

Comparing 16-bit binary block data

BKCMPP(P)(U)

FX5S

FX5UJ

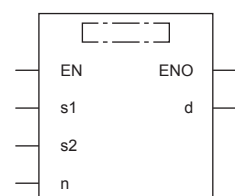
FX5U

FX5UC

These instructions perform a comparison operation between (n) point(s) of 16-bit binary data in the device starting from the one specified by (s1) and (n) point(s) of 16-bit binary data in the device starting from the one specified by (s2), and store the operation result in the device specified by (d).

Ladder diagram	Structured text ^{*1}
<p>("BKCMPP=(P)(U)", "BKCMPP<=>(P)(U)", "BKCMPP>(P)(U)", "BKCMPP<=(P)(U)", "BKCMPP<(P)(U)", "BKCMPP>=(P)(U)" enters □.)</p>	<p>ENO:=BKCMPP_□(EN,s1,s2,n,d); ENO:=BKCMPP_□_U(EN,s1,s2,n,d);</p> <p>ENO:=BKCMPP_□P(EN,s1,s2,n,d); ENO:=BKCMPP_□P_U(EN,s1,s2,n,d);</p> <p>("EQ", "NE", "GT", "LE", "LT", "GE" enters □.)^{*2}</p>

FBD/LD



("BKCMPP_EQ(P)(U)", "BKCMPP_NE(P)(U)", "BKCMPP_GT(P)(U)", "BKCMPP_LE(P)(U)", "BKCMPP_LT(P)(U)", "BKCMPP_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)	BKCMPP(P)	-32768 to +32767	16-bit signed binary	ANY16_S
	BKCMPP(P)_U	0 to 65535	16-bit unsigned binary	ANY16_U
(s2)	BKCMPP(P)	—	16-bit signed binary	ANY16_S
	BKCMPP(P)_U	—	16-bit unsigned binary	ANY16_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

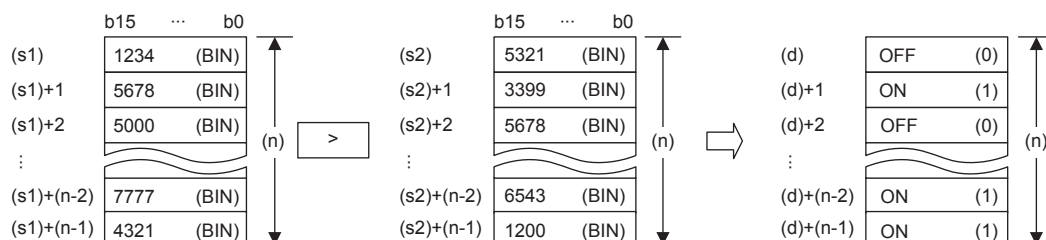
■Applicable devices

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)	○	○	○	○	—	—	○	○	—	—	—

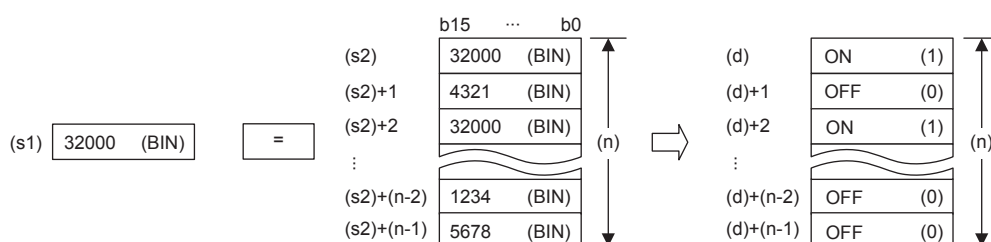
^{*1} T, ST, and C cannot be used.

Processing details

- These instructions perform a comparison operation between (n) point(s) of 16-bit binary data in the device starting from the one specified by (s1) and (n) point(s) of 16-bit binary data in the device starting from the one 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 16 bits.
- A constant can be directly specified in (s1).



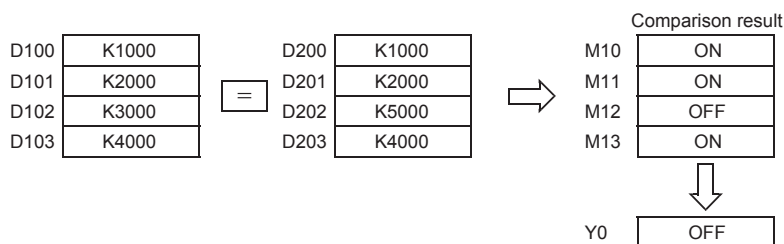
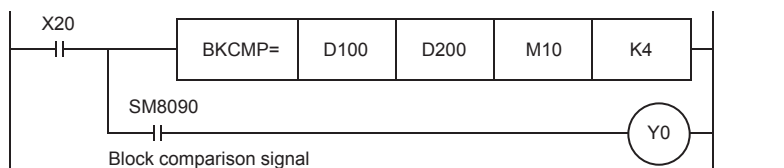
- The following table lists the comparison operation results of each instruction.

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

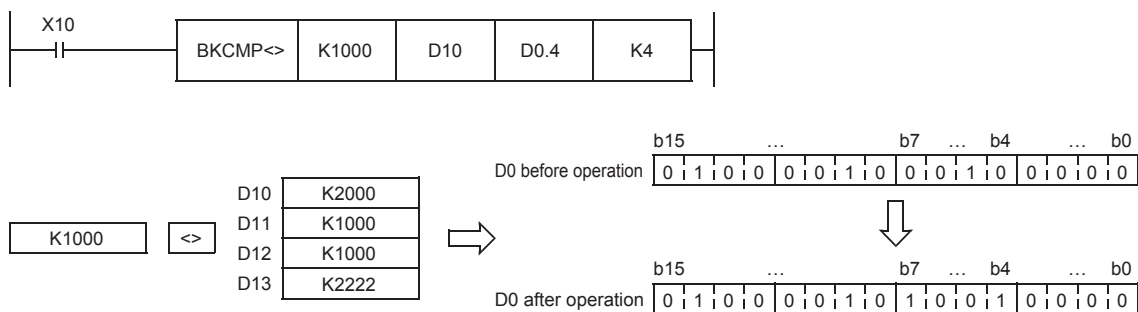
Program example

- In the program shown below, four 16-bit binary data starting from D100 are compared with four 16-bit binary data starting from D200 by BKCMP= instruction when X20 is set to ON, and the comparison result is stored in four points starting from M10. When the comparison result is "ON (1)" in all of the four points starting from M10, SM8090 turns ON and Y0 is set to ON.



(When all of M10 to M13 are ON, Y0 is set to ON.)

- In the program shown below, the constant K1000 is compared with four data starting from D10 when X10 is set to ON, and the comparison result is stored in b4 to b7 of D0.



Operation error

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