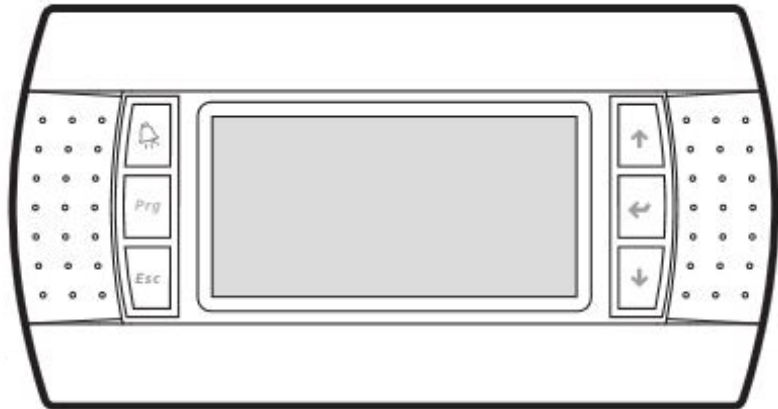




User Guide

CH536
Service terminal



RT-SVU011A-GB

Navigation

Control

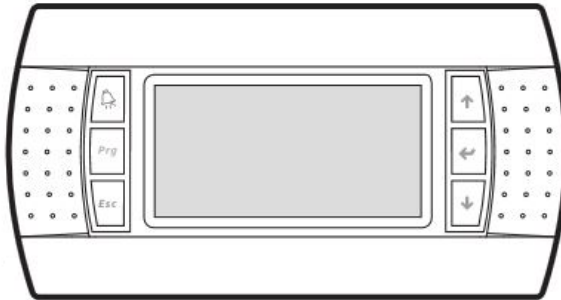
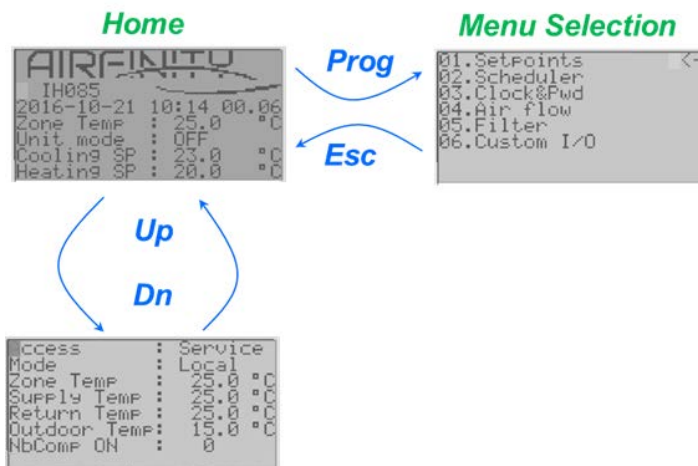


Fig.1

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

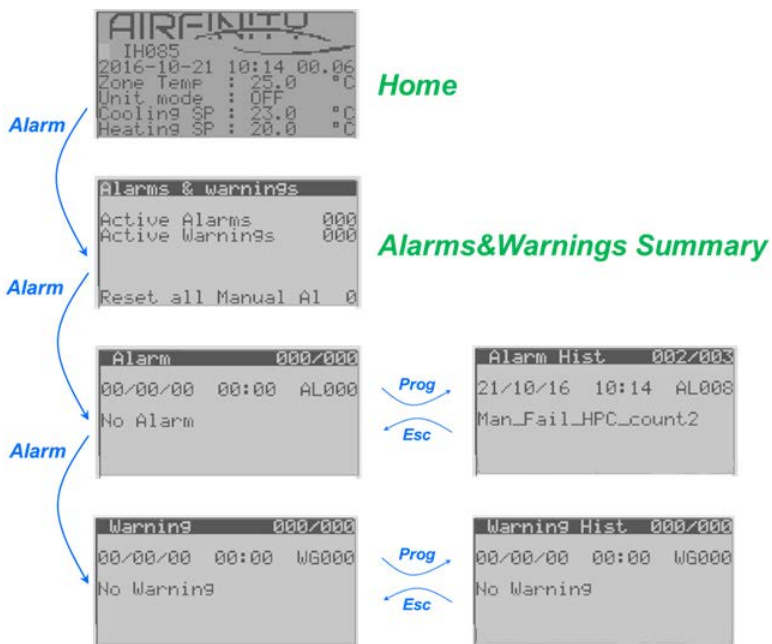
An internal time counter is included to monitor the filter usage.

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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