

*This series of application notes explains the key features and benefits of GENESYS+™ programmable power supplies.*

## What is isolated analogue control and how does it benefit us?

Isolating analogue control lines on programmable power supplies avoids common mode noise issues, improves accuracy and simplifies any potential ground loops. A test system may operate perfectly well in a laboratory environment, but when placed on the shop floor of an industrial facility, noise issues can arise. One widely adopted solution is to use signalling and control lines that are isolated from the power supply output.

This is also beneficial when multiple power supplies are connected in series, as the programming and monitoring circuitry does not have to be separated and galvanically isolated from the individual power supply outputs.

The GENESYS+ series of programmable power supplies has isolated analogue programming and monitoring as a standard feature, rather than an option. The modular construction of the GENESYS+ has an integrated interface assembly containing the isolated analogue circuitry in addition to LAN, USB and RS232/485 communication interfaces.

The analogue control allows the output voltage and current to be controlled and programmed remotely - from 0 to 100% of the rated output of the power supply - using an external resistance (selectable between 0-5 k $\Omega$  or 0-10 k $\Omega$ ) or voltage (selectable between 0-5 V or 0-10 V). The GENESYS+ series provides high accuracy programming and monitoring (0.15% Voltage programming, 0.4% Current programming, 0.5% Voltage and Current monitoring). The output voltage and current levels can also be monitored using selectable 0-5V or 0-10V signals.

All the control and monitoring signals are accessible through the J1 DB26HD rear panel connector and are SELV (up to 600 V) as are the serial communication ports (RS232/485 and USB) and the "DaisyChain Connection" which can be used to shut down all the power supplies in the system if a fault occurs.

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