

SCREW AIR COMPRESSOR CONTROLLER

MAM580

USER

MANUAL

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VOTE OF THANKS

Thank you for your trustworthy and select of PLOT air compressor controller !

Shenzhen Plot Electronic Co., Ltd specializes on the manufacture and R&D of air compressor controller. We are devoted to win customer trust through our high quality products and service.

We try our best to ensure the completeness and correctness of the manual, but PLOT Company shall reserve the rights for continuous research and improvement on its products and assume no obligation for the modification and improvement on the previously delivered products. The design of products is subject to the change without notice.

Please feel free to contact our after-sale service center if you encounter any problem with our product.

You are always welcome to make suggestions and advices!



NOTICE



Please read all the operation manual before operating the set and keep this manual for further reference.



Installation of MAM—KY** compressor controller can be performed only by professional technicians.



Installation position shall be considered carefully in order to ensure good ventilation and reduce electromagnetic interference.



Wiring shall be performed respectively according to regulations for heavy and weak current to reduce electromagnetic interference.



RC snubber must be connected to the two terminals of coil (such as AC contactor ,valve, etc),which are controlled by relay output.



Port connection shall be inspected carefully before power on.



Correct ground connection (the third ground)can help increase product capacity of resisting signal interference.



Set rated current of motor: the max current of motor/1.2.

Features:

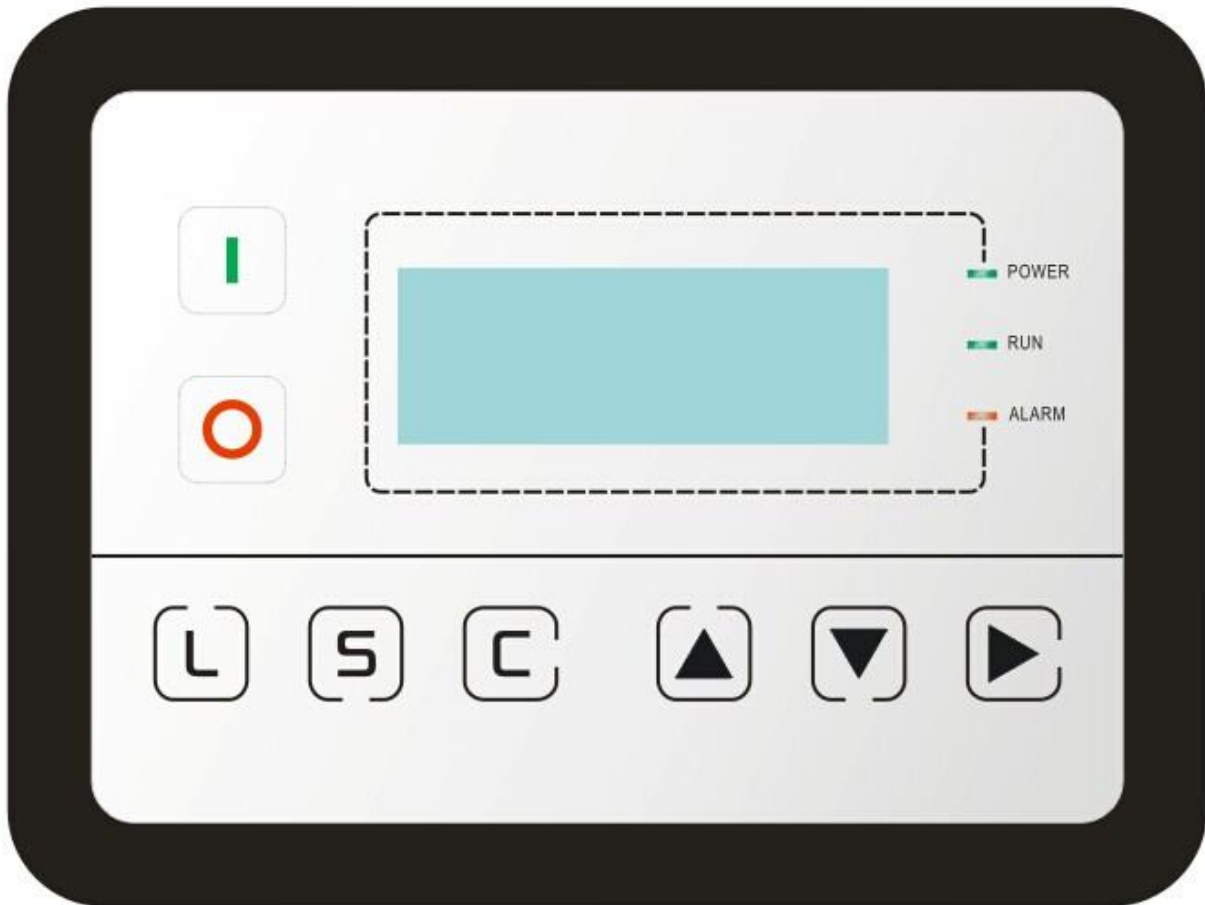
- Chinese / English display
- Remote/Local Mode
- Block control/Single machine/DCS control.
- Temperature/Pressure detection and protection.
- RS-485 communication function, support MODBUS RTU protocol.
- Scheduled on-off function, Auto restart function
- Automatically load/unload pressure switch in different period.
- Phase wrong, open phase ,low voltage ,high voltage protection
- Open phase ,current overload ,current unbalance ,high voltage, low voltage protection for motor.
- Support digital input&output and analogue input&output or RS485 communication control converter.
- High integration, high reliability, high cost performance

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1, Basic operation

1.1, Button explanation



Picture 1.1.1



—Start Button:

- When compressor is at stop status, press this button to start the compressor.
- When compressor is set as master (No.1) in block status ,press this button to start the compressor and activate block mode function at the same time.



—Stop Button:

- When the compressor is at running status, press this button to stop the compressor;
- When compressor is set as master (No.1) in block status, press this button to stop compressor and block function as well;



—Load / unload Button:

- When the compressor is at running status ,press this button to load or unload ;



—Set Button:

- When modifying data, press this button after modification to save and confirm the modified data.
- When the compressor is at password setting status ,press this button to save and confirm the password



——Return button / Reset button:

- When modifying data, press this button to exist data setting mode;
- When viewing the menu, press this button to return to previous menu;
- When the controller is at alarm and stop status, press this button for 5s to reset.



——Move down button / Decreasing button:

- When viewing the menu, press this button to move downward the cursor;
- When modifying data, press this button to decrease the data at current position.



——Move up button/Increasing button:

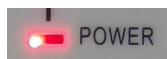
- When viewing the menu, press this button to move upward the cursor;
- When modifying data, press this button to increase the data at current position .



——Shift button /Enter button:

- When modifying data, press this button to move to the next data bit;
- When select menu, press this button to switch to submenu. If no submenu available, the controller will shift to data setting mode.

1.2, Indicator explanation



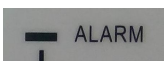
——Power:

Indicator is on when controller is powered on



——Run:

Indicator is on when motor is running



——Fault:

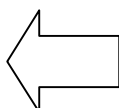
Indicator is blinking when controller is alarming;

Indicator is alight when compressor is alarm and stop;

Indicator is off after error is cleared and reset.

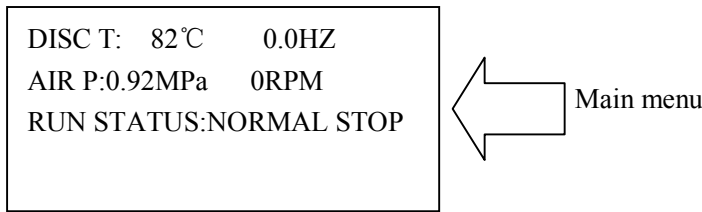
1.3, Status Display and Operation

The display screen will show as below after power on.:

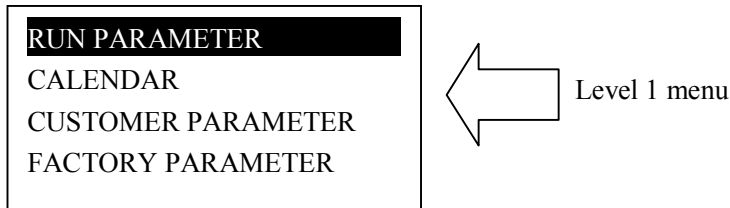


After powered on, show this menu

After 5 seconds, the menu will switch as below:

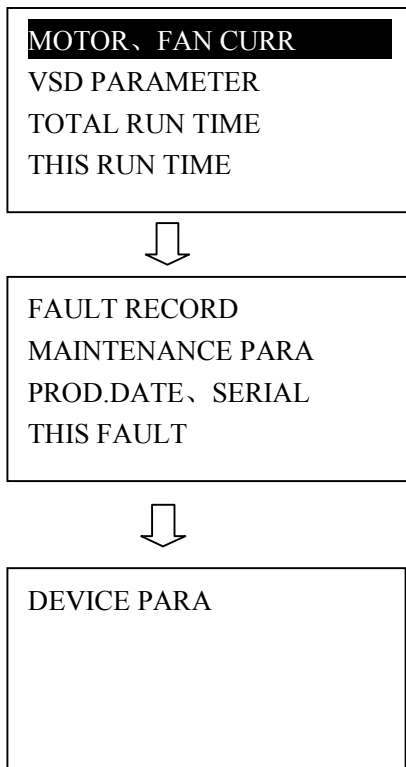


Press “” to enter into Selection Menu:




1.4, Operating Parameter and Menu

Press “” to move the cursor to “RUN PARAMETER”, then press “” to switch to secondary menu:



Move the cursor to the corresponding menu item, press “” to check the specific parameter such as viewing item MOTOR、FAN CURR. Move the cursor to item MOTOR、FAN CURR .Press “” to switch to MOTOR、FAN CURR




MOTOR(A) FAN(A)***V
A 0.0 0.0
B 0.0 0.0
C 0.0 0.0

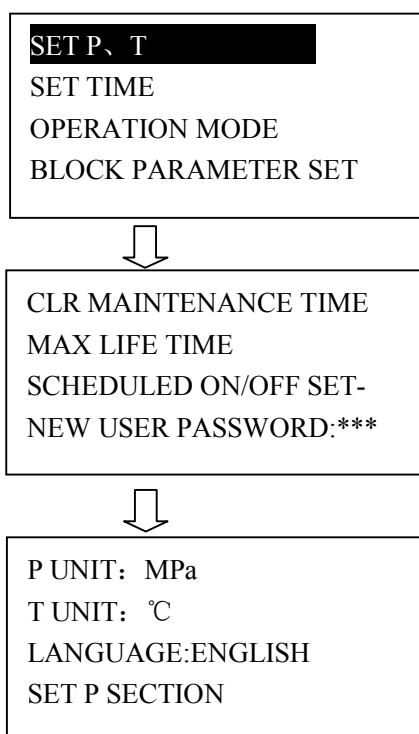
Press “”, to return to the previous menu or the main menu. If no operation at the current menu for 120 seconds , controller will automatically return to the main menu and turn off the back light simultaneously.

1.5, Calender

Check and set time of controller

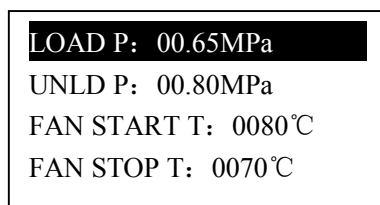
1.6, Customer Parameter View and Modification:


In first menu, press “” and “” to move the cursor to item CUSTOMER PARA., and then,press “” to switch to the following menu:

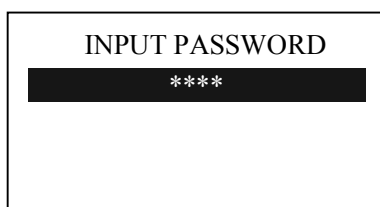


Move the cursor to item SET P、 T , then press “” to switch to the following menu:

:



Move the cursor to item LOAD P, then press “” to switch to the following menu which requires a user password input.



In this menu, the first data bit of password starts blinking, press “▲” or “▼” to modify the first bit of password, Press “▶” to move the cursor to the next data bit, modify the second data of password in accordance with the above , and modify the third and fourth data of password in sequence. Press “S” to confirm the input data and the menu will switch to the following menu after verification:

LOAD P: 00.65MPa
UNLD P: 00.80MPa
FAN START T: 0080°C
FAN STOP T: 0070°C

In the menu above , press “▶” , the first data of LOAD P starts blinking ,user can press “▲” or “▼” to modify the present data in accordance with the above method .Press “▶” to move to next data and modify the target data in sequence. When finished, press “S” to confirm and save the data. The controller prompts a short voice to advice the completion of parameter set.

1.7, Customer Parameter Sheet and Function

First menu	Second menu	Preset Data	Function
SET P、 T	LOAD P	00.65MPa	1,In AUTO load mode , compressor will load if pressure is below this set data 2,In STANDBY mode, compressor will start if the pressure is below this set data
	UNLD P	00.80MPa	1,Compressor will unload automatically if air pressure is above this set data 2.This data should be set above LOAD P ,also should be set below UNLD P LIM
	FAN START T	0080°C	Fan will start if DISC T is above this set data
	FAN STOP T	0070°C	Fan will stop if DISC T is below this set data
	VSD P	00.70MPa	Set AIR P in VSD mode to keep running stable. When pressure is fluctuated around this data, controller will adjust operating frequency of inverter to control the pressure close to this data (This data is only available in MOTOR VSD or MOTOR/FAN VSD mode)

	DESCEND P	00.72MPa	When set as VSD mode and AIR P is detected higher than set DESCEND P, DESCEND FREQ works.(This data is only available in MOTOR VSD or MOTOR/FAN VSD mode) Suggest: this set data = VSD P+0.02(MPa)
	MOTOR RATED POWER	022.0KW	Set MOTOR RATED POWER in order to calculate actual power in VSD mode(This data is only available in MOTOR VSD or MOTOR/FAN VSD mode)
	MOTOR RATED SPEED	1500RPM	Set MOTOR RATED SPEED at 50HZ in order to calculate the actual speed in VSD mode (This data is only available in MOTOR VSD or MOTOR/FAN VSD mode)
	DESCEND FREQ	005.0HZ	In VSD mode ,when the AIR P is detected higher than the set DESCEND P ,sent the data (CONTROL FREQUENCY based on the PID OPERATING FREQUENCY- SET DESCEND FREQUENCY) to inverter to avoid AIR P over PID TARGET PRESS too far which may cause the compressor loading and unloading frequently. Suggest: this set data \leq Motor max frequency \times 1% (Hz)
	FAN VSD T	0078°C	In VSD mode, set DISC T to keep running stable. When DISC T is fluctuated around this data, controller will adjust operating frequency of fan inverter to control DISC T close to this data(This data is only available in FAN VSD or MOTOR/FAN VSD mode)
	MAX VSD T	0085°C	When DISC T is above or equal to this data, control fan inverter output frequency to FAN MAX FREQ(This data is only available in FAN VSD or MOTOR/FAN VSD mode)
	VSD FAN START T	0070°C	VSD fan will start if DISC T is above this set data(This data is only available in FAN VSD or MOTOR/FAN VSD mode)
	VSD FAN STOP T	0065°C	VSD fan will stop if DISC T is below this set data(This data is only available in FAN VSD or MOTOR/FAN VSD mode)
	FAN RATED POWER	001.5KW	Set FAN RATED POWER to calculate the actual fan power in FAN VSD mode(This data is only available in FAN VSD or MOTOR/FAN VSD mode)
	FAN RATED SPEED	1500RPM	Set the corresponding fan speed in 50HZ to calculate actual fan speed in FAN VSD mode((This data is only available in FAN VSD or MOTOR/FAN VSD mode)

SET TIME	MOTOR START TIME	0008S	Set the MOTOR START TIME. Record time when motor is activated, controller will not start overload protection during this time to avoid impulse starting current stopping the motor.
	FAN START TIME	0003S	Set the FAN START TIME. Record time when fan is activated, controller will not start overload protection during this time to avoid impulse starting current stopping the fan.
	STAR DELAY TIME	0006S	Interval time from star start to delta start.
	LOAD DELAY TIME	0002S	Unloading in this set time after enter delta running
	STANDBY DELAY	0600S	When unloading continuously, compressor will automatically stop and enter to standby status if over this set time
	STOP DELAY	0010S	For NORMAL STOP operation, compressor will stop after it continuously unloads over this set time
	RE-START DELAY	0100S	Machine can start only over this set time at any case(after normal stop, standby or alarm &stop)
	DRAIN OPEN TIME	0002S	Auto drain control, continuously drain time
	DRAIN CLOSE TIME	0060S	Auto drain control, continuously drain interval time
	MOTOR UP SPEED	625	Restrict PID calculations in case the frequency increasing too fast which cause motor speeding up too fast
	MOTOR DN SPEED	625	Restrict PID calculations in case the frequency decreasing too fast which cause motor slowing down too fast
	ASSIST START T	000°C	When compressor is at the status from stop to loading and DISC T is detected lower than ASSIST START T, also AIR P is lower than UNLD P, ASSIST START function is activated. Set as 0000°C, this function is not available
	ASSIST START TIME	0100S	The max time for ASSIST START function after activation.
	ASSIST LOAD TIME	0020S	After ASSIST START function is activated, controller will turn to unload after loading for this set time
	ASSIST UNLD TIME	0020S	After ASSIST START function is activated, controller will turn to load after unloading for this set time
FAN UP SPEED	625	Restrict PID calculations in case the frequency increasing too fast which cause fan speeding up too fast	

	FAN DN SPEED	625	Restrict PID calculations in case the frequency decreasing too fast which cause fan slowing down too fast
	SOFT-START DELAY	0006S	Controller starts LOAD DELAY TIME after SOFT-START DELAY (this data is only available in SOFT START mode)
OPERATION MODE	LOAD MODE	AUTOMATIC/AL/MANUAL	MANUAL : only when the pressure is above UNLD P, compressor will unload automatically .For any other case ,the Load/Unload function can only be executed by pressing “load/unload” key. AUTOMATICAL: the load/unload function can be executed by the fluctuation of AIR P automatically
	START MODE	LOCAL/REMOTE	LOCAL :only the button on the controller can turn on and turn off the machine. REMOTE: both the button on the controller and the remote control button can turn on and turn off the machine; Note: When one input terminal is set as REMOTE START ENABLE, start mode is controlled by hardware status. It is remote when terminal is close, it is local when terminal is open. In this case, the set here is not available.
	STANDBY MODE	DISABLE/ENABLE	ENABLE: when AIR P is detected higher than UNLD P, compressor will unload DISABLE: when AIR P is detected higher than UNLD P, compressor will stop
	DRAIN FUNCTION	DISABLE/ENABLE	ENABLE:DRAIN FUNCTION is activated DISABLE:DRAIN FUNCTION is not activated (This data is not available in MOTOR/FAN VSD mode)
	COM ADD	0001	Set the communication address in COMPUTER or BLOCK mode. This address is unique for every controller in net
	COM MODE	DISABLE/BLOCK/COMPUTER	DISABLE: communication function is not activated. COMPUTER: compressor can communicate with computer or DCS as slave according to MODBUS-RTU. BLOCK: compressors can work in a net
	RUN MODE	PF/SOFT START/MOTOR/FAN VSD/FAN VSD/MOTOR VSD	Choose the corresponding compressor run mode according to customer requirement and choose the corresponding schematic diagram for reference.

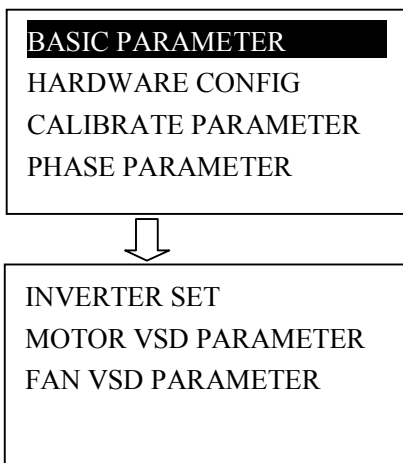
BLOCK PARAMETE R SET	BLOCK STATUS	MASTER/ SLAVE	1.When service as master in BLOCK, master controls slave; the COM ADD should be set as No.1 2.When service as slave in BLOCK, slave is controlled by master
	BLOCK MODE	VSD-VSD VSD-PF	VSD-VSD: Compressor starts with priority based on work status and running time VSD-PF: Master works with priority
	TURN TIME	0002H	When master pressure is between BLOCK LOAD P and BLOCK UNLD P, master determines slave to work alternatively after working over this set time
	BLOCK NUMBER	0002	Number of air compressors in block net
	BLOCK LOAD P	00.63MPa	In BLOCK mode, one compressor will start or load when master AIR P is below this set data
	BLOCK UNLD P	00.78MPa	In BLOCK mode, one compressor will stop or unload when master AIR P is above this set data
	BLOCK DELAY	0020S	In BLOCK mode, when master sends two commands continuously, second command signal delays for this set data
CLR MAINTENA NCE TIME	OIL FILTER	0000H	Record total running time of oil filter. If changing new oil filter, the data should be reset by manual operation.
	O/A SEPERATOR	0000H	Record total running time of O/A separator. If changing new O/A separator, the data should be reset by manual operation
	AIR FILTER	0000H	Record total running time of air filter .If changing new air filter, the data should be reset by manual operation
	LUBE	0000H	Record total running time of lubricant. If changing new lubricant, the data should be reset by manual operation
	GREASE	0000H	Record total running time of grease. If changing new grease, the data should be reset by manual operation
MAX LIFE TIME	OIL FILTER	2000H	1, Alarm prompt when total running time of oil filter is above the set data . 2,Set this data to “0000” , alarm function for oil filter running time is not activated
	O/A SEPERATOR	2000H	1, Alarm prompt when total running time of O/A separator is above the set data. 2,Set this data to “0000” ,alarm function for O/A separator running time is not activated
	AIR FILTER	2000H	1, Alarm prompt when total running time of air filter is above the set data. 2,Set this data to “0000” , alarm function for air filter running time is not activated

	LUBE	2000H	1, Alarm prompt when total running time of lubricant is above the set data. 2, Set this data to “0000”, alarm function for lubricant running time is not activated.	
	GREASE	2000H	1, Alarm prompt when total running time of grease is above the set data. 2,Set this data to “0” , alarm function for grease running time is not activated	
SCHEDULE D ON/OFF SET	WEEK1	ON	OFF	User set SCHEDULED ON/OFF from week 0 to week 6.Three periods are set in one day. When set as 00:00,the corresponding function is not activated. Note: When SCHEDULED ON/OFF is set as DISABLE in FACTORY PARAMETER, the parameter in SCHEDULED ON/OFF SET is invalid.
	A	00:00	00:00	
	B	00:00	00:00	
	C	00:00	00:00	
NEW USER PASSWORD	****	****	User could modify the user password by old user password or factory password	
P UNIT	MPa/PSI/BAR		MPa: pressure unit displays as MPa PSI: pressure unit displays as PSI BAR: pressure unit displays as BAR	
T UNIT	°C/°F		°C :temperature unit displays as °C 。 °F :temperature unit is displays as °F 。	
LANGUAGE	CHINESE/ ENGLISH	ENGLISH	ENGLISH: Displays in English CHINESE: Displays in Chinese	
SET P SECTION	SCHEDULED LOAD P	00.65MPa	During P START TIME and P STOP TIME, compressor will load if AIR P is below this set data	
	SCHEDULED UNLD P	00.80MPa	During P START TIME and P STOP TIME, compressor will unload if AIR P is above this set data	
	SCHEDULED VSD P	00.70MPa	During P START TIME and P STOP TIME, set AIR P in VSD mode to keep running stable. When pressure is fluctuated around this data, controller will adjust operating frequency of inverter to control the pressure close to this data (This data is only available in MOTOR VSD or MOTOR/FAN VSD mode)	
	SCHEDULED DESCEND P	00.73MPa	During P START TIME and P STOP TIME, In VSD mode ,when AIR P is detected higher than the set DESCEND P, the DESCEND F works.(This data is only available in MOTOR VSD or MOTOR/FAN VSD mode)	

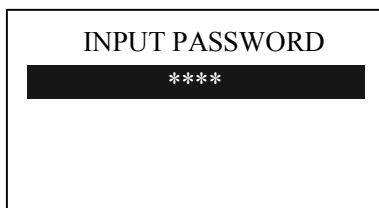
	P START TIME	00H00M	Set this data to activate P SECTION SEL function. Set this data to “0”, this function is not activated
	P STOP TIME	00H00M	Set this data to activate P SECTION SEL function. Set this data to “0”,this function is not activated
Note: There are three periods in SET P SECTION , see the No. in the right corner of window. Customer can choose one period or more to set. Set P START TIME and P STOP TIME to 00H00M , this function is not activated.			

1.8, Factory Parameter View and Modification

The view and modification of factory parameter requires a factory password. Press “▲”, “▼” to move the cursor to FACTORY PARAMETER, press “▶” to switch to below menu.



Move the cursor to BASIC PARAMETER and then press “▶” , to switch to the following menu which requires a user password input.



The view and modification of factory parameter requires a factory password. The modification step is same as customer parameter modification

For more FACTORY PARAMETER, see below table for reference.

1.9, Factory Parameter Sheet and Function

	PARAMETER	Initial Data	Function
BASIC PARAM ETER	MOTOR RATED CURR	Maximum motor overload data /1.2	When the current of motor is more than 1.2 times of the set data , the unit will stop for overload feature. (see table2.1.1)
	FAN RATED CURR	Maximum fan overload data/1.2	When the current of fan is more than 1.2 times than the set data , the unit will stop for overload feature.
	ALARM DISC T	105℃	When discharge temperature reaches this set data, compressor will alarm
	STOP DISC T	110℃	When the discharge temperature reaches this set data, compressor will alarm and stop
	UNLD P LIM	0.85MPa	This data is the maximum of UNLD P. The UNLD P in the customer parameter must be set no higher than this data.
	STOP AIR P	00.90MPa	When pressure reaches this set data ,compressor will alarm and stop
	T2 ALARM	0105℃	When T2 reaches this set data, compressor will alarm
	T2 STOP	0110℃	When T2 reaches this set data, compressor will alarm and stop
	P2 STOP	01.00MPa	When P2 reaches this set data, compressor will alarm and stop
	CURR UNBALANCE	0006	When MAX -MIN CURRENT $\geq (1 + \text{SET DATA} * \text{MIN CURRENT} / 10)$,the unbalance protection is activated ,compressor will alarm and stop, reporting MOTOR CURR UNBAL If the set data ≥ 15 , the unbalance protection will not be activated.
	OPEN PHASE PROT	002.0S	If OPEN PHASE protection ≥ 20 seconds, OPEN PHASE protection is not activated
	FAULT RECORD RESET	****	Input"8888"and press "set" button to clear all the history fault record.
	TOTAL RUN TIME	000100 H	Modify the TOTAL RUN TIME
	TOTAL LOAD TIME	000095 H	Modify the TOTAL LOAD TIME
MAX RUN TIME	0000H	1, When the compressor is in a stop status and the TOTAL RUN TIME is over this MAX TIME set, compressor will alarm and stop, reporting USER MISTAKE 2, Set the data to '0000', this function is not activated.	
ALARM LONG STOP	0000H	When controller detects oil filter, air filter, O/A separator lubricant and grease running over the max time and alarm over the data set, compressor will alarm and stop	

PROD.DATE	9999-99-99	Production date set by manufacturer
SERIAL NO.	9999999999	Serial No. set by manufacturer
HIGH VOLTAGE	0410V	When voltage is detected higher than HIGH VOLTAGE, the controller will alarm and stop When set as 0000, HIGH VOLTAGE protection function is not activated.
LOW VOLTAGE	0350V	When voltage is detected lower than LOW VOLTAGE, the controller will alarm and stop When set as 0000, LOW VOLTAGE protection function is not activated.
PHASE PROT	DISABLE ENABLE	ENABLE: Phase sequence protection function is activated DISABLE: Phase sequence protection function is not activated
FREQ SEL	50Hz/60Hz	Choose operation power frequency.(This parameter influences the sample current value. When this data is set incorrectly, the actual current is 1.2 times different from displayed current value)
LOW T PROT	-0005℃	1,In stop mode, air compressor is not allowed to start when discharge temperature is below this set data 2, When the discharge temperature is below this data two minutes after turned on, w, compressor will alarm and stop ,reporting LOW T
AUTO RESTART	DISABLE ENABLE	ENABLE: AUTO RESTART function is activated. When controller stop running suddenly by power loss, controller will restart automatically after power restored DISABLE: AUTO RESTART function is not activated Note: Take special attention when using this function
SCHEDULED ON/OFF	DISABLE ENABLE	ENABLE: SCHEDULED ON/OFF function is activated.. DISABLE: SCHEDULED ON/OFF function is not activated Note: Take special attention when using this function
CURR FILTER TIMES	0004	The current displayed in the RUN PARAMETER is the average of the detect data. The more of CURR FILTER TIMES, the slower current will change in RUN PARAMERTER.
VSD COM OVERTIME	002.0S	Record time when controller sent first data, if controller failed to receive the feedback from inverter within this set time, controller is regarded overtime and will send command again.
VSD COM INTERRUPT	0020S	If controller failed to receive feedback from inverter for this set time, VSD COM is interrupted.
VSD COM RESTORE	0015	After VSD COM is interrupted, and controller receives the correct data more than this set times, VSD COM is regarded restored.

	P SECTION SEL	DISABLE ENABLE	ENABLE:SET P SECTION in CUSTOMER PARAMETER is valid DISABLE: SET P SECTION in CUSTOMER PARAMETER is invalid	
HARDWARE CONFIG	PORT24	Factory set "EMERGENCY STOP"	Set the function of digital input. The function below is available by setting corresponding port. 1. REMOTE START ENABLE, 2. KEEP REMOTE, 3. SOFT START FAULT (N.O.), 4. REMOTE LOAD, 5. REMOTE LOAD/UNLD, 6. DRYER FAULT (N.C.), 7. AIR FAULT (N.C.), 8. FAN OVLD (N.C.), 9. MOTOR OVLD (N.C.), 10. ELEC FAULT (N.C.), 11. BEARING HIGH T (N.C.), 12. COIL HIGH T (N.C.), 13. TANK HIGH T (N.C.), 14. EMERGENCY STOP 15. VSD FAN FAULT (N.C.), 16. LACK WATER (N.C.), 17. FAN INV FAULT (N.C.), 18. FAN INV FAULT (N.O.), 19. MOTOR INV FAULT (N.C.), 20. MOTOR INV FAULT (N.O.), 21. REMOTE INCHING, 22. REMOTE OFF, 23. REMOTE ON, 24. AIR BLOCK (N.O.), 25. AIR BLOCK (N.C.), 26. O/A BLOCK (N.O.), 27. O/A BLOCK (N.C.), 28. OIL BLOCK (N.O.), 29. OIL BLOCK (N.C.), 30. NO FUNCTION Note: When one port is set "REMOTE START ENABLE", the START MODE in CUSTOMER PARAMETER is invalid. The selection of REMOTE and LOCAL is controlled by digital input status.	
	PORT23	Factory set" FAN INV FAULT"		
	PORT22	Factory set"LACK WATER"		
	PORT21	Factory set "OIL BLOCK (N.O.)"		
	PORT20	Factory set" O/A BLOCK (N.O.)"		
	PORT19	Factory set" AIR BLOCK (N.O.)"		
	PORT18	Factory set" MOTOR INV FAULT "		
	PORT17	Factory set "REMOTE INCHING"		
	PORT33	RUN		Set the function of relay output. Below function is available by setting corresponding port. 1. ALARM, 2. FAN INV RUN, 3. MOTOR INV RUN, 4. READY, 5. RUN,6.REMOTE,7.FAULT
	PORT32	FAULT		
	PORT31	ALARM		
	T2 SEL	DISABLE/		

		ENABLE	DISABLE:T2 function is not activated
	P2 SEL	DISABLE/ ENABLE	ENABLE:P2 function is activated DISABLE:P2 function is not activated
CALIBRATE PARAMETER	MOTOR A	1.000	Input the coefficient to calibrate current. Controller display current=sample current*coefficient. The range of coefficient:0.800-1.900
	MOTOR B	1.000	
	MOTOR C	1.000	
	FAN A	1.000	
	FAN B	1.000	
	FAN C	1.000	
	T 1 COEF	1.000	Input the coefficient when calibrate discharge temperature. Controller display temperature=sample temperature*coefficient. The range of coefficient:0.800-1.900
	T 1 ZERO	000	Calibrate controller temperature zero. Calibrate temperature to -20°C when controller pressure sensor terminal connects the resistance in accordance with -20 °C. For the calibration of temperature, it is required to calibrate T zero first and then calibrate coefficient
	T 2 COEF	1.000	Input the coefficient when calibrate temperature 2. Controller display temperature=sample temperature*coefficient. The range of coefficient:0.800-1.900
	T 2 ZERO	000	Calibrate controller temperature zero. Calibrate temperature to -20°C when controller pressure sensor terminal connects the resistance in accordance with -20 °C. For the calibration of temperature it is required to calibrate T zero first and then calibrate coefficient
	P1 COEF	1.000	Input the coefficient to calibrate air pressure. Controller display pressure =sample pressure*coefficient. The range of coefficient:0.800-1.900
	P 1 ZERO	0.03	When AIR P is below this set value, the pressure is displayed as 0.00.It is used to avoid air pressure transmitter from increasing.
	P 2 COEF	1.000	Input the coefficient to calibrate pressure 2. Controller display pressure =sample pressure*coefficient. The range of coefficient:0.800-1.900
	P 2 ZERO	0.03	When P 2 is below this set value, the pressure is displayed as 0.00.It is used to avoid pressure zero from increasing.
P PWM COEF	1.000	Calibrate the 20mA current transfer from controller to motor inverter	
P PWM ZERO	0.00	Calibrate the 4mA current transfer from controller to motor inverter	
T PWM COEF	1.000	Calibrate the 20mA current transfer from controller to fan inverter	

	T PWM ZERO	0.00	Calibrate the 4mA current transfer from controller to fan inverter
	VOLTAGE COEF	1.000	Calibrate voltage test value. The range of coefficient:0.800-1.900
PHASE PARAMETER	PHASE THRESHOLD	0.9V	After three phase adjustment, controller will report "PHASE WRONG" if voltage is detected lower than this set value. Set as "0", PHASE WRONG protection is not activated.
	OPEN PHASE THRESHOLD	0.6V	When open phase voltage is detected lower than this set value, controller will report "PHASE WRONG" Set as "0", OPEN PHASE protection is not activated.
INVERTER SET	FREQ(R) ADD	0C82	Read inverter frequency address(refer to inverter manual)
	VOLT(R) ADD	0C88	Read inverter voltage address
	CURR(R) ADD	0C84	Read inverter current address
	POWE(R) ADD	0C8B	Read inverter power address
	ERR STATE(R) ADD	219B	Read inverter error address
	FREQ(W) ADD	2136	Corresponding register address of inverter running frequency source
	RUN1(W) ADD	2135	Corresponding address 1 of inverter start command
	RUN2(W) ADD	2135	Corresponding address 2 of inverter start command
	STOP(W) ADD	2135	Corresponding address of inverter stop command
	RESET(W) ADD	2135	Corresponding address of inverter reset command
	COM FROM	8N1-N	Set the data format of controller and inverter communication. This set should be consistent with inverter communication format 8N1-N: 1start bit,8 data bits,1 stop bit, no parity bit 8N1-E: 1start bit,8 data bits,1 stop bit, even parity bit 8N1-O: 1start bit,8 data bits,1 stop bit, odd parity bit 8N2-N: 1start bit,8 data bits,2 stop bit, no parity bit Note: Communicate with inverter, the baud rate is fixed:9600
	VSD NAME	0ATV61	Set inverter name
	RUN1 VALUE	0001	This data is inverter start data 1 (please refer to communication chapter in inverter manual for different inverter.)
RUN2 VALUE	0002	This data is inverter start data 2 (please refer to communication chapter in inverter manual for different inverter.)	
STOP VALUE	0004	This data is inverter stop data (please refer to communication chapter in inverter manual for different inverter.)	
RST VALUE	0008	0 This data is inverter error reset data (please refer to	

			communication chapter in inverter manual for different inverter.)
	FREQ(R)	REC*0001÷0001	Calculate inverter frequency formula. Controller will transfer the frequency to one digit data
	VOLT(R)	REC*0001÷0001	Calculate inverter voltage formula. Controller will transfer the voltage to one decimal
	CURR(R)	REC*0001÷0001	Calculate inverter current formula. Controller will transfer the current to one digit data
	FREQ(W)	VAL*0001÷0001	When writing frequency to inverter through RS485 communication, controller transfer the one digit frequency value to digits number required by inverter communication..
	ERR S	R&FFFF≠0	Inverter reports error formula or not
	POWE(R)	REC*1*0001÷001	Calculate inverter power formula. Controller transfers the power to one digit data.
	RUN STATE(R) ADD	2135	Read inverter running status address
	RUN S	R&0001=0001	Check if inverter has run the formula(please refer to communication chapter in inverter manual)
MOTOR VSD PARAMETER	MOTOR INT SCALE	00.20MPa	(PID TARGET P - INTEGRAL SCALE)< detected AIR P < (PID TARGET P + INTEGRAL SCALE) ,INTEGRAL GAIN works
	MOTOR INT INITIAL	0020	When detected AIR P< (PID TARGET P -INTEGRAL SCALE) or Detected AIR P> (PID TARGET P +INTEGRAL SCALE) Integral calculation is based on this data
	MOTOR PROP GAIN	0010	Track speed of PID TARGET P , the bigger the data, the faster the track; the smaller the data, the slower the track
	MOTOR INT GAIN	0012	Track the speed of PID TARGET P and STEADY STATE ERROR, the bigger the data ,the faster the track and smaller the STEADY-STATE ERRORS; the smaller the data ,the slower the track and bigger the STEADY-STATE ERRORS
	MOTOR DIFF GAIN	0000	Track the hysteresis system(such as temperature) ,it is not used very often and normally set as “0000”
	MOTOR MAX FREQ	180.0HZ	The maximum operating frequency in loading status
	MOTOR MIN FREQ	040.0HZ	In the process of adjustment, The minimum operating frequency when pressure is over the LOAD P pressure and not reach the UNLD P
	MOTOR UNLD FREQ	0030.0HZ	Permitted operating frequency in UNLD MODE
	MOTOR PID CYCLE	001.0S	Set the PID calculation interval time to adjust motor speed.

	MOTOR VSD ADD	0001	Set the MOTOR VSD ADD and keep it consistent with VSD COM ADD
	MOTOR STOP MODE	SLOW/FREE	SLOW: When compressor receives stop command, INLET VALVE terminals will open and MOTOR INVERTER RUN terminal will open. The compressor will stop according to STOP DELAY set. FREE: When compressor receives stop command, Inlet valve will open. MOTOR INVERTER RUN terminal will keep closed to control inverter frequency decreasing and it will open until 1 S before STOP DELAY finishes
	MOTOR INVERTER0	0	Controller can prestore at most 5 different inverter communication address (Inverter should support MODBUS RTU protocol for communication)
	MOTOR WRITE FREQ	ENABLE/DISA BLE	ENABLE: Controller can write frequency to inverter through RS485 DISABLE: Controller can not write frequency to inverter through RS485
	MOTOR W FREQ PROT	DISABLE/STOP /ALARM	DISABLE: MOTOR W FREQ PROT is not activated STOP: Stop when error is detected in communication function ALARM: Alarm when error is detected in communication function
FAN VSD PARAM ETER	FAN INT SCALE	0005℃	$(PID\ TARGET\ T - INTEGRAL\ SCALE) < detected\ DISC\ T < (PID\ TARGET\ T + INTEGRAL\ SCALE)$,INTEGRAL GAIN works. Beyond this range, INT INITIAL works.
	FAN INT INITIAL	0020	When detected $DISC\ T < (PID\ TARGET\ T -INTEGRAL\ SCALE)$ or Detected $DISC\ T > (PID\ TARGET\ T +INTEGRAL\ SCALE)$ Integral calculation is based on this data
	FAN PROP GAIN	0020	Track speed of PID TARGET T , the bigger the data, the faster the track and the less stable the data; the smaller the data the slower the track and the slower the adjustment
	FAN INT GAIN	0020	Track the speed of PID TARGET T and steady state error, the bigger the data ,the faster the track and smaller the steady-state errors; the smaller the data ,the slower the track and bigger the steady-state errors
	FAN DIFF GAIN	0000	Normally set as “0000” , this function is not activated
	FAN MAX FREQ	050.0HZ	In the process of adjustment, The maximum operating frequency when temperature is over the VSD work temperature
	FAN MIN	010.0HZ	In the process of adjustment, The minimum operating

	FREQ		frequency when temperature is below the VSD work temperature
	FAN PID CYCLE	001.0S	Set the PID calculation interval time to adjust fan speed.
	FAN VSD ADD	0002	Set the FAN VSD ADD and keep it consistent with VSD COM ADD
	FAN INVERTER 0	0	Controller can prestore at most 5 different inverter communication address (Inverter should support MODBUS RTU protocol for communication)
	FAN WRITE FREQ	ENABLE/ DISABLE	ENABLE: FAN WRITE FREQ function is activated DISABLE: FAN WRITE FREQ function is not activated
	FAN W FREQ PROT	DISABLE/STOP /ALARM	DISABLE: FAN W FREQ PROT is not activated STOP: Stop when error is detected in communication function ALARM: Alarm when error is detected in communication function

1.10, Operating Authorization and Password

Controller provides multiple passwords and access management. According to different levels of passwords, controller provides different levels of operating authorization, details as following:

1.10.1, CUSTOMER PASSWORD: factory set:

Permissions: Allows to modify all CUSTOMER PRAMETER.

1.10.2 FACTORY PASSWORD: fixed:

Permissions: Allows to modify all CUSTOMER PRAMETER.

Permissions: Allows to modify BASIC PARAMETER, MOTOR VSD PARAMETER, FAN VSD PARAMETER in FACTORY PARAMETER

1.10.3, HARDWARE CONFIG PASSWORD: fixed:

Permissions: Allows to modify all HARDWARE CONFIG

1.10.4 CALIBRATE PASSWORD: fixed:

Permissions: Allows to modify all CALIBRATE PARAMETER

1.10.5, PHASE PASSWORD: fixed:

Permissions: Allows to modify all PHASE PARAMETER

1.10.6, INVERTER SET PASSWORD:

Permissions: Allows to modify all INVERTER SET

2, Controller Function and Technical Parameter

2.1, Digital input& output: 8 points of digital input (function optional) , 10 points of digital relay output (31.32.33 terminals function optional) .

2.2, Analog input& output: 2 points of Pt100 temperature input , 2 points of 4~20mA pressure signal input, 2 points of 4~20mA analogue current output. 2 groups of three phases current input (CT provided)

2.3, Input voltage of phases: 380V/ 220V.

2.4, High voltage, low voltage protection.

2.5, Controller operation power supply: AC20V、20VA.

2.6, Measurement :

2.6.1, DISC T: -20~150°C, Accuracy: ±1°C.

2.6.2, Running time: 0~999999H.

2.6.3, Current: 0~999.9A.

2.6.4, Pressure: 0~1.60MPa. Accuracy: 0.01Mpa.

2.7, Phase anti-reversal protection: When compressor is at stop mode and detects phase reversal, response time ≤ 2s

2.8, Open phase protection: When compressor is at stop mode and detects open phase, response time ≤ 2s

2.9, Motor protection: This controller provides open phase, unbalance and overload protection to motor, and also, provides overload protection to fan.

2.9.1, Open phase protection: When any phase opens, the response time equals to set time; This function is not activated when OPEN PHASE PROTECTION time is set over 20s

2.9.2, Unbalance protection: when MAX-MIN current ≥ SET DATA *MIN current/10, respond time is 5s;

2.9.3, Protection features of overload (time unit: second), please see following table (table 2.1.1) for your reference. Multiple = $I_{\text{actual}} / I_{\text{set}}$, response time is shown in following table (table 2.1.1) according to overload multiples from 1.2 times and 3.0 times .

$I_{\text{actual}}/I_{\text{set}}$ Time parameter	≥1.2	≥1.3	≥1.5	≥1.6	≥2.0	≥3.0
Response time (S)	60	48	24	8	5	1

Table 2.1.1 curve table for protection of motor

2.10, Temperature protection: when actual temperature measured is higher than temperature set; response time ≤ 2s;

2.11, Contact capacity of output relay: 250V,5A; Contact endurance :500000 times

2.12, Current error is less than 1.0%.

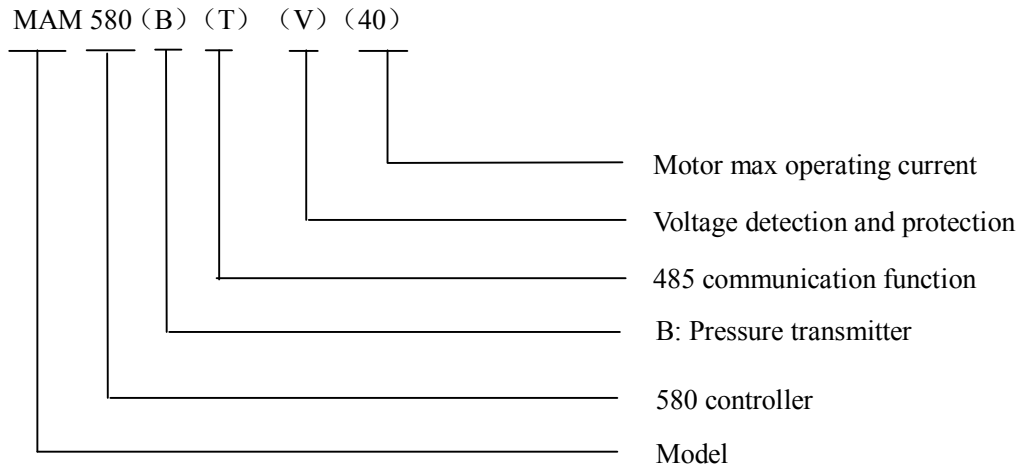
2.13, 2 points of RS485 communication port. 1 point is for block mode or computer communication.

The other point is for inverter communication like reading inverter run parameter, controlling inverter on-off or adjusting inverter frequency.

2.14 Remote control compressor: When set as REMOTE, user can remotely control the compressor.

3, Model and Specification

3.1, Model explanation



3.2, Power specification sheet for corresponding motor.

Specification	Current range (A)	Corresponding main motor power (KW)	Remark	Description
MAM580 (20)	8~20	Below 11		Fan has three levels of current, such as 0.2-2.5A, 1-5A and 4-10A, determined by current of motor
MAM580 (40)	16~40	11-18.5		
MAM580 (100)	100	22-45		
MAM580 (200)	200	55-90		
MAM580 (400)	400	110		
MAM580 (600/5)	600/5	200-250	With CT	

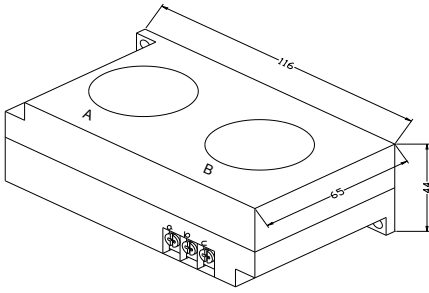
3.2.1 Power specification sheet for corresponding motor

4,Installation

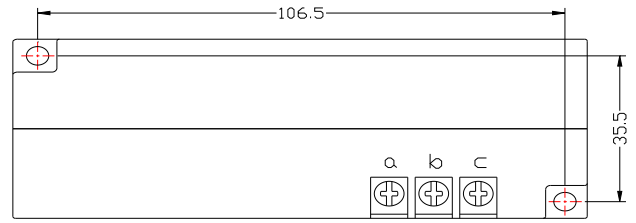
4.1, Mechanical Installation

4.1.1 CT installation

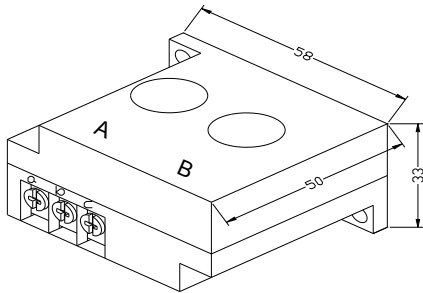
The CT shall be installed at a place where the current of motor cable can be measured, thus, controller can be set according to instructions on motor nameplate, and the detailed dimension is shown as below:



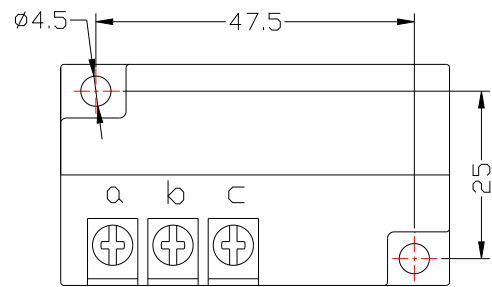
Picture4.1.1.1、 Structural dimension of CT1 (φ36 hole)



Picture 4.1.1.2、 CT1 Installation dimension



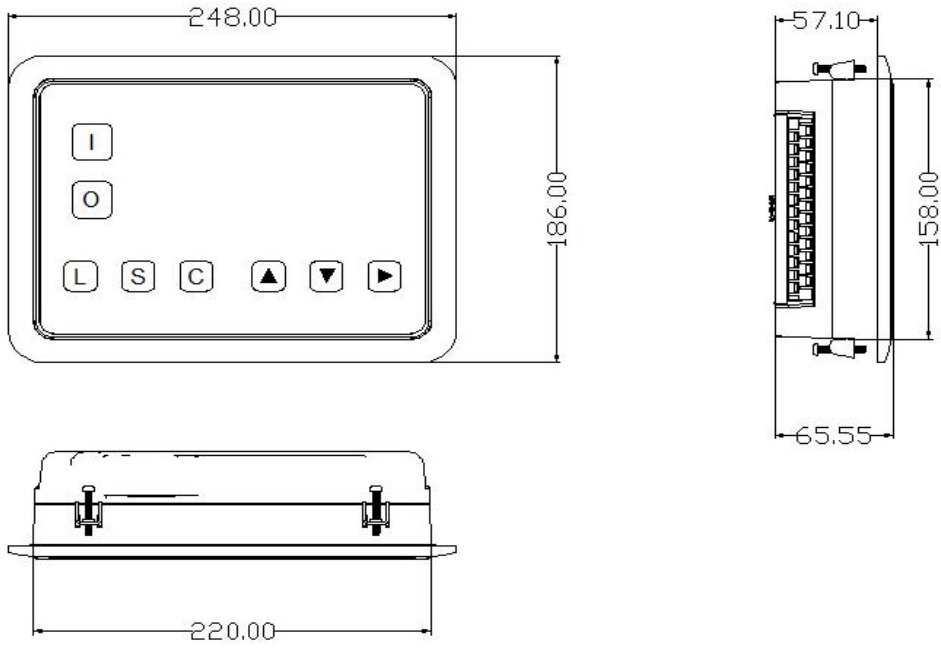
Picture4.1.1.3、 Structural dimension of CT2 (φ10 hole)



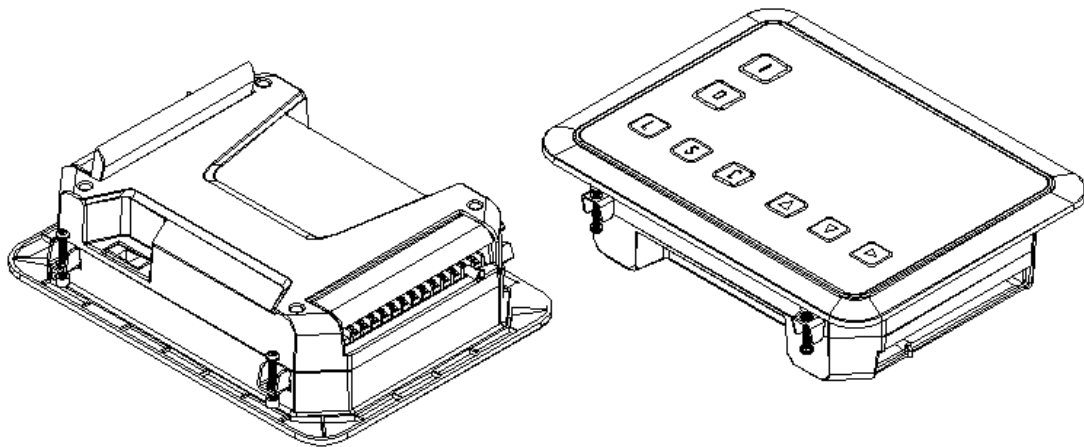
Picture 4.1.1.4、 CT2 Installation dimension

4.1.2 Controller installation

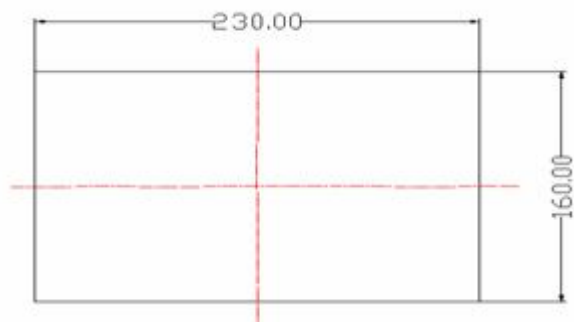
When install the controller, room should be left around controller for wiring. The specific dimension is shown as below:



Picture 4.1.2.1



Picture 4.1.2.2 Controller structure dimension



Picture 4.1.2.3 Hole size

4.2,Electrical Connections

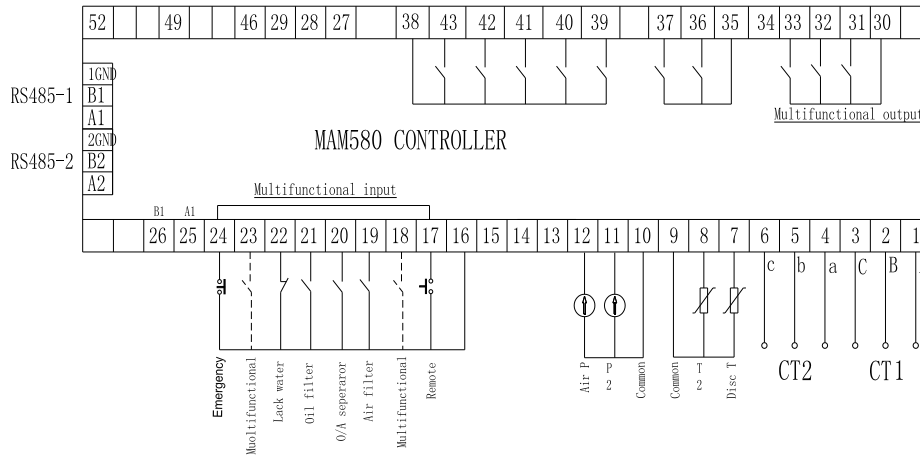


Figure 4.2.1 Terminal arrangement diagram

Controller terminal:

<u>1</u>	Motor CT output A	<u>2</u>	Motor CT output B	<u>3</u>	Motor CT output C
<u>4</u>	Fan CT output A	<u>5</u>	Fan CT output B	<u>6</u>	Fan CT output C
<u>7</u>	Discharge temperature	<u>8</u>	Temperature 2	<u>9</u>	Temperature common terminal
<u>10</u>	Pressure common terminal	<u>11</u>	Pressure 2	<u>12</u>	Air pressure
<u>13</u>	N/A	<u>14</u>	N/A	<u>15</u>	N/A
<u>16</u>	Digital input common terminal	<u>17</u>	Multifunctional Input1	<u>18</u>	Multifunctional Input 2
<u>19</u>	Multifunctional Input 3	<u>20</u>	Multifunctional Input 4	<u>21</u>	Multifunctional Input 5
<u>22</u>	Multifunctional Input 6	<u>23</u>	Multifunctional Input 7	<u>24</u>	Multifunctional Input 8
<u>25</u>	Spare communication port A1	<u>26</u>	Spare communication port B1	<u>27</u>	Power
<u>28</u>	Power	<u>29</u>	Ground	<u>30</u>	Common terminal of multifunctional relay output
<u>31</u>	Common terminal of multifunctional relay output 1	<u>32</u>	Common terminal of multifunctional relay output 2	<u>33</u>	Common terminal of multifunctional relay output 3
<u>34</u>	N/A	<u>35</u>	Common terminal of relay output 1	<u>36</u>	Drier
<u>37</u>	Drain Valve	<u>38</u>	Common terminal of relay output 2	<u>39</u>	Contactora control fan to start and stop
<u>40</u>	Inlet Valve	<u>41</u>	Delta contactora	<u>42</u>	Star contactora
<u>43</u>	Main contactora	<u>44</u>	N/A	<u>45</u>	N/A
<u>46</u>	Phase A	<u>47</u>	N/A	<u>48</u>	N/A
<u>49</u>	Phase B	<u>50</u>	N/A	<u>51</u>	N/A
<u>52</u>	Phase C				

Note :Electromagnetism coil shall be connected nearest with RC snubber during wiring

5,Alarm Function

5.1, Air Filter Alarm

- ①. Air filter block check. (In HARDWARE CONFIG , there is air check function set in digital input terminal)
The monitor displays AIR BLOCK by checking pressure differential switch close.
- ②. Air filter running time alarm
The text displays AIR TIME END when running time of the air filter is exhausted.

5.2, Oil Filter Alarm

- ①. Oil filter block check. (In HARDWARE CONFIG, there is oil check function set in digital input terminal)
The monitor displays OIL BLOCK by checking pressure differential switch close.
- ②. Oil filter running time alarm
The text displays OILTIME END when running time of the oil filter is exhausted.

5.3, O/A separator Alarm

- ①. O/A separator block check. (In HARDWARE CONFIG, there is O/A check function set in digital input terminal)
The monitor displays O/A BLOCK by checking pressure differential switch close.
- ②. O/A filter running time alarm
The text displays O/A TIME END when running time of the oil filter is exhausted.

5.4, Lubricant Alarm

The text displays LUBE TIME END when running time of the lubricant is exhausted.

5.5, Grease Alarm

The text displays GREASE TIME END when running time of the grease is exhausted.

5.6, Discharge Temperature High Alarm

The text displays DISC T HIGH when DISC T is higher than ALARM DISC T set in FACTORY PARAMETER.

6,Controller Protection

6.1, Motor Protection

MAM580 compressor controller provides overload, open phase, unbalance, high voltage, low voltage protection to motor and overload protection to fan.

Electronic failure	Failure Display	Reason
Overload	Display “:MOTOR/FAN CURR OVLD”	Overload, bearing wear and other mechanical failure
Open phase	Display “MOTOR CUR OPEN PHASE”	Power supply, contactor and open phase of motor
Current Unbalance	Display “MOTOR CURR UNBAL”	Poor contact of contactor, inside open loop of motor
High Voltage	Display “HIGH VOLTAGE”	Motor voltage high
Low Voltage	Display “LOW VOLTAGE”	Motor voltage low

6.2, Protection of Discharge Temperature High

When DISC T is above the STOP DISC T, the controller will alarm and stop the machine. THIS FAULT displays DISC T HIGH

6.3, Protection of Air Compressor anti-reversal

When compressor is at stop status and three phases sequence is not in order, THIS FAULT displays PHASE WRONG1, and the controller cannot start the motor. Change the position of any arbitrary two phase power lines and check the rotation of motor.

6.4, Protection of Air compressor Open Phase

When compressor is at stop status and open phase is detected, THIS FAULT displays PHASE WRONG2, and the controller cannot start the compressor. Check the three phase.

6.5, Protection of Air Pressure High

When the AIR P is above the MAX LIM P, the controller will alarm and stop the machine. THIS FAULT displays HIGH P.

6.6, Protection of Sensor Fault

When pressure sensor or temperature sensor is disconnected, the controller will alarm and stop the machine. THIS FAULT displays **SENSOR FAULT.


6.7, Protection of Low Temperature

Two minutes after compressor turns on, when DISC T is below LOW T PRO in FACTORY PARAMETER, the controller will alarm and stop. THIS FAULT displays DISC T SENSOR FAULT,

7, Troubleshooting

7.1, This Fault Review

Alarm and stop caused by the external parts of controllers may be removed by checking THIS FAULT or FAULT RECORD, method is shown as below:

Press “” to move the cursor to “RUN PARAMETER” menu, then press “”, the secondary menu will show as below:

MOTOR、 FAN CURR
VSD PARAMETER
TOTAL RUN TIME
THIS RUN TIME



FAULT RECORD
MAINTENANCE PARAMETER
PROD.DATE、 SERIAL
THIS FAULT

Move the cursor to “THIS FAULT” menu Then press “” to switch to the following menu (display failure) :

STOP: DISC T SENSOR FAULT
170°C

User can reset fault according to the information prompted

7.2,Common Fault and Causes

Failure	Reason	Solution
High discharge temperature	Bad vent condition, Oil shortage etc.	Check the vent condition and lubricant amount etc.
Temperature Sensor Failure	Cable broken or PT100 failure	Check the wiring and PT100
High Pressure	Pressure too high or the pressure sensor failure	Check the pressure and the pressure sensor
Pressure Sensor Failure	Cable broken, Sensor failure or the cables connect reversely	Check the wiring and pressure transmitter
Open Phase	Power open phase or the contactor failure	Check the power and contactors
Overload	Voltage too low, tubes block, bearing wear off or other mechanical failure or wrong set data etc.	Check the set data, voltage, bearings, tubes and other mechanical system.
Unbalance	Current unbalance, contactor failure or the internal open loop of the motor	Check the power, contactor and the motor
Wrong Phase Sequence	Phase sequence reversal or open phase	Check the wiring
Motor overload during start	Master start time set to less than the star delta delay time	Reset the master start time longer than star delay + 2 seconds
Main Contactor shakes frequently	The emergency stop button is loose or controller is reset by interference	Check if the coil of contactor connects with RC snubber or not

8,Block control and network communication

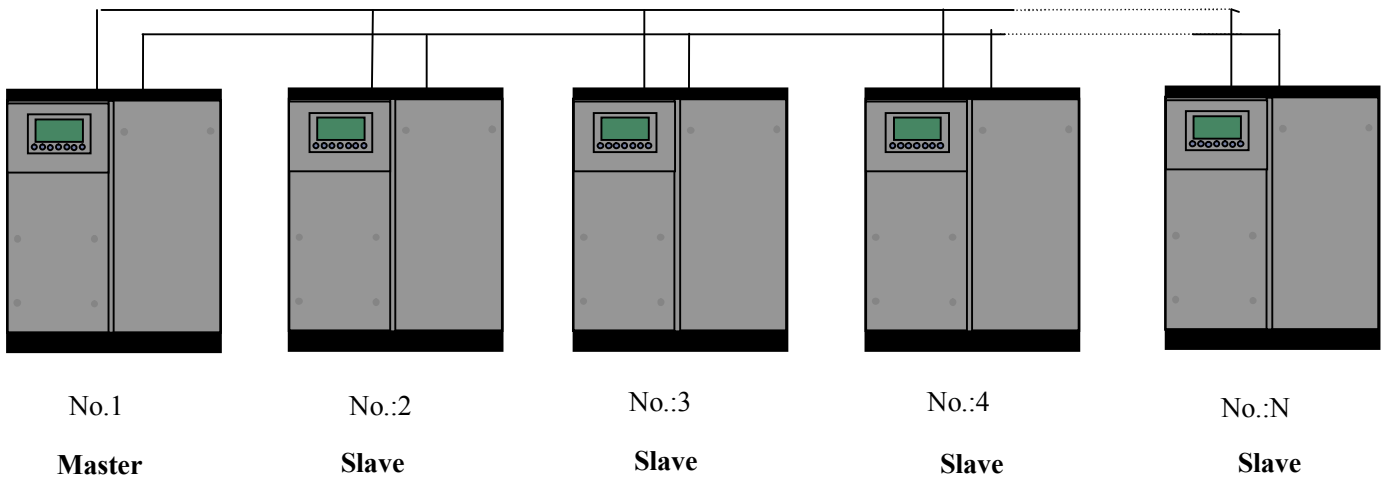
8.1,Block Control

8.1.1,Block Control Explanation:

MAM580 controller can work in block mode with MAM series compressor (with communication function).16 pieces compressors can work together in a net at most. Block mode can be set as VSD -VSD or VSD- PF .The cable connection for block mode control is as below....1,2 terminals (RS485 terminal) are used for block mode.

In BLOCK PARAMETER SET menu, set as VSD-VSD, master chooses compressor to work according to the TOTAL RUN TIME. Compressor with shorter running time is chosen to start and compressor with longer running time is chosen to stop with priority.

In BLOCK PARAMETER SET menu,, set as VSD-PF, master works first, other compressors work according to the TOTAL RUN TIME. Compressor with shorter running time is chosen to start and compressor with longer running time is chosen to stop with priority.





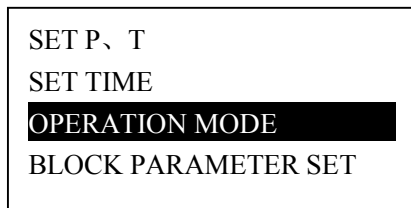
Picture 9.1.1

Compressor with COM ADD 0001 is master, others are slave. Any one MAM series compressor can be set as master or slave.

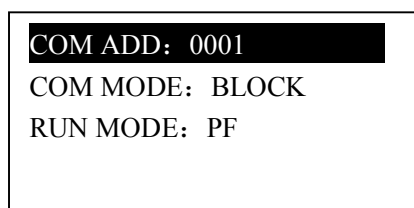
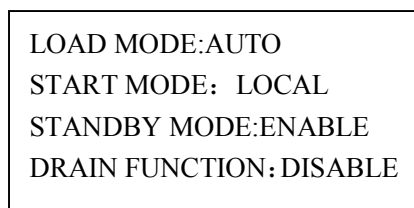
8.1.2 Block Control Set:


8.1.2.1 Set as Master:

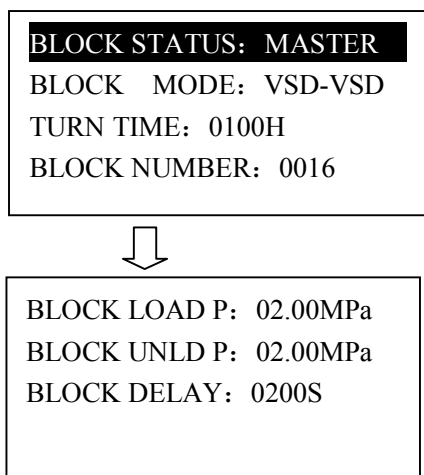
In main menu, press “” to enter menu selection and choose CUSTOMER PARAMETER, press “” to switch to the menu below:



Move the cursor to “OPERATION MODE” press “” to switch to the menu below.



Set COM MODE as BLOCK, COM ADD as 0001, return to the previous menu, move the cursor to BLOCK PARAMETER SET and press “” and switch to the menu below



According to user requirement, set BLOCK STATUS as MASTER, set BLOCK MODE, TURN TIME, BLOCK NUMBER, BLOCK LOAD P, BLOCK UNLD P, BLOCK DELAY accordingly .After set, controller needs to be powered off and restart to save setting.

8.1.2.2 Set as Slave:

When MAM580 controller serves as slave, it is only necessary to set COM MODE as BLOCK, COM ADD can be set from 2-16 in sequence according to the quantity of compressors, .BLOCK STATUS set as SLAVE.

8.1.3, Start, Stop Block mode:

Make sure block cables connect correctly, also the parameter of compressor in block mode is set correctly. Activate master, master controls the compressor in net automatically according to the AIR P detected. When manually stop the master, block control stops at the same time, thus, master will no longer send command to compressors in net.

8.2, Network Communication

MAM580 controller supports MODBUS RTU protocol and can serve as slave when connects with other equipment .It is supports 03、 06、 16 MODBUS command. Communication baud rate: 9600BPS, 1 start bit, 8 data bits, 1 stop bits and even parity. For MODBUS register address, please see MODBUS communication manual.

9, Inverter Control

9.1, Hardware control

Set MAM 580 RUN MODE as MOTOR VSD. Controller starts PID calculation based on AIR P detected and VSD P set. Controller can start or stop motor inverter through relay output also output 4~20mA current to adjust inverter frequency. This is how to control motor speed and realize constant pressure supply.

Set MAM 580 RUN MODE as FAN VSD. Controller starts PID calculation based on DISC T detected and FAN VSD T set. Controller can start or stop fan inverter through relay output also output 4~20mA current to adjust fan inverter frequency. This is how to control fan speed and realize constant temperature.

Set MAM 580 RUN MODE as MOTOR /FAN VSD. Controller starts PID calculation based on AIR P ,DISC T detected and VSD P,VSD T set. Controller can start or stop motor /fan inverter through relay output also output 4~20mA current to adjust motor/fan inverter frequency. This is how to control motor/fan speed and realize constant pressure and temperature.

9.2, 485 communication control

There is one spare port for RS485 to communicate with inverter. User can start or stop controller through RS485,it transfers the output frequency based on PID calculation to inverter through 485 port. This is how to adjust inverter output frequency and realize constant pressure and temperature. The baud rate is fixed as 9600BPS when RS485 control inverter. Different inverter data format can be set in INVERTER SET in FACTORY PARAMETER. MOTOR INVERTER is suggested to be set as 0001, FAN INVERTER is suggested to be set as 0002.

In order to be compatible with different inverter, set the item such as CURR(R) ADD, VOLT(R) ADD, FREQ(R) ADD , POWE(R) ADD, RUN (W) ADD, ERR STATE(R) ADD, FREQ(W) , RESET(W) ADD. For different inverter, amplification of current, voltage, frequency, power is different. Write a formula to every parameter to transfer current, voltage, frequency, power of inverter to one digit data.

Relative parameter introduction is as below, please take the Schneider 67,71 inverter as example.

FACTORY PARAMETER—>INVERTER SET

Item	Data Set	Explanation
FREQ(R) ADD :	0C82H	Inverter output frequency address
VOLT(R) ADD	0C88 H	Read output voltage
CURR(R) ADD	0C84 H	Read output current
POWE(R) ADD	0C8B H	Read output power
ERR STATE(R) ADD	219BH	Read error status , when Bit4=0, error occurred
FREQ(W) ADD	2136 H	Frequency write address (Write500, display 50.0Hz)
RUN1(W) ADD	2135H	Register address to send start command to inverter. write 0 first
RUN2(W) ADD	2135H	Register address to send start command to inverter., delay a while and write 1
STOP(W) ADD	2135H	Register address to send stop command to inverter. write 0
RESET(W) ADD	2135H	Register address to send reset command to inverter,0080H reset inverter error

COM FROM	8N1	Set as 8N1 ,no parity bit
VSD NAME	0ATV61	Set inverter name
RUN1VALUE	0001	Controller sends start command value 1 to inverter
RUN2 VALUE	0001	Controller sends start command value 2 to inverter
STOP VALUE	0000	Controller sends stop command value to inverter
RST VALUE	0080	Controller sends reset command value to inverter when inverter is failure
FREQ(R)	REC*0001÷0001	Output frequency is one digit, and displays one digit
VOLT(R)	REC*0010÷0001	Output voltage has no digit, and displays one digit
CURR(R)	REC*0001÷0001	Output current is one digit, and displays one digit
FREQ(W)	VAL*0001÷0001	Output frequency is one digit, and internal calculation is based on one digit
ERR S	R&0008≠0	Judge if there is error register address for inverter,2135 register; Bit4 = 1,error ; Bit4 = 0,no error
POWE(R)	REC*S*0001÷0100	Output power is based on percents
RUN STATE(R) ADD	219BH	Register address judging inverter running status
RUN S	R&0004H=0004H	Read inverter register for running status after sending start command to inverter. Schneidel 61 inverter register address for running status :219B,Bit 2 = 1,inverter is running

Firstly, controller sends 0 to corresponding register of “RUN1(W) ADD” through inverter. After delay for a while, sends 1 to corresponding register of “RUN1(W) ADD”. After another delay, reads “ RUN S” register, and judges if the inverter is running based on the set formula. Calculate the output frequency based on the comparison of pressure detected and pressure set and send this value to corresponding address of “FREQ(W)” through formula operation.

.Schneidel inverter parameter set:

1、CON |AD2-

|AD1-|ADD :1

|EBr :96

|EFO :8N1

|EEO :15

CTL- | Fr1 :ndb

|rln

|PST

|CHCF :IO

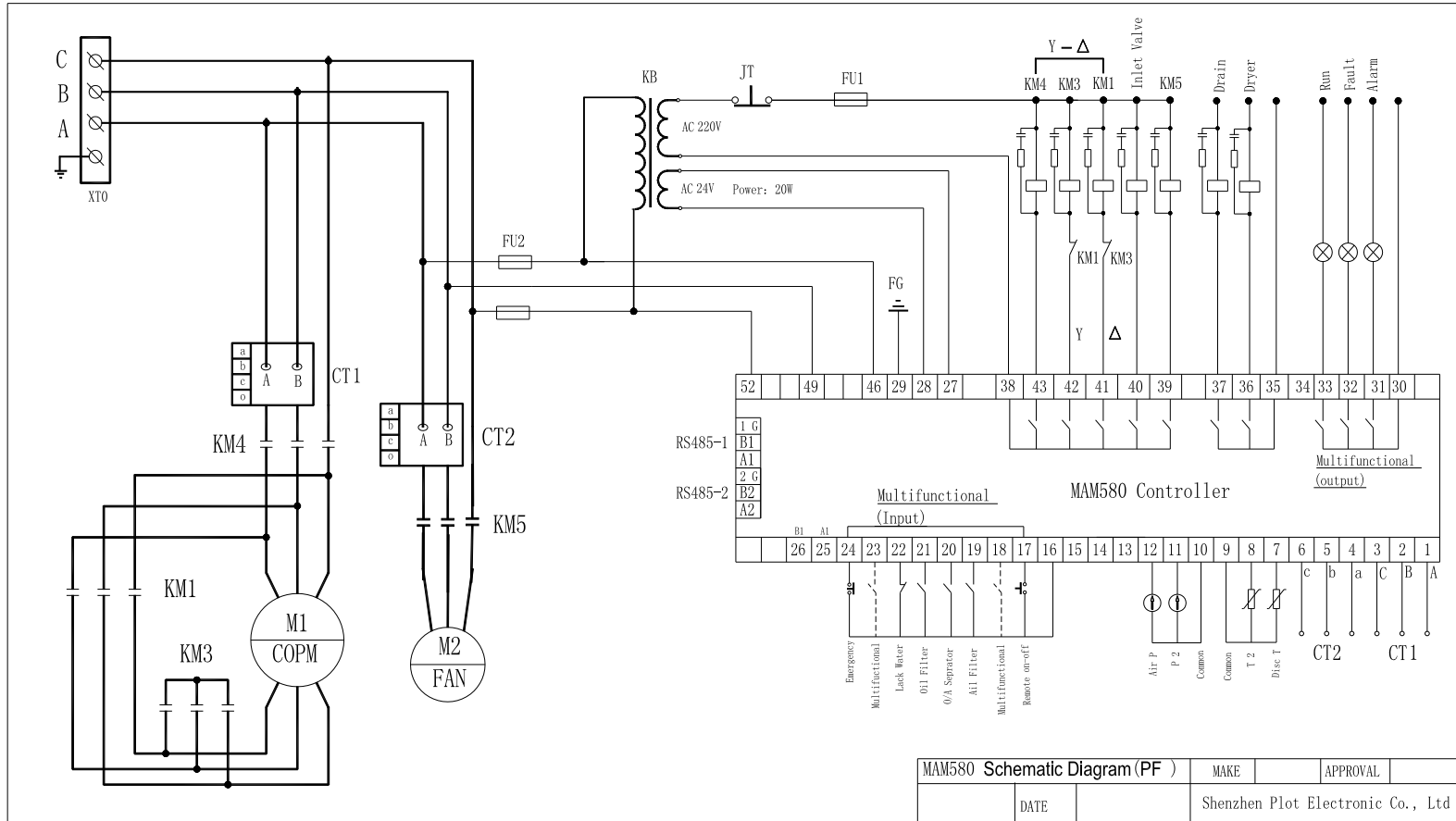
|CD1 : ndb

Flt- | PTC-

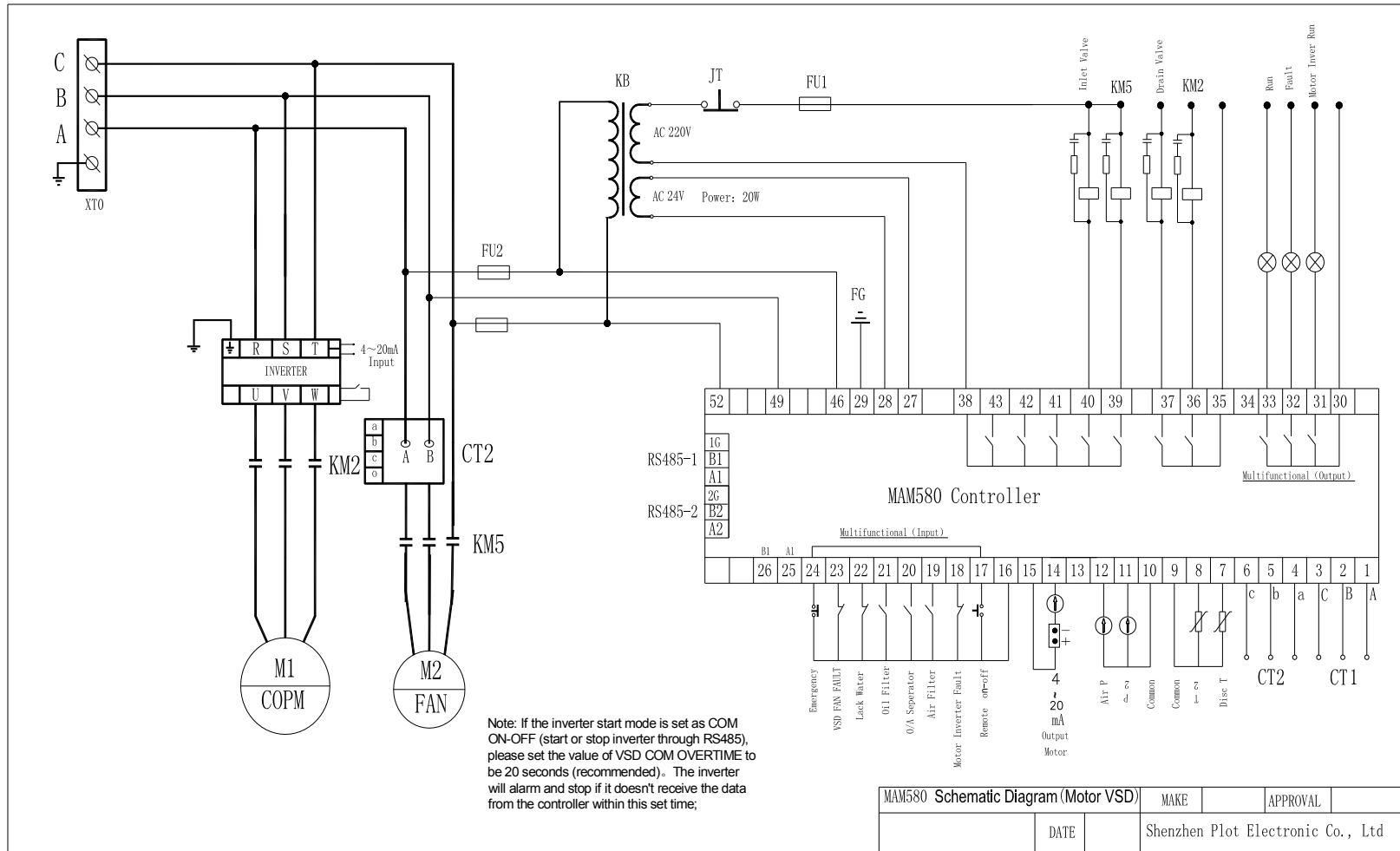
|rST- |rSF :C107

10, Schematic Diagram

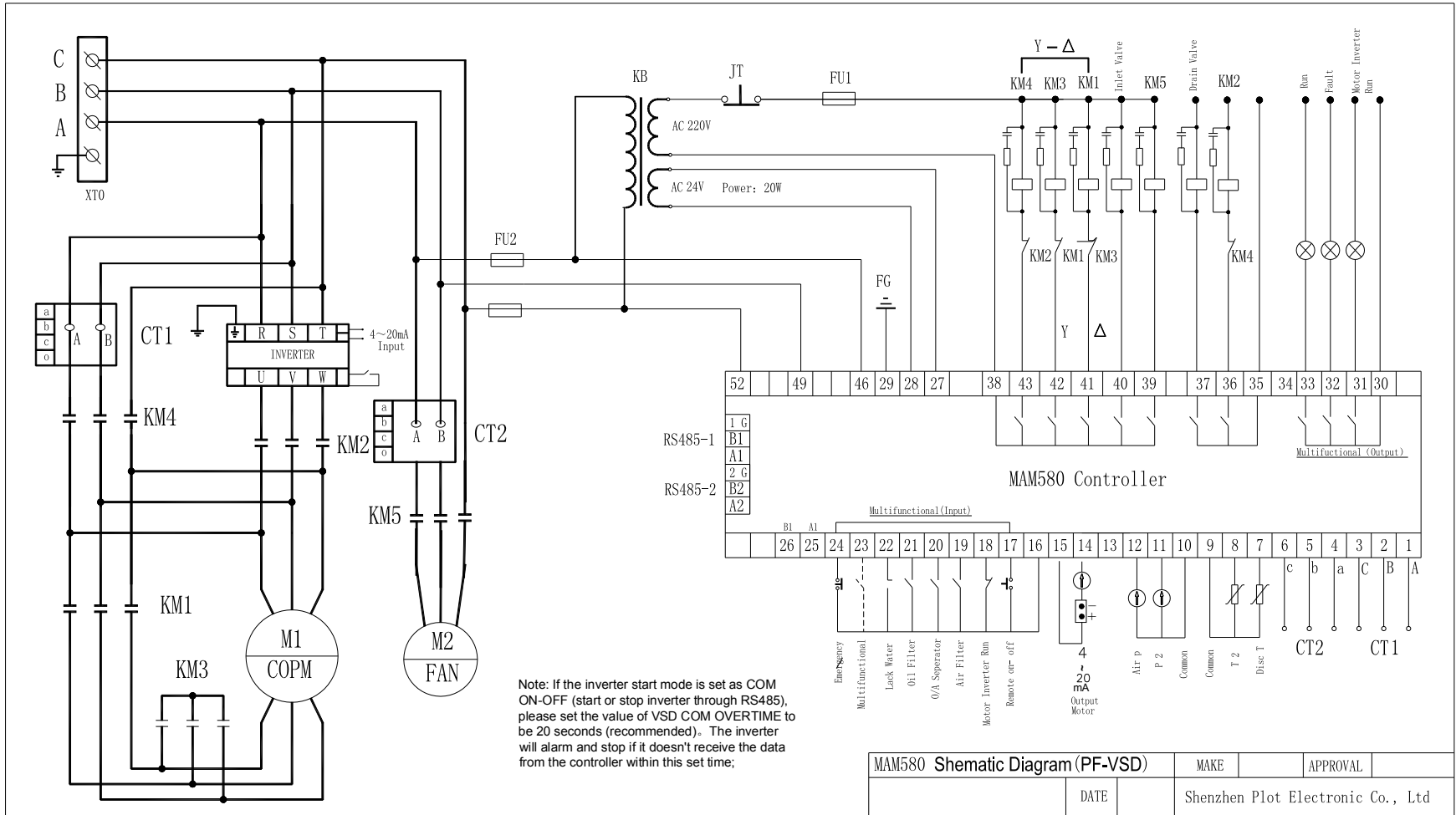
10.1PF TYPE



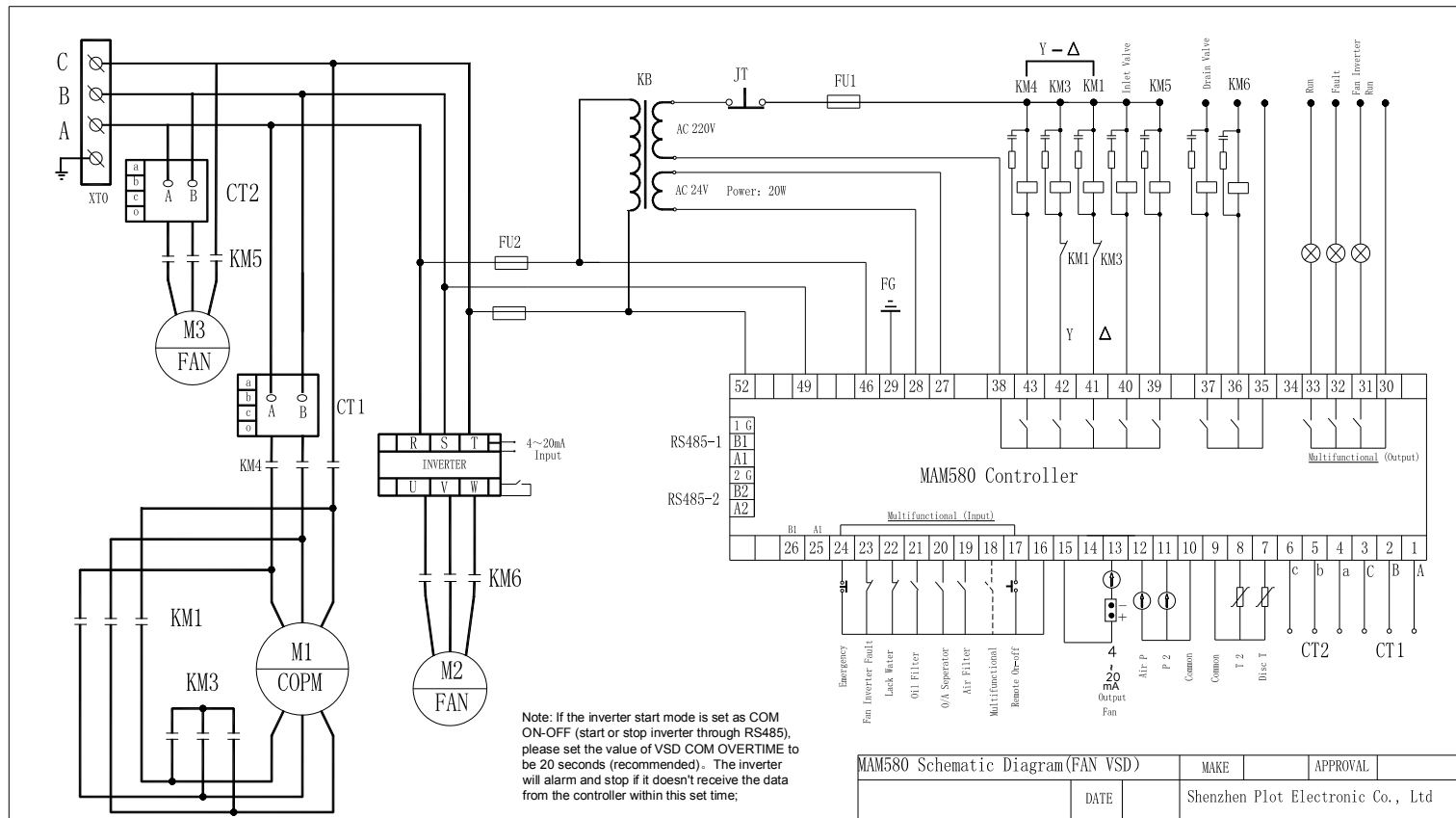
10.2 MOTOR VSD TYPE



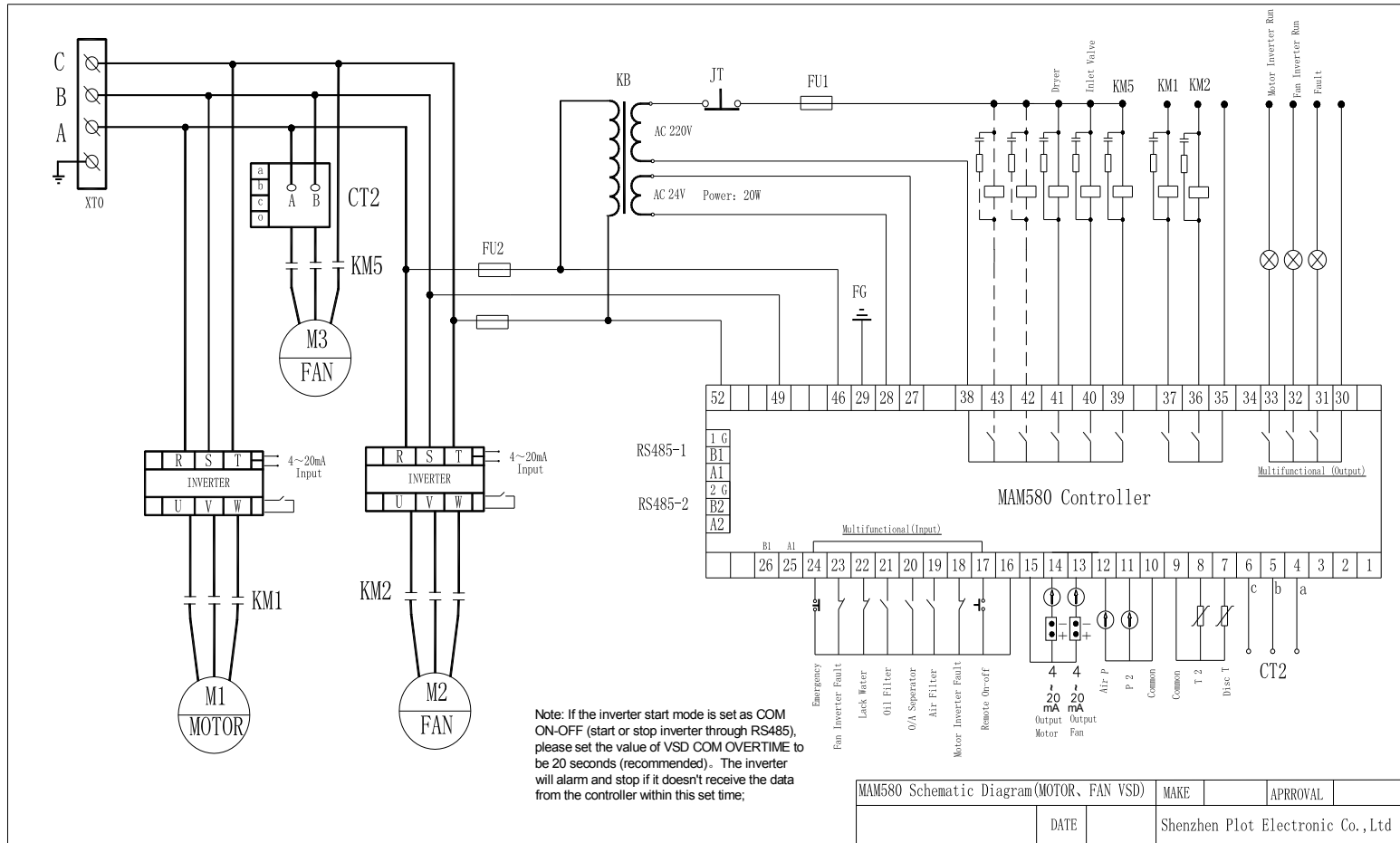
10.3PF/ MOTOR VSD TYPE



10.4FAN VSD TYPE



10.5, MOTOR/FAN VSD TYPE



10.6,SOFT START TYPE

