ATV310 complete parameters list

EAV9613603

Reference mode
Reference menu
402	External reference value
403	Analog input virtual
801	Speed reference
59.11	Internal PID reference
806	PID reference value

Monitoring mode
Monitoring parameter
402	External reference value
403	Analog input virtual
801	Speed reference
802	Output frequency
803	Motor current
804	PID error
805	PID Feedback
806	PID reference
807	Main voltage
808	Motor thermal state
809	Drive thermal state
810	Output power
811	Product status
	[00] Drive ready
	[01] Drive running
	[02] Acceleration
	[03] Deceleration
	[04] DC injection braking in progress
	[05] Current limitaion state
	[06] Freewheel stop control or freewheel state
	[07] Auto-adatated deceleration
	[08] Controlled stop on mains phase loss
	[09] Auto-tuning in progress
	[10] Fast stop state
	[11] No line power state
	[12] Drive in back state
	[13] Remote control mode
	[14] Local control mode

Maintenance menu
900-	MAINTENANCE MENU
901	State of logic inputs LI1 to LI4
902	State of the logic output LO1 and relay R1
903	Display of high speed value
904	Drive Power rating
	037
	075
	U15
	U22
	U30
	U40
	U55
	U75
	D11
905	Drive voltage rating
	N4
906	Specific Product Number
907	Card 1 Software Version
908	Card 2 Software Version
909	Run elapsed time display
910	Power On time display
911	Fan time display
912	Process Elapsed time
913	Modbus communication status
914	Last fault 1
915	State of drive at fault 1
916	Last fault 2
917	State of drive at fault 2
918	Last fault 3
919	State of drive at fault 3
920	Last fault 4
921	State of drive at fault 4
999	HMI Password
F000	Fault menu
F001	Precharge
F002	Unknown drive rating
F003	Unknown or incompatible power board
F004	Internal serial link
F005	Invalid industrialization zone

Detected fault codes
F006	Current measurement circuit
F007	Internal thermal sensor fault
F008	Internal CPU
F009	Overbraking
F010	Overcurrent
F011	Drive overheat
F012	Process overload
F013	Motor overload
F014	1 Output phase loss
F015	3 Output phases loss
F016	Main overvoltage
F017	Input phase loss
F018	Motor short-circuit
F019	Ground short-circuit
F020	IGBT short circuit
F021	Load short circuit
F022	Modbus interruption
F024	HMI communication
F025	Overspeed
F026	PI feedback fault
F027	IGBT overheat
F028	Autotuning fault
F029	Process underload
F030	Undervoltage
F031	Incorrect configuration
F032	Invalid configuration
F033	AI1 current loss
F034	Download invalid configuration
F035	Pre-charge resistor protection fault

Configuration mode
301	Standard motor frequency
	[00] 50Hz IEC
	[01] 60Hz NEMA
401	Reference channel 1
	[01] Terminal
	[163] Remote display
	[164] Modbus
	[183] Integrated display with Jog dial
501.0	Acceleration
	0.0 s to 999.9s (3.0s*)
501.1	Deceleration
	0.0 s to 999.9s (3.0s*)
512.0	Low speed
	0.0Hz to High speed (0Hz*)
512.2	High speed
	Low speed to max. frequency (mot. frequency*)
302	Rated Motor Power
	NCV -5 to NCV +2 (according to drive rating*)
305	Rated motor current
	(0.25-1.5In) (In*)
204.0	AI1 type
	[5U]* 0-5V
	[10U] 0-10V
	[0A] x-y mA
	[LIU] Logic inputs
101	Store customer parameter set
	[00]* Disabled
	[01] Stores current configuration
102	Factory / recall customer parameter set
	[00]* Disabled
	[02] Customer configuration
	[64] Factory set configuration

COMPLETE MENU
100	Macro-configuration
	[00] Start/stop
	[04] PID regulation
	[09] Speed
200-	I/O MENU
201	Type of control
	[00]* 2-wire control
	[01] 3-wire control
202	2-wire type control
	[00] level
	[01]* transition
	[02] Forward priority

The (*) indicates a parameter factory setting.

203	Logic inputs type
	[00]* positive
	[01] negative
204-	AI1 CONFIGURATION MENU
204.0	AI1 type
	[5U]* Voltage: 0-5Vdc
	[10U] Voltage: 0-10Vdc
	[0A] Current: x-y mA
	[LIU] Logic inputs
204.1	AI1 current scaling parameter of 0%
	0-20mA (4mA*)
204.2	AI1 current scaling parameter of 100%
	0-20mA (20mA*)
204.3	AI1F filter
	0 s to 10 s (0 s*)
205	R1 assignment
	[00] Not assigned
	[01]* No error detected
	[02] Drive run
	[04] Frequency threshold reached
	[05] HSP reached
	[06] I threshold reached
	[07] Frequency reference reached
	[08] Motor thermal reached
	[21] Underload alarm
	[22] Overload alarm
	[123] Loss of 4-20mA signal
206-	LO1 CONFIGURATION MENU
206.0	LO1 Assignment
	[00] Not assigned
	[01] No error detected
	[02] Drive run
	[04] Frequency threshold reached
	[05] HSP reached
	[06] I threshold reached
	[07] Frequency reference reached
	[08] Motor thermal reached
	[21] Underload alarm
	[22] Overload alarm
	[123] AI1 alarm 4-20mA
	[126] Auxiliary pump active
206.1	LO1 status (output active level)
	[00]* Positive : hight activation level
	[01] Negative : low activation level
207	Application Overload time delay
	0 to 100 s (0 s*)
208	Application Overload threshold
	70 to 150% of nominal motor current (90%*)
209	Overload fault duration
	0 to 6 min (0 min*)
210	Application underload time delay
	0 to 100 s (0 s*)
211	Application Underload threshold
	20 to 100% of nominal motor current (60%*)
212	Underload fault duration
	0 to 6min (0min*)
213	Motor frequency threshold
	0 to 400Hz (50Hz* or 60Hz)
214	Motor current threshold
	0 to 1.5In (In*)
215	Motor thermal state threshold
	0 to 118% (100%*)
216.0	AOI assignment
	[00]* Not assigned
	[129] Motor current
	[130] Output frequency
	[131] Ramp output
	[135] PID reference
	[136] PID feedback
	[137] PID error
	[139] Output power
	[140] Motor thermal state
	[141] Drive thermal state

I/O menu
216.1	AOI type
	[10U] Voltage: 0-10 Vdc
	[0A] Current: 0-20 mA
	[4A] Current: 4-20 mA
217	Speed Template
	[00]* Standard
	[02] DeadBand

Motor control menu
300-	MOTOR CONTROL MENU
301	Standard motor frequency
	[00]* 50Hz
	[01] 60Hz
302	Rated motor power
	Drive power (-5 to +2) depending on drive rating
303	Rated motor cos phi
	0.5 to 1 (depending on drive rating)
304	Rated motor voltage
	360 to 460V (380V*)
305	Rated motor current
	0.25 to 1.5In (depending on drive rating)
306	Rated motor frequency
	10 to 400Hz (50Hz*)
307	Rated motor speed
	0 to 24000rpM (depending on drive rating)
308	Maximum frequency
	10 to 500Hz (60Hz*)
309	Motor control type
	[00] Performance: Vector control
	[03]* Standard: U/F 2 points
	[06] Pump: U²/F
310	IR compensation
	25 to 200% (100%*)
311	Slip compensation
	0 to 150% (100%*)
312	Frequency loop stability
	0 to 100% (20%*)
313	Frequency loop gain
	0 to 100% (20%*)
314	Flux Profil
	0 to 100% (20%*)
315	Switching frequency
	2 to 12kHz (4kHz*)
317	Motor noise reduction
	[00]* No
	[01] Yes
318	Auto-tuning
	[00]* No: When factory paramameters of standard motors
	[01] Yes: Launches auto-tuning
	[02] Done: If auto-tuning has already been performed
319	Motor parameter choice
	[00]* Nominal motor power
	[01] Nominal motor cos phi
320	Vector control 2 points
	[00]* No
	[01] Yes
321	Max voltage of constant power
	360 to 460V (380V*)
322	Max frequency of constant power
	50 to 400Hz (50Hz*)

Control menu
400-	CONTROL MENU
401	Reference channel 1
	[01] Terminal
	[163] Remote display
	[164] Modbus
	[183] Integrated display with Jog dial
402	External reference value
	-400 to 400Hz
403	Analog input virtual
	0 to 100%
404	Reverse inhibition
	[00]* No
	[01] Yes
405	Stop key priority
	[00] No: Stop inactive
	[01] Yes: Stop active

Control menu (cont.)
406	Channel configuration
	[01]* Not separate mode
	[02] Separate mode
407	Command channel 1
	[01]* Terminals
	[02] Local
	[03] Remote display
	[10] Modbus
408	Forced local assignment
	[00]* No: Function inactive
	[L1H] LI1 active High
	[L2H] LI2 active High
	[L3H] LI3 active High
	[L4H] LI4 active High
	[LUH] LIU active High
409	Forced local reference
	[00]* Not assigned
	[01] Terminal
	[163] Remote display
	[183] Integrated jog dial

Function / Ramp menu
500-	FUNCTION MENU
501-	RAMP MENU
501.0	Acceleration
	0.0 to 999.9s (3.0s*)
501.1	Deceleration
	0.0 to 999.9s (3.0s*)
501.2	Ramp shape assignment
	[00]* Linear
	[01] S shape
	[02] U shape
501.3	Ramp switching commutation
	[00]* Not assigned
	[L1H] LI1 active High
	[L2H] LI2 active High
	[L3H] LI3 active High
	[L4H] LI4 active High
	[LUH] LIU active High
	[L1L] LI1 active low
	[L2L] LI2 active low
	[L3L] LI3 active low
	[L4L] LI4 active low
	[LUL] LIU active low
501.4	Acceleration 2
	0.0 to 999.9s (5.0s*)
501.5	Deceleration 2
	0.0 to 999.9s (5.0s*)
501.6	Decel Ramp Adaptation assignment
	[00] Function deactivated
	[01]* Function activated
	[02] Motor brake

Function / Stop configuration menu
502-	STOP CONFIGURATION MENU
502.0	Type of stop
	[00]* Ramp stop
	[01] Fast stop
	[02] Free wheel stop
502.1	Freewheel stop assignment
	[00]* Not assigned
	[L1L] LI1 active Low to stop
	[L2L] LI2 active Low to stop
	[L3L] LI3 active Low to stop
	[L4L] LI4 active Low to stop
	[LUL] LIU active Low to stop
502.2	Fast stop assignment
	[00]* Not assigned
	[L1L] LI1 active Low to stop
	[L2L] LI2 active Low to stop
	[L3L] LI3 active Low to stop
	[L4L] LI4 active Low to stop
	[LUL] LIU active Low to stop
502.3	Ramp divider
	1 to 10 (4*)
503	Reverse direction
	[00]* Not assigned
	[L1H] LI1 active High
	[L2H] LI2 active High
	[L3H] LI3 active High
	[L4H] LI4 active High
	[LUH] LIU active High

ATV310 complete parameters list

Column 1

DC injection function

504- **AUTO DC INJECTION MENU**
504.0 **Automatic DC injection**
- [00] Function inactive, no DC injected current.
- [01]* Time limited DC injection
- [02] Continuous DC injection

504.1 **Automatic DC injection current**
0 to 120% of nominal motor current (70%*)

504.2 **Automatic DC injection time**
0.1 to 30s (0.5s*)

Jog function

505 **Jog assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

Motor potentiometer function

506- **Speed up and down**
506.0 **Up speed command**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

506.1 **Down speed command**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

506.2 **Store**
- [00]* No
- [01] RAM
- [02] ROM

506.3 **Clear the function**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High
- [159] Acceleration and deceleration with command active high

506.4 **Reactivity of +/- speed around ref.**
0 to 100% (0%*)

Maintenance menu

507- **PRESET SPEED MENU**
507.0 **2 Preset speeds**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

507.1 **4 Preset speeds**
same as 2 Preset speeds

507.2 **8 Preset speeds**
same as 2 Preset speeds

507.3 **Preset speed 2**
0 to 400Hz (10Hz*)

507.4 **Preset speed 3**
0 to 400Hz (15Hz*)

507.5 **Preset speed 4**
0 to 400Hz (20Hz*)

507.6 **Preset speed 5**
0 to 400Hz (25Hz*)

507.7 **Preset speed 6**
0 to 400Hz (30Hz*)

507.8 **Preset speed 7**
0 to 400Hz (35Hz*)

507.9 **Preset speed 8**
0 to 400Hz (40Hz*)

Jump frequency

508 **Skip frequency**
0 to 400Hz (0Hz*)

The (*) indicates a parameter factory setting.

Column 2

PID Control function

59- **PID MENU**
59.00 **PID feedback assignment**
- [00]* Not assigned
- [01] Terminal

59.01 **PID proportional gain**
0.01 to 100 (1*)

59.02 **PID integral gain**
0.01 to 100 (1*)

59.03 **PID derivative gain**
0.00 to 100.0 (0*)

59.04 **PID feedback scale factor**
0.1 to 100.0 (1.0*)

59.05 **Activation internal PID reference**
- [00]* No
- [01] Yes

59.06 **2 preset PID assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

59.07 **4 preset PID assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

59.08 **2 preset PID reference**
0 to 100% (25%*)

59.09 **3 preset PID reference**
0 to 100% (50%*)

59.10 **4 preset PID reference**
0 to 100% (75%*)

59.11 **Internal PID reference**
0 to 100% (0%*)

59.12 **PID reference ramp**
0 to 100% (0%*)

59.13 **PID min value reference**
0 to 100% (0%*)

59.14 **PID max value reference**
0 to 100% (100%*)

59.15 **PID predictive speed**
0.1 to 400Hz (0.0*)

501.4 **Acceleration 2**
0.0 to 999.9s (5s*)

59.16 **PID correction reverse**
- [00]* No, no negative speed
- [01] Yes, no negative speed
- [02] No, allow negative speed
- [03] Yes, allow negative speed

59.17 **PID auto/manual assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

59.18 **PID manual reference**
- [00]* No
- [01] Yes
- [183] Integrated jog dial

512.1 **Low speed operating time**
0.1 to 999.9s (0s*)

59.19 **PID: wake up level**
0 to 100% (0%*)

59.20 **PID: Wake up threshold**
0 to 100% (0%*)

59.21 **Sleep offset threshold**
0 to High speed (0Hz*)

59.22 **PID feedback supervision threshold**
0 to 100% (0%*)

59.23 **PID supervision function time delay**
0 to 300s (0s*)

Column 3

PID / Pump mangement function

59.24 **Maximum frequency detection Hysteresis**
0 to 50Hz (0Hz*)

59.25 **PID feedback supervision**
- [00]* Not assigned
- [01] Free wheel
- [04] Fallback speed

59.26 **Fallback speed**
0 to High speed (0Hz*)

510- **PUMP SUB-MENU**
207 **Overload time delay**
0 to 100 s (0 s*)

208 **Overload threshold**
70 to 150% of nominal motor current (90%*)

209 **Overload fault duration**
0 to 6 min (0 min*)

210 **Underload time delay**
0 to 100 s (0 s*)

211 **Underload threshold**
20 to 120% of nominal motor current (60%*)

212 **Underload fault duration**
0 to 6min (0min*)

510.0 **Selecting operating mode**
- [00]* Single frequency conversion mode
- [01] Single frequency conversion combined with auxiliary pump mode

510.1 **Starting frequency of the auxiliary pump**
0 to 60Hz (50Hz*)

510.2 **Time delay before starting auxiliary pump**
0 to 999.9s (2s*)

510.3 **Auxiliary pump ramp reaching**
0 to 999.9s (2s*)

510.4 **Auxiliary pump stop frequency**
0 to 60Hz (0Hz*)

510.5 **Auxiliary pump stop time delay**
0 to 999.9s (2s*)

510.6 **Auxiliary pump stop ramp**
0 to 999.9s (2s*)

510.7 **Zero flow detection period**
0 to 20min (0min*)

510.8 **Zero flow detection activation threshold**
0 to 400Hz (0Hz*)

510.9 **Zero flow detection offset**
0 to 400Hz (0Hz*)

Speed limitation function

511- **CURRENT LIMITATION MENU**
511.0 **2nd current limitation commutation**
- [00]* Not activated
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High
- [L1L] LI1 active Low
- [L2L] LI2 active Low
- [L3L] LI3 active Low
- [L4L] LI4 active Low
- [LUL] LIU active Low

511.1 **Current limitation**
0.25 to 1.5In (1.5In*)

511.2 **Current limitation 2**
0.25 to 1.5In (1.5In*)

512- **SPEED LIMIT MENU**
512.0 **Low speed**
0Hz to high speed (0Hz*)

512.1 **Low speed operating time**
0.1 to 999.9s (0s*)

512.2 **High speed**
Low speed to maximum frequency (50 or 60Hz according to standard motor frequency*)

512.3 **2 High speed assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

Column 4

Speed limitation function (cont.)

512.4 **4 High speed assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

512.5 **High speed 2**
Low speed to Max frequency (50 or 60Hz*)

512.6 **High speed 3**
Low speed to Max frequency (50 or 60Hz*)

512.7 **High speed 4**
Low speed to Max frequency (50 or 60Hz*)

Fan

513 **Cooling fan control**
- [00]* Fan runs when drive runs
- [01]* Thermal control

Detected fault reset

600- **FAULT DETECTION MANAGEMENT MENU**
601 **Detected fault reset assignment**
- [00]* Not assigned
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

Automatic restart after a elected fault

602- **AUTOMATIC RESTART MENU**
602.0 **Automatic restart**
- [00]* No
- [01] Yes

602.1 **Max. automatic restart**
- [00]* 5 min
- [01] 10 min
- [02] 30 min
- [03] 1 hour
- [04] 2 hours
- [05] 3 hours
- [06] Infinite

Catch on the fly

603 **Catch on the fly**
- [00]* Function inactive
- [01] Function active

Motor thermal protection

604- **MOTOR THERMAL PROTECTION MENU**
604.0 **Motor thermal current**
0.2-1.5In (According to drive rating*)

604.1 **Motor protection type**
- [01] Self-ventilated
- [02] Motor-ventilated

604.2 **Overload fault management**
- [00] Detected fault ignored
- [01]* Free wheel stop

604.3 **Motor thermal state memo**
- [00]* thermal state not stored at power off
- [01] thermal state is stored at power off

605 **Output Phase loss**
- [00] Deactivated
- [01]* Tripping then freewheel stop

Phase loss

606 **Input Phase loss**
- [00] Detected fault ignored
- [01]* Detected fault with freewheel stop

Undervoltage

607- **UNDERVOLTAGE MENU**
607.0 **Undervoltage detected fault management**
- [00]* Detected fault and R1 relay open
- [01] Detected fault and R1 relay closed

607.1 **Undervoltage prevention**
- [00]* No action (freewheel)
- [02] Stop following an adjustable ramp

607.2 **Undervoltage ramp deceleration time**
0.0 to 10.0s (1.0s*)

607.3 **Precharge resistor protection level**
430 to 560 VDC (0 V* with protection removed)

IGBT

608 **IGBT test**
- [00]* No test
- [01] Starting test

4-20 mA loss

609 **4-20mA loss Behaviour**
- [00]* Detected fault ignored
- [01] Freewheel stop

Column 5

Det. fault inhibit.

610 **Detected fault inhibition assignment**
- [00]* Function inactive
- [L1H] LI1 active High
- [L2H] LI2 active High
- [L3H] LI3 active High
- [L4H] LI4 active High
- [LUH] LIU active High

Modbus line interrup.

611 **Modbus detected fault management**
- [00]* Detected fault ignored
- [01] Freewheel stop

Degr. line supply

612 **Degraded line supply operation**
- [00]* No
- [01] Yes

Reset power run

613 **Reset power run**
- [00]* No
- [03] Reset drive running time
- [04] Reset power-on time
- [07] Reset fan operation time

614 **Reset all previous detected faults via Run key of HMI**
- [00]* Deactivated
- [01] Active

Communication menu

700- **COMMUNICATION MENU**
701 **Modbus address**
Off to 247 (off*)

702 **Modbus baud rate**
- [24] 4.8 kbps
- [28] 9.6 kbps
- [32]* 19.2 kbps
- [36] 38.4 kbps

703 **Modbus format**
- [02] 8o1
- [03]* 8E1
- [04] 8n1
- [05] 8n2

704 **Modbus time out**
0.1 to 30s (10s*)

705- **INPUT SCANNER MENU**
705.0 **Com scanner read adress parameter 1**
0C81*

705.1 **Com scanner read adress parameter 2**
219C*

705.2 **Com scanner read adress parameter 3**
0000

705.3 **Com scanner read adress parameter 4**
0000

706- **OUTPUT SCANNER MENU**
706.0 **Com scanner write adress parameter 1**
2135*

706.1 **Com scanner write adress parameter 2**
219A*

706.2 **Com scanner write adress parameter 3**
0000

706.3 **Com scanner write adress parameter 4**
0000

707- **INPUT SCANNER ACCESS MENU**
707.0 **Com scanner read adress value 1**
0C81*

707.1 **Com scanner read adress value 2**
219C*

707.2 **Com scanner read adress value 3**
0000

707.3 **Com scanner read adress value 4**
0000

708- **OUTPUT SCANNER ACCESS MENU**
708.0 **Com scanner write adress value 1**
CMD value*

708.1 **Com scanner write adress value 2**
LFRD value*

708.2 **Com scanner write adress value 3**
8000

708.3 **Com scanner write adress value 4**
8000