EAV9613608

Easy Altivar ATV310 complete parameters list

ENGLISH

Reference menu

Reference mode
402 External reference value
403 Integrated display jog dial reference
801 Speed reference
59.11 Internal PID reference
806 PID reference value

Monitoring parameter

Monitoring mode
402 External reference value
403 Integrated display jog dial reference
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

Drive status

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
D15
D18
D22
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 list
F001 Precharge
F002 Unknown drive rating
F003 Unknown or incompatible power board
F004 Internal serial link

Detected fault codes

F005 Invalid industrialization zone
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 fault
F030 Undervoltage
F031 Incorrect configuration
F032 Invalid configuration
F033 AI1 current loss
F034 Download invalid configuration
F035 Pre-charge resistor protection fault

Short menu

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 (50 or 60Hz determined by 301 parameter value)
302 Rated Motor Power
NCV -5 to NCV +2 (according to drive rating*)
305 Rated motor current
(0.25-1.5In) (depending on drive rating)
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

Macro

COMPLETE MENU
100 Macro-configuration
[00] Start/stop
[04] PID regulation
[09] Speed

I/O menu

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

I/O menu (cont.)

203 Logic inputs type
[00]* Positive
[01] Negative internal supply
[02] Negative external supply
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 AI1 filter time
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] Process underload fault
[22] Process overload fault
[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] Process underload fault
[22] Process overload fault
[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 Process overload time delay
0 to 100 s (0 s*)
208 Process overload threshold
70 to 150% of nominal motor current (90%*)
209 Process overload fault duration
0 to 6 min (0 min*)
210 Process underload time delay
0 to 100 s (0 s*)
211 Process underload threshold
20 to 100% of nominal motor current (60%*)
212 Process 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 (cont.)

216.1 AO1 type
[10U] Voltage: 0-10 Vdc
[0A]* Current: 0-20 mA
[4A] Current: 4-20 mA
217 Speed Template
[BSD]* Standards
[BLS] Pedestral
[BNS] Deadband
[BNS0] Deadband at 0%

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 400Hz (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: Use factory paramameters of standard motors
[01] Yes: Request auto-tuning
[02] Done: 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*)
323 Dual Rating
[00] Normal duty
[01]* Heavy duty

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 Integrated display jog dial reference
0 to 100%
404 Reverse inhibition
[00]* No
[01] Yes

Control menu (cont.)

405 Stop key priority
[00] No: Stop inactive
[01]* Yes: Stop active
406 Channel configuration
[01]* Combined 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
[03] DC injection stop
[08] Fast stop
[13] 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*)
502.4 DC injection assignment
[00]* Not assigned
[L1H] to [L4H] LI1 to LI4 active High
[LUH] LIU active High

The (*) indicates a parameter factory setting.

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Function reverse direction

502.5 DC injection level
0.1 to 1.41In (0.64 In*)
502.6 IDC injection time for DCLI
0.1 to 30 s (0.5 s*)
502.7 DC injection level 2
0.1 to 1.41In (0.5 In*)
502.8 Injection standstill braking time
0.1 to 30 s (0.5 s*)
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

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

505.0 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
505.1 Jog frequency
0 to10Hz (*5Hz)

Motor potentiometer function

506- Speed up and down
506.0 Up speed command
[00]* Not assigned
[L1H] to [L4H] LI1 to LI4 active High
[LUH] LIU active High
506.1 Down speed command
[00]* Not assigned
[L1H] to [L4H] LI1 to 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] to [L4H] LI1 to LI4 active High
[LUH] LIU active High
[159] Acceleration and decele-ration with command active high
506.4 Reactivity of +/- speed around ref.
0 to 100% (0%*)

Preset speed function

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*)

Jump frequency

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

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 99.9s (0s*)
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] to [L4H] LI1 to LI4 active High
[LUH] LIU active High
59.18 PID manual reference
[00]* No
[01] Terminal
[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%*)

PID Control function (cont.)

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 600s (0s*)
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*)

PID / Pump mangement function

510- PUMP SUB-MENU
207 Process overload time delay
0 to 100 s (0 s*)
208 Process overload threshold
70 to 150% of nominal motor current (90%*)
209 Process overload fault duration
0 to 6 min (0 min*)
210 Process underload time delay
0 to 100 s (0 s*)
211 Process underload threshold
20 to 120% of nominal motor current (60%*)
212 Process 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*)

Current limiration 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*)

Speed limitation function

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 Max frequency (50 or 60Hz determined by 301 parameter value)

Speed limitation function (cont.)

512.3 2 High speed assignment
[00]* Not assigned
[L1H] to [L4H] LI1 to LI4 active High
[LUH] LIU active High
512.4 4 High speed assignment
[00]* Not assigned
[L1H] to [L4H] LI1 to 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 etected 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
[08] DC injection stop
604.3 Motor thermal state memo
[00]* thermal state not stored at power off
[01] thermal state is stored at power off

Phase loss

605 Output Phase loss
[00] Deactivated
[01]* Tripping then freewheel stop
606 Input Phase loss
[00] Detected fault ignored
[01]* Detected fault with freewheel stop
[08] DC injection stop

Undervoltage

607- UNDERVOLTAGE MENU
607.0 Undervoltage detected fault management
[00]* Detected fault and R1 relay set 0
[01] Detected fault and R1 relay set 1
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
[08] DC injection stop

Det. fault inhibit.

610 Detected fault inhibition assignment
[00]* Function inactive
[L1H] to [L4H] LI1 to LI4 active High
[LUH] LIU active High

Modbus interrup.

611 Modbus detected fault management
[00]* Detected fault ignored
[01] Freewheel stop
[08] DC injection stop

Degr. line

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
8000
707.3 Com scanner read adress value 4
8000
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

The (*) indicates a parameter factory setting.