YASKAWA

YASKAWA U1000
Product Revision and Software Upgrade
Supplemental Technical Manual

Introduction

Thank you for purchasing a YASKAWA U1000 MATRIX Drive.

This supplemental manual describes the functions added with a U1000 software upgrade, and should be read to ensure proper usage. Carefully read the U1000 technical manual (TOEP C710636 04 / TOEP C710636 12 / SIEP C710636 04 / SIEP C710636 12).

Observe the safety messages and precautions to ensure correct application of the product.

The following product revisions and software versions are applicable:

Revision: F and later

PRG: 1027 and later

Supplementary explanation content

This supplementary instruction manual explains the following newly changed features:

1. Defaults by Drive Model and Duty rating ND/HD (From Revision: F)
2. Exterior and Mounting Dimensions (From Revision: F)
3. Attachment for External Heatsink (From Revision: F)
4. Support for disabled alarm display at 24 V power supply (From PRG: 1027)
5. Support for JOHB-SMP3 communication protocol BACnet/IP (From PRG: 1027)

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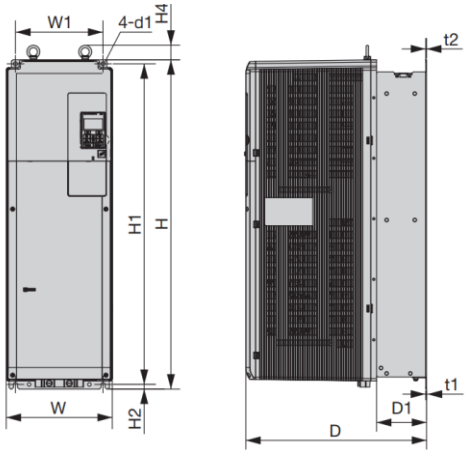
1. Defaults by Drive Model and Duty rating ND/HD (From Revision: F)

The o2-04 (Drive Model Selection) setting is added for Revision F.

No.	Name	Unit	Default Settings							
–	Drive Model	–	4□0096 (REV.F)		4□0124 (REV.F)		4□0180 (REV.F)		4□0216 (REV.F)	
C6-01	Drive Duty Selection	–	HD	ND	HD	ND	HD	ND	HD	ND
o2-04	Drive Model Selection	Hex.	B6		B7		B8		B9	
E2-11 (E4-11)	Motor Rated Output	kW (HP)	45 (60)	55 (75)	55 (75)	75 (100)	90 (125)	110 (150)	110 (150)	132 (175)
b3-04	V/f Gain during Speed Search	%	100	100	100	80	60	60	60	60
b3-06	Output Current 1 during Speed Search	–	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7
b3-08	Current Control Gain during Speed Search (Speed Estimation Type)	–	0.50	0.50	0.50	0.50	0.80	0.80	0.80	0.80
b8-03	Energy Saving Control Filter Time Constant	s	0.50	0.50	0.50	2.00	2.00	2.00	2.00	2.00
b8-04	Energy Saving Coefficient Value	–	76.32	71.56	71.56	67.20	46.20	38.91	38.91	36.23
C5-17 (C5-37)	Motor Inertia	Kgm^2	0.273	0.333	0.333	0.490	0.90	1.10	1.10	1.90
C6-02	Carrier Frequency Selection	–	1	1	1	1	1	1	1	1
E2-01 (E4-01)	Motor Rated Current	A	65.6	79.7	79.7	95.0	130.0	156.0	156.0	190.0
E2-02 (E4-02)	Motor Rated Slip	Hz	1.33	1.60	1.60	1.46	1.39	1.40	1.40	1.40
E2-03 (E4-03)	Motor No-Load Current	A	19.1	22.0	22.0	24.0	36.0	40.0	40.0	49.0
E2-05 (E4-05)	Motor Line-to-Line Resistance	Ω	0.155	0.122	0.122	0.088	0.092	0.056	0.056	0.046
E2-06 (E4-06)	Motor Leakage Inductance	%	18.8	19.9	19.9	20.0	20.0	20.0	20.0	20.0
E2-10 (E4-10)	Motor Iron Loss for Torque Compensation	W	925	1125	1125	1260	1600	1760	1760	2150
E5-01	Motor Code Selection (for PM Motors)	Hex.	1243	1243	1244	1244	1246	1246	1247	1247
L2-03	Momentary Power Loss Minimum Baseblock Time	s	1.1	1.2	1.2	1.2	1.3	1.5	1.5	1.7
L2-04	Momentary Power Loss Voltage Recovery Time	s	0.6	0.6	0.6	1.0	1.0	1.0	1.0	1.0
L2-21	Low Input Voltage Detection Level	V	300	300	300	300	300	300	300	300
L8-02	Overheat Alarm Level	℃	136	136	136	136	134	134	134	134
L8-35	Installation Method Selection	–	0	0	0	0	0	0	0	0
L8-38	Carrier Frequency Reduction Selection	–	1	1	1	1	1	1	1	1
n1-03	Hunting Prevention Time Constant	ms	10	10	10	10	30	30	30	30
n5-02	Motor Acceleration Time	s	0.320	0.387	0.387	0.317	0.533	0.592	0.592	0.646

2. Exterior and Mounting Dimensions (From Revision: F)

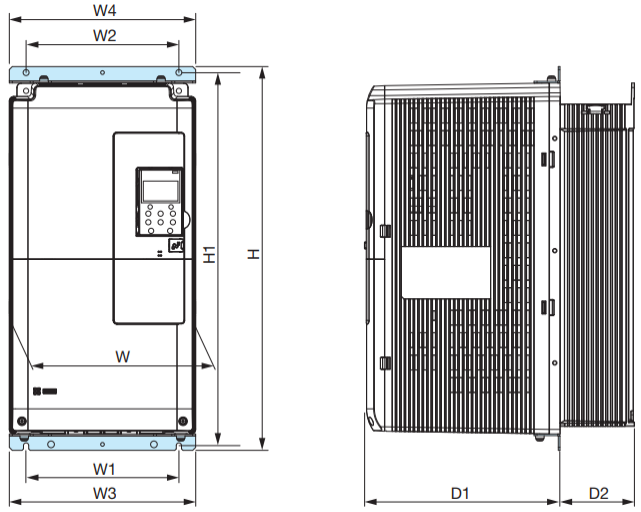
Revision F has changes to the external dimensions and approximate mass.



Drive Model	Dimensions mm (in)												Wt. kg (lb)	
	W	H	D	W1	W2	H1	H2	H4	D1	t1	t2	d	Models 4A□/ 4P□	Models 4E□/ 4W□
4□0096	264 (10.39)	816 (32.12)	450 (17.71)	218 (8.58)	–	795 (31.29)	11.5 (0.45)	40 (1.57)	124.5 (4.90)	2.3 (0.10)	4.6 (20.78)	10 (0.28)	69	72
4□0124	264 (10.39)	816 (32.12)	450 (17.71)	218 (8.58)	–	795 (31.29)	11.5 (0.45)	40 (1.57)	124.5 (4.90)	2.3 (0.10)	4.6 (20.78)	10 (0.28)	69	72

3. Attachment for External Heatsink (From Revision: F)

Revision F has changes to the Attachment for External Heatsink section.



Drive Model	Dimensions mm (in)									Code No.
	W	W1	H	W2	W3	W4	H1	D1	D2	
4□0096	264 (10.39)	218 (8.58)	857.5 (33.76)	218 (8.58)	250 (9.84)	264 (10.39)	833.5 (32.81)	326 (12.83)	124.5 (4.90)	EZZ022706G
4□0124	264 (10.39)	218 (8.58)	857.5 (33.76)	218 (8.58)	250 (9.84)	264 (10.39)	833.5 (32.81)	326 (12.83)	124.5 (4.90)	EZZ022706G

4. Support for disabled alarm display at 24 V power supply (From PRG: 1027)

Added o2-26 (Alarm Display at 24 V Power Supply), which disables the alarm display when it is operating from the 24V power supply.

No. (Hex.)	Name	Description	Default (Range)
o2-26 (1563)	Alarm Display at 24 V Power Supply	All Modes Selects whether the operator will display these alarms when the drive is operating from a 24 V power supply: ・AUv (Power Supply Undervoltage) ・Fdv (Power Supply Frequency Fault) ・SrC (Phase Order Detection Fault) ・Uv (Control Circuit Undervoltage) 0: Disabled Alarms 1: Enabled Alarms Notes: This parameter is intended for use when a 24 V power supply is connected. Do not set o2-26 = 0 if you are not using a 24 V Power Supply Unit (PS-U10L, PS-U10H). The drive will not run when it is operating from a 24 V power supply. Digital outputs programmed for 7 (During Power Supply Voltage Fault) and 10 (Minor Fault) will still close regardless of the o2-26 setting.	1 (0, 1)

5. Support for JOHB-SMP3 communication protocol BACnet/IP (From PRG: 1027)

The JOHB-SMP3 communication protocol BACnet/IP now supports U1000.

When using the JOHB-SMP3 BACnet/IP option with the U1000, the software versions must satisfy both of the following requirements:

JOHB-SMP3 option (BACnet/IP): Software version PRG: 7003 or later *1

U1000 drive: Software version PRG: 1027 or later *2

*1 To check the software version of the JOHB-SMP3 (BACnet/IP), start the BACnet/IP communication protocol and refer to parameter U6-97 [OPT SPARE 4].

*2 To check the software version of the U1000, refer to the PRG field on the nameplate.

The JOHB-SMP3 (BACnet/IP) option is added to Options.

Communication Options Cards		
BACnet/IP	JOHB-SMP3	Connects to a BACnet/IP network

This MEMOBUS/Modbus Monitor Data is added for JOHB-SMP3(BACnet/IP).

Hex.	Contents	
00B0	Option Code Connected to CN5-A	Register contains ASCII code of the option card. JOHB-SMP3 (BACnet/IP) = 100CH

BACnet/IP network parameters F7-50 through F7-57 are added.

No. (Hex.)	Name	Description	Default (Range)
F7-50 (1BC1)	BACnet/IP Port	All Modes Sets the UDP port on which the drive will receive incoming BACnet messages.	47808 (1024 - 65535)
F7-51 (1BE9)	BBMD Foreign Register Addr 1	All Modes Sets the first octet of the IP Address of the BACnet Broadcast Management Device (BBMD) to which the drive will register as a foreign device.	0 (0 - 255)
F7-52 (1BEA)	BBMD Foreign Register Addr 2	All Modes Sets the second octet of the IP Address of the BACnet Broadcast Management Device (BBMD) to which the drive will register as a foreign device.	0 (0 - 255)
F7-53 (1BEB)	BBMD Foreign Register Addr 3	All Modes Sets the third octet of the IP Address of the BACnet Broadcast Management Device (BBMD) to which the drive will register as a foreign device.	0 (0 - 255)
F7-54 (1BEC)	BBMD Foreign Register Addr 4	All Modes Sets the fourth octet of the IP Address of the BACnet Broadcast Management Device (BBMD) to which the drive will register as a foreign device.	0 (0 - 255)
F7-55 (1BED)	BBMD Foreign Port #	All Modes Sets the UDP port of the BBMD device to which the drive will register.	47808 (1024 - 65535)
F7-56 (1BEE)	BBMD Foreign Register Time	All Modes Sets the time interval in which the drive will repeat BBMD foreign registration.	3600 s (0 - 65535)
F7-57 (1BEF)	BACnet/IP BUS Timeout Value	All Modes Sets the length of time that the drive will wait after it receives a Run command or frequency reference command before it detects a bUS fault.	3600 s (0 - 65535)

The parameters below are related to BACnet/IP networks. For details on parameter settings, refer to the JOHB-SMP3 (BACnet/IP) Technical Manual (SIEPC7306000M).

F6-01 through F6-03, F6-07, F6-08, F6-14, F6-16, F6-48, F6-49, F7-01 through F7-15, F7-50 through F7-57