SECTION 7
Fuzzy Control Commands

This section describes the commands used for fuzzy control.

7-1 Fuzzy Strength Write: Wj

Function

This command is used to write fuzzy strength to a control point.

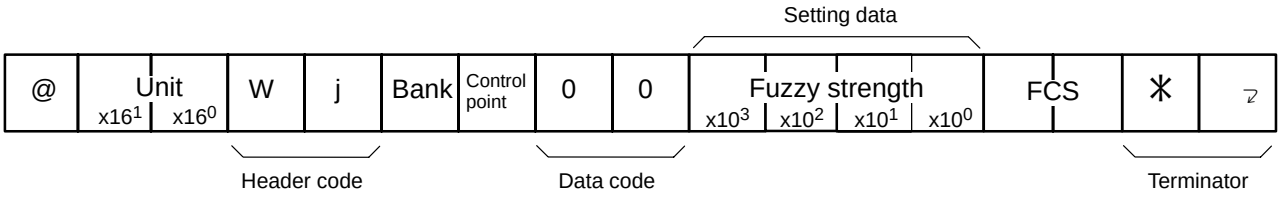
Fuzzy Strength Write (Wj) cannot be used at a control point being auto-tuned.

Setting Data Range

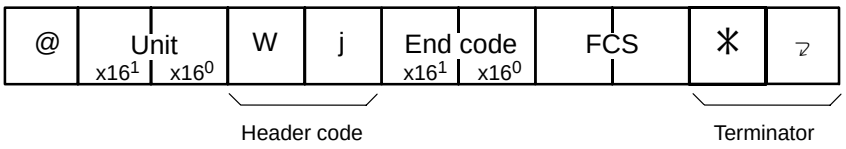
Setting unit	1
Fuzzy strength unit	%
Default	0050
Setting data	0000 to 0099

If the fuzzy strength of a control point set to 0000 is used for temperature control with the E5ZE, the E5ZE will not be in fuzzy control operation.

Command



Response

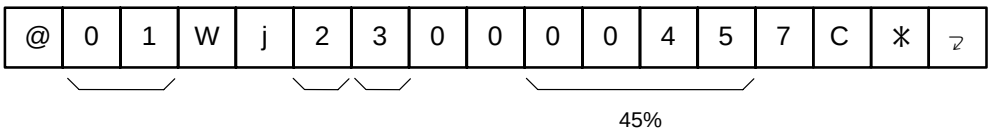


Communications Example

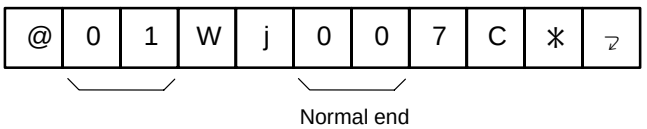
In this example, the E5ZE is operated with Fuzzy Strength Write (Wj) under the following conditions.

Unit no.: 1
Memory bank no.: 2
Control point: 3
Fuzzy strength: 45%

Command



Response

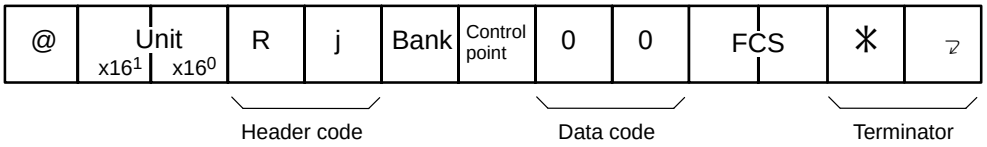


7-2 Fuzzy Strength Read: Rj

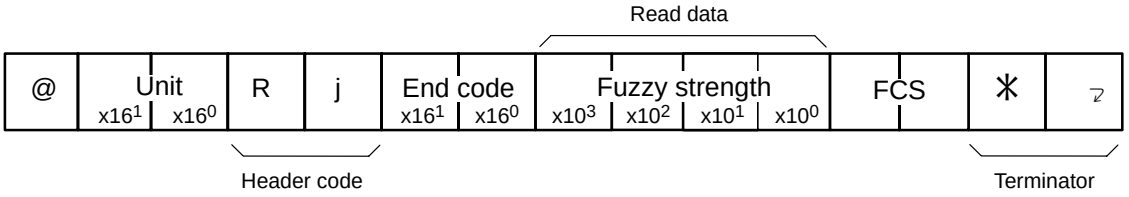
Function

This command is used to read the fuzzy strength that have been set at a control point.

Command



Response



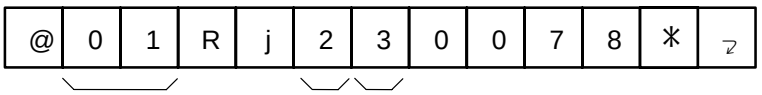
1. The response block for Fuzzy Strength Read (Rj) does not include read data if the end code of the response block is other than 00.
2. Refer to *1-4 End Codes*.

Communications Example

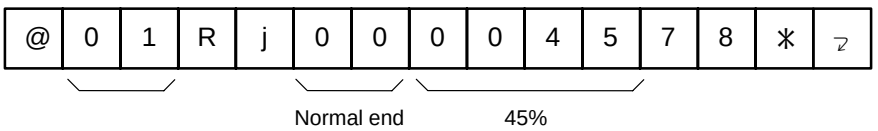
In this example, the E5ZE is operated with Fuzzy Strength Read (Rj) under the following conditions.

Unit no.: 1
Memory bank no.: 2
Control point: 3
Fuzzy strength: 45%

Command



Response



7-3 Fuzzy Scale 1 Write: Wk

Function

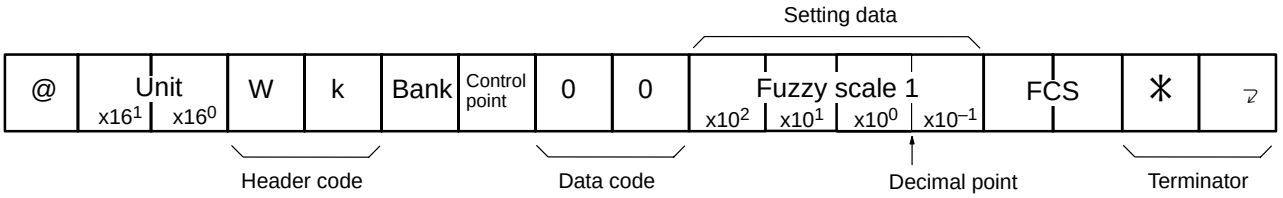
This command is used to write fuzzy scale 1 values to a control point for the E5ZE to determine external disturbance scales.

1. Fuzzy Scale 1 Write (Wk) cannot be used at a control point being auto-tuned.
2. Fuzzy scale 1 values for a control point being auto-tuned will be set automatically when the auto-tuning of the control point finishes.
3. The fuzzy scale 1 value of a control point will be automatically adjusted according to the PID constants. The fuzzy scale 1 value can be changed manually after PID constants are set for the bank.

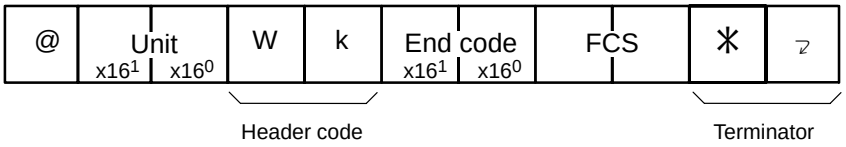
Setting Data Range

Setting unit	0.1	
°C or °F	°C	°F
Default	9999	
Setting data	0002 to 9999	

Command



Response

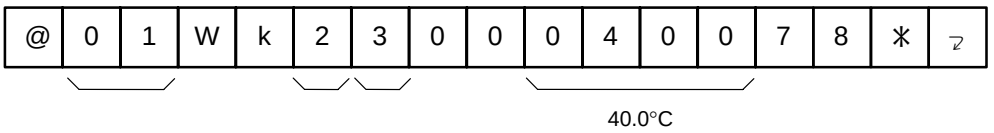


Communications Example

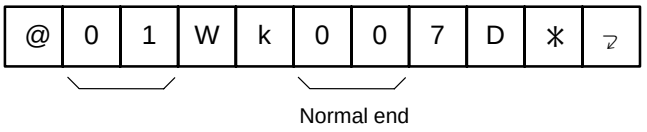
In this example, the E5ZE is operated with Fuzzy Scale 1 Write (Wk) under the following conditions.

Unit no.: 1
Memory bank no.: 2
Control point: 3
Fuzzy scale 1: 40.0°C

Command



Response

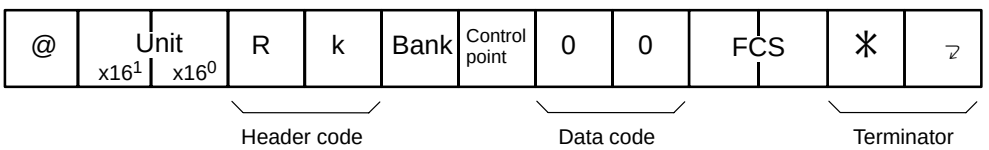


7-4 Fuzzy Scale 1 Read: Rk

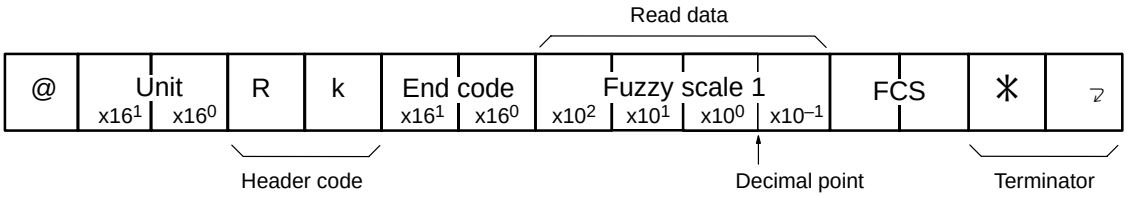
Function

This command is used to read the fuzzy scale 1 values that have been set at a control point.

Command



Response



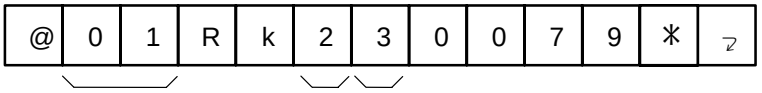
1. The response block for Fuzzy Scale 1 Read (Rk) does not include read data if the end code of the response block is other than 00.
2. Refer to *1-4 End Codes*.

Communications Example

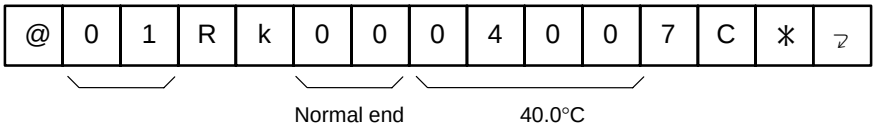
In this example, the E5ZE is operated with Fuzzy Scale 1 Read (Rk) under the following conditions.

Unit no.: 1
Memory bank no.: 2
Control point: 3
Fuzzy scale 1: 40.0°C

Command



Response



7-5 Fuzzy Scale 2 Write: Wl

Function

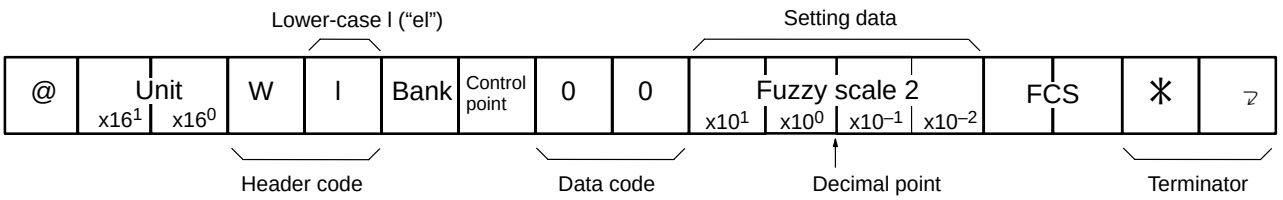
This command is used to write fuzzy scale 2 values to a control point for the E5ZE to determine the speeds of temperature changes due to external disturbance.

1. Fuzzy Scale 2 Write (Wl) cannot be used at a control point being auto-tuned.
2. Fuzzy scale 2 values for a control point being auto-tuned will be set automatically when the auto-tuning of the control point finishes.
3. The fuzzy scale 2 value of a control point will be automatically adjusted according to the PID constants. The fuzzy scale 2 value can be changed manually after PID constants are set for the bank.

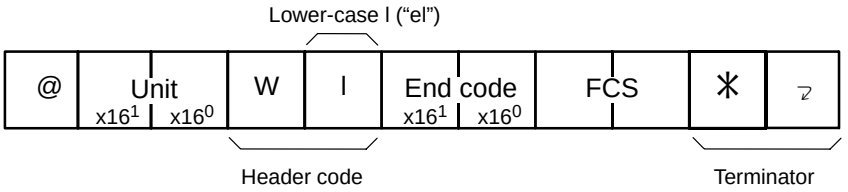
Setting Data Range

Setting unit	0.01	
°C or °F	°C/s	°F/s
Default	9999	
Setting data	0020 to 9999	

Command



Response

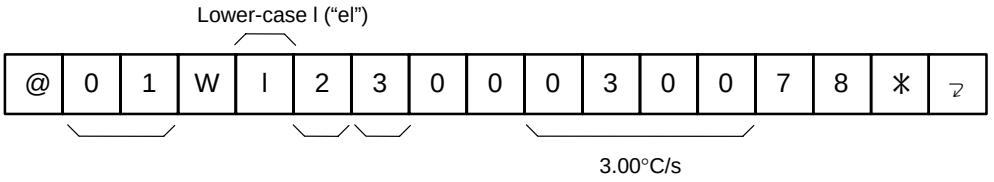


Communications Example

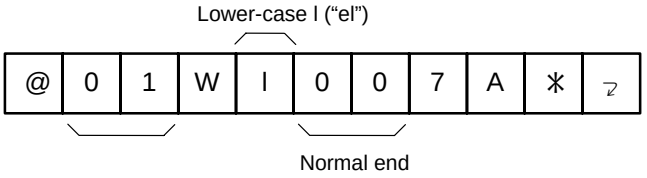
In this example, the E5ZE is operated with Fuzzy Scale 2 Write (Wl) under the following conditions.

Unit no.: 1
Memory bank no.: 2
Control point: 3
Fuzzy scale 2: 3.00°C/s

Command



Response

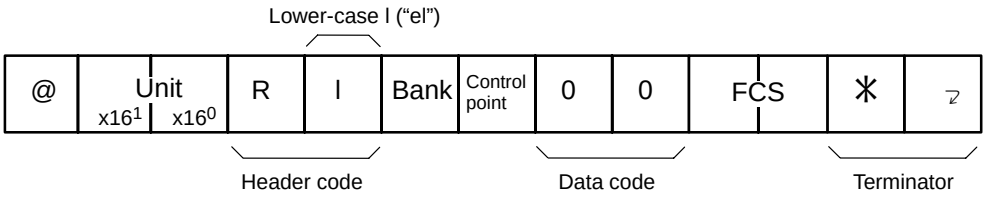


7-6 Fuzzy Scale 2 Read: Rl

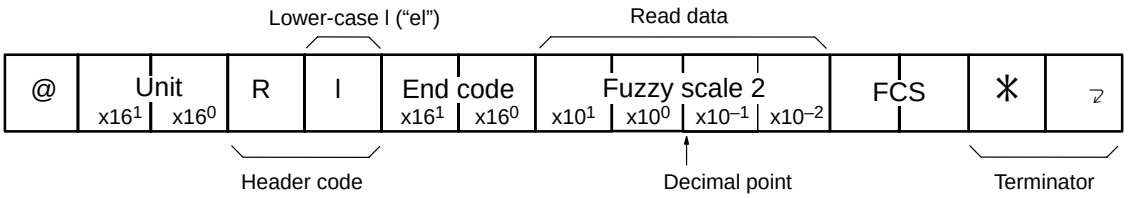
Function

This command is used to read the fuzzy scale 2 values that have been set at a control point.

Command



Response



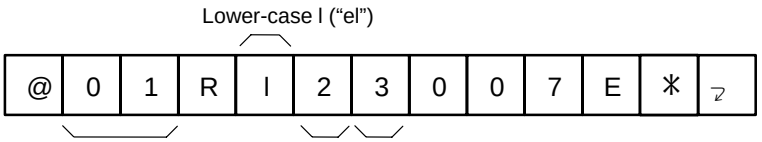
1. The response block for Fuzzy Scale 2 Read (Rl) does not include read data if the end code of the response block is other than 00.
2. Refer to *1-4 End Codes*.

Communications Example

In this example, the E5ZE is operated with Fuzzy Scale 2 Read (Rl) under the following conditions.

Unit no.:	1
Memory bank no.:	2
Control point:	3
Fuzzy scale 2:	3.00°C/s

Command



Response