



# Pressure Master

SubDrive | MonoDrive | E-Z Pac



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## Easily Replaceable Fan Kits

Controller	Franklin Electric #	AY McDonald #
SubDrive 75 NEMA 4	225635901	6617-161
SubDrive 100 NEMA 4	225635902	6617-162
SubDrive 150 NEMA 4	225635902	6617-162
MonoDrive NEMA 4	225635901	6617-161
MonoDrive XT NEMA 4	225635902	6617-162
SubDrive 2W NEMA 3R	225635910	Contact Factory
SubDrive 300	225635903	Contact Factory

## Pressure Sensor

Included with all constant pressure controllers.

Placement Kit	Franklin Electric #	AY McDonald #
SubDrive 75 / 100 / 150 MD & XT	223995901	6627-088
SubDrive 300	225495901	6617-431

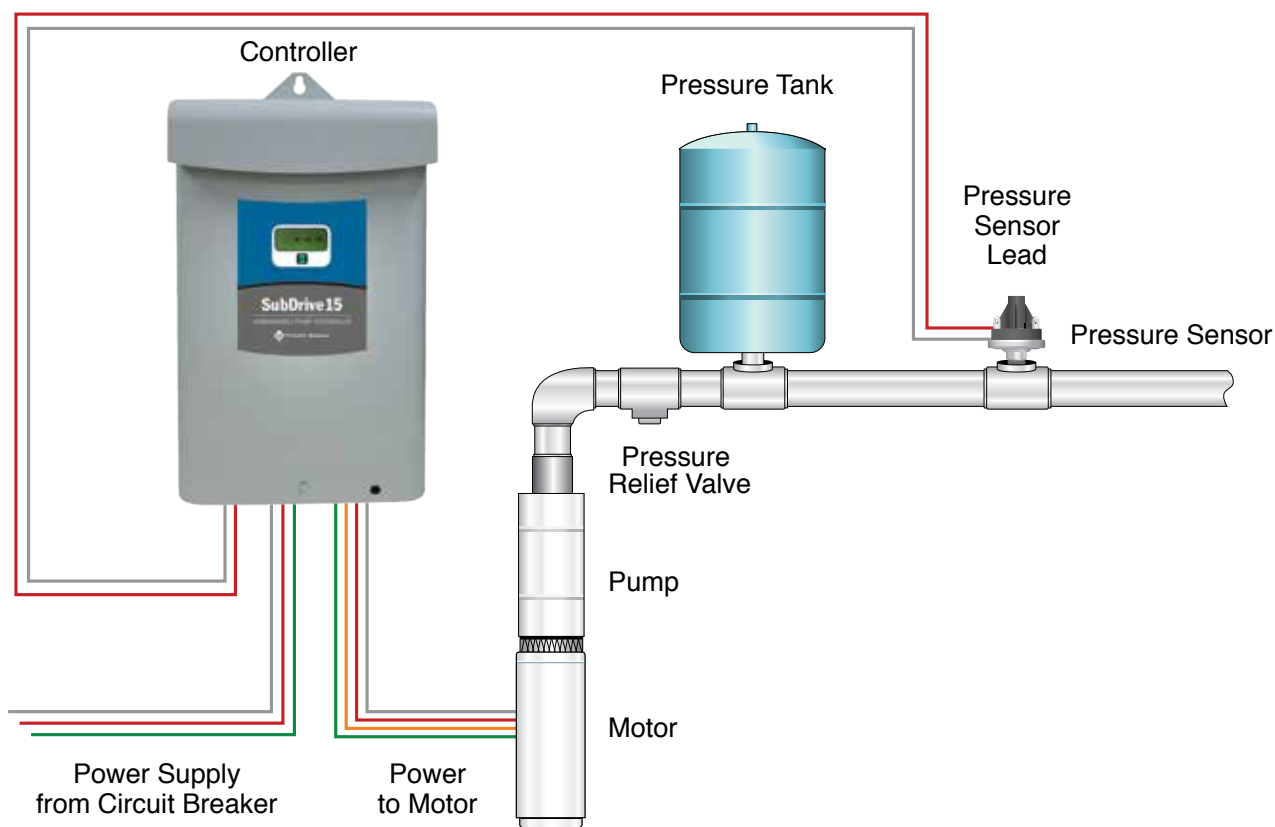


## NEMA 3R

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.



Drive	Franklin Electric Order No.	A.Y. McDonald Order No.	Single-phase (3-wire)					Three-phase		
			1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP	1 1/2 HP	2HP	3HP
MonoDrive	587 020 5003	6617-432	X	X	X					
MonoDriveXT	587 020 5203	6617-434			X	X	X			
SubDrive15	587 020 5103	6617-433	X	X	X			X		
SubDrive20	587 020 5303	6617-435			X	X	X	X	X	
SubDrive30	587 020 5403	6617-436			X	X	X	X	X	X

## FEATURES

- Constant water pressure with a wide range of settings (25-80 psi)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- 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
  - Underload
  - Undervoltage
  - Locked pump
  - Open circuit
  - Short circuit
  - Overheated controller
  - Broken pipe detection (NEMA 3R only)

## MONODRIVE - Pressure Master MD

This constant pressure controller provides the flexibility to convert a single phase conventional pump system to a constant pressure system with a simple replacement of the three wire control box and pressure switch. The MonoDrive can retrofit any existing 1/2 - 1 HP three wire single phase water well system which means that homeowners can enjoy the benefits of constant water pressure without purchasing a new pump.

### APPLICATIONS

MonoDrive is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1/2 - 1 HP submersible pump already in place with a Franklin Electric single phase three wire motor. The performance is the same as standard 1/2 - 1 HP pump/motor sets. It is great for homes that have a wide range of flow demands. The MonoDrive controller is equally effective on new installations.

The MonoDrive is design to convert a conventional 1/2 HP to 1 HP pump system to a variable speed constant pressure system by simply replacing the three-wire control box and pressure switch. They are easy to install, smooth running, just plug and play. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options.



### FEATURES

- Constant water pressure with a wide range of settings (25-80 psi)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- 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
- Fan kit is easily replaceable
- Built-in diagnostics and protection
  - Surge protection
  - Underload
  - Undervoltage
  - Locked pump
  - Open circuit
  - Short circuit
  - Overheated controller
  - Broken pipe detection (NEMA 3R only)
  - Replaceable pressure sensor board (NEMA 3R only)

### Models Available

Model #	NEMA 3R (Indoor/Outdoor)	NEMA 4 (Outdoor)
MonoDrive for 1/2, 3/4, and 1 HP	6617-432	6617-159

# MONODRIVE - Pressure Master MD

		MONODRIVE (NEMA 3R) - Indoor/Outdoor	MONODRIVE (NEMA 4) - Outdoor
Model No.		A.Y. Model # 6617-432 FE Model # 5870205003	A.Y. Model # 6617-159 FE Model # 5870203114
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)	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	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
	Power Factor	~0.95	1.0 (constant)
	Power (idle)	4 Watts	35 Watts
	Power (max)	2.5 kW	1150 Watts (1/2 hp, 0.37 kW) system 1750 Watts (3/4 hp, 0.55 kW) system 2150 Watts (1 hp, 0.75kW) 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 (three-wire)	Single-phase (three-wire)
	Frequency Range	30-63 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: 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
	Wire Gauge Size(s)	#6 - #14* ga.	#6 - #18* ga.
Pressure Setting	Factory Present	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 <sup>(a)</sup>	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 <sup>(b)</sup> (approximate)	Outer Dimensions Weight	9 3/4" x 16 3/4" x 5 1/4" (25 x 42.5 x 13 cm) 20 lbs (9 kg)	17 1/2" x 16 3/8" x 11 3/8" (44.45 x 41.59 x 28.89 cm) 24.14 lbs (10.95 kg)
For Use With <sup>(c)</sup>	Pump (60 Hz)	1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend	1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend
	FE Motor	1/2 hp single-phase, three-wire 3/4 hp single-phase, three-wire 1 hp single-phase, three-wire	1/2 hp single-phase, three-wire 3/4 hp single-phase, three-wire 1 hp single-phase, three-wire

## MONODRIVE XT - Pressure Master MD

This constant pressure controller provides the flexibility to convert a single phase conventional pump system to a constant pressure system with a simple replacement of the three wire control box and pressure switch. The MonoDriveXT can retrofit any existing 1 1/2 - 2 HP three wire single phase water well system which means that homeowners can enjoy the benefits of constant water pressure without purchasing a new pump.

### APPLICATIONS

MonoDriveXT is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1 1/2 - 2 HP submersible pump already in place with a Franklin Electric single phase three wire motor. The performance is the same as standard 1 1/2 - 2 HP pump/motor sets. It is great for homes that have a wide range of flow demands. The MonoDrive controller is equally effective on new installations.

The MonoDriveXT is design to convert a conventional 1 1/2 HP to 2 HP pump system to a variable speed constant pressure system by simply replacing the three-wire control box and pressure switch. They are easy to install, smooth running, just plug and play. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options.



### FEATURES

- Constant water pressure with a wide range of settings (25-80 psi)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- 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
- Fan kit is easily replaceable
- Built-in diagnostics and protection
  - Surge protection
  - Underload
  - Undervoltage
  - Locked pump
  - Open circuit
  - Short circuit
  - Overheated controller
  - Broken pipe detection (NEMA 3R only)

### Models Available

Model #	NEMA 3R (Indoor/Outdoor)	NEMA 4 (Outdoor)
MonoDrive XT for 1 1/2 and 2 HP	6617-434	6617-160



# MONODRIVE XT - Pressure Master MD

		MONODRIVEXT (NEMA 3R) - Indoor/Outdoor	MONODRIVEXT (NEMA 4) - Outdoor
Model No.		A.Y. Model # 6617-434 FE Model # 5870205203	A.Y. Model # 6617-160 FE Model # 5870204114
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)	13 Amps (RMS) 1 1/2 hp, 1.1 kW system 16 Amps (RMS) 2 hp, 1.5 kW system	13 Amps (RMS) 1 1/2 hp, 1.1 kW system 16 Amps (RMS) 2 hp, 1.5 kW system
	Power Factor	~0.95	1.0 (constant)
	Power (idle)	5 Watts	65 Watts
	Power (max)	4.2 kW	2500 Watts (1 1/2 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 (three-wire)	Single-phase (three-wire)
	Frequency Range	30-63 Hz	30-60 Hz
	Current (max)	Main Phase: 11.5 Amps (RMS) 1 1/2 hp, 1.1 kW system  Main Phase: 13.2 Amps (RMS) 2 hp, 1.5 kW system	Main Phase: 11.5 Amps (RMS) 1 1/2 hp, 1.1 kW system  Main Phase: 13.2 Amps (RMS) 2 hp, 1.5 kW system
	Wire Gauge Size(s)	#6 - #14* ga.	#6 - #18* ga.
Pressure Setting	Factory Present	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 <sup>(A)</sup>	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 <sup>(B)</sup> (approximate)	Outer Dimensions Weight	9 3/4" x 19 3/4" x 5 1/4" (25 x 50 x 13 cm) 26 lbs (11.8 kg)	17 1/2" x 16 3/8" x 11 3/8" (44.45 x 41.59 x 28.89 cm) 28.32 lbs (12.84 kg)
For Use With <sup>(C)</sup>	Pump (60 Hz)	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend
	FE Motor	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire

## SUBDRIVE 15 - Pressure Controller

The SubDrive 15 is designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power. They have a high starting torque, easy to install, smooth running, just plug and play. Performance ranges from 3/4 hp to 5 hp. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options. The fan kit is easily replaceable.

### APPLICATIONS

SubDrive 15 constant pressure controller is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 3/4 HP pump end mounted to a 1½ HP, 230 volt Franklin Electric three phase motor.

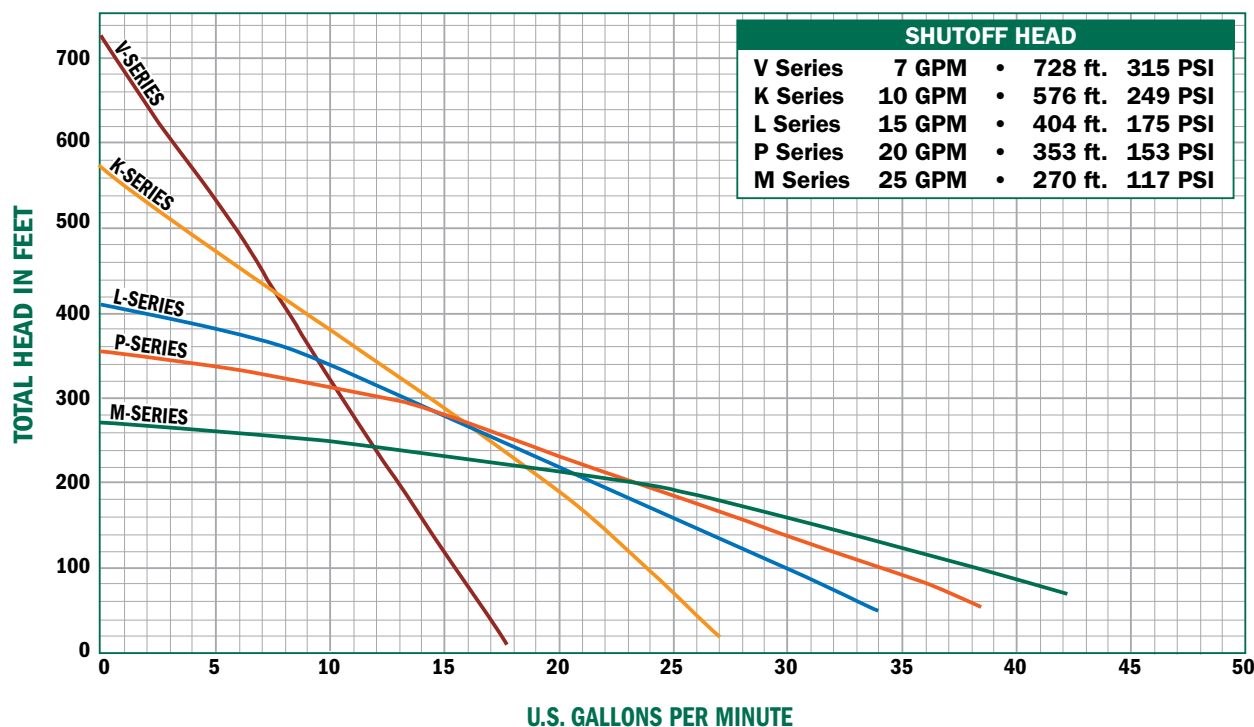
### FEATURES

- Constant water pressure with a wide range of settings (25-80 psi)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- 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
  - Undervoltage
  - Open circuit
  - Overheated controller
  - Underload
  - Locked pump
  - Short circuit
  - Broken pipe detection (NEMA 3R only)



SubDrive15 (NEMA 3R) - Indoor/Outdoor					
Model No.	Indoor/Outdoor	A.Y. Model # 6617-433 FE Model # 5870205103	Pressure Setting	Factory Present	50 psi (3.4 bar)
				Adjustment Range	25-80 psi (1.7 - 5.5 bar)
Input from Power Source	Voltage	208/230 VAC	Operating Conditions <sup>(A)</sup>	Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)
	Phase In	Single-phase		Relative Humidity	20-95%, non-condensing
	Frequency	60/50 Hz	Controller Size <sup>(B)</sup> (approximate)	Outer Dimensions Weight	
	Current (max)	12 Amps		9 3/4" x 19 3/4" x 5 1/4" (25 x 50 x 13 cm) 26 lbs (11.8 kg)	
	Power Factor	~0.95	For Use With <sup>(C)</sup>	Pump (60 Hz)	
	Power (idle)	4 Watts		1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend 1 1/2 hp submersible pumpend	
	Power (max)	2.5 kW		FE Motor	
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations		1/2 hp single-phase, three-wire 3/4 hp single-phase, three-wire 1 hp single-phase, three-wire 1 1/2 hp three-phase, three-wire	
Output to Motor	Voltage	Adjusts with Frequency			
	Phase Out	Single-phase (three-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 1/2 hp, 1.1 kW) pump 30-63 Hz (Single-phase Motors)			
	Current (max)	5.9 A / phase			
	Wire Gauge Size(s)	#6 - #14* ga.			





NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)



NEMA 4 is available in SubDrive 75. Contact Factory for more information.

## Models Available



### No-Lead Brass - 21000 Series

E-Z PAC (N1)	E-Z PAC (N4)	DESCRIPTION
21075VCP1EZ	21075VCP4EZ	V Series, 7 GPM
21075KCP1EZ	21075KCP4EZ	K Series, 10 GPM
21075LCP1EZ	21075LCP4EZ	L Series, 15 GPM
21075PCP1EZ	21075PCP4EZ	P Series, 20 GPM
21075MCP1EZ	21075MCP4EZ	M Series, 25 GPM

N1 = (NEMA 3R), N4 = (NEMA 4)

- 1 1/4" NPT connection on All Series



### Stainless Steel - 23000 Series

E-Z PAC (N1)	E-Z PAC (N4)	DESCRIPTION
23075VCP1EZ	23075VCP4EZ	V Series, 7 GPM
23075KCP1EZ	23075KCP4EZ	K Series, 10 GPM
23075LCP1EZ	23075LCP4EZ	L Series, 15 GPM
23075PCP1EZ	23075PCP4EZ	P Series, 20 GPM
23075MCP1EZ	23075MCP4EZ	M Series, 25 GPM

N1 = (NEMA 3R), N4 = (NEMA 4)

- 1 1/4" NPT connection on All Series

The SubDrive 15 is designed to be part of a system that includes three main components:



1

Subdrive 15 controller (pressure sensor included)  
NEMA 3R - Part No. 6617-433  
NEMA 4 - Part No. 6617-156



2

Franklin 1 1/2 HP, 230V three phase motor  
Part No. 3129-794



3

Appropriate pump end  
Includes pump end 23075K  
For example:  
23075KCP1EZ

## SUBDRIVE 20 - Pressure Controller

The SubDrive 20 is designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power. They have a high starting torque, easy to install, smooth running, just plug and play. Performance ranges from 3/4 hp to 5 hp. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options. The fan kit is easily replaceable.

### APPLICATIONS

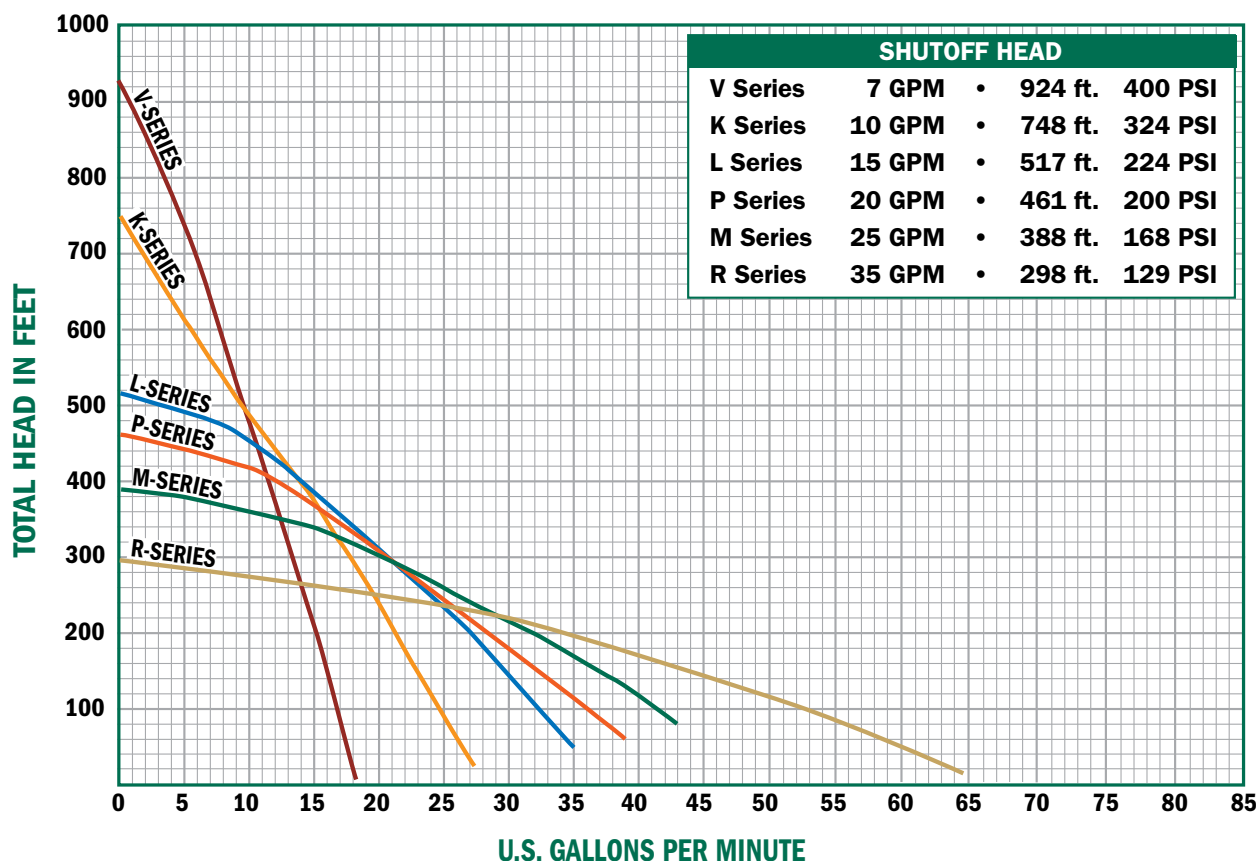
SubDrive 20 constant pressure controller is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1 HP pump end mounted to a 2 HP, 230 volt Franklin Electric three phase motor.

### FEATURES

- Constant water pressure with a wide range of settings (25-80 psi)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- 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
  - Underload
  - Undervoltage
  - Locked pump
  - Open circuit
  - Short circuit
  - Overheated controller
  - Broken pipe detection (NEMA 3R only)



SubDrive20 (NEMA 3R) - Indoor/Outdoor					
Input from Power Source	Model No.	A.Y. Model # 6617-435 FE Model # 5870205303	Pressure Setting	Factory Present	50 psi (3.4 bar)
	Voltage	208/230 VAC		Adjustment Range	25-80 psi (1.7 - 5.5 bar)
	Phase In	Single-phase	Operating Conditions <sup>(a)</sup>	Temperature (at 230 VAC input)	-13°F to 125°F (-25°C to 50°C)
	Frequency	60/50 Hz		Relative Humidity	20-95%, condensing
	Current (max)	12 Amps	Controller Size <sup>(b)</sup> (approximate)	Outer Dimensions Weight	9 3/4" x 19 3/4" x 5 1/4" (25 x 50 x 13 cm) 26 lbs (11.8 kg)
	Power Factor	~0.95			
	Power (idle)	5 Watts			
	Power (max)	4.2 kW			
Output to Motor	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	For Use With <sup>(c)</sup>	Pump (60 Hz)	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend
	Voltage	Adjusts with Frequency		FE Motor	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire 1 1/2 hp three-phase, three-wire 2 hp three-phase, three-wire
	Phase Out	Single-phase (three-wire) OR Three-phase			
	Frequency Range	30-78 Hz (1 hp, 0.75 kW) pump 30-72 Hz (1 1/2 hp, 1.1 kW) pump 30-60 Hz (2 hp, 1.5 kW) pump 30-63 Hz (Single-phase Motors)			
	Current (max)	8.1 A / phase			
	Wire Gauge Size(s)	#6 - #14* ga.			



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)



NEMA 4 is available in SubDrive 100. Contact Factory for more information.

## Models Available



### No-Lead Brass - 21000 Series

E-Z PAC (N1)	E-Z PAC (N4)	DESCRIPTION
21100VCP1EZ	21100VCP4EZ	V Series, 7 GPM
21100KCP1EZ	21100KCP4EZ	K Series, 10 GPM
21100LCP1EZ	21100LCP4EZ	L Series, 15 GPM
21100PCP1EZ	21100PCP4EZ	P Series, 20 GPM
21100MCP1EZ	21100MCP4EZ	M Series, 25 GPM

N1 = (NEMA 3R), N4 = (NEMA 4)

- 1 1/4" NPT connection on All Series



### Stainless Steel - 23000 & 24000 Series

E-Z PAC (N1)	E-Z PAC (N4)	DESCRIPTION
23100VCP1EZ	23100VCP4EZ	V Series, 7 GPM
23100KCP1EZ	23100KCP4EZ	K Series, 10 GPM
23100LCP1EZ	23100LCP4EZ	L Series, 15 GPM
23100PCP1EZ	23100PCP4EZ	P Series, 20 GPM
23100MCP1EZ	23100MCP4EZ	M Series, 25 GPM
24100RCP1EZ	24100RCP4EZ	R Series, 35 GPM

N1 = (NEMA 3R), N4 = (NEMA 4)

- 1 1/4" NPT connection on V, K, L, P, & M Series  
- 2" NPT connection on R Series

The SubDrive 20 is designed to be part of a system that includes three main components:



1

Subdrive 20 controller (pressure sensor included)  
NEMA 3R - Part No. 6617-435  
NEMA 4 - Part No. 6617-158



2

Franklin 2 HP, 230V three phase motor  
Part No. 3129-796



3

Appropriate pump end  
Includes pump end 23100K  
For example:  
23100KCP1EZ

## SUBDRIVE 30 - Pressure Controller

The SubDrive 15 is designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power. They have a high starting torque, easy to install, smooth running, just plug and play. Performance ranges from 3/4 hp to 5 hp. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options. The fan kit is easily replaceable.

### APPLICATIONS

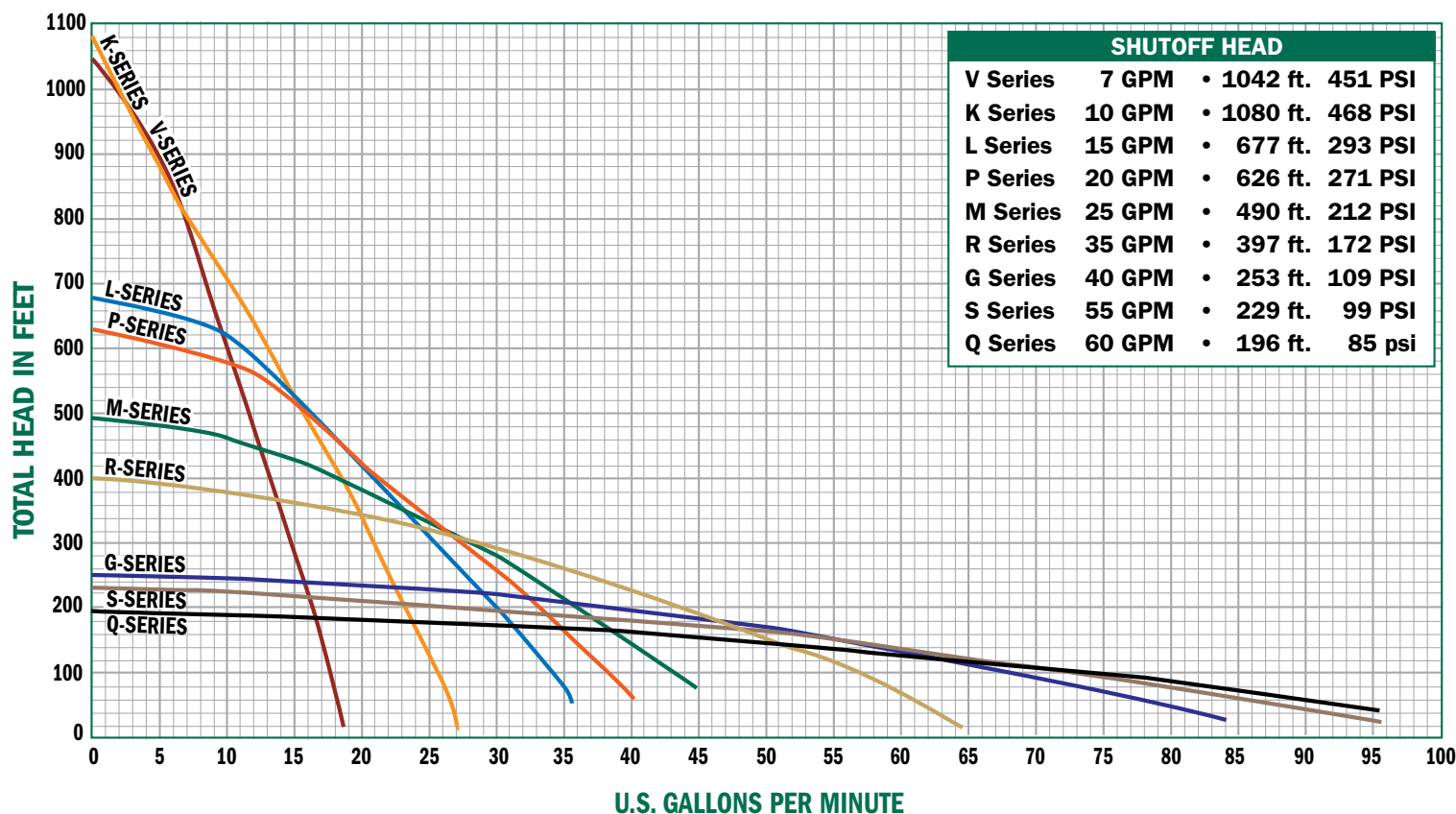
SubDrive 30 constant pressure controller is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1 1/2 HP pump end mounted to a 3 HP, 230 volt Franklin Electric three phase motor.

### FEATURES

- Constant water pressure with a wide range of settings (25-80 psi)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- 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
  - Undervoltage
  - Open circuit
  - Overheated controller
  - Underload
  - Locked pump
  - Short circuit
  - Broken pipe detection (NEMA 3R only)



SubDrive30 (NEMA 3R) - Indoor/Outdoor						
Model No.		A.Y. Model # 6617-435 FE Model # 5870205403	Pressure Setting	Factory Present	50 psi (3.4 bar)	
				Adjustment Range	25-80 psi (1.7 - 5.5 bar)	
Input from Power Source	Voltage	208/230 VAC	Operating Conditions <sup>(A)</sup>	Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)	
	Phase In	Single-phase		Relative Humidity	20-95%, condensing	
	Frequency	60/50 Hz		Controller Size <sup>(B)</sup> (approximate)	Outer Dimensions Weight	9 3/4" x 19 3/4" x 5 1/4" (25 x 50 x 13 cm) 26 lbs (11.8 kg)
	Current (max)	23 Amps	For Use With <sup>(C)</sup>		Pump (60 Hz)	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend 3 hp submersible pumpend
	Power Factor	~0.95				
	Power (idle)	5 Watts				
	Power (max)	4.2 kW				
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations				
Output to Motor	Voltage	Adjusts with Frequency		FE Motor	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire 1 1/2 hp three-phase, three-wire 2 hp three-phase, three-wire 3 hp three-phase, three-wire	
	Phase Out	Single-phase (three-wire) OR Three-phase				
	Frequency Range	30-78 Hz (1 1/2 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)				
	Current (max)	10.9 A / phase				
	Wire Gauge Size(s)	#6 - #14* ga.				



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)



NEMA 4 is available in SubDrive 150. Contact Factory for more information.

## Models Available

### No-Lead Brass - 21000 Series



E-Z PAC (N1)	E-Z PAC (N4)	DESCRIPTION
21150VCP1EZ	21150VCP4EZ	V Series, 7 GPM
21150KCP1EZ	21150KCP4EZ	K Series, 10 GPM
21150LCP1EZ	21150LCP4EZ	L Series, 15 GPM
21150PCP1EZ	21150PCP4EZ	P Series, 20 GPM
21150MCP1EZ	21150MCP4EZ	M Series, 25 GPM

N1 = (NEMA 3R), N4 = (NEMA 4)

- All connections 1/4" NPT

### Stainless Steel - 23000 & 24000 Series



E-Z PAC (N1)	E-Z PAC (N4)	DESCRIPTION
23150VCP1EZ	23150VCP4EZ	V Series, 7 GPM
23150KCP1EZ	23150KCP4EZ	K Series, 10 GPM
23150LCP1EZ	23150LCP4EZ	L Series, 15 GPM
23150PCP1EZ	23150PCP4EZ	P Series, 20 GPM
23150MCP1EZ	23150MCP4EZ	M Series, 25 GPM
24150RCP1EZ	24150RCP4EZ	R Series, 35 GPM
24150GCP1EZ	24150GCP4EZ	G Series, 40 GPM
24150SCP1EZ	24150SCP4EZ	S Series, 55 GPM
24150QCP1EZ	24150QCP4EZ	Q Series, 60 GPM

N1 = (NEMA 3R), N4 = (NEMA 4)

- 1 1/4" NPT connection on V, K, L, P, & M Series
- 2" NPT connection on R, G, S, and Q Series

The SubDrive 30 is designed to be part of a system that includes three main components:



**1** Subdrive 30 controller (pressure sensor included)  
NEMA 3R - Part No. 6617-436  
NEMA 4 - Part No. 6617-155



**2** Franklin 3 HP, 230V  
three phase motor  
Part No. 3129-709



**3** Appropriate pump end  
Includes pump end 23150K  
For example:  
23150KCP1EZ

## SUBDRIVE 300 - Pressure Controller

This controller provides constant water pressure using state of the art electronics to drive and enhance the performance of a standard submersible pump. The pressure in a well system is monitored and regulated by the pressure sensor to continually adjust the pump motor speed to meet water supply demands. It eliminates the pressure cycling associated with a conventional well system. SubDrive can deliver dependable constant pressure to provide water well owners with a premium water system.

### APPLICATIONS

SubDrive 300 constant pressure controller is designed for use with a McDonald 3 HP pump end mounted to a 5 HP, 230 volt Franklin Electric three phase motor. Using single-phase input, this innovative variable speed controller can be used to provide constant pressure in applications with a wide range of flow demand including large homes, ground source heat pumps, and sprinkler systems. Also designed to handle high capacities, SubDrive 300 is perfect for larger applications where constant pressure is essential: commercial landscaping, small livestock operations, nurseries, even some rare residential applications.

### FEATURES

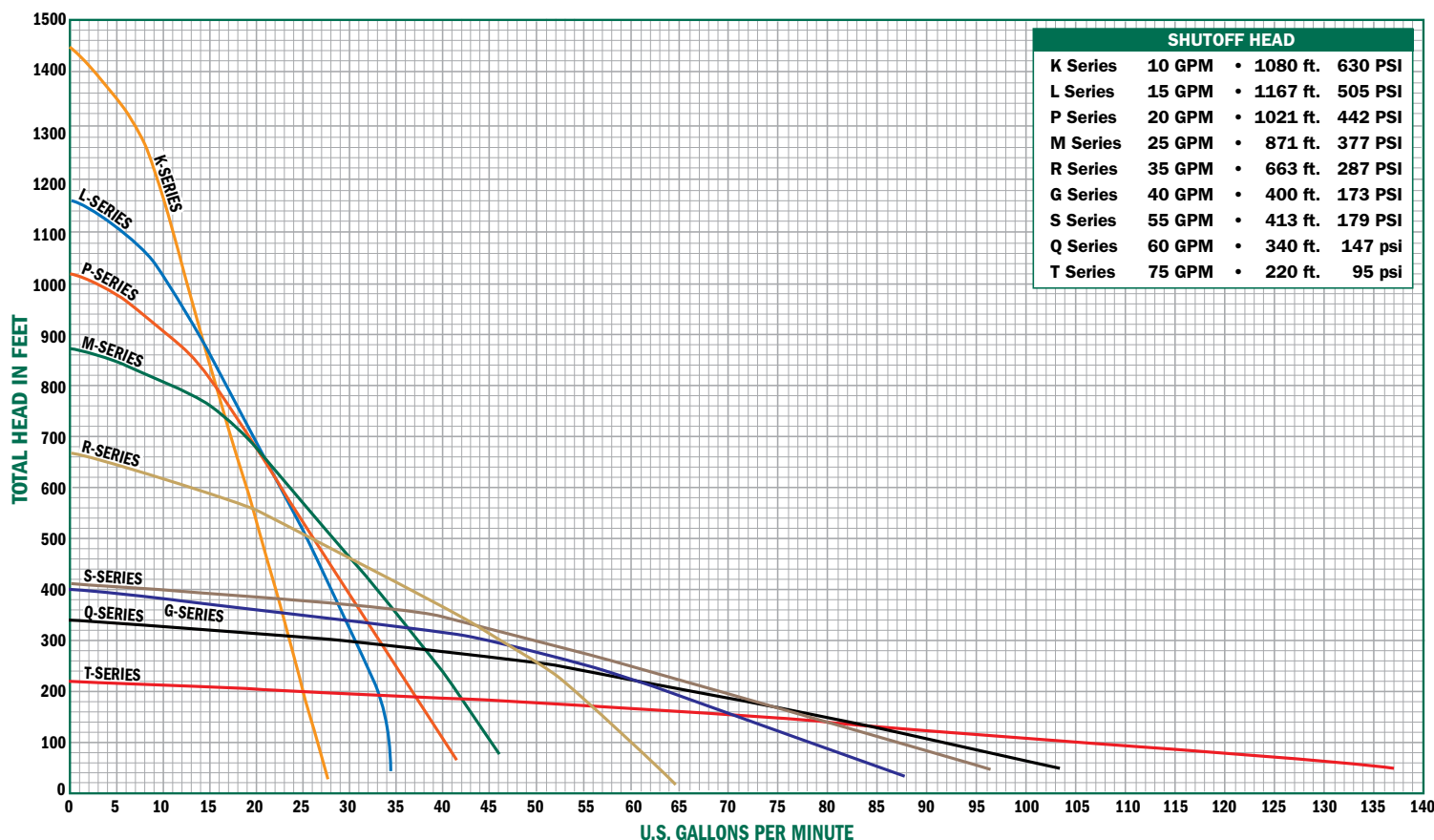
- Constant water pressure with a wide range of settings (25-80 psi)
- Works with a standard pump mounted to a three-phase Franklin Electric submersible motor
- NEMA 4 enclosure
- Smaller pressure tank or existing tank can be used
- Three-phase performance with single phase input
- Soft start means less stress and longer life on motor
- Smart Reset technology allows well recovery before restarting the pump
- Built in protection and diagnostics
  - Surge protection
  - Dry well conditions
  - Underload
  - Undervoltage
  - Locked pump
  - Open circuit
  - Short circuit
  - Overheated controller
  - Controllers are UL & cUL recognized for U.S.A. and Canada



SubDrive300 (NEMA 4) - Outdoor					
Model No.		A.Y. Model # 6617-153 FE Model # 5870206300	Pressure Setting	Factory Present	50 psi (3.4 bar)
				Adjustment Range	25-80 psi (1.7 - 5.5 bar)
Input from Power Source	Voltage	220/260 VAC	Operating Conditions <sup>(A)</sup>	Temperature (at 230 VAC input)	-13°F to 125°F (-25°C to 50°C)
	Phase In	Single-phase		Relative Humidity	100%, condensing
	Frequency	60/50 Hz	Controller Size <sup>(B)</sup> (approximate)	Outer Dimensions Weight	19 7/8" x 17 1/2" x 14 1/4" (50.48 x 44.45 x 36.20) 35.15 lbs (15.94 kg)
	Current (max)	36 Amps (RMS)			
	Power Factor	1.0 (constant)	For Use With <sup>(C)</sup>	Pump (60 Hz)	3 hp submersible pumpend 5 HP submersible pumpend
	Power (idle)	65 Watts		FE Motor	5 hp three-phase, three-wire
	Power (max)	7200 Watts			
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations			
Output to Motor	Voltage	Adjusts with Frequency			
	Phase Out	Three-phase (three-wire)			
	Frequency Range	30-80 Hz (3 hp, 2.2 kW) pump 30-70 Hz (5 hp, 3.7 kW) pump			
	Current (max)	17.8 Amps (RMS, each phase)			
	Wire Gauge Size(s)	#2 - #18* ga.			



# SUBDRIVE 300 - Pressure Controller



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

## Models Available



### No-Lead Brass - 21000 Series

MODEL	DESCRIPTION
21300K3CP	K Series, 10 GPM
21300L3CP	L Series, 15 GPM
21300P3CP	P Series, 20 GPM
21300M3CP	M Series, 25 GPM

- 1 1/4" NPT connection on All Series



### Stainless Steel - 23000 & 24000 Series

MODEL	DESCRIPTION
23300K3CP	K Series, 10 GPM
23300L3CP	L Series, 15 GPM
23300P3CP	P Series, 20 GPM
23300M3CP	M Series, 25 GPM
24300R3CP	R Series, 35 GPM
24300G3CP	G Series, 40 GPM
24300S3CP	S Series, 55 GPM
24300Q3CP	Q Series, 60 GPM
24300T3CP	T Series, 80 GPM

- 1 1/4" NPT connection on V, K, L, P, & M Series  
- 2" NPT connection on R, G, S, Q and T Series

The SubDrive 300 is designed to be part of a system that includes three main components:



**1** Subdrive 300 controller  
(pressure sensor included)  
NEMA 4 - Part No. 6617-153



**2** Franklin 5 HP, 230V  
three phase motor  
Part No. 3129-718



**3** Appropriate pump end  
Includes pump end 23300K  
For example:  
23300K3CP

## SUBDRIVE 2W

Designed to handle single-phase, two wire pumping systems up to 1 HP, the SubDrive 2W is a constant pressure system that offers outdoor rated NEMA 3R enclosure protection.

The SubDrive 2W is designed to convert a conventional 1/2 HP, 3/4 HP, and 1 HP pump system to a variable speed constant pressure system by simply replacing the pressure switch. Maximum pump output using the SubDrive 2W is similar to the performance achieved using a conventional pressure switch. Therefore, the pump selection criteria are the same as if a pressure switch were used.

### APPLICATIONS

Ideal for applications where constant pressure is desirable, such as: residential water systems, landscaping, water treatment, and geothermal applications where a two-wire motor is currently installed.

### FEATURES

- Single-phase, two wire motor, constant pressure, 230 volt
- 1/2 HP, 3/4 HP, or 1 HP Performance
- Easy to install NEMA 3R rated enclosure
- Plug & play
- Built-in diagnostic protection
- UL & cUL Listed



SubDrive 2W (NEMA 3R) - Indoor/Outdoor					
Input from Power Source	Model No.	A.Y. Model # 6617-164 FE Model # 5870203223	Pressure Setting	Factory Present	50 psi (3.4 bar)
				Adjustment Range	25-80 psi (1.7 - 5.5 bar)
	Voltage	207/260 VAC	Operating Conditions <sup>(A)</sup>	Temperature (at 230 VAC input)	-13°F to 125°F (-25°C to 50°C)
	Phase In	Single-phase		Relative Humidity	10-95%, condensing
	Frequency	60/50 Hz	Controller Size <sup>(B)</sup> (approximate)	Outer Dimensions Weight	12 1/4" x 16 1/2" x 9" (31.1 x 41.9 x 22.9 cm) 15.0 lbs (6.80 kg)
	Current (max)	14 Amps (RMS) (For circuit breaker sizing)			
	Power Factor	0.7 (approximate)	For Use With <sup>(C)</sup>	Pump (60 Hz)	1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend
	Power (idle)	20 Watts		FE Motor	Not Available
Output to Motor	Power (max)	1900 Watts			
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations			
	Voltage	Adjusts with Frequency			
	Phase Out	Single-phase (two-wire)			
	Frequency Range	30-60 Hz			
	Current (max)	6 Amps (RMS) 1/2 hp, 0.37 kW system 8 Amps (RMS) 3/4 hp, 0.55 kW system 10.4 Amps (RMS) 1 hp, 0.75 kW system			
	Wire Gauge Size(s)	#6 - #18* ga.			

# E-Z Pac Package

A.Y. McDonald's E-Z Pac Package is designed to make installing a constant pressure system even easier. The package includes the motor, pump, drive, and is available with the SubDrive 15, 20, 30, 75, 100, and 150.

## FEATURES

- Selection based on flow requirement
- System-specific performance curve
- Available in NEMA 3R or NEMA 4 rated enclosures



## Models Available

### SubDrive - NEMA 3R

5 GPM	7 GPM*	10 GPM*	15 GPM*	20 GPM*	25 GPM*	35 GPM	40 GPM	55 GPM	60 GPM
	23075VCP1EZ	23075KCP1EZ	23075LCP1EZ	23075PCP1EZ	23075MCP1EZ				
	23100VCP1EZ	23100KCP1EZ	23100LCP1EZ	23100PCP1EZ	23100MCP1EZ	24100RCP1EZ			24100QCP1EZ
	23150VCP1EZ	23150KCP1EZ	23150LCP1EZ	23150PCP1EZ	23150MCP1EZ	24150RCP1EZ	24150GCP1EZ	24150SCP1EZ	24150QCP1EZ
24075JCP1EZ	24075VCP1EZ	24075KCP1EZ	24075LCP1EZ	24075PCP1EZ					
	24100VCP1EZ	24100KCP1EZ	24100LCP1EZ	24100PCP1EZ	24100MCP1EZ				
	24150VCP1EZ	24150KCP1EZ	24150LCP1EZ	24150PCP1EZ	24150MCP1EZ				

### SubDrive - NEMA 4

5 GPM	7 GPM*	10 GPM*	15 GPM*	20 GPM*	25 GPM*	35 GPM	40 GPM	55 GPM	60 GPM
	23075VCP4EZ	23075KCP4EZ	23075LCP4EZ	23075PCP4EZ	23075MCP4EZ	24075RCP4EZ			
	23100VCP4EZ	23100KCP4EZ	23100LCP4EZ	23100PCP4EZ	23100MCP4EZ	24100RCP4EZ			24100QCP4EZ
	23150VCP4EZ	23150KCP4EZ	23150LCP4EZ	23150PCP4EZ	23150MCP4EZ	24150RCP4EZ	24150GCP4EZ	24150SCP4EZ	24150QCP4EZ
24075JCP4EZ	24075VCP4EZ	24075KCP4EZ	24075LCP4EZ	24075PCP4EZ					
	24100VCP4EZ	24100KCP4EZ	24100LCP4EZ	24100PCP4EZ	24100MCP4EZ				
	24150VCP4EZ	24150KCP4EZ	24150LCP4EZ	24150PCP4EZ	24150MCP4EZ				

\*Also available in brass - contact factory for model number

[illegible]

[illegible]



A.Y. McDonald Mfg. Co. is a leading manufacturer of Waterworks Brass, Plumbing Valves, Pumps and Water Systems, and High Pressure Gas Valves and Meter Bars. The Company has distinguished itself with a proud tradition of quality and reliability since its founding in 1856.

The mission of A.Y. McDonald Mfg. Co., in the words of our founder, is “to make good products and sell them honestly.” We, the stockholders and employees, accomplish this by extending the McDonald family culture through excellent customer service and by focusing on our customers’ needs.



**WARNING:** It is unlawful in **CALIFORNIA & VERMONT** (effective 1/1/2010); **MARYLAND** (effective 1/1/2012); **LOUISIANA** (effective 1/1/2013) and the **UNITED STATES OF AMERICA** (effective 1/4/2014) to use any product in the installation or repair of any public water system or any plumbing in a facility or system that provides water for human consumption if the wetted surface area of the product has a weighted average lead content greater than 0.25%. This prohibition does not extend to service saddles used in California, Louisiana or under USA Public Law 111-380.

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