Table 1

document:	**ModBusRegisters for Edge Technologies' EV Charger Controller (SmartEVSE)**
version:	2.10.17
date:	20250409
contact:	support@edgetech.eu
communication:	ModBus over RS485 with default parameters: address 0x01* @ 9600 8N1
firmware:	2.10.17
	*: while address is 0x01 the device will only respond to modbus when a state change has occurred. (e.g. by pressing the button on the board).

Input Registers (Read Only, fc = 4)

Address	Name	Size	Description
0000	SerialNumber	5	Device's serial number
0005	FirmwareVersion	1	Firmware version of the application
~~0006~~	MsSinceBoot	4	Milliseconds since boot
000A	SaveEEPROM*	1	Persist settings (in EEPROM)
000B	FactoryDefaults*	1	Reset settings to factory defaults
000C	Reset*	1	Restart application
000D	EnterBootloader*	1	Enter bootloader mode
000E	ChallanceResponse	1	Used to verify code
000F	EnableTestMode	1	Not used
0010	ExternalLock	1	Active external cable lock (return: 0 = unlocked, 1 = locked, 0xFFFF = lock port is used as CP disconnect)
0011	I2c errors	1	Read and reset number of internal I2C errors
0012	Quiet reset	1	Quiet reset
0013	Conditional answer	1	Conditional response
0014	Conditional address	1	Conditional response
0015	Lock lock	1	Lock the lock (return: 1 = locked, 0xFFFF = lock port is used as CP disconnect)
0016	Unlock lock	1	Unlock the lock (return: 0 = unlocked, 0xFFFF = lock port is used as CP disconnect)
0017	Disconnect CP	1	CP will be momentarily disconnected if set to do so (return: 1: disconnected, 0xFFFF = not configured for CP disconnect)
			*: protected by magic (default: 0x1234)

Input Registers (Read Only, fc = 4)

Address	Name	Registers	Description
0100	MinPilot	1	Minimum value measured of pilot signal
0101	MaxPilot	1	Maximum value measured of pilot signal
0102 L	MaxCableCurrent	1/2	Current rating of attached cable
0102 H	MaxCurrent	1/2	Advertised current
0103 L	State	1/2	IEC61851 state:
0103 H	Error	1/2	Error code (see error code tabel)
0104	Temperature	1	Temperature of board
0105	CurrentL1	1	Current draw measured on L1
0106	CurrentL2	1	Current draw measured on L2
0107	CurrentL3	1	Current draw measured on L3
0108	EnergySession	1	Energy delivered (in 1/256 KWh) during current charging session
0109	VoltageL1	1	Voltage on L1 output
010A	VoltageL2	1	Voltage on L2 output
010B	VoltageL3	1	Voltage on L3 output
010C	Options	1	bits: 7: x, 6: x, 5: x, 4: x, 3: x, 2: x, 1: 32A/16A, 0: DCL
010D	Energy	2	Total energy delivered (in 1/256 KWh) by board (010d + 010e<<16)
010F	EnergySessionL1	1	Energy delivered (in 1/256 KWh) during current charging session on L1
0110	EnergySessionL2	1	Energy delivered (in 1/256 KWh) during current charging session on L2
0111	EnergySessionL3	1	Energy delivered (in 1/256 KWh) during current charging session on L3
0112	Earth quality	1	Earth quality (experimental feature)
0113	UBRR	1	Baud rate UBRR

Input Registers (Read/Write, fc = 3/5/6)

Address	Name	Size	Description
0200 L	ModbusAddress	1/2	Modbus address*
0200 H	Discovery	1/2	Not used
0201 L	RemoteMaxCurrent	1/2	Limiting advertised current to this value
0201 H	RemoteMaxCurrentNextSecond	1/2	Limiting advertised current to this value for the next second
0202	MagicResetCode	1	Used to change magic code
0203	Challange	1	Used to verify code
0204	Settings	1	bits: 7: x, 6: x, 5: EV40_CP_DISCONNECT, 4: AUTO_CP_DISCONNECT,3: MISUSE_LOCK_PORT_AS_CP_DISCONNECT, 2: DCL_MUST_BE_PRESENT, 1: LOCK_STATE, 0: PHASES
0205	Led	1	value: 0: GRB_ONBOARD, 1: NEO_STRIP_36
0206	Condition	1	Conditional response
0207	UBRR	1	Baud rate UBRR
0208	CPDisconnectTime	1	Time (in ms) to disconnect CP (if set to do so)
0209	TimeBeforeCPDisconnect	1	Time (in ms) to wait after advertising current to check STATE_C and if not disconnect CP
020A L	CPType	1/2	CP type: 0 = normal, 1 = use A1 and B1
020A H	CPDisconnectType	1/2	CP disconnect type: 0 = EV40, 1 = extended EV40
			*: while address is 0x01: the device will only respond to modbus requests after a state change has occurred. (e.g. by pressing the button on the board).

Bootloader registers (ModBus address 0xF0)

Address [hex]	Function Code [hex]	Registers	Name	Description
500	4	-	BootloaderVersion	Bootloader version or 0 when address at application modbus address
address	10	64	FlashPage	low address byte indicates flash page, high address indicates "this is the last page"

Error codes

Error code	Description
0	No error
1	Temperature too high
2	Stuck relay
4	Ground fault
8	Max CP too low
16	Min CP too high
32	DCL triggered
64	I2C initialization failed
128	I2C communication error