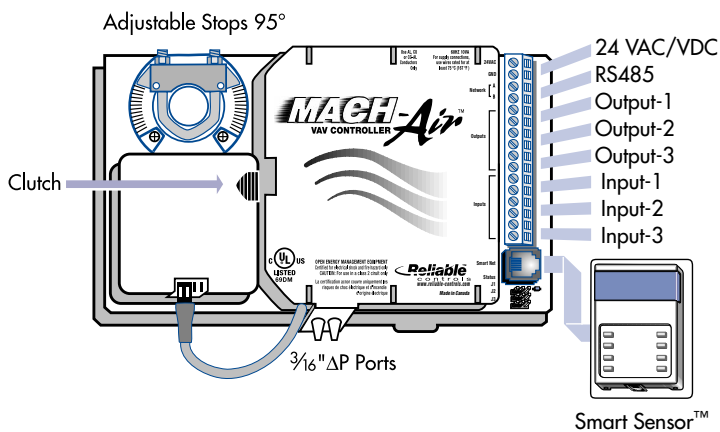


The MACH-Air™ controller is a programmable, 6 input, 5 output, DDC controller and shaft-mount damper actuator, combined together into one device to meet the needs of variable air volume (VAV) control. The MACH-Air™ controller features on-board velocity measurement, a 35 in-lb Belimo actuator, and three user specified universal inputs/outputs.

APPLICATION DIAGRAM



FEATURES

Protocols

- Reliable
- Network (RS-485/Token Bus)

4 Control Basic Programs

- User programmable control strategy in a readable, BASIC-like language
- 2000 bytes/program

6 Inputs

- 3 Inputs with Universal ranges
- Jumper selectable 0-5 VDC, thermistor, 4-20 mA and dry contact
- Input #4 dedicated to the flow sensor
- Input #5 dedicated to the damper position feedback
- Input #6 dedicated to indicate damper at end of position

5 Outputs

- 3 Outputs with Universal ranges
- Scalable 0-12VDC
- Output #4 dedicated to damper motor
- Output #5 dedicated to control direction of rotation to close

48 Variables

- Selectable standard and custom ranges, as well as fixed or program-driven values
- Variable #1 dedicated to flow calibration

4 Controllers

- Standard P, PI or PID controllers for closed loop control

2 Trend Logs

- Each trend log stores 150 samples of 6 points at programmable time intervals

4 Runtime Logs

- Totals the on time and records the on/off times of a digital point

2 System Groups

- Allows related points to be grouped on to one display
- 50 points/group

1 Weekly Schedule

- 4 on/off times for each weekday and 2 override days

5 Custom Tables

- For creating custom input ranges and Control Basic lookup tables

Smart Net Port

- Networks up to 4 Smart Sensors™
- Smart Sensor™ #5 is dedicated to Setup Tool™

32 Network In Points

32 Network Out Points

Warranty

- 5 years

Certification

- UL listed 69DM

ORDERING

MA

- MACH-Air™ controller with 3 universal inputs and 3 universal outputs

MA-P

- MACH-Air™ controller with potentiometer position feedback

MA-WA

- MACH-Air™ without actuator

MA-WF

- MACH-Air™ without flow sensor

MA-C

- MACH-Air™ connector cover

MAZ-ST

- MACH-Air™ /MACH-Zone™ Setup Tool™ (required for configuration)

TECHNICAL SPECIFICATION

Processor

- 25 MHz, high-performance 16-bit embedded microcontroller

Memory

- 32k RAM
- 64k Flash EEPROM operating system firmware and controller configurations

Supply Voltages

- 24 VAC/VDC, 10 VA max.

Communications

- RS-485 @ 76.8 kbps max.
- Smart Net (4 SS100 max.)

Setup Tool™

- MACH-Air™/MACH-Zone™ Setup Tool™ required for configuration

Inputs

- 3 universal inputs
- 10-bit A-D converter
- Analog: 0-5 VDC, thermistor, 4-20 mA
- Digital: dry contact
- Impedance: 15 k on 0-5 VDC range
- 40 Hz pulse counting (supports flow meters)
- 24 VAC over voltage protection

Outputs

- 3 universal outputs
- 8-bit D-A converter
- Analogue: 0-12 VDC
- Digital: 0-12 VDC
- Output power: 75 mA @ 12 VDC
- 24 VAC over voltage and short protection

Velocity Sensors

- Flow-through thermistor
- 0-1" W.C.

Actuator

- Torque: 35 in-lb

Enclosure

- NEMA type 1
- UL94-5V

Dimensions

- 22.9 cm L x 13.4 cm W x 6.3 cm H (9" L x 4.8" W x 2.5" H)

Weight

- 0.7 kg (1.8 lb.)

Ambient Limits

- Operating: -18°C to 40°C (0°F to 120°F)
- Shipping: -20°C to 60°C (-40°F to 140°F)
- Humidity: 10% to 90% RH non-condensing



MACH-Air™
VAV CONTROLLER
MACH-Net Building Automation System™

Reliable™
controls

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