

Application note



Subject:
**Better Energy Management in
Extrusion machines**

Industry:
Plastic and rubber

Product:
**NRGC-EIP
RGC1A60CM32KEN
RGC3P60CM30GEN**

Customer:
OEMs

CUSTOMER ISSUE

The OEMs, specialized in the production of extrusion machines, are seeking a solution to enhance energy management by increasing the amount and granularity of process data collected from their systems.

The required solution is to provide a comprehensive overview of machine performance, mainly on switching and measurement functions within the heating systems of both the barrel and die sections, compatible with their existing control architecture – which includes Allen Bradley PLCs using the EtherNet/IP protocol.

OUR SOLUTION

The NRG system is a digital solid-state relay solution that merges switching, real-time monitoring, and diagnostics through an integrated communication interface. Supporting for 1-pole, 2-pole, and 3-pole switching options, the NRG system is highly adaptable to various application requirements.

In particular, the RGC3P..N 3-phase variant is ideal for Extrusion applications, as it supports a wide range of load types – including Delta, Star, Unbalanced, and Single-phase – providing maximum flexibility across different die designs.

Each solid state relay on the NRG bus chain provides detailed process data, such as Current, Voltage, Power, and Energy.

The EtherNet/IP protocol is readily available in the NRG solution, thus, it can be seamlessly integrated with the Allen Bradley PLC.

BENEFITS

- **High flexibility**
With both 1-phase and 3-phase switching options, the NRG systems can be adopted in a wide range of applications.
- **Process optimisation and improved energy management**
Access to real-time analysed data supports better decision-making and optimizes machine performance.
- **Reduced engineering and maintenance time**
Switching monitoring and diagnostics, via the communication interface, reduce wiring complexity and minimize troubleshooting efforts.
- **Seamless integration**
Full support for major industrial Ethernet protocols, including EtherNet I/P, ensures compatibility with existing automation systems and simplifies deployment.