

Using GFCI Receptacles on Xantrex Inverters and Inverter/Chargers

Application Note

976-0100-01-01 Rev A

Introduction

In certain installations, electrical code regulations will require that GFCI (ground fault circuit interrupter) protection be provided to reduce the risk of electrical shock to the user. In particular, this will include situations where water may be present, such as in a bathroom. This application note indicates which GFCI receptacles have been tested on the output of various Xantrex 120Vac Inverter and Inverter/Charger products. Since the models of GFCIs will change with time, this document will be updated as required to indicate current models and progress in an ongoing testing program.

GFCIs on True Sine Wave (TSW) Products

Like all other devices designed to work with utility power, GFCIs are designed primarily for use on TSW sources. In general, all GFCIs will work on all TSW products. There can be exceptions if the source generates a large amount of electromagnetic noise, but any TSW source which complies with FCC Class B or European EMI requirements should be compatible with any GFCI receptacle.

GFCIs on Modified Sine Wave (MSW) Products

The acceptability of using GFCIs with MSW sources is not possible to generalize as GFCI manufacturer generally do not test their products on the modified sine waveform. Also, GFCI designs can vary from one manufacturer to another and over time. On MSW, a given GFCI may trip at a current that is too high (unsafe condition) or too low (nuisance trips), or may have difficulty resetting under some conditions. Further, there are different designs for MSW inverters so that a GFCI which works correctly on one inverter design may or may not work correctly on a different inverter design. The following table indicates the combinations of GFCIs and Xantrex products that Xantrex has tested and the results of those tests (pass/fail only).

Note: Empty cells indicate that the combination has not been tested.

GFCI Receptacle		Xantrex Inverter or Inverter/Charger Family											
		True Sine Wave				Modified Sine Wave							
Make	Model ¹	Prosine	RS MS	RS400 ⁴ XS400 ⁴ TS400 ⁴	SW SW Plus	DR	Fleet Power	Freedom	HI 400	HDT IP RM	Prowatt	RV Series	XPower
Hubbell / Bryant	GF52 ² GF53 ² GF82 ² GF83 ² GF5252 ² GF5352 ² GF8200 ² GF8300 ²	Pass						Pass		Pass			
	GF52*A ³ GF53*A ³ GF82*A ³ GF83*A ³ GFR5252*A ³ GFR5352*A ³ GF8200*A ³ GF8300*A ³	Pass	Pass	Pass		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Leviton	8598 8599 8898 8899	Pass	Pass			Fail	Fail	Fail		Fail	Fail	Fail	Pass
	6598 ² 6599 ²	Pass				Fail	Fail			Fail	Pass	Fail	Pass



Cooper / Eagle	GF15 ² GF20 ²	Pass										Fail	
	XGF15 XGF20	Pass				Fail	Fail	Fail		Fail	Fail	Fail	Pass
Pass & Seymour	1591 ²	Pass					Pass	Pass		Pass		Pass	
	1594 2094		Pass			Pass	Pass	Pass		Pass	Pass	Pass	Pass

Notes:

- 1) The model number is the base or series number; there may be other characters to denote color or packaging options.
- 2) This is an old model and is generally no longer sold as it does not offer the same level of protection as the newer models.
- 3) The asterisk * represents one or two letters to indicate the front color of the receptacle. The A indicates that this is the newer model which meets the latest safety standard.
- 4) This product includes GFCI protection even on the hardwired AC output so no external GFCI protection is required.

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