

INTEGRATED PRIMARY CURRENT SENSORS (Coreless integrated)

Melexis coreless integrated current sensors combine differential Hall-effect sensing elements, signal conditioning, and high-voltage isolation within a low-loss SOIC package.

Unlike discrete shunt and amplifier solutions that rely on higher resistance to generate a measurable voltage, current flows directly through a low-impedance integrated conductor optimized to minimize thermal losses while maximizing surge and overload robustness.

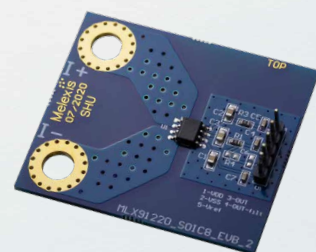
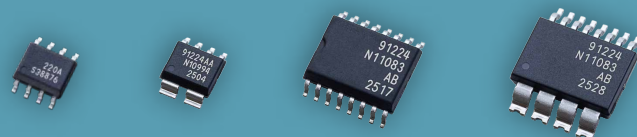


Key features

- ✓ **Integrated current sensors:** multiple packages options featuring integrated conductors with low-ohmic losses
- ✓ **High rated voltage isolation:** up to 3.55 kV_{RMS} for narrow body packages and 5.4 kV_{RMS} for wide body packages
- ✓ **Coreless:** hysteresis-free differential measurement for robust stray-field immunity
- ✓ **High-speed performance:** up to 400 kHz analog output (fixed or ratiometric, bipolar or unipolar)
- ✓ **Diagnostics & safety:** overcurrent detection (internal and/or external) output and ASIL B compliance

Highlights

	Supply	Current	Differentiator
MLX91220	5 V	< 50 A _{RMS}	Dual OCD (internal/external) SOIC-8 NB & SOIC-16 WB
MLX91221	3.3 V	< 50 A _{RMS}	Dual OCD (internal/external) SOIC-8 NB & SOIC-16 WB
MLX91224	5 V	< 100 A _{RMS} (30 kA surge)	ASIL B compliant (ISO 26262) SOIC-6 FL, SOIC-16W, SOIC-12W FL)
MLX91225	3.3 V	< 100 A _{RMS} (30 kA surge)	ASIL B compliant (ISO 26262) SOIC-6 FL, SOIC-16W, SOIC-12W FL)



Development kit available

Applications

Automotive: On-Board Chargers (OBC), DC/DC converters, Synchronous motor rotor exciters, HVAC E-compressors, PTC heaters, active suspension

Industrial & electrification: Solar grid-tie inverters, solar water pumps, datacenter Power Supply & Distribution Units (PSU/PDU), power conversion systems (PCS)

Motion & appliances: Variable frequency drives (VFD), HVAC/refrigeration compressors, pumps, industrial automation, and home appliances



www.melexis.com/coreless-integrated