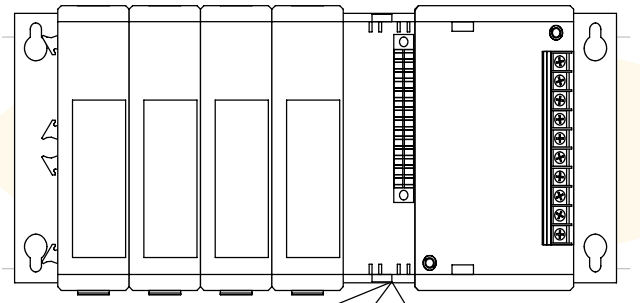
DL305 CPUs

There are three conventional CPUs and three specialty CPUs in the DL305 family. There are many considerations for choosing the right CPU, most of which depend on your particular application. The traditional CPUs, which offer control via RLL-style programming, are great for most applications. The information in this section provides a quick comparison. If you need to control I/O with a personal computer, or if you want to run a BASIC program in a CPU instead of ladder logic, then check out the specialty CPUs.



D3-330— The D3-330 design has been very popular for many years. It offers the lowest-cost solution in the DL305 family. It is great for machines that need little (if any) communications between the CPU and other devices.

D3-340—The D3-340 offers a faster scan rate, two RS232C ports (one with built-in Modbus RTU slave) and additional I/O points. Need RS422? Simply add an FA-ISOCON converter to one of the ports. If you need built-in communications, or even just an extra 16-point I/O card, the D3-340 offers the lowest-cost solution. This CPU allows you to make the most of your investment in a DL305 (or compatible) system.

D3-350—The D3-350 is the most powerful DL305 CPU. It is a spin-off of the D4-450 and D2-250(-1). It is plug-compatible with older bases, as well as analog and discrete I/O modules. The instruction set and I/O numbering scheme are similar to our DL05, DL06, DL105, DL205 and DL405 PLCs. The communications capabilities have also been greatly enhanced to include RS422 Remote I/O, MODBUS Master and Slave protocols, as well as our own *Direct*Net and K-Sequence protocols. When the D3-350 is installed in a -1 base, even more features are available. These bases allow for greater I/O expansion capabilities and for intelligent I/O modules.

NOTE: D3-330 and D3-340 programs cannot be downloaded into the D3-350 CPU. The D3-350's instruction set is based on the DL205/DL405 instruction set. If an existing D3-330 or D3-340 system is upgraded to a D3-350 CPU, the RLL program must be re-written for the D3-350 CPU.

Programming

Handheld programmer....D2-HPP $321.00
*Direct*SOFT Programming for Windows
PC-DSOFT6 ..... $395.00
PC-DS100..... Free
PC-R60-U (upgrade) $179.00

CPU Specifications

DL305 CPU Specifications			
System Capacity	***D3-330***	***D3-340***	***D3-350***
Total memory (K words)	3.91	3.98	14.8
Ladder memory (K words)	3.7	3.7	7.6
User data memory	116 bytes	172 bytes	7.1 K words
CMOS RAM	Yes	Yes	No
UVPROM	Opt.	Opt.	No
EEPROM	No	Opt.	Flash
Total I/O points using:			
Local I/O	128	136	144
Local and Expansion I/O	176	184	368
Remote I/O[1]	N/A	N/A	512
I/O point density	8/16	8/16	8/16
Slots per base (CPU requires 1 slot)	5/8/10	5/8/10	5/8/10
Performance			
Contact execution (boolean)	6.6 µs	0.87 µs	0.61 µs
Typical scan (1K boolean)[2]	15ms	4–5 ms	5–6 ms
Programming & Diagnostics			
RLL ladder style	Yes	Yes	Yes
RLL^{PLUS} (stage)	No	No	Yes
RunTime Editing	No	No	Yes
Supports Overrides	No	No	Yes
Variable/fixed scan	Variable	Variable	Either
Handheld programmer port	Yes	Yes	Yes
Built-in RS232C ports	No[3]	2	2
Real-time clock/calendar	No	No	Yes
Instructions	61	63	129
Control relays(CR)	140	196	1024
Shift register bits	128	128	Use CRs
Stages (RLL^{PLUS} only)	N/A	N/A	1024
Timers/counters	64	64	256/128
Immediate I/O	No	No	Yes
Subroutines	No	No	Yes
For/Next Loops	No	No	Yes
Timed interrupt	No	No	Yes
Integer math	Yes	Yes	Yes
Floating point math	No	No	Yes
PID	No	No	Yes
Drum sequence	No	No	Yes
Bit of word	No	No	Yes
ASCII print	No	No	Yes
Data registers	128	192	7168
Internal diagnostics	Yes	Yes	Yes
Password security	Yes	Yes	Multi-level
Battery backup	Yes	Yes	Yes
Communications			
Built-in ports[3]	No	Yes	Yes
*Direct*NET master	No	Yes	Yes
*Direct*NET slave	w/DCU	Yes	Yes
MODBUS RTU master	No	No	Yes
MODBUS RTU slave	No	Yes	Yes
Data communications unit	Yes	Yes	N/A
Specialty modules			
Thermocouple	Yes	Yes	Yes
Analog Input (#channels max.)	112	128	368
Analog output (#channels max.)	28	32	48
High-speed counter (10KHz)	Yes	Yes	No

1. The D3-350 bottom port supports DL205 remote I/O.

2. 1K program includes contacts, coils, and scan overhead. If you compare to other products, make sure to include their scan overhead.

3. The D3-330 requires a Data Communications Unit (DCU) for programming with Direct*SOFT *software.