

Overview

Today's energy costs are forcing older buildings to be retrofitted with Building Management Systems - keeping the occupied spaces comfortable while reducing the overall energy use. The TURB - Terminal Unit Relay Board is an interface board that allows convenient interconnection between a Digital Controller and a unitary unit's conventional thermostat terminal block. The TURB eliminates the wiring mess and provides a neat professional look that simplifies maintenance to eliminate costly callbacks.

The TURB provides an easily pluggable interface between the modules and provides fused power to the controller from the "R" terminal of the unitary unit. Dry-contact pilot duty relays interface between the Digital Controller and the conventional thermostat inputs of the DX unit.

The TURB also provides a "mini communications block" with surge protection to provide a clean and easily pluggable connection to the controller. All this is packaged on a board that mounts in a 2.75" snaptrack in one orientation, or a 3.25" snaptrack in the other orientation, depending on how you want to install the module.

For your convenience, BAPI offers the TURB with an optional 4" piece of 2.75" snaptrack, **BA/TURB-TRK**

NOTE: This unit uses a common supply (the R pin of the TSTAT terminal block J6) for the first and second stage compressors. For isolated supplies for first and second stage compressors, contact BAPI.

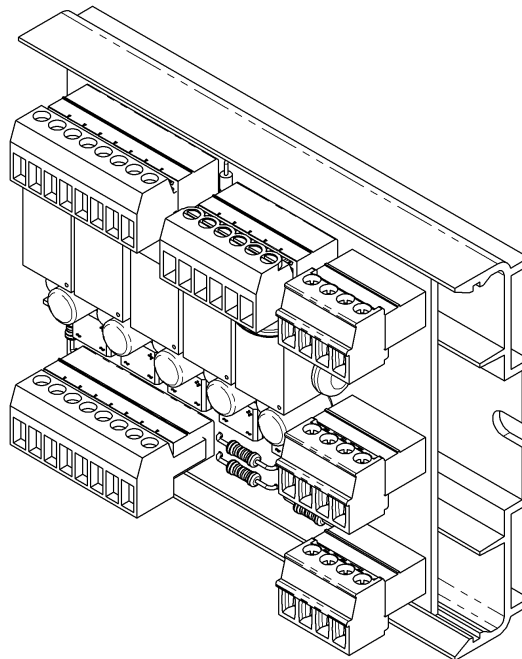


Fig 1: BA/TURB

Tool & Material List

#2 Phillips Screwdriver, 1/8" Screwdriver (**BA/116W**), Wire Stripper, Drill, DVM, Mounting Screws, Wire

Specifications

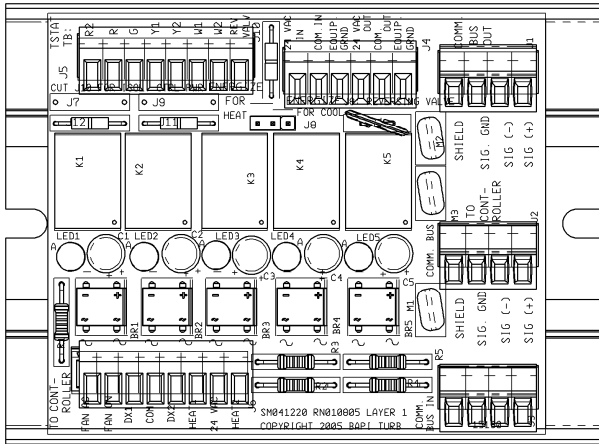
Relay Input Power: 24VAC @ 10mA each

Relay Output Contacts: 2 Amps @ 24VAC, 24VDC

Communications Clamping Voltage: 7.5 V positive, 1 V negative

Specifications subject to change without notice.

Mounting



The BAPI BA/TURB mounts in a piece of snap track as shown in Figure 2. On each end of the snaptrack is a crescent shaped mounting hole (see Figure 1). Place the snaptrack against its mounting surface and mark the two crescent shaped holes. Drill the holes for a #8 or #10 screw (provided by the user). Insert a screw into one hole and drive it down about 1/2 way. Slide the snaptrack under the screw head and drive in the opposite screw. Tighten both screws securely.

Fig 2: BA/TURB shown in horizontal mount (can be mounted 90 degrees if desired)

Termination

The wiring connections are shown in Figure 3 (on page 3) and in the following tables:

DDC Controller	TURB Connection (J6)
FAN AC	FAN AC
FAN ON	FAN ON
DX1	DX1
COM	COM
DX2	DX2
Heat1	HEAT1
24 VAC	24 VAC
Heat2	HEAT2

TURB Connection (J5)	Unitary Unit's Conventional Thermostat Terminal Block
R2	Not Connected. Contact BAPI for Isolated power for 1 st and 2 nd compressors.
R	Red - 24 VAC Thermostat Power
G	Green - Fan Control Terminal
Y1	Yellow1 - Stage 1 Cooling terminal
Y2	Yellow2 - Stage 2 Cooling terminal
W1	White 1 - Stage 1 Heating Terminal
W2	White 2 - Stage 2 Heating Terminal
REV VALVE	Reversing Valve

Signal for Communications Connectors (J1, J2, & J3)	Signal Description
+	Communications "+" signal wire
-	Communications "-" signal wire
SG	Communications signal common ground
Shield (PG)	Communications cable shield Protected Ground (PG)

PCB Label	Description
24 VAC IN	If J10 is cut, then 24 VAC IN. Else Not Connected
COM IN	Common return for 24 VAC IN
Equipment GND	Equipment Ground (Earth)
24 VAC OUT	24 VAC OUT to controller
COM OUT	Common return for the controller
Equipment GND	Equipment Ground for controller

Specifications subject to change without notice.

Termination Continued

NOTE: The BA/TURB connectors use a rising block screw terminal to hold the wires. It is possible for the block to be in a partially up position allowing the wire to be inserted under the block. Be sure that the connector screws are turned fully counterclockwise before inserting the wire. Lightly tug on each wire after tightening to verify proper termination.

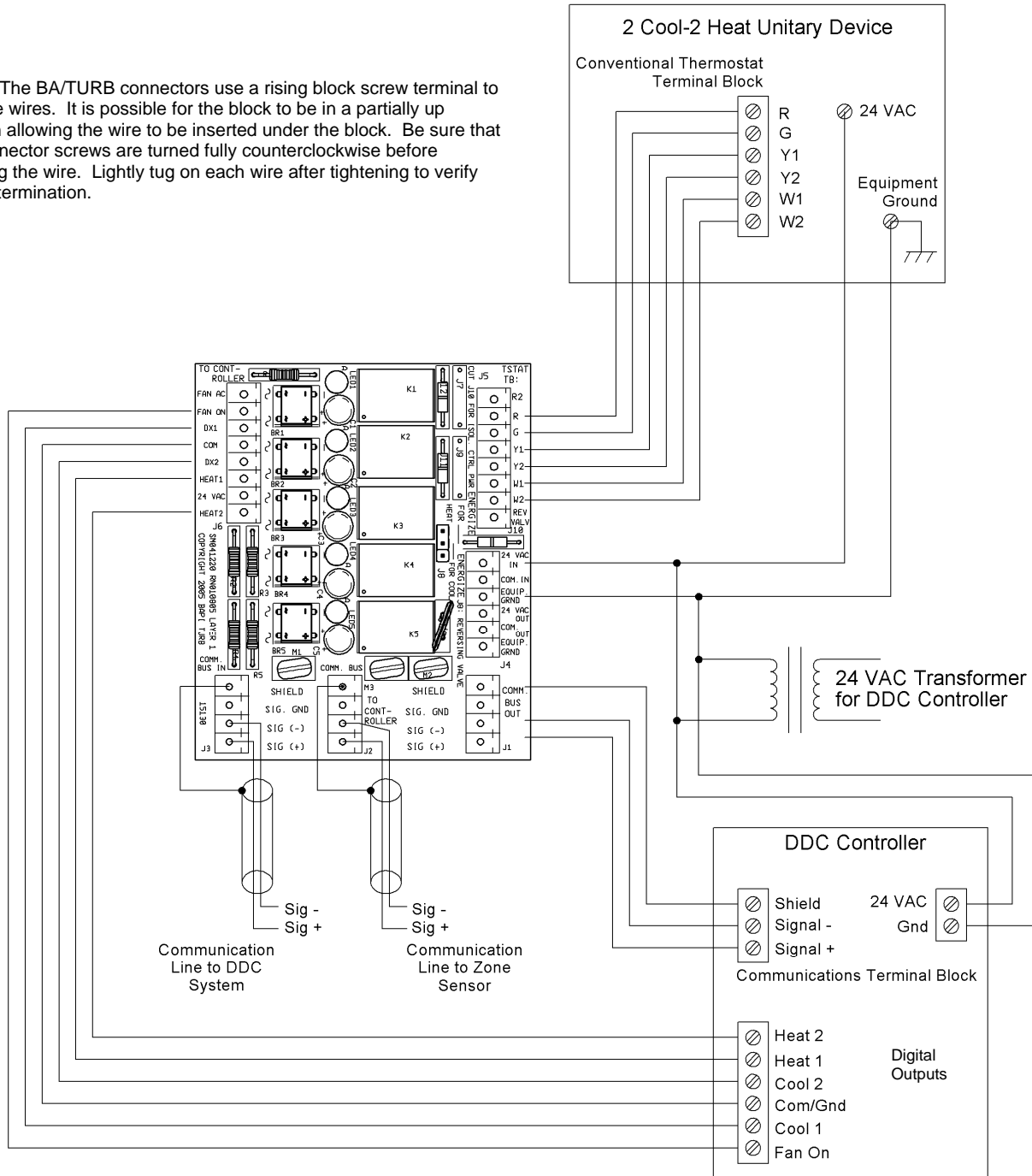


Figure 3: Generic TURB Connections

Note: Figure 3 is for DDC digital outputs that switch the 24 VAC supply. For DDC controllers with output that switch ground, contact BAPI.

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