DL305 Base Specifications

5-slot I/O base
(local or expansion)

8-slot I/O base
(local or expansion)

10-slot I/O base
(local or expansion)

(Bases provide built-in power supplies)

1.6'
0.5 M

1.115"
29.9mm

I/O Expansion Cable (D3-EXCBL)

94–240V

RUN

24V OUT

LG

G

**94-240 VAC
Terminal Strip**
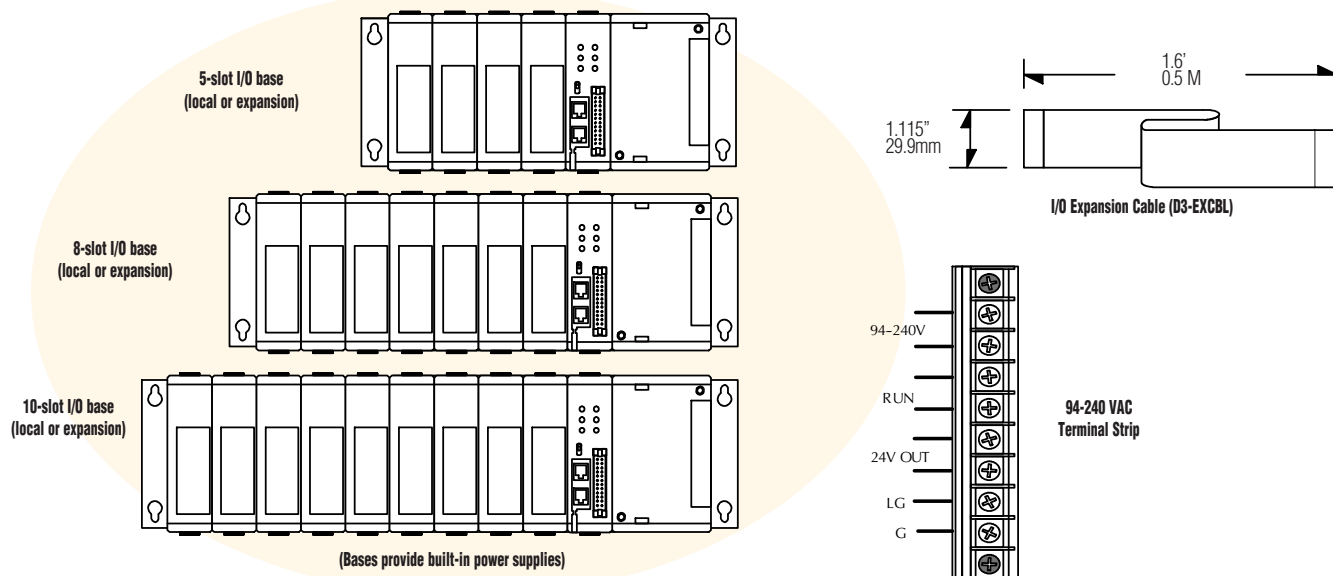
	D3-05B-1 <--->	D3-05BDC <--->	D3-08B-1 <--->	D3-10B-1 <--->	D3-10BDC <--->
Number of Slots	5	5	8	10	10
Local CPU Base	Yes	Yes	Yes	Yes	Yes
Expansion Base	Yes CPU base and two expansion bases. If CPU base is 5-slot, then the expansion bases must be 5-slot also.	Yes CPU base and two expansion bases. If CPU base is 5-slot, then the expansion bases must be 5-slot also.	Yes (D3-350 only) CPU base and two expansion bases. If CPU base is 8-slot, then the expansion bases must be 8-slot or 5-slot	Yes CPU base and one expansion bases. If CPU base is 10-slot, then the expansion bases must be 10-slot or 5-slot	Yes CPU base and one expansion bases. If CPU base is 10-slot, then the expansion bases must be 10-slot or 5-slot.
Input Voltage Range	85-264VAC 47-63Hz	20.5-30VDC <10% ripple	85-264VAC 47-63Hz	85-264VAC 47-63Hz	20.5-30VDC <10% ripple
Base Power Consumption	85 VA Max	48 Watts	85VA Max	85VA Max	65 Watts
Inrush Current Max.	30A 1ms	30A	30A 1ms	30A 1ms	30A
Dielectric Strength	1500VAC for one minute between terminals of AC P/S, run output, common, 24VDC	1500VAC for one minute between 24VDC input terminals and run output	1500VAC for one minute between terminals of AC P/S, run output, common, 24VDC	2000VAC for one minute between terminals of AC P/S, run output, common, 24VDC	1500VAC for one minute between 24VDC input terminals and run output
Insulation Resistance	>10Mohm at 500VDC	>10Mohm at 500VDC	>10Mohm at 500VDC	>10Mohm at 500VDC	>10Mohm at 500VDC
Power Supply Output (Voltage Ranges and Ripple)	(5VDC) 4.75-5.25V 5% ripple (9VDC) 8.5-10V 5% ripple (24VDC) 20-28V 5% ripple	(5VDC) 4.75-5.25V 5% ripple (9VDC) 8.5-10V 5% ripple (24VDC) 20-28V 5% ripple	(5VDC) 4.75-5.25V 5% ripple (9VDC) 8.5-10V 5% ripple (24VDC) 20-28V 5% ripple	(5VDC) 4.75-5.25V 5% ripple (9VDC) 8.5-10V 5% ripple (24VDC) 20-28V 5% ripple	(5VDC) 4.75-5.25V 5% ripple (9VDC) 8.5-10V 5% ripple (24VDC) 20-28V 5% ripple
5 VDC Current Supplied	.7A	1.4A	1.0A	1.0A	1.4A
9 VDC Current Supplied	2.0A	0.8A	2.0A	2.0A	1.7A
24 VDC Current Supplied	0.5A	0.5A	0.5A	0.5A	0.5A
Auxiliary 24 VDC Output	100mA max	None	100mA max	100mA max	None
Run Relay	250VAC 4A (resistive load)	250VAC 4A (resistive load)	250VAC 4A (resistive load)	250VAC 4A (resistive load)	250VAC, 4A (resistive load)
Fuses	2A (250V) Non-replaceable	4A (250V) User-replaceable D3-FUSE-3 <--->	2A (250V) Non-replaceable	2A (250V) Non-replaceable	4A (250V) User-replaceable D3-FUSE-3 <--->
Dimensions W/H/D	11.42x4.85x4.41 in. (290x123x112 mm)	11.42x4.85x4.41 in. (290x123x112 mm	15.55x4.85x4.41 in. (395x123x112 mm)	18.3x4.85x4.41 in. (465x123x112 mm)	18.34x4.85x4.41 in. (465x123x112 mm)
Weight	37oz. (1050g)	34oz. (964g)	44oz. (1250g)	51.1oz. (1450g)	50.5oz. (1432g)

Power Budget

Managing your power resource

The I/O configuration depends on your choice of I/O modules, bases and I/O location. When determining the types and quantity of I/O modules you will be using, it's important to remember there is a limited amount of power available from the power supply.

The chart on the next page indicates the power supplied and used by each DL305 device. The adjacent chart shows an example of how to calculate the power used by your particular system. These two charts should make it easy for you to determine if the devices you have chosen fit within the power budget of your system configuration.

If the I/O you have chosen exceeds the maximum power available from the power supply, you can resolve the problem by shifting some of the modules to an expansion base.

Use *ZIP*Links to reduce power requirements

If your application requires a lot of relay outputs, consider using the *ZIP*Link AC or DC relay output modules. These modules can switch high current (10A) loads without putting a load on your base power budget. Refer to the Wiring Solutions section in this catalog for more information.

This logo is placed next to I/O modules that are supported by the *ZIP*Link connection systems. See the I/O module specifications at the end of this section.

WARNING: *It is extremely important to calculate the power budget correctly. If you exceed the power budget, the system may operate in an unpredictable manner, which may result in a risk of personal injury or equipment damage.*

Example: how to calculate your power usage

The following example shows how to calculate the power budget for the DL305 system. The examples are constructed around a single 5-slot base using the devices shown. It is recommended you construct a similar table for each base in your DL305 system.

1. Using a chart similar to the one below, fill in column 2.
2. Using the tables on the opposite page, enter the current supplied and used by each device (columns 3, 4, and 5). Devices which fall into the "Other" category (Row D) are devices such as the Handheld Programmer or a Data Communication Unit, which also have power requirements, but do not directly plug into the base.

3. Add the current used by the system devices (columns 3, 4, and 5), starting with Slot 1, then put the total in the row labeled "Maximum Current Required" (Row E).
4. Subtract the row labeled "Maximum Current Required" (Row E), from the row labeled "Current Supplied" (Row B). Place the difference in the row labeled "Remaining Current" (Row F).
5. If "Maximum Current Required" is greater than "Current Supplied" in columns 3, 4 or 5, the power budget will be exceeded. It will be unsafe to use this configuration and you will need to restructure your I/O configuration.

A	Column 1	Column 2	Column 3	Column 4	Column 5
	Base # 0	Device Type	5 VDC (mA)	9VDC (mA)	24V(mA)
B	**Current Supplied**				
	5-slot Base	D3-05BDC	1400	800	500
C	**Current Required**				
	CPU Slot	D3-330	300	50	0
	Slot 0	D3-16NE3	0	130	0
	Slot 1	D3-16NE3	0	130	0
	Slot 2	D3-08TA-1	0	160	0
	Slot 3	D3-08TA-1	0	160	0
D	**Other**				
	Handheld prog D3-HPP	50	50	0	
E	**Maximum Current Required**		360	680	0
F	**Remaining Current**		1040	120	500

DL305 Power Requirements

This section shows the amount of power supplied by the base power supplies and the amount of power used by each DL305 device. Note the base power supplies provide three internal voltages (5V, 9V, 24V). The chart shows how much power from each of these power sources is required for each DL305 device. Use this information when calculating the power budget for your system.

In addition to the three internal power sources, the DL305 bases provide an external power connection. There is 24 VDC available from the 24 VDC output terminals on the bases (except D3-05BDC and D3-10BDC).

The 24 VDC can be used to power external devices or DL305 modules that require external 24 VDC. The power used from this external 24 VDC output reduces the internal system 24 VDC that is available to the modules by an equal amount. When using the 24 VDC output at the base terminal, it is recommended that 100 mA not be exceeded.

Power Consumed

Device	5V(mA)	9V(mA)	24V(mA)	Ext req.
CPUs				
D3-330	300	50	0	0
D3-340	300	20	0	0
D3-350	500	0	0	0
DC Input Modules				
D3-08ND2	0	10	112	0
D3-16ND2-1	0	25	224	0
D3-16ND2F	0	25	224	0
F3-16ND3F	0	148	68	0
AC Input Modules				
D3-08NA-1	0	10	0	0
D3-08NA-2	0	10	0	0
D3-16NA	0	100	0	0
AC/DC Input Modules				
D3-08NE3	0	10	0	0
D3-16NE3	0	130	0	0
DC Output Modules				
D3-04TD1	0	12	5	0
D3-08TD1	0	20	24	0
D3-08TD2	0	30	0	0
D3-16TD1-1	0	40	96	0
D3-16TD2	0	180	0	0
AC Output Modules				
D3-04TAS	0	12	0	0
F3-08TAS-1	0	200	0	0
D3-08TA-1	0	160	0	0
D3-08TA-2	0	160	0	0
F3-16TA-2	0	250	0	0
D3-16TA-2	0	400	0	0

Power Supplied

Device	5V(mA)	9V(mA)	24V(mA)	24 V (mA)
D3-05B-1	900	2000	500	100
D3-08B-1	900	2000	500	100
D3-10B-1	900	2000	500	100
D3-05BDC	900	2000	500	None
D3-10BDC	900	2000	500	None
D3-05B-NR	900	2000	500	100
D3-08B-NR	900	2000	500	100
D3-05BDC-NR	900	2000	500	None

Power Consumed

Device	5V(mA)	9V(mA)	24V(mA)	External required
Relay Output Modules				
D3-08TR	0	360	0	0
F3-08TRS-1	0	296	0	0
F3-08TRS-2	0	296	0	0
D3-16TR	0	480	0	0
Analog Temperature and Thermocouple Modules				
F3-04ADS	0	183	50	0
F3-08AD-1	0	45	55	0
F3-08THM-n	0	50	34	0
F3-16AD	0	55	65	0
F3-04DA-1	0	144	108	0
F3-04DAS	0	154	145	0
Communications and Networking				
D3-232 DCU	500	0	0	Optional 5V@500mA
D3-422 DCU	500	0	0	Optional 5V@500mA
FA-UNICON	0	0	0	24V or 5V@ 100mA
D3- DCM	0	300	0	0
Specialty Modules				
D3-08SIM	0	10	112	0
D3-HSC	0	70	0	0
D3-TCSU	40	5	0	0
Programming				
D3-HP	50	50	0	0
D3-HPP	50	50	0	0
D2-HP	200	0	0	0
Specialty CPUs				
F3-OMUX-1	409	0	0	0
F3-OMUX-2	262	0	150	0
F3-PMUX	455	0	0	0
F3-RTU	416	0	0	0
Operator Interface				
DV-1000	150	0	0	0
C-more Micro-Graphic	210	0	0	0

Dimensions and Installation

It is important to understand the installation requirements for your DL305 system. This will help ensure that the DL305 products operate within their environmental and electrical limits.

Plan for safety

This catalog should never be used as a replacement for the user manual. The user manuals, D3-USER-M and D3-350-M (available for download from our web site), contain important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

Base dimensions and mounting orientation

Use the diagrams to the right to make sure the DL305 system can be installed in your application. DL305 bases must be mounted horizontally to ensure proper airflow for cooling purposes. It is important to check these dimensions against the conditions required for your application. For example, it is recommended that you leave 1.5" depth for ease of access and cable clearance. However, your distance may be greater or less. Also, check the installation guidelines for the recommended cabinet clearances.

Specification	Rating
Storage Temperature	-4°F - 158°F (-20°C to 70°C)
Ambient Operating Temperature	32°F - 131°F (0° to 55°C)
Ambient Humidity	30% - 95% relative humidity (non-condensing)
Vibration Resistance	MIL STD 810C, Method 514.2
Shock Resistance	MIL STD810, Method 516.2
Noise Immunity	NEMA (ICS3-304)

DL305 mounting depths

4.41"
112mm — **Base and CPU**
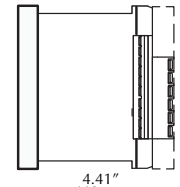
5"
127mm — **With 8-pt., 16-pt. I/O, or handheld**

OK

↑ Airflow
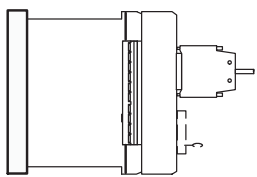
5.94"
151mm — **Base and CPU with DCU, or Thumbwheel interface**

6.75"
171mm — **With PROM Writer Unit (-lines)**

9.0"
229mm — **With DCU and D3-DSCBL-2 connected**

See the Enclosures section in this catalog for an enclosure that may be suitable for your application

2"
50mm
min

2"
50mm
min

2"
50mm
min

Component Chassis   Panel   Ground Braid Copper Lugs

Star Washers   Star Washers   Panel or Ground
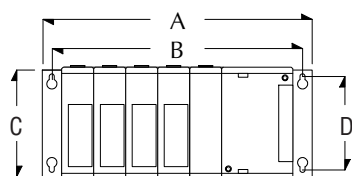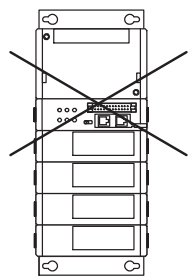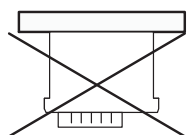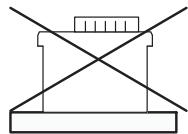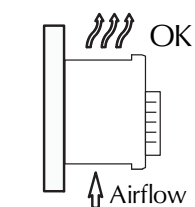
Base	Price	A		B		C		D	
D3-05B-1	<--->	11.41"	290mm	10.63"	270mm	4.84"	123mm	3.54"	90mm
D3-08B-1	<--->	15.55"	395mm	14.76"	375mm	4.84"	123mm	3.54"	90mm
D3-10B-1	<--->	18.30"	465mm	17.51"	445mm	4.84"	123mm	3.54"	90mm

Company Information

Control Systems Overview

CLICK PLC

Do-More PLCs Overview

Do-More H2 PLC

Do-More T1H PLC

DirectLOGIC PLCs Overview

DirectLOGIC DL05/06

DirectLOGIC DL105

DirectLOGIC DL205

DirectLOGIC DL305

DirectLOGIC DL405

Productivity Controller Overview

Productivity 3000

Universal Field I/O

Software

C-More HMI

C-More Micro HMI

ViewMarq Industrial Marquees

Other HMI

Communications

Appendix Book 1

Terms and Conditions