

CONTROL AND MODBUS COMMUNICATION

APPENDIX TO THE VTS5000D (SYv1) MANUAL ITEMS AS FOLLOW:

Index Number	Description	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.

1. FOR ALL CONFIGURATIONS SET THE COMMON PARAMETER LIST

Parameter	Code	Value	Comments
Maximum frequency	P105	100	-
Minimum frequency	P106	20	-
Acceleration Time	P107	45	Recommended - 45 sec.
Deceleration Time	P108	45	Recommended - 45 sec.
Motor rated voltage	P209	*	0-500V
Motor rated current	P210	*	Scale: 0.1 A
Motor rated speed	P212	*	-
Number of motor poles	P213	*	-
Motor rated frequency	P215	50	-
Motor overload protection selection	P816	1	Active

* - as per motor data

2. CONFIGURATIONS WITHOUT VTS CONTROLS

2.1 Local control using integrated control panel

Set additional parameters:

Parameter	Code	Value	Comments
Main frequency source selection	P101	3	Local keypad potentiometer setting mode
Start signal selection	P102	0	Operation panel (FWD/REV/STOP)
AVI minimum voltage input	P300	0V	0.00V~P301
AVI maximum voltage input	P301	10V	-

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

Use buttons to set frequency

2.2 Remote control with three speeds

Set additional parameters:

Parameter	Code	Value	Comments
Main frequency source selection	P101	6	Multi-speed
Start signal selection	P102	1	I/O terminal
SET multi function terminal REV	P316	9	Multi-speed selector bit 1
SET multi function terminal S1	P317	10	Multi speed selector bit 2
SET multi function terminal S2	P318	11	Multi-speed 3 selector bit 3
Multi-speed 1 (speed 1)	P503	*	20 – 100Hz
Multi-speed 2 (speed 2)	P505	*	20 – 100Hz
Multi-speed 3 (speed 3)	P509	*	20 – 100Hz

* - as per user preferences

Wire the I/O terminal of the inverter according to the figure below:

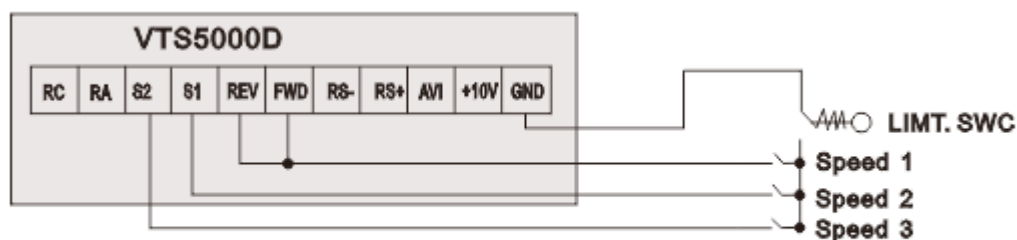


Figure 1

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 P505
1111 = START, 3RD SPEED	Value is P509

3. EXHAUST UNIT WITH VTS CONTROL SYSTEM

Set additional parameters:

Parameter	Code	Value	Comments
Main frequency source selection	P101	6	Multi-speed
Start signal selection	P102	1	I/O terminal
SET multi function terminal REV	P316	9	Multi-speed selector bit 1
SET multi function terminal S1	P317	10	Multi speed selector bit 2
SET multi function terminal S2	P318	11	Multi-speed 3 selector bit 3
Multi-speed 1 (speed 1)	P503	*	20 – 100Hz
Multi-speed 2 (speed 2)	P505	*	20 – 100Hz
Multi-speed 3 (speed 3)	P509	*	20 – 100Hz

* - as per user preferences

Wire the I/O terminal of the inverter according to the figure below:

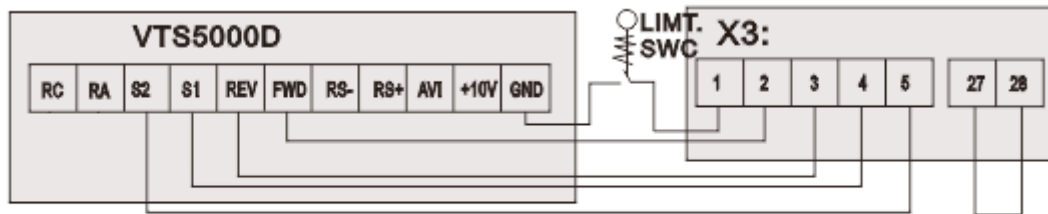


Figure 2a

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 P505
1111 = START, 3RD SPEED	Value is P509

NOTE! If the AHU is equipped with more than one fan, follow figure below for proper cabling:

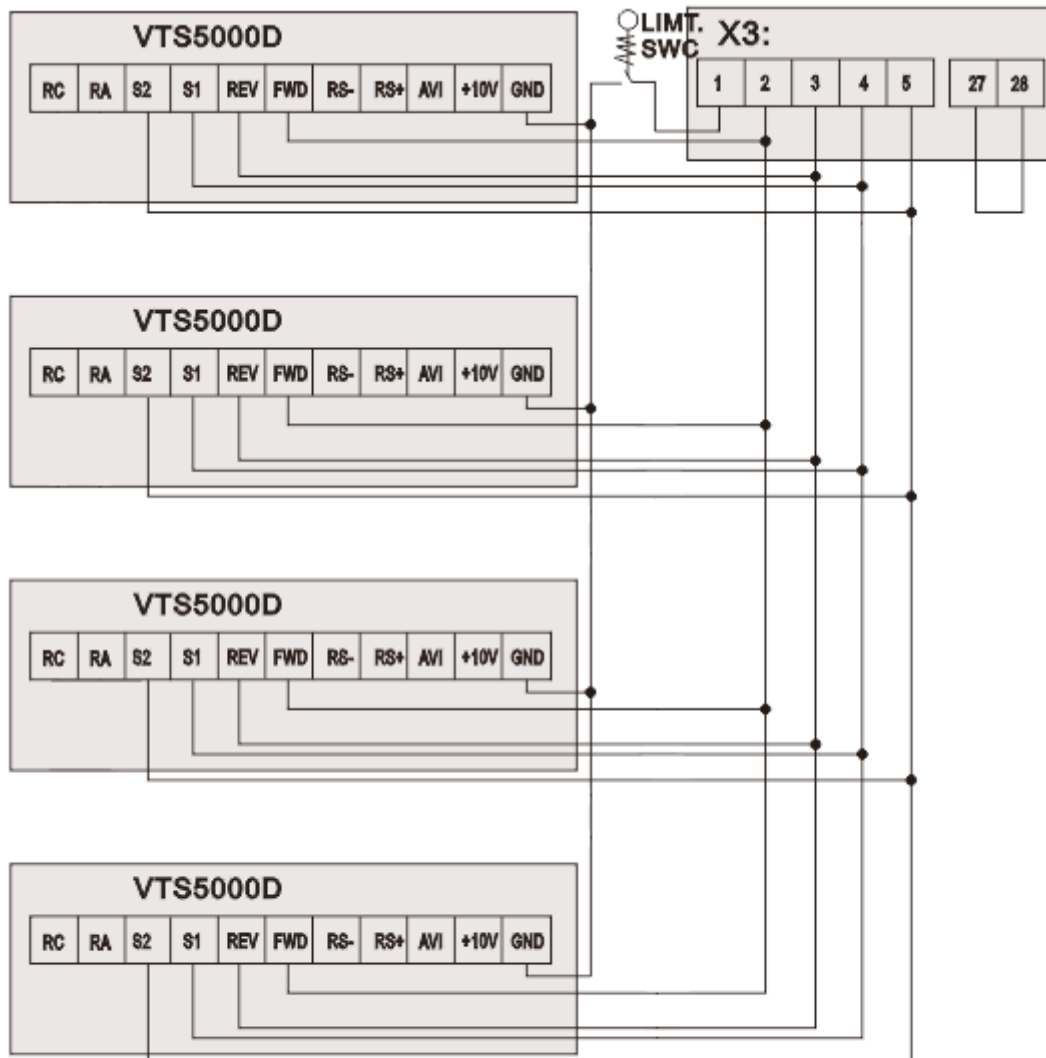


Figure 2b

4. AHU WITH VTS CONTROLS TYPE uPC3

NOTE! To allow control of the VTS5000D frequency drivers, set VFD type to SYv1 in uPC3 settings (HMI Advanced mask I03).

Set additional parameters:

Parameter	Code	Value	Comments
Main frequency source selection	P101	5	RS485 communication
Start signal selection	P102	2	RS485 communication
Baudrate	P700	1	9600
Parity and stop bit	P701	3	8N1
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 for RS485 communication error	P703	2	Display Co and stop
Communication time-out detection time	P704	30	30 sec.

Wire the I/O terminal of the inverter according to the figure below:

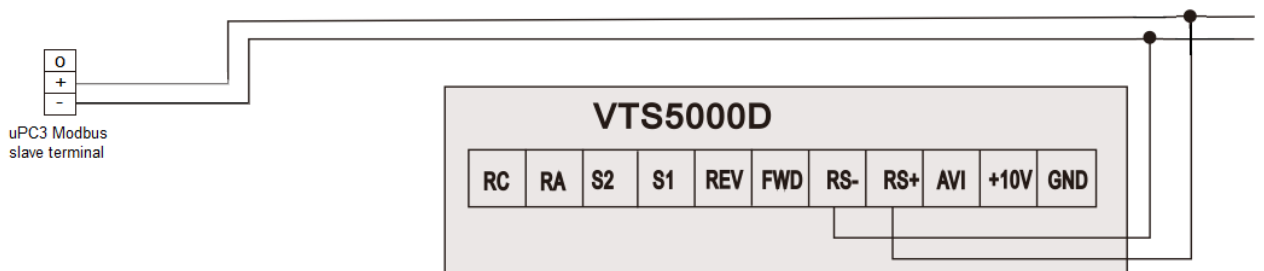


Figure 3

NOTE! To restore VTS5000D to default settings set P117 = 8 and switch off the power supply.