



# Product Transition Guide VS606 V74X to V1000-4X

6/22/10



PL.V1000-4X.01 Transition Guide

**Product Transition Guide**  
**PL. V1000-4X.01 Rev: 6/22/10**

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### 1.1 Applicable Drives

This document describes the substitution of the following drives:

Original drive: **CIMR - V7CUxxxx4**  
**Spec: xxxx4**

Replacement: **CIMR – VAxxxxxxGxx or CIMR-VUxxxxxxGxx**

The description is not valid for drives with other specs or other firmware installed!

### 1.2 Drive Replacement Checklist

	Item	Checkpoints	Checked?
Hardware	Basic	<p>&lt; <b>Drive Dimensions</b> &gt;</p> <ul style="list-style-type: none"> <li>Check if the new drive dimensions are bigger than the current drive. Can the mounting holes be used?               <ul style="list-style-type: none"> <li>Verify that the existing dimensions reference in Section 1.5, “Dimensions, installation space and substitution material” of this manual compares the sizes of the current and new unit. If a mechanical substitution kit is necessary, it is referenced in Section 1.5.</li> </ul> </li> </ul>	
		<p>&lt; <b>Digital operator</b> &gt;</p> <ul style="list-style-type: none"> <li>Does the digital operator need to be at the same position as before?               <ul style="list-style-type: none"> <li>If necessary, attempt to mount the operator panel at the same location as before.</li> </ul> </li> <li>Was a remote operator connected to the current unit?               <ul style="list-style-type: none"> <li>If so, do not attempt to connect the V74X remote operator to the V1000-4X.</li> </ul> </li> </ul>	
		<p>&lt; <b>Special specifications</b> &gt;</p> <ul style="list-style-type: none"> <li>Check the installed drive’s specification to ensure that it is compliant to the standard specification (no special firmware, no special coating, no special modifications, etc. (see section 1.1 “Applicable Drives” above)).</li> </ul>	
	Main and Control Terminals	<p>&lt; <b>Wire Length</b> &gt;</p> <ul style="list-style-type: none"> <li>In the replacement drive, the main and control circuit terminals may be mounted in different positions. Check to ensure all cables are long enough to be connected to the new unit.</li> </ul>	
<p>&lt; <b>Main circuit wires and terminal specifications</b> &gt;</p> <ul style="list-style-type: none"> <li>Compare the occupied terminals of the current unit with the new drive’s terminals (shape, size, etc.), and verify that the wires fit in the new unit’s terminals, using Section 1.4 “Terminals”, specifically “Control Terminal Sizes and Wire Sizes” of this document.</li> </ul>			
Software	Software Version	<p>&lt; <b>Check for special software</b> &gt;</p> <ul style="list-style-type: none"> <li>Check the software number of the current unit to ensure that it contains no special software.               <ul style="list-style-type: none"> <li>If necessary, ask your Yaskawa representative to determine if the installed software on the current unit is a special software or not. If the current drive has special software installed, it might not be possible to replace it with a V1000-4X drive. Special software may also be required for the V1000-4X.</li> </ul> </li> </ul>	
	Parameter	<p>&lt; <b>Check the parameter settings</b> &gt;</p> <ul style="list-style-type: none"> <li>Read the parameter settings of the current unit and perform a parameter conversion to the new parameters following Section 1.6 “Parameter Correspondence Table”, specifically “V74X and V1000-4X Differences in Parameter Settings” of this document.               <ul style="list-style-type: none"> <li>If there is special software installed or parameters appear that are not mentioned in this document, contact your Yaskawa representative.</li> </ul> </li> </ul>	

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	Item	Checkpoints	Checked?
<b>Options, Others</b>	<b>Option Cards</b>	<p>&lt; <b><u>Is an option card installed?</u></b> &gt;</p> <ul style="list-style-type: none"> <li>• Check if any option card is installed.               <ul style="list-style-type: none"> <li>– If an option card is installed, get the equivalent option card for the V1000-4X.</li> <li>– Never attempt to apply V74X option cards to the V1000-4X unit.</li> <li>– The option card on the V1000-4X may have another connector on the V74X. Make sure that the connectors fit into the new option card before using it.</li> </ul> </li> </ul>	
	<b>Others</b>	<p>&lt; <b><u>Is a braking resistor installed?</u></b> &gt;</p> <ul style="list-style-type: none"> <li>• Check if a braking resistor is installed on the current drive.               <ul style="list-style-type: none"> <li>– Check the braking resistor before connecting it to the new drive.</li> <li>– Connect the braking resistor to the equivalent terminals on the new unit.</li> <li>– If it is a heatsink installed braking resistor (ERF-type), it will not fit in the drive and will need to be panel mounted.</li> <li>– The terminals might have a different location in the new drive; check to ensure that existing wiring is long enough to reach the new terminal location.</li> </ul> </li> </ul>	
		<p>&lt; <b><u>Is a braking unit installed?</u></b> &gt;</p> <ul style="list-style-type: none"> <li>• Check if a braking unit is used in the current installation.               <ul style="list-style-type: none"> <li>– Check the braking unit before connecting it to the new drive.</li> <li>– Connect the braking unit to the equivalent terminals on the new unit.</li> <li>– The terminals might have a different location in the new drive; check to ensure that existing wiring is long enough to reach the new terminal location.</li> </ul> </li> </ul>	
		<p>&lt; <b><u>Is an AC reactor or DC choke installed?</u></b> &gt;</p> <ul style="list-style-type: none"> <li>• Check if an AC reactor or DC choke is used in the current installation.               <ul style="list-style-type: none"> <li>– Check the reactor or choke before connecting it to the new drive.</li> <li>– Make sure that the reactor or choke data are appropriate for the replacement drive.</li> <li>– The terminals might have a different location in the new drive; check to ensure that existing wiring is long enough to reach the new terminal location.</li> </ul> </li> </ul>	

- Refer to the instruction manual for questions about installation, parameter settings or detailed parameter/function descriptions.
- In case of technical questions regarding replacement, please contact your Yaskawa representative.

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### 1.3 Ratings Summary

The following table summarizes the output current ratings for the V1000-4X and V74X with respect to the specific drive model. Please note that the V74X current rating is based on a “Heavy Duty” rating, whereas, the V1000-4X factory default is based on a “Normal Duty” rating. See below for an explanation of the differences between “Heavy” and “Normal” duty ratings.

Rated Input Voltage	V74X Drive Model Number CIMR-V7CU	Heavy Duty		V1000-4X Drive Model Number CIMR-V□	Normal Duty		
		Rated Output Current (Amps)	Nominal HP		Rated Output Current (Amps)	Nominal HP	
200V, 3-Phase	20P14	0.8	1/8	2A0001GAA	1.2	1/8 & 1/4	
	20P24	1.6	1/4	2A0002GAA	1.9	1/4	
	20P44	3.0	1/2	2A0004GAA	3.5	1/2 & 3/4	
	20P74	5.0	3/4 & 1	2A0006GAA	6.0	1	
	21P54	8.0	2	2A0010GAA	9.6	2 & 3	
	22P24	11.0	3	2A0012GAA	12.0	3	
	23P74	17.5	5	2A0020GAA	19.6	5	
	25P54	25.0	7.5	2A0030GAA	30.0	7.5 & 10	
	27P54	33.0	10	2A0040GAA	40.0	10	
	400V, 3-Phase	40P24	1.2	1/2	4A0001GAA	1.2	1/2
		40P44	1.8	3/4	4A0002GAA	2.1	3/4 & 1
		40P74	3.4	1 & 2	4A0004GAA	4.1	2
41P54		4.8	3	4A0005GAA	5.4	3	
42P24		5.5	3	4A0007GAA	6.9	4	
43P74		8.6	5	4A0009GAA	8.8	5	
45P54		14.8	7.5 & 10	4A0011GAA	11.1	7.5	
45P54		14.8	7.5 & 10	4A0018GAA	18.0	10	
47P54		18.8	10	4A0023GAA	24.0	15	

**Note:** If the V1000-4X drive is set to “Heavy Duty”, the current ratings are the same as the V74X drive.

## 1.4 Terminals

### Main Circuit Terminals

- As the V74X and V1000-4X may have different terminals sizes (depending on capacity), the terminals must be carefully checked before replacement (see Section 1-4).
- The main terminal functionality has not been changed between the V74X and the V1000-4X drive.

Main Terminals		Note
V74X	V1000-4X	
R/L1	R/L1	Power supply connection
S/L2	S/L2	
T/L3	T/L3	
U/T1	U/T1	Drive output
V/T2	V/T2	
W/T3	W/T3	
B1	B1	Braking resistor or external braking unit connection
B2	B2	Braking resistor connection
+1	+1	DC Choke connection, DC power supply input
+2	+2	DC Choke connection
—	—	DC power supply input, external braking unit connection
⊕	⊕	Ground

### Control Terminals, Signal Levels

- The V74X and V1000-4X initial settings for terminal function are shown below.
- "—" indicates that an equivalent terminal on the other unit does not exist.

Control Terminals		Function	Signal Level	
V74X	V1000-4X		V74X	V1000-4X
S1		Multi-Function input 1 (1: Run forward 0: Stop)	Photocoupler 24 VDC, 8A isolation	Photocoupler 24 VDC, 8A
S2		Multi-Function input 2 (1: Run reverse 0: Stop)		
S3		Multi-Function input 3 (External fault)		
S4		Multi-Function input 4 (Fault reset)		
S5		Multi-Function input 5 (Multi-step speed 1)		
S6		Multi-Function input 6 (Multi-step speed 2)		
S7		Multi-Function input 7 (JOG reference)		
SC		Multi-Function input common	—	—
RP		Pulse input (frequency reference)	Frequency range: 1.0~32 kHz	Frequency range: 0.5~32 kHz
FS	+V	Analog input power supply	+12 V (max. current 20 mA)	+10.5 V (max. current 20 mA)

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Control Terminals		Function	Signal Level	
V74X	V1000-4X		V74X	V1000-4X
FR	A1	Analog input 1 Voltage or current (not available on V1000 - see Note) input (frequency reference)	0~+10 VDC (20 kW), 0 or 4~20 mA (250 kW)	0~+10 VDC (20 kW)
—	A2	Analog input 2 (frequency reference)	—	DC:0~+10 V (20 kΩ) 0 or 4~20 mA (250 kΩ) (initial setting: 4-20 mA)
FC	AC	Analog input common	0 V	
—	HC	Hard wire baseblock common	—	+24 V (max. current 10 mA)
—	H1	Hard wire baseblock input (EN954-1, category 3, Stop category 0)	—	Open: Stop Closed: Operation
MA		Multi-Function Digital Output (N.O. Contact) (Fault)	Max. AC load: 250 VDC, 1 A max. 30 VDC, 1 A max.	Max. load: AC:250 V, 10 mA~1 A DC:30 V, 10 mA~1 A
MB		Multi-Function Digital Output (N.O. Contact) (Fault)		
MC		Multi-Function Digital Output (common)		
P1		Open collector output 1 (during run)	Photocoupler +48 VDC, 50 mA or less Output	
P2		Open collector output 2 (speed agree)		
PC		Open collector output common		
—	MP	Pulse output (output frequency)	—	Max. 32 kHz
AM		Analog output	DC:0~+10 V, 2 mA max. Resolution: 8 bit	DC:0~+10 V, 2 mA max. Resolution: 1/1000
AC		Analog output GND		

**Note:** The current input for terminal A1 is not available on the V1000-4X. Use terminal A2 for current input.

## Network Communications Terminals

- "-" indicates that an equivalent terminal on the other unit does not exist.

Serial Communication Terminals		Function	Signal Level	
V74X	V1000-4X		V74X	V1000-4X
R+	R+	Receive +	RS-485/422 MEMOBUS Protocol Max. 19.2 kbps	RS-485/422 MEMOBUS Protocol Max. 115.2 kbps
R-	R-	Receive -		
S+	S+	Transmit +		
S-	S-	Transmit -		
GND	IG	Shield connection, GND	—	0V



**Terminal Size / Electric Wire Differences**

Voltage Class	Drive Type V74X (V1000-4X)	Terminal Symbol	V74X				V1000-4X			
			Screw Size	Tightening Torque N•m (lb-in)	Applicable Wire Size mm <sup>2</sup> (AWG)	Recommended Wire Size mm <sup>2</sup> (AWG)	Screw Size	Tightening Torque N•m (lb-in)	Applicable Wire Size mm <sup>2</sup> (AWG)	Recommended Wire Size mm <sup>2</sup> (AWG)
3 Phase 200V	20P14 20P24 20P44 20P74 (2A0001 2A0002 2A0004 2A0006)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, B1, B2, ⊥	M3.5	0.8~1.0 (7.1~8.9)	0.75~2.0 (18~14)	2 (14)	M3.5	0.8~1.0 (7.1~8.9)	0.75~2 (18~14)	2 (14)
	21P54 (2A0010)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2,	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	2 (14)	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	2 (14)
		⊥				3.5 (12)				2.0~5.5 (14~10)
	22P24 (2A0012)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, B1, B2, ⊥	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	3.5 (12)	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	3.5 (12)
	23P74 (2A0020)	R/L1, S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, B1, B2, ⊥	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	5.5 (10)	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	5.5 (10)
	25P54 (2A0030)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, ⊥	M5	2.5 (22.2)	5.5~8.0 (10~8)	8 (8)	M5	2~2.5 (17.7~22.1)	5.5~14 (10~6)	8 (8)
		B1, B2,					M4			
	27P54 (2A0040)	⊥	M5	2.5 (22.2)	5.5~8.0 (10~8)	8 (8)	M5	2~2.5 (17.7~22,1)	5.5~14 (10~6)	8 (8)
		R/L1,S/L2, T/L3,U/ T1,V/T2, W/ T3,-, +1, +2,								14 (6)
		B1, B2,								M4

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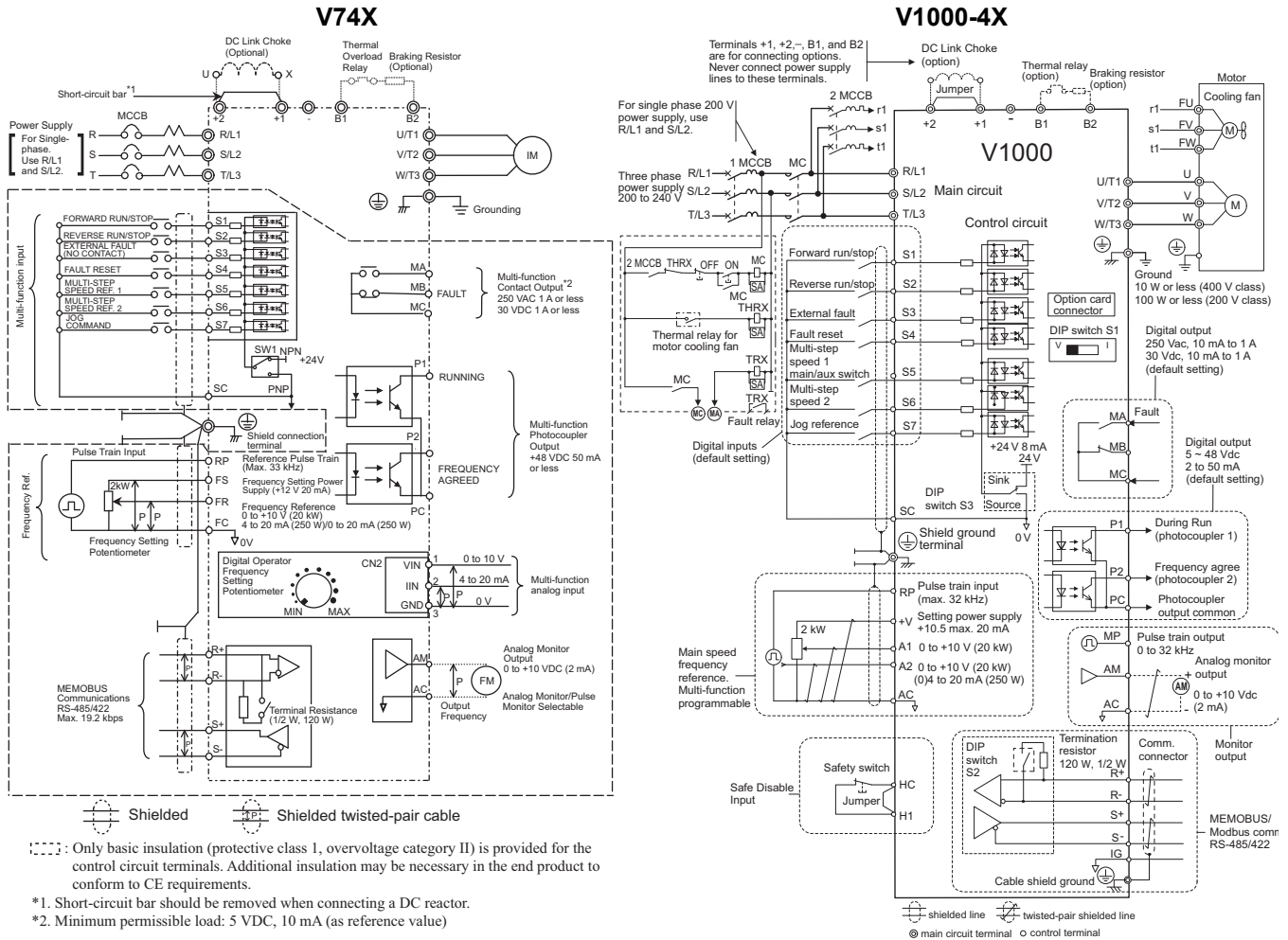
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Voltage Class	Drive Type V74X (V1000-4X)	Terminal Symbol	V74X				V1000-4X			
			Screw Size	Tightening Torque N•m (lb-in)	Applicable Wire Size mm <sup>2</sup> (AWG)	Recommended Wire Size mm <sup>2</sup> (AWG)	Screw Size	Tightening Torque N•m (lb-in)	Applicable Wire Size mm <sup>2</sup> (AWG)	Recommended Wire Size mm <sup>2</sup> (AWG)
3 Phase 400V	40P24 40P44 40P74 41P54 42P24 (4A0001) (4A0002) (4A0004) (4A0005) (4A0007)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, B1, B2 ⊕	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	2 (14)	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	2 (14)
	43P74 (4A0009) (4A0011)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, B1, B2, ⊕	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	2 (14)	M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	2 (14)
		3.5 (12)				3.5 (12)				
	45P54 (4A0018)	⊕	M4	1.4 (12.4)	3.5~5.5 (12~10)	5.5 (10)	M5	2.0~2.5 (17.7~22.1)	5.5~14 (10~6)	5.5 (10)
		R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, B1, B2,					M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	
	47P54 (4A0023)	R/L1,S/L2, T/L3,U/T1, V/T2,W/T3, -, +1, +2, ⊕	M5	2.5 (22.2)	5.5~8 (10~8)	5.5 (10)	M5	2.0~2.5 (17.7~22.1)	5.5~14 (10~6)	8 (8)
		⊕					M4	1.2~1.5 (10.6~13.3)	2.0~5.5 (14~10)	5.5 (10)
		B1, B2								

### Control Terminal Sizes and Wire Sizes

Terminals (New/Changed in V1000-4X)	V74X				V1000-4X			
	Screw Size	Tighten. Torque N•m (in-lbs)	Applicable Wire Size mm <sup>2</sup> (AWG)	Recommended Wire Size mm <sup>2</sup> (AWG)	Screw Size	Tighten. Torque N•m (in-lbs)	Applicable Wire Size mm <sup>2</sup> (AWG)	Recommended Wire Size mm <sup>2</sup> (AWG)
MA, MB, MC	M3	0.5~0.6 (4.4~5.3)	Stranded 0.5~1.25 (20~16) Solid 0.5~1.25 (20~16)	0.75 (18)	M3	0.5~0.6 (4.4~5.3)	Stranded 0.25~1.25 (24~16) Solid 0.25~1.25 (24~16)	0.75 (18)
S1-S7, P1, P2, SC, PC, R+, R-, S+, S-, FS (V+) FR (A1), (A2), FC (AC), AM, AC, RP (MP), (HC), (H1)	M2	0.22~0.25 (1.9~2.2)	Stranded 0.5~0.75 (20~18) Solid 0.5~1.25 (20~16)	0.75 (18)	M2	0.22~0.25 (1.9~2.2)	Stranded 0.25~0.75 (24~18) Solid 0.25~1.25 (24~16)	0.75 (18)

### Terminal Comparisons



**Note:** Refer to Installation & Start-Up Manual (TOBPC71060635) for warnings, cautions and additional notes.

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### 1.5 Dimensions, Installation Space and Substitution Material

#### Normal Duty (ND)

Voltage Class	Maximum Motor Power kW (HP)	V74X Type V7CU□□	V1000-4X Type V□GAA	V74X			V1000-4X		
				W mm (in)	H mm (in)	D mm (in)	W mm (in)	H mm (in)	D mm (in)
3 Phase 200 V	0.1 (1/8)	20P14	2A0001	155 (6.10)	192 (7.56)	165 (6.50)	162 (6.38)	222 (8.74)	185 (7.28)
	0.2 (1/4)	20P24							
	0.4 (3/4)	20P44							
	0.75 (1.5)	20P74	2A0004	170 (6.69)	254 (10.00)	190 (7.48)	187 (7.36)	255 (10.04)	235 (9.25)
	1.5 (3)	21P54	2A0006						
	2.2 (3)	22P24	2A0010						
	3.7 (5)	23P74	2A0012						
	5.5 (10)	25P54	2A0020	290 (11.41)	406 (15.98)	288 (11.34)	290 (11.42)	420 (16.54)	305 (12.01)
7.5 (15)	27P54	2A0030							
3 Phase 400 V	0.2 (1/4)	40P24	4A0001	155 (6.10)	192 (7.56)	165 (6.50)	162 (6.38)	222 (8.74)	185 (7.28)
	0.4 (3/4)	40P44							
	0.75 (2)	40P74							
	1.5 (3)	41P54	4A0004	170 (6.69)	254 (10.00)	190 (7.48)	187 (7.36)	255 (10.04)	235 (9.25)
	2.2 (3)	42P24	4A0005						
	2.2 (3)	42P24	4A0007						
	3.7 (7.5)	43P74	4A0009						
	5.5 (10)	45P54	4A0011	290 (11.41)	400 (15.74)	290 (11.42)	290 (11.42)	420 (16.54)	305 (12.01)
7.5 (15)	47P54	4A0018							

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### Heavy Duty (HD)

Voltage Class	Maximum Motor Power kW (HP)	V74X Type V7CU□□	V1000-4X Type V□GAA	V74X			V1000-4X		
				W mm (in)	H mm (in)	D mm (in)	W mm (in)	H mm (in)	D mm (in)
3 Phase 200V	0.1 (1/8)	20P1	2A0001	155 (6.10)	192 (7.56)	165 (6.50)	162 (6.38)	222 (8.74)	185 (7.28)
	0.2 (1/4)	20P2	2A0002						
	0.4 (3/4)	20P4	2A0004						
	0.75 (1)	20P7	2A0006						
	1.5 (2)	21P5	2A0010	170 (6.69)	254 (10.00)	190 (7.48)	187 (7.36)	255 (10.04)	235 (9.25)
	2.2 (3)	22P2	2A0012						
	3.7 (5)	23P7	2A0020						
	5.5 (7.5)	25P5	2A0030						
7.5 (10)	27P5	2A0040	290 (11.41)	406 (15.98)	288 (11.34)	290 (11.42)	420 (16.54)	305 (12.01)	
3 Phase 400V	0.2 (1/4)	40P2	4A0001	155 (6.10)	192 (7.56)	165 (6.50)	162 (6.38)	222 (8.74)	185 (7.28)
	0.4 (3/4)	40P4	4A0002						
	0.75 (2)	40P7	4A0004						
	1.5 (3)	41P5	4A0005	170 (6.69)	254 (10.00)	190 (7.48)	187 (7.36)	255 (10.04)	235 (9.25)
	2.2 (3)	42P2	4A0007						
	3.7 (5)	43P7	4A0009						
	5.5 (7.5)	45P5	4A0011	290 (11.41)	400 (15.74)	290 (11.42)	290 (11.42)	420 (16.54)	305 (12.01)
	5.5 (10)	45P5	4A0018						
7.5 (10)	47P5	4A0023							

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### Mounting Dimensions

Voltage Class	Maximum Motor Power kW (HP)	V74X Type V7AMCU□ □	V1000-4X Type V□GAA	V74X		V1000-4X	
				W mm (in)	H mm (in)	W mm (in)	H mm (in)
3 Phase 200 V	0.1 (1/8)	20P14	2A0001	141 (5.55)	178 (7.01)	135 (5.32)	210 (8.27)
	0.2 (1/4)	20P24					
	0.4 (3/4)	20P44					
	0.75 (1.5)	20P74					
	1.5 (3)	21P54	2A0006	158 (6.22)	240 (9.43)	158 (6.22)	241 (9.49)
	2.2 (3)	22P24	2A0010				
	3.7 (5)	23P74	2A0012				
	5.5 (10)	25P54	2A0020	270 (10.63)	360 (14.17)	265 (10.43)	400 (15.75)
7.5 (15)	27P54	2A0030					
3 Phase 400 V	0.2 (1/4)	40P24	4A0001	141 (5.55)	178 (7.01)	135 (5.32)	210 (8.27)
	0.4 (3/4)	40P44					
	0.75 (2)	40P74					
	1.5 (3)	41P54	4A0004	158 (6.22)	240 (9.43)	158 (6.22)	241 (9.49)
	2.2 (3)	42P24	4A0005				
	2.2 (3)	42P24	4A0007				
	3.7 (7.5)	43P74	4A0009	270 (10.63)	360 (14.17)	265 (10.43)	400 (15.75)
	5.5 (10)	45P54	4A0011				
7.5 (15)	47P54	4A0018					

## 1.6 Parameter Correspondence Table

### V74X and V1000-4X Differences in Parameter Settings

The list in Section 1.6 shows the parameter relations between the V74X and the V1000-4X. It lists the parameters and setting values necessary for V74X replacement by a V1000-4X, but does not show the complete V1000-4X parameters and extended parameter setting ranges. For details about new functions, parameters and parameter settings refer to the instruction manual <SIEPC71060618A>.

### V74X→V1000-4X Parameter Correspondence for Drive Replacement

Parameter Function	V74X			V1000-4X			Note		
	Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value			
Parameter access level	n001	1		A1-01	2		V74X	V1000-4X	
Initialization				A1-03	0		n001→0	A1-01→0	
				RUN cmd. In PRG mode sel.	b1-08	0		n001→1~4	A1-01→2
Initialize mode (Spec.)					o2-09	0		n001→5	A1-01→2 b1-08→1
								n001→6	o4-11→1
				n001→10	A1-03→2220				
				n001→11	A1-03→3330				
Control mode selection	n002	0		A1-02	0		n002→0	A1-02→0	
							n002→1	A1-02→2	
RUN command source selection	n003	0		b1-02	1		n003→0	b1-02→0	
							n003→1	b1-02→1	
							n003→2	b1-02→2	
							n003→3	b1-02→3	
Frequency reference source selection	n004	0		b1-01	1		n004→0	— (no operator pot)	
							n004→1	b1-01→0	
							n004→2	b1-01→1 and (H3-01→0 (term. A1) or H3-09→0 (term. A2))	
							n004→3	b1-01→1 and H3-09→2 (term. A2)	
							n004→4	b1-01→1 and H3-09→3 (term. A2)	
							n004→5	b1-01→4	
Frequency reference by analog input A2 (signal level) selection	n004 n078	0 1		H3-09	2		n004→6	b1-01→2	
							n004→7 n078→0	b1-01→1 and (H3-01→0 (term. A1) or H3-09→0 (term. A2))	
							n004→8 n078→1	b1-01→1 and H3-09→2 (term. A2)	
							n004→9	b1-01→3	
Stop method selection	n005	0		b1-03	0		n005→0	b1-03→0	
							n005→1	b1-03→1	
Reverse operation selection	n006	0		b1-04	0		n006→0	b1-04→0	
							n006→1	b1-04→1	

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Parameter Function	Drive	V74X		V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value		
Operation panel STOP key function	n007	0		o2-02	1		V74X	V1000-4X
							n007→0	o2-02→1
							n007→1	o2-02→0
Frequency reference in local mode	n008	0		-	-		As the V1000-4X has no operator panel pot, no selection available.	
Frequency reference from operator ENTER key selection	n009	0		o2-05	0		n009→0	o2-05→0
							n009→1	o2-05→1
Operator panel disconnect fault detection selection	n010	0		o2-06	o2-09 dep.		n010→0	o2-06 = 0
							n010→1	o2-06 = 1
Max. output frequency (FMAX)	n011	50.0 Hz		E1-04	E1-03, o2-09 dep./ E5-01 dep. If A1-02=5			
Max. output voltage (VMAX)	n012	200.0 V 400.0 V		E1-05	E5-01 dep. If A1-02=5		The V1000-4X has two different settings for VBASE and VMAX. The initial setting for VBASE is 0.0V which means, that VMAX is output at FBASE (like in V74X).	
Output voltage at base frequency (VBASE)	n012	200.0 V 400.0 V		E1-13	0.0VAC			
Base frequency (FBASE)	n013	50.0 Hz		E1-06	E1-03, o2-09 dep./ E5-01 dep. If A1-02=5			
Mid. output frequency (FMID)	n014	1.35 Hz		E1-07	A1-02, E1-03, o2-09 dep.			
Mid. output voltage (VMID)	n015	12.0 V		E1-08				
Min. output frequency (FMIN)	n016	1.3 Hz		E1-09	A1-02, E1-03, o2-09 dep./ E5-01 dep. If A1-02=5			
Min. output voltage (VMIN)	n017	12.0 V		E1-10	A1-02, E1-03, o2-09 dep.			
Acceleration / deceleration time resolution selection	n018	0		C1-10	1		n018→0	C1-10→1
							n018→1	C1-10→0
Acceleration time 1	n019	10.0 sec		C1-01	10.0 sec			
Deceleration time 1	n020	10.0 sec		C1-02	10.0 sec			
Acceleration time 2	n021	10.0 sec		C1-03	10.0 sec			



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Parameter Function	Drive	V74X			V1000-4X			Note
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value	
Deceleration time 2		n022	10.0 sec		C1-04	10.0 sec		
S-curve at accel. Start		n023	0 (0 sec)		C2-01	0.2 sec	In the V74X one of four values could be selected for all s-curves. The V1000-4X requires a separate time setting for each s-curve.	
S-curve at accel. End		n023	0 (0 sec)		C2-02	0.2 sec		
S-curve at decel. start		n023	0 (0 sec)		C2-03	0.2 sec		
S-curve at decel. end		n023	0 (0 sec)		C2-04	0.2 sec		
Multi speed reference 1		n024	6.00 Hz		d1-01	o2-09, FMAX dep.		
Multi speed reference 2		n025	0.00 Hz		d1-02	0 Hz		
Multi speed reference 3		n026	0.00 Hz		d1-03	0 Hz		
Multi speed reference 4		n027	0.00 Hz		d1-04	0 Hz		
Multi speed reference 5		n028	0.00 Hz		d1-05	0 Hz		
Multi speed reference 6		n029	0.00 Hz		d1-06	0 Hz		
Multi speed reference 7		n030	0.00 Hz		d1-07	0 Hz		
Multi speed reference 8		n031	0.00 Hz		d1-08	0 Hz		
Jog frequency		n032	6.00 Hz		d1-17	6.00 Hz		
Frequency reference upper limit		n033	100%		d2-01	100.0%		
Frequency reference lower limit		n034	0%		d2-02	0.0%		
Digital operator display unit for frequency reference values.		n035	0		o1-03	0	V74X	V1000-4X
							n035→0	o1-03→0
							n035→1	o1-03→1
							n035→2~39	o1-03→2 and set E2-04, E4-04, E4-05
n035→40~3999	o1-03→3 and set o1-10, o1-11							
Motor rated current		n036			E2-01	kVA dep.	Depends on the drive capacity (V74X, V1000-4X)	
Motor overload protection		n037	0		L1-01	1	n037→0	L1-01→1
							n037→1	L1-01→2~4
							n037→2	L1-01→0
Motor overload protection time		n038	8 min		L1-02	1 min	Needs not to be changed.	
Drive cooling fan operation selection		n039	0		L8-10	0	n039→0	<b>L8-10→0</b>
							n039→1	L8-10→1
Phase order selection		n040	0		b1-14	0	n040→0	b1-14→0
							n040→1	b1-14→1
Acceleration Time 3		n041	10 sec		C1-05	10.0 sec	In V1000-4X also used as Accel Time 1 for Motor 2	
Deceleration Time 3		n042	10 sec		C1-06	10.0 sec	In V1000-4X also used as Decel Time 1 for Motor 2	
Acceleration Time 4		n043	10 sec		C1-07	10.0 sec	In V1000-4X also used as Accel Time 2 for Motor 2	
Deceleration Time 4		n044	10 sec		C1-08	10.0 sec	In V1000-4X also used as Decel Time 2 for Motor 2	

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Parameter Function	Drive	V74X		V1000-4X			Note	
	Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value		
Frequency reference bias step value (up/down2)	n045	0.0 Hz		d4-03	0.0 Hz			
Frequency reference bias accel/decel rate (up/down2)	n046	0		d4-04	0		V74X	V1000-4X
							n046→0	d1-04→0 (use current Accel / decel time)
							n046→1	d1-04→1 (use Accel/decel time 4)
Frequency reference bias operation mode selection (up/down2)	n047	0		d4-05	0			
Frequency reference bias value (up/down2)	n048	0.0%		d4-06	0.0%			
Analog frequency reference fluctuation limit (up/down2)	n049	1.0%		d4-07	1.0%			
Terminal S1 function selection	n050	1		H1-01	40		n050~56→1	H1-01~H1-06→40
							n050~56→2	H1-01~H1-06→41
							n050~56→3	H1-01~H1-06→24
							n050~56→4	H1-01~H1-06→25
Terminal S2 function selection	n051	2		H1-02	41		n050~56→5	H1-01~H1-06→14
							n050~56→6	H1-01~H1-06→3
							n050~56→7	H1-01~H1-06→4
							n050~56→8	H1-01~H1-06→5
							n050~56→9	H1-01~H1-06→32
Terminal S3 function selection	n052	3		H1-03	24		n050~56→10	H1-01~H1-06→6
							n050~56→11	H1-01~H1-06→7
							n050~56→12	H1-01~H1-06→8
							n050~56→13	H1-01~H1-06→9
							n050~56→14	H1-01~H1-06→61
							n050~56→15	H1-01~H1-06→62
Terminal S4 function selection	n053	5		H1-04	14		n050~56→16	H1-01~H1-06→A
							n050~56→17	H1-01~H1-06→1
							n050~56→18	H1-01~H1-06→2 and b1-15→2 and b1-16→2
							n050~56→19	H1-01~H1-06→28
							n050~56→20	H1-01~H1-06→2C
Terminal S5 function selection	n054	6		H1-05	3 (0)		n050~56→21	H1-01~H1-06→29
							n050~56→22	H1-01~H1-06→2F
							n050~56→23	H1-01~H1-06→19
							n050~56→24	H1-01~H1-06→30

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Parameter Function	Drive	V74X			V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value		
Terminal S6 function selection	n055	7		H1-06	4 (3)		V74X	V1000-4X	
							n050~56→25	H1-01~H1-06→31	
							n050~56→26	H1-01~H1-06→B	
							n050~56→27	H1-01~H1-06→1A	
							n052→0	H1-03→0	
							n056→34	H1-07→10, 11	
							n056→35	H1-07→67	
Terminal S7 function selection	n056	10		-	-		Terminal S7 does not exist		
Terminal MA, MB, MC function selection	n057	0		H2-01	E		n056→36	H1-07→75,76	
							n057~59→0	H2-01~03→E	
							n057~59→1	H2-01~03→0	
							n057~59→2	H2-01~03→2	
							n057~59→3	H2-01~03→1	
							n057~59→4	H2-01~03→4	
							n057~59→5	H2-01~03→5	
							n057~59→6	H2-01~03→B,18	
Terminal P1 function selection (Open collector)	n058	1		H2-02	0		n057~59→7	H2-01~03→17,19	
							n057~59→8	H2-01~03→B,18	
							n057~59→9	H2-01~03→17, 19	
							n057~59→10	H2-01~03→10	
							n057~59→11	H2-01~03→8	
							n057~59→12	H2-01~03→3C	
							n057~59→13	H2-01~03→6	
							n057~59→14	H2-01~03→1E	
							n057~59→15	H2-01~03→7	
							n057~59→16	H2-01~03→1A	
Terminal P2 function selection (Open collector)	n059	2		H2-03	2		n057~59→17	H2-01~03→3D	
							n057~59→18	—	
							n057~59→19	H2-01~03→3E	
							n057~59→20	H2-01~03→C	
							n057~59→21	H2-01~03→(1F), 20	
Analog input FR (A1) gain	n060	100%		H3-03	100%				
Analog input FR (A2) bias	n061	0%		H3-04	0%				
Analog input filter time constant	n062	0.10 sec		H3-13	0.03 sec				
SI-T Watchdog error operation selection	n063	0		-	-	-	No ML support		
Operation at frequency reference loss selection	n064	0		L4-05	0		n064→0	L4-05→0	
							n064→1	L4-05→1 and L4-06→fref value	
Analog output AM Monitor type selection	n065	0		-	-		Use terminal FM for analog and terminal MP for pulse output signals.		

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Parameter Function	Drive	V74X		V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value		
Analog output AM function selection	n066	0		H4-01	102		V74X	V1000-4X
							n066→0	H4-01→102
							n066→1	H4-01→103
							n066→2	H4-01→107
							n066→3	H4-01→109
							n066→4	H4-01→108
							n066→5	H4-01→106
n066→6	H4-01→101							
Analog output AM gain	n067	1.00		H4-02	100.0%			
Analog frequency ref. gain (Volt. input CN2) → Terminal A2 gain	n068	100%		H3-11	100.0%		H3-09 must be set to 0 or 1	
Analog freq. reference bias (Volt. input CN2) → Terminal A2 bias	n069	0%		H3-12	0.0%			
Analog frequency ref. filter (Volt. input CN2)	n070	0.10s		H3-13	0.03		Filter time H3-13 is the same for analog input A1 and A2 in V1000-4X	
Analog frequency ref. gain (Cur. input CN2) → Terminal A2 gain	n071	100%		H3-11	100.0%		H3-09 must be set to 2 or 3	
Analog frequency ref. bias (Cur. input CN2) → Terminal A2 gain	n072	0%		H3-12	0.0%			
Analog frequency ref. filter (Volt. input CN2)	n073	0.10s		H3-13	0.03		Filter time H3-13 is the same for analog input A1 and A2 in V1000-4X	
Pulse input gain	n074	100%		H6-03	100.0%			
Pulse input bias	n075	0%		H6-04	0.0%			
Pulse input filter time	n076	0.10 sec		H6-05	0.10 sec			
Analog input function selection (CN2→ Terminal A2)	n077	0		H3-10	0		n077→0	H3-10→F
							n077→1	H3-10→2
							n077→2	H3-10→1
							n077→3	H3-10→0
							n077→4	H3-10→4
Analog input signal level selection (CN2→ Terminal A2)	n078	0		H3-09	1		n078→0	H3-09→0
							n078→1	H3-09→2
Frequency reference bias max. value for terminal CN2 reference input → terminal A2	n079	10%		-	-		This function can not be used with current input in the V1000-4X. For voltage input at terminal A2 the following has to be set: H3-09→1 H3-10→0 H3-11→n079 H3-11→n079	

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Parameter Function	Drive	V74X			V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value		
Carrier frequency selection	n080	4		C6-02	o2-04 dep.		V74X	V1000-4X	
Carrier frequency upper limit				C6-03	C6-02 dep.		n080→1	C6-02→1 (2kHz)	
Carrier frequency lower limit				C6-04	C6-02 dep.		n080→2	C6-02→2 (5kHz)	
Carrier frequency proportional gain				C6-05	0		n080→3	C6-02→3 (8kHz)	
							n080→4	C6-02→4 (10kHz)	
							n080→7~9	C6-03/04/05 must be used	
Momentary power loss detection selection	n081	0		L2-01	0		n081→0	L2-01→0	
							n081→1	L2-01→1	
							n081→2	L2-01→2	
Automatic restart attempts	n082	0		L5-01	0				
Jump frequency 1	n083	0.0 Hz		d3-01	0.0 Hz				
Jump frequency 2	n084	0.0 Hz		d3-02	0.0 Hz				
Jump frequency 3	n085	0.0 Hz		d3-03	0.0 Hz				
Jump frequency bandwidth	n086	0.0 Hz		d3-04	1.0 Hz				
Operation time counter selection	n087	0		o4-02	0		n087→0	o4-02→0	
							n087→1	o4-02→1	
Accumulated operation time	n088	0 H		o4-01	0 H				
DC injection braking current	n089	50%		b2-02	50%				
DC injection time at stop	n090	0.5 sec		b2-04	o2-09 dep.				
DC injection time at start	n091	0 sec		b2-03	0 sec				
Stall prevention during deceleration	n092	0		L3-04	1		n092→0	L3-04→1	
							n092→1	L3-04→0, 3	
Stall prevention level during acceleration	n093	170%		L3-02	150%				
Stall prevention level during run	n094	160%		L3-06	160%				
Output frequency detection level (DO)	n095	0.00 Hz		L4-01	0.0 Hz				
Over / under torque detection	n096 (OL) n117 (UL)	0		L6-01 L6-03	0		n096,117→0	L6-01/03→0	
							n096,117→1	L6-01/03→1(OL),5(UL)	
							n096,117→2	L6-01/03→3(OL),6(UL)	
							n096,117→3	L6-01/03→2(OL),7(UL)	
							n096,117→4	L6-01/03→4(OL),8(UL)	

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Parameter Function	Drive	V74X		V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value		Set Value
Over / under torque detection level		n098 (OL) n118 (UL)	160% 10%		L6-02 L6-05	150%		
Over / under torque detection time		n099 (OL) n119 (UL)	0.1 sec		L6-03 L6-06	0.1 sec		
Torque selection in vector mode		n097	0		-	-	The torque reference value (U1-09) is always used as comparison value for torque detection in vector control.	
Frequency reference hold selection (up/down function)		1n00	0		d4-01	0	V74X	V1000-4X
							n100→0	d4-01→0
							n100→1	d4-01→1
Speed search deceleration time		n101	2.0 sec		b3-03	2.0 sec		
Speed search deactivation current		n102	150%		b3-02	A1-02 dep.		
Torque compensation gain		n103	1.0		C4-01	1.00		
Torque compensation time constant		n104	0.3 sec		C4-02	A1-02 dep.		
Torque compensation iron losses		n105			E2-10	o2-04 dep.	Value is different than V74X and capacity dependent	
Motor rated slip		n106			E2-02	o2-04 dep.		
Motor line-to-line resistance		n107			E2-05	o2-04 dep.		
Motor leakage inductance		n108			E2-06	o2-04 dep.		
Motor no-load current		n110			E2-03	o2-04 dep.		
Slip compensation gain		n111	0.0		C3-01	A1-02 dep.		
Slip compensation time constant		n112	2.0 sec		C3-02	A1-02 dep.		
Slip compensation in regenerative mode selection		n113	0		C3-04	0	n113→0	C3-04→0
							n113→1	C3-04→1
SI-T BUS max. transmission errors		n114	2		-	-	No ML support.	
Stall prevention level reduction during run in constant power range		n115	0		L3-23	0	n115→0	L3-23→0
							n115→1	L3-23→1
Stall prevention during run selection		n116	0		L3-05	1	n116→0	L3-05→0
							n116→1	L3-05→2
Under torque detection		n117 to n119					→see n096 to n098 (Over torque det)	
Multi speed reference 9		n120	0.00 Hz		d1-09	0.00 Hz		
Multi speed reference 10		n121	0.00 Hz		d1-10	0.00 Hz		
Multi speed reference 11		n122	0.00 Hz		d1-11	0.00 Hz		

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Parameter Function	Drive	V74X			V1000-4X			Note																			
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value																				
Multi speed reference 12		n123	0.00 Hz		d1-12	0.00 Hz																					
Multi speed reference 13		n124	0.00 Hz		d1-13	0.00 Hz																					
Multi speed reference 14		n125	0.00 Hz		d1-14	0.00 Hz																					
Multi speed reference 15		n126	0.00 Hz		d1-15	0.00 Hz																					
Multi speed reference 16		n127	0.00 Hz		d1-16	0.00 Hz																					
PID control selection	n128	0		b5-01	0		<table border="1"> <tr> <th>V74X</th> <th>V1000-4X</th> </tr> <tr> <td>n128→0</td> <td>b5-01→0</td> </tr> <tr> <td>n128→1</td> <td>b5-01→1</td> </tr> <tr> <td>n128→2</td> <td>b5-01→2</td> </tr> <tr> <td>n128→3</td> <td>b5-01→3</td> </tr> <tr> <td>n128→4</td> <td>b5-01→4</td> </tr> <tr> <td>n128→5</td> <td>b5-01→1</td> </tr> <tr> <td>n128→6</td> <td>b5-01→2</td> </tr> <tr> <td>n128→7</td> <td>b5-01→3</td> </tr> <tr> <td>n128→8</td> <td>b5-01→4</td> </tr> </table>	V74X	V1000-4X	n128→0	b5-01→0	n128→1	b5-01→1	n128→2	b5-01→2	n128→3	b5-01→3	n128→4	b5-01→4	n128→5	b5-01→1	n128→6	b5-01→2	n128→7	b5-01→3	n128→8	b5-01→4
V74X				V1000-4X																							
n128→0	b5-01→0																										
n128→1	b5-01→1																										
n128→2	b5-01→2																										
n128→3	b5-01→3																										
n128→4	b5-01→4																										
n128→5	b5-01→1																										
n128→6	b5-01→2																										
n128→7	b5-01→3																										
n128→8	b5-01→4																										
PID output mode selection				b5-09	0		<table border="1"> <tr> <td>n128→5</td> <td>b5-01→1</td> </tr> <tr> <td>n128→6</td> <td>b5-01→2</td> </tr> <tr> <td>n128→7</td> <td>b5-01→3</td> </tr> <tr> <td>n128→8</td> <td>b5-01→4</td> </tr> </table>	n128→5	b5-01→1	n128→6	b5-01→2	n128→7	b5-01→3	n128→8	b5-01→4												
n128→5	b5-01→1																										
n128→6	b5-01→2																										
n128→7	b5-01→3																										
n128→8	b5-01→4																										
PID feedback gain	n129	1.0		H3-03 H3-11 H6-03	100%		Use feedback signal gain and bias (analog, pulse input gain/bias)																				
PID proportional gain (P)	n130	1.0		b5-02	1.00																						
PID integral time (I)	n131	1.0 sec		b5-03	1.0 sec																						
PID derivative time (D)	n132	0.0 sec		b5-05	0.0 sec																						
PID output offset	n133	0.0%		b5-07	0.0%																						
PID integral limit	n134	100%		b5-04	100%																						
PID output delay time	n135	0.0 sec		b5-08	0.0 sec																						
PID feedback loss detection	n136	0		b5-12	0		<table border="1"> <tr> <td>n136→0</td> <td>b5-12→0</td> </tr> <tr> <td>n136→1</td> <td>b5-12→1</td> </tr> <tr> <td>n136→2</td> <td>b5-12→2</td> </tr> </table>	n136→0	b5-12→0	n136→1	b5-12→1	n136→2	b5-12→2														
n136→0							b5-12→0																				
n136→1							b5-12→1																				
n136→2	b5-12→2																										
PID feedback loss detection level	n137	0%		b5-13	0%																						
PID feedback loss detection time	n138	1.0 sec		b5-14	1.0 sec																						
Auto tuning selection	n139	0		T1-01	0		<table border="1"> <tr> <td>n139→0</td> <td>b8-01→0</td> </tr> <tr> <td>n139→1</td> <td>b8-01→1</td> </tr> </table>	n139→0	b8-01→0	n139→1	b8-01→1																
n139→0							b8-01→0																				
n139→1	b8-01→1																										
Energy saving coefficient	n140			b8-04	o2-04 dep.		Value is different than V74X and capacity dependent																				
Energy saving voltage lower limit (60Hz)	n141	50%		-	-		No need to set.																				
Energy saving voltage lower limit (6Hz)	n142	12%		-	-																						
Power average time	n143	1		-	-																						
Energy saving voltage search limit	n144	0%		b8-06	0%																						
Voltage step width at 100% voltage	n145	0.5%					No need to set.																				
Voltage step width at 50% voltage	n146	0.1%																									

# Product Transition Guide

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Parameter Function	Drive	V74X			V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value		
Pulse input scaling		n149	2500 Hz		H6-02	1440 Hz			
Pulse output function selection		n150	0		H6-06	102	V74X	V1000-4X	
								H6-06	H6-07
							n150→0	102	1440
							n150→1		E1-04
							n150→6		6xE1-04
							n150→12		12xE1-04
n150→24	24xE1-04								
Pulse output scaling					H6-07	1440 Hz	n150→36	101	36xE1-04
							n150→40		1440
							n150→41		E1-04
							n150→42		6xE1-04
							n150→43		12xE1-04
							n150→44		24xE1-04
							n150→45		36xE1-04
Memobus communication error behavior selection		n151	0		H5-04	3	V74X	V1000-4X	
							H5-04	H5-05	
n151→0							1	1	
n151→1							0		
n151→2							(act. Ramp) 2 (C1-09)		
n151→3							3		
n151→4	No effect	0							
Memobus communication error detection					H5-05	1			
Drive node address		n153	0		H5-01	1F			
Memobus communication Speed selection		n154	2		H5-02	3	V74X	V1000-4X	
							n154→0	H5-02→1	
							n154→1	H5-02→2	
							n154→2	H5-02→3	
							n154→3	H5-02→4	
Memobus parity selection		n155	0		H5-03	0	n155→0	H5-03→1	
							n155→1	H5-03→2	
							n155→2	H5-03→0	
Transmission wait time		n156	10 ms		H5-06	5 ms			
RTS flow control control on/off		n157	0		H5-07	1	n157→0	H5-07→1	
							n157→1	H5-07→0	
Motor code (for energy saving)		n158			b8-04	E2-11, o2-04 dep.	<p>In the V74X the motor code sets the rated power and the coefficient for energy saving.</p> <p>In the V1000-4X the coefficient is set in b8-04. It depends on the rated motor power set in E2-11. E2-11 is automatically adjusted during autotuning.</p>		
					E2-11				



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Parameter Function	Drive	V74X		V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value		Set Value
Upper voltage limit for energy saving at 60Hz		n159	120%				No setting available.	
Upper voltage limit for energy saving at 6Hz		n160	16%					
Power detection hold during voltage tuning		n161	10%					
Power detection filter time constant		n162	5 (20 ms)		b8-05	20 ms		
PID output gain		n163	1.0		b5-10	1.0		
PID feedback value selection		n164	0	H3-09	2		V74X	V1000-4X
							n164→0	Term. A2: H3-09→0, H3-10→B
				H3-10	0		n164→1	Term. A2: H3-09→2, H3-10→B
							n164→2	Term. A2: H3-09→3, H3-10→B
							n164→3	– (no operator poti)
				n164→4				
				H6-01	0		n164→5	H6-01 = 1
When terminal A2 is used always check the position of DIP switch S1								
Braking resistor over heat protection (ERF type)		n165	0	L8-01	0		n165→0	L8-01→0
							n165→1	L8-01→1
Input open phase detection level		n166	0%	L8-05	o2-09 dep.		The input phase loss detection level and time can not be set in V1000-4X. The phase loss detection can be enabled/ disabled by setting L8-05.	
Input open phase detection time		n167	0.0 sec					
Output open phase detection level		n168	0%	L8-07	o2-09 dep.		The output phase loss detection level and time can not be set in V1000-4X. The phase loss detection can be enabled/ disabled by setting L8-07.	
Output open phase detection time		n169	0.0 sec					
Memobus Enter command selection		n170	0		-	-	V1000-4X accepts Enter commands at any time.	
Frequency reference bias upper limit (up/down2)		n171	0.0%		d4-08	0.0%		
Frequency reference bias lower limit (up/down2)		n172	0.0%		d4-09	0.0%		
DC braking P-gain		n173	83		-	-	No need to set up in V1000-4X	
DC braking integral time		n174	25		-	-		
Low speed carrier frequency reduction		n175	0	L8-38	0		n175→0	L8-38→0
							n175→1	L8-38→1
COPY function selection		n176	rdy	o3-01	0		n176→rdy	-
							n176→rEd	o3-01→1
							n176→CPy	o3-01→2
							n176→vFy	o3-01→3
							n176→vA	-
n176→Sno	-							

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Parameter Function	Drive	V74X			V1000-4X			Note	
		Param. No.	Initial Value	Set Value	Param. No.	Initial Value	Set Value		
READ prohibit selection	n177	0		o3-02	0		V74X	V1000-4X	
							n177→0	o3-02→0	
							n177→1	o3-02→1	
Fault History	n178	-		U2/U3-xx			In the V1000-4X the last fault can be traced in the U2-xx monitors. The fault history is displayed in the U3-xx monitors.		
Software version	n179	-		U1-25/ 26					

## 1.7 Appendix

### V74X and V1000-4X Differences in Output Capacity, Current and Carrier Freq.

#### Normal Duty

Voltage Class	Maximum Motor Power kW	V74X Type V7CU□□	V1000-4X Type V□GAA	V74X			V1000-4X		
				Output Power (kVA)	Output Current (A)	Carrier Frequency (kHz)	Output Power (kVA)	Output Current (A)	Carrier Frequency (kHz)
3 Phase 200V	0.1	20P14	2A0001	0.3	0.8	10	0.5	1.2	2
	0.2	20P24		0.6	1.6				
	0.4	20P44		2A0002	1.1				
	0.75	20P74	2A0004	1.9	5.0				
	1.5	21P54	2A0006	3.0	8.0	7.5	2.3	6.0	2
	2.2	22P24	2A0010	4.2	11.0				
	3.7	23P74	2A0012	6.7	17.5				
	5.5	25P54	2A0020	9.5	25.0				
	7.5	27P54	2A0030	13.0	33.0				
3 Phase 400V	0.2	40P24	4A0001	0.9	1.2	7.5	0.9	1.2	2
	0.4	40P44		1.4	1.8				
	0.75	40P74	4A0002	2.6	3.4				
	1.5	41P54	4A0004	3.7	4.8				
	2.2	42P24	4A0005	4.2	5.5				
	2.2	42P24	4A0007	4.2	5.5				
	3.7	43P74	4A0009	6.6	8.6				
	5.5	45P54	4A0011	11.0	14.8				
	7.5	47P54	4A0018	14.0	18.0				

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### Heavy Duty

Voltage Class	Maximum Motor Power kW	V74X Type V7CU□□	V1000-4X Type V□GAA	V74X			V1000-4X		
				Output Power (kVA)	Output Current (A)	Carrier Frequency (kHz)	Output Power (kVA)	Output Current (A)	Carrier Frequency (kHz)
3 Phase 200V	0.1	20P1	2A0001	0.3	0.8	10	0.3	0.8	2
	0.2	20P2	2A0002	0.6	1.6		0.6	1.6	
	0.4	20P4	2A0004	1.1	3.0		1.1	3.0	
	0.75	20P7	2A0006	1.9	5.0		1.9	5.0	
	1.5	21P5	2A0010	3.0	8.0	7.5	3.0	8.0	2
	2.2	22P2	2A0012	4.2	11.0		4.2	11.0	
	3.7	23P7	2A0020	6.7	17.5		6.7	17.5	
	5.5	25P5	2A0030	9.5	25.0		9.5	25.0	
7.5	27P5	2A0040	13.0	33.0		12.6	33.0		
3 Phase 400V	0.2	40P2	4A0001	0.9	1.2	7.5	0.9	1.2	2
	0.4	40P4	4A0002	1.4	1.8		1.4	1.8	
	0.75	40P7	4A0004	2.6	3.4		2.6	3.4	
	1.5	41P5	4A0005	3.7	4.8		3.7	4.8	
	2.2	42P2	4A0007	4.2	5.5		4.2	5.5	
	3.7	43P7	4A0009	6.6	8.6		5.5	7.2	
	5.5	45P5	4A0011	11.0	14.8		7.0	9.2	
	5.5	45P5	4A0018	11.0	14.8		11.3	14.8	
	7.5	47P5	4A0023	14.0	18.0		13.7	18.0	

## V74X and V1000-4X Option Differences

The table below gives an overview of options, which might be installed in the drive which has to be replaced. Replace an option with the appropriate new type and do not attempt to apply any option not mentioned to the V1000-4X. This option list may not be inclusive; please contact a Yaskawa representative.

Type	Description	V74X	V1000-4X
<b>Serial Communications</b>	Profibus comm. option	SI-P1 / V7	SI-P3/V
	CanOpen comm. option	SI-S1 / V7	SI-S3/V
	DeviceNet comm. option	SI-N1 / V7	SI-N3/V
	Mechatrolink II comm. option	SI-T / V7	No
	LonWorks comm. option	No	No
	EtherNet IP comm. option	CM093	SI-EN3/V
	Modbus TCP/IP comm. option	CM091	SI-EM3/V
	CC-Link comm. option	SI-C/V7	SI-C3/V
<b>Screwless Terminals</b>		No	Yes
<b>Option Cards</b>	120VAC Interface	DI-004, DI-005	DI-100

# Product Transition Guide

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### V74X and V1000-4X Specification Differences

Category	Feature	Item	V74X	V1000-4X
Power Section	Control Method	–	Sinewave PWM: V/f & OLV	Sinewave PWM: V/f & Current Vector
Power Section	Ratings	230v, 3ph.	0.125 to 10 HP	0.125 to 25 HP
Power Section	Ratings	460v, 3ph.	0.5 to 10 HP	0.5 to 25 HP
Power Section	Maximum Output Frequency	–	400 Hz (800 Hz optional)	400 Hz (1000 Hz optional)
Power Section	Carrier Frequency	–	10 kHz (model dependent)	ND: 2 kHz; HD: 15 kHz (model dependent)
Power Section	F <sub>c</sub> Default (derate)	–	Constant	Swing PWM
Power Section	Braking Transistor Circuit	–	Built-in to 10 HP	Built-in to 25 HP
Power Section	Short Circuit Withstand Rating	–	18,000 A RMS Symmetrical	30,000 A RMS Symmetrical
Power Section	Control Method	–	IM only	IM / PM Control
Control Section	Digital Operator	Display	LED 4x 7 seg. (LCD option)	LED 5x 7 seg. (LCD option)
Control Section	Digital Operator	Number of Keys	6	8
Control Section	Copy Function	–	Built-in	Y-Stick USB copy unit option
Control Section	Microprocessor	–	Single	Dual
Control Section	Control Method	Pseudo-Closed Loop	No	Yes, w/ RP input
Control Section	Macro Applications	–	No	Yes
Control Section	Digital Input	Scan Rate	8 msec.	4 msec.
Control Section	Analog Input	Qty.	1 (Programmable)	2 (Programmable)
Control Section	Analog Input	Scan Rate	8 msec.	2 msec.
Control Section	Analog Input	Freq. Ref Voltage	15 Vdc	10.5 Vdc
Control Section	Analog Output	Scan Rate	8 msec.	2 msec.
Control Section	Pulse Input	Qty.	1 (Programmable)	1 (Programmable)
Control Section	Pulse Input	Input Frequency	33 kHz	33 kHz
Control Section	Pulse output	Qty.	1 (Programmable)	1 (Programmable)
Control Section	Pulse output	Output Frequency	1.44 kHz	33 kHz
Control Section	Digital Operator	Display	8 LED Indicators	6 LED Indicators
Control Section	Removable Terminal Block	–	No	Yes (w / memory)
Control Section	Thermistor Input PTC	–	No	Yes
Control Section	2-Motor Control	–	No	Yes
Control Characteristics	Overload Capacity	–	150% for 1 min.	ND: 120% for 1 min.; HD: 150% for 1 min.
Control Characteristics	Starting Torque	–	150% @ 3 Hz (V/f)	150% @ 3 Hz (V/f), 200% @ 0.5 Hz (OLV)
Control Characteristics	Speed Control Range	Open Loop for PM	N/A	1:10
Control Characteristics	Output Frequency Resolution	–	0.01 Hz	0.001 Hz
Control Characteristics	Auto-Tuning	Automatic/OnLine	No	Yes, R1 and Rotational
Control Characteristics	Elapse Time	–	No	Yes (Power up or Run)
Control Characteristics	Fault Storage	–	Last 4	Last 10 w / Elapsed Time Meter
Control Characteristics	Fault Record	–	No Trace Data Points	15 Trace Data Points
Control Characteristics	High Current Alarm	HCA	No	Yes, 150%
Control Characteristics	OV Suppression	–	Option- CASE	Standard
Control Characteristics	Torque Detection	–	Over-Torque	Over and Under-Torque

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Category	Feature	Item	V74X	V1000-4X
Control Characteristics	Overtemperature	Memory Retention	No	Yes
Control Characteristics	Overtemperature	–	OH	Auto-Speed Reduction on OH
Control Characteristics	PI/PID Control	–	PID	PID w / sleep
Control Characteristics	High Slip Braking	–	No	Yes
Control Characteristics	Cooling Fan	–	Bottom-mount	Top-mount
Control Characteristics	Drive Enable Run Permissive	–	None	Meets EN954-1, Cat. 3
Control Characteristics	RS485 Comms	Comm. Speed	19.2kbps	115.2kbps
Key Features	Parameter Upload/Download	–	Drive Wizard	Drive Wizard Plus
Key Features	Drive Function Customization	–	None	DriveWorks EZ
Key Features	Maintenance Monitors	–	None	Capacitors, Fans, IGBTs
Key Features	Hybrid Heatsink	–	No	Yes
Enclosures	Types	NEMA Type 4X	230 V and 460 V to 10 Hp	230 V and 460 V to 25 Hp
Harmonics	Harmonic Filters	–	C1 as Option	C1, C2, C3 as Options
EMC	Internal RFI/EMC Filter	–	C1 as Option	C1, C2, C3 as Options
Standards	Third Party Certifications	–	UL / cUL / CE	UL / cUL / CE. RoHS, TUV
Environment	Ambient Temperature	–	-10 to 40° C	-10 to +50° C (IP20)

# VS606 V74X to V1000-4X Product Transition Guide

Data Subject to change without notice.



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