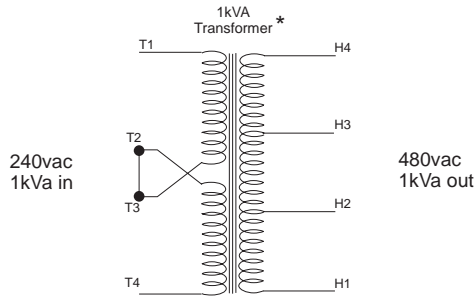


Generic Drive Conversion
using Allen-Bradley 1305

Dave Kamp 12/31/08

480v Boost



80vMost AC drives come in 208-250 and 480v input power classes.

208-250v drives are generally less common, and in higher demand than 480v drives, henceforth, they're more expensive.

480v drives, however, are plentiful and cheap.

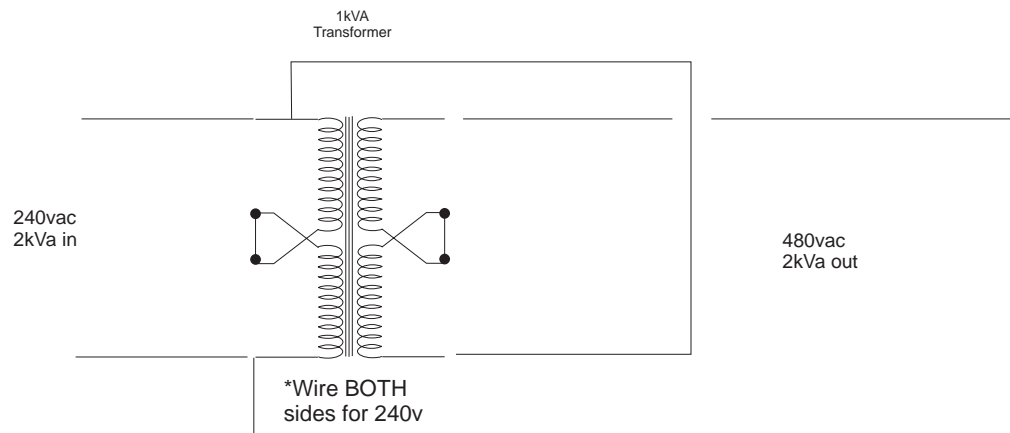
There's no real trick to taking advantage of the 480v drive's economy- install a 480-240 step down transformer 'backwards', or wire up an ordinary transformer to be a 'boosting' autotransformer. Both configurations will provide 480vac to power the drive from 240v single-phase mains.

The autotransformer configuration shown below has an added advantage- the available output (at 480vac) is TWICE the rated kVa of the transformer!

For example- a 480v drive that requires 5A is $480v \times 5A = 2400vA$, or 2.4kVa

You can either use a 480:240 2.4kVa transformer in reverse, or a 1.2kVa transformer 'wired in 'autotransformer' to accomplish the voltage conversion.

The autotransformer configuration will be smaller, lighter, and oftentimes less expensive.



Setup Programming

Yes, you'll need to program it... it WILL NOT be a plug-and-play out of the box, because it doesn't default to operation the way WE use it... actually, I don't think it defaults to any type of configuration that is useable... SO... The HIM will have all the buttons necessary to set it up, as long as your HIM isn't a blank plate.

Go through the settings as follows... I'll bet it springs to life!

First, you'll need to get into the Advanced Setup menu.

At the run display, press the ESCAPE button, then press the DOWN button to scroll through the menus. You need to go into PROGRAM, and then Advanced Setup. Once you've found Advanced, you'll press either the SEL or <- button to get INTO that menu, then press the DOWN button to scroll through (or UP to back up). To select a parameter, press the SEL or <- button. It's kinda clunky in some ways, but after you've done it a few times, you'll get the hang of it.

Under Advanced Setup, set the following parameters:

Input Mode = F/R MOP or 3 Wire MOP (depends on which firmware)
 Freq Select 1 = REMOTE POT
 Accel Time = 1s (you'll mess with this later)
 Decel Time= 1s (you'll mess with this later)
 Base Frequency = 60hz
 Base voltage = 480
 Maximum Voltage = 480
 Minimum Frequency = 10hz (you'll mess with this later)
 Maximum frequency = 120hz (you'll mess with this later)
 Stop Select = RAMP
 DB Enable = ENABLED (this tells the machine to use that big resistor I sent you!)

Back all the way out (Escape button), and when it's back to the running display (or stopped), shut off the power (this saves configuration) and wait for display to go out. Count to ten, then turn power back on. Set speed pot to slowest position (should be full left), and then close the RUN switch.... It SHOULD start running at the slowest speed. If it takes off like bat-out-a hell, put it to STOP, turn the speed pot full-other-way, and try again... it should start out slow...

Generic Drive Conversion
 using Allen-Bradley 1305

Dave Kamp 12/31/08