Application Note 1046: GFCI Selection Guidelines for M&P Systems

Revision Date:

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1. Introduction

This document provides guidelines for selecting Ground-Fault Circuit Interrupters (GFCIs) that are compatible with Mitsubishi Electric outdoor units.

The use of an incompatible GFCI may result in nuisance tripping or improper operation. To ensure stable performance and proper operation, installers should follow the recommendations outlined in this document, in addition to all applicable national and local electrical codes (such as NEC / NFPA 70 in the United States).

2. Guidelines

When installing and wiring a GFCI, always comply with national and local electrical codes.

- For all M-series models (MUY/MUZ/MXZ-ported), as well as SUZ-AA09/12/15/18/24/30/36NL and SUZ-AA09/12/15/18NLHZ models, please use either a UL 943–compliant Class A high-frequency-rated GFCI from any manufacturer, or a Class A GFCI listed in the table below.
- For SUZ-AK48/60NL and SUZ-AK24/30/36/48NLHZ models, as well as all P-Series (PUZ/PUY), MXZ-SM (single-phase) models, ATW(WUZ-SA) models please use a Class A GFCI listed in the table below.

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3. Recommended GFCI Compatibility Table

M-Series

		Class A GFCI																																					
		Siemens AG										Schneider Electric SE										Eaton Corporation PLC								General Electric Company									
		15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A	15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A	15A	20A	25A	30A	35A	40A	45A	50A	15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A
		QF115A	QF120A	Q215GF	Q220GF	Q225GF	Q230GF	QF235A	QF240A	QF245A	QF250A	QO115GFICP	QO120GFICP	QO215GFICP	QO220GFICP	QO225GFIC	QO230GFICP	QO235GFIC	QO240GFICP	QO245GFIC	QO250GFICP	BRN215GF	BRN220GF	BRN225GF	BRN230GF	BRN235GF	BRN240GF	BRN245GF	BRN250GF	THQL1115GFT	THQL1120GFT	THQL2115GFT	THQL2120GFT	THQL2125GFT	THQL2130GFT	THQL2135GFT2	THQL2140GFT2	THQL2145GFT2	THQL2150GFT2
	MUZ-FX06NLHZ-U1			✓										✓								✓										✓							
	MUZ-FX09NLHZ-U1			✓										✓								✓										✓							
	MUZ-FX12NLHZ-U1			✓										✓								✓										✓							
	MUZ-FX15NLHZ-U1					✓										✓								✓										✓					
	MUZ-FX18NLHZ-U1					✓										✓								✓										✓					
	MUZ-FX24NLHZ-U1					✓										✓								✓										✓					
	MUZ-GX09NL-U1			✓										✓								✓										✓							
	MUZ-GX12NL-U1			✓										✓								✓										✓							
	MUZ-GX15NL-U1				✓										✓								✓										✓						
	MUZ-GX18NL-U1					✓										✓								✓										✓					
	MUZ-GX24NL-U1					✓										✓								✓										✓					
	MUZ-GX30NL-U1					✓										✓								✓										✓					
	MUZ-GX36NL-U1					✓										✓								✓										✓					
	MUZ-GX09NLHZ-U1			✓										✓								✓										✓							
	MUZ-GX12NLHZ-U1				✓										✓								✓										✓						
	MUZ-GX15NLHZ-U1				✓										✓								✓										✓						
	MUZ-GX18NLHZ-U1					✓										✓								✓										✓					
	MUZ-GX24NLHZ-U1					✓										✓								✓										✓					
	MUY-GX09NL-U1			✓										✓								✓										✓							
	MUY-GX12NL-U1			✓										✓								✓										✓							
	MUY-GX15NL-U1				✓										✓								✓										✓						
M-Series	MUY-GX18NL-U1					✓										✓								✓										✓					
	MUY-GX24NL-U1					✓										✓								✓										✓					
	MUY-GX30NL-U1					✓										✓								✓										✓					
	MUY-GX36NL-U1					✓										✓								✓										✓					
	MUZ-HX09NL-U1			✓										✓								✓										✓							
	MUZ-HX12NL-U1				✓										✓								✓										✓						
	MUZ-HX18NL-U1				✓										✓								✓										✓						
	MUZ-HX24NL-U1					✓										✓								✓										✓					
	MUZ-JX09WL-U1	✓										✓																		✓									
	MUZ-JX12WL-U1		✓										✓																		✓								
	MUZ-WX09NL-U1			✓										✓								✓										✓							
	MUZ-WX12NL-U1			✓										✓								✓										✓							
	MUZ-WX18NL-U1				✓										✓								✓										✓						
	MUZ-WX24NL-U1				✓										✓								✓										✓						
	MXZ-2D20NL-U1				✓																		✓										✓						
	MXZ-3D24NL-U1					✓																		✓										✓					
	MXZ-4D30NL-U1					✓																		✓										✓					
	MXZ-5D36NL-U1					✓																		✓										✓					
	MXZ-5D42NL-U1								✓																		✓										✓		
	MXZ-2D20NLHZ-U1				✓																		✓										✓						
	MXZ-3D24NLHZ-U1					✓																		✓										✓					
	MXZ-3D30NLHZ-U1							✓																		✓										✓			

Please note that Mitsubishi Electric has checked compatibility with the above GFCI models. However, Mitsubishi Electric cannot guarantee compatibility in cases where the GFCI manufacturer changes specification.

Legend

✓ : Recommended GFCI model to align with the Recommended Fuse/Breaker Size

Blank : "Not-recommended GFCI model by factory even though it works technically " OR "Not compatible GFCI model"

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P-Series

		Class A GFCI																																	
		Siemens AG										Schneider Electric SE										Eaton Corporation PLC										General Electric Company					
		15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A	15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A	15A	20A	25A	30A	35A	40A	45A	50A	15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A
		QF115A	QF120A	Q215GF	Q220GF	Q225GF	Q230GF	QF235A	QF240A	QF245A	QF250A	QO115GFICP	QO120GFICP	QO215GFICP	QO220GFICP	QO225GFIC	QO230GFICP	QO235GFIC	QO240GFICP	QO245GFIC	QO250GFICP	BRN215GF	BRN220GF	BRN225GF	BRN230GF	BRN235GF	BRN240GF	BRN245GF	BRN250GF	THQL1115GFT	THQL1120GFT	THQL2115GFT	THQL2120GFT	THQL2125GFT	THQL2130GFT	THQL2135GFT2	THQL2140GFT2	THQL2145GFT2	THQL2150GFT2
P-Series	PUZ-AK12NL-U1				✓																																
	PUZ-AK18NL-U1				✓																																
	PUZ-AH24NL-U1					✓																															
	PUZ-AH30NL-U1					✓																															
	PUZ-AK36NL-U1/U2							✓																													
	PUZ-AK42NL-U1/U2							✓																													
	PUZ-AK48NL-U1/U2								✓																												
	PUZ-AK60NL-U1/U2								✓																												
	PUY-AK12NL-U1				✓																																
	PUY-AK18NL-U1				✓																																
	PUY-AH24NL-U1					✓																															
	PUY-AH30NL-U1					✓																															
	PUY-AK36NL-U1/U2							✓																													
	PUY-AK42NL-U1/U2							✓																													
	PUY-AK48NL-U1/U2								✓																												
	PUY-AK60NL-U1/U2								✓																												
	PUZ-AK24NLHZ-U1/U2					✓																															
	PUZ-AK30NLHZ-U1/U2						✓																														
	PUZ-AK36NLHZ-U1/U2						✓																														
	PUZ-AK42NLHZ-U1/U2								✓																												
	PUZ-AK48NLHZ-U1/U2								✓																												

Please note that Mitsubishi Electric has checked compatibility with the above GFCI models. However, Mitsubishi Electric cannot guarantee compatibility in cases where the GFCI manufacturer changes specification.

Legend

✓ : Recommended GFCI model to align with the Recommended Fuse/Breaker Size

Blank : "Not-recommended GFCI model by factory even though it works technically " OR "Not compatible GFCI model"

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M-Series (SUZ), MXZ-SM(1-Ph) and ATW

		Class A GFCI																																	
		Siemens AG										Schneider Electric SE										Eaton Corporation PLC										General Electric Company									
		15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A	15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A	15A	20A	25A	30A	35A	40A	45A	50A	15A, 1-Phase, 2-wire(1-pole)	20A, 1-Phase, 2-wire(1-pole)	15A	20A	25A	30A	35A	40A	45A	50A
		QF115A	QF120A	Q215GF	Q220GF	Q225GF	Q230GF	QF235A	QF240A	QF245A	QF250A	QO115GFICP	QO120GFICP	QO215GFICP	QO220GFICP	QO225GFIC	QO230GFICP	QO235GFIC	QO240GFICP	QO245GFIC	QO250GFICP	BRN215GF	BRN220GF	BRN225GF	BRN230GF	BRN235GF	BRN240GF	BRN245GF	BRN250GF	THQL1115GFT	THQL1120GFT	THQL2115GFT	THQL2120GFT	THQL2125GFT	THQL2130GFT	THQL2135GFT2	THQL2140GFT2	THQL2145GFT2	THQL2150GFT2
M-Series	SUZ-AA09NL-U1			✓										✓								✓										✓							
	SUZ-AA12NL-U1			✓										✓								✓										✓							
	SUZ-AA15NL-U1				✓										✓								✓										✓						
	SUZ-AA18NL-U1						✓										✓								✓										✓				
	SUZ-AA24NL-U1					✓										✓								✓										✓				
	SUZ-AA30NL-U1						✓										✓								✓										✓				
	SUZ-AA36NL-U1						✓										✓								✓										✓				
	SUZ-AK48NL-U1/U2								✓																														
	SUZ-AK60NL-U1/U2								✓																														
	SUZ-AA09NLHZ-U1					✓										✓								✓										✓					
	SUZ-AA12NLHZ-U1						✓										✓								✓										✓				
	SUZ-AA15NLHZ-U1						✓										✓								✓										✓				
	SUZ-AA18NLHZ-U1						✓										✓								✓										✓				
	SUZ-AK24NLHZ-U1/U2					✓																																
	SUZ-AK30NLHZ-U1/U2						✓																																
	SUZ-AK36NLHZ-U1/U2						✓																																
	SUZ-AK48NLHZ-U1/U2								✓																														
MXZ-SM	MXZ-SM36NL-U1						✓																																
	MXZ-SM48NL-U1						✓																																
	MXZ-SM60NL-U1								✓																														
	MXZ-SM36NLHZ-U1								✓																														
	MXZ-SM42NLHZ-U1								✓																														
	MXZ-SM48NLHZ-U1								✓																														
	MXZ-SM60NLHZ-U1									✓																														
ATW	WUZ-SA24NMZ-U1						✓																																
	WUZ-SA36NMZ-U1							✓																																
	WUZ-SA48NMZ-U1								✓																														

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Blank : "Not-recommended GFCI model by factory even though it works technically " OR "Not compatible GFCI model"

4. Exclusions

This app note does not pertain to three-phase products.

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