

Subject: Re: Milling machine Application

Date: Mon, 1 Oct 2001 09:40:37 -0700

From: smilici@deltatau.com (Stephen Milici)

To: "Paul Rako" <paul@rako.com>

Use Ix25, this parameter tells PMAC what set of flags it will look to for motor x's overtravel limit switches, home flag, amplifier-fault flag, amplifier-enable output, and index channel. The high bits are used to disable/enable various features.

Overtravel Limit Use Bit: bit 17

If bit 17 (value \$20000, or 131072) is set to one (e.g. I125=\$2C000), motor x does not use these inputs as overtravel limits.

If this is motor #4 (default) then set: I425=\$2C018

The amplifier enable for motor #4 is on the ACC-8E breakout.

Lube and coolant normally are taken from the user I/O option on the ADV600 control panel. There is a default Lube and coolant PLC in the examples directory.

----- Original Message -----

From: "Paul Rako" <paul@rako.com>

To: <support@deltatau.com>

Sent: Friday, September 28, 2001 1:00 AM

Subject: Milling machine Application

> Hi;

>

> After spending 10's of thousands of dollars and paying an engineer
> 10,000 dollars to do what should be a simple retrofit on a Bostomatic
> milling machine I still have a 10,000 pound paperweight sitting in my
shop.

>

> The engineer was able to get x,y,z motion but left the project stumped on
> two areas-- how to home the machine and how to get the spindle to work.
> After reviewing Delta Tau's documentation I can understand his confusion
> and frustration. When he would call he would be admonished to read all
the
> manuals and to take the class. Well I took the class 4 years ago and it
> sure is absolutely no help in these basic issues. At this point I feel it
may

> be best to just return all the hardware, operator panels and NC program
and sell

> the machine for scrap.

>

> I will try to make one more stab at getting some help from the people who
could

> spend a few minutes of their time to save me months of my 80 dollar an
> hour time. It won't take long before a new Haas with an operating control
> instead of a "general purpose DSP card" makes a lot more sense-- that's
> what everyone told me to do. If by some miracle I am able to get your
> insanely complex card working I do intend on publishing it on the web and
> will gladly give you the schematics and solid models. Maybe it will
> help the next poor fool. When I look at your "Application Notes"
> they are just advertisements-- as an Analog Applications Engineer with
> National Semiconductor maybe I have unrealistic expectations.

>
> Anyway let's start with this:
>
> I have a PMAC II PC with Dual Port Ram.
> I have 2 Acc 8E cards.
> I want motor output 4 to output an analog voltage to a Mitsubishi inverter
> for the milling machine spindle.
>
> That's it-- 0 to 10 volts to an inverter. No limit switches, no encoder,
no nothing.
> I have set I variables to DAC mode and enabled the motor. I can see the
motor status
> says limits are enabled but nowhere do I find any information on how to
disable them.
> Is there an I variable? Anyway I expect 4 or 5 commands should be able to
get the
> spindle to spin but I can't even get "O" commands to work. I am using the
Advantage 600
> panel and PMAC NC software (If I ever get the mill working). Is there
hardware
> settings that are made to work with this panel? Where do I bring digital
outputs for
> spindle enable as well as lube pump and coolant? Jopto?
>
> I will wade through the 2000 pages of documentation but it would sure be
nice to
> think there was some help available at PMAC.
>
> Thanks
> Paul Rako
> Engineer
>

Subject: RE: Milling machine Application

Date: Fri, 28 Sep 2001 10:51:13 -0700

From: "Francis" <francis@ucla.edu>

To: "Paul Rako" <paul@rako.com>

Paul,

Man you don't seem to be too satisfied. Are you okay with my work?

For the spindle, which is motor 4, to disable the limit switches you would most likely put in something like I425=\$2C018 (2 is to daible flags, C018 is the address of the flags for motor 4 which we don't use)

In the original PMAC manual (the really old one) you'll find the i variable Ix25. It is also in the technical documentation cd. When the splash screen comes up, click the PMAC/PMAC2 manual under PMAC software reference. That manual contains all the I variables. That should be the updated version but there are still "firmware version addendums"

If you got the spindle to work form the front panel then you got the jumper removed for forward rotation removed inside the inverter box? Yes, makeing something simple to work is hard. There's just so many of those I variables and everyone of them must be set correctly for the spindle to work. So far, I know disabling the limit switches is one thing and the wiring might be another. It was something that I couldn't get to at the end. If you look at the schematic, the inverter has a relay built into it. Normally connected. So wiring one side high (5V) and the other to the amplifier fault input should allow it to work intuitively. I think I asked you for help on that because I was kinda stumped. Need some sort of buffer circuit??

Well hope you understand about the huge manuals. It was about 2 months to get most the hardware wired up enough to do the finer details of wiring for the software. I think the two are closely related which is why I had to do some software to test out the hardware and in turn modify the hardware is there were any mistakes. Then one month left for doing the rest. I think maybe if I read all the manuals, studying them like textbooks for a month, then things will probably go a lot smoother. I really want to meet someone that wired, troubleshoot, and executed software on a PMAC. Someone that retrofited a machine. What kind of people are they? Engineers? A company making milling machines using their controller? You know, just to compare to see if I'm on par with the rest of the world.

How much would such an engineering effort worth? Say a new machine costs 100K?? Do you feel you got your money's worth on my work??

Francis

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Engineer