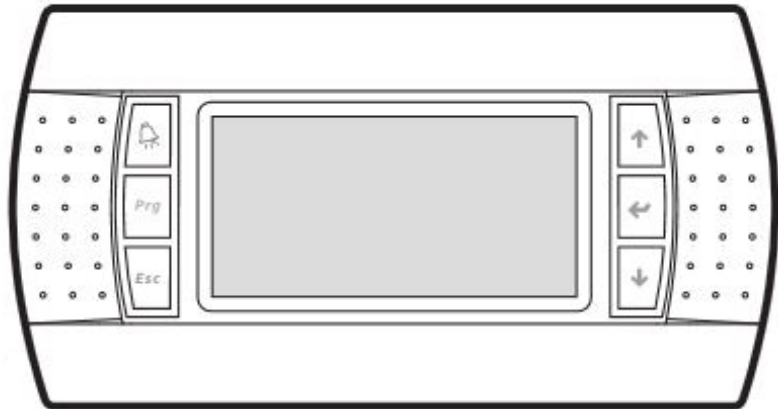




User Guide

CH536 Service terminal



RT-SVU011A-GB

Navigation

Control

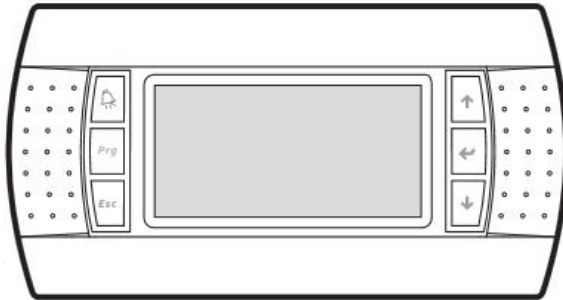
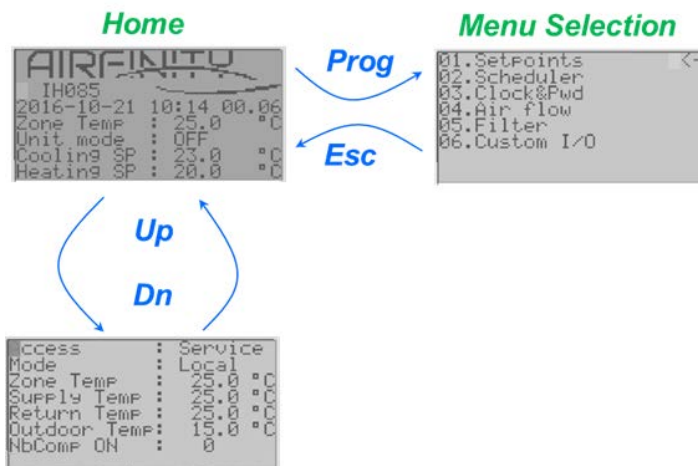


Fig.1

The interface has six buttons to navigate on Service Terminal (see Fig.1)

1. Alarms
2. Prg = Program
3. Esc = Escape
4. Up
5. Enter
6. Down

Map



Then to enter a sub-section from “Menu Selection” page, please use Enter.

Commissioning

Setpoints - Temperature

Minimum offset between cooling and heating setpoints is 2°C, to allow automatic switch-over.

Thus locally, the heating setpoint can be set in range [15°C ; 33°C]



Cooling setpoint can be set in range [17°C ; 35°C]

Setpoints-Temperature menu gives information of active temperature based on priority arbitration, from top priority "BAS" to bottom one "Local".

Setpoints – FreshAir

The fresh air rate can be locally set. This setting is then used in occupied mode.

In unoccupied mode, the fresh air rate is 0%.

Like temperature setpoint, information is provided on active setpoint and priority arbitration.

Setpoints - Unit Mode

The available local settings are

Auto: unit can run in cool or heat depending on zone temperature. The switch over is automatic.

Cool: unit run in cooling mode only

Heat: unit run in heating mode only

Aux Heat: unit run in heating mode only, with auxiliary heating only.

Fan Only: unit run in ventilation only (no cool or heat)

Conv Th: unit control is let to conventional thermostat interface

Test: unit mode only accessible to Service Technician

Scheduler

The scheduler feature allows programming on a weekly basis, with maximum 4 time bands per day.

| Parameter per TimeBand | Range | Example |
|------------------------|--|---------|
| Start Time | [00:00 ; 23:59] | 08:30 |
| Cool setpoint | [15.0 ; 35.0] °C | 23.0°C |
| Heat setpoint | [15.0 ; 35.0] °C | 20.0°C |
| Unit mode | {Off ; Auto ; Cool ; Heat} | Cool |
| Occupancy | { O ccupied ; U noccupied} | O |

Example:

```
Scheduler - Monday
start Heat Cool Mode O
08:30 20.0 23.0 Auto O
19:00 18.5 24.5 Auto U
99:99 20.0 23.0 Off O
99:99 20.0 23.0 Off O
reset 0
```



In the Scheduler menu, you will also find the capability to copy the setting of one day to another one.

Then when the program is entered, you have to “Enable” the scheduler control.

Clock

Date and time can be modified through the ad-hoc menu

Those internal date and time are used for Scheduler.

Air Flow

Two modes are available for Air Flow on supply side.

Either Constant Air Volume: blow supply air at nominal value.

Or Variable Air Volume: modulate supply air depending on cooling/heating load.

The mode selection can be done on cooling or heating modes independently.

Filter

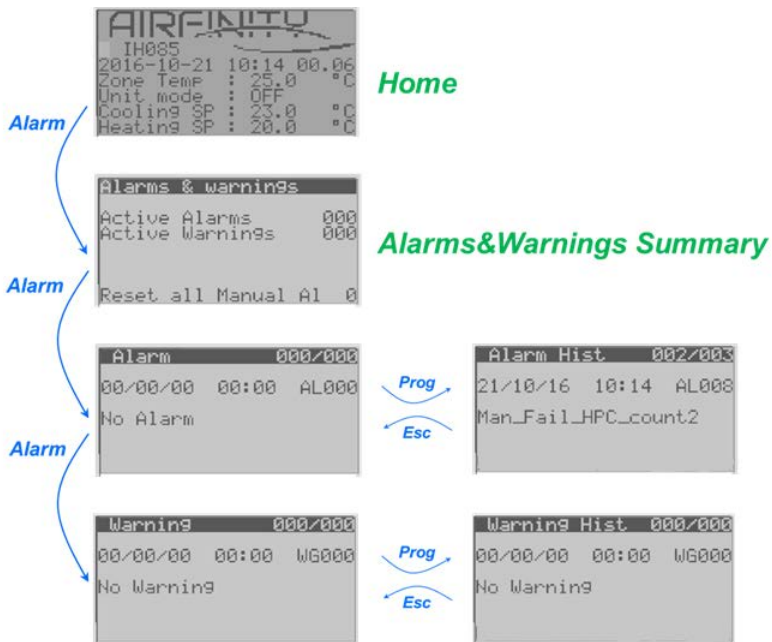
An internal time counter is included to monitor the filter usage.

This time counter can be locally reset.

Custom Inputs and Outputs

The Custom Inputs and Outputs allows visualization of physical state of I/O (in percentage).

Alarms and warnings



To scroll the alarms in “Alarm” or “Alarm Hist” pages, please use Up and Down buttons.

To scroll the warnings in “Warning” or “Warning Hist”, please use Up and Down buttons.



List of Alarms

| Display ID | Name | Description | Reset | Comment |
|------------|-----------------------------|--|--------|--|
| 1 | Man_Fail_1A | Compressor fault (Digital Input) >2s | Manual | Set Al_Fail_1A to 1 |
| 2 | Man_Fail_1B | Compressor fault (Digital Input) >2s | Manual | Set Al_Fail_1B to 1 |
| 3 | Man_Fail_2A | Compressor fault (Digital Input) >2s | Manual | Set Al_Fail_2A to 1 |
| 4 | Man_Fail_2B | Compressor fault (Digital Input) >2s | Manual | Set Al_Fail_2B to 1 |
| 5 | Man_fail_HP1 | 3 HighDischargePressure events (unload 1 CMP) within 1 hour or 4 within 2 hours | Manual | Stop circuit 1 |
| 6 | Man_fail_HP2 | 3 HighDischargePressure events (unload 1 CMP) within 1 hour or 4 within 2 hours | Manual | Stop circuit 2 |
| 7 | Man_fail_HPC_count1 | 4 HighPressure Cut-out events on circuit1 | Manual | Stop circuit1 Counter reset may be done anytime through ServiceTerminal |
| 8 | Man_fail_HPC_count2 | 4 HighPressure Cut-out events on circuit2 | Manual | Stop circuit2 Counter reset may be done anytime through ServiceTerminal |
| 9 | Man_fail_involute1 | CIPD fail (18.6bars during 30mn or 25.5bars - see CMP spec) | Manual | Stop circuit1 with pumpdown |
| 10 | Man_fail_involute2 | CIPD fail (18.6bars during 30mn or 25.5bars - see CMP spec) | Manual | Stop circuit2 with pumpdown |
| 11 | Man_fail_LP1 | 3 Low Suction Pressure events within 1 hour | Manual | Stop circuit1 with pumpdown |
| 12 | Man_fail_LP2 | 3 Low Suction Pressure events within 1 hour | Manual | Stop circuit2 with pumpdown |
| 13 | Man_fail_LowSH_A | 3 Low SuperHeat events within 1 hour on circuit1 | Manual | Stop circuit1 without pumpdown |
| 14 | Man_fail_LowSH_B | 3 Low SuperHeat events within 1 hour on circuit2 | Manual | Stop circuit2 without pumpdown |
| 15 | Man_fail_5times_EDT_C1 | 3 CMP High Discharge Temp (131°C) events within 3h30mn on circuit1 | Manual | Stop circuit1 with pumpdown |
| 16 | Man_fail_5times_EDT_C2 | 3 CMP High Discharge Temp (131°C) events within 3h30mn on circuit2 | Manual | Stop circuit2 with pumpdown |
| 17 | Man_OAD_MechOverload_3times | 3 mechanical overloads on OA Damper within 1 hour | Manual | |
| 18 | Man_LowTemp_HWC | Low Temperature on Hot Water Coil while unit is On and running | Manual | Protection from frost |
| 20 | Al_Fail_1A | Compressor fault (Digital Input) <2s | Auto | CMP1A not available anymore, and immediate stop |
| 21 | Al_Fail_1B | Compressor fault (Digital Input) <2s | Auto | CMP1B not available anymore, and immediate stop |
| 22 | Al_Fail_2A | Compressor fault (Digital Input) <2s | Auto | CMP2A not available anymore, and immediate stop |
| 23 | Al_Fail_2B | Compressor fault (Digital Input) <2s | Auto | CMP2B not available anymore, and immediate stop |
| 24 | Al_fail_hpc1 | High Pressure Cut-out on circuit1 | Auto | Stop circuit1 |
| 25 | Al_fail_hpc2 | High Pressure Cut-out on circuit2 | Auto | Stop circuit2 |
| 26 | Al_Fail_Low_Diff_Pres1 | Low Differential Pressure on circuit1 | Auto | Stop circuit1 without pumpdown |
| 27 | Al_Fail_Low_Diff_Pres2 | Low Differential Pressure on circuit2 | Auto | Stop circuit2 without pumpdown |
| 28 | Al_Fail_LP1 | Low Suction Pressure on circuit1 | Auto | Stop circuit1 with pumpdown |
| 29 | Al_Fail_LP2 | Low Suction Pressure on circuit2 | Auto | Stop circuit2 with pumpdown |
| 30 | Al_Fail_OD_Fan_ckt1 | Fault on OD Fan(s) circuit1 (EC or AC) | Auto | Stop circuit1 with pumpdown |
| 31 | Al_Fail_OD_Fan_ckt2 | Fault on OD Fan(s) circuit2 (EC or AC) | Auto | Stop circuit2 with pumpdown |
| 32 | Al_Maint_Comp1 | Running time/starts of CMP1A requires maintenance | Auto | Do not stop compressor, but Alarm highlighted |
| 33 | Al_Maint_Comp2 | Running time/starts of CMP1B requires maintenance | Auto | Do not stop compressor, but Alarm highlighted |
| 35 | Al_Maint_Comp3 | Running time/starts of CMP2A requires maintenance | Auto | Do not stop compressor, but Alarm highlighted |
| 36 | Al_Maint_Comp4 | Running time/starts of CMP2B requires maintenance | Auto | Do not stop compressor, but Alarm highlighted |
| 37 | Al_HighDscgTempDFan | Supply Air temperature above max limit in heating mode | Auto | Stop compressors without pumpdown, Aux Heat and Supply Air |
| 38 | Al_LowDscgTempDFan | Supply Air temperature below min limit in cooling mode | Auto | Stop compressors without pumpdown and Supply Air |

| | | | | |
|----|---------------------------|--|------|--|
| 39 | AI_Offline_OD1_EC1 | Modbus communication fault of Fan1 circuit1 | Auto | Prevent loading more compressors on circuit 1 |
| 40 | AI_Offline_OD1_EC2 | Modbus communication fault of Fan2 circuit1 | Auto | Prevent loading more compressors on circuit 1 |
| 41 | AI_Offline_OD2_EC1 | Modbus communication fault of Fan1 circuit1 | Auto | Prevent loading more compressors on circuit 2 |
| 42 | AI_Offline_OD2_EC2 | Modbus communication fault of Fan2 circuit1 | Auto | Prevent loading more compressors on circuit 2 |
| 43 | AI_Offline_OADamper | Modbus communication fault of OA Damper motor | Auto | none |
| 44 | AI_OADamper_Fault | Internal Alarm of OA Damper motor | Auto | |
| 45 | AI_LowSH_C1 | Low Superheat on circuit 1 | Auto | Stop circuit1 without pumpdown |
| 46 | AI_LowSH_C2 | Low Superheat on circuit 2 | Auto | Stop circuit2 without pumpdown |
| 47 | AI_fail_EDT_C1 | CMP High Discharge Temperature (estimated) (131°C) on circuit1 | Auto | Stop circuit1 with pumpdown |
| 48 | AI_fail_EDT_C2 | CMP High Discharge Temperature (estimated) (131°C) on circuit2 | Auto | Stop circuit2 with pumpdown |
| 49 | AI_Offline_ID1 | Modbus communication fault of supply fan1 | Auto | |
| 50 | AI_Offline_ID2 | Modbus communication fault of supply fan2 | Auto | No specific action for Communication Loss Force speed to 0 in case of Internal Fault |
| 51 | AI_Offline_ID3 | Modbus communication fault of supply fan3 | Auto | => at anytime, we check SupplyFan speed is between 40% and 100% of Nominal speed, if not we stop compressors, Aux Heat and close OA Damper |
| 52 | AI_fail_ID_Fan1 | Internal Alarm of Supply Fan 1 | Auto | |
| 53 | AI_fail_ID_Fan2 | Internal Alarm of Supply Fan 2 | Auto | |
| 54 | AI_fail_ID_Fan3 | Internal Alarm of Supply Fan 3 | Auto | |
| 55 | AI_LowAirAmbient | OAT below - 17°C | Auto | Stop circuits1&2 without pumpdown |
| 56 | AI_HighAirAmbient | OAT above 25°C in heating mode | Auto | Stop circuits1&2 without pumpdown |
| 57 | AI_EXVDriver_notReady | EXV driver not ready (software) | Auto | Stop circuits1&2 without pumpdown |
| 58 | AI_Cust_EmergencyStop | Emergency Stop signal from Customer Option module | Auto | Stop every actuator, close the OA Damper |
| 59 | AI_Offline_custOpt | Modbus communication fault of Customer Option Module | Auto | Impact depends on Customer Option Selection |
| 60 | AI_Cust_Firestat | Firestat signal from Customer Option module | Auto | Stop every actuator, close the OA Damper |
| 61 | AI_Offline_ERM_ExhaustFan | Modbus communication fault of Exhaust Fan (EC Fan in case of ERM) | Auto | |
| 62 | AI_Offline_pcoe_ERM | Modbus communication fault of ERM extension module | Auto | |
| 63 | AI_ExhaustFanAC_Fault | Fault on Exhaust Fan (AC) | Auto | |
| 64 | AI_Offline_ExtModule1 | Modbus communication fault of Extension Module1 (AuxHeat,...) | Auto | |
| 65 | AI_LowTemp_HWC | Low Temperature on Hot Water Coil while unit is Off (but powered-on) | Auto | Hot water coil protected by std-by mode |
| 66 | AI_FullCmpFault | Default on 4 compressor inputs OR "phase inversion detected" | Auto | Compressors can not be started |
| 67 | AI_Present_ERM_Exhaust | Internal Alarm of Exhaust Fan (EC Fan in case of ERM) | Auto | |
| 68 | AI_Present_ReturnFan1 | Internal Alarm of Return Fan 1 | Auto | |
| 69 | AI_Offline_ReturnFan1 | Modbus communication fault of Return Fan1 | Auto | |
| 70 | AI_Present_ReturnFan2 | Internal Alarm of Return Fan 2 | Auto | |
| 71 | AI_Offline_ReturnFan2 | Modbus communication fault of Return Fan1 | Auto | |
| 72 | AI_Offline_RADamper_MB | Modbus communication fault of RA Damper motor | Auto | |
| 73 | AI_RADamper_Fault_MB | Internal Alarm of RA Damper motor | Auto | |
| 74 | AI_Fail_AuxHeat | Aux Heat Fault input (thermostat auto or manual) | Auto | Automatic retry after 15mn |
| 75 | AI_Fail_Smoke | Smoke Detector Input (on extension module 1) | Auto | Manual reset on Head Detector |
| 76 | AI_AuxHeat_MinAirFlow | ID fan air flow below a given level (config) - Elec heaters protection | Auto | |



List of Warnings

| Name | Description | Comment |
|-------------------------------|--|--|
| Warning_Ventilation_Emergency | | |
| Warning_Econ_FC_sensors_Fault | Indicates that Economizer can not be used (fault on OAT or RAT sensors) | |
| Wrng_CO2_Sensor | Indicates that CO2 sensor value is out of range ([1 ; 2100 ppm]) | DCV control downgraded to Fixed Ventilation |
| Wrng_OAT_Sensor | Indicates that outdoor temperature sensor is out of range ([-30 ; 80 °C]) | Stop circuits1&2 without pumpdown |
| Wrng_RAT_Sensor | Indicates that return temperature sensor is out of range ([-30 ; 80 °C]) | |
| Wrng_OAH_Sensor | Indicates that outdoor humidity sensor is out of range ([0.1 ; 100 %]) | |
| Wrng_RAH_Sensor | Indicates that return humidity sensor is out of range ([0.1 ; 100 %]) | |
| Wrng_ZoneTemp_Sensor | Indicates that Zone Temperature Info is out of range ([-10 ; 50 °C]) | no action. In arbitration, last resource is RAT |
| Wrng_MAT_Sensor | Indicates that mixed temperature sensor is out of range ([-30 ; 80 °C]) | Stop circuits1&2 without pumpdown |
| Econ_DCV_CO2_Input_Fault | Indicates that CO2 information is out of range | DCV control downgraded to Fixed Ventilation |
| BitBoxMode_En | Indicates that controller is in Bitbox mode | sensor values coming from bitbox |
| Queue_Status_MBM | Indicates that Modbus communication is jammed | |
| SuctPressure_Sensor_C1 | Indicates that Suction Pressure sensor is out of range ([0 ; 20 bars]) | Stop circuit 1 without pumpdown |
| SuctTemp_Sensor_C1 | Indicates that Suction Temp sensor is out of range ([-50 ; 105 °C]) | Stop circuit 1 without pumpdown |
| SuctPressure_Sensor_C2 | Indicates that Suction Pressure sensor is out of range ([0 ; 20 bars]) | Stop circuit 2 without pumpdown |
| SuctTemp_Sensor_C2 | Indicates that Suction Temp sensor is out of range ([-50 ; 105 °C]) | Stop circuit 2 without pumpdown |
| DisPressure_Sensor_C1 | Indicates that Discharge Pressure sensor is out of range ([1 ; 46 bars]) | Stop circuit 1 without pumpdown |
| DisPressure_Sensor_C2 | Indicates that Discharge Pressure sensor is out of range ([1 ; 46 bars]) | Stop circuit 2 without pumpdown |
| Hold_CIPD_C1 | Indicates that circuit 1 is in hold due to CIPD limit | prevent loading more compressors on circuit1 |
| Unload_CIPD_C1 | Indicates that circuit 1 reached unloading limit due to CIPD | unload one compressor on circuit 1 |
| Hold_CIPD_C2 | Indicates that circuit 2 is in hold due to CIPD limit | prevent loading more compressors on circuit2 |
| Unload_CIPD_C2 | Indicates that circuit 2 reached unloading limit due to CIPD | unload one compressor on circuit 2 |
| Hold_EDT_C1 | Indicates that circuit 1 is in hold due to discharge temperature limit | prevent loading more compressors on circuit1 |
| Unload_EDT_C1 | Indicates that circuit 1 reached unloading limit due to discharge temperature | unload one compressor on circuit 1 |
| Hold_EDT_C2 | Indicates that circuit 2 is in hold due to discharge temperature limit | prevent loading more compressors on circuit2 |
| Unload_EDT_C2 | Indicates that circuit 2 reached unloading limit due to discharge temperature | unload one compressor on circuit 2 |
| Hold_HDP_C1 | Indicates that circuit 1 is in hold due to discharge pressure limit | prevent loading more compressors on circuit1 |
| Unload_HDP_C1 | Indicates that circuit 1 reached unloading limit due to discharge pressure | unload one compressor on circuit 1 |
| Hold_HDP_C2 | Indicates that circuit 2 is in hold due to discharge pressure limit | prevent loading more compressors on circuit2 |
| Unload_HDP_C2 | Indicates that circuit 2 reached unloading limit due to discharge pressure | unload one compressor on circuit 2 |
| Hold_LowSupplyAir | Indicates that supply Air reached Hold limit | prevent loading more compressors on unit |
| Unload_LowSupplyAir | Indicates that supply Air is unloading compressor due to low supply air | unload one compressor on unit |
| Hold_HighSupplyAir | Indicates that supply Air reached Hold limit | prevent loading more compressors/AuxHeat on unit |
| Unload_HighSupplyAir | Indicates that supply Air is unloading compressor/AuxHeat due to high supply air | unload one compressor/AuxHeat on unit |
| IDCoil_Defrost_Req | Indicates that Indoor coil is requesting defrost | Ask for compressors stop and let run ID Fan |



| | | |
|---------------------|---|---|
| IDCoil_Defrost_On | Indicates that Indoor coil is in defrost sequence | keep compressors off and let run ID Fan |
| THP04_Offline | Indicates Modbus communication fault on THP04 | |
| Wrng_HWCT_sensor | Indicates that HWC temperature sensor is out of range ([-30 ; 80 °C]) | Open Hot Water coil at 50% |
| Wrng_Clogged_Filter | Indicates that Pressure drop on filter is high (triggered) | indication on display |



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New

