SubDrive

CONSTANT PRESSURE CONTROLLERS

SUBDRIVE AND MONODRIVE

Franklin Electric's SubDrive and MonoDrive constant pressure controllers provide constant pressure by continually adjusting the speed of the pump to match water demand. Instead of draining and filling a large tank, a SubDrive system pumps more or less water as you need it. Finally, you'll be able to run the dishwasher, do laundry, and water the lawn – all at the same time!

DESCRIPTION

BENEFITS

- Constant water pressure with a wide range of settings
- Single-phase input power
- FE Connect smartphone app for advanced settings and monitoring*
- User-configurable motor frequency range*
- Pressure transducer input with system pressure display*
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Built-in diagnostics and protection (surge protection, short circuit, underload, overheat controller, undervoltage, broken-pipe detection*, locked pump, user-configurable underload off-time*, open circuit, optional moisture/wet-floor sensor protection)
- Supports surface pumping applications*

** Functionality for Connect models only*

APPLICATIONS

- Residential homes
- Restaurants
- Farms
- Schools
- Car washes
- Landscape irrigation systems

SINGLE-PHASE SYSTEMS

MonoDrive is designed to convert a conventional ½ hp to 2 hp pump system to a variable speed constant pressure system by simply replacing the 3-wire control box and pressure switch.

- Single-phase input, 3-wire motor control
- Easy, plug-and-play installation
- ½–2 hp (MonoDrive) and ½–3 hp (SubDrive50) performance
- Easily replaceable fan kit
- UL and cUL listed
- NEMA 4 enclosure options (indoor/outdoor)

THREE-PHASE SYSTEMS

SubDrive15, SubDrive20, SubDrive30, SubDrive50, SubDrive75, SubDrive100, SubDrive150, and SubDrive300 are designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power.

- Single-phase input, three-phase motor control
- 1–5 hp performance
- Smooth running
- Easy, plug-and-play installation
- Easily replaceable fan kit
- High starting torque
- UL and cUL listed
- NEMA 3R and NEMA 4 enclosures (indoor/outdoor)
- Surface pumps (Connect models only)

SUBDRIVE UTILITY

SubDrive Utility converts conventional Franklin Electric 2-wire submersible pumping systems ranging from 1/3 hp up to 1-1/2 hp into variable speed constant water pressure systems. These systems provide consistent water pressure throughout the chosen location, no matter how many fixtures are open at one time. Designed with a conveniently compact footprint, it features a sleek NEMA 3R (Type 3) enclosure rated for both indoor and outdoor use. SubDrive Utility retrofits to most 2-wire pumping systems that utilize a Franklin Electric motor, making the transition seamless for current systems.

- User-defined underload protection and several pressure control adjustments to fit a wide range of pumping applications
- Compatible with Franklin Electric submersible 2-wire motors, submersible permanent split capacitor (PSC), above ground booster pumps, and jet pumps*
- Robust SubDrive pressure sensor standard for ease of installation
- Additional input for optional analog pressure transducer for precise pressure control
- No programming required with easy DIP switch setup
- Three LED indicators allow for easy identification of system status and troubleshooting
- USB port allows for easy firmware updates
- UL and cUL listed

** Software version 1.3.1 or later is required for use with submersible PSC, above ground booster, and jet pump applications.*

FE CONNECT MOBILE APP

SUBDRIVE CONNECT MODELS

Wi-Fi connectivity is included in the drive to enable a connection to be made between the drive and a single mobile device (smartphone and tablet). This connection can be used to monitor drive characteristics, adjust advanced settings, and view and email fault history and configuration changes.

CONNECTING TO WI-FI

- Cycle power – Wi-Fi radio can only be connected within the first 15 minutes of power up.
- The FE Connect light will illuminate solid to indicate that a connection is available.
- Open the Wi-Fi connection settings on the mobile device you wish to use to connect to the drive.
- Select the "FECNCT_XXXXX" hotspot ("XXXXX" is the end portion of the serial number of the drive being connected to).
- The FE Connect light on the drive will flash to indicate that a connection is being made. Only one (1) mobile device can be connected to a drive at any given time.
- After making a successful connection, launch the FE Connect App on your mobile device. App can be downloaded from the Apple App Store or Google Play depending on the device being used.
- This connection will stay active until the connection is broken or device is out of range.
- Connection can be re-established for up to one hour following a disconnection.

MONITORING

This page allows for real-time monitoring of the system including:

- System Status
- System Pressure (requires pressure transducer)
- Output Current
- Input Voltage
- Motor Speed
- System Info (Drive Model, Hardware/Software Ver.)

SETUP

The Setup page allows for the setup of additional features of the drive including:

- Underload Off Time
- System Pressure Setpoint*
- Duplex Alternator Function
- Auxiliary Input
- Moisture/Wet-Floor Sensor
- Cut-in Pressure Setpoint/Drawdown**
- Drive Output*
- Minimum/Maximum Frequency
- Aggressive Bump
- Motor Size*
- Broken Pipe Detection
- Pump Size*
- Bump Mode
- Steady Flow*
- Underload Sensitivity*
- Tank Size Mode
- Units (hp or kW)
- Motor Overload Current***
- Prime Delay***

** In order to change and use app settings for the Drive Output, Motor Size, Pump Size, Underload Sensitivity, and Steady Flow, the FE Connect DIP switch (SW1, Position 1) on the drive must be on (up). Otherwise, the drive will default to the settings made via the DIP switches and Underload Sensitivity rotary knob on the drive itself.*
*** Requires pressure transducer*
**** Surface pumping applications*

LOGS

This page allows for viewing and emailing fault history and configuration changes with real date and time stamps.

- View drive power up time
- View motor run time
- View/email Fault History events
- View/email Configuration Changes

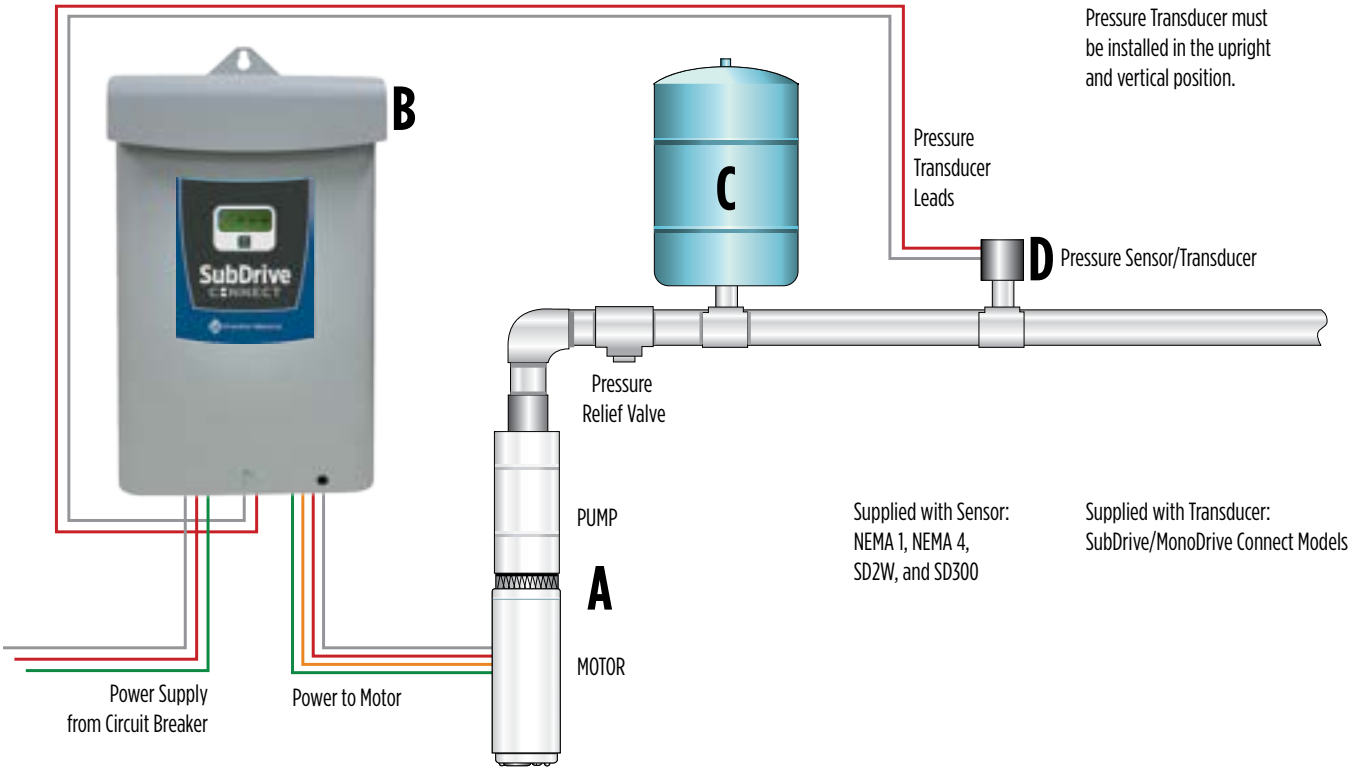
ENCLOSURE OPTIONS

- **NEMA 3R:** The NEMA 3R enclosure is rated for indoor and outdoor use. It provides a degree of protection against falling rain and sleet.
- **NEMA 4:** The NEMA 4 weatherproof enclosure is designed for both indoor and outdoor use and offers robust protection against harsh environmental conditions.

NEMA 3R

NEMA 4

CONSTANT PRESSURE SYSTEM



SPECIFICATIONS

Model No.	Indoor/Outdoor	MonoDrive (NEMA 4)	MonoDriveXT (NEMA 4)
		Model 5870203114	Model 5870204114
Input from Power Source	Voltage	190-260 VAC	190-260 VAC
	Phase In	Single-phase	Single-phase
	Frequency	60/50 Hz	60/50 Hz
	Current (max)	5.7 Amps (RMS) 1/2 hp, 0.37 kW system 8.7 Amps (RMS) 3/4 hp, 0.55 kW system 11 Amps (RMS) 1 hp, 0.75 kW system	13 Amps (RMS) 1.5 hp, 1.1 kW system 16 Amps (RMS) 2 hp, 1.5 kW system
	Power Factor	1.0 (constant)	1.0 (constant)
	Power (idle)	35 Watts	65 Watts
	Power (max)	1150 Watts (1/2 hp, 0.37 kW) system 1750 Watts (3/4 hp, 0.55 kW) system 2150 Watts (1 hp, 0.75 kW) system	2500 Watts (1.5 hp, 1.1 kW) system 3100 Watts (2 hp, 1.5 kW) system
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Adjusts with Frequency	Adjusts with Frequency
	Phase Out	Single-phase (3-wire)	Single-phase (3-wire)
	Frequency Range	30-60 Hz	30-60 Hz
	Current (max)	Main Phase: 6 Amps (RMS) 1/2 hp, 0.37 kW system Main Phase: 8 Amps (RMS) 3/4 hp, 0.55 kW system Main Phase: 10.4 Amps (RMS) 1 hp, 0.75 kW system	Main Phase: 11.5 Amps (RMS) 1.5 hp, 1.1 kW system Main Phase: 13.2 Amps (RMS) 2 hp, 1.5 kW system
	Wire Gauge Size(s)	#6 - #18 * ga.	#6 - #18 * ga.
Pressure Setting	Factory Preset	50 psi (3.4 bar)	50 psi (3.4 bar)
	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	25-80 psi (1.7 - 5.5 bar)
Operating Conditions (A)	Temperature (at 230 VAC input)	-13 °F to 125 °F (-25 °C to 50 °C)	-13 °F to 125 °F (-25 °C to 50 °C)
	Relative Humidity	0-100%, condensing	0-100%, condensing
Controller Size (B) (approximate)	Outer Dimensions	17-1/2" x 16-3/8" x 11-3/8" (44.45 x 41.59 x 28.89 cm)	17-1/2" x 16-3/8" x 11-3/8" (44.45 x 41.59 x 28.89 cm)
	Weight	24.14 lbs (10.95 kg)	28.32 lbs (12.84 kg)
For Use With (C)	Pump (60 Hz)	0.5 hp (0.37 kW) pump with 214505-Series motor 0.75 hp (0.55 kW) pump with 214507-Series motor 1.0 hp (0.75 kW) pump with 214508-Series motor	1.0 hp (0.75 kW) pump with 214508-Series motor 1.5 hp (1.1 kW) pump with 224300-Series motor 2.0 hp (1.5 kW) pump with 224301-Series motor
	FE Motor	214505-Series (0.5 hp, 0.37 kW) single-phase, 3-wire 214507-Series (0.75 hp, 0.55 kW) single-phase, 3-wire (default) 214508-Series (1.0 hp, 0.75 kW) single-phase, 3-wire	214508-Series (1.0 hp, 0.75 kW) single-phase, 3-wire 224300-Series (1.5 hp, 1.1 kW) single-phase, 3-wire (default) 224301-Series (2.0 hp, 1.5 kW) single-phase, 3-wire

NOTES: Refer to Franklin Electric's SubDrive/MonoDrive Installation Manual.
(A) Operating temperature is specified at full output power when installed as described in Controller Location Selection.
(B) Refer to detailed Mounting Dimensions.
(C) If a pump other than the default rating is used, refer to Drive Configuration.
** Refer to detailed Circuit Breaker and Wire Sizing charts.*

SPECIFICATIONS

Model No.	Indoor/Outdoor	SubDrive15 (NEMA 3R) (D)	SubDrive20 (NEMA 3R) (D)
		Model 5870205103C	Model 5870205303C
Input from Power Source	Voltage	208/230 VAC	208/230 VAC
	Phase In	Single-phase	Single-phase
	Frequency	60/50 Hz	60/50 Hz
	Current (max)	12 Amps	19 Amps
	Power Factor	~ 0.95	~ 0.95
	Power (idle)	4 Watts	5 Watts
	Power (max)	2500 Watts	4200 Watts
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Adjusts with Frequency	Adjusts with Frequency
	Phase Out	Single-phase (3-wire) OR Three-phase	Single-phase (3-wire) OR Three-phase
	Frequency Range	30-77 Hz (3/4 hp, 0.55 kW) pump 30-72 Hz (1 hp, 0.75 kW) pump 30-60 Hz (1.5 hp, 1.1 kW) pump 30-63 Hz (Single-phase Motors)	30-78 Hz (1 hp, 0.75 kW) pump 30-72 Hz (1.5 hp, 1.1 kW) pump 30-60 Hz (2 hp, 1.5 kW) pump 30-63 Hz (Single-phase Motors)
	Current (max)	5.9 A / phase	8.1 A / phase
	Wire Gauge Size(s)	#6 - #14 * ga.	#6 - #14 * ga.
Pressure Setting	Factory Preset	50 psi (3.4 bar)	50 psi (3.4 bar)
	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	25-80 psi (1.7 - 5.5 bar)
Operating Conditions (A)	Temperature (at 230 VAC input)	-13 °F to 122 °F (-25 °C to 50 °C)	-13 °F to 122 °F (-25 °C to 50 °C)
	Relative Humidity (NEMA 3R)	20-95%, non-condensing	20-95%, non-condensing
Controller Size (B) (approximate)	Outer Dimensions	9-3/4" x 19-3/4" x 5-1/4" (25 x 50 x 13 cm)	9-3/4" x 19-3/4" x 5-1/4" (25 x 50 x 13 cm)
	Weight	26 lbs (11.8 kg)	26 lbs (11.8 kg)
For Use With (C)	Pump (60 Hz)	0.5 hp (0.37 kW) pump with 214505-Series motor 0.75 hp (0.55 kW) pump with 214507-Series motor 1.0 hp (0.75 kW) pump with 214508-Series motor 0.75 hp (0.55 kW), 1.0 hp (0.75 kW), or 1.5 hp (1.1 kW) pump with 234514-Series motor	1.0 hp (0.75 kW) pump with 214508-Series motor 1.5 hp (1.1 kW) pump with 224300-Series motor 2.0 hp (1.5 kW) pump with 224301-Series motor 0.75 hp (0.55 kW), 1.0 hp (0.75 kW), or 1.5 hp (1.1 kW) pump with 234514-Series motor 1.0 hp (0.75 kW), 1.5 hp (1.1 kW), or 2.0 hp (1.5 kW) pump with 234315-Series motor
	FE Motor	214505-Series (0.5 hp, 0.37 kW) single-phase, 3-wire 214507-Series (0.75 hp, 0.55 kW) single-phase, 3-wire 214508-Series (1.0 hp, 0.75 kW) single-phase, 3-wire 234514-Series (1.5 hp, 1.1 kW) three-phase	214508-Series (1.0 hp, 0.75 kW) single-phase, 3-wire 224300-Series (1.5 hp, 1.1 kW) single-phase, 3-wire 224301-Series (2.0 hp, 1.5 kW) single-phase, 3-wire 234514-Series (1.5 hp, 1.1 kW) three-phase 234315-Series (2.0 hp, 1.5 kW) three-phase
	Surface Pumps	2.0–5.9 Amps, three-phase, 230 VAC three-phase	2.0–8.1 Amps, three-phase, 230 VAC three-phase

NOTES: Refer to Franklin Electric's SubDrive/MonoDrive Installation Manual.
(A) Operating temperature is specified at full output power when installed as described in Controller Location Selection.
(B) Refer to detailed Mounting Dimensions.
(C) If a pump other than the default rating is used, refer to Drive Configuration.
(D) When operating a SubDrive as a MonoDrive, the MonoDrive NEMA 3R pump and motor specifications on Page 5 apply.
** Refer to detailed Circuit Breaker and Wire Sizing charts.*

SPECIFICATIONS

Model No.	Indoor/Outdoor	SubDrive30 (NEMA 3R) (D) Model 5870205403C	SubDrive75 (NEMA 4) Model 5870203384
Input from Power Source	Voltage	208/230 VAC	190-260 VAC
	Phase In	Single-phase	Single-phase
	Frequency	60/50 Hz	60/50 Hz
	Current (max)	23 Amps	11 Amps (RMS)
	Power Factor	~ 0.95	1.0 (constant)
	Power (idle)	5 Watts	35 Watts
	Power (max)	4200 Watts	2400 Watts
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Adjusts with Frequency	Adjusts with Frequency
	Phase Out	Single-phase (3-wire) OR Three-phase	Three-Phase (3-wire)
	Frequency Range	30-78 Hz (1.5 hp, 1.1 kW) pump 30-70 Hz (2 hp, 1.5 kW) pump 30-60 Hz (3 hp, 2.2 kW) pump 30-63 Hz (Single-Phase Motors)	30-80 Hz (3/4 hp, 0.55 kW) pump 30-70 Hz (1 hp, 0.75 kW) pump 30-60 Hz (1.5 hp, 1.1 kW) pump
	Current (max)	10.9 A / phase	5.9 Amps (RMS, each phase)
	Wire Gauge Size(s)	#6 - #14 * ga.	#6 - #18 * ga.
Pressure Setting	Factory Preset	50 psi (3.4 bar)	50 psi (3.4 bar)
	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	25-80 psi (1.7 and 5.5 bar)
Operating Conditions (A)	Temperature (at 230 VAC input)	-13 °F to 122 °F (-25 °C to 50 °C)	-13 °F to 125 °F (-25 °C to 50 °C)
	Relative Humidity	20-95%, non-condensing	0-100%, condensing
Controller Size (B) (approximate)	Outer Dimensions	9-3/4" x 19-3/4" x 5-1/4" (25 x 50 x 13 cm)	17-1/2" x 16-3/8" x 11-3/8" (44.45 x 41.59 x 28.89 cm)
	Weight	26 lbs (11.8 kg)	24.14 lbs (10.95 kg)
For Use With (C)	Pump (60 Hz)	1.0 hp (0.75 kW) pump with 214508-Series motor 1.5 hp (1.1 kW) pump with 224300-Series motor 2.0 hp (1.5 kW) pump with 224301-Series motor 0.75 hp (0.55 kW), 1.0 hp (0.75 kW), or 1.5 hp (1.1 kW) pump with 234514-Series motor 1.0 hp (0.75 kW), 1.5 hp (1.1 kW), or 2.0 hp (1.5 kW) pump with 234315-Series motor 1.5 hp (1.1 kW), 2.0 hp (1.5 kW), or 3.0 hp (2.2 kW) pump with 234316-Series motor	3/4 hp (0.55 kW) [default] 1 hp (0.75 kW) 1.5 hp (1.1 kW)
	FE Motor	214508-Series (1.0 hp, 0.75 kW) single-phase, 3-wire 224300-Series (1.5 hp, 1.1 kW) single-phase, 3-wire 224301-Series (2.0 hp, 1.5 kW) single-phase, 3-wire 234514-Series (1.5 hp, 1.1 kW) three-phase 234315-Series (2.0 hp, 1.5 kW) three-phase 234316-Series (3.0 hp, 2.2 kW) three-phase	234514-Series (1.5 hp, 1.1 kW)
	Surface Pumps	2.0–10.9 Amps, three-phase, 230 VAC three-phase	-

NOTES: Refer to Franklin Electric's SubDrive/MonoDrive Installation Manual.
(A) Operating temperature is specified at full output power when installed as described in Controller Location Selection.
(B) Refer to detailed Mounting Dimensions.
(C) If a pump other than the default rating is used, refer to Drive Configuration.
(D) When operating a SubDrive as a MonoDrive, the MonoDrive NEMA 3R pump and motor specifications on Page 5 apply.
** Refer to detailed Circuit Breaker and Wire Sizing charts.*

SPECIFICATIONS

Model No.	Indoor/Outdoor	SubDrive100 (NEMA 4)	SubDrive150 (NEMA 4)
		Model 5870204104	Model 5870204154
Input from Power Source	Voltage	190-260 VAC	190-260 VAC
	Phase In	Single-phase	Single-phase
	Frequency	60/50 Hz	60/50 Hz
	Current (max)	19 Amps (RMS)	23 Amps (RMS)
	Power Factor	1.0 (constant)	1.0 (constant)
	Power (idle)	65 Watts	65 Watts
	Power (max)	3800 Watts	4600 Watts
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Adjusts with Frequency	Adjusts with Frequency
	Phase Out	Three-phase (3-wire)	Three-phase (3-wire)
	Frequency Range	30-80 Hz (1 hp, 0.75 kW) pump 30-70 Hz (1.5 hp, 1.1 kW) pump 30-60 Hz (2 hp, 1.5 kW) pump	30-80 Hz (1.5 hp, 1.1 kW) pump 30-70 Hz (2 hp, 1.5 kW) pump 30-60 Hz (3 hp, 2.2 kW) pump
	Current (max)	8.1 Amps (RMS, each phase)	10.9 Amps (RMS, each phase)
	Wire Gauge Size(s)	#6 - #18 * ga.	#6 - #18 * ga.
Pressure Setting	Factory Preset	50 psi (3.4 bar)	50 psi (3.4 bar)
	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	25-80 psi (1.7 - 5.5 bar)
Operating Conditions (A)	Temperature (at 230 VAC input)	-13 °F to 125 °F (-25 °C to 50 °C)	-13 °F to 125 °F (-25 °C to 50 °C)
	Relative Humidity	0-100%, condensing	0-100%, condensing
Controller Size (B) (approximate)	Outer Dimensions	17-1/2" x 16-3/8" x 11-3/8" (44.45 x 41.59 x 28.89 cm)	17-1/2" x 16-3/8" x 11-3/8" (44.45 x 41.59 x 28.89 cm)
	Weight	28.32 lbs (12.84 kg)	28.32 lbs (12.84 kg)
For Use With (C)	Pump (60 Hz)	1 hp (0.75 kW) [default] 1.5 hp (1.1 kW) 2 hp (1.5 kW)	1.5 hp (1.1 kW) [default] 2 hp (1.5 kW) 3 hp (2.2 kW)
	FE Motor	234315-Series (2 hp, 1.5 kW)	234316-Series (3 hp, 2.2 kW)

NOTES: Refer to Franklin Electric's SubDrive/MonoDrive Installation Manual.
(A) Operating temperature is specified at full output power when installed as described in Controller Location Selection.
(B) Refer to detailed Mounting Dimensions.
(C) If a pump other than the default rating is used, refer to Drive Configuration.
** Refer to detailed Circuit Breaker and Wire Sizing charts.*

SPECIFICATIONS

Model No.	Indoor/Outdoor	SubDrive300 (NEMA 4)	SubDrive50 (NEMA 3R)
		Model 5870206300	5870205503C
Input from Power Source	Voltage	220-260 VAC	208/230 +/- 10% VAC
	Phase In	Single-phase	Single-phase
	Frequency	60/50 Hz	60/50 Hz
	Current (max)	36 Amps (RMS)	36 A
	Power Factor	1.0 (constant)	~ 0.95
	Power (idle)	65 Watts	7 Watts
	Power (max)	7200 Watts	7200 Watts
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Adjusts with Frequency	Variable based on frequency
	Phase Out	Three-phase (3-wire)	Single-phase (3-wire) OR three-phase
	Frequency Range	30-80 Hz (3 hp, 2.2 kW) pump 30-70 Hz (5 hp, 3.7 kW) pump	30-78 Hz: 1/2-rated mismatched pump with three-phase motor 30-70 Hz: 2/3 or 3/4-rated mismatched pump with three-phase motor 30-60 Hz: Matched pump with three-phase motor 30-63 Hz: Matched pump with single-phase motor
	Current (max)	17.8 Amps (RMS, each phase)	17.8 (three-phase), 17.0 A (single-phase)
	Wire Gauge Size(s)	#2 - #18 * ga.	#6 - #12 * ga.
Pressure Setting	Factory preset	50 psi (3.4 bar)	50 psi (3.4 bar)
	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	Analog Transducer: 5-95 PSI (0.3 - 6.6 bar) Pressure Sensor: 25-80 psi (1.7 - 5.5 bar)
Operating Conditions (A)	Temperature (at 230 VAC input)	-13 °F to 125 °F (-25 °C to 50 °C)	-13 °F to 122 °F (-25 °C to 50 °C)
	Relative Humidity	0-100%, condensing	20-95%, non-condensing
Controller Size (B) (approximate)	Outer Dimensions	19-7/8" x 17-1/2" x 14-1/4" (50.48 x 44.45 x 36.20 cm)	26 1/8" x 15 3/8" x 11 1/2" (66 x 39 x 29 cm)
	Weight	35.15 lbs (15.94 kg)	31 lbs (14.1 kg)
For Use With (C)	Pump (60 Hz)	3 hp (2.2 kW) [default] 5 hp (3.7 kW)	0.5 hp (0.37 kW) pump with 214505-Series motor 0.75 hp (0.55 kW) pump with 214507-Series motor 1.0 hp (0.75 kW) pump with 214508-Series motor 1.5 hp (1.1 kW) pump with 224300-Series motor 2.0 hp (1.5 kW) pump with 224301-Series motor 3.0 hp (2.2 kW) pump with 224302-Series motor 0.5 hp (0.37 kW), 0.75 hp (0.55 kW), or 1.0 hp (0.75 kW) pump with 234513-Series motor 0.75 hp (0.55 kW), 1.0 hp (0.75 kW), or 1.5 hp (1.1 kW) pump with 234514-Series motor 1.0 hp (0.75 kW), 1.5 hp (1.1 kW), or 2.0 hp (1.5 kW) pump with 234315-Series motor 1.5 hp (1.1 kW), 2.0 hp (1.5 kW), or 3.0 hp (2.2 kW) pump with 234316-Series motor 3.0 hp (2.2 kW), or 5.0 hp (3.7 kW) pump with 234317-Series motor
	FE Motor	234317-Series (5 hp, 3.7 kW)	214505-Series (0.5 hp, 0.37 kW) single-phase, 3-wire 214507-Series (0.75 hp, 0.55 kW) single-phase, 3-wire 214508-Series (1.0 hp, 0.75 kW) single-phase, 3-wire 224300-Series (1.5 hp, 1.1 kW) single-phase, 3-wire 224301-Series (2.0 hp, 1.5 kW) single-phase, 3-wire 224302-Series (3.0 hp, 2.2 kW) single-phase, 3-wire 234513-Series (1.0 hp, 0.75 kW) three-phase 234514-Series (1.5 hp, 1.1 kW) three-phase 234315-Series (2.0 hp, 1.5 kW) three-phase 234316-Series (3.0 hp, 2.2 kW) three-phase 234317-Series (5.0 hp, 3.7 kW) three-phase
	Surface Pumps	-	2.0–17.8 Amps, three-phase, 230 VAC three-phase

NOTES: Refer to Franklin Electric's SubDrive/MonoDrive Installation Manual.
(A) Operating temperature is specified at full output power when installed as described in Controller Location Selection.
(B) Refer to detailed Mounting Dimensions.
(C) If a pump other than the default rating is used, refer to Drive Configuration.
** Refer to detailed Circuit Breaker and Wire Sizing charts.*

SPECIFICATIONS

Model No.	Indoor/Outdoor	SubDrive Utility (NEMA 3R)
		Model 5870202003 & 5870202003XD
Input from Power Source	Voltage	115/208/230 +/- 10% VAC
	Phase In	Single-phase
	Frequency	60/50 Hz
	Current (max)	20 Amps
	Power Factor	-0.52
	Power (idle)	3 Watts
	Power (max)	2500 Watts
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Variable based on frequency
	Phase Out	Single-phase (2-wire)
	Frequency Range	35–63 Hz
	Current (max)	13.1 A (based on motor SFA)
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations
Pressure Setting	Factory preset	50 psi (3.4 bar)
	Adjustment Range	0–80 psi (0.3 - 6.6 bar)
Operating Conditions (A)	Temperature (at 230 VAC input)	-13 °F to 122 °F (-25 °C to 50 °C)
	Relative Humidity	20–95%, non-condensing
Controller Size (B) (approximate)	Outer Dimensions	11-7/8" x 8-7/8" x 5-1/8" (30 x 23 x 13 cm)
	Weight	7.7 lbs (3.5 kg)
For Use With (C)	Pump (60 Hz)	1/3 hp, 0.25 kW with 244502-Series motor 1/2 hp, 0.37 kW with 244504- or 244505-Series motor 3/4 hp, 0.55 kW with 244507-Series motor 1.0 hp, 0.75 kW with 244508-Series motor 1.5 hp, 1.1 kW with 244509-Series motor
	FE 115 V Motor (Requires 115 VAC Input)	244502-Series (1/3 hp, 0.25 kW), 115 VAC, single-phase, 2-wire 244504-Series (1/2 hp, 0.37 kW), 115 VAC, single-phase, 2-wire
	FE 230 V Motor (Requires 230 VAC Input)	244505-Series (1/2 hp, 0.37 kW), 230 VAC, single-phase, 2-wire 244507-Series (3/4 hp, 0.55 kW), 230 VAC, single-phase, 2-wire 244508-Series (1.0 hp, 0.75 kW), 230 VAC, single-phase, 2-wire 244309-Series (1.5 hp, 1.1 kW), 230 VAC, single-phase, 2-wire
	Submersible PSC and Surface Pumps	4.6-13.1 Amps, single-phase, 2-wire, 115 VAC and 230VAC

NOTES: Refer to Franklin Electric's SubDrive/MonoDrive Installation Manual.
(A) Operating temperature is specified at full output power when installed as described in Controller Location Selection.
(B) Refer to detailed Mounting Dimensions.
(C) If a pump other than the default rating is used, refer to Drive Configuration.

ACCESSORIES

Accessories	Detail	Used With	Part No.
Air Screen Kit	Helps prevent insects from entering and damaging the internal components of the drive	SD Utility	226115920
		SD15, SD20, SD30, MD, MDXT non-"C" models	226550901
Analog Pressure Transducer	4-20mA analog pressure transducer used with "C" models (includes 10 ft cable)	All "C" models - 100 PSI	226905902
			226905903
			226905904
Analog Pressure Transducer Cable Kit	Outdoor rated cable to connect analog pressure transducer to "C" drive models	All "C" models - 10 ft	226910901
		All "C" models - 25 ft	226910902
		All "C" models - 50 ft	226910903
		All "C" models - 100 ft	226910904
		All "C" models - 150 ft	226910905
		All "C" models - 200 ft	226910906
Conduit Grounding Kit	Provides a means to ground metal conduit when used in conjunction with a nonmetallic drive enclosure - 1/2"	SD Utility	224471901
	Provides a means to ground metal conduit when used in conjunction with a nonmetallic drive enclosure - 3/4"		224471902
Duplex Alternator	Allows a water system to alternate between two parallel pumps controlled by separate SubDrives	All Models	5850012000
Duplex Alternator Cable Kit	Communication cable kit required to use the built-in Duplex Alternator function in "C" drive models	All "C" models - 10 ft	226895901
		All "C" models - 50 ft	226895902
		All "C" models - 100 ft	226895903
Enhanced Display Board Replacement Kit	Replacement board for drives that have a damaged display	All "C" models	226540912
Enhanced Pressure Input Board Replacement Kit	Replacement board for "C" drives that have experienced a surge on the Enhanced Pressure Input Board.	All "C" models	226540902
Filter (Input)	Filter used on the input side of drive to help eliminate interference	All models	225198901
Filter (Output)	Filter used on the output side of the drive to help eliminate interference	All models (excluding SD300)	225300901
Filter (Input/Output)	Dedicated filter box for SubDrive Utility systems to help eliminate electrical interference	SD Utility	226115910
Filter (System)	Filter used as a system filter on input/output of the drive to help eliminate interference	SD300	225650901
Filter (Surge Capacitors)	Capacitor used on the service panel to help eliminate power interference	All SubDrives/MonoDrives	225199901
Heatsink Cover Kit	Assists in preventing insects from entering and blocking fan area	All NEMA 4 models (excluding SD300)	225805901
Lightning Arrestor	Single-phase (Input Power)	Single-phase (Input Power)	150814902
Low Voltage Kit	Used to make adjustments to the voltage of the SubDrive	SD300	225950901
Moisture Sensor Kit	External sensor device that shuts down the drive when water is detected.	All "C" models	226770901
NEMA 1 Fan Replacement Kit	Replacement fan (date code prior to 08L)	SD75	225635905
	Replacement fan (date code 08L and after)	SD75	225635908
	Replacement fan (with date code prior to 08K)	SD100 and SD150	225635907
	Replacement fan (with date code 08K and after)	SD100 and SD150	225635909
NEMA 3R Fan Replacement Kit	Replacement fan (with date code prior to 08K)	SD75	225635907
	Replacement fan	SD Utility	226115915
	Replacement fan	SD50	226545903
	Replacement fan (with date code 14L and after)	SD15	226545901
	Replacement fan (with date code 14L and after)	SD20 and SD30	226545902
NEMA 4 External Cooling Fan Replacement Kit	Replacement External fan (with date code prior to 14L)	SD75	225635901
	Replacement External fan (with date code prior to 14L)	SD100, SD150, and MDXT	225635902
	Replacement External fan (include 2 fans)	SD300	225635903
NEMA 4 Internal Stirring Fan Replacement Kit	Replacement Internal Stirring fan (with date code prior to 14L)	SD75, SD100, SD150, SD300, MD, MDXT	225635904
NEMA 4 Auxiliary Relay Board	Offers Run-Indication Relay (for date codes 09J through 14K)	All NEMA 4 models (excluding SD300)	225755901
NEMA 4 Option Card	Offers Run-Indication Relay and Underload Extended Off-Time (date codes 09J–14K)	All NEMA 4 models (excluding SD300)	225880901
Pressure Sensor (High: 75-150 psi, NSF 61 rated)	Adjusts pressure in the water system from 75-150 psi (2-leaded cable)	All models	225970901
Pressure Sensor (Std.: 25-80 psi, NSF 61 rated)	Adjusts pressure in the water system from 25-80 psi (2-leaded cable)	All models (excluding SD Utility)	223995901
		SD Utility	226941901
Pressure Sensor/Pressure Shut-Off Switch Kit	Kit includes pressure sensor (25-80 psi, NSF 61 rated), pressure shut-off switch (100 psi) and 10 foot cable (4-leaded cable)	SD300	225495901
Pressure Sensor Input Board Replacement	Replacement board for drives that have experienced a surge on the pressure sensor input (with date codes 14L and after)	All models	226540901
Sensor Cable Kit (Indoor)	100 feet of 22 AWG cable (2-leaded cable)	All models (excluding SD Utility and SD300)	223995902
	100 feet of 22 AWG cable (4-leaded cable)	SD300	225495902
Sensor Cable Kit (outdoor)	100 feet of 22 AWG cable (2-leaded cable)	All models (excluding SD Utility)	226941901
		SD Utility	223995902
Sensor Direct Burial Cable	Designed to run in an underground trench without conduit to surround it (4-leaded cable)	All models - 10 ft (3 m)	225800901
		All models - 30 ft (9 m)	225800902
		All models - 100 ft (30.5 m)	225800903
Tank Drawdown Kit	Allows the use of water stored in the tank during low flow demands	SD15, SD20, SD30, SD Utility, and SD300	225770901
	Allows use of tank-stored water during low-flow demands (date codes prior to 14L)	SD75N4, SD100N4, SD150N4, MDN4, and MDXTN4 (requires Auxiliary Relay Board or NEMA 4 Option Card)	225770901

**N1 = NEMA 1 (Indoors), N3R = NEMA 3R (Indoor/Outdoor), N4 = NEMA 4 (Outdoor)*