



AFA5000 Laboratory Room Space Controller Data Sheet



The AFA5000 is an Intelligent Touch Screen Room Space Controller designed to control a mechanical HVAC ventilation system in a room space without the need for a BMS system and comprises of a wall or panel mounting 7" HMI touchscreen and remote I/O PCB.

The controller can be configured to operate the room space ventilation based on differential room pressure, air quality control, volumetric control or any combination of the control philosophies and can be fully configured in the field using the on board password protected menus.

The controller can also be optimized to give maximum energy savings with occupancy and out of hours' setback reduced flow rates and comfort / air quality set points and has on board time clock schedule control.

FEATURES INCLUDE

- Differential Room Pressure control
- Volumetric control of Supply / exhaust
- Volumetric control with pressure override
- Can take inputs from discrete, CO₂ / humidity / VOC sensors or interact with other demand control systems
- Heating control
- Cooling / heating demand control room purge
- Occupancy control
- Time Scheduling with Setback / out of hours' control
- Over Diversity status / alarms
- RS485 connection to AFA1000 controllers
- Historical Graphical display of all active functions
- Optional Expansion module with additional 6 programmable I/O connections
- Local display of active functions with low and high audible / visual alarms
- Password protected menu set up and configuration
- 7" HMI Touchscreen, wall or panel mountable
- Metric / imperial units
- Totalisation of supply and exhaust air change per hour





AFA5000 Laboratory Room Space Controller

AFA5000 Specifications

	AFA5000	Notes
Power Supply	240VAC 50Hz 3A or 120VAC 60Hz 3A	Specify when ordering
Operator Display	Configurable 7inch HMI Touchscreen	Panel Mounting or Surface Mount with optional surface mounting kit.

MAIN I/O PCB:

I/O Function	Input	Range	Alarm	Output
Supply Air 1	1 x 0-10V: Flow Grid Direct Feedback Volume / Pressure	Configurable: Area / Pressure Vmin / Vmax K Factor / Pressure	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Supply Air 2	1 x 0-10V: Flow Grid Direct Feedback Volume / Pressure	Configurable: Area / Pressure Vmin / Vmax K Factor / Pressure	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Exhaust Air 1	1 x 0-10V: Flow Grid Direct Feedback Volume / Pressure	Configurable: Area / Pressure Vmin / Vmax K Factor / Pressure	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Exhaust Air 2	1 x 0-10V: Flow Grid Direct Feedback Volume / Pressure	Configurable: Area / Pressure Vmin / Vmax K Factor / Pressure	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Fire Alarm	1 x Digital Input Configurable ventilation control	Open or Closed contact	Local Alarm	Relay Group alarm
Door Switch	1 x Digital Input (Room pressure control)	Open or Closed contact	Door Open Alarm	Relay Group alarm
PIR Sensor (Occupancy)	1 x Digital Input	Configurable Eco unoccupied mode: - Reduced Heat / Cool / Supply / Exhaust Air set points / General alarm points	Configurable Low / high Volume alarms + Dynamic Total Alarm	Relay Group alarm
DI-1	1 x Digital Input	Scalable On/Off Volumetric Exhaust Air Input	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
DI-2	1 x Digital Input	Scalable On/Off Volumetric Exhaust Air Input	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Humidity	1 x 0-10V	Configurable: Demand based Control of Room Exhaust Air	Configurable Low / high Volume alarms	Relay Group alarm
CO2	1 x 0-10V	Configurable: Demand based Control of Room Exhaust Air	Configurable Low / high Volume alarms	Relay Group alarm





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I/O Function	Input	Range	Alarm	Output
Night Setback	1 x Digital Input	Configurable Night Setback mode: - Reduced Heat / Cool / Supply / Exhaust Air set points / General alarm points	Configurable Low / high Volume alarms + Dynamic Total Alarms	Relay Group alarm
Room Temperature	1x 10K3 thermistor or 0-10V (Second averaging sensor can be added on expansion I/O PCB)	Heating: Configurable dedicated Re-Heat output Cooling: Configurable dedicated cooling output or Demand based Control of Room Exhaust Air	Configurable Low / high Volume alarms + Dynamic Total Alarms	1 x 0-10V (Heating) 1 x 0-10V (Cooling) Relay Group alarms
Spare Output 1	1 x 0-10V	Supply Air, Exhaust Air, Cooling	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Spare Output 2	1 x 0-10V	Supply Air, Exhaust Air, Cooling	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V
Relay Output 1	N/A	Configurable alarm Group output	Configurable from multiple inputs	Volt Free Change over Max 240VAC 5A / 120VAC 5A
Relay Output 2	N/A	Configurable alarm Group output	Configurable from multiple inputs	Volt Free Change over Max 240VAC 5A / 120VAC 5A
Relay Output 3	N/A	Configurable alarm Group output	Configurable from multiple inputs	Volt Free Change over Max 240VAC 5A / 120VAC 5A
RS485 Coms	TEL protocol	up to 64 AFA1000/E VAV Controllers to provide alarm and volume data	Local & Coms alarm / velocity / volume status	N/A
Ethernet Coms	Modbus IP or BACnet IP coms to BMS	See PICs documents for available registers	Local coms status alarms	N/A
Touch Screen	D-sub cable connection	Configurable display with timeclock / location text etc.	N/A	N/A





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EXPANSION I/O PCB:

I/O Function	Input	Range	Alarm	Output
AI 09 / AO 09	1 x 0-10V	Configurable as: - Room Temperature 10K3 or 0-10V Return Air Temperature Additional Supply Air Additional Return Air Other VAV	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V or Relay Group (dependent on use)
AI 10 / AO 10	1 x 0-10V	Configurable as: - Room Temperature 0-10V Return Air Temperature VOC Additional Supply Air Additional Return Air Other VAV	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V or Relay Group (dependent on use)
AI 11 / AO 11	1 x 0-10V	Configurable as: - Room Temperature 0-10V Return Air Temperature Additional Supply Air Additional Return Air Other VAV	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V or Relay Group (dependent on use)
AI 12 / AO 12	1 x 0-10V	Configurable as: - Room Temperature 0-10V Return Air Temperature Additional Supply Air Additional Return Air Other VAV	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V or Relay Group (dependent on use)
AI 13 / AO 13	1 x 0-10V	Configurable as: - Room Temperature 0-10V Return Air Temperature Additional Supply Air Additional Return Air Other VAV	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V or Relay Group (dependent on use)
AI 14 / AO 14	1 x 0-10V	Configurable as: - Room Temperature 0-10V Return Air Temperature Additional Supply Air Additional Return Air Other VAV	Configurable Low / high Volume alarms + Dynamic Total Alarm	1 x 0-10V or Relay Group (dependent on use)

Part Number Guide : AFA5000

