NO.	Error State	Error Reasons	Solutions
11	The display is normal, but when operating the thermostat or remote control, there is no response to the air diffuser, and there is no fault code display	1. The last running command of the tuyere has not been executed yet; 2. Configuration mismatch; 3. Network interference.	1. SAVD variable air diffuser control commands require a 10-second delay for execution. If the previous commands are still executing, the diffuser will not proceed with new ones. Please wait during these instances. 2. If there's a model or version mismatch between the control panel on the thermostat or remote control and the control board on the air diffuser, the fault code may not display when the air diffuser fails. In this case, replace the mismatched component or the entire air diffuser assembly. 3. If the SVAD connected to BA is affected by a workstation or host computer failure, it may impact the air diffuser control, causing operational failure. Please check the entire automatic control system when this occurs.
12	The air damper is adjusted repeatedly in a	1. It is caused by the deviation of the temperature sensed by the thermostat or the indoor temperature sensor; 2. Executing agency failure.	1.If the temperature deviation sensed by the thermostat or indoor temperature sensor fluctuates within a certain range, and the damper position correction exceeds 3% within 3 minutes, the damper may repeatedly adjust to a specific position. 2. If the air damper repeatedly switches at a certain position and encounters resistance exceeding the motor torque, the control board will attempt multiple zero reset actions to resolve the fault. If the issue persists, an ER10 fault code will be reported, indicating a blockage in the damper operation or a faulty actuator. If the problem cannot be resolved through simple remedies and is not caused by other factors, it suggests damage to the actuator, necessitating the replacement of the diffuser.

NO.	Error State	Error Reasons	Solutions
13	The motor noise is louder when the diffuser is running	1.Motor failure; 2. Failure of the actuator.	1. Due to installation reasons or working conditions or actuator failure reasons, when the operating resistance of the diffuser actuator is large, if it exceeds a certain range, it will cause a large noise due to the excessive working torque of the motor. If, after confirming that the installation is normal and working If the conditions are appropriate, please replace the air diffuser. 2. The quality of the motor itself will also cause a lot of noise during its operation. Please replace the diffuser.
14	The air supply noise is loud when the diffuser is running	1.The static pressure of the air supply is too high; 2. Propagated noise in air supply ducts.	1.When the static pressure at the inlet of the diffuser exceeds an appropriate value, excessive noise of the air supply may occur. Please check the static pressure value at the inlet of the diffuser , and adjust the control of the air supply static pressure control device to keep the static pressure at the inlet of the diffuser within an appropriate range; 2. If the propagating noise in the air supply duct is not effectively eliminated before reaching the air diffuser, it will be transmitted from the air diffuser. may appear. In this case, you can only install necessary noise reduction measures in front of the air diffuser, such as: muffler flex.
15	Abnormal sound when running	Executing agency failure	1. This kind of failure is caused by some reason that the actuator is displaced, deformed, obstructed, loose, etc., so that when the diffuser actuator is running, there will be abnormal noise. Please replace the diffuser.

NO.	Error State	Error Reasons	Solutions
16	Low airflow	1. Inlet static pressure is low and out of range; 2. Air damper travel setting is too low. 3. The selection of the model size of SVAD is too small.	1. Low airflow could be due to insufficient inlet static pressure. This might be a result of the SAVD's connection to a branch duct or main duct, a high resistance manual control damper, excess resistance in the branch duct, an overly long or sharply bent flexible duct, etc. These factors could decrease the static pressure at the SVAD inlet. It's essential to identify and mitigate these potential issues methodically. 2. The system or PIM damper's control static pressure value might also be low. In this case, adjustments to the settings of the inlet static pressure control device might be needed to keep the static pressure within an appropriate range. 3. If the diffuser's damper travel has been altered and doesn't correspond to the maximum travel for this specific model, refer to the setting mode of the thermostat or remote control. Check the damper travel setting and adjust it according to the airflow requirements, using the corresponding data from the product documentation. 4. If the maximum inlet static pressure and damper travel have been reached, it suggests the selected diffuser may be too small. In this instance, replacing the diffuser with a larger model could rectify the issue.
17	The airflow is too large	1. The selection of air outlet is too large; 2. Air damper travel setting is too large. 3. Inlet static pressure is too large;	1. An excessive air volume from the Variable Air Volume (VAV) diffuser generally indicates that the diffuser selection was too large. Under these circumstances, you can access the damper travel setting mode within the thermostat or remote control's settings. Based on the excess air volume, adjust the damper's range of motion to achieve the desired air volume. Refer to the product's data chart to determine the appropriate travel value.

NO.	Error State	Error Reasons	Solutions
17	The airflow is too large	1. The selection of air outlet is too large; 2. Air damper travel setting is too large. 3. Inlet static pressure is too large;	2. When the damper travel setting is too large, it results in a smaller maximum travel, thus reducing the damper's adjustment range. This causes significant air volume fluctuations, which can negatively impact indoor temperature control accuracy and generate wind noise. In such situations, consider replacing the air diffuser with a smaller model. 3. If the static pressure at the inlet of the diffuser is too high, the second situation above will also occur, please adjust the setting of the inlet static pressure adjustment control device to make the inlet static pressure within an appropriate range;
18	The indoor temperature is too cold In summer; The indoor temperature is too hot in winter.	1.The installation position of the thermostat is not suitable; 2.Thermostat temperature measurement deviation; 3.The air supply of the variable air diffuser of the remote control type or the temperature detection type of the return air diffuser is disturbed; 4.The minimum diffuser opening setting is too large; 5. Inlet static pressure is too large;	1.If the installation position of the thermostat is not suitable, causing the perceived air temperature to always be higher than the actual indoor temperature, this can lead the VAV diffuser to deliver excessive primary air due to incorrect information. To address this, verify the thermostat's temperature measurement accuracy and make necessary corrections; 2.It's also possible that the thermostat's indoor temperature measurement is inaccurate, resulting in excessive air volume. In this case, accurately measure the actual room temperature and adjust the temperature calibration setting in the thermostat (step 1 in the setting mode), until the thermostat's measurement is correct; 3. Improper installation of a remote control or return air outlet temperature detection type Variable Air Volume (VAV) air diffuser can disrupt airflow, interfere with the indoor temperature sensor, and lead to inaccurate temperature readings. Follow the installation manual guidelines to ensure proper installation, eliminate air supply interference, and use suitable air outlets with appropriate airflow directions.

NO.	Error State	Error Reasons	Solutions
18	The indoor temperature is too cold In summer; The indoor temperature is too hot in winter.	1.The installation position of the thermostat is not suitable; 2.Thermostat temperature measurement deviation; 3.The air supply of the variable air diffuser of the remote control type or the temperature detection type of the return air diffuser is disturbed; 4.The minimum diffuser opening setting is too large; 5. Inlet static pressure is too large;	Additionally, calibrate the indoor temperature value using the thermostat's temperature calibration mode to align measured temperatures with actual values.; 4. If the selection of the diffuser is too small, the maximum air volume at the maximum opening cannot meet the indoor load requirements, and this is the problem. Please replace the air diffuser with a larger type; 5. In certain situations, when the air volume fails to reach the desired level despite appropriate model selection or minimal differences, it may be due to low inlet static pressure. To address this, adjust the static pressure control equipment at the diffuser's inlet to increase the static pressure of the air supply. This adjustment will help achieve the desired air volume. 6. In certain cases, the current damper travel of the air damper in a diffuser may not reach its maximum setting, resulting in insufficient maximum air volume. To address this, access the air damper travel setting mode within the thermostat or remote control settings (step 5 in the setting mode). Adjust the air damper travel to achieve the desired air volume, referring to the relevant data chart in the product information provided by Royal for appropriate adjustment of the travel value.
19	The indoor temperature is too hot In summer; The indoor temperature is too cold in winter.		1. If the installation position of the thermostat is not suitable, causing the perceived air temperature to always be lower than the actual indoor temperature, it will be that the variable air diffuser gets an error message and sends out a larger primary air, causing this problem. Please check the correctness of the thermostat to test the indoor temperature, and take measures to correct it;

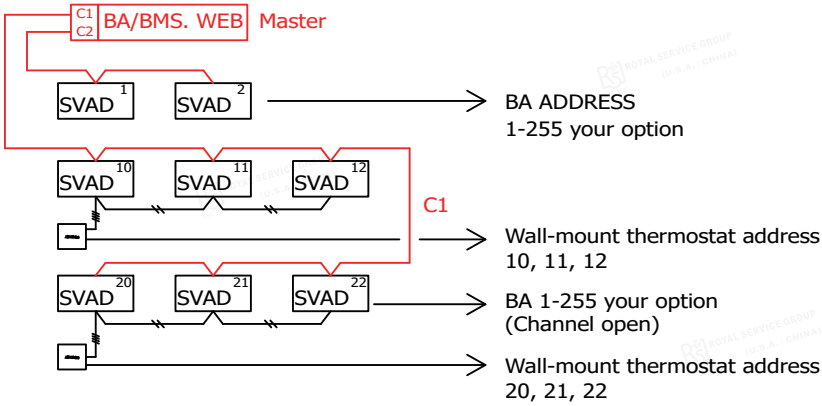
NO.	Error State	Error Reasons	Solutions
19	The indoor temperature is too hot In summer; The indoor temperature is too cold in winter.	1. The installation position of the thermostat is not suitable; 2. Thermostat temperature measurement deviation; 3. The air supply of the remote control variable air diffuser is disturbed; 4. The selection of air diffuser is too small; 5. Inlet static pressure is too small; Air damper travel setting is too small.	2.In some cases, the thermostat may have a deviation in measuring indoor temperature, leading to issues. To address this, accurately measure the actual temperature in the room and access the temperature calibration mode in the thermostat settings (step 1 in the setting mode). Adjust the temperature correction based on the deviation between the thermostat's measured temperature and the actual temperature until the thermostat displays an accurate reading. 3.Improper installation of a remote control or return air outlet temperature detection type Variable Air Volume (VAV) air diffuser can obstruct airflow, resulting in interference with the indoor temperature sensor and inaccurate temperature readings. Ensure proper installation as per the manual to eliminate air supply hindrance. If the air outlet is near obstacles or walls, opt for a variable air diffuser with appropriate airflow direction. Calibrate the indoor temperature value using the thermostat's temperature calibration mode to align measured and actual temperatures. 4.If the selection of the diffuser is too small, the maximum air volume at the maximum opening cannot meet the indoor load requirements, and this is the problem. Please replace the air diffuser with a larger type; 5.In certain situations, when the air volume fails to reach the desired level despite appropriate model selection or minimal differences, it may be due to low inlet static pressure. To address this, adjust the static pressure control equipment at the diffuser's inlet to increase the static pressure of the air supply. This adjustment will help achieve the desired air volume.

NO.	Error State	Error Reasons	Solutions
19	The indoor temperature is too hot In summer; The indoor temperature is too cold in winter.		6. In certain cases, the current damper travel of the air damper in a diffuser may not reach its maximum setting, resulting in insufficient maximum air volume. To address this, access the air damper travel setting mode within the thermostat or remote control settings (step 5 in the setting mode). Adjust the air damper travel to achieve the desired air volume, referring to the relevant data chart in the product information provided by Royal for appropriate adjustment of the travel value.
20	The mechanism of the diffuser part is loose	1. The diffuser is damaged due to transportation, handling or installation.	1. If the diffuser is transported and lifted without a packing box, if the position of the mechanism that the diffuser should not be lifted is lifted, it is very likely that some mechanisms of the diffuser will become loose, causing the actuator to shift, etc., which will cause the operation of the diffuser to malfunction. Please replace the diffuser. 2. It is also possible that during the transportation process, due to various reasons, the fixing parts of the diffuser are loosened, causing the actuator to shift, etc., which will cause the diffuser to malfunction. Please replace the diffuser.
21	When the power is turned on or started (On), the diffuser is closed for a long time, but there is no zero reset action.	1. Hall sensor failure; 2. Control board control logic failure.	1. Replace Hall sensor. 2. Replace the control board or replace the SVAD variable air diffuser.
22	The direction of damper operation is opposite to the logical direction	The forward and reverse setting of the motor of the diffuser is reversed.	If it is found that the operating direction of the air damper is opposite to the logical direction, it should be that the jumper setting on the control board to control the forward and reverse of the motor is reversed. Please correct it.

NO.	Error State	Error Reasons	Solutions
23	The mobile phone cannot perform WIFI distribution and code pairing with SVAD	1. SVAD has been successfully configured before, and the original distribution network has not been "removed" by the mobile phone that was originally configured; 2. The WIFI network signal selected by the mobile phone distribution network is not good;	1. Let the mobile phone that initially configures the network for this SVAD "remove" the SVAD from the mobile APP; 2. If the SAVD is equipped with a thermo-stat or remote control, you can press and hold the F key in the power-on state, and the Wi -Fi icon on the thermostat will flash, indicating that the SAVD has been forcibly entered into the Wi-Fi distribution network and code pairing state ; 3. If the indoor WIFI signal is not good, you can try another WIFI network when configuring the network on the mobile phone APP; 4. If, due to the placement of the indoor WIFI router, some indoor SVAD cannot be connected to WIFI, you should adjust the placement of the router so that all SVAD can be well connected. For WIFI, if necessary, a WIFI signal amplifier should be added; if the WIFI reception cannot be improved by changing the position of the WIFI router, you can extend the SVAD WIFI antenna out of the air outlet a little more to see if the WIFI signal can be resolved question.
24	The network distribution is successful, but the mobile phone APP cannot connect to the SVAD, and the mobile phone cannot operate and control the SVAD	1. The WIFI network signal is not good, and SAVD cannot connect to the TUYA server; 2. The mobile phone cannot connect to the TUYA server due to network problems or other problems.	1. If, due to the placement of the indoor WIFI router, some indoor SVAD cannot be connected to WIFI, you should adjust the placement of the router so that all SVAD can be well connected. For WIFI, if necessary, a WIFI signal amplifier should be added; if the WIFI reception cannot be improved by changing the position of the WIFI router, you can extend the SVAD WIFI antenna out of the air outlet a little more to see if the WIFI signal can be resolved question. 2. You can also reconfigure the network of SVAD, and choose a WIFI network with better signal;

NO.	Error State	Error Reasons	Solutions
			3. If it is a mobile phone network problem, you can change to a WIFI network with a better signal on the mobile phone or use the networking function of mobile communication, as long as the mobile phone can connect to the network, at this time, there is no need to reconfigure the network for SVAD.

Modbus - Addressing Mdobus Unit ID



Modbus Addrssing Diagram 87

BA	MIN	MAX	ADDRESS
C1	0	32	1-255
C2	0	32	1-255
C3	0	32	1-255
C4	0	32	1-255

MODBUS BOOSTER OPTION

Only available for network.

Set Address Using
Follow modbus cabling recommendations
All "A" must connect together
All "B" must connect together
Recommend length not exceed 600 meters / 1880 Feet,
If longer length or 120 ohm resitor is required, ask Royal Dealer
Use cable sheath, shield, twisted(SST)
Set the address of SVAD in wall-thermostat or "Royal Service" App

Our Mission:

Perfect design, First–class equipment,

Reliable installation, Excellent service.

CORP.U.S.A.
1712 New Ave., San Gabriel, Los Angeles County, California 91776, U.S.A. TEL: 1–626–4578848
FAX: 1–626–2938848
E–MAIL: royal@royalservice.com

CORP.ASIA PACIFIC
No.1 Kexing Road, Guangzhou Civilian Scien–Tech Park 1633 Beitai Road, Baiyun District, Guangzhou
TEL: 86–20–87375678
FAX: 86–20–87375678
E–MAIL: royal@royalservice.cn

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

*Since Royal Service has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.
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