

Frequency Inverter Drive, series LFT Saturn alpha/Orion alpha



motion and progress

Inhaltsverzeichnis

Seite

1.	Safety information	3
2.	Mechanical data for the Unidrive LFT AC drive	4
2.1	Dimensions (LFT)	4
2.2	RFI mains filter, size 4	5
2.3	Braking resistor	6
2.4	Technical data	7
2.5	Set-up	8
2.6	Electrical connections	12
2.7	Diagnostics	14

1. Safety information


This document contains various symbols corresponding to important safety instructions. It is essential that all personnel take note of the symbols and follow the instructions.

i Important: indicates advice on using the equipment, and other particularly helpful information.

i Attention: indicates a situation in which damage could occur. If the situation is not prevented, the product and/or other objects in its vicinity could be damaged.



Caution!
This draws attention to a hazard or an unsafe procedure that could result in injury to persons or damage to equipment.




Danger!
This draws attention to a direct and immediate danger that will result in serious injury or death.




Warning!
This draws attention to a grave risk. It is used to identify dangerous situations that could result in serious injury or death.

Electrical safety - general warning




Warning!
The voltages used in the drive can cause severe electrical shock and/or burns, and could be lethal. Extreme care is necessary at all times when working with or adjacent to the drive.

System design and safety of personnel




Warning!
The drive is intended as a component for professional incorporation into complete equipment or a system. If it is installed incorrectly, the drive may present a safety hazard. The drive uses high voltages and currents, carries a high level of stored electrical energy, and is used to control equipment which can cause injury. Close attention is required to the electrical installation and the system design to avoid hazards either in normal operation or in the event of equipment malfunction. System design, installation, commissioning and maintenance must be carried out by personnel who have the necessary training and experience.

Compliance with regulations



Caution!
The installer is responsible for complying with all relevant regulations, such as national wiring regulations, accident prevention regulations and electromagnetic compatibility (EMC) regulations. Particular attention must be given to the cross-sectional areas of conductors, the selection of fuses or other protection, and protective earth (ground) connections.

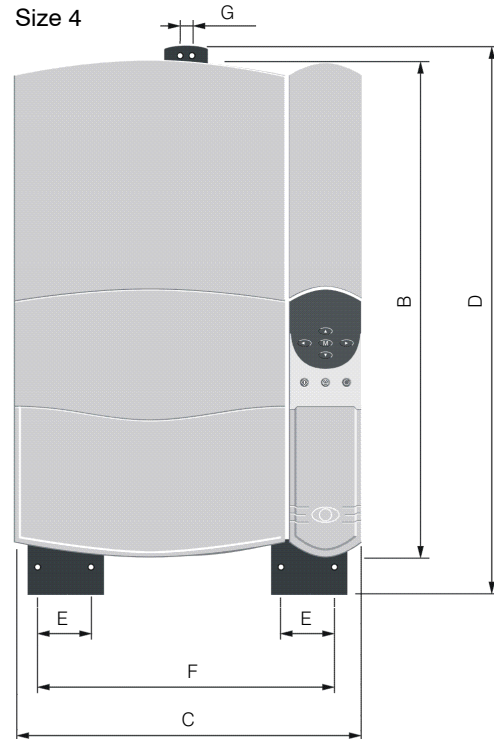
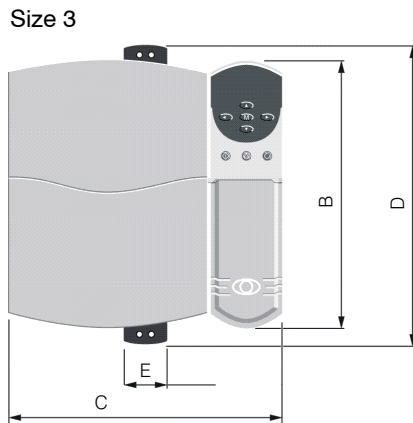
Adjusting parameters



Warning!
Some parameters have a profound effect on the operation of the drive. They must not be altered without careful consideration of the impact on the system that is being controlled. Measures must be taken to prevent unwanted changes due to error or tampering.

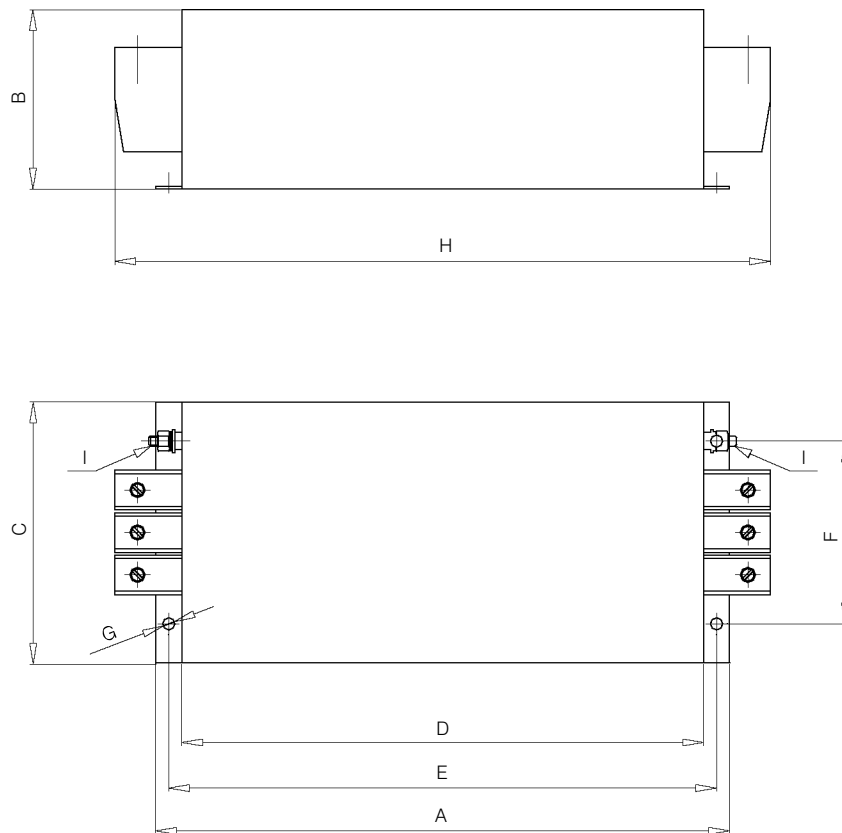
2. Mechanical data for the Unidrive LFT AC drive

2.1 Dimensions (LFT)



Unidrive LFT	Part no.	Size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight [kg]
UNI 3404 LFT 30.0 kW / 60.0 A	7013229	3	260	335	375	346	33	-	-	22
UNI 3405 LFT 37.0 kW / 77.0 A	7013230									
UNI 4401 LFT 45.0 kW / 96.0 A	7013231	4	260	700	500	713	65	417	34	70
UNI 4402 LFT 55.0 kW / 124.0 A	7013232									
UNI 4403 LFT 75.0 kW / 156.0 A	7013233									
UNI 4404 LFT 90.0 kW / 180.0 A	7013234									
UNI 4405 LFT 110.0 kW / 202.0 A	7013235									

2.2 RFI mains filter, size 4



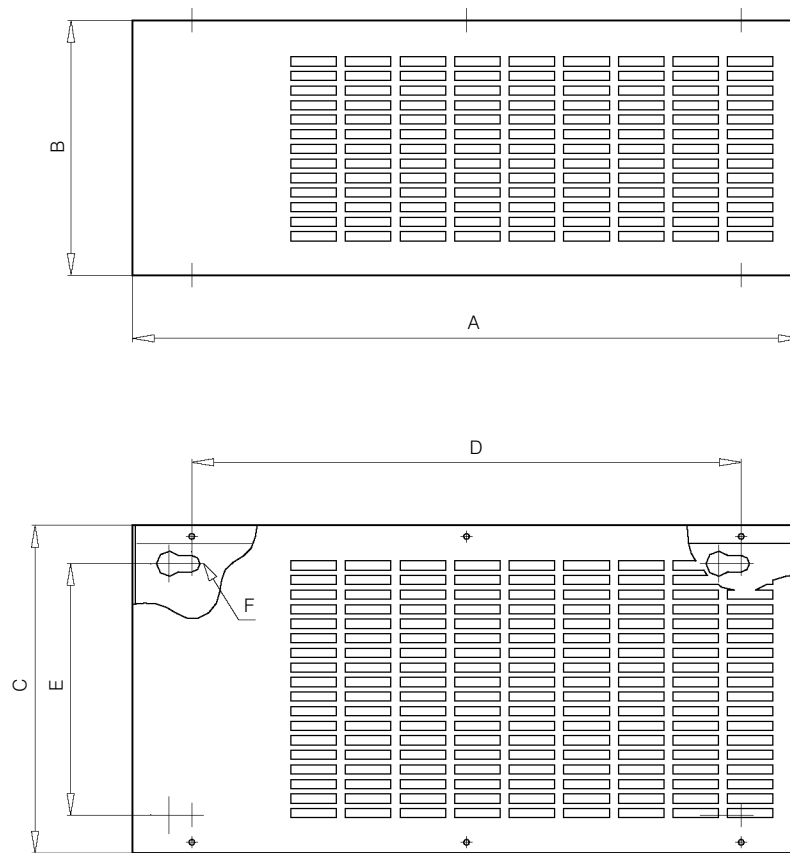
i **Important:** for EMC reasons, the mains filter must be sited in the immediate vicinity of the drive, so that the supply cables running to the drive can be kept as short as

possible. In addition, it is important that interference-prone (unshielded) signal cables are routed at least 300 mm away from the drive, the RFI mains filter, the

motor supply cables, the cables supplying the RFI mains filter and from the shielded braking resistor cables.

Type	Part no.	For Unidrive LFT [Part no.]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I	Weight [kg]
RFI4200-6117	7013245	7013229	330	103	150	300	315	105	7	377	M6	3.8
RFI4200-6106	7013246	7013230	325	107	150	294	310	105	7	380	M8	7.8
RFI4200-6107	7013247	7013231	345	135	150	314	330	120	7	414	M10	7.8
		7013232										
RFI4200-6111	7013248	7013233	440	157	170	400	420	110	8.5	502	M12	15
		7013234										
RFI4200-6112	7013249	7013235	440	157	170	375	420	110	8.5	523	M12	15

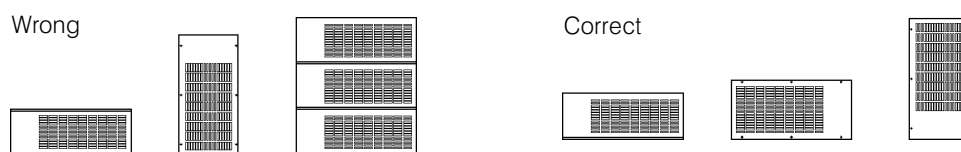
2.3 Braking resistor



Type	Part no.	For Unidrive LFT [Part no.]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F	Weight [kg]
DBR4-20R-2000	7013238	7013229 7013230 7013231	580	140	179	514	138	M8	7.5
DBR8-20R-2000	7013239	7013232	580	140	330	514	290	M8	13
DBR12-10R-6000	7013240	7013233	766	140	330	700	290	M8	16
DBR18-10R-9000	7013241	7013234	800	304	335	697	280	M10	30
DBR24-10R-12000	7013242	7013235	800	304	335	697	280	M10	34

i Attention: please note the following terminal assignments:
 Terminals: +DC / BR → connections for the braking resistor
 TH1 / TH2 → connections for the thermal contacts

Mounting attitude:



2.4 Technical data

Unidrive UNI xxxx LFT	3404	3405	4401	4402	4403	4404	4405
I_N [A]	60.0	77.0	96.0	124.0	156.0	180.0	202.0
I_{dyn} [A]	90.0	115.5	144.0	186.0	234.0	270.0	303.0
Output power [kVA]	30.0	37.0	45.0	55.0	75.0	90.0	110.0
Internal power consumption [kVA @ 16 kHz]	0.710	0.800	1.530 ¹⁾	1.560 ¹⁾	1.850 ¹⁾	2.470 ¹⁾	2.490 ¹⁾
Size of the external filter	3	3	4	4	4	4	4
Line fuse (slow-blow type)	3 x 70 A	3 x 80 A	3 x 100 A	3 x 125 A	3 x 160 A	3 x 200 A	3 x 250 A
Cross-section of supply and motor cables	4 x 16.0 mm ²	4 x 25.0 mm ²	4 x 35.0mm ²	4 x 35.0 mm ²	4 x 50.0 mm ²	4 x 70.0 mm ²	4 x 95.0 mm ²
AC supply voltage	380 ... 480 V ±10 %						
Operating temperature range	0 ... 50 °C (above 40 °C the drive must be derated)						
Mains frequency	50 ... 60 Hz						
Boot time after power ON	4 seconds						
Number of "Power ONs" per hour	≤10 (equally distributed)						
Braking resistors	20 Ω 2.0 kW	20 Ω 2.0 kW	20 Ω 2.0 kW	20 Ω 2.0 kW	10 Ω 6.0 kW	10 Ω 9.0 kW	10 Ω 12.0 kW

¹⁾ the maximum possible PWM switching frequency of this model is 9 kHz

2.4.1 Definitions

I_N [A]	Nominal current in A	In average service (40% duty cycle), this value must not be exceeded
I_{dyn} [A]	Dynamic current for 40 seconds	1.50 x normal load (for starting and acceleration)
Output power [kVA]	Nominal power in kVA	Total power (excitation and torque) of the drive

2.5 Set-up

2.5.1 Operation

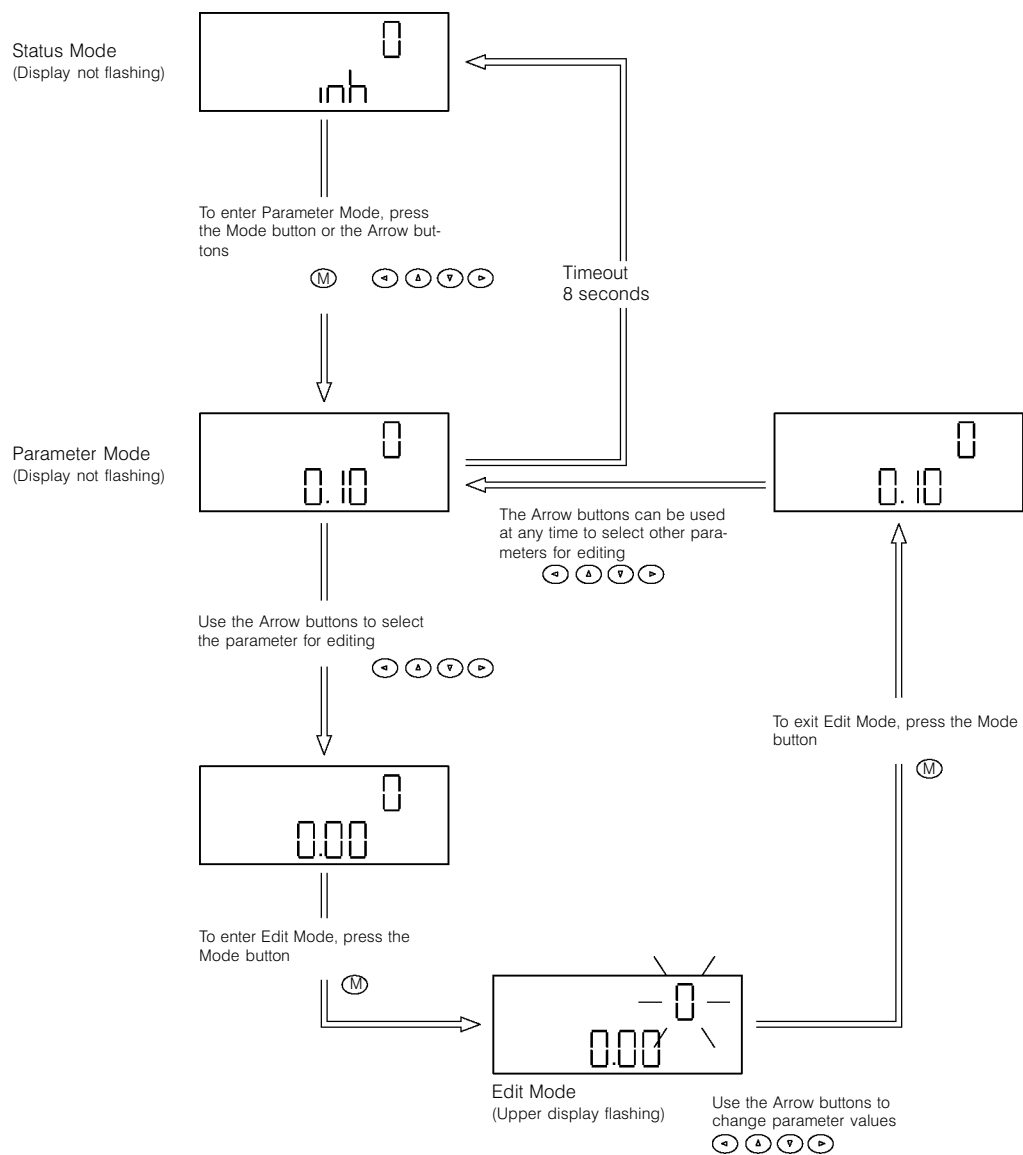
During the switch-on phase the CT drive checks its own hardware and the associated peripherals (mains supply phases, motor cables, encoder, etc.).

When the checks have been completed and no errors are present, the message “inh” is shown on the CT drive’s upper display (everything is OK, but drive is not enabled, no current output).

Following a power ON, the CT drive’s lower display shows the effective motor current that exists at the time.



Designation	Function and implementation
Upper display	Shows the parameter value, or the reason code for the trip (for further information on trip codes, please refer to the manufacturer’s operating manual) .
Lower display	Shows the drive status and the active menu and parameter numbers.
Forward/Reverse (blue)	In Keypad mode, pressing this button sets the direction of rotation (for further information, please refer to the manufacturer’s operating manual).
Stop/Reset button (red)	In Keypad mode, pressing this button initiates an emergency drive trip (for further information, please refer to the manufacturer’s operating manual). In normal status (drive idle), pressing the button resets the drive.
Start button (green)	In Keypad mode, pressing this button starts the drive (for further information, please refer to the manufacturer’s operating manual).
Mode button (black)	The Mode button is used to cycle through the 3 display modes of Parameter View, Parameter Edit and Status.
Arrow buttons	The four Arrow buttons are used to navigate through the parameter structure and to change parameter values.



Caution!
Parameters must not be altered without careful consideration of the impact on the system that is being controlled. Incorrect values can cause damage and create hazards, and compromise system safety.

i Important: the drive is shipped with a configuration that ensures that the user can access Menu 0 i.e. the user can read and also over-write values in Menu 0. To make the advanced menus viewable and editable, the access must be re-configured after every power OFF.
Procedure: select parameter 0.00 and enter the value "149". After pressing the Mode button M, the user can access the advanced menus.

i Important: to make parameter changes permanent (still in effect after a power OFF), the changes must be saved by a special procedure.
Procedure: select parameter 0.00 and enter the value "1000". Then press the Mode button M, followed by the red Stop/Reset button. The changes are now saved.

2.5.2 The parameters in Menu 0

Menu 0 is used to bring together the most commonly used parameters to enable a fast, straightforward set-up.

Parameter	Description	Value	Unit	Type
0.00	Operation mode, macro selection, configuration, saving	0		RW
Reference clamp min./max.				
0.01 {1.07}	Reference clamp (minimum)	0.0	min ⁻¹	RW
0.02 {1.06}	Reference clamp (maximum)	3000.0	min ⁻¹	RW
Acceleration/Deceleration				
0.03 {2.11}	Acceleration rate	0.0	s/1000 min ⁻¹	RW
0.04 {2.21}	Deceleration rate	0.0	s/1000 min ⁻¹	RW
Reference select				
0.05 {1.14}	Reference select	1 (= Analogue reference 1)		RW
Maximum dynamic current (in terms of the rated current)				
0.06 {4.07}	Current limit	150.0	%	RW
PID values for speed controller				
0.07 {3.10}	P-gain	200	0.0001/rad s ⁻¹	RW
0.08 {3.11}	I-gain	5	0.01/rad	RW
0.09 {3.12}	D-gain	0	s	RW
Important measured values for fault finding				
0.10 {3.02}	Motor speed	actual value	min ⁻¹	RO
0.11 {5.01}	Drive output frequency	actual value	Hz	RO
0.12 {4.01}	Apparent motor current	actual value	A	RO
0.13 {4.02}	Active motor current	actual value	A	RO
Rated motor values and motor-influenced PI values for the current loop				
0.14 {5.11}	No. of motor poles	2	No. of poles	RW
0.15 {5.10}	Rated motor power factor	dependent on motor (see page 12)	cos_phi	RW
0.16 {5.09}	Rated motor voltage	400	V	RW
0.17 {5.08}	Rated motor speed	dependent on motor (see page 12)	min ⁻¹	RW
0.18 {5.07}	Rated motor current	dependent on motor (see page 12)	A	RW
0.19 {5.06}	Rated motor frequency	dependent on motor (see page 12)	Hz	RW
0.20 {5.24}	Motor transient inductance	dependent on motor (see page 12)	mH	RW
0.21 {5.29}	Motor saturation breakpoint 1	dependent on motor (see page 12)	%	RW
0.22 {5.30}	Motor saturation breakpoint 2	dependent on motor (see page 12)	%	RW
Switching off the PTC thermistor monitoring function				
0.23 {7.15}	Mode - analogue input 3	0 - 20		RW
Over-speed threshold value				
0.24 {3.08}	Over-speed threshold value	3600	min ⁻¹	RW
Parameter for encoder				
0.25 {3.21}	Encoder lines per revolution	512		RW
Current reference				
0.26 {4.12}	Filter time constant 1	3.0	ms	RW
Brake resistor data				
0.27 {10.30}	Full power braking time	0.00	s	RW
0.28 {10.31}	Full power braking period	0.0	min	RW
0.29 {2.04}	Braking ramp mode select	FASt (1)		RW
Fault memory				
0.30 {10.20}	Most recent fault	0		RO

Parameter	Description	Value	Unit	Type
Macro information				
0.31 {11.33}	Active macro	0		RO
Serial communication				
0.32 {11.24}	Mode - serial interface	1 (=ANSI-4-wire)		RW
General drive information				
0.33 {11.32}	Rated drive current	dependent on inverter size		RO
Security code				
0.34 {11.30}	User security code	149		RW
Reference values via display				
0.35 {1.17}	Prevailing reference	0		RO
Serial communication				
0.36 {11.25}	Baud rate	19200		RW
0.37 {11.23}	Address	1.1		RW
Default display parameter				
0.38 {11.22}	Default display parameter after power ON	0.13		RW
Deactivation of function "synchronise with rotating motor"				
0.39 {6.09}	Synchronise with rotating motor	0 (= synchronisation deactivated)		RW
Auto-tune				
0.40 {5.12}	Auto-tuning	0		RW
Switching frequency				
0.41 {5.18}	Max. switching frequency	6	kHz	RW
Rated motor values (some are already shown in parameters 0.14 ... 0.19 of Menu 0)				
0.42 {5.11}	No. of motor poles	2	No. of motor poles	RW
0.43 {5.10}	Rated motor power factor	dependent on motor (see page 12)	cos_phi	RW
0.44 {5.09}	Rated motor voltage	400	V	RW
0.45 {5.08}	Rated motor speed	dependent on motor (see page 12)	min ⁻¹	RW
0.46 {5.07}	Rated motor current	dependent on motor (see page 12)	A	RW
0.47 {5.06}	Rated motor frequency	dependent on motor (see page 12)	Hz	RW
Operating mode				
0.48	Operating mode selector	1 (= CL.VECT/closed loop)		RW
Status password				
0.49	Security status	0001		RW
Software info				
0.50 {11.29}	Software version	x.xx		RW

Legend:

RW	Read and write access
RO	Read-only access
{x.xx}	Parameter no. in advanced menus

i Important: items 0.11 to 0.30 in the table have the parameters shown assigned to them before we ship the drive. The customer can change these assignments, which are programmed by means of Parameters 11.01 (for Parameter 0.11) to 11.20 (for Parameter 0.30).

i Important: auto-tuning is carried out before shipping (to do this, the motor must be run without any load whatsoever) and does not need to be done again by the customer. On the one hand, the parameter values obtained by auto-tuning are listed in the table on page 11 and, on the other, the drive has already been parametrised with the values for the motor that is specified for the application.

i Important: for a more detailed description of the individual parameters, please refer to the drive manufacturer's operating manual.

2.5.3 Motor-specific parameters (50 Hz Motors)

Motor power [kW]	Drive type	Parameter						
		0.15	0.17	0.18	0.19	0.20	0.21	0.22
20.0	UNI 3404 LFT UNI 3405 LFT	0.904	2780	42.0	50	4.491	85	93
24.0	UNI 3404 LFT UNI 3405 LFT UNI 4401 LFT	0.836	2780	50.0	50	3.409	85	94
28.0	UNI 3404 LFT UNI 3405 LFT UNI 4401 LFT	0.780	2790	58.0	50	2.842	86	94
33.0	UNI 3405 LFT UNI 4401 LFT UNI 4402 LFT	0.982	2810	70.0	50	2.692	87	94
40.0	UNI 4401 LFT UNI 4402 LFT UNI 4403 LFT	0.940	2810	83.0	50	2.223	89	94
47.0	UNI 4401 LFT UNI 4402 LFT UNI 4403 LFT	0.940	2820	95.0	50	1.883	90	95
60.0	UNI 4403 LFT UNI 4404 LFT UNI 4405 LFT	0.940	2820	120.0	50	1.439	90	94
77.0	UNI 4404 LFT UNI 4405 LFT	0.916	2820	150.0	50	1.163	90	94

2.5.4 Motor-specific parameters (60 Hz Motors)

Please contact us for details of the available motors (power ratings) and their motor-specific parameters.

2.6 Electrical connections

2.6.1 Encoder connection (D-SUB 15 pin; high density)

i **Important:** the cable must be looped and the shield of the stripped portion of cable must be held firmly onto the body of the encoder plug with a cable tie

Connection [Pin Nr.]	Encoder type TTL (Ub = 5 V) [4 tracks]	Colour of wire
1	A	green
2	/A	yellow
3	B	grey
4	/B	pink
5	N	n.u.
6	/N	n.u.
7		n.u.
8		n.u.
9		n.u.
10		n.u.
11		n.u.
12		n.u.
13	5 VDC	brown
14	GND	white
15		n.u.

2.6.2 Digital outputs (Saturn alpha/Orion alpha)

Connection [Terminal no.]	Function	Colour of wire
24	Ready	rot
25	Motor under current (torque)	black

Configuration for digital outputs (Saturn alpha/Orion alpha)

Parameter	Description	Value	Note	Unit	Type
8.10	Terminal 24 I/O source/ destination parameter	10.01	Ready	Parameter	RW
8.13	Terminal 25 I/O source/ destination parameter	10.02	Motor under current (torque)	Parameter	RW

Configuration of the terminal logic

Parameter	Description	Value	Note	Unit	Type
8.11	Terminal 24 output in- vert	1	= invert		RW
8.14	Terminal 25 output in- vert	1	= invert		RW
8.15	Terminal 25 I/O as out- put	1	= output		RW

2.6.3 Digital inputs (Saturn alpha)

Connection [Terminal no.]	Function	Colour of wire
26	UP enable	yellow
27	DOWN enable	green

Configuration for digital inputs (Saturn alpha)

Parameter	Description	Value	Note	Unit	Type
Terminal configuration					
8.16	Terminal 26 I/O source/ destination parameter	6.30	UP enable (cw)	Parameter	RW
8.19	Terminal 27 I/O source/ destination parameter	6.32	DOWN enable (ccw)	Parameter	RW

Reference mode

Parameter	Description	Value	Note	Unit	Type
1.10	Bipolar reference ena- ble	(OFF) 0	Reference 0...+10 V		RW

Configuration of the terminal logic

Parameter	Description	Value	Note	Unit	Type
8.27	Logic of the inputs	1	= Positive logic		RW

2.6.4 Digital inputs (Orion alpha)

Connection [Terminal no.]	Function	Colour of wire
26	Analogue input invert (for UP enable)	yellow
27	DOWN enable	green

Configuration for digital inputs (Orion alpha)

Parameter	Description	Value	Note	Unit	Type
Terminal configuration					
8.16	Terminal 26 I/O source/ destination parameter	7.09	Analogue input invert (UP enable)	Parameter	RW
8.19	Terminal 27 I/O source/ destination parameter	6.32	DOWN enable (ccw)	Parameter	RW

Reference mode select

Parameter	Description	Value	Note	Unit	Type
1.10	Bipolar reference ena- ble	ON (1)	Reference ± 10 V		RW

Configuration of the terminal logic

Parameter	Description	Value	Note	Unit	Type
8.27	Logic of the inputs	1	= Positive logic		RW

2.6.5 DC power supply (Saturn alpha/Orion alpha)

Connection [Terminal no.]	Function	Colour of wire
22	24 VDC power supply (from the drive)	pink
23	Digital GND	violet

i **Important:** the rated output current of 24 VDC power supply is 200 mA. In the event of a short circuit, or if the current draw is too high, (maximum current is 240 mA), the drive will trip.

2.6.6 Analogue input (Saturn alpha/Orion alpha)

Connection [Terminal no.]	Function	Colour of wire
5	Analogue reference	white
6	Analogue ground	brown

2.6.7 Drive hardware enable (Saturn alpha/Orion alpha)

Connection [Terminal no.]	Function	Colour of wire
30	Hardware enable	(customer)

i **Important:** to ensure operational safety, the +24 V supply that is tapped from drive terminal 22 must be connected to terminal 30 through two free, independent, series-wired contacts of the main contactor in the elevator control system.

Legend:

RW	Read/write access
n.u.	Terminal not used

2.7 Diagnostics



Caution!

Users must not attempt to repair a faulty drive, nor to rectify any errors other than those described in this section.

The drive casing must never be removed before the mains supply has been isolated. If a drive is faulty, it must be returned to an authorized Control Techniques distributor for repair.

In Status Mode, the drive display is used to show coded messages. These messages can be divided into the following categories:

Status messages

In normal operation, the lower display shows a code that represents the drive status.

Alarm messages

When a critical condition is detected, the drive continues to operate and the lower display shows an alarm code in place of the status code. If no corrective action is taken, the drive may eventually trip. The alarm code and the normal display flash alternately.

Trip codes

If the drive trips, its output is disabled and the drive no longer controls the motor. The lower display indicates that a trip has occurred and the upper display shows the relevant trip code.

2.7.1 Status messages

Lower display	Description	Drive output stage
rdY	<ul style="list-style-type: none"> The drive is ready to be run 	Disabled
run	<ul style="list-style-type: none"> The drive is running 	Enabled
inh	<ul style="list-style-type: none"> The drive is inhibited and cannot be run CL > Drive enable signal is not applied to terminal 30 	Disabled
SCAn	<ul style="list-style-type: none"> The drive is searching for the motor frequency when synchronising to a running motor 	Enabled
ACUU	<ul style="list-style-type: none"> The drive has detected that the AC supply has been lost and is attempting to maintain the DC bus voltage by decelerating the motor 	Enabled
triP	<ul style="list-style-type: none"> The drive has tripped and is no longer controlling the motor. The trip code appears on the upper display 	Disabled

2.7.2 Alarm messages

Lower display	Description
br.rS	<ul style="list-style-type: none"> The braking resistor accumulator [l x t] in the drive has reached 75 % of the value at which the drive will trip
OVLd	<ul style="list-style-type: none"> The motor accumulator [l x t] in the drive has reached 75 % of the value at which the drive will trip
Hot	<ul style="list-style-type: none"> The drive heatsink has reached 95 °C (203 °F) and the output current has not been (sufficiently) reduced
Air	<ul style="list-style-type: none"> The ambient temperature around the control PCB is approaching the over-temperature threshold

2.7.3 Trip codes

If the serial interface is used to access parameters 10.20 to 10.29 in the trip history, the numbers shown in the following table will be transmitted.

Upper display	No.	Description
UU	1	<ul style="list-style-type: none"> Bus voltage is too low (<320 V-) This occurs when the AC supply has been interrupted
OU	2	<ul style="list-style-type: none"> Bus voltage is too high (>830V-) Excessive regenerated power, resulting from: <ul style="list-style-type: none"> 0.03 acceleration rate is set too low Absence of a braking resistor
OI.AC	3	<ul style="list-style-type: none"> Excessive output current, resulting from: <ul style="list-style-type: none"> 0.03 acceleration rate is set too low 0.04 deceleration rate is set too low CL > 0.27 proportional gain is too high Motor cable capacitance is too high Short-circuit at the drive output
OI.br	4	<ul style="list-style-type: none"> Excessive current in the braking resistor The ohmic value of the braking resistor is too low
PS	5	<ul style="list-style-type: none"> Internal power supply fault Switch off the main power supply briefly. If the fault reappears, contact the dealer
Et	6	<ul style="list-style-type: none"> OL > external fault has caused Enable signal at terminal 30 to drop out Rectify the fault and reset the drive

OV.SPd	7	<ul style="list-style-type: none"> The motor has exceeded the over-speed threshold This can be caused by the following: <ul style="list-style-type: none"> Sudden removal of a large mechanical load 0.04 deceleration rate is set too low. Inappropriate setting for 0.16 Stop Mode 0.19 S-ramp da/dt is set too high (not used in Macro 5) Parameter 3.08 is incorrectly set
ENC.PH5	15	<ul style="list-style-type: none"> Encoder A channel signal missing.
ENC.PH6	16	<ul style="list-style-type: none"> Encoder B channel signal missing.
ENC.PH7	17	<ul style="list-style-type: none"> Encoder A and B channel signals connected incorrectly.
ENC.PH8	18	<ul style="list-style-type: none"> Auto-tune error (wrong test for operating mode, limit switch operated, trip, etc.)
It.br	19	<ul style="list-style-type: none"> The [l x t] brake resistor accumulator has reached too high a level
It.AC	20	<ul style="list-style-type: none"> The [l x t] accumulator for over-heating has reached 100% (see the OVLd alarm)
Oh1	21	<ul style="list-style-type: none"> Heatsink temperature is excessive ([l x t] too high) (see Hot alarm)
Oh2	22	<ul style="list-style-type: none"> The thermistor has registered an excessive heatsink temperature
OA	23	<ul style="list-style-type: none"> The ambient temperature around the control PCB is excessive (see the Air alarm).
th	24	<ul style="list-style-type: none"> The motor thermistor has registered an excessive motor temperature (or the thermistor or associated wiring is open-circuited)
thS	25	<ul style="list-style-type: none"> The motor thermistor or wiring is short-circuited.
OP.OVLd	26	<ul style="list-style-type: none"> The total current drawn from terminal 22 and 24 exceeds 240 mA
EEF	31	<ul style="list-style-type: none"> Fault in the internal EEPROM causing loss of parameter values This trip can only be reset by restoring the default parameters (please refer to section 5.9, page 61, in the drive manufacturer's operating manual). The application parameters must then be re-entered and saved.
Ph	32	<ul style="list-style-type: none"> Loss of a phase in the AC supply
rS	33	<ul style="list-style-type: none"> VT> incorrect measurement of stator resistance for the following reasons: <ul style="list-style-type: none"> Motor cable disconnection during the measurement Motor too small for the drive If required, set 0.07 Voltage Mode to Ur and enter the value of the stator resistance in parameter 5.17 (not possible with operation in Menu 0)
Ot inP	101	<ul style="list-style-type: none"> Input stage over-temperature (size 5 only)

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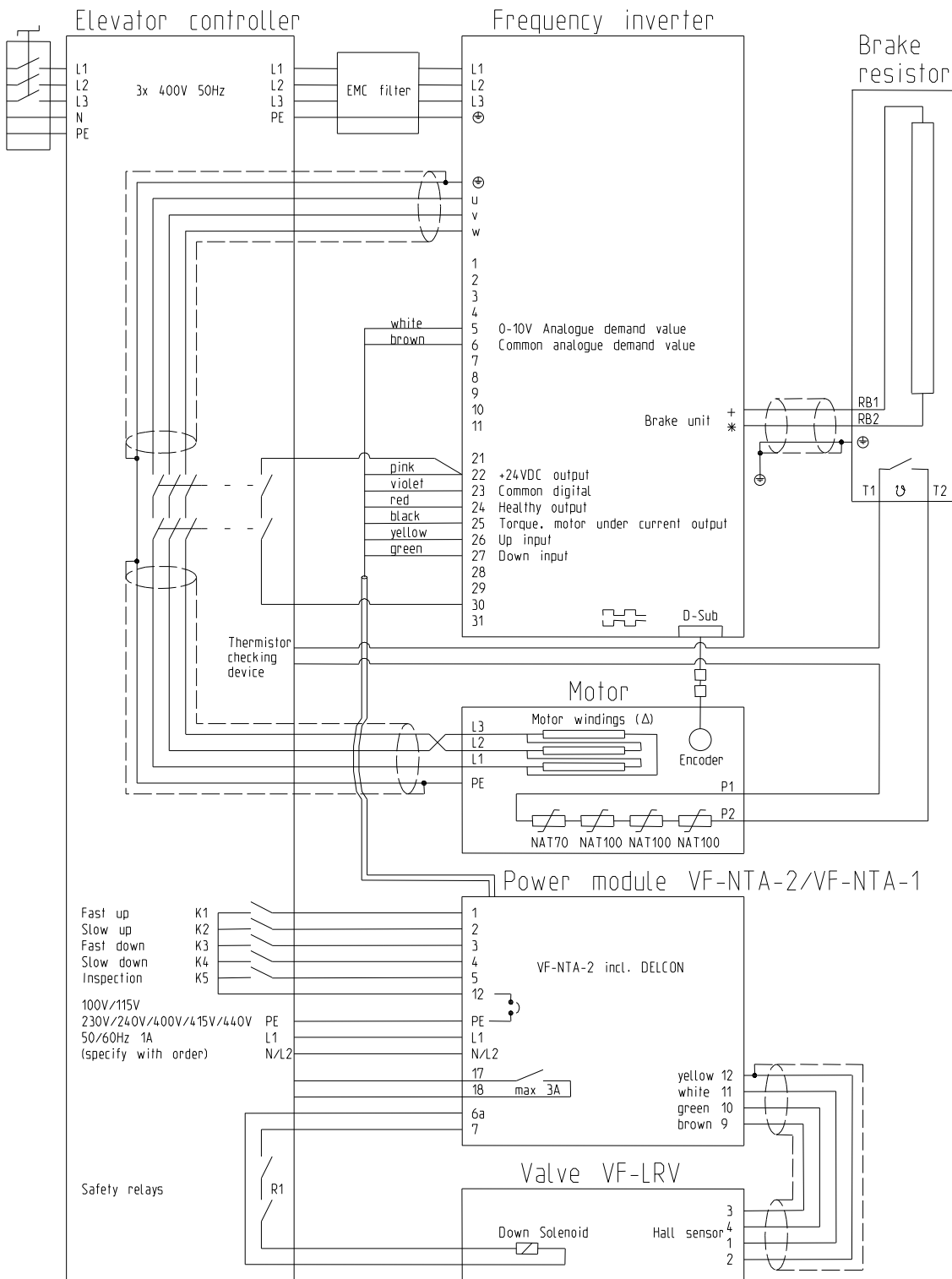
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We reserve the right of modification without notice.

Lift control valve VF-LRV
Saturn a

1 Electrical connection diagram with Inverter type CT Unidrive LFT (detail)



Picture Schematic for Frequency Converter LFT (Saturn alpha)