12 String instructions

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LEN/string length detection

LEN(P)

After detecting the length of the character string specified in (s), store it after the device number specified in (d).

The data from the device number designated in (s) to the device number of 00H is treated as a character string.

-[LEN (s) (d)]

Content, range and data type

Paramet	er	Content		Rang	ge		Data ty	ре	Da	ata type (l	abel)	
(s)		String or sta of the device string	art numbe ce storing t	r - :he			String		1A	NYSTRING	à_SINGLE	Ξ
(d)		Store the d number of t character s	evice the detecte string lengt	- ed h			Signed	BIN 16 bit	1A	NY16		
Devic	e used											
Instructi	d Paramete Devi	ces								Offset	Pulse	
										mod	lificatecute	ension
	KnX	KnY	KnM	KnS	т	С	D	R	SD	[D]	ХХР	
LEN	Paramete ● 1	•	•	•	•	•	•	•	•	•	•	
	Parameter 2	•	•	•	•	•	•	•	•	•	•	

Features

After detecting the length of the character string specified in (s), store it after the device number specified in (d).

The data from the device number specified in (s) to the stored device number of 00H is treated as a character string.



4086H

(d) When using offset, the offset address exceeds the device range

Example



For example, the above Circuit program

Use the asc instruction to write the string abcdef to the address starting from R0.

Then use the LEN instruction to determine the length. At this time, D0 will display 6.

LEFT/Extract from the left side of the string

LEFT(P)

For the character string data stored after the device number specified in (s), the data of (N) characters starting from the left side of the character string (the beginning of the character string) is stored in the device specified in (d) After numbering.

-[LEFT (s) (d) (N)]

Content, range and data type

Parameter Content					Range	e		Data t	уре		Data type (label)			
(s)	s) String or start number of the device storing t string d) The start number of th							String			ANYS	STRING_S	SINGLE	
(d)		The sta device t (N) cha the left o	rt numbe hat store racter st of (s)	er of the es the ring from	-			String			ANYS	TRING_	SINGLE	
(N)		Number extracte	r of chara ed	acters	1 to 40	00		Signed	3 BIN 16	bit	ANY1	6		
Devi	ce used													
Instruc	tRarame Deervice	s										Offset	Pulse	
												mod	lificaetxioteension	
	KnX	KnY	KnM	KnS	т	С	D	R	SD	К	н	[D]	ХХР	
LEFT	Paramet ● 1	•	•	•	•	•	•	•	•			•	•	
	Parameter 2	•	•	•	•	•	•	•	•			•	•	
	Parameter 3	•	•	•	•	•	•	•	•	•	•	•	•	

Features

For the character string data stored after the device number specified in (s), the data of (N) characters starting from the left side of the character string (the beginning of the character string) is stored in the device specified in (d) After numbering.



The character string specified in (s) is the data from the specified device to the position where "00H" is first detected in byte units.

(N)=7:



(1): Ascall code for 7th character

The final NULL code (00H) representing the character string will be automatically appended to the end of the character string data.

If the number of extracted characters is an odd number, "00H" is stored in the upper byte of the device storing the final character. If the number of extracted characters is an even number, "0000H" is stored in the device after the device storing the final character.

When the number of characters specified in (N) is 0, the NULL code (00H) is stored in (d).

#Note:

Error code

When handling character codes other than ASCII codes, pay attention to the following points.

#The number of characters is handled in byte units (8 bits). Therefore, like the shifted JIS code, the character code of 1 character is represented by 2 bytes, and the number of characters of 1 character is "2".

#When extracting a character string from a character string containing a character code representing one character in 2 bytes, such as the shift JIS code, the number of characters to be extracted should be considered in the unit of the character code of one character. If only 1 byte of the 2-byte character code is extracted, it will not be the expected character code, so be careful.

Content
(s) The read address exceeds the device range
(s) The length of the read string exceeds, and the continuous length of the string exceeds 400 characters
(s) When reading a character string, the maximum range of the device is read, but 00H is not found and the end



Example



From the "a b c d e f" starting from D0, take out 5 characters from the left to the R0 type. The character string of R0 is "a b c d e".

00 ar 1																	
RO	1	0	0	0	0	1	1	0	0	1	0	0	0	1	1	0	ab
R1	1	1	0	0	0	1	1	0	0	0	1	0	0	1	1	0	cd
R2	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	е.
R3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

RIGHT/Extract from the right side of the string

RIGHT(P)

For the string data stored after the device number specified in (s), the data of (N) characters starting from the right side of the string (the end of the string) is stored in the device number specified in (d) after.

-[RIGHT (s) (d) (N)]

Param	eter	er Content						Data	type		Data type (label)			
(s)	s) String or start n of the device sto string I) The start number				-			Strin	g		ANY	STRING_	SINGLE	
(d)		The st device (N) ch the rig	art numb that stor aracter s ht of (s)	er of the res the tring fron	- n			Strin	g		ANY	STRING_	SINGLE	
(N)		Numb extrac	er of cha ted	racters	1 to 4	400		Signe	ed BIN 10	6 bit	ANY	16		
Devi	ce used													
Instruc	tRarameteevic	e										Offse mo	t Pulse dific ætxip nansio	on
	KnX	KnY	KnM	KnS	т	С	D	R	SD	к	н	[D]	ХХР	
RIGHT	Paramet ● 1	•	•	•	•	•	•	•	•					
	Parameter 2	•	•	•	•	•	•	•	•					
	Parameter 3	•	•	•	•	•	•	•	•	•	•			
Feat	ures													

For the string data stored after the device number specified in (s), the data of (N) characters starting from the right side of the string (the end of the string) is stored in the device number specified in (d) after.



The character string specified in (s) is the data from the specified device to the position where "00H" is first detected in byte units.

(N)=5:



(1): 第5字符的ASCII代码

The final NULL code (00H) representing the character string will be automatically appended to the end of the character string data.

If the number of extracted characters is an odd number, "00H" is stored in the upper byte of the device storing the final character. If the number of extracted characters is an even number, "0000H" is stored in the device after the device storing the final character.

When the number of characters specified in (N) is 0, the NULL code (00H) is stored in (d).

#Note:

When handling character codes other than ASCII codes, pay attention to the following points.

#The number of characters is handled in byte units (8 bits). Therefore, like the shifted JIS code, the character code of 1 character is represented by 2 bytes, and the number of characters of 1 character is "2".

#When extracting a character string from a character string containing a character code representing one character in 2 bytes, such as the shift JIS code, the number of characters to be extracted should be considered in the unit of the character code of one character. If only 1 byte of the 2-byte character code is extracted, it will not be the expected character code, so be careful.

Error code



Example



Get 3 characters "890" from the right in the string "1234567890" and store them in R0

RO	0	0	0	1	1	1	0	0	1	0	0	1	1	1	0	0	89
R1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.

Any extraction from MIDR/string

MIDR(P)

Store the data at any position in the character string data after the device number specified in (d).

-[MIDR (s1) (d) (s2)]

Parame	ter	C	ontent		Ran	ge		Data ty	ре	D	ata type (la	bel)
(s1)		St of st	ring or sta the devic ring	art numbei e storing t	, ₋ he			String		A	NYSTRING <u></u>	_SINGLE
(d)		St de ch th	art numb evice stori aracter s e operatio	er of the ing the tring data on result	- of			String		A	NYSTRING <u></u>	_SINGLE
(s2)		Tł de sta ar ch	ne start nu evice that art charao nd the nur aracters	umber of the stores the cter position nber of	ne - n			Signed	BIN 16 bit	A	NY16_ARR	ΑY
		th (si ch	(s2)+0: th e starting 2)+1: the aracters	ne position character number of is signed	of							
Devic	e used											
Instruct	i d aramete	Device	6								Offset modi	Pulse fica técut ension
		KnX	KnY	KnM	KnS	Т	С	D	R	SD	[D]	ХХР
MIDR	Paramete 1	•	•	•	•	•	٠	•	٠	•	•	•



Features

For the character string data stored after the device number specified in (s1), the data of the character specified in (s2)+1 starting from the specified position in (s2) is stored to the device number specified in (d) and later .



- 1. : The position of the 5th character (S2).
- 2. : ASCII code (S2)+1 of the 5th character.

The character string specified in (s1) is the data from the specified device to the position where "00H" is first detected in byte units.

The final NULL code (00H) representing the character string will be automatically appended to the end of the character string data.

If the number of extracted characters "(s2)+1" is an odd number, "00H" is stored in the upper byte of the device storing the final character. If the number of extracted characters "(s2)+1" is an even number, "0000H" is stored in the device after the device storing the final character.

(s2) If the number of characters specified in +1 is 0, no processing is performed.

When the number of characters specified in (s2)+1 is -1, the data up to the final character data specified in (s1) is stored in the device specified in (d) and later.



(1): The position of the 5th character (S2).

#Note:

When handling character codes other than ASCII codes, pay attention to the following points.

#The number of characters is handled in byte units (8 bits). Therefore, like the shifted JIS code, the character code of 1 character is represented by 2 bytes, and the number of characters of 1 character is "2".

#When extracting a character string from a character string containing a character code representing one character in 2 bytes, such as the shift JIS code, the number of characters to be extracted should be considered in the unit of the character code of one character. If only 1 byte of the 2-byte character code is extracted, it will not be the expected character code, so be careful.

Error code

Error code	Content
4085H	(s1), (s2) The read address exceeds the device range
408AH	(s1) The length of the read string exceeds, and the continuous length of the string exceeds 400 characters
408BH	(s1) When reading a character string, the maximum range of the device is read, but 00H is not found.
4084H	(s2) When the value of +1 is -2 (including -2) or less.
	When the value of (s2) exceeds the number of characters in (s1).
	When the value of (s2) is negative.

When the value of $(s_2)+1$ exceeds the number of characters of (s_1) .

When the value of (s2) and (s2) + 1 after the addition operation exceeds the number of characters of (s1).

(d) The write address exceeds the device range

4086H

Example

SM102 {ASC 0 123456 D20 SM102 {mov 10 K2 D5 4 1 {mov KЗ D6 M1 MIDR D20 26 RO D5

Get three characters "234" from the second character of the string "123456" into R0.

DO MIT																	
RO	0	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	23
R1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	4.

\$MOV/ string transfer

\$MOV(P)

Transfer the character string data specified in (s) to the device number specified in (d) and later.

-[\$MOV (s) (d)]

Parameter	Content	Range	Data type	Data type (label)
(s)	Transmission string (maximum 255 characters) or the start number of the device storing the string	-	String	ANYSTRING_SINGLE

(d)		The start n the device transferred string	umber of storing the I character	-			String		IA	NYSTRING	G_SINGLE	
Devic	e used											
Instruct	ionarametoDevi	се								Offset	Pulse	
										moo	difica técop an	sion
	KnX	KnY	KnM	KnS	т	С	D	R	SD	[D]	XXP	
\$MOV	Paramete● 1	•	•	•	•	•	٠	•	•	•	•	
	Parameter 2	•	•	•	•	•	•	•	•	•	•	

Features

Transfer the character string data specified in (s) to the device number specified in (d) and later. In the transmission of a character string, the character string enclosed by the "" (double quotation marks) specified in (s) or the character string starting from the device number to the device number storing 00H is transmitted once.



Even if the device range (s) to (s)+n storing the transferred character string data overlaps with the device range (d) to (d)+n storing the transferred character string data, it will be normal To process. For example, when the character string stored in D10 to D13 is transferred to D11 to D14, the situation is as follows.

	b15 b8	b7 b0			b15 b8	b7 b0	_	
D10	32H(2)	31H(1)	D	10	32H(2)	31H(1)]	(1)
D11	34H(4)	33H(3)	D	11	32H(2)	31H(1)		
D12	36H(6)	35H(5)		12	34H(4)	33H(3)		
D13	000	HOC	D	13	36H(6)	35H(5)		
D14			[D	14	00	00H		
(1):	(1): 直接变为传送前的字符串。							

(1): It directly becomes the character string before transmission.

When 00H is stored in the low byte of (s)+n, both the high byte and low byte of (d)+n will store 00H.



- (1): The upper byte cannot be transmitted.
- (2): It directly becomes the character string before transmission.
- (3): The upper byte automatically stores 00H.

Error code

Error code

4085H

408AH

408BH

4086H

Example

Content

(s) The read address exceeds the device range

(s) The length of the read string exceeds, and the continuous length of the string exceeds 400 characters

(s) When reading a character string, the maximum range of the device is read, but 00H is not found and the end

(d) The write address exceeds the device range



Copy the string "a b c d e" in D0 to R0.

RO	1	0	0	0	0	1	1	0	0	1	0	0	0	1	1	0	ab
R1	1	1	0	0	0	1	1	0	0	0	1	0	0	1	1	0	cd
R2	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	e.

Arbitrary replacement in MIDW/string

MIDW(P)

For the string data stored after the device number specified in (s1), the data of the character specified in (s2)+1 is stored in the string data stored after the device number specified in (d) After the position specified in (s2).

-[MIDW (s1) (d) (s2)]

Parameter	Content	Range	Data type	Data type (label)
(s1)	String or start number of the device storing the string	-	String	ANYSTRING_SINGLE
(d)	Start number of the device storing the character string data of the operation result	-	String	ANYSTRING_SINGLE
(s2)	The start number of the device that stores the start character position and the number of characters	-	Signed BIN 16 bit	ANY16_ARRAY
	(s2)+0: the position of the starting character, (s2)+1: the number of characters is signed			
Device used				

Instruc	tioParameteDevice)								Offset	Pulse	
										mod	ifica teo uter	nsion
	KnX	KnY	KnM	KnS	т	С	D	R	SD	[D]	ХХР	
MIDW	Paramete● 1	•	•	•	•	•	•	٠	•	•	•	
	Parameter 2	•	•	•	•	•	•	•	•	•	•	
	Paramete● 3	•	•	•	•	•	•	•	•	•	•	

Features

For the string data stored after the device number specified in (s1), the data of the character specified in (s2)+1 is stored in the string data stored after the device number specified in (d) After the position specified in (s2).

 b15-----b8b7-----b0

 31H(1)
 30H(0)

 33H(3)
 32H(2)

 35H(5)
 34H(4)

 37H(7)
 36H(6)

 00H
 38H(8)

 "012345678"

3	Position from the left end in the character string stored in (D •) and later
6	Number of characters from the left end
	and later

Before	execution					
<u>b15b8</u>	b7b0					
42H(B)	41H(A)					
44H(D)	43H(C)					
46H(F)	45H(E)					
48H(H)	47H(G)					
00H	49H(I)					
"ABCDEFGHI"						
After ex	ecution					

b15b8	b7b0

42H(B)	41H(A)				
31H(1)	30H(0)				
33H(3)	32H(2)				
35H(5)	34H(4)				
00H	49H(I)				
"AB012345I"					

• The character string specified in (s1) or (d) is the data from the specified device to the position where "00H" is first detected in byte units.

• The final NULL code (00H) representing the character string will be automatically appended to the end of the character string data.

- If the number of characters specified in (s2)+1 is 0, no processing is performed.
- If the number of characters specified in (s2)+1 exceeds the last character of the character string data specified in (d), the data up to the last character of (d) is stored.



When the number of characters specified in $(s_2)+1$ is -1, the data up to the final character data specified in (s_1) is stored in the device specified in (d) and later.



#Note:

- When handling character codes other than ASCII codes, pay attention to the following points.
- The number of characters is handled in byte units (8 bits). Therefore, like the shifted JIS code, the character code of 1 character is represented by 2 bytes, and the number of characters of 1 character is "2".
- When extracting a character string from a character string containing a character code representing one character in 2 bytes, such as the shift JIS code, the number of characters to be extracted should be

considered in the unit of the character code of one character. If only 1 byte of the 2-byte character code is extracted, it will not be the expected character code, so be careful.

Error code

Error code	Content
4085H	(s1) (s2) (d) The read address exceeds the device range
408AH	(s1) (d) The length of the read string exceeds, and the continuous length of the string exceeds 400 characters
408BH	(s1) (d) When reading a character string, the maximum range of the device is read, but 00H is not found.
4084H	(s2) When the value of +1 is -2 (including -2) or less.
	When the value of (s2) exceeds the number of characters in (d).
	When the value of (s2) is negative.

When the value of (s2)+1 exceeds the number of characters of (s1).

(d) The write address exceeds the device range

4086H

Example



Replace the three-character-length characters starting with the second character in the character string "q w e r y" stored in R0 with the first three characters in D20.

The result of R0 is "q123y".

RO	1	0	0	0	1	1	1	0	1	0	0	0	1	1	0	0	q1
R1	0	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	23
R2	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	у.

STR/BIN 16-bit data → character string conversion

STR(P)

The BIN 16-bit data specified in (s2) is converted into a character string after a decimal point is added to the position specified in (s1), and stored in the device number specified in (d) or later.

-[STR (s1) (s2) (d)]

Parameter	Content	Range	Data type	Data type (label)
(s1)	The start number of the device that stores the number of digits of the converted value	-	Signed BIN 16 bit	ANY16_S_ARRAY
(s2)	Converted BIN data	-32768 to +32767	Signed BIN 16 bit	ANY16_S



Features

The BIN 16-bit data specified in (s2) is converted into a character string after a decimal point is added to the position specified in (s1), and stored in the device number specified in (d) or later.



All digits that can be specified in (s1) are 2 to 8 digits.

The number of decimal places that can be specified in (s1)+1 is 0 to 5 digits. However, the setting should satisfy the condition that the number of decimal places \leq (all digits-3).

The converted character string data will be stored in the device numbers after (d) as follows.

• In the sign, BIN 16-bit data will store 20H (blank) when it is positive, and 2DH (---) when it is negative.

• When the number of decimal places is set to other than 0, 2EH(.) is automatically stored in the specified digit + 1 digit. When the decimal place is 0, 2EH(.) is not stored.



(1): Number of decimal places



(1): Number of decimal places

(2): Automatically attach

If the value of the decimal place is greater than the number of digits of the BIN 16-bit data, 0 is automatically appended and converted to "0.***" right-aligned.



Automatically attach

(1): Automatically attach

In the value of all digits, excluding the sign, and if the number of digits after the decimal point is greater than the number of BIN 16-bit data, 20H (blank) is stored between the sign and the value. If the digit of BIN 16-bit data is larger, it will be in error status.



(1): Change to 20H (SP).

00H is automatically stored at the end of the converted character string.

• When the total digits are even digits, "0000H" is stored in the device after the device storing the final character. In the case of an odd number of digits, "00H" is stored in the upper byte (8 bits) of the device storing the final character.

Error code	
Error code	Content
4085H	(s1), (s2) The read address exceeds the device range
4084H	(s1) or (s1+1) parameter setting value is out of range. E.g:
	1. The value of (s1) is not in the range of 2-8
	2. The value of (s1+1) is not in the range of 0-5
	3. The value of $(s1+1)$ is greater than the value of $(s1)$ minus 3
	4. When (s1+1) is 0, the number of digits specified in (s1) is less than the number of BIN 16-bit data specified in (s2)+1.
	When $(s1+1)$ is not 0, the number of digits specified in $(s1)$ is less than the number of BIN 16-bit data specified in $(s2) + 2$.
	(The number of digits of $(s1)$ <the 16-bit="" <math="" a="" bin="" contain="" data="" does="" not="" number="" of="" sign="" that="">(s2) + the number of signs (+ or -) + the number of decimal points (.))</the>
4086H	(d) When using offset, the offset address exceeds the device range





After M8 is turned ON, according to the setting of all digits, 6 decimal places and 0 digits, it is converted into a character string "12345" (with a space before 1)

R10	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	1
R11	0	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	23
R12	0	0	1	0	1	1	0	0	1	0	1	0	1	1	0	0	45

DSTR/BIN 32-bit data → string conversion

DSTR(P)

The BIN 32-bit data specified in (s2) is converted into a character string after a decimal point is added to the position specified in (s1), and stored in the device number specified in (d) or later.

-[DSTR (s1) (s2) (d)]

Content, range and data type

Param	rameter Content					Rang	е		Dat	ta type			Data type (label)			
(s1)		Th dev nui cor	e start n vice tha mber of nverted	iumber t stores digits o value	of the the f the	-			Sig	ned BIN	I 16 bit		ANY16_	AY		
(s2)	s2) Converted BIN data			ta	-2147 21474	483648 183647	to	Sig	ned BIN	I 32 bit		ANY32_S				
(d)	d) Start number of the device storing the converted character string					-			Stri	ng			ANYST	RING_5	SINGLE	
Dev	ice used															
Instru	c Hər am @evs ic	е												Offse	et Pulse	
		14 . 14	14 . 14	K . 0	-	•	_	_	0.5					mo	odificentier	nsion
	KNX	кпү	кпм	KnS	I	C	D	к	SD	LC	HSC	ĸ	н	נטן	XXP	
DSTR	Parame e r 1	•	•	•	•	•	٠	•	•					•	•	
	Parame ⊕ r 2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Parameter 3				•	•	•	•	•					•	•		

Features

The BIN 32-bit data specified in (s2) is converted into a character string after a decimal point is added to the position specified in (s1), and stored in the device number specified in (d) or later. -654.321 is specified in S2.



b15b8	b7 b0	
ASCII code in "(Value specifying number of all digits - 1)"th digit	ASCII code indicating sign	
ASCII code in "(Value specifying number of all digits - 3)"th digit	ASCII code in "(Value specifying number of all digits - 2)"th digit	
ASCII code in "(Value specifying number of all digits - 5)"th digit	ASCII code in "(Value specifying number of all digits - 4)"th digit	1
ASCII code in "(Value specifying number of all digits - 7)"th digit	ASCII code in "(Value specifying number of all digits - 6)"th digit	
ASCII code in "(Value specifying number of all digits - 9)"th digit	ASCII code in "(Value specifying number of all digits - 8)"th digit	
ASCII code in "(Value specifying number of all digits -11)"th digit	ASCII code in "(Value specifying number of all digits -10)"th digit	
00H ▲	ASCII code in "(Value specifying number of all digits - 12)"th digit	L V
	00LL is sutemptical	h. at

 00H is automatically stored at end of a character string.



01508	D7 D0
36H(6)	2DH(-)
34H(4)	35H(5)
33H(3)	2EH(.)
31H(1)	32H(2)
000	ЮН

All digits that can be specified in (s1) are 2 to 13 digits.

The number of decimal places that can be specified in $(s_1)+1$ is 0 to 10 digits. However, the setting should satisfy the condition that the number of decimal places \leq (all digits-3).

The converted character string data will be stored in the device numbers after (d) as follows.

• In the sign, when the BIN 32-bit data is positive, 20H (blank) is stored, and when it is negative, 2DH (—) is stored.

• When the number of decimal places is set to other than 0, 2EH(.) is automatically stored in the specified digit + 1 digit. When the decimal place is 0, 2EH(.) is not stored.



(1): Number of decimal places



- 1. : Number of decimal places
- 2. : Automatically attach

• If the value of the decimal place is greater than the number of digits in the BIN 32-bit data, 0 is automatically added and converted to "0.***" right-justified.



(1): Automatically attach

• If the sign is excluded from the value of all digits, and the number of digits after the decimal point is greater than the number of BIN 32-bit data, 20H (blank) is stored between the sign and the value. If the digit of BIN 16-bit data is larger, it will be in error status.



(1): Change to 20H (SP)

• 00H is automatically stored at the end of the converted character string.

• When the total digits are even digits, "0000H" is stored in the device after the device storing the final character. In the case of an odd number of digits, "00H" is stored in the upper byte (8 bits) of the device storing the final character.

Error code

Error code	Content
4085H	(s1), (s2) The read address exceeds the device range
4084H	(s1) or (s1+1) parameter setting value is out of range. E.g:
	1. The value of (s1) is not in the range of 2 to 13.
	2. The value of $(s1+1)$ is not in the range of 0 to 10.
	3. The value of (s1+1) is greater than the value of (S1) minus 3.
	4. When (s1+1) is 0, the number of digits specified in (s1) is less than the number of BIN 16-bit data specified in (s2)+1.
	When $(s1+1)$ is not 0, the number of digits specified in $(s1)$ is less than the number of BIN 16-bit data specified in $(s2) + 2$.
	(The number of digits of (s1) <the (+="" (.))<="" (s2)="" +="" -)="" 16-bit="" a="" bin="" contain="" data="" decimal="" does="" not="" number="" of="" or="" points="" sign="" signs="" td="" that="" the=""></the>
4086H	(d) When using offset, the offset address exceeds the device range.
xample	



As shown in the example

We need to convert 123456 into a floating point string with 9 lengths after the decimal point and 3 lengths,

The result of the conversion should be 123.456. The previous value will have two spaces to supplement the insufficient number.

1007011	×	-	-	Ŭ			×	1	×	1	~	-	~	-	-		
R10	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
R11	1	0	0	0	1	1	0	0	0	1	0	0	1	1	0	0	12
R12	1	1	0	0	1	1	0	0	0	1	1	1	0	1	0	0	3.
R13	0	0	1	0	1	1	0	0	1	0	1	0	1	1	0	0	45
R14	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	6.

\$+/ Combination of strings

\$+(P)

Connect the string data stored after the device number specified in (s2) to the string data stored after the device number specified in (s1), and store it after the device number specified in (d).

-[\$+ (s1) (s2) (d)]

Paramete	er	Content		Rang	je		Data type	e	Da	ta type (la	bel)
(s1)		Connection the start nu device stori or a directly character s	data or mber of the ng the data specified tring	- 2			String		AN	YSTRING_	_SINGLE
(s2)		The connect or the start of the devic the connect the directly character s	eted data number e storing ted data or specified tring	-			String		AN	YSTRING_	_SINGLE
(d)		Start number device stori connection	er of the ng the result	-			String		AN	YSTRING_	SINGLE
Device	eused										
Instructio	Graramet@evi	се								Offset	Pulse
										modi	fica text ension
	KnX	KnY	KnM	KnS	т	С	D	R	SD	[D]	ХХР
\$+	Paramete● 1	٠	•	•	•	•	•	•	•	•	•



Features

Error code

Connect the string data stored after the device number specified in (s2) to the string data stored after the device number specified in (s1), and store it after the device number specified in (d).

The character strings of (s1) and (s2) start with the specified device number until the device number of 00H is stored.



When merging character strings, 00H indicating the end of the character string specified in (s1) is ignored, and the character string specified in (s2) is connected at the final character of (s1).

If the character string is merged, 00H will be automatically appended at the end. If the number of characters after connection is an odd number, 00H is stored in the upper byte of the device that stores the final character, and if the number of characters after connection is an even number, the device after the device that stores the final character is stored 0000H will be stored.





The result of combining the string "12345" and the string "abcde" is "12345abcde"

00 MT																	
R200	1	0	0	0	1	1	0	0	0	1	0	0	1	1	0	0	12
R201	1	1	0	0	1	1	0	0	0	0	1	0	1	1	0	0	34
R202	1	0	1	0	1	1	0	0	1	0	0	0	0	1	1	0	5a
R203	0	1	0	0	0	1	1	0	1	1	0	0	0	1	1	0	bc
R204	0	0	1	0	0	1	1	0	1	0	1	0	0	1	1	0	de

INSTR/string search

INSTR(P)

Starting from the left (s3) character of the string data stored after the device number specified in (s2), search for the string data stored after the device number specified in (s1), and store the search result in In the device specified in (d).

-[INSTR (s1) (s2) (d) (s3)]

Content, range and data type

Parameter	Content	Range	Data type	Data type (label)
(s1)	Search string or the start number of the device storing the search string	-	String	ANYSTRING_SINGLE
(s2)	The searched character string or the start number of the device storing the searched character string	-	String	ANYSTRING_SINGLE
(d)	Start number of the device storing the search result	-	Signed BIN 16 bit	ANY16
(s3)	Search start position	1 to 400	Signed BIN 16 bit	ANY16
Device used				

Instruc	structRarame Dessice												t Pulse		
												mo	modificaetitoeensio		
	KnX	KnY	KnM	KnS	т	С	D	R	SD	К	н	[D]	ХХР		
INSTR	Parameter 1				•	•	•	•	•			•	•		
	Parameter 2				•	•	•	•	•			•	•		
	Paramet ● 3	•	•	•	•	•	•	•	•			•	•		
	Paramet ● 4	•	•	•	•	•	•	•	•	•	•	•	•		

Features

Starting from the left (s3) character of the string data stored after the device number specified in (s2), search for the string data stored after the device number specified in (s1), and store the search result in In the device specified in (d). The search result will store the first character from the start character of the string data specified in (s2).



- (1): Search start position (S3): 3rd character
- (2): The fifth character from the start character
- If there is no matching character string data, 0 is stored in (d).
- If the search start position (s3) is "0", no processing is performed.
- The searched character string (s1) can be directly specified.



408AH

408BH

4086H

4084H

7411

(s1), (s2) The length of the read string exceeds, and the continuous length of the string exceeds 400 characters

(s1), (s2) When reading a character string, the maximum range of the device is read, but 00H is not found.

(d) The write address exceeds the device range

(s3) < 0 or (s3) > = string length

Example



Search for the string "ef" in the continuous string "abcdefg" from the first to the fifth position.

ASC/ASCII data input

ASC

A command to convert a character string of half-width/English numbers into ASCII code.

Used to select and display multiple messages on the external display.

-[ASC (s) (d)]

Content, range and data type

Parameter		Content		Range	D	ata type		Data t	ype (label)
(s)		32-charact English nur from the co	er half-width mbers input mputer	-	S	tring (ASCI cod	e only)	ANY_A	ASC
(d)		Start word number for ASCII data	device storing	-	В	IN16 bit		ANY16	6_S
Device us	sed								
Instruction	Parameter	s Device					O m	ffset Iodifica	Pulse tion extension
		т	С	D	R	SD	[[)]	ХХР
ASC	Parameter	1							
	Parameter	2 ●	•	•	•	•	•	1	

Features

1. 16-bit arithmetic (ASC)

After converting the half-width, English, and numeric character strings specified in (S) into ASCII codes, they are transferred to (D) in sequence.

• Process A to Z, 0 to 9, and half-width characters of Signs in (S). (Full-width character strings are not processed.)When programming with a programming tool, enter a character string.

• The converted ASCII code is stored in (D) every 2 characters/1 byte in the order of low 8 bits and high 8 bits.

Extensions

After SM161 is turned ON, the extended function becomes effective. At this time, the half-width/alphanumeric character string specified in S is converted into ASCII code, and then it is transmitted to the lower 8 bits (1 byte) of D in sequence.

#Note:

(1) Number of occupied points of the device

- 1) When the extended function is OFF
- D occupies the number of characters ÷ 2 points (if not evenly divisible, the decimal point is rounded up.)
- 2) When the extended function is ON

-The number of points occupied by D is the same as the number occupied by characters.

(2) When using etc.

The extended function flag SM161 is a flag bit common to other instructions.

When using the above instructions and ASC instructions, please note that the SM161 ON or OFF program is written before the ASC instruction so as not to affect it.

Error code

Error code 4085H Content

The output result of reading application instruction(s) exceeds the device range

(D) The output result exceeds the device range in writing

4086H

Example

1. Procedure



application instructions

When X20 = ON, the assignment of D200 to D203:



If the special register SM161 is set to ON, each ASCII character occupies a 16-bit variable after conversion, as shown in the figure below, the high byte of each variable is filled with 0 (hexadecimal):

	D•		S
	High 8 bits	Low 8 bits	String
(D·)	00	41	A
D• +1	00	42	В
D +2	00	43	С
D +3	00	44	D
D• +4	00	45	E
D +5	00	46	F
(D•) +6	00	47	G
D • ₊₇	00	48	Н