

*Register Description*

# CTR 210i



Revision 2

Software Revision: 2.00



Marie-Curie-Str. 8  
D-50170 Kerpen

Phone: +49 22 73 / 60 37 0  
Fax. : +49 22 73 / 60 37 22



Attention!

Important!

These instructions should be used in conjunction with the Standard Installation and Operating Instructions for CTR.

## Table of Contents

1. Register description.....	4
1.1. Holding Register (Basis 4xxx).....	4
1.1.1. Working variables.....	4
1.1.2. Parameter variables.....	6

## 1. Register description

This chapter lists all the registers that can be addressed via the Modbus interface.

### 1.1. Holding Register (Basis 4xxxx)

#### 1.1.1. Working variables

Reg. no.	Description	Data type	Access	Modbus function
1	Device identification, Value '6' is read	16 Bit Int	R/O	3
2	Version number e. g. 105 for version 1.05	16 Bit Int	R/O	3
3	Device no.	16 Bit Int	R/O	3
4	Input 1. AD converter	16 Bit Int	R/O	3
5	Input 2. AD converter	16 Bit Int	R/O	3
6	Input 3. AD converter	16 Bit Int	R/O	3
7	Input 1 normiert (0-100%)	16 Bit Int	R/O	3
8	Input 2 normiert (0-100%)	16 Bit Int	R/O	3
9	Input 3 normiert (0-100%)	16 Bit Int	R/O	3
10	Sollwert 1 standardised (0-100%)	16 Bit Int	R/O	3
11	Sollwert 2 standardised (0-100%)	16 Bit Int	R/O	3
12	Hand-flag – Controller 1	16 Bit Int	R/O	3
13	Hand-flag – Controller 2	16 Bit Int	R/O	3
14	Status - Alarms bit0 - Alarm1 bit1 - Alarm2 bit2 - Alarm3 bit3 - Alarm4 bit4 - Alarm5 bit5 - Alarm6	16 Bit Int	R/O	3
15	Status – digital inputs		R/O	3
16	Status – digital outputs		R/O	3
17	Status – sensor break bit0 - Ain1 bit1 - Ain2 bit2 - Ain3		R/O	
18	Analog output 1 standardised (0-100%)	16 Bit Int	R/O	
19	Analog output 2 standardised (0-100%)	16 Bit Int	R/O	3
20	PWM-Register for analog output 1	16 Bit Int	R/W	03, 06, 16
21	PWM-Register for analog output 2	16 Bit Int	R/W	03, 06, 16
22	0 – blocked controlling analog outputs from controller. The outputs could be controlled by the registser 20 and 21.	16 Bit Int	R/W	03, 06, 16
23	Setpoint_Write – if set to 1 the setpoint are written to the FRAM	16 Bit Int	R/W	03, 06, 16
24	Parameter_Write – if set to 1 the parameters are written to FRAM	16 Bit Int	R/W	03, 06, 16
25-40	not used	16 Bit Int	R/O	3

Reg. no.	Description	Data type	Access	Modbus function
41	main setpoint	16 Bit Int	R/W	03, 06, 16
42	setpoint di_1	Flag	R/W	03, 06, 16
43	setpoint di_2	Flag	R/W	03, 06, 16
44	setpoint di_3	Flag	R/W	03, 06, 16
45	setpoint di_4	Flag	R/W	03, 06, 16
46	setpoint di_5	16 Bit Int	R/W	03, 06, 16
47	setpoint di_6	Flag	R/W	03, 06, 16
48	main setpoint for VHT-Controller	16 Bit Int	R/W	03, 06, 16
49	setpoint di_1 f. VHT-Controller	16 Bit Int	R/W	03, 06, 16
50	setpoint di_2 f. VHT-Controller	16 Bit Int	R/W	03, 06, 16
51	setpoint di_3 f. VHT-Controller	16 Bit Int	R/W	03, 06, 16
52	setpoint di_4 f. VHT-Controller		R/W	03, 06, 16
53	setpoint di_5 f. VHT-Controller		R/W	03, 06, 16
54	setpoint di_6 f. VHT-Controller		R/W	03, 06, 16
55	setpoint for second controller		R/W	03, 06, 16
56	Y0 - Par1		R/W	03, 06, 16
57	Y0 - Par2		R/W	03, 06, 16
58	Y0 - Par3		R/W	03, 06, 16

**1.1.2. Parameter variables**

Reg. no.	Description	Data type	Access	Modbus function
1001	kp_1	16 Bit Int	R/W	03, 06, 16
1002	kp_2	16 Bit Int	R/W	03, 06, 16
1003	kp_3	16 Bit Int	R/W	03, 06, 16
1004	kd_1	16 Bit Int	R/W	03, 06, 16
1005	kd_2	16 Bit Int	R/W	03, 06, 16
1006	kd_3	16 Bit Int	R/W	03, 06, 16
1007	tn_1	16 Bit Int	R/W	03, 06, 16
1008	tn_2	16 Bit Int	R/W	03, 06, 16
1009	tn_3	16 Bit Int	R/W	03, 06, 16
1010	reserve	16 Bit Int	R/W	03, 06, 16
1011	reserve	16 Bit Int	R/W	03, 06, 16
1012	reserve	16 Bit Int	R/W	03, 06, 16
1013	tv_1	16 Bit Int	R/W	03, 06, 16
1014	tv_2	16 Bit Int	R/W	03, 06, 16
1015	tv_3	16 Bit Int	R/W	03, 06, 16
1016	decp_1	16 Bit Int	R/W	03, 06, 16
1017	decp_2	16 Bit Int	R/W	03, 06, 16
1018	reserve	16 Bit Int	R/W	03, 06, 16
1019	dsp_x0_1	16 Bit Int	R/W	03, 06, 16
1020	dsp_x0_2	16 Bit Int	R/W	03, 06, 16
1021	dsp_x100_1	16 Bit Int	R/W	03, 06, 16
1022	dsp_x100_2	16 Bit Int	R/W	03, 06, 16
1023	sp_min_1	16 Bit Int	R/W	03, 06, 16
1024	sp_min_2	16 Bit Int	R/W	03, 06, 16
1025	sp_max_1	16 Bit Int	R/W	03, 06, 16
1026	sp_max_2	16 Bit Int	R/W	03, 06, 16
1027	sp_min_VHT	16 Bit Int	R/W	03, 06, 16
1028	sp_max_VHT	16 Bit Int	R/W	03, 06, 16
1029	s_sp_1	16 Bit Int	R/W	03, 06, 16
1030	s_sp_2	16 Bit Int	R/W	03, 06, 16
1031	s_sp_VHT	16 Bit Int	R/W	03, 06, 16
1032	reserve	16 Bit Int	R/W	03, 06, 16
1033	sp_ramp	16 Bit Int	R/W	03, 06, 16
1034	reserve	16 Bit Int	R/W	03, 06, 16
1035	out_min_1	16 Bit Int	R/W	03, 06, 16
1036	out_min_2	16 Bit Int	R/W	03, 06, 16
1037	out_max_1	16 Bit Int	R/W	03, 06, 16
1038	out_max_2	16 Bit Int	R/W	03, 06, 16
1039	out_s_1	16 Bit Int	R/W	03, 06, 16
1040	reserve	16 Bit Int	R/W	03, 06, 16
1041	out_s_2	16 Bit Int	R/W	03, 06, 16
1042	reserve	16 Bit Int	R/W	03, 06, 16
1043	out_init_1	16 Bit Int	R/W	03, 06, 16
1044	out_init_2	16 Bit Int	R/W	03, 06, 16

Reg. no.	Description	Data type	Access	Modbus function
1045	out_ramp	16 Bit Int	R/W	03, 06, 16
1046	reserve	16 Bit Int	R/W	03, 06, 16
1047	reserve	16 Bit Int	R/W	03, 06, 16
1048	reserve	16 Bit Int	R/W	03, 06, 16
1049	sfxd	16 Bit Int	R/W	03, 06, 16
1050	sensor_min	16 Bit Int	R/W	03, 06, 16
1051	sensor_max	16 Bit Int	R/W	03, 06, 16
1052	sensor_time	16 Bit Int	R/W	03, 06, 16
1053	filter_1	16 Bit Int	R/W	03, 06, 16
1054	filter_2	16 Bit Int	R/W	03, 06, 16
1055	filter_3	16 Bit Int	R/W	03, 06, 16
1056	Ain1_Start	16 Bit Int	R/W	03, 06, 16
1057	Ain2_Start	16 Bit Int	R/W	03, 06, 16
1058	Ain3_Start	16 Bit Int	R/W	03, 06, 16
1059	Ain1_End	16 Bit Int	R/W	03, 06, 16
1060	Ain2_End	16 Bit Int	R/W	03, 06, 16
1061	Ain3_End	16 Bit Int	R/W	03, 06, 16
1062-1065	Caption_1	String 8 Char.	R/W	03, 06, 16
1066-1069	Caption_2	String 8 Char.	R/W	03, 06, 16
1070	reserve	16 Bit Int	R/W	03, 06, 16
1071	c1	16 Bit Int	R/W	03, 06, 16
1072	c2	16 Bit Int	R/W	03, 06, 16
1073	c3	16 Bit Int	R/W	03, 06, 16
1074	c4	16 Bit Int	R/W	03, 06, 16
1075	c5	16 Bit Int	R/W	03, 06, 16
1076	c6	16 Bit Int	R/W	03, 06, 16
1077-1080	reserve	16 Bit Int	R/W	03, 06, 16
1081	alarm_stat_1	16 Bit Int	R/W	03, 06, 16
1082	alarm_stat_2	16 Bit Int	R/W	03, 06, 16
1083	alarm_stat_3	16 Bit Int	R/W	03, 06, 16
1084	alarm_stat_4	16 Bit Int	R/W	03, 06, 16
1085	alarm_stat_5	16 Bit Int	R/W	03, 06, 16
1086	alarm_stat_6	16 Bit Int	R/W	03, 06, 16
1087	alarm_value_1	16 Bit Int	R/W	03, 06, 16
1088	alarm_value_2	16 Bit Int	R/W	03, 06, 16
1089	alarm_value_3	16 Bit Int	R/W	03, 06, 16
1090	alarm_value_4	16 Bit Int	R/W	03, 06, 16
1091	alarm_value_5	16 Bit Int	R/W	03, 06, 16
1092	alarm_value_6	16 Bit Int	R/W	03, 06, 16
1093	alarm_hyst_1	16 Bit Int	R/W	03, 06, 16
1094	alarm_hyst_2	16 Bit Int	R/W	03, 06, 16
1095	alarm_hyst_3	16 Bit Int	R/W	03, 06, 16
1096	alarm_hyst_4	16 Bit Int	R/W	03, 06, 16
1097	alarm_hyst_5	16 Bit Int	R/W	03, 06, 16

## Register description

Reg. no.	Description	Data type	Access	Modbus function
1098	alarm_hyst_6	16 Bit Int	R/W	03, 06, 16
1099	alarm_time_base	16 Bit Int	R/W	03, 06, 16
1100	Contrast	16 Bit Int	R/W	03, 06, 16
1101	aout_stat_1	16 Bit Int	R/W	03, 06, 16
1102	aout_stat_2	16 Bit Int	R/W	03, 06, 16
1103	aout_rng_beg_1	16 Bit Int	R/W	03, 06, 16
1104	aout_rng_beg_2	16 Bit Int	R/W	03, 06, 16
1105	aout_rgn_end_1	16 Bit Int	R/W	03, 06, 16
1106	aout_rng_end_2	16 Bit Int	R/W	03, 06, 16
1107, 1108	reserve	16 Bit Int	R/W	03, 06, 16
1109	din_stat_1	16 Bit Int	R/W	03, 06, 16
1110	din_stat_2	16 Bit Int	R/W	03, 06, 16
1111	din_stat_3	16 Bit Int	R/W	03, 06, 16
1112	din_stat_4	16 Bit Int	R/W	03, 06, 16
1113	din_stat_5	16 Bit Int	R/W	03, 06, 16
1114	din_stat_6	16 Bit Int	R/W	03, 06, 16
1115	dout_stat_1	16 Bit Int	R/W	03, 06, 16
1116	dout_stat_2	16 Bit Int	R/W	03, 06, 16
1117	dout_stat_3	16 Bit Int	R/W	03, 06, 16
1118	dout_stat_4	16 Bit Int	R/W	03, 06, 16
1119	dout_stat_5	16 Bit Int	R/W	03, 06, 16
1120	dout_stat_6	16 Bit Int	R/W	03, 06, 16
1121	dout_rng_beg_1	16 Bit Int	R/W	03, 06, 16
1122	dout_rng_beg_2	16 Bit Int	R/W	03, 06, 16
1123	dout_rng_beg_3	16 Bit Int	R/W	03, 06, 16
1124	dout_rng_beg_4	16 Bit Int	R/W	03, 06, 16
1125	dout_rng_beg_5	16 Bit Int	R/W	03, 06, 16
1126	dout_rng_beg_6	16 Bit Int	R/W	03, 06, 16
1127	dout_rng_end_1	16 Bit Int	R/W	03, 06, 16
1128	dout_rng_end_2	16 Bit Int	R/W	03, 06, 16
1129	dout_rng_end_3	16 Bit Int	R/W	03, 06, 16
1130	dout_rng_end_4	16 Bit Int	R/W	03, 06, 16
1131	dout_rng_end_5	16 Bit Int	R/W	03, 06, 16
1132	dout_rng_end_6	16 Bit Int	R/W	03, 06, 16
1133	dout_tcyc_1	16 Bit Int	R/W	03, 06, 16
1134	dout_tcyc_2	16 Bit Int	R/W	03, 06, 16
1135	dout_tcyc_3	16 Bit Int	R/W	03, 06, 16
1136	dout_tcyc_4	16 Bit Int	R/W	03, 06, 16
1137	dout_tcyc_5	16 Bit Int	R/W	03, 06, 16
1138	dout_tcyc_6	16 Bit Int	R/W	03, 06, 16
1139	aout_i_beg_1	16 Bit Int	R/W	03, 06, 16
1140	aout_i_beg_2	16 Bit Int	R/W	03, 06, 16
1141	aout_i_end_1	16 Bit Int	R/W	03, 06, 16
1142	aout_i_end_2	16 Bit Int	R/W	03, 06, 16
1143	sp_ext_stat	16 Bit Int	R/W	03, 06, 16
1144	out_ext_stat	16 Bit Int	R/W	03, 06, 16



Reg. no.	Description	Data type	Access	Modbus function
1145	ctrl_type	16 Bit Int	R/W	03, 06, 16
1146	y0_mode	16 Bit Int	R/W	03, 06, 16
1147	lang_mode	16 Bit Int	R/W	03, 06, 16
1148	dsp_phys_mode_1	16 Bit Int	R/W	03, 06, 16
1149	dsp_phys_mode_2	16 Bit Int	R/W	03, 06, 16
1150		16 Bit Int	R/W	03, 06, 16
1151		16 Bit Int	R/W	03, 06, 16
1152		16 Bit Int	R/W	03, 06, 16
1153		16 Bit Int	R/W	03, 06, 16
1154		16 Bit Int	R/W	03, 06, 16
1155		16 Bit Int	R/W	03, 06, 16
1156		16 Bit Int	R/W	03, 06, 16
1157		16 Bit Int	R/W	03, 06, 16
1158		16 Bit Int	R/W	03, 06, 16
1159		16 Bit Int	R/W	03, 06, 16
1160		16 Bit Int	R/W	03, 06, 16
1161		16 Bit Int	R/W	03, 06, 16
1162		16 Bit Int	R/W	03, 06, 16
1163		16 Bit Int	R/W	03, 06, 16
1164		16 Bit Int	R/W	03, 06, 16
1165		16 Bit Int	R/W	03, 06, 16
1166		16 Bit Int	R/W	03, 06, 16
1167	code_manual	16 Bit Int	R/W	03, 06, 16
1168	code_param	16 Bit Int	R/W	03, 06, 16
1169	code_stru	16 Bit Int	R/W	03, 06, 16
1170	code_calib	16 Bit Int	R/W	03, 06, 16
1171	code_prg	16 Bit Int	R/W	03, 06, 16
1172	code_ltg	16 Bit Int	R/W	03, 06, 16
1173		16 Bit Int	R/W	03, 06, 16
1174		16 Bit Int	R/W	03, 06, 16
1175	cal_ain1_0	16 Bit Int	R/W	03, 06, 16
1176	cal_ain1_100	16 Bit Int	R/W	03, 06, 16
1177	cal_ain2_0	16 Bit Int	R/W	03, 06, 16
1178	cal_ain2_100	16 Bit Int	R/W	03, 06, 16
1179	cal_ain3_0	16 Bit Int	R/W	03, 06, 16
1180	cal_ain3_100	16 Bit Int	R/W	03, 06, 16
1181	cal_out1_0	16 Bit Int	R/W	03, 06, 16
1182	cal_out1_100	16 Bit Int	R/W	03, 06, 16
1183	cal_out2_0	16 Bit Int	R/W	03, 06, 16
1184	cal_out2_100	16 Bit Int	R/W	03, 06, 16
1185		16 Bit Int	R/W	03, 06, 16
1186	alarm_r_gradx	16 Bit Int	R/W	03, 06, 16
1187	alarm_hy_gradx	16 Bit Int	R/W	03, 06, 16
1188	alarm_r_dy	16 Bit Int	R/W	03, 06, 16
1189	alarm_hy_dy	16 Bit Int	R/W	03, 06, 16
1190	alarm_r_dx	16 Bit Int	R/W	03, 06, 16