

HAND HELD ebmBUS CONTROL TERMINAL P/N CBC000-AB06-01 USER MANUAL



TGC
2007-10-17

The hand held controller P/N CBC000-AB06-01 provides open or closed loop motor speed control and programming of a **single** ebm-papst EC fan through the ebmBUS connections. The fan must be ebmBUS equipped in order to use the controller. The package includes one controller, 100-240VAC 50/60Hz to 12VDC power adapter, CAT-5E RJ45 patch cable w/data jack and two 1500mAh NiMH rechargeable batteries (photo 1). The unit may be used with the batteries or the power adapter, which comes with European style power pins so a plug adapter is needed for use with North American 115VAC power outlets (photo 2).

I. Installation & Power

Plug either end of the RJ45 patch cable into the mating port on the controller. Plug the other end of the cable into the data jack (photo 3). Looking at the non-cable end of the data jack (photo 4), insert insulated 20-24AWG lead wires into the positions marked 5 & 6 on the data jack label (photo 5). Insert the other end of the wire in **position 6** into the **RSA** terminal on the fan and the wire in **position 5** into the **RSB** terminal on the fan.

If used, make sure the power adapter is set to 12v (photo 6). A key is provided to turn the selector switch so that the arrow is facing the correct voltage. Plug the adapter into the controller and press "on".

II. Programming Instructions

The following instructions refer to the attached block diagram for stepping through the controller functions.

- Initial screen is "read only" and provides the **fan group number and fan number**. The screen will read

G00x F0y
NO ERROR

if the connections are correct and the fan motor is communicating, where "x & y" are the Group and Fan numbers, respectively. If there is a problem with the fan status, an error code will be reported. Refer to the attached error code table for the meaning of these codes.

- Press the down arrow ↓ to advance to the next screen, which is also read only and shows the **actual fan speed**.

ACT_SPDP
>0000<

- Press the down arrow ↓ again to advance to the **fan speed set point** screen.

SetPnt
>0000<

Press the back arrow ← and then the up ↑ or down ↓ arrow to increase or decrease fan speed. If the speed setting is at maximum, pressing the up arrow again will bring the speed back to zero. If the

speed setting is at zero, pressing the down arrow will bring the speed to the maximum setting. Once the desired speed is set, press the back arrow again to start the fan running at the programmed speed.

- Press the down arrow ↓ to advance to the *control mode* screen.

Mode
OL PWM or CL SPEED

and the back arrow ← to enter the speed control select mode. Use the up & down arrows to switch between closed loop and open loop speed control. Press the back arrow again to set the control mode in memory.

- Press the down arrow ↓ to advance to the *priority* screen (known as “set value control” in LISA5)

and the back arrow ← to enter the priority select mode. Use the up & down arrows to switch between RS485 and potentiometer priority. Press the back arrow again to set the priority mode in memory.

- Press the down arrow ↓ to advance to the *setting* screen

Setting


and the back arrow ← to bring up the fan address screen.

Address
G00x F0y

Press the back arrow again to set the fan group number using the up & down arrows and press the back arrow a 3rd time to set the fan number using the up & down arrows. Press the back arrow a 4th time to set the address in memory. The screen will change to “WAIT” while the fan address is being reprogrammed.

- From the fan address screen it's possible to move clockwise (up arrow) or counterclockwise (down arrow) around this loop of the block diagram. Moving CCW brings up a series of “read only” screens in the following order;
 - operating hours
 - serial number
 - number of motor poles
 - direction of rotation
 - speed save (automatic)

- Continuing CCW around the loop or starting CW from the fan address screen brings up the following programmable screens;
 - minimum PWM
 - maximum PWM
 - P-Factor
 - I-Factor
 - maximum speed

These can all be programmed by pressing the back arrow  after entering the screen, using the up & down arrows to set the variable and pressing the back arrow again to program the variable into memory. The P-Factor and I-Factor can be set in minimum increments of 3.1%. The maximum speed can be set in increments of one or 10 rpm.

ADDENDUM – RS485 Terminal Box

Fans that use the single phase, ebmBUS equipped version of the M3G084 or M3G112 motor are equipped with a 3-position power lead connector and a 4-position control lead connector built into the motor housing. The RS485 terminal box P/N 54002-4-1040 comes equipped with 30' power and control cables with connectors that mate to the connectors on these motors (photo 7). It can be used in conjunction with the hand held controller by plugging the RJ45 patch cable from the controller into one of the two RJ45 jacks available on the RS485 terminal box. This eliminates the need for the data jack.

Photo 1



Photo 2



Photo 3

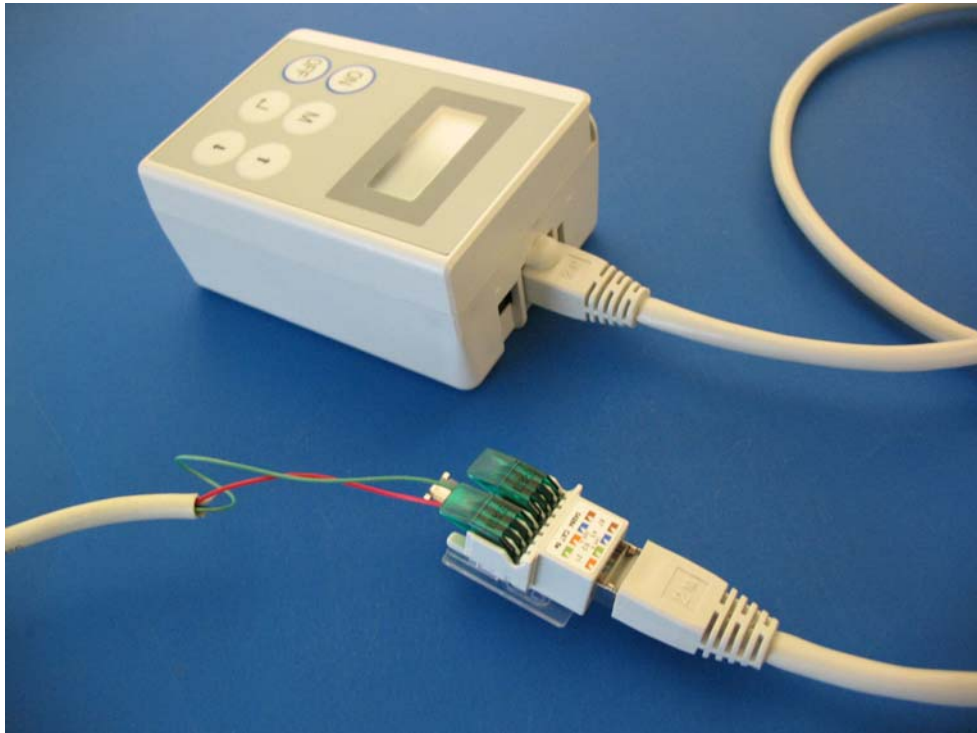


Photo 4

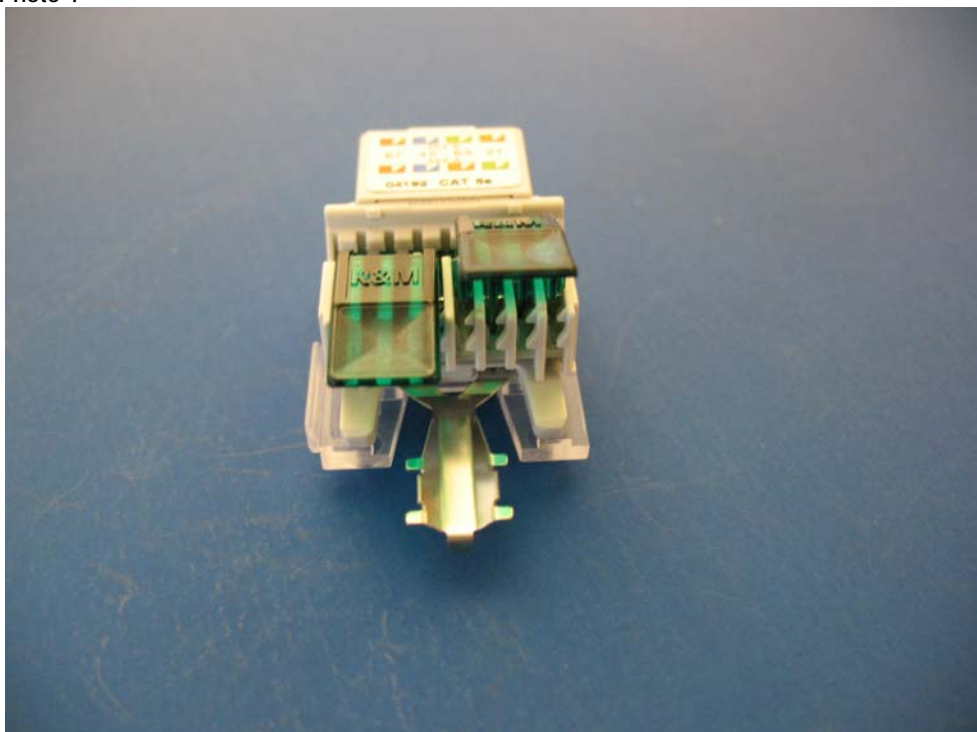


Photo 5

lead position label

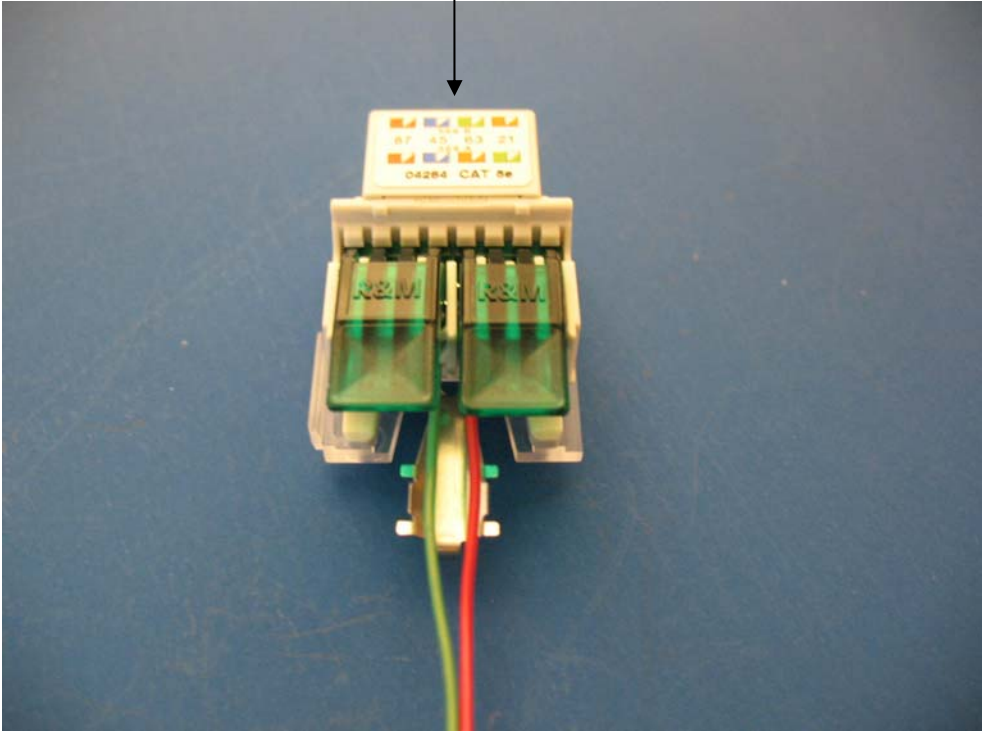


Photo 6



Photo 7



Photo 8

