



Electromagnetic Compatibility Directive 2009/19/EC

For general market electrohydraulic products not having a direct machine function in the sense of the Machinery Directive, the product does not fall under the scope of the Electromagnetic Compatibility Directive [EMC] and need not be certified. An example of this type of product is our solenoid-operated switching valves (Vac and Vdc).

If a product has potential electromagnetic compatibility issues, either conducted or radiated, and/or is susceptible to electromagnetic radiation or generation thereof, or performs a function on its own in the sense of the Machinery Directive, then appropriate measures must be taken to ensure compliance to the required EMC Directive protection levels.

Typical electrohydraulic products will need to comply with EN 61000-6-2, EN 61000-6-4, [heavy industrial] or EN 61000-6-1 and EN 61000-6-3 [light industrial]. If these protective measures are done within the component itself, then a CE mark may be affixed to the component and/or the Manufacturers Declaration of Conformity, certifying it passes the requirements of the EMC Directive in isolation (example: proportional valve with integrated amplifier electronics).

However, when the component is installed on the complete machine, the wiring and routing thereof may contribute to the electromagnetic signature and negate the individual component compliance. Testing can be done by suitable measures in the final installation on the "machine," and the overall machine then certified to meet the EMC Directive. The EMC Directive does not permit self-certification of components.

Model 790 Series Embedded Amplifiers

Sun's electrohydraulic products incorporating electronic amplifiers integral with the coil are all CE marked as per EMC Directive 2004/108/EC. They comply with the requirements of EN 61000-6-2 and EN 61000-6-4 for Industrial Heavy Duty environments (e.g., radiated electromagnetic field immunity > 10V/m). These products include the Embedded Electronic Proportional Valve Coils [model series 790-****].



The newer addition to this family of Sun’s electrohydraulic products – the Bluetooth Embedded Amplifier (models 790-****B) – incorporate Bluetooth communications capabilities and embedded electronic amplifiers. These products are all CE marked as per the updated EMC Directive 2009/19/EC set forth on 12 March 2009. They pass the requirements for both radiated and conducted electromagnetic field immunity > 30V/m and therefore comply with the requirements of EN 61000-6-2 and EN 61000-6-4 as well.

In addition, these electrohydraulic products are tested to the Radio Equipment Directive (RED) ETSI 300-328 and 301-489-17 for electromagnetic compatibility of vehicles.

See [“CE Testing Results & Explanation”](#) documentation for 790-****B models on our website.

Sun’s Position-Monitored Valves

Sun's hydraulic products with active element position monitoring incorporate an electronic position switch. Sun cartridge valves with a “Z” in the fifth position in the model code are supplied with an electronic position switch. The electronic switch in these products is CE marked per the EMC Directive and complies with EN 61000-2 and EN61000-4 for Industrial Heavy Duty environments (e.g., radiated electromagnetic field immunity > 10V/m).

Examples of these include the following:

- Logic Element Position-Monitored Valves
 - LO**-Z**
 - LK**-Z**
- Solenoid-Operated Position-Monitored Directional Valves
 - DAAL-Z** ○ DLDA-Z**
 - DBAL-Z** ○ DMDA-Z**
 - DTCA-Z** ○ DNCA-Z**
- Pilot-Operated, Position-Monitored Proportional Throttle Valves
 - FT**-Z**

Note, valves incorporating electrical position monitoring are not CE marked as a Safety Component. See our website for detailed information on the above products and our [“CE Testing Results & Explanation.”](#)