1. Event

➤ At the time of VFD configuration it's found that the VFD is not taking the reference speed command from the PLC.

➤ VFD running in the maximum speed(50Hz) upon the start command.

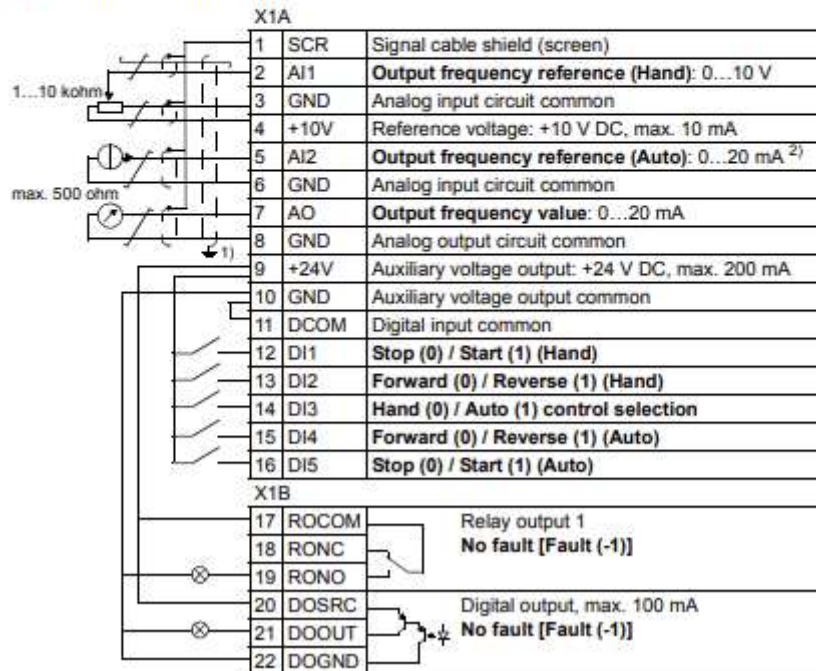➤ PLC input was connected to the AI1 (pin 2).

Hand/Auto macro

This macro can be used when switching between two external control devices is needed. To enable the macro, set the value of parameter *9902 APPLIC MACRO* to 5 (*HAND/AUTO*).

For the parameter default values, see section *Default values with different macros* on page *165*. If you use other than the default connections presented below, see section *I/O terminals* on page *49*.

Note: Parameter *2108 START INHIBIT* must remain in the default setting 0 (*OFF*).

Default I/O connections

X1A		
1	SCR	Signal cable shield (screen)
2	AI1	**Output frequency reference (Hand): 0…10 V**
3	GND	Analog input circuit common
4	+10V	Reference voltage: +10 V DC, max. 10 mA
5	AI2	**Output frequency reference (Auto): 0…20 mA** [2)]
6	GND	Analog input circuit common
7	AO	**Output frequency value: 0…20 mA**
8	GND	Analog output circuit common
9	+24V	Auxiliary voltage output: +24 V DC, max. 200 mA
10	GND	Auxiliary voltage output common
11	DCOM	Digital input common
12	DI1	**Stop (0) / Start (1) (Hand)**
13	DI2	**Forward (0) / Reverse (1) (Hand)**
14	DI3	**Hand (0) / Auto (1) control selection**
15	DI4	**Forward (0) / Reverse (1) (Auto)**
16	DI5	**Stop (0) / Start (1) (Auto)**
X1B		
17	ROCOM	Relay output 1
18	RONC	**No fault [Fault (-1)]**
19	RONO	
20	DOSRC	Digital output, max. 100 mA
21	DOOUT	**No fault [Fault (-1)]**
22	DOGND	

1…10 kohm

max. 500 ohm

2. Solution

➤ Checked all the parameters are configured properly or not.

➤ For this application the macro is used is Hand/Auto is enabled.

➤ From *9902 parameter* set the value to 5 for *Hand/Auto.*

➤ Refer to the Actual signals and parameters on ACS310 user manual for more details.

https://library.e.abb.com/public/0eda39cbd8494c4596d426b81e7884b3/EN_ACS310_UM_D_A4.pdf

- ➢ *Parameter Group 10* is used to configure the sources for external start, stop and direction control.
- ➢ *Parameter group 11* is used to configure the sources for external speed reference.
- ➢ In the parameters no anomalies found.
- ➢ Every parameter was configured properly.

3. Results

- ➢ Later changed the connection to the AI2
- ➢ And tried the configuration and found the VFD is responding to the speed input given.
- ➢ The Ref2 selected on the *parameter 1106*.

ACS310-03E-06A2-4 +BOP — ABB ACS310 SERIES DRIVE — DRIVE ON BOARD INPUT/OUPUT POINTS

4. Reference

- ➢ https://library.e.abb.com/public/0eda39cbd8494c4596d426b81e7884b3/EN_ACS310_UM_D_A4.pdf