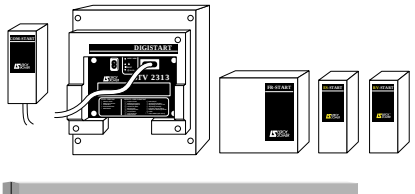
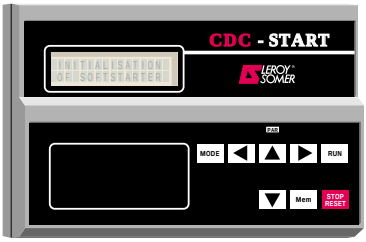
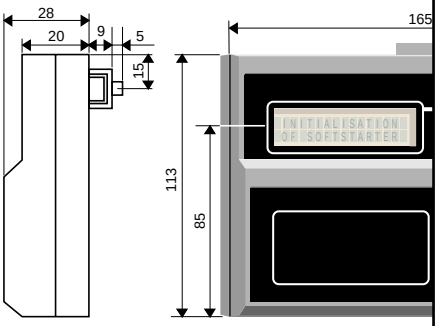
LEROY SOMER

Ref. 1814 - O33 / a - 6.94







CDC - START

Console for DIGISTART STV 2313

Installation and maintenance

NOTE

LEROY-SOMER reserves the right to modify its product characteristics at any time to incorporate the latest technological developments. The information contained in this document may therefore be changed without prior warning.
LEROY-SOMER gives no contractual guarantee whatsoever concerning the information published in this document and cannot be held responsible for any errors it may contain, nor for any damage arising from its use.

CAUTION

For the user's own safety, the STV 2313 starter must be connected to an approved earth (B terminal).

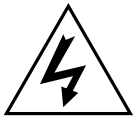
Power electronic equipment such as speed controllers, soft starters and inverters cannot be used as circuit-breaking or isolating devices as specified in standard EN 60204 - 1 (1992), section 5.
If an accidental start of the installation represents a risk for personnel or the machinery to be driven, it is imperative to supply the equipment via an isolating device and a circuit-breaking device (power contactor) controllable by an external safety system (emergency stop, fault detector).

The electronic starter is fitted with safety devices which can, in the case of certain faults, stop the starter and the motor. The motor can itself be jammed by mechanical means. Finally, voltage fluctuations, and particularly power cuts, can also cause the starter to switch off.
The removal of the cause of the shutdown can lead to restarting, with consequent hazard for certain machines or installations.

In such cases, it is essential that the user takes appropriate precautions against restarting when the motor makes an unscheduled stop.

Although this equipment complies with current construction standards, it may cause interference. The user must then take any necessary steps to eliminate it.

LEROY-SOMER declines all responsibility in the event of the above recommendations not being observed.



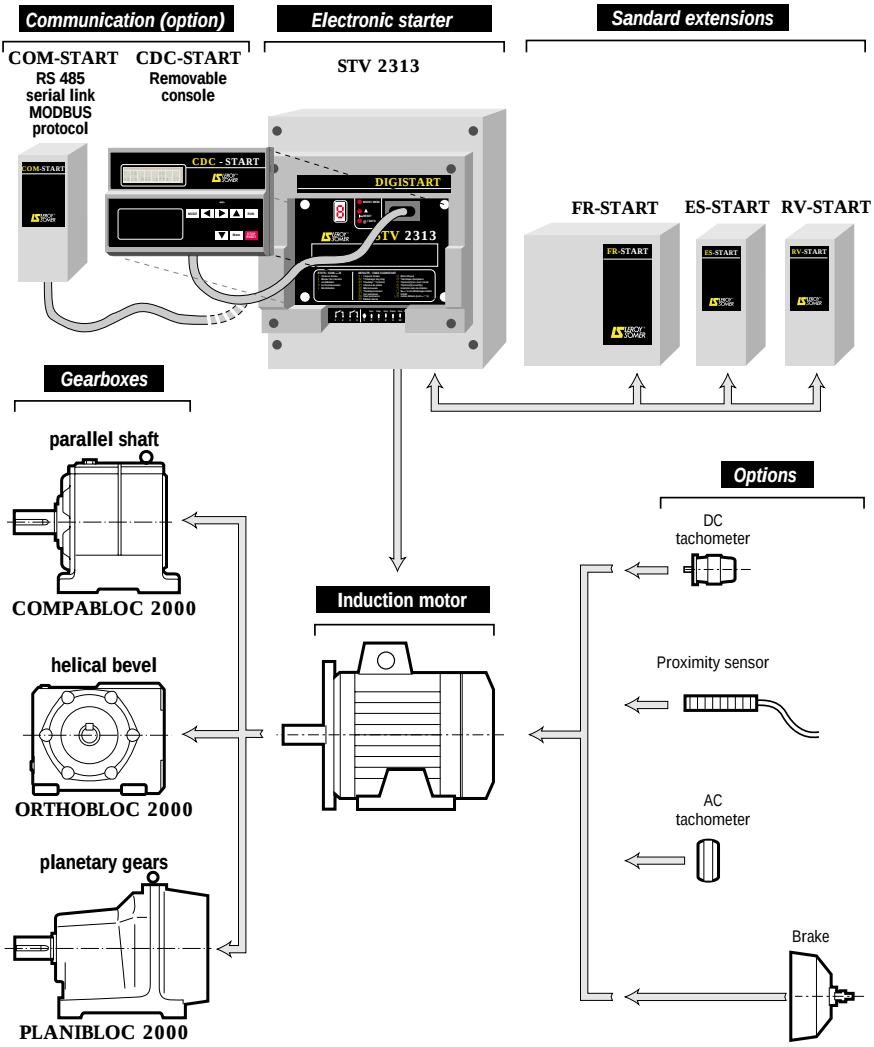
DANGER

IMPORTANT

BEFORE ANY INTERVENTION, WHETHER TO DO WITH THE ELECTRICS OR THE MECHANICS OF THE INSTALLATION OR MACHINE :
- ensure that the power to the starter has been switched off (fused isolator or circuit-breaker) and locked manually,
- wait 1 minute before any intervention.

PREFACE

This manual describes how to commission the **CDC - START** console. It gives details of all procedures which should be adopted when programming the DIGISTART STV 2313 and its extensions.



CONTENTS

NOTE TO THE READER

From section 3.3.4 onwards the tables in this document are laid out horizontally on facing pages.

1 - GENERAL INFORMATION

1.1 - Operating principle

The **CDC - START** console, which has 8 keys, 1 LED and 1 LCD with 32 characters, is designed for use with starters in the STV 2313 range.
When connected to the standard model, it can be used to :
• simplify programming, diagnostics and display of parameters,
• achieve more precise settings,
• access the following additional functions :
- assigning the K1 relay,
- memorizing a set of parameters,
- limiting the number of starts,
- setting the hysteresis of the over and underload thresholds,
- setting time delays for tripping at overload/underload faults,
- setting the overload/underload alarm thresholds.
- copying and transferring the parameters of one STV 2313 to another,
• display data concerning the operation of the motor :
- absorbed current,
- power consumption,
- power factor,
- number of motor operation hours,
- last 5 faults,
- the current operating phase of the motor.
• set up the other options associated with the STV 2313 :
- FR - START : DC injection module which is used for braking, drying or heating the motor,
- RV - START : speed feedback module which provides gradual and repeated starts and deceleration, whatever the load.
- ES - START : inputs/outputs module which is used to control :
- 2 logic inputs (multiple settings),
- 1 analogue input,
- 2 analogue outputs,
- 2 relay logic outputs,
- 6 PTC sensors.

The parameters linked to the options are masked and only become visible when the options are connected.
All parameters relating to a function which is not validated are masked so as to simplify programming by only providing access to active parameters.
Messages are available in 5 languages (English, French, German, Italian and Spanish). The language is selected by programming.

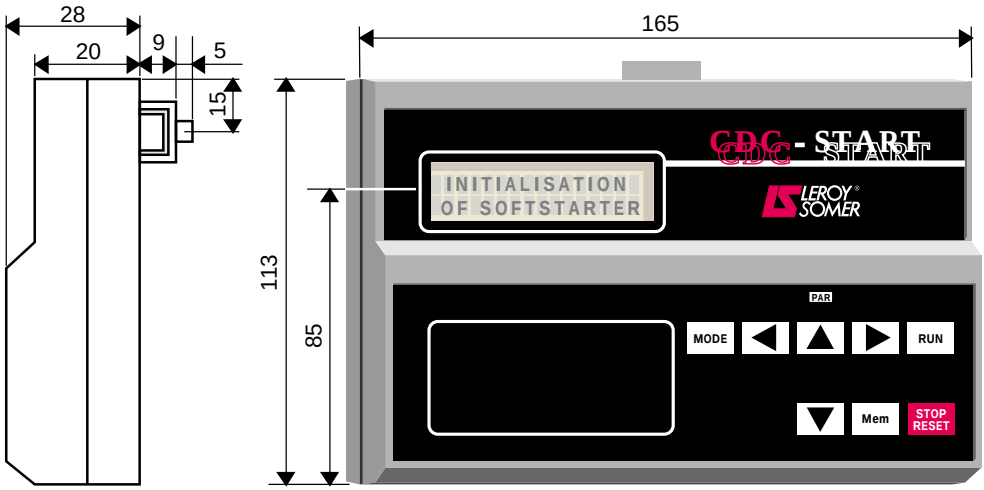
1.2 - General description

Only one programming and copying console exists. It is called the **CDC–START**.

1.3 - General characteristics

Power supply : provided by the STV 2313 to which the console is connected.
Display : 2-line digital LCD with 16 characters.
Remote connection : maximum length 5 m.

1.4 - Dimensions and weight



Weight : 0.3 kg.

2 - MECHANICAL INSTALLATION

2.1 - Checks on receipt

After receiving the **CDC - START** console, ensure that no damage has been sustained during transportation. In the event of any problems, contact the haulier.

2.2 - Installation precautions

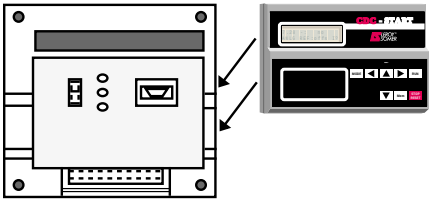
To avoid any risk of interference when the **CDC - START** console is installed remotely, it is strongly recommended that :

- the console is placed well away from any power source which could be a source of radiation (transformer, busbar system, etc),
- the console is not install more than 5m away from the STV 2313 control module,
- the connection lead is well away from all power cables.

2.3 - Installation

In all cases, it is preferable to install and/or connect the console when the STV 2313 is switched off.

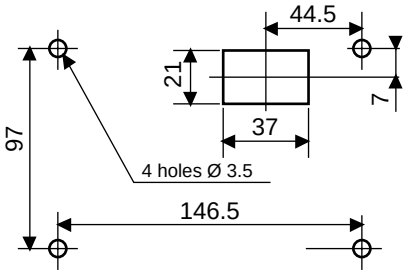
2.3.1 - Installation on the STV 2313



• A slot is provided on the STV 2313 control module for connecting the **CDC - START** console.
• The SubD9 connector on the console is plugged directly into the STV 2313 control module connector.
• The mechanical fixing is provided mainly by the magnet on the back of the console. However, if the installation is permanent, it is recommended that the console be screwed in place as follows :
- remove the protective cover on the STV 2313 control module,
- screw the console through the back of the protective cover using the 4 M3 x 12 screws supplied for this purpose,
- replace the protective cover on the control module.
• To remove the console, unscrew the 4 fixing screws if necessary, and use the strap above the display to pull the console out.

2.3.2 - Remote installation

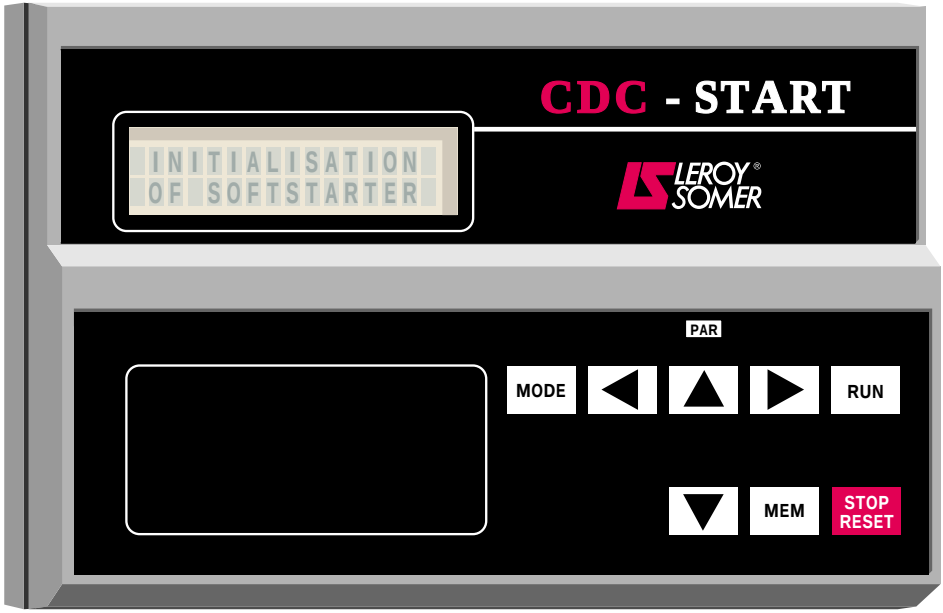
The **CDC - START** console can also be installed remotely (on the front of an enclosure for example). In order to do this, please consult LEROY-SOMER who will supply a screened connection cable (1.5m, 3m or 5m in length) and follow the procedure described below.
• Drill holes in the surface chosen for the installation, according to the diagram below.



• Position the **CDC - START** console on this surface and fix it using the 4 screws supplied for this purpose.
• Use the screened connection cable (CD - CORD 1.5 (1.5m), CD - CORD 3.0 (3m) or CD - CORD 5.0 (5m)) to connect the **CDC - START** console to the STV 2313 control module.

3 - COMMISSIONING

3.1 - Presentation of the keypad



Keys	MODE	Used to move from READ mode to SETTINGS mode and vice versa.
	D C E	The cursors are used to move within the various menu fields and to modify the contents.
	MEM.	Used to memorize the settings. These are stored in EEPROM type memories which do not require any back-up power supply.
	RUN	Used to give the start command when the starter is in **control via keypad** configuration.
	STOP RESET	Used to give the stop command when the device is in **control via keypad** configuration, and can also be used as a fault reset button.
LED	PAR	On : used as a reminder that the DIGISTART STV 2313 is in SETTING mode. Flashing : a setting has been modified but not memorised.

3.2 - READ mode

3.2.1 - Power up

When the STV is powered up, the **CDC - START** console automatically sets itself to "READ" mode.

Note : "serial link fault" may appear on the display before any operation has taken place. This is normal and corresponds to a serial link self-test. The length of this self-test depends on the number of options which are connected to the STV 2313.

3.2.2 - Display

The upper line of the display continuously indicates the current absorbed by the motor. (In SETTINGS mode it is possible to select the unit of the current absorbed : in % In or A).

On the lower line, using the keys
D or E , it is possible to display :

• The operating phase of the motor
(Eg. : switched off, acceleration, operating, etc).

C	U	R	R	E	N	T	:			X	X	X	%	I	n
		M	O	T	O	R		S	T	A	T	U	S		

• The power consumption
This is expressed as a % of the motor rated power. This reading is effective approximately 2 seconds after start up.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
P	O	W	E	R	:					X	X	X	%	P	n

• The power factor
The reading is effective approximately 2 seconds after start up.

C	U	R	R	E	N	T	:			X	X	X	X		A
P	W	R	.	F	A	C	T	O	R	:		0	.	X	X

• The length of the last start performed
Expressed in seconds.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
L	A	S	T		S	T	A	R	T	:	X	X	X		s

• The number of motor operating hours
The counter is active as soon as the start command is given. The hours totalled in this way cannot be deleted.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
O	P	E	R	A	T	I	N	G	:	X	X	X	X	X	H

• The starter reference followed by its rating.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
		S	T	V		2	3	1	3		X	X	X		

• The list of options which are connected to the STV control module.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
O	P	T	I	O	N	:		X	X	-	X	X	-	X	X

• The software version of the **CDC - START** console.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
S	O	F	T	W	A	R	E		1	:			X	X	X

• The software version of the STV control module.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
S	O	F	T	W	A	R	E		2	:			X	X	X

• The list of the last 5 faults
Once 5 faults have been registered, any new fault detected will delete the first fault which occurred.

C	U	R	R	E	N	T	:			X	X	X	%	I	n
1	:														

→ 1 to 5 by pressing : E .
1 corresponds to the last fault which occurred.

3.3 - SETTINGS mode

3.3.1 - Programming procedure

Setting the STV 2313 equipped with a **CDC - START** console is performed by moving the **cursor** within the menus and several levels of sub-menus.

The position of the cursor, within a menu or sub-menu, is indicated by part of the display flashing.

To modifiy a setting, position the cursor in the part of the menu which you wish to modify using the following keys :

D or E or ↻ or C .

Select the appropriate setting from those displayed using the D or E keys.

Do not forget to memorize using the MEM. key so that the settings can be taken into account.

Note : If you exit a field in which a value has just been modified without memorizing it, the following message is displayed :

MEMorization ? ?

If you do wish to memorize, press :

MEM.

If not, use the C or ↻ keys to exit the field.

3.3.2 - List of the main menus

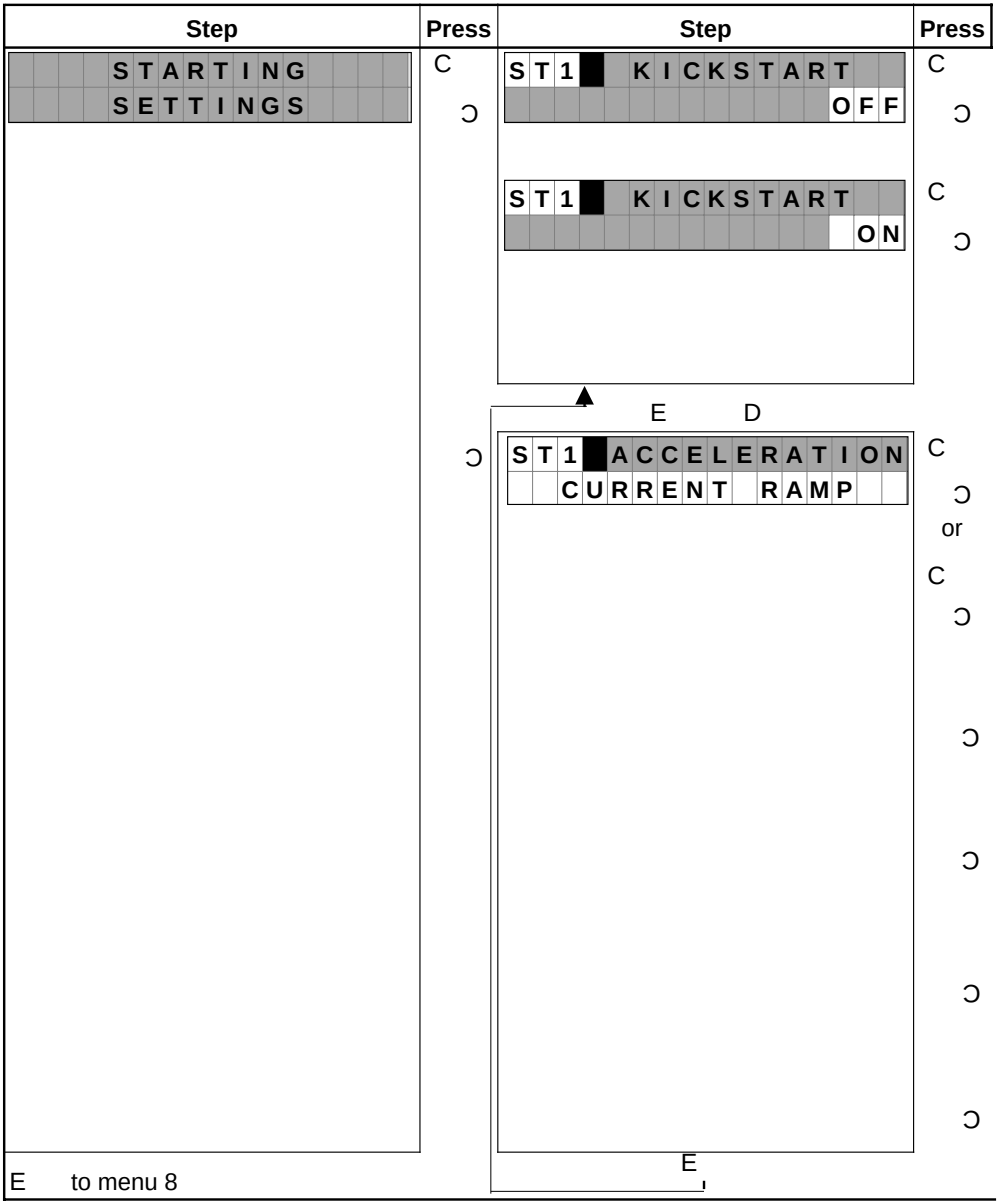
Menu	Display	Comments
1	**Select.**	**A choice of 5 languages**
2	**Access code**	**Access is locked to menus which follow**
3	**Initialisation of Softstarter**	**Customization of DIGISTART to the motor**
4	Option DC injection	With FR - START option
5	Option speed feedback	With RV - START option
6	Option inputs/outputs	With ES - START option
7	**Starting settings**	**According to the application**
8	Starting settings 2	With RV - START or ES - START option
9	Starting settings 3	With ES - START option
10	Starting settings 4	With ES - START option
11	**Protection settings**	**Enable protections**
12	**Deceleration settings**	**With or without options**
13	**Output relay settings**	**Relay assignment**
14	**Transfer**	**Copies the programmed settings**

Note : The shaded menus ( ) can only be accessed with the FR - START, RV - START or ES - START options.

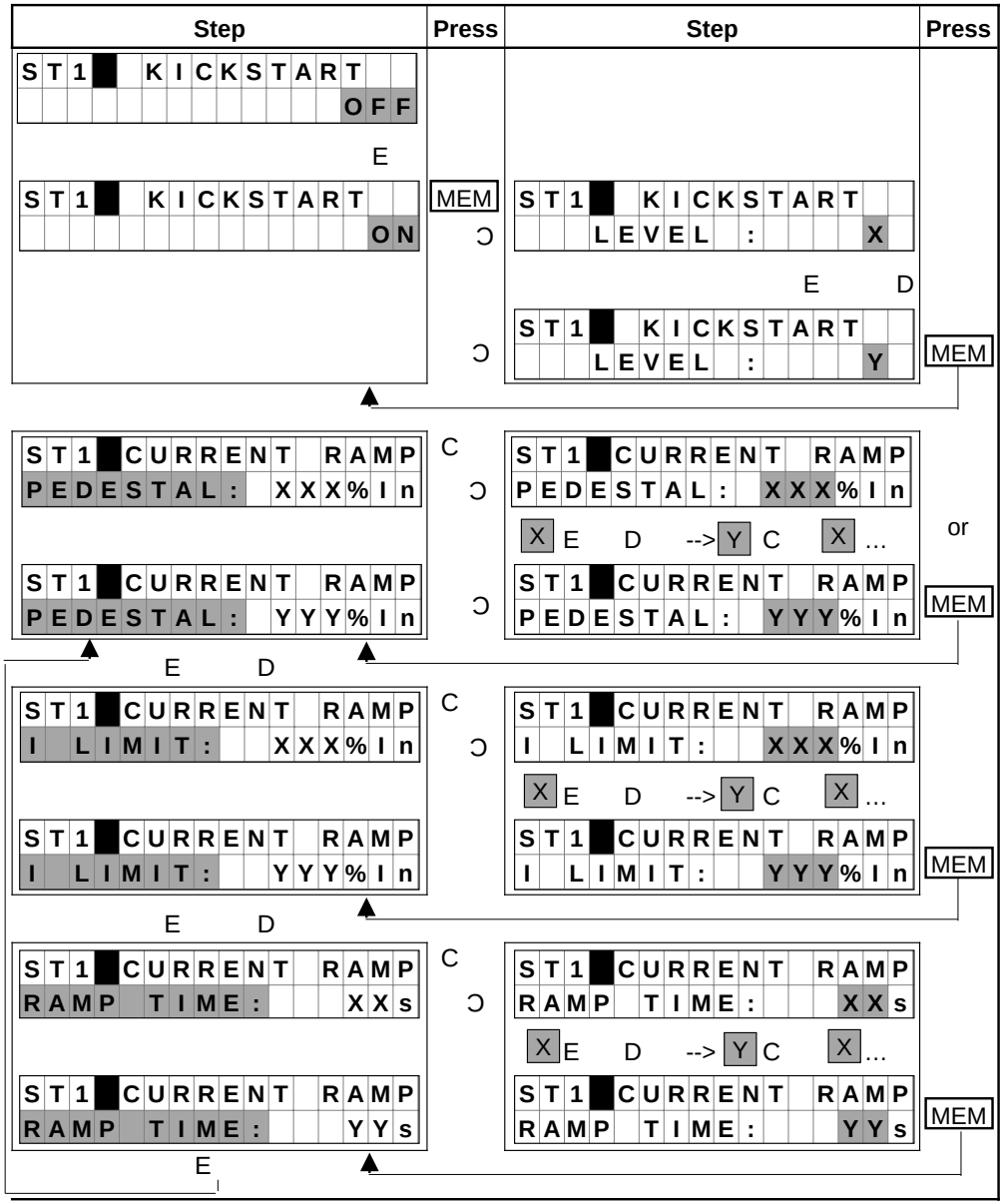
3.3.3 - Structure of settings

Example : Sequence for menu 7 (starting settings) for an STV 2313 without options.

Indicates the flashing part of the display and thus the position of the cursor.



CDC - START console

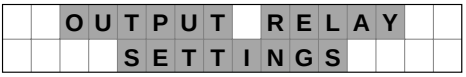
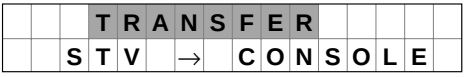
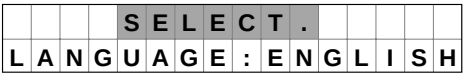
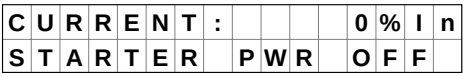


3.3.4 - Access to settings

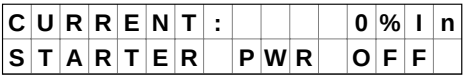
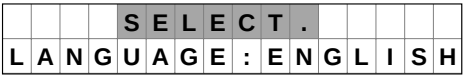
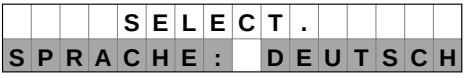
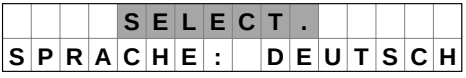
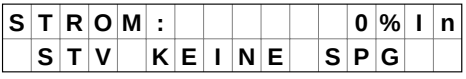
Note : Indicates the part of the display which flashes, and thus the position of the cursor. Shaded menus can only be accessed with FR - START, RV - START or ES - START options

Step	Press	Display
Power up	-	CURRENT: 0%In START PWR OFF
Access to menu 1 Select.	MODE	SELECT. LANGUAGE: ENGLISH
Menu 2 Access code	E	ACCESS CODE XXXX
Menu 3 Initialisation	E	INITIALISATION OF SOFT START ER
Menu 4 Option DC injection	E	OPTION DC INJECTION
Menu 5 Option speed feedback	E	OPTION SPEED FEEDBACK
Menu 6 Option inputs/outputs	E	OPTION INPUTS/OUTPUTS
Menu 7 Starting settings	E	STARTING SETTINGS
Menu 8 Starting settings 2	E	STARTING SETTINGS 2
Menu 9 Starting settings 3	E	STARTING SETTINGS 3
Menu 10 Starting settings 4	E	STARTING SETTINGS 4
Menu 11 Protection settings	E	PROTECTION SETTINGS

Remarks
The STV is in **Read** mode. The power is switched off.
The STV is in **Settings** mode. To select the dialogue language, see Section 3.4.
If no access code has been entered, move on to the next step. If a code has been memorized, enter the code, then press MEM. Movement to the next step is then automatic. (See Section 3.5 for setting up a code).
Adapts the STV to the motor and to the control mode.
Only available if the FR - START option is connected. Access to parameters relating to the heating and braking of the motor.
Only available if the RV - START option is connected. Access to parameters relating to the speed sensor.
Only available if the ES - START option is connected. Access to parameters relating to the inputs and outputs (logic and analogue) and the PTC sensors.
Sets the parameters relating to starting the motor.
Only available with a 2-speed motor and the RV - START option or if OTHER SETTINGS is enabled on one of the 2 logic inputs of the ES - START option. Access to a second set of parameters.
Only available if the ES - START option is connected and if OTHER SETTINGS has been enabled on the 2 logic inputs. Access to two additional sets of parameters.
Enabling and adjustment of the protections which stop and trip the STV 2313.

Step	Press	Display
Menu 12 Deceleration settings	E	
Menu 13 Output relay settings	E	
Menu 14 Transfer	E	
Return to Menu 1 Selection	E	
Return to Read mode	-	

3.4 - Programming menu 1 : choice of language

Step	Press	Display
Power up	-	
Access settings	MODE	
Access contents	C	
Modify contents	E	
Memorize	MEM	
Return to Read mode	MODE	

Remarks
Sets the parameters relating to deceleration of the motor.
Assigns the outputs.
All the parameters entered via the **CDC - START** are memorized in the STV 2313. They can then be transferred to the **CDC - START** memory so that they may be saved or copied to another STV 2313 with the same power rating (see Section 3.7).
Return to menu 1 : the menus are arranged in a loop.
When in Settings mode, if no key is pressed for a period of 180s, the STV 2313 returns to Read mode. Return to Read mode is also possible using the MODE key.

Remarks
Indicates that the STV 2313 is in **Read** mode when the electronic power circuit only is energized.
The STV is in **Settings** mode.
Positions the cursor on the language.
Selects German ; use the E key to select another language.
German is memorized, thus all parameters will subsequently be expressed in German.
Pressing the MODE key causes the return to **Read** mode. After a period of 180s, if no keys have been pressed, the return to Read mode is automatic.

3.5 - Programming menu 2 : access code

3.5.1 - Setting up an access code

Step	Press	Display
Access settings	MODE	SELECT. LANGUAGE:ENGLISH
Move to menu 2	E	ACCESS CODE 0000
Access contents	C	ACCESS CODE 0000
Enter code	D , E then C	ACCESS CODE XXXX
Memorize the code	MEM	INITIALISATION OF SOFTSTARTER

3.5.2 - Using the access code

Step	Press	Display
Search for menu 2	E	ACCESS CODE 0000
Access contents	C	ACCESS CODE 0000
Enter code	D ,E then C	ACCESS CODE XXXX
Validate code	MEM	INITIALISATION OF SOFTSTARTER CODE INCORRECT YYYY ACCESS CODE YYYY

Remarks
The STV 2313 changes to **Settings** mode.
Access to menu 2 (access code).
As long as no other code has already been memorized, it is possible to enter a code. Once this code has been memorized, it must be entered to access subsequent menus.
Program a code between 0001 and 9999 by entering four numbers in succession.
The code is memorized. After returning to Read mode, access to menus 3 to 14 is not allowed.

Remarks
In **Settings** mode, position the cursor on menu 2 "ACCESS CODE".
Access to the four numbers which comprise the code. (Even if a code has been memorised, the display shows 0000).
Enter the code which has been memorized.
The code which has just been entered is identical to the memorized code, thus access to the subsequent menus is authorised.
The code which has just been entered is different to the memorized code, thus access to the subsequent menus is locked. After a time delay the STV 2313 offers the possibility of re-entering the access code.

3.6 - STV 2313 parameters

3.6.1 - Menu 1 : select.

Display	Factory settings	Adjustment range
SELECT. LANGUAGE:ENGLISH	ENGLISH	ENGLISH DEUTSCH ITALIANO ESPANOL FRANÇAIS

3.6.2 - Menu 2 : access code

Display	Factory settings	Adjustment range
ACCESS CODE 0000	0000	0000 to 9999

3.6.3 - Menu 3 : initialisation of Softstarter

Display	Factory settings	Adjustment range
INIT MAIN SUPPLY Un : XXX V	400	001 to 760V
INIT MOTOR SPEED Nn : XXXX RPM	1500	375 to 3600 RPM
INIT MOTOR POWER Pn : XXX.X KW	According to STV RATING	1.1 to 500.0 kW
INIT MOTOR CURRENT IN : XX A	STV RATING	7 to 130 % of the STV rating
INIT DISPLAY OF CURRENT : IN % In	% In	IN % In IN AMPS
INIT CONTROL DISTANCE	DISTANCE	DISTANCE LOCAL
INIT AUTORESTART ON SUP. LOSS : OFF	OFF	OFF ON

Note : If the STV 2313 is controlling several motors which have different power ratings (with ES - START option) or a 2-speed motor (with ES - START or RV - START option), enter the parameters which correspond to the highest power rating in this menu.

Note : - ▭ indicates the part of the display where the adjustment is performed,
- ▭ indicates those menus which are only available with another option.

Remarks
Selects the communication language. All menus will be displayed in the selected language. (See procedure in Section 3.4).

Remarks
If a code has been memorized, enter the code in order to access the parameters of menus 3 to 14. (See procedure in Section 3.5).

Remarks
Enter the mains supply nominal voltage.
Enter the rated speed of the motor given on its identification plate.
Enter the rated power of the motor given on its identification plate.
Enter the rated current of the motor given on its identification plate.
In % In : In Read mode, displays the current absorbed as a % of the motor rated current. In Amps : In Read mode, displays the current absorbed in Amperes.
DISTANCE: Start/Stop control via terminal block contact. LOCAL : Control via Run and Stop/Reset keys on the console.
ON : the STV 2313 restarts after a short mains loss of up to 1s. OFF : the STV 2313 trips on mains loss fault. Not to be used on applications with high resistive torque and low inertia.

3.6.4 - Menu 4 : option DC injection

Can only be accessed with the FR - START option connected.

Display	Factory settings	Adjustment range
ODC HEATING WHEN STOPPED : OFF	OFF	OFF AUTO MANUAL
ODC HEATING AUTO:DELAY:XXXMn AUTO:LEVEL:XX	1 50	0 to 120 mn 25 to 80
ODC HEATING MANU.:LEVEL:XXX	50	25 to 120
ODC BRAKING SELF DETECTION.	SELF DETECTION	SELF DETECTION STOP AFTER DELAY *

* See menu 12 (deceleration settings) for the setting level.

3.6.5 - Menu 5 : option speed feedback

Can only be accessed with the RV - START option connected.

	Display	Factory settings	Adjustment range
	OSF 2 SPEED MOTOR : OFF	OFF	OFF ON
	OSF CHOICE OF SENSOR: 4-20 mA	4 - 20 mA	4 - 20 mA INDUCT. TACHO.
	OSF SENS. INDUCT. V1:XXXXX PULS/Mn	6000	3000 to 30000 Puls/Mn
*	OSF SENS. INDUCT. V2:XXXXX PULS/Mn	3000	3000 to 30000 Puls/Mn
	OSF SENS. TACHO. VOLTAGE V1:XXX V	90	20 to 220V AC or DC
*	OSF SENS. TACHO. VOLTAGE V2:XXX V	45	20 to 220V AC or DC

* If 2 speed motor = ON.

Remarks
OFF : Heating not enabled. AUTO : Automatic start of the heating function after a time delay triggered by a stop command MANUAL : Control of the heating function via a Start/Stop command.
AUTO : Setting of the time between the stop command and the DC injection, and setting of the required level of current. **CAUTION : The level which is set will give a current which depends on the impedance of the motor. Never exceed 0.6 In motor (measured with a current clamp).**
MANUAL : Dries the motor by DC injection controlled by a start command. Set the level so that the current (measured on current clamp) does not exceed 0.6 In motor.
SELF DETECTION : In braking mode, the STV 2313 automatically stops the DC injection as soon as the motor is stationary or at the latest when the injection period has finished (see menu 12). STOP AFTER DELAY: The STV 2313 stops the DC injection after the time delay. Used for motors ≤ 15 kW when self detection is not satisfactory.

Remarks
In the case of a 2-speed motor, the STV 2313 can have dual settings (LSP and HSP). Selecting ON gives access to menu 8 (starting settings 2).
Selects the type of sensor used. 4 - 20 mA, 4 mA = zero speed, 20 mA = rated speed. In the case of a 2-speed motor, 20 mA corresponds to high speed.
Enter the number of pulses per min supplied by the sensor at motor rated speed. In the case of a 2-speed motor, enter in V1 the number of pulses/min at high speed, and in V2 the number of pulses/min at low speed.
Enter the voltage supplied by the DC tachometer at motor rated speed. In the case of a 2-speed motor, enter in V1 the voltage supplied at high speed, and in V2 the voltage supplied at low speed.

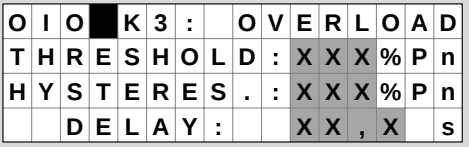
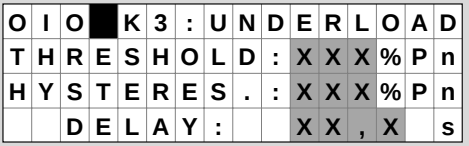
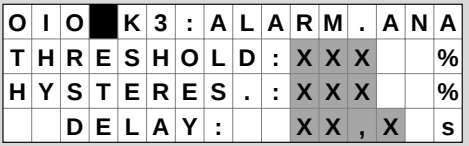
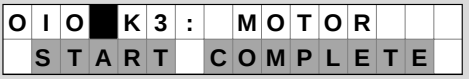
3.6.6 - Menu 6 : option inputs/outputs

Can be only be accessed with the ES - START option connected.

Display	Factory settings	Adjustment range
IO■ INPUT LOGIC N°1: OFF	OFF	OFF ON
IO■ INPUT 1 OTHER SETTINGS	OTHER SETTINGS	OTHER SETTINGS EXTERNAL FAULT
IO■ INPUT LOGIC N°2: OFF	OFF	OFF ON
IO■ INPUT 2 OTHER SETTINGS	OTHER SETTINGS	OTHER SETTINGS EXTERNAL FAULT
IO■ INPUT ANALOGUE : OFF	OFF	OFF ON
IO■ INPUT ANALOG SIGNAL : 4-20 mA	4 - 20 mA	4 - 20 mA 0 - 10V
IO■ CONTROL OF PTC SENSORS: OFF	OFF	OFF ON
IO■ CONTROL PTC SENSORS NUMBER: X	3	1 to 6

Remarks
ON : Enables logic input 1.
If logic input 1 is enabled, select : EXTERNAL FAULT : Logic input 1 is used to monitor an external fault. Changes the STV 2313 to trip state by opening the contact of logic input 1. OTHER SETTINGS : Is used to enable a second set of parameters in menu 8 (starting settings 2).
ON : Enables logic input 2.
If logic input 2 is enabled, select : EXTERNAL FAULT : Logic input 2 is used to monitor an external fault. Changes the STV 2313 to trip state by opening the contact of logic input 2. OTHER SETTINGS : Is used to enable a second set of parameters in menu 8 (starting settings 2 if logic input 1 = EXTERNAL FAULT). Is also used to enable menus 9 and 10 in order to have 4 sets of parameters, if logic input 1 = OTHER SETTINGS.
ON : Manages an external analogue signal. Changes the STV 2313 to trip state on detection of min. and max. threshold and/or alarm via K1 to K4 relays (adjustable opening and closing thresholds)
If the analogue input is enabled, select the type of analogue signal.
ON : Management of PTC sensors by the STV 2313 is enabled.
If management of PTC sensors by the STV 2313 is enabled, set the number of PTCs connected.

3.6.6 - Menu 6 continued

Display	Factory settings	Adjustment range
	OVERLOAD	OVERLOAD UNDERLOAD ALARM. ANALOG.I/P GENERAL FAULT MOTOR STATUS
	100 80 2,0	000 to 150 % 000 to 150 % 00,0 to 60,0 s
	50 70 2,0	000 to 100 % 000 to 100 % 00,0 to 60,0 s
	100 80 2,0	000 to 100 % 000 to 100 % 00,0 to 60,0 s
	START COMPLETE	START COMPLETE ENERGIZED ACCELERATING

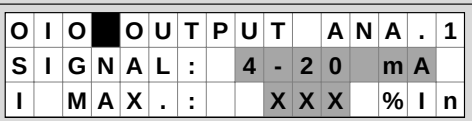
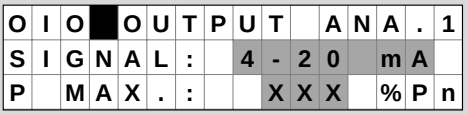
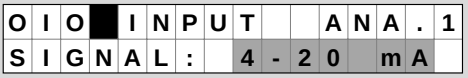
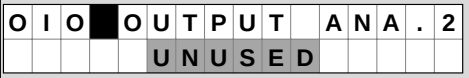
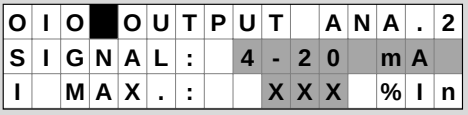
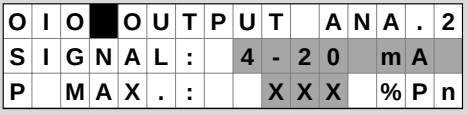
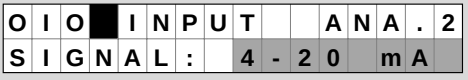
Remarks
Selects the assignment of relay K3. GENERAL FAULT : Relay open when fault or if the electronic power circuit is de-energized. **Note : ALARM ANALOG. I/P can only be accessed if the analogue input has been enabled.**
If K3 = OVERLOAD : Relay K3 closes when the power consumption is greater than the closing threshold, for a period longer than or equal to the time delay. It opens as soon as the power consumption falls below the opening threshold.
If K3 = UNDERLOAD : Relay K3 closes when the power consumption is less than the closing threshold, for a period longer than or equal to the time delay. It opens as soon as the power consumption exceeds the opening threshold.
If K3 = ALARM ANALOG. I/P : Relay K3 closes when the analogue input level is greater than the closing threshold for a period longer than or equal to the time delay. It opens as soon as the analogue input level falls below the opening threshold.
If K3 = MOTOR STATUS : Select the operating phase to be monitored. START COMPLETE : Relay K3 closes when the start is complete (when the motor is at full voltage) and opens as soon as the stop command is given. ENERGIZED : Relay K3 closes as soon as the start command is given and opens when the motor is switched off. ACCELERATING : Relay K3 closes as soon as the start command is given and opens when the motor is at full voltage.

3.6.6 - Menu 6 continued

Display	Factory settings	Adjustment range
OIO OUTPUT K4 UNDERLOAD	UNDERLOAD	UNDERLOAD ALARM. ANALOG. I/P GENERAL FAULT MOTOR STATUS OVERLOAD
OIO K4: OVERLOAD THRESHOLD: XXX%Pn HYSTERES.: XXX%Pn DELAY: XX,X s	100 80 2,0	000 to 150 % 000 to 150 % 00,0 to 60,0 s
OES K4:UNDERLOAD THRESHOLD: XXX%Pn HYSTERES.: XXX%Pn DELAY: XX,X s	50 70 2,0	000 to 100 % 000 to 100 % 00,0 to 60,0 s
OIO K4:ALARM ANA THRESHOLD: XXX % HYSTERES.: XXX % DELAY: XX,X s	100 80 2,0	000 to 100 % 000 to 100 % 00,0 to 60,0 s
OIO K4: MOTOR ACCELERATING	ACCELERATING	ACCELERATING START COMPLETE ENERGIZED

Remarks	
Selects the assignment of relay K4. If K4 = GENERAL FAULT : Relay open when fault or if the electronic power circuit is de-energized. **Note : ALARM ANALOG. I/P can only be accessed if the analogue input has been enabled**	
If K4 = OVERLOAD	Relay K4 closes when the power consumption is greater than the closing threshold, for a period longer than or equal to the time delay. It opens as soon as the power consumption falls below the opening threshold.
If K4 = UNDERLOAD	: Relay K4 closes when the power consumption is less than the closing threshold, for a period longer than or equal to the time delay. It opens as soon as the power consumption exceeds the the opening threshold.
If K4 = ALARM ANALOG. I/P	: Relay K4 closes when the analogue input level is greater than the closing threshold for a period longer than or equal to the time delay. It opens as soon as the analogue input level falls below the opening threshold.
If K4 = MOTOR STATUS : Select the operating phase to be monitored.	
ACCELERATING	: Relay K4 closes as soon as the start command is given and opens when the motor is at full voltage.
START COMPLETE	: Relay K4 closes when the start is complete (when the motor is at full voltage) and opens as soon as the stop command is given.
ENERGIZED	: Relay K4 closes as soon as the start command is given and opens when the motor is is switched off.

3.6.6 - Menu 6 end

Display	Factory settings	Adjustment range
	UNUSED	UNUSED CURRENT SIGNAL POWER O/P SIGNAL ANALOG. I/P SIGN.
	4 - 20 mA 400	4 - 20 mA or 0 - 10V 000 to 500 % In
	4 - 20 mA 150	4 - 20 mA or 0 - 10V 000 to 250 % Pn
	4 - 20 mA	4 - 20 mA or 0 - 10V
	UNUSED	UNUSED CURRENT SIGNAL POWER O/P SIGNAL ANALOG. I/P SIGN.
	4 - 20 mA 400	4 - 20 mA or 0 - 10V 000 to 500 % In
	4 - 20 mA 150	4 - 20 mA or 0 - 10V 000 to 250 % Pn
	4 - 20 mA	4 - 20 mA or 0 - 10V

Remarks
Selects the signal supplied by analogue output 1. **Note : ANALOG. I/P SIGN. can only be accessed if the analogue input is enabled.**
If OUTPUT ANA. 1 = CURRENT SIGNAL : Select the type of signal required and the value of current corresponding to the maximum signal level.
If OUTPUT ANA. 1 = POWER O/P SIGNAL : Select the type of signal required and the value of of the absorbed power corresponding to the maximum signal level.
If OUTPUT ANA. 1 = ANALOG. I/P SIGN. : Select the type of signal required. In this case the analogue output is proportional to the analogue input.
Selects the signal supplied by analogue output 2. **Note : ANALOG. I/P SIGN. can only be accessed if the analogue input is enabled.**
If OUTPUT ANA. 2 = CURRENT SIGNAL : Select the type of signal required and the value of current corresponding to the maximum signal level.
If OUTPUT ANA. 2 = POWER O/P SIGNAL : Select the type of signal required and the value of of the power consumption corresponding to the maximum signal level.
If OUTPUT ANA. 2 = ANALOG. I/P SIGNAL : Select the type of signal required. In this case the analogue output is proportional to the analogue input.

3.6.7 - Menu 7 : starting settings

Display	Factory settings	Adjustment range
ST1 BRAKE BEFORE ACCELERATION: OFF	OFF	OFF ON *
ST1 BRAKE BEFORE ACCEL: LEVEL: XXX	150	25 to 250 % In
ACCEL: TIME: XXs	5	00 to 60 s
ST1 KICKSTART OFF	OFF	OFF ON *
ST1 KICKSTART LEVEL: X	3	0 to 4
ST1 ACCELERATION CURRENT RAMP	CURRENT	CURRENT RAMP SPEED RAMP
ST1 CURRENT RAMP PEDESTAL: XXX%In	200	50 to 500 % In
LIMIT: XXX%In	400	100 to 500 % In
RAMP TIME: XXs	20	00 to 60 s
ST1 SPEED RAMP LIMIT: XXX%In	400	100 to 500 % In
ACCEL.TIME: XXXs	20	000 to 160 s

* It is only possible to have either one or the other : the last "ON" memorized is taken into account.

Remarks
With FR - START option only. ON : The acceleration phase is automatically preceded by DC injection used to immobilise the motor.
If braking before acceleration is enabled : set the braking level and the maximum duration of the DC injection.
If ON : The acceleration phase is preceded by a kickstart.
If kickstart is enabled : Set the duration of the kickstart pulse (the number of half-waves).
Selects the type of acceleration ramp. **Note : The speed ramp is only available with the RV - START option.**
If CURRENT RAMP : Set the ramp parameters. PEDESTAL : Minimum current required to turn the load as soon as the start command is given. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. RAMP TIME : Time taken to ramp up from the pedestal current to the current limit. Does not represent the start time but how progressive it will be.
If SPEED RAMP: Set the ramp parameters. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. ACCEL. TIME : Acceleration time, which will remain constant whatever the load.

3.6.8 - Menu 8 : starting settings 2

Can be accessed using the ES - START (if one of the 2 logic inputs is assigned to "OTHER SETTINGS") and/or RV - START (if "2 SPEED MOTOR" = ON) options.

Display	Factory settings	Adjustment range
ST2 ADAPTATION CURRENT2 : XXX%In	100	In 2 = 007 to 100 % In 1
ST2 BRAKE BEFORE ACCELERATION : OFF	OFF	OFF ON *
ST2 BRAKE BEFORE ACCEL : LEVEL : XXX ACCEL : TIME : XXs	150 5	25 to 250 % In 2 00 to 60 s
ST2 KICKSTART OFF	OFF	OFF ON *
ST2 KICKSTART LEVEL : X	3	0 to 4
ST2 ACCELERATION CURRENT RAMP	CURRENT	CURRENT RAMP SPEED RAMP
ST2 CURRENT RAMP PEDESTAL : XXX%In I LIMIT : XXX%In RAMP TIME : XXs	200 400 20	50 to 500 % In 2 100 to 500 % In 2 00 to 60 s
ST2 SPEED RAMP I LIMIT : XXX%In ACCEL.TIME : XXXs	400 20	

* It is only possible to have either one or the other : the last "ON" memorised is taken into account.

Remarks
Set the rated current of the motor being controlled using the second set of parameters. This is expressed as a % of the rated current set in menu 3 (initialisation of Softstarter).
With FR - START option only. ON : The acceleration phase is automatically preceded by DC injection used to immobilise the motor.
If braking before acceleration is enabled. Set the braking level and the maximum duration of the DC injection.
If ON : The acceleration phase is preceded by a kickstart.
If kickstart is enabled : Set the duration of the kickstart pulse (the number of half-waves).
Selects the type of acceleration ramp. **Note : The speed ramp is only available with the RV - START option.**
If CURRENT RAMP : Set the ramp parameters. PEDESTAL : Minimum current required to turn the load as soon as the start command is given. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. RAMP TIME : Time taken to ramp up from the pedestal current to the current limit. Does not represent the start time but how progressive it will be.
If SPEED RAMP: Set the ramp parameters. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. ACCEL. TIME : Acceleration time, which will remain constant whatever the load.

Attention : All current values are expressed as a % of the rated current In2.

3.6.9 - Menu 9 : starting settings 3

Can only be accessed using the ES - START option (if the 2 logic inputs are assigned to "OTHER SETTINGS".

Display	Factory settings	Adjustment range
ST3 ADAPTATION CURRENT3 : XXX%In	100	In 3 = 007 to 100 % In 1
ST3 BRAKE BEFORE ACCELERATION : OFF	OFF	OFF ON *
ST3 BRAKE BEFORE ACCEL : LEVEL : XXX ACCEL : TIME : XXs	150 5	25 to 250 % In 3 00 to 60 s
ST3 KICKSTART OFF	OFF	OFF ON *
ST3 KICKSTART LEVEL : X	3	0 to 4
ST3 ACCELERATION CURRENT RAMP	CURRENT	CURRENT RAMP SPEED RAMP
ST3 CURRENT RAMP PEDESTAL : XXX%In I LIMIT : XXX%In RAMP TIME : XXs	200 400 20	50 to 500 % In 3 100 to 500 % In 3 00 to 60 s
ST3 SPEED RAMP I LIMIT : XXX%In ACCEL.TIME : XXXs	400 20	100 to 500 % In 3 000 to 160 s

* It is only possible to have either one or the other : the last "ON" memorized is taken into account.

Remarks
Set the rated current of the motor being controlled using the third set of parameters. This is expressed as a % of the rated current set in menu 3 (initialisation of Softstarter).
With FR - START option only. ON : The acceleration phase is automatically preceded by DC injection used to immobilise the motor.
If braking before acceleration is enabled. Set the braking level and the maximum duration of the DC injection.
If ON : The acceleration phase is preceded by a kickstart.
If kickstart is enabled : Set the duration of the kickstart pulse (the number of half-waves).
Selects the type of acceleration ramp. **Note : The speed ramp is only available with the RV - START option.**
If CURRENT RAMP : Set the ramp parameters. PEDESTAL : Minimum current required to turn the load as soon as the start command is given. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. RAMP TIME : Time taken to ramp up from the pedestal current to the current limit. Does not represent the start time but how progressive it will be.
If SPEED RAMP: Set the ramp parameters. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. ACCEL. TIME : Acceleration time, which will remain constant whatever the load.

Attention : All current values are expressed as a % of the rated current In3.

3.6.10 - Menu 10 : starting settings 4

Can only be accessed using the ES - START option (if the 2 logic inputs can be assigned to " OTHER SETTINGS ").

Display	Factory settings	Adjustment range
ST4 ADAPTATION CURRENT4 : XXX% In	100	In 4 = 007 to 100 % In 1
ST4 BRAKE BEFORE ACCELERATION : OFF	OFF	OFF ON *
ST4 BRAKE BEFORE ACCEL : LEVEL : XXX ACCEL : TIME : XXs	150 5	25 to 250 % In 4 00 to 60 s
ST4 KICKSTART OFF	OFF	OFF ON *
ST4 KICKSTART LEVEL : X	3	0 to 4
ST4 ACCELERATION CURRENT RAMP	CURRENT	CURRENT RAMP SPEED RAMP
ST4 CURRENT RAMP PEDESTAL : XXX% In I LIMIT : XXX% In RAMP TIME : XXs	200 400 20	50 to 500 % In 4 100 to 500 % In 4 00 to 60 s
ST4 SPEED RAMP I LIMIT : XXX% In ACCEL.TIME : XXXs	400 20	100 to 500 % In 4 000 to 160 s

* It is only possible to have either one or the other : the last " ON " to be memorized is taken into account.

Remarks
Set the rated current of the motor being controlled using the fourth set of parameters. This is expressed as a % of the rated current set in menu 3 (initialisation of Softstarter).
With FR - START option only. ON : The acceleration phase is automatically preceded by DC injection used to immobilise the motor.
If braking before acceleration is enabled : Set the braking level and the maximum duration of DC injection.
If ON : The acceleration phase is preceded by a kickstart.
If the kickstart is enabled : Set the duration of the kickstart pulse (the number of half-waves).
Selects the type of acceleration ramp. The speed ramp is only available with the RV - START option.
If CURRENT RAMP : Set the ramp parameters. PEDESTAL : Minimum current required to turn the load as soon as the start command is given. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. RAMP TIME : Time taken to ramp up from the pedestal current to the current limit. Does not represent the start time but how progressive it will be.
If SPEED RAMP : Set the ramp parameters. I LIMIT : Maximum current supplied by the STV 2313. This must be sufficient to enable starting under the most severe load conditions. ACCEL. TIME : Acceleration time, which will remain constant whatever the load.

Note : All current values are expressed as a % of the rated current In4.

3.6.11 - Menu 11 : protection settings

Display	Factory settings	Adjustment range
PRO EXCESSIVE START.TIME: ON	ON	ON OFF
PRO EXC.START. MAX.TIME: XXXs	030	000 to 160s
PRO MOT. THERMAL OVERLOAD: ON	ON	ON OFF
PRO MOTOR TEMP. CURRENT: XXX%	100	50 to 150 % In
PRO INSTANTENOUS OVERLOAD: OFF	OFF	OFF ON
PRO OVERLOAD TRIPPING: XXX% Pn DELAY: XX s	120 1	000 to 160 % Pn 00 to 60s
PRO INSTANTENOUS UNDERLOAD: OFF	OFF	OFF ON
PRO UNDERLOAD TRIPPING: XXX% Pn DELAY: XX s	30 1	000 to 100 % Pn 00 to 60s
PRO LOCKED ROTOR: OFF	OFF	OFF ON
PRO PHASE SEQUENCE: OFF	OFF	OFF ON
PRO DELAY BEFORE RESTART: OFF	OFF	OFF ON
PRO REST. DELAY TIME: XXXMns 2 CONSECUT.: OFF	60 OFF	000 to 120 mn OFF ON
PRO FAULT ANA. INPUT: OFF	OFF	OFF ON
PRO ANALOG. I/P HIGH LEVEL: XXX % LOW LEVEL: XXX % HYSTERESIS: X % DELAY: XX s	80 20 5 1	000 to 100 % 000 to 100 % 00 to 5 % 0 to 60 s

Remarks
If ON : The STV 2313 trips if the motor has not finished starting within the maximum programmed time.
If the excessive start time protection is enabled. Set the maximum time for the most difficult start conditions.
If ON : The STV 2313 trips if the motor thermal limit is reached. Must be enabled if the installation has no other thermal protection.
If the thermal protection is enabled : Set the thermal current threshold.
ON : The STV 2313 trips if the power consumption is greater than the threshold set for a period greater than the time delay.
If the overload protection is enabled : Set the tripping threshold and the time delay.
If ON : The STV 2313 trips if the power consumption is less than the threshold set for a period greater than the time delay.
If the protection is enabled : Set the tripping threshold and the time delay.
If ON : The STV 2313 trips if the motor does not accelerate.
If ON : The STV 2313 trips if the L1, L2, L3 phase sequence is not followed directly.
If ON : The STV 2313 trips if it receives a start command when the time elapsed since the last stop is less than the time delay.
If protection before a restart is enabled, set the minimum desired stop time, then authorise 2 consecutive starts from cold if necessary.
If the **ES - START option** analogue input has been enabled : The STV 2313 trips if the analogue input level is above the high level or below the low level for a period greater than the time delay.
When the analogue input fault is enabled, set the high and low levels, the tripping delay and the hysteresis.

3.6.11 - Menu 11 End

Display	Factory settings	Adjustment range
PRO EXTERNAL TRIP 1 : OFF	OFF	OFF ON
PRO EXTERNAL TRIP 2 : OFF	OFF	OFF ON

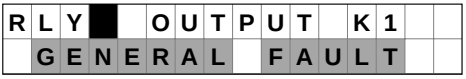
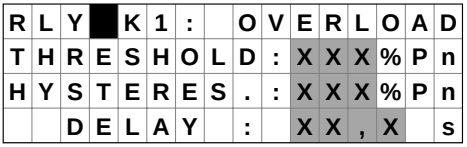
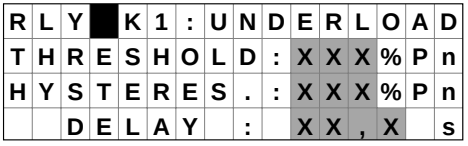
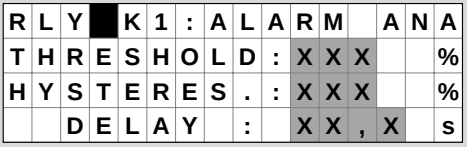
3.6.12 - Menu 12 : decelerating settings

Display	Factory settings	Adjustment range
DEC DECELERATION COAST STOP	COAST STOP	COAST STOP SOFT STOP WITH SPD FEEDBCK WITH DC BRAKING
DEC COAST STOP DELAY : XX s	00	00 to 60 s
DEC SOFT STOP DELAY : XX s DECEL. TIME : XX s	00 20	00 to 60 s 00 to 50 s
DEC SPD FEEDBCK DELAY : XX s DECEL. TIME : XX s	0 20	00 to 60 s 000 to 160 s
DEC DC BRAKING DELAY : XX s LEVEL : XXX INJECT. TIME : XX s	0 150 5	00 to 60 s 025 to 250 00 to 60

Remarks
With ES - START option if logic input 1 = EXTERNAL TRIP. ON : The opening of logic input 1 trips the STV 2313.
With ES - START option if logic input 2 = EXTERNAL TRIP. ON : The opening of logic input 2 trips the STV 2313.

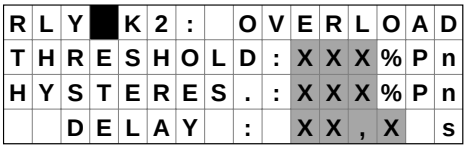
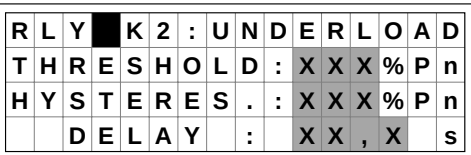
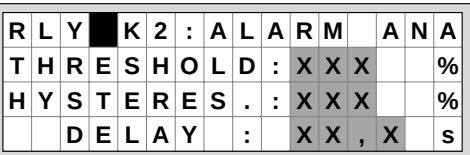
Remarks
Select the required stop mode. **WITH SPEED FEEDBACK : Only with the RV - START option.** **WITH BRAKING : Only with the FR - START option.**
If COAST STOP DECELERATION : Set the delay between the stop command and switching the motor voltage off.
If SOFT STOP DECELERATION : Set the delay between the stop command and the start of the deceleration, and the desired deceleration time.
If DECELERATION WITH SPEED FEEDBACK : Set the delay between the stop command and the start of the deceleration and the desired deceleration time.
If DECELERATION BY BRAKING : Set the delay between the stop command and the start of the DC injection, and the level of braking current and the maximum injection time.

3.6.13 - Menu 13 : output relay settings

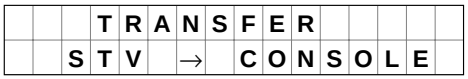
Display	Factory settings	Adjustment range
	GENERAL FAULT	GENERAL FAULT MOTOR STATUS OVERLOAD UNDERLOAD ALARM ANALOG. I/P
	ACCELERATING	ACCELERATING START COMPLETE ENERGIZED
	100 80 2.0	000 to 150 % Pn 000 to 150 00 to 60.0
	50 70 2.0	000 to 100 % Pn 000 to 100 % Pn 00 to 60 s
	100 80 2.0	000 to 100 % 000 to 100 % 00.0 to 60.0 s

Remarks
Selects the assignment of relay K1. GENERAL FAULT : Relay open when fault or if the electronic power circuit is de-energized. **Note : ALARM ANALOG. I/P can only be accessed if the analogue input has been enabled in menu 6.**
If K1 = MOTOR STATUS : Select the operating phase to be monitored. ACCELERATING : Relay K1 closes as soon as the start command is given and opens when the motor is at full voltage. START COMPLETE : Relay K1 closes as soon as the start is complete (when the motor is at full voltage) and opens as soon as the stop command is given. ENERGIZED : Relay K1 closes as soon as the start command is given and opens when the motor is switched off.
If K1 = OVERLOAD : Relay K1 closes when the power consumption is greater than the closing threshold for a period longer than or equal to the time delay. It opens as soon as the power consumption falls below the opening threshold.
If K1 = UNDERLOAD : Relay K1 closes when the power consumption is less than the closing threshold for a period longer or equal to the time delay. It opens as soon as the power consumption exceeds the opening threshold.
If K1 = ALARM ANALOG. I/P : Relay K1 closes when the analogue input level is greater than the closing threshold for a period longer than or equal to the time delay. It opens as soon as the analogue input level falls below the opening threshold.

3.6.13 - Menu 13 End

Display	Factory settings	Adjustment range
	MOTOR STATUS	MOTOR STATUS OVERLOAD UNDERLOAD ALARM ANALOG. I/P GENERAL FAULT
	ENERGIZED	ENERGIZED ACCELERATING START COMPLETE
	100 80 2,0	000 to 150 % 000 to 150 % 00,0 to 60,0 s
	50 70 2,0	000 to 100 % 000 to 100 % 00,0 to 60,0 s
	100 80 2,0	000 to 100 % 000 to 100 % 00,0 to 60,0 s

3.6.14 - Transfer

Display	Factory settings	Adjustment range
	STV → CONSOLE	STV → CONSOLE CONSOLE → STV

Note : Before duplication, the console must first be "loaded" by performing an STV --> CONSOLE transfer.

Remarks
Selects the assignment of relay K2. GENERAL FAULT : Relay open at a fault or if the electronic power circuit is off. **Note : ALARM ANALOG. I/P can only be accessed if the analog input has been validated in menu 6.**
If K2 = MOTOR STATUS : Select the operating phase to be monitored. ENERGIZED : Relay K2 closes as soon as the start command is given and opens when the motor is switched off. ACCELERATING : Relay K2 closes as soon as the start command is given and opens when the motor is at full voltage. START COMPLETE : Relay K2 closes as soon as the start is complete (when the motor is at full voltage) and opens as soon as the stop command is given.
If K2 = OVERLOAD : Relay K2 closes when the power consumption is greater than the closing threshold for a period longer than or equal to the time delay. It opens as soon as the power consumption falls below the opening threshold.
If K2 = UNDERLOAD : Relay K2 closes when the power consumption is less than the closing threshold for a period longer than or equal to the time delay. It opens as soon as the power consumption is greater than the opening threshold.
If K2 = ALARM ANALOG I/P : Relay K2 closes when the analogue input level is greater than the closing threshold for a period greater than or equal to the time delay. It opens as soon as the analogue input level falls below the opening threshold.

Remarks
Once the parameters have been saved in the STV 2313 memory, it is possible to transfer them to the console so that they may be copied at a later date to another STV 2313 with the same power rating (see procedure in Section 3.7).

3.7 - Using the transfer function

When using several STV 2313 models of the same power rating which are to be programmed identically, it is possible to duplicate the programming as follows :
- program the first STV 2313,
- perform a transfer "STV --> CONSOLE",
- disconnect the console and reconnect to another STV 2313,
- perform a transfer "CONSOLE --> STV",
- follow the same procedure for the other STV 2313s.

3.7.1 - Transferring parameters : STV to console

Step	Press	Display
Search for menu 14	D or E	TRANSFER STV → CONSOLE
Move to sub-menu	C	TRANSFER STV → CONSOLE
Memorise	MEM	TRANSFER >>> CONSOLE: LOADING CURRENT: 0%In START PWR OFF

3.7.2 - Transferring parameters : console to STV

Step	Press	Display
Search for menu 14	D or E	TRANSFER STV → CONSOLE
Move to sub-menu	C	TRANSFER STV → CONSOLE
Modification	E	TRANSFER CONSOLE → STV
Memorise	MEM	TRANSFER >>> STV: LOADING CURRENT: 0%In START PWR OFF

Note : • When the console is connected to the STV 2313, using the MEM key memorizes the parameter **in the STV 2313 memory and not in the console memory**. This is why it is essential to perform an STV --> CONSOLE transfer before disconnecting the console (so that the settings are duplicated).

• **Only copy parameters between two STV 2313s with the same power rating.**

Remarks
Scroll the parameters to menu 14 (transfer).
Selects the sub-menu which memorizes the parameters.
The parameters are being transferred from the STV 2313 to the console.
The parameters are transferred, with automatic return to **Read** mode.

Remarks
Scroll the parameters to menu 14 (transfer).
Selects the sub-menu which memorizes the parameters.
Selects the direction of the transfer.
The parameters are being transferred from the console to the STV 2313 (see Section 3.7.1).
The parameters are transferred, with automatic return to **Read** mode.

3.8 - Back to factory settings

Step	Press	Display
Read mode	E , D , C and Ↄ	BACK TO FACTORY SETTINGS ? ON→MEM
Validation	MEM	BACK TO FACTORY SETTINGS→LOADING COURANT : 0%In STV HORS TENSION

Note : It is only possible to return to factory settings from **Read** mode and with the motor switched off.

Remarks
Press the 4 arrow keys simultaneously.
After a break in the electronic power circuit supply, the return is validated, all the parameters revert to the values they had at the time of the first power up (including the access code). *

*** The break in the STV 2313 electronic power circuit supply is essential for the new configuration to be memorized and the self-test to be performed.**

4 - FAULTS - DIAGNOSTICS

4.1 - Operating faults

	C	O	D	E		I	N	C	O	R	R	E	C	T	

• An access code has just been entered which does not correspond to the one which has already been memorized.
- Re-enter the access code.

M	E	M	o	r	i	z	a	t	i	o	n		?	?	

• A parameter has just been modified but it has not been memorized before exiting the field.
- Press MEM. to memorize the modification.
- If the modification does not need to be memorized, use the ↺ key.

				T	R	A	N	S	F	E	R				
		N	O	T		P	O	S	S	I	B	L	E		

• A user wishes to transfer parameters from the console to the STV 2313, but nothing has been memorized in the console, or the contents of the parameters transferred to the console are not compatible with the STV 2313 to which it is connected. Use one of the four arrow keys to return to the preceding menu.

4.2 - "FAULT" messages

When a fault occurs, the STV 2313 displays the "FAULT" message on the upper line, and describes the nature of the fault on the lower line.

						F	A	U	L	T					
		T	Y	P	E		O	F		F	A	U	L	T	

After resetting the fault, either via the terminal block or using the STOP/RESET key on the **CDC - START** console, the display returns to the configuration it was at before the fault occurred.

4.3 - Possible causes of faults

						F	A	U	L	T					
		S	U	P	P	L	Y		L	O	S	S			

• No voltage on the L1 - L2 - L3 terminals.

						F	A	U	L	T					
E	X	C	.		S	T	A	R	T	.		T	I	M	E

• Start time is greater than the "Max time" set in menu 11 (protection settings).
- Load conditions are more severe than those used as a reference for the settings --> Revise the "Max time"
- Defective motor (insufficient torque).
- Incorrect motor connection.

						F	A	U	L	T					
	T	H	.		T	H	Y	R	I	S	T	O	R	S	

• Start conditions greater than the thermal capacity of the STV 2313.
- Start current is too high,
- Idle period between 2 starts is too short,
- Start time is too long,
- Capacity of equipment is insufficient.

						F	A	U	L	T					
			P	H	A	S	E		L	O	S	S			

• Upstream or downstream phase failure on the STV 2313 :
- Open power fuses,
- Motor cable cut or connectors loose.

						F	A	U	L	T					
S	H	O	R	T		S	U	P	.		L	O	S	S	

• Mains supply loss and restart after short mains loss is not enabled in menu 3, (initialisation of Softstarter).

						F	A	U	L	T					
				T	H	.		M	O	T	O	R			

• The operating conditions cause the motor thermal limit to be exceeded or the motor temp. current is incorrectly set. (See protection settings).

						F	A	U	L	T					
					O	V	E	R	L	O	A	D			

• The load on the motor has been above the threshold set for a period longer than the tripping time delay :
- Threshold less than the maximum operating conditions,
- Time delay is too short, and does not allow for overload surges,
- Mechanical problem.
(See protection settings).

						F	A	U	L	T					
				U	N	D	E	R	L	O	A	D			

• The load on the motor has been below the threshold set for a period longer than the tripping time delay.
- Threshold greater than minimum operating conditions,
- Time delay is too short, and does not allow for any possible underloads,
- Break in transmission,
- Loss of pump priming,
(See protection settings).

						F	A	U	L	T					
				S	O	F	T	W	A	R	E				

• Significant interference causing the microcontrollor to malfunction :
- Check the shielding of the remote cables,
- Return to the factory settings then reprogramme the STV 2313 (see procedure in Section 3.8).
- If the fault is permanent, replace the board,
- Control board has failed.

						F	A	U	L	T					
		S	H	O	R	T	E	D		T	H	Y	R	.	

• Short circuit of one or more thyristors :
- Check that no external element part connected to the STV 2313 is short circuiting the thyristors,
- If not, check the state of the thyristors.

						F	A	U	L	T					
	O	P	E	N		T	H	Y	R	I	S	T	O	R	

• Thyristor non-conduction or open circuit :
- Check the connection of the thyristor gate wires,
- Check the power connections,
- Check the state of the thyristors.

						F	A	U	L	T					
	P	H	A	S	E		S	E	Q	U	E	N	C	E	

• The phase sequence upstream of the STV does not correspond directly.
- Cross two phases upstream so that the phase sequence is direct and check the direction of the rotation of the motor.

						F	A	U	L	T					
		L	O	C	K	E	D		R	O	T	O	R		

• Mechanical locking of the machine making it impossible to start.

						F	A	U	L	T					
		T	H	.		H	E	A	T	S	I	N	K		

• Abnormal increase in temperature of the heat sink :
- Check operation of the forced ventilation (except for power rating 37),
- Check that there is sufficient air renewal required for cooling.

						F	A	U	L	T						
		M	A	I	N	S		S	U	P	P	L	Y			

• Electronic power circuit supply voltage is less than :
- 177V if using the 230V input,
- 340V if using the 400V input.

						F	A	U	L	T						
	T	O	O		M	A	N	Y		S	T	A	R	T	S	

• Restart requested before the time delay has elapsed :
- Wait for the end of the time delay and repeat the start command. (See protection settings).

						F	A	U	L	T						
	E	M	E	R	G	E	N	C	Y		S	T	O	P		

• Open circuit between terminals 10 and 11 of the STV 2313 remote control terminal block.

						F	A	U	L	T						
			S	E	R	I	A	L		L	I	N	K			

• Communication between the STV and the console is not possible.

						F	A	U	L	T						
	E	X	T	.		T	R	I	P		N	°		1		

• With the ES - START option, open contact between terminals 11 (EL1) and 12 (0V) of the ES - START module.

						F	A	U	L	T						
	E	X	T	.		T	R	I	P		N	°		2		

• With the ES - START option, open contact between terminals 13 (EL2) and 12 (0V) of the ES - START module.

						F	A	U	L	T						
			P	T	C		S	E	N	S	O	R	S			

• With the ES - START option, the tripping threshold of one of the PTC sensors connected to terminals 3 to 7 of the ES - START module is exceeded.

						F	A	U	L	T						
		A	N	A	L	O	G	.		I	N	P	U	T		

• With the ES - START option, the analogue input is outside the range defined by the high and low levels. (See protection settings).

						F	A	U	L	T						
	S	P	E	E	D		F	E	E	D	B	A	C	K		

• With the RV - START option, loss or absence of speed feedback.
This fault does not trip the STV 2313.

5 - SUMMARY OF THE SETTINGS

Product	Power rating	Serial N°	Commissioning	Comment
STV 2313				
CDC - START	-			
FR - START				
ES - START	-			
RV - START	-			

Complete the last columns of the table by filling in your settings.
The shaded parts ▭ can only be accessed using the FR - START, RV - START or ES - START options.

Menu	Parameter	Factory setting	Your setting on .../.../...	Your setting on .../.../...
1	Language	French		
2	Access code	0		
3	Main supply Motor speed Motor power Rated motor current Display of current Control by Autorestart	400 1500 dep. on rating STV rating As % In Terminal On		
4	Heating Delay Level Braking	Off 1mn 50 Self detection		
5	2 speed motor Choice of sensor Induct. V1 V2 Tacho V1 V2	Off 4 - 20 mA 6000 3000 90 45		
6	Input logic 1 Input 1 Input logic 2 Input 2 Input analogue Signal Control PTC sensors Number	Off Other settings Off Other settings Off 4 - 20 mA Off 3		

Menu	Parameter	Factory setting	Your setting on .../.../...	Your setting on .../.../...
6 Cont'd	Output K3	Overload		
	Threshold	100		
	Hysterisis	80		
	Delay	2		
	Motor	Energized		
	Output K4	Underload		
	Threshold	100		
	Hysterisis	80		
	Delay	2		
	Motor	Energized		
	Output Ana. 1	Unused		
	Signal	4 - 20 mA		
	I. max	400		
	P. max	150		
	Input Ana. 1	4 - 20 mA		
	Output Ana. 2	Unused		
	Signal	4 - 20 mA		
	I. max	400		
	P. max	150		
	Input Ana. 2	4 - 20 mA		
7	Brake	Off		
	Level	150		
	Time	5		
	Kickstart	Off		
	Level	3		
	Acceleration ramp	Current		
	Pedestal	200		
	I. limit	400		
	Accel time.	20		
8	Adaptation current 2	100		
	Brake	Off		
	Level	150		
	Time	5		
	Kickstart	Off		
	Level	3		
	Acceleration ramp	Current		
	Pedestal	200		
	I. Limit	400		
	Acceleration time	20		

Menu	Parameter	Factory setting	Your setting on .../.../...	Your setting on .../.../...
9	Adaptation current 3	100		
	Brake	Off		
	Level	150		
	Time	5		
	Kickstart	Off		
	Level	3		
	Acceleration ramp	Current		
	Pedestal	200		
	I. Limit	400		
	Acceleration time	20		
10	Adaptation current 4	100		
	Brake	Off		
	Level	150		
	Time	5		
	Kickstart	Off		
	Level	3		
	Acceleration ramp	Current		
	Pedestal	200		
	I. Limit	400		
	Acceleration time	20		
11	Excessive start	On		
	Max. time	30		
	Motor temperature	Off		
	Current Th	100		
	Instantaneous overload	Off		
	Tripping	120		
	Delay	1		
	Instantaneous underload	Off		
	Tripping	30		
	Delay	1		
	Locked rotor	Off		
	Phase sequence	Off		
	Restart delay	Off		
	Time	60		
	2 consecut.	Off		
	Analogue input	Off		
	High level	80		
	Low level	20		
	Hysteresis	5		
	Delay	1		

Menu	Parameter	Factory setting	Your setting on .../.../...	Your setting on .../.../...
11 Cont'd	External trip 1 External trip 2	Off Off		
12	Deceleration Delay Decel. time	Coast stop 00 20		
	Level Inject. time	150 5		
13	Output K1 Motor Threshold Hysterisis Delay Output K2 Motor Threshold Hysterisis Delay	General fault Accelerating 100 or 50 * 80 or 70 * 2 Motor status Energized 100 or 50 ** 80 or 50 ** 2		
14	Transfer	STV - CONSOLE		

* According to the "output K1" setting.
** According to the "output K2" setting.