For form ZX smart sensors
Interface unit type ZX-SF11
Compoway/F
Message communication command specifications

Rev0.13b

Rev	Date	Contents
0.13b	2002.3.5	The English version creation
		・

CompoWay/F Message communication

By publishing an CompoWay/F message from a key station to this communication unit, read-out of the arbitrary parameters of an amplifier unit and writing can be performed.

CompoWay/F The kind of service (the contents of a command text)

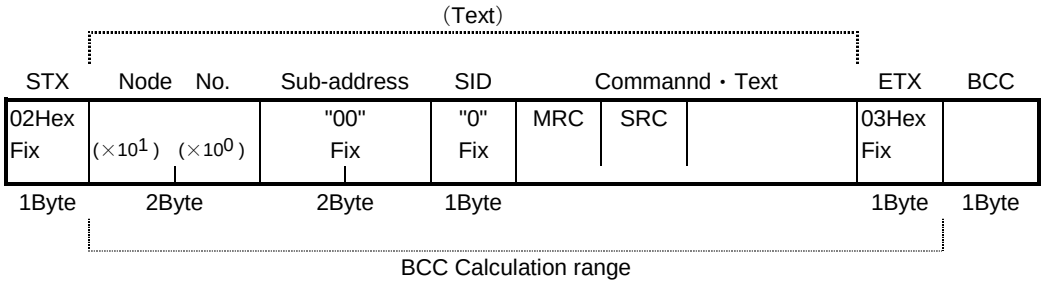
In CompoWay/F, the following services are specified in a command text. A command text defines the contents of service by top MRC (main request code) and SRC (sub request code).

MRC	SRC	Service name	Processing
"01"	"01"	Variable area read-out	Variable area is read.
"02"	"01"	Parameter area read-out	Parameter area is read.
"02"	"02"	Parameter area writing	Parameter area is written in.
"05"	"03"	Main part attribute read-out	Read-out of form and a version is performed.
"06"	"01"	Controller status read-out	An operation state is read.
"08"	"01"	Echo back test	A echo back test is performed.
"30"	"05"	Instructions of operation	Instructions of operation are directed.

A command / response format

The command format of a communication message and a response format are as follows. If Hex is hereafter attached after the numerical value like (02Hex), the number of 16 is expressed. The thing written by "" and the thing written only for the usual numerical value express an ASCII character.

■Command format



STX	It is the code (02Hex) which shows the head of a communication frame. Please be sure to set this character to a head byte. When STX is again received during reception, reception is redone from the place which received STX.。
Node No.	- It is node No. for specifying a transmission place. - Please be sure to specify "00" in form ZX-SF11.
Sub-address	It is not used in form ZX-SF11. Please be sure to set up "00."

SID（Service ID）	It is not used in form ZX-SF11. Please be sure to set up "0."
Commannd・Text	It is a command text portion.
ETX	It is the code (03Hex) which shows the end of a text.
BCC	It is a block check character. The value which carried out XOR (exclusive logical sum) of the value to node No.-ETX for every byte is set to BCC.

●The example of calculation of BCC

STX	NodeNo.		Subaddress	SID	Command/text	ETX	BCC
	"0"	"0"	"00"	"0"	"30053001"		
02Hex	(30Hex)	(30Hex)	(3030Hex)	(30Hex)	(3330303533303031Hex)	03Hex	37Hex

37Hex(es) of a calculation result are set to the

BCC=30Hex＋30Hex＋30 Hex＋30 Hex＋30 Hex＋33 Hex＋30 Hex＋30 Hex＋35 Hex＋33 Hex＋30 Hex
＋30 Hex＋31 Hex＋03 Hex =37 Hex

+ It is shown that it is XOR (exclusive logical sum) operation.

■Response format

STX	Node No.		Sub-address	End code	Commannd・Text			ETX	BCC
02Hex			"00"		MRC	SRC		03Hex	
Fix	($\times 10^1$)	($\times 10^0$)	Fix					Fix	
1Byte	2Byte		2 Byte	2 Byte				1 Byte	1 Byte

The end code of a response is as follows.

"00"	Normal end	It is normal and the command end was carried out normally.
"0F"	Command error	A specification command has not been executed. Please judge non-performing details in response code.
"10"	Parity error	The parity error occurred in one of characters at the time of reception.
"11"	Frame error	The frame error occurred in one of characters at the time of reception.
"12"	Overrun error	The overrun error occurred in one of characters at the time of reception.
"13"	BCC error	BCC which received is inaccurate.
"14"	Format error	- In other than 0-9, and A-F, the character in a command text is. (However, a echo back test removes.) - There are SID and no command text. Or there is no command text. - "MRC/SRC" of a command text has not gathered.
"16"	Sub-address error	- The sub ad lesbian of a receiving frame is injustice (un-supporting). - There are a sub-address, SID, and no command text. - In less than two characters, SID and a command text do not have a sub-address.
"18"	Frame length error	The receiving frame is over the number of predetermined (support) bytes.

An end code is returned to 1 command frame reception of self-node . When having not completed to ETX and a BCC character, a response does not occur. An error detection priority shows ranking when two or more errors occur.

- Under the influence of a noise etc., it may become an error response or a response may not come on the contrary. Please be sure to perform lithograph rye processing by the key station side.
- - It is the worst, and there are 3 seconds of these cases after transmitting a command until a response comes on the contrary. Please send the following command after waiting 3 seconds or more, when a response does not come on the contrary.

●The example of the end code at the time of not carrying out a normal end

The example of the end code at the time of not carrying out a normal end to a command below is shown.

Ex1） When a sub-address is inaccurate and there are not SID and a command text

Command

STX	Node No.		Sub address		ETX	BCC
02Hex			"0"	"A"	03Hex	

Response

STX	Node No.		Sub-address		End code		ETX	BCC
02Hex			"0"	"A"	"1"	"6"	03Hex	

Since reception of "16" (sub-address error) sub-addresses has done the end code and the sub-address error of error detection ranking is higher than a format error.

Ex2） When there is no command text

Command

STX	Node No.		Sub address		SID	ETX	BCC
02Hex			"0"	"0"	"0"	03Hex	

Response

STX	Node No..		Sub address		End code		ETX	BCC
02Hex			"0"	"0"	"1"	"4"	03Hex	

An end code is "14" (format error).

Ex3） When node No. has not gathered

Command

STX		ETX	BCC
02Hex		03Hex	

Node No. does not have 1 character legs.

Response

A response does not occur.

Ex4） When there is no sub-address and BCC is inaccurate

Command

STX	Node No.		ETX	BCC
02Hex			03Hex	Err

Response

STX	Node No.		Sub address		End code		ETX	BCC
02Hex			"0"	"0"	"1"	"3"	03Hex	

A sub-address is set to "00" and an end code is "14" (BCC error).

<Variable area read-out（MRC＝"01"、SRC＝"01"）>

Variable area is read.

Item	Variable classification	Read-out start address	Bit position	The number of elements
Main digital display value read-out (Notes 1)	"C6"	Number machine number	"00"	"0001"
Incident level read-out	"C8"	Number machine number	"00"	"0001"
resolution data read-out	"CA"	Number machine number	"00"	"0001"
Control output data read-out	"CE"	Number machine number	"00"	"0001"
ENABLE data read-out	"CF"	Number machine number	"00"	"0001"
Decimal point position read-out	“D3”	Number machine number	"00"	"0001"

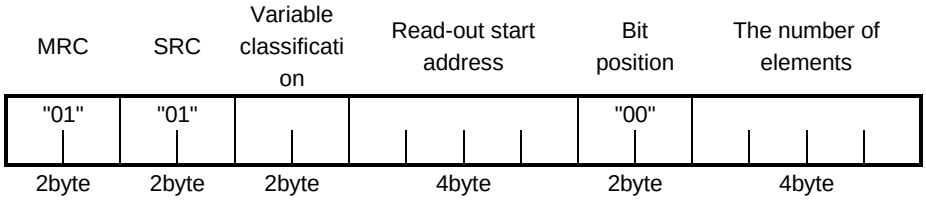
Notes 1) Keep in mind that there are restrictions of the following table by the version of sensor amplifier about a main digital display value read-out command.

Main digital display value read-out	Sensor amplifier versionVer2.100,Ver2.000	Sensor amplifier version Ver2.110 or subsequent ones
Read-out of a plus display value	It corresponds.	It corresponds.
Read-out of a minus display value	It has not corresponded. Notes 2	It corresponds.

Note 2)When the numerical value of minus is shown by a differentiation setup and zero reset before the sensor amplifier version Ver2.100 and this is read, it becomes an unusual numerical value.

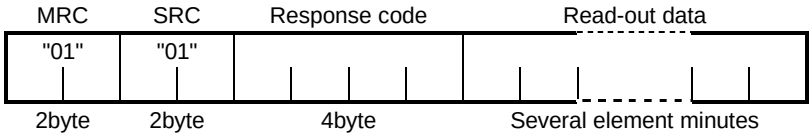
■Command

The command text part in an CompoWay/F command format is as follows.



■Response

The command text part in an CompoWay/F response format is as follows.



・Read-out start address

The number machine number of the sensor which reads is specified by the ASCII code of the number of 16 . In addition, the number machine number of form ZX-SF11 is set to "0000." When reading from amplifier, it becomes a number machine number =CH number. In example .2CH, it is set to "0002."

・Bit position

Bit access is not supported in form ZX-SF11. They are "00" fixation.

・The number of elements

Usually, only number of elements "0001" can be set up.

・Read-out data

Read-out data is expressed with the ASCII code of the number of 16 . Data length turns into 32-bit length.

The data format of each item is shown below.

・main digital display read-out,　Incident level data read-out, and resolution -- data read-out

	Contents
The 1st byte	Mark ＋：00h －：01h
The 2nd byte	All 0
The 3rd byte	The 1st byte of data
The 4th byte	The 2 nd byte of data

・Decimal point position read-out

	Contents
The 1st byte	All 0
The 2nd byte	All 0
The 3rd byte	All 0
The 4th byte	The decimal-point position best grade: 00h From a decimal point position higher rank to figure [2nd] : 01h From a decimal point position higher rank to figure [3rd] : 02h From a decimal point position higher rank to figure [4th] : 03h Those without a decimal-point display: 04h

・Control output data read-out

	Contents
The 1st byte	LOW Output ：01h HIGH Output：02h PASS Output：03h
The 2nd byte	All 0
The 3rd byte	All 0
The 4th byte	All 0

・ENABLE data read-out

	Contents
The 1st byte	ENABLE Lighting：00h ENABLE Lighting：01h
The 2nd byte	All 0
The 3rd byte	All 0
The 4th byte	All 0

■Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	a normal end	It is not abnormal.

●At the time of error generating

Response code	Error name	Cause
"1001"	Command length over	Command length is too long.。
"1002"	Command length insufficient.	Command length is insufficient.
"1101"	Variable classification error	Variable classification is wrong.
"1103"	An error the start address range outside	A read-out start address is outside the range. - Specify the sensor of a number machine number to which the read-out start address is not connected. A bit position is except "00."
"1104"	An error the end address range outside	The sensor of the number machine specified with the number of read-out start address + elements is not connected.

"2203"	An error of operation	When a main digital display value is read at the time of abnormalities, such as abnormalities in Incident level
"2204"	An error of operation	When the mode of a sensor of operation is except RUN mode.
"2205"	An error of operation	When the command besides regulation is required.

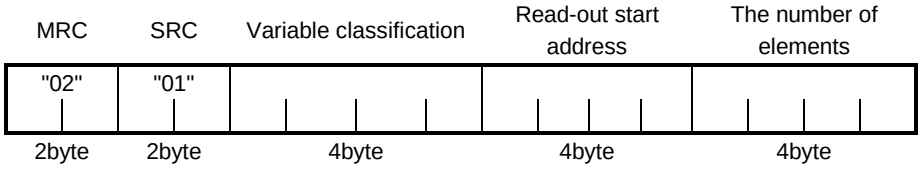
<Parameter area read-out（MRC＝"02"、SRC＝"01"）>

Parameter area is read. *N.m.n＝Number machine number

Item	Variable classification	Read-out start address	The number of elements
HIGH threshold data	"C000"	N.m.n	"8001"
LOW threshold data	"C004"	N.m.n	"8001"
Hysterics width data (at the time of the in ten city OFF)	"C008"	N.m.n	"8001"
Hysterics width data (at the time of the in ten city ON)	"C00A"	N.m.n	"8001"
Self trigger threshold level	"C00C"	N.m.n	"8001"
Differentiation cycle setting value	"C040"	N.m.n	"8001"
The number of times of an average	"C042"	N.m.n	"8001"
Timer data	"C043"	N.m.n	"8001"
Timer selection	"8000"	N.m.n	"8001"
Hold function	"8001"	N.m.n	"8001"
Selection of a contiguity operation function	"8002"	N.m.n	"8001"
Special function	"8003"	N.m.n	"8001"
Intensity mode	"8004"	N.m.n	"8001"
Differentiation mode	"8005"	N.m.n	"8001"
Reverse function	"8007"	N.m.n	"8001"
ECO mode	"8008"	N.m.n	"8001"
Limited number of display digit	"8009"	N.m.n	"8001"
Settings for non-measurement	"800A"	N.m.n	"8001"
Zero reset memory function	"800B"	N.m.n	"8001"
The contents of a sub digital display	"800C"	N.m.n	"8001"
Gain setting	"800E"	N.m.n	"8001"
Lock flag	"800F"	N.m.n	"8001"
Scaling flag	"8010"	N.m.n	"8001"

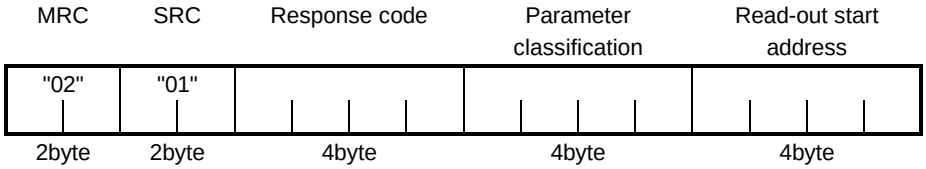
■Command

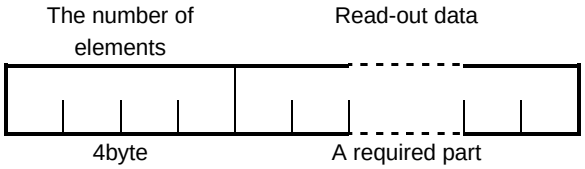
The command text part in an CompoWay/F command format is as follows.



■Response

The command text part in an CompoWay/F response format is as follows.





- Read-out start address

The number machine number of the sensor which reads is specified by the ASCII code of the number of Hex. In addition, the number machine number of form ZX-SF11 is set to "0000." When reading from amplifier, it becomes a number machine number =CH number. In example .2CH, it is set to "0002."

・The number of elements

Only number of elements "8001" can be set up.

・Read-out data

Read-out data is expressed with the ASCII code of the number of 16. According to a command, data length is classified, as shown in the following table.

Data classification	Item	Data length
Digital data	HIGH threshold data	32-bit length
	LOW threshold data	32-bit length
	Hysterics width data (at the time of the in ten city OFF)	32-bit length
	Hysterics width data (at the time of the in ten city ON)	32-bit length
	Self trigger threshold level	32-bit length
	Differentiation cycle setting value	32-bit length
	The number of times of an average	32-bit length
	Timer data	32-bit length
Flag data	Timer selection	16-bit length
	Hold function	16-bit length
	Selection of a contiguity operation function	16-bit length
	Special function	16-bit length
	Intensity mode	16-bit length
	Differentiation mode	16-bit length
	Reverse function	16-bit length
	ECO mode	16-bit length
	Limited number of display digit	16-bit length
	Settings for non-measurement	16-bit length
	Zero reset memory function	16-bit length
	The contents of a sub digital display	16-bit length
	Gain setting	16-bit length
	Lock flag	16-bit length
	Scaling flag	16-bit length

The data format of each item is shown below.

・Digital data (32-bit length data)

The 1st byte	Mark ＋：00h －：01h
The 2nd byte	All 0
The 3rd byte	The 1st byte of data
The 4th byte	The 2nd byte of data

・Flag data (16-bit length data)

The 1st byte	Flag data
The 2nd byte	It is 0 altogether.

・The contents of flag data

Name	Value
Timer selection	0:OFF /1:OFF Delay /2:ON delay /3:ONE SHOT
Hold function	0:OFF / 1:P-H / 2:B-H / 3: S-H / 4: PP-H / 5:SP-H / 6:SB-H
Selection of a contiguity operation function	0：OFF/1:a-b/2:a+b
Special function	0：CLOSE/1:SET /2:DISP /3:ETC /4:ALL

Intensity mode	0:OFF/1：ON
Differentiation mode	
Reverse function	0:NORMAL / 1:REVERSE
Eco mode	0:OFF / 1:ON
Limited number of display digit	0：5-figure display /1：4-figure display /2：3-figure display 3：2-figure display /4：1-figure display /5：0-figure display
Settings for non-measurement	0：KEEP/1:CLAMP
Zero reset memory function	0：OFF/1：ON
The contents of a sub digital display	0: Threshold /1Voltage: /2: Current /3: Incident level /4: Resolution
Gain setting	0:AUTO/1:BLACK /2:WHITE /3:METAL/4:MIRROR
Lock flag	0: With no keylock/1: All push button operations are impossible.
Scaling flag	0: With no scaling /1: Those with scaling

■Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	Normal end	It is not abnormal

●At the time of error

Response code	Error name	Cause
"1001"	Command length over	Command length is too long
"1002"	Command length is insufficient.	Command length is insufficient.
"1003"	The number of elements / data disagreement	The number of the number of elements and the numbers of data is not in agreement.
"1101"	Area classification error	Variable classification is wrong.
"1103"	Start address An error range outside	A read-out start address is outside the range. The sensor of a number machine number to which the read-out start address is not connected is specified. A bit position is except "00."
"1104"	End address An error range outside	The specified number of elements is outside the range.
"2203"	An error of operation	Read-out error
"2204"	An error of operation	When the mode of a sensor of operation is except RUN mode.
"2205"	An error of operation	When the command besides regulation is required.

<Parameter area writing（MRC＝"02"、SRC＝"02"）>

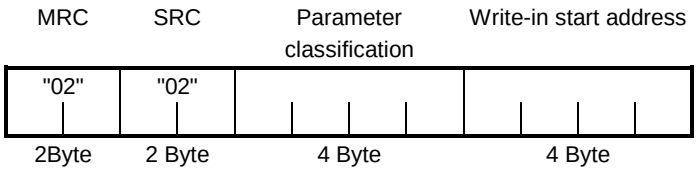
Parameter area is written in.

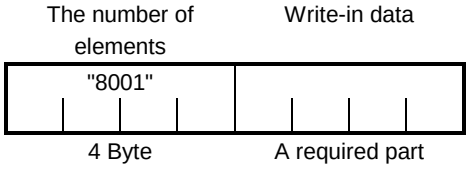
Item	Variable classification	Read-out start address	The number of elements
HIGH threshold data	"C000"	N.m.n	"8001"
LOW threshold data	"C004"	N.m.n	"8001"
Hysterics width data (at the time of the in ten city OFF)	"C008"	N.m.n	"8001"
Hysterics width data (at the time of the in ten city ON)	"C00A"	N.m.n	"8001"
Self trigger threshold level	"C00C"	N.m.n	"8001"
Differentiation cycle setting value	"C040"	N.m.n	"8001"
The number of times of an average	"C042"	N.m.n	"8001"
Timer data	"C043"	N.m.n	"8001"
Timer selection	"8000"	N.m.n	"8001"
Hold function	"8001"	N.m.n	"8001"
Selection of a contiguity operation function	"8002"	N.m.n	"8001"
Special function	"8003"	N.m.n	"8001"
Intensity mode	"8004"	N.m.n	"8001"
Differentiation mode	"8005"	N.m.n	"8001"

Reverse function	"8007"	N.m.n	"8001"
ECO mode	"8008"	N.m.n	"8001"
Limited number of display digit	"8009"	N.m.n	"8001"
Settings for non-measurement	"800A"	N.m.n	"8001"
Zero reset memory function	"800B"	N.m.n	"8001"
The contents of a sub digital display	"800C"	N.m.n	"8001"
Gain setting	"800E"	N.m.n	"8001"
Lock flag	"800F"	N.m.n	"8001"
Scaling flag	"8010"	N.m.n	"8001"

■Command

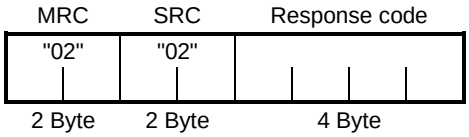
The command text part in an CompoWay/F command format is as follows.





■Response

The command text part in an CompoWay/F response format is as follows.



- When a parameter area write-in command is executed, a setting value is written in an internal memory. However, if there is a maximum in the number of times of writing of an internal memory and it writes in each sensor number machine number and 1 million times or more per each parameter, there is a possibility that an internal memory may break. Therefore, when you use a parameter area write-in command, please create a communication program so that the number of times of writing does not exceed each sensor number machine number and 1 million times per each parameter.
- Please publish not any commands other than the specified variable classification. When it publishes accidentally, there is a possibility that an internal parameter may write and replace. When the internal parameter of the sensor connected wrote and replaces, please execute "a sensor initialization command" of an instruction command of operation.

・Write-in start address

The number machine number of the sensor which reads is specified by the ASCII code of the number of 16 . In addition, the number machine number of form ZX-SF11 is set to "0000." When reading from amplifier, it becomes a number machine number =CH number. In example .2CH, it is set to "0002."

・The number of elements

Only the number of elements "8001" can be set up in parameter writing.

・Write-in data

Write-in data is expressed with the ASCII code of the number of 16 . According to a command, data length is classified, as shown in the following table.

Data classification	Item	Data length
Digital data	HIGH threshold data	32-bit length
	LOW threshold data	32-bit length
	Hysterics width data (at the time of the in ten city OFF)	32-bit length
	Hysterics width data (at the time of the in ten city ON)	32-bit length
	Self trigger threshold level	32-bit length
	Differentiation cycle setting value	32-bit length
	The number of times of an average	32-bit length
	Timer data	32-bit length
Flag data	Timer selection	16-bit length
	Hold function	16-bit length
	Selection of a contiguity operation function	16-bit length
	Special function	16-bit length
	Intensity mode	16-bit length
	Differentiation mode	16-bit length
	Reverse function	16-bit length
	ECO mode	16-bit length
	Limited number of display digit	16-bit length
	Settings for non-measurement	16-bit length
	Zero reset memory function	16-bit length
	The contents of a sub digital display	16-bit length
	Gain setting	16-bit length
	Lock flag	16-bit length
	Scaling flag	16-bit length

The data format of each item is shown below.

・Threshold data, hysterics width data, self trigger data

The 1st byte	Mark ＋：00h －：01h
The 2nd byte	All 0
The 3rd byte	The 1st byte of data
The 4th byte	The 2nd byte of data

Differentiation cycle writing

The setting range is "0000" - "EA5F" (0-59999) cycle. It becomes an error when it is going to write in the value which is not applied to the above-mentioned setting range.

・Number-of-times writing of an average

The number of times of an average can write in only the following number of times. "1", "2", "4", "8", "16", "32", "64", "128", "256", "512", "1024", "2048", and "4096" It becomes an error when it is going to write in the value which is not applied to the above-mentioned setting value.

・Timer time writing

the timer value of off-delay, on-delay, and a one SHOTO timer -- the number of 16 -- it sets up by 4 figures The setting range is "0000"-" EA5F" (0 - 59999ms). It becomes an error when it is going to write in the value which is not applied to the above-mentioned setting range.

・Flag data (16-bit length data)

	Contents
The 1st byte	Flag data

The 2nd byte	It is 0 altogether.

・The contents of flag data

Name	Value
Timer selection	0:OFF /1:OFF Delay /2:ON delay /3:ONE SHOT
Hold function	0:OFF / 1:P-H / 2:B-H / 3: S-H / 4: PP-H / 5:SP-H / 6:SB-H
Selection of a contiguity operation function	0：OFF/1:a-b/2:a+b
Special function	0：CLOSE/1:SET /2:DISP /3:ETC /4:ALL
Intensity mode	0:OFF/1：ON
Differentiation mode	
Reverse function	0:NORMAL / 1:REVERSE
ＥＣＯ mode	0:OFF / 1:ON
Limited number of display digit	0：5-figure display /1：4-figure display /2：3-figure display 3：2-figure display /4：1-figure display /5：0-figure display
Settings for non-measurement	0：KEEP/1:CLAMP
Zero reset memory function	0：OFF/1：ON
The contents of a sub digital display	0: Threshold /1Voltage: /2: Current /3: Incident level /4: Resolution
Gain setting	0:AUTO/1:BLACK /2:WHITE /3:METAL/4:MIRROR
Lock flag	0: With no keylock/1: All push button operations are impossible.
Scaling flag	0: With no scaling /1: Those with scaling

Note) It becomes an error when it is going to write in the value which is not applied to the setting value of a top table.

■Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	Normal end	It is not abnormal

●At the time of error

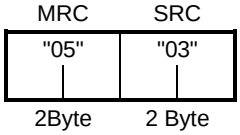
Response code	Error name	Cause
"1001"	Command length over	Command length is too long
"1002"	Command length is insufficient.	Command length is insufficient.
"1003"	The number of elements / data disagreement	The number of the number of elements and the numbers of data is not in agreement.
"1101"	Area classification error	Variable classification is wrong.
"1103"	Start address An error range outside	A read-out start address is outside the range. The sensor of a number machine number to which the read-out start address is not connected is specified. A bit position is except "00."
"1104"	End address An error range outside	The specified number of elements is outside the range.
"2203"	An error of operation	Read-out error
"2204"	An error of operation	When the mode of a sensor of operation is except RUN mode.
"2205"	An error of operation	When the command besides regulation is required.

<Main part attribute read-out（MRC＝"05"、SRC＝"03"）>

The form of the communication unit for fiber amplifier etc. is read.

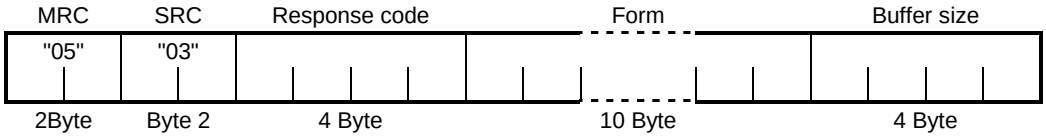
■Command

The command text part in an CompoWay/F command format is as follows.



■Response

The command text part in an CompoWay/F response format is as follows.



Form ... The discernment code which shows the RS232C interface unit for type ZX expresses with 10 bytes of ASCII character. 1 byte of the last becomes a space (20H).

Buffer size ... A value with the smaller transceiver buffer size by the side of CompoWay/F is expressed by 4 figure of Hex, and it returns in 4 figures of the ASCII characters.

●Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	Normal end	It is not abnormal

●At the time of error

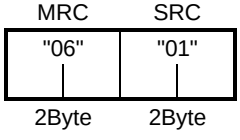
Response code	Error name	Cause
"1001"	Command length over	Command length is too long
"1002"	Command length is insufficient.	Command length is insufficient.

<Controller status read-out（MRC＝"06"、SRC＝"01"）>

An operation state and the number of a sensor which can be communicated are read.

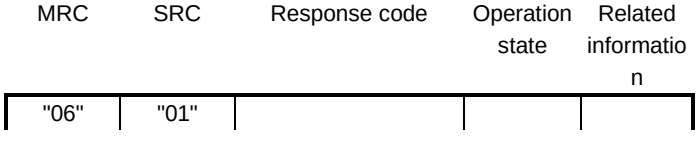
■Command

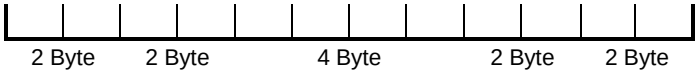
The command text part in an CompoWay/F command format is as follows.



■Response

The command text part in an CompoWay/F response format is as follows.





- Operation state

"00" : the abnormalities in sensor communication normal

"01":sensor communication

・Related information

The number of a sensor which is communicating normally

●Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	Normal end	It is not abnormal

●At the time of error

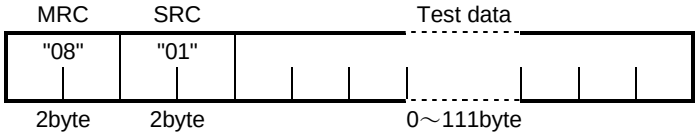
Response code	Error name	Cause
"1001"	Command length over	Command length is too long
"1002"	Command length is insufficient.	Command length is insufficient.

<Echo back test（MRC＝"08"、SRC＝"01"）>

A echo back test is performed.

●Command

The command text part in an CompoWay/F command format is as follows.

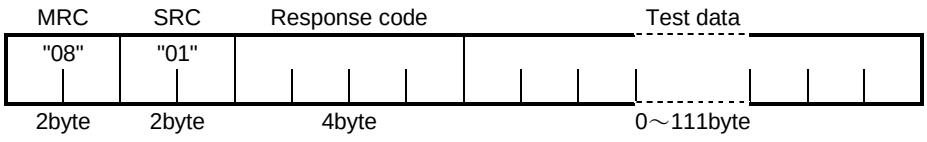


・ test data

arbitrary test data is set in 0-111 bytes of range

●Response

The command text part in an CompoWay/F response format is as follows.



●Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	Normal end	It is not abnormal

●At the time of error

Response code	Error name	Cause
"1001"	Command length over	Command length is too long
"1002"	Command length is insufficient.	Command length is insufficient.

<Instructions of operation（MRC＝"30"、SRC＝"05"）>

Instructions of teaching, zero reset, etc. of operation are performed.

Item	Instruction code	Related information 1	Related information 2
H threshold teaching 1 (1 point)	"30"	N.m.n	0000h
H threshold teaching 2 (2 point)	"31"	N.m.n	0000h
H threshold teaching 3 (ATT start)	"32"	N.m.n	0000h
H threshold teaching 4 (ATT stop)	"33"	N.m.n	0000h
L threshold teaching 1 (one point)	"34"	N.m.n	0000h
L threshold teaching 2 (two points)	"35"	N.m.n	0000h
L threshold teaching 3 (ATT start)	"36"	N.m.n	0000h
L threshold teaching 4 (ATT stop)	"37"	N.m.n	0000h
Zero reset directions	"38"	N.m.n	0000h
Zero reset release directions	"39"	N.m.n	0000h
Initialization command	"3A"	N.m.n	0000h
Auto hysterics setup	"3B"	N.m.n	0000h
CH display command	"3E"	N.m.n	0000h
CH display elimination command	"3F"	N.m.n	0000h
Display blink start command	"40"	N.m.n	0000h
Display blink stop command	"3C"	N.m.n	0000h

Notes 1) When zero reset is carried out by the zero reset directions command by communication, as shown in the following table, operation about a zero reset memory changes with versions of sensor amplifier.。

Zero reset memory function	Sensor amplifier version Ver2.100, Ver2.000	Sensor amplifier version Ver2.110 or subsequent ones
ON (Default)	A zero reset level is saved at EEPROM.	A zero reset level is saved at EEPROM.
OFF	A zero reset level is saved at EEPROM. Notes.2)	A zero reset level is not saved at EEPROM. Notes.3)

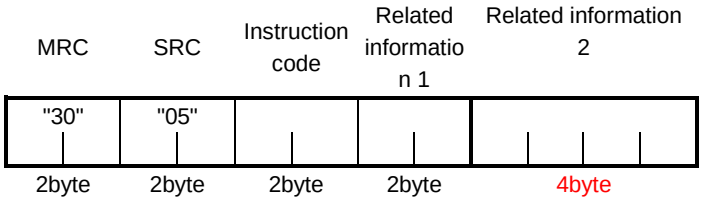
Notes 2) Please do not use a communication command but perform zero reset by the external input line of sensor amplifier to save a zero reset level in a sensor amplifier version (Ver2.100) at EEPROM.

Notes 3）After zero reset directions command execution, when the following command is executed, a zero reset level is saved at EEPROM.

- When a parameter area write-in command of some kind is executed and instructions of operation other than
- When instructions of operation other than zero reset directions / release directions command are performed

●Command

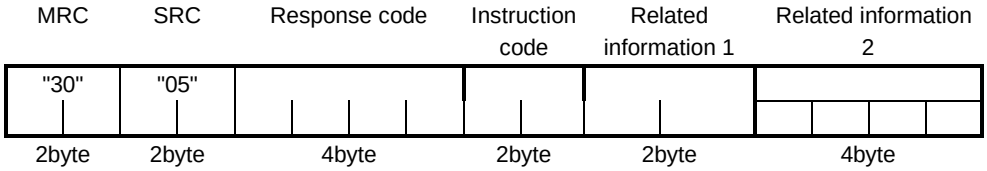
The command text part in an CompoWay/F command format is as follows.



Related information is not in a reset command.

●Response

The command text part in an CompoWay/F response format is as follows.。



An initialization command returns the setting value of each sensor to a default.

・Related information 1

The number machine number of the sensor which reads is specified by the ASCII code of the number of 16 . In addition, the number machine number of form ZX-SF11 is set to "00." When reading from amplifier, it becomes a number machine number =CH number. In example .2CH, it is set to "02."

・Related information 2

Only "0000" can usually be set up.

■Response code

●At the time of a normal end

Response code	Name	Contents
"0000"	Normal end	It is not abnormal

●At the time of error

Response code	Error name	Cause
"1001"	Command length over	Command length is too long
"1002"	Command length is insufficient.	Command length is insufficient.
"1003"	The number of elements / data disagreement	The number of the number of elements and the numbers of data is not in agreement.
"1101"	Area classification error	Variable classification is wrong.
"1103"	Start address An error range outside	A read-out start address is outside the range. The sensor of a number machine number to which the read-out start address is not connected is specified. A bit position is except "00."
"1104"	End address An error range outside	The specified number of elements is outside the range.
"2203"	An error of operation	Read-out error
"2204"	An error of operation	When the mode of a sensor of operation is except RUN mode.
"2205"	An error of operation	When the command besides regulation is required.