

# Energy controller ATS-C120 / MODBUS registers

Version ATS: 3.21.10.8

## System info

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x0	0	10	Vendor	R	3, 4	char		"PK-ELSYS"
0x5	5	22	Product (text)	R	3, 4	char		"ATS-C120-LM"
0x10	16	4	Version FirmWare	R	3, 4	uint32		V.YY.MM.DD
0x12	18	4	Version Proto (compatibility)	R	3, 4	uint32		V.YY.MM.DD
0x14	20	2	Product (code)	R	3, 4	uint16		
0x15	21	4	Serial Number	R	3, 4	uint32		
0x17	23	2	Max. Msr. Count (licensed)	R	3, 4	uint16		6, 14, 120
0x18	24	2	Max. Outputs Count	R	3, 4	uint16		32

## Parameters / Pulse Per Unit

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x100	256	4	PPU1	R	3, 4	float		default = 1.000
0x102	258	4	PPU2	R	3, 4	float		
0x104	260	468	PPU3 - PPU119	R	3, 4	float		
0x1EE	494	4	PPU120	R	3, 4	float		IEEE 754 standard

## Parameters / Regulation

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x200	512	2	Synchronize interval	R	3, 4	uint16		0=15min, 1=1h, 2=24h
0x201	513	2	Sync24H/start	R	3, 4	uint16	h	start hour, 24h sync only
0x202	514	4	Reg. Max. T1	R	3, 4	uint32		
0x204	516	4	Reg. Max. T2	R	3, 4	uint32		
0x206	518	2	Reg. Step	R	3, 4	uint16	s	
0x207	519	2	Line ON	R	3, 4	uint16	%	0 - 99
0x208	520	2	Line OFF	R	3, 4	uint16	%	0 - 99
0x209	521	2	Idle begin	R	3, 4	uint16	%	0 - 99
0x20A	522	2	Idle end	R	3, 4	uint16	%	0 - 99
0x20B	523	2	Limit ON	R	3, 4	uint16	%	0 - 99
0x20C	524	2	Prediction from	R	3, 4	uint16	%	0 - 99
0x20D	525	2	Outputs inverted	R	3, 4	uint16		0=NORMAL, 1=INVERTED

## Parameters / Output mode

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x300	768	2	Output mode 1	R	3, 4	uint16		0=DISABLED, 1=NORMAL, 2-9=SIGNAL MODE
0x301	769	2	Output mode 2	R	3, 4	uint16		
0x302	770	58	Output mode 3 - 31	R	3, 4	uint16		
0x31F	799	2	Output mode 32	R	3, 4	uint16		

## Parameters / Output priority

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x320	800	2	Output priority 1	R	3, 4	uint16		0 - 32
0x321	801	2	Output priority 2	R	3, 4	uint16		0 - 32
0x322	802	58	Output priority 3-31	R	3, 4	uint16		0 - 32
0x33F	831	2	Output priority 32	R	3, 4	uint16		0 - 32

## Measurement / 15 minute energy (clear every 15 minutes)

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x400	1024	4	Energy 1 / 15M	R	3, 4	float		Energy 1 = "Pulse Count 1" / "PPU 1"
0x402	1026	4	Energy 2 / 15M	R	3, 4	float		
0x404	1028	468	Energy 3-119 / 15M	R	3, 4	float		
0x4EE	1262	4	Energy 120 / 15M	R	3, 4	float		

## Measurement / 24 hour energy (clear at 00:00)

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x500	1280	4	Energy 1 / 24H	R	3, 4	float		Energy 1 = "Pulse Count 1" / "PPU 1"
0x502	1282	4	Energy 2 / 24H	R	3, 4	float		
0x504	1284	468	Energy 3-119 / 24H	R	3, 4	float		
0x5EE	1518	4	Energy 120 / 24H	R	3, 4	float		

## Measurement / Instant Power

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x600	1536	4	Power 1	R	3, 4	float		( energy per hour )
0x602	1538	4	Power 2	R	3, 4	float		
0x604	1540	468	Power 3-119	R	3, 4	float		
0x6EE	1774	4	Power 120	R	3, 4	float		

## Measurement / Status

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x700	1792	2	RTC/year	R	3, 4	uint16		
0x701	1793	2	RTC/month	R	3, 4	uint16		
0x702	1794	2	RTC/day	R	3, 4	uint16		
0x703	1795	2	RTC/hour	R	3, 4	uint16		
0x704	1796	2	RTC/minute	R	3, 4	uint16		
0x705	1797	2	RTC/second	R	3, 4	uint16		
0x706	1798	4	System Ticks	R	3, 4	uint32	x10ms	
0x708	1800	4	Sync. Time	R	3, 4	uint32	s	time from SYNC signal
0x70A	1802	4	Status Flags	R	3, 4	uint32		b0 ... TARIF 2 b1 ... sync time is running b2 ... sync OK b3 ... outputs inverted
0x70C	1804	4	Error Flags	R	3, 4	uint32		b0 ... RTC error b1 ... RTC osc fail b2 ... RTC low battery b3 ... SYNC wait b4 ... SYNC absent b5 ... FRAM error b6 ... DATAFLASH error b7 ... POWER 24V error b8-b11 ... OUTPUT module error b12-b15 ... ATS input module error b16 ... ECT input module error b17 ... OUTPUT model - manual b18 ... SYNC unstable b19 ... RESTART flag
0x70E	1806	4	Params Checksum	R	3, 4	uint32		param change detection
0x710	1808	4	Outputs State	R	3, 4	uint32		b0=OUTPUT 1, b1=OUTPUT 2, ...
0x712	1810	4	Outputs Manual	R	3, 4	uint32		b0=OUTPUT 1, b1=OUTPUT 2, ...
0x714	1812	16	Inputs States	R	3, 4	uint32		b0=INPUT 1, b1=INPUT 2, ...

## Measurement / Total Counters

Note:  $Total\ Energy\ M[xx] = Total\ Pulse\ Count[xx] / Pulse\ Per\ Unit[xx]$

Addr (HEX)	Addr (DEC)	Size (byte)	Register description	Access	MODBUS function	Data format	Unit	Notes
0x800	2048	4	Total Counter 1	R	3, 4	uint32		M01: Total Pulse Count

0x802	2050	4	Total Counter 2	R	3, 4	uint32	M02: Total Pulse Count
0x804	2052	468	Total Counter 3-119	R	3, 4	uint32	M03 - M119: Total Pulse Count
0x8EE	2286	4	Total Counter 120	R	3, 4	uint32	M120: Total Pulse Count