

# DRIVES, CONTROLS & PROTECTION

AGRICULTURAL, INDUSTRIAL & MUNICIPAL





### **SAFETY FIRST!**

As with all electrical equipment, only qualified, expert personnel should perform maintenance and installation. Comply with all applicable local and national codes and laws that regulate the installation and operation of equipment and read manuals thoroughly. Use only installation manuals and not this sales brochure for installation procedures. It is up to the installer to determine product suitability for a given application.

# AGRICULTURAL, INDUSTRIAL, & MUNICIPAL DRIVES & CONTROLS

<b>Controls Sizing Chart .....</b>	<b>2</b>
<b>Starters &amp; Soft Starters Comparison Chart .....</b>	<b>8</b>
Starter Comparison.....	8
Soft Starter Comparison.....	9
<b>Starters &amp; Protection.....</b>	<b>10</b>
EPS Economy Pump Starter .....	10
SSP SmartStart™ Pump Starter .....	18
SubMonitor Connect .....	26
SMS SubMonitor Connect Starter .....	28
<b>Soft Starters .....</b>	<b>34</b>
SPS-RV Standard Pump Starter Reduced Voltage .....	34
IPS-RV Intelligent Pump Soft Starter .....	40
<b>Variable Frequency Drives.....</b>	<b>47</b>
Cerus® X-Drive .....	47
NEMA 3R Panels.....	48
NEMA 1 Panels .....	61
Stand-Alone N1 Variable Frequency Drive.....	69
Cerus X-Drive for MagForce High Efficiency Systems.....	81

For the most up-to-date product information, visit [franklinwater.com](http://franklinwater.com).



## CONTROLS SIZING CHART - SUBMERSIBLE MOTORS

4" 1-PHASE INPUT / 3-PHASE OUTPUT

Motor				Cerus X-Drive		
Motor Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 3R Panel w/Disconnect	NEMA 3R Panel w/o Disconnect	VFD Only
234501	1/2	3.4	200	XS2B0034-1A	XS2B0034-10	CXD-007A-2V
234503	1	5.4		XS2B0054-1A	XS2B0054-10	CXD-015A-2V
234504	1.5	6.8		XS2B0075-1A	XS2B0075-10	CXD-015A-2V
234305	2	9.3		XS2B0105-1A	XS2B0105-10	CXD-021A-2V
234306	3	12.5		XS2B0155-1A	XS2B0155-10	CXD-031A-2V
234307	5	20.5		XS2B0230-1A	XS2B0230-10	CXD-046A-2V
234308	7.5	30.5		XS2B0305-1A	XS2B0305-10	CXD-061A-2V
234511	1/2	2.9	230	XS2B0038-1A	XS2B0038-10	CXD-007A-2V
234513	1	4.7		XS2B0050-1A	XS2B0050-10	CXD-010A-2V
234514	1.5	5.9		XS2B0075-1A	XS2B0075-10	CXD-015A-2V
234315	2	8.1		XS2B0105-1A	XS2B0105-10	CXD-021A-2V
234316	3	10.9		XS2B0155-1A	XS2B0155-10	CXD-031A-2V
234317	5	17.8		XS2B0230-1A	XS2B0230-10	CXD-046A-2V
234318	7.5	26.4		XS2B0305-1A	XS2B0305-10	CXD-061A-2V
234521	1/2	1.5	460	XS4B0015-1A	XS4B0015-10	CXD-003A-4V
234523	1	2.4		XS4B0028-1A	XS4B0028-10	CXD-005A-4V
234524	1.5	3.1		XS4B0040-1A	XS4B0040-10	CXD-008A-4V
234325	2	4.1		XS4B0043-1A	XS4B0043-10	CXD-008A-4V
234326	3	5.5		XS4B0060-1A	XS4B0060-10	CXD-013A-4V
234327	5	8.9		XS4B0090-1A	XS4B0090-10	CXD-018A-4V
234328	7.5	13.2		XS4B0160-1A	XS4B0160-10	CXD-032A-4V
234595	10	17.3		XS4B0180-1A	XS4B0180-10	CXD-038A-4V
234626	15	25.8	575	XS4B0270-1A	XS4B0270-10	CXD-060A-4V
234531	1/2	1.2		XS6B0015-1A	XS6B0015-10	CXD-003A-6V
234533	1	1.9		XS6B0020-1A	XS6B0020-10	CXD-004A-6V
234534	1.5	2.4		XS6B0030-1A	XS6B0030-10	CXD-006A-6V
234335	2	3.2		XS6B0034-1A	XS6B0034-10	CXD-006A-6V
234336	3	4.4		XS6B0050-1A	XS6B0050-10	CXD-009A-6V
234337	5	7.1		XS6B0080-1A	XS6B0080-10	CXD-018A-6V
234338	7.5	10.6		XS6B0120-1A	XS6B0120-10	CXD-024A-6V
234598	10	13.6		XS6B0150-1A	XS6B0150-10	CXD-030A-6V
234636	15	20.7		XS6B0210-1A	XS6B0210-10	CXD-045A-6V

## CONTROLS SIZING CHART - SUBMERSIBLE MOTORS

### 4" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				Cerus X-Drive			Starters			Soft Starters	
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 3R Panel w/Disconnect	NEMA 3R Panel w/o Disconnect	VFD Only	EPS	SSP	SMS	SPS-RV	IPS-RV
234501	1/2	3.4	200	XS2B0034-3A	XS2B0034-30	CXD-005A-2V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S0-J-G15
234503	1	5.4		XS2B0055-3A	XS2B0055-30	CXD-007A-2V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S0-J-G15
234504	1.5	6.8		XS2B0075-3A	XS2B0075-30	CXD-007A-2V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S0-J-G15
234305	2	9.3		XS2B0100-3A	XS2B0100-30	CXD-010A-2V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IP3R-RV-S1-J-G20
234306	3	12.5		XS2B0150-3A	XS2B0150-30	CXD-015A-2V	EPS3C-3A030S	SSP3C-3A030S	SMS3C-3A030S1	SPSRV3D-3A030	IP3R-RV-S1-J-G30
234307	5	20.5		XS2B0210-3A	XS2B0210-30	CXD-021A-2V	EPS3C-3A040S	SSP3C-3A040S	SMS3D-3A040S1	SPSRV3D-3A040	IP3R-RV-S1-J-G40
234308	7.5	30.5		XS2B0310-3A	XS2B0310-30	CXD-031A-2V	EPS3E-3A060S	SSP3E-3A060S	SMS3E-3A060S1	SPSRV3E-3A060	IP3R-RV-S1P-J-G60
234511	1/2	2.9		XS2B0034-3A	XS2B0034-30	CXD-005A-2V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S0-J-G15
234513	1	4.7	230	XS2B0055-3A	XS2B0055-30	CXD-007A-2V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S0-J-G15
234514	1.5	5.9		XS2B0075-3A	XS2B0075-30	CXD-007A-2V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S0-J-G15
234315	2	8.1		XS2B0100-3A	XS2B0100-30	CXD-010A-2V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IP3R-RV-S1-J-G20
234316	3	10.9		XS2B0110-3A	XS2B0110-30	CXD-015A-2V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IP3R-RV-S1-J-G20
234317	5	17.8		XS2B0190-3A	XS2B0190-30	CXD-021A-2V	EPS3C-3A040S	SSP3C-3A040S	SMS3D-3A040S1	SPSRV3D-3A040	IP3R-RV-S1-J-G40
234318	7.5	26.4		XS2B0310-3A	XS2B0310-30	CXD-031A-2V	EPS3E-3A050S	SSP3E-3A050S	SMS3E-3A050S1	SPSRV3E-3A050	IP3R-RV-S1P-J-G50
234521	1/2	1.5		XS4B0017-3A	XS4B0017-30	CXD-003A-4V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-J-G15
234523	1	2.4		XS4B0030-3A	XS4B0030-30	CXD-003A-4V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-J-G15
234524	1.5	3.1	460	XS4B0034-3A	XS4B0034-30	CXD-004A-4V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-J-G15
234325	2	4.1		XS4B0042-3A	XS4B0042-30	CXD-004A-4V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-J-G15
234326	3	5.5		XS4B0055-3A	XS4B0055-30	CXD-005A-4V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-J-G15
234327	5	8.9		XS4B0105-3A	XS4B0105-30	CXD-010A-4V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IP3R-RV-S1-J-G20
234328	7.5	13.2		XS4B0140-3A	XS4B0140-30	CXD-018A-4V	EPS3B-3A030S	SSP3B-3A030S	SMS3C-3A030S1	SPSRV3D-3A030	IP3R-RV-S1-J-G30
234595	10	17.3		XS4B0180-3A	XS4B0180-30	CXD-018A-4V	EPS3B-3A040S	SSP3B-3A040S	SMS3D-3A040S1	SPSRV3D-3A040	IP3R-RV-S1-J-G40
234626	15	25.8		XS4B0320-3A	XS4B0320-30	CXD-032A-4V	EPS3E-3A050S	SSP3E-3A050S	SMS3F-3A080S1	SPSRV3E-3A050	IP3R-RV-S1P-J-G50
234531	1/2	1.2		XS6B0016-3A	XS6B0016-30	CXD-003A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-6J-G15
234533	1	1.9	575	XS6B0020-3A	XS6B0020-30	CXD-003A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-6J-G15
234534	1.5	2.4		XS6B0030-3A	XS6B0030-30	CXD-003A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-6J-G15
234335	2	3.2		XS6B0032-3A	XS6B0032-30	CXD-004A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-6J-G15
234336	3	4.4		XS6B0048-3A	XS6B0048-30	CXD-006A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-6J-G15
234337	5	7.1		XS6B0076-3A	XS6B0076-30	CXD-009A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IP3R-RV-S1-6J-G15
234338	7.5	10.6		XS6B0110-3A	XS6B0110-30	CXD-012A-6V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IP3R-RV-S1-6J-G20
234598	10	13.6		XS6B0160-3A	XS6B0160-30	CXD-018A-6V	EPS3B-3A030S	SSP3B-3A030S	SMS3C-3A030S1	SPSRV3D-3A030	IP3R-RV-S1-6J-G30
234636	15	20.7		XS6B0210-3A	XS6B0210-30	CXD-024A-6V	EPS3C-3A040S	SSP3C-3A040S	SMS3E-3A050S1	SPSRV3D-3A040	IP3R-RV-S1-6J-G40

## CONTROLS SIZING CHART - SUBMERSIBLE MOTORS

### 6" 1-PHASE INPUT / 3-PHASE OUTPUT

Motor				Cerus X-Drive		
Motor Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 3R Panel w/Disconnect	NEMA 3R Panel w/o Disconnect	VFD Only
236650	5	20	200	XS2B0230-1A	XS2B0230-10	CXD-046A-2V
236651	7.5	28.3		XS2B0305-1A	XS2B0305-10	CXD-061A-2V
236652	10	37		XS2B0375-1A	XS2B0375-10	CXD-075A-2V
236653	15	54.4		XS2B0594-1A	XS2B0594-10	CXD-180A-2V
236654	20	69.7		XS2B0710-1A	XS2B0710-10	CXD-215A-2V
236655	25	86.3		XS2B0911-1A	XS2B0911-10	CXD-276A-2V
236656	30	104		XS2B1063-1A	XS2B1063-10	CXD-322A-2V
236600	5	17.6	230	XS2B0230-1A	XS2B0230-10	CXD-046A-2V
236601	7.5	24.6		XS2B0305-1A	XS2B0305-10	CXD-061A-2V
236602	10	32.2		XS2B0375-1A	XS2B0375-10	CXD-075A-2V
236603	15	47.4		XS2B0525-1A	XS2B0525-10	CXD-105A-2V
236604	20	60.6		XS2B0710-1A	XS2B0710-10	CXD-215A-2V
236605	25	76.4		XS2B0911-1A	XS2B0911-10	CXD-276A-2V
236606	30	90.4		XS2B0911-1A	XS2B0911-10	CXD-276A-2V
236610	5	8.8	460	XS4B0090-1A	XS4B0090-10	CXD-018A-4V
236611	7.5	12.3		XS4B0160-1A	XS4B0160-10	CXD-032A-4V
236612	10	16.1		XS4B0180-1A	XS4B0180-10	CXD-038A-4V
236613	15	23.7		XS4B0250-1A	XS4B0250-10	CXD-060A-4V
236614	20	30.3		XS4B0350-1A	XS4B0350-10	CXD-073A-4V
236615	25	38.2		XS4B0450-1A	XS4B0450-10	CXD-150A-4V
236616	30	45.2		XS4B0495-1A	XS4B0495-10	CXD-150A-4V
236617	40	61.6		XS4B0726-1A	XS4B0726-10	CXD-220A-4V
276618	50	78.1		XS4B0800-1A	XS4B0800-10	CXD-260A-4V
276619	60	92.3		XS4B1023-1A	XS4B1023-10	CXD-310A-4V
236620	5	7.1	575	XS6B0080-1A	XS6B0080-10	CXD-018A-6V
236621	7.5	9.8		XS6B0120-1A	XS6B0120-10	CXD-024A-6V
236622	10	12.9		XS6B0150-1A	XS6B0150-10	CXD-030A-6V
236623	15	19		XS6B0210-1A	XS6B0210-10	CXD-045A-6V
236624	20	24.2		XS6B0250-1A	XS6B0250-10	CXD-086A-6V
236625	25	30		-	-	-
236626	30	36.2		-	-	-
236627	40	49.6		-	-	-
236628	50	62.5		-	-	-
236629	60	73.9		-	-	-



## CONTROLS SIZING CHART - SUBMERSIBLE MOTORS

### 6" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				Cerus X-Drive			Starters			Soft Starters	
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 3R Panel w/Disconnect	NEMA 3R Panel w/o Disconnect	VFD Only	EPS	SSP	SMS	SPS-RV	IPS-RV
236650	5	20	200	XS2B0210-3A	XS2B0210-30	CXD-021A-2V	EPS3C-3A040S	SSP3C-3A040S	SMS3D-3A040S1	SPSRV3D-3A040	IPS3R-RV-S1-J-G40
236651	7.5	28.3		XS2B0310-3A	XS2B0310-30	CXD-031A-2V	EPS3E-3A060S	SSP3E-3A060S	SMS3E-3A060S1	SPSRV3E-3A060	IPS3R-RV-S1P-J-G60
236652	10	37		XS2B0460-3A	XS2B0460-30	CXD-046A-2V	EPS3F-3A080S	SSP3F-3A080S	SMS3F-3A080S1	SPSRV3F-3A080	IPS3R-RV-S2-J-G80
236653	15	54.4		XS2B0610-3A	XS2B0610-30	CXD-061A-2V	EPS3G-3A125S	SSP3G-3A125S	SMS3F-3A100S1	SPSRV3G-3A100	IPS3R-RV-S3-J-G100
236654	20	69.7		XS2B0750-3A	XS2B0750-30	CXD-075A-2V	EPS3H-3A150S	SSP3H-3A150S	SMS3G-3A125S1	SPSRV3G-3A125	IPS3R-RV-S3-J-G125
236655	25	86.3		XS2B0900-3A	XS2B0900-30	CXD-090A-2V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S4-J-G200
236656	30	104		XS2B1050-3A	XS2B1050-30	CXD-105A-2V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S4-J-G200
236600	5	17.6	230	XS2B0190-3A	XS2B0190-30	CXD-021A-2V	EPS3C-3A040S	SSP3C-3A040S	SMS3D-3A040S1	SPSRV3D-3A040	IPS3R-RV-S1-J-G40
236601	7.5	24.6		XS2B0250-3A	XS2B0250-30	CXD-031A-2V	EPS3E-3A050S	SSP3E-3A050S	SMS3E-3A050S1	SPSRV3E-3A050	IPS3R-RV-S1P-J-G50
236602	10	32.2		XS2B0340-3A	XS2B0340-30	CXD-046A-2V	EPS3F-3A080S	SSP3F-3A080S	SMS3E-3A060S1	SPSRV3F-3A080	IPS3R-RV-S1P-J-G60
236603	15	47.4		XS2B0480-3A	XS2B0480-30	CXD-061A-2V	EPS3F-3A100S	SSP3F-3A100S	SMS3F-3A100S1	SPSRV3G-3A100	IPS3R-RV-S3-J-G100
236604	20	60.6		XS2B0610-3A	XS2B0610-30	CXD-061A-2V	EPS3G-3A125S	SSP3G-3A125S	SMS3G-3A125S1	SPSRV3G-3A125	IPS3R-RV-S3-J-G125
236605	25	76.4		XS2B0800-3A	XS2B0800-30	CXD-090A-2V	EPS3H-3A150S	SSP3H-3A150S	SMS3H-3A150S1	-	IPS3R-RV-S3P-J-G150
236606	30	90.4		XS2B1000-3A	XS2B1000-30	CXD-105A-2V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S4-J-G200
236610	5	8.8	460	XS4B0105-3A	XS4B0105-30	CXD-010A-4V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IPS3R-RV-S1-J-G20
236611	7.5	12.3		XS4B0130-3A	XS4B0130-30	CXD-013A-4V	EPS3C-3A030S	SSP3C-3A030S	SMS3C-3A030S1	SPSRV3D-3A030	IPS3R-RV-S1-J-G30
236612	10	16.1		XS4B0180-3A	XS4B0180-30	CXD-018A-4V	EPS3C-3A030S	SSP3C-3A030S	SMS3C-3A030S1	SPSRV3D-3A030	IPS3R-RV-S1-J-G30
236613	15	23.7		XS4B0240-3A	XS4B0240-30	CXD-024A-4V	EPS3E-3A050S	SSP3E-3A050S	SMS3E-3A050S1	SPSRV3E-3A050	IPS3R-RV-S1P-J-G50
236614	20	30.3		XS4B0320-3A	XS4B0320-30	CXD-032A-4V	EPS3E-3A060S	SSP3E-3A060S	SMS3E-3A060S1	SPSRV3E-3A060	IPS3R-RV-S1P-J-G60
236615	25	38.2		XS4B0450-3A	XS4B0450-30	CXD-045A-4V	EPS3F-3A080S	SSP3F-3A080S	SMS3F-3A080S1	SPSRV3F-3A080	IPS3R-RV-S2-J-G80
236616	30	45.2		XS4B0500-3A	XS4B0500-30	CXD-060A-4V	EPS3F-3A100S	SSP3F-3A100S	SMS3F-3A100S1	SPSRV3G-3A100	IPS3R-RV-S3-J-G100
236617	40	61.6		XS4B0650-3A	XS4B0650-30	CXD-073A-4V	EPS3G-3A125S	SSP3G-3A125S	SMS3G-3A125S1	SPSRV3G-3A125	IPS3R-RV-S3-J-G125
276618	50	78.1		XS4B0800-3A	XS4B0800-30	CXD-091A-4V	EPS3H-3A150S	SSP3H-3A150S	SMS3H-3A150S1	SPSRV3H-3A150	IPS3R-RV-S3P-J-G150
276619	60	92.3		XS4B1100-3A	XS4B1100-30	CXD-110A-4V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S4-J-G200
236620	5	7.1	575	XS6B0076-3A	XS6B0076-30	CXD-009A-6V	EPS3B-3A015S	SSP3B-3A015S	SMS3B-3A015S1	SPSRV3D-3A015	IPS3R-RV-S1-6J-G15
236621	7.5	9.8		XS6B0099-3A	XS6B0099-30	CXD-018A-6V	EPS3B-3A020S	SSP3B-3A020S	SMS3B-3A020S1	SPSRV3D-3A020	IPS3R-RV-S1-6J-G20
236622	10	12.9		XS6B0160-3A	XS6B0160-30	CXD-018A-6V	EPS3C-3A030S	SSP3C-3A030S	SMS3C-3A030S1	SPSRV3D-3A030	IPS3R-RV-S1-6J-G30
236623	15	19		XS6B0195-3A	XS6B0195-30	CXD-024A-6V	EPS3C-3A040S	SSP3C-3A040S	SMS3D-3A040S1	SPSRV3D-3A040	IPS3R-RV-S1-6J-G40
236624	20	24.2		XS6B0242-3A	XS6B0242-30	CXD-024A-6V	EPS3E-3A050S	SSP3E-3A050S	SMS3E-3A050S1	SPSRV3E-3A050	IPS3R-RV-S1P-6J-G50
236625	25	30		XS6B0300-3A	XS6B0300-30	CXD-030A-6V	EPS3E-3A060S	SSP3E-3A060S	SMS3E-3A060S1	SPSRV3E-3A060	IPS3R-RV-S1P-6J-G60
236626	30	36.2		XS6B0410-3A	XS6B0410-30	CXD-045A-6V	EPS3F-3A080S	SSP3F-3A080S	SMS3F-3A080S1	SPSRV3F-3A080	IPS3R-RV-S2-6J-G80
236627	40	49.6		XS6B0540-3A	XS6B0540-30	CXD-054A-6V	EPS3F-3A100S	SSP3F-3A100S	SMS3F-3A100S1	SPSRV3G-3A100	IPS3R-RV-S3-6J-G100
236628	50	62.5		XS6B0670-3A	XS6B0670-30	CXD-067A-6V	EPS3G-3A125S	SSP3G-3A125S	SMS3G-3A125S1	SPSRV3G-3A125	IPS3R-RV-S3-6J-G125
236629	60	73.9		XS6B0800-3A	XS6B0800-30	CXD-086A-6V	EPS3H-3A150S	SSP3H-3A150S	SMS3H-3A150S1	SPSRV3H-3A150	IPS3R-RV-S3-6J-G150

## CONTROLS SIZING CHART - SUBMERSIBLE MOTORS

### 8" 1-PHASE INPUT / 3-PHASE OUTPUT

Motor				Cerus X-Drive		
Motor Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 3R Panel w/Disconnect	NEMA 3R Panel w/o Disconnect	VFD Only
239600	40	60	460	XS4B0726-1A	XS4B0726-10	CXD-220A-4V
239601	50	73		XS4B0800-1A	XS4B0800-10	CXD-260A-4V
239602	60	86		XS4B1023-1A	XS4B1023-10	CXD-310A-4V
239603	75	107		XS4B1100-1A	XS4B1100-10	CXD-370A-4V
239604	100	142		XS4B1518-1A	XS4B1518-10	CXD-460A-4V
239105	125	188		XS4B2000-1A	XS4B2000-10	CXD-616A-4V
239106	150	219		XS4B2254-1A	XS4B2254-10	CXD-683A-4V
239107	175	249		XS4B2500-1A	XS4B2500-10	CXD-770A-4V
239108	200	282		XS4B3050-1A	XS4B3050-10	CXD-930A-4V



## CONTROLS SIZING CHART - SUBMERSIBLE MOTORS

### 8" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				Cerus X-Drive			Starters			Soft Starters	
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 3R Panel w/Disconnect	NEMA 3R Panel w/o Disconnect	VFD Only	EPS	SSP	SMS	SPS-RV	IPS-RV
239600	40	60	460	XS4B0600-3A	XS4B0600-30	CXD-060A-4V	EPS3G-3A125S	SSP3G-3A125S	SMS3G-3A125S1	SPSRV3G-3A125	IPS3R-RV-S3-J-G125
239601	50	73		XS4B0730-3A	XS4B0730-30	CXD-073A-4V	EPS3H-3A150S	SSP3H-3A150S	SMS3H-3A150S1	SPSRV3H-3A150	IPS3R-RV-S3P-J-G150
239602	60	86		XS4B0910-3A	XS4B0910-30	CXD-091A-4V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S4-J-G200
239603	75	107		XS4B1100-3A	XS4B1100-30	CXD-110A-4V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S4-J-G200
239604	100	142		XS4B1500-3A	XS4B1500-30	CXD-150A-4V	-	-	SMS3K-3A300S1	-	IPS3R-RV-S5-J-G250
239105	125	188		XS4B2000-3A	XS4B2000-30	CXD-220A-4V	-	-	SMS3K-3A400S1	-	IPS3R-RV-S5-J-G400
239106	150	219		XS4B2200-3A	XS4B2200-30	CXD-220A-4V	-	-	SMS3K-3A400S1	-	IPS3R-RV-S5-J-G400
239107	175	249		XS4B2500-3A	XS4B2500-30	CXD-260A-4V	-	-	SMS3L-3A500S1	-	IPS3R-RV-S5-J-G500
239108	200	282		XS4B3050-3A	XS4B3050-30	CXD-310A-4V	-	-	SMS3L-3A500S1	-	IPS3R-RV-S5-J-G500
239610	40	48	575	XS6B0540-3A	XS6B0540-30	CXD-054A-6V	EPS3F-3A100S	SSP3F-3A100S	SMS3F-3A100S1	SPSRV3G-3A100	IPS3R-RV-S3-6J-G100
239611	50	59		XS6B0670-3A	XS6B0670-30	CXD-067A-6V	EPS3G-3A125S	SSP3G-3A125S	SMS3G-3A125S1	SPSRV3G-3A125	IPS3R-RV-S3-6J-G125
239612	60	69		XS6B0800-3A	XS6B0800-30	CXD-086A-6V	EPS3G-3A125S	SSP3G-3A125S	SMS3G-3A125S1	SPSRV3H-3A150	IPS3R-RV-S3-6J-G125
239613	75	86		XS6B0860-3A	XS6B0860-30	CXD-086A-6V	-	-	SMS3I-3A200S1	-	IPS3R-RV-S5-6J-G200
239614	100	114		XS6B1250-3A	XS6B1250-30	CXD-125A-6V	-	-	SMS3R-S5-6M-G250	-	IPS3R-RV-S5-6J-G200
239115	125	151		XS6B1600-3A	XS6B1600-30	CXD-180A-6V	-	-	SMS3R-S5-6M-G300	-	IPS3R-RV-S5-6J-G300
239116	150	182		XS6B2000-3A	XS6B2000-30	CXD-220A-6V	-	-	SMS3R-S5-6M-G400	-	IPS3R-RV-S5-6J-G400
239117	175	200		XS6B2000-3A	XS6B2000-30	CXD-220A-6V	-	-	SMS3R-S5-6M-G400	-	IPS3R-RV-S5-6J-G400
239118	200	226		XS6B2500-3A	XS6B2500-30	CXD-290A-6V	-	-	SMS3R-S5-6M-G400	-	IPS3R-RV-S5-6J-G500

# STARTERS & SOFT STARTERS COMPARISON CHART

## STARTER COMPARISON

Starter	EPS	SSP	SMS
	 PG. 10	 PG. 18	 PG. 28
Amp Range (A)	1-80	1-80	1-361
Control	Hand-Off-Auto Switch	Hand-Off-Auto Switch	Hand-Off-Auto Switch
Overload Type	Electronic I <sup>2</sup> T trip curve	Electronic I <sup>2</sup> T trip curve	Electronic I <sup>2</sup> T trip curve
Overload Trip Class	10	10	Adjustable, 5-30
Motor Protection	Overload	Overload	Overload
	Current Phase Unbalance	Current Phase Unbalance	Current Phase Unbalance
	-	Under Load (Dry Run)	Under Power (Dry Run)
	-	Cycle Fault	Cycle Fault
	-	Locked Rotor/Stall	Locked Rotor/Stall
	-	-	Over Power
	-	-	Under Voltage
	-	-	Over Voltage
	-	-	Temperature Sensor
Inputs / Outputs	Dry Contacto Auto-Run	Dry Contacto Auto-Run	Dry Contacto Auto-Run
	Fault Relay Output	Fault Relay Output	Fault Relay Output
	-	-	High/Low Float Switch Terminals
	-	-	Voltage Auto-Run
	-	-	PT100/1000 Input
Additional Features	-	-	RS-485 Modbus & Bacnet Communication
	-	Adjustable Power Fail Modes	Adjustable Power Fail Modes
	-	-	Configurable Fault Reset Timers
	-	-	Dry Well Recovery Timer
	-	-	Door-Mountable NEMA 4X Display
	-	-	Adjustable Overload Service Factor
	-	-	Fault & Even Logging
	-	-	Power Metering
	-	-	Bluetooth Connectivity (FE Connect Mobile App)

## STARTER COMPARISON CHART

### SOFT STARTER COMPARISON

Soft Starter	SPS-RV	IPS-RV
	 <p>PG. 34</p>	 <p>PG. 40</p>
Amp Range (A)	1-85	1-330
Control	Hand/Off/Auto keypad with LED mode, run, and fault indication	Hand-Off-Auto Switch
Overload Type	Electronic I <sup>2</sup> T trip curve	Electronic I <sup>2</sup> T trip curve
Overload Trip Class	10	Adjustable, 5-30
Motor Protection	Overload	Overload
	Current Phase Unbalance	Current Phase Unbalance
	Cycle fault	Cycle fault
	Locked Rotor/Stall	Locked Rotor/Stall
	-	Under Power (Dry Run)
	-	Over Power
	-	Under Voltage
	-	Over Voltage
	-	Temperature Sensor
Inputs / Outputs	Dry Contact Auto-Run	Dry Contact Auto-Run
	Status Relay Output	Status Relay Output
	-	Fault Relay Output
	-	Voltage Auto-Run
	-	Float Switch Terminals
	-	Emergency Shutdown Input
	-	0-10V or 4-20mA Analog Input
	-	RS-485 Modbus Communication
Additional Features	SCR Over-Temperature Trip	SCR Over-Temperature Trip
	Shorted/Open SCR Trip	Shorted/Open SCR Trip
	Ability to Start Across-the-Line	Ability to Start Across-the-Line
	Adjustable Power Fail Modes	Adjustable Power Fail Modes
	-	Configurable Fault Reset Timers
	-	Dry Well Recovery Timer
	-	Power Metering
	-	Power Metering

## STARTERS & PROTECTION - EPS ECONOMY PUMP STARTER

3-Phase, 50/60HZ, 200-600 VAC, 1-80A

The enhanced Franklin Electric Economy Pump Starter (EPS) provides a simple and dependable starting option with a wide electronic overload range that meets submersible standards for overload protection in agricultural and industrial applications. The EPS features a circuit breaker with easy-to-replace components to eliminate the need to replace burnt fuses.

### INTEGRATED ELECTRONIC OVERLOAD MOTOR PROTECTION

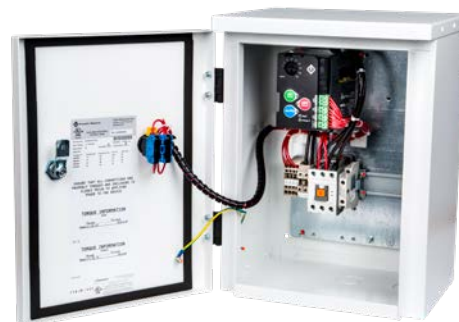
- Class S electronic overload protection specifically designed for submersible motors
- Phase loss protection

### MULTI-VOLTAGE OPERATING RANGE WITH AUTOMATION I/O

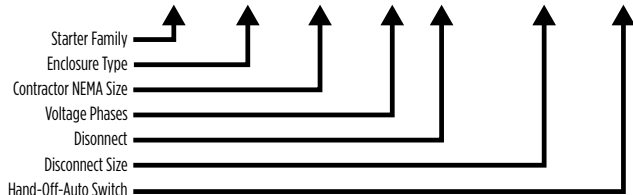
- Accepts 200-600 VAC directly with no adjustments; true plug-and-play
- Covers submersible systems between one and 50 horsepower in just three models
- Control I/O includes a dry contact auto-run input and fault relay output

### INDUSTRIAL GRADE CONSTRUCTION FOR HIGH RELIABILITY

- NEMA/IEC rated contactors that will survive up to 2.5 million electrical cycles
- Door mounted, heavy-duty H0A switch
- Thoroughly tested and designed to run on multiple power sources – power line, generators, phase converters



## EPS[X][X]-3[X][XXX]S



## EPS-ECONOMY PUMP STARTER - SIZING INFORMATION FOR SUBMERSIBLE MOTORS

### 4" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				EPS Part Number				
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 1	NEMA 3R	NEMA 3R with Circuit Breaker	NEMA 4*	NEMA 4X*
234501	1/2	3.4	200	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234503	1	5.4		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234504	1.5	6.8		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234305	2	9.3		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234306	3	12.5		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A030S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234307	5	20.5		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A040S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234308	7.5	30.5		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A060S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234511	1/2	2.9	230	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234513	1	4.7		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234514	1.5	5.9		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234315	2	8.1		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234316	3	10.9		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234317	5	17.8		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A040S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234318	7.5	26.4		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A050S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234521	1/2	1.5	460	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234523	1	2.4		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234524	1.5	3.1		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234325	2	4.1		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234326	3	5.5		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234327	5	8.9		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234328	7.5	13.2		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A030S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234595	10	17.3	575	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A040S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234626	15	25.8		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A050S	EPS4-S1P-R-33	EPS4XF-S1P-R-33
234531	1/2	1.2		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234533	1	1.9		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234534	1.5	2.4		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234335	2	3.2		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234336	3	4.4		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234337	5	7.1	575	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234338	7.5	10.6		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234598	10	13.6		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A030S	EPS4-S1P-R-32	EPS4XF-S1P-R-32
234636	15	20.7		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A040S	EPS4-S1P-R-32	EPS4XF-S1P-R-32

## EPS-ECONOMY PUMP STARTER - SIZING INFORMATION FOR SUBMERSIBLE MOTORS

### 6" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				EPS Part Number				
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 1	NEMA 3R	NEMA 3R with Circuit Breaker	NEMA 4*	NEMA 4X*
236650	5	20	200	EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A040S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236651	7.5	28.3		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A060S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236652	10	37		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A080S	EPS4-S2-J-52	EPS4XF-S2-J-52
236653	15	54.4		EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
236654	20	69.7		EPS1-S3P-R-80	EPS3H-30S	EPS3H-3A150S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
236600	5	17.6	230	EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A040S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236601	7.5	24.6		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A050S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236602	10	32.2		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A080S	EPS4-S2-J-52	EPS4XF-S2-J-52
236603	15	47.4		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A100S	EPS4-S2-J-52	EPS4XF-S2-J-52
236604	20	60.6		EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
236605	25	76.4		EPS1-S3P-R-80	EPS3H-30S	EPS3H-3A150S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
236610	5	8.8	460	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236611	7.5	12.3		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A030S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236612	10	16.1		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A030S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236613	15	23.7		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A050S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236614	20	30.3		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A060S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236615	25	38.2		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A080S	EPS4-S2-J-52	EPS4XF-S2-J-52
236616	30	45.2		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A100S	EPS4-S2-J-52	EPS4XF-S2-J-52
236617	40	61.6		EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
276618	50	78.1		EPS1-S3P-R-80	EPS3H-30S	EPS3H-3A150S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
236620	5	7.1	575	EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A015S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236621	7.5	9.8		EPS1-S1P-R-32	EPS3E-30S	EPS3B-3A020S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236622	10	12.9		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A030S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236623	15	19		EPS1-S1P-R-32	EPS3E-30S	EPS3C-3A040S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236624	20	24.2		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A050S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236625	25	30		EPS1-S1P-R-32	EPS3E-30S	EPS3E-3A060S	EPS4-S1P-J-32	EPS4XF-S1P-J-32
236626	30	36.2		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A080S	EPS4-S2-J-52	EPS4XF-S2-J-52
236627	40	49.6		EPS1-S2-R-52	EPS3F-30S	EPS3F-3A100S	EPS4-S2-J-52	EPS4XF-S2-J-52
236628	50	62.5		EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
236629	60	73.9		EPS1-S3P-R-80	EPS3H-30S	EPS3H-3A150S	EPS4-S3P-J-80	EPS4XF-S3P-J-80

### 8" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				EPS Part Number				
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 1	NEMA 3R	NEMA 3R with Circuit Breaker	NEMA 4*	NEMA 4X*
239600	40	60	460	EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
239601	50	73		EPS1-S3P-R-80	EPS3H-30S	EPS3H-3A150S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
239610	40	48	575	EPS1-S2-R-52	EPS3F-30S	EPS3F-3A100S	EPS4-S2-J-80	EPS4XF-S2-J-80
239611	50	59		EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80
239612	60	69		EPS1-S3P-R-80	EPS3H-30S	EPS3G-3A125S	EPS4-S3P-J-80	EPS4XF-S3P-J-80

\*Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.



## EPS-ECONOMY PUMP STARTER - ORDERING INFORMATION

### ECONOMY PUMP STARTERS

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 3R Enclosed Starter (Includes Service Entrance Circuit Breaker Disconnect)

Standard Model No.*	Configure-to-Order Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
EPS3B-3A015S	EPS3R-S0-J-G15	6-8	6-8	8	2	8	2	8	5	8	5	6-8	8	1
EPS3B-3A020S	EPS3R-S0-J-G20	8-11	8-11	11	3	11	3	11	7.5	11	10	8-11	11	1.5
EPS3C-3A030S	EPS3R-S0P-J-G30	12-17	12-17	17	3	17	3	17	10	17	15	12-17	17	3
EPS3C-3A040S	EPS3R-S0P-J-G40	16-22	16-22	22	5	22	7.5	22	15	22	20	16-17	17	3
EPS3E-3A050S	EPS3R-S1P-J-G50	20-28	20-28	28	7.5	28	10	28	20	28	25	20-28	28	5
EPS3E-3A060S	EPS3R-S1P-J-G60	24-32	24-32	32	7.5	32	10	32	20	32	30	24-32	32	7.5
EPS3F-3A080S	EPS3R-S2-J-G80	32-45	32-45	45	10	45	15	45	30	45	40	32-45	45	7.5
EPS3F-3A100S	EPS3R-S2-J-G100	40-52	40-52	52	15	52	20	52	40	52	50	40-50	50	10
EPS3G-3A125S	EPS3R-S3-J-G125	50-71	50-71	71	20	71	25	71	50	71	60	50-68	68	15
EPS3H-3A150S	EPS3R-S3P-J-G150	60-80	60-77	80	25	80	30	80	60	77	75	60-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 3R Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configure-to-Order Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
EPS3E-30S	EPS3R-S1P-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
EPS3F-30S	EPS3R-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
EPS3H-30S	EPS3R-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 1 Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configure-to-Order Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
-	EPS3R-S1P-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
-	EPS3R-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
-	EPS3R-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 4 Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configure-to-Order Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
-	EPS4-S1P-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
-	EPS4-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
-	EPS4-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

## EPS-ECONOMY PUMP STARTER - ORDERING INFORMATION

### FACTORY INSTALLABLE OPTIONS

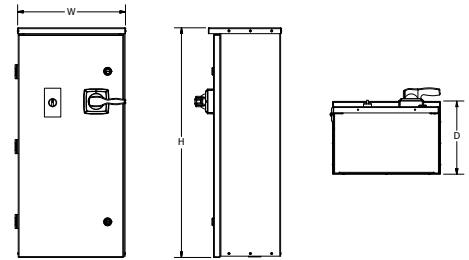
Part Number	Description
EPS-HOA-KEY	Keyed HOA Switch
EPS-RPL	Run Pilot Light
EPS-FPL	Fault Pilot Light
EPS-SRG-240V	Surge Suppressor, 200/230V
EPS-SRG-460V	Surge Suppressor, 460V
EPS-SRG-600V	Surge Suppressor, 600V
EPS-2FC	2-Float Switch Input Terminals
EPS-3FC	3-Float Switch Input Terminals
EPS-CAM-KEY	Keyed Enclosure Latch
EPS-CAM-PAD	Padlockable Enclosure Latch
EPS-DHM	Digital Hour Meter
EPS-RLY-120VAC	Interposing Run Relay - 120V
EPS-RLY-24VAC-DC	Interposing RunRelay - 24V
EPS-IPH	Wiring for Single Phase Input

*Product Sizing*      *Submersible Motors - Reference Service Factor Amps on the motor nameplate or Franklin AIM manual*  
*Surface Motors - Reference Full Load Amps on the motor nameplate*

## EPS-ECONOMY PUMP STARTER - DIMENSIONS

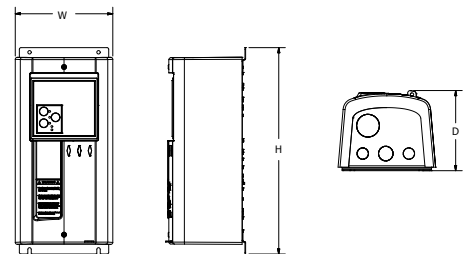
### DIMENSIONS: NEMA 3R ENCLOSURE

Combination Starter	Starter Type	Dimensions (in)			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
EPS3B-3A015S	with Service Entrance Circuit Breaker Disconnect	22	15	10	5/16"	17 & 5/8 x 12 & 3/4
EPS3B-3A020S						
EPS3C-3A030S						
EPS3C-3A040S						
EPS3E-3A050S						
EPS3E-3A060S						
EPS3F-3A080S						
EPS3F-3A100S						
EPS3G-3A125S	Disconnect not Included	32	15	10	5/16"	27 & 5/8 x 12 & 3/4
EPS3H-3A150S						
EPS3E-30S						
EPS3F-30S						
EPS3H-30S						



### DIMENSIONS: NEMA 1 ENCLOSURE

EPS Pump Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
EPSIE-30S	Disconnect not Included	16	7.5	6	1/4"	15 x 5 & 1/4
EPSIF-30S					16	12
EPSIH-30S						



### DIMENSIONS: NEMA 4 ENCLOSURE

EPS Pump Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
EPS4-S1P-J-32	Disconnect not Included	14	12	6	12/24"	13 & 1/4 x 9 & 1/2
EPS4-S2-J-52					16"	14
EPS4-S3P-J-80						

### DIMENSIONS: NEMA 4X ENCLOSURE

EPS Pump Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
EPS4XF-S1P-J-32	Disconnect not Included	16	7.5	6	1/4"	15 x 5 & 1/4
EPS4XF-S2-J-52						
EPS4XF-S3P-J-80						

\*All measurements shown in inches.

## EPS-ECONOMY PUMP STARTER - SPECIFICATIONS

### SPECIFICATIONS

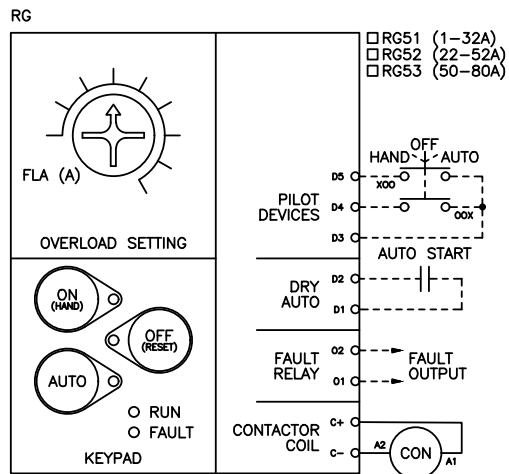
Starter Type		
Full Voltage, Non-Reversing		
With or Without Service Entrance Rated Circuit Breaker Disconnect (NEMA 3R Models Only)		
Enclosure Options		
NEMA Type 1 Enclosed - Indoor		
NEMA Type 3R Enclosed - Rain Tight		
*NEMA Type 4 Enclosed - Washdown Rated		
*NEMA Type 4X Fiberglass - Washdown Rated, Corrosion Resistant		
User Interface		
Control - NEMA 1	Hand-Off-Auto Keypad with LED's for Hand, Off, Auto,Run, and Fault Indication	
Control - NEMA 3R, 4 & 4X	Hand-Off-Auto Switch	
Setting Adjustments	Internal dial for motor FLA/SFA setting	
Inputs/Outputs		
Inputs	Auto-Run Input	D1/D2 Terminal, Normally Open Dry Contact, when closed, the motor will start when in auto mode
Output	Fault Relay Output	O1/O2 Terminal, Normally Open Relay - Rated for 12-240V, closes when a fault is detected
Contactor Power	Supplied power to the contactor	C+/C- Terminal, For Use with Franklin Electric Contactors Only
Overload Operational Specifications		
Overload Type	Electronic I2T trip curve	-
Overload Trip Class	Class S (submersible)	-
Overload Setting Range	EPS[ ]B to EPS[ ]E	1-32A
	EPS[ ]F	22-52A
	EPS[ ]G to EPS[ ]H	50-80A
Current Phase Unbalance	Trips within 3 seconds @ 80% current unbalance	-
Fault Reset	NEMA 1	Manual, Hold Off Key for 5 Seconds
	NEMA 3R, 4, 4X	Manual, Place Hand-Off-Auto Switch in the Off Position for 5 Seconds
Motor Stall	Trips within 0.5 seconds (disabled during startup)	-
Rapid Start (Cycle) Fault	Trip if cycle rate exceeds 20 starts/minute	-
Max Time to Start	If starting current is outside of an acceptable range (in-rush / 5) and still decreasing after 10 seconds	-
Power Fail Modes	Return to last mode prior to power fail (Hand, Off, or Auto)	-
Agency Approvals	UL/cUL, CSA, CE	-

\*Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.

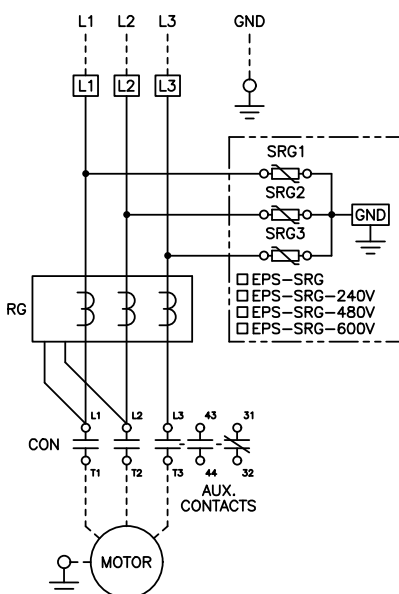
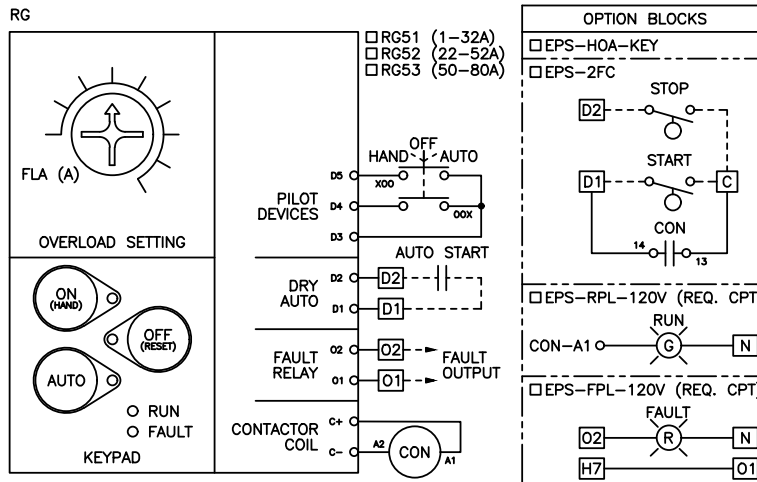
# EPS-ECONOMY PUMP STARTER - WIRING DIAGRAM

## WIRING DIAGRAM

### NEMA 1

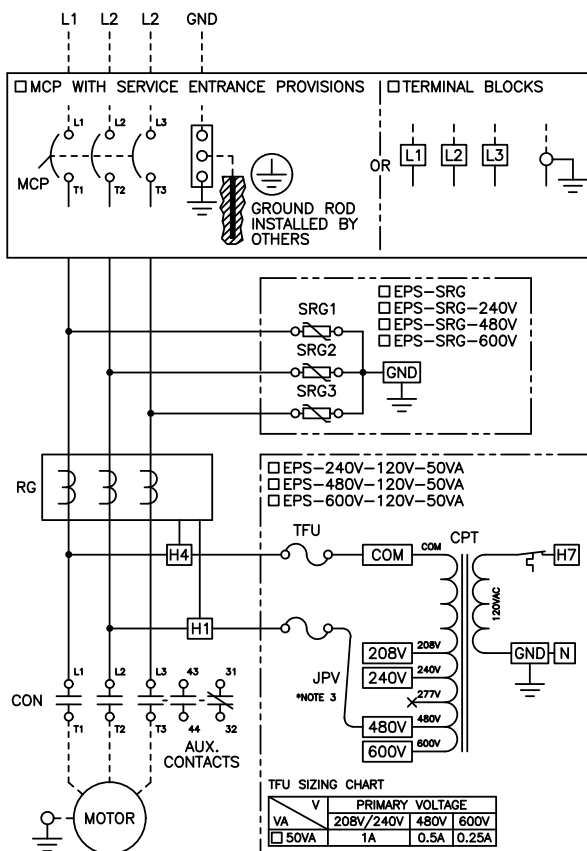


### NEMA 3R, NEMA 4 & NEMA 4X



#### NOTES

1. DASHED LINES INDICATE FIELD WIRING.
2. CHECK BOX INDICATES A SELECTED OPTION.



#### NOTES

1. DASHED LINES INDICATE FIELD WIRING.
2. CHECK BOX INDICATES A SELECTED OPTION.
3. JUMPER JPV AND FUSES SET ACCORDING TO THE SELECTED OPTION. CUSTOMER IS RESPONSIBLE FOR PRIMARY SIDE FUSES IF JPV IS MOVED.

## STARTERS & PROTECTION – SSP SMARTSTART™ PUMP STARTER

### INTEGRATED ELECTRONIC PROTECTION

- Enhanced Class 10 electronic overload protection specifically designed for submersible motors; Built-in 1.15 service factor compensation
- Underload (dry-run protection)
- Current phase unbalance protection
- Cycle fault protection
- Locked rotor and stall protection

### MULTI-VOLTAGE OPERATING RANGE

- Accepts 200-600 VAC directly, true plug and play
- Includes a dry contact auto-run input and fault relay output

### INDUSTRIAL GRADE CONSTRUCTION

- Door mounted heavy-duty HOA switch
- Housed in an outdoor rated, gasketed, NEMA 3R enclosure
- NEMA/IEC rated magnetic contactors feature 2.5 million electrical cycles at full rated current

### CIRCUIT BREAKER DISCONNECT (OPTIONAL)\*

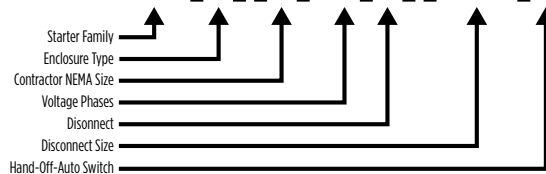
- UL 489 circuit breaker provides branch and short circuit protection  
*\*Service entrance rated*
- No fuses required – saves time and money
- Lockable handle for safety

### REVOLUTIONARY MOTOR PROTECTION

- **Aware:** SMARTSTART™ protects your system from adverse dry-run conditions with built-in underload protection standard.
- **Watchful:** SMARTSTART™ detects harmful extended starting conditions with maximum time to start. Monitors motor in-rush current conditions and trips if the motor doesn't start within 10 seconds (class 10 overload) regardless of FLA setting.
- **Active:** Active current monitoring provides superior protection against locked rotor and stall conditions, tripping faster than a standard inverse trip curve, regardless of the FLA setting.



**SSP[X][X]-3[X][XXX]S**





## SSP SMARTSTART™ PUMP STARTER - SIZING INFORMATION - SUBMERSIBLE MOTORS

### 4" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SSP Part Number				
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 1	NEMA 3R	NEMA 3R with Circuit Breaker	NEMA 4*	NEMA 4X*
234503	1	5.4	200	SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234504	1.5	6.8		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234305	2	9.3		SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234306	3	12.5		SSPIE-30S	SSP3E-30S	SSP3C-3A030S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234307	5	20.5		SSPIE-30S	SSP3E-30S	SSP3C-3A040S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234308	7.5	30.5		SSPIE-30S	SSP3E-30S	SSP3E-3A060S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234513	1	4.7	230	SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234514	1.5	5.9		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234315	2	8.1		SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234316	3	10.9		SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234317	5	17.8		SSPIE-30S	SSP3E-30S	SSP3C-3A040S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234318	7.5	26.4		SSPIE-30S	SSP3E-30S	SSP3E-3A050S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234523	1	2.4	460	SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234524	1.5	3.1		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234325	2	4.1		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234326	3	5.5		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234327	5	8.9		SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234328	7.5	13.2		SSPIE-30S	SSP3E-30S	SSP3B-3A030S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234595	10	17.3	575	SSPIE-30S	SSP3E-30S	SSP3B-3A040S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234533	1	1.9		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234534	1.5	2.4		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234335	2	3.2		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234336	3	4.4		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234337	5	7.1		SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234338	7.5	10.6	575	SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
234598	10	13.6		SSPIE-30S	SSP3E-30S	SSP3B-3A030S	SSP4-SIP-J-32	SSP4XF-SIP-J-32

## SSP SMARTSTART™ PUMP STARTER - SIZING INFORMATION - SUBMERSIBLE MOTORS

### 6" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SSP Part Number				
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 1	NEMA 3R	NEMA 3R with Circuit Breaker	NEMA 4*	NEMA 4X*
236650	5	20	200	SSPIE-30S	SSP3E-30S	SSP3C-3A040S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236651	7.5	28.3		SSPIE-30S	SSP3E-30S	SSP3E-3A060S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236652	10	37		SSPIF-30S	SSP3F-30S	SSP3F-3A080S	SSP4-S2-J-52	SSP4XF-S2-J-52
236653	15	54.4		SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236654	20	69.7		SSPIH-30S	SSP3H-30S	SSP3H-3A150S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236600	5	17.6	230	SSPIE-30S	SSP3E-30S	SSP3C-3A040S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236601	7.5	24.6		SSPIE-30S	SSP3E-30S	SSP3E-3A050S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236602	10	32.2		SSPIF-30S	SSP3F-30S	SSP3F-3A080S	SSP4-S2-J-52	SSP4XF-S2-J-52
236603	15	47.4		SSPIF-30S	SSP3F-30S	SSP3F-3A100S	SSP4-S2-J-52	SSP4XF-S2-J-52
236604	20	60.6		SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236605	25	76.4	460	SSPIH-30S	SSP3H-30S	SSP3H-3A150S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236610	5	8.8		SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236611	7.5	12.3		SSPIE-30S	SSP3E-30S	SSP3C-3A030S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236612	10	16.1		SSPIE-30S	SSP3E-30S	SSP3C-3A030S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236613	15	23.7		SSPIE-30S	SSP3E-30S	SSP3E-3A050S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236614	20	30.3	575	SSPIE-30S	SSP3E-30S	SSP3E-3A060S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236615	25	38.2		SSPIF-30S	SSP3F-30S	SSP3F-3A080S	SSP4-S2-J-52	SSP4XF-S2-J-52
236616	30	45.2		SSPIF-30S	SSP3F-30S	SSP3F-3A100S	SSP4-S2-J-52	SSP4XF-S2-J-52
236617	40	61.6		SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236618	50	78.1		SSPIH-30S	SSP3H-30S	SSP3H-3A150S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236620	5	7.1	575	SSPIE-30S	SSP3E-30S	SSP3B-3A015S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236621	7.5	9.8		SSPIE-30S	SSP3E-30S	SSP3B-3A020S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236622	10	12.9		SSPIE-30S	SSP3E-30S	SSP3C-3A030S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236623	15	19		SSPIE-30S	SSP3E-30S	SSP3C-3A040S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236624	20	24.2		SSPIE-30S	SSP3E-30S	SSP3E-3A050S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236625	25	30	575	SSPIE-30S	SSP3E-30S	SSP3E-3A060S	SSP4-SIP-J-32	SSP4XF-SIP-J-32
236626	30	36.2		SSPIF-30S	SSP3F-30S	SSP3F-3A080S	SSP4-S2-J-52	SSP4XF-S2-J-52
236627	40	49.6		SSPIF-30S	SSP3F-30S	SSP3F-3A100S	SSP4-S2-J-52	SSP4XF-S2-J-52
236628	50	62.5		SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
236629	60	73.9		SSPIH-30S	SSP3H-30S	SSP3H-3A150S	SSP4-S3P-J-80	SSP4XF-S3P-J-80

### 8" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SSP Part Number				
Model Prefix	HP	SFA (Max Amps)	Volts	NEMA 1	NEMA 3R	NEMA 3R with Circuit Breaker	NEMA 4*	NEMA 4X*
239600	40	60	460	SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
239601	50	73		SSPIH-30S	SSP3H-30S	SSP3H-3A150S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
239610	40	48	575	SSPIF-30S	SSP3F-30S	SSP3F-3A100S	SSP4-S2-J-80	SSP4XF-S2-J-80
239611	50	59		SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80
239612	60	69		SSPIH-30S	SSP3H-30S	SSP3G-3A125S	SSP4-S3P-J-80	SSP4XF-S3P-J-80

\*Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.

## SSP SMARTSTART™ PUMP STARTER - ORDERING INFORMATION

### SMARTSTART™ PUMP STARTERS

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 3R Enclosed Starter (Includes Service Entrance Circuit Breaker Disconnect)

Standard Model No.*	Configured Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
SSP3B-3A015S	SSP3R-S0-J-G15	6-8	6-8	8	2	8	2	8	5	8	5	6-8	8	1
SSP3B-3A020S	SSP3R-S0-J-G20	8-11	8-11	11	3	11	3	11	7.5	11	10	8-11	11	1.5
SSP3C-3A030S	SSP3R-S0P-J-G30	12-17	12-17	17	3	17	3	17	10	17	15	12-17	17	3
SSP3C-3A040S	SSP3R-S0P-J-G40	16-22	16-22	22	5	22	7.5	22	15	22	20	16-17	17	3
SSP3E-3A050S	SSP3R-S1P-J-G50	20-28	20-28	28	7.5	28	10	28	20	28	25	20-28	28	5
SSP3E-3A060S	SSP3R-S1P-J-G60	24-32	24-32	32	7.5	32	10	32	20	32	30	24-32	32	7.5
SSP3F-3A080S	SSP3R-S2-J-G80	32-45	32-45	45	10	45	15	45	30	45	40	32-45	45	7.5
SSP3F-3A100S	SSP3R-S2-J-G100	40-52	40-52	52	15	52	20	52	40	52	50	40-50	50	10
SSP3G-3A125S	SSP3R-S3-J-G125	50-71	50-71	71	20	71	25	71	50	71	60	50-68	68	15
SSP3H-3A150S	SSP3R-S3P-J-G150	60-80	60-77	80	25	80	30	80	60	77	75	60-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 3R Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configured Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
SSP3E-30S	SSP3R-SIP-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
SSP3F-30S	SSP3R-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
SSP3H-30S	SSP3R-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 1 Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configured Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
SSPIE-30S	SSPI-S1P-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
SSPIF-30S	SSPI-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
SSPIH-30S	SSPI-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 4 Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configured Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
-	SSP4-S1P-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
-	SSP4-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
-	SSP4-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

## SSP SMARTSTART™ PUMP STARTER - ORDERING INFORMATION

### SMARTSTART™ PUMP STARTERS

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 4X Fiberglass Enclosed Starter (Disconnect not Included)

Standard Model No.*	Configured Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP								200 V - 230 V 1-Phase Amp Range	1-Phase Max. Amps / HP	
				200 V		230 V		460 V		600 V			230 V	
				A	HP**	A	HP**	A	HP**	A	HP**		A	HP**
-	SSP4XF-S1P-J-32	1-32	1-32	32	7.5	32	10	32	20	32	30	1-32	32	5
-	SSP4XF-S2-J-52	22-52	22-52	52	15	52	15	52	40	52	50	22-50	50	10
-	SSP4XF-S3P-J-80	50-80	50-77	80	25	80	30	80	60	77	75	50-80	80	15

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

### FACTORY INSTALLABLE OPTIONS

Part Number	Description
SSP-HOA-KEY	Keyed HOA Switch
SSP-RPL	Run Pilot Light
SSP-FPL	Fault Pilot Light
SSP-SRG-240V	Surge Suppressor, 200/230V
SSP-SRG-460V	Surge Suppressor, 460V
SSP-SRG-600V	Surge Suppressor, 600V
SSP-2FC	2-Float Switch Input Terminals
SSP-3FC	3-Float Switch Input Terminals
SSP-CAM-KEY	Keyed Enclosure Latch
SSP-CAM-PAD	Padlockable Enclosure Latch
SSP-DHM	Digital Hour Meter
SSP-RLY-120VAC	Interposing Run Relay - 120V
SSP-RLY-24VAC-DC	Interposing RunRelay - 24V
SSP-1PH	Wiring for Single Phase Input

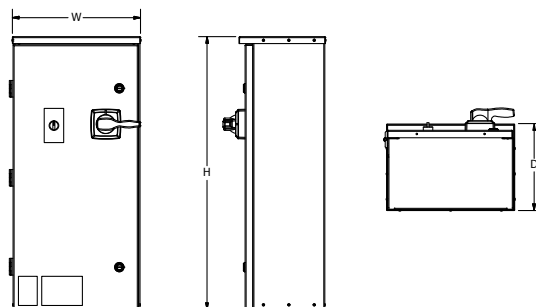
Factory Installable Options apply to Configured Models only. Configured items are built to order with lead time based on production capacity and backlog.

Product Sizing      Submersible Motors - Reference Service Factor Amps on the motor nameplate or Franklin AIM manual  
                                  Surface Motors - Reference Full Load Amps on the motor nameplate

## SSP SMARTSTART™ PUMP STARTER - DIMENSIONS

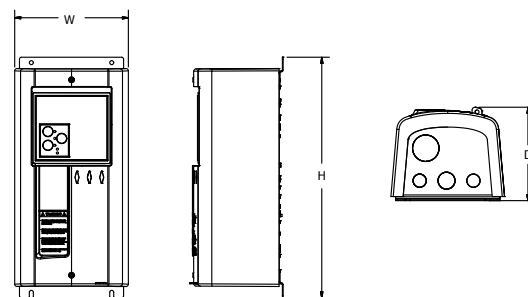
### DIMENSIONS: NEMA 3R ENCLOSURE

Combination Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
SSP3B-3A015S	with Service Entrance Circuit Breaker Disconnect	22	15	10	5/16"	17 & 5/8 x 12 & 3/4
SSP3B-3A020S						
SSP3C-3A030S						
SSP3C-3A040S						
SSP3E-3A050S						
SSP3E-3A060S						
SSP3F-3A080S						
SSP3F-3A100S						
SSP3G-3A125S	Disconnect not Included	16	12	10	5/16"	13 x 9 & 1/2
SSP3H-3A150S						
SSP3E-30S						
SSP3F-30S						
SSP3H-30S						



### DIMENSIONS: NEMA 1 ENCLOSURE

SmartStart Pump Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
SSPIE-30S	Disconnect not Included	16	7.5	6	1/4"	15 x 5 & 1/4
SSPIF-30S		16	12	8	5/16"	13 x 9 & 1/2
SSPIH-30S		16	12	8	5/16"	13 x 9 & 1/2



### DIMENSIONS: NEMA 4 ENCLOSURE

SmartStart Pump Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
SSP4-S1P-J-32	Disconnect not Included	14	12	6	#12-24	13 & 1/4 x 9 & 1/2
SSP4-S2-J-52		16	14	8	#12-24	15 & 1/4 x 11 & 1/2
SSP4-S3P-J-80		16	14	8	#12-24	15 & 1/4 x 11 & 1/2

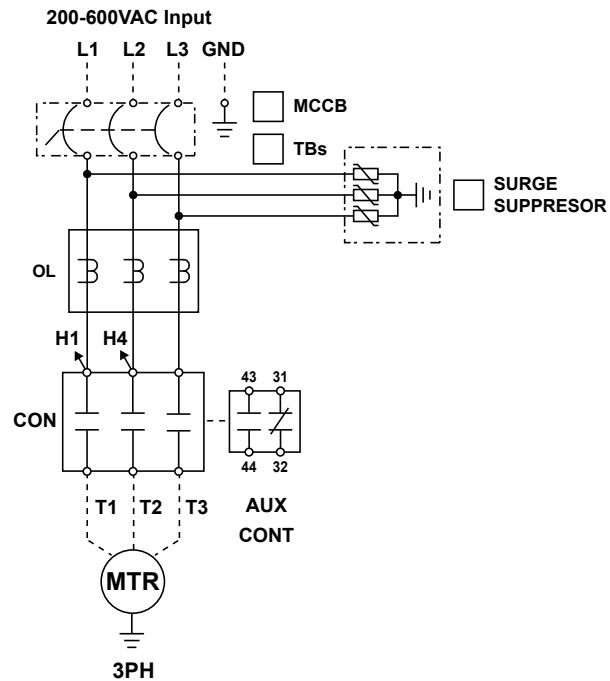
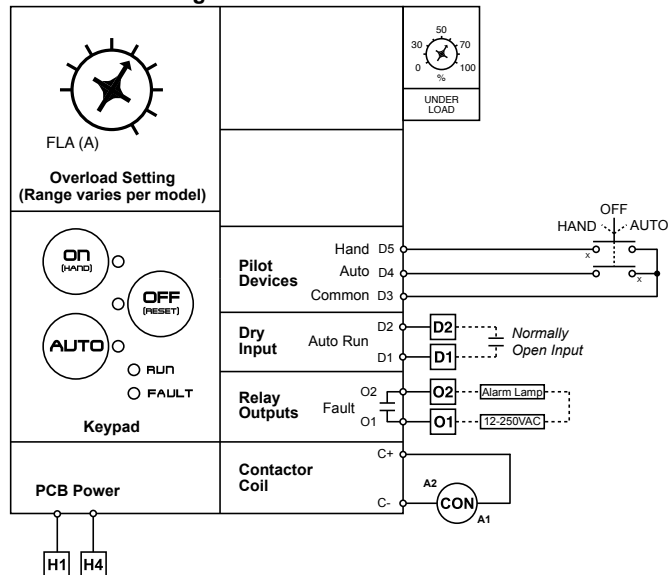
### DIMENSIONS: NEMA 4X ENCLOSURE

SmartStart Pump Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
SSP4XF-S1P-J-32	Disconnect not Included	16	7.5	6	1/4"	15 x 5 & 1/4
SSP4XF-S2-J-52						
SSP4XF-S3P-J-80						

# SSP SMARTSTART™ PUMP STARTER - WIRING DIAGRAM

## WIRING DIAGRAM

### SSP Control Wiring



NOTE: standard wiring schematic shown, actual product wiring may vary depending on options selected. Dashed lines indicate field wiring.



## SSP SMARTSTART™ PUMP STARTER - SPECIFICATIONS

### SPECIFICATIONS

Starter Type		
Full Voltage, Non-Reversing		
With or Without Service Entrance Rated Circuit Breaker Disconnect (NEMA 3R Models Only)		
Enclosure Options		
NEMA Type 1 Enclosed - Indoor		
NEMA Type 3R Enclosed - Rain Tight		
*NEMA Type 4 Enclosed - Washdown Rated		
*NEMA Type 4X Fiberglass - Washdown Rated, Corrosion Resistant		
User Interface		
Control - NEMA 1	Hand-Off-Auto Keypad with LED's for Hand, Off, Auto,Run, and Fault Indication	
Control - NEMA 3R, 4 & 4X	Hand-Off-Auto Switch	
Setting Adjustments	Internal dial for motor FLA/SFA setting, Internal dial for Underload % setting	
Inputs/Outputs		
Inputs	Auto-Run Input	D1/D2 Terminal, Normally Open Dry Contact, when closed, the motor will start when in auto mode
Output	Fault Relay Output	O1/O2 Terminal, Normally Open Relay - Rated for 12-240V, closes when a fault is detected
Contactor Power	Supplied power to the contactor	C+/C- Terminal, For Use with Franklin Electric Contactors Only
Environmental		
Ambient Operating Temp	-5 °F to 140 °F (-20 °C to 60 °C)	-
Ambient Storage Temp	-5 °F to 185 °F (-20 °C to 85 °C)	-
Relative Humidity	5% to 95% non-condensing	-
Overload Operational Specifications		
Overload Type	Electronic I2T trip curve	-
Overload Trip Class	Class S (submersible)	-
Overload Setting Range	SSP[ ]B to SSP[ ]E	1-32A
	SSP[ ]F	22-52A
	SSP[ ]G to SSP[ ]H	50-80A
Current Phase Unbalance	Trips when current deviation is greater than the selected value.	25% (OFF) or 80% (ON). Dip Switch Selectable
Fault Reset	NEMA 1	Manual, Hold Off Key for 5 Seconds
	NEMA 3R, 4, 4X	Manual, Place Hand-Off-Auto Switch in the Off Position for 5 Seconds
Underload (Dry Well) Protection	Adjustable Trip: 0%-100% of FLA	70% Default
Motor Stall	Trips within 0.5 seconds (disabled during startup)	-
Rapid Start (Cycle) Fault	Trip if cycle rate exceeds 20 starts/minute	-
Max Time to Start	If starting current is outside of an acceptable range (in-rush / 5) and still decreasing after 10 seconds	-
Power Fail Modes	Selectable: Return to Off Mode or return to last mode prior to power fail (Hand, Off, or Auto)	-
Agency Approvals	UL/cUL, CSA, CE	-

# STARTERS & PROTECTION - SUBMONITOR CONNECT

1 & 3-Phase, 50/60 Hz, 200-600 VAC, 1-700 HP

## ELECTRONIC OVERLOAD MOTOR PROTECTION

- Wide range, adjustable, class 5-30 electronic overload
- Dry pump detection protects your pump and motor from adverse conditions and allows for time-based automatic restart with well recovery mode
- Industry-leading motor protection for the following conditions: over/under power (dry-run), over/under voltage protection, voltage phase loss, voltage and current phase unbalance, locked rotor, cycle fault, ground fault
- Easy access to input and output terminals
- 32-character, backlit, NEMA 4x, wash-down rated screen mounted on front of panel allowing for safe viewing of conditions while motor is running
- Motor insulation check

## REAL-TIME & DATE-STAMPED FAULT LOGGING

- Unit ships with a pre-programmed real time clock with a 10-year battery backup
- Contains separate fault, configuration change, and start logs. Independent logs allow user to see last fault even if it occurred years ago
- Fault log tracks 150 faults with date and time stamp accurate down to the second; allows users to diagnose power problems and prove them to your power provider; unit will give users a 'snapshot' of conditions at the time of fault, such as line to line voltage and current, alarms present, and I/O status; format of time stamping example: 7/7/16 10:15:24

## APPLICATION-BASED SETUP

- SubMonitor Connect is an advanced, comprehensive, 1 & 3 phase motor protection relay that allows users to dial in protection and automation with extreme accuracy and parameter depth. However, SubMonitor Connect also has a streamlined Basic Setup Wizard to allows user to get up and running quickly.
- 9 simple steps to program unit
- Users select between Submersible, Surface, or Custom and SubMonitor prepopulates protection parameters accordingly
- Confirm basic motor info, key protection info, time to get started.



NOTE: Product range is 0.1 to 1000A. External CTs required above 135A.

## SUBMONITOR CONNECT - ORDERING & SIZING INFORMATION

### SUBMONITOR CONNECT

Description	Part No.
SubMonitor Connect - Standard, 1-135A	5860015010
SubMonitor Connect - Premium, 1-135A	5860005110

### OPTIONS

Description	Part No.
Door Mounting Kit	5860015160
External CTs, 120-270A	5860015170
External CTs, 200-400A	5860015180
External CTs, 400-1000A	5860015190

## SUBMONITOR CONNECT - SPECIFICATIONS

### SPECIFICATIONS

Product Type		
Pump & Motor Protection Relay		
NEMA Open Type with NEMA 4X Remote Mountable Display		
User Interface		
Setting Adjustments		SubMonitor keypad, 32 character, backlit NEMA 4X display FE Connect Mobile App (Bluetooth)
		FE Connect Mobile App connected via Bluetooth
Inputs/Outputs		
Inputs	Control Circuit	Provides a Triac capable of closing 24 VAC to 600 VAC LS manufactured contactors rated up to 800 Amps. Capable of closing other contactors with coil current ratings up to 2 Amps.
	RS-485	Modbus RTU & BACnet MSTP Communication
	PT100/1000	PT100/1000 input, On/Off, adjustable, 0-100oC
Output	Fault Relay Output	Normally Open Relay - Rated for 12-240V, closes in a fault condition
Environmental		
Ambient Operating Temp		-5 °F to 140 °F (-20 °C to 60 °C)
Ambient Storage Temp		-5 °F to 185 °F (-20 °C to 85 °C)
Relative Humidity		5% to 95% non-condensing
Overload Operational Specifications		
Overload Type		Electronic I2T trip curve
Overload Trip Class		Adjustable: 5-30, Default = 10
Overload Setting Range		0.1-135A (Base Unit), 1-1000A (with External CT's)
Overload Service Factor		Adjustable: 1.00-2.00, Default = 1.15
Under Power (Dry Run)		On/Off/Alarm, adjustable, 1-99% of kW setting, Default = On/65%
Over Power		On/Off/Alarm, adjustable, 101-200% of kW setting, Default = On/125%
Under Voltage		On/Off/Alarm, adjustable, 80-99% of voltage setting, Default = On/90%
Over Voltage		On/Off/Alarm, adjustable, 101-125% of voltage setting, Default = On/110%
Voltage Phase Loss		Always On
Ground Fault (UL 1053 Certified)		On/Off/Alarm, adjustable, 1-10A, Default = On/1A
Cycle Fault		On/Off, adjustable start limit, 2-100, default = On
Warm Start Provision		On/Off, delays motor restart based on calculated motor temperature, Default = On
Current Phase Unbalance		On/Off, adjustable, 1-50%, Default = On/5%
Locked Rotor/Stall		On/Off, trips if current exceeds 300% of FLA/SFA setting for 0.5 seconds, Default = On
Out of Calibration		On/Off, trips after 10 seconds if the calculated FLA/SFA setting is set too high, Default = Off
Max Time to Start		“On/Off, regardless of max amps or i <sup>2</sup> T trip curve, always trip at start if starting current is outside of an acceptable range and still decreasing after 10 seconds. Default = Off”
Power Fail Modes		Adjustable, return to last mode (Hand/Off/Auto) or return in Off mode
On/Off Time Delay		On/Off, adjustable, 1-60 seconds
Backspin Delay		On/Off, adjustable, 2 seconds - 60 minutes
Fault Reset		Manual/Automatic, adjustable (default differs per motor protection feature)
Agency Approvals		UL/cUL, CSA

# STARTERS & PROTECTION - SMS SUBMONITOR CONNECT STARTER

1 & 3-Phase, 50/60 Hz, 200-600 VAC, 1-361 A

## ELECTRONIC OVERLOAD MOTOR PROTECTION

- Wide range, adjustable, class 5-30 electronic overload
- Dry pump detection protects your pump and motor from adverse conditions and allows for time-based automatic restart with well recovery mode
- Industry-leading motor protection for the following conditions: over/under power (dry-run), over/under voltage protection, voltage phase loss, voltage and current phase unbalance, locked rotor, cycle fault, ground fault
- Easy access to input and output terminals
- 32-character, backlit, NEMA 4x, wash-down rated screen mounted on front of panel allowing for safe viewing of conditions while motor is running
- Motor insulation check

## REAL-TIME & DATE-STAMPED FAULT LOGGING

- Unit ships with a pre-programmed real time clock with a 10-year battery backup
- Contains separate fault, configuration change, and start logs. Independent logs allow user to see last fault even if it occurred years ago
- Fault log tracks 150 faults with date and time stamp accurate down to the second; allows users to diagnose power problems and prove them to your power provider; unit will give users a 'snapshot' of conditions at the time of fault, such as line to line voltage and current, alarms present, and I/O status; format of time stamping example: 7/7/16 10:15:24

## APPLICATION-BASED SETUP

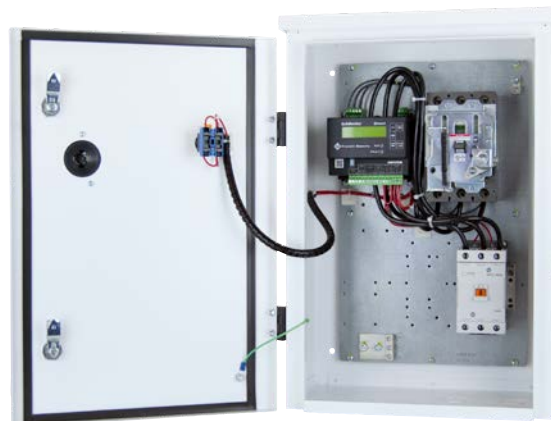
- SubMonitor Connect is an advanced, comprehensive, 1 & 3 phase motor protection relay that allows users to dial in protection and automation with extreme accuracy and parameter depth. However, SubMonitor Connect also has a streamlined Basic Setup Wizard to allows user to get up and running quickly
- 9 simple steps to program unit
- Users select between Submersible, Surface, or Custom and SubMonitor prepopulates protection parameters accordingly
- Confirm basic motor info, key protection info, time to get started

## AUTOMATION READY - ADVANCED PUMP CONTROL

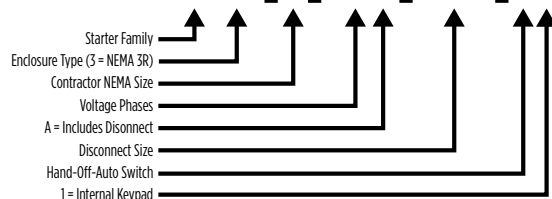
- 12-240 VAC/VDC wet input for remote start/stop
- Dry contacts for auto run/shutdown or high float/low float
- Modbus RTU communication
- Automatic fault reset and on and off delay settings
- Well recovery mode

## HEAVY-DUTY INDUSTRIAL-GRADE CONSTRUCTION

- Outdoor rated, gasketed, powder coated, NEMA 3R enclosure designed in house by Franklin Electric to optimize layout and functionality
- UL 489 circuit breaker disconnect for branch and short circuit protection
- No fuses required saving time and money
- Lockable handle



### SMS3[X]-3A[XXX]S1



## SMS SUBMONITOR CONNECT STARTER - SIZING INFORMATION - SUBMERSIBLE MOTORS

### 4" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SMS Model No.
Model Prefix	HP	SFA (Max Amps)	Volts	
234503	1	5.4	200	SMS3B-3A015S1
234504	1.5	6.8		SMS3B-3A015S1
234305	2	9.3		SMS3B-3A020S1
234306	3	12.5		SMS3C-3A030S1
234307	5	20.5		SMS3D-3A040S1
234308	7.5	30.5		SMS3E-3A060S1
234513	1	4.7	230	SMS3B-3A015S1
234514	1.5	5.9		SMS3B-3A015S1
234315	2	8.1		SMS3B-3A020S1
234316	3	10.9		SMS3B-3A020S1
234317	5	17.8		SMS3D-3A040S1
234318	7.5	26.4		SMS3E-3A050S1
234523	1	2.4	460	SMS3B-3A015S1
234524	1.5	3.1		SMS3B-3A015S1
234325	2	4.1		SMS3B-3A015S1
234326	3	5.5		SMS3B-3A015S1
234327	5	8.9		SMS3B-3A020S1
234328	7.5	13.2		SMS3C-3A030S1
234595	10	17.3	575	SMS3D-3A040S1
234533	1	1.9		SMS3B-3A015S1
234534	1.5	2.4		SMS3B-3A015S1
234335	2	3.2		SMS3B-3A015S1
234336	3	4.4		SMS3B-3A015S1
234337	5	7.1		SMS3B-3A015S1
234338	7.5	10.6		SMS3B-3A020S1
234598	10	13.6		SMS3C-3A030S1

## SMS SUBMONITOR CONNECT STARTER - SIZING INFORMATION - SUBMERSIBLE MOTORS

### 6" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SMS Model No.
Model Prefix	HP	SFA (Max Amps)	Volts	
236650	5	20	200	SMS3D-3A040S1
236651	7.5	28.3		SMS3E-3A060S1
236652	10	37		SMS3F-3A080S1
236653	15	54.4		SMS3F-3A100S1
236654	20	69.7		SMS3G-3A125S1
236655	25	86.3		SMS3I-3A200S1
236656	30	104	230	SMS3I-3A200S1
236600	5	17.6		SMS3D-3A040S1
236601	7.5	24.6		SMS3E-3A050S1
236602	10	32.2		SMS3E-3A060S1
236603	15	47.4		SMS3F-3A100S1
236604	20	60.6		SMS3G-3A125S1
236605	25	76.4	460	SMS3H-3A150S1
236606	30	90.4		SMS3I-3A200S1
236610	5	8.8		SMS3B-3A020S1
236611	7.5	12.3		SMS3C-3A030S1
236612	10	16.1		SMS3C-3A030S1
236613	15	23.7		SMS3E-3A050S1
236614	20	30.3		SMS3E-3A060S1
236615	25	38.2	575	SMS3F-3A080S1
236616	30	45.2		SMS3F-3A100S1
236617	40	61.6		SMS3G-3A125S1
276618	50	78.1		SMS3H-3A150S1
276619	60	92.3		SMS3I-3A200S1
236620	5	7.1	575	SMS3B-3A015S1
236621	7.5	9.8		SMS3B-3A020S1
236622	10	12.9		SMS3C-3A030S1
236623	15	19		SMS3D-3A040S1
236624	20	24.2		SMS3E-3A050S1
236625	25	30		SMS3E-3A060S1
236626	30	36.2		SMS3F-3A080S1
236627	40	49.6		SMS3F-3A100S1
236628	50	62.5		SMS3G-3A125S1
236629	60	73.9		SMS3H-3A150S1

### 8" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SMS Model No.
Model Prefix	HP	SFA (Max Amps)	Volts	
239600	40	60	460	SMS3G-3A125S1
239601	50	73		SMS3H-3A150S1
239602	60	86		SMS3I-3A200S1
239603	75	107		SMS3I-3A200S1
239604	100	142		SMS3K-3A300S1
239105	125	188		SMS3K-3A400S1
239106	150	219		SMS3K-3A400S1
239107	175	249		SMS3L-3A500S1
239108	200	282		SMS3L-3A500S1
239610	40	48	575	SMS3F-3A100S1
239611	50	59		SMS3G-3A125S1
239612	60	69		SMS3G-3A125S1
239613	75	86		SMS3I-3A200S1
239614	100	114		SMS3R-S5-6M-G250
239115	125	151		SMS3R-S5-6M-G300
239116	150	182		SMS3R-S5-6M-G400
239117	175	200		SMS3R-S5-6M-G400
239118	200	226		SMS3R-S5-6M-G400
236614	20	30.3		SMS3E-3A060S1
236615	25	38.2		SMS3F-3A080S1
236616	30	45.2		SMS3F-3A100S1
236617	40	61.6		SMS3G-3A125S1
276618	50	78.1		SMS3H-3A150S1



## SMS SUBMONITOR CONNECT STARTER - ORDERING INFORMATION

### SUBMONITOR CONNECT STARTERS

1 & 3 Phase, 50/60Hz, 200-600VAC, NEMA Type 3R Enclosed Starter (Includes Service Entrance Circuit Breaker Disconnect)

Standard Model No.*	Configured Model No.	3-Phase Max. Amps / HP								1-Phase Max. Amps / HP	
		200 V		230 V		460 V		575 V		230 V	
		A	HP**	A	HP**	A	HP**	A	HP**	A	HP**
SMS3B-3A015S1	SMS3R-S0-M-G15	8	2	8	2	8	5	8	5	8	1
SMS3B-3A020S1	SMS3R-S0-M-G20	11	3	11	3	11	7.5	11	10	11	1.5
SMS3C-3A030S1	SMS3R-S0P-M-G30	17	3	17	5	17	10	17	15	17	3
SMS3D-3A040S1	SMS3R-S1-M-G40	22	5	22	7.5	22	15	22	20	22	3
SMS3E-3A050S1	SMS3R-S1P-M-G50	28	7.5	28	10	28	20	28	25	28	5
SMS3E-3A060S1	SMS3R-S1P-M-G60	34	10	34	10	34	25	32	30	34	5
SMS3F-3A080S1	SMS3R-S2-M-G80	45	10	45	15	45	30	45	40	45	7.5
SMS3F-3A100S1	SMS3R-S2-M-G100	57	15	57	20	52	40	52	50	50	10
SMS3G-3A100S1	SMS3R-S3-M-G100	57	15	57	20	57	40	57	50	57	10
SMS3G-3A125S1	SMS3R-S3-M-G125	71	20	71	25	71	50	71	60	68	15
SMS3H-3A150S1	SMS3R-S3P-M-G150	85	25	85	30	85	60	77	75	85	15
SMS3I-3A200S1	SMS3R-S4-M-G200	114	30	114	40	114	75	99	100	88	20
SMS3I-3A250S1	SMS3R-S4-M-G250	120	40	130	50	124	100	-	-	-	-
SMS3K-3A300S1	SMS3R-S5-M-G300	171	50	171	60	171	125	-	-	136	30
SMS3K-3A400S1	SMS3R-S5-M-G400	228	75	228	75	228	150	-	-	-	-
SMS3L-3A500S1	SMS3R-S5P-M-G500	285	100	285	100	285	200	-	-	-	-
SMS3L-3A600S1	SMS3R-S5P-M-G600	342	100	342	125	342	250	-	-	-	-
SMS3L-3A800S1	SMS3R-S5P-M-G800	359	125	360	150	361	300	-	-	-	-
-	SMS3R-S5-6M-G250	-	-	-	-	-	-	143	125	-	-
-	SMS3R-S5-6M-G300	-	-	-	-	-	-	171	150	-	-
-	SMS3R-S5-6M-G400	-	-	-	-	-	-	228	200	-	-
-	SMS3R-S5P-6M-G500	-	-	-	-	-	-	285	250	-	-
-	SMS3R-S5P-6M-G600	-	-	-	-	-	-	289	300	-	-

\*Standard Models not available in 1-Phase

\*\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

### FACTORY INSTALLABLE OPTIONS

Part Number	Description
SMS-SRG-240V	Surge Suppressor 240VAC
SMS-SRG-480V	Surge Suppressor 480VAC
SMS-SRG-600V	Surge Suppressor 600VAC
SMS-STSP	Start/Stop Pushbutton Control (in lieu of HOA switch)
SMS-HOA-START	Start Pushbutton when HOA in hand
SMS-RPL	Run Pilot Light
SMS-FPL	Fault Pilot Light
SMS-DR-DISPLAY	Door Mounted Keypad
SMS-IPH	Wiring for Single Phase Input
SMS-CAM-KEY	Keyed Enclosure Latch
SMS-CAM-PAD	Padlockable Enclosure Latch
SMS-HOA-KEY	Keyed HOA Switch

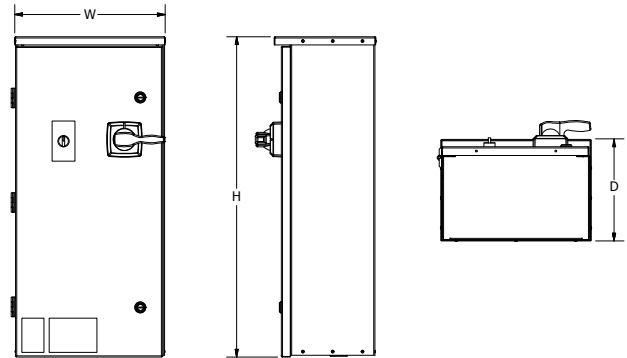
Factory Installable Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.

Product Sizing Submersible Motors - Reference Service Factor Amps on the motor nameplate or Franklin AIM manual  
Surface Motors - Reference Full Load Amps on the motor nameplate

## SMS SUBMONITOR CONNECT STARTER - DIMENSIONS

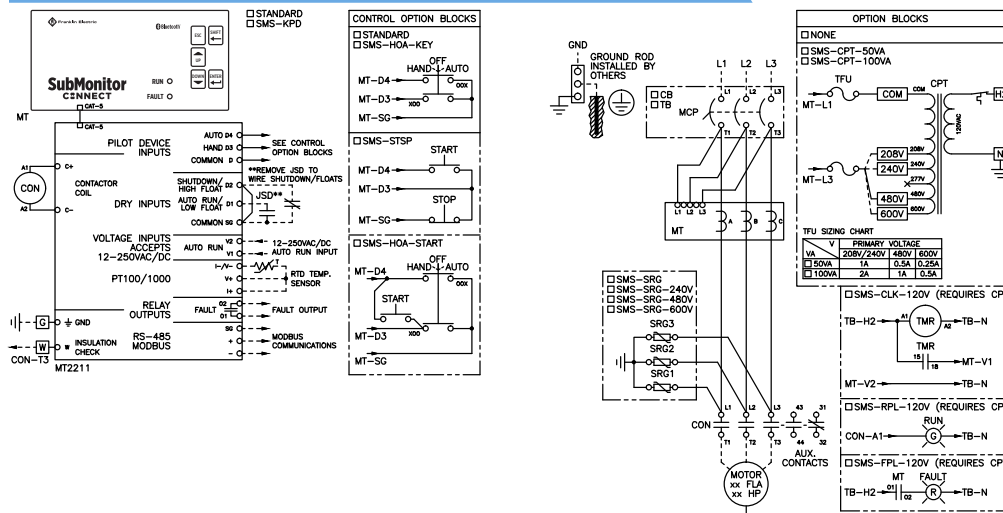
### DIMENSIONS: NEMA 3R ENCLOSURE

SubMonitor Starter	Starter Type	Dimensions			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
SMS3B-3A015S1	with Service Entrance Circuit Breaker Disconnect	22	15	10	5/16"	17 & 5/8 x 12 & 3/4
SMS3B-3A020S1						
SMS3C-3A030S1						
SMS3D-3A040S1						
SMS3E-3A050S1						
SMS3E-3A060S1						
SMS3F-3A080S1						
SMS3F-3A100S1						
SMS3G-3A100S1						
SMS3G-3A125S1						
SMS3H-3A150S1						
SMS3I-3A200S1		32	15	10	5/16"	27 & 5/8 x 12 & 3/4
SMS3I-3A250S1						
SMS3K-3A300S1		42	25	15	3/8"	20 & 7/8 x 37 & 3/4
SMS3K-3A400S1						
SMS3L-3A500S1		62	25	15	3/8"	30 & 7/8 x 37 & 3/4
SMS3L-3A600S1						
SMS3L-3A800S1						



\*All measurements shown in inches.

### WIRING DIAGRAM



NOTE: standard wiring schematic shown, actual product wiring may vary depending on options selected.  
 Dashed lines indicate field wiring.

## SMS SUBMONITOR CONNECT STARTER - SPECIFICATIONS

### SPECIFICATIONS

Starter Type		
Full Voltage, Non-Reversing with Service Entrance Rated Circuit Breaker Disconnect		
NEMA Type 3R Enclosed - Rain Tight		
User Interface		
Control	Hand-Off-Auto Switch	
Setting Adjustments	"SubMonitor keypad, 32 character, backlit NEMA 4X display FE Connect Mobile App (Bluetooth)"	
Inputs/Outputs		
Inputs	Voltage Auto-Run	Applying 12-250VAC/DC will send a run command to the starter when in Auto Mode.
	"Dry Contract Auto-Run / Low Float"	"Normally Open or Normally Closed, adjustable, Default = Normally Open Closing the circuit between the D1 & D terminals will send a run command to the starter when in Auto Mode. Can be used with Shutdown/High Float terminal to set up float switch drain or fill operation."
	"Dry Contact Shutdown / High Float"	"Normally Open or Normally Closed, adjustable, Default = Normally Closed Opening the circuit between the D2 & D terminals will shut down the starter. Can be used with Shutdown/High Float terminal to set up float switch drain or fill operation."
	RS-485	Modbus RTU & BACnet MSTP Communication
	PT100/1000	PT100/1000 input, On/Off, adjustable, 0-100oC
Output	Fault Relay Output	Normally Open Relay - Rated for 12-240V, closes in a fault condition
Environmental		
Ambient Operating Temp	-5 °F to 140 °F (-20 °C to 60 °C)	
Ambient Storage Temp	-5 °F to 185 °F (-20 °C to 85 °C)	
Relative Humidity	5% to 95% non-condensing	
Overload Operational Specifications		
Overload Type	Electronic I2T trip curve	
Overload Trip Class	Adjustable: 5-30, Default = 10	
Overload Setting Range	Differs per model	
Overload Service Factor	Adjustable: 1.00-2.00, Default = 1.15	
Under Power (Dry Run)	On/Off/Alarm, adjustable, 1-99% of kW setting, Default = On/65%	
Over Power	On/Off/Alarm, adjustable, 101-200% of kW setting, Default = On/125%	
Under Voltage	On/Off/Alarm, adjustable, 80-99% of voltage setting, Default = On/90%	
Over Voltage	On/Off/Alarm, adjustable, 101-125% of voltage setting, Default = On/110%	
Voltage Phase Loss	Always On	
Ground Fault (UL 1053 Certified)	On/Off/Alarm, adjustable, 1-10A, Default = On/1A	
Cycle Fault	On/Off, adjustable start limit, 2-100, default = On	
Warm Start Provision	On/Off, delays motor restart based on calculated motor temperature, Default = On	
Current Phase Unbalance	On/Off, adjustable, 1-50%, Default = On/5%	
Locked Rotor/Stall	On/Off, trips if current exceeds 300% of FLA/SFA setting for 0.5 seconds, Default = On	
Out of Calibration	On/Off, trips after 10 seconds if the calculated FLA/SFA setting is set too high, Default = Off	
Max Time to Start	"On/Off, regardless of max amps or I <sup>2</sup> T trip curve, always trip at start if starting current is outside of an acceptable range and still decreasing after 10 seconds. Default = Off"	
Power Fail Modes	Adjustable, return to last mode (Hand/Off/Auto) or return in Off mode	
On/Off Time Delay	On/Off, adjustable, 1-60 seconds	
Backspin Delay	On/Off, adjustable, 2 seconds - 60 minutes	
Fault Reset	Manual/Automatic, adjustable (default differs per motor protection feature)	
Agency Approvals	UL/cUL, CSA	

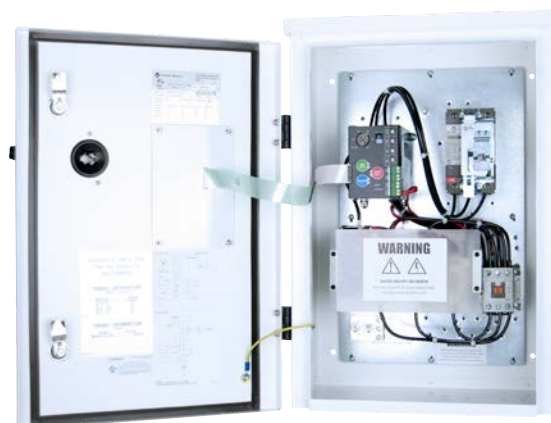
## SOFT STARTERS – SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE

Integrated electronic pump protection overload and a wide range of voltage acceptance (200-600 VAC).

3Ø, 50/60 Hz, 200-600 VAC, 6-85 A

### ELECTRONIC PROTECTION & AUTOMATION I/O

- Wide-range, Class 10 electronic overload
- Current phase unbalance protection
- Locked rotor / stall protection
- Cycle fault protection
- Accepts 200-600 VAC directly, true plug and play
- Voltage auto-run input
- Dry contact auto-run input
- Status relay output
- Hand/Off/Auto keypad with LEDs for mode, fault, and run indication



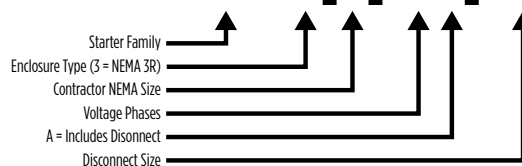
### SOFT STARTER FEATURES

- Across-the-line start for emergency situations
- Adjustable current limit, start/stop voltage, and start/stop time
- SCR over-temperature detection
- Shorted SCR detection
- UL 489 circuit breaker provides branch and short circuit protection  
*\*Service entrance rated*
- No fuses required – saves time and money
- Lockable handle for safety

### INDUSTRIAL GRADE CONSTRUCTION

- Door mounted HOA keypad
- Housed in an outdoor rated, gasketed, NEMA 3R enclosure
- NEMA rated bypass contactor features 2.5 million electrical cycles at full rated current

## SPSRV3[X]-3A[XXX]



## SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE - SIZING INFORMATION - SUBMERSIBLE MOTORS

### 4" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SPS-RV Model No.
Model Prefix	HP	SFA (Max Amps)	Volts	
234503	1	5.4	200	SPSRV3D-3A015
234504	1.5	6.8		SPSRV3D-3A015
234305	2	9.3		SPSRV3D-3A020
234306	3	12.5		SPSRV3D-3A030
234307	5	20.5		SPSRV3D-3A040
234308	7.5	30.5		SPSRV3E-3A060
234513	1	4.7	230	SPSRV3D-3A015
234514	1.5	5.9		SPSRV3D-3A015
234315	2	8.1		SPSRV3D-3A020
234316	3	10.9		SPSRV3D-3A020
234317	5	17.8		SPSRV3D-3A040
234318	7.5	26.4		SPSRV3E-3A050
234523	1	2.4	460	SPSRV3D-3A015
234524	1.5	3.1		SPSRV3D-3A015
234325	2	4.1		SPSRV3D-3A015
234326	3	5.5		SPSRV3D-3A015
234327	5	8.9		SPSRV3D-3A020
234328	7.5	13.2		SPSRV3D-3A030
234595	10	17.3		SPSRV3D-3A040
234533	1	1.9	575	SPSRV3D-3A015
234534	1.5	2.4		SPSRV3D-3A015
234335	2	3.2		SPSRV3D-3A015
234336	3	4.4		SPSRV3D-3A015
234337	5	7.1		SPSRV3D-3A015
234338	7.5	10.6		SPSRV3D-3A020
234598	10	13.6		SPSRV3D-3A030

## SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE - SIZING INFORMATION - SUBMERSIBLE MOTORS

### 6" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SPS-RV Model No.
Model Prefix	HP	SFA (Max Amps)	Volts	
236650	5	20	200	SPSRV3D-3A040
236651	7.5	28.3		SPSRV3E-3A060
236652	10	37		SPSRV3F-3A080
236653	15	54.4		SPSRV3G-3A100
236654	20	69.7		SPSRV3G-3A125
236600	5	17.6	230	SPSRV3D-3A040
236601	7.5	24.6		SPSRV3E-3A050
236602	10	32.2		SPSRV3F-3A080
236603	15	47.4		SPSRV3G-3A100
236604	20	60.6		SPSRV3G-3A125
236610	5	8.8	460	SPSRV3D-3A020
236611	7.5	12.3		SPSRV3D-3A030
236612	10	16.1		SPSRV3D-3A030
236613	15	23.7		SPSRV3E-3A050
236614	20	30.3		SPSRV3E-3A060
236615	25	38.2		SPSRV3F-3A080
236616	30	45.2		SPSRV3G-3A100
236617	40	61.6		SPSRV3G-3A125
276618	50	78.1		SPSRV3H-3A150
236620	5	7.1	575	SPSRV3D-3A015
236621	7.5	9.8		SPSRV3D-3A020
236622	10	12.9		SPSRV3D-3A030
236623	15	19		SPSRV3D-3A040
236624	20	24.2		SPSRV3E-3A050
236625	25	30		SPSRV3E-3A060
236626	30	36.2		SPSRV3F-3A080
236627	40	49.6		SPSRV3G-3A100
236628	50	62.5		SPSRV3G-3A125
236629	60	73.9		SPSRV3H-3A150

### 8" 3-PHASE INPUT / 3-PHASE OUTPUT

Motor				SPS-RV Model No.
Model Prefix	HP	SFA (Max Amps)	Volts	
239600	40	60	460	SPSRV3G-3A125
239601	50	73		SPSRV3H-3A150
239610	40	48	575	SPSRV3G-3A100
239611	50	59		SPSRV3G-3A125
239612	60	69		SPSRV3H-3A150

## SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE - ORDERING INFORMATION

### SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE

3 Phase, 50/60Hz, 200-600VAC, NEMA Type 3R Enclosed Soft Starter (Includes Service Entrance Circuit Breaker Disconnect)

Standard Model No.	Configure-to-Order Model No.	200 V - 460 V 3-Phase Amp Range	600 V 3-Phase Amp Range	3-Phase Max. Amps / HP*							
				200 V		230 V		460 V		600 V	
				A	HP*	A	HP*	A	HP*	A	HP*
SPSRV3D-3A015	SPS3R-RV-S1-J-G15	6-8	6-8	8	2	8	2	8	5	8	5
SPSRV3D-3A020	SPS3R-RV-S1-J-G20	8-11	8-11	11	3	11	3	11	7.5	11	10
SPSRV3D-3A030	SPS3R-RV-S1-J-G30	12-17	12-17	17	3	17	3	17	10	17	15
SPSRV3D-3A040	SPS3R-RV-S1-J-G40	16-22	16-22	22	5	22	7.5	22	15	22	20
SPSRV3E-3A050	SPS3R-RV-SIP-J-G50	20-28	20-28	28	7.5	28	10	28	20	28	25
SPSRV3E-3A060	SPS3R-RV-SIP-J-G60	24-34	24-32	34	7.5	34	10	34	20	32	30
SPSRV3F-3A080	SPS3R-RV-S2-J-G80	32-45	32-45	45	10	45	15	45	30	45	40
SPSRV3G-3A100	SPS3R-RV-S3-J-G100	40-57	40-57	57	15	57	20	57	40	57	50
SPSRV3G-3A125	SPS3R-RV-S3-J-G125	50-71	50-71	71	20	71	25	71	50	71	60
SPSRV3H-3A150	SPS3R-RV-S3P-J-G150	60-85	60-77	85	25	85	30	85	60	77	75

\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

### FACTORY INSTALLABLE OPTIONS

Part Number	Description
SPSRV-SRG-240V	Surge Suppressor 240VAC
SPSRV-SRG-480V	Surge Suppressor 480VAC
SPSRV-SRG-600V	Surge Suppressor 600VAC
SPSRV-CAM-KEY	Keyed Enclosure Latch
SPSRV-CAM-PAD	Padlockable Enclosure Latch
SPSRV-RLY-120VAC	Interposing Run Relay - 120V
SPSRV-RLY-24VAC-DC	Interposing RunRelay - 24V

Factory Installable Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.

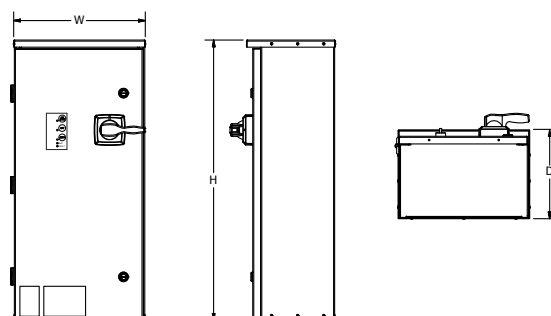
Product Sizing      Submersible Motors - Reference Service Factor Amps on the motor nameplate or Franklin AIM manual  
                                  Surface Motors - Reference Full Load Amps on the motor nameplate



## SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE - DIMENSIONS & WIRING DIAGRAM

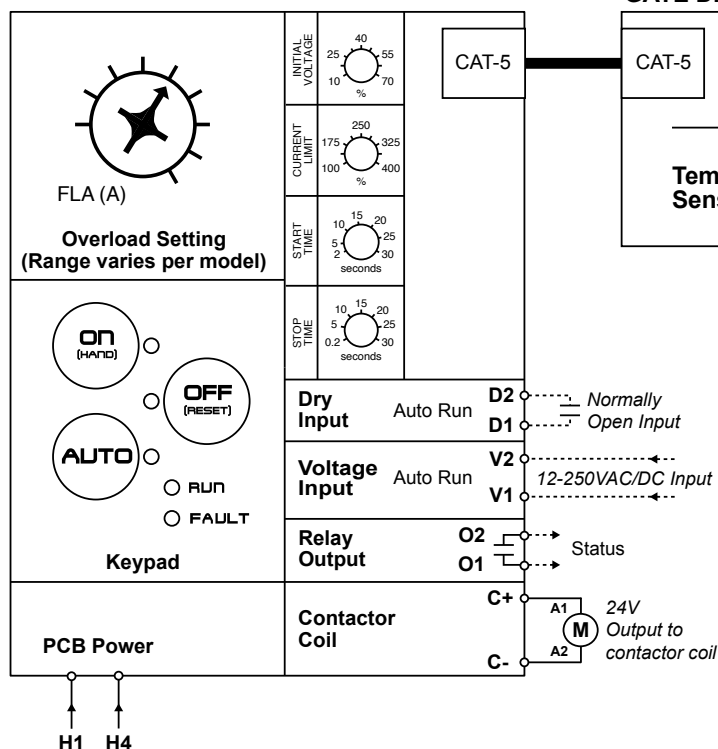
### DIMENSIONS: NEMA 3R ENCLOSURE

Standard Pump Soft Starter	Starter Type	Dimensions (in)			Mounting	
		H	W	D	Hardware Size	Spacing (Height x Width)
SPSRV3D-3A015	with Service Entrance Circuit Breaker Disconnect	22	15	10	5/16"	17 & 5/8 x 12 & 3/4
SPSRV3D-3A020						
SPSRV3D-3A030						
SPSRV3D-3A040						
SPSRV3E-3A050						
SPSRV3E-3A060						
SPSRV3F-3A080						
SPSRV3G-3A100						
SPSRV3G-3A125		32	15	10	5/16"	27 & 5/8 x 12 & 3/4
SPSRV3H-3A150						

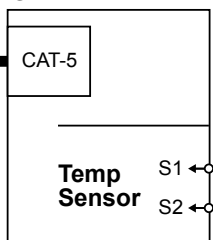


### WIRING DIAGRAM

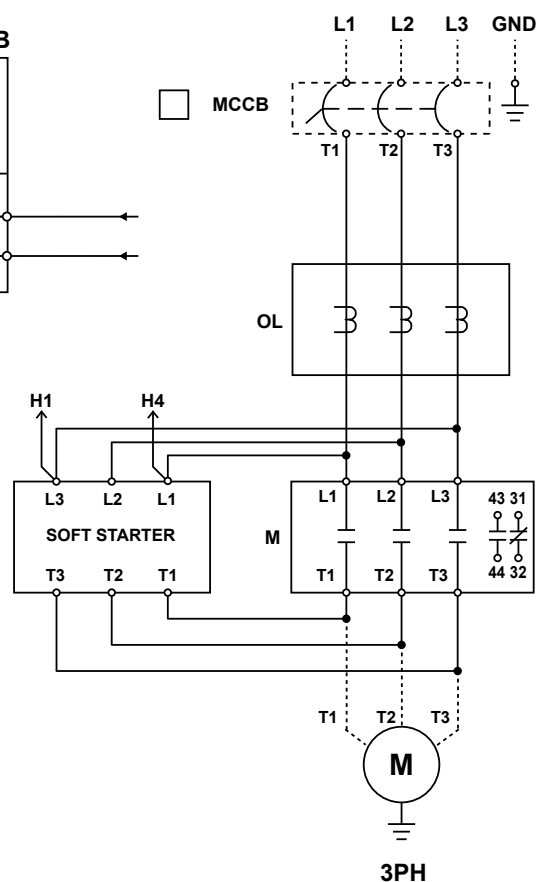
#### SPS-RV CONTROL WIRING



#### GATE DRIVE PCB



#### 200-600VAC Input



NOTE: standard wiring schematic shown, actual product wiring may vary depending on options selected. Dashed lines indicate field wiring.

## SPS-RV STANDARD PUMP STARTER REDUCED VOLTAGE - SPECIFICATIONS

### SPECIFICATIONS

Soft Starter Type			
Soft Starter with HP Rated Bypass Contactor with Service Entrance Rated Circuit Breaker Disconnect			
NEMA Type 3R Enclosed - Rain Tight			
User Interface			
Setting Adjustments		Internal dial for motor FLA/SFA setting	
Control		Door mounted Hand/Off/Auto keypad with LED mode, run, and fault indication	
Inputs/Outputs			
Inputs	Dry Contact Auto-Run Input	D1/D2 Terminal, Normally Open Dry Contact, when closed, the motor will start when in auto mode	
	Voltage Auto-Run Input	V1/V2 Terminal, Applying 12-250VAC/DC will start the motor when in auto mode	
Output	Status Relay Output	O1/O2 Terminal, Normally Open Relay - Rated for 12-240V	
Contactor Power	Supplied power to the contactor	C+/C- Terminal, For Use with Franklin Electric Contactors Only	
Environmental			
Ambient Operating Temp		-5 °F to 140 °F (-20 °C to 60 °C)	-
Ambient Storage Temp		-5 °F to 185 °F (-20 °C to 85 °C)	-
Relative Humidity		5% to 95% non-condensing	-
Overload Operational Specifications			
Overload Type		Electronic I2T trip curve	
Overload Trip Class		10	
Overload Setting Range		Differs per model	
Cycle Fault		Trips if the contactor cycle rate exceeds 20 starts/minute	
Current Phase Unbalance		Trips if the measured current phase unbalance is greater than 50%	
Locked Rotor/Stall		Trips within 0.5 seconds if the measured current exceeds 300% of the max amps setting	
Shorted SCR		Trips if a shorted SCR is detected or if there is no motor	
Open SCR		Trips if no current is measured during start-up or bypass	
SCR Over-Temperature		Trips if the SCR temperature reaches 125oC	
Across-the-Line Start		On/Off, adjustable, allows the user to start the motor across-the-line, Default = Off	
Power Fail Mode		Return to last mode (Hand/Off/Auto)	
Fault Reset		Manual or Automatic, adjustable, Default = Manual	
Starts		6/hour, 20 seconds max. start time @ 400% FLA, 30 seconds max. start time @ 300% FLA	
Agency Approvals		UL/cUL, CSA, CE	

## SOFT STARTERS - IPS-RV INTELLIGENT PUMP SOFT STARTER

Integrated electronic pump protection overload and power metering and Modbus RTU communications.

3Ø, 50/60 Hz, 200-600 VAC, 2-250 hp

### INTEGRATED TRU-POWER™ ELECTRONIC PROTECTION

- Eliminates need for costly pump protection relays
- Dry pump detection using power (nuisance trip-free); time-based automatic restart and well recovery mode
- Features a wide-range, adjustable, class 5-30 electronic overload
- Provides superior motor protection from the following conditions:
  - Over/under power (dry-run)
  - Voltage phase loss
  - Stalled/locked rotor
  - Ground fault (UL1053 certified)
  - Over/under voltage protection
  - Voltage and current phase unbalance
  - Cycle fault
  - Voltage phase reversal

### SOFT STARTER FEATURES

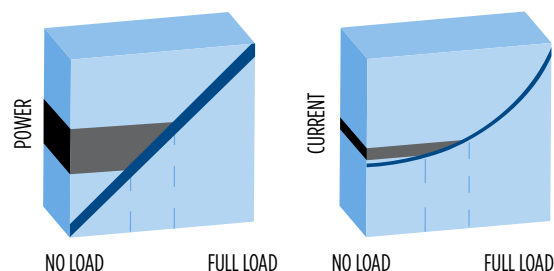
- Full hp rated bypass contactor
- Across-the-line start for emergency situations (turns the soft-starter into a standard IPS)
- Start modes feature an adjustable current limit, initial voltage, and start time with a torque boost feature
- Stop modes include:
  - Coast to stop
  - Linear deceleration (reduces water-hammer effect)
  - Adjustable stop voltage and stop time
- SCR over-temperature detection
- Shorted SCR detection

### TRU-POWER™ SENSING

Tru-power™ sensing protects pumps from dry-run, dead head, run-out, and jammed impeller conditions - keeping you online and preventing costly premature pump failure. Along with superior protection, measuring underload using power allows for a more flexible trip range, as opposed to measuring by current, which requires a more precise set point. The end result is the elimination of nuisance trips.

### BUILT-IN MONITORING & FAULT LOGGING

- View voltage, current, power factor, and more through an intuitive display
- Built-in fault log, counter and parameter change log: records last 15 fault types with power condition values, stores how many times each fault type has occurred (up to 255 count), and logs changes to parameter settings (e.g. FLA, OV/UV, under power)
- Built-in Modbus RTU communications card



NOTE: Power is linear for superior load monitoring

## IPS-RV INTELLIGENT PUMP STARTER

### EASY TO SET-UP AND USE

- Inside the display shows an easy to use menu for setting a wealth of parameters. Adjust any protective or control setting in seconds. For example, choose how long to allow for dry well recovery, set run time periods, and on/off delays. All this with just a few intuitive keystrokes. The IPS-RV ships with factory default settings pre-programmed for optimal submersible pump protection.

### INDUSTRIAL GRADE CONSTRUCTION

- Door mounted heavy-duty HOA switch
- Housed in an outdoor rated, gasketed, NEMA 3R enclosure
- Multi-tap control power transformer with integrated secondary protection accommodates common motor voltages. No fuses required!
- Includes 120 VAC control power for field devices

### ADVANCED PROGRAMMABLE PUMP CONTROL

- Automatic fault reset
- Backspin delay - prevents start-up while system is draining
- On and off delay settings
- Well recovery mode (up to 48 hours)
- Minimum run time based on last input
- 12-120 V input for remote start/stop
- Dry contact input for remote start/stop
- Dry contact inputs for float switches
- Analog input for (selectable) 0-10 V, 4-20 mA, or 10k thermistor, viewable as a Modbus point

### STANDARD CIRCUIT BREAKER DISCONNECT\*

- UL 489 circuit breaker provides branch and short circuit protection
- No fuses required – saves time and money
- Lockable handle for safety

\*Service entrance rated.



*The internal keypad and LCD make the IPS-RV intuitive and versatile. Parameters are easily changed and faults are clearly displayed.*

*Standard control features include a 12-120V auto run input (irrigation control system, etc.), shutdown terminal for applications such as a low level float switch, and more.*



*The multi-tap power transformer accepts inputs of 200V, 230 V, and 460 V*

## IPS-RV INTELLIGENT PUMP SOFT STARTER - SIZING INFORMATION - SUBMERSIBLE MOTOR

### 4" 3-PHASE INPUT / 3-PHASE OUTPUT

Model Prefix	Motor		Volts	IPS-RV Model No.
	HP	SFA (Max Amps)		
234501	1/2	3.4	200	IP3R-RV-S0-J-G15
234503	1	5.4		IP3R-RV-S0-J-G15
234504	1.5	6.8		IP3R-RV-S0-J-G15
234305	2	9.3		IPS3R-RV-S1-J-G20
234306	3	12.5		IPS3R-RV-S1-J-G30
234307	5	20.5		IPS3R-RV-S1-J-G40
234308	7.5	30.5		IPS3R-RV-S1P-J-G60
234511	1/2	2.9	230	IP3R-RV-S0-J-G15
234513	1	4.7		IP3R-RV-S0-J-G15
234514	1.5	5.9		IP3R-RV-S0-J-G15
234315	2	8.1		IPS3R-RV-S1-J-G20
234316	3	10.9		IPS3R-RV-S1-J-G20
234317	5	17.8		IPS3R-RV-S1-J-G40
234318	7.5	26.4		IPS3R-RV-S1P-J-G50
234521	1/2	1.5	460	IPS3R-RV-S1-J-G15
234523	1	2.4		IPS3R-RV-S1-J-G15
234524	1.5	3.1		IPS3R-RV-S1-J-G15
234325	2	4.1		IPS3R-RV-S1-J-G15
234326	3	5.5		IPS3R-RV-S1-J-G15
234327	5	8.9		IPS3R-RV-S1-J-G20
234328	7.5	13.2		IPS3R-RV-S1-J-G30
234595	10	17.3		IPS3R-RV-S1-J-G40
234626	15	25.8	575	IPS3R-RV-S1P-J-G50
234531	1/2	1.2		IPS3R-RV-S1-6J-G15
234533	1	1.9		IPS3R-RV-S1-6J-G15
234534	1.5	2.4		IPS3R-RV-S1-6J-G15
234335	2	3.2		IPS3R-RV-S1-6J-G15
234336	3	4.4		IPS3R-RV-S1-6J-G15
234337	5	7.1		IPS3R-RV-S1-6J-G15
234338	7.5	10.6		IPS3R-RV-S1-6J-G20
234598	10	13.6	575	IPS3R-RV-S1-6J-G30
234636	15	20.7		IPS3R-RV-S1-6J-G40

## IPS-RV INTELLIGENT PUMP SOFT STARTER - SIZING INFORMATION - SUBMERSIBLE MOTOR

### 6" 3-PHASE INPUT / 3-PHASE OUTPUT

Model Prefix	Motor			IPS-RV Model No.
	HP	SFA (Max Amps)	Volts	
236650	5	20	200	IPS3R-RV-S1-J-G40
236651	7.5	28.3		IPS3R-RV-S1P-J-G60
236652	10	37		IPS3R-RV-S2-J-G80
236653	15	54.4		IPS3R-RV-S3-J-G100
236654	20	69.7		IPS3R-RV-S3-J-G125
236655	25	86.3		IPS3R-RV-S4-J-G200
236656	30	104		IPS3R-RV-S4-J-G200
236600	5	17.6	230	IPS3R-RV-S1-J-G40
236601	7.5	24.6		IPS3R-RV-S1P-J-G50
236602	10	32.2		IPS3R-RV-S1P-J-G60
236603	15	47.4		IPS3R-RV-S3-J-G100
236604	20	60.6		IPS3R-RV-S3-J-G125
236605	25	76.4		IPS3R-RV-S3P-J-G150
236606	30	90.4		IPS3R-RV-S4-J-G200
236610	5	8.8	460	IPS3R-RV-S1-J-G20
236611	7.5	12.3		IPS3R-RV-S1-J-G30
236612	10	16.1		IPS3R-RV-S1-J-G30
236613	15	23.7		IPS3R-RV-S1P-J-G50
236614	20	30.3		IPS3R-RV-S1P-J-G60
236615	25	38.2		IPS3R-RV-S2-J-G80
236616	30	45.2		IPS3R-RV-S3-J-G100
236617	40	61.6	575	IPS3R-RV-S3-J-G125
276618	50	78.1		IPS3R-RV-S3P-J-G150
276619	60	92.3		IPS3R-RV-S4-J-G200
236620	5	7.1		IPS3R-RV-S1-6J-G15
236621	7.5	9.8		IPS3R-RV-S1-6J-G20
236622	10	12.9		IPS3R-RV-S1-6J-G30
236623	15	19		IPS3R-RV-S1-6J-G40
236624	20	24.2		IPS3R-RV-S1P-6J-G50
236625	25	30		IPS3R-RV-S1P-6J-G60
236626	30	36.2		IPS3R-RV-S2-6J-G80
236627	40	49.6		IPS3R-RV-S3-6J-G100
236628	50	62.5		IPS3R-RV-S3-6J-G125
236629	60	73.9		IPS3R-RV-S3-6J-G150

### 8" 3-PHASE INPUT / 3-PHASE OUTPUT

Model Prefix	Motor			IPS-RV Model No.
	HP	SFA (Max Amps)	Volts	
239600	40	60	460	IPS3R-RV-S3-J-G125
239601	50	73		IPS3R-RV-S3P-J-G150
239602	60	86		IPS3R-RV-S4-J-G200
239603	75	107		IPS3R-RV-S4-J-G200
239604	100	142		IPS3R-RV-S5-J-G250
239105	125	188		IPS3R-RV-S5-J-G400
239106	150	219		IPS3R-RV-S5-J-G400
239107	175	249	575	IPS3R-RV-S5-J-G500
239108	200	282		IPS3R-RV-S5-J-G500
239610	40	48		IPS3R-RV-S3-6J-G100
239611	50	59		IPS3R-RV-S3-6J-G125
239612	60	69		IPS3R-RV-S3-6J-G125
239613	75	86		IPS3R-RV-S5-6J-G200
239614	100	114		IPS3R-RV-S5-6J-G200
239115	125	151		IPS3R-RV-S5-6J-G300
239116	150	182		IPS3R-RV-S5-6J-G400
239117	175	200		IPS3R-RV-S5-6J-G400
239118	200	226		IPS3R-RV-S5-6J-G500



## IPS-RV INTELLIGENT PUMP SOFT STARTER - ORDERING & SIZING INFORMATION

### INTELLIGENT PUMP SOFT STARTERS (IPS-RV)

3-Phase, 50/60Hz, 200-460VAC, NEMA Type 3R Enclosed Soft Starter (Includes Service Entrance Circuit Breaker Disconnect)

Model No.	Amp Range	3-Phase Max. Amps / HP					
		200 V		230 V		460 V	
		A	HP*	A	HP*	A	HP**
IPS3R-RV-S1-J-G15	6-8	8	2	8	2	8	5
IPS3R-RV-S1-J-G20	8-11	11	3	11	3	11	7.5
IPS3R-RV-S1-J-G30	11-17	17	3	17	5	17	10
IPS3R-RV-S1-J-G40	16-22	22	5	22	7.5	22	15
IPS3R-RV-S1P-J-G50	20-28	28	7.5	28	10	28	20
IPS3R-RV-S1P-J-G60	24-34	34	10	34	10	34	25
IPS3R-RV-S2-J-G80	32-45	45	10	45	15	45	30
IPS3R-RV-S3-J-G100	40-57	57	15	57	20	57	40
IPS3R-RV-S3-J-G125	50-71	71	20	71	25	71	50
IPS3R-RV-S3P-J-G150	60-85	85	25	85	30	85	60
IPS3R-RV-S4-J-G200	80-114	114	30	114	40	114	75
IPS3R-RV-S4-J-G250	100-DPV**	120	40	130	50	124	100
IPS3R-RV-S5-J-G250	100-142	142	40	142	50	142	100
IPS3R-RV-S5-J-G300	120-170	171	50	171	60	171	125
IPS3R-RV-S5-J-G400	160-220	228	75	228	75	228	150
IPS3R-RV-S5-J-G500	201-285	285	100	285	100	285	200
IPS3R-RV-S5-J-G600	240-320	342	100	342	125	342	250

\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

\*\*DPV = Differs per voltage.

3-Phase, 50/60Hz, 575VAC, NEMA Type 3R Enclosed Soft Starter (Includes Service Entrance Circuit Breaker Disconnect)

Model No.	Amp Range	3-Phase Max. Amps / HP	
		575 V	
		A	HP**
IPS3R-RV-S1-6J-G15	6-8	8	5
IPS3R-RV-S1-6J-G20	8-11	11	10
IPS3R-RV-S1-6J-G30	11-17	17	15
IPS3R-RV-S1-6J-G40	16-22	22	20
IPS3R-RV-S1P-6J-G50	20-27	27	25
IPS3R-RV-S1P-6J-G60	24-34	34	30
IPS3R-RV-S2-6J-G80	32-45	45	40
IPS3R-RV-S3-6J-G100	40-57	57	50
IPS3R-RV-S3-6J-G125	50-71	71	60
IPS3R-RV-S3-6J-G150	60-77	77	75
IPS3R-RV-S5-6J-G200	80-114	114	100
IPS3R-RV-S5-6J-G250	100-142	142	125
IPS3R-RV-S5-6J-G300	120-170	170	150
IPS3R-RV-S5-6J-G400	160-220	220	200
IPS3R-RV-S5-6J-G500	201-285	285	250
IPS3R-RV-S5-6J-G600	240-289	289	300

\*HP rating is based on standard NEMA B, 4-pole motor design as represented in NEC table 430.150 full-load current, 3-phase alternating current motors.

### FACTORY INSTALLABLE OPTIONS

Part Number	Description
IPSRV-SRG-240V	Surge Suppressor 240VAC
IPSRV-SRG-480V	Surge Suppressor 480VAC
IPSRV-SRG-600V	Surge Suppressor 600VAC
IPSRV-STSP	Start/Stop Pushbutton Control (in lieu of HOA switch)
IPSRV-HOA-START	Start Pushbutton when HOA in hand
IPSRV-RPL	Run Pilot Light
IPSRV-FPL	Fault Pilot Light
IPSRV-CAM-KEY	Keyed Enclosure Latch
IPSRV-CAM-PAD	Padlockable Enclosure Latch
IPSRV-HOA-KEY	Keyed HOA Switch

Product Sizing

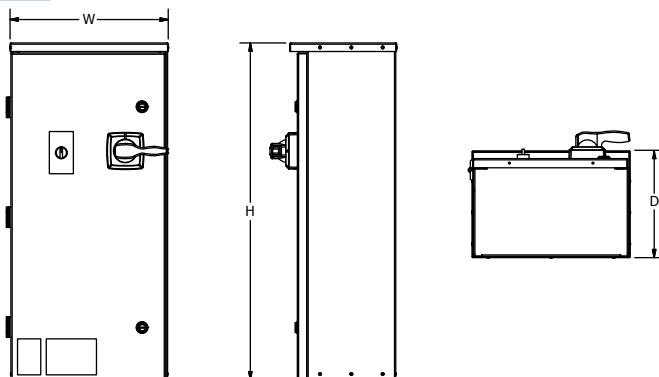
Submersible Motors - Reference Service Factor Amps on the motor nameplate or Franklin AIM manual  
Surface Motors - Reference Full Load Amps on the motor nameplate



# IPS-RV INTELLIGENT PUMP SOFT STARTER - DIMENSIONS & WIRING DIAGRAM

## DIMENSIONS

Combination Soft Starter	Dimensions (in)		
	H	W	D
IPS3R-RV-S1-J-GXX	32	15	10
IPS3R-RV-S1P-J-GXX			
IPS3R-RV-S2-J-GXX			
IPS3R-RV-S3-J-GXXX			
IPS3R-RV-S3P-J-GXXX	36	24	12
IPS3R-RV-S4-J-GXXX			
IPS3R-RV-S5-J-G250			
IPS3R-RV-S5-J-G300	42	25	12
IPS3R-RV-S5-J-G400			
IPS3R-RV-S5-J-G500	62	25	15
IPS3R-RV-S5-J-G600			
Standard Soft Starter	H	W	D
IPS3R-RV-S2-J-50	32	15	10
IPS3R-RV-S3P-J-XX			
IPS3R-RV-S4-J-130	36	24	12
IPS3R-RV-S5-J-XXX	42	25	12



## WIRING DIAGRAM

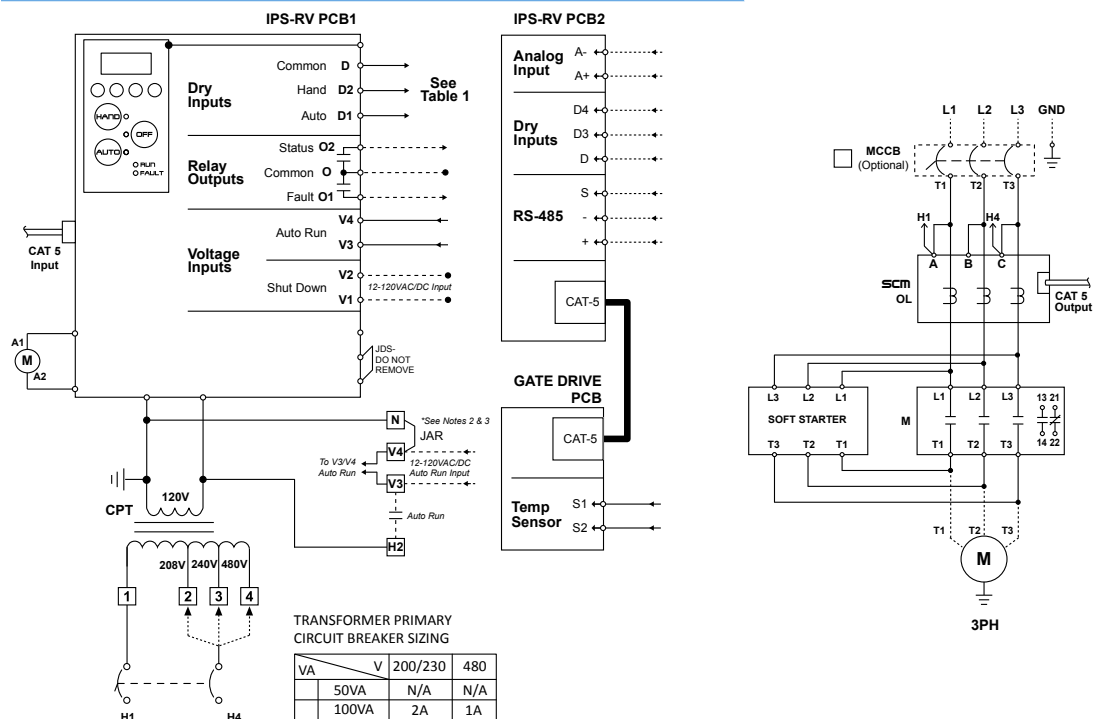


TABLE 1	
HOA SWITCH	
Common	OFF
Hand	A
Auto	X
HOA SWITCH / START	
Common	OFF
Hand	A
Auto	X
START / STOP	
Common	STOP
Hand	START
Auto	START

NOTE: Standard wiring schematic shown, actual product wiring may vary depending on options selected. Dashed lines indicate field wiring. When jumper jar is present, terminals V3 & H2 act as connections for a normally open, dry contact, auto run input. Remove jumper jar to use V3 & V4 terminals as a voltage, auto run input. Apply 12-120 VAC/DC to energize.

## IPS-RV INTELLIGENT PUMP SOFT STARTER - SPECIFICATIONS

### SPECIFICATIONS

Soft Starter Type		
With or without a disconnect (service rated, suitable for use as a service disconnect)		
NEMA Type 3R Enclosed		
User Interface		
Settings Adjustments	Internal	
Hand/Off/Auto	Door mounted 3-position switch	
Standard Control Operations		
Inputs	Voltage Auto	Accepts 12-130 VAC/DC. Applying voltage will send a run command to the starter when in auto mode.
	Dry Contact Auto	Normally open dry contact. When closed, the starter will be commanded to run when in auto mode.
	Shutdown	Accepts 12-130 VAC/DC. Applying voltage will open the contactor and the starter will not accept a run command. Hand/Off/Auto LEDs will flash.
	Float Switches	(2) Programmable normally open or normally closed dry contacts.
	RS-485	Modbus RTU slave
Outputs	Analog	Selectable: 0-10 V, 4-20mA, 10k Thermistor, viewable as a Modbus point
	Status Relay	Normally open relay contact, 0.3A @ 125 VAC, 1A @ 24 VAC
	Fault Relay	Normally open relay contact, 0.3A @ 125 VAC, 1A @ 24 VAC
Operational	Overload Type	Electronic, I2T trip curve
	Power Fail Modes	Restart in last mode (Hand/Off/Auto) with no delay (default)
		Restart in off mode
		Restart in off mode if power failure lasts longer than 2 seconds. Restart in last mode if power failure is less than 2 seconds.
	On/Off Time Delay	On/Off, adjustable: 0.1-99 seconds
	Fault Reset	Adjustable: manual or automatic (default differs per motor protection feature)
Starts	6/hour, 20 seconds max. start time @ 400% FLA, 30 seconds max. start time @ 300% FLA	
Environmental		
Ambient Operating Temp	-5 °F to 140 °F (-20 °C to 60 °C)	
Ambient Storage Temp	-5 °F to 185 °F (-20 °C to 85 °C)	
Relative Humidity	5% to 95% non-condensing	
Motor / Soft Starter Protection	Adjustment / Description	Default Setting
Overload Current Setting Range	Differs per model	Per SFA
Overload Trip Class	Adjustable: 5-30	10
Overload Service Factor	Adjustable: 0.00-2.00	1.15
Under Power	On/Off, adjustable: 0-99% of measured electrical input	On / 60%
Over Power	On/Off, adjustable: 101-200% of measured electrical input	On / 120%
Over / Under Voltage	On/Off, adjustable: +5-25% over/under the nominal voltage setting	On / 10%
Voltage Phase Unbalance	On/Off, adjustable: 1-20% voltage phase deviation	On / 3%
Voltage Phase Loss	Always on, adjustable: 1-50% voltage phase deviation	10%
Voltage Phase Sequence Reversal	On/Off, trips within 0.1 seconds upon voltage phase reversal detection	On
Ground Fault (UL 1053 Certified)	On/Off, adjustable: 1.0-9.9A	On / 1A
Cycle Fault	On/Off, adjustable: trip if cycle rate exceeds 20 starts/minute	On
Warm Start Provision	On/Off, delays motor restart based on calculated motor temperature	On
Current Phase Unbalance	On/Off, adjustable: 1-50% current phase unbalance	On / 5%
Locked Rotor / Stall	On/Off, trips within 0.5 seconds	On
Shorted SCR	Always on: trips upon detection of a shorted SCR or no motor	On
Open SCR	Always on: trips if no current is detected during start-up or bypass	On
SCR Over-Temperature	Always on: trips if the SCR temperature reaches 125 °C	On
Across-the-Line Start	On/Off: allows the user to start the motor across-the-line. (Turns soft starter into standard IPS)	Off

## VARIABLE FREQUENCY DRIVES - CERUS® X-DRIVE VFD

### VARIABLE SPEED CONTROL IS JUST THE BEGINNING

Designed for variable torque applications up to 700 hp, the Cerus® X-Drive is Franklin Electric's all-inclusive drive solution for a variety of markets. The X-Drive controller is loaded with application-specific firmware with enhanced settings that control and protect motors for the most demanding applications in pump, HVAC and industrial markets. Available in multiple packaged configurations, including submersible and centrifugal, these panels are built to last, with every detail and component centered around your requirements.

Pair this product with our legendary motors, including MagForce High Efficiency Motor, and pumps to maximize the performance of your application. All of this is backed by the best support team in the industry, making sure our business isn't what slows yours down.

**Deliver More. Offer Franklin.**

### FULL-FEATURED FOR YOUR APPLICATION

- Streamline setup process with application-specific firmware that pre-programs settings for quick and easy startups and reliable protection for any project
- Pre-PID control provides constant pressure and enhanced modes with external or cascade control options
- Built-in DC choke for applications 50 hp and above for harmonics mitigation, eliminating the need for line reactor
- Seamless integration into SCADA and automation systems using Modbus RTU and BACnet communications
- Designed with a UL type 4X removable display that can be mounted remotely without additional covers or environmental protection
- Built-in Programmable Logic Controller (PLC) for advanced industrial applications
- Compact form-factor offers a reduced footprint and industry-leading power density (horsepower per cubic inch), which translates to a smaller panel
- UL-Listed phase conversion versatility allows for single-phase or three-phase input
- Varying Speed, Constant Savings
- By running your motor to meet the demand of your application, the X-Drive can reduce energy costs by up to 50%: Variable motor speed allows for soft start, protecting the life of your equipment and offering long-term savings

### EASY INSTALLATION

Discover an incredibly intuitive start-up experience with application-specific parameters pre-set to industry standards for submersible pumps, centrifugal pumps, cooling tower panels and circulating pumps.

### VARYING SPEED, CONSTANT SAVINGS

- By running your motor to meet the demand of your application, the X-Drive can reduce energy costs by up to 50%: Variable motor speed allows for soft start, protecting the life of your equipment and offering long-term savings
- Maximize electrical cost savings when pairing your X-Drive with MagForce™ High Efficiency Motors via a 90% efficiency rating\*

*\*Based on field trial data, the efficiency rating is 10-12 percent greater than standard induction motor construction.*



## CERUS® X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

4" Motor				Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	With Disconnect*		With Disconnect*	
				Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
234501	1/2	3.4	200	XS2B0034-3A	CXD3R-SUB0034-2V-3	XS2B0034-1A	CXD3R-SUB0034-2V-1
234503	1	5.4		XS2B0055-3A	CXD3R-SUB0055-2V-3	XS2B0054-1A	CXD3R-SUB0054-2V-1
234504	1.5	6.8		XS2B0075-3A	CXD3R-SUB0075-2V-3	XS2B0075-1A	CXD3R-SUB0075-2V-1
234305	2	9.3		XS2B0100-3A	CXD3R-SUB0100-2V-3	XS2B0105-1A	CXD3R-SUB0105-2V-1
234306	3	12.5		XS2B0150-3A	CXD3R-SUB0150-2V-3	XS2B0155-1A	CXD3R-SUB0155-2V-1
234307	5	20.5		XS2B0210-3A	CXD3R-SUB0210-2V-3	XS2B0230-1A	CXD3R-SUB0230-2V-1
234308	7.5	30.5		XS2B0310-3A	CXD3R-SUB0310-2V-3	XS2B0305-1A	CXD3R-SUB0305-2V-1
234511	1/2	2.9	230	XS2B0034-3A	CXD3R-SUB0034-2V-3	XS2B0038-1A	CXD3R-SUB0038-2V-1
234513	1	4.7		XS2B0055-3A	CXD3R-SUB0055-2V-3	XS2B0050-1A	CXD3R-SUB0050-2V-1
234514	1.5	5.9		XS2B0075-3A	CXD3R-SUB0075-2V-3	XS2B0075-1A	CXD3R-SUB0075-2V-1
234315	2	8.1		XS2B0100-3A	CXD3R-SUB0100-2V-3	XS2B0105-1A	CXD3R-SUB0105-2V-1
234316	3	10.9		XS2B0110-3A	CXD3R-SUB0110-2V-3	XS2B0155-1A	CXD3R-SUB0155-2V-1
234317	5	17.8		XS2B0190-3A	CXD3R-SUB0190-2V-3	XS2B0230-1A	CXD3R-SUB0230-2V-1
234318	7.5	26.4		XS2B0310-3A	CXD3R-SUB0310-2V-3	XS2B0305-1A	CXD3R-SUB0305-2V-1
234521	1/2	1.5	460	XS4B0017-3A	CXD3R-SUB0017-4V-3	XS4B0015-1A	CXD3R-SUB0015-4V-1
234523	1	2.4		XS4B0030-3A	CXD3R-SUB0030-4V-3	XS4B0028-1A	CXD3R-SUB0028-4V-1
234524	1.5	3.1		XS4B0034-3A	CXD3R-SUB0034-4V-3	XS4B0040-1A	CXD3R-SUB0040-4V-1
234325	2	4.1		XS4B0042-3A	CXD3R-SUB0042-4V-3	XS4B0043-1A	CXD3R-SUB0043-4V-1
234326	3	5.5		XS4B0055-3A	CXD3R-SUB0055-4V-3	XS4B0060-1A	CXD3R-SUB0060-4V-1
234327	5	8.9		XS4B0105-3A	CXD3R-SUB0105-4V-3	XS4B0090-1A	CXD3R-SUB0090-4V-1
234328	7.5	13.2		XS4B0140-3A	CXD3R-SUB0140-4V-3	XS4B0160-1A	CXD3R-SUB0160-4V-1
234595	10	17.3		XS4B0180-3A	CXD3R-SUB0180-4V-3	XS4B0180-1A	CXD3R-SUB0180-4V-1
234626	15	25.8		XS4B0320-3A	CXD3R-SUB0320-4V-3	XS4B0270-1A	CXD3R-SUB0270-4V-1

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

\*\*\*460V and 575V models include a dV/dt filter

### NEMA 3R PANEL PART NUMBER ANATOMY

## XS2B0034-3A

Drive Type (XS=X-Drive for Submersible Pumps, XC=X-Drive for Centrifugal Pumps)

VFD Voltage Rating (2=200/230VAC, 4=460VAC, or 6=575/600VAC)

Enclosure (A=NEMA 1, B=NEMA 3R)

VFD Maximum Operating Amperage (0034=3.4A)

Voltage Input Phases (1=1-Phase, 3=3-Phase)

Disconnect (0=None, A=Circuit Breaker w/Service Entrance Provisions)



## CERUS® X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

4" Motor				Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	With Disconnect*		With Disconnect*	
				Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
234531	1/2	1.2	575	XS6B0016-3A	CXD3R-SUB0016-6V-3	XS6B0015-1A	CXD3R-SUB0015-6V-1
234533	1	1.9		XS6B0020-3A	CXD3R-SUB0020-6V-3	XS6B0020-1A	CXD3R-SUB0020-6V-1
234534	1.5	2.4		XS6B0030-3A	CXD3R-SUB0030-6V-3	XS6B0030-1A	CXD3R-SUB0030-6V-1
234335	2	3.2		XS6B0032-3A	CXD3R-SUB0032-6V-3	XS6B0034-1A	CXD3R-SUB0034-6V-1
234336	3	4.4		XS6B0048-3A	CXD3R-SUB0048-6V-3	XS6B0050-1A	CXD3R-SUB0050-6V-1
234337	5	7.1		XS6B0076-3A	CXD3R-SUB0076-6V-3	XS6B0080-1A	CXD3R-SUB0080-6V-1
234338	7.5	10.6		XS6B0110-3A	CXD3R-SUB0110-6V-3	XS6B0120-1A	CXD3R-SUB0120-6V-1
234598	10	13.6		XS6B0160-3A	CXD3R-SUB0160-6V-3	XS6B0150-1A	CXD3R-SUB0150-6V-1
234636	15	20.7		XS6B0210-3A	CXD3R-SUB0210-6V-3	XS6B0210-1A	CXD3R-SUB0210-6V-1

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

\*\*\*460V and 575V models include a dV/dt filter

6" Motor				Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	With Disconnect*		With Disconnect*	
				Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
236650	5	20	200	XS2B0210-3A	CXD3R-SUB0210-2V-3	XS2B0230-1A	CXD3R-SUB0230-2V-1
236651	7.5	28.3		XS2B0310-3A	CXD3R-SUB0310-2V-3	XS2B0305-1A	CXD3R-SUB0305-2V-1
236652	10	37		XS2B0460-3A	CXD3R-SUB0460-2V-3	XS2B0375-1A	CXD3R-SUB0375-2V-1
236653	15	54.4		XS2B0610-3A	CXD3R-SUB0610-2V-3	XS2B0594-1A	CXD3R-SUB0594-2V-1
236654	20	69.7		XS2B0750-3A	CXD3R-SUB0750-2V-3	XS2B0710-1A	CXD3R-SUB0710-2V-1
236655	25	86.3		XS2B0900-3A	CXD3R-SUB0900-2V-3	XS2B0911-1A	CXD3R-SUB0911-2V-1
236656	30	104		XS2B1050-3A	CXD3R-SUB1050-2V-3	XS2B1063-1A	CXD3R-SUB1063-2V-1
236600	5	17.6	230	XS2B0190-3A	CXD3R-SUB0190-2V-3	XS2B0230-1A	CXD3R-SUB0230-2V-1
236601	7.5	24.6		XS2B0250-3A	CXD3R-SUB0250-2V-3	XS2B0305-1A	CXD3R-SUB0305-2V-1
236602	10	32.2		XS2B0340-3A	CXD3R-SUB0340-2V-3	XS2B0375-1A	CXD3R-SUB0375-2V-1
236603	15	47.4		XS2B0480-3A	CXD3R-SUB0480-2V-3	XS2B0525-1A	CXD3R-SUB0525-2V-1
236604	20	60.6		XS2B0610-3A	CXD3R-SUB0610-2V-3	XS2B0710-1A	CXD3R-SUB0710-2V-1
236605	25	76.4		XS2B0800-3A	CXD3R-SUB0800-2V-3	XS2B0911-1A	CXD3R-SUB0911-2V-1
236606	30	90.4		XS2B1000-3A	CXD3R-SUB1000-2V-3	XS2B0911-1A	CXD3R-SUB0911-2V-1

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

\*\*\*460V and 575V models include a dV/dt filter

## CERUS® X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

6" Motor				Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	With Disconnect*		With Disconnect*	
				Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
236610	5	8.8	460	XS4B0105-3A	CXD3R-SUB0105-4V-3	XS4B0090-1A	CXD3R-SUB0090-4V-1
236611	7.5	12.3		XS4B0130-3A	CXD3R-SUB0130-4V-3	XS4B0160-1A	CXD3R-SUB0160-4V-1
236612	10	16.1		XS4B0180-3A	CXD3R-SUB0180-4V-3	XS4B0180-1A	CXD3R-SUB0180-4V-1
236613	15	23.7		XS4B0240-3A	CXD3R-SUB0240-4V-3	XS4B0250-1A	CXD3R-SUB0250-4V-1
236614	20	30.3		XS4B0320-3A	CXD3R-SUB0320-4V-3	XS4B0350-1A	CXD3R-SUB0350-4V-1
236615	25	38.2		XS4B0450-3A	CXD3R-SUB0450-4V-3	XS4B0450-1A	CXD3R-SUB0450-4V-1
236616	30	45.2		XS4B0500-3A	CXD3R-SUB0500-4V-3	XS4B0495-1A	CXD3R-SUB0495-4V-1
236617	40	61.6		XS4B0650-3A	CXD3R-SUB0650-4V-3	XS4B0726-1A	CXD3R-SUB0726-4V-1
276618	50	78.1		XS4B0800-3A	CXD3R-SUB0800-4V-3	XS4B0800-1A	CXD3R-SUB0800-4V-1
276619	60	92.3		XS4B1100-3A	CXD3R-SUB1100-4V-3	XS4B1023-1A	CXD3R-SUB1023-4V-1
236620	5	7.1	575	XS6B0076-3A	CXD3R-SUB0076-6V-3	XS6B0080-1A	CXD3R-SUB0080-6V-1
236621	7.5	9.8		XS6B0099-3A	CXD3R-SUB0099-6V-3	XS6B0120-1A	CXD3R-SUB0120-6V-1
236622	10	12.9		XS6B0160-3A	CXD3R-SUB0160-6V-3	XS6B0150-1A	CXD3R-SUB0150-6V-1
236623	15	19		XS6B0195-3A	CXD3R-SUB0195-6V-3	XS6B0210-1A	CXD3R-SUB0210-6V-1
236624	20	24.2		XS6B0242-3A	CXD3R-SUB0242-6V-3	XS6B0250-1A	CXD3R-SUB0250-6V-1
236625	25	30		XS6B0300-3A	CXD3R-SUB0300-6V-3	-	-
236626	30	36.2		XS6B0410-3A	CXD3R-SUB0410-6V-3	-	-
236627	40	49.6		XS6B0540-3A	CXD3R-SUB0540-6V-3	-	-
236628	50	62.5		XS6B0670-3A	CXD3R-SUB0670-6V-3	-	-
236629	60	73.9		XS6B0800-3A	CXD3R-SUB0800-6V-3	-	-

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

\*\*\*460V and 575V models include a dV/dt filter



## CERUS® X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

8" Motor				Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	With Disconnect*		With Disconnect*	
				Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
239600	40	60	460	XS4B0600-3A	CXD3R-SUB0600-4V-3	XS4B0726-1A	CXD3R-SUB0726-4V-1
239601	50	73		XS4B0730-3A	CXD3R-SUB0730-4V-3	XS4B0800-1A	CXD3R-SUB0800-4V-1
239602	60	86		XS4B0910-3A	CXD3R-SUB0910-4V-3	XS4B1023-1A	CXD3R-SUB1023-4V-1
239603	75	107		XS4B1100-3A	CXD3R-SUB1100-4V-3	XS4B1100-1A	CXD3R-SUB1100-4V-1
239604	100	142		XS4B1500-3A	CXD3R-SUB1500-4V-3	XS4B1518-1A	CXD3R-SUB1518-4V-1
239105	125	188		XS4B2000-3A	CXD3R-SUB2000-4V-3	XS4B2000-1A	CXD3R-SUB2000-4V-1
239106	150	219		XS4B2200-3A	CXD3R-SUB2200-4V-3	XS4B2254-1A	CXD3R-SUB2254-4V-1
239107	175	249		XS4B2500-3A	CXD3R-SUB2500-4V-3	XS4B2500-1A	CXD3R-SUB2500-4V-1
239108	200	282		XS4B3050-3A	CXD3R-SUB3050-4V-3	XS4B3050-1A	CXD3R-SUB3050-4V-1
239610	40	48	575	XS6B0540-3A	CXD3R-SUB0540-6V-3	-	-
239611	50	59		XS6B0670-3A	CXD3R-SUB0670-6V-3	-	-
239612	60	69		XS6B0800-3A	CXD3R-SUB0800-6V-3	-	-
239613	75	86		XS6B0860-3A	CXD3R-SUB0860-6V-3	-	-
239614	100	114		XS6B1250-3A	CXD3R-SUB1250-6V-3	-	-
239115	125	151		XS6B1600-3A	CXD3R-SUB1600-6V-3	-	-
239116	150	182		XS6B2000-3A	CXD3R-SUB2000-6V-3	-	-
239117	175	200		XS6B2000-3A	CXD3R-SUB2000-6V-3	-	-
239118	200	226		XS6B2500-3A	CXD3R-SUB2500-6V-3	-	-

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

\*\*\*460V and 575V models include a dV/dt filter

For sizing and ordering information on Cerus X-Drive for 10" & 12" submersible motors, contact your Franklin Electric representative.



## CERUS® X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### PANEL ACCESSORIES

NEMA 3R	
Part Number	Description
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

### FACTORY INSTALLABLE OPTIONS

NEMA 3R	
Part Number	Description
VFD-F125SR	Service Entrance Disconnect Provisions 20-125A CB
VFD-F250SR	Service Entrance Disconnect Provisions 150-250A CB
VFD-F400SR	Service Entrance Disconnect Provisions 300-400A CB
VFD-F800SR	Service Entrance Disconnect Provisions 500-800A CB
VFD-FK12	Free-Standing Enclosure Foot Kit (12" Deep Enclosures)
VFD-FK16	Free-Standing Enclosure Foot Kit (16" Deep Enclosures)
VFD-RPL	Run Pilot Light
VFD-FPL	Fault Pilot Light
VFD-SPD	Door Mounted Speed Potentiometer
VFD-MBEIP	Modbus TCP/IP Communication Card
VFD-EMI-8A	EMI/RFI Filter, 8A
VFD-EMI-16A	EMI/RFI Filter, 16A
VFD-EMI-25A	EMI/RFI Filter, 25A
VFD-EMI-36A	EMI/RFI Filter, 36A
VFD-EMI-50A	EMI/RFI Filter, 50A
VFD-EMI-66A	EMI/RFI Filter, 66A
VFD-EMI-90A	EMI/RFI Filter, 90A
VFD-EMI-120A	EMI/RFI Filter, 120A
VFD-EMI-150A	EMI/RFI Filter, 150A
VFD-EMI-180A	EMI/RFI Filter, 180A
VFD-EMI-250A	EMI/RFI Filter, 250A
VFD-EMI-320A	EMI/RFI Filter, 320A
VFD-HTR-150	Panel Heater - 150W
VFD-HTR-300	Panel Heater - 300W
VFD-HTR-500	Panel Heater - 500W
VFD-HTR-800	Panel Heater - 800W
VFD-HOA	Hand/Off/Auto Switch

*Factory Installable Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.*

## CERUS X-DRIVE - PANEL DIMENSION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

200 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS2B0034-3A	36.5 x 26 x 16.375
1	XS2B0055-3A	
1.5	XS2B0075-3A	
2	XS2B0100-3A	
3	XS2B0150-3A	
5	XS2B0210-3A	
7.5	XS2B0310-3A	
10	XS2B0460-3A	
15	XS2B0610-3A	
20	XS2B0750-3A	
25	XS2B0900-3A	41.5 x 29 x 16.375
30	XS2B1050-3A	51.5 x 34 x 20.5

230 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS2B0038-1A	36.5 x 26 x 16.375
1	XS2B0050-1A	
1.5	XS2B0075-1A	
2	XS2B0105-1A	
3	XS2B0155-1A	
5	XS2B0230-1A	
7.5	XS2B0305-1A	
10	XS2B0375-1A	41.5 x 29 x 16.375
15	XS2B0525-1A	46.5 x 29 x 16.375
20	XS2B0710-1A	51.5 x 34 x 20.5
25	XS2B0911-1A	56.5 x 39 x 20.5
30	XS2B0911-1A	

460 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS4B0017-3A	35.6 x 26 x 16.375
1	XS4B0030-3A	
1.5	XS4B0034-3A	
2	XS4B0042-3A	
3	XS4B0055-3A	
5	XS4B0105-3A	
7.5/6"	XS4B0130-3A	
7.5/4"	XS4B0140-3A	
10	XS4B0180-3A	
15/6"	XS4B0240-3A	
15/4"	XS4B0320-3A	41.5 x 29 x 16.375
20	XS4B0320-3A	
25	XS4B0450-3A	
30	XS4B0500-3A	
40/8"	XS4B0600-3A	
40/6"	XS4B0650-3A	
50/8"	XS4B0730-3A	
50/6"	XS4B0800-3A	46.5 x 29 x 16.375
60/8"	XS4B0910-3A	
60/6"	XS4B1100-3A	
75	XS4B1100-3A	
100	XS4B1500-3A	51.5 x 34 x 20.5
125	XS4B2000-3A	56.5 x 39 x 20.5
150	XS4B2200-3A	
175	XS4B2500-3A	
200	XS4B3050-3A	

200 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS2B0034-1A	36.5 x 226 x 16.375
1	XS2B0054-1A	
1.5	XS2B0075-1A	
2	XS2B0105-1A	
3	XS2B0155-1A	
5	XS2B0230-1A	
7.5	XS2B0305-1A	
10	XS2B0375-1A	41.5 x 29 x 16.375
15	XS2B0594-1A	51.5 x 34 x 20.5
20	XS2B0710-1A	56.5 x 39 x 20.5
25	XS2B0911-1A	
30	XS2B1063-1A	

230 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS2B0034-3A	36.5 x 26 x 16.375
1	XS2B0055-3A	
1.5	XS2B0075-3A	
2	XS2B0100-3A	
3	XS2B0110-3A	
5	XS2B0190-3A	
7.5/6"	XS2B0250-3A	
7.5/4"	XS2B0310-3A	
10	XS2B0340-3A	
15	XS2B0480-3A	
20	XS2B0610-3A	41.5 x 29 x 16.375
25	XS2B0800-3A	
30	XS2B1000-3A	

460 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS4B0015-1A	35.6 x 26 x 16.375
1	XS4B0028-1A	
1.5	XS4B0040-1A	
2	XS4B0043-1A	
3	XS4B0060-1A	
5	XS4B0090-1A	
7.5	XS4B0160-1A	
10	XS4B0180-1A	
15/6"	XS4B0250-1A	
15/4"	XS4B0270-1A	41.5 x 29 x 16.375
20	XS4B0350-1A	51.5 x 34 x 20.5
25	XS4B0450-1A	
30	XS4B0495-1A	
40	XS4B0726-1A	
50	XS4B0800-1A	56.5 x 39 x 20.5
60	XS4B1023-1A	
75	XS4B1100-1A	
100	XS4B1518-1A	63 x 60 x 25
125	XS4B2000-1A	93 x 72 x 25
150	XS4B2254-1A	
175	XS4B2500-1A	
200	XS4B3050-1A	

## CERUS X-DRIVE - PANEL DIMENSION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

575 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS6B0016-3A	35.6 x 26 x 16.375
1	XS6B0020-3A	
1.5	XS6B0030-3A	
2	XS6B0032-3A	
3	XS6B0048-3A	
5	XS6B0076-3A	
7.5/6"	XS6B0099-3A	
7.5/4"	XS6B0110-3A	
10	XS6B0160-3A	
15/6"	XS6B0195-3A	
15/4"	XS6B0210-3A	
20	XS6B0242-3A	
25	XS6B0300-3A	
30	XS6B0410-3A	41.5 x 29 x 16.375
40	XS6B0540-3A	51.5 x 34 x 20.5
50	XS6B0670-3A	
60	XS6B0800-3A	
75	XS6B0860-3A	
100	XS6B1250-3A	56.5 x 39 x 20.5
125	XS6B1600-3A	
150	XS6B2000-3A	
175	XS6B2000-3A	63 x 60 x 25
200	XS6B2500-3A	

575 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1/2	XS6B0015-1A	36.5 x 26 x 16.375
1	XS6B0020-1A	
1.5	XS6B0030-1A	
2	XS6B0034-1A	
3	XS6B0050-1A	
5	XS6B0080-1A	
7.5	XS6B0120-1A	
10	XS6B0150-1A	41.5 x 29 x 16.375
15	XS6B0210-1A	
20	XS6B0250-1A	

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

Voltage	Motor		Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
	HP	FLA	With Disconnect*		With Disconnect*	
			Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
200 V	1	4.8	XC2B0048-3A	CXD3R-CEN0048-2V-3	XC2B0048-1A	CXD3R-CEN0048-2V-1
	1.5	6.9	XC2B0069-3A	CXD3R-CEN0069-2V-3	XC2B0069-1A	CXD3R-CEN0069-2V-1
	2	7.8	XC2B0078-3A	CXD3R-CEN0078-2V-3	XC2B0078-1A	CXD3R-CEN0078-2V-1
	3	11	XC2B0110-3A	CXD3R-CEN0110-2V-3	XC2B0110-1A	CXD3R-CEN0110-2V-1
	5	17.5	XC2B0175-3A	CXD3R-CEN0175-2V-3	XC2B0175-1A	CXD3R-CEN0175-2V-1
	7.5	25.3	XC2B0253-3A	CXD3R-CEN0253-2V-3	XC2B0253-1A	CXD3R-CEN0253-2V-1
	10	32.2	XC2B0322-3A	CXD3R-CEN0322-2V-3	XC2B0322-1A	CXD3R-CEN0322-2V-1
	15	48.3	XC2B0483-3A	CXD3R-CEN0483-2V-3	XC2B0483-1A	CXD3R-CEN0483-2V-1
	20	62.1	XC2B0621-3A	CXD3R-CEN0621-2V-3	XC2B0621-1A	CXD3R-CEN0621-2V-1
	25	78.2	XC2B0782-3A	CXD3R-CEN0782-2V-3	XC2B0782-1A	CXD3R-CEN0782-2V-1
	30	92	XC2B0920-3A	CXD3R-CEN0920-2V-3	XC2B0920-1A	CXD3R-CEN0920-2V-1
	40	120	XC2B1200-3A	CXD3R-CEN1200-2V-3	-	-
	50	150	XC2B1500-3A	CXD3R-CEN1500-2V-3	-	-
	60	177	XC2B1770-3A	CXD3R-CEN1770-2V-3	-	-
	75	221	XC2B2210-3A	CXD3R-CEN2210-2V-3	-	-
	100	285	XC2B2850-3A	CXD3R-CEN2850-2V-3	-	-
230 V	1	4.2	XC2B0042-3A	CXD3R-CEN0042-2V-3	XC2B0042-1A	CXD3R-CEN0042-2V-1
	1.5	6	XC2B0060-3A	CXD3R-CEN0060-2V-3	XC2B0060-1A	CXD3R-CEN0060-2V-1
	2	6.8	XC2B0068-3A	CXD3R-CEN0068-2V-3	XC2B0068-1A	CXD3R-CEN0068-2V-1
	3	9.6	XC2B0096-3A	CXD3R-CEN0096-2V-3	XC2B0096-1A	CXD3R-CEN0096-2V-1
	5	15.2	XC2B0152-3A	CXD3R-CEN0152-2V-3	XC2B0152-1A	CXD3R-CEN0152-2V-1
	7.5	22	XC2B0220-3A	CXD3R-CEN0220-2V-3	XC2B0220-1A	CXD3R-CEN0220-2V-1
	10	28	XC2B0280-3A	CXD3R-CEN0280-2V-3	XC2B0280-1A	CXD3R-CEN0280-2V-1
	15	42	XC2B0420-3A	CXD3R-CEN0420-2V-3	XC2B0420-1A	CXD3R-CEN0420-2V-1
	20	54	XC2B0540-3A	CXD3R-CEN0540-2V-3	XC2B0540-1A	CXD3R-CEN0540-2V-1
	25	68	XC2B0680-3A	CXD3R-CEN0680-2V-3	XC2B0680-1A	CXD3R-CEN0680-2V-1
	30	80	XC2B0800-3A	CXD3R-CEN0800-2V-3	XC2B0800-1A	CXD3R-CEN0800-2V-1
	40	104	XC2B1040-3A	CXD3R-CEN1040-2V-3	XC2B1040-1A	CXD3R-CEN1040-2V-1
	50	130	XC2B1300-3A	CXD3R-CEN1300-2V-3	-	-
	60	154	XC2B1540-3A	CXD3R-CEN1540-2V-3	-	-
	75	192	XC2B1920-3A	CXD3R-CEN1920-2V-3	-	-
	100	248	XC2B2480-3A	CXD3R-CEN2480-2V-3	-	-
	125	312	XC2B3120-3A	CXD3R-CEN3120-2V-3	-	-

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

Voltage	Motor		Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
	HP	FLA	With Disconnect*		With Disconnect*	
			Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
460V	1	2.1	XC4B0021-3A	CXD3R-CEN0021-4V-3	XC4B0021-1A	CXD3R-CEN0021-4V-1
	1.5	3	XC4B0030-3A	CXD3R-CEN0030-4V-3	XC4B0030-1A	CXD3R-CEN0030-4V-1
	2	3.4	XC4B0034-3A	CXD3R-CEN0034-4V-3	XC4B0034-1A	CXD3R-CEN0034-4V-1
	3	4.8	XC4B0048-3A	CXD3R-CEN0048-4V-3	XC4B0048-1A	CXD3R-CEN0048-4V-1
	5	7.6	XC4B0076-3A	CXD3R-CEN0076-4V-3	XC4B0076-1A	CXD3R-CEN0076-4V-1
	7.5	11	XC4B0110-3A	CXD3R-CEN0110-4V-3	XC4B0110-1A	CXD3R-CEN0110-4V-1
	10	14	XC4B0140-3A	CXD3R-CEN0140-4V-3	XC4B0140-1A	CXD3R-CEN0140-4V-1
	15	21	XC4B0210-3A	CXD3R-CEN0210-4V-3	XC4B0210-1A	CXD3R-CEN0210-4V-1
	20	27	XC4B0270-3A	CXD3R-CEN0270-4V-3	XC4B0270-1A	CXD3R-CEN0270-4V-1
	25	34	XC4B0340-3A	CXD3R-CEN0340-4V-3	XC4B0340-1A	CXD3R-CEN0340-4V-1
	30	40	XC4B0400-3A	CXD3R-CEN0400-4V-3	XC4B0400-1A	CXD3R-CEN0400-4V-1
	40	52	XC4B0520-3A	CXD3R-CEN0520-4V-3	XC4B0520-1A	CXD3R-CEN0520-4V-1
	50	65	XC4B0650-3A	CXD3R-CEN0650-4V-3	XC4B0650-1A	CXD3R-CEN0650-4V-1
	60	77	XC4B0770-3A	CXD3R-CEN0770-4V-3	XC4B0770-1A	CXD3R-CEN0770-4V-1
	75	96	XC4B0960-3A	CXD3R-CEN0960-4V-3	XC4B0960-1A	CXD3R-CEN0960-4V-1
	100	124	XC4B1240-3A	CXD3R-CEN1240-4V-3	XC4B1240-1A	CXD3R-CEN1240-4V-1
	125	156	XC4B1560-3A	CXD3R-CEN1560-4V-3	XC4B1560-1A	CXD3R-CEN1560-4V-1
	150	180	XC4B1800-3A	CXD3R-CEN1800-4V-3	XC4B1800-1A	CXD3R-CEN1800-4V-1
	200	240	XC4B2400-3A	CXD3R-CEN2400-4V-3	XC4B2400-1A	CXD3R-CEN2400-4V-1
	250	302	XC4B3020-3A	CXD3R-CEN3020-4V-3	-	-
	300	361	XC4B3610-3A	CXD3R-CEN3610-4V-3	-	-
	350	414	XC4B4140-3A	CXD3R-CEN4140-4V-3	-	-
	400	477	XC4B4770-3A	CXD3R-CEN4770-4V-3	-	-
	450	515	XC4B5150-3A	CXD3R-CEN5150-4V-3	-	-
	500	590	XC4B5900-3A	CXD3R-CEN5900-4V-3	-	-
	550	683	XC4B6830-3A	CXD3R-CEN6830-4V-3	-	-
	600	770	XC4B7700-3A	CXD3R-CEN7700-4V-3	-	-

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

Voltage	Motor		Model No. - 3-Phase Input / 3-Phase Output		Model No. - 1-Phase Input / 3-Phase Output	
	HP	FLA	With Disconnect*		With Disconnect*	
			Standard Model No.	Configured Model No.	Standard Model No.	Configured Model No.
575V	1	1.7	XC6B0017-3A	CXD3R-CEN0017-6V-3	XC6B0017-1A	CXD3R-CEN0017-6V-1
	1.5	2.4	XC6B0024-3A	CXD3R-CEN0024-6V-3	XC6B0024-1A	CXD3R-CEN0024-6V-1
	2	2.7	XC6B0027-3A	CXD3R-CEN0027-6V-3	XC6B0027-1A	CXD3R-CEN0027-6V-1
	3	3.9	XC6B0039-3A	CXD3R-CEN0039-6V-3	XC6B0039-1A	CXD3R-CEN0039-6V-1
	5	6.1	XC6B0061-3A	CXD3R-CEN0061-6V-3	XC6B0061-1A	CXD3R-CEN0061-6V-1
	7.5	9	XC6B0090-3A	CXD3R-CEN0090-6V-3	XC6B0090-1A	CXD3R-CEN0090-6V-1
	10	11	XC6B0110-3A	CXD3R-CEN0110-6V-3	XC6B0110-1A	CXD3R-CEN0110-6V-1
	15	17	XC6B0170-3A	CXD3R-CEN0170-6V-3	XC6B0170-1A	CXD3R-CEN0170-6V-1
	20	22	XC6B0220-3A	CXD3R-CEN0220-6V-3	XC6B0220-1A	CXD3R-CEN0220-6V-1
	25	27	XC6B0270-3A	CXD3R-CEN0270-6V-3	XC6B0270-1A	CXD3R-CEN0270-6V-1
	30	32	XC6B0320-3A	CXD3R-CEN0320-6V-3	-	-
	40	41	XC6B0410-3A	CXD3R-CEN0410-6V-3	-	-
	50	52	XC6B0520-3A	CXD3R-CEN0520-6V-3	-	-
	60	62	XC6B0620-3A	CXD3R-CEN0620-6V-3	-	-
	75	77	XC6B0770-3A	CXD3R-CEN0770-6V-3	-	-
	100	99	XC6B0990-3A	CXD3R-CEN0990-6V-3	-	-
	125	125	XC6B1250-3A	CXD3R-CEN1250-6V-3	-	-
	150	144	XC6B1440-3A	CXD3R-CEN1440-6V-3	-	-
	200	192	XC6B1920-3A	CXD3R-CEN1920-6V-3	-	-
	250	242	XC6B2420-3A	CXD3R-CEN2420-6V-3	-	-
	300	289	XC6B2890-3A	CXD3R-CEN2890-6V-3	-	-
	350	336	XC6B3360-3A	CXD3R-CEN3360-6V-3	-	-
	400	382	XC6B3820-3A	CXD3R-CEN3820-6V-3	-	-
	450	412	XC6B4120-3A	CXD3R-CEN4120-6V-3	-	-
	500	472	XC6B4720-3A	CXD3R-CEN4720-6V-3	-	-
	600	675	XC6B6750-3A	CXD3R-CEN6750-6V-3	-	-

\*Standard panels with disconnect include service entrance provisions

\*\*All panels include a line reactor or DC choke

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### PANEL ACCESSORIES

NEMA 3R	
Part Number	Description
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

### FACTORY INSTALLABLE OPTIONS

NEMA 3R	
Part Number	Description
VFD-F125SR	Service Entrance Disconnect Provisions 20-125A CB
VFD-F250SR	Service Entrance Disconnect Provisions 150-250A CB
VFD-F400SR	Service Entrance Disconnect Provisions 300-400A CB
VFD-F800SR	Service Entrance Disconnect Provisions 500-800A CB
VFD-FK12	Free-Standing Enclosure Foot Kit (12" Deep Enclosures)
VFD-FK16	Free-Standing Enclosure Foot Kit (16" Deep Enclosures)
VFD-RPL	Run Pilot Light
VFD-FPL	Fault Pilot Light
VFD-SPD	Door Mounted Speed Potentiometer
VFD-MBEIP	Modbus TCP/IP Communication Card
VFD-EMI-8A	EMI/RFI Filter, 8A
VFD-EMI-16A	EMI/RFI Filter, 16A
VFD-EMI-25A	EMI/RFI Filter, 25A
VFD-EMI-36A	EMI/RFI Filter, 36A
VFD-EMI-50A	EMI/RFI Filter, 50A
VFD-EMI-66A	EMI/RFI Filter, 66A
VFD-EMI-90A	EMI/RFI Filter, 90A
VFD-EMI-120A	EMI/RFI Filter, 120A
VFD-EMI-150A	EMI/RFI Filter, 150A
VFD-EMI-180A	EMI/RFI Filter, 180A
VFD-EMI-250A	EMI/RFI Filter, 250A
VFD-EMI-320A	EMI/RFI Filter, 320A
VFD-HTR-150	Panel Heater - 150W
VFD-HTR-300	Panel Heater - 300W
VFD-HTR-500	Panel Heater - 500W
VFD-HTR-800	Panel Heater - 800W
VFD-HOA	Hand/Off/Auto Switch

Factory Installable Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.



## CERUS X-DRIVE - PANEL DIMENSION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

200 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1	XC2B0048-3A	36.5 x 26 x 16.375
1.5	XC2B0069-3A	
2	XC2B0078-3A	
3	XC2B0110-3A	
5	XC2B0175-3A	
7.5	XC2B0253-3A	
10	XC2B0322-3A	
15	XC2B0483-3A	41.5 x 29 x 16.375
20	XC2B0621-3A	
25	XC2B0782-3A	
30	XC2B0920-3A	51.5 x 34 x 20.5
40	XC2B1200-3A	
50	XC2B1500-3A	
60	XC2B1770-3A	56.5 x 39 x 20.5
75	XC2B2210-3A	
100	XC2B2850-3A	

200 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1	XC2B0048-1A	36.5 x 226 x 16.375
1.5	XC2B0069-1A	
2	XC2B0078-1A	
3	XC2B0110-1A	
5	XC2B0175-1A	
7.5	XC2B0253-1A	
10	XC2B0322-1A	
15	XC2B0483-1A	41.5 x 29 x 16.375
20	XC2B0621-1A	56.5 x 39 x 20.5
25	XC2B0782-1A	
30	XC2B0920-1A	

230 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1	XC2B0042-3A	36.5 x 26 x 16.375
1.5	XC2B0060-3A	
2	XC2B0068-3A	
3	XC2B0096-3A	
5	XC2B0152-3A	
7.5	XC2B0220-3A	
10	XC2B0280-3A	
15	XC2B0420-3A	41.5 x 29 x 16.375
20	XC2B0540-3A	
25	XC2B0680-3A	
30	XC2B0800-3A	46.5 x 29 x 16.375
40	XC2B1040-3A	51.5 x 34 x 20.5
50	XC2B1300-3A	
60	XC2B1540-3A	
75	XC2B1920-3A	56.5 x 39 x 20.5
100	XC2B2480-3A	
125	XC2B3120-3A	

230 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1	XC2B0042-1A	36.5 x 26 x 16.375
1.5	XC2B0060-1A	
2	XC2B0068-1A	
3	XC2B0096-1A	
5	XC2B0152-1A	
7.5	XC2B0220-1A	
10	XC2B0280-1A	
15	XC2B0420-1A	41.5 x 29 x 16.375
20	XC2B0540-1A	51.5 x 34 x 20.5
25	XC2B0680-1A	56.5 x 39 x 20.5
30	XC2B0800-1A	
40	XC2B1040-1A	

## CERUS X-DRIVE - PANEL DIMENSION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ

460 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1	XC4B0021-3A	35.6 x 26 x 16.375
1.5	XC4B0030-3A	
2	XC4B0034-3A	
3	XC4B0048-3A	
5	XC4B0076-3A	
7.5	XC4B0110-3A	
10	XC4B0140-3A	
15	XC4B0210-3A	
20	XC4B0270-3A	41.5 x 29 x 16.375
25	XC4B0340-3A	
30	XC4B0400-3A	
40	XC4B0520-3A	46.5 x 29 x 16.375
50	XC4B0650-3A	
60	XC4B0770-3A	
75	XC4B0960-3A	51.5 x 34 x 20.5
100	XC4B1240-3A	
125	XC4B1560-3A	
150	XC4B1800-3A	56.5 x 39 x 20.5
200	XC4B2400-3A	
250	XC4B3020-3A	
300	XC4B3610-3A	63 x 60 x 25
350	XC4B4140-3A	
400	XC4B4770-3A	
450	XC4B5150-3A	93 x 72 x 25
500	XC4B5900-3A	
550	XC4B6830-3A	
600	XC4B7700-3A	

575 VAC / 3 Phase Input		
HP	Model No.	H x W x D (in)
1	XC6B0017-3A	35.6 x 26 x 16.375
1.5	XC6B0024-3A	
2	XC6B0027-3A	
3	XC6B0039-3A	
5	XC6B0061-3A	
7.5	XC6B0090-3A	
10	XC6B0110-3A	
15	XC6B0170-3A	
20	XC6B0220-3A	41.5 x 29 x 16.375
25	XC6B0270-3A	
30	XC6B0320-3A	
40	XC6B0410-3A	51.5 x 34 x 20.5
50	XC6B0520-3A	
60	XC6B0620-3A	
75	XC6B0770-3A	56.5 x 39 x 20.5
100	XC6B0990-3A	
125	XC6B1250-3A	
150	XC6B1440-3A	63 x 60 x 25
200	XC6B1920-3A	
250	XC6B2420-3A	
300	XC6B2890-3A	93 x 72 x 25
350	XC6B3360-3A	
400	XC6B3820-3A	
450	XC6B4120-3A	
500	XC6B4720-3A	
600	XC6B6750-3A	

460 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1	XC4B0021-1A	36.5 x 26 x 16.375
1.5	XC4B0030-1A	
2	XC4B0034-1A	
3	XC4B0048-1A	
5	XC4B0076-1A	
7.5	XC4B0110-1A	
10	XC4B0140-1A	
15	XC4B0210-1A	
20	XC4B0270-1A	41.5 x 29 x 16.375
25	XC4B0340-1A	
30	XC4B0400-1A	
40	XC4B0520-1A	51.5 x 34 x 20.5
50	XC4B0650-1A	
60	XC4B0770-1A	
75	XC4B0960-1A	56.5 x 39 x 20.5
100	XC4B1240-1A	
125	XC4B1560-1A	
150	XC4B1800-1A	63 x 60 x 25
200	XC4B2400-1A	
		93 x 72 x 25

575 VAC / 1 Phase Input		
HP	Model No.	H x W x D (in)
1	XC6B0017-1A	36.5 x 26 x 16.375
1.5	XC6B0024-1A	
2	XC6B0027-1A	
3	XC6B0039-1A	
5	XC6B0061-1A	
7.5	XC6B0090-1A	
10	XC6B0110-1A	
15	XC6B0170-1A	
20	XC6B0220-1A	41.5 x 29 x 16.375
25	XC6B0270-1A	
		51.5 x 34 x 20.5

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

4" Motor				3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	Panel Max Amps	Model No.	Panel Max Amps
234501	1/2	3.4	200	CXD1-SUB0034-2V-3	3.4	CXD1-SUB0034-2V-1	3.4
234503	1	5.4		CXD1-SUB0055-2V-3	5.5	CXD1-SUB0054-2V-1	5.4
234504	1.5	6.8		CXD1-SUB0075-2V-3	7.5	CXD1-SUB0075-2V-1	7.5
234305	2	9.3		CXD1-SUB0100-2V-3	10	CXD1-SUB0105-2V-1	10.5
234306	3	12.5		CXD1-SUB0150-2V-3	15	CXD1-SUB0155-2V-1	15.5
234307	5	20.5		CXD1-SUB0210-2V-3	21	CXD1-SUB0230-2V-1	23
234308	7.5	30.5		CXD1-SUB0310-2V-3	31	CXD1-SUB0305-2V-1	30.5
234511	1/2	2.9	230	CXD1-SUB0034-2V-3	3.4	CXD1-SUB0034-2V-1	3.4
234513	1	4.7		CXD1-SUB0055-2V-3	5.5	CXD1-SUB0050-2V-1	5
234514	1.5	5.9		CXD1-SUB0075-2V-3	7.5	CXD1-SUB0075-2V-1	7.5
234315	2	8.1		CXD1-SUB0100-2V-3	10	CXD1-SUB0105-2V-1	10.5
234316	3	10.9		CXD1-SUB0110-2V-3	11	CXD1-SUB0155-2V-1	15.5
234317	5	17.8		CXD1-SUB0190-2V-3	19	CXD1-SUB0230-2V-1	23
234318	7.5	26.4		CXD1-SUB0310-2V-3	31	CXD1-SUB0305-2V-1	30.5
234521	1/2	1.5	460	CXD1-SUB0017-4V-3	1.7	CXD1-SUB0015-4V-1	1.5
234523	1	2.4		CXD1-SUB0030-4V-3	3	CXD1-SUB0028-4V-1	2.8
234524	1.5	3.1		CXD1-SUB0034-4V-3	3.4	CXD1-SUB0040-4V-1	4
234325	2	4.1		CXD1-SUB0042-4V-3	4.2	CXD1-SUB0043-4V-1	4.3
234326	3	5.5		CXD1-SUB0055-4V-3	5.5	CXD1-SUB0060-4V-1	6
234327	5	8.9		CXD1-SUB0105-4V-3	10.5	CXD1-SUB0090-4V-1	9
234328	7.5	13.2		CXD1-SUB0140-4V-3	14	CXD1-SUB0160-4V-1	16
234595	10	17.3		CXD1-SUB0180-4V-3	18	CXD1-SUB0180-4V-1	18
234626	15	25.8		CXD1-SUB0320-4V-3	32	CXD1-SUB0270-4V-1	27
234531	1/2	1.2	575	CXD1-SUB0016-6V-3	1.6	-	-
234533	1	1.9		CXD1-SUB0020-6V-3	2	-	-
234534	1.5	2.4		CXD1-SUB0030-6V-3	3	-	-
234335	2	3.2		CXD1-SUB0032-6V-3	3.2	-	-
234336	3	4.4		CXD1-SUB0048-6V-3	4.8	-	-
234337	5	7.1		CXD1-SUB0076-6V-3	7.6	-	-
234338	7.5	10.6		CXD1-SUB0110-6V-3	11	-	-
234598	10	13.6		CXD1-SUB0160-6V-3	16	-	-
234636	15	20.7		CXD1-SUB0210-6V-3	21	-	-

\*All panels include a disconnect and line reactor or DC choke

\*\*460V and 575V models include a dv/dt filter

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

6" Motor				3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	Panel Max Amps	Model No.	Panel Max Amps
236650	5	20	200	CXD1-SUB0210-2V-3	21	CXD1-SUB0230-2V-1	23
236651	7.5	28.3		CXD1-SUB0310-2V-3	31	CXD1-SUB0305-2V-1	30.5
236652	10	37		CXD1-SUB0460-2V-3	46	CXD1-SUB0375-2V-1	37.5
236653	15	54.4		CXD1-SUB0610-2V-3	61	CXD1-SUB0594-2V-1	59.4
236654	20	69.7		CXD1-SUB0750-2V-3	75	-	-
236655	25	86.3		CXD1-SUB0900-2V-3	90	-	-
236656	30	104		CXD1-SUB1050-2V-3	105	-	-
236600	5	17.6	230	CXD1-SUB0190-2V-3	19	CXD1-SUB0230-2V-1	23
236601	7.5	24.6		CXD1-SUB0250-2V-3	25	CXD1-SUB0305-2V-1	30.5
236602	10	32.2		CXD1-SUB0340-2V-3	34	CXD1-SUB0375-2V-1	37.5
236603	15	47.4		CXD1-SUB0480-2V-3	48	CXD1-SUB0525-2V-1	52.5
236604	20	60.6		CXD1-SUB0610-2V-3	61	-	-
236605	25	76.4		CXD1-SUB0800-2V-3	80	-	-
236606	30	90.4		CXD1-SUB1000-2V-3	100	-	-
236610	5	8.8	460	CXD1-SUB0105-4V-3	10.5	CXD1-SUB0090-4V-1	9
236611	7.5	12.3		CXD1-SUB0130-4V-3	13	CXD1-SUB0160-4V-1	16
236612	10	16.1		CXD1-SUB0180-4V-3	18	CXD1-SUB0180-4V-1	18
236613	15	23.7		CXD1-SUB0240-4V-3	24	CXD1-SUB0250-4V-1	25
236614	20	30.3		CXD1-SUB0320-4V-3	32	CXD1-SUB0350-4V-1	35
236615	25	38.2		CXD1-SUB0450-4V-3	45	-	-
236616	30	45.2		CXD1-SUB0500-4V-3	50	-	-
236617	40	61.6	575	CXD1-SUB0650-4V-3	65	-	-
276618	50	78.1		CXD1-SUB0800-4V-3	80	-	-
276619	60	92.3		CXD1-SUB1100-4V-3	110	-	-
236620	5	7.1		CXD1-SUB0076-6V-3	7.6	-	-
236621	7.5	9.8		CXD1-SUB0099-6V-3	9.9	-	-
236622	10	12.9		CXD1-SUB0160-6V-3	16	-	-
236623	15	19		CXD1-SUB0195-6V-3	19.5	-	-
236624	20	24.2		CXD1-SUB0242-6V-3	24.2	-	-
236625	25	30		CXD1-SUB0300-6V-3	30	-	-
236626	30	36.2		CXD1-SUB0410-6V-3	41	-	-

\*All panels include a disconnect and line reactor or DC choke

\*\*460V and 575V models include a dv/dt filter

8" Motor				3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	Panel Max Amps	Model No.	Panel Max Amps
239600	40	60	460	CXD1-SUB0600-4V-3	60	-	-
239601	50	73		CXD1-SUB0730-4V-3	73	-	-
239602	60	86		CXD1-SUB1100-4V-3	110	-	-

\*All panels include a disconnect and line reactor or DC choke

\*\*460V and 575V models include a dv/dt filter

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### PANEL ACCESSORIES

NEMA 1	
Part Number	Description
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

### FACTORY INSTALLABLE OPTIONS

NEMA 1	
Part Number	Description
VFD-FPL	Fault Pilot Light
VFD-RPL	Run Pilot Light
VFD-MBEIP	Modbus TCP/IP Communication Card
VFD-SPD	Run Pilot Light
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

*Factory Installable Options apply to configured-to-order models only and are subject to variable lead times. Consult your Franklin Electric Representative.*

## CERUS X-DRIVE - PANEL DIMENSION FOR SUBMERSIBLE APPLICATIONS - 4" MOTORS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

200 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0034-2V-3	43 x 8 x 9
1	CXD1-SUB0055-2V-3	
1.5	CXD1-SUB0075-2V-3	
2	CXD1-SUB0100-2V-3	
3	CXD1-SUB0150-2V-3	
5	CXD1-SUB0210-2V-3	
7.5	CXD1-SUB0310-2V-3	

200 VAC / 1-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0034-2V-1	43 x 8 x 9
1	CXD1-SUB0054-2V-1	
1.5	CXD1-SUB0075-2V-1	
2	CXD1-SUB0105-2V-1	
3	CXD1-SUB0155-2V-1	
5	CXD1-SUB0230-2V-1	
7.5	CXD1-SUB0305-2V-1	52 x 10 x 10

230 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0034-2V-3	43 x 8 x 9
1	CXD1-SUB0055-2V-3	
1.5	CXD1-SUB0075-2V-3	
2	CXD1-SUB0100-2V-3	
3	CXD1-SUB0110-2V-3	
5	CXD1-SUB0190-2V-3	
7.5	CXD1-SUB0310-2V-3	

230 VAC / 1-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0034-2V-1	43 x 8 x 9
1	CXD1-SUB0050-2V-1	
1.5	CXD1-SUB0075-2V-1	
2	CXD1-SUB0105-2V-1	
3	CXD1-SUB0155-2V-1	
5	CXD1-SUB0230-2V-1	
7.5	CXD1-SUB0305-2V-1	52 x 10 x 10

460 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0017-4V-3	43 x 8 x 9
1	CXD1-SUB0030-4V-3	
1.5	CXD1-SUB0034-4V-3	
2	CXD1-SUB0042-4V-3	
3	CXD1-SUB0055-4V-3	
5	CXD1-SUB0105-4V-3	
7.5	CXD1-SUB0140-4V-3	52 x 10 x 10
10	CXD1-SUB0180-4V-3	
15	CXD1-SUB0320-4V-3	

460 VAC / 1-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0015-4V-1	43 x 8 x 9
1	CXD1-SUB0028-4V-1	
1.5	CXD1-SUB0040-4V-1	
2	CXD1-SUB0043-4V-1	
3	CXD1-SUB0060-4V-1	
5	CXD1-SUB0090-4V-1	
7.5	CXD1-SUB0160-4V-1	52 x 10 x 10
10	CXD1-SUB0180-4V-1	58 x 12 x 12
15	CXD1-SUB0270-4V-1	

575 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
1/2	CXD1-SUB0016-6V-3	43 x 8 x 9
1	CXD1-SUB0020-6V-3	
1.5	CXD1-SUB0030-6V-3	
2	CXD1-SUB0032-6V-3	
3	CXD1-SUB0048-6V-3	
5	CXD1-SUB0076-6V-3	
7.5	CXD1-SUB0110-6V-3	52 x 10 x 10
10	CXD1-SUB0160-6V-3	
15	CXD1-SUB0210-6V-3	

## CERUS X-DRIVE - NEMA 1 SUBMERSIBLE PUMP PANELS - 6" MOTORS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

200 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0210-2V-3	43 x 8 x 9
7.5	CXD1-SUB0310-2V-3	
10	CXD1-SUB0460-2V-3	
15	CXD1-SUB0610-2V-3	52 x 10 x 10
20	CXD1-SUB0750-2V-3	
25	CXD1-SUB0900-2V-3	
30	CXD1-SUB1050-2V-3	58 x 12 x 12

230 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0190-2V-3	43 x 8 x 9
7.5	CXD1-SUB0250-2V-3	
10	CXD1-SUB0340-2V-3	
15	CXD1-SUB0480-2V-3	52 x 10 x 10
20	CXD1-SUB0610-2V-3	
25	CXD1-SUB0800-2V-3	
30	CXD1-SUB1000-2V-3	58 x 12 x 12

460 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0105-4V-3	43 x 8 x 9
7.5	CXD1-SUB0130-4V-3	
10	CXD1-SUB0180-4V-3	
15	CXD1-SUB0240-4V-3	52 x 10 x 10
20	CXD1-SUB0320-4V-3	
25	CXD1-SUB0450-4V-3	
30	CXD1-SUB0500-4V-3	58 x 12 x 12
40	CXD1-SUB0650-4V-3	
50	CXD1-SUB0800-4V-3	
60	CXD1-SUB1100-4V-3	62 x 19 x 13

200 VAC / 1-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0230-2V-1	43 x 8 x 9
7.5	CXD1-SUB0305-2V-1	52 x 10 x 10
10	CXD1-SUB0375-2V-1	
15	CXD1-SUB0594-2V-1	58 x 12 x 12

230 VAC / 1-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0230-2V-1	43 x 8 x 9
7.5	CXD1-SUB0305-2V-1	52 x 10 x 10
10	CXD1-SUB0375-2V-1	
15	CXD1-SUB0525-2V-1	58 x 12 x 12

460 VAC / 1-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0090-4V-1	43 x 8 x 9
7.5	CXD1-SUB0160-4V-1	52 x 10 x 10
10	CXD1-SUB0180-4V-1	
15	CXD1-SUB0250-4V-1	58 x 12 x 12
20	CXD1-SUB0350-4V-1	

575 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
5	CXD1-SUB0076-6V-3	43 x 8 x 9
7.5	CXD1-SUB0099-6V-3	
10	CXD1-SUB0160-6V-3	
15	CXD1-SUB0195-6V-3	52 x 10 x 10
20	CXD1-SUB0242-6V-3	
25	CXD1-SUB0300-6V-3	
30	CXD1-SUB0410-6V-3	58 x 12 x 12

## CERUS X-DRIVE - NEMA 1 SUBMERSIBLE PUMP PANELS - 8" MOTORS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

460 VAC / 3-Phase Input		
HP	Model No.	H x W x D [in.]
40	CXD1-SUB0600-4V-3	52 x 10 x 10
50	CXD1-SUB0730-4V-3	52 x 12 x 12
60	CXD1-SUB1100-4V-3	62 x 19 x 13



## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

Voltage	Motor		3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
	HP	FLA	Model No.	Panel Max Amps	Model No.	Panel Max Amps
200 V	1	4.8	CXD1-CEN0048-2V-3	4.8	CXD1-CEN0048-2V-1	4.8
	1.5	6.9	CXD1-CEN0069-2V-3	6.9	CXD1-CEN0069-2V-1	6.9
	2	7.8	CXD1-CEN0078-2V-3	7.8	CXD1-CEN0078-2V-1	7.8
	3	11	CXD1-CEN0110-2V-3	11	CXD1-CEN0110-2V-1	11
	5	17.5	CXD1-CEN0175-2V-3	17.5	CXD1-CEN0175-2V-1	17.5
	7.5	25.3	CXD1-CEN0253-2V-3	25.3	CXD1-CEN0253-2V-1	25.3
	10	32.2	CXD1-CEN0322-2V-3	32.2	CXD1-CEN0322-2V-1	32.2
	15	48.3	CXD1-CEN0483-2V-3	48.3	CXD1-CEN0483-2V-1	48.3
	20	62.1	CXD1-CEN0621-2V-3	62.1	-	-
	25	78.2	CXD1-CEN0782-2V-3	78.2	-	-
230 V	30	92	CXD1-CEN0920-2V-3	92	-	-
	1	4.2	CXD1-CEN0042-2V-3	4.2	CXD1-CEN0042-2V-1	42
	1.5	6	CXD1-CEN0060-2V-3	6	CXD1-CEN0060-2V-1	6
	2	6.8	CXD1-CEN0068-2V-3	6.8	CXD1-CEN0068-2V-1	6.8
	3	9.6	CXD1-CEN0096-2V-3	9.6	CXD1-CEN0096-2V-1	9.6
	5	15.2	CXD1-CEN0152-2V-3	15.2	CXD1-CEN0152-2V-1	15.2
	7.5	22	CXD1-CEN0220-2V-3	22	CXD1-CEN0220-2V-1	22
	10	28	CXD1-CEN0280-2V-3	28	CXD1-CEN0280-2V-1	28
	15	42	CXD1-CEN0420-2V-3	42	CXD1-CEN0420-2V-1	4.2
	20	54	CXD1-CEN0540-2V-3	54	-	-
	25	68	CXD1-CEN0680-2V-3	68	-	-
	30	80	CXD1-CEN0800-2V-3	80	-	-
460V	40	104	CXD1-CEN1040-2V-3	104	-	-
	1	2.1	CXD1-CEN0021-4V-3	2.1	CXD1-CEN0021-4V-1	2.1
	1.5	3	CXD1-CEN0030-4V-3	3	CXD1-CEN0030-4V-1	3
	2	3.4	CXD1-CEN0034-4V-3	3.4	CXD1-CEN0034-4V-1	3.4
	3	4.8	CXD1-CEN0048-4V-3	4.8	CXD1-CEN0048-4V-1	4.8
	5	7.6	CXD1-CEN0076-4V-3	7.6	CXD1-CEN0076-4V-1	7.6
	7.5	11	CXD1-CEN0110-4V-3	11	CXD1-CEN0110-4V-1	11
	10	14	CXD1-CEN0140-4V-3	14	CXD1-CEN0140-4V-1	14
	15	21	CXD1-CEN0210-4V-3	21	CXD1-CEN0210-4V-1	21
	20	27	CXD1-CEN0270-4V-3	27	CXD1-CEN0270-4V-1	27
	25	34	CXD1-CEN0340-4V-3	34	CXD1-CEN0340-4V-1	34
	30	40	CXD1-CEN0400-4V-3	40	-	-
	40	52	CXD1-CEN0520-4V-3	52	-	-
	50	65	CXD1-CEN0650-4V-3	65	-	-
575V	60	77	CXD1-CEN0770-4V-3	77	-	-
	75	96	CXD1-CEN0960-4V-3	96	-	-
	1	1.7	CXD1-CEN0017-6V-3	1.7	-	-
	1.5	2.4	CXD1-CEN0024-6V-3	2.4	-	-
	2	2.7	CXD1-CEN0027-6V-3	2.7	-	-
	3	3.9	CXD1-CEN0039-6V-3	3.9	-	-
	5	6.1	CXD1-CEN0061-6V-3	6.1	-	-
	7.5	9	CXD1-CEN0090-6V-3	9	-	-
	10	11	CXD1-CEN0110-6V-3	11	-	-
	15	17	CXD1-CEN0170-6V-3	17	-	-
	20	22	CXD1-CEN0220-6V-3	22	-	-
	25	27	CXD1-CEN0270-6V-3	27	-	-
	30	32	CXD1-CEN0320-6V-3	32	-	-
	40	41	CXD1-CEN0410-6V-3	41	-	-

\*All panels include a disconnect and line reactor or DC choke

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### PANEL ACCESSORIES

NEMA 1	
Part Number	Description
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

### FACTORY INSTALLABLE PANEL ADDERS & PANEL ACCESSORIES

NEMA 1	
Part Number	Description
VFD-FPL	Fault Pilot Light
VFD-RPL	Run Pilot Light
VFD-MBEIP	Modbus TCP/IP Communication Card
VFD-SPD	Run Pilot Light
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

## CERUS X-DRIVE - PANEL DIMENSION FOR CENTRIFUGAL APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 1 PANELS, 50/60HZ

200 VAC / 3-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0048-2V-3	43 x 8 x 9
1.5	CXD1-CEN0069-2V-3	
2	CXD1-CEN0078-2V-3	
3	CXD1-CEN0110-2V-3	
5	CXD1-CEN0175-2V-3	
7.5	CXD1-CEN0253-2V-3	
10	CXD1-CEN0322-2V-3	52 x 10 x 10
15	CXD1-CEN0483-2V-3	
20	CXD1-CEN0621-2V-3	58 x 12 x 12
25	CXD1-CEN0782-2V-3	
30	CXD1-CEN0920-2V-3	

230 VAC / 3-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0048-2V-3	43 x 8 x 9
1.5	CXD1-CEN0069-2V-3	
2	CXD1-CEN0078-2V-3	
3	CXD1-CEN0110-2V-3	
5	CXD1-CEN0175-2V-3	
7.5	CXD1-CEN0253-2V-3	
10	CXD1-CEN0322-2V-3	52 x 10 x 10
15	CXD1-CEN0483-2V-3	
20	CXD1-CEN0621-2V-3	58 x 12 x 12
25	CXD1-CEN0782-2V-3	
30	CXD1-CEN0920-2V-3	
40	CXD1-CEN1040-2V-3	62 x 19 x 13

460 VAC / 3-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0021-4V-3	43 x 8 x 9
1.5	CXD1-CEN0030-4V-3	
2	CXD1-CEN0034-4V-3	
3	CXD1-CEN0048-4V-3	
5	CXD1-CEN0076-4V-3	
7.5	CXD1-CEN0110-4V-3	
10	CXD1-CEN0140-4V-3	52 x 10 x 10
15	CXD1-CEN0210-4V-3	
20	CXD1-CEN0270-4V-3	58 x 12 x 12
25	CXD1-CEN0340-4V-3	
30	CXD1-CEN0400-4V-3	
40	CXD1-CEN0520-4V-3	
50	CXD1-CEN0650-4V-3	
60	CXD1-CEN0770-4V-3	
75	CXD1-CEN0960-4V-3	

200 VAC / 1-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0048-2V-1	43 x 8 x 9
1.5	CXD1-CEN0069-2V-1	
2	CXD1-CEN0078-2V-1	
3	CXD1-CEN0110-2V-1	
5	CXD1-CEN0175-2V-1	
7.5	CXD1-CEN0253-2V-1	52 x 10 x 10
10	CXD1-CEN0322-2V-1	
15	CXD1-CEN0483-2V-1	58 x 12 x 12

230 VAC / 1-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0042-2V-1	43 x 8 x 9
1.5	CXD1-CEN0060-2V-1	
2	CXD1-CEN0068-2V-1	
3	CXD1-CEN0096-2V-1	
5	CXD1-CEN0152-2V-1	
7.5	CXD1-CEN0220-2V-1	52 x 10 x 10
10	CXD1-CEN0280-2V-1	
15	CXD1-CEN0420-2V-1	58 x 12 x 12

460 VAC / 1-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0021-4V-1	48 x 8 x 9
1.5	CXD1-CEN0030-4V-1	
2	CXD1-CEN0034-4V-1	
3	CXD1-CEN0048-4V-1	
5	CXD1-CEN0076-4V-1	
7.5	CXD1-CEN0110-4V-1	
10	CXD1-CEN0140-4V-1	52 x 10 x 10
15	CXD1-CEN0210-4V-1	
20	CXD1-CEN0270-4V-1	58 x 12 x 12
25	CXD1-CEN0340-4V-1	

575 VAC / 3-Phase Input		
HP	Model No.	H x W x D (in)
1	CXD1-CEN0017-6V-3	43 x 8 x 9
1.5	CXD1-CEN0024-6V-3	
2	CXD1-CEN0027-6V-3	
3	CXD1-CEN0039-6V-3	
5	CXD1-CEN0061-6V-3	
7.5	CXD1-CEN0090-6V-3	
10	CXD1-CEN0110-6V-3	52 x 10 x 10
15	CXD1-CEN0170-6V-3	
20	CXD1-CEN0220-6V-3	
25	CXD1-CEN0270-6V-3	
30	CXD1-CEN0320-6V-3	
40	CXD1-CEN0410-6V-3	58 x 12 x 12

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### STAND-ALONE NEMA 1 VARIABLE FREQUENCY DRIVE, 50/60HZ

4" Motor				3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	VFD Max Amps	Model No.	VFD Max Amps
234501	1/2	3.4	200	CXD-005A-2V	5	CXD-007A-2V	3.75
234503	1	5.4		CXD-007A-2V	7.5	CXD-015A-2V	7.5
234504	1.5	6.8		CXD-007A-2V	7.5	CXD-015A-2V	7.5
234305	2	9.3		CXD-010A-2V	10	CXD-021A-2V	10.5
234306	3	12.5		CXD-015A-2V	15	CXD-031A-2V	15.5
234307	5	20.5		CXD-021A-2V	21	CXD-046A-2V	23
234308	7.5	30.5		CXD-031A-2V	31	CXD-061A-2V	30.5
234511	1/2	2.9	230	CXD-005A-2V	5	CXD-007A-2V	3.75
234513	1	4.7		CXD-007A-2V	7.5	CXD-010A-2V	5
234514	1.5	5.9		CXD-007A-2V	7.5	CXD-015A-2V	7.5
234315	2	8.1		CXD-010A-2V	10	CXD-021A-2V	10.5
234316	3	10.9		CXD-015A-2V	15	CXD-031A-2V	15.5
234317	5	17.8		CXD-021A-2V	21	CXD-046A-2V	23
234318	7.5	26.4		CXD-031A-2V	31	CXD-061A-2V	30.5
234521	1/2	1.5	460	CXD-003A-4V	3	CXD-003A-4V	1.5
234523	1	2.4		CXD-003A-4V	3	CXD-005A-4V	2.75
234524	1.5	3.1		CXD-004A-4V	4.2	CXD-008A-4V	4.25
234325	2	4.1		CXD-004A-4V	4.2	CXD-008A-4V	4.25
234326	3	5.5		CXD-005A-4V	5.5	CXD-013A-4V	6.5
234327	5	8.9		CXD-010A-4V	10.5	CXD-018A-4V	9
234328	7.5	13.2		CXD-018A-4V	18	CXD-032A-4V	16
234595	10	17.3		CXD-018A-4V	18	CXD-038A-4V	19
234626	15	25.8	575	CXD-032A-4V	32	CXD-060A-4V	30
234531	1/2	1.2		CXD-003A-6V	3	CXD-003A-6V	1.5
234533	1	1.9		CXD-003A-6V	3	CXD-004A-6V	2.15
234534	1.5	2.4		CXD-003A-6V	3	CXD-006A-6V	3.35
234335	2	3.2		CXD-004A-6V	4.3	CXD-006A-6V	3.35
234336	3	4.4		CXD-006A-6V	6.7	CXD-009A-6V	4.95
234337	5	7.1		CXD-009A-6V	9.9	CXD-018A-6V	9.35
234338	7.5	10.6		CXD-012A-6V	12.1	CXD-024A-6V	12.1
234598	10	13.6	575	CXD-018A-6V	18.7	CXD-030A-6V	15
234636	15	20.7		CXD-024A-6V	24.2	CXD-045A-6V	22.5

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### STAND-ALONE N1 VARIABLE FREQUENCY DRIVE, 50/60HZ

6" Motor				3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	VFD Max Amps	Model No.	VFD Max Amps
236650	5	20	200	CXD-021A-2V	21	CXD-046A-2V	23
236651	7.5	28.3		CXD-031A-2V	31	CXD-061A-2V	30.5
236652	10	37		CXD-046A-2V	46	CXD-075A-2V	37.5
236653	15	54.4		CXD-061A-2V	61	CXD-180A-2V	59.4
236654	20	69.7		CXD-075A-2V	75	CXD-215A-2V	70.9
236655	25	86.3		CXD-090A-2V	90	CXD-276A-2V	91
236656	30	104		CXD-105A-2V	105	CXD-322A-2V	106.2
236600	5	17.6	230	CXD-021A-2V	21	CXD-046A-2V	23
236601	7.5	24.6		CXD-031A-2V	31	CXD-061A-2V	30.5
236602	10	32.2		CXD-046A-2V	46	CXD-075A-2V	37.5
236603	15	47.4		CXD-061A-2V	61	CXD-105A-2V	52.5
236604	20	60.6		CXD-061A-2V	61	CXD-215A-2V	70.9
236605	25	76.4		CXD-090A-2V	90	CXD-276A-2V	91
236606	30	90.4		CXD-105A-2V	105	CXD-276A-2V	91
236610	5	8.8	460	CXD-010A-4V	10.5	CXD-018A-4V	9
236611	7.5	12.3		CXD-013A-4V	13	CXD-032A-4V	16
236612	10	16.1		CXD-018A-4V	18	CXD-038A-4V	19
236613	15	23.7		CXD-024A-4V	24	CXD-060A-4V	30
236614	20	30.3		CXD-032A-4V	32	CXD-073A-4V	36.5
236615	25	38.2		CXD-045A-4V	45	CXD-150A-4V	49.5
236616	30	45.2		CXD-060A-4V	60	CXD-150A-4V	49.5
236617	40	61.6		CXD-073A-4V	73	CXD-220A-4V	72.6
276618	50	78.1		CXD-091A-4V	91	CXD-260A-4V	85.8
276619	60	92.3		CXD-110A-4V	110	CXD-310A-4V	102.3
236620	5	7.1	575	CXD-009A-6V	9.9	CXD-018A-6V	9.35
236621	7.5	9.8		CXD-018A-6V	18.7	CXD-024A-6V	12.1
236622	10	12.9		CXD-018A-6V	18.7	CXD-030A-6V	15
236623	15	19		CXD-024A-6V	24.2	CXD-045A-6V	22.5
236624	20	24.2		CXD-024A-6V	24.2	CXD-086A-6V	28.3
236625	25	30		CXD-030A-6V	30	-	-
236626	30	36.2		CXD-045A-6V	45	-	-
236627	40	49.6		CXD-054A-6V	54	-	-
236628	50	62.5		CXD-067A-6V	67	-	-
236629	60	73.9		CXD-086A-6V	86	-	-

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR SUBMERSIBLE APPLICATIONS

### STAND-ALONE N1 VARIABLE FREQUENCY DRIVE, 50/60HZ

8" Motor				3-Phase Input / 3-Phase Output		1-Phase Input / 3-Phase Output	
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	VFD Max Amps	Model No.	VFD Max Amps
239600	40	60	460	CXD-060A-4V	60	CXD-220A-4V	72.6
239601	50	73		CXD-073A-4V	73	CXD-260A-4V	85.8
239602	60	86		CXD-091A-4V	91	CXD-310A-4V	102.3
239603	75	107		CXD-110A-4V	110	CXD-370A-4V	122.1
239604	100	142		CXD-150A-4V	150	CXD-460A-4V	151.8
239105	125	188		CXD-220A-4V	220	CXD-616A-4V	203.28
239106	150	219		CXD-220A-4V	220	CXD-683A-4V	225.39
239107	175	249		CXD-260A-4V	260	CXD-770A-4V	254.1
239108	200	282		CXD-310A-4V	310	CXD-930A-4V	306.9
239610	40	48	575	CXD-054A-6V	54	-	-
239611	50	59		CXD-067A-6V	67	-	-
239612	60	69		CXD-086A-6V	86	-	-
239613	75	86		CXD-086A-6V	86	-	-
239614	100	114		CXD-125A-6V	125	-	-
239115	125	151		CXD-180A-6V	180	-	-
239116	150	182		CXD-220A-6V	220	-	-
239117	175	200		CXD-220A-6V	220	-	-
239118	200	226		CXD-290A-6V	290	-	-

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### STAND-ALONE N1 VARIABLE FREQUENCY DRIVE, 50/60HZ

Voltage	Model No.	Variable Torque Applications				Constant Torque Applications			
		3-Phase In / 3-Phase Out		1-Phase In / 3-Phase Out		3-Phase In / 3-Phase Out		1-Phase In / 3-Phase Out	
		HP	Max Amps	HP	Max Amps	HP	Max Amps	HP	Max Amps
200V, 1 & 3 Phase Input, 3 Phase Output	CXD-005A-2V	1	5	1/2	2.5	1/2	3	1/2	2.5
	CXD-007A-2V	1.5	7.5	3/4	3.75	1	5	1/2	2.5
	CXD-010A-2V	2	10	1	5	2	8	3/4	4
	CXD-015A-2V	3	15	1	7.5	3	11	1	5.5
	CXD-021A-2V	5	21	2	10.5	3	17	2	8.8
	CXD-031A-2V	7.5	31	3	15.5	5	25	3	12.5
	CXD-046A-2V	10	46	5	23	10	33	3	16.5
	CXD-061A-2V	15	61	7.5	30.5	15	49	5	24.5
	CXD-075A-2V	20	75	10	37.5	20	65	10	32.5
	CXD-090A-2V	25	90	10	45	20	75	10	37.5
	CXD-105A-2V	30	105	15	52.5	25	90	10	45
	CXD-146A-2V	40	146	10	48.1	40	120	10	39.6
	CXD-180A-2V	50	180	15	59.4	50	146	10	48.2
	CXD-215A-2V	60	215	20	70.9	60	180	15	59.4
230V, 1 & 3 Phase Input, 3 Phase Output	CXD-276A-2V	75	276	25	91	60	215	20	71
	CXD-322A-2V	100	322	30	106.2	75	255	25	84.2
	CXD-005A-2V	1	5	1/2	2.5	1/2	3	1/2	2.5
	CXD-007A-2V	2	7.5	3/4	3.75	1	5	1/2	2.5
	CXD-010A-2V	3	10	1	5	2	8	3/4	4
	CXD-015A-2V	5	15	2	7.5	3	11	1	5.5
	CXD-021A-2V	7.5	21	3	10.5	5	17	2	8.8
	CXD-031A-2V	10	31	5	15.5	7.5	25	3	12.5
	CXD-046A-2V	15	46	7.5	23	10	33	5	16.5
	CXD-061A-2V	20	61	10	30.5	15	49	7.5	24.5
	CXD-075A-2V	25	75	10	37.5	20	65	10	32.5
	CXD-090A-2V	30	90	15	45	25	75	10	37.5
	CXD-105A-2V	40	105	15	52.5	30	90	15	45
	CXD-146A-2V	50	146	10	48.1	40	120	10	39.6
	CXD-180A-2V	60	180	20	59.4	50	146	15	48.2
	CXD-215A-2V	75	215	25	70.9	60	180	20	59.4
	CXD-276A-2V	100	276	30	91	75	215	25	71
	CXD-322A-2V	125	322	40	106.2	100	255	30	84.2



## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR CENTRIFUGAL APPLICATIONS

### STAND-ALONE N1 VARIABLE FREQUENCY DRIVE, 50/60HZ

Voltage	Model No.	Variable Torque Applications				Constant Torque Applications			
		3-Phase In / 3-Phase Out		1-Phase In / 3-Phase Out		3-Phase In / 3-Phase Out		1-Phase In / 3-Phase Out	
		HP	Max Amps	HP	Max Amps	HP	Max Amps	HP	Max Amps
460V, 1 & 3 Phase Input, 3 Phase Output	CXD-003A-4V	1.5	3	1/2	1.5	3/4	1.7	1/2	1.5
	CXD-004A-4V	2	4.2	1	2.1	1.5	3	1/2	1.5
	CXD-005A-4V	3	5.5	1	2.75	2	4	3/4	2
	CXD-008A-4V	5	8.5	2	4.25	3	6	1.5	3
	CXD-010A-4V	5	10.5	3	5.25	5	9	2	4.5
	CXD-013A-4V	7.5	13	3	6.5	5	10.5	3	5.3
	CXD-018A-4V	10	18	5	9	7.5	12	3	6
	CXD-024A-4V	15	24	7.5	12	10	18	5	9
	CXD-032A-4V	20	32	10	16	15	24	7.5	12
	CXD-038A-4V	25	38	10	19	20	32	10	16
	CXD-045A-4V	30	45	15	22.5	25	38	10	19
	CXD-060A-4V	40	60	20	30	30	45	15	22.5
	CXD-073A-4V	50	73	25	36.5	40	60	20	30
	CXD-091A-4V	60	91	20	30	50	73	20	27
	CXD-110A-4V	75	110	25	36.3	60	91	20	33
	CXD-150A-4V	100	150	30	49.5	75	110	30	40
	CXD-180A-4V	150	180	40	59.4	100	150	40	55
	CXD-220A-4V	150	220	50	72.6	150	180	50	65
	CXD-260A-4V	200	260	60	85.8	150	220	60	80
	CXD-310A-4V	250	310	75	102.3	200	260	60	91
	CXD-370A-4V	300	370	75	122.1	250	310	75	109
	CXD-460A-4V	350	460	100	151.8	300	370	100	130
	CXD-530A-4V	450	530	125	174.9	350	460	125	161
	CXD-616A-4V	500	616	150	203.28	450	550	150	193
575V, 1 & 3 Phase Input, 3 Phase Output	CXD-683A-4V	550	683	150	225.39	500	616	150	216
	CXD-770A-4V	600	770	200	254.1	550	683	200	240
	CXD-930A-4V	700	930	250	306.9	600	866	200	285.7
	CXD-003A-6V	2	3	3/4	1.5	1.5	2.5	1/2	1.25
	CXD-004A-6V	3	4.3	1	2.15	2	3.6	1	1.8
	CXD-006A-6V	5	6.7	2	3.35	3	5.5	2	2.75
	CXD-009A-6V	7.5	9.9	3	4.95	5	8.2	3	4.1
	CXD-012A-6V	10	12.1	3	6.05	7.5	10	3	5
	CXD-018A-6V	15	18.7	7.5	9.35	10	15.5	5	7.7
	CXD-024A-6V	20	24.2	10	12.1	15	20	7.5	9.95
	CXD-030A-6V	25	30	10	15	20	24	7.5	10
	CXD-036A-6V	30	36	15	18	25	30	10	12
	CXD-045A-6V	40	45	20	22.5	30	36	10	15
	CXD-054A-6V	50	54	15	17.82	40	45	15	18
	CXD-067A-6V	60	67	20	22.11	50	54	10	14.8
	CXD-086A-6V	75	86	25	28.3	60	67	15	17.8
	CXD-104A-6V	100	104	-	-	75	86	20	22.1
	CXD-125A-6V	125	125	-	-	100	104	-	-
	CXD-150A-6V	150	150	-	-	125	125	-	-
	CXD-180A-6V	150	180	-	-	150	150	-	-
	CXD-220A-6V	200	220	-	-	150	180	-	-
	CXD-290A-6V	300	290	-	-	200	220	-	-
	CXD-350A-6V	350	350	-	-	300	290	-	-
	CXD-430A-6V	450	430	-	-	350	350	-	-
	CXD-465A-6V	450	465	-	-	450	430	-	-
	CXD-590A-6V	600	590	-	-	450	465	-	-
	CXD-675A-6V	700	675	-	-	600	590	-	-

## CERUS X-DRIVE - DIMENSIONS

### STAND-ALONE N1 VARIABLE FREQUENCY DRIVE, 50/60HZ

Voltage	Part No.	Dimensions H x W x D (in)	Frame Size
200/230V	CXD-005A-2V	5.12 x 9.84 x 6.69	A
	CXD-007A-2V		
	CXD-010A-2V		
	CXD-015A-2V		
	CXD-021A-2V		
	CXD-031A-2V	7.48 x 12.60 x 7.48	B
	CXD-046A-2V		
	CXD-061A-2V		
	CXD-075A-2V	9.84 x 15.75 x 8.27	C
	CXD-090A-2V		
	CXD-105A-2V		
	CXD-146A-2V	12.99 x 21.65 x 10.83	D
	CXD-180A-2V		
	CXD-215A-2V		
460V	CXD-276A-2V	14.57 x 23.19 x 11.81	E
	CXD-322A-2V		
	CXD-003A-4V	5.12 x 9.84 x 6.69	A
	CXD-004A-4V		
	CXD-005A-4V		
	CXD-008A-4V		
	CXD-010A-4V		
	CXD-013A-4V		
	CXD-018A-4V		
	CXD-024A-4V	7.48 x 12.60 x 7.48	B
	CXD-032A-4V		
	CXD-038A-4V		
	CXD-045A-4V	9.84 x 15.75 x 8.27	C
	CXD-060A-4V		
	CXD-073A-4V		
	CXD-091A-4V	11.02 x 19.69 x 10.04	D0
	CXD-110A-4V		
	CXD-150A-4V		
	CXD-180A-4V	12.99 x 21.65 x 10.83	D
	CXD-220A-4V		
	CXD-260A-4V		
	CXD-310A-4V	14.57 x 23.19 x 11.81	E
	CXD-370A-4V		
	CXD-460A-4V		
	CXD-530A-4V	16.54 x 31.50 x 11.81	F
	CXD-616A-4V		
	CXD-683A-4V		
	CXD-770A-4V	19.69 x 39.37 x 15.63	G
	CXD-930A-4V		
		27.56 x 56.50 x 15.91	H

## CERUS X-DRIVE - DIMENSIONS

### STAND-ALONE NI VARIABLE FREQUENCY DRIVE, 50/60HZ

Voltage	Part No.	Dimensions H x W x D (in)	Frame Size
575V	CXD-003A-6V	5.12 x 9.84 x 6.69	A
	CXD-004A-6V		
	CXD-006A-6V		
	CXD-009A-6V	7.48 x 12.60 x 7.48	B
	CXD-012A-6V		
	CXD-018A-6V		
	CXD-024A-6V		
	CXD-030A-6V	9.84 x 15.75 x 8.27	C
	CXD-036A-6V		
	CXD-045A-6V		
	CXD-054A-6V	12.99 x 21.65 x 10.83	D
	CXD-067A-6V		
	CXD-086A-6V	14.57 x 23.19 x 11.81	E
	CXD-104A-6V		
	CXD-125A-6V		
	CXD-150A-6V		
	CXD-180A-6V	16.54 x 31.50 x 11.81	F
	CXD-220A-6V		
	CXD-290A-6V	19.69 x 39.37 x 15.63	G
	CXD-350A-6V		
	CXD-430A-6V	27.56 x 56.50 x 15.91	H
	CXD-465A-6V		
	CXD-590A-6V		
	CXD-675A-6V		

# CERUS® X-DRIVE VFD

## SPECIFICATIONS

Cooling method				Forced air cooling by internal fans							
Short Circuit Rating				100kA*							
Agency Approvals				UL and cUL listed, CE marked							
Motor Controls	Control Methods		V/F and SVC (Sensorless Vector Control) for IM and PM motors								
	Control Type		PWM (Pulse Width Modulation)								
	Frequency Setting Resolution		Digital Reference: 0.01 Hz (Below 100 Hz), 0.1 Hz (Over 100 Hz)								
			Analog Reference: [Max. output frequency]x 0.03/60Hz (±11 bit)								
	Frequency Accuracy		Digital: 0.01 % of Max. Output Frequency								
			Analog: 0.1 % of Max. Output Frequency								
	V/F Control Curve		12 preset V/F curves and four-point square wave								
	Speed Control Ratio		1:12 (5Hz-60Hz) at 60Hz maximum frequency								
	Maximum Output Frequency		200/208/230VAC models: 599Hz (55kW and above: 400Hz); 460VAC models: 599Hz (90kW and above: 400Hz); 575VAC models: 599Hz								
	Overload Capacity		Variable Torque: 120% of VFD rated current for 1 minute during every 5 minutes of operation.								
Constant Torque: 150% of VFD rated current for 1 minute during every 5 minutes of operation and 160% for 3 seconds during every 25 seconds of operation.											
Starting Torque		Up to 150% or higher at 0.5Hz (Torque Accuracy ±5%).									
Torque Limit (Stall level)		Variable Torque: Max. 130% torque current; Constant Torque: Max. 160% torque current									
Operation Method		Keypad / Terminals / RS-485 BACnet or Modbus Communication / Optional Modbus TCP/IP & Ethernet IP Communication									
Frequency Setting		Two Analog Inputs 0- 10VDC/ 4- 20mA and One AI 0-10VDC.									
		Digital: Keypad or Communication									
Operation	By Digital Inputs	Start Signal		Forward, Reverse and Jog (some features can start and stop VFD based on analog signal).							
		Digital Inputs		8 programmable digital inputs can be set to any selection from long list of functions.							
		Multi-Step		Up to 17 Speeds can be set including Jog by Programmable Digital Inputs.							
		Accel/Decel Time and Presets		0.00- 600.00/0.0- 6000.0 seconds. Three ACC/DEC preset values switched by digital inputs or one by frequency. Additional adjustable Accel/Decel S-Curve pattern.							
		Emergency Stop		Ext. Trip and Shutdown immediately interrupt VFD output in any control method.							
		Jog		Jog operation with adjustable Jog frequency.							
		Fault Reset		Resets VFD faults via keypad, digital input or communication. Some critical faults can only be reset by cycling the VFD power.							
	Outputs	Safety Inputs		SCM and STO terminals for safety circuit wiring.							
		Three Multi-Function Relays		One relay with Form C: 250VAC 3A/30VDC, 3A (resistive) 1.2A (inductive) contact; Two relays with Form A: 250VAC 1.2A/30VDC 3A (resistive) 1.2A (inductive). Each relay can be programmed to any selection from the functions list.							
	Two Analog Outputs		Selections: Output Frequency, Output Current, Output Voltage, Output kW, DC Link Voltage, AVI1, ACI, AVI2 AI signal level. Both outputs are 0-10VDC scalable from 10 to 200%.								
	General Operation Functions		DC Braking, Frequency Limit, Jump Frequencies, 2nd ACC/DEC, Auto Restart, Auto-Tuning, PID w/sleep, Flying Start, Speed Search, DC Braking, Slip Compensation, Motor Pre-heat, Temperature Foldback, Damper Control, Fireman's Override, Shutdown, Power-on Delay, Run Delay, Minimum Run Timer, PM Motor and MagForce Control and Auto-Tuning								
	Pump Operation Functions/Protections		Sleep Mode with Pressure Boost, Pipe Fill, PID, Overpressure, ULD (Underload), HLD (High Load), Broken Pipe, Backspin Timer, MMC, Lubrication, Screen Clean, No-Flow Protection, Pump Prime Time								
	Protection	VFD Fault Trips		Over Voltage, Low Voltage, Over Current, Overload, Short Circuit, Ground Fault, VFD Overheat, Input Phase Loss, Output Phase Open, CPU Communication Error, Signal Loss, Hardware Fault, etc.							
		Motor Overload		Adjustable electronic motor overload protection.							
		Overcurrent		200/208/230/460VAC Variable Torque: At 200% of VFD rated current							
				200/208/230/460VAC Constant Torque: At 240% of VFD rated current							
Current clamp: Variable Torque: 130- 135%, Constant Torque 170- 175%											
Overvoltage		575VAC models: At 225% VFD rated current									
		Current clamp: Variable Torque: 128- 141%, Constant Torque: 170- 175%									
		230VAC models: At 410VDC DC bus voltage									
Overtemperature		460VAC models: At 820VDC DC bus voltage									
		575VAC models: At 1016VDC DC bus voltage									
Restart After IPF		Built-in IGBT and Capacitor Bank temperature sensors									
VFD Alarm		Adjustable power loss duration up to 20 sec. Leakage current is greater than 50% of rated current of the drive.									
"Keypad Display"	Operation Information		Stall Prevention at ACC and DEC, Overload, Thermal Sensor Fault, Capacitors High Temperature, Signal Loss, Overpressure, Underload, High Load, etc.								
	Fault History		Output Frequency, Output Current, Output Voltage, Frequency Reference, Operating Speed, DC Voltage, kWattmeter, Run-time, Last Trip Time, Pressure, etc. Provides 6 fault records and logs 30 faults								
Environment	Operating Temperature		NEMA 1: 14°F - 104°F (-10°C - 40°C), Open Type: 14°F - 122°F (-10°C - 50°C)								
	Storage Temperature		-13°F - 158°F (-25°C - 70°C)								
	Ambient Humidity		Up to 95% RH. (Non-Condensing)								
	Altitude		Normal up to 3,300ft (1,000m). At altitude up to 2,000 m, de-rate by 1% of rated current or lower 0.5 °C of temperature for every 100m above 1,000m. Maximum altitude for Corner Grounded TN system is 2,000m. For application over 2,000m, please contact FELE for more details.								
	Vibration and Impact		1mm peak to peak value from 2Hz to 13.2Hz; 0.7G- 1.0G from 13.2Hz to 55Hz; 1.0G from 55Hz to 512Hz. Comply with IEC 60068-2-6 and IEC/EN60068-2-27.								
	Environmental Conditions		Pollution degree 2. No Corrosive Gas, Combustible Gas, Oil Mist or Dust.								
Input Efficiency (>X%)	Drive Frame		A	B	C	DO	D	E	F	G	H
	Input Voltage	200/230V	98	98	98	-	98	98	-	-	-
		460V	98	98	98	98	98	98	98	98	98
		575V	97	98	97	-	97	97	97	98	98

\*Short-circuit rating of 100kA when protected by suitable Class J fuses.

## CERUS X-DRIVE - STAND-ALONE VARIABLE FREQUENCY DRIVE ACCESSORIES

### PRESSURE TRANSDUCERS

Part Number	Description
PSIG-100-20FT	Pressure Transducer, 100PSIG, 4-20mA
PSIG-200-20FT	Pressure Transducer, 200PSIG, 4-20mA
PSIG-300-20FT	Pressure Transducer, 300PSIG, 4-20mA

### VFD OPTIONAL CARDS & OTHER

Part Number	Description
CMC-EIP01	Modbus TCP/IP Communication Card
EMC-D42A	I/O Card - Additional 4 digital inputs and 2 transistor outputs
EMC-D611A	I/O Card - Additional 6 digital inputs
EMC-R6AA	I/O Card - Additional 6 relay outputs
MKC-KPPK	Remote Keypad Mounting Bracket

### LINE (INPUT) REACTORS

Voltage	Amps	NEMA 1		NEMA 3R	
		3% Reactor Model No.	5% Reactor Model No.	3% Reactor Model No.	5% Reactor Model No.
200V/230 V	1.4	KDRMA21L1E01	KDRMA21H1E01	KDRMA21L1E3R1	KDRMA21H1E3R1
	2.4	KDRMA22L1E01	KDRMA22H1E01	KDRMA22L1E3R1	KDRMA22H1E3R1
	3.5	KDRMA23L1E01	KDRMA23H1E01	KDRMA23L1E3R1	KDRMA23H1E3R1
	4.6	KDRMA24L1E01	KDRMA24H1E01	KDRMA24L1E3R1	KDRMA24H1E3R1
	6.6	KDRMA25L1E01	KDRMA25H1E01	KDRMA25L1E3R1	KDRMA25H1E3R1
	7.5	KDRMA27L1E01	KDRMA26H1E01	KDRMA27L1E3R1	KDRMA26H1E3R1
	10.6	KDRAA28L2E01	KDRAA28H2E01	KDRAA28L2E3R1	KDRAA28H2E3R1
	16.7	KDRB22LE01	KDRB25HE01	KDRB22LE3R	KDRB25HE3R
	24.2	KDRB23LE01	KDRB26HE01	KDRB23LE3R	KDRB26HE3R
	30.8	KDRD25LE01	KDRD21HE01	KDRD25LE3R	KDRD21HE3R
	46.2	KDRD24LE01	KDRD22HE01	KDRD24LE3R	KDRD22HE3R
	59.4	KDRD26LE01	KDRD22HE01	KDRD26LE3R	KDRD22HE3R
	74.8	KDRC22LE01	KDRF28HE01	KDRC22LE3R	KDRF28HE3R
	88	KDRF24LE01	KDRF25HE01	KDRF24LE3R	KDRF25HE3R
	114	KDRF25LE01	KDRF26HE01	KDRF25LE3R	KDRF26HE3R
460 V	0.7	KDRMA1L1E01	KDRMA1H1E01	KDRMA1L1E3R1	KDRMA1H1E3R1
	0.8	KDRMA2L1E01	KDRMA2H1E01	KDRMA2L1E3R1	KDRMA2H1E3R1
	1.1	KDRMA3L1E01	KDRMA3H1E01	KDRMA3L1E3R1	KDRMA3H1E3R1
	1.6	KDRMA4L1E01	KDRMA4H1E01	KDRMA4L1E3R1	KDRMA4H1E3R1
	2.1	KDRMA5L1E01	KDRMA5H1E01	KDRMA5L1E3R1	KDRMA5H1E3R1
	3	KDRMA6L1E01	KDRMA6H1E01	KDRMA6L1E3R1	KDRMA6H1E3R1
	3.4	KDRMA7L1E01	KDRAA9H2E01	KDRMA7L1E3R1	KDRAA9H2E3R1
	4.8	KDRMA8L1E01	KDRAA1H2E01	KDRMA8L1E3R1	KDRAA1H2E3R1
	3	KDRAA9L2E01	KDRAA2H2E01	KDRAA9L2E3R1	KDRAA2H2E3R1
	6.2	KDRAA6L2E01	KDRAA6H2E01	KDRAA6L2E3R1	KDRAA6H2E3R1
	7.6	KDRAA3L2E01	KDRAA3H2E01	KDRAA3L2E3R1	KDRAA3H2E3R1
	11	KDRAA4L2E01	KDRAA4H2E01	KDRAA4L2E3R1	KDRAA4H2E3R1
	14	KDRAA5L2E01	KDRAA5H2E01	KDRAA5L2E3R1	KDRAA5H2E3R1
	21	KDRB2LE01	KDRB2HE01	KDRB2LE3R	KDRB2HE3R
	27	KDRB1LE01	KDRC3HE01	KDRB1LE3R	KDRC3HE3R
	34	KDRD1LE01	KDRC1HE01	KDRD1LE3R	KDRC1HE3R
	40	KDRD2LE01	KDRE2HE01	KDRD2LE3R	KDRE2HE3R
	52	KDRC1LE01	KDRF4HE01	KDRC1LE3R	KDRF4HE3R
	65	KDRF2LE01	KDRF1HE01	KDRF2LE3R	KDRF1HE3R
	77	KDRF4LE01	KDRF2HE01	KDRF4LE3R	KDRF2HE3R

\*A Line Reactor is recommended on applications where the distance between the incoming power source and VFD input is greater than 50ft on X-Drive models that do not have an integrated DC Choke.

## CERUS X-DRIVE - STAND-ALONE VARIABLE FREQUENCY DRIVE ACCESSORIES

### LINE (INPUT) REACTORS

Voltage	Amps	NEMA 1		NEMA 3R	
		3% Reactor Model No.	5% Reactor Model No.	3% Reactor Model No.	5% Reactor Model No.
575 V	0.5	KDRMA41L1E01	KDRMA41H1E01	KDRMA41L1E3R1	KDRMA41H1E3R1
	0.7	KDRMA42L1E01	KDRMA42H1E01	KDRMA42L1E3R1	KDRMA42H1E3R1
	0.9	KDRMA43L1E01	KDRMA43H1E01	KDRMA43L1E3R1	KDRMA43H1E3R1
	1.3	KDRMA44L1E01	KDRMA44H1E01	KDRMA44L1E3R1	KDRMA44H1E3R1
	1.7	KDRMA45L1E01	KDRMA45H1E01	KDRMA45L1E3R1	KDRMA45H1E3R1
	2.4	KDRMA46L1E01	KDRAA46H2E01	KDRMA46L1E3R1	KDRAA46H2E3R1
	2.7	KDRMA47L1E01	KDRAA43H2E01	KDRMA47L1E3R1	KDRAA43H2E3R1
	3.9	KDRAA52L2E01	KDRAA44H2E01	KDRAA52L2E3R1	KDRAA44H2E3R1
	4.9	KDRAA57L2E01	KDRAA57H2E01	KDRAA57L2E3R1	KDRAA57H2E3R1
	6.1	KDRAA58L2E01	KDRAA58H2E01	KDRAA58L2E3R1	KDRAA58H2E3R1
	9	KDRAA48L2E01	KDRB42H01	KDRAA48L2E3R1	KDRB42H03R
	11	KDRAA49L2E01	KDRB43H01	KDRAA49L2E3R1	KDRB43H03R
	17	KDRB45L01	KDRB44H01	KDRB45L03R	KDRB44H03R
	22	KDRB44L01	KDRD41H01	KDRB44L03R	KDRD41H03R
	27	KDRB43L01	KDRC43H01	KDRB43L03R	KDRC43H03R
	32	KDRD42L01	KDRE42H01	KDRD42L03R	KDRE42H03R
	41	KDRC43L01	KDRF44H01	KDRC43L03R	KDRF44H03R
	52	KDRC44L01	KDRF45H01	KDRC44L03R	KDRF45H03R

\*A Line Reactor is recommended on applications where the distance between the incoming power source and VFD input is greater than 50ft on X-Drive models that do not have an integrated DC Choke.

### LINE (INPUT) REACTORS

Voltage	Amps	NEMA 1	NEMA 3R
460 V	0.7	KDRMAIL1E01	KDRMAIL1E3R1
	0.8	KDRMA2L1E01	KDRMA2L1E3R1
	1.1	KDRMA3L1E01	KDRMA3L1E3R1
	1.6	KDRMA4L1E01	KDRMA4L1E3R1
	2.1	KDRMA5L1E01	KDRMA5L1E3R1
	3	KDRMA6L1E01	KDRMA6L1E3R1
	3.4	KDRMA7L1E01	KDRMA7L1E3R1
	4.8	KDRMA8L1E01	KDRMA8L1E3R1
	7.6	KDRAA3L2E01	KDRAA3L2E3R1
	11	KDRAA4L2E01	KDRAA4L2E3R1
	14	KDRB1PE01	KDRB1PE3R
	21	KDRD1PE01	KDRD1PE3R
	27	KDRD2PE01	KDRD2PE3R
	34	KDRD3PE01	KDRD3PE3R
	40	KDRD4PE01	KDRD4PE3R
	52	KDRC1PE01	KDRC1PE3R
	65	KDRF1PE01	KDRF1PE3R
	77	KDRF2PE01	KDRF2PE3R
	96	KDRF3PE01	KDRF3PE3R
	124	KDRH1PE01	KDRH1PE3R
	156	KDRI1PE01	KDRI1PE3R
	180	KDRI2PE01	KDRI2PE3R
	240	KDRG1PE01	KDRG1PE3R
	302	KDRJ1PE01	KDRJ1PE3R
	361	KDRJ2PE01	KDRJ2PE3R
	414	KDRL1PE01	KDRL1PE3R
	477	KDRL2PE01	KDRL2PE3R
	515	KDRL3PE01	KDRL3PE3R
	590	KDRL4PE01	KDRL4PE3R

\*For 460V & 575V applications, a Load Reactor is recommended when the length of power wire between the motor and drive exceeds 45ft. For distances greater than 100ft, a dV/dt Filter is recommended.

## CERUS X-DRIVE - STAND-ALONE VARIABLE FREQUENCY DRIVE ACCESSORIES

### LINE (INPUT) REACTORS

Voltage	Amps	NEMA 1	NEMA 3R
575 V	0.5	KDRMA41L1E01	KDRMA41L1E3R1
	0.7	KDRMA42L1E01	KDRMA42L1E3R1
	0.9	KDRMA43L1E01	KDRMA43L1E3R1
	1.3	KDRMA44L1E01	KDRMA44L1E3R1
	1.7	KDRMA45L1E01	KDRMA45L1E3R1
	2.4	KDRMA46L1E01	KDRMA46L1E3R1
	2.7	KDRMA47L1E01	KDRMA47L1E3R1
	3.9	KDRAA52L2E01	KDRAA52L2E3R1
	4.9	KDRAA57L2E01	KDRAA57L2E3R1
	6.1	KDRAA58L2E01	KDRAA58L2E3R1
	9	KDRAA48L2E01	KDRAA48L2E3R1
	11	KDRAA49L2E01	KDRAA49L2E3R1
	17	KDRD31PE01	KDRD31PE3R
	22	KDRD32PE01	KDRD32PE3R
	27	KDRD35PE01	KDRD35PE3R
	32	KDRD33PE01	KDRD33PE3R
	41	KDRD34PE01	KDRD34PE3R
	52	KDRC31PE01	KDRC31PE3R
	62	KDRF31PE01	KDRF31PE3R
	77	KDRF32PE01	KDRF32PE3R
	99	KDRF33PE01	KDRF33PE3R
	125	KDRH31PE01	KDRH31PE3R
	144	KDRI31PE01	KDRI31PE3R
	192	KDRI32PE01	KDRI32PE3R
	242	KDRG31PE01	KDRG31PE3R
	289	KDRJ31PE01	KDRJ31PE3R
	336	KDRJ32PE01	KDRJ32PE3R
	382	KDRL31PE01	KDRL31PE3R
	412	KDRL35PE01	KDRL35PE3R
	472	KDRL32PE01	KDRL32PE3R

\*For 460V & 575V applications, a Load Reactor is recommended when the length of power wire between the motor and drive exceeds 45ft.  
 †For distances greater than 100ft, a dV/dt Filter is recommended.



## CERUS X-DRIVE - STAND-ALONE VARIABLE FREQUENCY DRIVE ACCESSORIES

### LINE (INPUT) REACTORS

Voltage	Amps	NEMA 1	NEMA 3R
460 V & 575 V	2	V1K2A01	V1K2A03
	3	V1K3A01	V1K3A03
	4	V1K4A01	V1K4A03
	6	V1K6A01	V1K6A03
	8	V1K8A01	V1K8A03
	12	V1K12A01	V1K12A03
	16	V1K16A01	V1K16A03
	18	V1K18A01	V1K18A03
	21	V1K21A01	V1K21A03
	25	V1K25A01	V1K25A03
	27	V1K27A01	V1K27A03
	35	V1K35A01	V1K35A03
	45	V1K45A01	V1K45A03
	55	V1K55A01	V1K55A03
	80	V1K80A01	V1K80A03
	110	V1K110A01	V1K110A03
	130	V1K130A01	V1K130A03
	160	V1K160A01	V1K160A03
	200	V1K200A01	V1K200A03
	250	V1K250A01	V1K250A03
	305	V1K305A01	V1K305A03
	362	V1K362A01	V1K362A03
	420	V1K420A01	V1K420A03
	480	V1K480A01	V1K480A03
	600	V1K600A01	V1K600A03
	750	V1K750A01	V1K750A03
	336	KDRJ32PE01	KDRJ32PE3R
	382	KDRL31PE01	KDRL31PE3R
	412	KDRL35PE01	KDRL35PE3R
	472	KDRL32PE01	KDRL32PE3R

\*For 460V & 575V applications, a Load Reactor is recommended when the length of power wire between the motor and drive exceeds 45ft.  
 †For distances greater than 100ft, a dV/dt Filter is recommended.

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR MAGFORCE HIGH EFFICIENCY SUBMERSIBLE APPLICATIONS

### VARIABLE FREQUENCY DRIVE NEMA 3R PANELS, 50/60HZ, 3-PHASE INPUT

6" MagForce Motor				NEMA 3R VFD Panel		
Model Prefix	HP	SFA (Max Amps)	Volts	Model No.	Volts	Panel Max Amps
2360809566E	7.5	11.6	460	XS4B007-3A	460	13.2
2360809566E	10	14.2		XS4B010-3A		17.3
2360809566E	15	20.2		XS4B015-3A		25.8
2360849566E	20	28.9		XS4B020-3A		30.3
2360849566E	25	34.6		XS4B025-3A		38.2
2360849566E	30	41		XS4B030-3A		45.2
2360862166E	40	56.5		XS4B040-3A		61.6
2360862166E	50	69.2		XS4B050-3A		78.1
2360862166E	60	80		XS4B060-3A		92.3
2360809566E	7.5	11.6	460	XP6B007-3A	575	13.2
2360809566E	10	14.2		XP6B010-3A		17.3
2360809566E	15	20.2		XP6B015-3A		25.8
2360849566E	20	28.9		XP6B020-3A		30.3
2360849566E	25	34.6		XP6B025-3A		38.2
2360849566E	30	41		XP6B030-3A		45.2
2360862166E	40	56.5		XP6B040-3A		61.6
2360862166E	50	69.2		XP6B050-3A		78.1
2360862166E	60	80		XP6B060-3A		92.3

NOTE: Firmware version 1.1 or newer is required for permanent magnet motor (or MagForce) functionality.

NEMA 3R panels include door-Mounted keypad with HOA functionality, a circuit breaker, dV/dt filter, and line reactor or integrated DC Choke.

Output filters are required when using an X-Drive with a permanent magnet motor. dV/dt filters cover motor lead lengths up to 800'.

A sine wave filter is required for lead lengths greater than 800'.

## CERUS X-DRIVE - ORDER & SIZING INFORMATION FOR MAGFORCE HIGH EFFICIENCY SUBMERSIBLE APPLICATIONS

### STAND-ALONE N1 VARIABLE FREQUENCY DRIVE, 50/60HZ, 1 & 3-PHASE INPUT

6" MagForce Motor				VFD			dV/dt Filter		Sine Wave Filter
Model Prefix	HP	SFA (Max Amps)	Volts	Model No. 3-PH Input	Model No. 1-PH Input	Volts	NEMA 1 Model No.	NEMA 3R Model No.	NEMA 1/3R Model No.
2360809566E	7.5	11.6	460	CXD-013A-4V	CXD-024A-4V	460	V1K18A01	V1K18A03	MSD0012A300
2360809566E	10	14.2		CXD-018A-4V	CXD-032A-4V		V1K25A01	V1K25A03	MSD0016A300
2360809566E	15	20.2		CXD-024A-4V	CXD-045A-4V		V1K27A01	V1K27A03	MSD0023A300
2360849566E	20	28.9		CXD-032A-4V	CXD-060A-4V		V1K55A01	V1K55A03	MSD0030A300
2360849566E	25	34.6		CXD-038A-4V	CXD-073A-4V		V1K80A01	V1K80A03	MSD0035A300
2360849566E	30	41		CXD-045A-4V	CXD-150A-4V		V1K80A01	V1K80A03	MSD0045A300
2360862166E	40	56.5		CXD-060A-4V	CXD-180A-4V		V1K80A01	V1K80A03	MSD0065A300
2360862166E	50	69.2		CXD-073A-4V	CXD-220A-4V		V1K110A01	V1K110A03	MSD0080A300
2360862166E	60	80		CXD-091A-4V	CXD-260A-4V		V1K110A01	V1K110A03	MSD0080A300
2360809566E	7.5	11.6	460	CXD-012A-6V	CXD-024A-6V	575	V1K18A01	V1K18A03	MSD0012A300
2360809566E	10	14.2		CXD-018A-6V	CXD-030A-6V		V1K25A01	V1K25A03	MSD0016A300
2360809566E	15	20.2		CXD-024A-6V	CXD-045A-6V		V1K27A01	V1K27A03	MSD0023A300
2360849566E	20	28.9		CXD-030A-6V	-		V1K55A01	V1K55A03	MSD0030A300
2360849566E	25	34.6		CXD-036A-6V	-		V1K80A01	V1K80A03	MSD0035A300
2360849566E	30	41		CXD-045A-6V	-		V1K80A01	V1K80A03	MSD0045A300
2360862166E	40	56.5		CXD-067A-6V	-		V1K80A01	V1K80A03	MSD0065A300
2360862166E	50	69.2		CXD-086A-6V	-		V1K110A01	V1K110A03	MSD0080A300
2360862166E	60	80		CXD-086A-6V	-		V1K110A01	V1K110A03	MSD0080A300

NOTE: Firmware version 1.1 or newer is required for permanent magnet motor (or MagForce) functionality.

Output filters are required when using an X-Drive with a permanent magnet motor. dV/dt filters cover motor lead lengths up to 800'.

A sine wave filter is required for lead lengths greater than 800'."

## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

