

# Inverter Selection Guide

U.S. MOTORS®

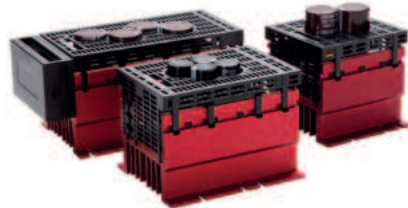


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021-87700210



## USVF Hybrid Drive™ – Chassis / IP 20



The USVF Series of Adjustable Frequency Drives consist of eleven inverter models rated for 0.25 to 5 horsepower motors. These chassis / IP 20 drives are ideal for OEM applications where digital programming and displays are not required. Hybrid drives are a digital drive with an analog interface. A 5 kΩ Main Speed Potentiometer is also included.

**Options:** SIVFR Signal Isolator and Run/Fault Relay (Standard on 460 VAC models), Class “A” or “B” (CE) RFI Filter, DBVF Dynamic Brake Module, Multi-Speed Board, USRK Remote Digital Keypad (OEM applications only), IOVF Input/Output Multi-Function Module, and Knob and Dial Kits.

HP	kW	AC Line Voltage (50/60 Hz)	Phase (Ø)	Catalog No.	Model No.	Max. AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight (Lbs.)	Net Weight (kg)	Dim Ref. Code
0.25	0.18	115	1	USVF22D*	U9572	6	0 – 208/230	1.5	1.3	0.6	D
		208/230				3.8					
0.5	0.37	115	1	USVF23D*	U9959	9.7	0 – 208/230	2.4	1.3	0.6	D
		208/230				6					
1	0.75	115	1	USVF24D*	U9979	14	0 – 208/230	4	2.2	1	E
		208/230				10					
1.5	1.13	115	1	USVF26D*	U9496	22	0 – 208/230	5.5	2.9	1.3	G
		208/230				14					
0.5	0.37	208/230	3	USVF23P	U9676	3.1	0 – 208/230	2.4	1.1	0.5	D
1	0.75	208/230	3	USVF24P	U9677	5.2	0 – 208/230	4	2.2	1	E
2	1.5	208/230	1	USVF27	U9591	17	0 – 208/230	6.7	4.1	1.9	H
			3			8.7					
2	1.5	208/230	1	USVF29	U9593	16.7	0 – 208/230	6.7	4.6	2.1	H
3	2.25		3			11.7		9			
1	0.75	400/460	3	USVF42**	U9645	2.6	0 – 400/460	2	2.8	1.3	I
3	2.25	400/460	3	USVF45**	U9590	5.3	0 – 400/460	4.6	4.1	1.9	J
5	3.75	400/460	3	USVF48**	U9592	11	0 – 400/460	8.3	4.6	2.1	J

\*Models USVF22D, 23D, 24D and 26D are available in single voltage AC line input (115 or 208/230 Volts AC) and also contain a built-in Motor Filter to eliminate winding and bearing failures.

\*\*Contains SIVFR signal input isolation and Run/Fault output relay.

## USVF Hybrid Drive™ – Accessories

The USVF Series of Adjustable Frequency Drives is a modular system designed to give you only the features you need. Accessories are easy to install and operate.

Part No.	Model No.	Description
USVF SIVFR2G	U9597	Signal isolator with Run/Fault Relay (Installs on end of USVF)
USVFSIVFR3G	U9651	Signal Isolator with Run/Fault Relay (Installs on end of USVF)
USVFAC MSB	U9503	Multi-Speed Board (Installs on end of USVF)
USVFDVBF	U9598	Dynamic Braking Module for single phase models
USVFIIOVF	U9996	Input/Output Module (Installs on end of USVF)
USVFKDS	U9115	Small Knob and Dial Kit. Black knob with silver insert. Dial Plate: 0.04" aluminum with 3/8" mounting hole, 1.62" L X 1.5" W.
USVFKDL	U9832	Large Knob and Dial Kit. Black knob with silver insert. Dial Plate: 0.04" aluminum with 3/8" mounting hole, 2.25" L X 2.06" W.

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## USAC Hybrid Drive™ – NEMA 4X / IP 65

The USAC Series of Adjustable Frequency Drives consist of sixteen inverter models rated for 1-10 horsepower motors. These drives are housed in heavy duty NEMA 4X / IP 65 die-cast aluminum washdown/watertight enclosures for indoor or outdoor use. Hybrid drives are a digital drive with an analog interface.

**Options:** On/Off AC Line Switch, Forward-Stop-Reverse Switch, Run-Stop-Jog Switch, Signal Isolator with Auto/Manual Switch, Class "A" (CE) RFI Filter and Liquidtight Fittings.

HP	kW	AC Line Voltage (50/60 Hz)	Phase (Ø)	Catalog No.	Model No.		Max. AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight (Lbs.)	Net Weight (kg)	Dim. Ref. Code
					Gray	White						
1	0.75	115	1	USAC24D	U9987	U9988	14.4	0 – 208/230	3.6	5.9	2.7	A
		208/230					8.1					
1.5	1.13	115	1	USAC27D	U9520	U9521	22	0 – 208/230	5.5	10.3	4.7	B
2	1.5	208/230					16.7		6.7			
3	2.25	208/230	1	USAC29 (1P)	U10001	U10002	20.5	0 – 208/230	9	10.3	4.7	B
2	1.5	208/230	1	USAC29	U9528	U9529	16.7	0 – 208/230	6.7	10.3	4.7	B
3	2.25		3				11.7		9			
3	2.25	400/460	3	USAC45**	U9530	U8869	7.2	0 – 400/460**	5.5	10.3	4.7	B
5	3.75	400/460	3	USAC48**	U9540	U9541	11	0 – 400/460**	8.3	10.3	4.7	B
5	3.75	208/230	3	USAC217	U8868	U8879	22.1	0-203/230	17	22	10	C
10	7.5	400/460	3	USAC416**	U8870	U8881	20.8	0-400/460**	16	22	10	C

\*FDA approved finish (white cases only).

\*\*400/460 VAC models are rated 0-400 Volts AC for 50 Hz motor operation and 0-460 Volts AC for 60 Hz motor operation.



## USAC Hybrid Drive™ – Accessories

NEMA 4X /IP 65 Hybrid Drive designed to be easy to use with little to no programming of the features you need. Accessories are easy to install and operate.

Part No.	Model No.	Description
USACSIAC	U9600	Signal Isolator (Installs inside all USAC controls)
USACSIACWAMSW	U9605	Signal Isolator with Auto/Manual Switch Kit (Installs inside all USAC controls)
USACFSRS	U9480	Forward/Stop/Reverse Switch Kit
USACAMS	U9481	Auto/Manual Switch Kit
USACAD24DOOS	U9482	Power On/Off Switch Kit (for -24D)
USACAD27DOOS	U9523	Power On/Off Switch Kit (for -27D, -29 (1P))
USACAD3POOS	U9532	3 Phase Power On/Off Switch Kit (Installs inside -29, -45, -48)
USACADRFAC24D	U9507	CE AC Line Filter (Class A) (Factory installed only) (for -24D)
USACADRFAC27D	U9512	CE AC Line Filter (Class A) (Factory installed only) (for -27D)
USACADRFAC3PS	U9479	CE 3 phase AC Line Filter (Class A) (Factory installed only)
USACADRFAC3PNS	U9515	CE 3 phase AC Line Filter (Class A) (Factory installed only)
USACADLTF	U9526	Liquidtight Fittings, 3 x 0.5", 1 x 0.75" (for Dim. Ref. Codes for "A" and "B" only)
USACCOLTF	U8892	Liquidtight Fittings, 1 x 0.5", 2 x 0.75" (for Dim. Ref. Code "C" only)
USACALF	U9516	AC Line Filter (Class A) (Factory installed) (for Dim. Ref. Code "C" only)

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### USAD Digital Drive – NEMA 4X / IP 65

The USAD Series of Digital Adjustable Frequency Drives consist of sixteen inverter models rated for 1-5 horsepower motors. These drives are housed in heavy duty NEMA 4X / IP 65 die-cast aluminum wash-down/watertight enclosures for indoor or outdoor use.

**Options:** IOAD Input/Output Multi-Function Module, Modbus Serial Communication Module, Drive-Link™ Programming Kit, On/Off AC Line Switch, Class “A” (CE) RFI Filter and Liquidtight Fittings.

HP	kW	AC Line Voltage (50/60 Hz)	Phase (Ø)	Catalog No.	Model No.		Max. AC Line Current (Amps AC)	Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight (Lbs.)	Net Weight (kg)	Dim. Ref. Code
					Gray	White*						
1	0.75	115	1	USAD24D	U9536	U9537	14.4	0 – 208/230	3.6	5.9	2.7	A
		8.1										
1.5	1.13	115	1	USAD27D	U9543	U9544	22	0 – 208/230	5.5	10.3	4.7	B
2	1.5	208/230					16.7		6.7			
3	2.25	208/230	1	USAD29 (1P)	U10003	U10004	20.5	0 – 208/230	9	10.3	4.7	B
1	0.75	208/230	3	USAD24P	U9766	U9767	4.8	0 – 208/230	3.6	5.9	2.7	A
2	1.5	208/230	1	USAD29	U9545	U9546	16.7	0 – 208/230	6.7	10.3	4.7	B
3	2.25		3				11.7		9			
1	0.75	400/460	3	USAD42**	U9763	U9764	2.1	0 – 400/460**	2	5.9	2.7	A
3	2.25	400/460	3	USAD45**	U9659	U9660	7.2	0 – 400/460**	5.5	10.3	4.7	B
5	3.75	400/460	3	USAD48**	U9661	U9662	11	0 – 400/460**	8.3	10.3	4.7	B

\*FDA approved finish (white cases only).

\*\*400/460 VAC models are 0-400 Volts AC for 50 Hz motor operation and 0-460 Volts AC for 60 Hz motor operation.



### USAD Digital Drive – Accessories NEMA 4X / IP 65 Digital Drive

Part No.	Model No.	Description
USADIODA	U9668	Input/Output Module (for all Models)
USAD3POOS	U9768	3 phase Power On/Off Switch Kit (For use with -24P & -42 with no filter)
USAD3PFOOS	U9762	3 phase Power On/Off Switch Kit (For use with -24P & -42 with RFI filter)
USADFDA3P	U9465	CE 3 phase AC Line Filter (Class A) (Factory installed only with -24P & -42)
USACAD24DOOS	U9482	Power On/Off Switch Kit (for -24D)
USACAD27DOOS	U9523	Power On/Off Switch Kit (for -27D, -29 (IP))
USACAD3POOS	U9532	3 Phase Power On/Off Switch Kit (Installs inside -29, -45, -48)
USACDRFAC24D	U9507	CE AC Line Filter (Class A) (Factory installed only) (for -24D)
USACDRFAC27D	U9512	CE AC Line Filter (Class A) (Factory installed only) (for -27D)
USACDRFAC3PS	U9479	CE 3 phase AC Line Filter (Class A) (Factory installed only)
USACDRFAC3PNS	U9515	CE 3 phase AC Line Filter (Class A) (Factory installed only)
USACADLTF	U9526	Liquidtight Fittings, 3 x 0.5", 1 x 0.75"

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### USWA Hybrid Drive™ – NEMA 1 Enclosures\*

The USWA Series of Adjustable Frequency Drives consist of two inverter models rated for 1/8 to 1/2 horsepower\*\* motors. These drives are housed in NEMA 1 enclosures\*. Both models contain an On/Off AC Line Switch and a Main Speed Potentiometer. Hybrid drives are a digital drive with an analog interface.

**Option:** Supplied Forward-Stop-Reverse Switch.

HP	kW	AC Line Voltage (50/60 Hz)	Phase (Ø)	Catalog No.	Model No.	Max. AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight (Lbs.)	Net Weight (kg)	Dim. Ref. Code
0.25	0.19	115	1	USWA22D	U9926	5.2	0 – 208/230	1.3	1.58	0.72	K
		208/230				3.8		1.5			
0.5	0.37	115	1	USWA23D	U9946	8.8	0 – 208/230	2.2	1.58	0.72	K
		208/230				6		2.4			

\*Models USWA22D (IP 50), model USWA23D (IP 20). \*\*Lower horsepower models available (USWA21D, 2P3D, 2P6D).



### USMA Hybrid Drive™ – NEMA 1 / IP 50

The USMA Series of Adjustable Frequency Drives consist of two inverter models rated for 1/8 to 1 horsepower motors. These drives are housed in NEMA 1 / IP 50 aluminum enclosures. The USMA-24DF contains a built-in CE approved AC Line Class “A” Industrial Standard RFI (EMI) Filter. Hybrid drives are a digital drive with an analog interface.

**Option:** Forward-Stop-Reverse Switch.

HP	kW	AC Line Voltage (50/60 Hz)	Phase (Ø)	Catalog No.	Model No.	Max. AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight (Lbs.)	Net Weight (kg.)	Dim. Ref. Code
1	0.75	115	1	USMA24D	U9533	14.4	0 – 208/230	3.6	2.42	1.09	C
		208/230				9.5					
1	0.75	115	1	USMA24DF	U9534	9.5	0 – 208/230	3.6	2.48	1.12	C
		208/230									



### USMK Digital Drive – NEMA 1 / IP 50

The USMK Series of Digital Adjustable Frequency Drives consist of two inverter models rated for 1/8 to 1 horsepower motors. These drives are housed in NEMA 1 / IP 50 aluminum enclosures. The USMK-24DF contains a built-in CE approved AC Line Class “A” Industrial Standard RFI (EMI) Filter.

**Options:** IODA Input/Output Multi-Function Module and On/Off AC Line Switch.

HP	kW	AC Line Voltage (50/60 Hz)	Phase (Ø)	Catalog No.	Model No.	Max. AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight (Lbs.)	Net Weight (kg.)	Dim. Ref. Code
1	0.75	115	1	USMK24D	9680	14.4	0 – 208/230	3.6	2.26	1.03	C
		208/230				9.5					
1	0.75	115	1	USMK24DF	9681	9.5	0 – 208/230	3.6	2.26	1.03	C
		208/230									

### USWA, USMA, USMK – Accessories

Part No.	Model No.	Description
USWAFSRS	U9916	USWA Replacement FSR Switch Kit
USWAWKOOS	U9918	USWA/USWK Replacement On/Off AC Line Switch Kit
USMAFSRS	U9519	USMA Forward/Stop/Reverse Switch Kit
USMKOOS	U9683	USMK On/Off AC Line Switch Kit