

ModbusTCP protocol description PRO IONIZER

Interface description

PRO IONIZER family power supplies support a ModbusTCP based Ethernet interface. Only the variant based on the TCP/IP protocol is supported.

Generally, it should be noted that a register has always 16 bits. Longer data types with 32 bits or strings are split over several consecutive registers.

Supported Modbus Function Codes PRO IONIZER

The following Modbus function codes are supported. Note: Not all Modbus specific feature codes are supported. Only the codes in the table below are to be used for the communication.

Function code	Description
3	Read Holding Registers
6	Write Single Register
16	Write Multiple Register

Setting of network parameters

As standard, the DHCP protocol is activated to set the network parameters (IP address, submask, gateway, etc.). It is possible to change the parameters manually, using the "IPConfig" program from HMS. Similarly, this tool can analyse the entire network for available devices. For further information and download of the program please see <http://www.anybus.de/>.

Overview of the used register "Device information"

The device information (e.g. serial number, device type, etc.) is available in the following register.

Register	Name
0x2000 – 0x200F	Order Code
0x2010 – 0x2016	Serial Number
0x2020	Revision Number Hardware
0x2030 – 0x2033	Revision Number Software

Overview of the used register "Software Reset"

Register	Name
0x2040	Software Reset

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Overview of the used register “Error- and Warning history”

Register	Name
0x2050 – 0x205F	Error History
0x2056 600x206F	Warning History

Overview of the used register “Actual values”

The following table lists all the registers used for the actual values.

Register	Name
0x0800	System Status
0x0801	Active Error
0x0802	Active Warning
0x0803	Supply Voltage
0x0804	Temperature Device
0x0805	Discharging Mode
0x0806	Power Discharge 1
0x0807	Power Discharge 2
0x0808	Power Discharge 3
0x0809	Power Discharge 4
0x080A	Pollution Discharge 1
0x080B	Pollution Discharge 2
0x080C	Pollution Discharge 3
0x080D	Pollution Discharge 4
0x080E	Status Discharge 1
0x080F	Status Discharge 2
0x0810	Status Discharge 3
0x0811	Status Discharge 4
0x0812	Voltage Discharging
0x0813	Voltage Discharging Positive
0x0814	Voltage Discharging Negative
0x0815	AC Discharging Current
0x0816	DC Discharging Current
0x0817	Power Discharging
0x0818	Discharging Capacity
0x0819	Revolutions Speed Sensor 1
0x081A	Revolutions Speed Sensor 2
0x081B	Revolutions Speed Sensor 3
0x081C	Revolutions Speed Sensor 4
0x081D	Revolutions Speed Sensor 5
0x081E	Revolutions Speed Sensor 6
0x081F	Revolutions Speed Sensor 7
0x0820	Revolutions Speed Sensor 8
0x0821	Revolutions Speed Sensor 9
0x0822	Revolutions Speed Sensor 10
0x0823	E-Field Sensor 1
0x0824	Ripple E-Field Sensor 1
0x0825	E-Field Sensor 2

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Register	Name
0x0826	Ripple E-Field Sensor 2
0x0827	State Digital Inputs D1-D10, A1-A2
0x0828	Analog Voltage Input A1
0x0829	Analog Voltage Input A2
0x082A	Sensor Ambient Temperature 1
0x082B	Sensor Ambient Temperature 2
0x082C	Sensor Humidity 1
0x082D	Sensor Humidity 2
0x082E	Sensor Metal Detection
0x082F	Sensor Suction Monitoring
0x0830	Years Operating Hour
0x0831	Days Operating Hour
0x0832	Hours Operating Hour
0x0833	Minutes Operating Hour
0x0834	Years Discharging Hour
0x0835	Days Discharging Hour
0x0836	Hours Discharging Hour
0x0837	Minutes Discharging Hour

Overview of the used register “Acknowledgement of errors and warning messages“

The following table lists all the registers used for the acknowledgement of error and warning messages.

Register	Name
0x1480	Clear Error
0x1190	Clear Warning

Overview of the used register “Save and reset parameters”

The following registers are used for saving and resetting the parameters.

Register	Name
0x14A0	Save Parameter
0x14B0	Load Factory Settings

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Overview of the used register "Parameter"

The following table lists all the registers used for the parameters. The table shows all supported parameters independent of the corresponding device version. If this entry is not supported by the device version, the corresponding parameter is not changed by the read or write access.

Register	Name
0x1500	Voltage Setpoint Discharging
0x1510	Current Setpoint Discharging
0x1520	Power Setpoint Discharging
0x1530	Percent Setpoint Discharging
0x1540	Discharging Frequency
0x1550	Ion Balance
0x1560	Discharging Mode
0x1570	Release Mode
0x1580	Output Signal Mode
0x1590	Actual Value Cycle Time
0x15A0	Keyboard Lock
0x15B0	LED Bar Mode
0x15C0	Pollution Detection Discharge 1
0x15D0	Pollution Detection Discharge 2
0x15E0	Pollution Detection Discharge 3
0x15F0	Pollution Detection Discharge 4
0x1600	Nominal Power Discharge 1
0x1610	Nominal Power Discharge 2
0x1620	Nominal Power Discharge 3
0x1630	Nominal Power Discharge 4
0x1640	Power Limit A Discharge 1
0x1650	Power Limit A Discharge 2
0x1660	Power Limit A Discharge 3
0x1670	Power Limit A Discharge 4
0x1680	Power Limit B Discharge 1
0x1690	Power Limit B Discharge 2
0x16A0	Power Limit B Discharge 3
0x16B0	Power Limit B Discharge 4
0x16C0	Active Length Discharge 1
0x16D0	Active Length Discharge 2
0x16E0	Active Length Discharge 3
0x16F0	Active Length Discharge 4
0x1700	Cable Length Discharge 1
0x1710	Cable Length Discharge 2
0x1720	Cable Length Discharge 3
0x1730	Cable Length Discharge 4
0x1740	Warning Level Discharge 1
0x1750	Warning Level Discharge 2
0x1760	Warning Level Discharge 3
0x1770	Warning Level Discharge 4
0x1780	Reference Point Activation
0x1790	Discharging Overload Warning
0x17A0	Sensor Input Mode
0x17B0	Minimum Revolutions Speed Sensor
0x17C0	Type E-Field Sensor 1
0x17D0	Distance E-Field Sensor 1

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Register	Name
0x17E0	Warning Level E-Field Sensor 1
0x17F0	Error Level E-Field Sensor 1
0x1800	Zero Point E-Field Sensor 1
0x1810	Type E-Field Sensor 2
0x1820	Distance E-Field Sensor 2
0x1830	Warning Level E-Field Sensor 2
0x1840	Error Level E-Field Sensor 2
0x1850	Zero Point E-Field Sensor 1
0x1860	Sensor Extension Mode D1-D8
0x1870	Sensor Extension Mode D9-D10, A1-A2
0x1880	Sensor Temperature 1 Low Value
0x1890	Sensor Temperature 1 High Value
0x18A0	Sensor Temperature 2 Low Value
0x18B0	Sensor Temperature 2 High Value

Overview of the used register “Release”

The following register is used to control the release:

Register	Name
0x1010	HV Release

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Description of the individual registers

Register 0x0800 – System Status

Current system status of the power supply. The status is composed of several parts:

- Bit 0 – high voltage release
0 – high voltage deactivated
1 – high voltage activated
- Bit 1 – Error
0 – no error active
1 – error occurred
- Bit 2 – Warning
0 – no warning occurred
1 – warning occurred
- Bit 4 – Discharge
0 – discharge deactivated (resp. with existing discharge: passive mode)
1 – discharge active
- Bit 5 – Software release
0 – no software release
1 – software release is set
- Bit 6 – Hardware release
0 – no hardware release
1 – hardware release is set

Register	0x0800
Name	System Status
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0801 – Active Error

Number of the active error message. For further information see chapter “error messages” in the operating instructions.

Register	0x0801
Name	Active Error
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0802 – Active Warning

Number of the active warning message. For further information see chapter “warning messages” in the operating instructions.

Register	0x0802
Name	Active Warning
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0803 – Supply Voltage

Supply voltage in mV.

Register	0x0803
Name	Supply Voltage
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0804 – Temperature Device

Internal device temperature in °C.

Register	0x0804
Name	Temperature Device
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0805 – Discharging Mode

Operating state of the discharging.

The indication of the operating state is divided into two parts. The low-order byte represents the current operating mode. The higher-order byte represents the limits of the discharge.

- Discharge Operating mode
0 – Passive Discharge
1 – Active Discharge
- Bit 8 - Limiter Discharge
0 – Voltage limiter not active
1 – Voltage limiter active

Register	0x0805
Name	Discharging Mode
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0806 – Power Discharge 1

Effective power Discharge connection 1 in mW.

Register	0x0806
Name	Power Discharge 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0807 – Power Discharge 2

Effective power Discharge connection 2 in mW.

Register	0x0807
Name	Power Discharge 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0808 – Power Discharge 3

Effective power Discharge connection 3 in mW.

Register	0x0808
Name	Power Discharge 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0809 – Power Discharge 4

Effective power Discharge connection 4 in mW.

Register	0x0809
Name	Power Discharge 4
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x080A – Pollution Discharge 1

Pollution Discharge connection 1 in %.

Register	0x080A
Name	Pollution Discharge 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x080B – Pollution Discharge 2

Pollution Discharge connection 2 in %.

Register	0x080B
Name	Pollution Discharge 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x080C – Pollution Discharge 3

Pollution Discharge connection 3 in %.

Register	0x080C
Name	Pollution Discharge 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x080D – Pollution Discharge 4

Pollution Discharge connection 4 in %.

Register	0x080D
Name	Pollution Discharge 4
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x080E – Status Discharge 1

Discharge status of connection 1.

The individual values for the possible states are listed below:

- 0 – No device connected
- 1 – Device detected
- 2 – Pollution of the connected device detected
- 3 – Overload of the connection due to the connected device
- 4 – Error detected within the connection resp. the connected device

Register	0x080E
Name	Status Discharge 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x080F – Status Discharge 2

Discharge status of connection 2.

The individual values for the possible states are listed below:

- 0 – No device connected
- 1 – Device detected
- 2 – Pollution of the connected
- 3 – Overload of the connection due to the connected device
- 4 – Error detected within the connection resp. the connected device

Register	0x080F
Name	Status Discharge 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0810 – Status Discharge 3

Discharge status of connection 3.

The individual values for the possible states are listed below:

- 0 – No device connected
- 1 – Device detected
- 2 – Pollution of the connected
- 3 – Overload of the connection due to the connected device
- 4 – Error detected within the connection resp. the connected device

Register	0x0810
Name	Status Discharge 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0811 – Status Discharge 4

Discharge status of connection 4.

The individual values for the possible states are listed below:

- 0 – No device connected
- 1 – Device detected
- 2 – Pollution of the connected
- 3 – Overload of the connection due to the connected device
- 4 – Error detected within the connection resp. the connected device

Register	0x0811
Name	Status Discharge 4
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0812 – Voltage Discharging

Effective discharge voltage in V.

Register	0x0812
Name	Voltage Discharging
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0813 – Voltage Discharging Positive

Effective discharge voltage of the positive half-wave in V.

Register	0x0813
Name	Voltage Discharging Positive
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0814 – Voltage Discharging Negative

Effective discharge voltage of the negative half-wave in V.

Register	0x0814
Name	Voltage Discharging Negative
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0815 – AC Discharging Current

Effective AC discharge current in μ A.

Register	0x0815
Name	AC Discharging Current
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0816 – DC Discharging Current

Signed DC discharge current in μ A.

Register	0x0816
Name	DC Discharging Current
Data Type	SIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0817 –Power Discharging

Discharging Power in watt with one decimal place.

Register	0x0817
Name	Power Discharging
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0818 – Discharging Capacity

Percentage utilization of the discharge capacity.

Register	0x0818
Name	Discharging Capacity
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0819 – Revolutions Speed Sensor 1

Number of revolutions per minute, speed sensor 1.

Register	0x0819
Name	Revolutions Speed Sensor 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x081A – Revolutions Speed Sensor 2

Number of revolutions per minute, speed sensor 2.

Register	0x081A
Name	Revolutions Speed Sensor 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x081B – Revolutions Speed Sensor 3

Number of revolutions per minute, speed sensor 3.

Register	0x081B
Name	Revolutions Speed Sensor 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x081C – Revolutions Speed Sensor 4

Number of revolutions per minute, speed sensor 4.

Register	0x081C
Name	Revolutions Speed Sensor 4
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x081D – Revolutions Speed Sensor 5

Number of revolutions per minute, speed sensor 5.

Register	0x081D
Name	Revolutions Speed Sensor 5
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x081E – Revolutions Speed Sensor 6

Number of revolutions per minute, speed sensor 6.

Register	0x081E
Name	Revolutions Speed Sensor 6
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x081F – Revolutions Speed Sensor 7

Number of revolutions per minute, speed sensor 7.

Register	0x081F
Name	Revolutions Speed Sensor 7
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0820 – Revolutions Speed Sensor 8

Number of revolutions per minute, speed sensor 8.

Register	0x0820
Name	Revolutions Speed Sensor 8
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0821 – Revolutions Speed Sensor 9

Number of revolutions per minute, speed sensor 9.

Register	0x0821
Name	Revolutions Speed Sensor 9
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0822 – Revolutions Speed Sensor 10

Number of revolutions per minute, speed sensor 10.

Register	0x0822
Name	Revolutions Speed Sensor 10
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0823 – E-Field Sensor 1

Measured value of E-field sensor 1 in V.

Register	0x0823
Name	E-Field Sensor 1
Data Type	SIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0824 – Ripple E-Field Sensor 1

Ripple of the measured value E-field sensor 1 in V.

Register	0x0824
Name	Ripple E-Field Sensor 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0825 – E-Field Sensor 2

Measured value of E-field sensor 2 in V.

Register	0x0825
Name	E-Field Sensor 2
Data Type	SIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0826 – Ripple E-Field Sensor 2

Ripple of the measured value E-field sensor 2 in V.

Register	0x0826
Name	Ripple E-Field Sensor 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0827 – State Digital Inputs D1-D10, A1-A2

Status of the digital input of the sensor inputs D1-D10 and A1-A2. The status is signalled by the corresponding bit for the respective sensor input.

The digital status of the sensor input is arranged as follows:

Byte 0								Byte 1							
LSB				MSB				LSB				MSB			
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	A1	A2				

Register	0x0827
Name	State Digital Inputs D1-D10, A1-A2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0828 – Analog Voltage Input A1

Voltage of the analog sensor input A1 in mV.

Register	0x0828
Name	Analog Voltage Input A1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0829 – Analog Voltage Input A2

Voltage of the analog sensor input A2 in mV.

Register	0x0829
Name	Analog Voltage Input A2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x082A – Sensor Ambient Temperature 1

Measured value ambient temperature sensor 1 in °C.

Register	0x082A
Name	Sensor Ambient Temperature 1
Data Type	SIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x082B – Sensor Ambient Temperature 2

Measured value ambient temperature sensor 2 in °C.

Register	0x082B
Name	Sensor Ambient Temperature 2
Data Type	SIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x082C – Sensor Humidity1

Measured value humidity sensor 1 in %.

Register	0x082C
Name	Sensor Humidity 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x082D – Sensor Humidity2

Measured value humidity sensor 2 in %.

Register	0x082D
Name	Sensor Humidity 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x082E – Sensor Metal Detection

Status of the metal detection

- 0 – Metal not detected
- 1 – Metal detected

Register	0x082E
Name	Sensor Metal Detection
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x082F – Sensor Suction Monitoring

Status of the suction monitoring

- 0 – Suction not active
- 1 – Suction active

Register	0x082F
Name	Sensor Suction Monitoring
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0830 – Years Operating Hour

Years of the operating hours counter.

Register	0x0830
Name	Years Operating Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0831 – Days Operating Hour

Days of the operating hours counter.

Register	0x0831
Name	Days Operating Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0832 – Hours Operating Hour

Hours of the operating hours counter.

Register	0x0832
Name	Hours Operating Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0833 – Minutes Operating Hour

Minutes of the operating hours counter.

Register	0x0833
Name	Minutes Operating Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0834 – Years Discharging Hour

Years of the hours counter Discharge.

Register	0x0834
Name	Years Discharging Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x0835 – Days Discharging Hour

Days of the hours counter Discharge.

Register	0x0835
Name	Days Discharging Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0836 – Hours Discharging Hour

Hours of the hours counter Discharge.

Register	0x0836
Name	Hours Discharging Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x0837 – Minutes Discharging Hour

Minutes of the hours counter Discharge.

Register	0x0837
Name	Minutes Discharging Hour
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x1010 – HV Release

Release of the high voltage.

If the option "Fieldbus Ethernet" interface is selected for the release ([register 0x1570](#)), the software release of the high voltage is deleted or set in the event of a write access. The high voltage is activated as soon as the hardware release for charging or discharging is active.

- 0x0000 – Delete the software release
- 0x000A – Setting the software release and activating the reference point to perform the connection monitoring. For more information, see [register 0x1780](#).
- 0x000F – Set the software release

Register	0x1010
Name	HV Release
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	0x0000
Low Limit	0x0000
High Limit	0x000F

Register 0x1480 – Clear Error

After a successful internal check, the selected error message is deleted.

Register	0x1480
Name	Clear Error
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	0x0000
Low Limit	0x0000
High Limit	0xFFFF

Register 0x1490 – Clear Warning

After a successful internal check, the selected warning message is deleted.

Register	0x1490
Name	Clear Warning
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	0x0000
Low Limit	0x0000
High Limit	0xFFFF

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Register 0x14A0 – Save Parameter

For saving the entire parameter set with the current values, key 0xA5 must be written to register 0x14A0.

Register	0x14A0
Name	Save Parameter
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	0x0000
Low Limit	0x0000
High Limit	0xFFFF

Register 0x14B0 Load Factory Settings

After a write access with key 0x5A to register 0x14B0, the factory settings for the entire parameter set are loaded.

Register	0x14B0
Name	Load Factory Settings
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	0x0000
Low Limit	0x0000
High Limit	0xFFFF

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Register 0x1500 – Voltage Setpoint Discharging

Setting of the voltage setpoint of the Discharge in V.

Register	0x1500
Name	Voltage Setpoint Discharging
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	100% Umax Discharging
Low Limit	Umin Discharging
High Limit	Umax Discharging

Register 0x1510 – Current Setpoint Discharging

Setting of the current setpoint of the Discharge in μ A.
This parameter can only be read.

Register	0x1510
Name	Current Setpoint Discharging
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x1520 – Power Setpoint Discharging

Setting of the power setpoint of the Discharge in W.
The value for the power is displayed with one decimal place
(indication 125 corresponds to 12.5 W).

Register	0x1520
Name	Power Setpoint Discharging
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

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Register 0x1530 – Percent Setpoint Discharging

Setting the voltage setpoint of the discharge in %.

Register	0x1530
Name	Percent Setpoint Discharging
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	100
Low Limit	0
High Limit	100

Register 0x1540 – Discharging Frequency

Selection of the frequency for the discharge voltage. The setting is made by selecting the respective index for the frequency. The following discharge frequencies can be set:

- 0 – 50 Hz
- 1 – 62,5 Hz
- 2 – 75 Hz
- 3 – 87,5 Hz
- 4 – 100 Hz
- 5 – 125 Hz
- 6 – 150 Hz
- 7 – 175 Hz
- 8 – 200 Hz

Register	0x1540
Name	Discharging Frequency
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	8

Register 0x1550 – Ion Balance

Adjustment of the balance between the positive and negative half-wave to optimize the residual charge. The ion balance is adjustable for both polarities to optimize the residual charge.

If the setting is 100, there is no adaptation.

If the set value is below 100, the positive polarity is adapted and if the setting is above 100, the negative polarity is adapted.

Register	0x1550
Name	Ion Balance
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	100
Low Limit	0
High Limit	200

ModbusTCP protocol description PRO IONIZER

Register 0x1560 – Discharging Mode

Setting of the discharge mode. The following settings can be selected:

- 0 – Passive discharge
- 1 – Active discharge

Register	0x1560
Name	Discharging Mode
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	1
Low Limit	0
High Limit	1

Register 0x1570 –Release Mode

Setting of the release option of the high voltage. The individual options can be activated separately. The output of the high voltage starts after the conditions for the release have been set.

- Bit 0 – Autostart
0 – Autostart deactivated
1 – Autostart activated (Automatic setting of the software release after witching on the supply voltage)
- Bit 1 – HMI
0 – HMI release deactivated
1 – HMI release activated (release can be switched on / off via touchscreen or keypad)
- Bit 2 – CANopen®
0 – Release via CANopen® deactivated
1 – Release via CANopen® activated
- Bit 3 – Fieldbus Ethernet
0 – Release via Ethernet deactivated
1 – Release via Ethernet activated (software release can be controlled via write access to [register 0x1010](#))
- Bit 4 – Hardware release
0 – Hardware release deactivated
1 – Hardware release activated

Register	0x1570
Name	Release Mode
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	2
Low Limit	0
High Limit	31

ModbusTCP protocol description PRO IONIZER

Register 0x1580 – Output Signal Mode

Setting the mode for the signal output for signaling the individual device states.

- 0 – HV Active
- 1 – Warning
- 2 – Pollution

Register	0x1580
Name	Output Signal Mode
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	2

Register 0x1590 – Actual Value Cycle Time

Cycle time for transmitting the actual values in ms.

Register	0x1590
Name	Actual Value Cycle Time
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	500
Low Limit	1
High Limit	60000

Register 0x15A0 – Keyboard Lock

Activation or deactivation of the keyboard lock of the keypad. When the keyboard lock is activated, an operation via the integrated keypad at the power supply is not possible. Note that this parameter is not saved, and the keyboard lock is always deactivated after the power supply is restarted.

- 0 – Keyboard lock not activated
- 1 – Keyboard lock activated

Register	0x15A0
Name	Keyboard Lock
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	1

ModbusTCP protocol description PRO IONIZER

Register 0x15B0 – LED Bar Mode

Setting of the mode for displaying the actual values using the integrated LED bar.

- 0 – Display: Actual value of the voltage
- 1 – Display: Frequency parameter of the discharge
- 2 – Display: Parameter of the ion balance
- 3 – Display: Actual value of the pollution, connection 1
- 4 – Display: Actual value of the pollution, connection 2
- 5 – Display: Actual value of the pollution, connection 3
- 6 – Display: Actual value of the pollution, connection 4
- 7 – Display: Actual value with automatic selection of the connection

Register	0x15B0
Name	LED Bar Mode
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	7

Register 0x15C0 – Pollution Detection Discharge 1

Setting of the discharge pollution monitoring, Discharge 1.

- 0 – Pollution monitoring deactivated
- 1 – Pollution monitoring activated
- 2 – Display: Calibration of the pollution monitoring

Register	0x15C0
Name	Pollution Detection Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	2

ModbusTCP protocol description PRO IONIZER

Register 0x15D0 – Pollution Detection Discharge 2

Setting of the discharge pollution monitoring, Discharge 2.

- 0 – Pollution monitoring deactivated
- 1 – Pollution monitoring activated
- 2 – Display: Calibration of the pollution monitoring

Register	0x15D0
Name	Pollution Detection Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	2

Register 0x15E0 – Pollution Detection Discharge 3

Setting of the discharge pollution monitoring, Discharge 3.

- 0 – Pollution monitoring deactivated
- 1 – Pollution monitoring activated
- 2 – Display: Calibration of the pollution monitoring

Register	0x15E0
Name	Pollution Detection Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	2

Register 0x15F0 – Pollution Detection Discharge 4

Setting of the discharge pollution monitoring, Discharge 4.

- 0 – Pollution monitoring deactivated
- 1 – Pollution monitoring activated
- 2 – Display: Calibration of the pollution monitoring

Register	0x15F0
Name	Pollution Detection Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	2

ModbusTCP protocol description PRO IONIZER

Register 0x1600 – Nominal Power Discharge 1

Setting of the nominal power in mW of the device operated at connection 1 determined by the calibration of the pollution monitoring. This value represents the 0 % reference point for determining the pollution for connection 1.

Register	0x1600
Name	Nominal Power Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

Register 0x1610 – Nominal Power Discharge 2

Setting of the nominal power in mW of the device operated at connection 2 determined by the calibration of the pollution monitoring. This value represents the 0 % reference point for determining the pollution for connection 2.

Register	0x1610
Name	Nominal Power Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

Register 0x1620 – Nominal Power Discharge 3

Setting of the nominal power in mW of the device operated at connection 3 determined by the calibration of the pollution monitoring. This value represents the 0 % reference point for determining the pollution for connection 3.

Register	0x1620
Name	Nominal Power Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

ModbusTCP protocol description PRO IONIZER

Register 0x1630 – Nominal Power Discharge 4

Setting of the nominal power in mW of the device operated at connection 4 determined by the calibration of the pollution monitoring. This value represents the 0 % reference point for determining the pollution for connection 4.

Register	0x1630
Name	Nominal Power Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

Register 0x1640 – Power Limit A Discharge 1

Setting the lower power limit in mW for calculating the pollution for connection 1. This value represents the 100 % reference point for determining the pollution for connection 1.

Register	0x1640
Name	Power Limit A Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

Register 0x1650 – Power Limit A Discharge 2

Setting the lower power limit in mW for calculating the pollution for connection 2. This value represents the 100 % reference point for determining the pollution for connection 2.

Register	0x1650
Name	Power Limit A Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

Register 0x1660 – Power Limit A Discharge 3

Setting the lower power limit in mW for calculating the pollution for connection 3. This value represents the 100 % reference point for determining the pollution for connection 3.

Register	0x1660
Name	Power Limit A Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

ModbusTCP protocol description PRO IONIZER

Register 0x1670 – Power Limit A Discharge 4

Setting the lower power limit in mW for calculating the pollution for connection 4. This value represents the 100 % reference point for determining the pollution for connection 4.

Register	0x1670
Name	Power Limit A Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	3500

Register 0x1680 – Power Limit B Discharge 1

Setting the upper power limit in mW for calculating the pollution for connection 1. This value represents the 100 % reference point for determining the pollution for connection 1.

Register	0x1680
Name	Power Limit B Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	10000

Register 0x1690 – Power Limit B Discharge 2

Setting the upper power limit in mW for calculating the pollution for connection 2. This value represents the 100 % reference point for determining the pollution for connection 2.

Register	0x1690
Name	Power Limit B Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	10000

Register 0x16A0 – Power Limit B Discharge 3

Setting the upper power limit in mW for calculating the pollution for connection 3. This value represents the 100 % reference point for determining the pollution for connection 3.

Register	0x16A0
Name	Power Limit B Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	10000

ModbusTCP protocol description PRO IONIZER

Register 0x16B0 – Power Limit B Discharge 4

Setting the upper power limit in mW for calculating the pollution for connection 4. This value represents the 100 % reference point for determining the pollution for connection 4.

Register	0x16B0
Name	Power Limit B Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	10000

Register 0x16C0 – Active Length Discharge 1

Setting of the active length in mm of the device connected to connection 1. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x16C0
Name	Active Length Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	6000

Register 0x16D0 – Active Length Discharge 2

Setting of the active length in mm of the device connected to connection 2. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x16D0
Name	Active Length Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	6000

Register 0x16E0 – Active Length Discharge 3

Setting of the active length in mm of the device connected to connection 3. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x16E0
Name	Active Length Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	6000

ModbusTCP protocol description PRO IONIZER

Register 0x16F0 – Active Length Discharge 4

Setting of the active length in mm of the device connected to connection 4. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x16F0
Name	Active Length Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	6000

Register 0x1700 – Cable Length Discharge 1

Setting of the cable length in dm of the device connected to connection 1. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x1700
Name	Cable Length Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	350

Register 0x1710 – Cable Length Discharge 2

Setting of the cable length in dm of the device connected to connection 2. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x1710
Name	Cable Length Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	350

Register 0x1720 – Cable Length Discharge 3

Setting of the cable length in dm of the device connected to connection 3. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x1720
Name	Cable Length Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	350

ModbusTCP protocol description PRO IONIZER

Register 0x1730 – Cable Length Discharge 4

Setting of the cable length in dm of the device connected to connection 4. This setting adjusts the sensitivity of the pollution monitoring according to the setting.

Register	0x1730
Name	Cable Length Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	350

Register 0x1740 – Warning Level Discharge 1

Setting of the warning level for the pollution of connection 1 in %. If the calculated pollution for the connection exceeds the set value, the corresponding warning is set.

Register	0x1740
Name	Warning Level Discharge 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	50
Low Limit	20
High Limit	90

Register 0x1750 – Warning Level Discharge 2

Setting of the warning level for the pollution of connection 2 in %. If the calculated pollution for the connection exceeds the set value, the corresponding warning is set.

Register	0x1750
Name	Warning Level Discharge 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	50
Low Limit	20
High Limit	90

Register 0x1760 – Warning Level Discharge 3

Setting of the warning level for the pollution of connection 3 in %. If the calculated pollution for the connection exceeds the set value, the corresponding warning is set.

Register	0x1760
Name	Warning Level Discharge 3
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	50
Low Limit	20
High Limit	90

ModbusTCP protocol description PRO IONIZER

Register 0x1770 – Warning Level Discharge 4

Setting of the warning level for the pollution of connection 4 in %. If the calculated pollution for the connection exceeds the set value, the corresponding warning is set.

Register	0x1770
Name	Warning Level Discharge 4
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	50
Low Limit	20
High Limit	90

Register 0x1780 – Reference Point Activation

Setting for activating the reference point. When the reference point is activated, the maximum discharge voltage is set with a frequency of 50 Hz and no adjustment of the ion balance.

These settings are used to determine the current power of the connected devices and to assess the current status of the respective device. Once the determination has been carried out, the previously set values for the discharge voltage are reloaded.

- 0 – HV release
- 1 – Reference point permanently activated
- 2 – Cyclical activation of the reference point, 1 minute interval
- 3 – Cyclical activation of the reference point, 10 minutes interval
- 4 – Cyclical activation of the reference point, 30 minutes interval
- 5 – Cyclical activation of the reference point, 60 minutes interval
- 6 – Activation on request via the field bus (see [register 0x1010](#))

Register	0x1780
Name	Reference Point Activation
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	6

Register 0x1790 – Discharging Overload Warning

Setting to detect the warnings in case of an overload of the connection.

- 0 – Overload detection Warnings deactivated
- 1 – Overload detection Warnings activated

Register	0x1790
Name	Discharging Overload Warning
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	1
Low Limit	0
High Limit	1

ModbusTCP protocol description PRO IONIZER

Register 0x17A0 – Sensor Input Mode

Setting the mode for the sensor input

- 0 – Sensor input deactivated
- 1 – Speed sensor mode
- 2 – E-field sensor mode
- 3 – External sensor mode: expansion box D1-D2, A1-A2
- 4 – External sensor mode: expansion box D1-D6, A1-A2
- 5 – External sensor mode: expansion box D1-D10, A1-A2
- 6 – Humidity sensor
- 7 – Temperature sensor
- 8 – Metal detection
- 9 – Suction monitoring

Register	0x17A0
Name	Sensor Input Mode
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	9

Register 0x17B0 – Minimum Revolutions Speed Sensor

Setting of the minimum number of revolutions per minute of the connected speed sensors. If a sensor falls below this value, the device generates the corresponding warning.

Register	0x17B0
Name	Minimum Revolutions Speed Sensor
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	300
Low Limit	0
High Limit	1200

ModbusTCP protocol description PRO IONIZER

Register 0x17C0 – Type E-Field Sensor 1

Setting the type of E-field sensor 1.

- 0 – SMC IZD 10-110
- 1 – SMC IZD 10-510

Register	0x17C0
Name	Type E-Field Sensor 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	1

Register 0x17D0 – Distance E-Field Sensor 1

Setting the working distance in mm for E-field sensor 1 to convert the measured E-field into the corresponding voltage.

Register	0x17D0
Name	Distance E-Field Sensor 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	25 – SMC IZD 10-110 50 – SMC IZD 10-510
Low Limit	10 – SMC IZD 10-110 25 – SMC IZD 10-510
High Limit	50 – SMC IZD 10-110 70 – SMC IZD 10-510

Register 0x17E0 – Warning Level E-Field Sensor 1

Setting the warning level in V to recognize the corresponding warning of E-field sensor 1.

Register	0x17E0
Name	Warning Level E-Field Sensor 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	800 – SMC IZD 10-110 28000 – SMC IZD 10-510
Low Limit	0 – SMC IZD 10-110 0 – SMC IZD 10-510
High Limit	1000 – SMC IZD 10-110 30000 – SMC IZD 10-510

ModbusTCP protocol description PRO IONIZER

Register 0x17F0 – Error Level E-Field Sensor 1

Setting the error level in V to recognize the corresponding error of E-field sensor 1.

Register	0x17F0
Name	Error Level E-Field Sensor 1
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	1000 – SMC IZD 10-110 30000 – SMC IZD 10-510
Low Limit	0 – SMC IZD 10-110 0 – SMC IZD 10-510
High Limit	1000 – SMC IZD 10-110 30000 – SMC IZD 10-510

Register 0x1800 – Zero Point E-Field Sensor 1

Setting the zero point deviation in V of the E-field sensor 1.

Register	0x1800
Name	Zero Point E-Field Sensor 1
Data Type	SIGNED16
Access Type	Read/Write
Default Value	0 – SMC IZD 10-110 0 – SMC IZD 10-510
Low Limit	-100 – SMC IZD 10-110 -1000 – SMC IZD 10-510
High Limit	100 – SMC IZD 10-110 1000 – SMC IZD 10-510

Register 0x1810 – Type E-Field Sensor 2

Setting the type of E-field sensor 2.

- 0 – SMC IZD 10-110
- 1 – SMC IZD 10-510

Register	0x1810
Name	Type E-Field Sensor 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	0
High Limit	1

ModbusTCP protocol description PRO IONIZER

Register 0x1820 – Distance E-Field Sensor 2

Setting the working distance in mm for E-field sensor 2 to convert the measured E-field into the corresponding voltage.

Register	0x1820
Name	Distance E-Field Sensor 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	25 – SMC IZD 10-110 50 – SMC IZD 10-510
Low Limit	10 – SMC IZD 10-110 25 – SMC IZD 10-510
High Limit	50 – SMC IZD 10-110 70 – SMC IZD 10-510

Register 0x1830 – Warning Level E-Field Sensor 2

Setting the warning level in V to recognize the corresponding warning of E-field sensor 2.

Register	0x1830
Name	Warning Level E-Field Sensor 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	800 – SMC IZD 10-110 28000 – SMC IZD 10-510
Low Limit	0 – SMC IZD 10-110 0 – SMC IZD 10-510
High Limit	1000 – SMC IZD 10-110 30000 – SMC IZD 10-510

Register 0x1840 – Error Level E-Field Sensor 2

Setting the error level in V to recognize the corresponding error of E-field sensor 2.

Register	0x1840
Name	Error Level E-Field Sensor 2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	1000 – SMC IZD 10-110 30000 – SMC IZD 10-510
Low Limit	0 – SMC IZD 10-110 0 – SMC IZD 10-510
High Limit	1000 – SMC IZD 10-110 30000 – SMC IZD 10-510

ModbusTCP protocol description PRO IONIZER

Register 0x1850 – Zero Point E-Field Sensor 2

Setting the zero point deviation in V of the E-field sensor 2.

Register	0x1850
Name	Zero Point E-Field Sensor 2
Data Type	SIGNED16
Access Type	Read/Write
Default Value	0 – SMC IZD 10-110 0 – SMC IZD 10-510
Low Limit	-100 – SMC IZD 10-110 -1000 – SMC IZD 10-510
High Limit	100 – SMC IZD 10-110 1000 – SMC IZD 10-510

Register 0x1860 – Sensor Extension Mode D1-D8

Selection of the mode of the external sensor expansion box of the sensors to be evaluated for the inputs D1-D8.

The following modes are available for evaluating the inputs:

- 0 – Sensor input deactivated
- 1 – Speed sensor selected for the sensor input
- 2 – Metal detection
- 3 – Suction monitoring

The mode selection for the respective sensor inputs is arranged as follows:

Byte 0				Byte 1			
LSB			MSB	LSB			MSB
D1	D2	D3	D4	D5	D6	D7	D8

Register	0x1860
Name	Sensor Extension Mode D1-D8
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0x0000
Low Limit	0x0000
High Limit	0xFFFF

ModbusTCP protocol description PRO IONIZER

Register 0x1870 – Sensor Extension Mode D9-D10, A1-A2

Selection of the mode of the external sensor extension box of the sensors to be evaluated for the inputs D9-D10 and A1-A2.

The following modes are available for evaluating the inputs D9-D10:

- 0 – Sensor input deactivated
- 1 – Speed sensor selected for the sensor input
- 2 – Metal detection
- 3 – Suction monitoring

The following modes are available for evaluating the inputs A1-A2:

- 0 – Sensor input deactivated
- 1 – E-field sensor selected for the sensor input
- 2 – Humidity sensor
- 3 – Temperature sensor

The mode selection for the respective sensor inputs is arranged as follows:

Byte 0				Byte 1			
LSB		MSB		LSB		MSB	
D9	D10	A1	A2				

Register	0x1870
Name	Sensor Extension Mode D9-D10, A1-A2
Data Type	UNSIGNED16
Access Type	Read/Write
Default Value	0x0000
Low Limit	0x0000
High Limit	0x00FF

ModbusTCP protocol description PRO IONIZER

Register 0x1880 – Sensor Temperature 1 Low Value

Setting the 0 V reference point for calculating the analog measured value of temperature sensor 1 in °C.

Register	0x1880
Name	Sensor Temperature 1 Low Value
Data Type	SIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	-40
High Limit	200

Register 0x1890 – Sensor Temperature 1 High Value

Setting the 10 V reference point for calculating the analog measured value of temperature sensor 1 in °C.

Register	0x1890
Name	Sensor Temperature 1 High Value
Data Type	SIGNED16
Access Type	Read/Write
Default Value	100
Low Limit	-40
High Limit	200

Register 0x18A0 – Sensor Temperature 2 Low Value

Setting the 0 V reference point for calculating the analog measured value of temperature sensor 2 in °C.

Register	0x18A0
Name	Sensor Temperature 2 Low Value
Data Type	SIGNED16
Access Type	Read/Write
Default Value	0
Low Limit	-40
High Limit	200

Register 0x18B0 – Sensor Temperature 2 High Value

Setting the 10 V reference point for calculating the analog measured value of temperature sensor 2 in °C.

Register	0x18B0
Name	Sensor Temperature 2 High Value
Data Type	SIGNED16
Access Type	Read/Write
Default Value	100
Low Limit	-40
High Limit	200

ModbusTCP protocol description PRO IONIZER

Register 0x2000 – 0x200F – Order Code

The complete article number of the power supply is shown as a character string in ASCII format. Each register contains one character.

Register	0x2000
Name	Order Code Character 0
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2001
Name	Order Code Character 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2002
Name	Order Code Character 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2003
Name	Order Code Character 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2004
Name	Order Code Character 4
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

ModbusTCP protocol description PRO IONIZER

Register	0x2005
Name	Order Code Character 5
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2006
Name	Order Code Character 6
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2007
Name	Order Code Character 7
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2008
Name	Order Code Character 8
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2009
Name	Order Code Character 9
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x200A
Name	Order Code Character 10
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

ModbusTCP protocol description PRO IONIZER

Register	0x200B
Name	Order Code Character 11
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x200C
Name	Order Code Character 12
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x200D
Name	Order Code Character 13
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x200E
Name	Order Code Character 14
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x200F
Name	Order Code Character 15
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

ModbusTCP protocol description PRO IONIZER

Register 0x2010 – 0x2016 – Serial Number

The serial number of the power supply is shown as a string in ASCII format.
Each register contains one character.

Register	0x2010
Name	Serial Number Character 0
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2011
Name	Serial Number Character 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2012
Name	Serial Number Character 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2013
Name	Serial Number Character 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

ModbusTCP protocol description PRO IONIZER

Register	0x2014
Name	Serial Number Character 4
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2015
Name	Serial Number Character 5
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2016
Name	Serial Number Character 6
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register 0x2020 – Revision Number Hardware

Revision number of the hardware.

Register	0x2020
Name	Revision Number Hardware
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

ModbusTCP protocol description PRO IONIZER

Register 0x2030 – 0x2033 – Revision Number Software

The revision number of the software is shown as a string in ASCII format.
Each register contains one character.

Register	0x2030
Name	Revision Number Software Character 0
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2031
Name	Revision Number Software Character 1
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2032
Name	Revision Number Software Character 2
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

Register	0x2033
Name	Revision Number Software Character 3
Data Type	UNSIGNED16
Access Type	Read Only
Default Value	
Low Limit	
High Limit	

ModbusTCP protocol description PRO IONIZER

Register 0x2040 – Software Reset

A software reset of the power supply is possible via a write access to the register 0x2040 with the key 0x71A3.

Before the reset, there is an internal check whether the reset is executable. In the case of a diagnostic error (error number greater than 80), the reset via the network is not possible.

Register	0x2040
Name	Software Reset
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	
Low Limit	
High Limit	

Register 0x2050 – 0x205F – Error History

In the individual registers 0x2050 - 0x205F one entry of the error history is stored each. The last error occurred is stored in register 0x2050. In the following registers the previously occurred errors are stored.

Register	0x2050 – 0x205F
Name	Error History
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	
Low Limit	
High Limit	

Register 0x2060 – 0x206F – Warning History

In the individual registers 0x2060 - 0x206F one entry of the warning history is stored each. The last error occurred is stored in register 0x2060. In the following registers the previously occurred warnings are stored.

Register	0x2060 – 0x206F
Name	Error History
Data Type	UNSIGNED16
Access Type	Write Only
Default Value	
Low Limit	
High Limit	