TICA®

INSTALLATION&
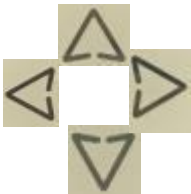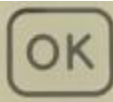# OPERATION MANUAL

Controller Instruction (TCA series)

III. Operation Description of the Controller

Wired controller instructions

(A) Output of touch-type wired controller

Icon	Name	Function
	Query	1) Query errors on the main interface.
	Menu	1) Tap **Menu** to enter the function menu on the default interface. 2) Tap **Menu** to return to the preceding level of menu on the setting interface or query interface.
	Directions	1) Tap the direction button on the menu interface to enter the next level of menu. 2) Tap the direction button on the setting interface to modify the parameter values or set functions.
	OK	1) Tap **OK** to enter the next level of menu on the menu interface. 2) Tap **OK** on the setting interface to confirm the parameter setting.
	ON/OFF	1) In power-on state, tap **ON/OFF** to shut down the unit. 2) In power-off state, tap **ON/OFF** to start up the unit.

Main interface

Jan. 1, 2019, 12:00:00
Unit status: Cooling
Air conditioner water outlet:
30.5°C/45
Air conditioner water inlet:
30.1°C/40
Ambient temperature: 15.6°C

The display screen displays current time information in the first line, the current water inlet and outlet temperatures and set values of the unit in the second and third lines respectively, and the ambient temperature of the main module in the fourth line. The operating mode area displays the setting mode of the unit (cooling ❄, heating ✳ , water pump ◎ , or anti-freezing ◈). When the heating symbol blinks, the system is defrosting. In the remote control status area, ♀ is displayed if the unit is remotely controlled and the symbol is not displayed if the unit is controlled by a wired controller.

In the operation status area, "Stop" is displayed if the unit is shut down. If the water pump is started, the water pump symbol (⊚) is displayed; if the water pump is not started, the symbol is not displayed. If the word "Ambient" blinks, the ambient temperature for unit (including submodules) operation does not meet operating conditions.

Menu interface

Jan. 1, 2019, 12:00:00
    Unit Operating Status
    Unit Port Status
    Modify User Parameters
    Modify Maintenance
    Parameters

Jan. 1, 2019, 12:00:00
    Check Unit Error
    Program Version

Menu interface: Tap the up or down button to switch between menus, tap **OK** to enter a selected menu interface, and tap **Menu** to go back to the home page.

Unit Operating Status page: tap **Menu** to go back to the menu page. Unit Port Status page: tap **Menu** to go back to the menu page, tap left or right button to switch between unit models, and tap up or down to display unit port information.

Modify User Parameters page: tap **Menu** to go back to the menu page, tap up or down button to switch between menus, tap **OK** to enter the setting menu, tap left or right button to modify parameter value, tap **OK** to confirm the setting, and tap **Menu** to go back to the original page.

Modify Maintenance Parameters page: tap **Menu** to go back to the menu page, tap up or down button to switch between parameters, tap left or right button to change parameter value, and tap **OK** to confirm the setting.

Check Unit Error page: tap **Menu** to go back to the menu page, tap left or right button to switch between unit models, and tap up or down to display unit error information.

Program Version page: tap **Menu** to go back to the menu page, and tap left or right button to switch between unit models.

Interface Function Description

Interface	Display
Main Interface	1) Operating mode
	2) Real-time temperature and humidity, water temperature, etc.
	3) Error icon, water pump icon, anti-freezing icon, etc.
	4) Error message
Unit Operating Status	1) Water pump status
	2) Electric heater status
	3) Number of systems loaded by the compressor

Unit Port Status	1) Temperature sensor values, including ambient temperature, discharge temperature, suction temperature, coil temperature, water inlet/outlet temperature, and air return temperature 2) Humidity sensor value 3) Pressure sensor value 4) Operating current of unit 5) EXV steps
Modify User Parameters	1) Operating mode settings, including mode, temperature and humidity 2) Configuration parameter settings, including centralized control parameter 3) Date and time settings
Check Unit Error	4) Unit timing settings 1) Current errors 2) Historical errors
Program Version	1) Main controller program version 2) Wired controller program version

(B) . Overview of the Touch Screen

A 7-inch capacitive touch screen is configured and it communicates with the ODU through RS485 (COM2 port (A+, B-) of the touch screen is connected to A and B on the main board of the ODU). The touch screen needs to be powered using 24 V DC and supports programming with a USB drive.

1. Touch Screen Operations and Permission Description

(1) The permissions of the touch screen are classified into four levels: not logged in, user level, service level and factory level.

Permission	Description
Not logged in	1. Users can only view the running status, trend curve graph, and unit faults.
Service level (password 0701)	2. Users can modify the running mode of the unit and the heating/cooling water inlet and outlet temperature set points. 3. Users can manually reset the unit to clear faults, perform defrosting manually, and restore factory default parameters.

(2) Each page is described as follows:

Not logged in: drop-down window, homepage, and user login page
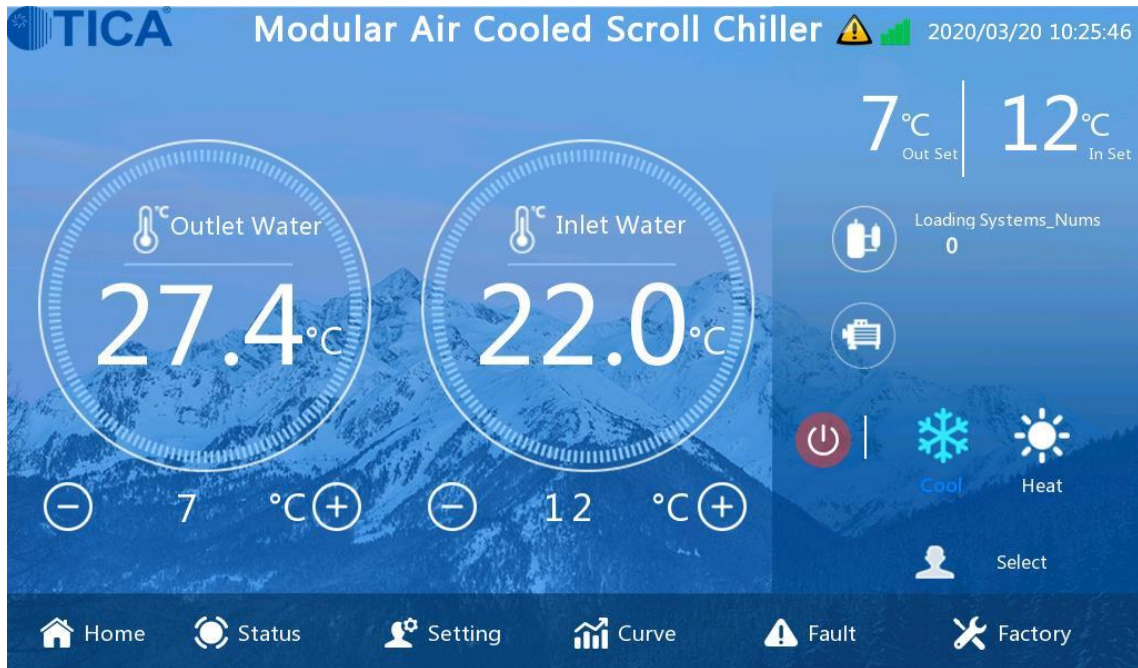
User level: drop-down window, homepage, user login page, and run page

Service level: drop-down window, homepage, user login page, run page, user setting page, trend curve graph, and fault view page

Page	Description
Homepage	1. Homepage is the initial page after the touch screen is powered on and reset. 2. Water temperature set values and actual values are displayed. 3. Temperatures can be set. 4. The unit running status, touch screen communication, and faults are displayed. 5. Power-on/off operations can be performed.
Drop-down window	1. **You can scroll down the touch screen to display this window, or scroll up the touch screen to hide this window.** 2. The button operation sound can be turned on/off. 3. The time of reducing brightness of the touch screen can be selected. 4. The time of turning off backlight of the touch screen can be selected. 5. The brightness of the touch screen can be adjusted. 6. The real-time fault alarm information can be observed.
User login	1. Users can click the login icon on the homepage (or run page) to log in to the user login page. After successful login, the homepage (or run page) is displayed. 2. The user can log in to get the corresponding operation permissions. 3. The current logged-in user can exit.
Operating status	1. The unit running diagram is displayed. 2. The temperature and mode can be set. 3. Some running parameters of the unit can be observed. 4. Power-on/off operations can be performed.

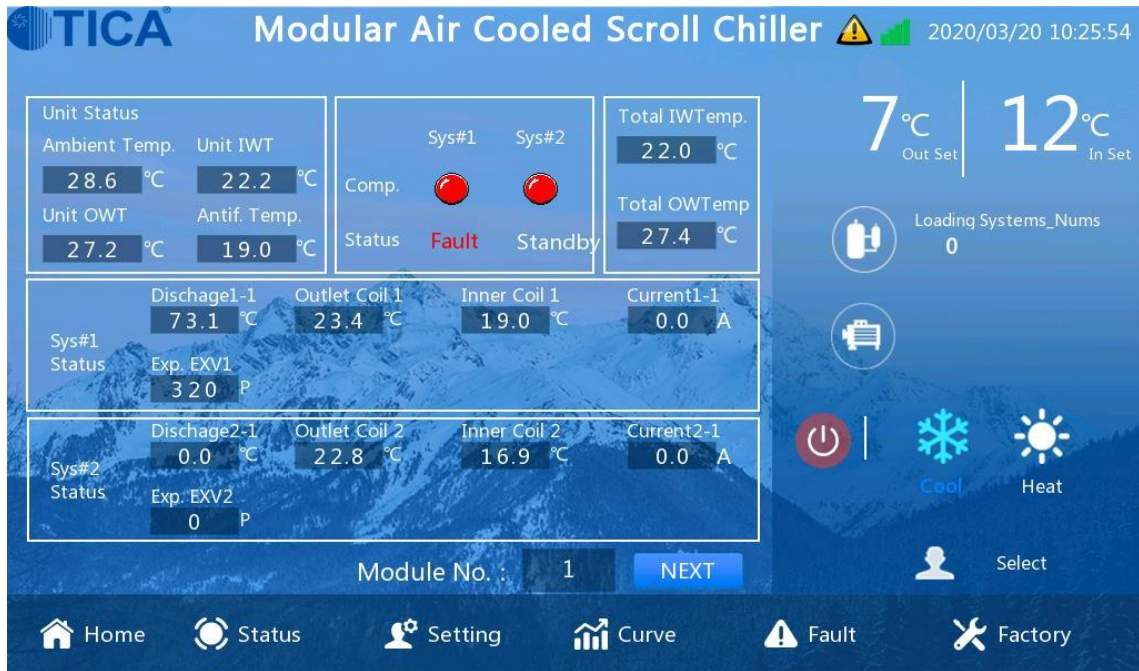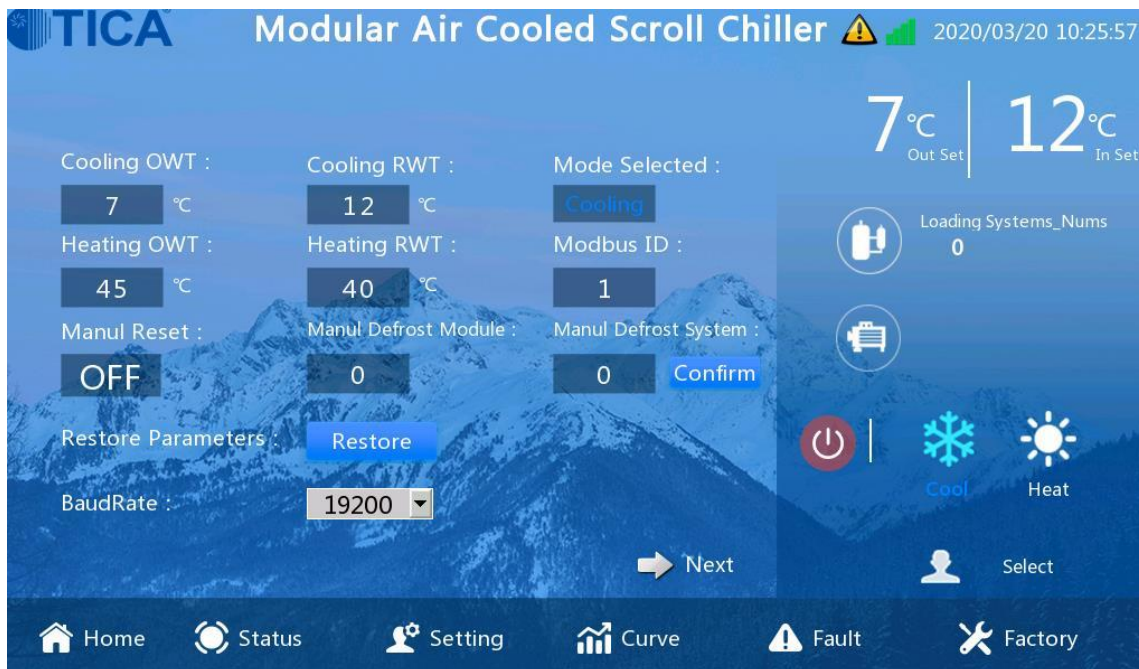| User setting	1. Common functions can be set: automatic startup after power restoration, timed power-on/off. 2. Some running parameters of the unit can be viewed.
Trend curve	1. The dynamic changes of set temperature and humidity and actual temperature and humidity can be observed visually. 2. The run data of the unit can be exported.
Fault check	1. Current errors 2. Historical errors

2. Homepage Description

Homepage

Content	Description
Communication status indication	This icon indicates the communication maintained between the touch screen and the IDU board. The green icon indicates normal communication while the white icon with a red cross indicates abnormal communication.
Fault indication	When this icon appears in the upper right corner of the screen, the unit fails. You can view fault information in the drop-down window.
Power-on/off button	The green icon indicates that the unit is in the power-on state. Click this icon, and a dialog box will pop up, asking you to confirm the power-off operation. The red icon indicates that the unit is in power-off state. Click this icon, and a dialog box will pop up, asking you to confirm the power-on operation.
User login button	Click this icon to go to the user login page. After successful login, users can control service parameters.

3. Description of the Drop-down Window

In the drop-down window, you can set whether to enable the buzzer, and set the backlight time, brightness reduction time, and screen brightness. You can also view the current fault of the unit and the fault occurrence time.

Drop-down window

4. Description of the Login Page

Login page

5. Description of the Operating Status Page

Run page

6. User Setting Description

The first page of user settings

Content	Description
Temperature control	The heating water outlet temperature and return water temperature of the unit can be set.
Mode control	The running mode (cooling mode or heating mode) can be modified.
Other functions	Manual reset, manual defrosting, and factory default restoration

7. Description of the Trend Curve
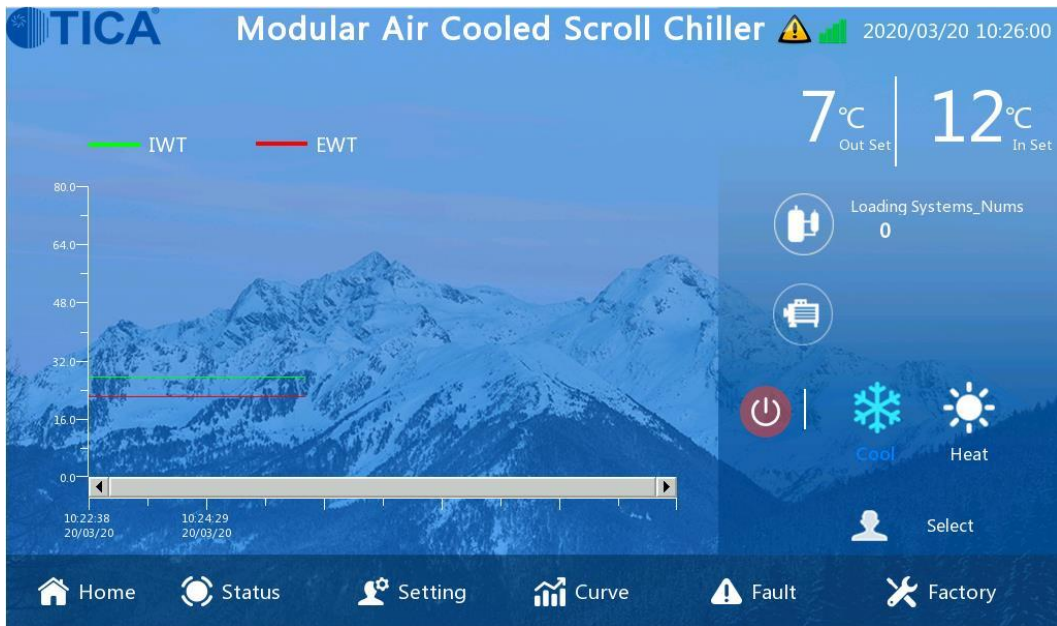
Trend curve

Content	Description
Curve graph	The curve graph shows the temperature changes within 48 hours.

8. Description of the Fault View
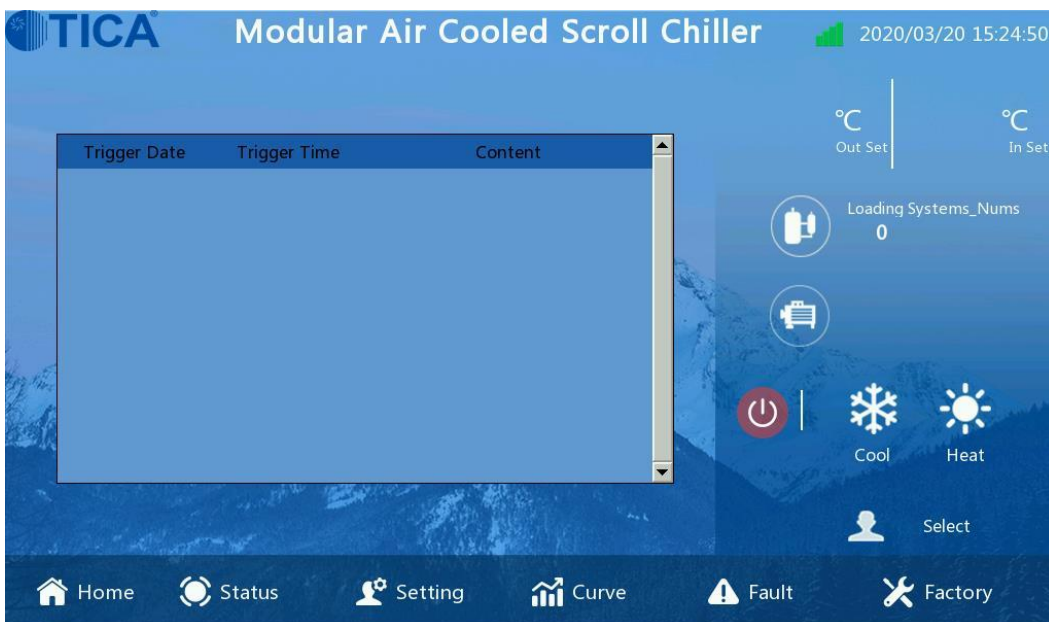
The first page of the fault view

Content	Description
Real-time faults	You can view real-time faults on the first page of the fault view. The displayed real-time fault information is the same as that displayed in the drop-down window.

Adjustable Parameter List and Fault Code List

1. List of Adjustable Parameters

No.	Parameter	Default	Remarks
1	Running mode	Cooling	It needs to be manually set.
2	Cooling water outlet temperature	7°C	
3	Cooling water inlet temperature	12°C	
4	Heating water outlet temperature	45°C	
5	Heating water inlet temperature	40°C	
6	Defrosting module ID	1	
7	Defrosting System ID	No	
8	MODBUS address	1	Used for remote monitoring
9	Baud rate	19200	Used for remote monitoring

2. Fault Code List

Fault Code List			
Fault 01	Insufficient water flow	Fault 09	Air discharge temperature high 01
Fault 02	External interlocking	Fault 10	Air discharge temperature high 02
Fault 03	Wired control switch	Fault 11	Air discharge temperature 1#1 fault
Fault 04	Error in communication with the master (slave) unit	Fault 12	Air discharge temperature 2#1 fault
		Fault 13	Outer coil temperature 1# fault
Fault 05	Ambient temperature error	Fault 14	Outer coil temperature 2# fault
Fault 06	Anti-freezing temperature error	Fault 15	System 1# overload
Fault 07	Main water outlet fault (master unit)	Fault 16	System 2# overload
Fault 08	Anti-freezing temperature error		
Fault 17	1#1 current too high	Fault 25	Single-module water inlet temperature sensor fault
Fault 18	1#2 current too high	Fault 26	Single-module water outlet temperature sensor fault
Fault 19	2#1 current too high	Fault 27	Water inlet/outlet temperature lower than the set value
Fault 20	2#2 current too high	Fault 28	
Fault 21	Indoor coil 1# temperature fault	Fault 29	Water inlet/outlet temperature lower than the protection value
Fault 22	Indoor coil 2# temperature fault		Water inlet/outlet temperature too high
Fault 23		Fault 30	
Fault 24		Fault 31	Unrecoverable fault
		Fault 32	
Fault 33	Air discharge temperature 1#2 fault	Fault 41	1# cooling low pressure
Fault 34	Air discharge temperature 2#2 fault	Fault 42	2# cooling low pressure
Fault 35	Open phase protection	Fault 43	1# heating low pressure
Fault 36	Misphase protection	Fault 44	2# heating low pressure
Fault 37	1# system current low	Fault 45	
Fault 38	2# system current low	Fault 46	
Fault 39		Fault 47	
Fault 40		Fault 48	

Fault 49	Slave module 1 communication fault	Fault 57	Slave module 9 communication fault
Fault 50	Slave module 2 communication fault	Fault 58	Slave module 10 communication fault
Fault 51	Slave module 3 communication fault	Fault 59	Slave module 11 communication fault
Fault 52	Slave module 4 communication fault	Fault 60	Slave module 12 communication fault
Fault 53	Slave module 5 communication fault	Fault 61	Slave module 13 communication fault
Fault 54	Slave module 6 communication fault	Fault 62	Slave module 14 communication fault
Fault 55	Slave module 7 communication fault	Fault 63	Slave module 15 communication fault
Fault 56	Slave module 8 communication fault	Fault 64	Program and model mismatch