

SECTION 5

Heater Burnout and SSR Failure Detection Commands

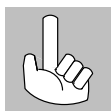
This section describes the commands used for heater burnout and SSR failure detection.

5-1	HB Alarm and HS Alarm Point Write: WU
5-2	HB Alarm and HS Alarm Point Read: RU
5-3	Heater Burnout and SSR Failure Detection Current Value Write: WW
5-4	Heater Burnout and SSR Failure Detection Current Value Read: RW
5-5	Heater Current Value and SSR Leakage Current Value Read: RZ

5-1 HB Alarm and HS Alarm Point Write: WU

Function

This command is used to designate the control points that are to have HB and HS alarms so that the control points can detect heater burnout and SSR failures.



1. The control points designated by HB Alarm and HS Alarm Point Write (WU) will have both HB and HS alarms.
2. HB Alarm and HS Alarm Point Write (WU) cannot be used if a control point is being auto-tuned.

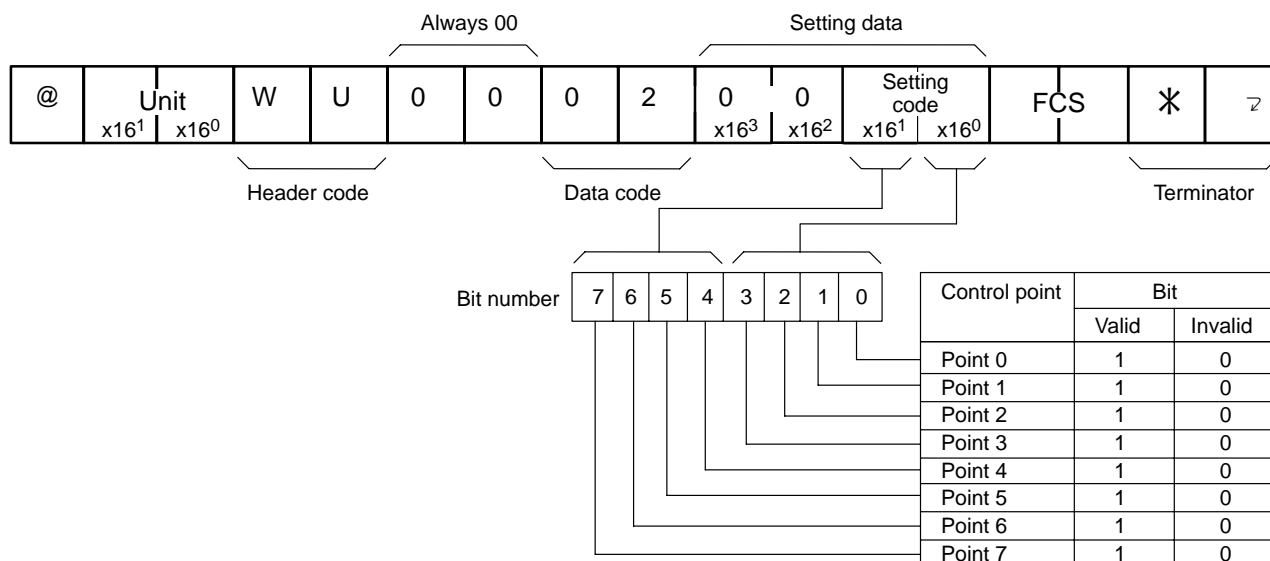


The HB or HS alarm of a control point will not work if the control point is being auto-tuned.

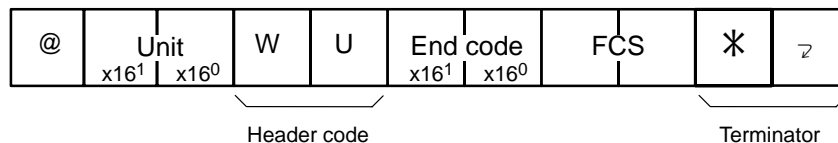
Setting Data Range

Default	00 (None of the control points have HB or HS alarm.)
Setting code	00 to FF

Command



Response



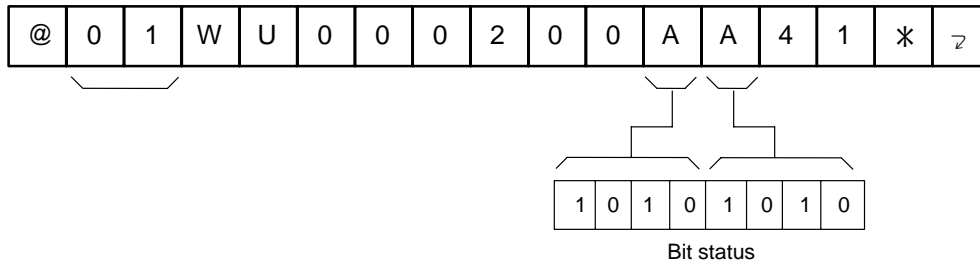
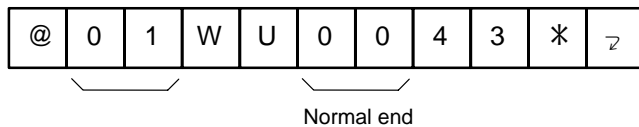
Communications Example

In this example, the E5ZE is operated with HB Alarm and HS Alarm Point Write (WU) under the following conditions.

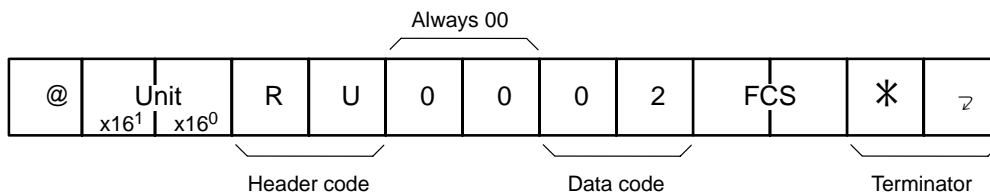
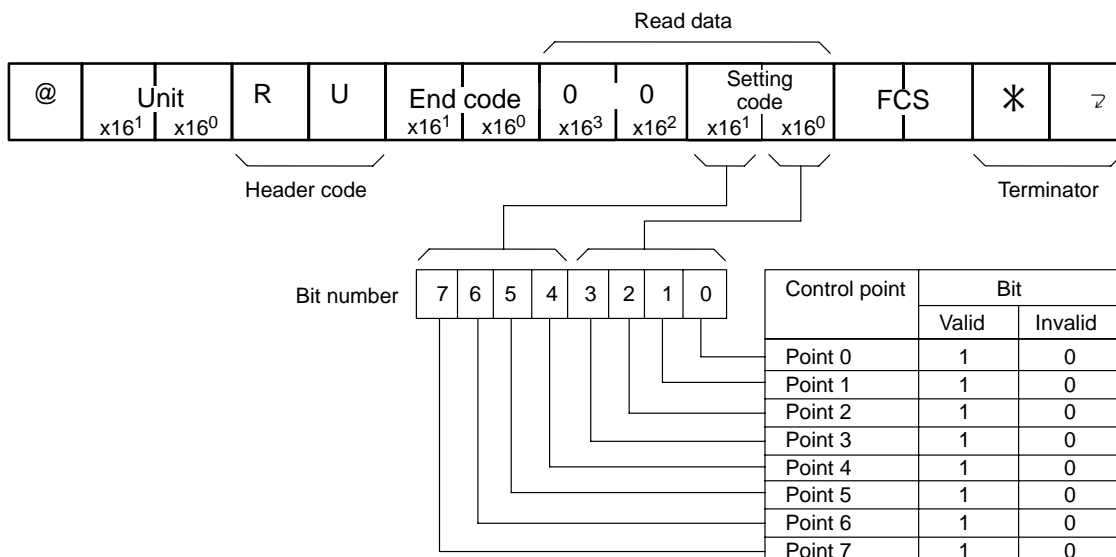
Unit no.: 1

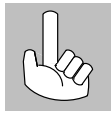
Control Points 0, 2, 4, and 6: Invalid

Control Points 1, 3, 5, and 7: Valid

Command**Response****5-2 HB Alarm and HS Alarm Point Read: RU****Function**

This command is used to read which control points have been set for HS and HB alarms.

Command**Response**



1. The response block for HB Alarm and HS Alarm Point Read (RU) does not include read data if the end code of the response block is other than 00.
2. Refer to 1-4 End Codes.

Communications Example

In this example, the E5ZE is operated with HB Alarm and HS Alarm Point Read (RU) under the following conditions.

Unit no.: 1

Control Points 0, 2, 4, and 6: Invalid

Control Points 1, 3, 5, and 7: Valid

Command

@	0	1	R	U	0	0	0	2	4	4	*	↵
---	---	---	---	---	---	---	---	---	---	---	---	---

Response

@	0	1	R	U	0	0	0	0	A	A	4	6	*	↵
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Normal end

1	0	1	0	1	0	1	0
---	---	---	---	---	---	---	---

Bit status

5-3 Heater Burnout and SSR Failure Detection Current Value Write: WW

Function

This command is used to set the current value at a control point to be used by the E5ZE to detect heater burnout or SSR failures at the control point.

Setting Data Range

Function	Heater burnout detection	SSR failure detection
Setting unit	0.1	
Current unit	A	
Default	0000	0005
Setting data	0000 to 0500	



Refer to the following to turn the HB alarm of a control point OFF or ON.

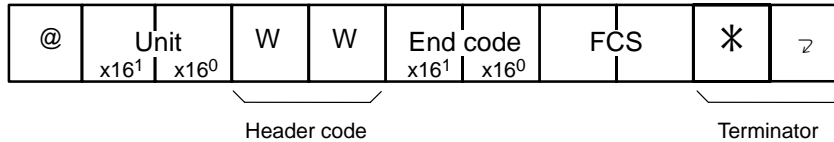
If the detection current value are set to 0000, the HB alarm will be always OFF.

If the detection current value are set to 0500, the HB alarm will be always ON.

Command

@	Unit x16 ¹ x16 ⁰		W	W	0	Control point	Data code	Setting data Detection current value x10 ² x10 ¹ x10 ⁰ x10 ⁻¹				FCS	*	↻
Header code												Terminator		

Response



Communications Example

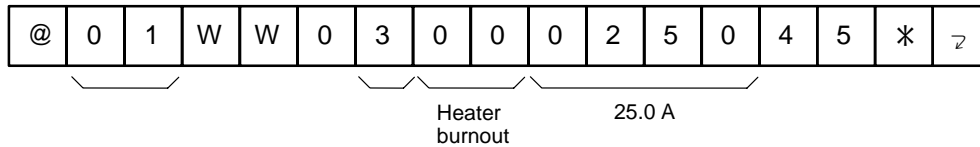
In this example, the E5ZE is operated with Heater Burnout and SSR Failure Detection Current Value Write (WW) under the following conditions.

Unit no.: 1

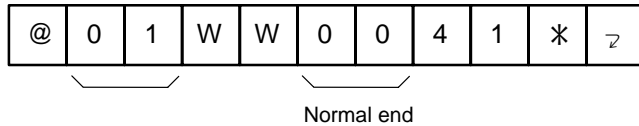
Control Point: 3

Heater Burnout Detection Current Value: 25.0 A

Command



Response

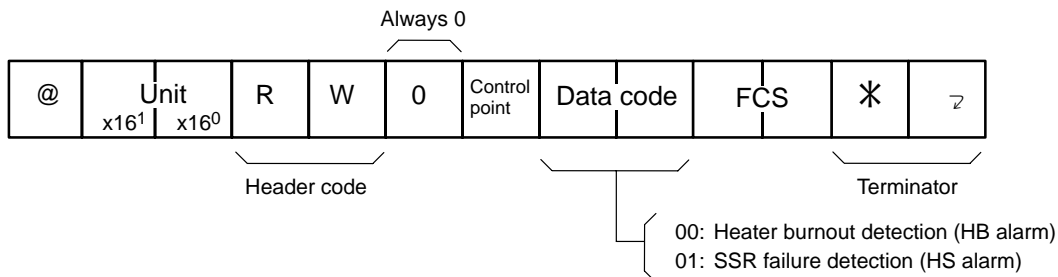


5-4 Heater Burnout and SSR Failure Detection Current Value Read: RW

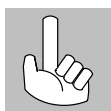
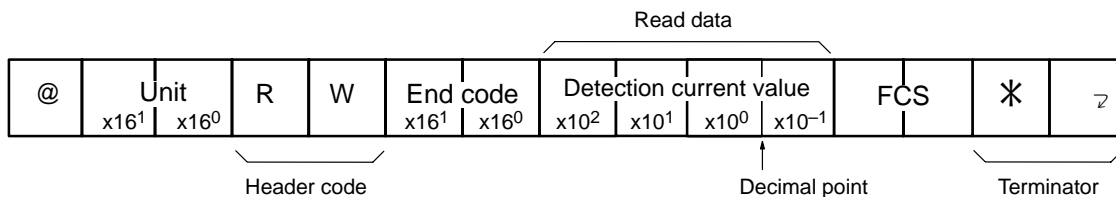
Function

This command is used to read the current value set at a control point to be used by the E5ZE to detect heater burnout or SSR failures.

Command



Response



1. The response block for Heater Burnout and SSR Failure Detection Current Value Read (RW) does not include read data if the end code of the response block is other than 00.
2. Refer to 1-4 End Codes.

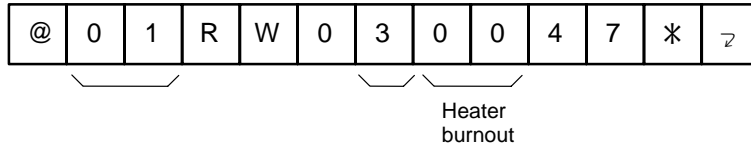
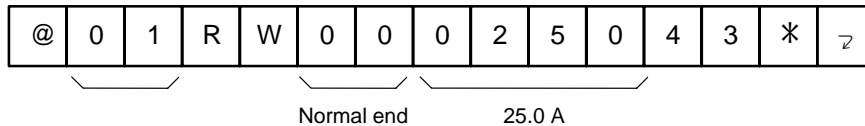
Communications Example

In this example, the E5ZE is operated with Heater Burnout and SSR Failure Detection Current Value Read (RW) under the following conditions.

Unit no.: 1

Control Point: 3

Heater Burnout Detection Current Value: 25.0 A

Command**Response**

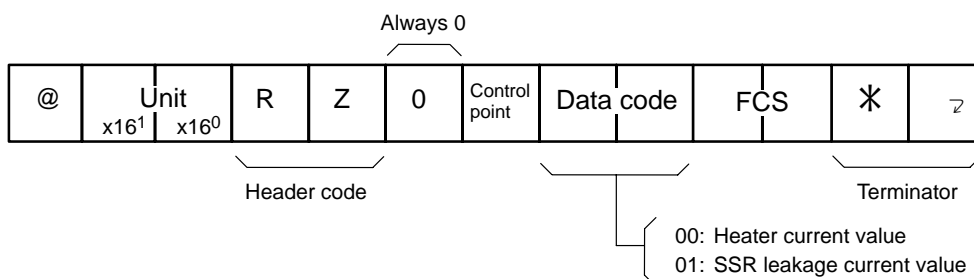
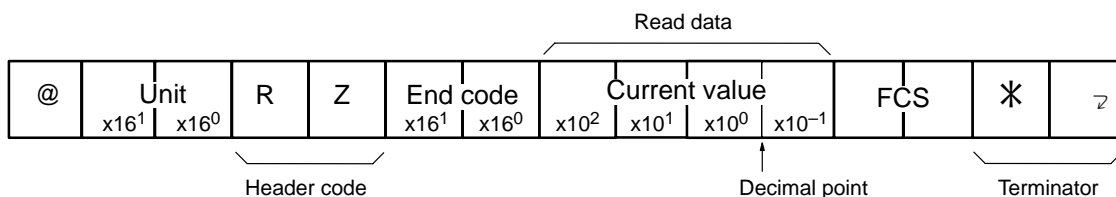
5-5 Heater Current Value and SSR Leakage Current Value Read: RZ

Function

This command is used so that the E5ZE can read the current value of the heater or the leakage current value of the SSR connected to a control point via the Current Transformer.



1. Heater Current Value: The current value of the heater measured at the control point with its control output turned ON.
2. SSR Leakage Current Value: The leakage current value of the SSR measured at the control point with its control output turned OFF.

Command**Response**

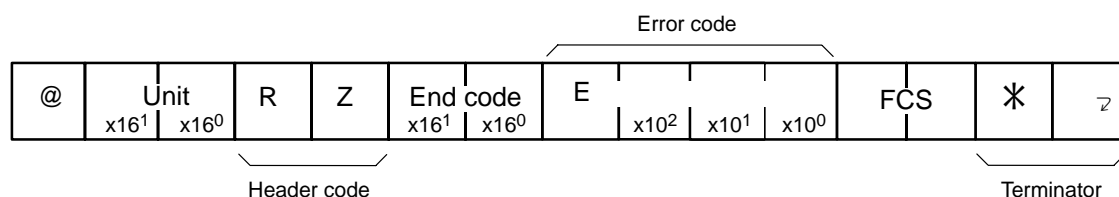
The current data of the response block for Heater Current Value and SSR Leakage Current Value Read (RZ) will be 0000 in the following cases.

The HB or HS alarm is not valid for the control point that has been designated.

The operation of the control point that has been designated is stopped.

Response Block with Error Detected

The response block for Heater Current Value and SSR Leakage Current Value Read (RZ) will include an error code if an error is detected by the E5ZE while the E5ZE is processing the command.



1. The response block for Heater Current Value and SSR Leakage Current Value Read (RZ) does not include read data or an error code if the end code of the response block is other than 00.

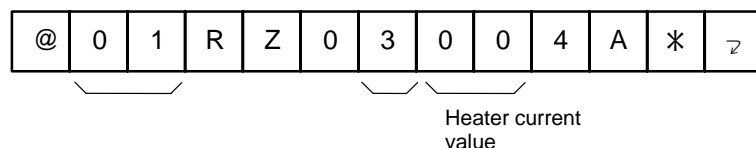
2. Refer to 1-4 End Codes and 1-5 Error Codes.

Communications Example

In this example, the E5ZE is operated with Heater Current Value and SSR Leakage Current Value Read (RZ) under the following conditions.

Unit no.: 1
Control Point: 3
Heater Current Value: 25.6 A

Command



Response

