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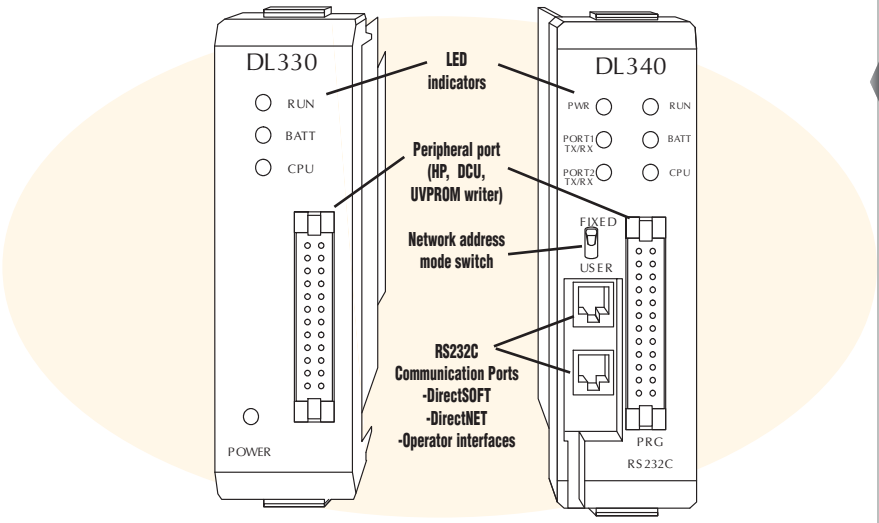
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Find the *Automation Direct D3-350* at our website: *Click HERE*

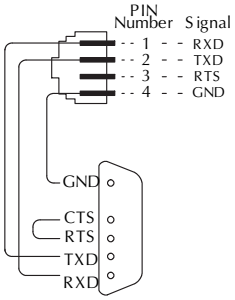
D3-330 and D3-340 Key Features

D3-330 <---> D3-340 <--->

The diagram to the right shows the various hardware features found on the D3-330 and D3-340 CPUs.



CPU Status Indicators		
RUN	ON OFF	CPU is in RUN mode CPU is in Program mode
BATT	ON OFF	Memory backup voltage low Memory backup voltage good
CPU	ON OFF	CPU failure CPU is good
PWR (Power)	ON OFF	CPU power good CPU power failure
Port1 RX/TX (D3-340)	RED GREEN	Flashing red indicates the CPU port is receiving data Flashing green indicates the CPU port is sending data
Port2 RX/TX (D3-340	RED Green	Flashing red indicates the CPU port is receiving data Flashing green indicates the CPU port is sending data



D3-340 RS232C Communication Port Specs	
Protocol	***DirectNET***
Connector	RJ11(handset connector)
Network address	01 to 90
Baud rate	38400, 19200, 9600, 4800, 2400, 1200, 600, 300
Parity-	None or odd
Transfer mode	HEX/ASCII Half-duplex Asynchronous
Data bits	8
Start bits	1
Stop bits	1
Turn around delay	0 to 1980 in 20ms intervals (preset with R777)

EEPROM and UVPROM chips

The DL305 CPUs come with on-board RAM and a battery. If you need additional program security, you may want to choose the EEPROM or UVPROM memory.

D3-CPU-UV <---> Optional

UVPROM memory. Four chips per pack. (Only one chip is required for the CPU.) A D3-PWU Prom Writer Unit is required for programming.

D3-340-EE <--->

Optional EEPROM memory for the D3-340 only. Four chips per pack. (Only one chip is required for the CPU.) No additional programming device is necessary.

D3-D4-BAT <--->

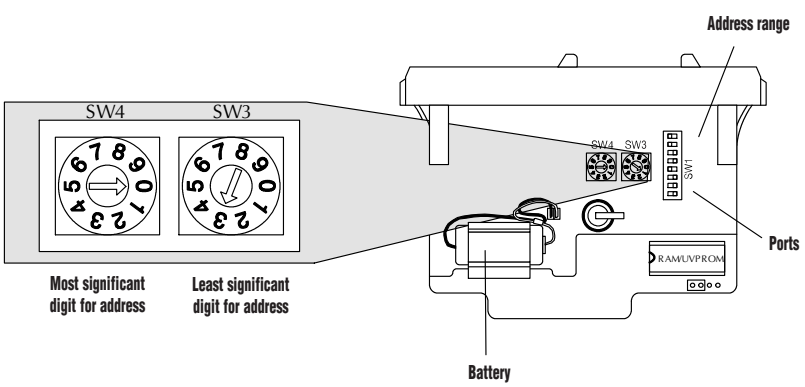
Spare battery (lithium 3.0V). Also used for D4-430 and D4-440 CPUs.

Hardware switches

Below is a side view of a D3-340 CPU that shows several types of hardware switches.

The D3-330 has a 2-position dipswitch for selecting retentive memory and jumpers for selecting UVPROM and RAM options.

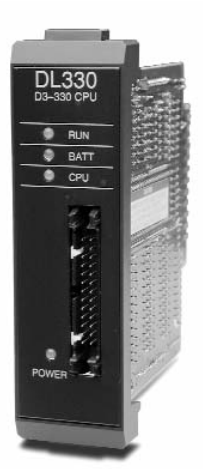
The D3-340 has a jumper switch for selecting UVPROM, EEPROM and RAM options, two rotary switches to select network addresses and an eight-position dipswitch for selecting baud rates (300 to 38.4K baud), communication mode (slave, master, Modbus RTU) and memory options.



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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	7.1K 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)	6.6µs	.87µs	.61µs
Typical scan (1K boolean)[2]	15ms	4-5ms	5-6ms
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.***

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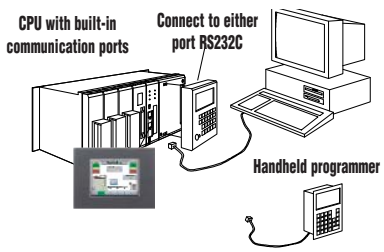
Communications

Determine your communications requirements

The choice of CPU can have a big impact on your communications capabilities in the DL305 family. If you are considering doing any communications, you should use the D3-340 or the D3-350 CPUs. You can communicate with the D3-330 CPU, but you have to add a DL305 Data Communications Unit to connect any device other than a handheld programmer. The Data Communications Unit has only one port.

D3-340 RS232C Communication Port Specifications

Protocol	*DirectNET*
Connector	RJ11(handset connector)
Network address	01 to 90
Baud rate	38400, 19200, 9600, 4800, 2400, 1200, 600, 300
Parity-	None or odd
Transfer mode	HEX/ASCII Half-duplex Asynchronous
Data bits	8
Start bits	1
Stop bits	1
Turn around delay	0 to 1980 in 20ms intervals (preset with R777)



Network Addresses

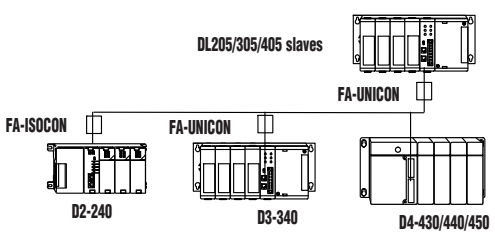
Port	*Protocol*	*Range*
1	Slave	1-90
2	Slave	1-90
	Master	0
	MODBUS/RTU	1-247

Standard communications

The D3-340 and D3-350 CPUs offer two built-in RS232C communication ports. Operator interfaces and *Direct*SOFT can be connected to either port. On the D3-340 CPU, the handheld programmer is attached directly or with a cable to the parallel port adjacent to the two serial communication ports. On the D3-350 CPU, the handheld programmer is attached to Port 1. The handheld programmer can be operated simultaneously with the communication ports. The D3-340 baud rate and network addresses are set by hardware dipswitches and rotary switches for Port 1. Port 2 uses internal registers that can be changed with a handheld programmer or *Direct*SOFT. Port 1 on the D3-350 is fixed. Port 2 can be configured using the handheld programmer or *Direct*SOFT.

DL305 as a slave on a network

Both ports on the D3-340 and the D3-350 CPUs can serve as slave ports for *Direct*NET. The bottom ports offer additional flexibility in that they can serve as a slave on a Modbus RTU network. The D3-350 even supports RS422, so no RS232-to-RS422 converter is needed. No programming is required in these CPUs for them to act as slave ports.



DL305 as a network master

The bottom built-in communication port of the D3-340 and D3-350 CPUs can serve as a Network Master for *Direct*NET. Up to 90 slave stations can be addressed. The D3-350 can also serve as a MODBUS RTU Master; up to 247 slave stations can be addressed. DL405, DL305 and DL205 controllers can be used as slave stations. *(Please note there are certain restrictions pertaining to valid DL205 and DL405 memory types that the D3-340 master can read and write.)*

Custom drivers

The DL305 product family supports the *Direct*NET protocol. However, in some applications you may have a need to connect to a device that does not support this protocol. If so, the ASCII/BASIC modules also allow you to write your own custom communication drivers (in BASIC) to connect to special devices. These high-speed modules offer communication rates up to 115.2K baud on RS232C, RS422, and RS485. With 128K of memory, there is ample program or data storage space. (These modules are not supported by the D3-350.)

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