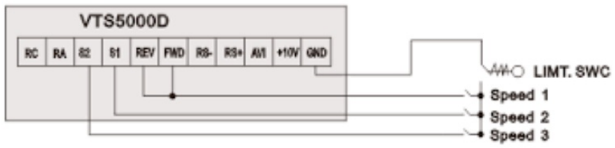


VTS5000D Control and Modbus Communication Instructions

Contents

VTS5000D Control and Modbus Communication

Description

Index Number	Description	Sanyu Customized Model
1-2-1208-5024	FC 0,75kW 3PH 3~400V VFD	VTS5000D-0R7G-4
1-2-1208-5025	FC 1,5kW 3PH 3~400V VFD	VTS5000D-1R5G-4
1-2-1208-5026	FC 2,2kW 3PH 3~400V VFD	VTS5000D-2R2G-4
1-2-1208-5033	0,75kW 1PH 1~230V VFD_S2	VTS5000D-0R7G-S2
1-2-1208-5034	1,5kW 1PH 1~230V VFD_S2	VTS5000D-1R5G-S2
1-2-1208-5035	2,2kW 1PH 1~230V VFD_S2	VTS5000D-2R2G-S2

THE FOLLOWING MANUAL ASSUMES GOOD KNOWLEDGE OF TECHNICAL DOCUMENTATION INCLUDED WITH THE AIR HANDLING UNIT (AHU). THIS MANUAL CONSIDERS ONLY THE CONTROL AND COMMUNICATION CIRCUITS. THE INSTALLATION OF THE FREQUENCY CONVERTER AND INSTALLATION OF MAINS AND MOTOR CABLES SHOULD BE DONE ACCORDING TO THE VTS5000D MANUAL.

FOR ALL CONFIGURATIONS SET THE COMMON PARAMETER LIST

Parameter	Code	Value	Comments
Maximum frequency	P105	100	
Acceleration Time 1	P107	45	recommended 45 sec.
Deceleration Time	P108	45	recommended 45 sec.
Rated motor voltage	P209	380	0-500V
Rated motor current	P210	*	Scale: 0.1 A
Motor rated speed	P212	*	
Number of motor poles	P213	*	
Rated motor slip	P214	**	0.1HZ
Rated motor frequency	P215	50	
Motor overload protection selection	P816	1	0: Prohibit 1: Permit

CONFIGURATIONS WITHOUT VTS CONTROLS

Local control using integrated control panel

Set additional parameters:

Parameter	Code	Value	Comments
Main frequency source X selection	P101	3	Local keypad potentiometer setting mode
Start signal selection	F102	0	0: Operation panel (FWD/REV/STOP) 1: I/O terminal 2:Communication(RS485)
Maximum frequency	P105	100	
Minimum frequency	P106	20	
Switch AI jumper to I to choose analog current input			
AI minimum voltage input	P300	0V	0.00V~P301
AI maximum voltage input	P301	10V	

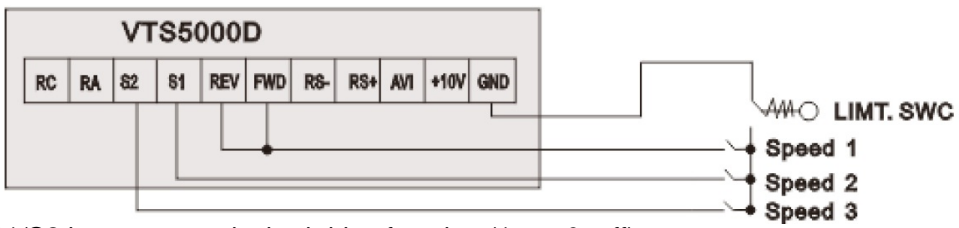
Use the RUN and STOP/RST buttons to control the drive Use buttons to set frequency

Remote control with three speeds

Set additional parameters:

Parameter	Code	Value	Comments
Main frequency source X selection	P101	6	Multi-speed
Start signal selection	F102	1	0: Operation panel (FWD/REV/STOP) 1: I/O terminal 2:Communication(RS485)
SET multi function terminal REV	P316	9	Multi -speed 1
SET multi function terminal S1	P317	10	Multi -speed 2
SET multi function terminal S2	P318	11	Multi -speed 3
Multi speed 1 (speed I)	P503	*	20 – 100Hz
Multi speed 2 (speed II)	P504	*	20 – 100Hz
Multi speed 3 (speed III)	P505	*	20 – 100Hz
RA,RC	P325	3	3:Alarm (stop)

Wire the I/O terminal of the VTS5000D inverter according to the Figure 1



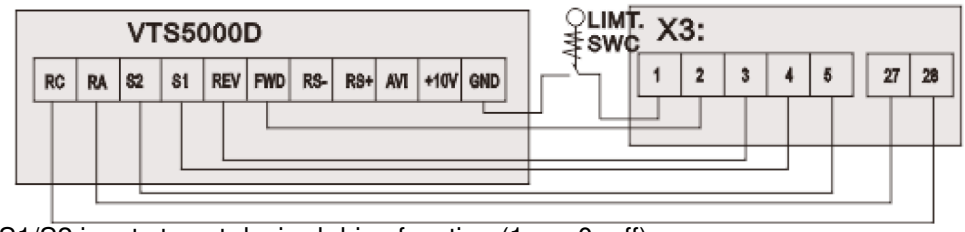
Use FWD/REV/S1/S2 inputs to set desired drive function (1=on,0=off)

0000 = STOP	
1100 = START, 1ST SPEED	Value is P503
1110 = START, 2ND SPEED	Value is P503+P504
1111 = START, 3RD SPEED	Value is P503+P504+P505

EXHAUST UNIT WITH VTS CONTROL SYSTEM

Parameter	Code	Value	Comments
Main frequency source X selection	P101	6	Multi-speed
Start signal selection	F102	1	0: Operation panel (FWD/REV/STOP) 1: I/O terminal 2:Communication(RS485)
SET multi function terminal REV	P316	9	Multi -speed 1
SET multi function terminal S1	P317	10	Multi -speed 2
SET multi function terminal S2	P318	11	Multi -speed 3
Multi speed 1 (speed I)	P503	*	20 – 100Hz
Multi speed 2 (speed II)	P504	*	20 – 100Hz
Multi speed 3 (speed III)	P505	*	20 – 100Hz
RA,RC	P325	3	3:Alarm (stop)

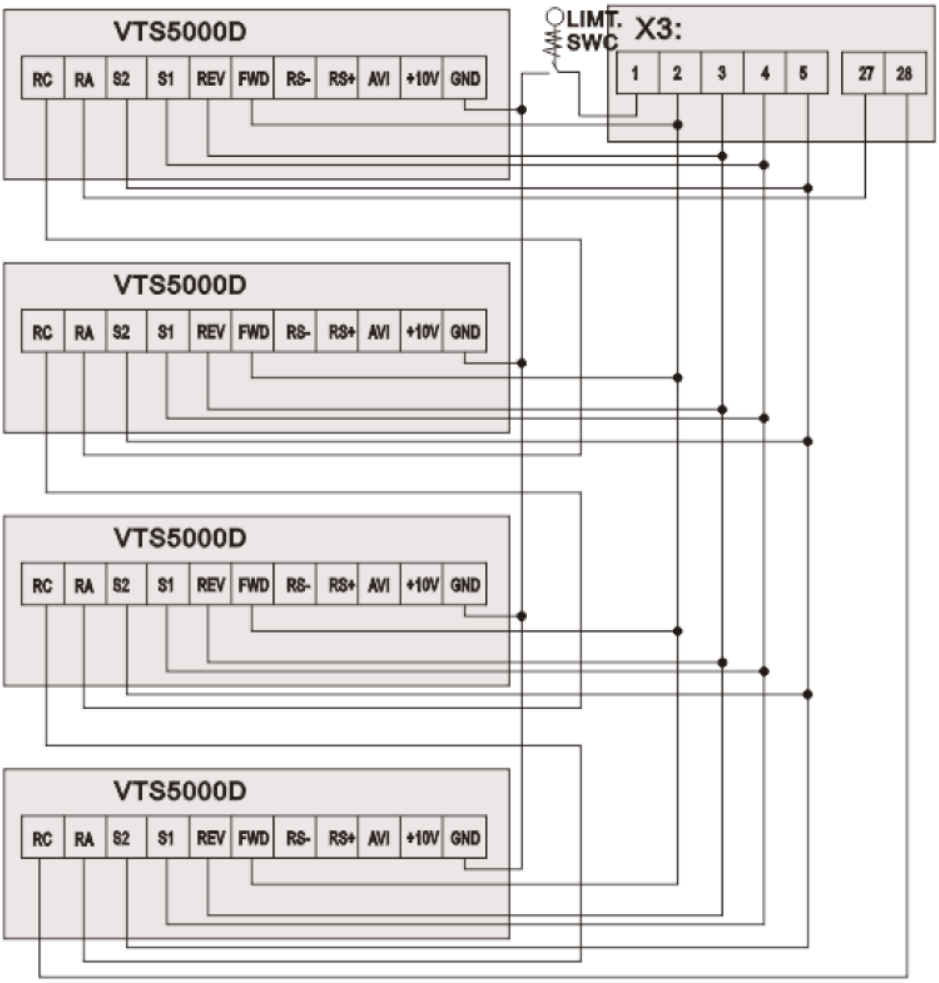
Wire the I/O terminal and the terminal X3 of the control box CG according to the Figure 2a



Use FWD/REV/S1/S2 inputs to set desired drive function (1=on,0=off)

0000 = STOP	
1100 = START, 1ST SPEED	Value is P503
1110 = START, 2ND SPEED	Value is P503+P504
1111 = START, 3RD SPEED	Value is P503+P504+P505

NOTE! If the AHU is equipped with more than 1 fan, follow Figure 2b for proper cabling.

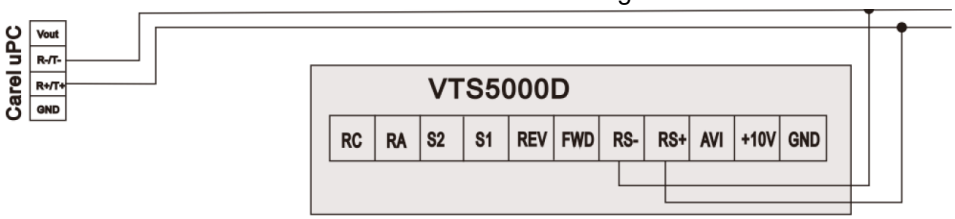


AHU WITH VTS CONTROLS TYPE: VS … CG ACX36 EVO … or VS … CG uPC …
Set additional parameters

Parameter	Code	Value	Comments
Main frequency source X selection	P101	5	5: RS485 communication frequency setting

Start signal selection	F102	2	2:Communication(RS485)
Converter’s address in Modbus Network	P702	2	Air-supply fan
		3	Air-exhaust fan
		5	Air-supply fan No.2 / redundant
		7	Air-supply fan No.3
		9	Air-supply fan No.4
		6	Air-exhaust fan No.2/ redundant
		8	Air-exhaust fan No.3
		10	Air-exhaust fan No.4
Action of RS485 communication error	P703	2	0: No warning 1: Warning, display Co 2: Display Co and stop

Communication parameters as below: Modbus RS-485, 9600 8N1,
Wire the communication terminal of the VTS5000D inverter according to the



CAUTION: It is recommended to apply an automatic procedure for the converters’ configuration, which is available in advanced options of the HMI Advanced panel.
NOTE: To restore VTS5000D to default settings set P117 = 8 and switch off the power supply.

Documents / Resources

	VTS VTS5000D Control and Modbus Communication [pdf] Instructions VTS5000D Control and Modbus Communication, VTS5000D, Control and Modbus Communication