

# DL405 CPU Comparisons

DL405 CPU Specifications			
	D4-440	D4-450	D4-454
<b>System Capacity</b>			
Total memory available (words)	22.5K	30.8K	46.8K
Ladder memory (words)			
built-in memory	None, requires MC	7.5K flash	31.5K
with memory cartridge	up to 15.5K	up to 15.5K	N/A
V-memory (words)	7.0K	15.3K	15.3K
Battery backup	Yes	Yes	Yes, MRAM*
Total CPU memory I/O pts. available ( <b>actual I/O points depend on I/O configuration selected</b> )	2688 (X+Y+CR+GX)	8192 (X+Y+GX+GY)	8192 (X+Y+GX+GY)
I/O module point density	2/4/8/16/32/64	2/4/8/16/32/64	2/4/8/16/32/64
I/O module slots per base	4/6/8	4/6/8	4/6/8
<b>Local/local expansion</b>			
Serial Remote I/O (including local & exp. I/O)	320 in/320 out	1024 in/1024 out	1024 in/1024 out
Remote I/O Channels	1664 max.	4224 max.	4224 max.
I/O pts. per remote module channel	2	3	3
I/O pts. per remote module channel	512	512; 2048 (port 3)	512, 2048
<b>Ethernet Remote I/O (including local/exp. I/O)</b>			
discrete I/O pts.	Yes	Yes	Yes,
	2688 max.	8192 max.	8192 max.
	(Including local and exp.I/O)	(Including local and exp.I/O)	(Including local and exp. I/O)
Analog I/O channels	map into V-memory	Limited by power budget	Limited by power budget
Remote I/O channels	Limited by power budget	16,384 (16 fully expanded H4-EBC slaves using V-memory and bit-of-word instructions)	16,384 (16 fully expanded H4-EBC slaves using V-memory and bit-of-word instructions)
I/O per remote channel	16,384 (limited to 2688)		
<b>Performance</b>			
Contact execution (boolean)	0.33µs	0.96µs	0.96µs
Typical scan (1K boolean)	2-3ms	4-5ms	4-5ms
<b>Programming and Diagnostics</b>			
RLL ladder style	Yes	Yes	Yes
RLL PLUS/flowchart style (Stages)	Yes/1024	Yes/1024	Yes/1024
Run time editing	Yes	Yes	Yes
Supports Overrides	No	Yes	Yes
Variable/fixd scan	Variable	Fixed or variable	Fixed or variable
Instructions	170	210	210
Control relays	1024	2048	2048
Timers	256	256	256
Counters	128	256	256
Immediate I/O	Yes	Yes	Yes
Subroutines	Yes	Yes	Yes
For/next loops	Yes	Yes	Yes
Timed interrupt	Yes	Yes	Yes
Integer math	Yes	Yes	Yes
Floating-point math	No	Yes	Yes
Trigonometric functions	No	Yes	Yes
Table instructions	Yes	Yes	Yes
PID	No	Yes	Yes
Drum sequencers	No	Yes	Yes
Bit of word	No	Yes	Yes
Real-time clock/calendar	Yes	Yes	Yes
Internal diagnostics	Yes	Yes	Yes
Password security	Yes	Multi-level	Multi-level
System and User error log	Yes	Yes	Yes
IBox instructions	No	Yes	Yes
<b>CPU Ports Communications</b>			
Built-in ports	2 ports	4 ports	4 ports
K-sequence (proprietary protocol)	Yes	Yes	Yes
DirectNET	Yes	Yes	Yes
Modbus master/slave	No	Yes	Yes
ASCII out (Print)	No	Yes	Yes
Maximum baud rate	19.2K	38.4K	38.4K

\*Battery used for Real Time Clock backup