

# YASKAWA

# GA800 Drive

## AC Drive for Industrial Applications Manual Supplement

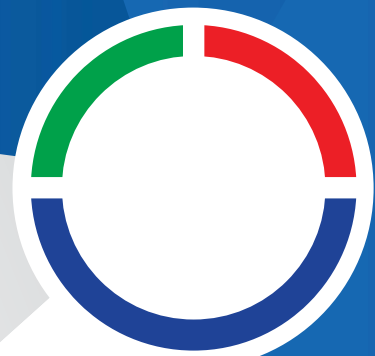
Affected  
documents:

GA800 Installation & Primary Operation (TOEPC71061737)

GA800 Technical Reference (SIEPC71061737)

GA800 Quick Setup Procedures (TOEPC71061748 and TOEPC71061750)

GA800 Quick Setup Procedures for IP55/UL Type 12 Heatsink External  
(TOEPC71061780 and TOEPC71061781)



Simplify drive start-up  
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# 1 Supplemental Information - Applicable Documents

The contents of this supplement apply to the product instructions in [Table 1.1](#).

**Table 1.1 Affected Documents**

Drive Series	Document
GA800	Installation & Primary Operation (TOEPC71061737)
	Technical Reference (SIEPC71061737)
	Quick Setup Procedure (TOEPC71061748)
	Quick Setup Procedure (TOEPC71061750)
	Quick Setup Procedure for IP55/UL Type 12 Heatsink External (TOEPC71061780)
	Quick Setup Procedure for IP55/UL Type 12 Heatsink External (TOEPC71061781)

## 2 Short Circuit Protection Requirements for UL Listing

**⚠ WARNING** *Electrical Shock Hazard. After the input protective device trips, do not immediately energize the drive or operate peripheral devices. Wait for the time specified on the warning label at a minimum and make sure that all indicators are OFF. Then check the wiring and peripheral device ratings to find the cause of the problem. If you do not know the cause of the problem, contact Yaskawa before you energize the drive or peripheral devices. If you do not fix the problem before you operate the drive or peripheral devices, it can cause serious injury or death.*

### ◆ UL Compliance

Install one of these types of short circuit protection devices in [Table 2.1](#) to comply with UL 508C. Semiconductor protective type fuses are recommended, but the table also shows alternative short circuit protection devices.

#### ■ Molded Case Circuit Breaker (MCCB) Ratings

- Maximum MCCB rating is 200% of the Normal-Duty drive full load output amp (FLA) rating.
- When you use MCCBs you must mount the drive in a ventilated enclosure according to the minimum enclosure volume specified in this document.

**Note:**

When you use MCCBs, Yaskawa recommends the current-limiting type.

#### ■ Semiconductor Fuse Ratings

- When you use semiconductor fuses as UL listed drive protection, the drives and fuses must be in the same enclosure.
- Where multiple semiconductor fuse ratings are listed for a single drive, Yaskawa recommends the larger fuse for cyclical load applications that frequently approach 150% overload. Smaller semiconductor fuses (than what is listed) of the same manufacturer and series are permitted; however, this can cause fuses to clear prematurely.

#### ■ Non-Semiconductor Fuse Ratings

- Maximum CC, J, T, RK1 or RK5 fuse rating is 175% of the Normal-Duty drive full load output amp (FLA) rating.
- When you use class CC, J, or T fuses as UL listed drive protection, **models 4371 and larger have the same minimum enclosure volume requirements as MCCBs.**
- When you use RK1 or RK5 fuses, you must mount the drive in a ventilated enclosure according to the minimum enclosure volume specified in this document.

## ■ Short Circuit Current Rating (SCCR)

The maximum SCCR provided by drive and fuse, or drive and MCCB combinations in this document, is 100,000 RMS symmetrical amps.

- **240 V models:** Use the protection specified in this document to prepare the drive for use on a circuit capable of delivering not more than 100,000 RMS symmetrical amps and not more than 240 Vac.
- **480 V models:** Use the protection specified in this document to prepare the drive for use on a circuit capable of delivering not more than 100,000 RMS symmetrical amps and not more than 480 Vac.

## ■ Electric Code Compliance

The user must provide short circuit protection to protect input branch circuits as specified by the National Electric Code (NEC), the Canadian Electric Code, Part 1 (CEC), and local codes.

## ■ Required Short Circuit Protection

**Table 2.1 Required Short Circuit Protection for GA800 AC Drives**

Drive Catalog Code GA80U	Semiconductor Fuse Part Number <i>Manufacturer: Eaton/ Bussman</i>	Class CC, J or T Fuse Maximum Amps	MCCB Maximum Amps	Class RK1 or RK5 Fuse Maximum Amps	Enclosure Volume Minimum (in <sup>3</sup> )
Three-phase 240 V Class					
2004	FWH-45B	7	15	7	4195
2006	FWH-45B	10	15	10	4195
2008	FWH-45B	12	15	12	4195
2010	FWH-45B	15	15	15	4195
2012	FWH-50B or FWH-80B	20	20	20	4195
2018	FWH-80B or FWH-100B	30	35	30	4195
2021	FWH-80B or FWH-100B	35	40	35	4195
2030	FWH-100B or FWH-125B	50	60	50	4195
2042	FWH-150B	70	80	70	4195
2056	FWH-200B	90	110	90	4195
2070	FWH-200B or FWH-225A	110	125	110	4195
2082	FWH-225A or FWH-250A	125	150	125	4195
2110	FWH-225A or FWH-250A	175	200	175	10121
2138	FWH-275A or FWH-300A	225	250	225	10121
2169	FWH-275A or FWH-350A	250	300	250	10121
2211	FWH-325A or FWH-450A	350	400	350	10121
2257	FWH-600A	400	500	400	14657
2313	FWH-700A or FWH-800A	500	600	500	14657
2360	FWH-800A or FWH-1000A	600	700	600	52800
2415	FWH-1000A	700	800	n/a	52800

## 2 Short Circuit Protection Requirements for UL Listing

Drive Catalog Code GA80U	Semiconductor Fuse Part Number <i>Manufacturer: Eaton/ Bussman</i>	Class CC, J or T Fuse Maximum Amps	MCCB Maximum Amps	Class RK1 or RK5 Fuse Maximum Amps	Enclosure Volume Minimum (in <sup>3</sup> )
<b>Three-phase 480 V Class</b>					
<b>Note:</b> When you use class CC, J, or T fuses as UL listed drive protection, <b>models 4371 and larger</b> have the same minimum enclosure volume requirements as MCCBs.					
4002	FWH-40B or FWH-50B	3.5	15	3.5	4195
4004	FWH-50B	7	15	7	4195
4005	FWH-50B	9	15	9	4195
4007	FWH-60B	12	15	12	4195
4009	FWH-60B	15	15	15	4195
4012	FWH-60B	20	20	20	4195
4018	FWH-80B	30	35	30	4195
4023	FWH-90B	40	45	40	4195
4031	FWH-125B or FWH-150B	50	60	50	4195
4038	FWH-200B	60	75	60	4195
4044	FWH-200B	70	80	70	4195
4060	FWH-225A	100	110	100	4195
4075	FWH-250A	125	150	125	10121
4089	FWH-250A or FWH-275A	150	175	150	10121
4103	FWH-250A or FWH-275A	175	200	175	10121
4140	FWH-300A	225	250	225	10121
4168	FWH-325A or FWH-400A	250	300	250	10121
4208	FWH-500A	350	400	350	14657
4250	FWH-600A	400	500	400	14657
4302	FWH-700A	500	600	500	14657
4371	FWH-800A	600	700	600	52800
4414	FWH-800A or FWH-1000A	700	800	n/a	52800
4477	FWH-1000A or FWH-1200A	800	900	n/a	52800
4568	FWH-1000A or FWH-1200A	900	1000	n/a	52800
4605	FWH-1200A or FWH-1400A	1000	1200	n/a	52800
4720	FWH-1200A or FWH-1400A	1200	1400	n/a	52800

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## Revision History

Date of Publication	Revision Number	Revised Content
April 2020	<2>	Format and layout and wording. Normalized the Fuse and MCCB table.
January 2020	<1>	Added alternate fuses for a selection of models and added language to footnotes.
October 2019	-	First release

# GA800 Drive

## Manual Supplement

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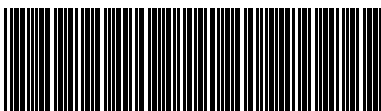
In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

Original Instructions

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