Southeast Drilling Services, Inc.

January 21, 2021
Updated (June 28, 2222021)

VIA EMAIL: Duke39@aol.com

Mr. Jerry Houston
Clearwater Executive Golf Course
1875 Airport Drive
Clearwater, Florida 33765

Re: Revised Quote for 40 HP Irrigation Booster Pump and Motor, VFDs and Electrical Upgrade with HDPE from Mondragon

Southeast is pleased to provide the following proposal for services at the referenced facility:

Mechanical

1. Provide equipment and crew to install centrifugal pump, piping, and fittings.
2. Furnish new 40 HP centrifugal pump; 600 gpm @ 175 ft of head (75 psi boost) with Premium Efficiency Motor (recommended to use with VFD).
3. Furnish 6-inch C-900 PVC pipe for discharge between new pump and existing piping system.
4. Furnish 6-inch Ductile Iron Pipe and fittings above ground to connect ~~and replace the existing piping from the existing well and irrigation main connection point~~ (DIP to HDPE), note HDPE will be used in this proposal for the bulk of piping.
5. Fittings above ground will be flanged; fittings below ground will be mechanical joint as necessary to accommodate HDPE and flanged fittings.
6. All joints will be restrained as necessary
7. Form and pour concrete pedestal to support pump and pipe supports with steel straps
8. Centrifugal pump to be located on existing pad with housekeeping pad and vibration isolator as necessary
9. Provide and install 2 6-inch flange totalizing/indicating flowmeters

10614 E US Hwy 92, Tampa, FL 33610 (813) 968-7277 (813) 443-0530 Fax

10. 4” Double check OSY back flow preventer at production well
11. New HDPE piping to be provided from well discharge head over to new centrifugal pump and to existing irrigation main
12. Remove existing fertilizer tank
13. Piping layout, valves, flow meter, etc are per the proposed station sketches attached
14. ***In this revision***, above ground and below ground piping has changed to HDPE material in all locations where practical as noted in the attached sketches by SED and Mondragon Golf. Note some minor adjustments may be required once authorized to proceed and we review this modification in detail.

Electrical

1. Permits and inspections
2. New rack with concrete posts and stainless steel Unistrut
3. 2 New VFDs (50 hp for submersible and 40 hp for centrifugal) including programming start up and testing
4. 2 Pressure transducers for termination with VFDs
5. NEMA 3R disconnect breaker and grounding system
6. New conduits and wire to each motor
7. Phase in installation to minimize down time

Excluded from Scope

1. Electrical demo of existing system
2. Final coatings, new DIP to be provided with base primer, owner to apply final coat
3. Removal or existing jockey pump or plugging of 4-inch well
4. PLEASE NOTE WITH CURRENT SUPPLY CHAIN ISSUES, OUR SUPPLIERS ARE ONLY HOLDING PRICING FOR 14 DAYS.

Total Revised Lump Sum Cost $116,200.00

If this proposal is acceptable, please sign the space provided below and FAX back to 813-443-0530 or email to bill.ziegler@southeastdrilling.net. Should you have any questions or require further information with this matter, please do not hesitate to call me at 813-968-7277 or my cell at 813-390-4233.

Sincerely,
Bill Ziegler
Vice President

Approved By:

_____, Date

Cc: File

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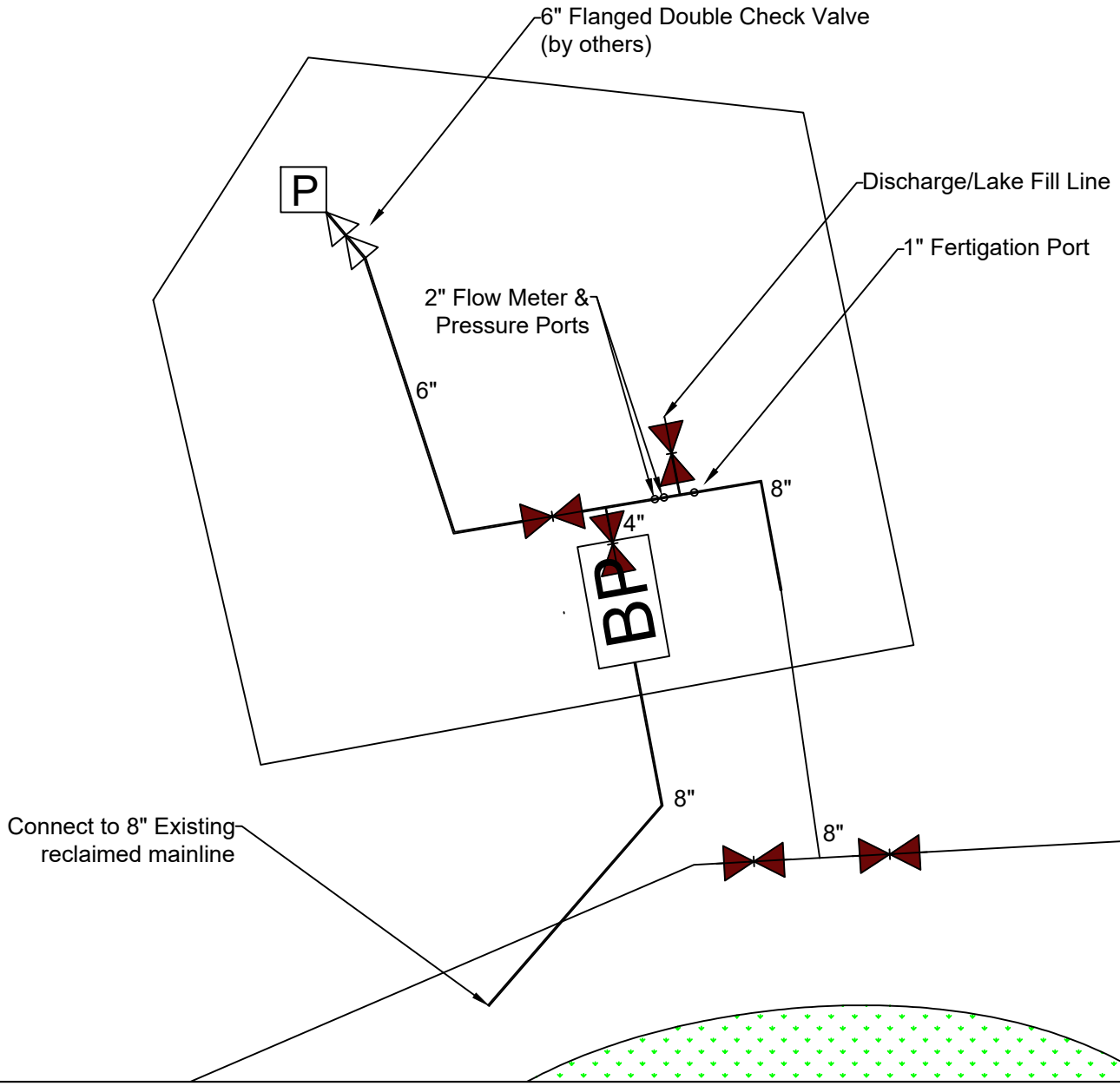


Mondragon Golf, Inc.
5813 US Highway 17 S.
Bartow, FL 33830
Tel: (863) 8003255
Fax: (863) 800-3279
mondragongolf@earthlink.net
www.mondragongolf.com

The Landings Golf

Pump Station Intake & Discharge

Proj#:021060309TLG

Drawn By: Mauro

Date: 06/03/2021

Checked by:

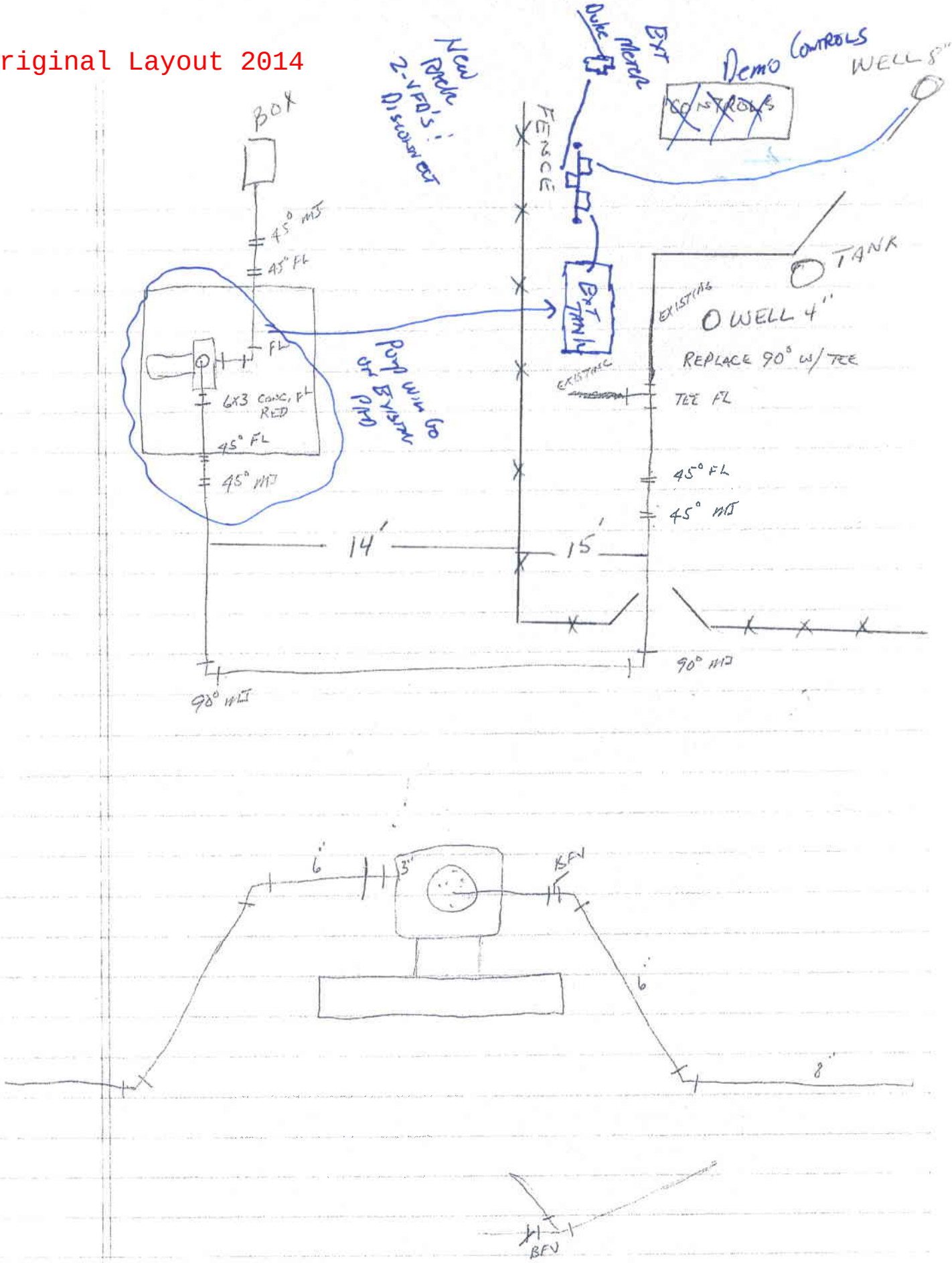
Revisions

Date:	By:	Revision:
/	.	:
/	.	:

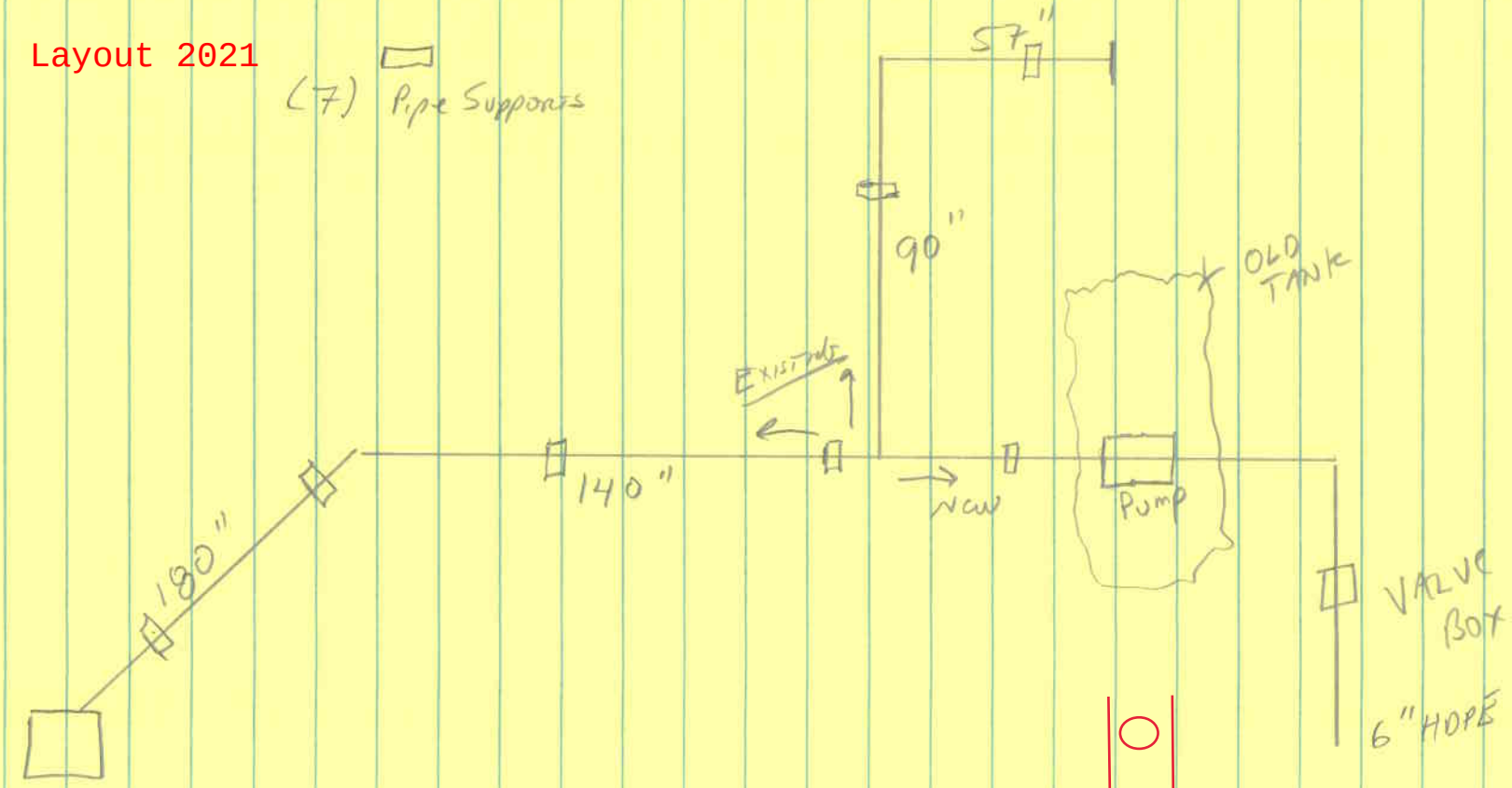
Page Title: Overview

Scale: 1 = 10

Original Layout 2014

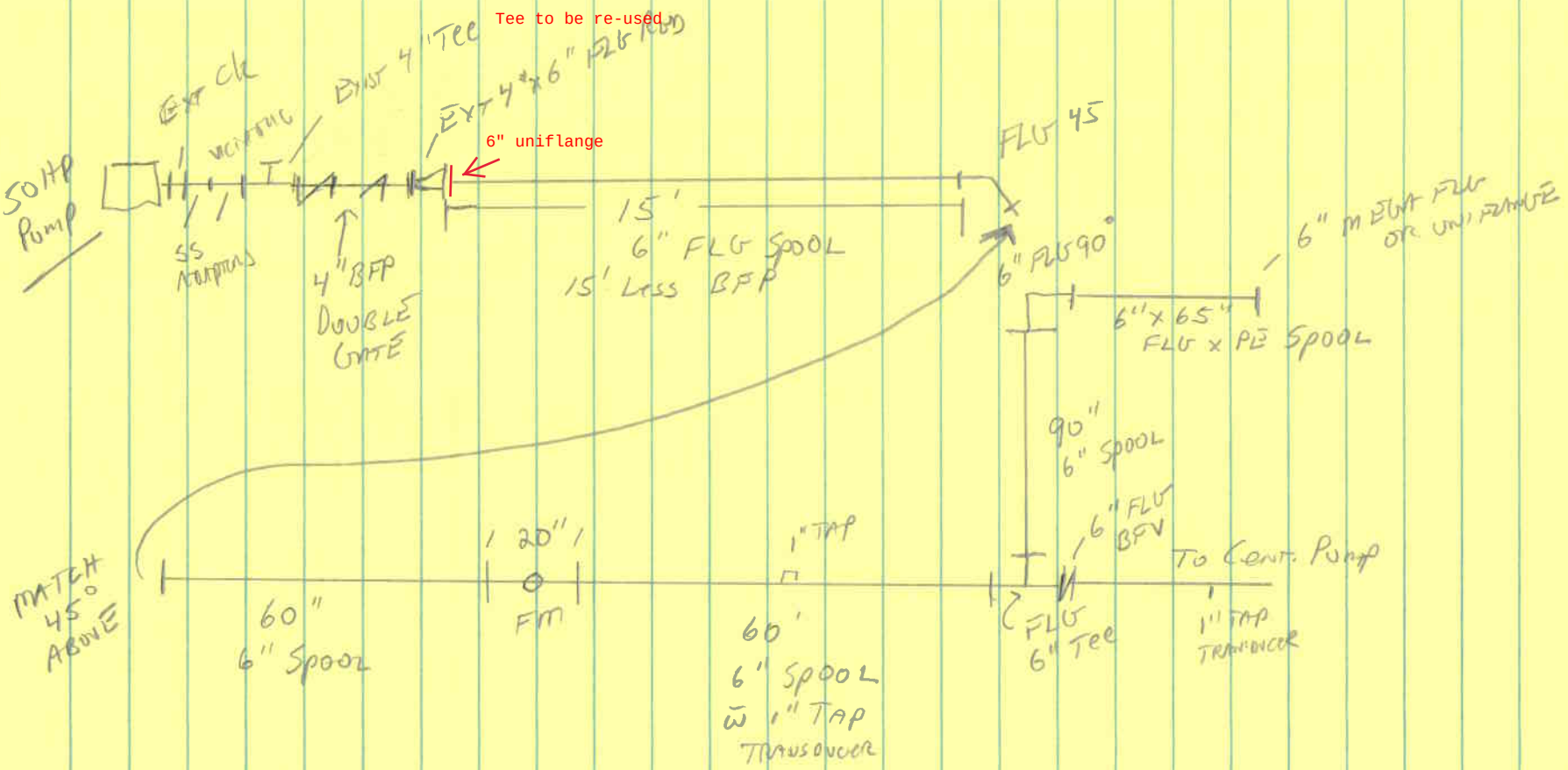


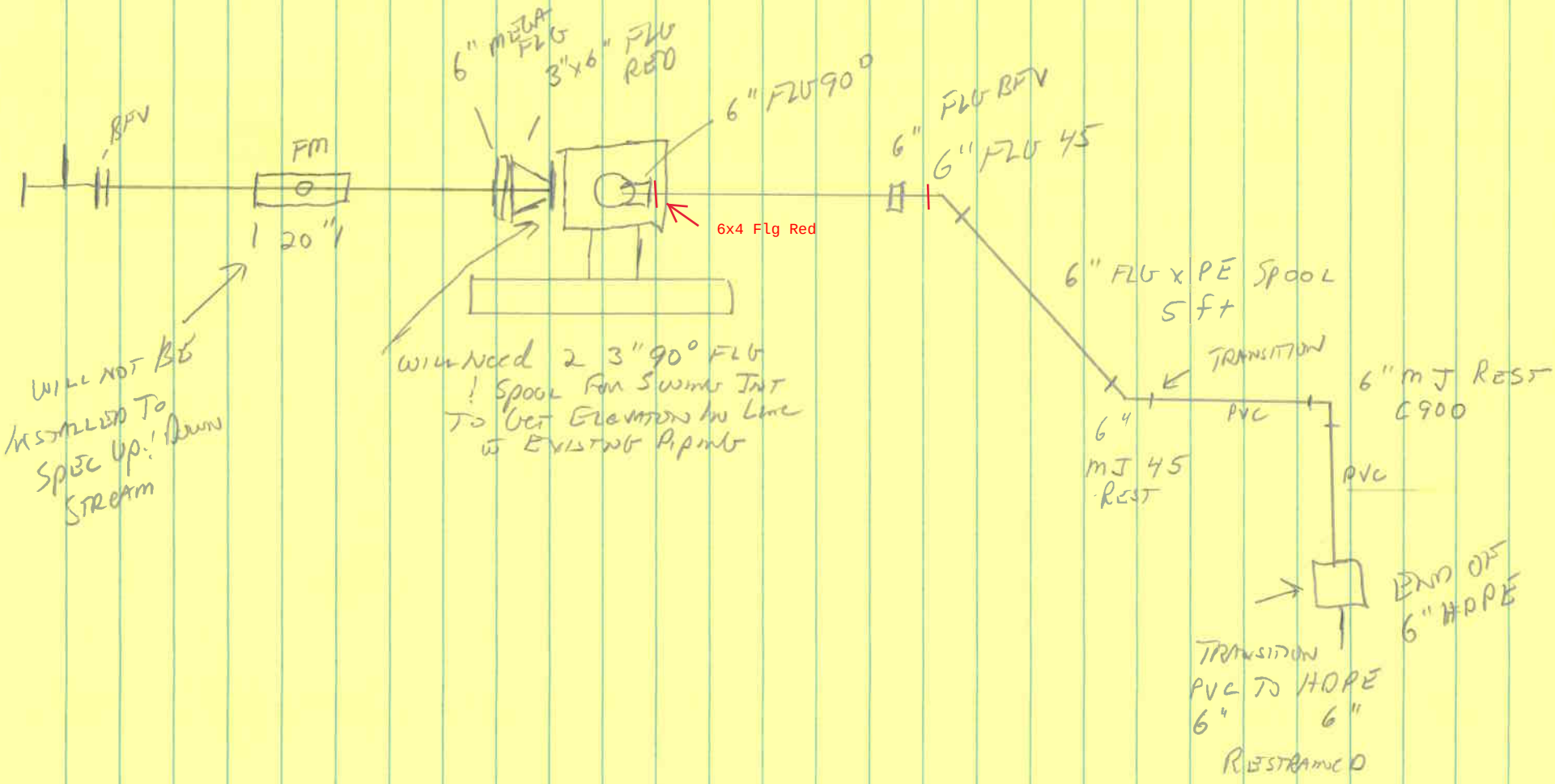
Layout 2021



Electrical rack

disconnect and VFDs


Tee to be re-used
6" uniflange
SOHP Pump
EXT Clr
EXT 4" Tee
EXT 4"x6" PLE Rdcr
SS Adapters
4" BFP Double Gate
15'
6" FLG Spool
15' Less BFP
FLG 45
6" PLE 90°
6" x 65"
FLG x PLE Spool
90°
6" Spool
6" FLG BFV
To Cent. Pump
1" TAP
20"
FM
60"
6" Spool
60'
6" Spool
w 1" TAP
Transducer
FLG
6" Tee
1" TAP
Transducer
MATCH 45° ABOVE


6" MEGA FLG
3"x6" FLG RED
6" FLG 90°
6" FLG BFV
6" FLG 45
BFV
FM
20'
6x4 Flg Red
6" FLG x PE Spool
5 ft
TRANSITION
6" MJ REST C900
PVC
6" MJ 45 REST
PVC
END OF 6" HDPE
TRANSITION PVC TO HDPE
6" 6"
REGISTRANCO
WILL NOT BE INSTALLED TO SPEC UP! DOWN STREAM
WILL NEED 2 3" 90° FLG & SPOOL FOR SWING JNT TO GET ELEVATION TO LINE UP W EXISTING PIPING

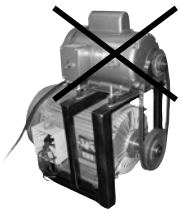
P-SERIES VFD (VARIABLE FREQUENCY DRIVE)

VARIABLE SPEED CONTROL IS JUST THE BEGINNING

Everyone knows variable frequency drives save you money by varying motor speed to match demand. Our automatic energy savings mode minimizes losses by optimizing the output power for higher efficiency. Under low load conditions, Sleep Mode deactivates the drive and its output – then awakens and reactivates output when demand rises to unlock additional savings. It also extends the life of the equipment.

STANDARD FEATURES (ENCLOSED DRIVES)

- Selectable V/F, sensorless vector control
- For outdoor and/or wash down applications
- Rainproof NEMA 3R enclosure reduces thermal absorption with white, solar reflective finish and filtered cooling fans
- Standard VFD package is rated for 110 °F ambient temperature in non-direct sunlight.
- Additional application-specific protective devices included (i.e. line reactors, load reactors, and dV/dT filter)
- Franklin FastApp™ Firmware
  - Quick and easy set-up for submersible and centrifugal packages
  - Display uses pump specific terminology
- Pump Specific Protection and Features
  - Broken pipe detection
  - Dry-well/Underload detection with well refill timer
  - Pipe fill (Pre-PID) - VFD ramps up to Pre-PID frequency and fills pipes without pressurizing system and hydraulic surges
  - Sleep mode and wake up functions with pressure boost
  - Automatic energy savings mode
  - Flying start protection prevents trips, rough starts, and drive damage from regenerative power due to heavy inertia rotation
- Custom Packages Available
  - Alternative enclosure options (NEMA 1, NEMA 12, NEMA 4X)
  - Multi-motor/pump packages
  - Customizable control options



NO NEED FOR
ROTO-PHASE CONVERTERS!

FRANKLIN CONTROL SYSTEMS

P-SERIES VFD (VARIABLE FREQUENCY DRIVE)

EASY START-UP WITH FASTAPP PROGRAMMING

Franklin Control Systems drive packages come pre-programmed for submersible or surface motors with pre-set parameters based on your specific application. To watch a start-up video of the basic wiring and programming of a P-Series VFD for a submersible application, scan the QR code below or go to www.franklin-controls.com.

ANY JOB, ANY ENVIRONMENT

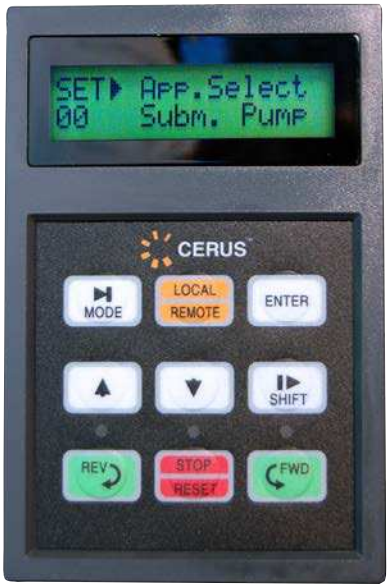
From corrosive environments to long motor leads to soaring temperatures, we can engineer a panel to fit nearly any application in any location. Our standard packages usually fit the bill, but if your job poses unique challenges, our engineers are up to the task.

1- TO 3-PHASE CONVERSION

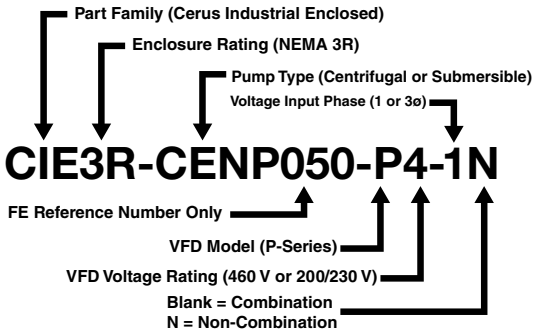
Franklin has solutions for 230 V or 460 V, 1Ø to 3Ø conversion - no need for a roto-phase converter and pump starter combo. By doubling the hp of your motor to size your VFD (20 hp motor = 40 hp VFD), the conversion is complete. All you need is one Franklin VFD.

NEW & IMPROVED FEATURES

- Alternating Lead-Lag Control - Two motors, no external PLC needed
- Dual Demand Control - Drive senses when to switch to second set point on applications feeding two systems
- Adaptive Dry Well Protection - Automatic determination of well recovery time
- Water Lubrication Timer
- Auxiliary Timer
- No Flow Protection
- Screen Cleaning
- Backspin Timer
- Pipe Leak (Cycling Protection)
- Speed Limit by VFD Temperature (to avoid overheat nuisance trips)
- Motor Overheat Protection
- Relay Activated by Analog Level
- Speed Limit by Well Water Level
- Two-transducer redundancy



PART NUMBER ANATOMY



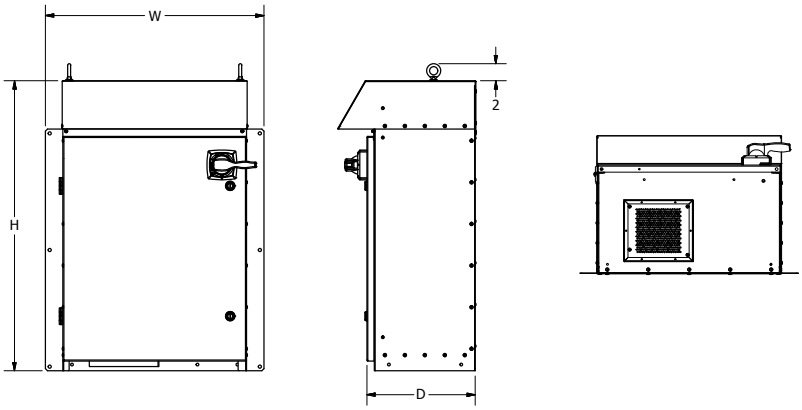
Scan for start-up video

NEW & IMPROVED TYPE 3R ENCLOSURES!

FEATURES

- Heavy-duty construction
- Improved dust filter
  - Better protection
  - Easily serviceable
- Smaller footprint
- Eye-bolt lift kit comes standard
- Convenient mounting hole locations and sizes
- Small diameter perforation pattern for ventilation
  - Prevents critter intrusion
- Optional floor mounting kits
  - Field installable without drilling

DIMENSIONS



See page 38 for product specific dimensions.

FRANKLIN CONTROL SYSTEMS

P-SERIES VFD ENCLOSED - NEMA 1 LARGE DRIVE

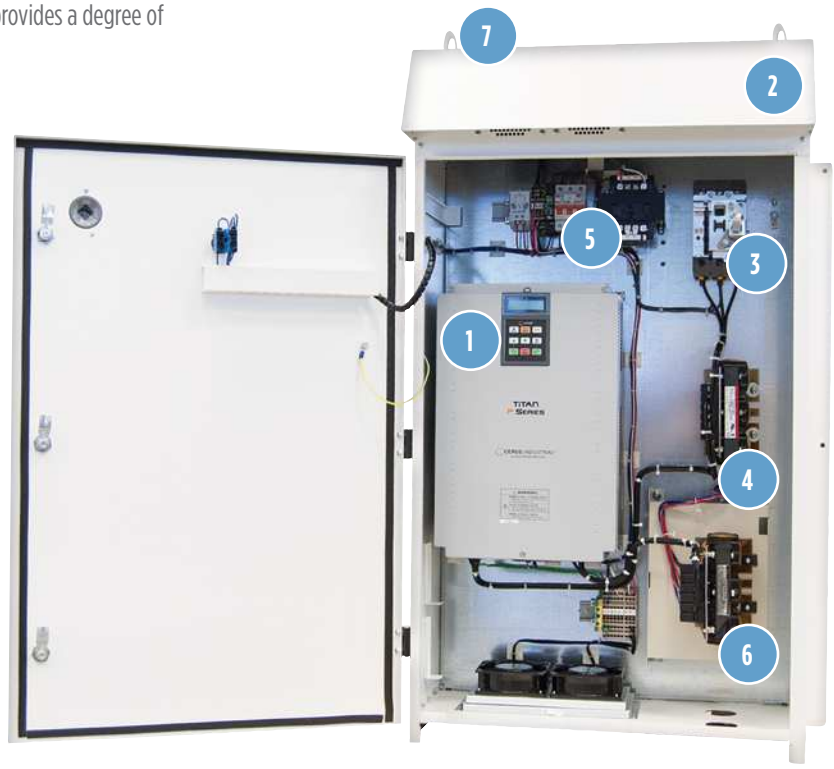
SLIM SPACE-SAVING DESIGN

1. P-Series Pump Optimized VFD
   - 32-character keypad and pre-configured parameters for all common pump applications
2. Indoor NEMA 1 enclosure
3. Disconnect provides short circuit protection and eliminates call backs due to fuse issues
4. Line reactor enhances protection from transient surges and provides a degree of harmonic mitigation
5. Output filter for long motor leads (standard in submersible packages only)

P-SERIES VFD ENCLOSED - NEMA 3R LARGE DRIVE

DESIGNED TO WITHSTAND HARSH ENVIRONMENTS

1. P-Series Pump Optimized VFD
   - 32-character keypad and pre-configured parameters for all common pump applications
2. Rugged outdoor NEMA 3R enclosure with cooling fans and filtration
3. Circuit breaker disconnect eliminates call backs due to fuse issues
4. Line reactor enhances protection from transient surges and provides a degree of harmonic mitigation
5. Control power transformer with breaker protection
6. Output filter for long motor leads
7. Eye-bolt lift kit comes standard



FRANKLIN CONTROL SYSTEMS

P-SERIES VFD ENCLOSED - ORDERING & SIZING INFORMATION

NEMA 1 LARGE DRIVE SUBMERSIBLES (COMBINATION)

Single-Phase & Three-Phase (200-230 V, 480 V), UL/NEMA 3R Enclosure

VOLTAGE	HP	MAX AMPS	MODEL NO.	DESCRIPTION
230 V, 1-PHASE	1	5.5	CIE1-SUBP001-P2-1	NEMA 1, 1 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	2	8	CIE1-SUBP002-P2-1	NEMA 1, 2 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	3	12	CIE1-SUBP003-P2-1	NEMA 1, 3 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	5	17.6	CIE1-SUBP005-P2-1	NEMA 1, 5 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	7.5	25	CIE1-SUBP007-P2-1	NEMA 1, 7.5 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	10	33	CIE1-SUBP010-P2-1	NEMA 1, 10 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	15	48.6	CIE1-SUBP015-P2-1	NEMA 1, 15 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
	20	64	CIE1-SUBP020-P2-1	NEMA 1, 20 HP 230 V, 1-PH, UPSIZED VFD, MCP, LR, OR
230 V, 3-PHASE	2	8	CIE1-SUBP002-P2-3	NEMA 1, 2 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	3	12	CIE1-SUBP003-P2-3	NEMA 1, 3 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	5	19	CIE1-SUBP005-P2-3	NEMA 1, 5 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	7.5	30	CIE1-SUBP007-P2-3	NEMA 1, 7.5 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	10	40	CIE1-SUBP010-P2-3	NEMA 1, 10 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	15	55	CIE1-SUBP015-P2-3	NEMA 1, 15 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	20	74	CIE1-SUBP020-P2-3	NEMA 1, 20 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	25	85	CIE1-SUBP025-P2-3	NEMA 1, 25 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
	30	100	CIE1-SUBP030-P2-3	NEMA 1, 30 HP 230 V, 3-PH, UPSIZED VFD, MCP, LR, OR
460 V, 1-PHASE	2	4	CIE1-SUBP002-P4-1	NEMA 1, 2 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	3	5.3	CIE1-SUBP003-P4-1	NEMA 1, 3 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	5	8.8	CIE1-SUBP005-P4-1	NEMA 1, 5 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	7.5	13.2	CIE1-SUBP007-P4-1	NEMA 1, 7.5 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	10	16.5	CIE1-SUBP010-P4-1	NEMA 1, 10 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	15	24.5	CIE1-SUBP015-P4-1	NEMA 1, 15 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	20	30.3	CIE1-SUBP020-P4-1	NEMA 1, 20 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	25	35.7	CIE1-SUBP025-P4-1	NEMA 1, 25 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	30	42.3	CIE1-SUBP030-P4-1	NEMA 1, 30 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	40	60.4	CIE1-SUBP040-P4-1	NEMA 1, 40 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	50	80	CIE1-SUBP050-P4-1	NEMA 1, 50 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
	60	91	CIE1-SUBP060-P4-1	NEMA 1, 60 HP 460 V, 1-PH, UPSIZED VFD, MCP, LR, OF
460 V, 3-PHASE	1	3	CIE1-SUBP001-P4-3	NEMA 1, 1 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	2	4	CIE1-SUBP002-P4-3	NEMA 1, 2 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	3	6	CIE1-SUBP003-P4-3	NEMA 1, 3 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	5	9.6	CIE1-SUBP005-P4-3	NEMA 1, 5 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	7.5	13	CIE1-SUBP007-P4-3	NEMA1, 7.5 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	10	17	CIE1-SUBP010-P4-3	NEMA 1, 10 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	15	25	CIE1-SUBP015-P4-3	NEMA 1, 15 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	20	30	CIE1-SUBP020-P4-3	NEMA 1, 20 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	25	40	CIE1-SUBP025-P4-3	NEMA 1, 25 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	30	45	CIE1-SUBP030-P4-3	NEMA 1, 30 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	40	63	CIE1-SUBP040-P4-3	NEMA 1, 40 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	50	77	CIE1-SUBP050-P4-3	NEMA 1, 50 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	60	100	CIE1-SUBP060-P4-3	NEMA 1, 60 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	75	110	CIE1-SUBP075-P4-3	NEMA 1, 75 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF
	100	150	CIE1-SUBP100-P4-3	NEMA 1, 100 HP 460 V, 3-PH, UPSIZED VFD, MCP, LR, OF

FRANKLIN CONTROL SYSTEMS

P-SERIES VFD ENCLOSED - ORDERING & SIZING INFORMATION

NEMA 3R LARGE DRIVE SUBMERSIBLES (COMBINATION)

Single-Phase & Three-Phase (200-230 V, 480 V), UL/NEMA 3R Enclosure

VOLTAGE	HP	MAX AMPS	MODEL NO.	DESCRIPTION
200-230 V, 1-PHASE	3	11	CIE3R-SUBP003-P2-1	N3R, 3 HP, 230 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	5	16	CIE3R-SUBP005-P2-1	N3R, 5 HP, 230 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	7.5	24	CIE3R-SUBP007-P2-1	N3R, 7 HP, 230 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	10	32	CIE3R-SUBP010-P2-1 (230 V ONLY)	N3R, 10 HP, 230 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	15	45	CIE3R-SUBP015-P2-1 (230 V ONLY)	N3R, 15 HP, 230 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	20	60	CIE3R-SUBP020-P2-1 (230 V ONLY)	N3R, 20 HP, 230 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
200-230 V, 3-PHASE	3	12	CIE3R-SUBP003-P2-3	N3R, 3 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	5	20	CIE3R-SUBP005-P2-3	N3R, 5 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	7.5	30	CIE3R-SUBP007-P2-3	N3R, 7.5 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	10	40	CIE3R-SUBP010-P2-3	N3R, 10 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	15	55	CIE3R-SUBP015-P2-3	N3R, 15 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	20	74	CIE3R-SUBP020-P2-3	N3R, 20 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	25	85	CIE3R-SUBP025-P2-3	N3R, 25 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
	30	100	CIE3R-SUBP030-P2-3	N3R, 30 HP, 230 V, 3-PH ENCLOSED VFD, MCCB, LR, OR
480 V, 1-PHASE	3	5.2	CIE3R-SUBP003-P4-1	N3R, 3 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	5	8	CIE3R-SUBP005-P4-1	N3R, 5 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	7.5	12	CIE3R-SUBP007-P4-1	N3R, 7 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OR
	10	18	CIE3R-SUBP010-P4-1	N3R, 10 HP, 460 V, 1-PH ENCLOSED VFD, MCCB,LR,OF
	15	24	CIE3R-SUBP015-P4-1	N3R, 15 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	20	30	CIE3R-SUBP020-P4-1	N3R, 20 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	25	35.7	CIE3R-SUBP025-P4-1	N3R, 25 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	30	45	CIE3R-SUBP030-P4-1	N3R, 30 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	40	60.4	CIE3R-SUBP040-P4-1	N3R, 40 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	50	75	CIE3R-SUBP050-P4-1	N3R, 50 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	60	90.6	CIE3R-SUBP060-P4-1	N3R, 60 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	75	101	CIE3R-SUBP075-P4-1	N3R, 75 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	100	131	CIE3R-SUBP100-P4-1	N3R, 100 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	125	178	CIE3R-SUBP125-P4-1	N3R, 125 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	150	203	CIE3R-SUBP150-P4-1	N3R, 150 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
	200	264	CIE3R-SUBP200-P4-1	N3R, 200 HP, 460 V, 1-PH ENCLOSED VFD, MCCB, LR, OF
480 V, 3-PHASE	3	6	CIE3R-SUBP003-P4-3	N3R, 3 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	5	9.6	CIE3R-SUBP005-P4-3	N3R, 5 HP, 460 V, 3-PH ENCLOSED VFD, MCCB,LR,OF
	7.5	13.3	CIE3R-SUBP007-P4-3	N3R, 7.5 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	10	18	CIE3R-SUBP010-P4-3	N3R, 10 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	15	25	CIE3R-SUBP015-P4-3	N3R, 15 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	20	30	CIE3R-SUBP020-P4-3	N3R, 20 HP, 460 V, 3-PH ENCLOSED VFD, MCCB,LR,OF
	25	40	CIE3R-SUBP025-P4-3	N3R, 25 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	30	45	CIE3R-SUBP030-P4-3	N3R, 30 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	40	65	CIE3R-SUBP040-P4-3	N3R, 40 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	50	77	CIE3R-SUBP050-P4-3	N3R, 50 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	60	93	CIE3R-SUBP060-P4-3	N3R, 60 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	75	110	CIE3R-SUBP075-P4-3	N3R, 75 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	100	150	CIE3R-SUBP100-P4-3	N3R, 100 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	125	185	CIE3R-SUBP125-P4-3	N3R, 125 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	150	230	CIE3R-SUBP150-P4-3	N3R, 150 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF
	200	300	CIE3R-SUBP200-P4-3	N3R, 200 HP, 460 V, 3-PH ENCLOSED VFD, MCCB, LR, OF

NOTES: Phase refers to incoming power, not motor.

The drive MUST BE sized according to the motor manufacturer's maximum amperage draw. Upsize VFD for ambient temperature compensation (see VFD specs for temperature rating).

If 3-Phase open delta power source, consult the hotline for further sizing information.

FRANKLIN CONTROL SYSTEMS

P-SERIES VFD ENCLOSED - ORDERING & SIZING INFORMATION

NEMA 3R LARGE DRIVE SUBMERSIBLES (COMBINATION)

Three-Phase (600 V) UL/NEMA 3R Enclosure

VOLTAGE	HP	MAX AMPS	MODEL NO.	DESCRIPTION
600 V, 3-PHASE	2	3.3	CIE3R-SUBP002-P6-3	N3R, 2 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	3	6	CIE3R-SUBP003-P6-3	N3R, 3 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	5	7	CIE3R-SUBP005-P6-3	N3R, 5 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	7.5	11	CIE3R-SUBP007-P6-3	N3R, 7.5 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	10	16	CIE3R-SUBP010-P6-3	N3R, 10 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	15	19.5	CIE3R-SUBP015-P6-3	N3R, 15 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	20	24	CIE3R-SUBP020-P6-3	N3R, 20 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	25	30	CIE3R-SUBP025-P6-3	N3R, 25 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	30	41	CIE3R-SUBP030-P6-3	N3R, 30 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	40	52	CIE3R-SUBP040-P6-3	N3R, 40 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	50	62	CIE3R-SUBP050-P6-3	N3R, 50 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	60	77	CIE3R-SUBP060-P6-3	N3R, 60 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	75	99	CIE3R-SUBP075-P6-3	N3R, 75 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	100	125	CIE3R-SUBP100-P6-3	N3R, 100 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF
	125	150	CIE3R-SUBP125-P6-3	N3R, 125 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OF

NOTES: Phase refers to incoming power, not motor.
The drive MUST BE sized according to the motor manufacturer's maximum amperage draw. Upsize VFD for ambient temperature compensation (see VFD specs for temperature rating).

NEMA 3R LARGE DRIVE SURFACE (COMBINATION)

Three-Phase (600 V) UL/NEMA 3R Enclosure

VOLTAGE	HP	MAX AMPS	MODEL NO.	DESCRIPTION
600 V, 3 PHASE	2	3.3	CIE3R-CENP002-P6-3	N3R, 2 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	3	5	CIE3R-CENP003-P6-3	N3R, 3 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	5	7	CIE3R-CENP005-P6-3	N3R, 5 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	7.5	10.4	CIE3R-CENP007-P6-3	N3R, 7.5 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	10	11	CIE3R-CENP010-P6-3	N3R, 10 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	15	19.5	CIE3R-CENP015-P6-3	N3R, 15 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	20	24	CIE3R-CENP020-P6-3	N3R, 20 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	25	30	CIE3R-CENP025-P6-3	N3R, 25 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	30	32	CIE3R-CENP030-P6-3	N3R, 30 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	40	41	CIE3R-CENP040-P6-3	N3R, 40 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	50	52	CIE3R-CENP050-P6-3	N3R, 50 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	60	62	CIE3R-CENP060-P6-3	N3R, 60 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	75	77	CIE3R-CENP075-P6-3	N3R, 75 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	100	99	CIE3R-CENP100-P6-3	N3R, 100 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR
	125	125	CIE3R-CENP125-P6-3	N3R, 125 HP, 575 V, 3-PH ENCLOSED UPSIZED VFD, MCCB, LR, OR

NOTES: Phase refers to incoming power, not motor.
The drive MUST BE sized according to the motor manufacturer's maximum amperage draw. Upsize VFD for ambient temperature compensation (see VFD specs for temperature rating).

NEMA 3R LARGE DRIVE OPTIONS

MODEL NO.	WT. (LBS)	DESCRIPTION
VFD-FPL	1	FAULT PILOT LIGHT (RED STANDARD)
VFD-HOA		HAND/OFF/AUTO SWITCH
VFD-KPD-4X		DOOR MOUNTED KEYPAD WITH TYPE 4X COVER
VFD-KPD		DOOR MOUNTED KEYPAD
VFD-RPL		RUN PILOT LIGHT (GREEN STANDARD)
VFD-SPD		DOOR MOUNTED SPEED POTENTIOMETER
PSIG-100-20FT		TRANSDUCER (GAUGE PRESSURE), 100 PSIG 4-20 MA, +/-0.5% ACCY
PSIG-200-20FT		TRANSDUCER (GAUGE PRESSURE), 200 PSIG 4-20 MA, +/-0.5% ACCY
PSIG-300-20FT		TRANSDUCER (GAUGE PRESSURE), 300 PSIG 4-20 MA, +/-0.5% ACCY

P-SERIES VFD ENCLOSED - DIMENSIONS

NEMA 3R LARGE DRIVE SUBMERSIBLES

MODEL NO.	H	W	D
CIE3R-SUBP003-P2-1	33	22	12
CIE3R-SUBP005-P2-1			
CIE3R-SUBP007-P2-1			
CIE3R-SUBP010-P2-1	38	25	12
CIE3R-SUBP015-P2-1	43	25	12
CIE3R-SUBP020-P2-1			
CIE3R-SUBP003-P2-3	33	22	12
CIE3R-SUBP005-P2-3			
CIE3R-SUBP007-P2-3			
CIE3R-SUBP010-P2-3			
CIE3R-SUBP015-P2-3	38	25	12
CIE3R-SUBP020-P2-3			
CIE3R-SUBP030-P2-3	43	25	12
CIE3R-SUBP003-P4-1	33	22	12
CIE3R-SUBP005-P4-1			
CIE3R-SUBP007-P4-1			
CIE3R-SUBP010-P4-1	38	25	12
CIE3R-SUBP015-P4-1	43	25	12
CIE3R-SUBP020-P4-1			

MODEL NO.	H	W	D
CIE3R-SUBP025-P4-1	48	30	16
CIE3R-SUBP030-P4-1			
CIE3R-SUBP040-P4-1			
CIE3R-SUBP050-P4-1	53	35	16
CIE3R-SUBP060-P4-1			
CIE3R-SUBP075-P4-1	60	60	24
CIE3R-SUBP100-P4-1			
CIE3R-SUBP125-P4-1			
CIE3R-SUBP150-P4-1	72	60	24
CIE3R-SUBP200-P4-1			
CIE3R-SUBP003-P4-3	33	22	12
CIE3R-SUBP005-P4-3			
CIE3R-SUBP007-P4-3			
CIE3R-SUBP010-P4-3			
CIE3R-SUBP015-P4-3	38	25	12
CIE3R-SUBP020-P4-3			
CIE3R-SUBP025-P4-3	43	25	12
CIE3R-SUBP030-P4-3			
CIE3R-SUBP040-P4-3	48	30	16
CIE3R-SUBP050-P4-3			
CIE3R-SUBP060-P4-3			

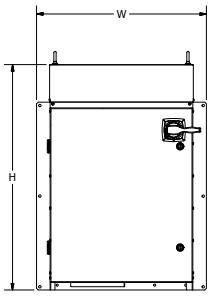
MODEL NO.	H	W	D
CIE3R-SUBP075-P4-3	53	35	16
CIE3R-SUBP100-P4-3			
CIE3R-SUBP125-P4-3	60	60	24
CIE3R-SUBP150-P4-3			
CIE3R-SUBP200-P4-3			
CIE3R-SUBP250-P4-3	72	60	24
CIE3R-SUBP300-P4-3			
CIE3R-SUBP350-P4-3			
CIE3R-SUBP002-P6-3	33	22	12
CIE3R-SUBP003-P6-3			
CIE3R-SUBP005-P6-3			
CIE3R-SUBP007-P6-3			
CIE3R-SUBP010-P6-3			
CIE3R-SUBP015-P6-3	38	25	12
CIE3R-SUBP020-P6-3			
CIE3R-SUBP025-P6-3	43	25	12
CIE3R-SUBP030-P6-3			
CIE3R-SUBP040-P6-3	48	30	16
CIE3R-SUBP050-P6-3			
CIE3R-SUBP060-P6-3			
CIE3R-SUBP075-P6-3	53	35	16
CIE3R-SUBP100-P6-3			
CIE3R-SUBP125-P6-3	60	60	24

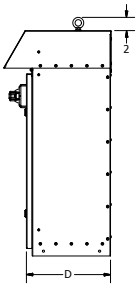
NEMA 3R LARGE DRIVE CENTRIFUGALS

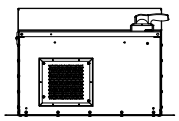
MODEL NO.	H	W	D
CIE3R-CENP003-P2-1	33	22	12
CIE3R-CENP005-P2-1			
CIE3R-CENP007-P2-1			
CIE3R-CENP010-P2-1	38	25	12
CIE3R-CENP015-P2-1	43	25	12
CIE3R-CENP020-P2-1			
CIE3R-CENP003-P2-3	33	22	12
CIE3R-CENP005-P2-3			
CIE3R-CENP007-P2-3			
CIE3R-CENP010-P2-3			
CIE3R-CENP015-P2-3	38	25	12
CIE3R-CENP020-P2-3			
CIE3R-CENP030-P2-3	43	25	12
CIE3R-CENP003-P4-1	33	22	12
CIE3R-CENP005-P4-1			
CIE3R-CENP007-P4-1			
CIE3R-CENP010-P4-1	38	25	12
CIE3R-CENP015-P4-1	43	25	12
CIE3R-CENP020-P4-1			

MODEL NO.	H	W	D
CIE3R-CENP025-P4-1	48	30	16
CIE3R-CENP030-P4-1			
CIE3R-CENP040-P4-1			
CIE3R-CENP050-P4-1	53	35	16
CIE3R-CENP060-P4-1			
CIE3R-CENP075-P4-1	60	60	24
CIE3R-CENP100-P4-1			
CIE3R-CENP125-P4-1			
CIE3R-CENP150-P4-1	72	60	24
CIE3R-CENP200-P4-1			
CIE3R-CENP003-P4-3	33	22	12
CIE3R-CENP005-P4-3			
CIE3R-CENP007-P4-3			
CIE3R-CENP010-P4-3			
CIE3R-CENP015-P4-3	38	25	12
CIE3R-CENP020-P4-3			
CIE3R-CENP025-P4-3	43	25	12
CIE3R-CENP030-P4-3			
CIE3R-CENP040-P4-3	48	30	16
CIE3R-CENP050-P4-3			
CIE3R-CENP060-P4-3			

MODEL NO.	H	W	D
CIE3R-CENP075-P4-3	53	35	16
CIE3R-CENP100-P4-3			
CIE3R-CENP125-P4-3	60	60	24
CIE3R-CENP150-P4-3			
CIE3R-CENP200-P4-3			
CIE3R-CENP250-P4-3	72	60	24
CIE3R-CENP300-P4-3			
CIE3R-CENP350-P4-3			
CIE3R-CENP002-P6-3	33	22	12
CIE3R-CENP003-P6-3			
CIE3R-CENP005-P6-3			
CIE3R-CENP007-P6-3			
CIE3R-CENP010-P6-3			
CIE3R-CENP015-P6-3	38	25	12
CIE3R-CENP020-P6-3			
CIE3R-CENP025-P6-3	43	25	12
CIE3R-CENP030-P6-3			
CIE3R-CENP040-P6-3	48	30	16
CIE3R-CENP050-P6-3			
CIE3R-CENP060-P6-3			
CIE3R-CENP075-P6-3	53	35	16
CIE3R-CENP100-P6-3			
CIE3R-CENP125-P6-3	60	60	24

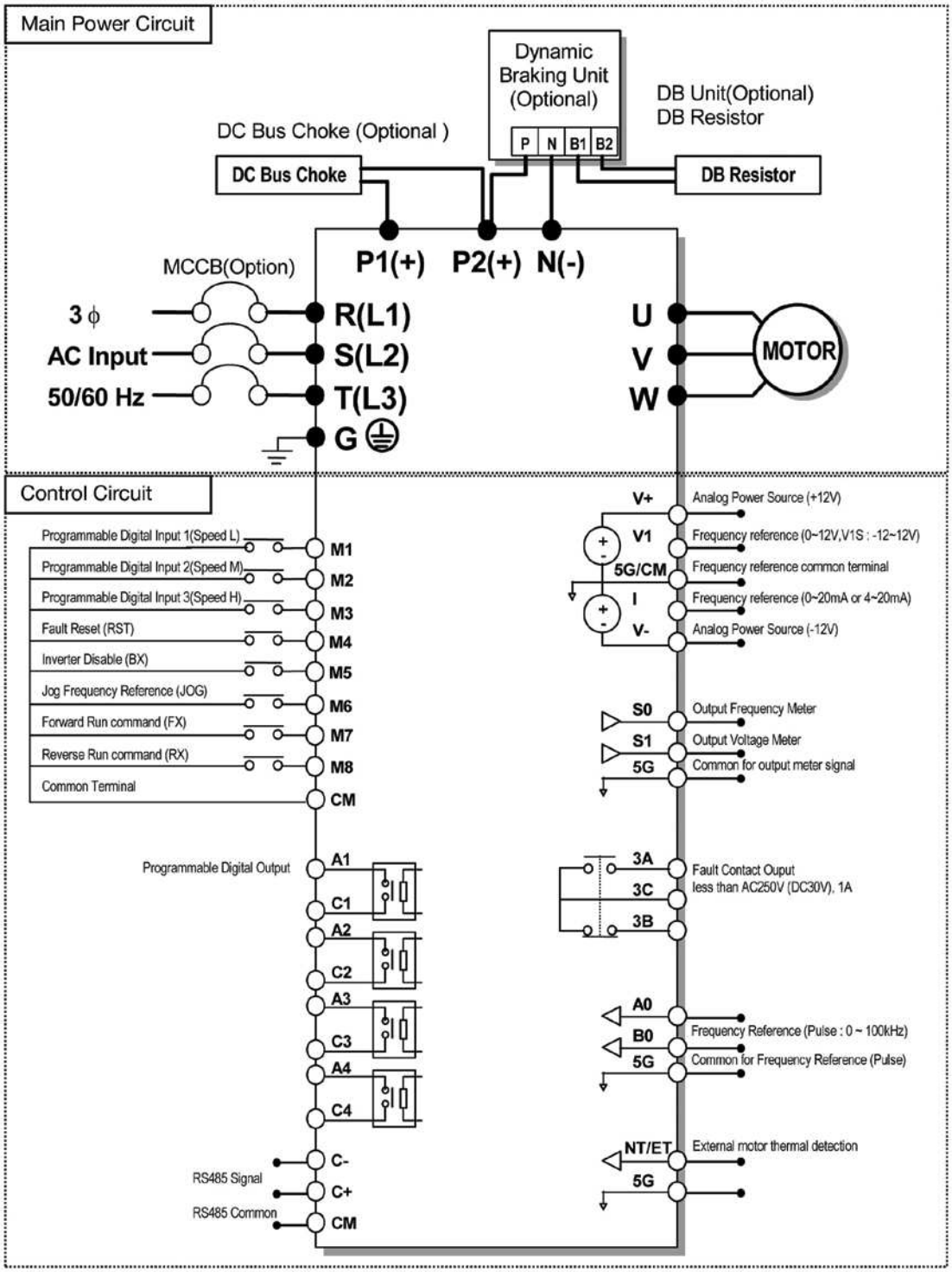






P-SERIES VFD STAND ALONE - WIRING DIAGRAM

5.5~90 KW (7.5~125 HP)



NOTES: 5G is common ground for analog input/output for 7.5-40 hp.
5G is common ground for analog meter output (S0, S1) and external motor thermal detection (ET).
Use terminal V1 for V1, V1S (0-12 V -12-12 V) input.
** For general reference only, not field wiring. Consult installation instructions.*

FRANKLIN CONTROL SYSTEMS

P-SERIES VFD STAND ALONE - SPECIFICATIONS

SPECIFICATIONS

OUTPUT RATINGS	
Voltage (V)	Three-phase, 200~230 V, Three-phase, 380~480 V, Three-phase 525~600 V
Frequency (Hz)	0~120 Hz
INPUT RATINGS	
Voltage (V)	Single- and three-phase, 200~230 V (-15%, +10%), single- and three-phase, 380~480 V (-15%, +10%), Three-phase 525~600 V (-15%,+10%)
Frequency (Hz)	50~60 Hz (±5%)
Input Power Factor	> .95 from no load to full load
OPERATION	
Drive Efficiency	> 96%
Control Method	V/F control, sensorless vector control
Frequency Setting Resolution	Digital reference: 0.01 Hz (below 99 Hz) & 0.1 Hz (100 Hz and over); Analog reference: 0.06 Hz at 60 Hz
Frequency Setting Accuracy	Digital: 0.01% of maximum output frequency; Analog: 0.1% of maximum output frequency
V/F Ratio	Linear, Square, User V/F
Overload Capacity	1 minute at 120%, 10 seconds at 150% (with inverse characteristic proportional to time)
Torque Boost	Auto, manual (0~15%)
Multi-Function Input Terminals	Total 8 inputs (programmable)
Analog Output	0~10 V linear
INPUT SIGNAL	
Operator Control	32-character LCD keypad, Terminals, ModBus-RTU communication Optional, ProfiBus-DP, DeviceNet, F-Net, BACnet, LonWorks
Frequency Setting	Analog: 0~10 V, 4~20mA, additional port for Sub-Board (0~10 V); Digital: Keypad, Communication
Start Signal	Forward, reverse
Multi-Step Operation	Setting up to 17 speeds (using multi-function terminal)
Multi-Step Accel/Decel Time	0.1~6000 seconds. Maximum 8 pre-defined steps using multi-function terminals
Operational Functions	DC braking, frequency limit, frequency jump, second motor function, slip compensation, reverse rotation prevention, auto restart, inverter bypass, auto-tuning, dual PID control
Emergency Stop	Stops output from inverter
Auto Operation	Operates from internal sequence by setting multi-function terminal (5 way x 8 step)
Jog	Jog operation
Fault Reset	Resets fault signal when protective function is active
OUTPUT SIGNAL	
Operational Status	Frequency detection, overload alarm, stall, overvoltage, undervoltage, inverter overheat, run, stop, constant speed, speed search, fault output, inverter bypass, auto-operation sequence
Indicator	Output frequency, output current, output voltage, DC voltage, output torque (output voltage: 0~10 V)
PROTECTIVE FUNCTIONS	
Trip	Overvoltage, undervoltage, overcurrent, inverter overheat, motor overheat, i/o-phase loss, fuse open, ground fault, external fault 1, 2, option fault, overload, speed command loss, hardware fault, communication error, etc.
Alarm	Stall, overload temperature sensor fault
OPERATING ENVIRONMENT	
Ambient Temperature	-10~40 °C (50 °C when derated 20%) or 14~104 °F (122 °F when derated 20%)
Storage Temperature	-20 ~65 °C or -4~149.5 °F
Humidity	Less than 95% relative humidity maximum (non-condensing)
Vibration	Below 5.9m²/sec (=0.6g)
Altitude	Max. 3,300 ft (1000 m): derate 1% for every additional 330 ft. Derating 20% allows for installation up to 10,000 ft
Application Site	Pollution degree 2. no corrosive gas, combustible gas, oil mist or dust