

AMTRON 4You 500 / 4Business 700 - Modbus TCP Server - Data Points

Protocol Version	1.5
Modbus TCP Server on Port	502
Unit Id	1
Register Type	All Holding-Registers

Start Address	Reg. Count	Function Codes	Name	Unit	Description	Available with Protocol Version
100	2	FC03 - Read	Firmware Version	4 * ASCII Character - Example X.XX	Returns the application version number. More details in registers 153-157.	1.0
104	1	FC03 - Read	OCPP Status	1 * uint16 - Undefined = 0, Available = 1, Preparing = 2, Charging = 3, SuspendedEVSE = 4, SuspendedEV = 5, Finishing = 6, Reserved = 7, Unavailable = 8, Faulted = 9	Returns the charge point status based on the enumeration defined in the OCPP 1.6 specification.	1.0
105	8	FC03 - Read	Error Codes	4 * uint32	Aggregated error states. Bit coded in 4 uint32 data points.	1.0
120	2	FC03 - Read	Protocol Version	4 * ASCII Character - Example X.XX	Modbus protocol version number used by this AMTRON 4You/4Business.	1.0
122	1	FC03 - Read	Vehicle State	1 * int16 - A = 1, B = 2, C = 3, D = 4, E = 5	Reflects the vehicle state as signaled by the Control Pilot (CP). A = no EV connected, B = EV connected but not charging, C = EV charging, D = ventilation required, E = error.	1.0
124	1	FC03 - Read	Charge Point Availability	1 * uint16 - 0 = Unavailable, 1 = Available	Status of the charge point availability as also reported to a configured backend.	1.0
131	1	FC03 - Read FC16 - Write FC06 - Write	Safe Current	1 * uint16 - [A]	Defines the charging current that will be applied for all phases if the communication with the modbus master (HEMS) is lost. The timeout duration is set in register 132. To pause the charging session when communication fails, set the register to 0 Ampere. Values below 6A are also set to 0A. Allowed values are therefore 0A and 6A to 16A.	1.0
132	1	FC03 - Read FC16 - Write FC06 - Write	Communication Timeout	1 * uint16 - [s]	Time without a read or write process until the charging station (modbus client) will operate with the current as specified in register 131.	1.0
134	1	FC03 - Read	Operator Current Limit	1 * uint16 - [A]	Calculates the minimum current across all active internal and external load management modules. The result is the lowest value across all phases and is ready to be signaled to the EV.	1.0
140	1	FC03 - Read	Relay State	1 * uint16 - On = 1, Off = 0	State of the charging relay. It is closed by the charging station. The state changes to "On", if all preconditions are valid.	1.0
141	1	FC03 - Read	Device Id	2 * ASCII Character - AM	Identifies the device and always returns the value "AM".	1.0
142	10	FC03 - Read	Charge Point Model	20 * ASCII Character	Identifies the model of the charge point as set by the manufacturer.	1.0
152	1	FC03 - Read	Plug Lock Status	1 * uint16 - Undefined = 0, Open = 1, Closed = 2, Latch not used = 3, Not read = 4	Status of the plug lock detection. Reports the latch position for charging stations without fixed cables.	1.0
153	5	FC03 - Read	Firmware Versions	Registers: 1.Major uint16; 2.Minor uint16; 3.Patch uint16; 4+5.Build uint32	Application Version as Major.Minor.Patch-Build	1.0

158	16	FC03 - Read	Device Name	32 * ASCII Character	Identifies the name of the charge point as set by the user. DEPRECATED, use registers 2158-2173 instead.	1.0
200	6	FC03 - Read	Meter Energy	3 * int32 - L1 [Wh], L2 [Wh], L3 [Wh]	Energy [Wh] from primary meter for each phase. Phase 1 = Meter Total; Phase 2+3 = 0 (Not Available)	1.0
206	6	FC03 - Read	Meter Power	3 * int32 - L1 [W], L2 [W], L3 [W]	Power [W] from primary meter for Phase 1, 2, 3	1.0
212	6	FC03 - Read	Meter Current	3 * int32 - L1 [mA], L2 [mA], L3 [mA]	Current [mA] from primary meter for Phase 1, 2, 3	1.0
218	2	FC03 - Read	Meter Total Energy	1 * int32 - [Wh]	Total Energy from primary meter	1.0
220	2	FC03 - Read	Meter Total Power	1 * int32 - [W]	Total Power from primary meter	1.0
222	6	FC03 - Read	Meter Voltage	3 * int32 - L1 [V], L2 [V], L3 [V]	Voltage from primary meter for Phase 1, 2, 3	1.0
600	1	FC03 - Read	Charging Point Network Mode	1 * uint16 - 0 = Disabled, 1 = Charging Point Network Master, 4 = Charging Point Network Satellite	Indicates the role of this device in a charging point network. 0 indicates that the device is not part of a charging point network. To control the current limit of a charging point network, use the Charging Point Network EMS Current Limit (see registers 613-615). Only the Charging Point Network Master reports the charging point network details via Modbus and can be controlled by an EMS.	1.5
610	3	FC03 - Read	Charging Point Network Current Limit	3 * uint16 - [A]	Current limit as configured for the charging point network. Valid for phase 1, 2 and 3.	1.5
613	3	FC03 - Read FC16 - Write FC06 - Write	Charging Point Network EMS Current Limit	3 * uint16 - [A]	Current limits as set by the EMS for the whole charging point network for phase 1, 2 and 3. The lowest value is applied for all three phases.	1.5
620	1	FC03 - Read	Charging Point Network Source of Limitation	1 * uint16 - 0 = Static value charging point network, 1 = Static value charging point network with external meter, 2 = Static value grid with external meter, 3 = Downgrade, 4 = Energy Meter Fallback, 5 = Static value charging point network with EEBus	Source for the currently active limitation of the calculated current within the charging point network. The current for charging the EVs will be adjusted accordingly.	1.5
621	1	FC03 - Read	Charging Point Network Connected Charging Stations	1 * uint16	The number of charging stations within this charging point network. This includes the master itself and all satellites (including unavailable).	1.5
630	3	FC03 - Read	Charging Point Network Overall Current Applied	3 * uint16 - [A]	Overall Current the Charging Point Network Master is currently applying to the charging point network for phase 1, 2, 3. It reflects the sum of the current distributed within the charging point network for all connected devices. For EVs without consumption the network will reserve 6A for these charging stations. This may lead to a higher value in registers 630-632 than configured in registers 610-612. In addition, the currently phasewise consumed currents are listed in registers 2636-2638.	1.5
633	3	FC03 - Read	Charging Point Network Overall Current Available	3 * uint16 - [A]	Overall free available current for the Charging Point Network Master within the charging point network for phase 1, 2, 3. It reflects the sum of the unused current (difference between registers 630-632 and 610-612) which still can be distributed within the charging point network for all connected devices.	1.5
706	1	FC03 - Read	Signaled Current to EV	1 * uint16 - [A]	The maximum current that's being signaled to the EV for charging. If the signaled current is still zero even if an EV is connected, not all preconditions for charging are met (e.g. authorization, valid HEMS limit, external inputs).	1.0

707	2	FC03 - Read	Charging Start Time	hhmmss - Big-Endian packed BCD with left zero padding	Timestamp indicating the start of the previous or ongoing charging process.	1.0
710	2	FC03 - Read	Charging End Time	hhmmss - Big-Endian packed BCD with left zero padding	Timestamp indicating when the previous charging process was completed.	1.0
712	1	FC03 - Read	Min Charging Current Limit	1 * uint16 - [A]	Minimum current limit for charging.	1.0
715	1	FC03 - Read	Max Charging Current Limit	1 * uint16 - [A]	This is the maximum current with which the EV can charge. It may come from the cable's PR value in analog vehicles, or from the maximum reported by the vehicle via 15118, whichever is lower.	1.0
716	2	FC03 - Read	Charged Energy	1 * uint32 - [Wh]	Sum of charged energy for the current charging session. The amount of charged energy will stay at its maximum until the next session is started.	1.0
718	2	FC03 - Read	Charging Duration	1 * uint32 - [s]	Duration of the charging process in seconds.	1.0
1000	1	FC03 - Read FC16 - Write FC06 - Write	HEMS Current Limit	1 * uint16 - [A]	Current limit as requested by a HEMS. It is applied for all phases. To pause the charging session, set the register to 0 Ampere. Values below 6A are also set to 0A. Allowed values are therefore 0A and 6A to 16A. [COPY of register 2000.]	1.0
1001	1	FC03 - Read FC16 - Write FC06 - Write	HEMS Current Limit 1/10 A	1 * uint16 - [0.1 A]	Same as Register 1000, but in 0.1A steps. e.g. 60 = 6 Ampere. [DEPRECATED, use register 2001 instead.]	1.0
1002	1	FC03 - Read FC16 - Write FC06 - Write	HEMS Power Limit	1 * uint16 - [W]	Power limit as requested by a HEMS. Values below the HEMS Power Limit (Minimum) in register 2012 will be interpreted as 0W. Values above the HEMS Power Limit (Maximum) in register 2013 will be set to this maximum. The following values for the HEMS Power Limit shall be used: 0W for pause charging, 1380W up to 3680/7360W for 1-phase charging and at least 4140W for 3-phase charging. Also consider the Phase Switch Mode as listed in register 2020. The calculated and signaled current in direction to the EV (see register 706) uses a voltage-dependent correction factor based on the internally measured voltage in register 222. [DEPRECATED, use register 2002 instead.]	1.0
2000	1	FC03 - Read FC16 - Write FC06 - Write	HEMS Current Limit	1 * uint16 - [A]	Current limit as requested by a HEMS. It is applied for all phases. To pause the charging session, set the register to 0 Ampere. Values below 6A are also set to 0A. Allowed values are therefore 0A and 6A to 16A.	1.5
2001	1	FC03 - Read FC16 - Write FC06 - Write	HEMS Current Limit 1/10 A	1 * uint16 - [0.1 A]	Same as Register 2000, but in 0.1A steps. e.g. 60 = 6 Ampere.	1.5
2002	1	FC03 - Read FC16 - Write FC06 - Write	HEMS Power Limit	1 * uint16 - [W]	Power limit as requested by a HEMS. Values below the HEMS Power Limit (Minimum) in register 2012 will be interpreted as 0W. Values above the HEMS Power Limit (Maximum) in register 2013 will be set to this maximum. The following values for the HEMS Power Limit shall be used: 0W for pause charging, 1380W up to 3680/7360W for 1-phase charging and at least 4140W for 3-phase charging. Also consider the Phase Switch Mode as listed in register 2020. The calculated and signaled current in direction to the EV (see register 706) uses a voltage-dependent correction factor based on the internally measured voltage in register 222.	1.5
2010	1	FC03 - Read	Modbus TCP / HEMS Configuration	1 * uint16 - 0 = Modbus TCP Server not active (HEMS not possible), 1 = Modbus TCP Server active in Read only Mode (HEMS Read Only), 2 = Modbus TCP Server active in Read and Write Mode (HEMS Read and Write)	Configuration of the Modbus TCP Server for HEMS functionality.	1.5

2011	1	FC03 - Read	HEMS Communication Status	1 * uint16 - 0 = No Communication Error, 1 = HEMS Communication Timeout (Safe Current Active)	If the HEMS is configured as HEMS Read and Write, the communication is monitored. The configured Safe Current is triggered after a Communication Timeout is recognized (see registers 131, 132).	1.5
2012	1	FC03 - Read	HEMS Power Limit (Minimum)	1 * uint16 - [W]	Minimum power value of the charging station depending on the connected phases and the configured phase switch mode. Lower values in register 1002/2002 will be set automatically to 0W.	1.5
2013	1	FC03 - Read	HEMS Power Limit (Maximum)	1 * uint16 - [W]	Maximum power value of the charging station depending on the connected phases, the maximum device current, the installation current and the phase switch mode. Higher values written in register 1002/2002 will be set automatically to the maximum.	1.5
2020	1	FC03 - Read	Phase Switch Mode	1 * uint16 - 0 = Use 1 phase only, 1 = Use 3 phases only, 2 = Use dynamic phase switch, 3 = Phase switch only if no EV is connected (phase(s) are used as they were at the start of the charging session)	Configuration of the used phases during a charging session. When using dynamic phase switch, an appropriate hysteresis must be implemented in the HEMS both before and after the phase switch. In general a hysteresis is also important when pausing and restarting a charging session.	1.5
2021	1	FC03 - Read	Phase Switch Pause	1 * uint16 - [s]	Additional time in seconds to delay the charging process after a phase switch was triggered. The EV may run into sleep mode so that the changed phases are accepted after the charging is continued.	1.5
2022	1	FC03 - Read	Phase Switch Status	1 * uint16 - 0 = Phase switch not running, 1 = Phase switch running	Indicates whether the phase switch is currently in progress if dynamic phase switch is configured (see register 2020).	1.5
2023	1	FC03 - Read	Assigned Phases	1 * uint16 - 0 = None, 1 = One phase, 2 = Three phases	In combination with the Relay State, the number of actively available phases can be determined during an active charging session.	1.5
2030	1	FC03 - Read	Authorization Status	1 * uint16 - 0 = No authorization necessary (Autostart), 1 = Authorized, 2 = Not authorized	If authorization is configured, the authorization is mandatory to start a charging session.	1.5
2158	16	FC03 - Read	Device Name	32 * ASCII Character	Identifies the name of the charge point as set by the user.	1.5
2622	1	FC03 - Read	Charging Point Network Satellites in Fallback	1 * uint16	The number of satellites which are unavailable due to an interrupted connection. The satellites in fallback will operate with the configured fallback current. Must be 0 if the charging point network is fully operational, with a valid connection to each satellite.	1.5
2623	1	FC03 - Read	Charging Point Network Satellite Fallback Current	1 * uint16 - [A]	If a Charging Point Network Satellite is not reachable due to an interrupted connection, it operates with the configured fallback current. This value is also reserved for each unavailable satellite within the Charging Point Network Master to avoid uncontrolled consumption.	1.5
2636	3	FC03 - Read	Charging Point Network Overall Current Consumption	3 * uint16 - [A]	Overall Current shows the currently consumed current on phase 1, 2 and 3. It sums up the current of all connected devices in the charging point network. Each unavailable, but paired Charging Point Network Satellite will be calculated with a consumption of the configured Satellite Fallback Current (see registers 2622 and 2623).	1.5

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