Table 1

document:	**ModBusRegisters for Edge Technologies' EV Charger Controller (SmartEVSE)**
version:	2.10.4-1
date:	20240306
contact:	support@edgetech.eu
communication:	ModBus over RS485 with default parameters: address 0x01* @ 9600 8N1
firmware:	2.10.4
	*: 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 = lock port is not used for CP disconnect)
			*: protected by magic (default: 0xabcd)

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
0200 L	ModbusAddress	1/2
0200 H	Discovery	1/2
0201 L	RemoteMaxCurrent	1/2
0201 H	RemoteMaxCurrentNextSecond	1/2
0202	MagicResetCode	1
0203	Challange	1
0204	Settings	1
0205	Led	1
0206	Condition	1
0207	UBRR	1
0208	CPDisconnectTime	1
0209	TimeBeforeCPDisconnect	1

Address	Description
0200 L	Modbus address*
0200 H	Not used
0201 L	Limiting advertised current to this value
0201 H	Limiting advertised current to this value for the next second
0202	Used to change magic code
0203	Used to verify code
0204	bits: 7: x, 6: x, 5: x, 4: x,3: MISUSE_LOCK_PORT_AS_CP_DISCONNECT, 2: DCL_MUST_BE_PRESENT, 1: LOCK_STATE, 0: PHASES
0205	value: 0: GRB_ONBOARD, 1: NEO_STRIP_36
0206	Conditional response
0207	Baud rate UBRR
0208	Time (in ms) to disconnect CP (if set to do so)
0209	Time (in ms) to wait after advertising current to check STATE_C and if not disconnect CP
	*: 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