CPE102 - PROFINET PROTOCOL FOR FC400

FC400 from release FW 4.0

Rev 3 of 16/09/26

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1. PREFACE

CPE 102 is the PROFINET / MODBUS converter for FC family controllers produced by Hyterm.

2. HYSTORY OF DOCUMENT

DATE	REV.	CHANGES
18/07/23	00	Emission This document is based on: • MODBUS Protocol FC400 Rev01 of 08/05/23
03/02/25	01	Position vs Byte nr
19/08/26	02	Update on some paragraph appearance Changed MODBUS diagnostic Byte nr to 240 Added new Bytes nr: 58, 60, 98 Reduced poll times
16/09/26	03	Paragraphs updates

3. CONTACT ADDRESS OF THE MANUFACTURER AND TECHNICAL SUPPORT

In case of information requests or technical issues the buyer can contact HYTERM at the following address:

HYTERM S.r.l.
Viale del lavoro, 18 – 25045 Castegnato (BS)

Site: www.hyterm.com
E-mail: info@hyterm.com

Technical Support:
E-mail: support@hyterm.com
Teams: support@hyterm.com

4. DESCRIPTION OF THE REGISTERS OF FC400

This section contains information on numeric and non-numeric data exchanged with FC400.

4.1. READ ONLY REGISTERS OF FC400

This section contains the information on numeric data reading only.

4.1.1. STATUS PARAMETERS



POLL TIME is the data cyclical update time between the regulator and the converter.

BYTE NR	POLL TIME	DESCRIPTION
0	60s	Operating hours (controller powered)
2	60s	Controller operating hours (CU>0)
4	60s	Device identification
6	60s	Release HW
8	60s	Release FW (Due byte) → Tripletta
10	1s	Controller status
12	10s	Number of working fans
14	1s	Total fan power consumption
16	1s	Fan rotation speed (average)
18	10s	Setpoint value in use
20	1s	Analog input 1 value
22	1s	Analog input 2 value
24	1s	Analog input 3 value
26	1s	Analog input 4 value
28	1s	Analog input 5 value
30	1s	Analog input 6 value
32	1s	Digital input status
34	1s	Actual DAC value for analog output 1
36	1s	Actual DAC value for analog output 2
38	1s	Digital output status
40	1s	CU value (Fan control percentage)

BYTE NR	POLL TIME	DESCRIPTION
42	1s	Warning code 1
44	1s	Warning code 2
46	1s	Warning code 3
48	1s	Error code 1
50	1s	Error code 2
52	1s	Error code 3
54	1s	Error code 4
56	1s	Temperature unit of measure in use
58	1s	Pressure unit of measure in use

4.1.2. MODBUS DIAGNOSTICS

This Byte signals a malfunction in the MODBUS side communication (the regulator doesn't respond to MODBUS queries).
See chapter 5.1.2 MODBUS DIAGNOSTICS for details.



When Byte 240 value is greater than 0 wait 60s before triggering an alarm (Communication can automatically re-establish itself within 60s)

BYTE NR	POLL TIME	DESCRIPTION
240	1s	Modbus diagnostic

4.2. READ & WRITE REGISTER

This section contains information on data with the possibility both of reading and writing numeric numbers contained in the position.



POLL TIME is the data cyclical update time between the regulator and the converter.

4.2.1. WORRKING PARAMETERS

BYTE NR	POLL TIME	DESCRIPTION
60	1s	Set Point 1 (regulation)
62	1s	Set Point 2 (regulation)
64	60s	Proportional Band
66	1s	Minimum limit
68	1s	Maximum limit
70	1s	MODBUS slave mode speed set
72	10s	PID Proportional component weight
74	10s	PID Integral component weight
76	10s	PID Peso componente derivativa
78	10s	PID sampling time
80	60s	Pressure scale

4.2.2. DIGITAL INPUTS



The command **Enable control functions** is saved in memory of the regulator, write the desired value and then the **AUTOSAVE** function will save it in memory permanently.



Digital Input from 1 to 7 are **not saved** in memory: you need to write the desired value continuously over time. If not, if the regulator is turned off the set values will be lost.

BYTE NR	POLL TIME	DESCRIPTION
82	1s	Digital Input 1
84	1s	Digital Input 2
86	1s	Digital Input 3
88	1s	Digital Input 4
90	1s	Digital Input 5
92	1s	Digital Input 6
94	1s	Digital Input 7
96	1s	Enabling control functions for single digital input

4.2.3. SPECIAL FUNCTIONS



All data in this section (write mode) are saved in memory of the regulator, write the desired value and then the AUTOSAVE function will save it in memory permanently.

4.2.3.1. EMERGENCY SPEED

BYTE NR	POLL TIME	DESCRIPTION
98	5s	Enabling the Fan Emergency function
100	5s	Rotation speed in EMERGENCY mode
102	5s	Fan start delay

4.2.3.2. SHEDDING

BYTE NR	POLL TIME	DESCRIPTION
104	5s	Enabling the Shedding function
106	5s	Number of start attempts

4.2.3.3. NIGHT LIMIT

BYTE NR	POLL TIME	DESCRIPTION
108	5s	Enabling the NIGHT function
110	5s	Function activation time (Enable = 2)
112	5s	Function deactivation time (Enable = 2)
114	5s	Rotation speed in NIGHT mode

4.2.3.4. SPEED JUMP

BYTE NR	POLL TIME	DESCRIPTION
116	5s	Enabling the JUMP function
118	5s	Jump lower limit 1
120	5s	Jump upper limit 1
122	5s	Jump lower limit 2
124	5s	Jump upper limit 2

4.2.3.5. UNLOCK

BYTE NR	POLL TIME	DESCRIPTION
126	5s	Enabling the UnLock function
128	5s	Fan rotation time
130	5s	Fan rest time
132	5s	Rotation speed in UNLOCK mode

4.2.3.6. CLEAN

BYTE NR	POLL TIME	DESCRIPTION
134	5s	Enabling the Clean function
136	5s	Trigger Frequency (Enable = 2)
138	5s	Cleaning start time (Enable = 2)
140	5s	Cleaning cycle duration (Enable = 2)
142	5s	Speed during the cleaning cycle

4.2.3.7. WASH

BYTE NR	POLL TIME	DESCRIPTION
144	5s	Enabling the WASH function
146	5s	Trigger Frequency
148	5s	Cleaning start time
150	5s	Battery cooling duration
152	5s	Battery wash duration
154	5s	Speed during the wash cycle

4.2.3.8. ECO

BYTE NR	POLL TIME	DESCRIPTION
156	5s	Enabling the ECO function
158	5s	Minimum waiting time before the next activation/deactivation
160	5s	Group activation speed
162	5s	Group deactivation speed
164	5s	Speed KICK

4.2.3.9. SETPOINT SWITCH

BYTE NR	POLL TIME	DESCRIPTION
166	5s	Enabling the SP change function with Tamb
168	5s	Temperature change Set point
170	5s	hysteresis

4.2.3.10. SETPOINT ADJUST

BYTE NR	POLL TIME	DESCRIPTION
172	5s	Enabling the SP adjustment function with Tamb
174	5s	Minimum acceptable SP
176	5s	Maximum acceptable SP
178	5s	Offset
180	5s	Refrigerant selection for BAR → °C conversion in pressure control Refrigerant used in the condenser

4.2.3.11. FLOATING SETPOINT

BYTE NR	POLL TIME	DESCRIPTION
182	5s	Enabling of the Sp regulation function with external signal
184	5s	SP control signal
186	5s	Minimum value that can be set for SP
188	5s	Maximum value that can be set for SP

4.2.3.12. SLAVE SAFETY

BYTE NR	POLL TIME	DESCRIPTION
190	5s	Enabling the SLAVE SAFETY function
192	5s	Control signal

4.2.3.13. FEEDBACK

BYTE NR	POLL TIME	DESCRIPTION
194	5s	Function enable
196	5s	Feedback speed

4.2.3.14. BOOST

BYTE NR	POLL TIME	DESCRIPTION
198	5s	Enabling the BOOST function
200	5s	Activation value
202	5s	Hysteresis

4.2.3.15. CUTOFF

BYTE NR	POLL TIME	DESCRIPTION
204	5s	Function enable
206	5s	Activation value
208	5s	Hysteresis

4.2.3.16. THERMOSTAT

BYTE NR	POLL TIME	DESCRIPTION
210	5s	Function enable
212	5s	Activation value
214	5s	Hysteresis
216	5s	Function disabled during control

4.2.3.17. THRESHOLD

BYTE NR	POLL TIME	DESCRIPTION
218	5s	Enabling the THRESHOLD function
220	5s	THRESHOLD speed

5. DESCRIPTION OF THE REGISTERS OF FC400

List of the position with detailed description.

5.1. READ ONLY REGISTERS OF FC400

5.1.1. STATUS PARAMETERS

BYTE NR	VALUES	MIN	MAX	DEF	DEC
0	**Description**: Operating hours (controller powered)				
	h	0	65535	0	0
2	**Description**: Controller operating hours (CU>0)				
	h	0	65535	0	0
4	**Description**: Device identification				
	0 = ND 3 = FC400 HEADLESS 4 = FC400 CIECO ETHERNET 5 = FC400 UI 6 = FC400 UI ETHERNET 7 = SC400 8 = RB100	0	65535	0	0
6	**Description**: Release HW				
	100 = 1.00	0.00	65535.00	0.00	2
8	**Description**: Release FW (Due byte) → Tripletta				
	Byte 1 (least significant) = Build Byte 2 (most significant) = Upper 4 bits: Minor, Latest 4 bits: Major	0	65535	0	0
10	**Description**: Controller status				
	0 = STARTING 1 = STOP 2 = RUN	0	2	0	0
12	**Description**: Number of working fans				
	nr	0	22	0	0
14	**Description**: Total fan power consumption				
	Sum of the individual powers in W	0	65535	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
16	**Description**: Fan rotation speed (average)				
	RPM	0	65535	0	0
18	**Description**: Setpoint value in use				
	°C	-15.0	90.0	0.0	1
	°F	5.0	194.0	0.0	1
	Bar	0.0	45.0	0.0	1
	Psi	0.0	652.6	0.0	1
20	**Description**: Analog input 1 value				
	Value *	-32768.0	32767.0	0.0	1
22	**Description**: Analog input 2 value				
	Value *	-32768.0	32767.0	0.0	1
24	**Description**: Analog input 3 value				
	Value *	-32768.0	32767.0	0.0	1
26	**Description**: Analog input 4 value				
	Value *	-32768.0	32767.0	0.0	1
28	**Description**: Analog input 5 value				
	Value *	-32768.0	32767.0	0.0	1
30	**Description**: Analog input 6 value				
	Value *	-32768.0	32767.0	0.0	1
32	**Description**: Digital input status				
	Bit 0 = DI1 Bit 1 = DI2 Bit 2 = DI3 Bit 3 = DI4 Bit 4 = DI5 Bit 5 = DI6 Bit 6 = DI7	0	255	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
34	**Description**: Actual DAC value for analog output 1				
	Volt (0-10V)	0.00	1000.00	0.00	2
36	**Description**: Actual DAC value for analog output 2				
	Volt (0-10V)	0.00	1000.00	0.00	2
38	**Description**: Digital output status				
	Bit 0 = DO1 Bit 1 = DO2 Bit 2 = DO3 Bit 3 = DO4	0	15	0	0
40	**Description**: CU value (Fan control percentage)				
	%	0	100	0	0
42	**Description**: Warning code 1				
	Bit 0 = DATALOGGER Bit 1 = FAN (General notification) Bit 2 = CIRCUIT BREAKERS WARNING Bit 3 = REPAIR SWITCH WARNING Bit 4 = PANEL HEATER	0	65535	0	0
44	**Description**: Warning code 2				
	Bit 0 = FAN_1 Bit 1 = FAN_2 Bit 2 = FAN_3 Bit 3 = FAN_4 Bit 4 = FAN_5 Bit 5 = FAN_6 Bit 6 = FAN_7 Bit 7 = FAN_8 Bit 8 = FAN_9 Bit 9 = FAN_10 Bit 10 = FAN_11 Bit 11 = FAN_12 Bit 12 = FAN_13 Bit 13 = FAN_14 Bit 14 = FAN_15 Bit 15 = FAN_16	0	65535	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
46	**Description**: Warning code 3				
	Bit 0 = FAN_17 Bit 1 = FAN_18 Bit 2 = FAN_19 Bit 3 = FAN_20 Bit 4 = FAN_21 Bit 5 = FAN_22	0	65535	0	0
48	**Description**: Error code 1				
	Bit 0 = TK DIGITAL INPUT (Function ALARM) Bit 1 = ALL FAN Bit 2 = ANALOG Input Bit 3 = SLAVE SAFETY Bit 4 = Reserved Bit 5 = ADIABATIC COMMUNICATION Bit 6 = COMMUNICATION REMOTE CONTROL Bit 7 = OVER HEAT (board) Bit 8 = UNDER HEAT (board) Bit 9 = POWER SUPPLY Bit 8 = UNDER HEAT (board)	0	65535	0	0
50	**Description**: Error code 2				
	Bit 0 = FAN_1 Bit 1 = FAN_2 Bit 2 = FAN_3 Bit 3 = FAN_4 Bit 4 = FAN_5 Bit 5 = FAN_6 Bit 6 = FAN_7 Bit 7 = FAN_8 Bit 8 = FAN_9 Bit 9 = FAN_10 Bit 10 = FAN_11 Bit 11 = FAN_12 Bit 12 = FAN_13 Bit 13 = FAN_14 Bit 14 = FAN_15 Bit 15 = FAN_16	0	65535	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
52	**Description**: Error code 3				
	Bit 0 = FAN_17 Bit 1 = FAN_18 Bit 2 = FAN_19 Bit 3 = FAN_20 Bit 4 = FAN_21 Bit 5 = FAN_22 Bit 6 = FAN_23 Bit 7 = FAN_24 Bit 10 = Analog input alarm	0	65535	0	0
54	**Description**: Error code 4				
	Bit 0 = ANALOG INPUT 1 Bit 1 = ANALOG INPUT 2 Bit 2 = ANALOG INPUT 3 Bit 3 = ANALOG INPUT 4 Bit 4 = ANALOG INPUT 5 Bit 5 = ANALOG INPUT 6	0	65535	0	0
56	**Description**: Temperature unit of measure in use				
	Temperature unit 0 = °C 1 = °F	0	1	0	0
58	**Description**: Pressure unit of measure in use				
	Pressure unit 0 = Bar 1 = Psi	0	1	0	0

5.1.2. MODBUS DIAGNOSTICS

This Byte signals a malfunction in the MODBUS side communication (the regulator doesn't respond to MODBUS queries).



When Byte 212 value is greater than 0 wait 60s before triggering an alarm (Communication can automatically re-establish itself within 60s)

BYTE NR	VALUES	MIN	MAX	DEF	ACCESS
240	**Description**: FC400 side diagnostics				
	240 = 0 → Communication OK 240 > 0 → Communication KO	0	256	0	R

5.2. READ & WRITE REGISTER

5.2.1. WORRKING PARAMETERS



All data in this section (write mode) are saved in memory of the regulator, write the desired value and then the AUTOSAVE function will save it in memory permanently.

BYTE NR	VALUES	MIN	MAX	DEF	DEC
60	**Description**: Set Point 1 (regulation)				
	°C	-15.0	90.0	35.0	1
	°F	5.0	194.0	95.0	1
	Bar	0.0	60.0	30.0	1
	Psi	0.0	870.2	435.1	1
62	**Description**: Set Point 2 (regulation)				
	°C	-15.0	90.0	25.0	1
	°F	5.0	194.0	95.0	1
	Bar	0.0	60.0	30.0	1
	Psi	0.0	870.2	435.1	1
64	**Description**: Proportional Band				
	°C	2.0	60.0	7.5	1
	°F	3.6	108.0	13.5	1
	Bar (PSCALE <= 16)	0.0	45.0	2.4	1
	Bar (16 < PSCALE < 45)	0.0	45.0	3.5	1
	Bar (PSCALE >= 45)	0.0	45.0	5.2	1
	Psi (PSCALE <= 16)	0.0	652.6	34.8	1
	Psi (16 < PSCALE < 45)	0.0	652.6	50.7	1
	Psi (PSCALE >= 45)	0.0	652.6	75.4	1
66	**Description**: Minimum limit				
	%	0	100	0	0
68	**Description**: Maximum limit				
	%	0	100	100	0
70	**Description**: MODBUS slave mode speed set				
	0 = 0% 65535 = 100%	0	65535	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
72	**Description**: PID Proportional component weight				
	%	0	100	5	0
74	**Description**: PID Integral component weight				
	%	0	100	5	0
76	**Description**: PID Peso componente derivativa				
	%	0	100	5	0
78	**Description**: PID sampling time				
	s	1	10	1	0
80	**Description**: Pressure scale				
	0 = 15,0 Bar 1 = 16,0 Bar 2 = 25,0 Bar 3 = 30,0 Bar 4 = 40,0 Bar 5 = 45,0 Bar 6 = 50,0 Bar 7 = 60,0 Bar	0	7	3	0
	0 = 217.5 Psi 1 = 232.1 Psi 2 = 362.5 Psi 3 = 435.1 Psi 4 = 580.1 Psi 5 = 652.6 Psi 6 = 725.2 Psi 7 = 870.2 Psi	0	7	3	0

5.2.2. DIGITAL INPUTS



The command **Enable control functions** is saved in memory of the regulator, write the desired value and then the **AUTOSAVE** function will save it in memory permanently.



Digital Input from 1 to 7 are **not saved** in memory: you need to write the desired value continuously over time. If not, if the regulator is turned off the set values will be lost.

BYTE NR	VALUES	MIN	MAX	DEF	DEC
82	**Description**: Digital Input 1				
	0 = OFF 1 = ON	0	1	0	0
84	**Description**: Digital Input 2				
	0 = OFF 1 = ON	0	1	0	0
86	**Description**: Digital Input 3				
	0 = OFF 1 = ON	0	1	0	0
88	**Description**: Digital Input 4				
	0 = OFF 1 = ON	0	1	0	0
90	**Description**: Digital Input 5				
	0 = OFF 1 = ON	0	1	0	0
92	**Description**: Digital Input 6				
	0 = OFF 1 = ON	0	1	0	0
94	**Description**: Digital Input 7				
	0 = OFF 1 = ON	0	1	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
96	**Description**: Enabling control functions for single digital input				
	Bit 0 = digital input 1 –> 0 = OFF / 1 = ON Bit 1 = digital input 2 –> 0 = OFF / 1 = ON Bit 2 = digital input 3 –> 0 = OFF / 1 = ON Bit 3 = digital input 4 –> 0 = OFF / 1 = ON Bit 4 = digital input 5 –> 0 = OFF / 1 = ON Bit 5 = digital input 6 –> 0 = OFF / 1 = ON Bit 6 = digital input 7 –> 0 = OFF / 1 = ON	0	127	0	0

5.2.3. SPECIAL FUNCTIONS



All data in this section (write mode) are saved in memory of the regulator, write the desired value and then the AUTOSAVE function will save it in memory permanently.

5.2.3.1. EMERGENCY SPEED

BYTE NR	VALUES	MIN	MAX	DEF	DEC
98	**Description**: Enabling the Fan Emergency function				
	0 = Function disabled 1 = Function enabled	0	1	0	0
100	**Description**: Rotation speed in EMERGENCY mode				
	%	10	100	100	0
102	**Description**: Fan start delay				
	sec	1	60	5	0

5.2.3.2. SHEDDING

BYTE NR	VALUES	MIN	MAX	DEF	DEC
104	**Description**: Enabling the Shedding function				
	0 = Function disabled 1 = Function enabled	0	1	0	0
106	**Description**: Number of start attempts				
	nr	1	200	20	0

5.2.3.3. NIGHT LIMIT

BYTE NR	VALUES	MIN	MAX	DEF	DEC
108	**Description**: Enabling the NIGHT function				
	0 = Function disabled 1 = Function enabled with digital input 2 = Automatic function	0	2	1	0
110	**Description**: Function activation time (Enable = 2)				
	hh:mm	100	2359	2300	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
112	**Description**: Function deactivation time (Enable = 2)				
	hh:mm	100	2359	600	0
114	**Description**: Rotation speed in NIGHT mode				
	%	1	100	70	0

5.2.3.4. SPEED JUMP

BYTE NR	VALUES	MIN	MAX	DEF	DEC
116	**Description**: Enabling the JUMP function				
	0 = Function disabled 1 = Function enabled	0	1	0	0
118	**Description**: Jump lower limit 1				
	%	0	100	0	0
120	**Description**: Jump upper limit 1				
	%	0	100	0	0
122	**Description**: Jump lower limit 2				
	%	0	100	0	0
124	**Description**: Jump upper limit 2				
	%	0	100	0	0

5.2.3.5. UNLOCK

BYTE NR	VALUES	MIN	MAX	DEF	DEC
126	**Description**: Enabling the UnLock function				
	0 = Function disabled 1 = Function enabled with digital input 2 = Automatic function	0	2	0	0
128	**Description**: Fan rotation time				
	min	1	120	15	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
130	**Description**: Fan rest time				
	min	1	43000	10080	0
132	**Description**: Rotation speed in UNLOCK mode				
	%	10	100	100	0

5.2.3.6. CLEAN

BYTE NR	VALUES	MIN	MAX	DEF	DEC
134	**Description**: Enabling the Clean function				
	0 = Function disabled 1 = Function enabled with digital input 2 = Automatic function	0	2	0	0
136	**Description**: Trigger Frequency (Enable = 2)				
	day	1	30	10	0
138	**Description**: Cleaning start time (Enable = 2)				
	hh:mm	100	2359	2300	0
140	**Description**: Cleaning cycle duration (Enable = 2)				
	min	1	60	15	0
142	**Description**: Speed during the cleaning cycle				
	%	1	100	100	0

5.2.3.7. WASH

BYTE NR	VALUES	MIN	MAX	DEF	DEC
144	**Description**: Enabling the WASH function				
	0 = OFF 1 = ON	0	1	0	0
146	**Description**: Trigger Frequency				
	day	1	30	10	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
148	**Description**: Cleaning start time				
	hh:mm	100	2359	2300	0
150	**Description**: Battery cooling duration				
	min	1	60	5	0
152	**Description**: Battery wash duration				
	min	1	60	15	0
154	**Description**: Speed during the wash cycle				
	%	1	100	100	0

5.2.3.8. ECO

BYTE NR	VALUES	MIN	MAX	DEF	DEC
156	**Description**: Enabling the ECO function				
	0 = OFF 1 = ON	0	1	0	0
158	**Description**: Minimum waiting time before the next activation/deactivation				
	sec	3	90	10	0
160	**Description**: Group activation speed				
	%	10	50	25	0
162	**Description**: Group deactivation speed				
	%	10	50	15	0
164	**Description**: Speed KICK				
	%	1	100	80	0

5.2.3.9. SETPOINT SWITCH

BYTE NR	VALUES	MIN	MAX	DEF	DEC
166	**Description**: Enabling the SP change function with Tamb				
	0 = Function disabled 1 = Function enabled	0	1	0	0
168	**Description**: Temperature change Set point				
	°C	-10.0	60.0	30.0	1
	°F	14.0	140.0	86.0	1
170	**Description**: hysteresis				
	°C	3.0	20.0	5.0	1
	°F	14.0	140.0	86.0	1

5.2.3.10. SETPOINT ADJUST

BYTE NR	VALUES	MIN	MAX	DEF	DEC
172	**Description**: Enabling the SP adjustment function with Tamb				
	0 = Function disabled 1 = Function enabled	0	1	0	0
174	**Description**: Minimum acceptable SP				
	°C	0.0	90.0	20.0	1
	°F	32.0	194.0	68.0	1
176	**Description**: Maximum acceptable SP				
	°C	0.0	90.0	40.0	1
	°F	32.0	194.0	104.0	1
178	**Description**: Offset				
	°C	1.0	20.0	5.0	1
	°F	33.8	68.0	41.0	1
180	**Description**: Refrigerant selection for BAR → °C conversion in pressure control Refrigerant used in the condenser				
	18 = R404A	0	33	18	0

5.2.3.11. FLOATING SETPOINT

BYTE NR	VALUES	MIN	MAX	DEF	DEC
182	**Description**: Enabling of the Sp regulation function with external signal				
	0 = Function disabled 1 = Function enabled	0	1	0	0
184	**Description**: SP control signal				
	0 = 1-10V 1 = 4-20mA	0	1	0	0
186	**Description**: Minimum value that can be set for SP				
	°C	-15.0	90.0	20.0	1
	°F	5.0	194.0	68.0	1
	Bar	0.0	60.0	20.0	1
	Psi	0.0	870.2	290.0	1
188	**Description**: Maximum value that can be set for SP				
	°C	-15.0	90.0	40.0	1
	°F	5.0	194.0	104.0	1
	Bar	0.0	60.0	40.0	1
	Psi	0.0	870.2	580.0	1

5.2.3.12. SLAVE SAFETY

BYTE NR	VALUES	MIN	MAX	DEF	DEC
190	**Description**: Enabling the SLAVE SAFETY function				
	0 = Function disabled 1 = Function enabled	0	1	0	0
192	**Description**: Control signal				
	0 = MODBUS 1 = 1-10V 2 = 4-20mA	0	2	2	0

5.2.3.13. FEEDBACK

BYTE NR	VALUES	MIN	MAX	DEF	DEC
194	**Description**: Function enable				
	0 = Function disabled 1 = Function enabled	0	1	0	0

BYTE NR	VALUES	MIN	MAX	DEF	DEC
196	**Description**: Feedback speed				
	%	1	20	10	0

5.2.3.14. BOOST

BYTE NR	VALUES	MIN	MAX	DEF	DEC
198	**Description**: Enabling the BOOST function				
	0 = Function disabled 1 = Function enabled	0	1	0	0
200	**Description**: Activation value				
	°C	-15.0	120.0	100.0	1
	°F	5.0	248.0	212.0	1
	Bar	0.0	60.0	45.0	1
	Psi	0.0	870.2	652.6	1
202	**Description**: Hysteresis				
	°C	1.0	30.0	3.0	1
	°F	1.8	54.0	5.4	1
	Bar	0.1	15.0	1.0	1
	Psi	1.4	217.5	14.5	1

5.2.3.15. CUTOFF

BYTE NR	VALUES	MIN	MAX	DEF	DEC
204	**Description**: Function enable				
	0 = Function disabled 1 = Function enabled	0	1	0	0
206	**Description**: Activation value				
	°C	-25.0	80.0	20.0	1
	°F	-13.0	176.0	68.0	1
	Bar	0.0	60.0	0.0	1
	Psi	0.0	870.2	0.0	1
208	**Description**: Hysteresis				
	°C	1.0	30.0	3.0	1
	°F	1.8	54.0	5.4	1
	Bar	0.1	15.0	0.1	1
	Psi	1.4	217.5	1.4	1

5.2.3.16. THERMOSTAT

BYTE NR	VALUES	MIN	MAX	DEF	DEC
210	**Description**: Function enable				
	0 = Function disabled 1 = Function enabled	0	1	0	0
212	**Description**: Activation value				
	°C	-35.0	80.0	15.0	1
	°F	-31.0	176.0	59.0	1
214	**Description**: Hysteresis				
	°C	1.0	30.0	5.0	1
	°F	1.8	54.0	5.4	1
216	**Description**: Function disabled during control				
	0 = Function enabled during control 1 = Function disabled during control	0	1	0	0

5.2.3.17. THRESHOLD

BYTE NR	VALUES	MIN	MAX	DEF	DEC
218	**Description**: Enabling the THRESHOLD function				
	0 = Function disabled 1 = Function enabled	0	1	0	0
220	**Description**: THRESHOLD speed				
	%	1	100	30	0