DL405 Family of Products

This page provides an overview of the variety of products found in the DL405 family.

CPUs

D4-454 – 110/220 VAC P/S

D4-454DC-1 – 24VDC P/S
30.8K total memory
16 PID loops with auto-tune

Memory cartridges

EEPROM - 15.5K (D4-EE-2)

Programming

DirectSOFT Programming for Windows (PC-DSOFT6)

Bases

4-slot base (D4-04B-1)

6-slot base (D4-06B-1)

8-slot base (D4-08B-1)

Local expansion base power supplies

110/220 VAC P/S (D4-EX)

24VDC P/S (D4-EXDC)

Discrete input modules

DC input

16-point 12–24 VDC (D4-16ND2)

16-point 12–24 VDC (1ms response) (D4-16ND2F)

32-point 24VDC (D4-32ND3-1)

64-point 20–28 VDC (D4-64ND2)

AC input modules

8-point 110/220 VAC (D4-08NA)

16-point 110VAC (D4-16NA)

AC/DC input modules

16-pt 12–24 VAC/DC (D4-16NE3)

Discrete output modules

DC output modules

16-point 5–24 VDC (D4-16TD1)

16-point 12–24 VDC (D4-16TD2)

32-point 5–26 VDC (D4-32TD1)

32-point 12–24 VDC (D4-32TD2)

64-point 5–26 VDC (D4-64TD1)

AC output modules

8-point 18–220 VAC (D4-08TA)

16-point 18–220 VAC (D4-16TA)

Relay output modules

8-point 2A (D4-08TR)

8-point 5A/pt (isolated) (F4-08TRS-2)

8-point 10A/pt (isolated) (F4-08TRS-1)

16-point 1A/pt (D4-16TR)

Analog modules (12-bit)

Analog input

4-channel in, current/voltage (F4-04AD)

4-channel in, current/voltage (isolated) (F4-04ADS)

8-channel in, current/voltage (F4-08AD)

16-channel in, current (F4-16AD-1)

16-channel in, voltage (F4-16AD-2)

Analog output

4-channel out, current (F4-04DA-1)

4-channel out, voltage (F4-04DA-2)

8-channel out, current (F4-08DA-1)

8-channel out, voltage (F4-08DA-2)

16-channel out, current (F4-16DA-1)

16-channel out, voltage (F4-16DA-2)

Temperature Input

8-channel in, type J thermocouple (F4-08THM-J)

Analog modules (16-bit)

Temperature Input

8-channel in, RTD (F4-08RTD)

8-channel in, thermocouple (F4-08THM)

Analog output

4-channel out, current (isolated) (F4-04DAS-1)

Communications/ networking modules

Ethernet communications [H4-ECOM100]

Data communications (D4-DCM)

Modbus master (F4-MAS-MB)

Specialty modules

High-speed counter I/O (H4-CTRIO)

8-point magnetic pulse input (F4-8MPI)

4-loop temperature controller (F4-4LTC)

BASIC CoProcessor Module

128K triple port (F4-CP128-1)

CPU-Slot slave controllers

Ethernet base controller (H4-EBC)

Remote I/O modules

Ethernet

Ethernet remote Master Module (H4-ERM100)

Ethernet base Controller (Slave) (H4-EBC)

Remote I/O protocol (serial)

Remote I/O Master Module (D4-RM)

Remote I/O Slave 110/220 VAC (D4-RS)

DL405 CPUs

System capacity

System capacity is the ability of the CPU to accommodate a variety of applications. Here are a few key considerations when determining system capacity:

How much memory do you need? Consider both ladder memory and data registers (V-memory). For ladder memory, most boolean instructions require one word. Some other instructions, such as timers, counters, etc., require two or more words. Our V-memory locations are 16-bit words and are useful for data storage, etc.

What type of memory do you need? The D4-454 has 15.5K of built in M-RAM ladder memory and no memory cartridge is needed.

How many I/O points are required? You will need to know how many field devices are required. Compare the D4-454 specifications tables on the next page with your application requirements.

Are there any remote I/O points? In many applications, the cost of bringing the individual control wiring back to the PLC control panel can be reduced by the use of remote I/O. The D4-454 CPU has built-in serial remote I/O connections on the lower 25-pin port; or use Ethernet Remote I/O for fast and easy set-up and communications.

Performance

If you have a time-critical application where every millisecond is important, then the D4-454 CPU, with the fastest overall scan time, is the right choice. The D4-454 is very fast at performing even the most basic of math or data instructions and will provide a faster overall scan time.

Programming and diagnostics

The D4-454 CPU offers a wide array of instructions and diagnostic features that can save you many hours of programming and debugging time. From basic boolean contact logic, to PID and floating point math, we have it covered! For the D4-454 CPU, IBox programming instructions simplify complex tasks with instructions such as Memory, Discrete Helper, Analog Helper, Math, Communications, and CTRIO. The chart on the next page lists the instructions by category. Beginning on page tDL4-70, you will find a detailed list showing the name and function of each instruction.

D4-454 Parameters	
Features	***D4-454***
Total Memory	46.8K
Ladder Memory	31.5K
DirectSOFT	Yes, version 6.1 or later
Memory Cartridge	No, (same amount of memory as the largest memory cartridge)
Battery	D2-BAT-1 (CR2354)
Mode Switch	Toggle Switch (Same position/ function)
Port 1 and 3 Baud Rate	2400, 4800, 9600, 19200, 38400
Port 1 and 3 Settings	8 data bits, 1 start bit, 1 stop bit, Odd, Even or No parity
Port 2 Protocol	DirectNet (master/slave), K-sequence, Non-procedure, Modbus RTU (master/slave)
Firmware Update	Supported from all ports

Built-in CPU communications

The D4-454 CPU provides at least two built-in communications ports. Each CPU supports our ***Direct***NET protocol on the lower port for easy, economical networking. Need Modbus RTU? Then the D4-454 CPU with built-in Modbus RTU Master and Slave capability is the right choice. Of course, we also offer a wide array of communications, such as our Ethernet Communications Module, Data Communications Module and Modbus Master module.

Specialty I/O modules

In addition to our cost-effective discrete and analog I/O, we also offer specialty modules to solve the really tough applications. Our D4-454 CPU supports specialty modules in the local CPU base, and can also support selected specialty modules in expansion bases.

D4-454 Unsupported Modules Table	
Bases	***Retired***
D4-04B, D4-04BNX	Yes
D4-06B, D4-06BNX	Yes
D4-08B, D4-08BNX	Yes
Input Modules	
D4-32ND3-2	Yes
D4-16NA-1	Yes
Output Modules	
D4-08TD1	Yes
Comm Modules	
H4-ECOM	Yes
Remote I/O Modules	
D4-ERM	Yes
D4-ERM-F	–
Specialty Modules	
D4-PULS	Yes
F4-CP128-R	Yes
F4-CP512-1	Yes