

Vector inverter for lifts with **Asynchronous/Synchronous motors**

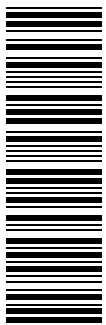


ADL300

English

Fast installations and commissioning

Rev. 0.7 - 7-6-2019



1S9FNEN

GEFRAN

Thank you for choosing this Gefran product.

We will be glad to receive any possible information which could help us improving this manual. The e-mail address is the following: techdoc@gefran.com.

Before using the product, read the safety instruction section carefully.

Keep the manual in a safe place and available to engineering and installation personnel during the product functioning period.

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1 Introduction

This manual has the target to provide the operators the indications for installations and fast commissioning of the ADL300.

The instructions reported below refers to the ADL300 Basic version in a multispeed control.

For more detailed information refer to the ADL300 Quick Start Guide available on website www.gefran.com.

2 Safety Precautions

2.1 Symbols used in the manual



Indicates a procedure, condition, or statement that, if not strictly observed, could result in personal injury or death.



Indicates a procedure, condition, or statement that, if not strictly observed, could result in damage to or destruction of equipment.



Indicates that the presence of electrostatic discharge could damage the appliance. When handling the boards, always wear a grounded bracelet.



Indicates a procedure, condition, or statement that should be strictly followed in order to optimize these applications.

Note !

Indicates an essential or important procedure, condition, or statement.

Qualified personnel

For the purpose of this Instruction Manual , a "Qualified person" is someone who is skilled to the installation, mounting, start-up and operation of the equipment and the hazards involved. This operator must have the following qualifications:

- trained in rendering first aid.
- trained in the proper care and use of protective equipment in accordance with established safety procedures.
- trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.

Use for intended purpose only

The power drive system (electrical drive + application plant) may be used only for the application stated in the manual and only together with devices and components recommended and authorized by Gefran.

2.2 Safety precaution

The following instructions are provided for your safety and as a means of preventing damage to the product or components in the machines connected. This section lists instructions, which apply generally when handling electrical drives.

Specific instructions that apply to particular actions are listed at the beginning of each chapters.

Read the information carefully, since it is provided for your personal safety and will also help prolong the service life of your electrical drive and the plant you connect to it.

2.3 General warnings



Warning

This equipment contains dangerous voltages and controls potentially dangerous rotating mechanical parts. Non-compliance with Warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

Only suitable qualified personnel should work on this equipment, and only after becoming familiar with all safety notices, installation, operation and maintenance procedures contained in this manual. The successful and safe operation of this equipment is dependent upon its proper handling, installation, operation and maintenance.

In the case of faults, the drive, even if disabled, may cause accidental movements if it has not been disconnected from the mains supply.

Electrical Shock

The DC link capacitors remain charged at a hazardous voltage even after cutting off the power supply.

Never open the device or covers while the AC Input power supply is switched on. Minimum time to wait before working on the terminals or inside the device is listed in [next page \(see “Minimum time required for safe DC-link voltage”\)](#).

Electrical Shock and Burn Hazard:

When using instruments such as oscilloscopes to work on live equipment, the oscilloscope's chassis should be grounded and a differential probe input should be used. Care should be used in the selection of probes and leads and in the adjustment of the oscilloscope so that accurate readings may be made. See instrument manufacturer's instruction book for proper operation and adjustments to the instrument.

Fire and Explosion Hazard:

Fires or explosions might result from mounting Drives in hazardous areas such as locations where flammable or combustible vapors or dusts are present. Drives should be installed away from hazardous areas, even if used with motors suitable for use in these locations.

2.4 Instruction for compliance with UL Mark (UL requirements), U.S. and Canadian electrical codes

Short circuit ratings

ADL300 inverters must be connected to a grid capable of supplying a symmetrical short-circuit power of less than or equal to “xxxx A rms.

The values of the “xxxx” A rms short-circuit current, in accordance with UL requirements (UL 508 C), for each motor power rating (Pn mot in the manual) are shown in the table below.

Short current rating	
Pn mot (kW)	SCCR (A)
1.1 ... 37.3	5000
39 ... 149	10000

Note !

Drive will be protected by semiconductor Fuse type as specified in the instruction manual.

Branch circuit protection

In order to protect drive against over-current use fuses specified in [ADL300 QS manual \(code 1S9QSEN\)](#).

Environmental condition

The drive has to be considered “Open type equipment”. Max surrounding air temperature equal to 40°C. Pollution degree 2.

Wiring of the input and output power terminals

Use UL listed cables rated at 75°C and round crimping terminals. Crimp terminals with tool recommended by terminal manufacturer.

Field wiring terminals shall be used with the tightening torque specified in [ADL300 QS manual \(code 1S9QSEN\)](#).

Over-voltage control

In case of CSA-requirements Overvoltage at mains terminal is achieved installing an overvoltage protection device as for type OVR 1N 15 320 from ABB or similar.

Minimum time required for safe DC-link voltage

Before removing drive cover in order to access internal parts, after mains disconnection wait for time as follow :

Drive size	Safe time (sec)
size 1.....5	300

Over-speed; over-load/current limit; motor overload

Drive incorporate over-speed, over-current/current limit, motor overload protection. Instruction manual specify degree of protection and detailed installation instruction.

Data plate

Serial number	Gefran Drive and Motion S.r.L. Via G. Carducci, 24 I-21040-Gerenzano(VA)					
Drive model	Type : ADL300A-1040-KBL -F-4-C			S/N: 09012345		
Input (mains supply, frequency, AC Input Current at constant torque)	Inp: 230Vac-480Vac (Fctry set=400) 50/60Hz 3Ph					
	12.5A@400Vac 11A@480Vac					
Output (Output voltage, frequency, power, current, overload)	Out : 0-480Vac 300Hz 3Ph 4kW@400Vac 5 Hp @ 460Vac					
	9A @400V 0v1d . 200%-10s 8.10A@460V 0v1d.200%-10s					
Approvals	Made in Italy			0051		CE
	UL US LISTED			IND.CONT.EQ.31KF		

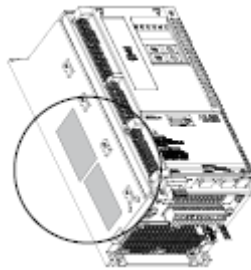
Firmware and card revision plate

Firmware Release	HW release					S/N BU	09012345 SW . CFG	Prod. CONF
	D	F	P	R	S			
3.0.0			-R	-D		12.12.13	A1	

Firmware revision points to the first row of the table.
 Cards revision points to the second row of the table.

Power Regulation Safety Braking unit Software revision Product configuration

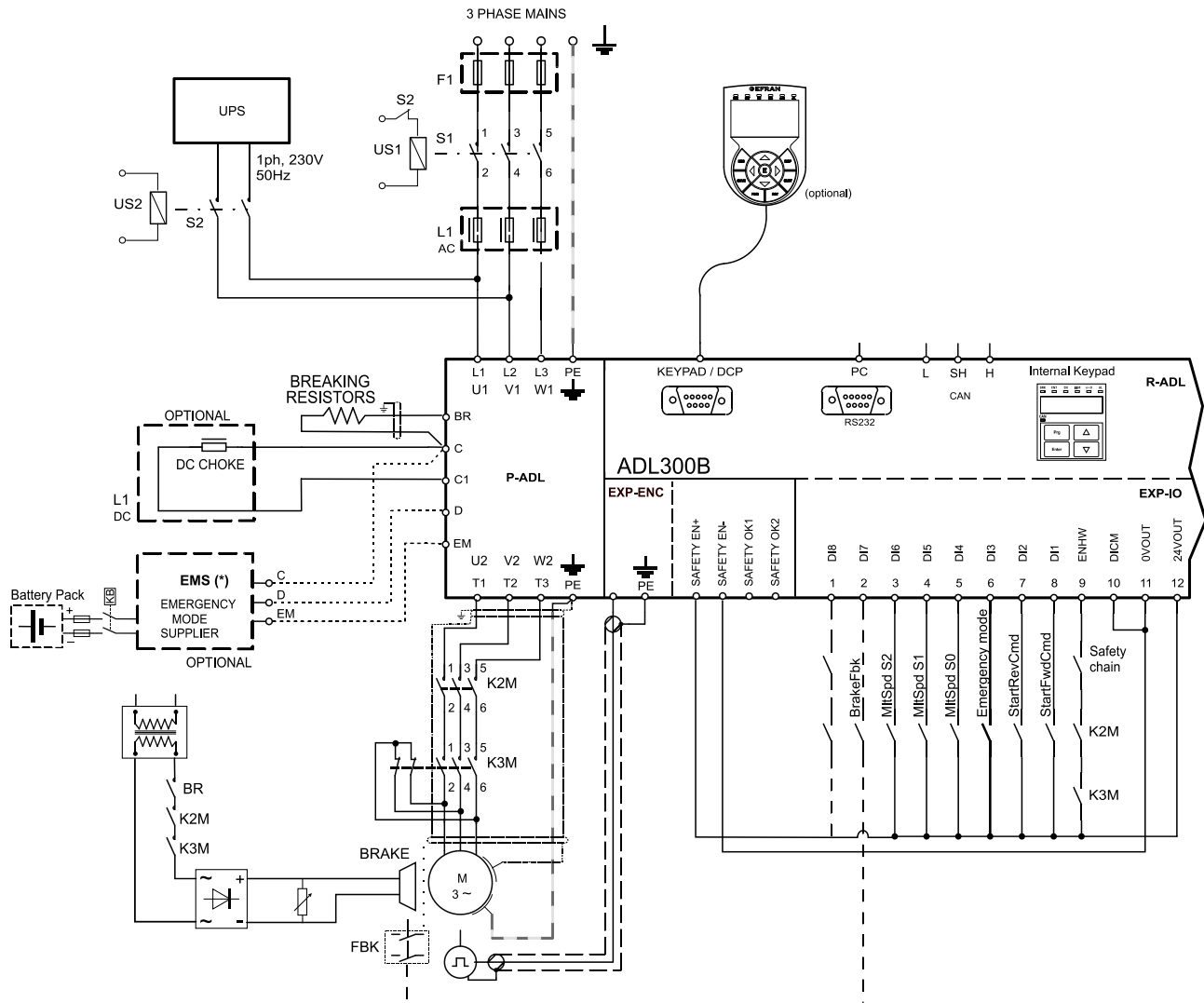
Position of plates on the drive



4 Electrical Installation

4.1 ADL300 Typical Installation and Main Sections

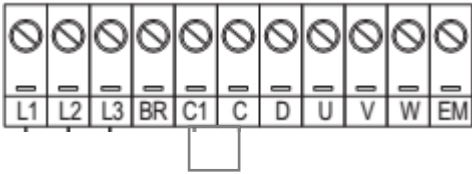
The ADL300 is composed of two parts where the cables must be connected: power section (P-ADL) and regulation section (R-ADL). Here a typical connection schema using phase contactors (for single contactor or contactorless connections see ADL300 Quick Start Manual).



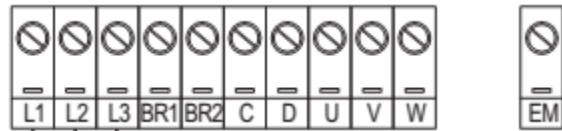
4.1.1 Power Section (P-ADL)

The power section that is supplied by the main and provides the power to the motor. The terminals available in the power section of the drive are the followings:

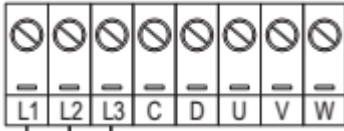
- L1 - L2 - L3: terminals for connection to the main
- U - V - W: terminals for connection to the motor
- C - D: terminals for direct connection to the DC bus.
- BR: terminal for the connection of the braking resistor
- EM: terminal for the connection of the Emergency system (see chapter 6.7).



For Power 4 ÷ 22 kW



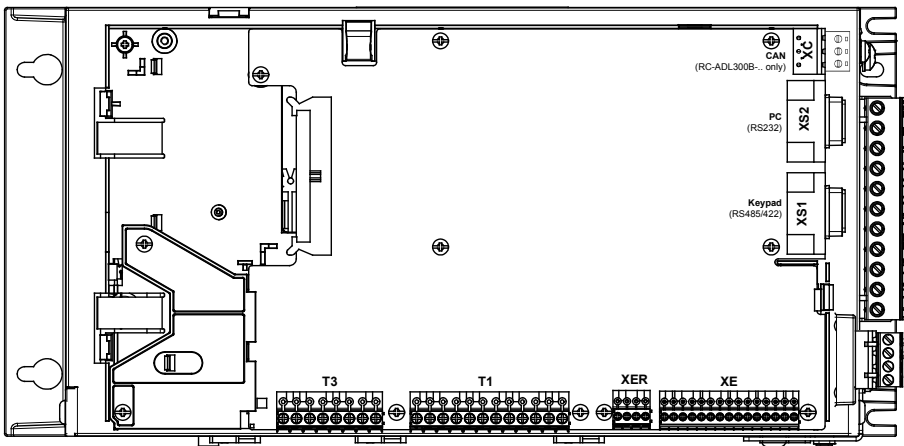
For Power 30 ÷ 55 kW



For Power 75 kW

4.1.2 Regulation Section (R-ADL)

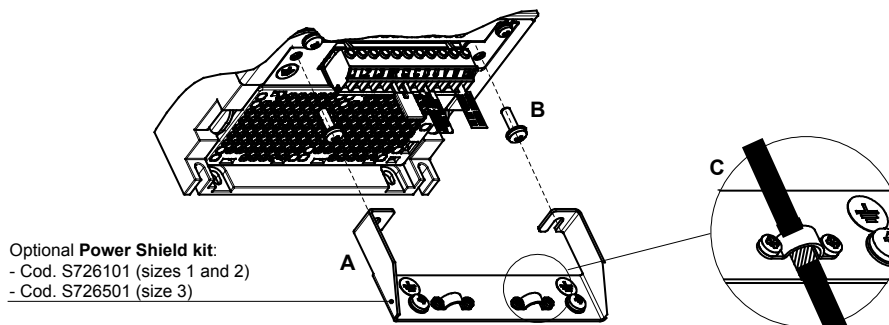
The regulation section for the ADL300B series has the following interfaces:



- Terminal T1 and T3: Input / Output Interfaces
- Terminal XE and XER: Feedback Interfaces (XER is available in the version ADL300B with repetition)
- Terminal Safety: Safety (positioned in the bottom part of the drive)
- Serial Interface XS1: Optional Keypad serial Interface
- Serial Interface XS2: Serial Interface RS232 for PC Connection
- Interface XC: CAN Interface (only version with CAN)

4.2 Power section wiring

4.2.1 Connection of shielding (recommended)



Loosen the two screws (B), put the metal support (A) (optional, POWER SHIELD KIT) in place and screw down tightly. Fasten the power cable shield to the omega sections (C) as illustrated in the figure.

- Sizes 4 and 5 : for these sizes the metal support (A) is not provided. Cable shielding must be provided by the installer.

4.2.2 EMC guide line



Warning

In a domestic environment, this product may cause radio interference, in which case supplementary mitigation measures may be required.



Attention

The converters are protected in order to be used in industrial environments where, for immunity purposes, large amounts of electromagnetic interference can occur. Proper installation practices will ensure safe and trouble-free operation. If you encounter problems, follow the guidelines which follow.

- Check for all equipment in the cabinet are well grounded using short, thick grounding cable connected to a common star point or busbar. Better solution is to use a conductive mounting plane and use that as EMC ground reference plane.
- Flat conductors, for EMC grounding, are better than other type because they have lower impedance at higher frequencies.
- Make sure that any control equipment (such as a PLC) connected to the inverter is connected to the same EMC ground or star point as the inverter via a short thick link.
- Connect the return ground from the motors controlled by the drives directly to the ground connection (\perp) on the associated inverter.
- Separate the control cables from the power cables as much as possible, using separate trunking, if necessary at 90° to each other.
- Whenever possible, use screened leads for the connections to the control circuitry
- Ensure that the contactors in the cubicle are suppressed, either with R-C suppressors for AC contactors or 'flywheel' diodes for DC contactors fitted to the coils. Varistor suppressors are also effective. This is important when the contactors are controlled from the inverter relay.
- Use screened or armored cables for the motor connections and ground the screen at both ends using the cable clamps.

Note !

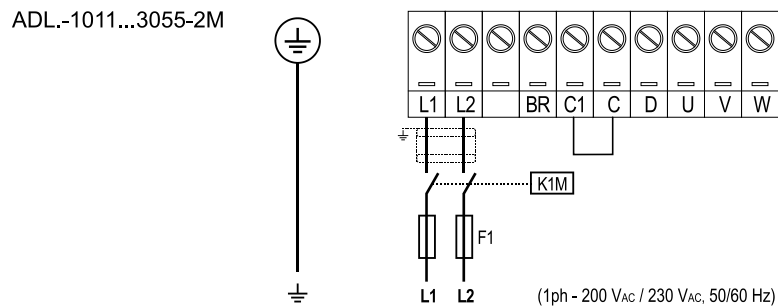
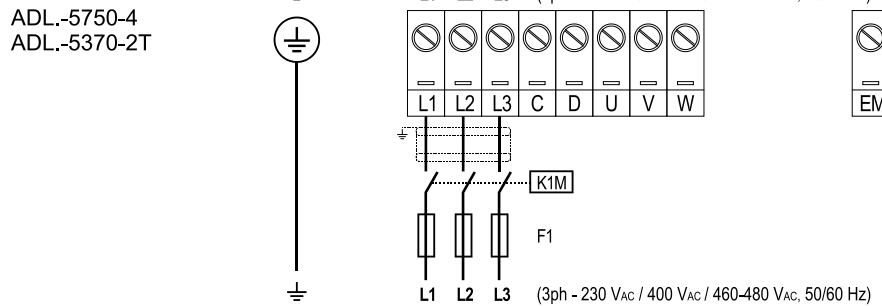
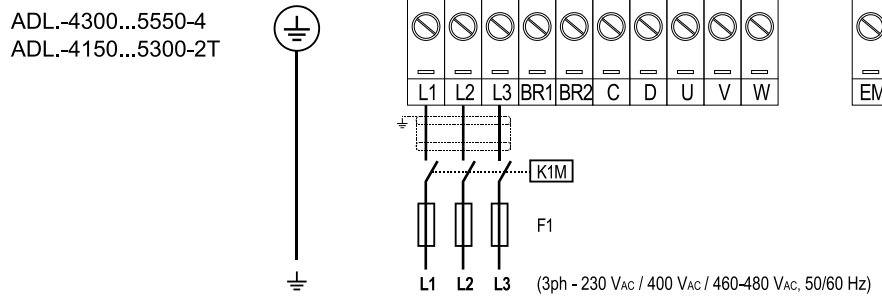
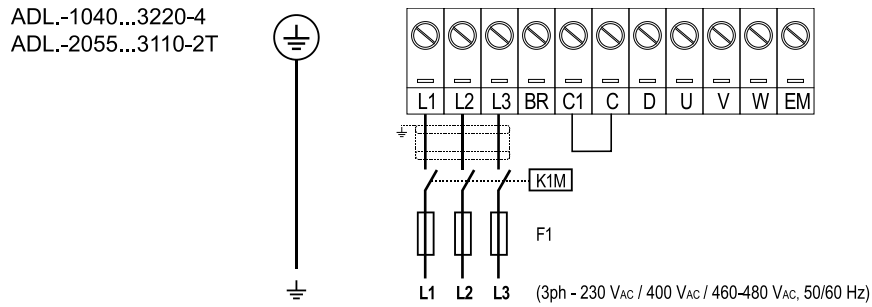
For further information regarding electro-magnetic compatibility standards, according to Directive EMC 2014/30/EU, conformity checks carried out on Gefran appliances, connection of filters and mains inductors, shielding of cables, ground connections, etc., consult the "Electro-magnetic compatibility guide" (<https://www.gefran.com/en/download/2700/attachment/all>).

4.2.3 Internal EMC filter (standard)

The ADL300-...-F-... series of inverters are equipped with an internal EMI filter (optional for the ADL300-...-2M series) able to guarantee the performance levels required by EN 12015, first environment, with max 10 m of shielded motor cable.

Compliance with these requirements means the drive can be incorporated into lift systems built to EN 12015.

4.2.4 Power line connection



Note !

Recommended combination F1 fuses: see [paragraph 5.1.1. of ADL300 QS manual \(code 1S9QSEN\)](#).

4.2.5 Connection of AC and DC chokes (optional)

(For three-phase ADL300 only). The drive can use both a three-phase choke on the AC power line and, for 4 to 22 kW drives only, a DC choke between terminals C1 and C. Refer to [chapter 5.2 of ADL300 QS manual \(code 1S9QSEN\)](#) for the recommended connections.

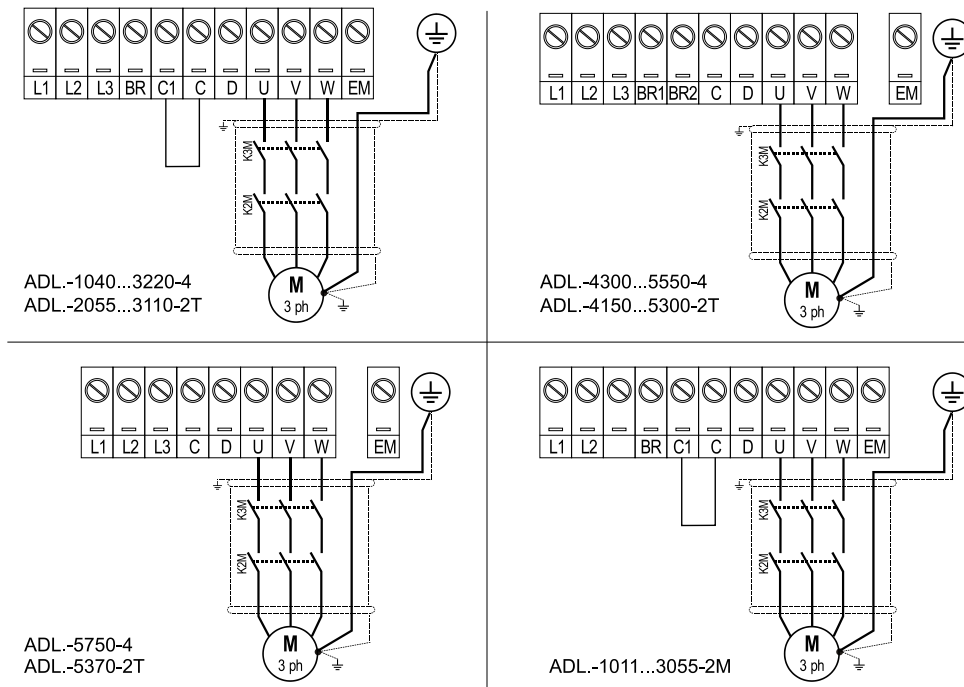
If no DC choke is used on 4 to 22 kW drives, terminals C1 and C must be bridged.



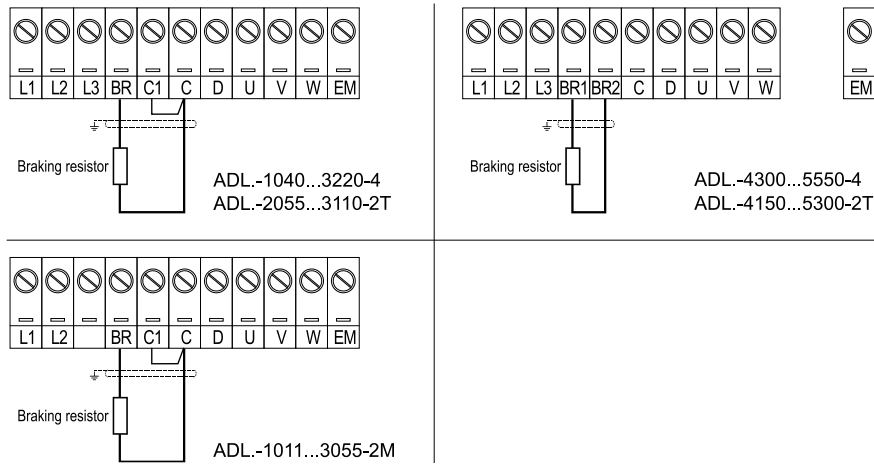
Attention

If no DC choke is used, terminals C1 and C must be bridged (sizes 1-2 e 3).

4.2.6 Motor connection



4.2.7 Connection of braking resistor (optional)



Note !

Recommended combination braking resistors: [see paragraph 5.4 of ADL300 QS manual \(code 1S9QSEN\)](#).

For sizes 5750 and 5370 an optional external BUy braking unit can be used and connected to terminals Cand D. Refer to the BUy handbook for further information.

4.3 Regulation section

Figure 4.3.1-A: Identification of cards and terminals (ADL300B)

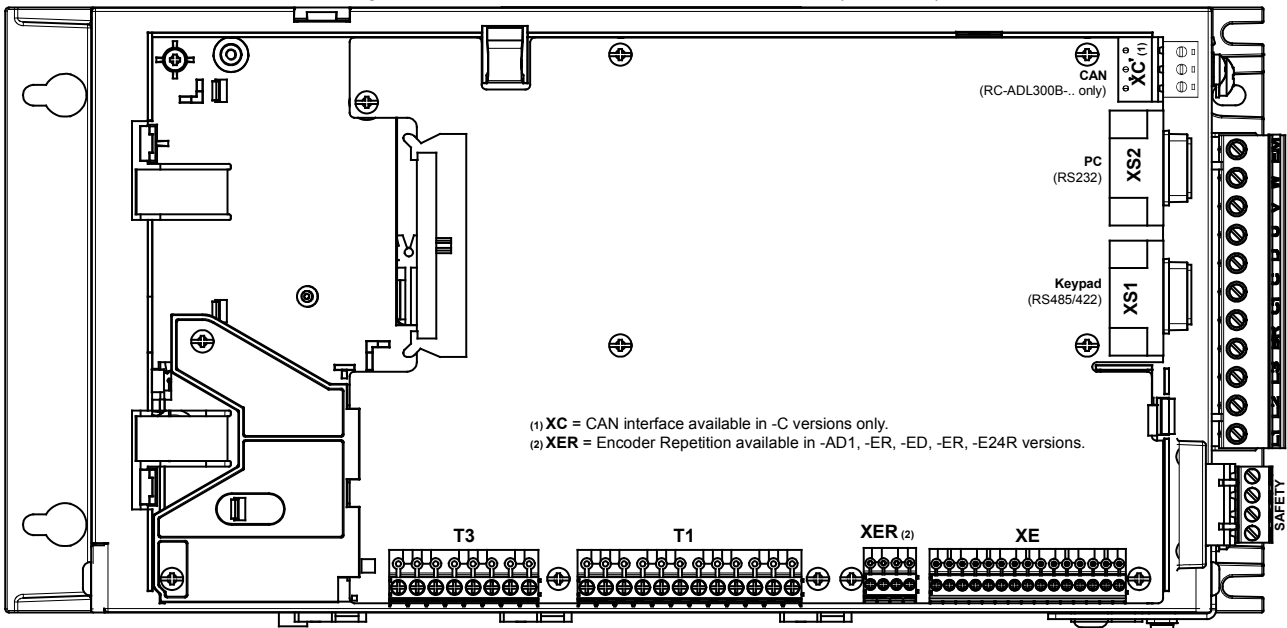
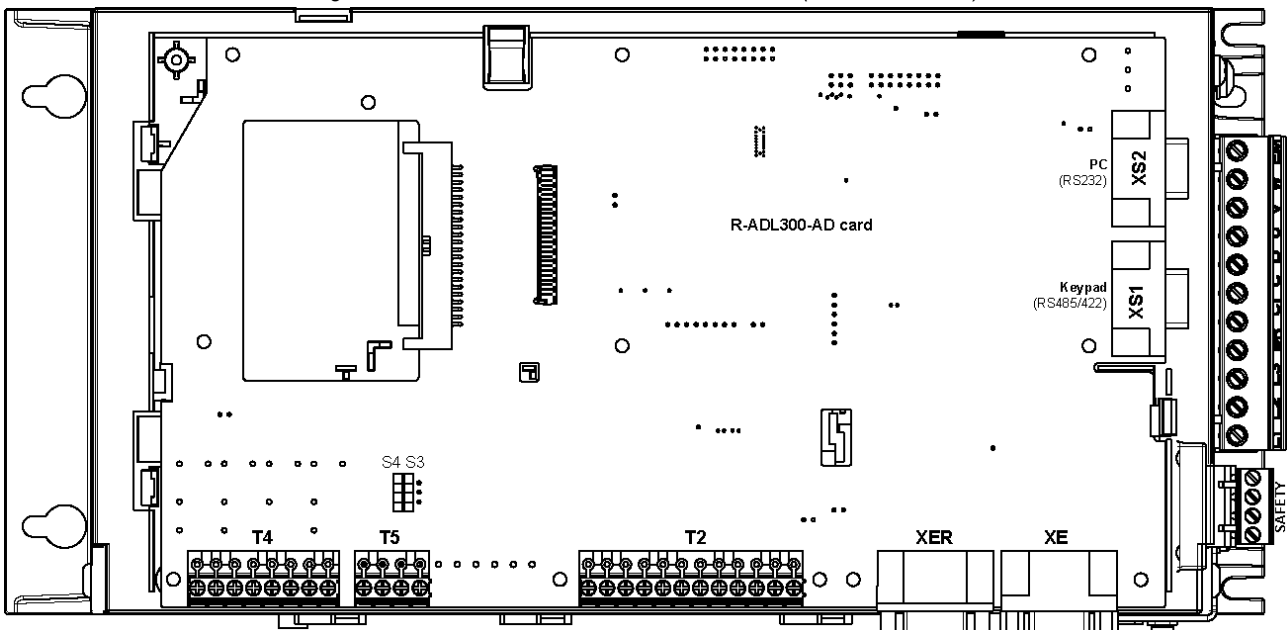


Figure 4.3.1-B: Identification of cards and terminals (ADL300B-...-AD1)



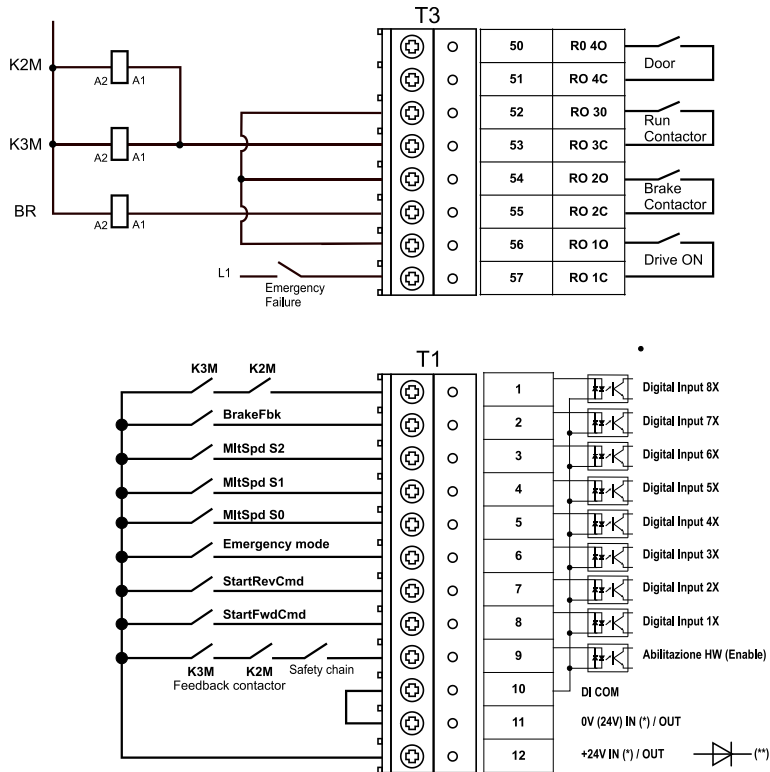
4.3.1 Connection of I/O card

Note !

All I/O card terminal strips are extractable.

For electrical properties of analog, digital and relay inputs/outputs see [section A.2 of the Appendix \(ADL300 QS manual, code 1S9QSEN\)](#).

Figure 4.3.2-A: terminal strip and connection ADL300B-4/2T



(*) Standard = +24V OUT; +24V IN/OUT versions on request;

(**) Cards with +24V external power supply (+24V IN/OUT versions) must be separated from the external power supply with an external diode. Check if the diode is already present on the external power supply.

Figure 4.3.2-B: terminal strip and connection ADL300B-2M

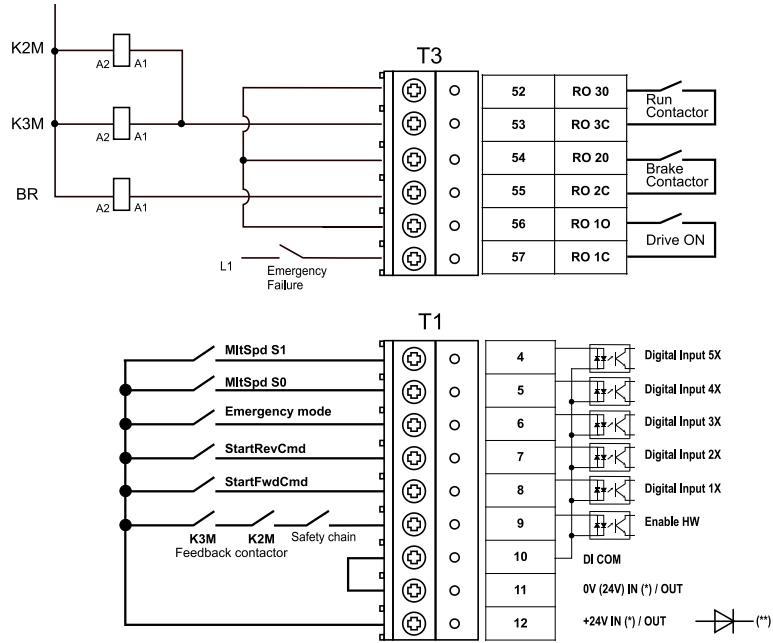
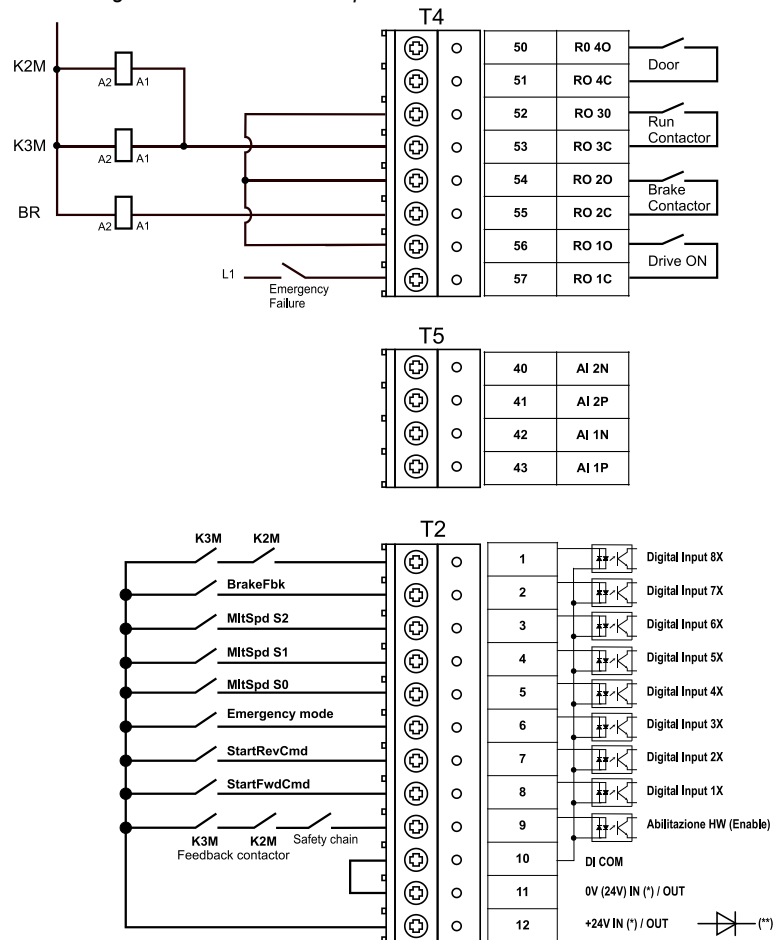


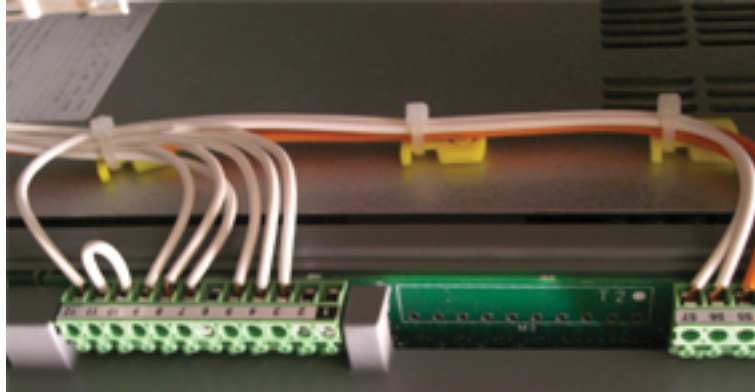
Figure 4.3.2-C: terminal strip and connection ADL300B-...-AD1



(*) Standard = +24V OUT; +24V IN/OUT versions on request;

(**) Cards with +24V external power supply (+24V IN/OUT versions) must be separated from the external power supply with an external diode. Check if the diode is already present on the external power supply.

Figure 4.3.3: Recommended card wiring



4.3.2 Feedback Connection

This section describes the feedback connections for the ADL300B series.

For the ADL300A series, see [section A3 of the Appendix \(ADL300 QS manual, code 1S9QSEN\)](#).



Caution

The names of the terminals and of the relative connection differs for the various card versions.
For more information see [section A3 of the Appendix \(ADL300 QS manual, code 1S9QSEN\)](#).

Note !

All terminal boards are extractable.

Figure 4.3.4: Connection of shielding (recommended)



Note !

The indicated connection is not valid for ADL300B-...-AD1: in this model, the shield must be connected to the VGA connector shell.

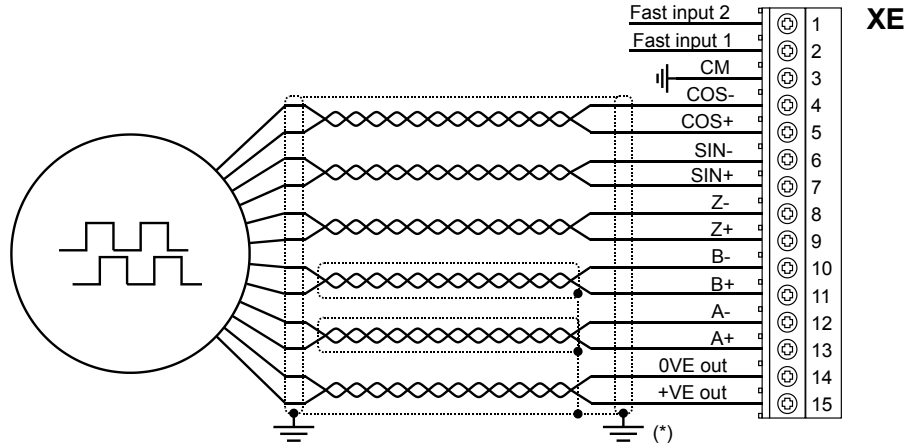


Attention

Connections for the most common encoder types are shown below. For Technical data refer to [ADL300 QS manual section 7.2.3](#).

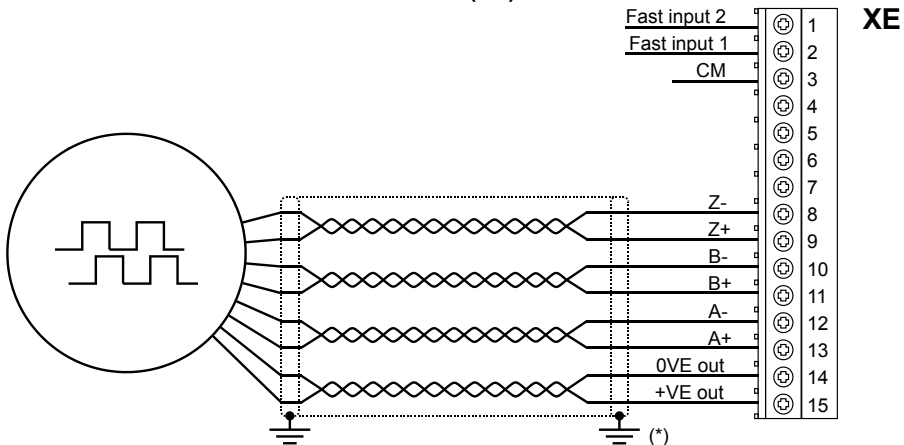
See the table on page 14 of [ADL300 QS manual \(code 1S9QSEN\)](#) to check which encoders can be connected to your model ADL300B.

(1) Connection SinCos encoder + 2 Freeze (SESC)



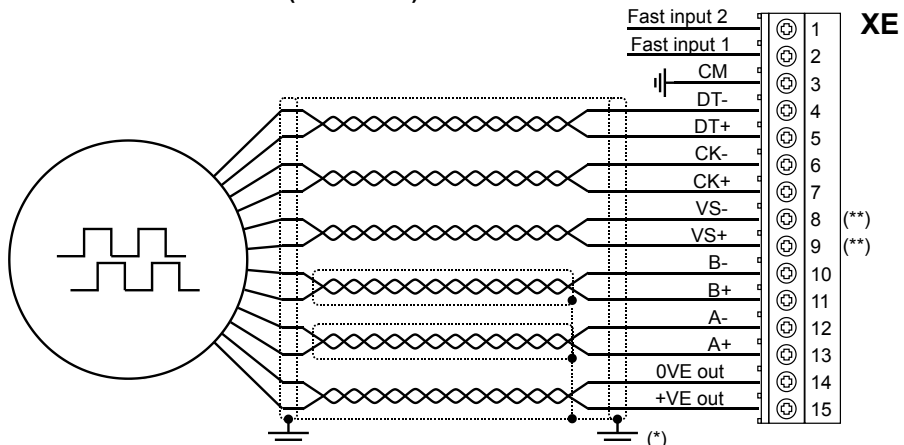
(*) Connection of shielding, see figure 4.3.4

(2) Connection sinusoidal encoder 3 Channels + 2 Freeze (SE)



(*) Connection of shielding, see figure 4.3.4

(3) Connection EnDat Encoder + 2 Freeze (EnDat-SSi)



(*) Connection of shielding, see figure 4.3.4



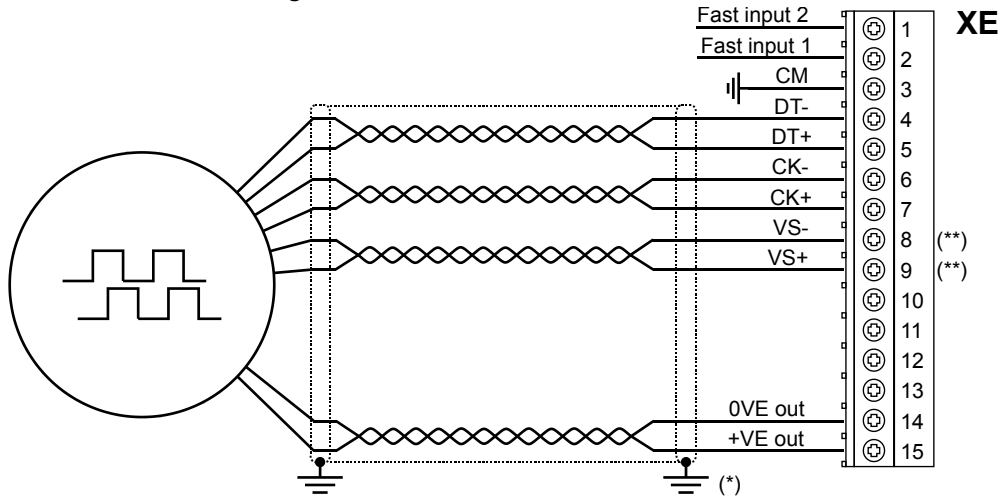
Caution

() Caution - If not strictly observed, could result in damage to or destruction of encoder!**

ADL300B-.....-F-4-C - F24I models: do not connect SENSOR-0V (VS- XE.8) and SENSOR-Up (VS+ XE.9).Based on standard cable do not use PIN 1 and PIN 4

All other models: VS+ / VS- : optional (encoder power supply feedback)

(4) Connection EnDat Encoder Full Digital + 2 Freeze



(*) Connection of shielding, see figure 4.3.4



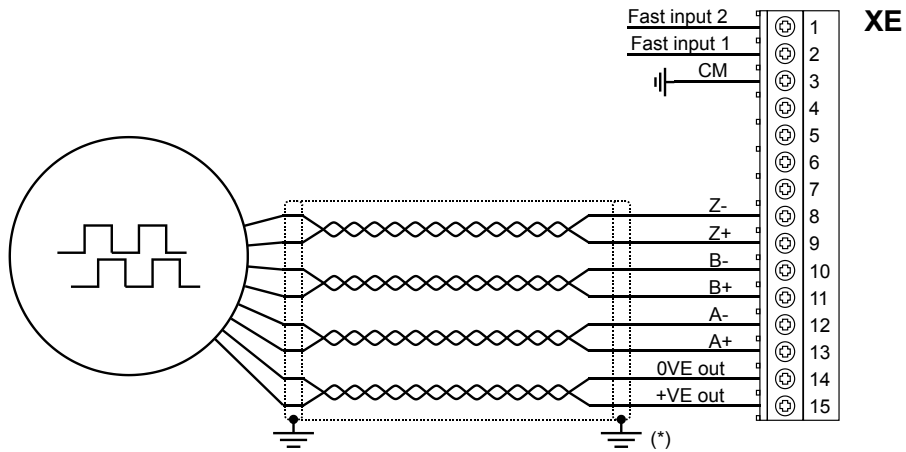
Caution

() Caution - If not strictly observed, could result in damage to or destruction of encoder!**

ADL 300B-...-F-4-C - E24I models: do not connect SENSOR-0V (VS- XE.8) and SENSOR-Up (VS+ XE.9).Based on standard cable do not use PIN 1 and PIN 4

All other models: VS+ / VS- : optional (encoder power supply feedback)

(5) Connection digital encoder 3 Channels + 2 Freeze (TTL Line Driver / push pull) (DE)

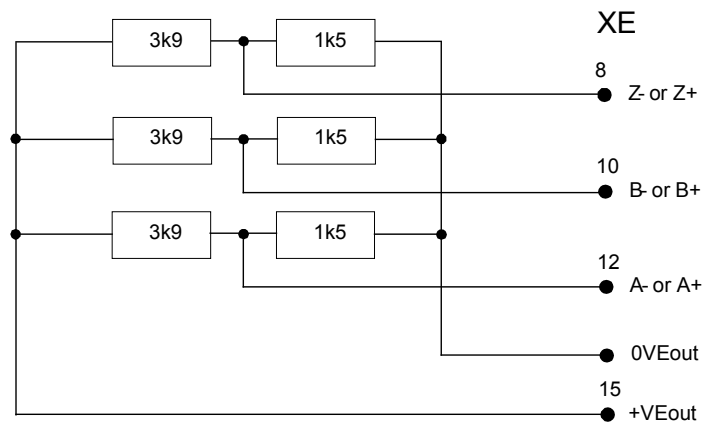


(*) Connection of shielding, see figure 4.3.4

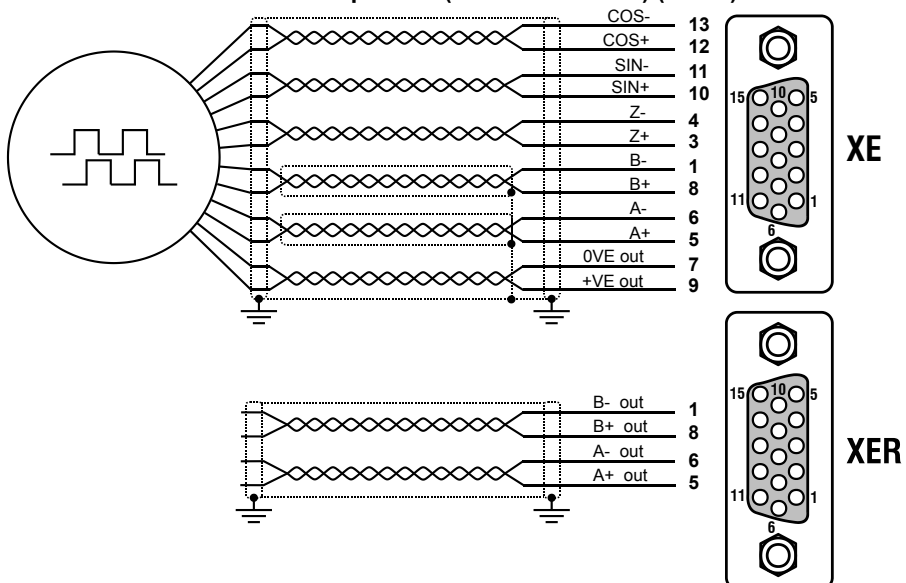
(6) Connection Single Ended Encoder

The following resistive divider must be added on single-ended configurations.

Figure 4.3.5: resistive divider for single-ended configurations

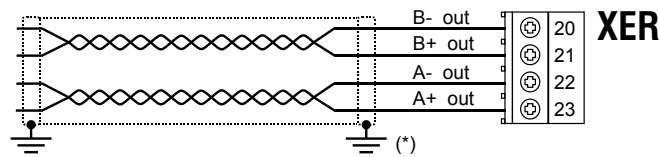


(7) Connection Sinusoidal SinCos Encoder + repetition (ADL300B-...-AD1) (SESC)

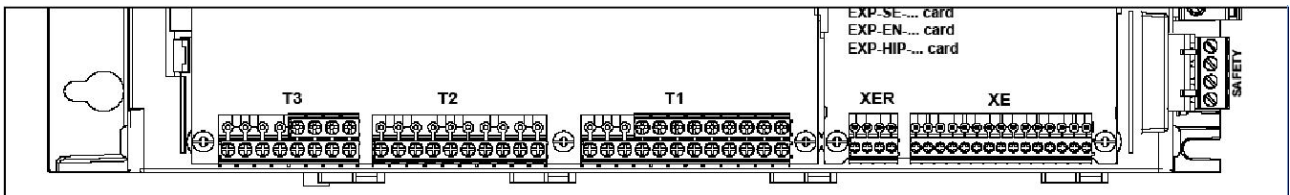


(8) Repeat Encoder (TTL line-driver)

ADL300B-...-E24R have an incremental encoder output with TTL Line Driver levels (according to the main encoder supply) to be used to repeat the servomotor feedback device. This function is performed via HW and an encoder output can be repeated with a programmable divider. The encoder output signals are available on the XER connector:



4.3.3 Integrated Safety Card Connection



The SAFETY EN+, SAFETY EN-, SAFETY OK1 and SAFETY OK2 terminals must be connected as shown in the typical connection diagrams [in chapter 4.1](#).

Safety card management is now integrated in the firmware.

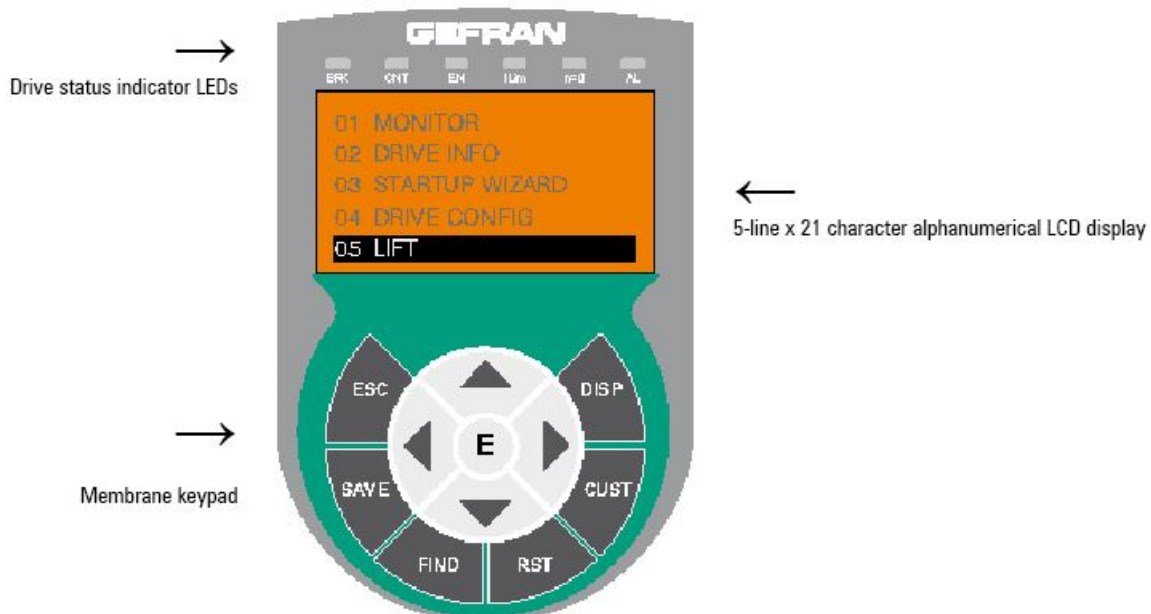
The Safety card must be enabled to enable the drive (menu 9 - COMMANDS, PAR 1010 **Commands safe start**, Default = 1).

The drive is disabled if the Safety card enable command is removed while it is enabled.

To re-enable the drive, re-enable the Safety card then remove and re-send both the Enable and Start commands.

5 Keypad Operation

5.1 KB-ADL optional programming keypad



The optional programming keypad is used to display the status and diagnostics parameters during operation. It has a strip of magnetic material on the back so that it can be attached to the front of the drive or other metal surface (e.g. door of the electrical panel). The keypad can be used remotely from distances of up to 15 m. A 70 cm-long connection cable is supplied as standard. Up to 5 sets of parameters can be saved using the KB-ADL keypad and sent to other drives.

5.1.1 Membrane keypad

This section describes the keys on the membrane keypad and their functions

Symbol	Reference	Description
ESC	Escape	Returns to the higher level menu or submenu. Exits a parameter, a list of parameters, the list of the last 10 parameters and the FIND function. Can be used to exit a message that requires use of this.
SAVE	Save	Saves the parameters directly in the non-volatile memory without having to use 4.1 Save parameters
FIND	Find	Enables the function for accessing a parameter using its number. To exit these functions, press the ◀ key.
RST	Reset	Resets alarms, only if the causes have been eliminated.
CUST	Custom	Displays the last 10 parameters that have been modified. To exit these functions, press the ◀ key.
DISP	Display	Displays a list of drive functioning parameters.
E	Enter	Enters the submenu or selected parameter, or selects an operation. It is used when modifying parameters to confirm the new value that has been set.
▲	Up	Moves the selection up in a menu or list of parameters. During modification of a parameter, increases the value of the digit under the cursor.
▼	Down	Moves the selection down in a menu or list of parameters. During modification of a parameter, decreases the value of the digit under the cursor.
◀	Left	Returns to the higher level menu. During modification of a parameter, moves the cursor to the left.
▶	Right	Accesses the submenu or parameter selected. During modification of a parameter, moves the cursor to the right.

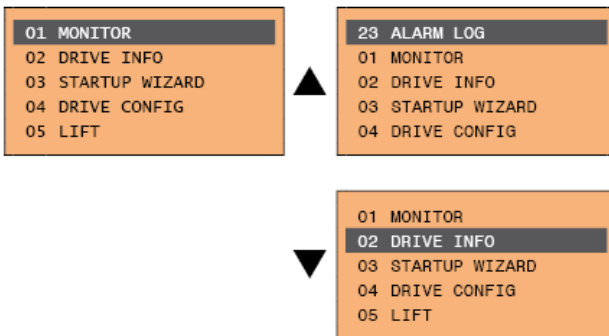
5.1.2 Meaning of LEDs

LEDs	Colour	Meaning of LEDs
BRK	Yellow	The LED is lit when the drive has activated the brake release command
CNT	Yellow	The LED is lit when the drive has activated the close contactors command
EN	Green	The LED is lit during IGBT modulation (drive operating)
ILIM	Red	When this LED is lit the drive has reached a current limit condition. During normal functioning, this LED is off.
N=0	Yellow	The LED is lit when motor speed is 0.
AL	Red	The LED is lit when the drive signals that an alarm has been triggered

5.2 Navigating with the optional keypad

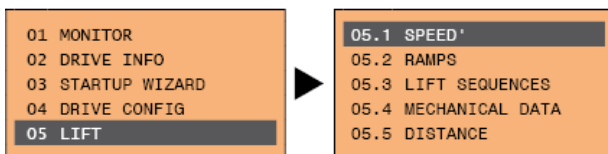
5.2.1 Scanning of the first and second level menus

First level



First level

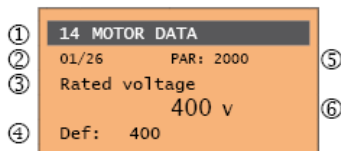
Second level



Note !

This example is only visible in Expert mode.

5.2.2 Display of a parameter



- (1) Reference to the menu where the parameter is to be found (in this case menu 14 - MOTOR DATA)
- (2) Position of the parameter in the menu structure (01)
- (3) Description of the parameter (Rated voltage)

(4) Depends on the type of parameter:

Numeric parameter: displays the numeric value of the parameter, in the format required, and unit of measurement.

Binary selection: the parameter may assume only 2 states, indicated as On - Off or 0 - 1.

LINK type parameter: displays the description of the parameter set from the selection list.

ENUM type parameter: displays the description of the selection

Command: displays the method of execution of the command

(5) Parameter number

(6) In this position, the following may be displayed:

Numeric parameter: displays the default, minimum and maximum values of the parameter. These values are displayed in sequence pressing the ► key.

LINK type parameter: displays the number (PAR) of the parameter set.

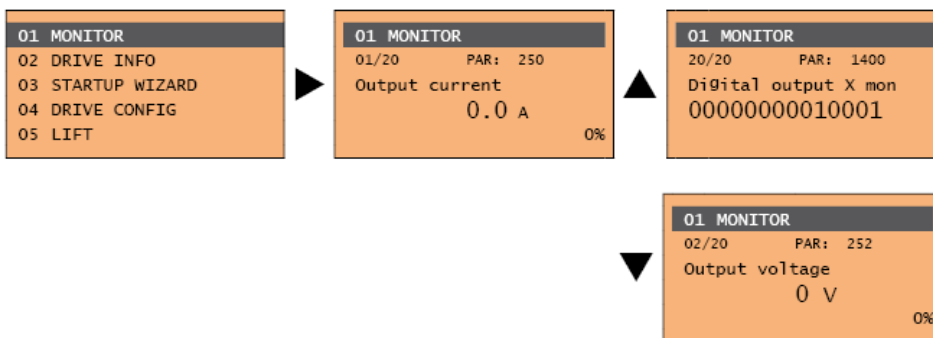
ENUM type parameter: displays the numeric value corresponding to the current selection.

Command: in the case of an error in the command, indicates that ESC must be pressed to terminate the command.

Messages and error conditions:

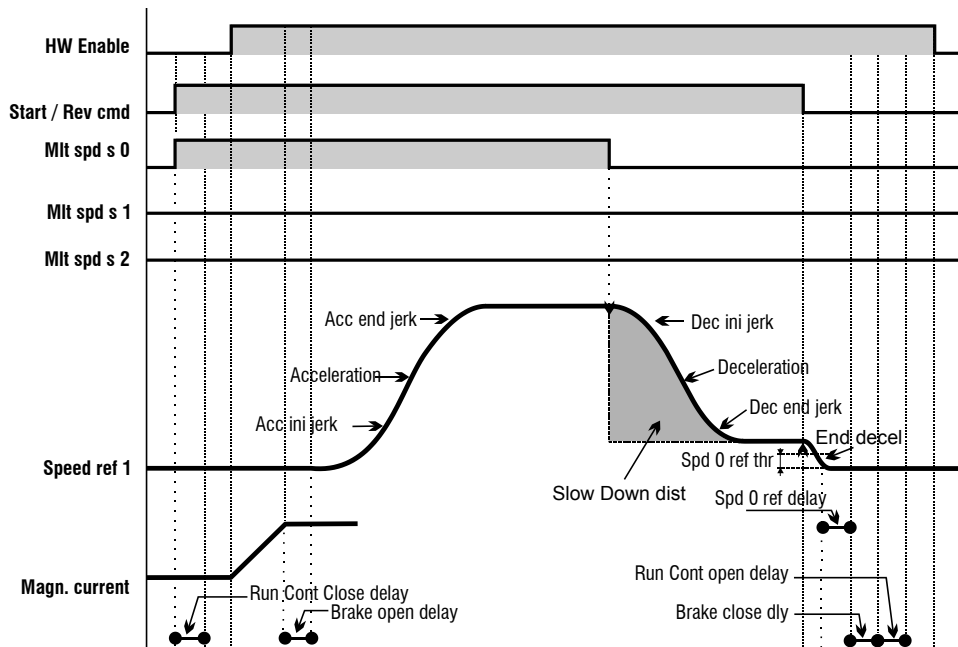
Param read only	attempt to modify a read-only parameter
Password active	the parameter protection password is active
Drive enabled	attempt to modify a non-modifiable parameter with the drive enabled
Input value too high	the value entered too high
Input value too low	the value entered too low
Out of range	attempt to insert a value outside the min. and max. limits

5.2.3 Scanning of the parameters



6 Commissioning

6.1 Lift Sequences



6.2 Preliminary Operations

Menu	Parameter	Description	Default Value	Set to
4.3	554	Access Mode	Easy	Expert
The drive can be configured in two modalities, Easy (only the main parameters are displayed) and Expert (all parameters are displayed). The mode can be selected by parameter:				

6.2.1 Set the motor type

Menu	Parameter	Description	Default Value	Set to
4.19	6100	Load Async / Sync Control		Async or Sync
If a different type is selected, the drive must be switched off and then switched on.				

6.2.2 Set the units for the car speed

Menu	Parameter	Description	Default Value	Set to
5.1.1	11002	Travel Units sel (Hz, m/s, rpm)	0	1-2-3
To select m/s set to 1, in rpm (speed of the motor shaft) set to 2, in feet per minute set to 3.				

6.3 Motor & Encoder Setup

6.3.1 Motor data setup

Figure 8.1: Motor data setup

Motor & Co.		Brushless Servomotor	
Type: ABCDE	Nr 12345-91	Pn 9.614 kW	
To 48 Nm	Io 20.4 A	Vn 299 V	Speed 2000 rpm
Tn 46 Nm	In 19.6 A	Ipk 51 A	Duty S1
Jm 6 gm ²	Kt 2.35 Nm/A	Fan 220 V	IP 54
Feedback RE 21-1-V32	Brake / Nm / Vdc		
Ins class F IEC34-1 Pt130°C Ph3	Poles 8	Weight 38 kg	
Made in			

Labels in the diagram: PAR 2002 points to Io; PAR 2000 points to Vn; PAR 2004 points to Speed; PAR 2010 points to Jm; PAR 2008 points to Poles.

Menu	Parameter	Description	Default Value	Set to
14.1	2000	Rated Voltage	-	200 - 460
Rated Voltage (possible range) 200 – 460 Volts.				

Menu	Parameter	Description	Default Value	Set to
14.2	2002	Rated Current	-	1.0 - 1500
Rated current (possible range) 1 – 1500 Ampere.				

Menu	Parameter	Description	Default Value	Set to
14.7	2012	Rated Power Factor	0,83	0,60 – 0,95
Power Factor (Async motor only).				

Menu	Parameter	Description	Default Value	Set to
14.3	2004	Rated Speed	-	10 - 32000
Rated Speed (possible range) 10 – 32000 rpm.				

Menu	Parameter	Description	Default Value	Set to
14.4	2008	Pole Pairs	-	1 - 60
Number of Pole Pairs in the range 1 – 60.				

Synchronous menu	Parameter	Description	Default Value	Set to
14.5	2010	Torque Constant	-	1 - 60
Torque generated at in the range 0.1 – 120.				

Asynchronous menu	Parameter	Description	Default Value	Set to
14.5	2010	Rated Power	-	1 - 1500
Rated motor power				

6.3.2 Encoder data setup

Menu	Parameter	Description	Default Value	Set to
15.10	2132	Encoder Mode	Sinus SINCOS	See below
Encoder Type Selection 0 None (Open Loop Elevators) 1 Digital FP				

- 2 Digital F
- 3 Sinus SINCOS
- 5 Sinus ENDAT (Version ADL300 -.....-ED only)
- 6 Sinus SSI (Version ADL300 -.....-ED only)
- 7 Sinus HIPER
- 8 ENDAT

Menu	Parameter	Description	Default Value	Set to
15.1	2100	Encoder Pulses	1024	128 - 16384
Encoder Resolution (Pulses) Setup in the range 128 – 16384.				

Menu	Parameter	Description	Default Value	Set to
15.9	2130	Encoder Direction	Not Inverted	0 - 1
Encoder Direction Setup. Setting of the sign of the information obtained from the incremental or absolute encoder.				
<p>0 Not inverted</p> <p>1 Inverted</p> <p>According to international standards, positive references are associated with clockwise motor rotation, seen from the control side (shaft). To ensure correct operation, the regulation algorithms ensure that positive speed references correspond to positive speed measurements.</p> <p>If the motor pulley is mounted on the side opposite the command side, it will turn in an anticlockwise direction when the speed is positive: to make the pulley turn in a clockwise direction, the motor phase sequence is modified, which inverts the speed measurement sign. To restore the correct speed measurement sign, invert the incremental encoder A+ and A- signals and the absolute encoder Sin+ and Sin- signals on the encoder connections. The absolute part cannot be inverted with Endat absolute encoders.</p>				

6.3.3 Autotuning and Autophasing Procedure

Set the motor data in the drive executing the command.

Menu	Parameter	Description	Default Value	Set to
14.7	2020	Take Parameters		Execute
Check if the motor data have been properly set. If the status is "Done" the data have been properly acquired.				

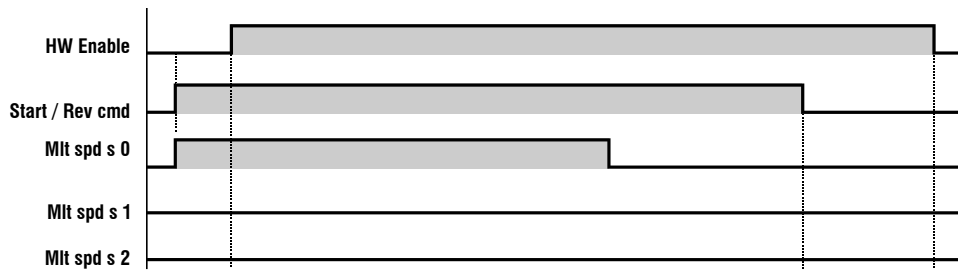
Menu	Parameter	Description	Default Value	Status
14.9	2028	Take Status		Required / Done
After the execution check if the motor data have been properly set. If the status is "Done" the data have been properly acquired.				

Menu	Parameter	Description	Default Value	Set to
14.8	2024	Autotune Still		Execute
Execute Still Autotune.				

Menu	Parameter	Description	Default Value	Status
14.10	2030	Autotune Status		Required / Done
Check if the motor data have been properly set. If the status is "Done" the Autotune has been properly executed.				

Menu	Parameter	Description	Default Value	Set to
15.22	2192	Autophase Still	0	1
<p>Perform Autophase (only for Synchronous Motors).</p> <p>This parameter can be set to perform encoder phasing without the motor running: the brake must be closed.</p> <p>In order to execute the command:</p> <ul style="list-style-type: none"> - open the enable command (Enable). - set this parameter to 1 - press Enter to confirm - when prompted to close the enabling contact apply the command to terminal 9 (Enable) - at the end of the procedure you will be asked to open the enabling contact (Enable) again to confirm completion 				

6.4 Set Car Speed



It's possible to configure different speeds for the car. The drive is able to manage up to 8 speeds.
See parameters:

Menu	Parameter	Description	Default Value	Set to
5.1.2	11020	Multi speed 0	0.10 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.3	11022	Multi speed 1	1 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.4	11024	Multi speed 2	0.40 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.5	11026	Multi speed 3	0.0 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.6	11028	Multi speed 4	0.0 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.7	11030	Multi speed 5	0.0 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.8	11032	Multi speed 6	0.0 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.1.9	11034	Multi speed 7	0.0 m/s	Wished speed

Menu	Parameter	Description	Default Value	Set to
5.5.9	11120	Slow Speed	Autoselect	Multispeed 1-7

The Slow speed is the speed used in the landing zone. When the multispeed associated with the Slow speed is selected the slow down space is checked in order to reach this speed in proximity to the landing zone.

- 0 Autoselect
- 1 Multispeed 0
- 2 Multispeed 1
- 3 Multispeed 2
- 4 Multispeed 3
- 5 Multispeed 4
- 6 Multispeed 5
- 7 Multispeed 6
- 8 Multispeed 7
- 9 Null

When mode 0 (Autoselect) is selected, Slow speed is automatically connected to the multispeed with absolute value of less and other than zero. If repositioning speeds with a value of less than the Slow speed are used, the multispeed corresponding to the floor approach speed must be set.

When mode 9 (Null) is selected the floor approach spaces are never controlled. In this case the profile depends exclusively on the multispeed selected.

To check the speed that the car is travelling see parameter:

Menu	Parameter	Description	Default Value	Status
5.1.11	12210	Actual Speed ref		Travelling speed

The controller communicated the travelling speed to the drive by 3 digital inputs.

Menu	Parameter	Description	Default Value	Set to
5.7.4	11226	Multi speed S0 sel	Digital Input 4	

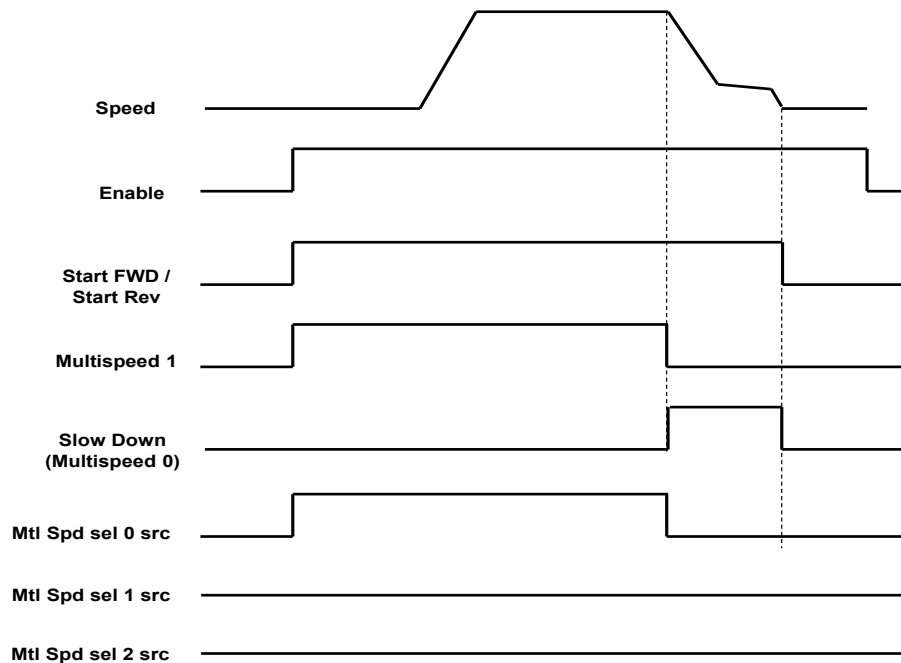
Menu	Parameter	Description	Default Value	Set to
5.7.5	11228	Multi speed S1 sel	Digital Input 5	

Menu	Parameter	Description	Default Value	Set to
5.7.6	11230	Multi speed S2 sel	Digital Input 6	

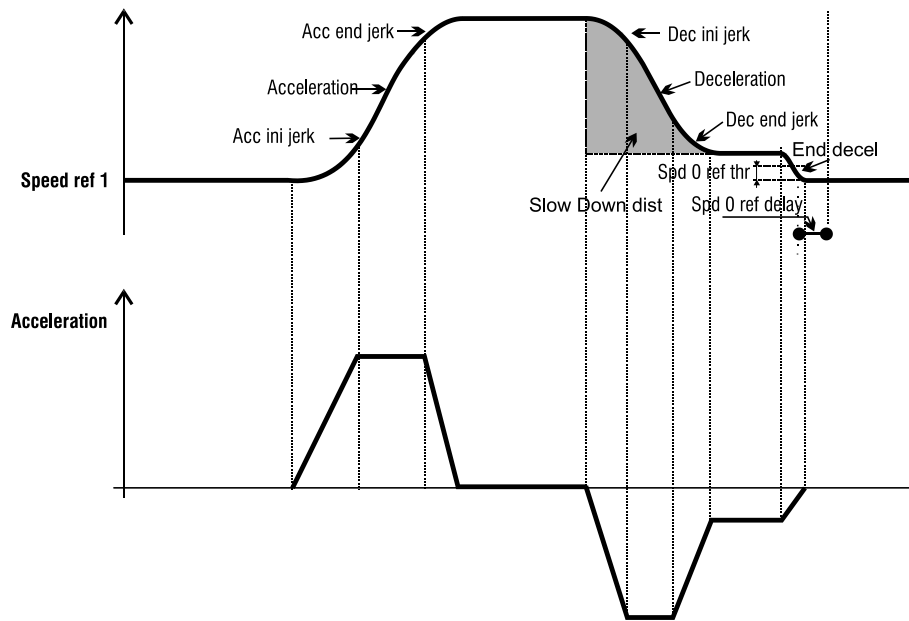
The conversion table is the following:

Multi speed S2 sel	Multi speed S1 sel	Multi speed S0 sel	ACTIVE RAMP REF
0	0	0	Multi speed 0
0	0	1	Multi speed 1
0	1	0	Multi speed 2
0	1	1	Multi speed 3
1	0	0	Multi speed 4
1	0	1	Multi speed 5
1	1	0	Multi speed 6
1	1	1	Multi speed 7

Hereafter an example of elevator working in two speeds:



6.5 Ramps Acceleration and Jerks



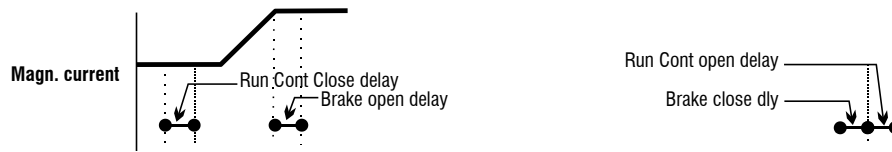
Menu	Parameter	Description	Default Value	Set to
5.2.1	11040	Acc ini Jerk	0.50	
5.2.2	11042	Acceleration	0.60	
5.2.3	11044	Acc end Jerk	1.40	
5.2.4	11046	Dec ini Jerk	1.40	
5.2.5	11048	Deceleration	0.60	
5.2.6	11050	Dec end jerk	0.50	
5.3.8	11078	Speed 0 threshold	1,00 rpm	
5.3.9	11080	Speed 0 delay	400 ms	

Multi speed configuration table

Through the combination of “MtlSpd S0” (Digital input 4), “MtlSpd S1” (Digital input 5) and “MtlSpd S2” (Digital input 6) commands, is possible to select Multi speed desired, according to next table:

MtlSpd S2	MtlSpd S1	MtlSpd S0	ACTIVE SPEED
0	0	0	Multispeed 0, PAR 11020
0	0	1	Multispeed 1, PAR 11022
0	1	0	Multispeed 2, PAR 11024
0	1	1	Multispeed 3, PAR 11026
1	0	0	Multispeed 4, PAR 11028
1	0	1	Multispeed 5, PAR 11030
1	1	0	Multispeed 6, PAR 11032
1	1	1	Multispeed 7, PAR 11034

6.6 Brake Sequence



Menu	Parameter	Description	Default Value	Set to
5.3.2	11062	Cont close delay	200 ms	0 - 10000

Menu	Parameter	Description	Default Value	Set to
5.3.3	11064	Brake open delay	0 ms	0 - 10000

Menu	Parameter	Description	Default Value	Set to
5.3.5	11068	Brake close delay	200 ms	0 - 10000

Menu	Parameter	Description	Default Value	Set to
5.3.7	11072	Contacteur Open delay	200 ms	0 - 10000

6.7 Emergency Operation

The emergency operation happens when there is a failure at main power supply . The drive can be feed by external modules.

Two different modes are possible:

- Operation by Emergency Power Supply (EMS)
- Operation by Single Phase Uninterruptible Power Supply (UPS)

The emergency operation condition must be noticed to the drive by a dedicated Digital Input as reported in the schematic below (Default is Digital Input 3).

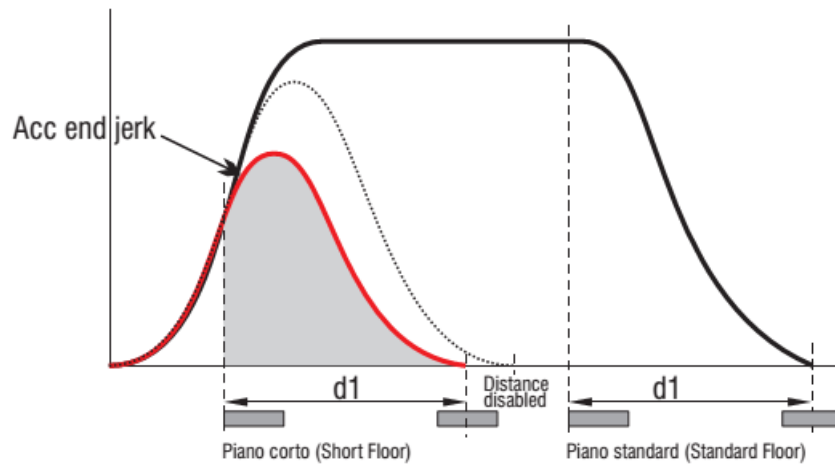
[See diagram on chapter 4.1 “ADL300 Typical Installation and Main Sections”.](#)

During the emergency operation the under-voltage alarm is disabled. It is possible to configure the minimum allowed value of the DC bus voltage that assure the operation of the drive. Below the configured value at parameter 448 the drive stop any operation. The default value is automatically calculated by the drive, it is possible to set a value lower than the default.

Menu	Parameter	Description	Default Value	Set to
4.7	448	Emergency UV	Calculated by the drive	0 - 10000

7 Short Floor

In some building the distance between two adjacent floors is not always the same. This happens in case of short floor. It is possible to associate to the short floor a wished speed in order to calculate the best curve to approach the landing floor.



The wished speed is set based on indication at paragraph 7.4. While the distance of the short floor is set based on parameter that can be selected in the parameter group 11102 -11118 (see picture distance d1). When the car move in the short floor a specific speed is communicated by the controller to the drive. The drive knowing speed and distance can calculate the right curve to approach. For example to associate the speed of the short floor to the multispeed 2 the following parameter must be set to the distance d1.

Menu	Parameter	Description	Default Value	Set to
5.5.3	11106	Distance multispeed 2	0,0	0,0 – 10,0

8 Fine Adjustment

Problem	Cause	Action	Parameters
At Start there is a delay to release the brake and there is a car shock.	The Motor starts running when the brake is not completely released or runs against the brake	Increase the Brake Open Delay	11064 Menu (5.3.3)
At Start the acceleration is to sharp.	The Acc ini Jerk value is too high	Decrease the Acc ini Jerk value	11040 Menu (5.2.1)
After the start the acceleration is to sharp.	The linear acceleration value is too high	Decrease the Acc value	11042 Menu (5.2.2)
The first phase of the deceleration is to sharp.	The Dec ini Jerk value is too high	Decrease the Dec ini Jerk value	11046 Menu (5.2.4)
The deceleration to approach the floor is to sharp.	The deceleration value is too high	Decrease the Dec value	11048 Menu (5.2.5)
During the landing phase the speed is not smooth but with jumps.		In case of Asyn motors increase the Slip Compensation and/or increase the slow speed. In case of Synch motors increase the slow speed	2440 Menu (19.10) (Asyn motors only) 11120 Menu (5.5.9)
At Stop there is a delay to close the brake.	The configuration of the brake closure timing is not optimized	Decrease the Brake close Delay	11068 Menu (5.3.5)
At Stop there is a shock.	The brake closes before of the motor stop.	Increase the Brake close Delay	11068 Menu (5.3.5)
For elevator in close loop, during the travelling at the rated speed there are vibrations.	The Speed control loop is not well set.	Decrease the Proportional Speed Regulation Gain.	2200 Menu (16.1)
The short floor is not optimized.	The parameters related to the short floor are not well optimized.	Adjust the related parameters to have the best	11046 Menu (5.2.4) 11048 Menu (5.2.5) 11050 Menu (5.2.6)
Rollback at Start for Open Loop Control or the car is not able to start.	There is no enough current.	Tune the the parameters to modifying the V/f curve to provide higher torque at lower Voltage.	2408 – 2410 – 2412 – 2414. Menu (19.5.x)

9 Alarms and Troubleshooting



Attention

To reset Alarms see chapter 8.3.11 of ADL300 QS manual.

Note !

In the following table, the Code is visible only from serial line

9.1 Alarms

Code	Error message shown on the display [on the integrated keypad]	Sub-code	Description
0	No alarm		Condition: No alarm present
1	Overvoltage [OV]		<p>Condition: DC link overvoltage alarm due to energy recovered from the motor. The voltage arriving at the drive power section is too high compared to the maximum threshold relating to the PAR 560 Mains voltage parameter setting.</p> <p>Solution:</p> <ul style="list-style-type: none"> - Check the status of the braking resistors and check that no interruptions in the cabling. - Always use a braking resistor to dissipate the energy recuperation, to be connected to the specific terminals. See section "7.1.9 Connection of braking resistor (optional) on ADL300 QS manual (code 1S9QSEN).
2	Undervoltage [UV]		<p>Condition: DC link undervoltage alarm. The voltage arriving at the drive power section is too low compared to the minimum threshold relating to the 560 Mains voltage parameter setting due to:</p> <ul style="list-style-type: none"> - the mains voltage being too low or overextended voltage drops. - poor cable connections (e.g. loose contactor terminals, inductance, filter, etc.). <p>Solution: Check the connections and mains voltage</p>
3	Ground fault [GNDF]		<p>Condition: Ground short circuit alarm</p> <p>Solution:</p> <ul style="list-style-type: none"> - Check drive and motor wiring. - Check that the motor is not grounded.
4	Overcurrent [OC]		<p>Condition: Instantaneous overcurrent protection intervention alarm. This may be due to the incorrect setting of current regulator parameters or a short circuit between phases or ground fault on the drive output.</p> <p>Solution:</p> <ul style="list-style-type: none"> - Check the current regulator parameters (menu 17) - Check wiring towards the motor
5	Desaturation [DES]		<p>Condition: Instantaneous overcurrent in the IGBT bridge alarm.</p> <p>Solution:</p> <ul style="list-style-type: none"> - Switch the drive off and then switch it on again. - Check the condition of the braking resistor isolation. Make sure there are no earth leakages. - If the alarm persists, contact the technical service centre.
6	MultiUndervolt [MUV]		<p>Condition: The number of attempted automatic restarts after the Undervoltage alarm has exceeded the set PAR 4650 UVRep attempts value in the PAR 4652 UVRep delay time.</p> <p>Solution: Too many Undervoltage alarms. Adopt the proposed solutions for the Undervoltage alarm.</p>
7	MultiOvercurr [MOC]		<p>Condition: 2 attempted automatic restarts after the Overcurrent alarm within 30 seconds. If more than 30 seconds pass after the Overcurrent alarm was generated, the attempt counter is reset.</p> <p>Solution: Too many Overcurrent alarms. Adopt the proposed solutions for the Overcurrent alarm.</p>
8	MultiDesat [MDES]		Condition: 2 attempted at automatic restarts after the Desaturation alarm within 30 seconds. If more than 30 seconds pass after the Desaturation alarm

Code	Error message shown on the display [on the integrated keypad]	Sub-code	Description
			was generated, the attempt counter is reset. Solution: Too many Desaturation alarms. Adopt the proposed solutions for the Desaturation alarm.
9	Heatsink OT [HOT]		Condition: Heatsink temperature too high alarm Solution: - Verify the correct operation of the cooling fan. - Check that the heatsinks are not clogged - Check that the openings for the cabinet cooling air are not blocked.
10	HeatsinkS OTUT [HSOT]		Condition: IGBT module temperature too high or too low alarm Solution: - Verify the correct operation of the cooling fan. - Check that the heatsinks are not clogged - Check that the openings for the cabinet cooling air are not blocked.
11	Intakeair OT [IOT]		Condition: Input air temperature too high alarm. Solution: - Check correct fan operation - Check that panel cooling air openings are unobstructed. - Check temperature in electrical panel.
12	Motor OT [MOT]		Condition: Motor overtemperature alarm. Possible causes: - Load cycle too heavy - The motor is installed in a place where the ambient temperature is too high - If the motor is provided with a blower: the fan is not working - If the motor is not provided with a blower: the load is too high at slow speeds. Cooling the fan on the motor shaft is not sufficient for this load cycle. - The motor is used at less than the rated frequency, causing additional magnetic losses. Solution: - Change the processing cycle. - Use a cooling fan to cool the motor.
13	Drive overload [DOL]		Condition: Drive overload alarm. - The inverter output current has exceeded the allowed overload value. - The overload cycle has exceeded the allowed values. Solution: - Check that the load is not excessive. - Check that accelerations are not excessive. - Check that the overload cycle is within allowed limits.
14	Motor overload [MOL]		Condition: Motor overload alarm. The current absorbed during operation is greater than that specified on the motor data plate. Solution: - Reduce the motor load. - Increase the size of the motor.
15	Bres overload [BOL]		Condition: Braking resistor overload alarm. The current absorbed by the resistor is greater than the rated current. Solution: - Check the size of the braking resistor. - Check the condition of the braking resistor.
16	Phase loss [PHL]		Condition: Power phase loss alarm. Solution: Check the mains voltage and whether any protections upstream of the drive have been tripped.
17	Opt Bus fault [OPTB]		Condition: Error in the configuration stage or communication error.
		XXX0H-X	If the first digit to the left of "H" in the alarm sub-code is equal to 0, the error relates to a communication problem.
		XXXXH-X	If the first digit to the left of "H" in the alarm sub-code is other than 0, the error relates to a configuration problem.

Code	Error message shown on the display [on the integrated keypad]	Sub-code	Description
			<p>Solution: For configuration errors, check the configuration of the Bus communication, Bus type, Baudrate, address. parameter setting For communication errors verify wiring, resistance of terminations, interference immunity, timeout settings. For more details reference should be made to the datasheet of the bus being used.</p>
18	Opt 1 IO fault [OPT1]		Condition: Error in the communication between Regulation and I/O expansion card in slot 1 (Advanced version only).
			Solution: Check that it has been inserted correctly, see Appendix section A.1 on ADL300 QS manual (code 1S9QSEN) . Advanced version only.
19	Opt 2 IO fault		Condition: Error in the communication between Regulation and encoder expansion card in slot 2 (Advanced version only).
			Solution: Check that it has been inserted correctly, see Appendix section A.1 on ADL300 QS manual (code 1S9QSEN) . Advanced version only.
20	Opt Enc fault [OPTe]		Condition: Error in the communication between Regulation and Encoder feedback card (Advanced version only).
			Solution: Check that it has been inserted correctly, see Appendix section A.1 on ADL300 QS manual (code 1S9QSEN) .
21	External fault [EF]		Condition: External alarm present. A digital input has been programmed as an external alarm, but the +24V voltage is not available on the terminal.
			Solution: Check that the terminal screws are tight
22	Speed fbk loss [SFL]		Condition: Speed feedback loss alarm. The encoder is not connected, not connected properly or not powered: verify encoder operation by selecting the PAR 260 Motor speed parameter in the MONITOR menu.
			Solution: See parameter 2172 SpdFbkLoss code (on ADL300 QS manual) for information about the cause of the alarm and chapter 10.2 Speed fbk loss [22] alarm
23	Overspeed [OS]		Condition: Motor overspeed alarm. The motor speed exceeds the limits set in the PAR 4540 parameter.
			Solution: - Limit the speed reference. - Check that the motor is not driven in overspeed during rotation.
24	Speed ref loss [SRL]		Condition: Speed reference loss alarm; occurs if the difference between the speed regulator reference and the actual motor speed is more than 100 rpm. This condition occurs because the drive is in the current limit condition. It is only available in the Flux Vect OL and Flux Vect CL mode (see PAR 4550).
			Solution: Check that the load is not excessive.
25	Not Used		
26	Power down [PRR]		Condition: The drive was enabled with no supply voltage at the power section.
			Solution: Emergency stop alarm. The Stop key on the keypad was pressed with the Stop key mode parameter set to EmgStop&Alarm in case of Remote->Terminal Strip or Remote->Digital or Local->Terminal Strip mode.
27	Phaseloss out [PHLO]		Condition: Output phase loss.
			Solution: Check Drive/motor connection.
28	OV safety [QVSF]		Condition: Safety status alarm caused by Overvoltage situations.
			Solution: the firmware attempts to reset the card automatically. If the condition is removed (the alarm cleared message is displayed) the alarm can be reset and the drive restarted by deactivating and reactivating Enable and Start.
29	Safety failure [SF]		Condition: The state of the "safety function" is communicated to the regulation card via 2 digital inputs: SAFETY_ON (pin P1.8) and SAFETY_EN (pin P1.9)
			Solution: Switch the drive off and then back on. If the error persists, contact the technical service centre.
30	Mot phase loss [MOTL]		Condition: Output phase loss.
			Solution: Check Drive/motor connection.
31	Rope change [ROPC]		<p>This may occur in two conditions:</p> <ul style="list-style-type: none"> the drive continues to run but the rope usage threshold set in parameter 3404 Ropes change thr has been reached; the drive finishes the current travel and then locks because parameter 3414 Direction counter has reached 0 (corresponding to parameter 3412 Ropes usage = 100%).

Code	Error message shown on the display [on the integrated keypad]	Sub-code	Description
			<p>Solution: replace the ropes.</p> <p>By switching the drive off and back on you can run a single travel to bring the car to a better position for the procedure.</p> <p>After you have changed the ropes, reset the direction change counter to eliminate the lock condition.</p>
32	Not Used		
33 ... 40	Plc1 fault [PLC1] ... Plc8 fault [PLC8]		<p>Condition: Enabled application developed in the IEC 61131-3 environment has found the conditions for generating this specific alarm to be true. The meaning of the alarm depends on the type of application. For more information, refer to the documentation concerning the specific application..</p>
		XXXXH-X	The XXXXH-X code indicates the reason for the error: make a note of this to discuss it with the service centre.
			<p>Solution: Refer to the documentation concerning the enabled application.</p> <p>With regards to the standard application EFC refer to Functional Parameter Manual section LIFT ALARMS. For the applications DCP3/DCP4, EPC and CiA 417 refer to the application manual section ALARMS.</p>
41	Watchdog [WDT]		<p>Condition: this condition can occur during operation when the watchdog micro protection is enabled; the alarm is included in the list of alarms and alarm log. After this alarm:</p> <ul style="list-style-type: none"> - the drive automatically runs a reset - motor control is not available.
		XXXXH-X	The XXXXH-X code indicates the reason for the error: make a note of this to discuss it with the service centre.
			<p>Solution: If the alarm is the consequence of a change in the drive configuration (parameter setting, option installation, PLC application download) remove it.</p> <p>Turn the drive off and then on again.</p>
42	Trap error [TRAP]		<p>Condition: this condition can occur during operation when the trap micro protection is enabled; the alarm is included in the list of alarms and alarm log. After this alarm:</p> <ul style="list-style-type: none"> - the drive automatically runs a reset - motor control is not available.
		XXXXH-X	The XXXXH-X (SubHandler-Class) code indicates the reason for the error: make a note of this to discuss it with the service centre.
			<p>Solution: If the alarm was a consequence of a variation to the drive configuration (parameter setting, installation of an option, downloading of a PLC application), remove it.</p> <p>Switch the drive off and then switch it on again.</p>
43	System error [SYS]		<p>Condition: this condition can occur during operation when the operating system protection is enabled; the alarm is included in the list of alarms and alarm log. After this alarm:</p> <ul style="list-style-type: none"> - the drive automatically runs a reset - motor control is not available.
		XXXXH-X	The XXXXH-X (Error-Pid) code indicates the reason for the error: make a note of this to discuss it with the service centre.
			<p>Solution: If the alarm was a consequence of a variation to the drive configuration (parameter setting, installation of an option, downloading of a PLC application), remove it.</p> <p>Switch the drive off and then switch it on again.</p>
44	User error [USR]		<p>Condition: this condition can occur during operation when the software protection is enabled; the alarm is included in the list of alarms and alarm log. After this alarm:</p> <ul style="list-style-type: none"> - the drive automatically runs a reset - motor control is not available.
		XXXXH-X	The XXXXH-X (Error-Pid) code indicates the reason for the error: make a note of this to discuss it with the service centre.
			<p>Solution: If the alarm was a consequence of a variation to the drive configuration (parameter setting, installation of an option, downloading of a PLC application), remove it.</p> <p>Switch the drive off and then switch it on again.</p>
45	Param error [PE]		<p>Condition: if an error occurs during the enabling of the parameter database saved in the Flash memory; the alarm is included in the list of alarms and alarm log.</p>
		XXXXH-X	Code XXXXH-X indicates the number of the parameter (Hex-Dec) that has caused the error: make a note of this to discuss it with the service centre.
			<p>Solution: Set the parameter causing the error to the correct value and run Save parameter. Switch the drive off and then switch it back on again.</p>
46	Load default [LD]		<p>Condition: this can occur during loading of the parameter database saved in the Flash memory</p> <p>it is normal if it appears in the following conditions: the first time the drive is switched on, when a new version of the firmware is downloaded, when the</p>

Code	Error message shown on the display [on the integrated keypad]	Sub-code	Description
			regulation is installed on a new size, when a new region is entered. If this message appears when the drive is already in use it means there has been a problem in the parameter database saved in the Flash memory. If this message is displayed the drive restores the default database, i.e. the one downloaded during production.
		0001H-1	The database saved is not valid
		0002H-2	The database saved is not compatible
		0003H-3	The saved database refers to a different size and not to the current size
		0004H-4	The saved database refers to a different region and not to the current region
			Solution: Set the parameters to the desired value and execute Save parameters
47	Plc cfg error [PLCE]		Condition: this can occur during loading of the MDPLC application The Mdplc application present on the drive is not run.
		0004H-4	The application that has been downloaded has a different Crc on the DataBlock and Function table.
		0065H-101	The application that has been downloaded has an invalid identification code (Info).
		0066H-102	The application that has been downloaded uses an incorrect task number (Info).
		0067H-103	The application that has been downloaded has an incorrect software configuration.
		0068H-104	The application that has been downloaded has a different Crc on the DataBlock and Function table.
		0069H-105	A Trap error or System error has occurred. The drive has automatically executed a Power-up operation. Application not executed. See the Alarm List for more information about an error that has occurred.
		006AH-106	The application that has been downloaded has an invalid identification code (Task).
		006BH-107	The application that has been downloaded uses an incorrect task number (Task).
		006CH-108	The application that has been downloaded has an incorrect Crc (Tables + Code)
			Solution: Remove the MDPLC application or download a correct MDPLC application.
48	Load par def plc [LDP]		Condition: this can occur during loading of the parameter database saved in the Flash memory of the MDPLC application it is normal if it appears the first time the drive is switched on, after downloading a new application. If this message appears when the drive is already in use it means there has been a problem in the parameter database saved in the Flash memory. If this message appears the drive automatically runs the Load default command.
		0001H-1	The database saved is not valid
			Solution: Set the parameters to the desired value and run Save parameter.
49	Key failed [KEY]		Condition: this can occur at drive power-on if the wrong enabling key is entered for a given firmware function
		0001H-1	Incorrect PLC key. PLC application not available.
			Solution: Contact Gefran to request the key to enable the desired firmware function.
50	Encoder error [ENC]		Condition: this condition may occur when the drive is powered during encoder setup each time parameter 552 Regulation mode is set.
		100H-256	Cause: An error occurred during setup; the information received from the encoder is not reliable. If the encoder is used for feedback the Speed fbk loss alarm is also generated. Solution: Take the recommended action for the Speed fbk loss alarm.
		200H-512	Cause: The firmware on the optional encoder card is incompatible with that on the regulation card. The information received from the encoder is not reliable Solution: Contact Gefran in order to update the firmware on the optional encoder card.
51	Opt cfg change [OCFG]		Condition: an optional card has been removed with respect to the configuration present when the last Save parameters command was executed or there is a fault on the optional card or on the regulation card. Solution: If the user has removed the card on purpose, execute Save parameters . If the user has not removed the card, identify and replace the faulty card.

9.2 Speed fbk loss alarm according to the type of feedback

Note 1

For the correct interpretation of the cause of the alarm trigger, it is necessary to transform the hex code indicated in parameter 15.13 SpdFbkLoss code, PAR 2172, in the corresponding binary and verify in the encoder table that the active bits and related description are used.

Example with encoder Endat:

PAR 2172 = A0H (hex value)

In the table "Speed fbk loss [22] alarm with absolute encoder EnDat" A0 is not indicated in the value column.

A0 should be contemplated as a bitword with meaning A0 -> 10100000 -> bit 5 and bit 7. The following causes simultaneously intervene:

- Bit 5 = 20H Cause: the SSI signal interferences cause an error in the CKS or parity.
- Bit 7 = 80H Cause: The encoder has detected an incorrect operation and communicates it to the converter through the Error bit. Bits 16..31 present the type of incorrect encoder operation detected.

The value is displayed in hexadecimal format on the optional and standard keypad.

- **Speed fbk loss [22] alarm with digital incremental encoder**

Bit	Value	Name	Description
0	0x01	CHA	Cause: no impulses or disturbance on incremental channel A.
			Solution: Check the connection of the encoder-drive channel A, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2104 Encoder input config.
1	0x02	CHB	Cause: no impulses or disturbance on incremental channel B.
			Solution: Check the connection of the encoder-drive channel B, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2104 Encoder input config.
2	0x04	CHZ	Cause: no impulses or disturbance on incremental channel Z.
			Solution: Check the connection of the encoder-drive channel Z, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2104 Encoder input config, check parameter 2110 Encoder signal check

- **Speed fbk loss [22] alarm with sinusoidal incremental encoder**

Bit	Value	Name	Description
3	0x08	MOD_INCR	Cause: voltage level not correct or disturbance on signals of incremental channels A-B.
			Solution: Check the connection of the encoder-drive channels A-B, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2108 Encoder signal Vpp.

- **Speed fbk loss [22] alarm with SinCos encoder**

Bit	Value	Name	Description
3	0x08	MOD_INCR	Cause: voltage level not correct or disturbance on signals of incremental channels A-B.
			Solution: Check the connection of the the encoder-drive channels A-B, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2108 Encoder signal Vpp.
4	0x10	MOD_ABS	Cause: voltage level not correct or disturbance on signals of absolute SinCos channels.

Bit	Value	Name	Description
			Solution: Check the connection of the the encoder-drive channels A-B, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2108 Encoder signal Vpp.

- **Speed fbk loss [22] alarm with EnDat absolute encoder**

Bit	Value	Name	Description
3	0x08	MOD_INCR	Cause: voltage level not correct or disturbance on signals of incremental channels A-B. Solution: Check the connection of the the encoder-drive channels A-B, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply, check parameter 2108 Encoder signal Vpp.
5	0x20	CRC_CKS_P	Cause: SSI signals not present or disturbed cause an error on CRC Solution: Check the connection of the clock and encoder-drive data, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply.
8	0x100	Setup error	Cause: An error occurred during setup. Solution: Check the connection of the clock and encoder-drive data, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply.

The following conditions occur while resetting the encoder following Speed fbk loss [22] activation

Bit	Value	Name	Description																																				
6	0x40	ACK_TMO	Cause: SSI signals not present or disturbed cause an error on CRC Solution: Check the connection of the clock and encoder-drive data, check the connection of the screen, check the encoder supply voltage, check parameter 2102 Encoder supply.																																				
7	0x80	DT1_ERR	Cause: Encoder has detected malfunction and signals this to the drive via bit DT1. Bits 16..31 contain the type of malfunction detected by the encoder. Solution: See the encoder manufacturer's technical guide.																																				
16..31			<table border="1"> <thead> <tr> <th>Bit</th> <th></th> <th>=0</th> <th>=1</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Light source</td> <td>OK</td> <td>Failure (1)</td> </tr> <tr> <td>1</td> <td>Signal amplitude</td> <td>OK</td> <td>Erroneous (1)</td> </tr> <tr> <td>2</td> <td>Position value</td> <td>OK</td> <td>Erroneous (1)</td> </tr> <tr> <td>3</td> <td>Over voltage</td> <td>NO</td> <td>Yes (1)</td> </tr> <tr> <td>4</td> <td>Under voltage</td> <td>NO</td> <td>Under voltage supply (1)</td> </tr> <tr> <td>5</td> <td>Over current</td> <td>NO</td> <td>Yes (1)</td> </tr> <tr> <td>6</td> <td>Battery</td> <td>OK</td> <td>Change the battery (2)</td> </tr> <tr> <td>7..15</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Bit		=0	=1	0	Light source	OK	Failure (1)	1	Signal amplitude	OK	Erroneous (1)	2	Position value	OK	Erroneous (1)	3	Over voltage	NO	Yes (1)	4	Under voltage	NO	Under voltage supply (1)	5	Over current	NO	Yes (1)	6	Battery	OK	Change the battery (2)	7..15			
Bit		=0	=1																																				
0	Light source	OK	Failure (1)																																				
1	Signal amplitude	OK	Erroneous (1)																																				
2	Position value	OK	Erroneous (1)																																				
3	Over voltage	NO	Yes (1)																																				
4	Under voltage	NO	Under voltage supply (1)																																				
5	Over current	NO	Yes (1)																																				
6	Battery	OK	Change the battery (2)																																				
7..15																																							
(1) Can also be set after the power supply is switched off or on. (2) Only for battery-buffered encoders																																							

9.2.1 Reset Speed fbk loss alarm

The reasons for activating the Speed fbk loss alarm and the information acquired by the encoder are shown in parameter 2172 SpdFbkLoss code.

If no card has been installed the Speed fbk loss [22] alarm is generated and no cause is displayed in parameter 2172 SpdFbkLoss code. Several causes may be present at the same time.

If no card is recognised, the system runs a routine that always returns Speed fbk loss [22] active without specifying a cause.

9.2.2 Encoder error alarm

Setup is performed each time the drive is turned on, regardless of the regulation mode that has been selected. If an error is detected during setup the Encoder error alarm is generated with the following codes:

Bit	Value	Name	Description
8	0x100	Setup error	Cause: An error occurred during setup. When this has been signalled the information obtained from the encoder is not reliable.
			Solution: Take the action recommended for Speed fbk loss [22] alarm according to the type of encoder.
9	0x200	Compatibility error	Cause: Firmware on option card incompatible with firmware on regulation card. When this has been signalled the information obtained from the encoder is not reliable.
			Solution: Contact Gefran in order to update the firmware on the optional card.

10 Monitoring Parameters

Variable	Description	Values	Menu	Parameter	Unit
Output Current	Drive Output Current		MONITOR	250	A
Output Voltage	Drive Output Voltage		MONITOR	252	V
Output Frequency	Drive Output Frequency		MONITOR	254	Hz
Ramp Setpoint	Ramp Reference		MONITOR	628	rpm
Speed Setpoint	Speed Reference		MONITOR	664	rpm
Motor Speed	Actual Speed of the motor		MONITOR	260	rpm
Enable State mon	The drive Enable Command Status (Default Dig Input 7)	0 Disabled 1 Enabled	MONITOR	1066	
Start State mon	The drive Start Command Status		MONITOR	1068	
Fast Stop mon	The drive Fast Stop Command Status		MONITOR	1070	
Digital Input x	The status of the digital inputs	0 Disabled 1 Enabled	MONITOR	1200	
<p>Example:</p> <p>0 0 0 0 0 0 0 0 0 0 0 1 1</p> <p>Enable DI 1</p>					
Digital Output x	The status of the digital outputs	0 Disabled 1 Enabled	MONITOR	1400	
<p>Example:</p> <p>0 0 0 0 0 0 0 0 0 0 0 1 1</p> <p>DO 1 DO 2</p>					
DC Link Voltage	The direct voltage of the intermediate circuit capacitors is displayed (DC-Bus)		MONITOR	270	V
Heatsink Temperature	The temperature measured on the drive heatsink		MONITOR	272	°C
Torque current ref	The current reference used for torque control		MONITOR	280	A
Magnet Current Ref	Magnet current ref		MONITOR	282	A
Torque Current	The actual torque current		MONITOR	284	A
Magnet Current	The actual magnetizing current		MONITOR	286	A
Motor OVLD Accum	The motor overload level		MONITOR	3212	%
Drive OVLD	The drive overload level		MONITOR	368	%
Bres OVLD Accum	The braking resistor overload limit is displayed (100% = alarm threshold)		MONITOR	3260	%
Drive Type	The drive series identification code is displayed. The drives reporting 24V in the description can be feeded by an external 24Vdc power supply. For schematics and connection diagrams please refer to Quick Start manual	0 Basic-Sin 1 Advanced 2 Basic-VGA 3 Basic-End 128 Basic-Sin 24V 129 Advanced 24V 130 Basic-VGA 24V 131 Basic-End 24V	DRIVE INFO	476	
Control Type	The control mode is displayed.	11 Asynchronous 12 Synchronous	DRIVE INFO	480	
Drive Size	The drive size identification code		DRIVE INFO	482	
Drive Family	The available mains voltage is displayed (e.g. 400V). The undervoltage alarm refers to this voltage value. The condition No power occurs	0 No Power 1 230V..480V 2 500V..575V 3 690V	DRIVE INFO	484	

Variable	Description	Values	Menu	Parameter	Unit
	when the regulation board has just left from production and has never been configured for any power. The configuration adjustment for a given power is achieved by linking it to a power board and running a Save parameters.	4 230V			
Drive Region	This setting determines the factory voltage and power supply frequency values.	0 EU (400V / 50Hz) 1 USA (460 / 60 Hz)	DRIVE INFO	486	
Drive Cont Current	The current that the drive can deliver continuously according to size, supply voltage and programmed switching frequency is displayed		DRIVE INFO	488	
Firmware ver.rel	The version number and release number of the drive firmware are displayed.		DRIVE INFO	490	
Firmware Type	Identifies the version of the special firmware installed in the drive		DRIVE INFO	496	
Product S/N	The drive serial number		DRIVE INFO	520	
Regulation S/N	The drive regulation card serial number		DRIVE INFO	522	
Power S/N	The drive power card serial number		DRIVE INFO	524	
FW Encoder ver.rel	The version and release number of the encoder firmware		DRIVE INFO	546	
FW Encoder Type	The type of firmware installed in the encoder		DRIVE INFO	548	
Actual Multispeed Selected	The currently selected speed	Multispeed 0 + Multispeed 7	LIFT - SPEED	12010	
Actual Speed Reference	The speed of the car lift		LIFT - SPEED	12210	m/s
Trip Number	The lift journey counter is displayed. The counter increases each time the Start lift signal is activated.		LIFT - SEQUENCES	12014	
Chosen Direction	Indicates the direction selected by the drive during the emergency	0 No direction selected 1 Forward 2 Reverse	LIFT – EMERGENCY MODE	12282	
Take Status	Indication of the status of parameter saving.	0 Required 1 Done	MOTOR DATA	2028	
Autotune Status	Indication of the status of execution of motor parameter self-tuning. The parameter displays the Requiredmessage when motor parameter self-tuning is required. When self-tuning is complete the parameter indicates Done.	0 Required 1 Done	MOTOR DATA	2030	
Application type	The type of application currently used by the drive	6 EFC (Creep to Floor) 10 EPC (Direct Approach) 11 DCP3/DCP4 21 DS417 (CANOpen Lift CiA 417)	DRIVE INFO	506	

11 Main Parameters List

Menu	Parameter	Description	Default Value	Min	Max
4.3	554	Access mode	Easy	0	1
<p>0 <i>Easy</i> 1 <i>Expert</i></p> <p>The Easy mode gives access to a list of parameters that can be used for rapid drive commissioning. This type of configuration is suitable for the majority of applications.</p> <p>Setting the parameter to Expert gives access to all the parameters in the firmware. This mode allows an extremely high level of customization to be achieved in order to exploit the potential of the ADL300 to the full.</p>					

Menu	Parameter	Description	Default Value	Min	Max
4.8	448	Emergency UV (V)	CALCF	0.0	CALCF
<p>This parameter enables for the undervoltage threshold to be configured on the DC link. This parameter prevents the drive from opening the brake in emergency conditions without a DC link being supplied correctly.</p>					

Menu	Parameter	Description	Default Value	Min	Max
4.17	580	Load default	0	0	1
<p>Transfers the standard factory settings to the drive memory ("Def" column in the parameters table).</p>					

Menu	Parameter	Description	Default Value	Min	Max
4.19	6100	Load asynch control	0	0	1
<p>Select the Asynchronous motor control mode. The drive is reset and restarts in the new control mode. To perform this operation via keypad, see chapters 8.2.9 and 8.2.15 of the ADL 300 Quick Start Guide.</p> <p>Note ! Important: the default parameters including the LIFT application are reloaded. This can only be done with the drive disabled.</p>					

Menu	Parameter	Description	Default Value	Min	Max
5.1.1	11002	Travel units sel (Hz)	0	0	2
<p>Selection of the unit of measure for speed references.</p> <p>0 <i>Hz</i> (output frequency) 1 <i>m/s</i> (cabin speed and depends on the mechanical constant) 2 <i>Rpm</i> (speed of the motor shaft) 3 <i>USCS</i> (US units: fpm, ft/s2, ft/s3)</p> <p>When the unit of measure is modified the conversion constants are re-calculated, the units of measure are changed in the parameter list and the multispeed values are converted into the new unit of measure (the result may contain approximations due to the conversion calculations).</p> <p>A variable representing the speed of the cabin in m/s (fpm) is always available (PAR 12210). There are fixed units of measure for the acceleration and deceleration parameters m/s² (ft/s2), and for jerks m/s³ (ft/s3).</p>					

Menu	Parameter	Description	Default Value	Min	Max
5.1.2	11020	Multi speed 0 (m/s)	0.10	-10000	10000
<p>Setting of the multispeed 0 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp. This setting is taken as the default low speed value.</p>					

Menu	Parameter	Description	Default Value	Min	Max
5.1.3	11022	Multi speed 1 (m/s)	1.00	-10000	10000
<p>Setting of the multispeed 1 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp. This setting is taken as the default high speed value.</p>					

Menu	Parameter	Description	Default Value	Min	Max
5.1.4	11024	Multi speed 2 (m/s)	0.40	-10000	10000
<p>Setting of the multispeed 2 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp. This setting is taken as the default maintenance speed value.</p>					

Menu	Parameter	Description	Default Value	Min	Max
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5.1.5	11026	Multi speed 3 (m/s)	0.00	-10000	10000
Setting of the multispeed 3 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp.					

Menu	Parameter	Description	Default Value	Min	Max
5.1.6	11028	Multi speed 4 (m/s)	0.00	-10000	10000
Setting of the multispeed 4 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp.					

Menu	Parameter	Description	Default Value	Min	Max
5.1.7	11030	Multi speed 5 (m/s)	0.00	-10000	10000
Setting of the multispeed 5 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp.					

Menu	Parameter	Description	Default Value	Min	Max
5.1.8	11032	Multi speed 6 (m/s)	0.00	-10000	10000
Setting of the multispeed 6 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp.					

Menu	Parameter	Description	Default Value	Min	Max
5.1.9	11034	Multi speed 7 (m/s)	0.00	-10000	10000
Setting of the multispeed 7 value. Can be selected via digital input, fieldbus, etc. The selected value is the reference for the S-shaped lift ramp.					

Menu	Parameter	Description	Default Value	Min	Max
5.1.11	12210	Actual speed ref (m/s)			
The speed of the cabin is displayed in m/s.					

Menu	Parameter	Description	Default Value	Min	Max
5.2.1	11040	Acc ini Jerk (m/s ³)	0.50	0.01	20
Setting of the jerk value for the first part of the acceleration.					

Menu	Parameter	Description	Default Value	Min	Max
5.2.2	11042	Acceleration (m/s ²)	0.60	0.01	10
Setting of the maximum acceleration value.					

Menu	Parameter	Description	Default Value	Min	Max
5.2.3	11044	Acc end jerk (m/s ³)	1.40	0.01	20
Setting of the jerk value for the last part of the acceleration.					

Menu	Parameter	Description	Default Value	Min	Max
5.2.4	11046	Dec ini jerk (m/s ³)	1.40	0.01	20
Setting of the jerk value for the first part of the deceleration.					

Menu	Parameter	Description	Default Value	Min	Max
5.2.5	11048	Deceleration (m/s ²)	0.60	0.01	10
Setting of the maximum deceleration value.					

Menu	Parameter	Description	Default Value	Min	Max
5.2.6	11050	Dec end jerk (m/s ³)	0.50	0.01	20
Setting of the jerk value for the last part of the deceleration.					

Menu	Parameter	Description	Default Value	Min	Max
5.3.2	11062	Cont close delay (ms)	200.00	0	10000
Setting of the delay time for closing the contactor.					

Menu	Parameter	Description	Default Value	Min	Max
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5.3.3	11064	Brake open delay (ms)	0	0	10000
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Setting of the brake opening delay time.					
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Menu	Parameter	Description	Default Value	Min	Max
5.3.5	11068	Brake close delay (ms)	200.00	0	10000

Setting of the brake closing delay time.					
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Menu	Parameter	Description	Default Value	Min	Max
5.3.7	11072	Contactator open delay (ms)	200.00	0	10000

Setting of the contactor opening delay time.					
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Menu	Parameter	Description	Default Value	Min	Max
5.3.8	11078	Speed 0 threshold (rpm)	1.00	0.01	20

Setting of the zero speed threshold, below which the zero speed signal is activated.					
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Menu	Parameter	Description	Default Value	Min	Max
5.5.3	11106	Distance multispeed2 (m)	0.00	0.01	10

Setting of the value of the distance associated with multispeed 2.					
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Menu	Parameter	Description	Default Value	Min	Max
5.5.9	11120	Slow speed	0	0	9

Setting of the floor approach speed.					
The Slow speed is the speed of approach to the landing zone. When the multispeed associated with the Slow speed is selected the slow down space is checked in order to reach this speed in proximity to the landing zone.					
<ul style="list-style-type: none"> 0 Autoselect 1 Multispeed 0 2 Multispeed 1 3 Multispeed 2 4 Multispeed 3 5 Multispeed 4 6 Multispeed 5 7 Multispeed 6 8 Multispeed 7 9 Null 					
When mode 0 (Autoselect) is selected, Slow speed is automatically connected to the multispeed with absolute value of less and other than zero. If repositioning speeds with a value of less than the Slow speed are used, the multispeed corresponding to the floor approach speed must be set.					
When mode 9 (Null) is selected the floor approach spaces are never controlled. In this case the profile depends exclusively on the multispeed selected.					

Menu	Parameter	Description	Default Value	Min	Max
5.7.4	11226	Multi speed S0 sel	1216	0	35

Setting of the source for the first multispeed selection bit.					
1110	Digit input E	6000	Null		
1210	Digit input 1x	6002	One		
1212	Digit input 2x	12250	B0 Lift decomp		
1214	Digit input 3x	12252	B1 Lift decomp		
1216	Digit input 4x	12254	B2 Lift decomp		
1218	Digit input 5x	12256	B3 Lift decomp		
1220	Digit input 6x	12258	B4 Lift decomp		
1222	Digit input 7x	12260	B5 Lift decomp		
1224	Digit input 8x	12262	B6 Lift decomp		
1226	Digit input 9x	12264	B7 Lift decomp		
1228	Digit input 10x	12266	B8 Lift decomp		
1230	Digit input 11x	12268	B9 Lift decomp		
1232	Digit input 12x	12270	B10 Lift decomp		
3702	Run cont mon	12272	B11 Lift decomp		
3706	Down cont mon	12274	B12 Lift decomp		
3708	Brake cont mon	12276	B13 Lift decomp		
3714	Door open mon	12278	B14 Lift decomp		
3728	PAD 15	12280	B15 Lift decomp		

Menu	Parameter	Description	Default Value	Min	Max
5.7.5	11228	Multi speed S1 sel	1218	0	35

Setting of the source for the second multispeed selection bit.					
See the list on PAR 11226					

Menu	Parameter	Description	Default Value	Min	Max
5.7.6	11230	Multi speed S2sel	1220	0	35
Setting of the source for the third multispeed selection bit. See the list on PAR 11226					

Menu	Parameter	Description	Default Value	Min	Max
14.1	2000	Rated voltage (V)	SIZE	50.0	690.0
Set the motor rated voltage as indicated on the data plate. This is the voltage the drive must supply at the motor rated frequency.					

Menu	Parameter	Description	Default Value	Min	Max
14.2	2002	Rated current (A)	SIZE	1.0	1500.0
The motor rated current at its rated power (kW / Hp) and voltage (indicated on the motor data plate). If using a single drive to control several motors connected in parallel (only possible in the SSC mode), enter a value that corresponds to the sum of the rated currents of all the motors; in this case do not perform any "self-tuning operations".					

Menu	Parameter	Description	Default Value	Min	Max
14.3	2004	Rated speed (rpm)	SIZE	10.0	32000.0
Rated speed of the motor with full load in rpm. In some motors the synchronous speed (e.g. 1500 rpm for a 4-pole motor) and slippage, i.e. the loss of revolutions between the motor idling condition and the rated load condition (e.g. 80 rpm), is indicated. Enter the following: synchronous speed - slippage.					

Menu	Parameter	Description	Default Value	Min	Max
14.4	2008	Pole pairs	SIZE	1	60
Setting of the number of motor pole pairs.					

Menu	Parameter	Description	Default Value	Min	Max
14.5	2010	Torque constant (Nm/A)	SIZE	0.1	120
Setting of the ratio between the torque generated and the rated current of the motor.					

Menu	Parameter	Description	Default Value	Min	Max
14.6	2012	EMF constant (Wb)	SIZE	0.0	100.0
Setting of the electromotive force constant, which represents the ratio between the motor voltage and its rated speed (this can be calculated by dividing the torque constant by $\sqrt{3}$).					

Menu	Parameter	Description	Default Value	Min	Max
14.7	2020	Take parameters	0	0	1
Saves the set motor data in the drive. This command must be supplied last after entering the appropriate values of all the parameters listed above. This means calculating the normalization factors (a) and estimated values for the motor parameters (b). The drive cannot be started until the Take parameters command has been set.					

Menu	Parameter	Description	Default Value	Min	Max
14.8	2024	Autotune still	0	0	1
Performs self-tuning with the motor coupled to the transmission. The self-tuning procedure may cause limited rotation of the motor shaft. To perform self-tuning, follow the procedure described for the previous parameter.					

Menu	Parameter	Description	Default Value	Min	Max
14.9	2028	Take status	Required	0	0
Indication of the status of parameter saving. 0 Required 1 Done The parameter displays the Required message when the motor parameters that have been entered need to be saved. When they have been saved the parameter indicates Done.					

Menu	Parameter	Description	Default Value	Min	Max
14.10	2030	Autotune status	Required	0	0
Indication of the status of execution of motor parameter self-tuning. 0 Required 1 Done					

The parameter displays the Required message when motor parameter self-tuning is required. When self-tuning is complete the parameter indicates Done.

Menu	Parameter	Description	Default Value	Min	Max
15.1	2100	Encoder pulses (ppr)	1024	125	16384
Setting of the number of feedback encoder impulses. During setup, for incremental sinusoidal encoders + absolute EnDat, encoder absolute EnDat Full digital and Hiperface encoders this value is set automatically by reading the number of incremental encoder impulses. With the EnDat Full digital Encoder, the value set automatically may be below the minimum.					

Menu	Parameter	Description	Default Value	Min	Max
15.9	2130	Encoder direction	Not inverted	0	1
Setting of the sign of the information obtained from the incremental or absolute encoder. 0 Not inverted By setting 0 the encoder feedback signals are not inverted. 1 Inverted By setting 1 the encoder feedback signals are inverted According to international standards, positive references are associated with clockwise motor rotation, seen from the control side (shaft). To ensure correct operation, the regulation algorithms ensure that positive speed references correspond to positive speed measurements. If the motor pulley is mounted on the side opposite the command side, it will turn in an anticlockwise direction when the speed is positive: to make the pulley turn in a clockwise direction, the motor phase sequence is modified, which inverts the speed measurement sign. To restore the correct speed measurement sign, invert the incremental encoder A+ and A- signals and the absolute encoder Sin+ and Sin- signals on the encoder connections. The absolute part cannot be inverted with Endat and Hiperface absolute encoders.					

Menu	Parameter	Description	Default Value	Min	Max
15.10	2132	Encoder mode	Sinus sincos	CALCI	CALCI
ADL300B: The drive has an integrated encoder card (SinCos & Incremental TTL Encoder). The encoder mode can be selected in accordance with the following table: 0 None 1 Digital FP 2 Digital F 3 Sinus SINCOS (Default) 5 Sinus ENDAT 6 Sinus SSI 7 Sinus HIPER Note ! There is no need to restart the drive when the mode is changed. ADL300 Basic with Digital FP / Digital F / Sinus / Sinus SINCOS encoder and ADL300 Basic with Sinus ENDAT / Sinus SSI encoder have different commercial codes (see ADL300 catalog).					

Menu	Parameter	Description	Default Value	Min	Max
15.22	2192	Autophase still	0	0	1
This parameter can be set to perform encoder phasing without the motor running: the brake must be closed. In order to execute the command: <ul style="list-style-type: none"> - open the enable command (Enable). - set this parameter to 1 - press Enter to confirm - when prompted to close the enabling contact apply the command to terminal 9 (Enable) - at the end of the procedure you will be asked to open the enabling contact (Enable) again to confirm completion. Note ! See section A3.2 of the Appendix to the Quick start guide for further information.					

Note ! See "Functions description and parameters list" manual for the complete parameters list.

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