Bard™
SINCE 1914
Climate Control Solutions

THE WALL-MOUNT™ AIR CONDITIONER WITH "V" CONTROLS OPTION

DESCRIPTION

The Bard Wall-Mount air conditioner with Bard's "V" control module option allows the unit to be remotely monitored and controlled with analog and digital data. A user supplied PLC or control may be used to digitally control the Wall-Mount air conditioning unit based on user-defined control strategies. The sensing devices function to input analog data such as temperature, as well as digital data such as airflow, compressor status or filter status.

The Wall-Mount air conditioning system has (4) four sensors factory installed within the unit. These (4) four sensors and other additional unit safety controls are identified by control module "V".

Factory installed control module "V" includes:

- Discharge air temperature sensor - monitors the supply discharge air temperature to verify the unit is in the cooling or heating mode and provides temperature read-out. Uses an 8" stainless steel probe type thermistor.
- Indoor blower airflow sensor - monitors blower's airflow to verify the blower operation.
- Compressor current sensor - monitors the compressor current to verify compressor operation; has an adjustable trip point.
- Dirty filter sensor - used to detect dirty filter and send alarm on a dirty filter condition. Adjustable and measures pressure drop across the filter.
  NOTE: *See reverse side for detailed specification of the above sensors.*
- Auto reset high pressure control is connected to the compressor control module ① which shuts down the unit if the refrigerant pressure rises above a specified PSIG. This protects the compressor if airflow through the condenser is blocked or if the outdoor fan motor fails.
- Auto reset low pressure control is connected to the compressor control module ① which shuts down the unit if the refrigerant pressure drops below 40 PSIG (+/-4) for R-410A units. This control protects the unit if airflow through the indoor blower is impeded, if the blower motor fails, dirty filter condition, or if there is a loss of refrigerant. In addition, the compressor control module includes a built-in 2-minute timed low pressure bypass circuit. During mechanical cooling in low ambient temperatures, this prevents nuisance tripping on low pressure start-up.
- Low ambient control is mandatory whenever the compressor operates below 60°F. The low ambient control cycles the condenser fan in order to maintain head pressure in the outdoor unit. Without the low ambient control, the evaporator coil will freeze up due to low head pressure. This in turn causes liquid refrigerant to flow into the compressor and damage it.
- Alarm relay has a set of normally open and normally closed dry contacts to provide the ability to signal a condition of unit shut down on either the high or low pressure control.

① *Compressor control module also includes an adjustable 30-second to 5 minute delay-on-break timer to allow refrigerant pressure equalization. If there is a power interruption, there is also a delay-on-make that is equal to 10% of delay-on-break setting. The module also provides the lockout feature (with one retry) for high and low pressure controls, and the 2-minute timed bypass for low pressure control.*

APPLICATIONS

- Communication equipment shelters
- Electronic equipment shelters
- Remote access buildings
- Cable and satellite buildings
- Office buildings
- Applications where the building has high internal heat gain and needs to be monitored to prevent system downtime

AIR CONDITIONING WALL-MOUNT MODEL NOMENCLATURE

W60A2-A10XXXXXV
↑— DDC sensor options

"V" Module Sensor Specifications

TEMPERATURE SENSORS

Discharge Air

Type	Thermistor
Ohms	10000 Ω at 77°F (25°C)
Temperature Range	-40 to 302°F (-40 to 150°C)
Interchangeability	.2 Deg Celsius

COMPRESSOR CURRENT SENSOR

Type	Solid State DC Switch
Output	Form "A" solid state DC switch
Supply Voltage	Self Powered
Trip Current Range	3 to 200 Amps
Maximum Load	.30 A @ 200 VAC/VDC
Temperature Range	-58 to 149°F (-50 to 65°C)
Dimensions	2.70 in. high, 3.33 in. wide, 1.08 in. deep (69 mm. high, 84 mm. wide, 28 mm. deep)

DIRTY FILTER SENSOR

Type	Mechanical Pressure Switch
Output	Form "A" Contact
Supply Voltage	Self Powered
Maximum Load	1.5A, at 24 VAC
Temperature Range	0 to 170°F (-18 to 77°C)
Pressure Range	0.1 to 0.7 in. wc.
Dimensions	3 1/4 in. high, 2 1/4 in. wide, 2 in. deep (83 mm. high, 57 mm. wide, 51 mm. deep)

BLOWER AIRFLOW SWITCH

Type	Mechanical Airflow Switch
Output	Form "C" Contact
Supply Voltage	Self Powered
Maximum Load	300 VA, at 24 VAC
Temperature Range	-40 to 180°F (-40 to 82°C)
Pressure Range	0.07 to 0.12 in. wc
Dimensions	6.125 high, 4.125 wide, 3.188 deep (156 mm. high, 105 mm. wide, 81 mm. deep)