

CM2 Modbus Addresses

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This Guide Applies to CM2 motors with firmware versions 3.21 and 3.21 X013.

For X007, see [X007 Modbus Manual.pdf](#)

Setup Information

The following list indicates important setup information for running in Modbus TCP. Ensure that the master is setup with the same configuration.

- Port 502 - Modbus-TCP uses port 502. This is fixed.
- Holding register addressing depends on the system used. Refer to your modbus master documentation to understand the address format.
 - Additional information is below to list the most common address types
- Max holding registers for read and write is 16
- Use function code 0x10 for write single register. Function code 0x06 is not supported.
- All registers are 32-bit
 - Exceptions are the registers used directly in the CM1-T Library (IEC 61131-3).
- 32-bit word mapping is little endian

The following Parameters must be set in order to use modbus mode:

Parameter	Description	Default	Available Options	Description
K20	Baud Rate	0	0: 38.4 kbps 1: 9.6 kbps 2: 19.2 kbps 3: 57.6 kbps 4: 115.2 kbps 5: 230.4 kbps	Sets the baud rate of the Motor. Default is 38400
K78	COM1 Modbus Address Offset	0	0 - 32767	Set an offset for the Modbus Address of COM1  It is recommended to leave the offset set to 0
K79	COM2 Modbus Address Offset	0	0 - 32767	Set an offset for the Modbus Address of COM2  It is recommended to leave the offset set to 0
K81	COM1 Modbus Slave ID	0	0 : Disabled 1- 32767 : Station ID	Set the CM2 station ID
K82	Parity	0	0: None 1: Even 2: Odd	Set the communications parity
K84	COM2 Modbus Slave ID	0	0 : COM2 Modbus Disabled 1: COM2 Modbus Enabled (ID=1)	Set the Station ID for the second COM port. If using COM2, the ID must be set to 1

K85	Modbus Endianness	0	Value	COM1	COM2	Sets the Endianness of the Modbus data only. E.g. Transmission of 6553600(0x640000) Big Endian [Word 1] [Word 2] 0x0064 0x0000 Little Endian [Word 1] [Word 2] 0x0000 0x0064
			0	Big Endian	Big Endian	
			1	Little Endian	Big Endian	
			2	Big Endian	Little Endian	
			3	Little Endian	Little Endian	

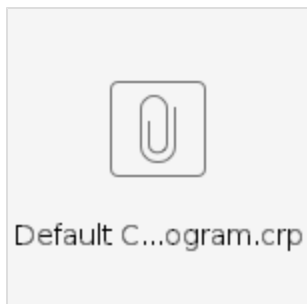


K65 MUST be set to 0 (38400 Baud) in order to use Modbus on COM2.

Turning off Modbus Mode

If the Motor is currently in Modbus mode, you can temporarily turn this off and communicate through the normal serial communications by sending the motor nine upper case letter F (**FFFFFFFF**). When the motor receives this, it will switch to communicate via the normal serial mode until the motor is power cycled again.

Default CM2 Modbus Programming:



Modbus Register Addresses

Motor Information

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
0	40001	Position Error (?95)	Yes	No
2	40003	Motor Position (?96)	Yes	No
4	40005	Motor Speed (?97)	Yes	No
6	40007	Motor Torque (?98)	Yes	No
8	40009	Motor Status (?99)	Yes	No
686	40687	Motor Temperature (?71)	Yes	No

Variables

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
10	40011	V0	Yes	Yes
12	40013	V1	Yes	Yes
14	40015	V2	Yes	Yes

16	40017	V3	Yes	Yes
18	40019	V4	Yes	Yes
20	40021	V5	Yes	Yes
22	40023	V6	Yes	Yes
24	40025	V7	Yes	Yes
26	40027	V8	Yes	Yes
28	40029	V9	Yes	Yes
30	40031	V10	Yes	Yes
32	40033	V11	Yes	Yes
34	40035	V12	Yes	Yes
36	40037	V13	Yes	Yes
38	40039	V14	Yes	Yes
40	40041	V15	Yes	Yes

Inputs/Outputs

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
52	40053	Analog Input	Yes	No
54	40055	Analog Output	Yes	Yes
56	40057	Digital Input Status (?70)	Yes	No
58	40059	Digital Output Status (?50)	Yes	No

Positions

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
200	40201	P0	Yes	Yes
202	40203	P1	Yes	Yes
204	40205	P2	Yes	Yes
206	40207	P3	Yes	Yes
208	40209	P4	Yes	Yes
210	40211	P5	Yes	Yes
212	40213	P6	Yes	Yes
214	40215	P7	Yes	Yes
216	40217	P8	Yes	Yes
218	40219	P9	Yes	Yes
220	40221	P10	Yes	Yes
222	40223	P11	Yes	Yes
224	40225	P12	Yes	Yes
226	40227	P13	Yes	Yes
228	40229	P14	Yes	Yes
230	40231	P15	Yes	Yes
232	40233	P16	Yes	Yes
234	40235	P17	Yes	Yes
236	40237	P18	Yes	Yes
238	40239	P19	Yes	Yes

240	40241	P20	Yes	Yes
242	40243	P21	Yes	Yes
244	40245	P22	Yes	Yes
246	40247	P23	Yes	Yes
248	40249	P24	Yes	Yes
250	40251	P25	Yes	Yes
252	40253	P26	Yes	Yes
254	40255	P27	Yes	Yes
256	40257	P28	Yes	Yes
258	40259	P29	Yes	Yes
260	40261	P30	Yes	Yes
262	40263	P31	Yes	Yes
264	40265	P32	Yes	Yes
266	40267	P33	Yes	Yes
268	40269	P34	Yes	Yes
270	40271	P35	Yes	Yes
272	40273	P36	Yes	Yes
274	40275	P37	Yes	Yes
276	40277	P38	Yes	Yes
278	40279	P39	Yes	Yes
280	40281	P40	Yes	Yes
282	40283	P41	Yes	Yes
284	40285	P42	Yes	Yes
286	40287	P43	Yes	Yes
288	40289	P44	Yes	Yes
290	40291	P45	Yes	Yes
292	40293	P46	Yes	Yes
294	40295	P47	Yes	Yes
296	40297	P48	Yes	Yes
298	40299	P49	Yes	Yes
300	40301	P50	Yes	Yes
302	40303	P51	Yes	Yes
304	40305	P52	Yes	Yes
306	40307	P53	Yes	Yes
308	40309	P54	Yes	Yes
310	40311	P55	Yes	Yes
312	40313	P56	Yes	Yes
314	40315	P57	Yes	Yes
316	40317	P58	Yes	Yes
318	40319	P59	Yes	Yes
320	40321	P60	Yes	Yes
322	40323	P61	Yes	Yes
324	40325	P62	Yes	Yes
326	40327	P63	Yes	Yes
328	40329	P64	Yes	Yes
330	40331	P65	Yes	Yes
332	40333	P66	Yes	Yes

334	40335	P67	Yes	Yes
336	40337	P68	Yes	Yes
338	40339	P69	Yes	Yes
340	40341	P70	Yes	Yes
342	40343	P71	Yes	Yes
344	40345	P72	Yes	Yes
346	40347	P73	Yes	Yes
348	40349	P74	Yes	Yes
350	40351	P75	Yes	Yes
352	40353	P76	Yes	Yes
354	40355	P77	Yes	Yes
356	40357	P78	Yes	Yes
358	40359	P79	Yes	Yes
360	40361	P80	Yes	Yes
362	40363	P81	Yes	Yes
364	40365	P82	Yes	Yes
366	40367	P83	Yes	Yes
368	40369	P84	Yes	Yes
370	40371	P85	Yes	Yes
372	40373	P86	Yes	Yes
374	40375	P87	Yes	Yes
376	40377	P88	Yes	Yes
378	40379	P89	Yes	Yes
380	40381	P90	Yes	Yes
382	40383	P91	Yes	Yes
384	40385	P92	Yes	Yes
386	40387	P93	Yes	Yes
388	40389	P94	Yes	Yes
390	40391	P95	Yes	Yes
392	40393	P96	Yes	Yes
394	40395	P97	Yes	Yes
396	40397	P98	Yes	Yes
398	40399	P99	Yes	Yes
400	40401	P100	Yes	Yes
402	40403	P101	Yes	Yes
404	40405	P102	Yes	Yes
406	40407	P103	Yes	Yes
408	40409	P104	Yes	Yes
410	40411	P105	Yes	Yes
412	40413	P106	Yes	Yes
414	40415	P107	Yes	Yes
416	40417	P108	Yes	Yes
418	40419	P109	Yes	Yes
420	40421	P110	Yes	Yes
422	40423	P111	Yes	Yes
424	40425	P112	Yes	Yes
426	40427	P113	Yes	Yes

428	40429	P114	Yes	Yes
430	40431	P115	Yes	Yes
432	40433	P116	Yes	Yes
434	40435	P117	Yes	Yes
436	40437	P118	Yes	Yes
438	40439	P119	Yes	Yes
440	40441	P120	Yes	Yes
442	40443	P121	Yes	Yes
444	40445	P122	Yes	Yes
446	40447	P123	Yes	Yes
448	40449	P124	Yes	Yes
450	40451	P125	Yes	Yes
452	40453	P126	Yes	Yes
454	40455	P127	Yes	Yes
456	40457	P128	Yes	Yes
458	40459	P129	Yes	Yes
460	40461	P130	Yes	Yes
462	40463	P131	Yes	Yes
464	40465	P132	Yes	Yes
466	40467	P133	Yes	Yes
468	40469	P134	Yes	Yes
470	40471	P135	Yes	Yes
472	40473	P136	Yes	Yes
474	40475	P137	Yes	Yes
476	40477	P138	Yes	Yes
478	40479	P139	Yes	Yes
480	40481	P140	Yes	Yes
482	40483	P141	Yes	Yes
484	40485	P142	Yes	Yes
486	40487	P143	Yes	Yes
488	40489	P144	Yes	Yes
490	40491	P145	Yes	Yes
492	40493	P146	Yes	Yes
494	40495	P147	Yes	Yes
496	40497	P148	Yes	Yes
498	40499	P149	Yes	Yes
500	40501	P150	Yes	Yes
502	40503	P151	Yes	Yes
504	40505	P152	Yes	Yes
506	40507	P153	Yes	Yes
508	40509	P154	Yes	Yes
510	40511	P155	Yes	Yes
512	40513	P156	Yes	Yes
514	40515	P157	Yes	Yes
516	40517	P158	Yes	Yes
518	40519	P159	Yes	Yes
520	40521	P160	Yes	Yes

522	40523	P161	Yes	Yes
524	40525	P162	Yes	Yes
526	40527	P163	Yes	Yes
528	40529	P164	Yes	Yes
530	40531	P165	Yes	Yes
532	40533	P166	Yes	Yes
534	40535	P167	Yes	Yes
536	40537	P168	Yes	Yes
538	40539	P169	Yes	Yes
540	40541	P170	Yes	Yes
542	40543	P171	Yes	Yes
544	40545	P172	Yes	Yes
546	40547	P173	Yes	Yes
548	40549	P174	Yes	Yes
550	40551	P175	Yes	Yes
552	40553	P176	Yes	Yes
554	40555	P177	Yes	Yes
556	40557	P178	Yes	Yes
558	40559	P179	Yes	Yes
560	40561	P180	Yes	Yes
562	40563	P181	Yes	Yes
564	40565	P182	Yes	Yes
566	40567	P183	Yes	Yes
568	40569	P184	Yes	Yes
570	40571	P185	Yes	Yes
572	40573	P186	Yes	Yes
574	40575	P187	Yes	Yes
576	40577	P188	Yes	Yes
578	40579	P189	Yes	Yes
580	40581	P190	Yes	Yes
582	40583	P191	Yes	Yes
584	40585	P192	Yes	Yes
586	40587	P193	Yes	Yes
588	40589	P194	Yes	Yes
590	40591	P195	Yes	Yes
592	40593	P196	Yes	Yes
594	40595	P197	Yes	Yes
596	40597	P198	Yes	Yes
598	40599	P199	Yes	Yes
600	40601	P200	Yes	Yes

Speeds

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
602	40603	S0	Yes	Yes
604	40605	S1	Yes	Yes

606	40607	S2	Yes	Yes
608	40609	S3	Yes	Yes
610	40611	S4	Yes	Yes
612	40613	S5	Yes	Yes
614	40615	S6	Yes	Yes
616	40617	S7	Yes	Yes
618	40619	S8	Yes	Yes
620	40621	S9	Yes	Yes
622	40623	S10	Yes	Yes
624	40625	S11	Yes	Yes
626	40627	S12	Yes	Yes
628	40629	S13	Yes	Yes
630	40631	S14	Yes	Yes
632	40633	S15	Yes	Yes

Accelerations

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
634	40635	A0	Yes	Yes
636	40637	A1	Yes	Yes
638	40639	A2	Yes	Yes
640	40641	A3	Yes	Yes
642	40643	A4	Yes	Yes
644	40645	A5	Yes	Yes
646	40647	A6	Yes	Yes
648	40649	A7	Yes	Yes
650	40651	A8	Yes	Yes

Torques

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
652	40653	M0	Yes	Yes
654	40655	M1	Yes	Yes
656	40657	M2	Yes	Yes
658	40659	M3	Yes	Yes
660	40661	M4	Yes	Yes
662	40663	M5	Yes	Yes
664	40665	M6	Yes	Yes
666	40667	M7	Yes	Yes
668	40669	M8	Yes	Yes

H Gain Parameters

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			

670	40671	H0	Yes	Yes
672	40673	H1	Yes	Yes
674	40675	H2	Yes	Yes
676	40677	H3	Yes	Yes
678	40679	H4	Yes	Yes
680	40671	H5	Yes	Yes
682	40673	H6	Yes	Yes
684	40675	H7	Yes	Yes

Timers

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
696	40697	T0	Yes	No
698	40699	T1	Yes	Yes
700	40701	T2	Yes	Yes
702	40703	T3	Yes	Yes
704	40705	T4	Yes	Yes
706	40707	T5	Yes	Yes
708	40709	T6	Yes	Yes
710	40711	T7	Yes	Yes
712	40713	T8	Yes	Yes

K Parameters

Holding Register Address		Motor Parameter	Read Access	Write Access
Base Address	Modicon Address			
752	40753	K20	Yes	Yes
754	40755	K21	Yes	Yes
756	40757	K22	Yes	Yes
758	40759	K23	Yes	Yes
760	40761	K24	Yes	Yes
762	40763	K25	Yes	Yes
764	40765	K26	Yes	Yes
766	40767	K27	Yes	Yes
768	40769	K28	Yes	Yes
770	40771	K29	Yes	Yes
772	40773	K30	Yes	Yes
774	40775	K31	Yes	Yes
776	40777	K32	Yes	Yes
778	40779	K33	Yes	Yes
780	40781	K34	Yes	Yes
782	40783	K35	Yes	Yes
784	40785	K36	Yes	Yes
786	40787	K37	Yes	Yes
788	40789	K38	Yes	Yes
790	40791	K39	Yes	Yes

792	40793	K40	Yes	Yes
794	40795	K41	Yes	Yes
796	40797	K42	Yes	Yes
798	40799	K43	Yes	Yes
800	40801	K44	Yes	Yes
802	40803	K45	Yes	Yes
804	40805	K46	Yes	Yes
806	40807	K47	Yes	Yes
808	40809	K48	Yes	Yes
810	40811	K49	Yes	Yes
812	40813	K50	Yes	Yes
814	40815	K51	Yes	Yes
816	40817	K52	Yes	Yes
818	40819	K53	Yes	Yes
820	40821	K54	Yes	Yes
822	40823	K55	Yes	Yes
824	40825	K56	Yes	Yes
826	40827	K57	Yes	Yes
828	40829	K58	Yes	Yes
830	40831	K59	Yes	Yes
832	40833	K60	Yes	Yes
834	40835	K61	Yes	Yes
836	40837	K62	Yes	Yes
838	40839	K63	Yes	Yes
840	40841	K64	Yes	Yes
842	40843	K65	Yes	Yes
844	40845	K66	Yes	Yes
846	40847	K67	Yes	Yes
848	40849	K68	Yes	Yes
850	40851	K69	Yes	Yes
852	40853	K70	Yes	Yes
854	40855	K71	Yes	Yes
856	40857	K72	Yes	Yes
858	40859	K73	Yes	Yes
860	40861	K74	Yes	Yes
862	40863	K75	Yes	Yes
864	40865	K76	Yes	Yes
866	40867	K77	Yes	Yes
868	40869	K78	Yes	Yes
870	40871	K79	Yes	Yes
872	40873	K80	Yes	Yes
874	40875	K81	Yes	Yes
876	40877	K82	Yes	Yes
878	40879	K83	Yes	Yes
880	40881	K84	Yes	Yes
882	40883	K85	Yes	Yes
884	40885	K86	Yes	Yes

886	40887	K87	Yes	Yes
888	40889	K88	Yes	Yes
890	40891	K89	Yes	Yes