SubDrive HPX Quick Reference Guide

For Constant Pressure Operations (5 - 200 hp Standalone)

Set Up Directions

For all other motors use nameplate full load amps.

Note: The unit has been setup with a minimum and maximum value viewable at the bottom of the SF Amps screen.

▶ Motor RPM (Surface motor must be selected for this option)

Enter the motor RPMS from the nameplate data.

▶ Motor Confirm

Used to confirm (save) the settings above. Toggle to Yes to confirm motor selections. Drive will not operate until confirmation is made. Modbus add Prg. C is not used.

4. Set Up for Constant Pressure Operations

(Consult "SubDrive HPX Menu Screen Map" for other modes of operation.)

▶ Franklin Elec ▶ Menu Select ▶ Cntl Mode

Choose desired control configuration (here we use constant pressure as an example)

▶ Control Mode ▶ Press Reg

▶ PSI – Select to view pressure units as PSI

▶ BAR – Select to view pressure units as Bar

▶ Xducer – Enter pressure rating for transducer (default = 100 psi/bar)

▶ PSI Targt1 – Enter desired pressure target (default = 50 psi/bar)

▶ Limit Lvl – Enter desired psi drop before restart (default = 5 psi/bar)

5. Connect Motor Leads

Connect motor leads to the Output Power Terminal at "U/T1", "V/T2", and "W/T3"

Connect the ground to one of the ground leads at the bottom of the unit.

6. Activate Switch

▶ Drive Menu ▶ Franklin Elec ▶ Menu Select ▶ Cntl Mode ▶ Switch 1 Mode

▶ Run Open

Pump will start if Switch 1 is open (e.g. for constant pressure, pressure in the system is above or below the target pressure)

7. Unlimited Parameter Access

Used to gain access to multiple drive parameters.

▶ Main Menu

▶ Access Level

▶ Expert

Franklin Electric

400 E. Spring St., Bluffton, IN 46714
Tel: 260.824.2900 • Fax: 260.824.2909
www.franklin-electric.com

225948101 M1579 Rev. 1 08-11

Set Up Directions (continued)

1. Follow these steps before starting set up:

1. Disconnect motor leads
2. Connect Transducer
3. Power up the drive
4. Status Screen will be displayed, push Navigation Button/Dial to get into the Main Menu

"▼" means to scroll to the proper item (rotate the navigation dial) and enter the selection (push down the round navigation dial)

"ESC" means press the ESC button on the terminal

2. Set Date and Time

▶ Main Menu ▶ Drive Menu ▶ Franklin Elec ▶ Date/Time Settings

Set time and date (FORMAT = day/month/year), move to the right or left using F2 and F3 buttons, and push Navigation Button/Dial to set the number or ESC

3. Choose Desired Motor

▶ Main Menu ▶ Drive Menu ▶ Franklin Elec

Verify Menu Select is set to Motors

▶ Input Power

1-phase (only available on select 230 V/460 V drives)

3-phase

▶ Motor Type

Submersible 60 Hz (SubM 60 Hz)

Surface 60 Hz (SurF 60 Hz)

Submersible 50 Hz (SubM 50 Hz)

Surface 50 Hz (SurF 50 Hz)

▶ Motor Size

Enter horsepower (hp) or kilowatts (kW) [50 Hz only] of the motor

▶ Motor Volts

Enter the rated Motor Voltage

▶ N/P Amps

Enter the rated Motor Amps. For Submersible 60 Hz applications use the Service Factor (SF) amps on the motor nameplate or from the AIM manual.

Description and Operation:

A **Display Status:** Displays default settings. Display content can be configured.
B **Menu Line:** Displays the name of the current menu or submenu.
C **Submenus:** Lists the submenus of the current menu.
D **Scroll Boxes:** Indicates (by arrow direction) whether there are additional submenus or levels to access. A blank box indicates there are no additional submenus or levels to access.
E **Status Line:** Displays the functions assigned to function buttons F1 to F4.
F **Function buttons:**
F1 - Displays the code of the selected parameter or Help info.
F2 - Navigate to left or right OR returns to previous menu.
F3 - Navigate to left or right OR advances to the next menu.
F4 - Command and reference via the terminal.
G **Red Stop/Reset Button:** Using this button will stop the drive. Input power must be cycled to restart the drive.
H **ESC Button:** Exits a menu or parameter, or cancels a value to return to the previous value in memory.
I **Green Run Button:** Currently disabled. Do not use.
J **Navigation Button/Dial:** "Push and Turn" dial to navigate within menu screens or to change parameters of values.
K **FWD/REV Button:** Currently disabled. Do not use.

Connections:

Power:
- Connect power leads to the Input Power Terminal at "R/L1", "S/L2", and "T/L3"
- Connect the ground to one of the ground leads at the bottom of the unit.

Motor Leads:
- Do not connect motor leads at this time.

Controls/Pilot Device:

Pressure Transducer

For 2-wire with shield (4-20 ma) transducers, connect the black lead (-) to the "AI2" terminal on the Control Terminal Block, and the red lead (+) to:
- The "+10" terminal for 10 volt transducers
- The "+24" terminal for 24 volt transducers

Note: There will be a jumper between the CIC Terminal block ("24 V") and the Control Terminal Block ("PWR"). **Do not remove this jumper cable.**

Transducer Connection

CAUTION: Adhere to the safety guidelines (maximum pressure rating) of the pressure tank in the system, while making sure to install the tank and sensor per applicable codes and also including a pressure relief valve.

Transducer Types

SubDrive HPX Quick Reference Guide

Menu Screen Map

MAIN MENU
DRIVE MENU
ACCESS LEVEL
OPEN/SAVE AS
PASSWORD
LANGUAGE
MONITORING CONFIG.

DRIVE MENU
SIMPLY START
MONITORING
SETTINGS
MOTOR CONTROL
INPUTS/OUTPUTS CFG
COMMAND
APPLICATION FUNCT.
FAULT MANAGEMENT
COMMUNICATION
DIAGNOSTICS
IDENTIFICATION
FACTORY SETTINGS
Franklin Elec

Franklin Elec		
Control Type	:	Franklin
Pressure or Flow	:	0 PSI/Bar or 0%
Menu Select	:	Motors
		Cntl Mode
		Parameter
		Data Log

Motors			
Control Type	:		Franklin
Pressure or Flow	:		0 PSI/Bar or 0%
Menu Select	:		Motors
Input Power			1-phase
			3-phase
Motor Type	:	SubM 60 Hz	Motor Size
			Motor Volts
			SF Amps
			Motor Confirm
		SurF 60 Hz	Motor Size
			Motor Volts
			SF Amps
			RPMs
			Motor Confirm
		SubM 50 Hz	Motor Size
			Motor Volts
			N/P Amps
			Motor Confirm
		SurF 50 Hz	Motor Size
			Motor Volts
			N/P Amps
			RPMs
			Motor Confirm
Modbus add Prg C.	:		OFF
DATE/TIME SETTINGS	:		

Notes:
-
A readout of the pressure or flow transducer
-
1-phase option is only available on select 230 V and 460 V drives
Size, in hp (5 - 200 hp)
Motor Voltage 200-575 V
Service Factor Amps: 4-500 A
No/Yes: set to "Yes" to enforce motor settings
Size, in hp (5 - 200 hp)
Motor Voltage 200-575 V
Service Factor Amps: 4-500 A
Motor RPM Rating
No/Yes: set to "Yes" to enforce motor settings
Size, in kW (3.7-250 kW)
Motor Voltage 200-575 V
Nameplate Amps: 4-500 A
No/Yes: set to "Yes" to enforce motor settings
Size, in kW (3.7-250 kW)
Motor Voltage 200-575 V
Nameplate Amps: 4-500 A
Motor RPM Rating
No/Yes: set to "Yes" to enforce motor settings
Do not adjust
Adjust date and time

Cntl Mode				
Control Type	:		Franklin	
Pressure or Flow	:		0 PSI/Bar or 0%	
Menu Select	:		Cntl Mode	
Switch 1 Mode	:		Not Used	✓
			Trp-Open	
			Trp-Close	
			Run Open	
			Run Close	
			FLW Open	
			FLW Close	
			Sec Targt	
Switch 2 Mode	:		Not Used	✓
			Trp-Open	
			Trp-Close	
			Run Open	
			Run Close	
			FLW Open	
			FLW Close	
			Sec Targt	
Control Mode	:	Switch Cn	PSI	
			Bar	
			Xducer	
		Press Cyc*	PSI	
			Bar	
			Xducer	
			PSI Targt1	
			PSI Targt2	
			Limit Lvl	
		Flow Cntl*	FL Targt1	
			FL Targt2	
		Press Reg*	PSI	
			Bar	
			Xducer	
			PSI Targt1	
			PSI Targt2	
			Limit Lvl	
			Pipe Fill Ena	
			Pipe Fill Tgt	
			Pipe Fill Spd	
			Pipe Fill Tim	
		Level Cnt	PSI	
			Bar	
			Xducer	
Modbus add Prg C.	:	OFF		
DATE/TIME SETTINGS	:			

Notes:
-
A readout of the pressure or flow transducer
-
Switch 1 Mode is selected using a check mark (default is “Not Used”)
Switch 2 Mode is selected using a check mark (default is “Not Used”)
Select Yes for PSI units
Select Yes for Bar units
Dial in the transducer range (in psi/bar)
Select Yes for PSI units
Select Yes for Bar units
Dial in the transducer range (in psi/bar)
Dial in the Targt1 pressure target (in psi/bar)
Dial in the Targt2 pressure target (in psi/bar)
Dial in the Lvl Limit (in psi/bar)
Dial in the flow target 1 (in % of the flow meter full scale rating - i.e. at the max 20 mA output)
Dial in the flow target 2 (in % of the flow meter full scale rating - i.e. at the max 20 mA output)
Select Yes for PSI units
Select Yes for Bar units
Dial in the transducer range (in psi/bar)
Dial in the Targt1 pressure target (in psi/bar)
Dial in the Targt2 pressure target (in psi/bar)
Dial in the Lvl Limit (in psi/bar)
Enable/Disable Pipe Fill Feature
Pipe Fill Pressure Target (in psi/bar)
Pipe Fill Fixed Motor Speed
Time that Pipe fill remains active
Select Yes for PSI units
Select Yes for Bar units
Dial in the transducer range (in psi/bar)
Do not adjust
Adjust date and time

*Display option depends on mode selected

Data Log		
Control Type	:	Franklin
Pressure or Flow	:	0 PSI/Bar or 0%
Menu Select	:	Data Log
Run Time	:	
Lst Prm Chg	:	---------
dd/mm - 13:16	:	Mtr Typ
Cntrl. Faults	:	---------
Clear Log	:	
dd/mm - 13:18	:	Restart E
dd/mm - 13:18	:	Drive Fault
etc.	:	
Modbus add Prg C.	:	OFF
DATE/TIME SETTINGS	:	

Notes:
-
A readout of the pressure or flow transducer
-
Dial in the run time (in minutes)
-
-
-
Choose “Yes” or “No”
-
-
Do not adjust
Adjust date and time

Parameter		
Control Type	:	Franklin
Pressure or Flow	:	0 PSI/Bar or 0%
Menu Select	:	Parameter
Undrload Trip	:	---------
Trip Point	:	
Idle Time	:	
Restarts	:	
Other Trps	:	---------
Idle Pst Trp	:	
Restarts	:	
Enables	:	---------
Dip Test	:	
Bump	:	
Quick Stp	:	
Timers	:	---------
Idle	:	
SW1 Delay	:	
SW2 Delay	:	
NFD Timer	:	
Hertz	:	---------
Max	:	
Min	:	
Hand	:	
Accel	:	
Cntrl Loop	:	---------
Proportionl	:	
Rst Rate	:	
EFlex Ctrl	:	---------
EFlex Ctrl Enble	:	
Software Ver	:	---------
HPX Version Number	:	
Reset Timers	:	
Modbus add Prg C.	:	OFF
DATE/TIME SETTINGS	:	

Notes:
-
A readout of the pressure or flow transducer
-
-
Dial in the trip point (in %)
Dial in the idle time (in minutes)
Dial in the number of restarts after underload trip
-
Dial in the idle time post trip (in minutes)
Dial in the number of restarts after all other trips (other than underload)
-
Choose “Yes” or “No” (“Yes” defeats Bump)
Choose “Yes” or “No” (“Yes” defeats Dip Test)
Choose “Yes” or “No”
-
Dial in the idle time after shutdown (in minutes)
Dial in the SW1 delay (time-out in seconds)
Dial in the SW2 delay (time-out in seconds)
Dial in the NFD timer (in seconds)
-
Dial in max Hertz
Dial in min Hertz
Dial in manual speed control limit
Dial in acceleration (in Hz/s)
-
Dial in proportional gain (in %)
Dial in rst rate (in minutes)
-
Choose “Yes” or “No”
-
S/W Version Number, DateCode for release
Choose “Yes” or “No” (“Yes” clears equipment timers to allow equipment to restart immediately for test purposes. Must be set to “Yes” each time.)
Do not adjust
Adjust date and time