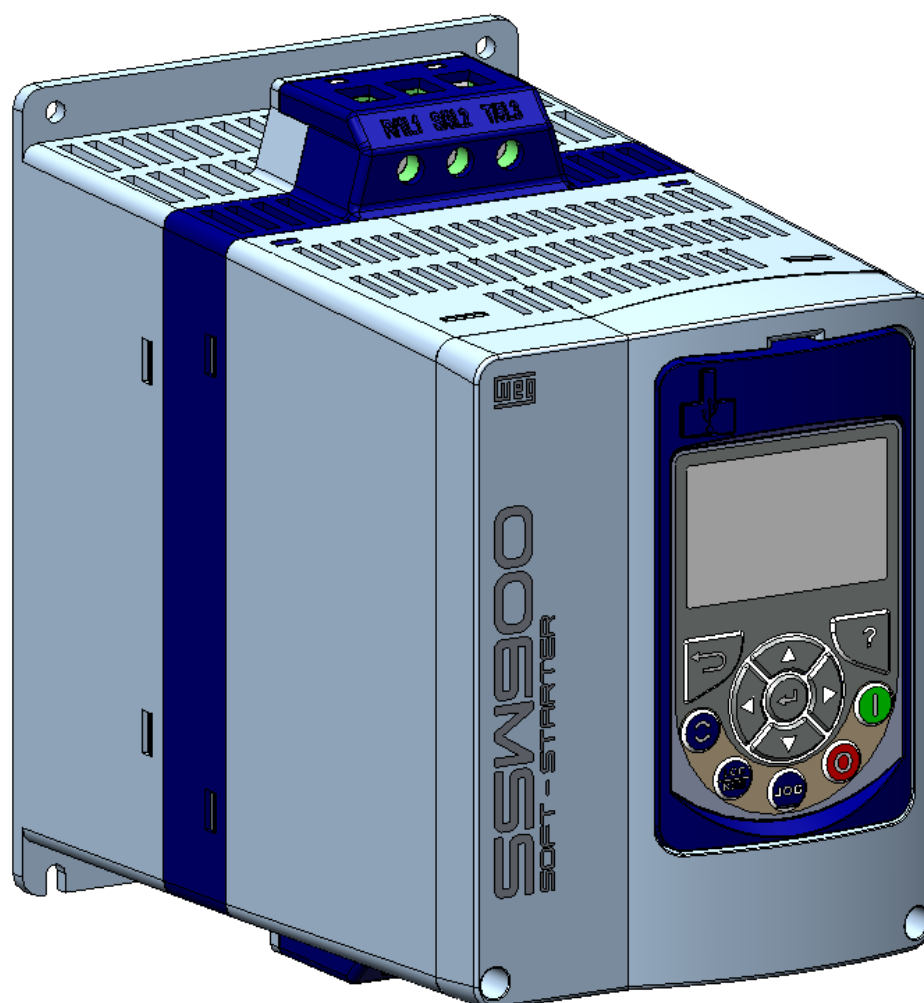


Soft-Starter

SSW900 V1.6X

Quick References



Quick References

SSW900

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SUMMARY OF REVISIONS

The information below describes the reviews made in this manual.

Version	Revision	Description	Date
-	R00	First edition.	12/2015
V1.0X	R01	General Revision.	02/2017
V1.1X	R02	General Revision.	08/2018
V1.2X	R03	General Revision.	01/2019
V1.3X	R04	Parameters related to the SSW900-CETH-W accessory. Parameter for adjusting the contrast of the HMI display. Text corrections.	02/2021
V1.4X	R05	C6.2.1, C11.4. Text corrections.	11/2021
V1.5X	R06	General Revision.	09/2022
V1.6X	R07	C8.3.11, C8.5.11. General Revision.	10/2024

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1.1 READING PARAMETERS - STATUS AND DIAGNOSTICS

Table 1.2: Status and diagnostics of reading parameters

Parameter	Description	Range of values	Properties	Communication Address
S1 Status\Measurements				
S1.1	Current			
S1.1.1	R Phase	0.0 to 14544.0 A	32bit	26
S1.1.2	S Phase	0.0 to 14544.0 A	32bit	28
S1.1.3	T Phase	0.0 to 14544.0 A	32bit	30
S1.1.4	Average	0.0 to 14544.0 A	32bit	24
S1.1.5	Motor %In	0.0 to 999.9 %	16bit	2
S1.1.6	SSW %In	0.0 to 999.9 %	16bit	1
S1.2	Main Line Voltage			
S1.2.1	R-S Line	0.0 to 999.9 V	16bit	33
S1.2.2	S-T Line	0.0 to 999.9 V	16bit	34
S1.2.3	T-R Line	0.0 to 999.9 V	16bit	35
S1.2.4	Average	0.0 to 999.9 V	16bit	4
S1.2.5	Motor %Vn	0.0 to 999.9 %	16bit	3
S1.2.6	SSW %Vn	0.0 to 999.9 %	16bit	5
S1.3	Output Voltage			
S1.3.1	Average	0.0 to 999.9 V	16bit	7
S1.3.2	Motor %Vn	0.0 to 999.9 %	16bit	6
S1.4	SCR Blocking Voltage			
S1.4.1	R-U Blocking	0.0 to 999.9 V	16bit	21
S1.4.2	S-V Blocking	0.0 to 999.9 V	16bit	22
S1.4.3	T-W Blocking	0.0 to 999.9 V	16bit	23
S1.5	Output Power & P.F.			
S1.5.1	Active	0.0 to 11700.0 kW	32bit	10
S1.5.2	Apparent	0.0 to 11700.0 kVA	32bit	12
S1.5.3	Reactive	0.0 to 11700.0 kVAr	32bit	14
S1.5.4	P. F.	0.00 to 1.00	8bit	8
S1.6	P.L.L.			
S1.6.1	Status	0 = Off 1 = Ok	enum	16
S1.6.2	Frequency	0.0 to 99.9 Hz	16bit	17
S1.6.3	Sequence	0 = Invalid 1 = RST / 123 2 = RTS / 132	enum	18
S1.7	Motor Torque			
S1.7.1	Motor %Tn	0.0 to 999.9 %	16bit	9
S1.8	Control Voltage			
S1.8.1	Input	0.0 to 999.9 V	16bit	71
S1.8.2	+5V	0.00 to 9.99 V	16bit	72
S1.8.3	+12V	0.0 to 99.9 V	16bit	73
S1.8.4	+Vbat	0.00 to 9.99 V	16bit	75
S1.8.5	+48V	0.0 to 99.9 V	16bit	76
S2 Status\I/O				
S2.1	Digital			
S2.1.1	Inputs	Bit 0 = DI1 Bit 1 = DI2 Bit 2 = DI3 Bit 3 = DI4 Bit 4 = DI5 Bit 5 = DI6 Bit 6 ... 15 = Reserved	16bit	677
S2.1.2	Outputs	Bit 0 = DO1 Bit 1 = DO2 Bit 2 = DO3 Bit 3 ... 15 = Reserved	16bit	678

PARAMETER STRUCTURE

Parameter	Description	Range of values	Properties	Communication Address
S2.2	Analog Output			
S2.2.1	Percent	0.00 to 100.00 %	16bit	673
S2.2.2	Current	0.000 to 20.000 mA	16bit	674
S2.2.3	Voltage	0.000 to 10.000 V	16bit	675
S2.2.4	10 bits	0 to 1023	16bit	676
S3 Status\SSW900				
S3.1	SSW Status			
S3.1.1	Actual	0 = Ready 1 = Initial Test 2 = Fault 3 = Ramp Up 4 = Full Voltage 5 = Bypass 6 = Reserved 7 = Ramp Down 8 = Braking 9 = FWD/REV 10 = Jog 11 = Start Delay 12 = Re-start Delay 13 = General Disabled 14 = Configuration	enum	679
S3.1.2	Active Command Source	0 = HMI Keys LOC 1 = HMI Keys REM 2 = Dlx LOC 3 = Dlx REM 4 = USB LOC 5 = USB REM 6 = SoftPLC LOC 7 = SoftPLC REM 8 = Slot 1 LOC 9 = Slot 1 REM 10 = Slot 2 LOC 11 = Slot 2 REM	enum	232
S3.1.3	Status Word			
S3.1.3.1	SSW	Bit 0 = Running Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = Initial Test Bit 4 = Ramp Up Bit 5 = Full Voltage Bit 6 = Bypass Bit 7 = Ramp Down Bit 8 = Remote Bit 9 = Braking Bit 10 = FWD/REV Bit 11 = Reverse Bit 12 = Ton Bit 13 = Toff Bit 14 = Alarm Bit 15 = Fault	16bit	680
S3.1.4	Configuration Mode			
S3.1.4.1	Status	Bit 0 = System Initialization Bit 1 = Firmware Download Bit 2 = Oriented Start-Up Bit 3 = Incompatible Bit 4 = Reset Needs Bit 5 = Copy HMI Bit 6 = Test Mode	16bit	692

PARAMETER STRUCTURE

Parameter	Description	Range of values	Properties	Communication Address
		Bit 7 ... 15 = Reserved		
S3.2	Software Version			
S3.2.1	Package	0.00 to 99.99	16bit	328
S3.2.2	Details			
S3.2.2.1	Control 1 V	0.00 to 99.99	16bit	330
S3.2.2.2	Control 1 rev.	-32768 to 32767	s16bit	327
S3.2.2.3	Bootloader V	0.00 to 99.99	16bit	329
S3.2.2.4	Bootloader rev.	-32768 to 32767	s16bit	323
S3.2.2.5	HMI rev.	-32768 to 32767	s16bit	322
S3.2.2.6	Control 2 V	0.00 to 99.99	16bit	331
S3.2.2.7	Control 2 rev.	-32768 to 32767	s16bit	326
S3.2.2.8	Accessory 1 V	0.00 to 99.99	16bit	333
S3.2.2.9	Accessory 1 rev.	-32768 to 32767	s16bit	324
S3.2.2.10	Accessory 2 V	0.00 to 99.99	16bit	334
S3.2.2.11	Accessory 2 rev.	-32768 to 32767	s16bit	325
S3.3	SSW Model			
S3.3.1	Current	0 = 10 to 30 A 1 = 45 to 105 A 2 = 130 to 200 A 3 = 255 to 412 A 4 = 480 to 670 A 5 = 820 to 950 A 6 = 1100 to 1400 A	enum	294
S3.3.2	Voltage	0 = 220 to 575 V 1 = 380 to 690 V	enum	296
S3.3.3	Control Voltage	0 = 110 to 240 V 1 = 110 to 130 V 2 = 220 to 240 V 3 = 24 V	enum	297
S3.3.4	Serial Number	0 to 4294967295	32bit	298
S3.4	Fan Status			
S3.4.1	Actual	0 = Off 1 = On	enum	293
S3.5	Accessories			
S3.5.1	Slot 1	0 = Without 1 = Anybus-CC 2 = RS-485 3 = PT100 4 = I/Os Exp. 5 = Profibus 6 = CAN 7 = Ethernet 8 = External Current Acqu.	enum	335
S3.5.2	Slot 2	0 = Without 1 = Anybus-CC 2 = RS-485 3 = PT100 4 = I/Os Exp. 5 = Profibus 6 = CAN 7 = Ethernet 8 = External Current Acqu.	enum	336
S4 Status/Temperatures				
S4.1	SCRs Temperature			
S4.1.1	Actual	-22 to 260 °C	s16bit	60
S4.2	Thermal Class Status			
S4.2.1	Of Maximum	0.0 to 100.0 %	16bit	50

PARAMETER STRUCTURE

Parameter	Description	Range of values	Properties	Communication Address
S4.3	Motor Temperature			
S4.3.1	Channel 1	-20 to 260 °C	s16bit	63
S4.3.2	Channel 2	-20 to 260 °C	s16bit	64
S4.3.3	Channel 3	-20 to 260 °C	s16bit	65
S4.3.4	Channel 4	-20 to 260 °C	s16bit	66
S4.3.5	Channel 5	-20 to 260 °C	s16bit	67
S4.3.6	Channel 6	-20 to 260 °C	s16bit	68
S5 Status\Communications				
S5.1	Status Word			
S5.1.1	SSW	Bit 0 = Running Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = Initial Test Bit 4 = Ramp Up Bit 5 = Full Voltage Bit 6 = Bypass Bit 7 = Ramp Down Bit 8 = Remote Bit 9 = Braking Bit 10 = FWD/REV Bit 11 = Reverse Bit 12 = Ton Bit 13 = Toff Bit 14 = Alarm Bit 15 = Fault	16bit	680
S5.2	Command Word			
S5.2.1	Dlx	Bit 0 = Start/Stop Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = FWD/REV Bit 4 = LOC/REM Bit 5 ... 6 = Reserved Bit 7 = Reset Bit 8 = Brake Bit 9 = Emergency Start Bit 10 ... 15 = Reserved	16bit	683
S5.2.2	HMI Key	Bit 0 = Start/Stop Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = FWD/REV Bit 4 = LOC/REM Bit 5 ... 6 = Reserved Bit 7 = Reset Bit 8 ... 15 = Reserved	16bit	681
S5.2.3	USB	Bit 0 = Start/Stop Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = FWD/REV Bit 4 = LOC/REM Bit 5 ... 6 = Reserved Bit 7 = Reset Bit 8 ... 15 = Reserved	16bit	682
S5.2.4	SoftPLC	Bit 0 = Start/Stop Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = FWD/REV Bit 4 = LOC/REM Bit 5 ... 6 = Reserved	16bit	684

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Parameter	Description	Range of values	Properties	Communication Address
S5.2.5	Slot1	Bit 7 = Reset Bit 8 ... 15 = Reserved	16bit	685
S5.2.6	Slot2	Bit 0 = Start/Stop Bit 1 = Gener. Enabled Bit 2 = JOG Bit 3 = FWD/REV Bit 4 = LOC/REM Bit 5 ... 6 = Reserved Bit 7 = Reset Bit 8 ... 15 = Reserved	16bit	686
S5.3	Value for Outputs			
S5.3.1	DO Value	Bit 0 = DO1 Bit 1 = DO2 Bit 2 = DO3 Bit 3 ... 15 = Reserved	16bit	695
S5.3.2	Value for AO			
S5.3.2.1	AO in 10 bits	0 to 1023	16bit	696
S5.4	RS485 Serial			
S5.4.1	Interface Status	0 = Off 1 = On 2 = Timeout Error	enum	735
S5.4.2	Received Telegram	0 to 65535	16bit	736
S5.4.3	Transmitted Telegram	0 to 65535	16bit	737
S5.4.4	Telegram with Error	0 to 65535	16bit	738
S5.4.5	Reception Errors	0 to 65535	16bit	739
S5.5	Anybus-CC			
S5.5.1	Identification	0 = Disabled 1 ... 15 = Reserved 16 = Profibus DP 17 = DeviceNet 18 = Reserved 19 = EtherNet/IP 20 = Reserved 21 = Modbus TCP 22 = Reserved 23 = PROFINET IO 24 = PROFINET S2 25 = Reserved	enum	750
S5.5.2	Comm. Status	0 = Setup 1 = Init 2 = Wait Comm 3 = Idle 4 = Data Active 5 = Error 6 = Reserved 7 = Exception 8 = Access Error	enum	751
S5.6	Configuration Mode			
S5.6.1	Status		16bit	692

PARAMETER STRUCTURE

Parameter	Description	Range of values	Properties	Communication Address
		Bit 0 = System Initialization Bit 1 = Firmware Download Bit 2 = Oriented Start-Up Bit 3 = Incompatible Bit 4 = Reset Needs Bit 5 = Copy HMI Bit 6 = Test Mode Bit 7 ... 15 = Reserved		
S5.6.2	Control	Bit 0 = Abort Startup Bit 1 ... 15 = Reserved	16bit	693
S5.7	CANopen/DeviceNet			
S5.7.1	CAN Controller Status	0 = Disabled 1 = Auto-baud 2 = CAN Enabled 3 = Warning 4 = Error Passive 5 = Bus Off 6 = No Bus Power	enum	705
S5.7.2	Received Telegram	0 to 65535	16bit	706
S5.7.3	Transmitted Telegram	0 to 65535	16bit	707
S5.7.4	Bus Off Counter	0 to 65535	16bit	708
S5.7.5	Lost Messages	0 to 65535	16bit	709
S5.7.6	CANopen Comm. Status	0 = Disabled 1 = Reserved 2 = Comm. Enabled 3 = ErrorCtrl.Enab 4 = Guarding Error 5 = HeartbeatError	enum	721
S5.7.7	CANopen Node State	0 = Disabled 1 = Initialization 2 = Stopped 3 = Operational 4 = PreOperational	enum	722
S5.7.8	DNet Network Status	0 = Offline 1 = OnLine,NotConn 2 = OnLine,Conn 3 = Conn.Timed-out 4 = Link Failure 5 = Auto-Baud	enum	716
S5.7.9	DeviceNet Master Status	0 = Run 1 = Idle	enum	717
S5.8	Ethernet			
S5.8.1	MBTCP: Communication Status	0 = Disabled 1 = No connection 2 = Connected 3 = Timeout Error	enum	860
S5.8.2	MBTCP: Active Connections	0 to 4	8bit	863
S5.8.3	EIP Master Status	0 = Run 1 = Idle	enum	869
S5.8.4	EIP Communication Status	0 = Disabled 1 = No connection 2 = Connected 3 = Timeout in I/O Connection 4 = Duplicated IP	enum	870

PARAMETER STRUCTURE

Parameter	Description	Range of values	Properties	Communication Address
S5.8.5	Interface Status	Bit 0 = Link1 Bit 1 = Link2 Bit 2 ... 15 = Reserved	16bit	889
S5.8.6	Current IP Address	0.0.0.0 to 255.255.255.255	ip_address	846
S5.9	Bluetooth			
S5.9.1	MAC Address	00:00:00:00:00:00 to FF:FF:FF:FF:FF:FF	MAC_ADDRESS	S801
S6 Status\SoftPLC				
S6.1	SoftPLC Status			
S6.1.1	Actual	0 = No Application 1 = Install. App. 2 = Incompat. App. 3 = App. Stopped 4 = App. Running	enum	1100
S6.2	Scan Cycle Time			
S6.2.1	Actual	0 to 65535 ms	16bit	1102
S6.3	Value for Outputs			
S6.3.1	DO Value	Bit 0 = DO1 Bit 1 = DO2 Bit 2 = DO3 Bit 3 ... 15 = Reserved	16bit	697
S6.3.2	AO Value			
S6.3.2.1	AO in 10 bits	0 to 1023	16bit	698
S6.4	Parameter			
S6.4.1	User #1	-10000 to 10000	s32bit	1110
S6.4.2	User #2	-10000 to 10000	s32bit	1112
S6.4.3	User #3	-10000 to 10000	s32bit	1114
S6.4.4	User #4	-10000 to 10000	s32bit	1116
S6.4.5	User #5	-10000 to 10000	s32bit	1118
S6.4.6	User #6	-10000 to 10000	s32bit	1120
S6.4.7	User #7	-10000 to 10000	s32bit	1122
S6.4.8	User #8	-10000 to 10000	s32bit	1124
S6.4.9	User #9	-10000 to 10000	s32bit	1126
S6.4.10	User #10	-10000 to 10000	s32bit	1128
S6.4.11	User #11	-10000 to 10000	s32bit	1130
S6.4.12	User #12	-10000 to 10000	s32bit	1132
S6.4.13	User #13	-10000 to 10000	s32bit	1134
S6.4.14	User #14	-10000 to 10000	s32bit	1136
S6.4.15	User #15	-10000 to 10000	s32bit	1138
S6.4.16	User #16	-10000 to 10000	s32bit	1140
S6.4.17	User #17	-10000 to 10000	s32bit	1142
S6.4.18	User #18	-10000 to 10000	s32bit	1144
S6.4.19	User #19	-10000 to 10000	s32bit	1146
S6.4.20	User #20	-10000 to 10000	s32bit	1148
S6.4.21	User #21	-10000 to 10000	s32bit	1150
S6.4.22	User #22	-10000 to 10000	s32bit	1152
S6.4.23	User #23	-10000 to 10000	s32bit	1154
S6.4.24	User #24	-10000 to 10000	s32bit	1156
S6.4.25	User #25	-10000 to 10000	s32bit	1158
S6.4.26	User #26	-10000 to 10000	s32bit	1160
S6.4.27	User #27	-10000 to 10000	s32bit	1162
S6.4.28	User #28	-10000 to 10000	s32bit	1164
S6.4.29	User #29	-10000 to 10000	s32bit	1166
S6.4.30	User #30	-10000 to 10000	s32bit	1168
S6.4.31	User #31	-10000 to 10000	s32bit	1170
S6.4.32	User #32	-10000 to 10000	s32bit	1172
S6.4.33	User #33	-10000 to 10000	s32bit	1174
S6.4.34	User #34	-10000 to 10000	s32bit	1176
S6.4.35	User #35	-10000 to 10000	s32bit	1178
S6.4.36	User #36	-10000 to 10000	s32bit	1180

PARAMETER STRUCTURE

Parameter	Description	Range of values	Properties	Communication Address
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S6.4.38	User #38	-10000 to 10000	s32bit	1184
S6.4.39	User #39	-10000 to 10000	s32bit	1186
S6.4.40	User #40	-10000 to 10000	s32bit	1188
S6.4.41	User #41	-10000 to 10000	s32bit	1190
S6.4.42	User #42	-10000 to 10000	s32bit	1192
S6.4.43	User #43	-10000 to 10000	s32bit	1194
S6.4.44	User #44	-10000 to 10000	s32bit	1196
S6.4.45	User #45	-10000 to 10000	s32bit	1198
S6.4.46	User #46	-10000 to 10000	s32bit	1200
S6.4.47	User #47	-10000 to 10000	s32bit	1202
S6.4.48	User #48	-10000 to 10000	s32bit	1204
S6.4.49	User #49	-10000 to 10000	s32bit	1206
S6.4.50	User #50	-10000 to 10000	s32bit	1208
D1 Diagnostics\Fault				
D1.1	Actual			
D1.1.1	Fxxx	0 to 999	16bit	90
D1.2	Fault History			
D2 Diagnostics\Alarms				
D2.1	Actual			
D2.1.1	Axxx 1	0 to 999	16bit	91
D2.1.2	Axxx 2	0 to 999	16bit	92
D2.1.3	Axxx 3	0 to 999	16bit	93
D2.1.4	Axxx 4	0 to 999	16bit	94
D2.1.5	Axxx 5	0 to 999	16bit	95
D2.2	Alarm History			
D3 Diagnostics\Events				
D4 Diagnostics\Motor On				
D4.1	Start Current			
D4.1.1	Maximum	0.0 to 14544.0 A	32bit	36
D4.1.2	Average	0.0 to 14544.0 A	32bit	38
D4.2	Real Start Time			
D4.2.1	Actual	0 to 999 s	16bit	48
D4.2.2	Final	0 to 999 s	16bit	49
D4.3	Current Full Voltage			
D4.3.1	Maximum	0.0 to 14544.0 A	32bit	40
D4.4	Main Line Voltage			
D4.4.1	Maximum	0.0 to 999.9 V	16bit	54
D4.4.2	Minimum	0.0 to 999.9 V	16bit	55
D4.5	Main Line Frequency			
D4.5.1	Maximum	0.0 to 99.9 Hz	16bit	56
D4.5.2	Minimum	0.0 to 99.9 Hz	16bit	57
D4.6	kWh Counter			
D4.6.1	Total	0.0 to 429496729.5 kWh	32bit	52
D4.7	Number Start			
D4.7.1	Total	0 to 65535	16bit	59
D5 Diagnostics\Temperatures				
D5.1	SCRs Maximum			
D5.1.1	Total	-22 to 260 °C	s16bit	77
D5.2	Motor Maximum			
D5.2.1	Channel 1	-20 to 260 °C	s16bit	80
D5.2.2	Channel 2	-20 to 260 °C	s16bit	81
D5.2.3	Channel 3	-20 to 260 °C	s16bit	82
D5.2.4	Channel 4	-20 to 260 °C	s16bit	83
D5.2.5	Channel 5	-20 to 260 °C	s16bit	84
D5.2.6	Channel 6	-20 to 260 °C	s16bit	85
D6 Diagnostics\Hours Control				
D6.1	Powered	0 to 4294967295 s	TIME	42
D6.2	Enabled	0 to 4294967295 s	TIME	44
D6.3	Fan ON	0 to 4294967295 s	TIME	46
D7 Diagnostics\Changed Parameters				

1.2 WRITING PARAMETERS - CONFIGURATIONS

Table 1.3: Parameter writing settings

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C1 Configurations\Starting and Stopping					
C1.1	Types of Control	0 = Voltage Ramp 1 = Voltage Ramp + Current Limit 2 = Current Limit 3 = Current Ramp 4 = Pump Control 5 = Torque Control 6 = D.O.L. SCR	1	enum	202
C1.2	Initial Start Voltage	25 to 90 %	30 %	8bit	101
C1.3	Maximum Start Time	1 to 999 s	20 s	16bit	102
C1.4	Start End Detection	0 = Time 1 = Automatic	1	enum	106
C1.5	Initial Current Ramp	150 to 600 %	150 %	16bit	111
C1.6	Current Ramp Time	1 to 99 %	20 %	8bit	112
C1.7	Current Limit	150 to 600 %	300 %	16bit	110
C1.8	Start Torque Chara.	1 = Constant 2 = Linear 3 = Square	1	enum	120
C1.9	Initial Start Torque	10 to 300 %	30 %	16bit	121
C1.10	End Start Torque	10 to 300 %	110 %	16bit	122
C1.11	Minimum Start Torque	10 to 300 %	27 %	16bit	123
C1.12	Min.Start Torq. Time	1 to 99 %	20 %	8bit	124
C1.13	Stop Time	0 to 999 s	0 s	16bit	104
C1.14	Step Down Volt. Stop	60 to 100 %	100 %	8bit	103
C1.15	End Voltage Stop	30 to 55 %	30 %	8bit	105
C1.16	Stop Torque Characte.	1 = Constant 2 = Linear 3 = Square	1	enum	125
C1.17	End Stop Torque	10 to 100 %	20 %	8bit	126
C1.18	Minimum Stop Torque	10 to 100 %	50 %	8bit	127
C1.19	Min. Stop Torque Time	1 to 99 %	50 %	8bit	128
C2 Configurations\Nominal Motor Data					
C2.1	Voltage	1 to 999 V	380 V	16bit	400
C2.2	Current	0.1 to 2424.0 A	10.0 A	16bit	401
C2.3	Speed	1 to 3600 rpm	1780 rpm	16bit	402
C2.4	Power	0.1 to 1950.0 kW	7.5 kW	16bit	404
C2.5	P.F. Power Factor	0.01 to 1.00	0.89	8bit	405
C2.6	S.F. Service Factor	0.01 to 1.50	1.00	8bit	406
C3 Configurations\LOC/REM Selection					
C3.1	Mode	0 = Always LOC 1 = Always REM 2 = HMI LR Key LOC 3 = HMI LR Key REM 4 = DIx 5 = USB LOC 6 = USB REM 7 = SoftPLC LOC 8 = SoftPLC REM 9 = Slot 1 LOC 10 = Slot 1 REM 11 = Slot 2 LOC 12 = Slot 2 REM	3	enum	220
C3.2	LOC Command	0 = HMI Keys	0	enum	229

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C3.3	REM Command	1 = DIx 2 = USB 3 = SoftPLC 4 = Slot 1 5 = Slot 2	1	enum	230
C3.4	Commands Copy	0 = HMI Keys 1 = DIx 2 = USB 3 = SoftPLC 4 = Slot 1 5 = Slot 2	0	enum	231
C4 Configurations I/O					
C4.1	Digital Inputs				
C4.1.1	DI1	0 = Not Used 1 = Start / Stop 2 = Start (3 Wires) 3 = Stop (3 Wires) 4 = General Enable 5 = LOC / REM 6 = JOG 7 = FWD / REV 8 = No External Fault 9 = No External Alarm 10 = Brake 11 = Reset 12 = Load User 1/2 13 ... 16 = Reserved	2	enum	263
C4.1.2	DI2	0 = Not Used 1 = Start / Stop 2 = Start (3 Wires) 3 = Stop (3 Wires) 4 = General Enable 5 = LOC / REM 6 = JOG 7 = FWD / REV 8 = No External Fault 9 = No External Alarm 10 = Brake 11 = Reset 12 = Load User 1/2 13 ... 16 = Reserved	3	enum	264
C4.1.3	DI3	0 = Not Used 1 = Start / Stop 2 = Start (3 Wires) 3 = Stop (3 Wires) 4 = General Enable 5 = LOC / REM 6 = JOG 7 = FWD / REV 8 = No External Fault 9 = No External Alarm 10 = Brake 11 = Reset 12 = Load User 1/2 13 = Reserved 14 = Emergency Start	0	enum	265

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C4.1.4	DI4	15 ... 16 = Reserved 0 = Not Used 1 = Start / Stop 2 = Start (3 Wires) 3 = Stop (3 Wires) 4 = General Enable 5 = LOC / REM 6 = JOG 7 = FWD / REV 8 = No External Fault 9 = No External Alarm 10 = Brake 11 = Reset 12 = Load User 1/2 13 ... 16 = Reserved	0	enum	266
C4.1.5	DI5	0 = Not Used 1 = Start / Stop 2 = Start (3 Wires) 3 = Stop (3 Wires) 4 = General Enable 5 = LOC / REM 6 = JOG 7 = FWD / REV 8 = No External Fault 9 = No External Alarm 10 = Brake 11 = Reset 12 = Load User 1/2 13 ... 16 = Reserved	0	enum	267
C4.1.6	DI6	0 = Not Used 1 = Start / Stop 2 = Start (3 Wires) 3 = Stop (3 Wires) 4 = General Enable 5 = LOC / REM 6 = JOG 7 = FWD / REV 8 = No External Fault 9 = No External Alarm 10 = Brake 11 = Reset 12 = Load User 1/2 13 ... 14 = Reserved 15 = Mot. Thermistor A032 16 = Mot. Thermistor F032	0	enum	268
C4.2	Digital Outputs				
C4.2.1	DO1	0 = Not Used 1 = Running 2 = Full Voltage 3 = Bypass 4 = FWD / REV K1 5 = DC Braking 6 = Without Fault 7 = With Fault 8 = Without Alarm 9 = With Alarm 10 = No Fault / Alarm 11 = SoftPLC 12 = Communication	1	enum	275

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C4.2.2	DO2	13 = I motor % > Value 14 = Breaker Shunt Trip 0 = Not Used 1 = Running 2 = Full Voltage 3 = Bypass 4 = FWD / REV K2 5 = DC Braking 6 = Without Fault 7 = With Fault 8 = Without Alarm 9 = With Alarm 10 = No Fault / Alarm 11 = SoftPLC 12 = Communication 13 = I motor % > Value 14 = Breaker Shunt Trip	3	enum	276
C4.2.3	DO3	0 = Not Used 1 = Running 2 = Full Voltage 3 = Bypass 4 = Not Used 5 = DC Braking 6 = Without Fault 7 = With Fault 8 = Without Alarm 9 = With Alarm 10 = No Fault / Alarm 11 = SoftPLC 12 = Communication 13 = I motor % > Value 14 = Breaker Shunt Trip	7	enum	277
C4.2.4	DO Comparison Value	10.0 to 500.0 %	100.0 %	16bit	278
C4.3	Analog Output				
C4.3.1	Function	0 = Not Used 1 = SSW Current % 2 = Line Voltage % 3 = Output Voltage % 4 = Power Factor 5 = Thermal Class Prot. 6 = Output Power W 7 = Output Power VA 8 = Motor Torque % 9 = Value to AO 10 = SCRs Temperature 11 = SoftPLC	0	enum	251
C4.3.2	Gain	0.000 to 9.999	1.000	16bit	252
C4.3.3	Signal	0 = 0 to 20mA 1 = 4 to 20mA 2 = 20mA to 0 3 = 20 to 4mA 4 = 0 to 10V 5 = 10V to 0	0	enum	253
C5 Configurations\Protections					
C5.1	Voltage Protections				
C5.1.1	Motor Undervoltage				
C5.1.1.1	Mode	0 = Inactive 1 = Fault F002	1	enum	900

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C5.1.1.2	Level	2 = Alarm A002 0 to 30 %Vn	20 %Vn	8bit	901
C5.1.1.3	Time	0.1 to 10.0 s	0.5 s	8bit	902
C5.1.2	Motor Overvoltage				
C5.1.2.1	Mode	0 = Inactive 1 = Fault F016 2 = Alarm A016	1	enum	903
C5.1.2.2	Level	0 to 20 %Vn	15 %Vn	8bit	904
C5.1.2.3	Time	0.1 to 10.0 s	0.5 s	8bit	905
C5.1.3	Motor Voltage Imbalance				
C5.1.3.1	Mode	0 = Inactive 1 = Fault F001 2 = Alarm A001	1	enum	906
C5.1.3.2	Level	0 to 30 %Vn	15 %Vn	8bit	907
C5.1.3.3	Time	0.1 to 10.0 s	0.5 s	8bit	908
C5.2	Current Protections				
C5.2.1	Motor Undercurrent				
C5.2.1.1	Mode	0 = Inactive 1 = Fault F065 2 = Alarm A065	0	enum	910
C5.2.1.2	Level	0 to 99 %In	20 %In	8bit	911
C5.2.1.3	Time	1 to 99 s	1 s	8bit	912
C5.2.2	Motor Overcurrent				
C5.2.2.1	Mode	0 = Inactive 1 = Fault F066 2 = Alarm A066	0	enum	913
C5.2.2.2	Level	0 to 99 %In	20 %In	8bit	914
C5.2.2.3	Time	1 to 99 s	1 s	8bit	915
C5.2.3	Current Imbalance				
C5.2.3.1	Mode	0 = Inactive 1 = Fault F074 2 = Alarm A074	0	enum	916
C5.2.3.2	Level	0 to 30 %In	15 %In	8bit	917
C5.2.3.3	Time	1 to 99 s	1 s	8bit	918
C5.3	Torque Protections				
C5.3.1	Undertorque				
C5.3.1.1	Mode	0 = Inactive 1 = Fault F078 2 = Alarm A078	0	enum	950
C5.3.1.2	Level	0 to 99 %Tn	30 %Tn	8bit	951
C5.3.1.3	Time	1 to 99 s	1 s	8bit	952
C5.3.2	Overtorque				
C5.3.2.1	Mode	0 = Inactive 1 = Fault F079 2 = Alarm A079	0	enum	953
C5.3.2.2	Level	0 to 99 %Tn	30 %Tn	8bit	954
C5.3.2.3	Time	1 to 99 s	1 s	8bit	955
C5.4	Power Protections				
C5.4.1	Underpower				
C5.4.1.1	Mode	0 = Inactive 1 = Fault F080 2 = Alarm A080	0	enum	960
C5.4.1.2	Level	0 to 99 %Pn	30 %Pn	8bit	961
C5.4.1.3	Time	1 to 99 s	1 s	8bit	962

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C5.4.2	Overpower				
C5.4.2.1	Mode	0 = Inactive 1 = Fault F081 2 = Alarm A081	0	enum	963
C5.4.2.2	Level	0 to 99 %Pn	30 %Pn	8bit	964
C5.4.2.3	Time	1 to 99 s	1 s	8bit	965
C5.5	Phase Sequence				
C5.5.1	Mode	0 = Inactive 1 = RST - Fault F067 2 = RTS - Fault F068	0	enum	930
C5.6	Bypass Protections				
C5.6.1	Undercurrent	0 = Inactive 1 = Fault F076	1	enum	919
C5.6.2	Overcurrent	0 = Inactive 1 = Fault F063	1	enum	920
C5.6.3	Closed	0 = Inactive 1 = Fault F077	1	enum	921
C5.7	Time Protections				
C5.7.1	Before Start	0.5 to 999.9 s	0.5 s	16bit	931
C5.7.2	After Stop	2.0 to 999.9 s	2.0 s	16bit	932
C5.7.3	Between Start	2 to 9999 s	120 s	16bit	933
C5.8	Motor Thermal Protection				
C5.8.1	Ch1 Installed Sensor				
C5.8.1.1	Mode	0 = Off 1 = On 2 = On Stator	0	enum	1006
C5.8.2	Ch1 Sensor Fault				
C5.8.2.1	Mode	0 = Fault F109 and F117 1 = Alarm A109 and A117	0	enum	998
C5.8.3	Ch1 Overtemperature				
C5.8.3.1	Mode	0 = Fault F101 1 = Alarm A101 2 = F101 and A101	0	enum	966
C5.8.3.2	Fault Level	0 to 250 °C	139 °C	8bit	967
C5.8.3.3	Alarm Level	0 to 250 °C	124 °C	8bit	968
C5.8.3.4	Alarm Reset	0 to 250 °C	108 °C	8bit	969
C5.8.4	Ch2 Installed Sensor				
C5.8.4.1	Mode	0 = Off 1 = On 2 = On Stator	0	enum	1007
C5.8.5	Ch2 Sensor Fault				
C5.8.5.1	Mode	0 = Fault F110 and F118 1 = Alarm A110 and A118	0	enum	999
C5.8.6	Ch2 Overtemperature				
C5.8.6.1	Mode	0 = Fault F102 1 = Alarm A102 2 = F102 and A102	0	enum	970
C5.8.6.2	Fault Level	0 to 250 °C	139 °C	8bit	971
C5.8.6.3	Alarm Level	0 to 250 °C	124 °C	8bit	972
C5.8.6.4	Alarm Reset	0 to 250 °C	108 °C	8bit	973
C5.8.7	Ch3 Installed Sensor				

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C5.8.7.1	Mode	0 = Off 1 = On 2 = On Stator	0	enum	1008
C5.8.8	Ch3 Sensor Fault				
C5.8.8.1	Mode	0 = Fault F111 and F119 1 = Alarm A111 and A119	0	enum	1000
C5.8.9	Ch3 Overtemperature				
C5.8.9.1	Mode	0 = Fault F103 1 = Alarm A103 2 = F103 and A103	0	enum	974
C5.8.9.2	Fault Level	0 to 250 °C	139 °C	8bit	975
C5.8.9.3	Alarm Level	0 to 250 °C	124 °C	8bit	976
C5.8.9.4	Alarm Reset	0 to 250 °C	108 °C	8bit	977
C5.8.10	Ch4 Installed Sensor				
C5.8.10.1	Mode	0 = Off 1 = On 2 = On Stator	0	enum	1009
C5.8.11	Ch4 Sensor Fault				
C5.8.11.1	Mode	0 = Fault F112 and F120 1 = Alarm A112 and A120	0	enum	1001
C5.8.12	Ch4 Overtemperature				
C5.8.12.1	Mode	0 = Fault F104 1 = Alarm A104 2 = F104 and A104	0	enum	978
C5.8.12.2	Fault Level	0 to 250 °C	139 °C	8bit	979
C5.8.12.3	Alarm Level	0 to 250 °C	124 °C	8bit	980
C5.8.12.4	Alarm Reset	0 to 250 °C	108 °C	8bit	981
C5.8.13	Ch5 Installed Sensor				
C5.8.13.1	Mode	0 = Off 1 = On 2 = On Stator	0	enum	1010
C5.8.14	Ch5 Sensor Fault				
C5.8.14.1	Mode	0 = Fault F113 and F121 1 = Alarm A113 and A121	0	enum	1002
C5.8.15	Ch5 Overtemperature				
C5.8.15.1	Mode	0 = Fault F105 1 = Alarm A105 2 = F105 and A105	0	enum	982
C5.8.15.2	Fault Level	0 to 250 °C	139 °C	8bit	983
C5.8.15.3	Alarm Level	0 to 250 °C	124 °C	8bit	984
C5.8.15.4	Alarm Reset	0 to 250 °C	108 °C	8bit	985
C5.8.16	Ch6 Installed Sensor				
C5.8.16.1	Mode	0 = Off 1 = On 2 = On Stator	0	enum	1011
C5.8.17	Ch6 Sensor Fault				
C5.8.17.1	Mode	0 = Fault F114 and F122 1 = Alarm A114 and A122	0	enum	1003
C5.8.18	Ch6 Overtemperature				
C5.8.18.1	Mode	0 = Fault F106	0	enum	986

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
		1 = Alarm A106 2 = F106 and A106			
C5.8.18.2	Fault Level	0 to 250 °C	139 °C	8bit	987
C5.8.18.3	Alarm Level	0 to 250 °C	124 °C	8bit	988
C5.8.18.4	Alarm Reset	0 to 250 °C	108 °C	8bit	989
C5.9	Motor Thermal Class				
C5.9.1	Programming Mode	0 = Standard 1 = Custom	0	enum	934
C5.9.2	Action Mode	0 = Inactive 1 = Fault F005 2 = Alarm A005 3 = F005 and A005	1	enum	935
C5.9.3	Alarm Level	0 to 100 %	90 %	8bit	936
C5.9.4	Alarm Reset	0 to 100 %	84 %	8bit	937
C5.9.5	Motor Temperature	0 = T.C. + PT100 1 = T.C. + Th.Im.	1	enum	938
C5.9.6	Thermal Class	0 = Automatic 1 = Class 10 2 = Class 15 3 = Class 20 4 = Class 25 5 = Class 30 6 = Class 35 7 = Class 40 8 = Class 45	5	enum	939
C5.9.7	Motor Data				
C5.9.7.1	Insulation Class	0 = Class A 105°C 1 = Class E 120°C 2 = Class B 130°C 3 = Class F 155°C 4 = Class H 180°C 5 = Class N 200°C 6 = Class R 220°C 7 = Class S 240°C 8 = Class 250°C	3	enum	940
C5.9.7.2	Temperature Rise	0 to 200 °C	60 °C	8bit	942
C5.9.7.3	Ambient Temperature	0 to 200 °C	40 °C	8bit	941
C5.9.7.4	Locked Rotor Time	1 to 100 s	10 s	8bit	943
C5.9.7.5	Locked Rotor Current	2.0 to 10.0 x	6.0 x	8bit	944
C5.9.7.6	Heating Time Constant	1 to 2880 min	30 min	16bit	945
C5.9.7.7	Cooling Time Constant	1 to 8640 min	93 min	16bit	946
C5.9.8	Thermal Image				
C5.9.8.1	Reset	0 to 8640 min	0 min	16bit	947
C5.10	SSW Short Circuit				
C5.10.1	Motor Off	0 = Inactive 1 = Fault F019	1	enum	922
C5.10.2	Motor On	0 = Inactive 1 = Fault F020	0	enum	923
C5.11	Fault Auto-Reset				
C5.11.1	Mode	0 = Off 1 = On	0	enum	207
C5.11.2	Time	3 to 600 s	3 s	16bit	208
C6 Configurations\HMI					
C6.1	Password				
C6.1.1	Password	0 to 9999	0	16bit	210

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C6.1.2	Password Options	0 = Off 1 = On 2 = Change Password	1	enum	200
C6.2	Language				
C6.2.1	Language	0 = Português 1 = English 2 = Español 3 = Français 4 = Downloaded	1	enum	201
C6.3	Date and Time				
C6.3.1	Date and Time	yy/mm/dd and hh:mm:ss		date	196
C6.3.2	Day of the Week	0 = Sunday 1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday	0	enum	195
C6.4	Main Screen				
C6.5	LCD Display				
C6.5.1	Backlight	1 to 15	10	8bit	218
C6.5.2	Contrast	0 to 100 %	40 %	8bit	219
C6.6	Communication Timeout				
C6.6.1	Mode	0 = Inactive 1 = Fault F127 2 = Alarm A127	2	enum	190
C6.6.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	1	enum	191
C6.6.3	Time	1 to 999 s	3 s	16bit	192
C7 Configurations\Special Functions					
C7.1	Forward/Reverse				
C7.1.1	Mode	0 = Inactive 1 = By Contactor 2 = Only for JOG	0	enum	228
C7.2	Kick Start				
C7.2.1	Mode	0 = Off 1 = On	0	enum	520
C7.2.2	Time	0.1 to 2.0 s	0.1 s	8bit	521
C7.2.3	Voltage	70 to 90 %	70 %	8bit	522
C7.2.4	Current	300 to 700 %	500 %	16bit	523
C7.3	Jog				
C7.3.1	Mode	0 = Off 1 = On	0	enum	510
C7.3.2	Level	10 to 100 %	30 %	8bit	511
C7.4	Braking				
C7.4.1	Mode	0 = Inactive 1 = Reverse 2 = Optimal 3 = DC	0	enum	500
C7.4.2	Time	1 to 299 s	10 s	16bit	501

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C7.4.3	Level	30 to 70 %	30 %	8bit	502
C7.4.4	End	0 = Inactive 1 = Automatic	0	enum	503
C8 Configurations\Communications					
C8.1	I/O Data				
C8.1.1	Data Read				
C8.1.1.1	Slot 1 1st Word	1 to 50	1	8bit	712
C8.1.1.2	Slot 1 Quantity	1 to 50	1	8bit	713
C8.1.1.3	Slot 2 1st Word	1 to 50	26	8bit	753
C8.1.1.4	Slot 2 Quantity	1 to 50	1	8bit	754
C8.1.1.5	Word #1	0 to 65535	0	16bit	1300
C8.1.1.6	Word #2	0 to 65535	0	16bit	1301
C8.1.1.7	Word #3	0 to 65535	0	16bit	1302
C8.1.1.8	Word #4	0 to 65535	0	16bit	1303
C8.1.1.9	Word #5	0 to 65535	0	16bit	1304
C8.1.1.10	Word #6	0 to 65535	0	16bit	1305
C8.1.1.11	Word #7	0 to 65535	0	16bit	1306
C8.1.1.12	Word #8	0 to 65535	0	16bit	1307
C8.1.1.13	Word #9	0 to 65535	0	16bit	1308
C8.1.1.14	Word #10	0 to 65535	0	16bit	1309
C8.1.1.15	Word #11	0 to 65535	0	16bit	1310
C8.1.1.16	Word #12	0 to 65535	0	16bit	1311
C8.1.1.17	Word #13	0 to 65535	0	16bit	1312
C8.1.1.18	Word #14	0 to 65535	0	16bit	1313
C8.1.1.19	Word #15	0 to 65535	0	16bit	1314
C8.1.1.20	Word #16	0 to 65535	0	16bit	1315
C8.1.1.21	Word #17	0 to 65535	0	16bit	1316
C8.1.1.22	Word #18	0 to 65535	0	16bit	1317
C8.1.1.23	Word #19	0 to 65535	0	16bit	1318
C8.1.1.24	Word #20	0 to 65535	0	16bit	1319
C8.1.1.25	Word #21	0 to 65535	0	16bit	1320
C8.1.1.26	Word #22	0 to 65535	0	16bit	1321
C8.1.1.27	Word #23	0 to 65535	0	16bit	1322
C8.1.1.28	Word #24	0 to 65535	0	16bit	1323
C8.1.1.29	Word #25	0 to 65535	0	16bit	1324
C8.1.1.30	Word #26	0 to 65535	0	16bit	1325
C8.1.1.31	Word #27	0 to 65535	0	16bit	1326
C8.1.1.32	Word #28	0 to 65535	0	16bit	1327
C8.1.1.33	Word #29	0 to 65535	0	16bit	1328
C8.1.1.34	Word #30	0 to 65535	0	16bit	1329
C8.1.1.35	Word #31	0 to 65535	0	16bit	1330
C8.1.1.36	Word #32	0 to 65535	0	16bit	1331
C8.1.1.37	Word #33	0 to 65535	0	16bit	1332
C8.1.1.38	Word #34	0 to 65535	0	16bit	1333
C8.1.1.39	Word #35	0 to 65535	0	16bit	1334
C8.1.1.40	Word #36	0 to 65535	0	16bit	1335
C8.1.1.41	Word #37	0 to 65535	0	16bit	1336
C8.1.1.42	Word #38	0 to 65535	0	16bit	1337
C8.1.1.43	Word #39	0 to 65535	0	16bit	1338
C8.1.1.44	Word #40	0 to 65535	0	16bit	1339
C8.1.1.45	Word #41	0 to 65535	0	16bit	1340
C8.1.1.46	Word #42	0 to 65535	0	16bit	1341
C8.1.1.47	Word #43	0 to 65535	0	16bit	1342
C8.1.1.48	Word #44	0 to 65535	0	16bit	1343
C8.1.1.49	Word #45	0 to 65535	0	16bit	1344
C8.1.1.50	Word #46	0 to 65535	0	16bit	1345
C8.1.1.51	Word #47	0 to 65535	0	16bit	1346
C8.1.1.52	Word #48	0 to 65535	0	16bit	1347
C8.1.1.53	Word #49	0 to 65535	0	16bit	1348
C8.1.1.54	Word #50	0 to 65535	0	16bit	1349
C8.1.2	Data Write				
C8.1.2.1	Slot 1 1st Word	1 to 20	1	8bit	714

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C8.1.2.2	Slot 1 Quantity	1 to 20	1	8bit	715
C8.1.2.3	Slot 2 1st Word	1 to 20	11	8bit	755
C8.1.2.4	Slot 2 Quantity	1 to 20	1	8bit	756
C8.1.2.5	Update Delay	0.0 to 999.9 s	0.0 s	16bit	899
C8.1.2.6	Word #1	0 to 65535	0	16bit	1400
C8.1.2.7	Word #2	0 to 65535	0	16bit	1401
C8.1.2.8	Word #3	0 to 65535	0	16bit	1402
C8.1.2.9	Word #4	0 to 65535	0	16bit	1403
C8.1.2.10	Word #5	0 to 65535	0	16bit	1404
C8.1.2.11	Word #6	0 to 65535	0	16bit	1405
C8.1.2.12	Word #7	0 to 65535	0	16bit	1406
C8.1.2.13	Word #8	0 to 65535	0	16bit	1407
C8.1.2.14	Word #9	0 to 65535	0	16bit	1408
C8.1.2.15	Word #10	0 to 65535	0	16bit	1409
C8.1.2.16	Word #11	0 to 65535	0	16bit	1410
C8.1.2.17	Word #12	0 to 65535	0	16bit	1411
C8.1.2.18	Word #13	0 to 65535	0	16bit	1412
C8.1.2.19	Word #14	0 to 65535	0	16bit	1413
C8.1.2.20	Word #15	0 to 65535	0	16bit	1414
C8.1.2.21	Word #16	0 to 65535	0	16bit	1415
C8.1.2.22	Word #17	0 to 65535	0	16bit	1416
C8.1.2.23	Word #18	0 to 65535	0	16bit	1417
C8.1.2.24	Word #19	0 to 65535	0	16bit	1418
C8.1.2.25	Word #20	0 to 65535	0	16bit	1419
C8.2	RS485 Serial				
C8.2.1	Serial Protocol	0 ... 1 = Reserved 2 = Modbus RTU	2	enum	730
C8.2.2	Address	1 to 247	1	8bit	731
C8.2.3	Baud Rate	0 = 9600 bits/s 1 = 19200 bits/s 2 = 38400 bits/s 3 = 57600 bits/s	1	enum	732
C8.2.4	Bytes Config.	0 = 8 bits, no, 1 1 = 8 bits, even, 1 2 = 8 bits, odd, 1 3 = 8 bits, no, 2 4 = 8 bits, even, 2 5 = 8 bits, odd, 2	1	enum	733
C8.2.5	Timeout				
C8.2.5.1	Mode	0 = Inactive 1 = Fault F128 2 = Alarm A128	2	enum	740
C8.2.5.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	2	enum	741
C8.2.5.3	Timeout	0.0 to 999.9 s	0.0 s	16bit	734
C8.3	Anybus-CC				
C8.3.1	Update Configuration	0 = Normal Operation 1 = Update configuration	0	enum	749
C8.3.2	Address	0 to 255	63	8bit	757
C8.3.3	Baud Rate	0 = 125 kbps 1 = 250 kbps 2 = 500 kbps 3 = Autobaud	3	enum	758

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C8.3.4	IP Address Configuration	0 = Parameters 1 = DHCP 2 = DCP	1	enum	760
C8.3.5	IP Address	0.0.0.0 to 255.255.255.255	192. 168. 0. 10	ip_address	762
C8.3.6	CIDR	0 = Reserved 1 = 128.0.0.0 2 = 192.0.0.0 3 = 224.0.0.0 4 = 240.0.0.0 5 = 248.0.0.0 6 = 252.0.0.0 7 = 254.0.0.0 8 = 255.0.0.0 9 = 255.128.0.0 10 = 255.192.0.0 11 = 255.224.0.0 12 = 255.240.0.0 13 = 255.248.0.0 14 = 255.252.0.0 15 = 255.254.0.0 16 = 255.255.0.0 17 = 255.255.128.0 18 = 255.255.192.0 19 = 255.255.224.0 20 = 255.255.240.0 21 = 255.255.248.0 22 = 255.255.252.0 23 = 255.255.254.0 24 = 255.255.255.0 25 = 255.255.255.128 26 = 255.255.255.192 27 = 255.255.255.224 28 = 255.255.255.240 29 = 255.255.255.248 30 = 255.255.255.252 31 = 255.255.255.254	24	enum	761
C8.3.7	Gateway	0.0.0.0 to 255.255.255.255	0. 0. 0. 0	ip_address	766
C8.3.8	Station Name Suffix	0 to 254	0	8bit	770
C8.3.9	Modbus TCP Timeout				
C8.3.9.1	Mode	0 = Inactive 1 = Fault F131 2 = Alarm A131	2	enum	771
C8.3.9.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	2	enum	772
C8.3.9.3	Modbus TCP Timeout	0.0 to 999.9 s	0.0 s	16bit	759
C8.3.10	Off Line Error				
C8.3.10.1	Mode	0 = Inactive 1 = Fault F129 2 = Alarm A129	2	enum	897

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C8.3.10.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	2	enum	898
C8.3.11	Web Server Config	0 = Disabled 1 = Enabled	0	enum	798
C8.4	CANopen/DeviceNet				
C8.4.1	Protocol	0 = Disabled 1 = CANopen 2 = DeviceNet	2	enum	700
C8.4.2	Address	0 to 127	63	8bit	701
C8.4.3	Baud Rate	0 = 1 Mbps/Auto 1 = Reserved 2 = 500 Kbps 3 = 250 Kbps 4 = 125 Kbps 5 = 100 Kbps/Auto 6 = 50 Kbps/Auto 7 = 20 Kbps/Auto 8 = 10 Kbps/Auto	0	enum	702
C8.4.4	Bus Off Reset	0 = Manual 1 = Automatic	1	enum	703
C8.4.5	CAN Error				
C8.4.5.1	Mode	0 = Inactive 1 = Fault 2 = Alarm	2	enum	723
C8.4.5.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	2	enum	724
C8.5	Ethernet				
C8.5.1	IP Address Config	0 = Parameters 1 = DHCP	1	enum	850
C8.5.2	IP Address	0.0.0.0 to 255.255.255.255	192. 168. 0. 10	ip_address	852
C8.5.3	CIDR Sub-net	0 = Reserved 1 = 128.0.0.0 2 = 192.0.0.0 3 = 224.0.0.0 4 = 240.0.0.0 5 = 248.0.0.0 6 = 252.0.0.0 7 = 254.0.0.0 8 = 255.0.0.0 9 = 255.128.0.0 10 = 255.192.0.0 11 = 255.224.0.0 12 = 255.240.0.0 13 = 255.248.0.0 14 = 255.252.0.0	24	enum	855

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
		15 = 255.254.0.0 16 = 255.255.0.0 17 = 255.255.128.0 18 = 255.255.192.0 19 = 255.255.224.0 20 = 255.255.240.0 21 = 255.255.248.0 22 = 255.255.252.0 23 = 255.255.254.0 24 = 255.255.255.0 25 = 255.255.255.128 26 = 255.255.255.192 27 = 255.255.255.224 28 = 255.255.255.240 29 = 255.255.255.248 30 = 255.255.255.252 31 = 255.255.255.254			
C8.5.4	Gateway	0.0.0.0 to 255.255.255.255	0. 0. 0. 0	ip_address	856
C8.5.5	MBTCP: TCP Port	0 to 65535	502	16bit	865
C8.5.7	EIP Data Profile	0 ... 9 = Reserved 10 = 110/160-Configurable I/O	10	enum	871
C8.5.9	Modbus TCP Error				
C8.5.9.1	Mode	0 = Inactive 1 = Fault F149 2 = Alarm A149	2	enum	893
C8.5.9.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	2	enum	894
C8.5.9.3	Timeout	0.0 to 999.9 s	0.0 s	16bit	868
C8.5.10	EtherNet/IP Error				
C8.5.10.1	Mode	0 = Inactive 1 = Fault F147 2 = Alarm A147	2	enum	895
C8.5.10.2	Alarm Action	0 = Indicates Only 1 = Ramp Stop 2 = General Disable 3 = Change to LOC 4 = Change to REM	2	enum	896
C8.5.11	Web Server Config	0 = Disabled 1 = Enabled	0	enum	798
C8.6	Bluetooth				
C8.6.1	Mode	0 = Off 1 = On	0	enum	800
C8.6.2	PIN	6 to 6	123456	STRING_NUMERIC	804
C8.6.3	Device Name	1 to 15	SSW9x	STRING_ASCII	808
C9 Configurations\SSW900					
C9.1	Nominal Data				
C9.1.1	Current	0 = 10 A 1 = 17 A 2 = 24 A	0	enum	295

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
		3 = 30 A 4 = 45 A 5 = 61 A 6 = 85 A 7 = 105 A 8 = 130 A 9 = 171 A 10 = 200 A 11 = 255 A 12 = 312 A 13 = 365 A 14 = 412 A 15 = 480 A 16 = 604 A 17 = 670 A 18 = 820 A 19 = 950 A 20 = 1100 A 21 = 1400 A			
C9.2	Types of Connections				
C9.2.1	Delta Inside	0 = Off 1 = On	0	enum	150
C9.2.2	External Bypass	0 = Without 1 = With	0	enum	140
C9.3	Accessories Config.				
C9.3.1	Slot 1	0 = Automatic 1 = Anybus-CC 2 = RS-485 3 = PT100 4 = I/Os Exp. 5 = Profibus 6 = CAN 7 = Ethernet 8 = External Current Acqu.	0	enum	337
C9.3.2	Slot 2	0 = Automatic 1 = Anybus-CC 2 = RS-485 3 = PT100 4 = I/Os Exp. 5 = Profibus 6 = CAN 7 = Ethernet 8 = External Current Acqu.	0	enum	338
C9.4	Fan Configuration				
C9.4.1	Mode	0 = Always Off 1 = Always On 2 = Controlled	2	enum	203
C10 Configurations\Load / Save Parameters					
C10.1	Load / Save User				
C10.1.1	Mode	0 = Not Used 1 = Load User 1 2 = Load User 2 3 = Reserved 4 = Save User 1 5 = Save User 2 6 = Reserved	0	enum	206
C10.2	Copy Function HMI				

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C10.2.1	Mode	0 = Off 1 = SSW -> HMI 2 = HMI -> SSW	0	enum	319
C10.3	Erase Diagnostics				
C10.3.1	Mode	0 ... 1 = Not Used 2 = Fault 3 = Alarms 4 = Events 5 = Motor ON 6 = Temperaturas 7 = Hours Control 8 = Thermal Class Status	0	enum	205
C10.4	Load Factory Default				
C10.4.1	Mode	0 = No 1 = Yes	0	enum	204
C10.5	Save Changed Param.				
C10.5.1	Mode	0 = No 1 = Yes	0	enum	209
C11 Configurations\SoftPLC					
C11.1	Mode	0 = Stop Program 1 = Run Program	0	enum	1101
C11.2	Action App. Not Running	0 = Inactive 1 = Alarm A708 2 = Fault F708	0	enum	1103
C11.3	Parameter				
C11.3.1	User #1	-10000 to 10000	0	s32bit	1110
C11.3.2	User #2	-10000 to 10000	0	s32bit	1112
C11.3.3	User #3	-10000 to 10000	0	s32bit	1114
C11.3.4	User #4	-10000 to 10000	0	s32bit	1116
C11.3.5	User #5	-10000 to 10000	0	s32bit	1118
C11.3.6	User #6	-10000 to 10000	0	s32bit	1120
C11.3.7	User #7	-10000 to 10000	0	s32bit	1122
C11.3.8	User #8	-10000 to 10000	0	s32bit	1124
C11.3.9	User #9	-10000 to 10000	0	s32bit	1126
C11.3.10	User #10	-10000 to 10000	0	s32bit	1128
C11.3.11	User #11	-10000 to 10000	0	s32bit	1130
C11.3.12	User #12	-10000 to 10000	0	s32bit	1132
C11.3.13	User #13	-10000 to 10000	0	s32bit	1134
C11.3.14	User #14	-10000 to 10000	0	s32bit	1136
C11.3.15	User #15	-10000 to 10000	0	s32bit	1138
C11.3.16	User #16	-10000 to 10000	0	s32bit	1140
C11.3.17	User #17	-10000 to 10000	0	s32bit	1142
C11.3.18	User #18	-10000 to 10000	0	s32bit	1144
C11.3.19	User #19	-10000 to 10000	0	s32bit	1146
C11.3.20	User #20	-10000 to 10000	0	s32bit	1148
C11.3.21	User #21	-10000 to 10000	0	s32bit	1150
C11.3.22	User #22	-10000 to 10000	0	s32bit	1152
C11.3.23	User #23	-10000 to 10000	0	s32bit	1154
C11.3.24	User #24	-10000 to 10000	0	s32bit	1156
C11.3.25	User #25	-10000 to 10000	0	s32bit	1158
C11.3.26	User #26	-10000 to 10000	0	s32bit	1160
C11.3.27	User #27	-10000 to 10000	0	s32bit	1162
C11.3.28	User #28	-10000 to 10000	0	s32bit	1164
C11.3.29	User #29	-10000 to 10000	0	s32bit	1166
C11.3.30	User #30	-10000 to 10000	0	s32bit	1168
C11.3.31	User #31	-10000 to 10000	0	s32bit	1170
C11.3.32	User #32	-10000 to 10000	0	s32bit	1172

PARAMETER STRUCTURE

Parameter	Description	Range of values	Factory setting	Properties	Communication Address
C11.3.33	User #33	-10000 to 10000	0	s32bit	1174
C11.3.34	User #34	-10000 to 10000	0	s32bit	1176
C11.3.35	User #35	-10000 to 10000	0	s32bit	1178
C11.3.36	User #36	-10000 to 10000	0	s32bit	1180
C11.3.37	User #37	-10000 to 10000	0	s32bit	1182
C11.3.38	User #38	-10000 to 10000	0	s32bit	1184
C11.3.39	User #39	-10000 to 10000	0	s32bit	1186
C11.3.40	User #40	-10000 to 10000	0	s32bit	1188
C11.3.41	User #41	-10000 to 10000	0	s32bit	1190
C11.3.42	User #42	-10000 to 10000	0	s32bit	1192
C11.3.43	User #43	-10000 to 10000	0	s32bit	1194
C11.3.44	User #44	-10000 to 10000	0	s32bit	1196
C11.3.45	User #45	-10000 to 10000	0	s32bit	1198
C11.3.46	User #46	-10000 to 10000	0	s32bit	1200
C11.3.47	User #47	-10000 to 10000	0	s32bit	1202
C11.3.48	User #48	-10000 to 10000	0	s32bit	1204
C11.3.49	User #49	-10000 to 10000	0	s32bit	1206
C11.3.50	User #50	-10000 to 10000	0	s32bit	1208
C11.4	SoftPLC Application	0 = User 1 = Timer Control 2 = Pump Cleaning	0	enum	1104
A1 Assistant\Oriented Start-up					
A1.1	Mode	0 = No 1 = Yes	1	enum	317

PARAMETER STRUCTURE

Table 1.4: Description of the parameter data types

Data Type	Description
enum	Enumerated type (unsigned 8-bit) contains a list of values with function description for each item.
8bit	Unsigned 8-bit integer, ranges from 0 to 255.
16bit	Unsigned 16-bit integer, ranges from 0 to 65,535.
s16bit	Signed 16-bit integer, ranges from -32,768 to 32,767.
32bit	Unsigned 32-bit integer, ranges from 0 to 4,294,967,295.
s32bit	Signed 32-bit integer, ranges from -2,147,483,648 to 2,147,483,647.
date	Displays the date and time value in the format below: second (1 byte) minute (1 byte) hour (1 byte) day (1 byte) month (1 byte) reserved (1 byte) year (2 bytes)
TIME	Displays the time in the format hh:mm:ss. For network protocols, this data type is transferred as an unsigned 32-bit integer value representing the number of seconds.
ip_address	Unsigned 32-bit integer representing the octets of the IP address.
MAC_ADDRESS	48-bit identifier displayed in XX:XX:XX:XX:XX:XX format.
STRING_ASCII	Text string. For network protocols, this data type is transferred as a string filled with zeros (0) to the end (maximum parameter size plus one).



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