

ELECTRICAL ENGINEERING DESIGN SOFTWARE

PART 3 of a series: *Variable Speed Drives – Selection & Compliance checking to IEEE 519 utilising PowerCad-5 electrical design software*

PowerCad-5 electrical engineering design software allows engineers to rapidly integrate variable speed drives (VSD) into the LV electrical distribution model for an Industrial project.

VSD CONFIGURATION

The VSD location:

- Within the motor control centre,
- Remote, or
- Close coupled to the motor

HARMONIC MITIGATION

PowerCad-5 offers the following Harmonic mitigation solutions:

- Passive Filter: Line Passive filters can be added to the VSD
- Active Filter: An Active filter added to the MCC bus

VSD MOTOR FEED CABLE

A VSD/EMC variable speed drive cable with 3 cores plus 3 earths and a copper tape screen can be selected as the feed cable from the VSD to the motor.

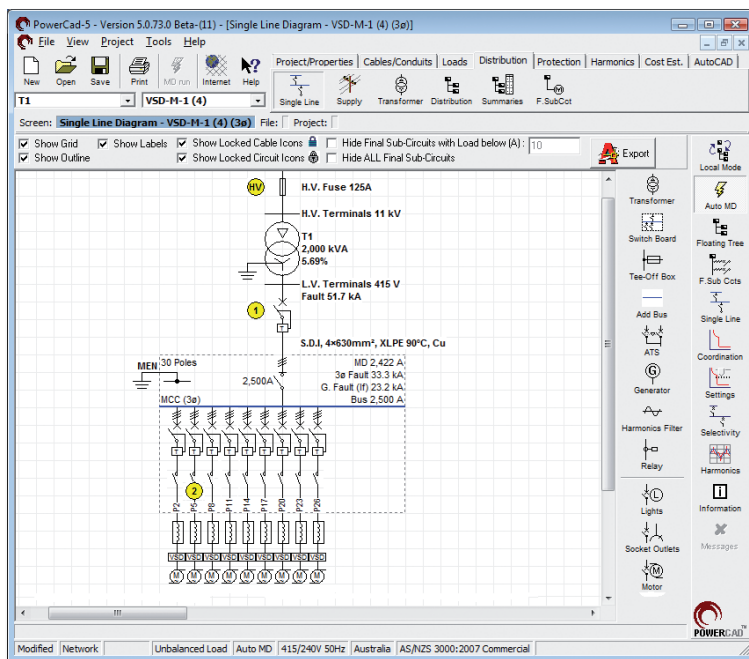


Figure 1



The Optimum Electrical Engineering Design Solutions for Consulting Engineers

- ✓ AS/NZS3000:2007 Amdt 1 2009 Compliance Checking
- ✓ Now includes latest AS/NZS3008.1.1:2009 Standard
- ✓ Now with  Consumer & Industrial switchgear
- ✓ Quality Service and Support

For the Best Electrical Engineering Design Software Available - Contact us Today



Autodesk
Authorized Developer

www.powercad.com.au
info@powercad.com.au



PowerCad Software Pty. Ltd.
Suite 9, 118 Church Street
Hawthorn, Victoria 3122, Australia
Telephone: 61 3 9819 3853
Facsimile: 61 3 9819 4021

CODES/STANDARDS

PowerCad-5 electrical engineering design software allows the user to select Codes/Standard for compliance checking from the following options.

Power Distribution - Conductor Loss:

- Hong Kong Code of Practice for Energy Efficiency of Electrical Installations – 2002 Edition

Maximum Total Harmonic Distortion (THD):

- IEEE Std 519:1992
- Emirate of Abu Dhabi – Limits for Harmonics in the Electricity Supply System (2005)
- Hong Kong Code of Practice for Energy Efficiency of Electrical Installations – 2002 Edition

Maximum Allowable Harmonic Current:

- Emirate of Adu Dhabi - Limits for Harmonics in the Electricity Supply System (2005)

User defined:

- Total Harmonic Current Distortion (THD) as %Fundamental or % RMS
- Total Harmonic Voltage Distortion (THD) as %Fundamental

VARIABLE SPEED DRIVE SELECTION

PowerCad-5 electrical engineering design software allows engineers to automatically select the variable speed drive based on the electric motor size selected. (See Figure 2 without filter)

The variable speed drive can be selected with or without a Passive line filter. (See Figure 3 with filter)

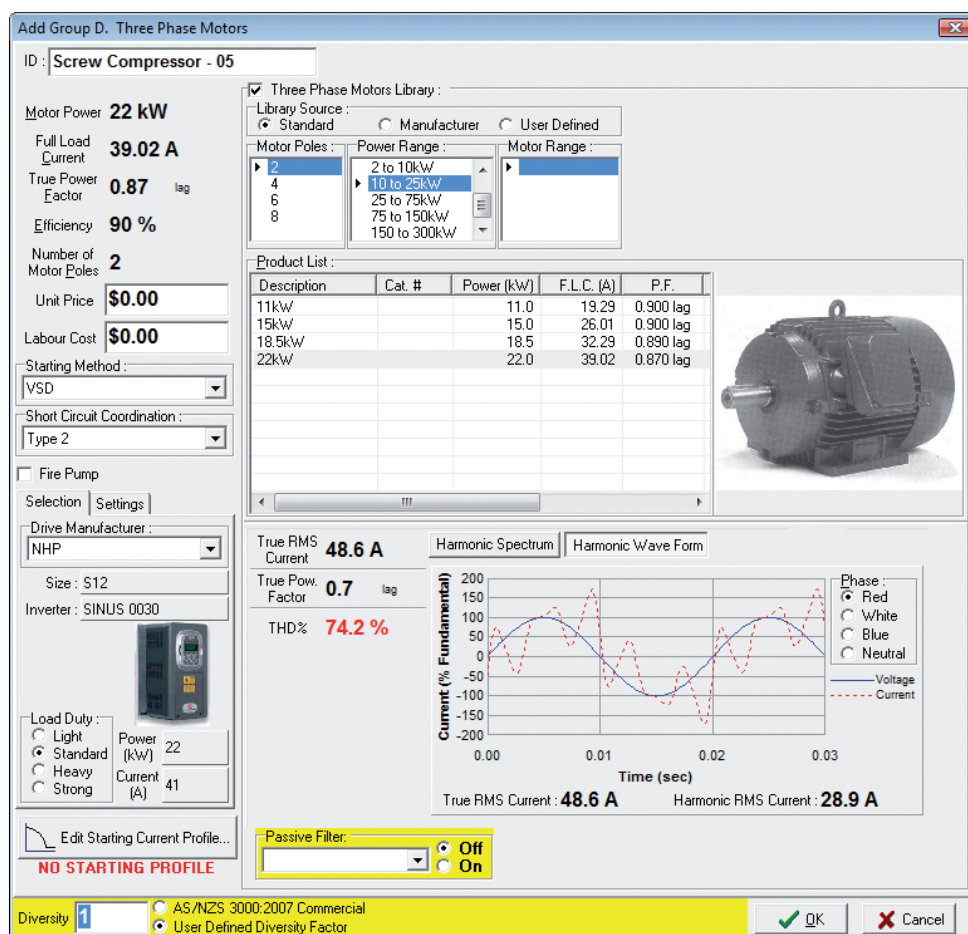


Figure 2

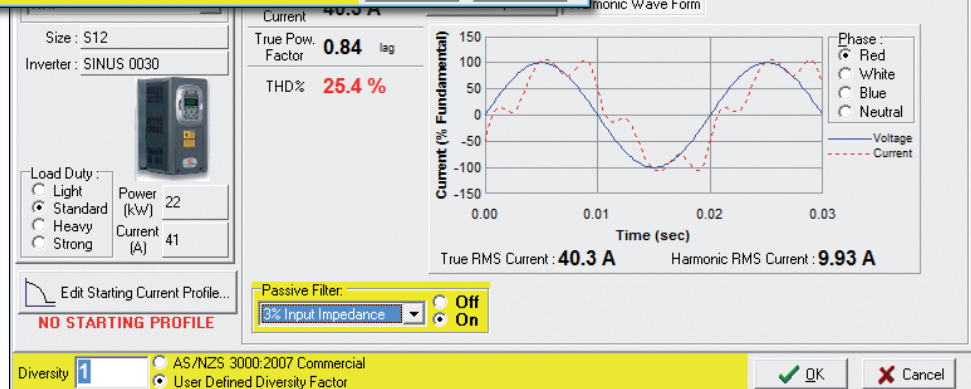


Figure 3