Altivar® 31 Quick Reference Guide

8800HO0403
12/2004

ATV31H••••

Note: Please refer to the ATV31 Installation Guide (VVDED303041US) and the ATV31 Programming Manual (VVDED303042US) for complete installation and programming instructions.

ATV31H••••A

KEYPAD OPERATION

Red LED
DC bus ON

Four 7-segment displays

2 CANopen status LEDs

Returns to the previous menu or parameter, or increases the displayed value

Exits a menu or a parameter, or clears the displayed value to return to the previous stored value

Advances to the next menu or parameter, or decreases the displayed value

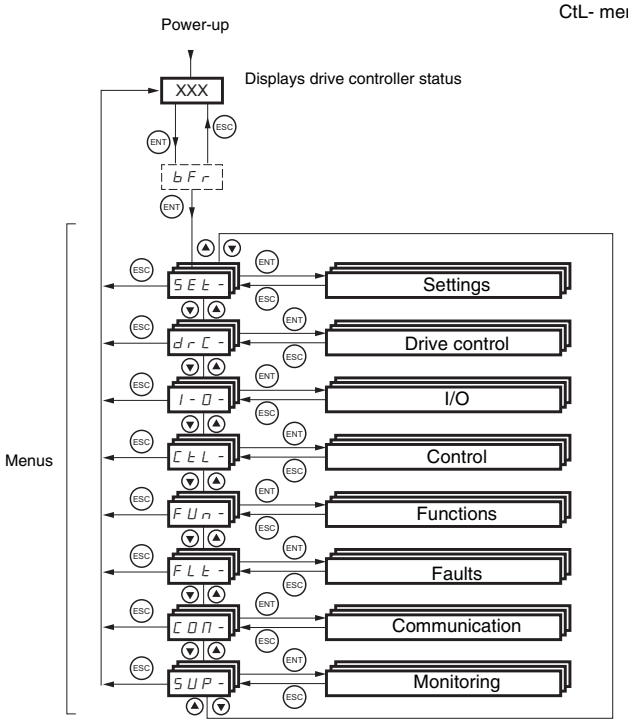
Enters a menu or a parameter, or saves the displayed parameter or value

RUN button (ATV31••••••A only)
Starts the motor in forward direction if parameter tCC in the I-O- menu is configured as LOC

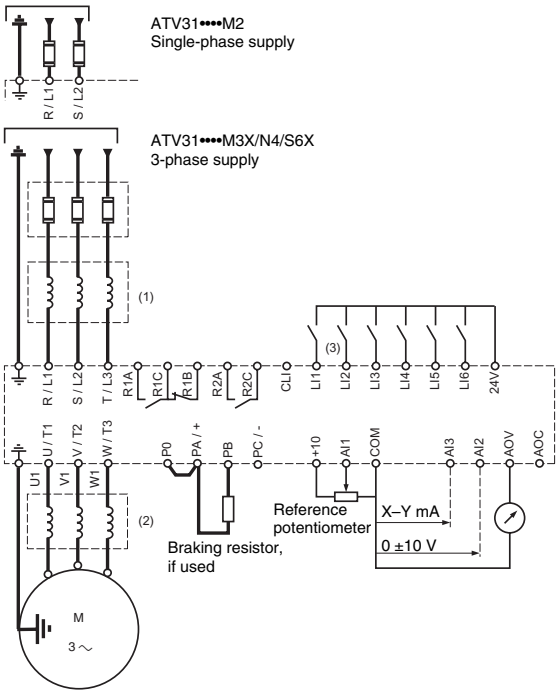
STOP/RESET button (ATV31••••••A only)
Resets faults
Stops the motor:
•If tCC (I-O- menu) is not configured as LOC, pressing the STOP/RESET key commands a freewheel stop.
•If tCC (I-O- menu) is configured as LOC, stopping is on a ramp, but if injection braking is in progress, a freewheel stop takes place.

Reference potentiometer (ATV31••••••A only)
Active if parameter Fr1 in the CtL- menu is configured as AIP

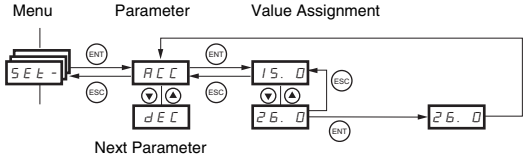
ACCESS TO MENUS



TYPICAL CONNECTIONS



ACCESS TO PARAMETERS



The display flashes when a value is stored. Some functions may require pressing the ENT button for two seconds to store the parameter change.

(1) A line reactor is required for 575 V installations.
(2) A load reactor is recommended for 575 V installations.
(3) When configured for 2-wire control, LI1 is Run Forward (fixed). When configured for 3-wire control, LI1 is Stop (fixed) and LI2 is Run Forward (fixed).

SEt - SETTINGS Menu

Parameter	Code	Factory Setting
Speed ref. from remote -Hz	LFr	
Internal PI regulator ref. -Hz	rPI	0 Hz
Acceleration ramp time -s	ACC	3 s
Acceleration ramp time 2 -s	AC2	5 s
Deceleration ramp time 2 -s	dE2	5 s
Deceleration ramp time -s	dEC	3 s
Start custom accel. ramp-%	tA1	10%
End custom accel. ramp -%	tA2	10%
Start custom decel. ramp-%	tA3	10%
End custom decel. ramp -%	tA4	10%
Low speed -Hz	LSP	0 Hz
High speed -Hz	HSP	bFr
Thermal current -A	ItH	Varies w/rating
IR compensation -%	UFr	20%
Gain -%	FLG	20%
Stability -%	StA	20%
Slip comp. -%	SLP	100%
DC injection curr -A	IdC	0.7 In
DC injection time -s	tdC	0.5 s
Auto. DC injection time -s	tdC1	0.5 s
Auto. DC injection curr -A	SdC1	0.7 In
Auto. DC injection time 2 -s	tdC2	0 s
Auto. DC injection curr 2 -A	SdC2	0.5 In
Skip freq. -Hz	JPF	0 Hz
Skip freq. 2 -Hz	JF2	0 Hz
Jog operating freq. -Hz	JGF	10 Hz
PI regulator prop. gain	rPG	1
PI regulator int. gain -/s	rIG	1/s
PID coeff	FbS	1
PID inversion	PiC	nO
2nd preset PI reference -%	rP2	30%
3rd preset PI reference -%	rP3	60%
4th preset PI reference -%	rP4	90%
Preset speed 2 -Hz	SP2	10 Hz
Preset speed 3 -Hz	SP3	15 Hz
Preset speed 4 -Hz	SP4	20 Hz
Preset speed 5 -Hz	SP5	25 Hz
Preset speed 6 -Hz	SP6	30 Hz
Preset speed 7 -Hz	SP7	35 Hz
Preset speed 8 -Hz	SP8	40 Hz
Preset speed 9 -Hz	SP9	45 Hz
Preset speed 10 -Hz	SP10	50 Hz
Preset speed 11 -Hz	SP11	55 Hz
Preset speed 12 -Hz	SP12	60 Hz
Preset speed 13 -Hz	SP13	70 Hz
Preset speed 14 -Hz	SP14	80 Hz
Preset speed 15 -Hz	SP15	90 Hz
Preset speed 16 -Hz	SP16	100 Hz
Current limit -A	CL1	1.5 In
Current limit 2 -A	CL2	1.5 In
Low speed oper. time -s	tLS	0 (no time limit)
Restart error threshold	rSL	0
Motor 2 IR compen. -%	UFr2	20%
Motor 2 freq. loop gain -%	FLG2	20%
Motor 2 freq. loop stabil.-%	StA2	20%
Motor 2 slip compen. -%	SLP2	100%
Frequency Lev.Att -Hz	Ftd	bFr
Thermal Level Att. -%	ttd	100%
Current Level Att. -A	Ctd	In
Display para. scale factor	SdS	30
Sw. Freq -kHz	SFr	4 kHz

drC - DRIVE CONTROL Menu

Parameter	Code	Factory Setting
Motor frequency -Hz	bFr	50 Hz
Nom. motor volt -V	UnS	Varies w/rating
Nom. motor frequency -Hz	FrS	50 Hz
Nom. motor current -A	nCr	Varies w/rating
Nom. motor speed -RPM	nSP	Varies w/rating
Motor CosPhi (power fact.)	CoS	Varies w/rating
Cool state stator resistance	rSC	nO
Auto tuning	tUn	nO
Auto tuning status	tUS	tAb
Voltage/frequency ratio	UFt	n
Noise reduction	nrd	YES
Switching frequency -kHz	SFr	4 kHz
Maximum frequency -Hz	tFr	60 Hz
Suppress speed loop filter	SrF	nO
Save the configuration	SCS	nO
Return to factory settings	FCS	nO

I-O - I/O Menu

Parameter	Code	Factory Setting
Terminal strip config	tCC	2C ATV31••••••A: LOC
Type 2 wire	tCt	trn
Reverse operation	rrS	If tCC=2C: L12 if tCC=3C: L13 if tCC=LOC:nO
AI3 low speed -mA	CrL3	4 mA
AI3 high speed -mA	CrH3	20 mA
Analog output config	AOIt	oA
Analog/logic output	dO	nO
Relay R1	r1	FLt
Relay R2	r2	nO

CtL - CONTROL Menu

Parameter	Code	Factory Setting
Function access level	LAC	L1
Ref 1 config	Fr1	AI1 ATV31••••••A: AIP
Ref 2 config	Fr2	nO
Ref switching	rFC	Fr1
Separate ctrl/ref channels	CHCF	SIM
Ctrl channel 1 config	Cd1	tEr ATV31••••••A: LOC
Ctrl channel 2 config	Cd2	Mdb
Ctrl channel switching	CCS	Cd1
Copy channel 1 to channel 2	COP	nO
Ctrl via remote keypad	LCC	nO
Stop priority	PSt	YES
Direction of operation	rOt	dFr

FUn - APPLICATION FUNCTIONS Menu

Parameter	Code	Factory Setting
rPC submenu		
Ramp type	rPt	LIn
Start CUS accel ramp-%	tA1	10%
End CUS accel ramp -%	tA2	10%
Start CUS decel ramp-%	tA3	10%
End CUS decel ramp -%	tA4	10%
Accel ramp time -s	ACC	3 s
Decel ramp time -s	dEC	3 s
Ramp switching	rPS	nO
Ramp switch. thresh-Hz	Frt	0
Accel ramp time 2 -s	AC2	5 s
Decel ramp time 2 -s	dE2	5 s
Decel ramp adaptation	brA	YES
StC submenu		
Normal stop	Stt	Stn
Fast stop	FSt	nO
Decel ramp coef.	dCF	4
DC injection stop	dCI	nO
DC injection current -A	IdC	0.7 In
DC injection time -s	tdC	0.5 s
Freewheel stop	nSt	nO
AdC submenu		
Auto DC injection	AdC	YES
Auto inject. time -s	tdC1	0.5 s
Auto inject. level -A	SdC1	0.7 In
Auto inject. time 2 -s	tdC2	0 s
Auto inject. level 2 -A	SdC2	0.5 In
SAI submenu		
Summing input 2	SA2	AI2
Summing input 3	SA3	nO
PSS submenu		
2 preset speeds	PS2	if tCC=2C/LOC: LI3 if tCC=3C: LI4
4 preset speeds	PS4	if tCC=2C/LOC: LI4 if tCC=3C: nO
8 preset speeds	PS8	nO
16 preset speeds	PS16	nO
JOG submenu		
Jog operation	JOG	if tCC=2C/LOC: nO if tCC=3C: LI4
Jog oper. reference -Hz	JGF	10 Hz
UPd submenu		
Plus speed	USP	nO
Minus speed	dSP	nO
Save references	Str	nO
PI submenu		
PI regulator feedback	PIF	nO
PI regul. proport. gain	rPG	1
PI regul. intergral gain	rIG	1
PI feedback coeff.	FbS	1
Reverse PI regul. direction	PIC	nO
2 preset PI references	Pr2	nO
4 preset PI references	Pr4	nO

FUn - APPL. FUNCTIONS Menu (cont.)

Parameter	Code	Factory Setting
PI submenu (cont.)		
Preset PI ref. 2 -%	rP2	30%
Preset PI ref. 3 -%	rP3	60%
Preset PI ref. 4 -%	rP4	90%
Restart after error thresh.	rSL	0
Internal PI regul. ref.	PI1	nO
Internal PI regul. ref. -%	rPI	0
bLC submenu		
Brake control config.	bLC	nO
Brake release freq. -Hz	brL	Varies w/rating
Release current thresh.-A	Ibr	Varies w/rating
Brake release time -s	brt	0.5 s
Brake engage freq. thresh.	bEn	nO
Brake engage time -s	bEt	0.5 s
Brake release pulse	bIP	nO
LC2 submenu		
Current limit 2 switching	LC2	nO
Current limit 2 -A	CL2	1.5 In
CHP Motor Switching	CHP	nO
LSt Limit switch management		

FLt - FAULTS Menu

Parameter	Code	Factory Setting
Automatic restart	Atr	nO
Max restart duration	tAr	5
Reset fault	rSF	nO
Catch on fly	FLr	nO
External fault	EtF	nO
External fault stop mode	EPL	YES
Motor phase loss fault config.	OPL	YES
Line phase loss fault config.	IPL	YES
Drive overheat fault stop mode	OHL	YES
Mtr overload fault stop mode	OLL	YES
Modbus serial link fault stop	SLL	YES
CANopen serial link fault stop	COL	YES
Auto-tune fault config.	tnL	YES
Signal loss fault stop	LFL	nO
Fallback speed -Hz	LFF	10 Hz
Undervoltage derated oper.	drn	nO
Mains power loss stop	StP	nO
Fault inhibit	InH	nO
Reset oper. time to zero	rPr	nO

COn - COMMUNICATION Menu

Parameter	Code	Factory Setting
Modbus drive address	Add	1
Modbus transmission speed	tbr	19200
Modubus commun. format	tFO	8E1
Modbus timeout -s	ttO	10 s
CANopen drive address	AdCO	0
CANopen transmisson speed	bdCO	125
CANopen error registry	ErCO	
Forced local mode	FLO	nO
Ref & ctrl channel selection in forced local mode	FLOC	AI1 ATV31••••••A: AIP

SUP - DISPLAY Menu

Parameter	Code	Factory Setting
Speed ref. from remote -Hz	LFr	
Internal PI reference -%	rPI	
Freq. ref before ramp -Hz	FrH	
Output freq. at motor -Hz	rFr	
Output value in cust. units	SPd1 SPd2 SPd3	
Motor current -A	LCr	
Motor power -%	OPr	
Line voltage -V	ULn	
Motor thermal state -%	tHr	
Drive thermal state -%	tHd	
Last fault	LFt	
Motor torque -%	Otr	
Operating time -hr	rtH	

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