable devices

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)	○	○*1	—	—	—	—	—	—	—	—	—
(n)	○	○	○	○	—	—	○	○	—	—	—

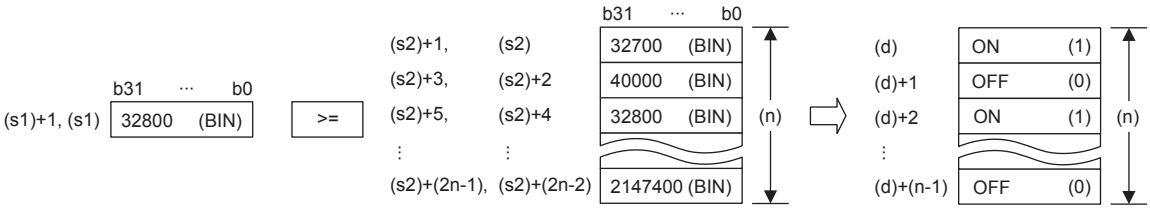
*1 T, ST, and C cannot be used.

Processing details

- These instructions perform a comparison operation between (n) point(s) of 32-bit binary data starting from the device specified by (s1) and (n) point(s) of 32-bit binary data starting from the device specified by (s2), and store the comparison result in (n) point(s) of data starting from the device specified by (d).
- The relevant devices of (n) point(s) of data starting from the device specified by (d) are turned ON when the comparison conditions are met and turned OFF when the comparison conditions are not met.



- Comparison operation is performed in units of 32 bits.
- A constant can be directly specified in (s1).



- (d) is specified outside the device range of (n) point(s) of data starting from the one specified by (s1) and outside the device range of (n) point(s) of data starting from the one specified by (s2).
- The following table lists the comparison operation results of each instruction.

Instruction symbol	Condition	Result
DBKCMP=(P)(_U)	(s1)=(s2)	On(1)
DBKCMP<>(P)(_U)	(s1)≠(s2)	
DBKCMP>(P)(_U)	(s1)>(s2)	
DBKCMP<=(P)(_U)	(s1)≤(s2)	
DBKCMP<(P)(_U)	(s1)<(s2)	
DBKCMP>=(P)(_U)	(s1)≥(s2)	
DBKCMP=(P)(_U)	(s1)≠(s2)	Off(0)
DBKCMP<>(P)(_U)	(s1)=(s2)	
DBKCMP>(P)(_U)	(s1)≤(s2)	
DBKCMP<=(P)(_U)	(s1)>(s2)	
DBKCMP<(P)(_U)	(s1)≥(s2)	
DBKCMP>=(P)(_U)	(s1)<(s2)	

- When the comparison operation result is all ON (1) in all (n) point(s) starting from (d), SM704 and SM8090 (block comparison signal) turns ON.

Precautions

If a 32-bit counter (high-speed counter included) is used, make sure to compare using the 32-bit operation (DBKCMP=, DBKCMP>, DBKCMP<, etc.).

Operation error

Error code (SD0/SD8067)	Description
2820H	The (n) × 2 points of data starting from the device specified by (s1) and (s2) or the (n) point(s) of data starting from the device specified by (d) exceeds said device.
2821H	When (d) specifies "D□.b", the (n) point(s) of data starting from the device specified by (d) and the device range of the (n) × 2 points of data starting from the device specified by (s1) overlap.
	When (d) specifies "D□.b", the (n) point(s) of data starting from the device specified by (d) and the device range of the (n) × 2 points of data starting from the device specified by (s2) overlap.

Point

When bit is specified for word device, devices other than the bit-specified word devices where operation result is stored will not change.