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In this post I have explained how to make a 3 phase inverter circuit which can be used in conjunction with any ordinary single phase square wave inverter circuit. The circuit was requested by one of the interested readers of this blog.

The dimensioned push-pull PWM now becomes available at the E/C junction of the two BC547 transistors. This PWM is applied to the input of the 3 phase generator explained in the next section.

The circuit below shows a 3 phase inverter circuit stage using H-bridge mosfets configuration which receives the phase shifted PWMs from the above stage and converts them into corresponding high voltage AC outputs for operating the connected 3 phase load, normally this would be a 3 phase motor.

The 330V high voltage across the individual mosfet drivers sections is obtained from any standard single phase inverter integrated across the shown mosfets drains for powering the desired 3 phase load.

You may refer the article which explains how to make a 3 phase solar inverter circuit for understanding the 3 phase signal generator stage functioning and implementation details.

A relatively simpler version of the above 3 phase inverter circuit can be studied below, using the IC IR2103 half bridge driver ICs. This version lacks the shut down feature, therefore if you do not wish to incorporate the shut down feature, you can try the following simpler design.

In the above explained 3-phase inverter circuit, the 3-phase generator stage looks unnecessarily complex, and therefore I decided to look for an alternative easier option for replacing this specific section.

Therefore now you can simply replace the earlier explained IC 4047 and the opamp section entirely and integrate this design with HIN, LIN inputs of the 3 phase driver circuit.

So far we have learned how to make a basic 3 phase inverter circuit, now we'll see how a solar inverter with a 3 phase output can be built using very ordinary ICs and passive components.

The diagram above shows the basic processor circuit which looks complex but actually it's not. The circuit is made up of three sections, the IC 555 which determines the 3 phase frequency (50 Hz or 60 Hz), the IC 4035 which splits the frequency into the required 3 phases separated by a phase angle of 120 degrees.

As may be seen in the above figure, this section is built across 3 separate half bridge driver ICs using IRS2608 which are specialized for driving high side and low side mosfet pairs.



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Web: <https://www.sumthingtasty.co.za/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

