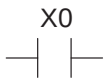
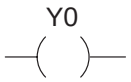
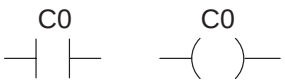
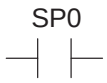
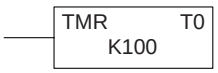
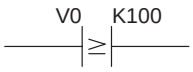
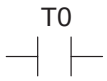
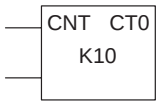
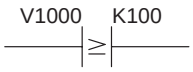
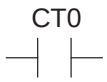
A

DL105/DL205 Memory Map

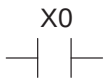
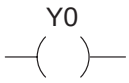
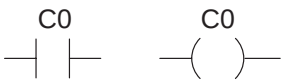
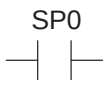
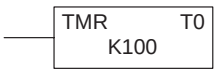
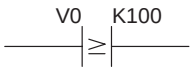
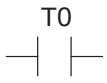
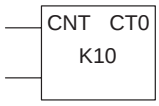
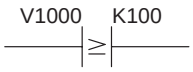
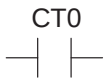
In This Chapter. . . .

DL130 Memory Map Overview

Memory Type	Discrete Memory Reference (octal)	Word Memory Reference (octal)	Qty. Decimal	Symbol
Input Points	X0 – X177	V40400 – V40407	128	
Output Points	Y0 – Y177	V40500 – V40507	128	
Control Relays	C0 – C377	V40600 – V40617	256	
Special Relays	SP0 – SP117 SP540 – SP577	V41200 – V41204 V41226 – V41227	112	
Timers	T0 – T77		64	
Timer Current Values	None	V0 – V77	64	
Timer Status Bits	T0 – T77	V41100 – V41103	64	
Counters	CT0 – CT77		64	
Counter Current Values	None	V1000 – V1077	64	
Counter Status Bits	CT0 – CT77	V41140 – V41143	64	
Data Words	None	V2000 – V2377	256	None specific, used with many instructions
Data Words Non–volatile	None	V4000 – V4177	128	None specific, used with many instructions
Stages	S0 – S377	V41000 – V41017	256	
System V-memory	None	V7620 – V7647 V7750–V7777	48	None specific, used for various purposes

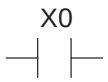
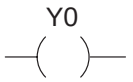
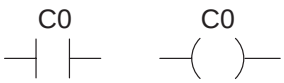
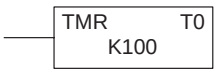
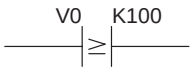
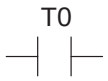
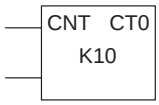
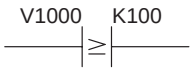
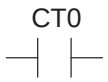
1 – The DL105 systems are limited to 10 discrete Inputs and 8 descrete outputs. There are 8 different DL105 models whcih are configured with various voltage level capabilities. Please refer to the Product Catalog or DL105 User Manual for specific models and specifications.

DL230 Memory Map Overview

Memory Type	Discrete Memory Reference (octal)	Word Memory Reference (octal)	Qty. Decimal	Symbol
Input Points	X0 – X177	V40400 – V40407	128	
Output Points	Y0 – Y177	V40500 – V40507	128	
Control Relays	C0 – C377	V40600 – V40617	256	
Special Relays	SP0 – SP117 SP540 – SP577	V41200 – V41204 V41226 – V41227	112	
Timers	T0 – T77		64	
Timer Current Values	None	V0 – V77	64	
Timer Status Bits	T0 – T77	V41100 – V41103	64	
Counters	CT0 – CT77		64	
Counter Current Values	None	V1000 – V1077	64	
Counter Status Bits	CT0 – CT77	V41140 – V41143	64	
Data Words	None	V2000 – V2377	256	None specific, used with many instructions
Data Words Non–volatile	None	V4000 – V4177	128	None specific, used with many instructions
Stages	S0 – S377	V41000 – V41017	256	
System V-memory	None	V7620 – V7647 V7750–V7777	48	None specific, used for various purposes

1 – The DL205 systems are limited to 128 discrete I/O points (total) with the present system hardware available. These can be mixed between input and output points as necessary.

DL240 Memory Map Overview

Memory Type	Discrete Memory Reference (octal)	Word Memory Reference (octal)	Qty. Decimal	Symbol
Input Points	X0 – X177	V40400 – V40407	128 [1]	
Output Points	Y0 – Y177	V40500 – V40507	128 [1]	
Control Relays	C0 – C377	V40600 – V40617	256	
Special Relays	SP0 – SP137 SP540 – SP617	V41200 – V41205 V41226 – V41230	144	
Timers	T0 – T177		128	
Timer Current Values	None	V0 – V177	128	
Timer Status Bits	T0 – T177	V41100 – V41107	128	
Counters	CT0 – CT177		128	
Counter Current Values	None	V1000 – V1177	128	
Counter Status Bits	CT0 – CT177	V41140 – V41147	128	
Data Words	None	V2000 – V3777	1024	None specific, used with many instructions
Data Words Non–volatile	None	V4000 – V4377	256	None specific, used with many instructions
Stages	S0 – S777	V41000 – V41037	512	
System V-memory	None	V7620 – V7737 V7746–V7777	106	None specific, used for various purposes

1 – The DL205 systems are limited to 128 discrete I/O points (total) with the present system hardware available. These can be mixed between input and output points as necessary.

X Input Bit Map

This table provides a listing of the individual Input points associated with each V-memory address bit for the DL130, 230 and DL240 CPUs.

MSB							DL130/DL230/DL240 Input (X) Points								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
017	016	015	014	013	012	011	010	007	006	005	004	003	002	001	000	V40400
037	036	035	034	033	032	031	030	027	026	025	024	023	022	021	020	V40401
057	056	055	054	053	052	051	050	047	046	045	044	043	042	041	040	V40402
077	076	075	074	073	072	071	070	067	066	065	064	063	062	061	060	V40403
117	116	115	114	113	112	111	110	107	106	105	104	103	102	101	100	V40404
137	136	135	134	133	132	131	130	127	126	125	124	123	122	121	120	V40405
157	156	155	154	153	152	151	150	147	146	145	144	143	142	141	140	V40406
177	176	175	174	173	172	171	170	167	166	165	164	163	162	161	160	V40407

Y Output Bit Map

This table provides a listing of the individual output points associated with each V-memory address bit for both the DL130, DL230 and DL240 CPUs.

MSB							DL130/DL230/DL240 Output (Y) Points								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
017	016	015	014	013	012	011	010	007	006	005	004	003	002	001	000	V40500
037	036	035	034	033	032	031	030	027	026	025	024	023	022	021	020	V40501
057	056	055	054	053	052	051	050	047	046	045	044	043	042	041	040	V40502
077	076	075	074	073	072	071	070	067	066	065	064	063	062	061	060	V40503
117	116	115	114	113	112	111	110	107	106	105	104	103	102	101	100	V40504
137	136	135	134	133	132	131	130	127	126	125	124	123	122	121	120	V40505
157	156	155	154	153	152	151	150	147	146	145	144	143	142	141	140	V40506
177	176	175	174	173	172	171	170	167	166	165	164	163	162	161	160	V40507

Control Relay Bit Map

This table provides a listing of the individual control relays associated with each V-memory address bit.

MSB								DL130/DL230/DL240 Control Relays (C)							LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
017	016	015	014	013	012	011	010	007	006	005	004	003	002	001	000	V40600
037	036	035	034	033	032	031	030	027	026	025	024	023	022	021	020	V40601
057	056	055	054	053	052	051	050	047	046	045	044	043	042	041	040	V40602
077	076	075	074	073	072	071	070	067	066	065	064	063	062	061	060	V40603
117	116	115	114	113	112	111	110	107	106	105	104	103	102	101	100	V40604
137	136	135	134	133	132	131	130	127	126	125	124	123	122	121	120	V40605
157	156	155	154	153	152	151	150	147	146	145	144	143	142	141	140	V40606
177	176	175	174	173	172	171	170	167	166	165	164	163	162	161	160	V40607
217	216	215	214	213	212	211	210	207	206	205	204	203	202	201	200	V40610
237	236	235	234	233	232	231	230	227	226	225	224	223	222	221	220	V40611
257	256	255	254	253	252	251	250	247	246	245	244	243	242	241	240	V40612
277	276	275	274	273	272	271	270	267	266	265	264	263	262	261	260	V40613
317	316	315	314	313	312	311	310	307	306	305	304	303	302	301	300	V40614
337	336	335	334	333	332	331	330	327	326	325	324	323	322	321	320	V40615
357	356	355	354	353	352	351	350	347	346	345	344	343	342	341	340	V40616
377	376	375	374	373	372	371	370	367	366	365	364	363	362	361	360	V40617

Stage Control / Status Bit Map

This table provides a listing of the individual stage control bits associated with each V-memory address bit.

MSB							DL130/DL230/DL240 Stage (S) Control Bits								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
017	016	015	014	013	012	011	010	007	006	005	004	003	002	001	000	V41000
037	036	035	034	033	032	031	030	027	026	025	024	023	022	021	020	V41001
057	056	055	054	053	052	051	050	047	046	045	044	043	042	041	040	V41002
077	076	075	074	073	072	071	070	067	066	065	064	063	062	061	060	V41003
117	116	115	114	113	112	111	110	107	106	105	104	103	102	101	100	V41004
137	136	135	134	133	132	131	130	127	126	125	124	123	122	121	120	V41005
157	156	155	154	153	152	151	150	147	146	145	144	143	142	141	140	V41006
177	176	175	174	173	172	171	170	167	166	165	164	163	162	161	160	V41007
217	216	215	214	213	212	211	210	207	206	205	204	203	202	201	200	V41010
237	236	235	234	233	232	231	230	227	226	225	224	223	222	221	220	V41011
257	256	255	254	253	252	251	250	247	246	245	244	243	242	241	240	V41012
277	276	275	274	273	272	271	270	267	266	265	264	263	262	261	260	V41013
317	316	315	314	313	312	311	310	307	306	305	304	303	302	301	300	V41014
337	336	335	334	333	332	331	330	327	326	325	324	323	322	321	320	V41015
357	356	355	354	353	352	351	350	347	346	345	344	343	342	341	340	V41016
377	376	375	374	373	372	371	370	367	366	365	364	363	362	361	360	V41017

MSB							DL240 Additional Stage (S) Control Bits								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
417	416	415	414	413	412	411	410	407	406	405	404	403	402	401	400	V41020
437	436	435	434	433	432	431	430	427	426	425	424	423	422	421	420	V41021
457	456	455	454	453	452	451	450	447	446	445	444	443	442	441	440	V41022
477	476	475	474	473	472	471	470	467	466	465	464	463	462	461	460	V41023
517	516	515	514	513	512	511	510	507	506	505	504	503	502	501	500	V41024
537	536	535	534	533	532	531	530	527	526	525	524	523	522	521	520	V41025
557	556	555	554	553	552	551	550	547	546	545	544	543	542	541	540	V41026
577	576	575	574	573	572	571	570	567	566	565	564	563	562	561	560	V41027
617	616	615	614	613	612	611	610	607	606	605	604	603	602	601	600	V41030
637	636	635	634	633	632	631	630	627	626	625	624	623	622	621	620	V41031
657	656	655	654	653	652	651	650	647	646	645	644	643	642	641	640	V41032
677	676	675	674	673	672	671	670	667	666	665	664	663	662	661	660	V41033
717	716	715	714	713	712	711	710	707	706	705	704	703	702	701	700	V41034
737	736	735	734	733	732	731	730	727	726	725	724	723	722	721	720	V41035
757	756	755	754	753	752	751	750	747	746	745	744	743	742	741	740	V41036
777	776	775	774	773	772	771	770	767	766	765	764	763	762	761	760	V41037

Timer Status Bit Map

This table provides a listing of the individual timer contacts associated with each V-memory address bit.

MSB							DL130/DL230/DL240 Timer (T) Contacts								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
017	016	015	014	013	012	011	010	007	006	005	004	003	002	001	000	V41100
037	036	035	034	033	032	031	030	027	026	025	024	023	022	021	020	V41101
057	056	055	054	053	052	051	050	047	046	045	044	043	042	041	040	V41102
077	076	075	074	073	072	071	070	067	066	065	064	063	062	061	060	V41103

MSB							Additional DL240 Timer (T) Contacts								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
117	116	115	114	113	112	111	110	107	106	105	104	103	102	101	100	V41104
137	136	135	134	133	132	131	130	127	126	125	124	123	122	121	120	V41105
157	156	155	154	153	152	151	150	147	146	145	144	143	142	141	140	V41106
177	176	175	174	173	172	171	170	167	166	165	164	163	162	161	160	V41107

Counter Status Bit Map

This table provides a listing of the individual counter contacts associated with each V-memory address bit.

MSB							DL130/DL230/DL240 Counter (CT) Contacts								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
017	016	015	014	013	012	011	010	007	006	005	004	003	002	001	000	V41140
037	036	035	034	033	032	031	030	027	026	025	024	023	022	021	020	V41141
057	056	055	054	053	052	051	050	047	046	045	044	043	042	041	040	V41142
077	076	075	074	073	072	071	070	067	066	065	064	063	062	061	060	V41143

MSB							Additional DL240 Counter (CT) Contacts								LSB	Address
17	16	15	14	13	12	11	10	7	6	5	4	3	2	1	0	
117	116	115	114	113	112	111	110	107	106	105	104	103	102	101	100	V41144
137	136	135	134	133	132	131	130	127	126	125	124	123	122	121	120	V41145
157	156	155	154	153	152	151	150	147	146	145	144	143	142	141	140	V41146
177	176	175	174	173	172	171	170	167	166	165	164	163	162	161	160	V41147

DL130/DL230 System V-memory

The DL205 CPUs reserve several V-memory locations for storing system parameters or certain types of system data. These memory locations store things like the error codes, counter interface module data, and other types of system setup information.

System V-memory	Description of Contents	Default Values / Ranges
V2320–V2377	The default location for multiple preset values for the UP counter.	N/A
V7620–V7627	Locations for DV–1000 operator interface parameters	
V7620	Sets the V-memory location that contains the value.	V0 – V2377
V7621	Sets the V-memory location that contains the message.	V0 – V2377
V7622	Sets the total number (1 – 16) of V-memory locations to be displayed.	1 – 16
V7623	Sets the V-memory location that contains the numbers to be displayed.	V0 – V2377
V7624	Sets the V-memory location that contains the character code to be displayed.	V0 – V2377
V7625	Contains the function number that can be assigned to each key.	V-memory location for X, Y, or C points used.
V7626	Reserved for future use.	
V7627	Reserved for future use.	
V7630	Starting location for the multi–step presets for channel 1. The default value is 2320, which indicates the first value should be obtained from V2320. Since there are 24 presets available, the default range is V2320 – V2377. You can change the starting point if necessary.	Default: V2320 Range: V0 – V2320
V7631–V7632	Not used	N/A
V7633	Sets the desired function code for the high speed counter, interrupt, pulse catch, pulse train, and input filter. Location is also used for setting the with/without battery option, enable/disable CPU mode change, and power-up in Run Mode option.	Default: 0000 Lower Byte Range: Range: 0 – None 10 – Up 40 – Interrupt 50 – Pulse Catch 60 – Filtered discrete In. Upper Byte Range: Bits 8 – 11, 14,15: Unused Bit 12: With/Without Batt. Bit 13: Power-up in Run
V7634	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X0 (when D2–CNTINT is installed).	Default: 0000
V7635	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X1 (when D2–CNTINT is installed).	Default: 0000
V7636	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X2 (when D2–CNTINT is installed).	Default: 0000
V7637	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X3 (when D2–CNTINT is installed).	Default: 0000

System V-memory	Description of Contents	Default Values / Ranges
V7640–V7647	Not used	N/A
V7751	Fault Message Error Code — stores the 4-digit code used with the FAULT instruction when the instruction is executed.	N/A
V7752	I/O Configuration Error — stores the module ID code for the module that does not match the current configuration.	N/A
V7753	I/O Configuration Error — stores the correct module ID code.	
V7754	I/O Configuration Error — identifies the base and slot number.	
V7755	Error code — stores the fatal error code.	
V7756	Error code — stores the major error code.	
V7757	Error code — stores the minor error code.	
V7760–V7764	Module Error — stores the slot number and error code where an I/O error occurs.	
V7765	Scan — stores the total number of scan cycles that have occurred since the last Program Mode to Run Mode transition.	
V7666–V7774	Not used	N/A
V7775	Scan — stores the current scan time (milliseconds).	N/A
V7776	Scan — stores the minimum scan time that has occurred since the last Program Mode to Run Mode transition (milliseconds).	N/A
V7777	Scan — stores the maximum scan time that has occurred since the last Program Mode to Run Mode transition (milliseconds).	N/A

DL240 System* V-memory

The DL205 CPUs reserve several V-memory locations for storing system parameters or certain types of system data. These memory locations store things like the clock / calendar information, analog potentiometer current values, error codes, and other types of system setup information.

System V-memory	Description of Contents	Default Values / Ranges
V3630–V3707	The default location for multiple preset values for UP/DWN and UP counter 1 or pulse catch function.	N/A
V3710–V3767	The default location for multiple preset values for UP/DWN and UP counter 2.	N/A
V3770–V3773	Not used	N/A
V3774–V3777	Default locations for analog potentiometer data (channels 1–4, respectively).	Range: 0 – 9999
V7620–V7627	Locations for DV–1000 operator interface parameters	
V7620	Sets the V-memory location that contains the value.	V0 – V3760
V7621	Sets the V-memory location that contains the message.	V0 – V3760
V7622	Sets the total number (1 – 16) of V-memory locations to be displayed.	1 – 16
V7623	Sets the V-memory location that contains the numbers to be displayed.	V0 – V3760
V7624	Sets the V-memory location that contains the character code to be displayed.	V0 – V3760
V7625	Contains the function number that can be assigned to each key.	V-memory location for X, Y, or C points used.
V7626	Reserved for future use.	
V7627	Reserved for future use.	
V7630	Starting location for the multi–step presets for channel 1. Since there are 24 presets available, the default range is V3630 – V3707. You can change the starting point if necessary.	Default: V3630 Range: V0 – V3710
V7631	Starting location for the multi–step presets for channel 1. Since there are 24 presets available, the default range is V3710– 3767. You can change the starting point if necessary.	Default: V3710 Range: V0 – V3710
V7632	Contains the baud rate setting for Port 2. You can use AUX 56 (from the Handheld Programmer) or, use ***Direct***SOFT™ to set the port parameters if 9600 baud is unacceptable.	Default: 2 – 9600 baud Range: 0 = 300 1 = 1200 2 = 9600 3 = 19.2K
V7633	Sets the desired function code for the high speed counter, interrupt, pulse catch, pulse train, and input filter. Location is also used for setting the with/without battery option, enable/disable CPU mode change, and power-up in Run Mode option.	Default: 0000 Lower Byte Range: Range: 0 – None 10 – Up 20 – Up/Dwn. 30 – Pulse Out 40 – Interrupt 50 – Pulse Catch 60 – Filtered Dis. Upper Byte Range: Bits 8 – 11, 13, 15 Unused Bit 12: With/Without Batt. Bit 14: Mode chg. enable
V7634	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X0 (when D2–CNTINT is installed).	Default: 0000

System V-memory	Description of Contents	Default Values / Ranges
V7635	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X1 (when D2–CNTINT is installed).	Default: 0000
V7636	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X2 (when D2–CNTINT is installed).	Default: 0000
V7637	Contains set up information for high speed counter, interrupt, pulse catch, pulse train output, and input filter for X3 (when D2–CNTINT is installed).	Default: 0000
V7640–V7641	Location for setting the lower and upper limits for the CH1 analog pot.	Default: 0000 Range: 0 – 9999
V7642–V7643	Location for setting the lower and upper limits for the CH2 analog pot.	Default: 0000 Range: 0 – 9999
V7644–V7645	Location for setting the lower and upper limits for the CH3 analog pot.	Default: 0000 Range: 0 – 9999
V7646–V7647	Location for setting the lower and upper limits for the CH4 analog pot.	Default: 0000 Range: 0 – 9999
V7650–V7737	Locations reserved for set up information used with future options (such as remote I/O and data communications.)	
V7746	Location contains the battery voltage, accurate to 0.1V. For example, a value of 32 indicates 3.2 volts.	
V7747	Location contains a 10ms counter. This location increments once every 10ms.	
V7751	Fault Message Error Code — stores the 4-digit code used with the FAULT instruction when the instruction is executed. If you've used ASCII messages (DL240 only) then the data label (DLBL) reference number for that message is stored here.	
V7752	I/O configuration Error — stores the module ID code for the module that does not match the current configuration.	
V7753	I/O Configuration Error — stores the correct module ID code.	
V7754	I/O Configuration Error — identifies the base and slot number.	
V7755	Error code — stores the fatal error code.	
V7756	Error code — stores the major error code.	
V7757	Error code — stores the minor error code.	
V7760–V7764	Module Error — stores the slot number and error code where an I/O error occurs.	
V7765	Scan — stores the total number of scan cycles that have occurred since the last Program Mode to Run Mode transition.	
V7766	Contains the number of seconds on the clock. (00 to 59).	
V7767	Contains the number of minutes on the clock. (00 to 59).	
V7770	Contains the number of hours on the clock. (00 to 23).	
V7771	Contains the day of the week. (Mon, Tue, etc.).	
V7772	Contains the day of the month (1st, 2nd, etc.).	
V7773	Contains the month. (01 to 12)	
V7774	Contains the year. (00 to 99)	
V7775	Scan — stores the current scan time (milliseconds).	
V7776	Scan — stores the minimum scan time that has occurred since the last Program Mode to Run Mode transition (milliseconds).	
V7777	Scan — stores the maximum scan time that has occurred since the last Program Mode to Run Mode transition (milliseconds).	