Inverter power measurement

How to evaluate motors and inverters accurately and efficiently?
Motors and inverters can be evaluated accurately and efficiently. nPower calculation function of Oscilloscope and ScopeCorder You can use the power calculation function of the Oscilloscope or ScopeCorder, if you only need rough power measurements, rather than the high-precision power measurements using a power analyzer.

How are currents and voltages measured in a pulse width modulated inverter?
The currents and voltages are measured in all three lines. Despite the pulsed voltage of the pulse width modulated inverter,the current is still approximately sinusoidal. Therefore,the current signal is used to derive the cycle time for mean-value calculation in the power measurement.

What is a pulse width modulated inverter?
Innovative measuring instruments are needed to be able to test and optimize the drive train of an electric vehicle. They must enable both highly accurate power measurements and calculation of various intermediate values. A pulse width modulated inverter converts a DC voltage into an AC voltage with variable frequency and amplitude.

How to calculate instantaneous power delivered by pulse width modulated inverter?
The instantaneous power delivered by the pulse width modulated inverter can be calculated with these star voltages and currents (i1, i2, i3). (3.01) Fig. 3.2: Diagram showing a power measurement with an artificial star point Fig. 3.3 shows the result of a measurement with an artificial star point.

How to calculate inverter voltage?
The inverter voltages e?M with ? = 1, 2, 3, according to the corresponding control signal, can take on the value +Ud /2 with S? = 1 or the voltage value -Ud /2with S? = 0. (2.01) To calculate the line voltages in the machine, first the mesh equations are set up: (2.02)

How to calculate total effective power delivered by pulse width modulated inverter?
The total effective power delivered by the pulse width modulated inverter is determined by calculating the mean value of the instantaneous power. Equation 3.02 shows the procedure in Perception. (3.02) The apparent power S is the product of the current RMS value and the voltage RMS value.

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