ENERTRONICA SANTERNO

15W0132B153

Sinus S

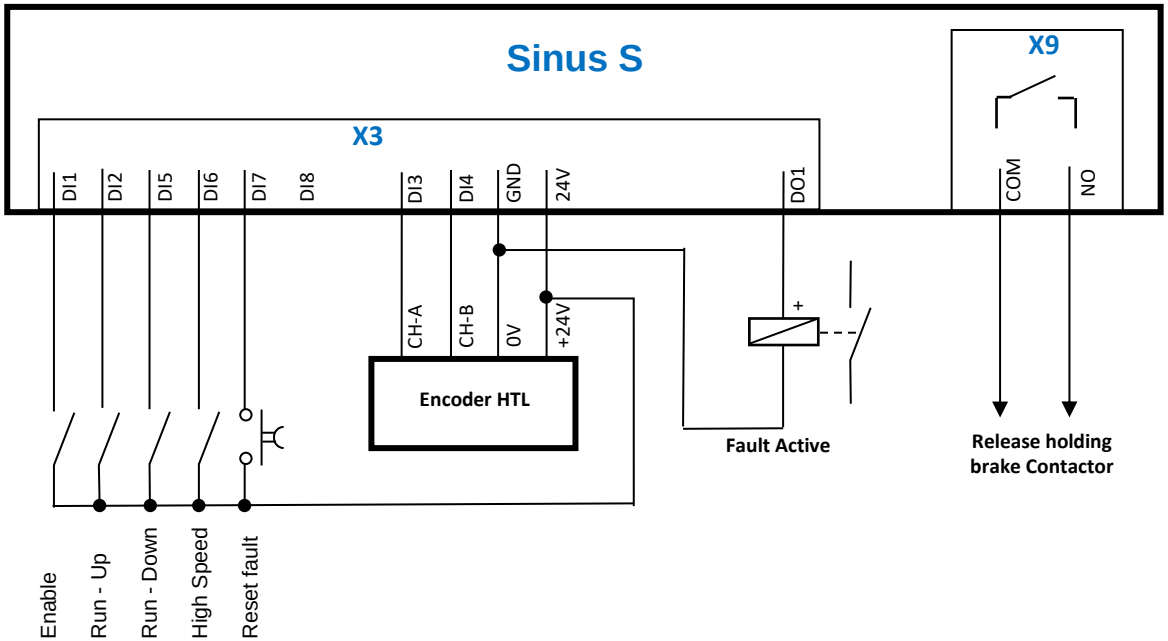
Vertical hoisting with encoder feedback

Parameter setting using the keypad - R.00 30/03/2022

Functional example of a simple hoisting system with two fixed speeds

NOTE: A Control Unit with extended I/O is necessary to achieve this type of application.

NOTE: Use HTL 24 VDC Push-Pull encoders only.



Reference wiring diagram

control section

Parameter setting and motor self-calibration using the alphanumeric keypad

To be sure to keep the control inputs and outputs disabled, it is advisable to temporarily remove the control terminal board until programming is complete.

Motor Data

P300:000	Motor control mode Servo control	= Servo Control (SC ASM) [2]	(Enables vector Servo Control)
P320:004	Motor parameters: Rated peed	= …… RPM	(from motor nameplate)
P320:005	Motor parameters: Rated Freq	= …… Hz	(from motor nameplate)
P320:006	Motor parameters: Rated power	= …… kW	(from motor nameplate)
P320:007	Motor parameters: Rated voltage	= …… V	(from motor nameplate)
P320:008	Motor parameters: Cosine phi	= …….	(from motor nameplate)
P323:000	Rated motor current	= …… A	(from motor nameplate)

Procedure to perform the motor self-calibration using the keypad

The self-calibration will not rotate the motor shaft, so there is no need to mechanically decouple it

P327:04 = 1

Press the "Back" key to reach the first page (the display shows "STOP")

Enable the "Local" mode with the "CTRL" key and then "Enter" ("Man" appears on the display)

Press the green “Start” button to start the self-calibration

Calibration begins, the progressive status of calibration appears on the display as a percentage. "Cal. Progress ". Wait for it to reach 100%

Press "CTRL" again and then "Enter" to disable the local keypad command ("Rem" appears on the display)

Temporarily save the programming by pressing the "Enter" key until "Saved" appears

Digital inputs programming

P400:004	Function List. Reset Fault	= Digital Input 7 [17]	(Enable Reset Alarms on input DI7)
P400:008	Function List. Run Forward (CW)	= Digital input 2 [12]	(Enables Run Up on input DI2)
P400:009	Function list: Run Reverse (CCW)	= Digital input 5 [15]	(Enables Run Down on input DI5)

P400:013	Function list: Reverse rotational direct.	= Not connected [0]	
P400:018	Function list: Activate preset (bit 0)	= Digital input 6 [16]	(Enables High Speed on input DI6)
P400:019	Function list: Activate preset (bit 1)	= Not connected [0]	
P400:048	Function list: Activate PID influence ramp	= Not connected [0]	

Encoder enable

P410:002	Digital Input setting: input function	= High res. HTL encoder [1]	(Enables inputs DI3 and DI4 for encoder inputs Ch A and B with common GND)
P341:001	Encoder settings: Increments/revolution	= 1024	(Number of encoder pulses per revolution)

Digital Outputs and Brake Control

P420:002	Digital outputs function:	= Fault active [56]	(Enables the DO1 output to the "Fault active" function)
P420:001	Digital outputs function:	= Relay Release holding brake [115]	(Enables the “Release holding brake” function at the output relay)
P712:001	Holding brake control:	= Brake mode Automatically [0]	(Enables automatic management of the holding brake)
P712:008	Holding brake control:	= Brake holding load 20,0 %	(Preloaded holding torque before the brake is released at the start)

Ramps setting

P220:000 Acceleration time 1	= 1,5 s	(Acceleration time up to maximum speed)
P221:000 Deceleration time 1	= 1,0 s	(Deceleration time from maximum speed to stop)

Speed setting

P210:000	Minimum frequency	= 12,0 Hz	(Low speed for Up and Down)
P450:001	Frequency setpoint presets: Preset 1	= 50,0 Hz	(High speed for Up and Down)

Brake resistor

P706:001	Brake energy management: Operating mode	= Brake resistor [0]	(Enables the braking control on resistor)
P707:002	Brake resistor: Resistance value	= …… Ω	(Rated resistive value of the braking resistor used)
P707:003	Brake resistor: Rated power	= …… W	(Rated power value of the braking resistor used)
P707:004	Brake resistor: Maximum thermal load	= …… kWs	(Rated energy value of the braking resistor used)

Permanently save the parameter setting by pressing the "Enter" key until "Saved" appears

Snap the terminal board back into position and carry out the normal motor control operations