Application Note -16 Migrating the Elite to Altivar 71





Simply Smart !





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1. Overview

This application note looks at the migration from an existing PDL Elite series drive to the Altivar 71. The application note covers the basic cabling and I/O requirements and provides the basic programming instructions required to configure the drive for simple operation.

2. Introduction

The Altivar 71 series of drives is Schneider Electrics upgraded replacement for the Elite series of drives to 500kW. The Altivar 71 range of drives is available from 0.37kW through to 500kW and offers a range of controls that provide flexibility for most process specific areas of operation. This configurability means that the Altivar 71 can often be employed as a complete stand-alone process control system. The purpose of this application note is to provide the basic information and an easy step-by-step guide to assist the user in migrating from their existing Elite hardware and standard software setup to the Altivar 71 and achieve fast application start-up.

For Elite series drives with Vysta installed, please consult a Schneider Electric Applications engineer for upgrade and migration options.

3. Dimensions

The Elite and the Altivar have distinct physical profiles. The Altivar 71 has a smaller overall footprint but differs from the Elite in its height to width ratio. In general this means that the Altivar replacement for Elite models may require more space in the horizontal plane (width). Ensure that the dimensions of the existing Elite and its surroundings allow sufficient space particularly in the horizontal plane for the fitting of the Altivar 71.

3.1 Dimensions Comparison Elite / Altivar 71

Elite (Constant Torque) 3-Phase supply voltage 380...480 V 50/60 Hz Variable Torque applications are now covered by the ATV61.



Type/Model	Height	Width	Depth
E002 (0.75kW)	430mm	139mm	262mm
ATV71H075N4 (0.75kW)	230mm	130mm	175mm
E006 (3kW)	430mm	139mm	262mm
ATV71HU30N4 (3.0kW)	260mm	155mm	187mm
E010 (4kW)	430mm	139mm	262mm
ATV71HU40N4 (4.0kW)	260mm	155mm	187mm
E012 (5.5kW)	430mm	139mm	262mm
ATV71HU55N4 (5.5kW)	295mm	175mm	187mm
E018 (7.5kW)	430mm	139mm	262mm
ATV71HU75N4 (7.5kW)	295mm	175mm	187mm
E022 (11kW)	430mm	139mm	262mm
ATV71HD11N4 (11kW)	295mm	210mm	213mm
E031 (15kW)	430mm	279mm	262mm
ATV71HD15N4 (15kW)	400mm	230mm	213mm
E038 (18.5kW)	430mm	279mm	262mm
ATV71HD18N4 (18.5kW)	400mm	230mm	213mm
E046 (22kW)	430mm	279mm	262mm
ATV71HD22N4 (22kW)	420mm	240mm	236mm
	970mm	347mm	313mm
	550mm	240mm	266mm
	970mm	347 mm	313000
A = V T = D = T = D = T = D = T = D = T = D = D	550IIIII	24011111	20011111
0E090C34 (43KW)	970mm	34711111 220mm	31311111 200mm
HE115C54 (55kW)	030mm	320mm	29011111 313mm
ATV71HD55N/ (55kW)	630mm	320mm	200mm
LIE140C54 (75kW)	970mm	347mm	290mm
ATV71HD75N4 (75kW)	630mm	320mm	290mm
UE170C54 (90kW)	1426mm	545mm	405mm
ATV71HD90N4 (90kW)	920mm	320mm	377mm
UE205C54 (110kW)	1426mm	545mm	405mm
ATV71HC11N4 (110kW)	1022mm	360mm	377mm
UE250C54 (132kW)	1426mm	545mm	405mm
ATV71HC13N4 (132kW)	1190mm	340mm	377mm
UE305C54 (160kW)	1426mm	965mm	405mm
ATV71HC16N4 (160kW)	1190mm	440mm	377mm
UE370C54 (200kW)	1426mm	965mm	405mm
ATV71HC20N4 (200kW)	1190mm	595mm	377mm
UE440C54 (250kW)	1426mm	965mm	405mm
ATV71HC25N4 (250kW)	1190mm	595mm	3//mm
UE540C54 (315kW)	1426mm	965mm	405mm
ATV/1HC31N4 (315kW)	1390mm	890mm	377mm
	1426mm	1385mm	405mm
	1390[1][1]	09011111	377(IIII) 405mm
	1420[1][]	138511111 800mm	405mm
ATV/THC40N4 (400KW)	1390000	890000	37711111



4. Elite / Altivar71 mains connections



Fig 1. Elite mains connections

ATV71H 037M3, 075M3, U15M3, U22M3, U30M3, U40M3, 075N4, U15N4, U22N4, U30N4, U40N4



TV71H Maximum wire size		Tightening torque	
	mm²	AWG	Nm (lb.in)
037M3, 075M3, U15M3, 075N4, U15N4, U22N4	2,5	14	1,2 (10.6)
U22M3, U30M3, U40M3, U30N4, U40N4	6	8	1,2 (10.6)

ATV71H U55M3, U75M3, D11M3X, D15M3X, U55N4, U75N4, D11N4, D15N4, D18N4



ATV71H	Maximum wire size		Tightening torque	
	mm²	AWG	Nm (lb.in)	
U55M3, U55N4, U75N4	10	6	2 (17.7)	
U75M3, D11N4	16	4	2,4 (21)	
D11M3X, D15M3X, D15N4, D18N4	35	1	2,4 (21)	

ATV71H D18M3X, D22M3X, D30M3X, D37M3X, D45M3X, D22N4, D30N4, D37N4, D45N4, D55N4, D75N4



ATV71H	Maximum wire size		Tightening torque
	mm²	AWG	Nm (lb.in)
D18M3X, D22M3X, D22N4, D30N4, D37N4	50	1/0	6 (53)
ATV71H	Maxim si	um wire ze	Tightening torque
	mm²	kcmils	Nm (lb.in)

Fig 2. Altivar 71 mains connections



4.1 Elite / Altivar 71 mains connections comparison

Description	Elite	Altivar 71
Ground terminal	Ð	
Power supply	L1	R/L1
	L2	S/L2
	L3	T/L3
Outputs to the motor	U	U/T1
	V	V/T2
	W	W/T3
Output to brake resistor (+)		PA/+ (ATV71HM3.)
Output to brake resistor		PB (ATV71H075N4 to HC16N4)
DC bus + polarity	+	PO
DC bus - polarity	-	PC/-

5. Elite / Altivar 71 control terminals



Fig 3. Elite control connections





Note: The ATV71 is supplied with a link between the PWR and +24 terminals.

Fig 4. ATV71 control connections

The standard Elite and Altivar 71 control terminals provide inputs and outputs that allow the connection of various control devices for easy integration into most control environments. There are differences between the control options available on each of the drives and these are summarised as the following.

- The Altivar 71 programmable Analogue Input (1) can be configured for either 0 to +10V, +/-10V (the Elite Al1 has 0 –10V, +/-10V, 0 to 20mA or 4 to 20mA options as well).
- The Altivar 71 programmable Analogue Input (2) can be configured for either 0 to +10V, +/-10V or scaled between 0 to 20mA (the Elite Al2 is the same as its Al1 input).
- The Altivar 71's Analogue Output can be configured for either 0 to 20mA or 0 to +10V operation (the Elite has 2 Analogue Outputs and can be configured for 0 20mA, 4 to 20mA, 0 to +10V and +/-10V capability).

The Altivar 71 has five programmable logic inputs, the Elite has six plus a PTC trip input. The Altivar 71 has a further sixth input that can be used as a PTC trip input or as another logic input depending on the setting of switch SW2^{*}.* See section 8 (page 7)

• The ATV71 I/O count can be extended via an option card. Elite Series cannot.

5.1 Elite / Altivar 71 control terminal comparison

Terminal Description	Elite Terminal	Altivar 71 Terminal
Programmable Output	T1 – (N/O)	R1A – (N/O)
Relay 1	T2 – (Common),	R1C – (Common)
	T3 – (N/C)	R1B – (N/C)
Programmable Output	T4 – (Common)	R2C – (Common)
Relay 2	T5 – (N/O)	R2A – (N/O)
Programmable Output	T6 – (Common)	N/A
Relay 3	T7 – (N/O)	
Analogue Input 1	T25 – (Common)	Al1- – (0V)
	T26 – (Analogue input)	+10V – (+10V)
		Al1+ – (Analogue input)
Analogue Input 2	T25 – (Common)	Com – (Common),
	T27 – (Analogue input)	Al2+ – (Analogue Input)
Analogue Output 1	T22 – (Common)	Com – (Common),
	T23 – (Analogue Output)	AO1 – (Analogue Output)
Analogue Output 2	T22 – (Common)	N/A
	T24 – (Analogue Output)	
Programmable Input 1	T13 – (MFI1)	Ll1 – (Logic Input 1)
Programmable Input 2	T14 – (MFI2)	LI2 – (Logic Input 2)
Programmable Input 3	T15 – (MFI3)	LI3 – (Logic Input 3)
Programmable Input 4	T16 – (MFI4)	LI4 – (Logic Input 4)
Programmable Input 5	T17 – (MFI5)	LI5 – (Logic Input 5)
Programmable Input 5	T18 – (MFI6)	N/A
External Trip Input	T19 – (External Trip)	LI6 – (PTC Trip or Logic
		Input 6)

* For further information regarding Altivar 71 I/O specification please refer to the Appendix 20.1 (page 20



6. Altivar 71 control connection diagram



7. Altivar 71 - 2 wire control logic states

When using the Altivar 71 with 2-wire control you can select between "level" and "transition" switching logic. With the setting left at its default setting of "transition" the drive is looking for a state change (transition or edge) to initiate operation. Transition setting prevents accidental restart after a break in the power supply. In the "level" setting a logic state 0 or 1 is taken into account for run (logic 1) or stop (logic 0). You can also set the drive controls in 2 wire control for "forward priority" with forward priority selected the "forward" input always takes priority over the "reverse" input.

8. Altivar 71 logic switching

The logic input switch (SW1) is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.*

Position the switch at Source (factory setting) if using PLC outputs using PNP transistors.

Position the switch at Sink Int or Sink Ext if using PLC outputs using NPN transistors. To provide the same switching logic format as the Elite the Altivar 71 inputs should be set to source.

* For diagrammatic examples of the logic switching refer to the Appendix 20.2 (page 21)

9. Altivar 71 logic input 6

Logic input 6 on the Altivar 71 can be set by using switch (SW2) as either another programmable logic input or a PTC trip input.



Note: The ATV71 is supplied with a link between the PWR and +24 terminals.



10. Altivar communications adaptor

The Altivar 71 comes with integrated RJ45 adaptor for connection to a suitable personal computer or notebook using the appropriate cable or blue tooth adaptor and Power Suite V2.2 or above.

11. Preparing the user settings

Prior to programming it is advisable to complete the user settings tables below.

Code	Name	Factory setting	Customer setting
tCC	[2/3 wire control]	[2 wire] (2C)	
CFG	[Macro configuration]	[Start/Stop] (StS)	
bFr	[Standard mot. freq]	[50 Hz] (50)	
nPr	[Rated motor power]	According to drive rating	
UnS	[Rated motor volt.]	According to drive rating	
nCr	[Rated mot. current]	According to drive rating	
FrS	[Rated motor freq.]	50 Hz	
nSP	[Rated motor speed]	According to drive rating	
tFr	[Max frequency]	60 Hz	
PHr	[Output Ph rotation]	ABC	
ltH	[Mot. therm. current]	According to drive rating	
ACC	[Acceleration]	3.0 s	
dEC	[Deceleration]	3.0 s	
LSP	[Low speed]	0	
HSP	[High speed]	50 Hz	

12. Functions assigned to I/O

12.1 Standard Altivar 71 I/O

I/O	Functions assigned
LI1	
LI2	
LI3	
LI4	
LI5	
LI6	
Al1	
AI2	
AO1	
R1	
R2	

Altivar 71 optional extended I/O

I/O	Functions assigned
LI7	
LI8	
LI9	
LI10	
LI11	
LI12	
LI13	
LI14	
LO1	
LO2	
LO3	
LO4	
AI3	
Al4	
AO2	
AO3	
R3	
R4	
RP	
Encoder	



13. Programming: Example of accessing a parameter

Accessing the acceleration ramp



Note:

- To select a parameter:
- Turn the navigation button to scroll vertically
- To modify a parameter:
 - Use the << and >> keys (F2 and F3) to scroll horizontally and select the digit to be modified (the selected digit changes to white
 on a black background).
 - Turn the navigation button to modify the digit.
- To cancel the modification:
 Press ESC
- To save the modification:
 - Press the navigation button (ENT).

14. Elite to Altivar 71 parameter conversion

Navigation through the Elites group screen menus is managed through the Elites keypad using the "*", "+" and "-" keys. Navigation through the Altivar 71 can be achieved through either the drives Graphic Display Terminal or by using a personal computer/laptop with Powersuite v2.2 (or above) software using the appropriate cable. Basic settings can be configured in the Altivar 71 by using the **[1.1 SIMPLY START]** menu accessed within the **[1. DRIVE MENU]**. The **[1.1 SIMPLY START]** menu gives you direct access to configuration settings such as 2 or 3 wire control options, auto tune function, motor nameplate ratings, acceleration and deceleration rates, speed range, motor thermal current. There are also 7 macro configurations available which allow the user to speed up the configuration of functions for a specific field of application. The seven macro configurations available are:

- Start/stop (factory configuration)
- Materials handling
- General use
- Hoisting
- PID regulator
- Communication bus
- Master/slave

Selecting a macro configuration assigns the parameters in this macro configuration.

15. Simply Start

The **[1.1 SIMPLY START]** menu of the Altivar 71 can be used for fast start-up and provides the basic settings for the majority of applications. The **[1.1 SIMPLY START]** menu gives you direct access to configuration settings such as 2 or 3 wire control options, auto tune function, motor nameplate ratings, acceleration and deceleration rates, speed range, motor thermal current and macro configurations which allows the user to speed up the configuration of functions for a specific field of application. It is advisable that initially the parameters in the **[1.1 SIMPLY START]** menu are entered prior to all other settings.



16. Elite / Altivar 71 parameter comparison > denotes parameter is accessed through a submenu structure.

Flito		Altivar 71	
Screen Group A -	A1-Local Keyboard	[1.6 Command]	
Auxiliary Screens	Mode Select A2-Local Torque	[1.2 Monitoring]	HMI Torque ref. (LTR)
Γ	A3-Local Speed Reference	[1.2 Monitoring]	HMI Frequency ref. (LFR)
	A4-Torque Reference, Speed Reference	[6. Monitoring Config.]	<i>Configurable</i> – Monitor Screen Type > Parameter Selection = Frequency ref., Torque reference
	A5-Motor Power, Motor RPM	[6. Monitoring Config.]	Configurable – Monitor Screen Type > Parameter Selection = Motor power, Motor speed
	A6-Motor Current, Stator Frequency	[6. Monitoring Config.]	Configurable – Monitor Screen Type > Parameter Selection = Motor current, Output frequency
	A6a-Phase Output Currents		Cannot display individual phase currents
	A7-Motor, Inverter Temperatures	[6. Monitoring Config.]	Configurable – Monitor Screen Type > Parameter Selection = Motor thermal state, Drv. thermal state
	A7a-Actual Heatsink & Internal Temps	[6. Monitoring Config.]	<i>Configurable</i> – Monitor Screen Type > Parameter Selection = Drv. thermal state
	A8-Bus and Output Voltages	[6. Monitoring Config.]	Configurable – Monitor Screen Type > Parameter Selection = Motor voltage
Screen Group C- Level Comparator	C1-Comparator Source Selection	[1.5 Input/Outputs CFG]	The ATV71 does not have the equivalent function of the Elites
	C2-Comparator On Setpoint C3-Comparator Off Setpoint		function can be achieved by using either the drives "threshold" assignments for R1 or R2 or by using
	C4-Comparator Source Selection C5-Comparator On Setpoint C6-Comparator Off Setpoint		the Ref. Operations i.e. summing, subtract, multiplier in the Application Function Menu.
Screen Group D– Dynamic Brake Controls	D1-Time Constant of Dynamic Brake Resistor	[1.8 Fault Management]	DB Res. Protection > Time constant is calculated by the drive once the resistor power and ohmic value are entered.



Screen Group F- Fault History Screens F-Fault Display Screen [1.10 Diagnostics] DB Res. Protection > Duty Rating is calculated by the drive once the resistor power and ohmic value are entered. F-Fault History Log [1.10 Diagnostics] Fault History F1-Fault History Log [1.10 Diagnostics] Fault History F2-Fault History Log [1.10 Diagnostics] Fault History F3-Fault History Log [1.10 Diagnostics] Fault History F4-Fault History Log [1.10 Diagnostics] Fault History F6-Clear Fault History Log [1.10 Diagnostics] Fault History F6-Clear Fault History Log [1.10 Diagnostics] Fault History Screen Group H - Serial F6-Clear Fault History Fault History H2-Serial Communications [1.9 Communication] Communication] Modbus Network or Communication] Nuddress H3-Modbus Serial Communications [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H4-Devicenet Communication Baud Rate [1.6 Command] Modbus network (Md1) Number H4-Assembly Unput Instance [1.6 Command] Cmd Channel 1 (Cd1) H4-Devicenet Reference Source <td< th=""><th>Elite</th><th></th><th>Altivar 71</th><th></th></td<>	Elite		Altivar 71	
Screen Group F- Fault History F-Fault Display Screen F1-Fault History Log [1.10 F3-Fault History Log Fault History F2-Fault History Log [1.10 F3-Fault History Log Fault History Fault History F2-Fault History Log [1.10 F3-Fault History Log Fault History Fault History F3-Fault History Log [1.10 Diagnostics] Fault History Fault History F4-Fault History Log [1.10 Diagnostics] Fault History Fault History F6-Clear Fault History Log [1.10 Diagnostics] Fault History Fault History F6-Clear Fault History Log [1.10 Diagnostics] Fault History Fault History Screen Group H H-Select Serial Communication [1.9 Communication] Modbus Network or CANopen (other comms options when additional communication Communication] Modbus network (Md1) Subgroup H3 - Modbus Serial Communications [1.9 Communication] Modbus network (Md1) Modbus network (Md1) Subgroup H4 - Devicenet Communication H4c-Assembly Input Instance [1.8 Communication] Modbus network (Md1) H4d-Devicenet Rate H4c-Assembly Unput Instance [1.6 Command] Cmd Channel 1 (Cd1) > HMd H4d-		D2-% Duty Rating of	[1.8 Fault	DB Res. Protection
Screen Group F - Fault History F-Fault Display Screen [1.10 Diagnostics] Fault History Screens F1-Fault History Log [1.10 Diagnostics] Fault History F2-Fault History Log Diagnostics] Fault History F3-Fault History Log [1.10 Diagnostics] Fault History F4-Fault History Log [1.10 Diagnostics] Fault History F5-Fault History Log [1.10 Diagnostics] Modbus Network or CANDeen (other comms options when additional communications Address Subgroup H3 - Devicenet Communication Parameters H2-Serial Communication Baud Rate [1.9 Communication Baudrate H32-Modbus Serial Communication Baudrate [1.9 Communication Baudrate Modbus network (Md1) Subgroup H4 - Devicenet Interface Status [1.6 Command] H42-Devicenet Interface Status [1.6 Command] S		Dynamic Brake	Management]	> Duty Rating is
Screen Group F - F-Fault Display Screen [1.10 Diagnostics] Fault History Screens F1-Fault History Log [1.10 Diagnostics] Fault History F2-Fault History Log [1.10 Diagnostics] Fault History Fault History F3-Fault History Log [1.10 Diagnostics] Fault History Fault History F4-Fault History Log [1.10 Diagnostics] Fault History Fault History F4-Fault History Log [1.10 Diagnostics] Fault History Fault History Screen Group H F6-Clear Fault History Log [1.10 Diagnostics] Fault History Screen Group H F6-Sclear Fault History Log [1.10 Diagnostics] Fault History State H F6-Clear Fault History Log [1.3 Modbus Network or CANpeen (other comms options when additional comms cards are fitted.) Nodbus Serial Communications Communications [1.9 Modbus network (Md1) Modbus network (Md1) Subgroup H4 – H42-Asc Identification Number [1.9 Communication] Modbus setwork (Md1) Subgroup H4 – H42-Asc Identification Number [1.9 Communication]		Resistor		calculated by the drive
Screen Group F - Fault History F-Fault Display Screen [1.10 Diagnostics] Fault History Screens F1-Fault History Log [1.10 Diagnostics] Fault History F2-Fault History Log [1.10 Diagnostics] Fault History F3-Fault History Log [1.10 Diagnostics] Fault History F4-Fault History Log [1.10 Diagnostics] Fault History F4-Fault History Log [1.10 Diagnostics] Fault History F4-Fault History Log [1.10 Diagnostics] Fault History F5-Fault History Log [1.10 Diagnostics] Fault History F6-Clear Fault History Log [1.10 Diagnostics] Fault History Screen Group H - Serial Communications [1.9 Communication] Modbus Network or CANopen (other comms options when additional communication] Subgroup H3 - Modbus Carriet H3a-Modbus Serial Communication [1.9 Communication] Subgroup H4 - Devicenet Communication [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication H44-Devicenet Reference Source [1.6 Command] Modbus network (Md1) Subdroup I- H44-Devicenet Reference Source [1.6 Command] Cmd Channel 1 (Cd1) > HM Suree H44-Devicenet Referenc				once the resistor power
Screen Group F - Fault History F-Fault Display Screen [1.10 Fault History Screens F1-Fault History Log [1.10 Fault History F2-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F2-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F5-Fault History Log [1.10 Fault History F6-Clear Fault History Log [1.10 Fault History F6-Clear Fault History Log [1.10 Fault History F6-Clear Fault History Log [1.9 Communication Timeout [1.9 Modbus Network or Communications Communications Modbus Network or Communications [1.9 Communication Badrate H3c-Modbus Serial Communication Communications [1.9 Communication Badrate H4c-Assembly Coupt [1.9 Communication [1.9 Modbus network (Md1) Subgroup H4 - H4a-Mac Identification Nodbus format (IFO) Number Communication [1.9 Modbus sterwork (Md1) Subgroup I4 H4c-Devicene				and ohmic value are
Screen Group F- Fault History F-Fault Display Screen [1.10 Diagnostics] Fault History Screens F1-Fault History Log [1.10 Diagnostics] Fault History F2-Fault History Log [1.10 Diagnostics] Fault History F3-Fault History Log [1.10 Diagnostics] Fault History F4-Fault History Log [1.10 Diagnostics] Fault History F5-Fault History Log [1.10 Diagnostics] Fault History F6-Clear Fault History [1.10 Diagnostics] Fault History Screen Group H - Serial F6-Clear Fault History Communication H2-Serial Communication [1.9 Communication Modbus Network or Subgroup H3 - Modbus H3a-Modbus Serial Communication [1.9 Communication Modbus network (Md1) > Modbus network (Md1) Subgroup H4 - Devicenet [1.9 Communication Mach Ldentification Number [1.9 Communication] H42-Assembly Uput Instance [1.4 Communication] H44-Assembly Uput Instance [1.6 Command] H44-Devicenet Communication [1.6 Command] M44-Devicenet Interface Status [1.6 Command] Inputs [1.7 Application Number [1.7 Application N				entered.
Pault History F1-Fault History Log Diagnostics] Fault History F2-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F6-Clear Fault History [1.10 Fault History Communications F6-Clear Fault History [1.9 Communications [1.9 Communication] Parameters H2-Serial [1.9 Communications [1.9 Communication] Address [1.9 Communication] Address [1.9 Communication] Parameters H36-Modbus Serial Communication] Subgroup H4 – H4-Aasc Identification [1.9 Communication H42-Assembly Output Instance [1.9 H44-Devicenet Communication] Modbus network (Md1) Subgroup H4 – H4-Devicenet Communication] H44-Devicenet Interface Status [1.6 H44-Devicenet Refere	Screen Group F –	F-Fault Display Screen	[1.10	Fault History
Screens F1-Fault History Log [1.10 Fault History F2-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F5-Fault History Log [1.10 Fault History F6-Clear Fault History Log [1.10 Fault History F6-Clear Fault History Log [1.9 Communication Communications F6-Clear Fault History - Fault H1-Select Serial [1.9 Communication Protocol to Use [1.9 Modbus Network or Communications [1.9 Communication] Address [1.9 Modbus Network (Md1) Subgroup H4 - Baudrate [1.9 Modbus active (Md1) Subgroup H4 - H42-Assembly Output Instance [1.9 Communication] H44-Assembly Number [1.9 Communication] Modbus serial (W3A3309) is fitted. Communication H44-Devicenet Intefrace Staus [1.6 Command]	Fault History		Diagnostics	
F2-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F3-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F5-Fault History Log [1.10 Fault History F5-Fault History Log [1.10 Fault History Screen Group H F6-Clear Fault History Fault History - Serial Protocol to Use Communication H2-Serial [1.9 Communication Communication Timeout [1.9 Subgroup H3 - H3a-Modbus Serial Communication Communication Baudrate [1.9 H3b-Modbus Serial Communication Communication [1.9 Modbus network (Md1) Subgroup H4 - Had-Mac Identification Modbus network (Md1) Number Communication [1.9 Communication Baud Communication Modbus network (Md1) Number Communication Modbus network (Md1) Nodbus network (Md1) Subgroup Is listed	Screens	F1-Fault History Log	[1.10 Diagnostics]	Fault History Fault
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F3-Fault History Log [1.10 Fault History F4-Fault History Log [1.10 Fault History F5-Fault History Log [1.10 Fault History F6-Clear Fault History Log [1.9 Communications Protocol to Use [1.9 Communications H2-Serial Communications [1.9 Modbus network (Md1) Communications [1.9 Modbus network (Md1) Subgroup H3 - H3a-Modbus Serial Communications Modbus network (Md1) Communications [1.9 Modbus network (Md1) Communications [1.9 Modbus serial Communication] Subgroup H4 - H3a-Modbus Serial Communications Modbus network (Md1) Selection H4a-Mac Identification Number [1.9 Modbus network (Md1) Subgroup H4 - H4b-Devicenet Communications Modbus network (Md1) Modbus network (Md1) Subgroup H4 - H4b-Devicenet Interface Starus [1.6 Command] Modbus network (Md1) Modbu			Diagnostics1	> Fault
Screen Group H - Serial Communication F4-Fault History Log Diagnostics] [1.10 Diagnostics] > Fault Fault History Screen Group H - Serial Communications F6-Clear Fault History Log [1.9 Communication] Modbus Network or CANopen (other comms options when additional communication] Subgroup H3 - Modbus H2-Serial Communications [1.9 Communications Modbus network (Md1) Subgroup H3 - Modbus H3-Modbus Serial Communications [1.9 Communications Modbus network (Md1) Subgroup H4 - Devicenet H3-Modbus Serial Communications [1.9 Communications Modbus network (Md1) Subgroup H4 - Devicenet H42-Devicenet Communication Baud Rate [1.9 Communication Modbus network (Md1) Subgroup H4 - Devicenet H42-Assembly Input Instance [1.9 Communication Modbus network (Md1) Subgroup I1- Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > H40-Devicenet I1-Local Start/Stop and Reset Control Cmd Channel 1 (Cd1) > HMI		F3-Fault History Log	[1.10	Fault History
Screen Group H F4-Fault History Log [1.10 Fault History F5-Fault History Log [1.10 Fault History Diagnostics] F6-Clear Fault History [1.10 Screen Group H - Serial F6-Clear Fault History [1.9 Communications H1-Select Serial [1.9 Communication] Nodbus H2-Serial [1.9 Modbus Network or Communication H3a-Modbus Serial [1.9 Modbus network (Md1) Communication H3b-Modbus Serial [1.9 Modbus network (Md1) Communications H3b-Modbus Serial [1.9 Modbus network (Md1) Communication H3b-Modbus Serial [1.9 Modbus network (Md1) Subgroup H4 - H3e-Modbus Parity [1.9 Modbus network (Md1) Subgroup H4 - H4e-Mac Identification [1.9 Modbus network (Md1) Number Modbus Parity [1.9 Modbus network (Md1) Subgroup H4 - H4e-Devicenet [1.9 Communication] Nodbus network (Md1) Number H4e-Devicenet [1.9 Communication] Modbus network (Md1) Surce			Diagnostics]	> Fault
Screen Group H F5-Fault History Log [1.10 Fault Fault Screen Group H H1-Select Serial [1.9 Communication] Modbus Network or Communication Protocol to Use [1.9 Communication] Modbus Network or Subgroup H3 - Modbus Serial [1.9 Communication] Modbus Network (Md1) Subgroup H3 - Modbus Serial [1.9 Communication] Modbus network (Md1) Subgroup H3 - Madress [1.9 Communication] Modbus network (Md1) Communication Address [1.9 Communication] Modbus network (Md1) Subgroup H4 - H3-Modbus Serial [1.9 Modbus network (Md1) Modbus network (Md1) Subgroup H4 - H4-Mac Identification [1.9 Modbus network (Md1) Modbus network (Md1) Subgroup H4 - H4-Assembly Output Instance [1.9 Communication] Modbus network (Md1) Instance H4-Devicenet Reference Source [1.4 Channel 1 (Cd1) N////////////////////////////////////		F4-Fault History Log	[1.10	Fault History
Screen Group H F5-Fault History Log [1.10 Fault History Screen Group H H1-Select Serial [1.9 Modbus Network or CANopen (other comms options when additional comms cards are fitted.) Subgroup H3 - H2-Serial [1.9 Communications Modbus Communication Timeout [1.9 Modbus Network (Md1) Subgroup H3 - H3-Modbus Serial [1.9 Modbus network (Md1) Communication Communications [1.9 Modbus network (Md1) Communications H3-Modbus Serial [1.9 Modbus network (Md1) Communications Baudrate [1.9 Modbus network (Md1) Subgroup H4 - H3-Mac Identification [1.9 Modbus network (Md1) Subgroup H4 - H4-Ada Identification [1.9 Modbus network (Md1) Subgroup H4 - H4-Ada Identification [1.9 Modbus network (Md1) Selection H4-Ada Identification [1.9 Modbus network (Md1) Number Communication Baud [1.4 Mada Secret Common Card (W3A3309) is fitted. Parameters H4-Devicenet [1.6 Command] Cmd Channel 1 (Cd1) H4-Devicenet H4e			Diagnostics]	> Fault
Screen Group H - Serial Communications F6-Clear Fault History Log Diagnostics] > Fault You cannot clear the fault list Modbus Communications Communication Parameters H1-Select Serial Protocol to Use [1.9 Communication] Modbus Network or CANopen (other comms options when additional comms cards are filted.) Subgroup H3 - Modbus Communication Parameters H2-Serial Communications Timeout [1.9 Communication] Modbus Network (Md1) Subgroup H3 - Modbus Communication Parameters H3a-Modbus Serial Communications H3b-Modbus Serial Communications Buddrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Screen Group I- Inputs H4-Devicenet Reference Source H4f-Devicenet Reference Source [1.6 Command] Reset Control Source Cmd Channel 1 (Cd1) > HM Screen Group I- Inputs I1-Local Start/Stop and Reset Control Source [1.6 Command] [1.6 Command] Cmd Channel 1 (Cd1) > HM		F5-Fault History Log	[1.10	Fault History
Screen Group H - Serial Communications F6-Clear Fault History Log You cannot clear the fault list Modbus Retwork or Communications F1-Select Serial Protocol to Use I1.9 Subgroup H3 - Modbus Communication H2-Serial Communications I1.9 Subgroup H3 - Modbus Communication H3a-Modbus Serial Communications I1.9 Subgroup H3 - Modbus Communication H3a-Modbus Serial Communications I1.9 Subgroup H4 - Devicenet H3a-Modbus Serial Communications I1.9 Subgroup H4 - Devicenet H3a-Modbus Serial Communications I1.9 Subgroup H4 - Devicenet H3a-Modbus Parity Selection I1.9 Subgroup H4 - Devicenet H4a-Mac Identification Number I1.9 Communication I1.9 Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number I1.9 Communication H4b-Devicenet Reference Source I1.4 H4t-Devicenet H4f-Devicenet Reference Source I1.6 H4f-Devicenet I1.6 Cmmand] Inputs I2-Speed Reference Source I1.7 Torque Control Source I3-Torque Reference Torque Control Torque Control			Diagnostics]	> Fault
Screen Group H - Serial Communications H1-Select Serial Protocol to Use [1.9 Communication] Modbus Network or CANopen (other comms options when additional comms cards are fitted.) Subgroup H3 - Modbus H2-Serial Communications Timeout [1.9 Communication] Modbus network (Md1) Subgroup H3 - Modbus H3a-Modbus Serial Communications Address [1.9 Communication] Modbus network (Md1) Parameters H3b-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H4a-Mac Identification Number [1.9 Communication Baud Rate Modbus network (Md1) Screen Group I- Inputs H4c-Assembly Input Instance [1.6 Command] Crmd Channel 1 (Cd1) H4-Devicenet Interface Status [1.6 Command] Crmd Channel 1 (Cd1) HMI I2-Speed Reference Source [1.7 Application] Torque Control Torque Control	·	F6-Clear Fault History		You cannot clear the
Screen Group H - Serial Communications H1-Select Serial Protocol to Use [1.9 Communication] Modbus Network or CANopen (other comms options when additional comms cards are fitted.) Subgroup H3 - Modbus Communication Parameters H3-Modbus Serial Communications H3D-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H3-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H3-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H4-Mac Identification Number [1.9 Communication] Modbus network (Md1) Screen Group I- Inputs H4-Devicenet Reference Source [1.6 Command] Reset Control Source Cmd Channel 1 (Cd1) > HMI Screen Group I- Inputs I1-Local Start/Stop and Reset Control Source [1.6 Command] Ref. 1 Channel (Fr1) Cmd Channel 1 (Cd1) > HMI		Log		fault list
- Serial Communications Protocol to Use Communication] CANopen (other comms options when additional comms cards are fitted.) Subgroup H3 – Modbus Communication Parameters H2-Serial Communications Timeout [1.9 Communication] Modbus network (Md1) Subgroup H3 – Modbus Communication Parameters H3a-Modbus Serial Communications Address [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H3c-Modbus Parity Selection [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H4a-Sesembly Input Instance [1.9 Communication] Modbus network (Md1) H4c-Assembly Uuput Instance H4d-Assembly Output Instance [1.6 Command] Cmd Channel 1 (Cd1) H4f-Devicenet Reference Source [1.6 Command] Cmd Channel 1 (Cd1) HMI I2-Speed Reference Source [1.7 Application] Torque Control Torque Control Surce I3-Torque Reference Source [1.7 Application] Torque Control Torque Control	Screen Group H	H1-Select Serial	[1.9	Modbus Network or
Communications H2-Serial Communications Timeout [1.9 Communication] Modbus network (Md1) Subgroup H3 - Modbus Communication Parameters H3a-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) H3b-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H3c-Modbus Serial Communications Baudrate [1.9 Communication] Subgroup H4 - Devicenet Communication Parameters H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Baud Rate H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) H4b-Devicenet H4b-Devicenet H4f-Devicenet Interface Status [1.6 Command] Only visible when the Device/Net Comms Card (VW3A3309) is fitted. Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > HMI I2-Speed Reference Source [1.7 Application Function] Ref.1 Channel (Fr1)	- Serial	Protocol to Use	Communication]	CANopen (other comms
Subgroup H3 - Modbus H2-Serial Communications Timeout [1.9 Communication] Modbus network (Md1) Subgroup H3 - Modbus H3a-Modbus Serial Communications Address [1.9 Communication] Modbus network (Md1) Parameters H3a-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H3c-Modbus Parity Selection [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Succe H4d-Assembly Input Instance [1.9 Communication] Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. Screen Group I- Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > HMI I2-Speed Reference Source I3-Torque Reference [1.7 Application] Torque Control Surce I3-Torque Reference Surce Torqu	Communications		_	options when additional
Subgroup H3 - H2-Serial [1.9 Modbus network (Md1) Modbus H3a-Modbus Serial Communications Modbus network (Md1) Communication H3a-Modbus Serial Communication] Modbus network (Md1) Parameters H3b-Modbus Serial Communication] Modbus network (Md1) Parameters H3b-Modbus Serial Communication] Modbus network (Md1) Subgroup H4 - H3c-Modbus Parity Selection I.9 Modbus network (Md1) Subgroup H4 - Number H4b-Devicenet Modbus network (Md1) Modbus network (Md1) Subgroup H4 - Number H4b-Devicenet Communication] Modbus network (Md1) Parameters H4b-Devicenet Communication I.9 Only visible when the Devicenet Communication Baud Rate H4c-Assembly Input Instance H44-Devicenet H4f-Devicenet H4f-Devicenet Cmd Channel 1 (Cd1) H4f-Devicenet I1-Local Start/Stop and Ref.1 Channel 1 (Cd1) Inputs I3-Torque Reference Source I1.6 Command] Torque Control Source I3-Torque Reference Source <t< th=""><th></th><th></th><th></th><th>comms cards are fitted.)</th></t<>				comms cards are fitted.)
Subgroup H3 - Modbus Communications Timeout Communication] > Modbus time out (tt0) Subgroup H3 - Modbus H3a-Modbus Serial Communications Baudrate I1.9 Communication] Modbus network (Md1) Parameters H3b-Modbus Serial Communications Baudrate I1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H3c-Modbus Parity Selection I1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number I1.9 Communication] Modbus network (Md1) Selection H4b-Devicenet Communication Baud Rate I1.9 Communication] Modbus network (Md1) H4b-Devicenet Communication Baud Rate H4b-Devicenet Communication Baud Rate Instance Instance H4d-Assembly Output Instance H4f-Devicenet Reference Source In-Local Start/Stop and Reset Control In-Local Start/Stop and Reset Control Cmd Channel 1 (Cd1) > HMI I2-Speed Reference Source I3-Torque Reference Source I1.6 Command] Ref.1 Channel (Fr1) Torque Reference Source Torque Control Torque Control		H2-Serial	[1.9	Modbus network (Md1)
Subgroup H3 - Modbus Communication Parameters Timeout H3a-Modbus Serial Communications Address [1.9 Communication] Modbus network (Md1) Parameters H3b-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H3c-Modbus Parity Selection [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Communication Parameters H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Modbus Serial Communication Communication] Modbus network (Md1) Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Instance H4d-Assembly Input Instance [1.9 Communication] Modbus format (tFO) H4f-Devicenet Reference Source H4f-Devicenet Reference Source [1.6 Command] Cmd Channel 1 (Cd1) H4f-Devicenet Interface Status I1-Local Start/Stop and Reset Control [1.6 Command] PHMI I2-Speed Reference Source I3-Torque Reference [1.7 Application] Torque Control		Communications	Communication]	> Modbus time out (ttO)
Subgroup H3 - Modbus Communications Parameters H3a-Modbus Serial Communications Address [1.9 Communication] Modbus network (Md1) Parameters H3b-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H3c-Modbus Parity Selection [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) H4b-Devicenet Communication Baud Rate [1.9 Communication] Modbus network (Md1) H4c-Assembly Input Instance Instance [1.9 Communication] Modbus network (Md1) H4f-Devicenet H4f-Devicenet (VW3A3309) is fitted. (VW3A3309) is fitted. Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.7 Application] Torque Control Source I3-Torque Reference Source [1.7 Application] Torque Control		Timeout	_	
Modbus Communication Parameters Communications Address Communication] H3b-Modbus Serial Communications Baudrate Communication] (1.9 Communication] > Modbus Address (Add) Subgroup H4 - Devicenet Communication Parameters H3c-Modbus Parity Selection Communication] (1.9 Communication] Modbus network (Md1) > Modbus network (Md1) Subgroup H4 - Devicenet Communication Parameters H4a-Mac Identification Number In.9 Communication] Modbus network (Md1) Subgroup H4 - Devicenet Communication Baud Rate H4a-Mac Identification Number In.9 Communication] Modbus network (Md1) H4a-Mac Identification Number H4a-Sevicenet Communication Baud Rate In.9 Communication] Modbus network (Md1) H4a-Devicenet Communication Baud Rate H4c-Assembly Input Instance In.9 Communication] Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. H4d-Assembly Output Instance H4d-Assembly Output Instance Instance Interface Status Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > HMI Isource I3-Torque Reference Source [1.7 Application] Torque Control > Torque Control	Subgroup H3 –	H3a-Modbus Serial	[1.9	Modbus network (Md1)
Communication Parameters Address H3b-Modbus Serial Communications Baudrate [1.9 Communication] Subgroup H4 – Devicenet Communication Parameters H4a-Mac Identification Number [1.9 Communication] H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) > Modbus format (tFO) Only visible when the Devicenet Communication Baud Rate [1.9 Communication] Modbus network (Md1) H4c-Assembly Input Instance H4d-Assembly Output Instance [1.9 Communication] Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. Screen Group I - Inputs H4-Devicenet Reference Source [1.6 Command] Cmd Channel 1 (Cd1) > HMI Is-Torque Reference Source I3-Torque Reference Source [1.7 Application Function] Torque Control > Torque Control	Modbus	Communications	Communication]	> Modbus Address (Add)
Parameters H3b-Modbus Serial Communications Baudrate [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H3a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Subgroup H4 – Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Communication Parameters H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) H4b-Devicenet Communication Baud Rate H4c-Assembly Input Instance [1.9 Communication] Modbus network (Md1) H4d-Assembly Input Instance H4d-Assembly Output Instance [1.9 Communication] Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. Screen Group I - Inputs H4f-Devicenet Reference Source [1.6 Command] Cmd Channel 1 (Cd1) > HMI I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > HMI I2-Speed Reference Source [1.7 Application] Torque Control Source I3-Torque Reference [1.7 Application] Torque Control	Communication	Address		
Subgroup H4 – Devicenet H3c-Modbus Parity Selection Communication] > Modbus baud rate (tbr) Subgroup H4 – Devicenet H4a-Mac Identification Number [1.9 Communication] Modbus network (Md1) Communication Parameters H4a-Mac Identification Number [1.9 Communication] Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. H4c-Assembly Input Instance H4c-Assembly Output Instance Instance H4f-Devicenet Reference Source H4f-Devicenet Reference Source H4f-Devicenet Reference Source [1.6 Command] Cmd Channel 1 (Cd1) > HMI I1-Local Start/Stop and Reset Control [1.6 Command] Ref.1 Channel (Fr1) I2-Speed Reference Source [1.7 Application] Torque Control I3-Torque Reference Source [1.7 Application] Torque Control	Parameters	H3b-Modbus Serial	[1.9	Modbus network (Md1)
Baudrate H3c-Modbus Parity Selection [1.9 Modbus network (Md1) Subgroup H4 – Devicenet H4a-Mac Identification Number [1.9 Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. Communication Parameters H4b-Devicenet Communication Baud Rate Communication] DeviceNet Comms Card (VW3A3309) is fitted. H4c-Assembly Input Instance H4c-Assembly Output Instance Fitted. Command] H4e-Devicenet Control Source H4f-Devicenet Reference Source Interface Status Interface Status Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > HMI I2-Speed Reference Source I3-Torque Reference [1.7 Application Function] Torque Control		Communications	Communication]	> Modbus baud rate (tbr)
Subgroup H4 – H3c-Modbus Parity Selection [1.9 Modbus network (Md1) Devicenet H4a-Mac Identification Number [1.9 Only visible when the DeviceNet Comms Card Communication Parameters H4b-Devicenet Communication Baud Rate [1.9 Only visible when the DeviceNet Comms Card H4b-Devicenet Communication] H4c-Assembly Input Instance Instance Instance H4e-Devicenet H4d-Assembly Output Instance H4d-Devicenet Commandiant Commandiant H4f-Devicenet H4f-Devicenet Interface Status Interface Status Cmd Channel 1 (Cd1) Screen Group I- I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) Inputs I2-Speed Reference Source [1.7 Application Torque Control		Baudrate		
Subgroup H4 – Devicenet Selection Communication Number > Modbus format (tFO) Communication Parameters H4a-Mac Identification Number [1.9 Only visible when the DeviceNet Comms Card (VW3A3309) is fitted. Parameters H4b-Devicenet Communication Baud Rate Communication] > Modbus format (tFO) H4c-Assembly Input Instance H4c-Assembly Input Instance Instance Instance H4f-Devicenet Reference Source H4f-Devicenet Interface Status Instance Instance Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) > HMI I2-Speed Reference Source I3-Torque Reference [1.7 Application Source Torque Control > Torque Control		H3c-Modbus Parity	[1.9	Modbus network (Md1)
Subgroup H4 - H4a-Mac Identification [1.9 Only visible when the Devicenet Number Communication] H4b-Devicenet Communication] Parameters H4b-Devicenet Communication Baud Rate DeviceNet Comms Card (VW3A3309) is fitted. H4c-Assembly Input Instance H4d-Assembly Output Instance H4d-Assembly Output H4e-Devicenet Control H4e-Devicenet Control Efference Source H4f-Devicenet H4g-Devicenet Interface Status [1.6 Command] Cmd Channel 1 (Cd1) Inputs I1-Local Start/Stop and [1.6 Command] Cmd Channel 1 (Cd1) Screen Group I - I2-Speed Reference [1.6 Command] Ref.1 Channel (Fr1) Inputs I3-Torque Reference [1.7 Application Torque Control		Selection	Communication]	> Modbus format (tFO)
Devicenet Communication Parameters Number Communication] DeviceNet Comms Card (VW3A3309) is fitted. Parameters H4b-Devicenet Communication Baud Rate H4c-Assembly Input Instance Impute H4c-Assembly Output Instance Impute H4d-Assembly Output Instance Impute H4d-Assembly Output Instance H4e-Devicenet Control Source H4f-Devicenet Reference Source Impute H4g-Devicenet Interface Status Impute Interface Status	Subgroup H4 –	H4a-Mac Identification	[1.9	Only visible when the
Communication Parameters H4b-Devicenet Communication Baud Rate (VW3A3309) is fitted. H4c-Assembly Input Instance H4c-Assembly Output Instance (VW3A3309) is fitted. H4d-Assembly Output Instance H4d-Assembly Output Instance (VW3A3309) is fitted. H4d-Assembly Output Instance H4d-Assembly Output Instance (VW3A3309) is fitted. H4e-Devicenet Control Source H4f-Devicenet Reference Source (VW3A3309) is fitted. H4g-Devicenet Interface Status (Instance) (Instance) Inputs I1-Local Start/Stop and Reset Control [1.6 Command] I2-Speed Reference Source [1.6 Command] Cmd Channel 1 (Cd1) > HMI Ref.1 Channel (Fr1) Source [1.7 Application Source Torque Control > Torque Ref Channel	Devicenet	Number	Communication]	DeviceNet Comms Card
Parameters Communication Baud Rate H4c-Assembly Input Instance H4c-Assembly Output Instance H4d-Assembly Output Instance H4d-Assembly Output Instance H4e-Devicenet Control Source H4f-Devicenet Control Source H4f-Devicenet Reference Source H4f-Devicenet Interface Status Screen Group I - Inputs I1-Local Start/Stop and Reset Control I2-Speed Reference Source [1.6 Command] I2-Speed Reference Source [1.7 Application Function]	Communication	H4b-Devicenet		(VW3A3309) is fitted.
Rate H4c-Assembly Input Instance H4d-Assembly Output Instance H4d-Assembly Output Instance H4e-Devicenet Control Source H4f-Devicenet Reference Source H4g-Devicenet Interface Status I1-Local Start/Stop and Reset Control I2-Speed Reference Source I3-Torque Reference Source	Parameters	Communication Baud		
H4c-Assembly Input Instance H4d-Assembly Output Instance H4d-Assembly Output Instance H4d-Assembly Output Instance H4e-Devicenet Control Source H4e-Devicenet Control Source H4f-Devicenet Reference Source H4g-Devicenet Interface Status H4g-Devicenet Interface Status [1.6 Command] I1-Local Start/Stop and Reset Control [1.6 Command] I2-Speed Reference Source [1.6 Command] I3-Torque Reference Source [1.7 Application Function]		Rate		
Instance H4d-Assembly Output Instance H4d-Assembly Output Instance H4e-Devicenet Control Source H4f-Devicenet Reference Source H4g-Devicenet Interface Status I1-Local Start/Stop and Reset Control I2-Speed Reference Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source		H4c-Assembly Input		
H4d-Assembly Output Instance H4d-Assembly Output Instance H4e-Devicenet Control Source H4f-Devicenet Control Source H4f-Devicenet Reference Source H4f-Devicenet Interface Status H4g-Devicenet Interface Status [1.6 Command] Screen Group I - Inputs I1-Local Start/Stop and Reset Control I2-Speed Reference Source [1.6 Command] Ref.1 Channel (Fr1) Source [1.7 Application Function]		Instance		
Instance H4e-Devicenet Control Source H4f-Devicenet Reference Source H4g-Devicenet Interface Status Inputs I1-Local Start/Stop and Reset Control I2-Speed Reference Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source		H4d-Assembly Output		
H4e-Devicenet Control Source H4f-Devicenet Reference Source H4f-Devicenet Reference Source H4g-Devicenet Interface Status Screen Group I - Inputs I1-Local Start/Stop and Reset Control [1.6 Command] I2-Speed Reference Source [1.6 Command] Ref.1 Channel 1 (Cd1) > HMI I3-Torque Reference Source [1.7 Application Function] Torque Control > Torque Ref. Channel		Instance		
Source H4f-Devicenet Reference Source H4g-Devicenet Interface Status I1-Local Start/Stop and Inputs I1-Local Start/Stop and Reset Control I1-6 Command] I2-Speed Reference I1-6 Command] Source I1-7 Application I3-Torque Reference I1-7 Application Source Function]		H4e-Devicenet Control		
Screen Group I - Inputs H4f-Devicenet Reference Source H4g-Devicenet Interface Status H4g-Devicenet Interface Status 11-Local Start/Stop and Reset Control [1.6 Command] I2-Speed Reference Source [1.6 Command] I3-Torque Reference Source [1.7 Application Function]		Source		
Reference Source H4g-Devicenet Interface Status I1-Local Start/Stop and Reset Control I2-Speed Reference Source I3-Torque Reference Source Source I3-Torque Reference Source I3-Torque Reference Source I3-Torque Reference Source Source Source Source Source Source III-Torque Reference III-Torque Reference III-Torque Reference Reference III-Torque Reference Source		H4t-Devicenet		
Screen Group I - Inputs H4g-Devicenet Interface Status [1.6 Command] Cmd Channel 1 (Cd1) > HMI I1-Local Start/Stop and Reset Control [1.6 Command] > HMI I2-Speed Reference Source [1.6 Command] Ref.1 Channel (Fr1) I3-Torque Reference Source [1.7 Application Function] Torque Control		Reference Source		
Screen Group I - Inputs Interface Status [1.6 Command] Cmd Channel 1 (Cd1) > HMI Inputs I1-Local Start/Stop and Reset Control [1.6 Command] > HMI I2-Speed Reference Source [1.6 Command] Ref.1 Channel (Fr1) I3-Torque Reference Source [1.7 Application Function] Torque Control		H4g-Devicenet		
Inputs In-Local Star/Stop and Reset Control [1.6 Command] Cmd Channel 1 (Cd1) Inputs I2-Speed Reference Source [1.6 Command] > HMI I3-Torque Reference Source [1.7 Application Function] Torque Control	Soroon Crown I			Cmd Channel 1 (Cd1)
I2-Speed Reference [1.6 Command] Ref.1 Channel (Fr1) I3-Torque Reference [1.7 Application Torque Control Source Function] > Torque Ref. Channel	Inputs	Reset Control		SHMI
Source [1.0 Command] Net. 1 Channel (FT) I3-Torque Reference [1.7 Application Torque Control Source Function] > Torque Ref. Channel	inputo	12-Speed Reference	[1.6 Command]	Ref 1 Channel (Fr1)
I3-Torque Reference [1.7 Application Torque Control Source Function] > Torque Ref. Channel		Source		
Source Function > Torque Ref Channel		13-Torque Reference	[1.7 Application	Torque Control
		Source	Function]	> Torque Ref. Channel



Elite		Altivar 71	
	I4-Alternative Speed	[1.6 Command]	Ref.2 Channel (Fr2)
	I5-Alternative Torque		No equivalent feature
	Reference Source		······
Subgroup I6 –	I6a-Analogue Input 1	[1.5 Input/Outputs	Al1 is not configurable
Analogue Inputs	Format		and is fixed at 0 to 10V
	Low Setpoint	CFG1	$\rightarrow \Delta I1 \Delta ssignment (\Delta I1)$
		0.0]	> Al1 min value (UIL1)
	I6c-Analogue Input 1	[1.5 Input/Outputs	Al1 Configuration (Al1)
	High Setpoint	CFG]	> AI1 Assignment (AI1)
			> Al1 max value (UIH1)
	l6d-Analogue Input 2 Format	[1.5 Input/Outputs CFG]	Al2 Configuration (Al2) > Al2 Type (Al2t)
	I6e-Analogue Input 2	[1.5 Input/Outputs	AI2 Configuration (AI2)
	Low Setpoint	CFG]	> AI2 Assignment (AI2)
			> Al2 min. value (CrL2)
			depends on mA /
			voltage assignment
	l6f-Analogue Input 2	[1.5 Input/Outputs	Al2 Configuration (Al2)
	High Setpoint	CFG]	> AI2 Assignment (AI2)
			> Al2 max. value $(CrH2)$ or $(HH2)$
			selection depends on
			mA / voltage
			assignment
	I6g-Zero Band of +/- 2	[1.5 Input/Outputs	Reference template
	% for Analogue Input	CFGj	(DP) > Deadband (bnS)
Subgroup I7 –	I7a-Multi-Function Input	[1.1 Simply Start]	Macro configuration
Digital Inputs	Mode Selection		(CFG)
	I7b-Multi-Function Input		Input inversion via logic
			terminal card
	I7c-Multi-Function 1	[1.3 Settings]	Logic inputs are
	Input Selections (T13)		assignable through
	I7d-Multi-Function 2		either macro-
	Input Selections (114)		menu specific
	Input Selections (T15)		assignment e.g. fault
	I7f-Multi-Function 4		reset via menu 1.8
	Input Selections (T16)		Fault Management.
	I7g-Multi-Function 5		
	The Multi-Euroption 6		
	Input Selections (T18)		
Subgroup I8 –	18a-Fibre Input Low		The ATV71 does not
Fibre Optic Input	Setpoint		support fibre media
	18b-Fibre Input High		The ATV71 does not
	Selpoint I8c-Fibre Ontic Control		The AT//71 does not
	Mode Selection		support fibre media
	18d-Fibre Optic Timeout		The ATV71 does not
	Period		support fibre media
Screen Group L - Limits	L2-Minimum Speed	[1.3 Settings]	Low speed (LSP)



Elite		Altivar 71	
	L3-Maximum Speed	[1.3 Settings]	High speed (HSP)
	L4-Minimum Torque	[1.7 Application	Torque Limitation (tOL)
		Function]	> Gen. torque lim (tLIG)
	L5-Maximum Torque	[1.7 Application	Torque Limitation (tOL)
		Function]	> Motoring torque lim
			(tLIN)
	L6-Speed Limit Timeout		No equivalent feature
	L7-Torque Limit		Torque or I Lim. Detect.
			> I rq/I limit. time out
	L8-Regeneration Limit		Equivalent function in the
			ATV71 Uses DB Res.
			the 1.8 Fault
			Management menu and
			Braking level in the 1.4
			Motor Control menu.
	L9-Current Limit	[1.3 Settings]	Current limitation (CLI)
	L10-Skip Speed 1		No equivalent feature
	L11-Skip Speed 2		No equivalent feature
	L12-Skip Bandwidth	-	No equivalent feature
	L13-Ground Current		No equivalent feature
	Limit		
	L14-Run at Minimum	[1.3 Settings]	Low speed time out (tLS)
Concern Onesen M	Speed	Id 7 Annelis stien	
Screen Group M-	Setpoint 1	[1.7 Application	Preset speed 2 (SP2)
Setnoints	M2-Multi-Reference	[1 7 Application	Preset speed 3 (SP3)
octpoints	Setpoint 2	Function]	
	M3-Multi-Reference	[1.7 Application	Preset speed 4 (SP4)
	Setpoint 3	Function]	
	M4-Multi-Reference	[1.7 Application	Preset speed 5 (SP5)
	Setpoint 4	Function]	
	M5-Multi-Reference	[1.7 Application	Preset speed 6 (SP6)
	Me Multi Poforonco	Function	Procet speed 7 (SP7)
	Setpoint 6	Function	riesel speed 7 (Sr7)
	M7-Multi-Reference	[1.7 Application	Preset speed 8 (SP8)
	Setpoint 7	Function]	
Screen Group N-	N1-Rated (Nameplate)	[1.1 Simply	Rated mot. current
Motor Nameplate	Motor Current	Start]	(NCr)
Data	N2-Rated (Nameplate)	[1.1 Simply	Rated motor volt. (UnS)
	Motor Voltage	Start]	
	N3-Rated (Nameplate)	[1.1 Simply Stort]	Rated motor freq. (FrS)
	NA Rated (Namoplate)	Startj [1.1.Simply	Patad matar power (pPr)
	Motor Power	Start1	Rated motor power (IIPT)
	N5-Rated (Nameplate)	[1.1 Simply	Rated motor speed (nSP)
	Motor Speed	Start]	
	N6-Motor Cooling at	[1.8 Fault	Motor thermal prot.(tHt)
	Zero Speed	Management]	> Motor protect. type (tHt)
	N8-Pulses per	[1.4 Motor	Number of pulses (PGI)
	Revolution of Tacho	Control]	
	Encoder		
	of Encoder	[1.4 Wotor	Encoder type (Ens)
		Control	



Elite		Altivar 71	
Screen Group O– Outputs	O-Outputs	[1.5 Input/Outputs CFG]	
Subgroup O1 – Analogue	O1a-Analogue Output 1 Source Selection	[1.5 Input/Outputs CFG]	AO1 Configuration (AO1)
Outputs			> AO1 assignment (AO1)
	O1b-Analogue Output 1 Format	[1.5 Input/Outputs CFG]	AO1 Configuration (AO1)
		-	> AO1 Type (AO1t)
	O1c-Analogue Output 1	[1.5 Input/Outputs	AO1 Configuration
	Low Setpoint	CFG]	(AO1)
	O1d-Analogue Output 1	[1.5 Input/Outputs	AO1 Configuration
	High Setpoint	CFG]	(AO1)
			> AO1 max output
			(AOH1)
	Source Selection		analogue output
			available.
	O1f-Analogue Output 2		There is only one
	Format		analogue output
	O1g-Analogue Output 2		available. There is only one
	Low Setpoint		analogue output
		_	available.
	O1h-Analogue Output 2		There is only one
	High Setpoint		analogue output available
Subgroup O2 –	O2a-Relay 1 Control	[1.5 Input/Outputs	R1 Configuration (r1)
Digital Output	Source Selection	CFG]	> R1 Assignment (r1)
Relays	O2b-Invert the Logic of	[1.5 Input/Outputs	R1 Configuration (r1)
	Output Relay 1	CFG]	> R1 Active at (r1S)
	Source Selection	CFG]	 R2 Configuration (12) R2 Assignment (r2)
	O2d-Invert the Logic of	[1.5 Input/Outputs	R2 Configuration (r2)
	Output Relay 2	CFG]	> R2 Active at (r2S)
	Source Selection		relav outputs
			available.
	O2f-Invert the Logic of		There are only 2
	Output Relay 3		relay outputs
	O3a-Fibre Output	-	The ATV71 does not
	Source Selection		support fibre media
Screen Group P –	P1-Process Control	[1.7 Application	PID Regulator
Process Control	Setpoint	Function]	> Act. Internal PID
-	P2-Process Control	[1 7 Application	PID Regulator
	Feedback Source	Function]	> PID feedback ass.
			(PIF)
	P3-Controller Gain	[1.7 Application	PID Regulator
		Function	> רוט prop. gain (rPG)
	P4-Integration Time	[1.7 Application	PID Regulator
	-	Function]	> PID integral gain
			(rIG)



Elite		Altivar 71	
	P5-Differentiation Time	[1.7 Application	PID Regulator
		Function]	> PID derivative gain
			(rdG)
	P6-Process Error	[1.2 Monitoring]	PID error (rPE)
	P7-Invert PID	[1.7 Application	PID Regulator
		Function]	> PID correct. reverse
			(PIC) = Yes
Screen Group R-	R1-Acceleration Rate	[1.3 Settings]	Acceleration (ACC)
Accel / Decel	R2-Deceleration Rate	[1.3 Settings]	Deceleration (dEC)
Rate	R3-Alternative	[1.3 Settings]	Acceleration 2 (AC2)
	Acceleration Rate		
	R4-Alternative Deceleration Rate	[1.3 Settings]	Deceleration 2 (dE2)
_	R5-Break Speed for	[1.7 Application	Ramp (rPt)
	Alternative Accel/Decel	Function]	> Ramp 2 threshold (Frt)
	R6-Deceleration	[1.7 Application	Stop configuration (Stt)
	(Stopping) Rate used	Function]	> Type of stop (Stt) =
	when Stopping		Fast stop (FSt)
			You must set up the
			this is a coefficient that
			is used to divide the
			Dec ramp time.
	R7-Speed S-Curve		The S ramp curve
	Filter Time Constant		coefficient is fixed with
			the ATV71 to change
			use a "Customized"
			ramp.
	R8-Torque Filter Time Constant		No equivalent feature
Screen Group S –	S1-Usual Starting Mode	[1.8 Fault	Catch on the fly (FLr)
Start and Stop		Management]	> Catch on the fly
Modes			(FLr) = Yes
	S2-Usual Stopping Mode	[1.7 Application Function]	Stop Configuration (Stt)
	S4-Alternative Stopping		No equivalent feature
	55-Start Delay Time	[1.5 Input/Outputs	Lix Configuration (LI-)
	S6-Off Delay Time	CFOJ	No equivalent feature
	S7-Mains Power Loss	[1.8 Equit	Catch on the fly (ELr)
	Response	Management]	> Catch on the fly
			(FLr)
	S8-DC Brake Current	[1.7 Application	Auto DC Injection
	Level	Function]	(AdC)
			> Auto DC inj. Level 1
			(SdC1)
	S9-DC Hold Voltage		No equivalent feature
	S10-DC Heat Current		No equivalent feature
	S11-Stop Timeout		No equivalent feature
	S12-Brake Release	[1.7 Application	Brake Logic Control
	IIme	Function	(DLU) > Broke release time
			> Brake release time
			(μπ)



Screen Group X - TuningS13-Pre Torque[1.7 Application Function]Can be achieved either through current or frequency release thresholds in theScreen Group X - TuningX1-Selection of Operating Mode[1.4 Motor Control]Motor control type (Ctt)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Auto-tuning (tUn)X3b-Stator Resistance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3e-Field Weakening Point[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3e-Field Weakening Point[1.4 Motor Control]No equivalent featureX4a-Dynaflux Minimum Flux LevelX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4d-Starting Boost TypeX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent featureNo equivalent feature
Screen Group X - TuningX1-Selection of Operating Mode[1.4 Motor Control]either through current or frequency release thresholds in theSubgroup X3 - Motor TuningX3-Main Inductance[1.4 Motor Control]Auto-tuning (tUn)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]No equivalent featureX3d-Total Leakage[1.4 Motor Control]No equivalent featureX3e-Field Weakening PointNo equivalent featureNo equivalent featureX4a-Dynaflux Minimum Flux LevelX4a-Starting Boost TypeNo equivalent featureX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent feature
Screen Group X - TuningX1-Selection of Operating Mode[1.4 Motor Control]or frequency release thresholds in theSubgroup X3 - Motor TuningX3-Auitotunes Motor[1.4 Motor Control]Auto-tuning (tUn)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]No equivalent featureX3d-Total Leakage[1.4 Motor Control]If w (rSA) Cold state stator resistance.X3e-Field Weakening PointNo equivalent featureX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4c-Starting Boost TypeNo equivalent featureX4c-Starting Goost) Band Adjustment X4f-Rotor Speed PID Loop Proportional GainNo equivalent feature
Screen Group X - TuningIntresholds in the Motor control type (Ctt)Subgroup X3 - Motor TuningX1-Selection of Operating Mode[1.4 Motor Control]Auto-tuning (tUn)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Auto-tuning (tUn)X3b-Stator Resistance X3c-Rotor Resistance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3c-Rotor Resistance X3d-Total Leakage[1.4 Motor Control]R1w (rSA) Cold state stator resistance.Subgroup X4 - Load TuningX4a-Dynaflux Minimum Flux Level[1.4 Motor Control]No equivalent feature No equivalent featureX4c-Starting Boost TypeX4c-Starting Goost) Band AdjustmentNo equivalent feature No equivalent featureNo equivalent feature No equivalent featureNo equivalent feature (Boost) AdjustmentX4f-Rotor Speed PID Loop Proportional GainNo equivalent featureNo equivalent feature
Screen Group X - TuningX1-Selection of Operating Mode[1.4 Motor Control]Motor control type (Ctt)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Auto-tuning (tUn)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3e-Field Weakening Point[1.4 Motor Control]If w (rSA) Cold state stator resistance.X3e-Field Weakening Point[1.4 Motor Control]No equivalent featureX4a-Dynaflux Minimum Flux LevelX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4c-Starting Boost TypeNo equivalent featureNo equivalent featureNo equivalent feature (Boost) AdjustmentNo equivalent featureNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent featureNo equivalent feature
TuningOperating Mode X2-Autotunes MotorControl] [1.4 Motor Control]Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Auto-tuning (tUn)X3b-Stator Resistance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]No equivalent featureX3d-Total Leakage[1.4 Motor Control]If W (LFA) Leakage inductance in mH.X3e-Field Weakening PointNo equivalent featureX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4b-Starting Boost TypeNo equivalent featureX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent feature
X2-Autotunes Motor[1.4 Motor Control]Auto-tuning (tUn)Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3d-Total Leakage[1.4 Motor Control]No equivalent featureX3e-Field Weakening Point[1.4 Motor Control]No equivalent featureX4a-Dynaflux Minimum Flux LevelNo equivalent featureNo equivalent featureX4b-Starting Boost TypeX4c-Starting Torque (Boost) AdjustmentNo equivalent featureNo equivalent featureNo equivalent featureNo equivalent featureNo equivalent featureNo equivalent featureNo equivalent feature (Boost) AdjustmentNo equivalent featureNo equivalent featureNo equivalent feature (Boost) Band AdjustmentNo equivalent featureNo equivalent feature
Subgroup X3 - Motor TuningX3a-Main InductanceControl] [1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]No equivalent featureX3c-Field Weakening Point[1.4 Motor Control]No equivalent featureX3e-Field Weakening PointNo equivalent featureX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4b-Starting Boost TypeNo equivalent featureX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent featureNo equivalent featureNo equivalent feature
Subgroup X3 - Motor TuningX3a-Main Inductance[1.4 Motor Control]Idw (IdA) Magnetizing current in A.X3b-Stator ResistanceX3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor ResistanceX3c-Total Leakage[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3e-Field Weakening PointX3e-Field Weakening Point[1.4 Motor Control]No equivalent featureX4a-Dynaflux Minimum Flux LevelX4b-Starting Boost TypeNo equivalent featureX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent feature
Motor TuningControl]current in A.X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3d-Total Leakage[1.4 Motor Control]No equivalent featureX3e-Field Weakening Point[1.4 Motor Control]If w (rSA) Cold state stator resistance.Subgroup X4 – Load TuningX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4b-Starting Boost TypeNo equivalent featureX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent featureNo equivalent featureNo equivalent feature
X3b-Stator Resistance[1.4 Motor Control]R1w (rSA) Cold state stator resistance.X3c-Rotor ResistanceX3c-Rotor ResistanceNo equivalent featureX3d-Total Leakage[1.4 Motor Control]Lfw (LFA) Leakage inductance in mH.X3e-Field Weakening PointNo equivalent featureX3e-Field Weakening PointNo equivalent featureX4a-Dynaflux Minimum Flux LevelNo equivalent featureX4b-Starting Boost TypeNo equivalent featureX4c-Starting Torque (Boost) AdjustmentNo equivalent featureX4f-Rotor Speed PID Loop Proportional GainNo equivalent feature
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Band Adjustment No equivalent feature X4f-Rotor Speed PID No equivalent feature Loop Proportional Gain Image: Comparison of the second
X4f-Rotor Speed PID Loop Proportional Gain
Loop Proportional Gain
X4g-Rotor Speed PID No equivalent feature
Loop Integral Gain
X4h-Rotor Speed PID No equivalent feature
Loop Derivative Gain
X4i-Flux Boost A No equivalent feature
X4j-Flux Boost B No equivalent feature
X4k-Inertia No equivalent feature
Compensation
Subgroup X5 – X5a-Current Limit Slip No equivalent feature
Controller Tuning Value
X5b-Voltage Limit Slip No equivalent feature
X5c-No Load Damping No equivalent feature
X5d-Enable Slip [1.4 Motor Slip compensation
Compensation Control (SLP)
Erequepcy
X5f-Modualtion Type
X5q-Current PLL oon
Proportional Gan
X5h-Current PLLoop No equivalent feature
Integral Gain
X5i-Rotor Speed Filter No equivalent feature
Constant
Screen Group Y – Y1-Selects Language of [5. Language] Choose language
Menu Options Screen List



Elite		Altivar 71	
	Y2-Selects Level of	[1 12 Eactory	Parameter Group List
	Initialisation of	Settings1	(FrY) To select the
	Parameters and Modes		parameters vou wish
			to return to defaults.
			Go to factory settings
			(GFS) To return the
			selected parameters to
			default settings.
	Y3-Control Program Selection	[1.7 Application Function]	Param. set switching (nLP)
Screen Group Z –	Z-Commissioning Mode	-	Dependent on Access
Commissioning	, i i i i i i i i i i i i i i i i i i i		Level and whether or
Screens			not the configuration
			has been passworded.
	Z1-Commissioning	[4. Password]	Status (CSt) The drive
	Mode Password		can be locked by a
			password
	Z2-Software and	[1.11	Identifies the drive
	Hardware Revision	Identification]	type, optional
	Numbers		hardware and software
			versions
	Z2a-Control Board	[1.11	Identifies the drive
	Serial Number	Identification	type, optional
			nardware and software
	72 Status of Apologue	[1.2 Monitoring]	
			 Analog inputs image (AIA)
	Z4-Status of Analogue	[1.2 Monitoring]	I/O Map (IOM)
	Input 2		> Analog inputs image
			(AIA)
Subgroup X4 –	Z5-Status of Analogue	[1.2 Monitoring]	I/O Map (IOM)
Load Tuning	Output 1		> Analog outputs
			image (AOA)
	Z6-Status of Analogue		There is only one
	Output 2		analogue output
	77 Status of Multi	[4.0 Maniforing]	
	Z7-Status of Multi-	[1.2 Monitoring]	
	Function inputs		> Logic input map
	78-Status of Fibre Ontic		The ATV71 does not
	Input: Status of Serial		support fibre media
	Input		support note media
	Z9-Encoder Count		No equivalent feature
	Z9a-Encoder Speed		No equivalent feature
	Z10-Status of Output	[1.2 Monitoring]	I/O Map (IOM)
	Relays; Status of		> Logic output map
	Dynamic Brake Output		(LOĂ)
	Z11-Fibre Optic Input		The ATV71 does not
	Status		support fibre media
	Z12-Fibre Optic Output		The ATV71 does not
	Status		support fibre media

ATTENTION!! Please note that the above Altivar 71 parameters suggested are approximate equivalents of the Elite parameters and may not have the identical functionality associated with the original Elite parameters.



17. Programming the Altivar 71

Once the Altivar 71 has been mounted and the wiring has been completed the drive is ready for programming^{*}. Throughout the programming stage it is advisable that you refer to the programming manual. Before powering up ensure that the run command is not present. At first power up the drive will automatically display **[5. LANGUAGE]** menu. Once a language has been selected the drive display will then switch to **[2. ACCESS LEVEL]**. Access levels are:-

- <u>BASIC</u> Access is limited to 5 menus only, and access to 6 submenus only in the [1. DRIVE MENU] menu. A single function can be assigned to each input.
- <u>STANDARD</u> This is the factory-set level. Provides access to 6 menus only, and access to all submenus in the [1. DRIVE MENU] menu. A single function can be assigned to each input.
- <u>ADVANCED</u> Access to all menus and submenus. Several functions can be assigned to each input.
- **EXPERT** Access to all menus and submenus as for the [ADVANCED] level, and access to additional parameters. Several functions can be assigned to each input.

Select the access level as required. Once the access level has been selected the display will switch to the [1. DRIVE MENU] and the [1.1 SIMPLY START] menu will be highlighted.

* For a description of the Graphic Display Terminal please refer to Appendix 20.4 (page 22)



18. Typical Elite to Altivar parameter conversions:

The following examples are typical applications that highlight the differences between the Elite and Altivar 71. It is assumed that the operating frequency is 0 to 50Hz in all cases and that all factory default* values that do not require adjustment have been ignored.

* For information regarding factory default settings please refer to Appendix 20.3 (page 21)

18.1 Application example 1: Elite 3 wire control for simple fan speed control

A typical application example is for simple fan speed control using a potentiometer to set 0-10V speed reference, and pushbuttons for start and remote stop control. External speed monitoring is achieved using a simple 0-10V meter representing 0-100% speed.

Elite		Altivar 71	
Subgroup I7 – Digital Inputs	I7a-Multifunction Input Mode	[1.1 Simply Start]	2/3 wire control (tCC) = 3 wire (3C)
	I7a I/P MODE = 01 No Equivalent		Macro configuration (CFG) = Start/Stop
Screen Group N– Motor Nameplate Data	N4-Rated (Nameplate) Motor Power N4 MTR P = Nameplate		(StS) Rated motor power (nPr) = Nameplate
	N2-Rated (Nameplate) Motor Voltage N2 MTR VOLT = Nameplate		Rated motor volt. (UnS) = Nameplate
	N1-Rated (Nameplate) Motor Current N1 MTR CUR = Nameplate		Rated mot. current (nCr) = Nameplate
	N3-Rated (Nameplate) Motor Frequency N3 MTR FR = Nameplate		Rated motor freq. (FrS) = Nameplate
	N5-Rated (Nameplate) Motor Speed N5 MTR RPM = Nameplate		Rated motor speed (nSP) = Nameplate
	No Equivalent		Mot. therm. Current (ItH) = Nameplate (rated motor current)
Screen Group R– Accel / Decel	R1-Acceleration Rate R1 ACC		Acceleration (ACC)
Rates	R2-Deceleration Rate R2 DEC		Deceleration (dEC)
Screen Group L - Limits	L2-Minimum Speed L2 MIN S = 0%		Low speed (LSP) = 0Hz
Soroon Crown I	L3-MAXIMUM Speed ds L3 MAX S = +100%	[1.6.Commond]	High speed (HSP) = 50Hz
Inputs	Reset Control 11 LOCAL S/STOP = 0	[1.6 Command]	= No
	I2-Speed Reference Source I2 REF S = AIN1		Ref.1 Channel (Fr1) = Al1

> denotes parameter is accessed through a submenu structure.



Elite		Altivar 71	
Subgroup I6 – Analogue Inputs	I6a-Analogue Input 1 Format I6a AI1 = 0-10V		Al1 is not configurable and is fixed at 0 to 10V
	I6b-Analogue Input 1 Low Setpoint I6b AI1 LO = 0%	[1.5 Input/Outputs CFG]	Al1 Configuration (Al1) > Al1 Assignment (Al1) > Al1 min value (UIL1) = 0V
	I6c-Analogue Input 1 High Setpoint I6c AI1 HI = +100%		Al1 Configuration (Al1) > Al1 Assignment (Al1) > Al1 max value (UIH1) = 10.0V
Subgroup O1 – Analogue Outputs	O1a-Analogue Output 1 Source Selection O1a AO1 O/P = 06		AO1 Configuration (AO1) > AO1 assignment (AO1) = Motor freq. (Ofr)
	O1b-Analogue Output 1 Format O1b AO1 = 0-10V		AO1 Configuration (AO1) > AO1 Type (AO1t) = Voltage (10U)
	O1c-Analogue Output 1 Low Setpoint O1c AO1 LO = 0%		AO1 Configuration (AO1) > AO1 min output (AOL1) = 0V
	O1d-Analogue Output 1 High Setpoint O1d AO1 HI = 100%		AO1 Configuration (AO1) > AO1 max output (AOH1) = 10V
Screen Group L - Limits	L9-Current Limit L9 I LIMIT = 150% of FLC	[1.3 Settings]	Current limitation (CLI) = 150% of FLC
		[1.1 Simply Start]	Max frequency (tFr) Set Max frequency to the same setting as HSP as AO1's format "Motor freq." is scaled between 0 and Max frequency.

Note: In 3 wire control the Altivar 71 uses logic input 1 (L11) as the stop command using a normally closed circuit. Logic input 2 (L12) is the forward command and logic input 3 is the reverse command. The reverse command can be inhibited via the **[1.6 Command]** menu.

18.1.1 Elite 3 wire control for simple fan speed control

Elite Inputs	Function	Altivar 71 Inputs	Function
MFI 1	ASTOP-RESET	LI1	STOP
MFI 2	START	LI2	FORWARD
MFI 3	STOP-RESET	LI4	A/STOP
MFI 4	INVERT DIRECTION	LI3	REVERSE
MFI 5	INVERT TORQUE	LI5	Not assigned
MFI 6	SPEED / TORQUE	LI6	Not assigned
Analogue Input 1	Speed Ref. 0-10V	Analogue Input 1	Speed Ref. 0-10V

Note: The default speed reference for the Elite is "local" and the default speed reference for the Altivar 71 is "analogue input 1". The "invert direction" command on the Elite will override a "start" (forward) command whereas the Altivar 71 logic doesn't have directional priority in 3-wire control mode.

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18.2 Application Example 2: Elite multi-reference 3 wire control

Another application example used typically in material handling systems or machines that have several operating speeds. This example uses 3 wire control and speed selection via logic inputs the Altivar 71 is capable of providing up to 16 preset speeds where as the Elite has a maximum of 7.

Elite		Altivar 71	
Subgroup I7 – Digital Inputs	I7a-Multi-Function Input Mode Selection I7a I/P MODE = 04	[1.1 Simply Start]	2/3 wire control (tCC) = 3 wire (3C)
	No Equivalent		Macro configuration (CFG) = M. handling (HdG)
	I7c-Multi-Function 1 Input Selections (T13) I7c MFI 1 SEL = 02		Already configured by selection of 3 wire control.
	I7d-Multi-Function 2 Input Selections (T14) I7d MFI 2 SEL = 01		Already configured by selection of 3 wire control.
	I7e-Multi-Function 3 Input Selections (T15) I7e MFI 3 SEL = 10		Already configured by selection of 3 wire control.
Screen Group I - Inputs	I1-Local Start/Stop and Reset Control I1 LOCAL S/STOP = 02	[1.6 Command]	Stop Key priority (PSt) = YES
	I2-Speed Reference Source I2 REF = MREF		No Equivalent
Screen Group N– Motor Nameplate Data	N4-Rated (Nameplate) Motor Power N4 MTR P = Nameplate	[1.1 Simply Start]	Rated motor power (nPr) = Nameplate
	N2-Rated (Nameplate) Motor Voltage N2 MTR VOLT = Nameplate		Rated motor volt. (UnS) = Nameplate
	N1-Rated (Nameplate) Motor Current N1 MTR CUR = Nameplate		Rated mot. current (nCr) = Nameplate
	N3-Rated (Nameplate) Motor Frequency N3 MTR FR = Nameplate		Rated motor freq. (FrS) = Nameplate
	N5-Rated (Nameplate) Motor Speed N5 MTR RPM = Nameplate		Rated motor speed (nSP) = Nameplate
	No Equivalent		Mot. therm. Current (ItH) = Nameplate (rated motor current)
Screen Group R- Accel / Decel	R1-Acceleration Rate R1 ACC		Acceleration (ACC)
	R2-Deceleration Rate R2 DEC		Deceleration (dEC)
Screen Group L - Limits	L2-Minimum Speed		Low speed (LSP) = 0Hz

> denotes parameter is accessed through a submenu structure.



Elite		Altivar 71	
Screen Group L - Limits	L3-Maximum Speed ds L3 MAX S = +100%		High speed (HSP) = 50Hz
	L9-Current Limit L9 I LIMIT = 150% of FLC	[1.3 Settings]	Current limitation (CLI) = 150% of FLC
Screen Group M– Multi-Reference Setpoints	M1-Multi-Reference Setpoint 1 M1 MREF1 = <i>speed</i> Hz	[1.7 Application Function]	Preset speed 1 is the Reference (1) speed Default = AI1
	M2-Multi-Reference Setpoint 2 M2 MREF2 = <i>speed</i> Hz		Preset speeds (PSS) Preset speed 2 (SP2) required speed in Hz
	M3-Multi-Reference Setpoint 3 M3 MREF3 = <i>speed</i> Hz		Preset speeds (PSS) > Preset speed 3 (SP3) = required speed in Hz
	M4-Multi-Reference Setpoint 4 M4 MREF4 = <i>speed</i> Hz	Γ	Preset speeds (PSS) > Preset speed 4 (SP4) = required speed in Hz
	M5-Multi-Reference Setpoint 5 M5 MREF5 = <i>speed</i> Hz		Preset speeds (PSS) > Preset speed 5 (SP5) = required speed in Hz
	M6-Multi-Reference Setpoint 6 M6 MREF6 = <i>speed</i> Hz		Preset speeds (PSS) > Preset speed 6 (SP6) = required speed in Hz
	M7-Multi-Reference Setpoint 7 M7 MREF7 = <i>speed</i> Hz		Preset speeds (PSS) > Preset speed 7 (SP7) = required speed in Hz
	No Equivalent		Preset speeds (PSS) > Preset speed 8 (SP8) = required speed in Hz

The **Preset speeds** function on the Altivar 71 is enabled via the **M. handling** (material handling) **Macro configuration**, which is set in the **[1.1 Simply Start]** menu. The logic inputs are automatically assigned for forward, reverse, stop and preset speed inputs. The preset speed selection logic is shown in the tables on page 19 section 18.2.2.

18.2.1 Elite / Altivar 71 I/O comparison for multi-reference 3 wire control

Elite Inputs	Function	Altivar 71 Inputs	Function
MFI 1	STOP	LI1	STOP
MFI 2	START	LI2	FORWARD
MFI 3	INVERT SPEED	LI3	REVERSE
MFI 4	MULTI-SPEED REF.	LI4	2 PRESET SPEEDS
MFI 5	MULTI-SPEED REF.	LI5	4 PRESET SPEEDS
MFI 6	MULTI-SPEED REF.	LI6	8 PRESET SPEEDS



18.2.2 Elite / Altivar speed selection logic tables comparison

		MULTI-REFERENCE FUNCTIONS			
SCREEN	TITLE	MFI4 (T16) X	MFI5 (T17) Y	MF16 (T18) Z	
	ZERO	0	0	0	
M1	MREF1	0	0	х	
M2	MREF2	0	х	0	
M3	MREF3	0	х	х	
M4	MREF4	х	0	0	
M5	MREF5	х	0	х	
M6	MREF6	х	х	0	
M7	MREF7	Х	х	х	

16 speeds LI (PS16)	8 speeds LI (PS8)	4 speeds LI (PS4)	2 speeds LI (PS2)	Speed reference
0	0	0	0	Reference (1)
0	0	0	1	SP2
0	0	1	0	SP3
0	0	1	1	SP4
0	1	0	0	SP5
0	1	0	1	SP6
0	1	1	0	SP7
0	1	1	1	SP8
1	0	0	0	SP9
1	0	0	1	SP10
1	0	1	0	SP11
1	0	1	1	SP12
1	1	0	0	SP13
1	1	0	1	SP14
1	1	1	0	SP15
1	1	1	1	SP16

Elite multi-speed logic chart

O- Open X - Closed

Altivar 71 multi-speed logic chart

Please note that speed preset input logic state 0, 0, 0 for the Elite is equivalent to a stop command where as the same speed preset input logic state for the Altivar 71 switches the drive to Reference 1 Channel (Default = AI1).

19. Elite / Altivar 71 parameter units comparison

During the program conversion process it is important to be aware of the differences between the drives in regards to the units in which each of the drives parameters are configured in. The differences are an important consideration and some examples are outlined below.

Elite parameter	Typical unit	Altivar 71 parameter	Typical unit
AIX - Scaling	-150/+150 Hz	AIX – Scaling	0/20mA or 1/10VDC
Acceleration	5.0Hz/sec	Acceleration	3.0sec (0 – 50Hz)
Deceleration	5.0Hz/sec	Deceleration	3.0sec (0 – 50Hz)
Alt. Accel. Rate	10Hz/sec	Acceleration 2	5.0sec (0 – 50Hz)
Alt. Decel. Rate	10Hz/sec	Deceleration 2	5.0sec (0 – 50Hz)



20. Appendix

20.1 Altivar 71 integrated I/O specification

Arrangement, characteristics and functions of the control terminals

Terminals	Function	Electrical characteristics
R1A R1B R1C	Common point C/O contact (R1C) of programmable relay R1	 minimum switching capacity: 3 mA for 24 V maximum switching capacity on resistive load (cos φ = 1): 5 A for 250 V ~ or 30 V
R2A R2C	N/O contact of programmable relay R2	 maximum switching current on inductive load (cos φ = 0.4 L/R = 7 ms): 2 A for 250 V ~ or 30 V m. reaction time: 7 ms ± 0.5 ms service life: 100,000 operations at max. switching power

+10	+ 10 V power supply for reference potentiometer 1 to 10 kΩ	 + 10 V (10.5 V ± 5V) 10 mA max.
Al1+ Al1 -	Differential analog input Al1	 -10 to +10 V (max. safe voltage 24 V) reaction time: 2 ms ± 0.5 ms, 11-bit resolution + 1 sign bit accuracy ± 0.6% for a ∆θ = 60°C, linearity ± 0.15%, of max. value
COM	Analog I/O common	0V
AI2	Depending on software configuration: Analog voltage input	 analog input 0 to +10 V (max. safe voltage 24 V), impedance 30 kΩ
	or Analog current input	or • analog input X - Y mA, X and Y can be programmed from 0 to 20 mA • impedance 250 Ω • reaction time: 2 ms ± 0.5 ms • 11-bit resolution, accuracy ± 0.6% for a Δθ = 60°C, linearity ± 0.15%, of max. value
COM	Analog I/O common	0V
A01	Depending on software configuration: Analog voltage output or Analog current output	 analog output 0 to +10 V_m, min. load impedance 470 Ω or analog output X - Y mA, X and Y can be programmed from 0 to 20 mA max. load impedance 500 Ω 10-bit resolution, reaction time: 2 ms ± 0.5 ms accuracy ± 1% for a Δθ = 60°C, linearity ± 0.2%, of max. value

P24	External +24V control power supply	 +24 V (min. 19 V, max. 30 V power 30 Watts 	=)		
OV	Logic I/O common				
LI1 LI2 LI3 LI4 LI5	Programmable logic inputs	 +24 V (Max. 30 V) impedance 3.5 kΩ reaction time: 2 ms ± 0.5 ms 	SW1 switch Source (factory setting) Sink Int or Sink Ext	State 0 < 5 V > 16 V	State 1 > 11 V < 10 V
L16	Depending on the position of the SW2 switch. - Programmable logic input or - Input for PTC probes	SW2 switch on LI (factory setting) • same characteristics as logic inputs or SW2 switch on PTC • trip threshold 3 kΩ, reset threshold < 50 • short-circuit detection threshold < 50	LI1 to LI5 I.8 kΩ) Ω		

+24	Logic input power supply	 SW1 switch in Source or Sink Int position +24 V output (min. 21 V, max. 27 V), protected against short-circuits and overloads max. current available for customers 200 mA SW1 switch in Sink Ext position inputs for external +24 V power supply for the logic inputs
PWR	Power Removal safety function input When PWR is not connected to the 24V, the motor cannot be started (compliance with safety standard EN954-1 and IEC/EN61508)	 24 V power supply (max. 30 V) impedance 1.5 kΩ state 0 if < 2V , state 1 if > 17V

20.2 Altivar 71 logic switching examples



· SW1 switch set to "Source" position

· SW1 switch set to "Int Sink" position

 SW1 switch set to "Source" position and use of an external power supply for the LIs



· SW1 switch set to "Ext Sink" position



20.3 Altivar 71 factory settings

The Altivar 71 is factory-set for the most common operating conditions:

- Macro-configuration: Start/Stop
- Motor frequency: 50Hz
- Constant torque application with sensorless flux vector control
- Normal stop mode on deceleration ramp
- Stop mode in the event of a fault: freewheel
- Linear, acceleration and deceleration ramps: 3 seconds
- Low speed: 0Hz
- High speed: 50Hz
- Motor thermal current = rated drive current
- Standstill injection braking current = 0.7 X rated drive current, for 0.5 seconds
- No automatic restarts after a fault
- Switching frequency 2.5kHz or 4kHz depending on drive rating
- Logic inputs: LI1: forward, LI2: reverse (2 operating directions), 2-wire control on transition, LI3,LI4,LI5,LI6: inactive (not assigned)
- Analogue inputs: Al1: speed reference 0 +/-10V, Al2: 0-20mA inactive (not assigned)
- Relay R1: The contact opens in the event of a fault (or drive off)
- Relay R2: inactive (not assigned)
- Analogue output AO1: 0-20mA, motor frequency

20.4 Graphic display terminal overview

Drive state ACC: Acceleration (Output frequency increasing) CLI: Drive current limiting Controlled stop on input phase loss CTL: DCB: DC injection braking in progress DEC: Deceleration (Output frequency decreasing) Active control channel FLU: Motor fluxing in progress Term: Terminals FST: Fast stop Graphic display terminal HMI: NLP: No line power MDB: Integrated Modbus NST: Freewheel stop Integrated CANopen CAN: Auto adapted deceleration OBR: NET: Communication card PRA: Drive locked, (Power removal function active) APP: Controller Inside card RDY: Drive ready RUN: Drive running SOC: Controlled output cut in progress TUN: Auto tuning in progress Under voltage alarm USA: Parameter bar selection Displayed Alarm groups Fault code from left to Frequency reference right in order Torque reference displayed under fault conditions of selection Output frequency Motor current ENA average speed Motor speed 52-Motor voltage F1 = 7 Segment Code Motor power Term 0.00Hz 0.0A RDY Motor Torque for parameter **1 DRIVE MENU** Г SIMPLY START Mains Voltage 1.2 MONITORING F2 & F3 = Navigation of Motor thermal state 1.3 SETTINGS main menus and digit Drive thermal state 1.4 MOTOR CONTROL selection for fast Brake resistor thermal state 1.5 INPUTS / OUTPUTS CFG Energy consumption accrued parameter adjustment << >> Quick Run time accrued F4 = Allows navigation Power on time accrued **F1** F2 F3 F4 directly to a screen by IGBT alarm counter its reference number PID reference PID feedback Code << >> Quick PID error PID output (F1) (F3) (F4) Controller Inside Card word 2 to 6 Parameter set being used Navagation control and HMI No levels above this speed reference HMI Start Stop and Reset HMI Forward More parameter screens reverse control below this display level Escape key returns to previous selection also aborts



a value or parameter

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