SOL·THOR

Documentation of Controls

Modbus TCP control

(!)
- It's not possible to control the power

- Mentioned register addresses are "real" addresses. Depending on your data retrieval system it might be required to add 1 to the register addresses (e.g. 1001 instead of 1000)!

- all registers are 16-bit unsigned integers

- All writable registers ("W") must not be written more than once a day except register 1009, 1010, 1011, 1012. This is due to protect the lifespan of the non-volatile memory.

Address	R/W	Parameter	Value Unit	Comment
1000	R	Power	W	unlimited range of value
1001	R	Temperature T1	1/10°C	
1002	R/W	Tmax (target temperature solar powered)	1/10°C	
1005	R/W	Boost mode		0: off 1: on 3: relay boost on

1006	R/W	Tmin (Boost backup target temperature)	1/10°C	
1007	R/W	Boost time 1 start	0-23 hrs	
1008	R/W	Boost time 1 stop	0-24 hrs	
1009	R/W	Actual Time (Hour)	0-23	
1010	R/W	Actual Time (Minute)	0-59	
1011	R/W	Actual Time (Second)	0-59	
1012	R/W	Boost activate		
1015	R	Temperature Power stage	1/10°C	
1016	R	Controller firmware main version		s**xxxxx**yy
1017	R	Power stage firmware version		sp**xxx**
1018	R	SOL•THOR serial number 1-2	2xCHAR	
1019	R	SOL•THOR serial number 3-4	2xCHAR	
1020	R	SOL•THOR serial number 5-6	2xCHAR	
1021	R	SOL•THOR serial number 7-8	2xCHAR	
1022	R	SOL•THOR serial number 9-10	2xCHAR	
1023	R	SOL•THOR serial number 11-12	2xCHAR	
1024	R	SOL•THOR serial number 13-14	2xCHAR	
1025	R	SOL•THOR serial number 15-16	2xCHAR	
1026	R/W	Boost time 2 start	0-23 hrs	
1027	R/W	Boost time 2 stop	0-24 hrs	
1028	R	Controller firmware sub version	u16	
1029	R	Controller firmware update state	see Footnote 1	
1030	R	Temperature T2	1/10°C	

1030	R	Temperature T3	1/10°C	
1053	R/W	Legionella interval	1-14 days	
1054	R/W	Legionella start	0-23 hrs	
1055	R/W	Legionella temp	°C	
1056	R/W	Legionella mode		0,1
1058	R	Relay status		0,1
1061	R	U L1	V	power stage input voltage
1064	R	Freq	mHz	
1065	R/W	Operation mode		1, 3
1077	R	operation state	see Footnote 3	
1081	R/W	Device state		0= off 1= on
1082	R	Power of the queried device	W	
1083	R	Solar part of device power	W	
1084	R	Grid part of device power	W	
1086	R	Co-Controller firmware version	u16	(sc**xxx**)

Registers can be read by Modbus command 0x03 (read holding registers) and written by Modbus commands 0x06 (write single register) or 0x10 (write multiple registers).

Serial numbers of my-PV devices

(!)   my-PV does not recommend using the serial number to identify the device type!

If the control system identifies the my-PV device using the 16-digit serial number, the following variants must be considered:

200300xxxxxxxxxx	ACTHOR 9s
200100xxxxxxxxxx	ACTHOR
200103xxxxxxxxxx	ACTHOR i
200101xxxxxxxxxx	ACTHOR CH (Switzerland) (This product is replaced by AC THOR i!)
160150xxxxxxxxxx	AC ELWA 2
160151xxxxxxxxxx	AC ELWA 2 electronic unit without heating element for AC ELWA 2
160152xxxxxxxxxx	AC ELWA 2 electronic unit without heating element for AC ELWA-E (This product is replaced by AC ELWA 2!)
160140xxxxxxxxxx	AC ELWA-E (Switzerland) (This product is replaced by AC ELWA 2!)
160129xxxxxxxxxx	AC ELWA-E electronic unit without heating element (This product is replaced by 160152xxxxxxxxxx!)
160142xxxxxxxxxx	AC ELWA-E electronic unit without heating element (Switzerland) (This product is replaced by 160152xxxxxxxxxx!)
140100xxxxxxxxxx	SOL•THOR

Status Codes

1 no control
2 Heat
3 Standby
4 Boost heat
5 Heat finished
7 startup DC-heating
21 Legionella-Boost active
22 Device disabled (devmode= 0)
23 Device blocked

Footnote 1

1: no new firmware version available,
2: new firmware version available
     (download not started, firmware version -version in variable Fwup_actual_version)
3: download started (ini-file download)
4: download started (fw.bin-file download)
5: downloading other files
6: download interrupted
7: download finished, waiting for installation

Footnote 2: operation states (screen icon):

1   green tick flashes
2   yellow wave is on
3   yellow wave flashes
4   green tick and yellow wave is on
5   red cross flashes
7   device starts DC operation

Status symbols heating mode:

Icon	Description
(green tick)	Flashes = Standby
(yellow wave)	Lights up = Target temperature reached. Heating finished
(yellow wave)	Lights up = heating with PV surplus. Flashing = Backup mode
(yellow wave with arrows)	Lights up = device starts DC operation

Status symbols network:

Icon	Description
(red arrows)	Lights up = No intact physical connection on the RJ45 network connection
(green arrows)	Lights up = Physical connection on the RJ45 network connection intact
(red WLAN)	Lights up = WLAN not connected
(green WLAN)	Lights up = WLAN connected (incl. signal strength display)
(green AP)	Lights up = WLAN access point active

```
"boostactive": 0,
"cloudstate": 4,
"co_upd_state": 0,
"coversion": "sc006",
"coversionlatest": "sc006",
"ctrl_errors": 0,
"cur_dns": "192.168.178.1",
"cur_eth_mode": 1,
"cur_gw": "192.168.178.1",
"cur_ip": "192.168.178.34",
"cur_sn": "255.255.255.0",
"date": "07.04.25",
"debug_ip": "0.0.0.0",
"device": "Solthor",
"freq": 50100,
"fsetup": 0,
"fwversion": "s0000011",
"fwversionlatest": "s0000011",
"legboostnext": "null",
"loctime": "10:38:50",
"nHO_ist": 0,
"nHO_soll": 3,
"nHU_ist": 0,
"nHU_soll": 3,
"nRegType_ist": 0,
"nRegType_soll": 7,
"p_co_s": 240,
"p_co_v": "sc006",
"p_ps_s": 254,
"p_ps_v": "null",
"p1_s": 240,
"p1_v": "0000011",
"p2_s": 0,
"p2_v": "null",
"power": 0,
"power_grid": 0,
"power_solar": 0,
"ps_debug_val": 0,
"ps_i_ef_gap": 0,
"ps_i_ef_type": 1,
"ps_i_flags": "0x00002000",
"ps_i_i_ac": 0,
"ps_i_i_in": 0,
"ps_i_i_out": 0,
"ps_i_lastdcerr": "0x92",
"ps_i_pretst": 251,
"ps_i_pwm_boost": 65,
"ps_i_pwm_boost_f": 25000,
"ps_i_pwm_buck": 1,
"ps_i_pwm_buck_f": 900,
"ps_i_rel_dc": 0,
"ps_i_u_l2v": 12951,
"ps_i_u_acgrid": 233941,
"ps_i_u_dcin": 403,
"ps_i_u_dcintst": 728,
"ps_i_u_zk": 310,
"ps_state": 0,
"ps_upd_state": 0,
"psversion": "sp016",
"psversionlatest": "sp016",
"relay_alarm": 0,
"relay_boost": 0,
"screen_mode_flag": 0,
"temp_ps": 277,
"temp1": 260,
"temp2": 0,
"temp3": 0,
"tempInt1": 260,
"tempInt2": 0,
"tempInt3": 0,
"unixtime": 1744015130,
"upd_state": 0,
"uptime": 1,
"uptime_s": 5003,
"volt_bat": 3288,
"volt_mains": 233,
"volt_solar": 403,
"warnings": 0,
"wifi_list": [
    {
        "signal": 0,
        "ssid": ""
    },
    {
        "signal": 0,
        "ssid": ""
    },
"wifi_signal": 4,
"wifi_signal_strength": 235
```

Subject to change.