

HSZ Command with M8130



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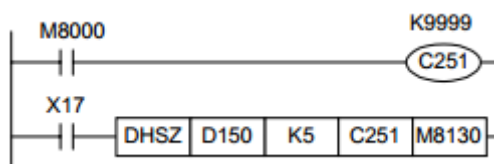
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I. General



HSZ have a special operation, it designated range is held in a data table driving “Y” output directly.

II. Instructions

It is selected when the destination device (D) is assigned special M coil M8130. This then allows device (S1, S2) to be used to define a data table using (S1) as the head address and (S2) as the number of record in the table – maximum number of records is 128. Each record occupies 4 consecutive data registers proportioned in the following manner (for a single record of data registers D through D+3):

	Single Record	
Data registers	D, D ₊₁	Used as a double (32bit) data register to contain the comparison data
	D ₊₂	Stores the I/O device number, in HEX of the “Y” output device to be controlled, i.e H10=Y10. Note: Hex digits A through F are not used.
	D ₊₃	Stores the action (SET/RESET) to be performed on the Output device D ₊₂ . Note: For a SET (ON) operation D ₊₃ must equal 1, for RESET (OFF) D ₊₃ must equal 0.

The data table is processed one “record number” at a time, i. e only 1 record is ever active as the comparison data. The currently active record number is stored in data register D8130. As the comparison value for the active record is “reached”, the assigned “Y” device is SET or RESET and the active “Record number” is incremented by 1. Once all records in a data table have been processed, the current record pointer (D8130) is reset to 0 (the table is then ready to process again) and the operation complete flag M8131 is set ON.

Record number [D8130]	Comparison value (lower/upper register) [D, D ₊₁]	Selected “Y” Output Device [D ₊₂]	SET/RESET “Y” Device (1=SET, 0=RESET) [D ₊₃]
0	[D150, D151] K321	[D152] H3 (Y10)	[D153] K1
1	[D154, D155] K432	[D156] H4(Y10)	[D157] K1
2	[D158, D159] K543	[D160] H5(Y10)	[D161] K1
3	[D162, D163] K765	[D164] H4(Y10)	[D165] K0
4	[D166, D167] K765	[D168] H3(Y10)	[D169] K0

If the high speed counter is reset (by program or hardware input), when it resumes counting and reaches

the first record's comparison value, the M8131 flag will be reset. Both the status of M8131 and contents of D8130 are not editable by the user. If the DHSZ instruction is turned OFF then all associated flags are reset.

Care should be exercise when resetting the high speed counter or turning OFF the DHSZ instruct as all associated “Y” output devices will remain in their last state, i.e. if an output was ON it will remain ON until independently reset by the user.

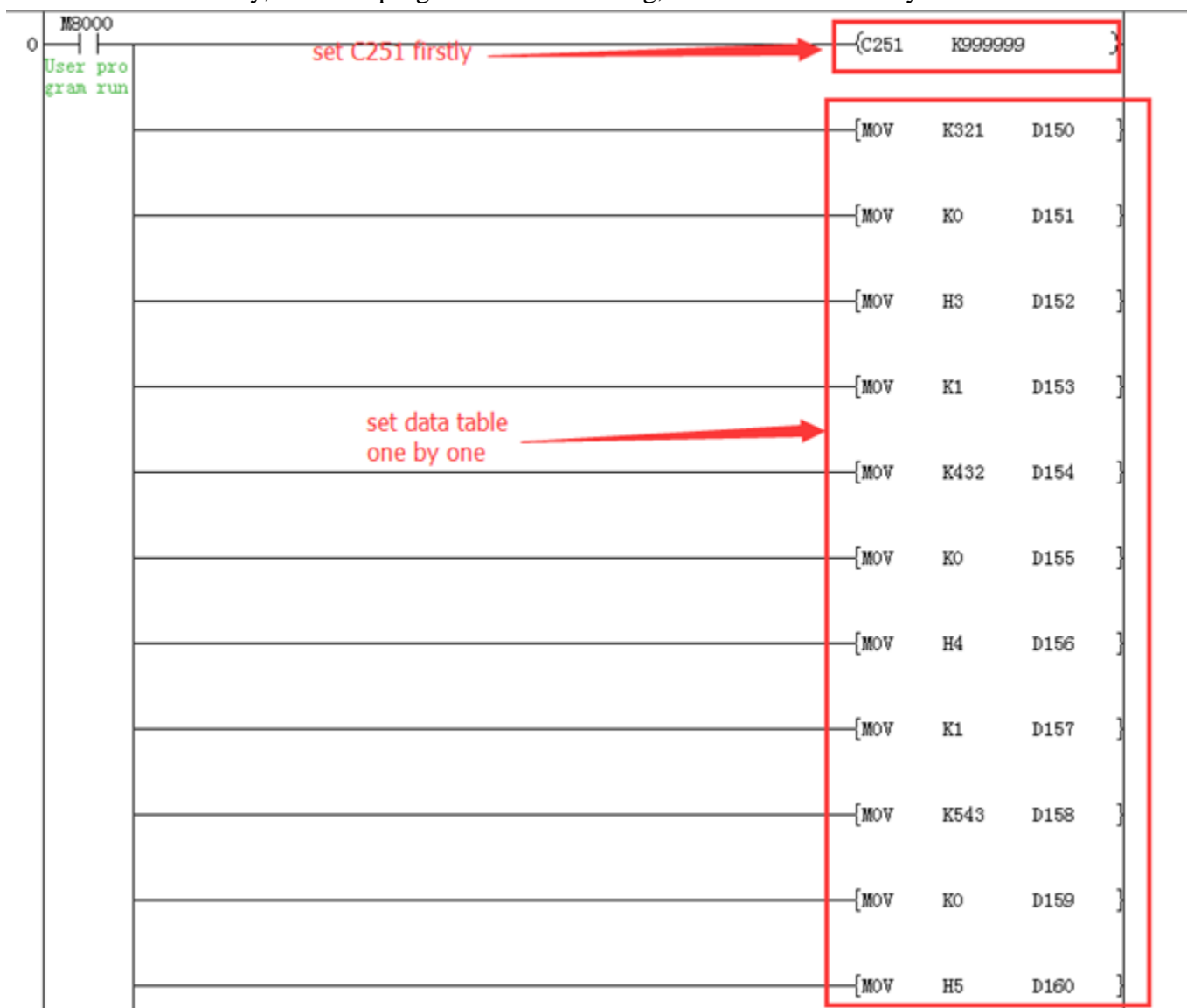
The data within inactive records can be changed during operation allowing data tables to be updated. Any change mode is processed at the end of the current program scan. The HSZ instruction will continue to process only the active data record, i.e. it will not reset due to the updating of an inactive data record.

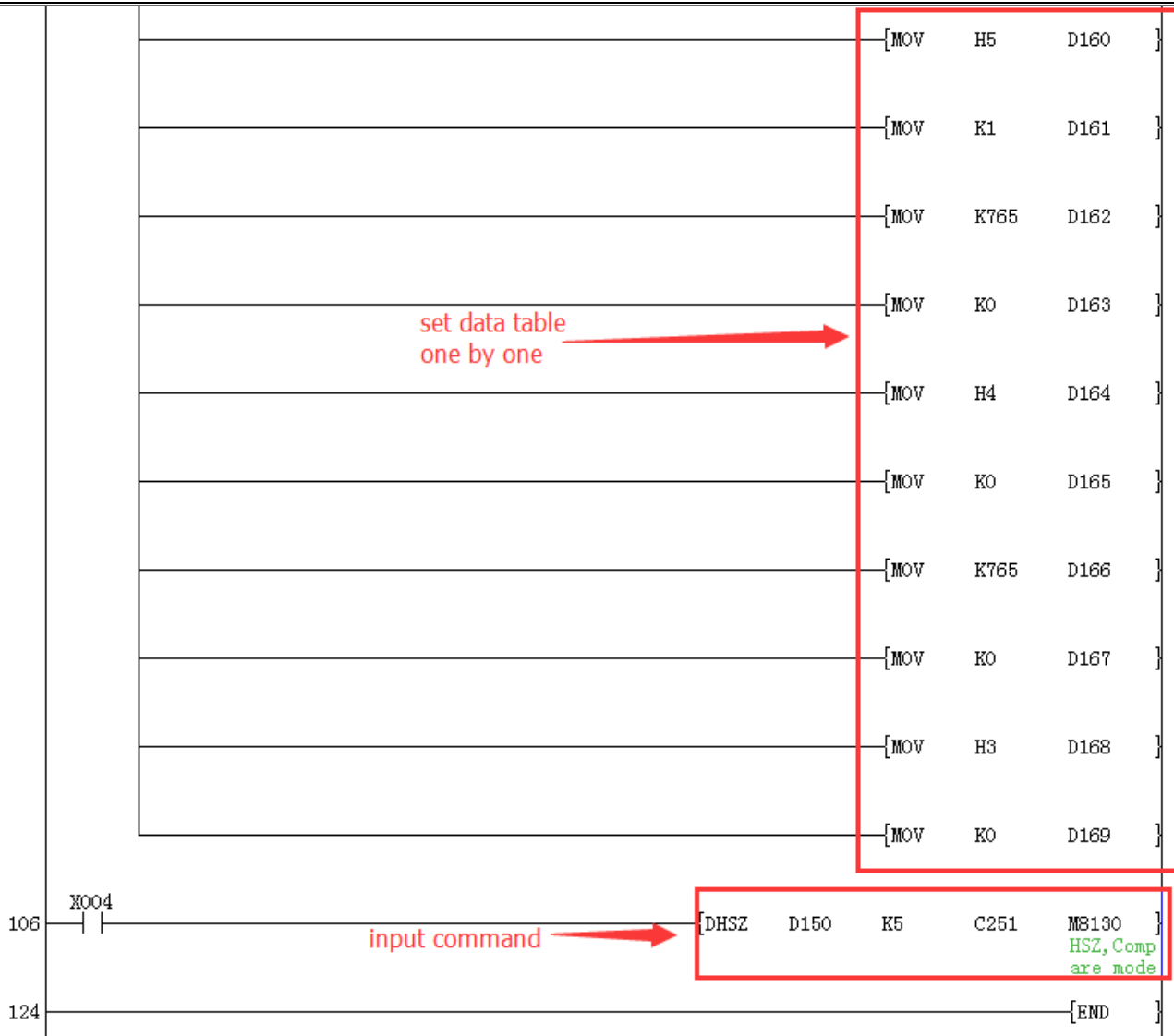
When the DHSZ instruction is initially activated it will not process a comparison until the following program scan as the CPU requires a slight time delay to initialize the comparison table.

III. Example

3.1 Using PLC to set data table

This is a direct way, but PLC program will be too long, if data table had many records.

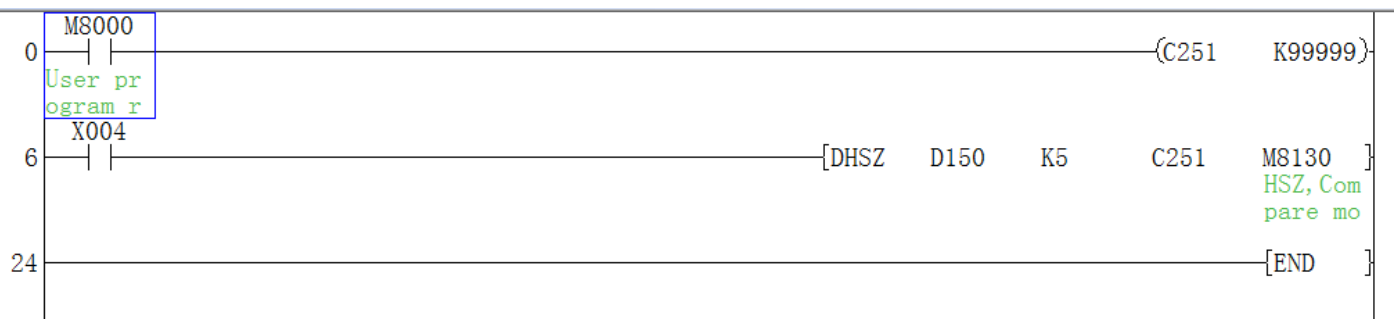




3.2 Using HMI to set data table

This is another way, user need to input data for table in HMI, before setting command.

PLC project



HMI project screen

Data Table

Comparison value lower	Comparison value upper	Select Y output	SET or RESET
<small>D150</small> 88888	<small>D151</small> 88888	<small>D152</small> 88888	<small>D153</small> 88888
<small>D154</small> 88888	<small>D155</small> 88888	<small>D156</small> 88888	<small>D157</small> 88888
<small>D158</small> 88888	<small>D159</small> 88888	<small>D160</small> 88888	<small>D161</small> 88888
<small>D162</small> 88888	<small>D163</small> 88888	<small>D164</small> 88888	<small>D165</small> 88888
<small>D166</small> 88888	<small>D167</small> 88888	<small>D168</small> 88888	<small>D169</small> 88888

