Motors | Automation | Energy | Transmission & Distribution | Coatings

ADL300 CiA® 417: Description of functions and Parameters list

ADL300

User Manual

Language: English

CANopen Lift (CiA® 417)

Information about this manual

This manual explains the functions and the description of the parameters.

The information about mechanical installation, electrical connection and fast start-up can be found on the ADL300 Quick start guide.

The whole set of manuals, included the expansions and field bus manuals, can be found on DOWNLOAD CENTER of ADL300 on WEG web site:

https://www.weg.net/catalog/weg/IT/en/p/MKT_WDC_GLOBAL_PRODUCT_INVERTER_FOR_ELEVATOR_ADL300

Software version

This manual is updated to software version V 4.x.7

Variation of the number replacing “X” have no influence on the functionality of the device.

The identification number of the drive software version is shown on the drive data plate or can be checked with the parameter **Ver rel firmware**- PAR 490, menu 2.6.

Application version (visible only in **Expert mode**)

This manual is updated according the application version DS417 V 2.x.0

The identification number of the application version can be checked with the parameter **Application ver.rel** - PAR 504, menu 2.9, and the type of application can be checked with the parameter **Application type** - PAR 506, menu 2.10 (21 = Application CiA 417).

General information

Note ! In industry, the terms “Inverter”, “Regulator” and “Drive” are sometimes interchanged. In this manual the term “Drive” will be used.

Before using the product, read the safety instruction section carefully (in the Quick Start Guide).

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

WEG Automation Europe srl has the right to modify products, data and dimensions without notice.

The data can only be used for the product description and they can not be understood as legally stated properties.

Thank you for choosing this WEG product.

We would be glad to receive any possible information which could help us improve this manual. Our email address is: techdoc@weg.net

Table of contents

1. INTRODUCTION

This manual contains information needed to configure the hardware and software of the ADL300 series drive (Release 3.0 and later) so that they can work in a lift system in which the various control devices communicate via a CANopen Lift network, i.e., based on DS417 profile.

Note:	*Use of the CANopen Lift requires an ADL300 version with CAN port (ADL300B-xxxx-KBL-F-4-C-yyyy and ADL300A-xxxx-KBL-4-C-yyyy).*

Communication via DS417 profile is in MdPlc environment and is therefore considered an application for all purposes.

The application is supported in all control modes provided by the drive.

The application has to be loaded via the procedure described in chapter 10.

This manual is specifically for the CANopen Lift application; for all other configurations, see the manuals **ADL300 FP** ”Description of functions and Parameter list” and **ADL300 QS** “Quick Start Guide to installation”.

2. REFERENCE STANDARDS

The application conforms to the CANopen® CiA 417® specification "*Application profile for lift control systems*" Version: 2.0.0 of February 2, 2011, consisting of 4 parts:

- Part 1: General Definitions
- Part 2: Functions of virtual devices
- Part 3: Specifications of defined PDOs
- Part 4: Specifications of Application Objects

As an affiliated company (*Vendor-ID 01000093*) of *CAN in Automation (CiA),* WEG is constantly updated on new and revised specifications.

3. A STANDARD COMMUNICATION PROTOCOL

Civil lift systems use a complex system of operating logic and devices. To achieve the required quality and safety levels, all devices must be able to communicate by exchanging information and commands.

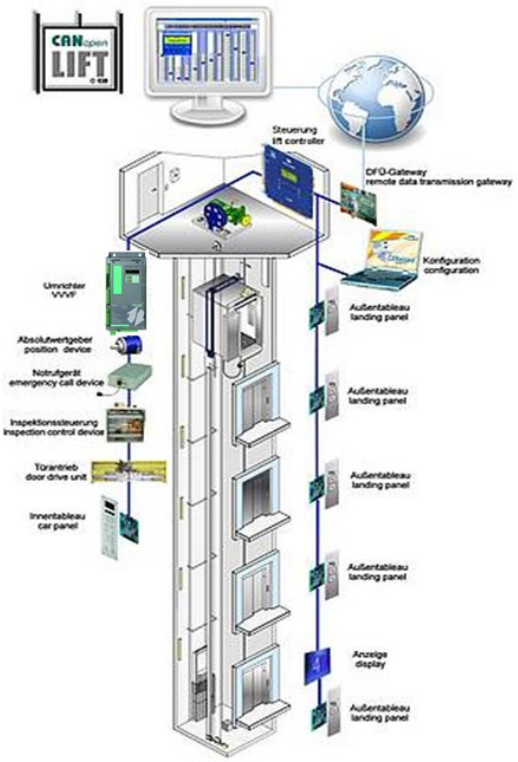


Figure 1: Main Lift Control Systems

Communication must be efficient and based on a Bus architecture. CANopen Lift with CiA 417 profile is a standard communication protocol based on a Bus architecture derived from industrial CANopen version, which allows communication via a shared language among the various control Devices in the lift system.

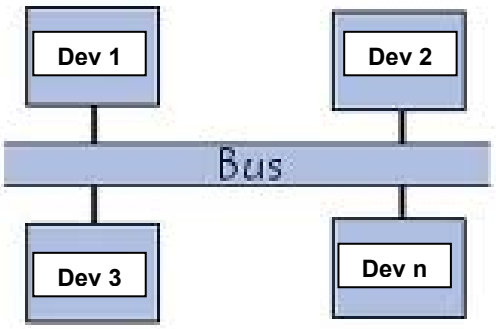


Figure 2: Bus Architecture

Focusing on the part of the system composed of Control Card, Drive and Electric Motor, the Bus architecture can be represented as follows:

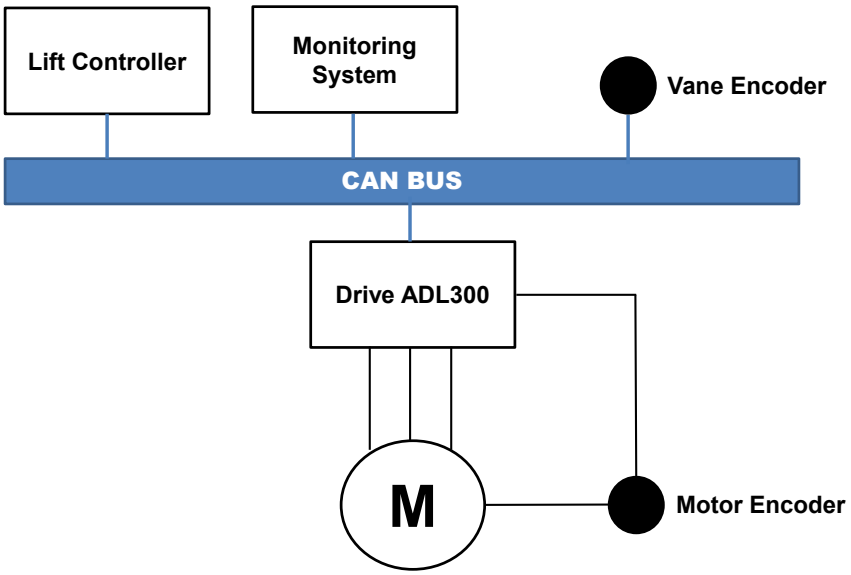


Figure 3: System architecture

4. SHARING THE DRIVE MENU

The Bus architecture allows direct communication among all devices that are connected to it. The Drive implements the ***Menu Sharing*** function, which displays the drive menu on the Lift Controller. Therefore, the drive can also be configured from the Lift Controller and, in general, from any device on the bus that supports reception of information via AO 6404_{hex} (Modes of Operation Display) / RPDO 260.

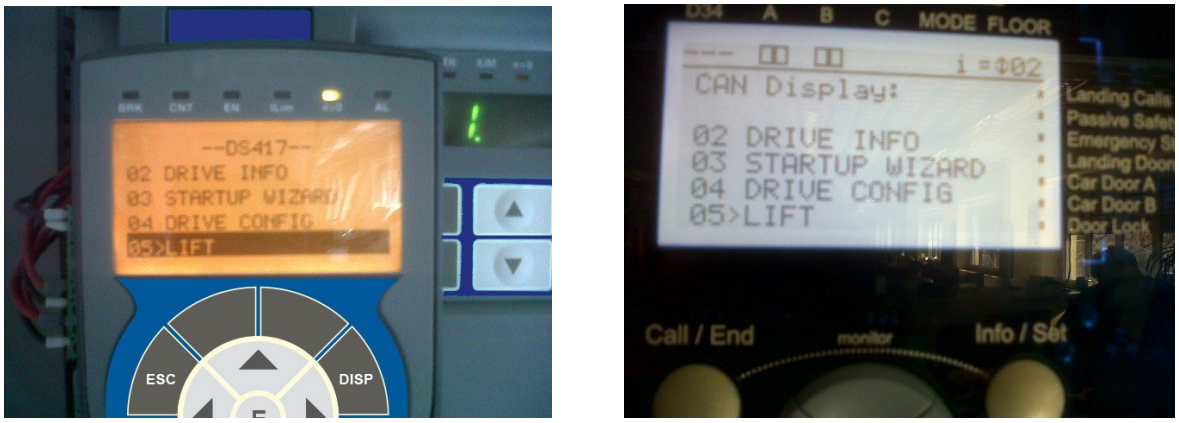


Figure 4: Optional and standard display (Left) and Lift Controller display (Right)

In Figure 4, the drive menu is shown on the optional Drive keypad and on the Lift Controller display. At the communication level, see the figure below.

5. FUNCTIONAL LOGIC

In a lift system, the various functions (such as call control, light control, door opening control, overload control, motor control, etc.) are performed by dedicated control devices. In the DS417 profile, the control devices perform these functions by using applications called Application Objects (AO) installed in the device itself. In the lift system, the Application Objects communicate with each other via DS 417 with the “homonymous” Application Objects in other devices. Communication takes place via PDOs (Process Data Objects), which can be in Reception (RPDO) as well as in transmission (TPDO), in which the specific application object is mapped.

The ADL300Drive, i.e., the device that controls motor direction and speed to manage car movement, uses a series of Application Objects to manage the speed profile, control method (in speed or in position), etc. All of this information is exchanged with the control system via RPDOs if in reception or via TPDOs if in transmission. Communication is continuous, with intervals of 1 ms.

Each application object is therefore “mapped” in the PDO (RPDO or PDO).

The Drive state machine is controlled by the AO 6400hex (controlword). The commands that the ADL300 Drive receives from the Lift Controller are coded in the control word.

The following is an example of communication between the Lift Controller and the Drive for management of control mode (in position or in speed).

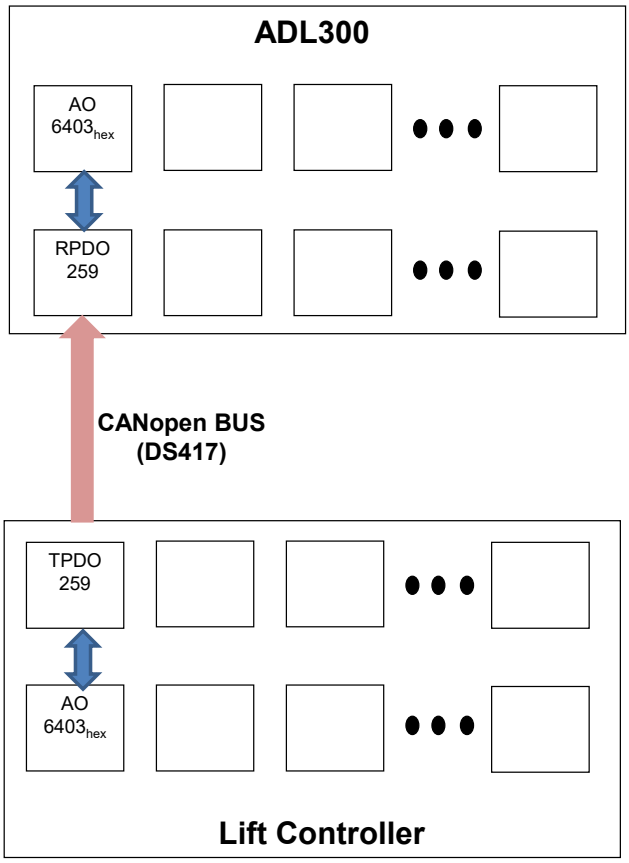


Figure 5: Block diagram for ADL300 - Lift Controller communication

The Lift Controller “commands” the control mode to the drive via AO 6403_{hex}. To do this, the Lift Controller maps the AO in Transmission PDO 259 and then sends the command to the Drive via the Bus. The Drive receives the command on the “homonymous” RPDO 259 and sends it to the “homonymous” AO. The Drive has now received the command to work in position or in speed because it has been configured by the Lift Controller.

The same Application Objects and related PDOs must be present on the Lift Controller and on the Drive for communication to take place.

6. CONTROL MODE

6.1 Speed Control

The Lift Controller configures speed control via AO 6403_{hex}. Speed control can be in open loop (no motor encoder) or in closed loop (with encoder on the motor).

For safety reasons, configuration is not possible when the Drive is in Enable status.

Note:

The control takes place with the multi-speeds that the controller transmits to the drive
Starting is controlled by the Lift Controller via AO 6430hex (Target Velocity), which assumes a value other than zero. Direction is defined by the sign of the AO.
Based on the AO 6430hex target speed (expressed in multiples of mm/s) communicated to the drive and the AO 6406hex speed reference (Control Effort) that the drive communicates to the Lift Controller, the Lift Controller calculates and communicates to the drive the point at which to activate deceleration to reach the destination floor. When the destination floor is reached, the Lift Controller communicates zero speed to the drive as the new target speed, which forces the drive to stop the car. In turn, the drive communicates to the Lift Controller that it has reached the target speed via the 10th bit of the AO 6401hex status word.

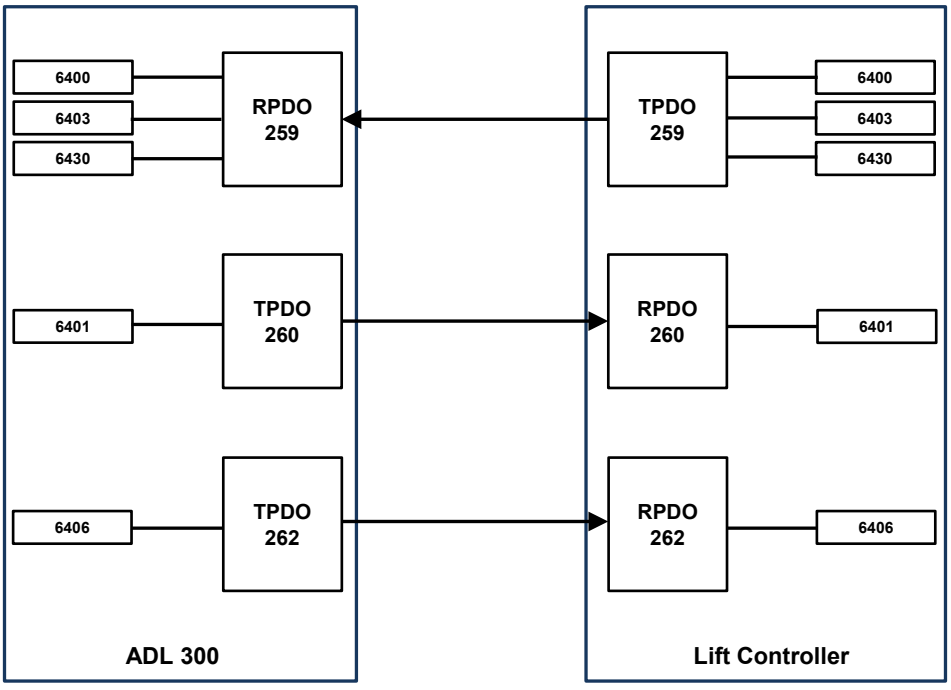


Figure 6: Exchange messages between Drive and Lift Controller for speed control

By appropriately configuring the Lift Controller, direct arrival with speed control is possible by using the sequences described above.

6.2 Position Control

The Lift Controller configures position control via AO 6403_{hex}. Position control can be **only in closed loop** (with encoder on the motor).

The Lift Controller communicates to the Drive the AO 6420_{hex} Target Position and the maximum speed that AO 6423_{hex} can reach (Profile Velocity).

Based on the AO 6420_{hex} target position and on the position communicated by the AO 6406_{hex} (Effort Control) drive, the Lift Controller calculates the deceleration point for reaching the destination floor. When the destination floor is reached, the Lift Controller communicates to drive to stop the car. In turn, the drive communicates to the Lift Controller that it has reached the target position via status word AO 6401_{hex}.

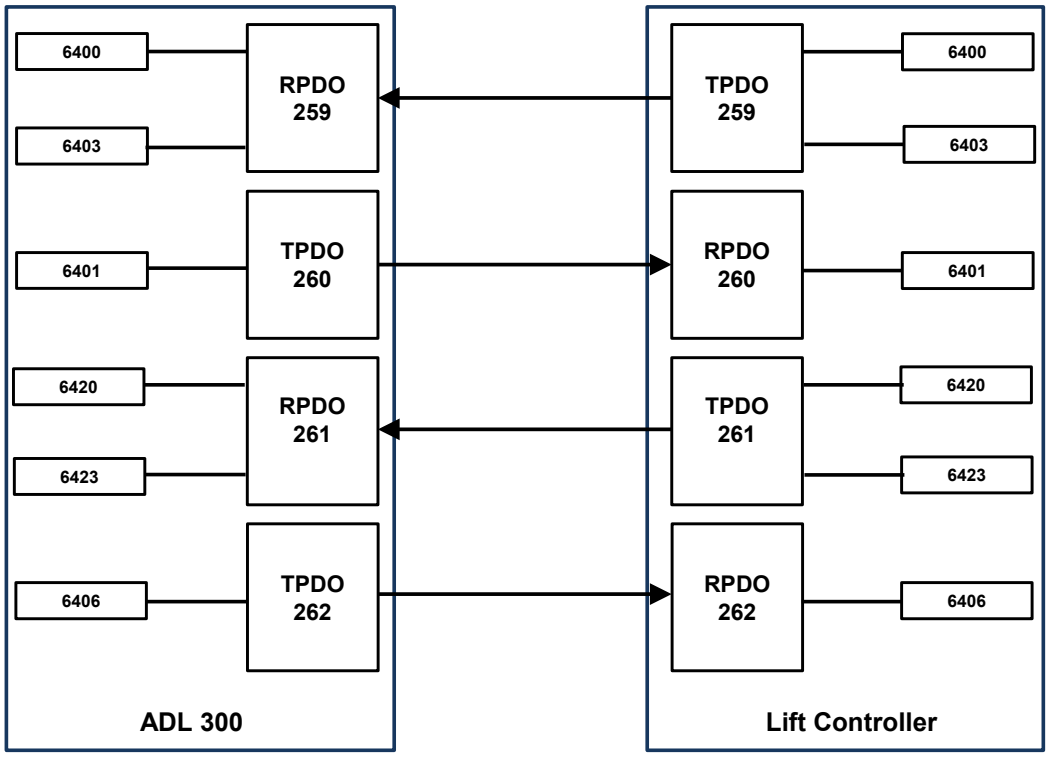
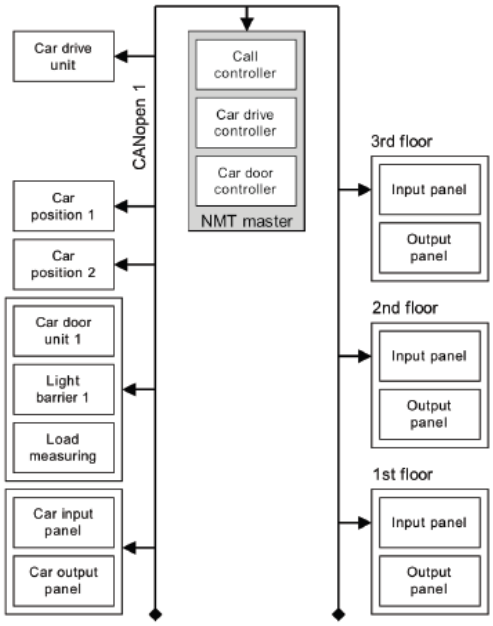


Figure 7: Exchange messages between Drive and Lift Controller for position control

7. SUPPORTED ARCHITECTURES

The DS417 profile requires the Drive to manage a single car with a single CAN bus. The supported architecture is shown below:



Single network architecture for a single-shaft lift control system

Figure 8: CAN bus architecture with single car

Both speed and position control are available for the above architectures. In general, architectures requiring a single CAN bus are possible. The current version of ADL300 does not support architectures requiring more than one CAN bus.

8. APPLICATION OBJECTS AND PROCESS DATA OBJECTS MANAGED

8.1 Process Data Object

The current version provides the following PDOs supported by the Drive:

PDO no.	COB-ID	OBj (hex)	Type
RPDO 259	182	6400 00 6403 00 6430 00	Car Drive Unit
RPDO 261	180	6420 00 6423 00	Car Drive Unit
RPDO 263	18C	6383 01	Car Drive Unit
RPDO 2	501-527	MPDO	Generic
TPDO 260	183	6401 00 6404 00 6433 00	Car Drive Unit
TPDO 262	181	6406 00	Car Drive Unit
TPDO 2	502	MPDO	Generic

8.2 Application Object

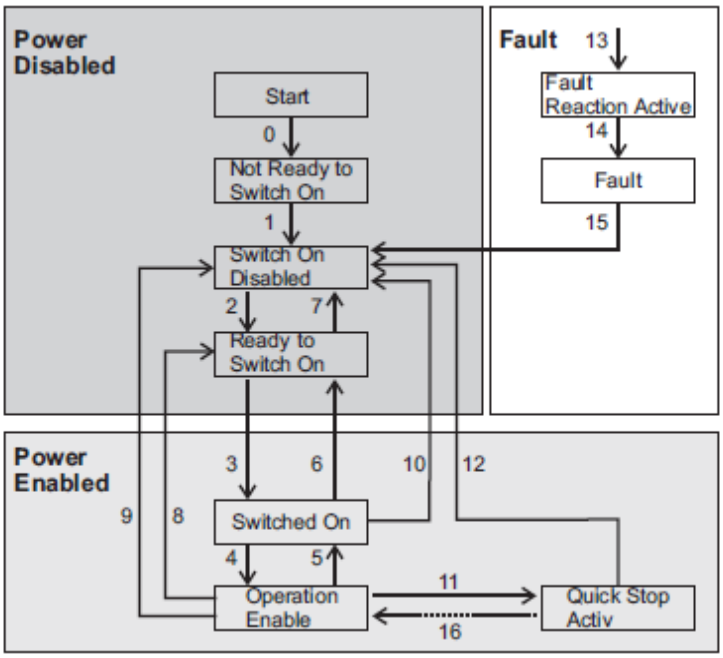
The current version provides the following Drive Application Objects supported by the Drive:

Index (hex)	Sub-Index (hex)	Name	Access
6383		Position value	rw
6400		Controlword	rw
6401		Statusword	ro
6403		Modes of operation	rw
6404		Modes of operation display	ro
6406		Control effort	ro
641F		Position Conversion	rw
	01	Number of position units	
	02	Total Lenght in Millimeter	
6420 (*)		Target position	rw
6422 (*)		Software position limit	rw
	01	Min position limit	
	02	Max position limit	
6423 (*)		Profile velocity	rw
6430 (**)		Target velocity	rw
6433 (**)		Velocity actual value	ro
600A	1	Virtual Terminal Input	rw
	2	Virtual Terminal Output	ro

(*): Profile Position / (**):Velocity Profile

9. STATE MACHINE

The device works according to the following CiA 417 state machine:



10. DRIVE CONNECTION

10.1 Interface with Master CAN

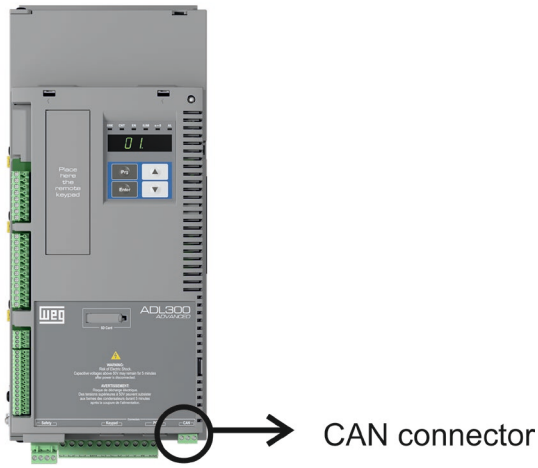


Figure 9: CAN connector position

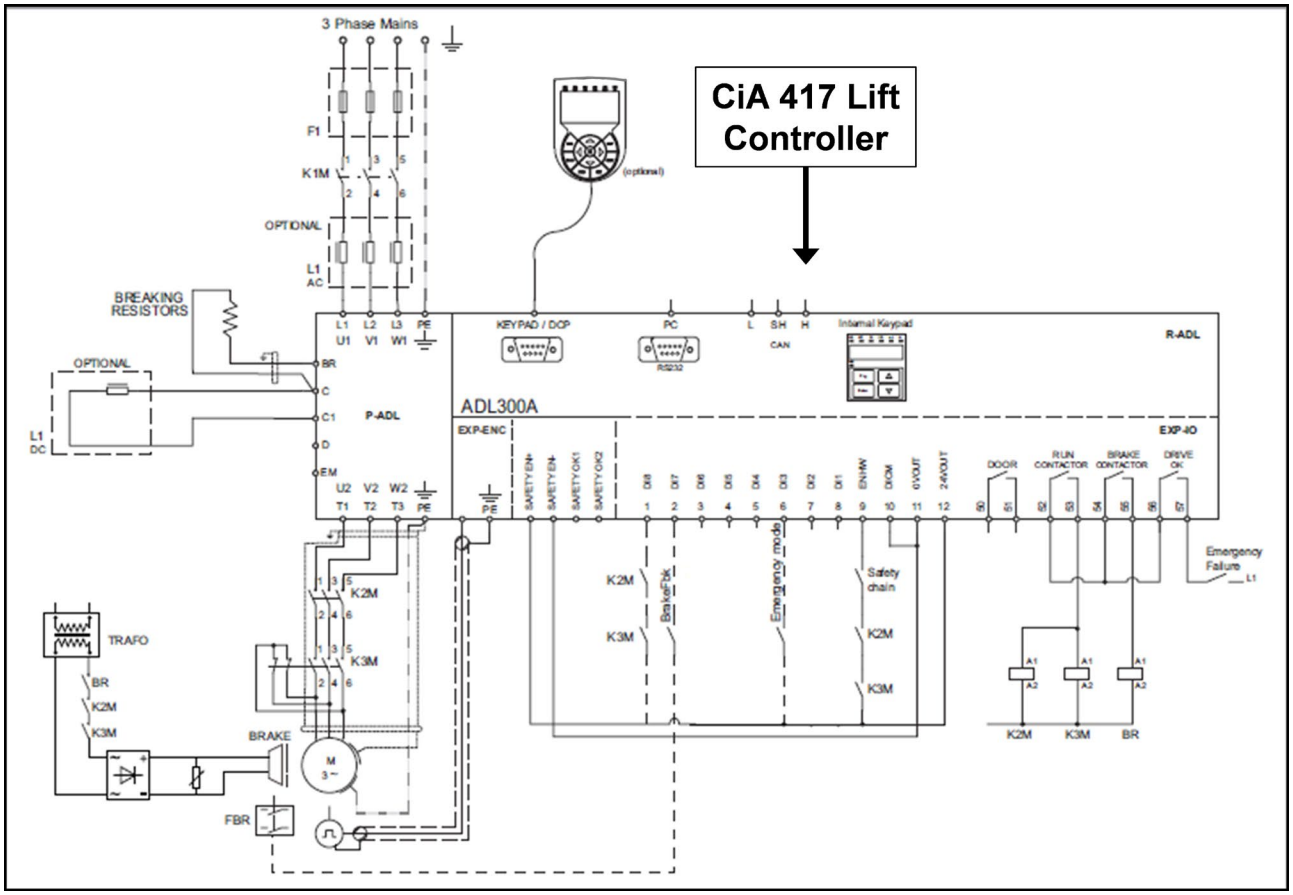
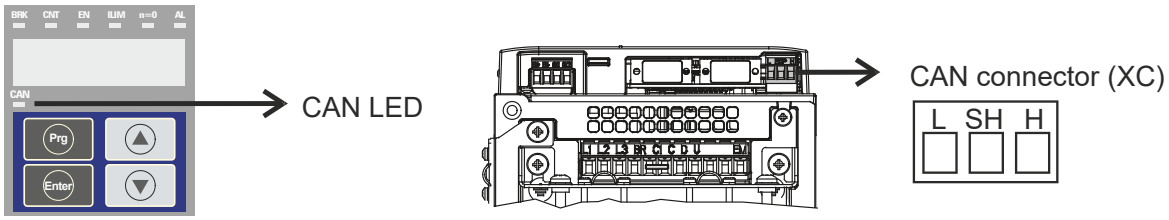


Figure 10: Safety connections for control with a single contactor

10.2 Wiring

The connection is made on the CAN contactor and does not require a power supply. The interface is functionally isolated (>1kV).

☞ See Paragraph 7.5 in Quick Start manual



Terminal	Designation	Function	Wire section
L	CAN_L	CAN_L bus line (low dominant)	0,2 ... 2,5 mm² AWG 26 ... 12
SH	CAN_SHLD	CAN shielding	
H	CAN_H	Can_H bus line (high dominant)	

LED	Significance
CAN (green)	
Off	Stop
Flashing	Pre-operative state
On	Operative state

Figure 11: CAN interface

10.3 Bus connection

The Bus connection requires a shielded twisted pair (as per the CANopen specification) placed separately from the power cables (minimum distance 20 cm). The cable shielding must be grounded at the two ends. If the cable shieldings are grounded at several points of the system, use unipotential connection cables to reduce the current flow between the Drives and the master CAN bus.

Note: ***Note on terminations:*** *the first and last element in the network must have a 120 ohm resistor between pins L and H.*

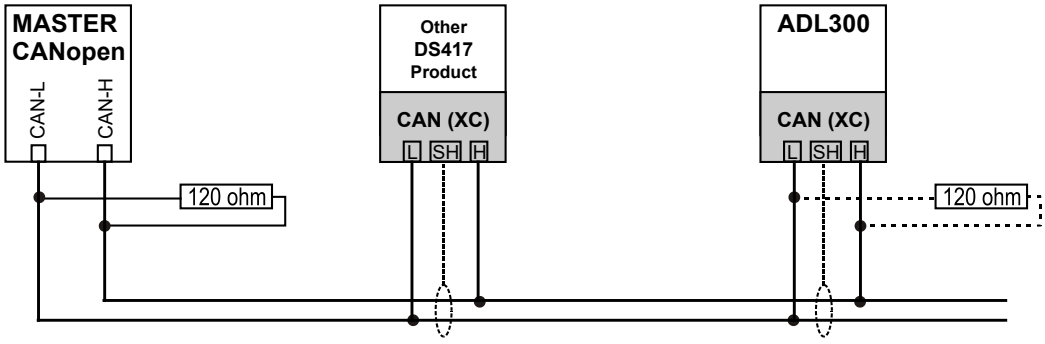


Figure 12: CAN BUS connection

Maximum cable length is 200 meters (6 meters for peripheral cable sections).

10.4 Bit Rates Supported

The CAN bus default speed is 250kbit/s. It can also be configured at 125kb/s (menu 22 parameter 4004).

10.5 Node IDs

Each device connected to the Bus has a unique network ID. The Drive's default ID is 2 (this address can be changed via parameter 4006 menu 22).

11. INSTALLING THE APPLICATION

11.1 General

The preliminary operations for commissioning are describe in chapter 8 of the ADL300 QS manual.

11.2 Requirements

The DS 417 application for ADL300 requires **firmware** version **3.00** and later.
To install the application you need a PC, WEG GF Express software version 1.8 or later with Catalog, a connection cable to the RS-232 drive, and the setup CD.
The CD for installing the application contains an automatic procedure that copies the required files to the specific folder of the GF Express catalog. When installation is done, the setup procedure requests the following files / path:

Files containing DS417Application:

- ***ADL300Asy_3_7_10_Fw_Lang_DS417_1_5_21_0__A2.fl2 (EPC for Synchronous Motors)***
- ***ADL300Syn_3_7_10_Fw_Lang_DS417_1_5_21_0__ A2.fl2 (EPC for Asynchronous Motors)***

11.3 Preliminary operations

The drive can contain two applications (“Application 1” and “Application 2”). You can download the DS417 application to “Application 2.”
Files to be installed:

- ***ADL300Asy_3_7_10_Fw_Lang_DS417_1_5_21_0__A2.fl2 (EPC for Synchronous Motors)***
- ***ADL300Syn_3_7_10_Fw_Lang_DS417_1_5_21_0__ A2.fl2 (EPC for Asynchronous Motors)***

Refer to parameter menu 4.5 PAR 558 **Application select** to select which application to run.
When the application has been installed, do as follows:

1) Send the “Drive reset” command via WEG_eXpress.
2) Execute the “Load default drive values” command
3) Execute the “Save parameter into target” command
4) Execute the Drive reset command.

The application is now ready for use. The parameters are shown on menu 5 “LIFT”.

12. COMMISSIONING FROM ALPHANUMERIC KEYPAD

Commissioning from the keypad is also possible with the CiA 417 application.

12.1 Asynchronous motor: guided startup

From ADL300 Quick Start Guide (pages 48/80 for asynchronous, pages 55/80 for brushless)

GUIDED STARTUP is a procedure for quick commissioning of the Drive that helps you set the main parameters. It consists of a series of questions corresponding to the various sequences for insertion and calculation of the parameters required for correct operation of the Drive and the Lift application. These sequences are in the following order:

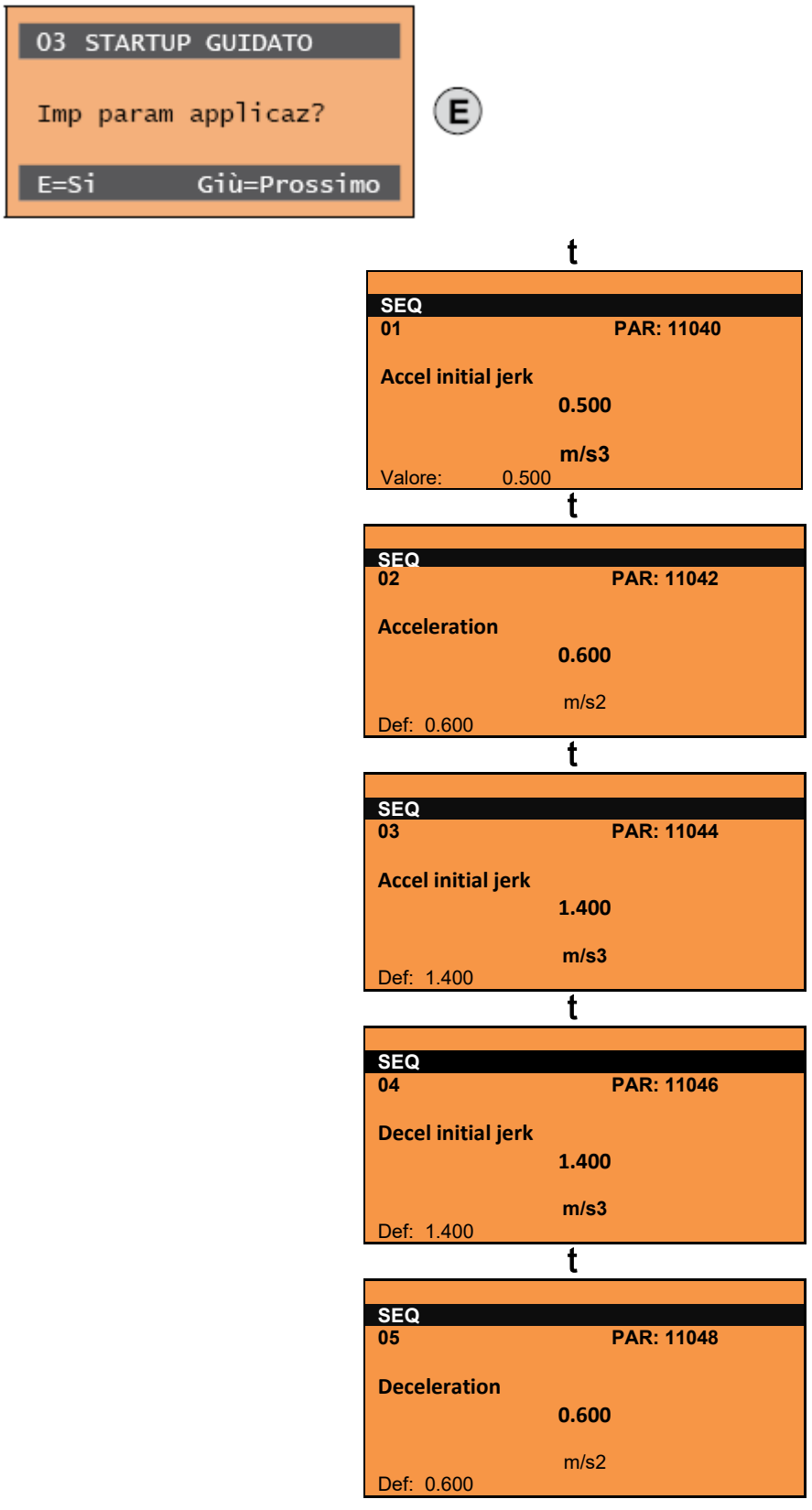
- **Electrical connections** **See step 1** (QS guide)
- **Setting motor data** **See step 2** (QS guide)
- **Self-learning with motor stopped or coupled to load** **See step 3** (QS guide)
- **Setting encoder parameters** **See step 4** (QS guide)
- **Setting maximum speed reference value and maximum system speed** **See step 6** (QS guide)
- **Setting system weight** **See step 7** (QS guide)
- **Setting application parameters** **See step 8**
- **Saving parameters** **See step 9**

12.2 Synchronous motor: guided startup

- **Electrical connections** **See step 1** (QS guide)
- **Setting motor data** **See step 2** (QS guide)
- **Self-learning with motor stopped or coupled to load** **See step 3** (QS guide)
- **Setting encoder parameters** **See step 4** (QS guide)
- **Encoder phasing** **See step 5** (QS guide)
- **Setting maximum speed reference value and maximum system speed** **See step 6** (QS guide)
- **Setting system weight** **See step 7** (QS guide)
- **Setting application parameters** **See step 8**
- **Saving parameters** **See step 9**

Step 8 Setting application parameters:

… for asynchronous and synchronous motor



t

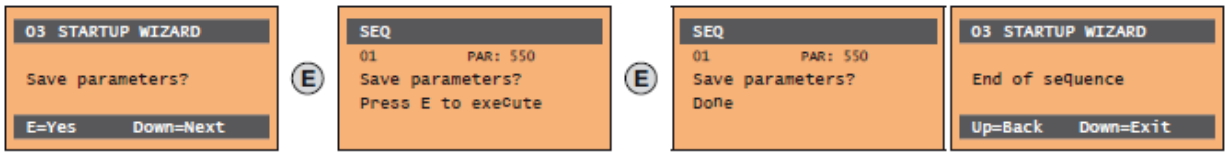
SEQ
06 PAR: 11050

Decel end jerk
0.500
m/s3
Def: 0.500

t

Step - Save parameters

To save the new parameter settings, so that they are maintained also after power-off, proceed as follows:



(1) (2) (3) (4)

(1) Press the E key to start the save parameters procedure.
(2) Press "E" to confirm
(3) End of procedure
(4) When the parameters have been saved correctly the drive displays this screen to show that the startup wizard is complete.

13. DESCRIPTION OF PARAMETERS

The LIFT menu displays the parameters for the LIFT function in configuration with CiA 417.
All of these functions are loaded on the ADL300 drive as “Application 2.”
To enable this function, parameter **558 Application select** must be set to 2 (see Introduction).

13.1 Legend

5 – LIFT *(Menu level 1)*

05.01 – SPEED *(Menu level 2)*

(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Menu	**Par**	**Description**	**UM**	**Type**	**FB BIT**	**Def**	**Min**	**Max**	**Acc**	**Mod**
5.5.5	**11240**	Door feedback sel		ENUM		6000			RW	FVS

Setting the source for Door Feedback input: **“LISTA INPUT CIA 417”. [*]**

(0)	Menu and parameter indexing	
(1)	Parameter ID	
(2)	Parameter description	
(3)	UM: Unit of measurement	
(4)	Parameter type BIT Boolean, seen as 16 bits by modbus ENUM Selection list, seen as 16 bits by modbus FLOAT Real, seen as 32 bits by modbus INT16 Integer with sign 16 bits, seen as 16 bits by modbus INT32 Integer with sign 32 bits, seen as 32 bits by modbus ILINK Selection list, seen as 16 bits by modbus LINK Selection list, seen as 16 bits by modbus UINT16 Integer without sign 16 bits, seen as 16 bits by modbus UINT32 Integer without sign 32 bits, seen as 32 bits by modbus	
(5)	Format of data exchanged on Fieldbus (16BIT, 32BIT)	
(6)	Default value	CALCF Value calculated as number with floating decimal CALCI Value calculated as integer SIZE Value depending on drive size
(7)	Minimum value	
(8)	Maximum value	
(9)	Accessibility: E Expert R Read S Size W Write Z parameters changeable ONLY with drive disabled	
(10)	Available in control mode: V = Control V/f (open loop) / Synchronous MP S = Vett Flow OL F = Vett Flow CL (closed loop)	
[*]	**Selection lists:** Parameters in “Sorgente.../Sorg...” (Source) format are linked to a selection list. On the specified list, you can select the origin (source) of the signal that will command the parameter. The lists are shown in Chapter C of this manual.	

5 – LIFT

The LIFT menu displays the parameters for the LIFT function in configuration with CiA 417.
All of these functions are loaded on the ADL300 drive as “Application 2.”
To enable this function, parameter **558 Application select** must be set to 2 (see Introduction).

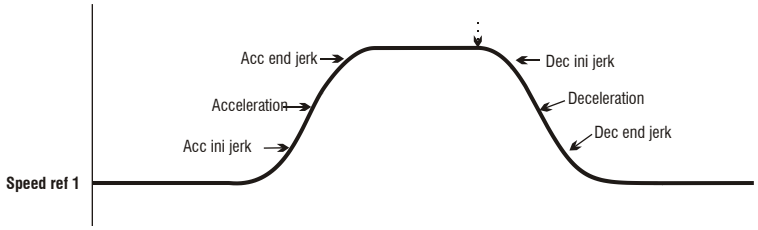
05.01 – SPEED

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.1.1	**12210**	Actual speed ref	m/s	FLOAT					R	FVS

Display of car speed in m/s.

05.02 – RAMPS

The lift works with an “S” ramp, with settings for 4 independent jerk settings and linear coefficients of acceleration and deceleration, as shown in the following standard profile.



The Acc ini jerk, Acceleration, and Acc end jerk values used to execute the acceleration ramp are calculated by multiplying the corresponding parameters by the acceleration ramp factor (Fattore percent acc), while the Dec ini jerk, Deceleration, and Dec end jerk values used to execute the deceleration ramp are calculated by multiplying the corresponding parameters by the deceleration ramp factor (**Percent dec factor,** PAR 11056).

When the **Start** command is removed, the reference speed goes to zero regardless of the reference selected in multispeeds.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.1	**11040**	Acc ini jerk	m/s3	FLOAT		0.500	0.001	20	RW	FVS

Setting of jerk value for initial part of acceleration.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.2	**11042**	Acceleration	m/s2	FLOAT		0.600	0.001	10	RW	FVS

Setting of maximum acceleration value.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.3	**11044**	Acc end jerk	m/s3	FLOAT		1.400	0.001	20	RW	FVS

Setting of jerk value for final part of acceleration.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.4	**11046**	Dec ini jerk	m/s3	FLOAT		1.400	0.001	20	RW	FVS

Setting of jerk value for initial part of deceleration.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.5	**11048**	Deceleration	m/s2	FLOAT		0.600	0.001	10	RW	FVS

Setting of maximum deceleration value.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.6	**11050**	Dec end jerk	m/s3	FLOAT		0.500	0.001	20	RW	FVS

Setting of jerk value for final part of deceleration.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.7	**11054**	Percent acc factor	Perc	FLOAT		100.0	0.0	1000.0	RW	FVS

Setting the acceleration coefficient multiplier.
If set to 100, the ramp uses the coefficients entered in the parameters.
If set to less than 100, the lift will tend to accelerate in a larger space.
If set to more than 100, the lift will tend to accelerate in a smaller space.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.8	**11056**	Percent dec factor	Perc	FLOAT		100.0	0.0	1000.0	RW	FVS

Setting the deceleration coefficient multiplier.
If set to 100, the ramp uses the coefficients entered in the parameters.
If set to less than 100, the lift will tend to decelerate in a larger space.
If set to more than 100, the lift will tend to decelerate in a smaller space.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.2.9	**11258**	Max End Jerk	m/s3	FLOAT		2	0.004	30.000	RW	FVS

This is the maximum configurable jerk value during deceleration. Parameter 11256 **Comp Enable** must be enabled.

05.03 – SEQUENCES

This menu describes the parameters used to manage and set lift travel based on the status of inputs and alarms. The following section summarizes the structure of lift sequences in case of floor call command. After the command is received and the number of the destination floor is saved, the internal positioner starts, which automatically runs the trajectory until the destination floor is reached with direct arrival.

In case of Jog running, the deceleration sequence starts when the jog command ends.

Start sequence:

1 Reading of Enable hardware input and checking of presence of alarms (in case of alarm, the enable is interrupted)

2 **Master** command read as set as B0

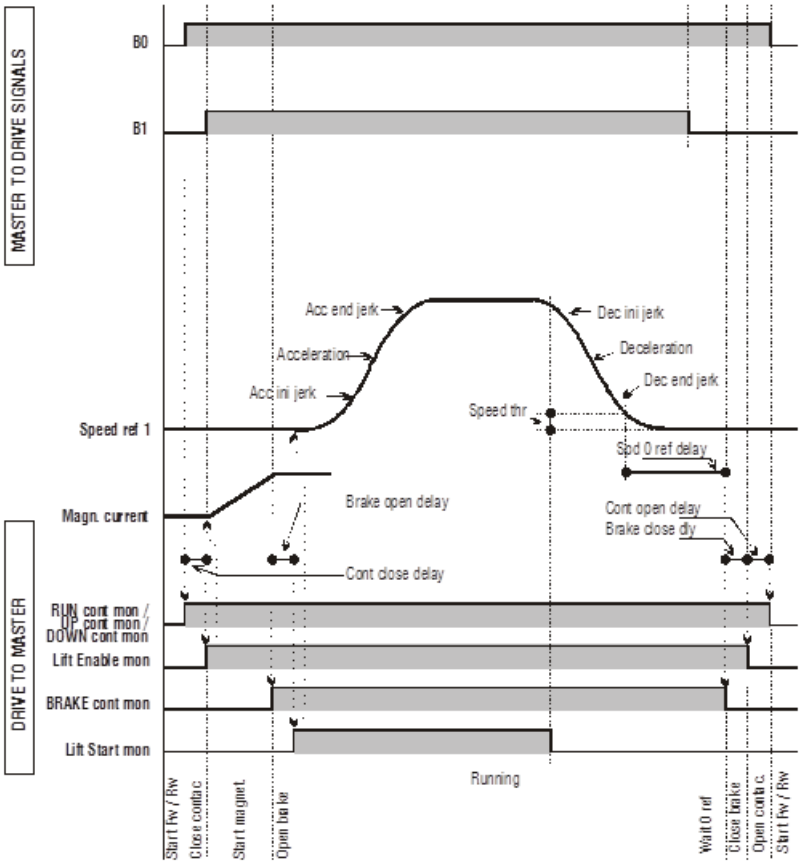
3 After time set in **Cont close delay** has lapsed, internal **Enable** signal is activated and **the start speed** set as B1 is **communicated to drive.**

4 Wait for Magn. current (**Drive ready**) signal from drive

5 At end of magnetization, brake open signal is activated

6 Wait for (**Brake open delay**) time.

7 After brake open delay time has lapsed, **Start** lift is commanded and movement is enabled.



Sequence of movement:

1 The motor starts with the values shown on the ramp. Movement follows multispeed and the “S” ramp set in internal position control.

2 When the set speed is exceeded, you can check that the brake has actually opened with the **Brake 2 mon** output signal.

3 Internal position control follows the set trajectory and starts the deceleration ramp at the appropriate time.

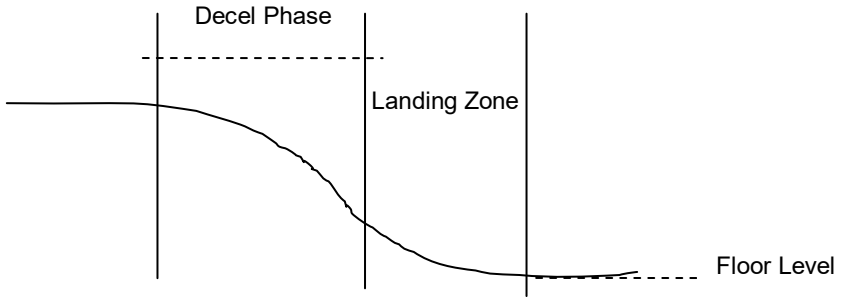
Stop sequence:

1 When zero speed is reached, the stop command is enabled.
2 After **Speed 0 Delay PAR 11080**, the command is given to close brakes 1-2.
3 After the time in **Brake close delay**, has lapsed, and if you want the current to be lowered on the ramp, wait for the current limit to be brought to zero, and then the **Enable** lift signals, arrival zone signals, and DC braking signals are lowered.
4 After the time set in **Contactor open delay** has lapsed, the system checks that zero current is delivered before commanding opening of the contactors.

IT IS ESSENTIAL to guarantee that whenever the drive goes into alarm or is disabled, the drive must stop and the command must be given to open the contactors.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.1	**11000**	Landing Zone	m	FLOAT		0	***	***	RW	FVS

This parameter defines the start of the landing zone. The distance from the start of the landing zone to floor level is expressed in meters.



Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.2	**11016**	Final Adjust		FLOAT		OFF	***	***	RW	FVS

This parameter defines an offset that is added to the arrival point calculated by the protocol.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.3	**11018**	Final Adjustment		BIT		OFF	***	***	RW	FVS

When this parameter is ON, movement in the landing zone is rectilinear; when OFF, the arrival curve calculated by the protocol is used.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.4	**11060**	Seq start mode		ENUM		0	0	1	RW	FVS

Setting the contactor command sequence start mode.

0 Start FW/RW
1 Enable

By setting 0 you can activate the contactor sequences without the Enable command (Enable is required only for motor operation). The Enable signal can be given by an auxiliary contact of the output contactors.

By setting 1 you can activate the contactor sequences only if the Enable command is ON.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.5	**11062**	Cont close delay	ms	INT32		200	0	10000	RW	FVS

Setting of delay time for closing contactor.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.6	**11064**	Brake open delay	ms	INT32		200	0	10000	RW	FVS

Setting of delay time for opening brake.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.7	**11068**	Brake close delay	ms	INT32		200	0	10000	RW	FVS

Setting of delay time for closing brake.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.8	**11070**	Current down delay	ms	INT32		0	0	10000	RW	FVS

Setting of time needed to lower torque from limit value active during travel to 0. It defines the slope of the descent ramp in the function "Current down ramp". This function prevents motor torque from being removed instantaneously after the brake is closed, which would otherwise cause an annoying movement of the car.

To prevent this from happening after the brake is closed, the current limits are brought to the current value in use and are then lowered on the ramp.

The function is enabled by setting PAR 11070 **Current down delay** to a value other than zero.

This is possible only if **Torque curr lim** has a value other than OFF; otherwise PAR 11070 **Current down delay** is forced to zero.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.9	**11072**	Contactor open delay	ms	INT32		200	0	10000	RW	FVS

Setting of delay time for opening the contactor.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.10	**11078**	Speed 0 threshold	rpm	INT16		1			RW	FVS

Setting of zero speed threshold, below which the zero speed signal is enabled.

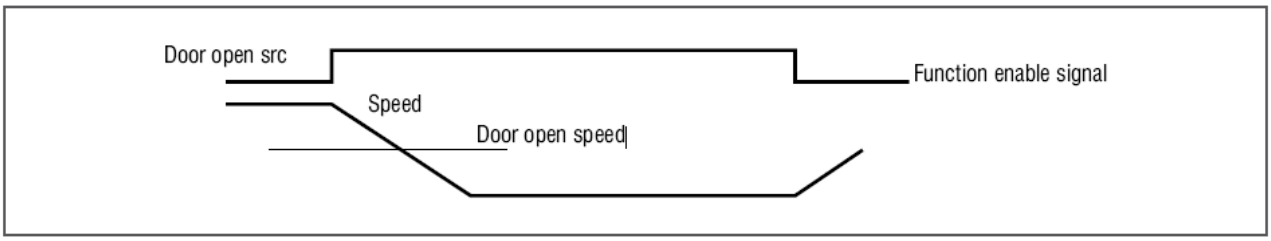
Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.11	**11080**	Speed 0 Delay	ms	UINT16		400	0	10000	RW	FVS

Setting of zero speed delay. After the zero speed signal and after the time set in this parameter has lapsed, the zero speed signal is enabled. These parameters are used to know the car stop.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.12	**11086**	Door open speed	m/s	FLOAT		0.0010			RW	FVS

Setting of door open speed. This function allows advance control of door opening before the car arrives at the floor. The door open signal can be brought to a digital output when the speed is below the settable limit. The function must be

enabled by the digital input. The execution status of the door open speed control command can be checked by supplying the feedback from the door opening mechanism to the digital input of the drive.
An alarm can be generated if the command and the feedback do not match.



Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.13	**11088**	Contactorless Enable		BIT		OFF			RW	FVS

Must be configured if you want contactorless mode. By enabling this parameter, the fast enable command is brought to digital input 7 and the drive (via digital output 4) signals the controller that contactorless mode is being used (see Figure 7.3.2.8-A in ADL300 QS manual).

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.14	**11140**	Delay Acq Time	ms	INT		15	0	1000	RW	FVS

Time for acquisition of absolute position by CIA 417 master.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.15	**11256**	Compensation Enable		BIT					RW	FVS

Enables compensation during deceleration. This parameter changes the final jerk to achieve arrival in the correct position (obtained with parameters 11252 and 11254).

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.16	**12014**	Trip Number		INT		0			R	FVS

Displays number of trips.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.3.17	**12016**	Actual lift state		ENUM					R	FVS

Displays status of lift sequences

0 Idle
1 Cont close
2 Drive ready
3 Brake open
4 Smooth start
5 Multispeed
6 Waiting 0 spd
7 Zero speed
8 Close brake
9 Cont open
10 Drive not ok

05.04 – MECHANICAL DATA

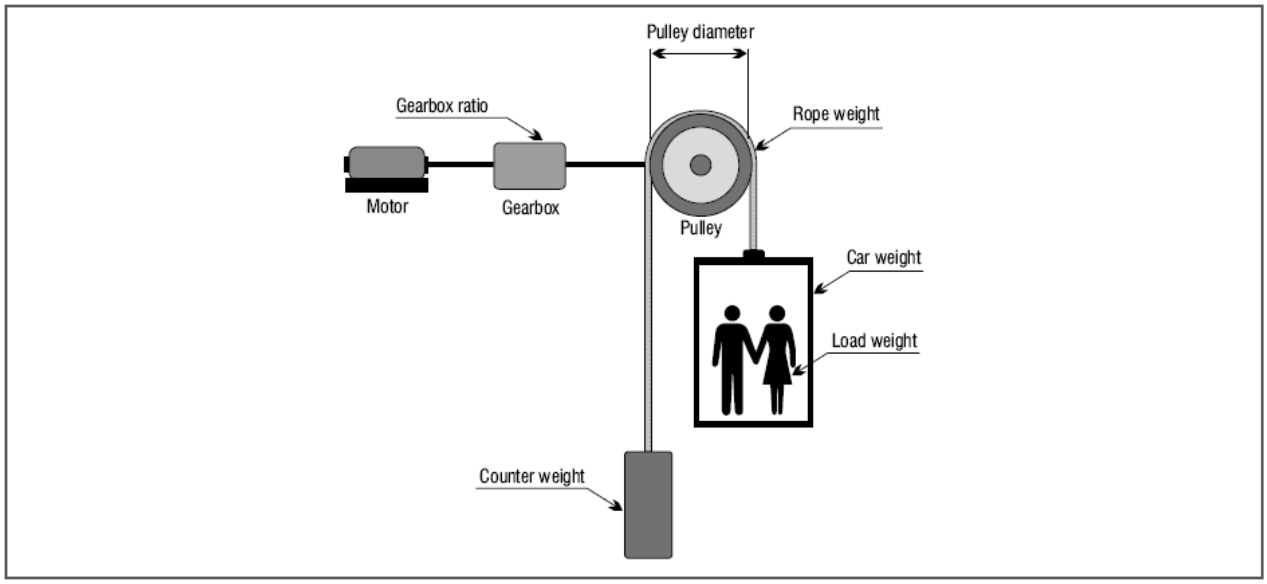
The parameters described on this menu are used to define the system's mechanical and physical characteristics.

Mechanical constants

The mechanical constant defines the link between motor revolutions and the space traveled by the car.
There are two ways to calculate **ConstMech** bases on the conversion method used.

- Direct method: **Mechanical constant** = System speed /(Full scale speed/60)

- Mechanical data: **Mechanical constant** = (π * Pulley diameter)/ Gearbox ratio



The mechanical constant is calculated when the drive is switched on and is recalculated each time one of its defining parameters is changed (**Mechanical calc mode, Full scale speed, Contract speed, Pulley diameter, Gearbox ratio**).
Selection of the mechanical constant calculation method is independent of the type of control selected (**SSC**, **Flux vector OL**, **Flux vector CL**, **Synchronous**) and of the unit of measurement used.

Weight and inertia

Entering the system's mechanical characteristics lets you calculate the total inertia applied to the motor.
After these parameters are changed, the inertia value calculated is automatically saved in the **Inertia comp** parameter to correctly compensate inertia.
The inertia value that can be entered in the **Inertia** parameter on the SPEED REG GAINS menu is displayed for more precise calculation of speed loop parameters. This can be done automatically by enabling PAR 11162 **Calc spd reg gain**.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.1	**11006**	Contract speed	m/s	FLOAT	16/32	1	0.000	10.000	RW	FVS

Car speed at Base frequency. Represents system speed and is also used to calculate the mechanical constant.
Associating car speed in m/s to speed full scale (PAR 628) gives the conversion coefficient (mt/rev).

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.2	**11008**	Mechanical calc mode		ENUM		0			ERW	FVS

Setting of calculation mode for unit of measurement, based on car and motor speed (Direct method) or based on mechanical ratios (Mechanical data mode).

- **0** Direct mode
- **1** Mechanical data

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.3	**11010**	Gearbox ratio		FLOAT	16/32	450.000	***	***	RW	FVS

Ratio of motor speed to pulley speed.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.4	**11012**	Pulley diameter	m	FLOAT		0.6	-10000	10000	RW	FVS

Pulley diameter setting.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.5	**11074**	*Absolute Encoder Resolution*		INT		1024	1	10000	RW	FVS

Setting of resolution of the encoder installed on the motor.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.6	**11076**	*Linear Distance per Encoder revolution*	mm	NUM		458	1	10000	RW	FVS

Setting of the distance (in millimeters) traveled by the car for each revolution of the motor encoder.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.7	**11150**	Car weight	kg	FLOAT		0.0	0	10000	RW	FVS

Car weight setting.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.8	**11152**	Counter weight	kg	FLOAT		0.0	0	100000	R/W	FVS

Setting of weight of the counter weight.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.9	**11154**	Load weight	kg	FLOAT		0.0	0	100000	RW	FVS

Setting of maximum load weight.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.10	**11156**	Rope weight	kg	FLOAT		0.0	0	100000	RW	FVS

Setting of rope weight.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.11	**11158**	Gearbox Inertia	Kgm2	FLOAT		0.000	0	1000	RW	FVS

Setting of gearbox inertia.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.12	**11160**	Motor inertia	Kgm2	FLOAT		0.000	0	1000	RW	FVS

Setting of motor inertia.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.13	**11162**	Calc spd reg gains			BIT	0	0	1	RW	FVS

Enables writing of inertia calculated on speed regulator (PAR 2240)

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.14	**12020**	Inertia calculated	Kgm2	FLOAT		0.0110			R	FVS

Displays system inertia with half load on motor. This value can be inserted in the Inertia parameter on the SPEED REG GAINS menu.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.4.15	**12022**	Max Linear Speed	m/s	FLOAT					RW	FVS

Linear speed with motor at maximum speed.

05.05 – LIFT I/Os

The CiA 417 lift application commands and inputs can be connected to a signal via a selector that lets you choose from a series of options on the selection list.
By means of the selection list, you can choose among the following for each command:

The CiA 417 application input signals can be connected by means of a selector that lets you choose from a series of options on the selection list.

By means of the selection list, you can choose among the following for each input:

- Null or One
- Digital Inputs of I/O expansion
- Some internal signals (example: "**Brake cont mon**" ..)
- A selectable bit of "**LiftDecomp1**" (example: "**Lift decom1 B0**")
- PAD15

They are connected to digital inputs in the I/O configuration.
In the CanOpen configuration, they are connected to LiftDecomp, which in turn is connected (for example, via the **Control word 1** variable) to a fieldbus process channel (example: **PDC FieldBus M->S1).**

In general, the **Control word 1 variable can be** connected to another fieldbus process channel or to the drive parameter **Wcomp** or to **PAD16.**

The factory configuration is as follows:

Input	Description	Default source
Enable	Enable Command	Enable digital input
Battery - Mode	Battery Mode Command	3X digital input
Input Contactor Feedback	Contactor Feedback Input	Run Cont Mon
Input Brake Feedback	Brake Feedback Input	Brake cont Mon
Input Door Open	Door Open Input	Door Open Mon
Input Door Feedback	Door Feedback Input	Null

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.1	**11220**	**Enable cmd sel**		ENUM		1110			RW	FVS

Setting of enable command source:

"CIA 417 INPUT LIST"

1110 Digit input E
1210 Digit input 1x
1212 Digit input 2x
1214 Digit input 3x
1216 Digit input 4x
1218 Digit input 5x
1220 Digit input 6x
1222 Digit input 7x
1224 Digit input 8x
1226 Digit input 9x
1228 Digit input 10x
1230 Digit input 11x
1232 Digit input 12x
3702 Run cont mon
3706 Down cont mon
3708 Brake cont mon

3714 Door open mon
3728 Input Variable
6000 Null
6002 One
12250 Lift decom B0
12252 Lift decom B1
12254 Lift decom B2
12256 Lift decom B3
12258 Lift decom B4
12260 Lift decom B5
12262 Lift decom B6
12264 Lift decom B7
12266 Lift decom B8
12268 Lift decom B9
12270 Lift decom B10
12272 Lift decom B11
12274 Lift decom B12
12276 Lift decom B13
12278 Lift decom B14
12280 Lift decom B15

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.2	**11232**	Contactor fbk sel		ENUM		16			RW	FVS

Setting of source for contactor feedback input: **"CIA 417 INPUT LIST".**

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.3	**11236**	Brake fbk sel		ENUM		17			RW	FVS

Setting of source for brake feedback input: **"CIA 417 INPUT LIST".**

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.4	**11238**	Door open sel		ENUM		18			RW	FVS

Setting of source for Door Open input: **"CIA 417 INPUT LIST".**

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.5	**11240**	Door feedback sel		ENUM		6000			RW	FVS

Setting of source for door feedback input: **"CIA 417 INPUT LIST".**

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.6	**11242**	Emergency mode sel		ENUM		1210			RW	FVS

Setting of source for Battery Mode command: **"CIA 417 INPUT LIST".**

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.7	**11264**	SelBrakeFbkA3		ENUM		6000			RW	FVS

Selection of "Brake out of service" alarm. The alarm function is disabled by default.
Enable source selection list:

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

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.8	**11272**	Fast Enable sel		ENUM		6002			RW	FVS

This parameter enables the Fast Enable command on digital input 7, which must be controlled by the system. This function must be enabled if contactorless mode is used.

6000 Null
6002 One
12250 BO Lift decomp
12252 B1 Lift decomp
12254 B2 Lift decomp
12256 B3 Lift decomp
12258 B4 Lift decomp
12260 B5 Lift decomp
12262 B6 Lift decomp
12264 B7 Lift decomp
12266 B8 Lift decomp
12268 B9 Lift decomp
12270 B10 Lift decomp
12272 B11 Lift decomp
12274 B12 Lift decomp
12276 B13 Lift decomp
12278 B14 Lift decomp

12280 B15 Lift decomp
1110 Digit input E
1210 Digit input 1X
1212 Digit input 2X
1214 Digit input 3X
1216 Digit input 4X
1218 Digit input 5X
1220 Digit input 6X
1222 Digit input 7X
1224 Digit input 8X
1226 Digit input 9X
1228 Digit input 10X
1230 Digit input 11X
1232 Digit input 12X
3702 Run cont mon
3706 Down cont mon
3708 Brake cont mon
3714 Door open mon

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.9	**12102**	Command input mon		UINT32		0			R	FVS

Hex display of input states. See “lift control word” description for significance of each bit.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.5.10	**12104**	Command output mon		UINT32		0			R	FVS

Hex display of output states. See “lift status word” description for significance of each bit.

WDecompOut(PAD 8):

Bit	Description	Note
0	Floor Command	Floor call command active
1	**Null**	
2	**Null**	
3	**Null**	
4	**Null**	
5	PosReady	Positioner ready
6	Battery Sel	Battery fwd
7	**Null**	
8	**Null**	
9	**Null**	
10	**Null**	
11	**Null**	
12	**Null**	
13	UpContMon	
14	DownContMon	
15	DoorOpenMon	

05.06 – EMERGENCY FUNCTION

In case of a blackout the drive can be powered by an Emergency Module Supplier (EMS) or by an Uninterruptible Power Supply (UPS).

The emergency function signal must be connected to the input of the **Emergency Mode** command (default digital input DI3).

Operation with Emergency Module Supplier (EMS)

If digital input 3 DI3 is active, the **Undervoltage (UV)** alarm refers to the value set in parameter 448 (menu 4), allowing the drive to run powered on the DC link. See the Quick Start Manual (paragraph 7.3.3) and the EMS Manual for the connection.

Operation with Single-phase Uninterruptible Power Supply (UPS)

When the emergency is activated by digital input DI3, the Drive can be powered by a 230V single-phase UPS. See the Quick Start Manual (paragraph 7.3.3) for the connection.

Managing arrival at floor in Emergency

For both closed-loop and open-loop configurations, arrival at the floor in an emergency is managed by trying to optimize the request for current to the emergency modules.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.6.1	**11278**	Em dc Brk		FLOAT		75.0	0	150	RW	FVS

The parameter lets you set the braking current value by injecting DC in the motor windings. You can limit this value and avoid overloading the emergency batteries.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.6.2	**11284**	Detection Limit	PERC	LONG		50	0	100	RW	FVS

This is the current value delivered by the drive (expressed as a percentage of nominal current) that the drive uses as a threshold to select the best riding direction.

If the drive was in regeneration before the emergency, it keeps the same riding direction in emergency; if the drive was not in regeneration but was delivering current at a value below the set value, it keeps the same riding direction. Otherwise, the drive changes riding direction and considers the previous one unfavorable.

Note: the direction is set by the controller. With this parameter the drive only evaluates what the best riding direction would be based on delivered current levels. This evaluation could be used by the controller to set the direction recommended by the drive.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.6.3	**12282**	ChosenDirection		INT		0	***	***	R	FVS

Indicates the direction selected by the drive during the emergency.

0 No direction selected

1 Forward

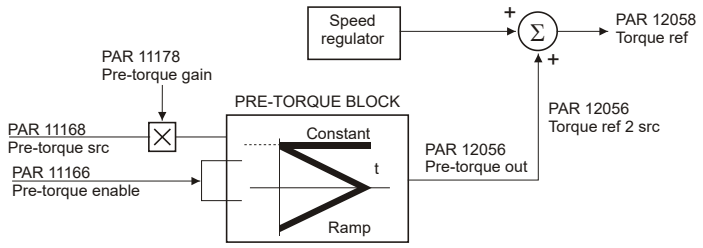
2 Reverse

The association Forward/Reverse and Up/Down depends on how the connection to the motor was made.

05.07 – PRE-TORQUE

The Pre-torque function helps ensure a linear start without any jerk. This is done by setting torque to a value corresponding to the load before opening the brake. The initial torque value applied to the motor, as well as the direction of applied torque, can be supplied by installing a load cell on the lift car. The load cell signal is acquired via analog input and is appropriately scaled if the pre-torque is used.

If there is no load cell, the system can work with a fixed torque value and supply only torque direction. In this case, the fixed torque value is optimized only for a load condition.



Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.1	**11166**	Pre-torque enable		BIT		0	0	1	RW	F

Pre-torque enable function.

0 Off
1 On

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.2	**11168**	Pre-torque source		ENUM		11170			RW	F

Selection of source of signal used for pre-torque function.

11170 Init pretorque
1600 AnalogInp1
1650 AnalogInp2
4034 FieldbusM->S2
4044 FieldbusM->S3
4054 FieldbusM->S4
4064 FieldbusM->S5
4074 FieldbusM->S6
4084 FieldbusM->S7
4094 FiledbusM->S8
4104 FieldbusM->S9
4114 FieldbusM->S10
4124 FieldbusM->S11
4134 FieldbusM->S12
4144 FieldbusM->S13
4154 FieldbusM->S14
4164 FieldbusM->S15
4174 FieldbusM->S16

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.3	**11170**	Init pre-torque	perc	INT32		0	-100	100	RW	F

Setting of reference value used in pre-torque function only if the **Pre-torque source** parameter is set to 0. The value set in this parameter lets you optimize the pre-torque function only for a load condition. Use the fieldbus to change the setting of this parameter to optimize the pre-torque function for other load situations.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.4	**11172**	Pre-torque ramp up	ms	INT32		0	0	60000	RW	F

Setting of ramp up time torque value (before brake opening): if this parameter is set to zero, the feed-forward torque value is kept constant during travel.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.5	**11174**	PreTorque Ramp down	ms	INT32		0	0	60000	RW	F

Setting of ramp down time torque value: if this parameter is set to zero, the feed-forward torque value is kept constant during travel.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.6	**11176**	Pre-torque offset		FLOAT		0.00	-100.00	100.00	RW	F

Setting of offset value applied to pre-torque function input reference.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.7	**11178**	Pre torque gain		FLOAT		1.00	-100.00	100.00	RW	F

Setting of gain value used to convert the value applied to the analog input in the torque value to be used in the function. This gain value is calculated automatically based on the inserted weights and inertias. For best operation, calibrate the reference so that minimum value corresponds to the empty car and maximum value to full load.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.8	**12040**	Pre-torque input	perc	INT32					ER	F

Display of reference value sampled at start.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.9	**12056**	Pre-torque out	perc	INT32					ER	F

Display of feed forward torque value in output from pre-torque function.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.10	**12058**	Torque reference	perc	INT32					ER	F

Display of torque reference value, given by the sum of the speed loop output and torque feed forward.

05.08 – ALARMS

The MdPlc application for the ADL300 manages and generates the following alarms:

PLC	Code	Message Displayed	Description	Possible Cause	Remedy
PLC 1	33	Cont Feedback	Alarm contactor feedback	Electromechanical failure of part. Wiring error.	Replace part. Check wiring.
PLC 2	34	Brake Feedback	Alarm brake feedback		
PLC 3	35	Door Feedback	Alarm Door Feedback		
PLC 4	37	PLC Calc Alarm	Internal Error	****	Reset drive. If alarm reoccurs, repeat installation of application from scratch.

All of the alarms have a parameter used to configure the action performed after the alarm trips.
Activity: lets you set the action to be performed after the alarm trips, as follows.

Action

Ignore The alarm is not inserted in the alarms list, is not inserted in the alarms history, is not signaled on the digital outputs, commands to the drive are not changed.

Warning The alarm is inserted in the alarms list, is inserted in the alarms history, is signaled on the digital outputs, **First alarm** information is updated, **Enabled alarms** information is updated, commands to the drive are not changed.

Disable The alarm is inserted in the alarms list, is inserted in the alarms history, is signaled on the digital outputs, **First alarm** information is updated, **Enabled alarms** information is updated, the disable motor command is given and the motor stops due to inertia.

Stop The alarm is inserted in the alarms list, is inserted in the alarms history, is signaled on the digital outputs, **First alarm** information is updated, **Enabled alarms** information is updated, the **Stop Motor** command is given. The drive goes to zero speed with the maximum possible current; when the **Delay speed 0** signal is activated the drive is disabled.

FastStop The alarm is inserted in the alarms list, is inserted in the alarms history, is signaled on the digital outputs, **First alarm** information is updated, **Enabled alarms** information is updated, the **Stop Motor** command is given. The drive goes to zero speed with the maximum possible current; when the **Delay speed 0** signal is activated the drive is disabled.

Stop lift The drive goes to zero speed in the set ramp time; when speed reaches zero the drive is disabled. After the drive has been disabled the alarm is inserted in the alarms list and signaled on the digital outputs.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.1	**11200**	Contactor activity		ENUM		1	0	5	RW	FVS

Setting of drive behavior if the **Cont fbk fail** alarm trips. The alarm indicates that feedback confirming that the contactor has closed has not been received.

0 Ignore
1 Warn
2 Disable
3 Stop
4 FastStop
5 Stop Lift

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.2	**11202**	Cont hold off	ms	INT16		1000	0	60000	RW	FVS

Setting of delay from signaling of **Cont fbk fail** alarm condition and tripping of alarm. If an alarm condition occurs, the drive waits for the set time to elapse before tripping the alarm. If the alarm condition is eliminated within the time set in this parameter, the drive does not trip the alarm.

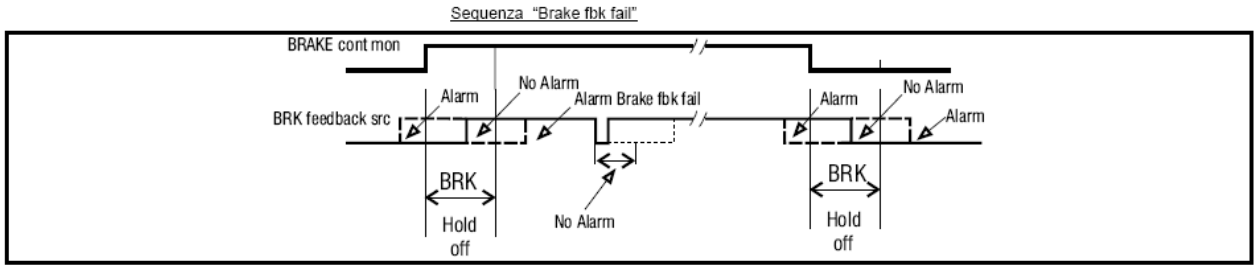
Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.3	**11204**	Brake activity		INT16		1	0	5	RW	FVS

Setting of drive behavior if the **Brake fbk fail** alarm trips. The alarm indicates that feedback confirming that the brake has opened/closed not been received.

0 Ignore
1 Warn
2 Disable
3 Stop
4 FastStop
5 Stop Lift

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.4	**11206**	Brake hold off	ms	INT16		1000	0	60000	RW	FVS

Setting of delay from signaling of **Brake fbk fail** alarm condition and tripping of alarm. If an alarm condition occurs, the drive waits for the set time to elapse before tripping the alarm. If the alarm condition is eliminated within the time set in this parameter, the drive does not trip the alarm.



Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.5	**11208**	Brake run hold off		INT16		1	0	1	RW	FVS

Setting of drive behavior if a possible **Brake fbk fail** alarm is detected.

0 Disable
1 Enable

If set to 0 the brake feedback alarm is indicated immediately.
If set to 1 the possible brake feedback alarm is indicated at the end of travel: this allows the car to reach the floor if the brake status signal is defective.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.6	**11210**	Door activity		ENUM		0	0	5	RW	FVS

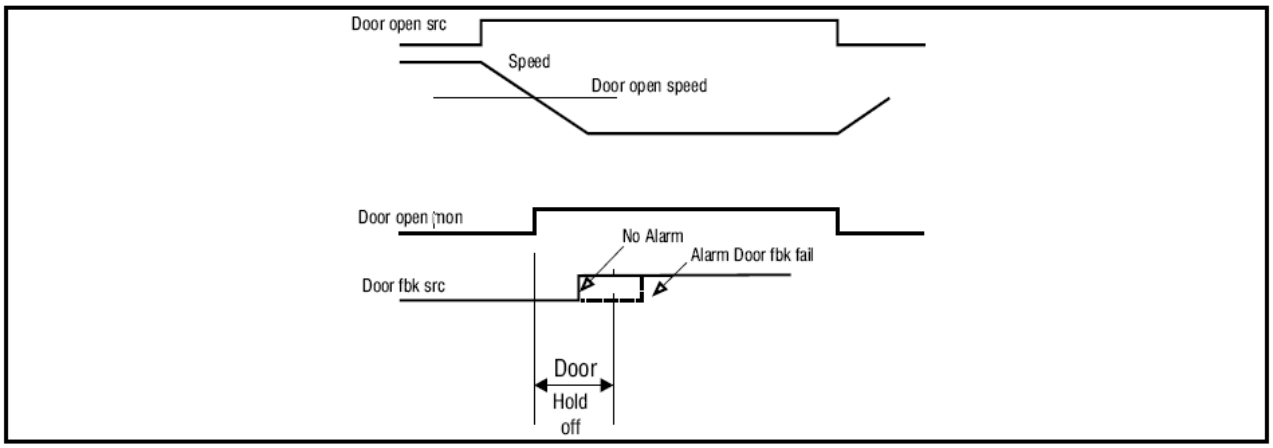
Setting of drive behavior if the **Door fbk fail** alarm trips. The alarm indicates that feedback confirming that the door has opened not been received..

0 Ignore
1 Warn
2 Disable
3 Stop
4 FastStop
5 Stop Lift

Note: *If the doors are commanded by the controller this value must be set to "Ignore" (Value 0)*

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.7	**11212**	Door hold off	ms	INT16		1000	0	60000	RW	FVS

Setting of delay from signaling of **Door fbk fail** alarm condition and tripping of alarm. If an alarm condition occurs, the drive waits for the set time to elapse before tripping the alarm. If the alarm condition is eliminated within the time set in this parameter, the drive does not trip the alarm.



Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.7.8	**11268**	Reset Brake Alarm		SHORT		0			RW	FVS

This command is the reset of the Brake Alarm. Reset procedure:
1. On menu 5.9 LIFT ALARMS,, check if the **Brake Alarm** parameter is ON.
2. Enter PAR 11268 Reset Brake Alarm (default 0).
3. The system requests a code to cancel the alarm: enter 5313.
4. On menu 5.9 LIFT ALARMS,, check that the Brake Alarm parameter is OFF.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.1	**11004**	TLanding	-	INT		0	0	3	R	FVS

Position loop integral gain used in the landing space

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.2	**11014**	K Landing	-	UDINT		0	-	-	R	FVS

Position loop proportional gain used in the landing space

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.3	**11036**	Polinom	-	BOOL		0	0	1	R	FVS

The speed is calculated according to a fifth degree polynomial to obtain continuous trajectories even under acceleration.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.4	**11038**	EnableTrack	-	BOOL		0	0	1	R	FVS

Enabling the Track function, this function allows you to fix the arrival speed at the floor.
If the function is enabled, the current speed is lower than the Track thr parameter (IPA 11052), the current position is within the Tracking zone threshold (IPA 11066), and the difference between the remaining distance to the floor and the current position is greater than zero , then the speed is set to Track Value (IPA 11058).

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.5	**11052**	Track thr		DINT		0	-	-	R	FVS

Threshold value for the activation of the Tack function, expressed in m/s.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.6	**11058**	Track Value		DINT		0	-	-	R	FVS

Fixed floor arrival speed, used by the Track function.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.7	**11066**	Tracking zone		DINT		0	-	-	R	FVS

Tracking area

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.8	**11252**	K prop		DINT		0	-	-	R	FVS

Position loop proportional gain.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.9	**11254**	K Integr		DINT		0	-	-	R	FVS

Position loop integral gain.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.10	**11280**	FastCalPosLoop		BOOL		Disable	-	-	R	FVS

Activation Macro used to configure the position loop parameters, the parameters vary according to the activated control mode (asynchronous or synchronous).
Once the command has been executed, the parameter returns to the initial value of Disable.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.11	**12000**	Speed 0	m/s	DINT		0	-	-	R	FVS

Zero speed threshold in m/s.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.12	**12006**	ActualError	m	DINT		0	-	-	R	FVS

The actual error is the difference between the remaining distance to reach the floor and the space calculated by the profile for the stop.
The error must be close to zero, a result that can only be obtained through a suitable calibration of the position gains.
The error remains at zero until the profile reaches the deceleration phase (sector in use > 4).

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.13	**12008**	CompSpeed	m/s	DINT		0	-	-	R	FVS

It is the contribution added to the speed reference, given by the correction of the position loop.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.14	**12012**	ActualSector	-	INT		0	-	-	R	FVS

The position profile is divided into sectors, the parameter displays the active sector.

Menu	Par	Description	UM	Type	FB BIT	Def	Min	Max	Acc	Mod
5.9.15	**12018**	DeltaPos		DINT		0	-	-	R	FVS

This variable is made up of the sum of parameter 11016 (FinalAdjust) and the difference between the target position (IPA 12030) and the current position of the car (12032).

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User Manual

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