

D2-262 CPU



In This Appendix...

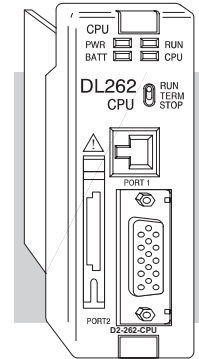
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CPU Overview

The D2-262 CPU is an addition to the DL205 system. It shares the same features as the D2-260 CPU. This appendix provides the information needed to understand the differences between the D2-262 and D2-260 CPUs.

General CPU Features

The D2-262 is a modular CPU in the same family as D2-230, D2-240, D2-250-1 and D2-260 CPUs. It can be installed in 3, 4, 6, or 9 slot bases. All I/O modules (except the D2-CTRINT) in the DL205 family will work with this CPU. The D2-262 CPU offers a wide range of processing power and program instructions. It offers RLL and Stage program instructions (See Chapter 5). It also provides extensive internal diagnostics that can be monitored from the application program or from an operator interface.



D2-262 CPU Features

The D2-262 offers all the features of the D2-260; it also supports up to 1280 local I/O points by using up to four local expansion bases. It has a maximum of 30.4K of program memory comprised of 15.8K of ladder memory (saved on flash memory) and 14.6K of V-memory (data registers). It also includes an internal RISC-based microprocessor for greater processing power. The D2-262 has 297 instructions. The D2-262 instruction set includes table instructions, trigonometric instructions and support for 16 PID loops.

The D2-262 has two built-in communications ports. The ports are identical to the ports of the D2-260. The ports will interface with *DirectSOFT* operator interfaces, and provides *DirectNet*, Modbus RTU Master/Slave connections.

D2-262 CPU Environmental Specifications

D2-262 CPU Environmental Specifications	
Ambient Operating Temperature	32°F to 131°F (0°C to 55°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Operating Humidity	30% to 95% (Non-condensing)
Atmosphere	No corrosive gases, The level for the environmental pollution is 2 (UL 840)
Vibration Resistance	IEC60068-2-6
Shock Resistance	IEC60068-2-27
Noise Immunity	Impulse noise μ s, 1000V RFI (145MHz, 435MHz)
Agency Approval	UL, CE, (FCC CLASS A), Class 1 Division 2 (C1D2)
Internal Power Consumption	DC 5V, 336mA Max.
Acceptable External Power Drop	Max. 10ms, (It Require more than 900ms interval between on and off)
Size	1.20" W x 3.50" H x 2.65" D (30.8 W x 89.9 H x 68 D mm)
Weight	2.5 oz. (70g)

DL205 CPU Bases Electrical Specifications

Specification	AC Powered Base	24 VDC Powered Base	125 VDC Powered Base
Part Numbers	D2-03B-1 D2-04B-1 D2-06B-1 D2-09B-1	D2-03BDC1-1 D2-04BDC1-1 D2-06BDC1-1 D2-09BDC1-1	D2-06BDC2-1 D2-09BDC2-1
Input Voltage Range	100-240 VAC +10% -15%	10.2-28.8 VDC (24VDC) with less than 10% ripple	104-240 VDC +10% -15%
Maximum Inrush Current	30A	10A	20A
Maximum Power	80VA	25W	30W
Voltage Withstand (dielectric)	1 minute @ 1500VAC between primary, secondary, field ground, and run relay		
Insulation Resistance	> 10M Ω at 500VDC		
Auxiliary 24 VDC Output	20-28 VDC, less than 1V p-p 300mA max.	None	20-28 VDC, less than 1V p-p 300mA max.
Fusing (internal to base power supply)	Non-replaceable 2A @ 250V slow blow fuse	Non-replaceable 3.15 A @ 250V slow blow fuse	Non-replaceable 2A @ 250V slow blow fuse

D2-260/D2-262 CPU General Specifications

Feature	D2-260	D2-262
Total Program memory (words)	30.4K	
Ladder memory (words)	15872 (Flash)	
V-memory (words)	14592	
Non-volatile V Memory (words)	No	
Boolean execution /K	1.9 ms/1.0 ms	
RLL and RLL ^{PLUS} Programming	Yes	
Handheld programmer	Yes	
<i>Direct</i> SOFT programming for Windows.	Yes (requires version 4.0 or higher)	Yes (requires version 6.3 or higher)
Built-in communication ports	One RS-232 One RS-232, RS-422 or RS-485	
EEPROM	Flash	
Total CPU memory I/O points available	8192 (X, Y, CR, GX, GY)	
Local I/O points available	256	
Local Expansion I/O points (including local I/O and expansion I/O points)	1280 (4 exp. bases max.)	
Serial Remote I/O points (including local I/O and expansion I/O points)	8192	
Serial Remote I/O Channels	8	
Max Number of Serial Remote Slaves	7 Remote / 31 Slice	
Ethernet Remote I/O Discrete points	8192	
Ethernet Remote I/O Analog I/O channels	Map into V-memory	
Ethernet Remote I/O channels	Limited by power budget	
Max Number of Ethernet slaves per channel	16	
I/O points per Remote channel	16,384 (16 fully expanded H4-EBC slaves using V-memory and bit-of-word instructions)	
I/O Module Point Density	4/8/12/16/32	
Slots per Base	3/4/6/9	

D2-262 CPU General Specifications

Feature	D2-260 or D2-262
Number of instructions available (see Chapter 5 for details)	297
Control relays	2048
Special relays (system defined)	144
Stages in RLL ^{PLUS}	1024
Timers	256
Counters	256
Immediate I/O	Yes
Interrupt input (hardware / timed)	Yes / Yes
Subroutines	Yes
Drum Timers	Yes
Table Instructions	Yes
For/Next Loops	Yes
Math	Integer, Floating Point, Trigonometric
ASCII	Yes, IN/OUT
PID Loop Control, Built In	Yes, 16 Loops
Time of Day Clock/Calendar	Yes
Run Time Edits	Yes
Supports Overrides	Yes
Internal diagnostics	Yes
Password security	Yes
System error log	Yes
User error log	Yes
Battery backup	Yes (optional)

D2-260/D2-262 CPU Program/Memory Specifications

Items		Specification	
Control Method		Stored program / Cyclic execution method	
I/O Transfer Method		3 Methods: In a lump, Direct (by instructions), Fixed interval (by the fixed scan)	
Program Language		Ladder Logic (Standard RLL), Stage logic (RLLPLUS)	
		CPUs	
		D2-260	D2-262
Number of Instructions		297	
Execution Time		Standard Instruction 0.61 μ s ~ Advanced Instruction 2.0 μ s ~ Scan time 1.9 ms/ K words	Standard Instruction 0.1 μ s ~ Advanced Instruction 0.1 μ s~ Scan time 1ms / K words
Operand Numbering System		Octal system (this numbering system depends on peripheral equipments.)	
Ladder Memory Size		15872 Words	
Number of I/O points	I/O	1024 Inputs (X0–X1777)	
	Remote I/O	1024 Outputs (Y0–Y1777)	
Link Inputs		2048 (GX0–GX3777)	
Link Output		2048 (GY0–GY3777)	
Control Relays		2048 (C0–C3777)	
Timers		256 (T0–T 377)	
Counters		256 (CT0–CT377)	
Stages		1024 (S0–S1777)	
V-memory		14592 words (V400–V777, V1400–V7377, V10000–35777)	
System V-memory		1152 words (V7600–V7777, V36000–37777)	
Special Relays		512 (SP0–SP777), 144 (Used)	
Accumulator		32 bits x 1	
Accumulator Stack		32 bits x 8	
Clock / Calendar		Year, Month, Day, Day of week, Hour, Min, Sec, 1/100 sec: in system V-memory	
I/O Numbering System		Fixed.(Input 0–1777, Output Y0–1777); Variable (by system of optional I/O & expansion I/O)	
PID Loop Operation		16 Loop	
Memory Backup		A Super Capacitor	Data: SRAM Program: Flash ROM
Software Interrupt		1 (5–1000 ms)	

D2-260/D2-262 CPU Program/Memory Specifications

Users Memory

Users Memory	Range	D2-260	D2-262
Total Memory available (words)		30.1K Words	
L Memory (words)	0 - 14591	15872 Words	
V Memory (words) *Data Register	V 400 – 777 V 1400-7377 V10000-35777	14592 Words	

Bit map - D2-260/ D2-262

Memory Type	Discrete Memory Reference	QTY (Bits)	Word Memory Reference	Qty (words)
Link Input Points	GX 0-3777	2048	V 40000-40177	128
Link Output Points	GY 0-3777	2048	V 40200-40377	128
Input Points	X 0-1777	1024	V 40400-40477	64
Output Points	Y 0-1777	1024	V 40500-40577	64
Control Relays	C 0-3777	2048	V 40600-40777	128
Stages	S 0-1777	1024	V 41000-41077	64
Timer Status	T 0-377	256	V 41100-41117	16
Counter Status	CT 0-377	256	V 41140-41157	16
Special Relays	SP 0-777	512	V 41200-41237	32

V-Memory Map - D2-260/ D2-262

V-Memory Type	V-Memory Reference	Qty (words)
Timer Current Values	V 0 – 377	256
Data Words	V 400 - 777	256
Counter Current Values	V 1000 – 1377	256
Data Words	V 1400 - 7377	3072
System Parameters	V 7400 - 7777	256
Data Words	V 10000 - 35777	11264
Special Data Words	V 36000 - 37777	1024

Expansion Modules Supported by D2-260 and D2-262

Analog Module	D2-260	D2-262
F2-04AD-1	√	√
F2-04AD-2	√	√
F2-08AD-1	√	√
F2-08AD-2	√	√
F2-02DA-1	√	√
F2-02DA-2	√	√
F2-02DA-1L	√	√
F2-02DA-2L	√	√
F2-02DAS-1	√	√
F2-02DAS-2	√	√
F2-08DA-1	√	√
F2-08DA-2	√	√
F2-4AD2DA	√	√
F2-04RTD	√	√
F2-04THM	√	√
F2-8AD4DA-1	√	√
F2-8AD4DA-2	√	√

Intelligent Module *	D2-260	D2-262
D2-RMSM	√	√
H2-ECOM	√	√
H2-ECOM100	√	√
D2-DCM	√	√
H2-CTRIO	√	√
D2-CTRINT	√	Not supported
D2-CM	√	√
D2-EM	√	√
H2-ERM100	√	√
H2-EBC100	√	√
F2-DEVNETS-1	√	√
F2-SDS-1	√	√
F2-CP128	√	√
H2-CTRIO2	√	√
H2-SERIO	Not supported	Not supported
H2-SERIO-4	Not supported	Not supported

* Intelligent I/O cannot be used in an expansion base.

Discrete Module	D2-260	D2-262
F2-08SIM	√	√
D2-08ND3	√	√
D2-16ND3-2	√	√
D2-32ND3	√	√
D2-32ND3-2	√	√
D2-08NA-1	√	√
D2-08NA-2	√	√
D2-16NA	√	√
D2-04TD1	√	√
D2-08TD1	√	√
D2-08TD2	√	√
D2-16TD1-2	√	√
D2-16TD2-2	√	√
D2-32TD1	√	√
D2-32TD2	√	√
D2-08TA	√	√
F2-08TA	√	√
D2-12TA	√	√
D2-04TRS	√	√
D2-08TR	√	√
F2-08TR	√	√
F2-08TRS	√	√
F2-16D1P	√	√
F2-16D2P	√	√
D2-12TR	√	√
D2-08CDR	√	√