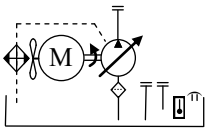
FluidHaus

Variable Frequency Power Unit
Series: SPV

365-4567 psi 0-19 gpm 240 or 480VAC, 50/60Hz, 3 Phase



Features:

- Hydraulic Power Unit with Variable Frequency Drive Motor.
- Motor speed varies to maintain the preset pressure selected in the frequency drive controller.
- Frequency drive controller prewired and integrated into the reservoir.
- Energy efficient as the motor speed stops or slows according to the actual output needed. Energy savings up to 65%.
- IE3 rated High Efficiency Motor
- Quite Operation. Noise level under 50dB (Standard power unit 64dB)
- Close Coupled motor and pump for small overall package.
- Built in pump case drain cooler reduces reservoir temperature while pump is de-stroked. Average reservoir temperature rise ~1°C.
- Option for up to a 4 station manifold directly mounted to pump outlet. Standard NG6/D03 pattern allows infinite circuit options utilizing standard valves and modules.

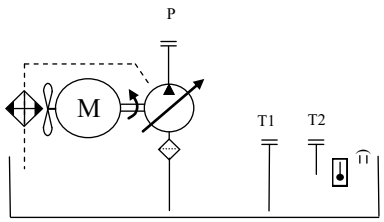
Ordering Details

S	System
PV	Variable Motor Power Unit
10-	Reservoir Capacity: **Code: Liters** — **10, 20, 30, 40, 60, 80**
AP	Pump Type: AP=Axial Piston Pump
1.1-	Pump Displacement, cc/rev: (Reference Page 2-3) — **Code: cc/rev.** — **8, 12, 16, 23, 38, 42**
H	Motor Mounting Direction: H=Horizontal
2-	Horsepower: (Reference Page 2-3)
240-	Voltage: **240** = 240VAC 50/60hz 3 Phase, **480** = 480VAC 50/60hz 3 Phase
D2-	Circuit:
1	Series: 1

8, 12, 16 = 3045psi Max. Pressure
23, 38, 42 = 4567psi Max. Pressure

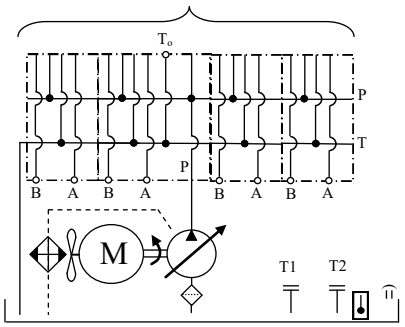
Reservoir Capacity, Liters	10, 20	30, 40, 60, 80
Code: HP	1, 2, 3	3, 5

Code: A
Basic power unit with variable pressure pump and case drain



Code: D_
Basic power unit with multi-station D03-NG6 mounting. Designate number of stations after code "D"

D03/NG6 Mounting Pattern. Select valves to mount from Sub-plate Valves catalog. Order separately.



Example Part Number: SPV10-AP1.1-H2-240-D2-1

Specifications:

Oil Temperature	10-60ºC
Recommended Fluid	Mineral oil, ISO VG32 ore equivalent
Color	Grey
Ambient Temperature (Humidity)	0-35ºC (<85%RH)
Stand by pressure	87 psi (6 bar)

Performance Specifications:

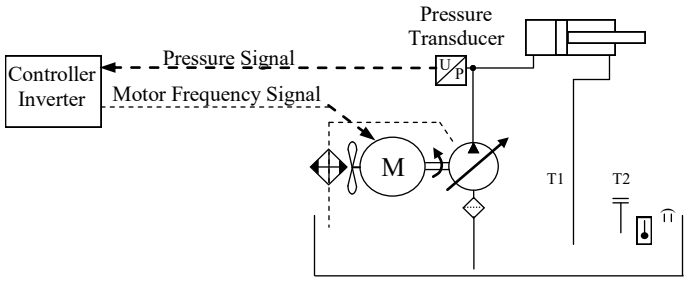
Reservoir, Liters	Pump, cc/rev.	Horsepower	Max. Flow, GPM	*Appr. Max. Flow at Max. Pressure, GPM	Pressure Range, PSI
10	8	1	3.7	0.51	365-3045
		2	3.7	1.01	365-3045
		3	3.7	1.52	365-3045
	12	1	5.5	0.51	365-3045
		2	5.5	1.01	365-3045
		3	5.5	1.52	365-3045
	16	1	7.3	0.51	365-3045
		2	7.3	1.01	365-3045
		3	7.3	1.52	365-3045
	23	1	10.5	0.34	365-4567
		2	10.5	0.68	365-4567
		3	10.5	1.01	365-4567
	38	1	17.4	0.34	365-4567
		2	17.4	0.68	365-4567
		3	17.4	1.01	365-4567
	42	1	19.2	0.34	365-4567
		2	19.2	0.68	365-4567
		3	19.2	1.01	365-4567
20	8	1	3.7	0.51	365-3045
		2	3.7	1.01	365-3045
		3	3.7	1.52	365-3045
	12	1	5.5	0.51	365-3045
		2	5.5	1.01	365-3045
		3	5.5	1.52	365-3045
	16	1	7.3	0.51	365-3045
		2	7.3	1.01	365-3045
		3	7.3	1.52	365-3045
	23	1	10.5	0.34	365-4567
		2	10.5	0.68	365-4567
		3	10.5	1.01	365-4567
	38	1	17.4	0.34	365-4567
		2	17.4	0.68	365-4567
		3	17.4	1.01	365-4567
	42	1	19.2	0.34	365-4567
		2	19.2	0.68	365-4567
		3	19.2	1.01	365-4567
30	8	3	3.7	1.52	365-3045
		5	3.7	2.53	365-3045
	12	3	5.5	1.52	365-3045
		5	5.5	2.53	365-3045
	16	3	7.3	1.52	365-3045
		5	7.3	2.53	365-3045
	23	3	10.5	1.01	365-4567
		5	10.5	1.69	365-4567
	38	3	17.4	1.01	365-4567
		5	17.4	1.69	365-4567
	42	3	19.2	1.01	365-4567
		5	19.2	1.69	365-4567

Performance Specifications (Continued):

Reservoir, Liters	Pump, cc/rev.	Horsepower	Max. Flow, GPM	*Appr. Max. Flow at Max. Pressure, GPM	Pressure Range, PSI
40	8	3	3.7	1.52	365-3045
		5	3.7	2.53	365-3045
	12	3	5.5	1.52	365-3045
		5	5.5	2.53	365-3045
	16	3	7.3	1.52	365-3045
		5	7.3	2.53	365-3045
	23	3	10.5	1.01	365-4567
		5	10.5	1.69	365-4567
	38	3	17.4	1.01	365-4567
		5	17.4	1.69	365-4567
	42	3	19.2	1.01	365-4567
		5	19.2	1.69	365-4567
60	8	3	3.7	1.52	365-3045
		5	3.7	2.53	365-3045
	12	3	5.5	1.52	365-3045
		5	5.5	2.53	365-3045
	16	3	7.3	1.52	365-3045
		5	7.3	2.53	365-3045
	23	3	10.5	1.01	365-4567
		5	10.5	1.69	365-4567
	38	3	17.4	1.01	365-4567
		5	17.4	1.69	365-4567
	42	3	19.2	1.01	365-4567
		5	19.2	1.69	365-4567
80	8	3	3.7	1.52	365-3045
		5	3.7	2.53	365-3045
	12	3	5.5	1.52	365-3045
		5	5.5	2.53	365-3045
	16	2	7.3	1.01	365-3045
		3	7.3	1.52	365-3045
		5	7.3	2.53	365-3045
	23	3	10.5	1.01	365-4567
		5	10.5	1.69	365-4567
	38	3	17.4	1.01	365-4567
		5	17.4	1.69	365-4567
	42	3	19.2	1.01	365-4567
		5	19.2	1.69	365-4567

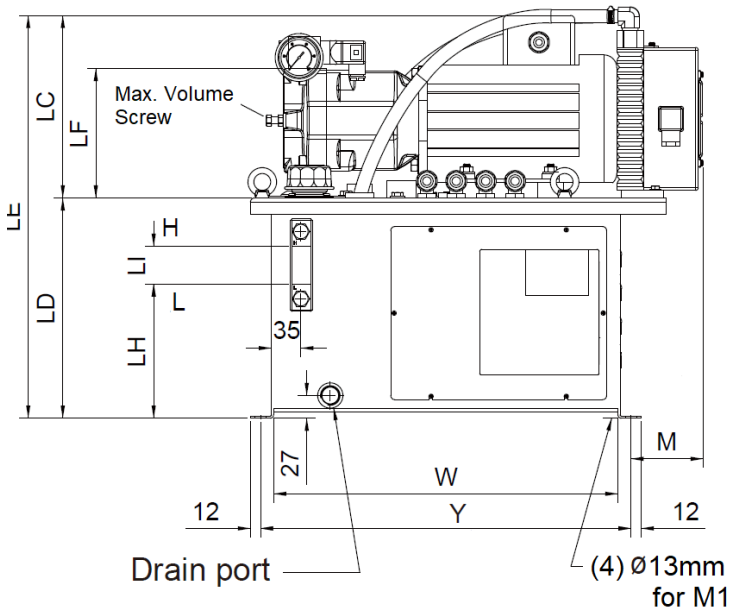
Note:
*Due to the limit of the motor power, both the max. pressure and max. flow may not be possible together. Listed are the limits of flow when max. pressure is needed and the limits of pressure when maxx flow is needed.

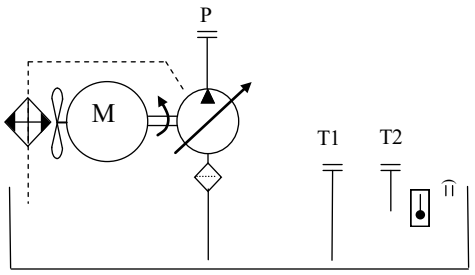
System Control Circuit:

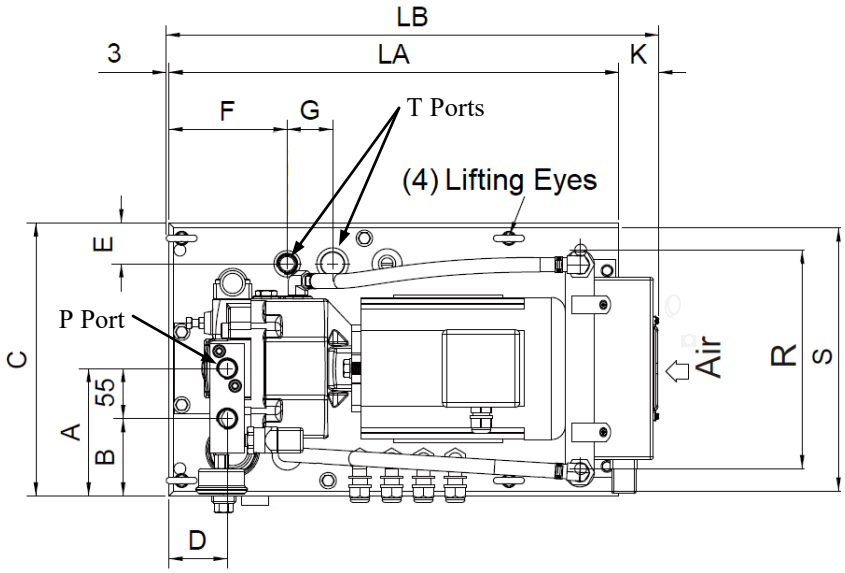


Dimensions, Code A Circuit:

Dimensions in mm



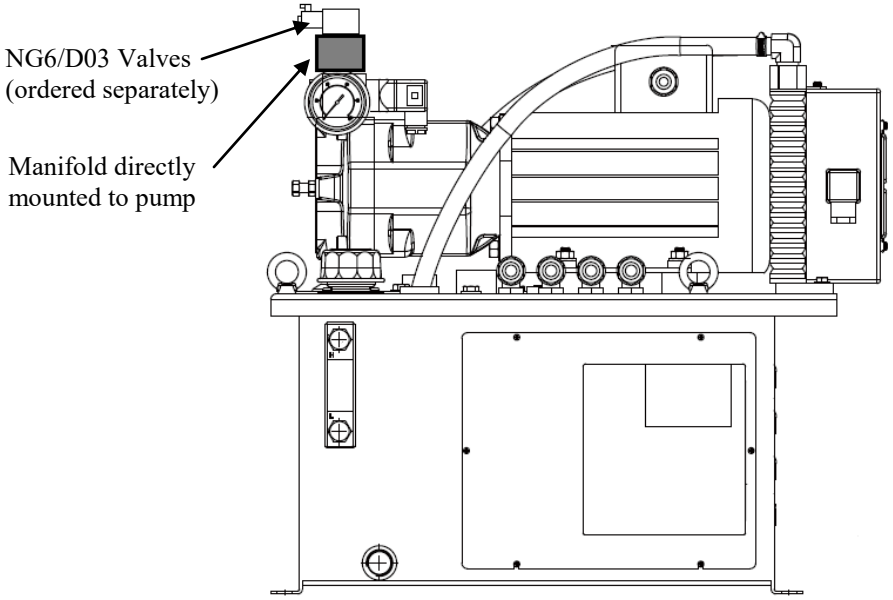




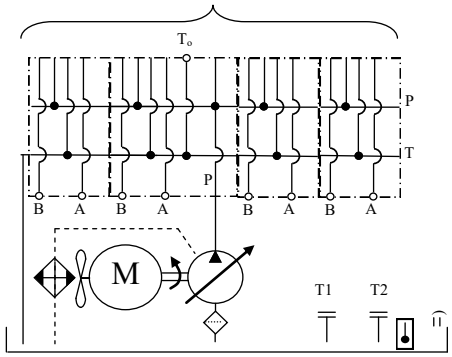
Reservoir, Liters	P Port	T Ports	Drain Port
10	G 1/2”	G 1/2”	G 1/2”
20	G 1/2”	G 1/2”	G 1/2”
30	G 1/2”	G 3/4”	G 1/2”
40	G 1/2”	G 3/4”	G 1/2”
60, 80	Consult Factory		

Reservoir, Liters	Motor, HP	LA	LB	LC	LD	LE	LF	LH	L1	H	L	A	B	C	D	E	F	G	K	M	R	Y	S	W	KG
10	1	495-460	542-499	217	262	479	154-152	159	45	14L	10L	140	195-85	300	64	45	50	50	44-36	86-43	240	441	290	410	46
	2	520-480	571-528	243		505	170-168												48-46	115-72					51
	3	565-520	614-572	265		527	180-178												46-49	158-116					56
20	1	495-460	542-499	217	362	579	154-152	259	45	21L	18L	140	195-85	300	64	45	50	50	44-36	86-43	240	441	290	410	58
	2	520-480	571-528	243		605	170-168												48-46	115-72					64
	3	565-520	614-572	265		627	180-178												46-49	158-116					70
30	3	565-560	615-572	265	320	585	180-178	218	263	31L	25L	185	240-130	370	64	55	55	55	47-39	59-16	290	541	360	510	84
	5	595-560	645-602																47-39	89-46					92
40	3	565-560	615-572	265	420	685	180-178	318	363	43L	38L	185	240-130	370	64	55	55	55	47-39	59-16	290	541	360	510	89
	5	595-560	645-602																47-39	89-46					97
60, 80	Consult Factory																								

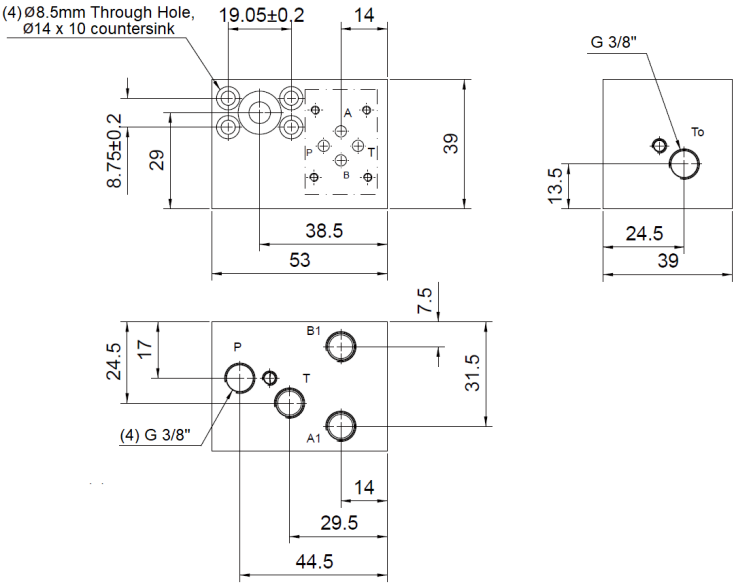
Dimensions, Code D Manifold:



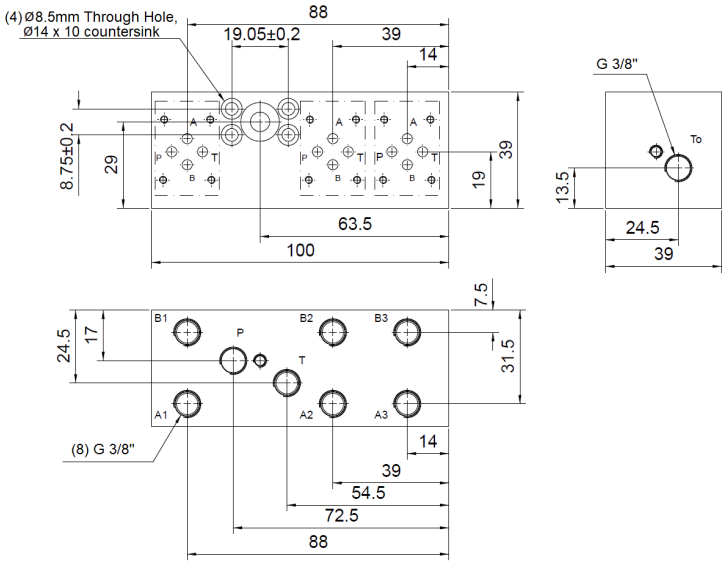
D03/NG6 Mounting Pattern. Select valves to mount from Sub-plate Valves catalog. Order separately.



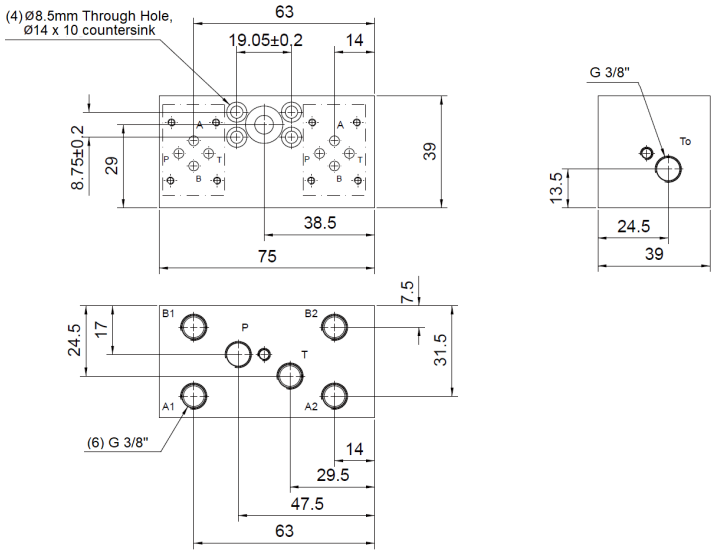
D1



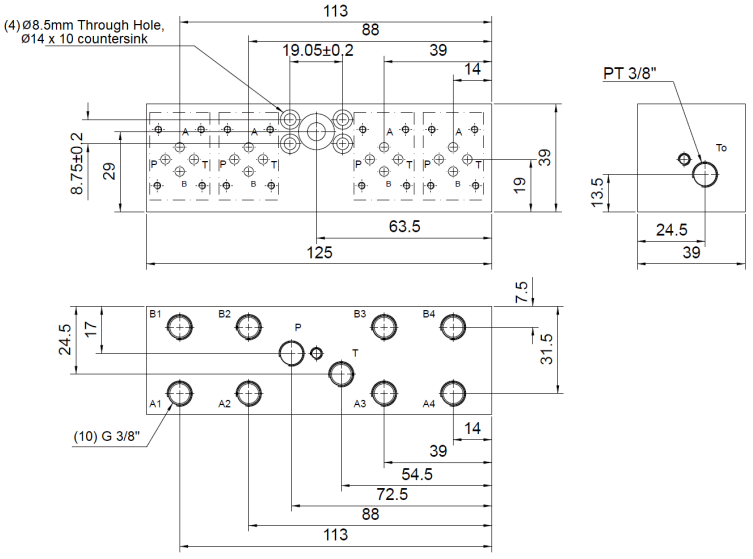
D2



D3

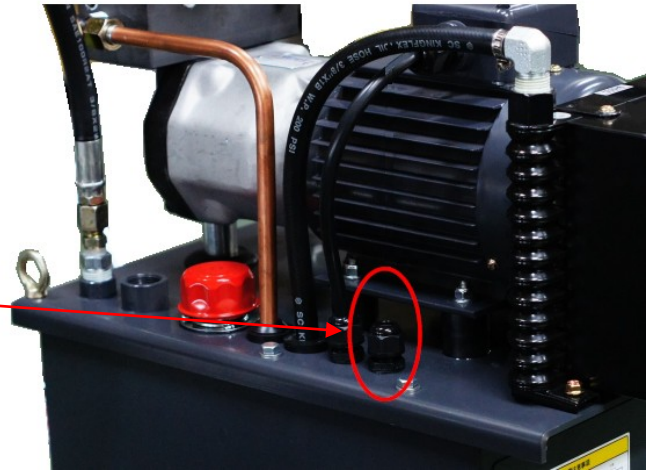


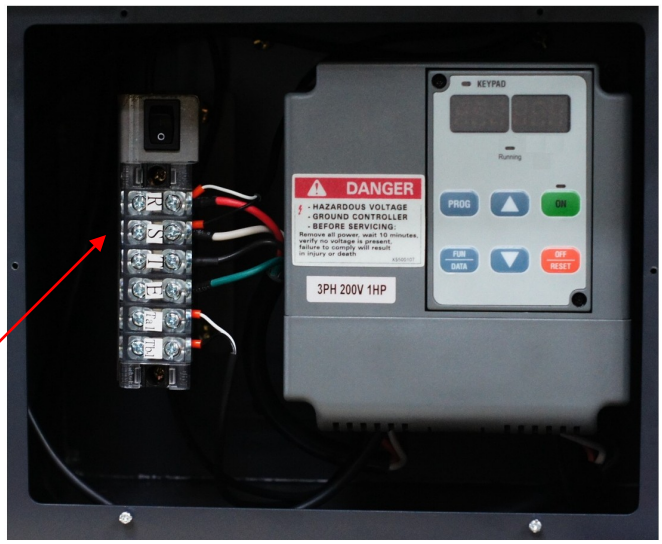
D4



Main Power Wiring:

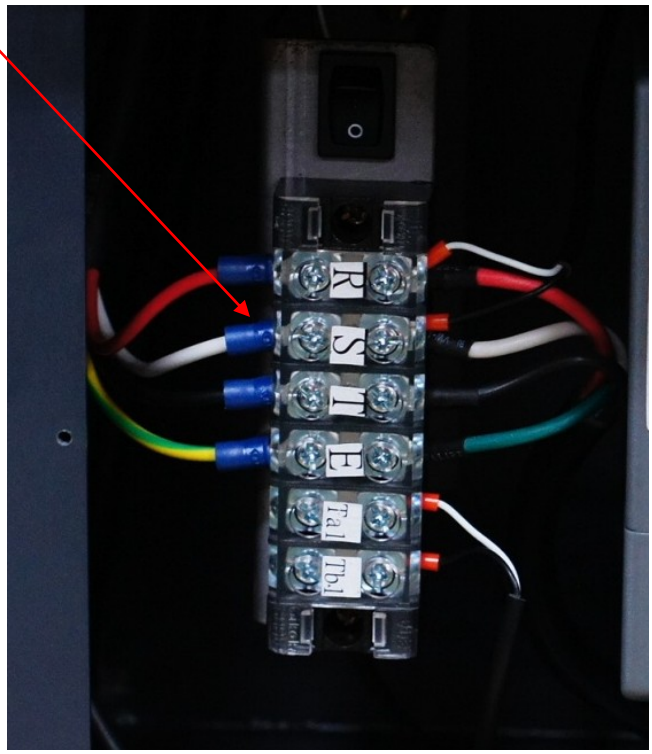
Insert oil resistant and water resistant main power cable through cable gland.





Connect wires to R (red), S (White), T (Black) and E (Ground) terminals.

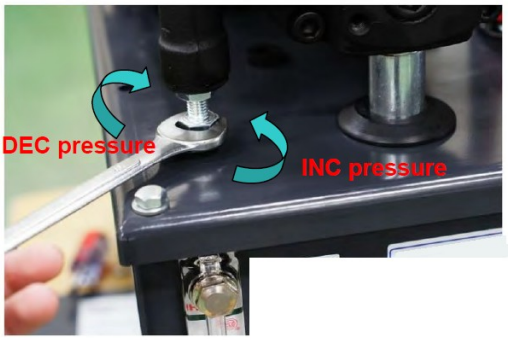
Ta1 and Tb1 are trouble shooting terminals.



Setting the Pressure:

Step 1: Press reset button up.

Step 2: Adjust Pressure on pump compensator. Loosen jam nut and adjust using size 17mm wrench. Use pressure gage or controller display for pressure reading.



Step 3: After pump compensator pressure is set, press reset button down. The inverter will automatically maintain the pressure by regulating the motor speed.

Warning: Do not press the ON/OFF button on the inverter panel.

Inverter Description:

LED “light off”, Frequency can be set from terminal.
LED “light on”, frequency is controlled by inverter

T.S.: Terminal indicator display

1. Set speed and actual speed equal: LED “light in”.
2. Speed Reducing: LED “light flickering”,

1. Access to setting mode
2. Back to supervision mode

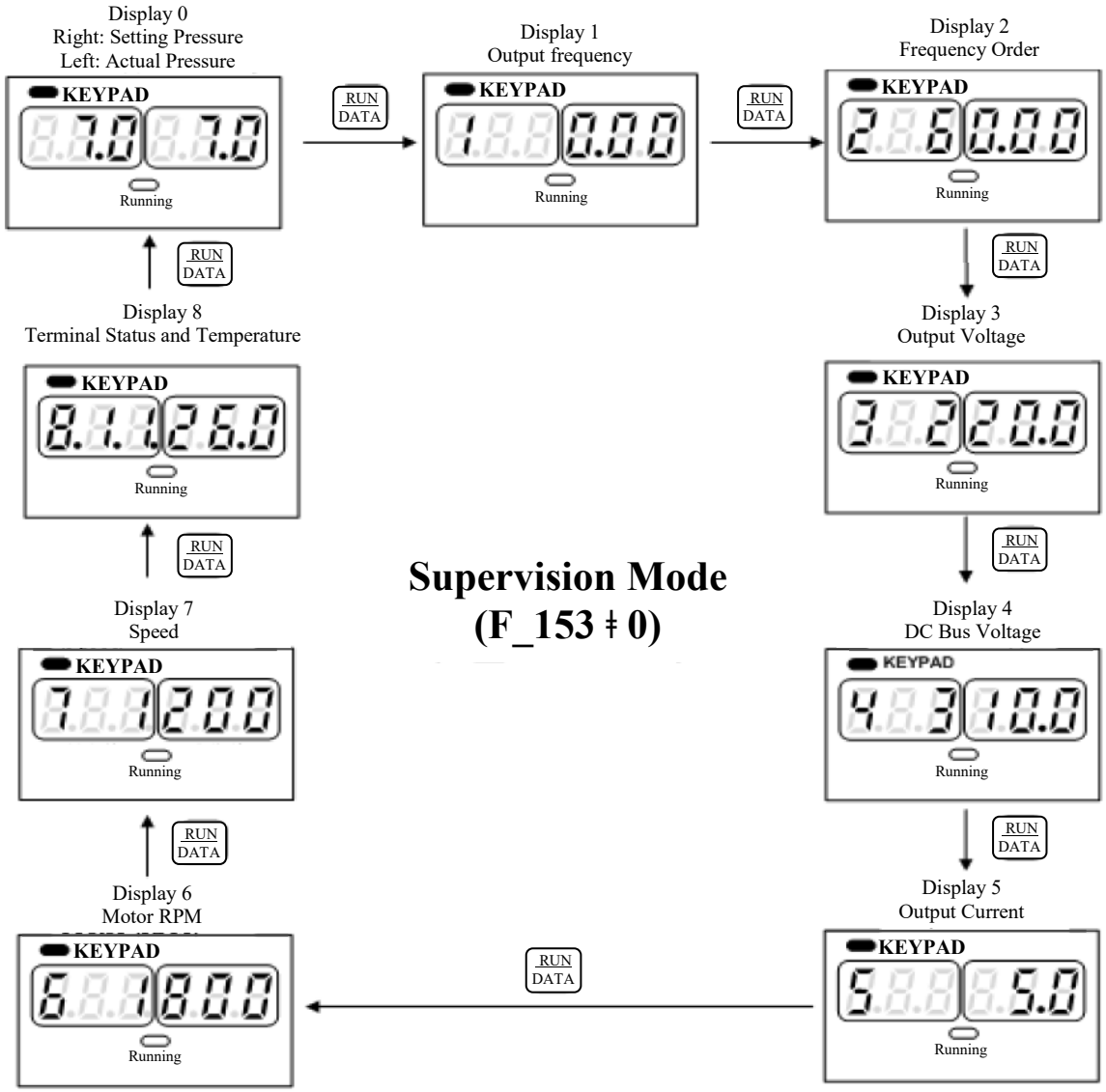
Inverter Start

Editing Parameters

1. Access to setting data mode
2. Back to setting item mode.
3. Change to supervision mode

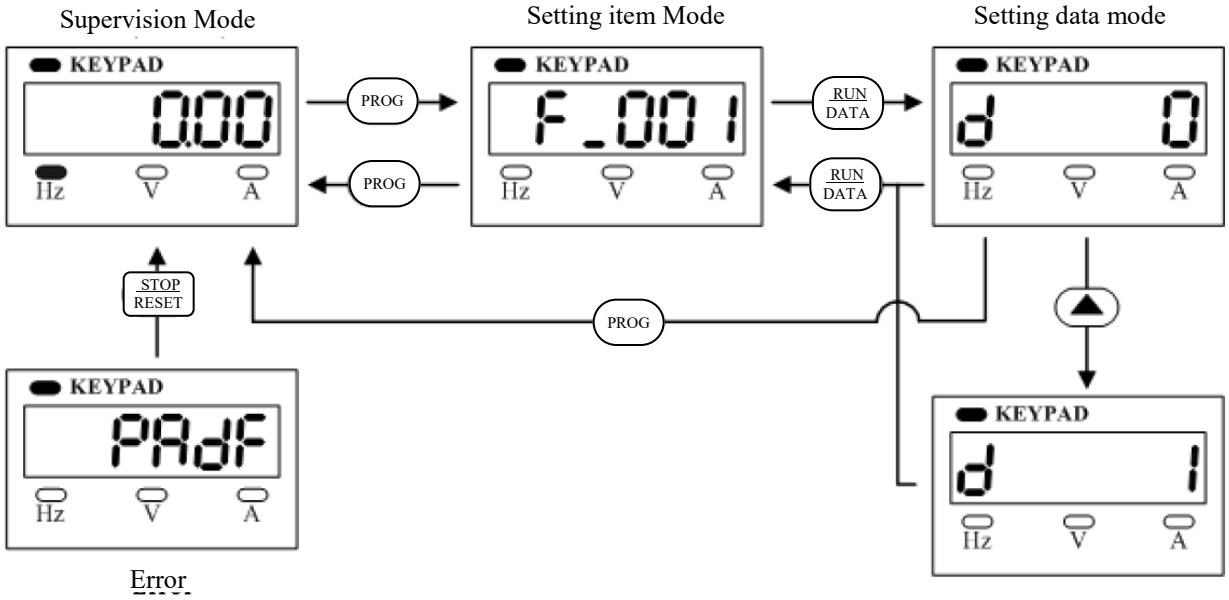
1. Inverter stop
2. Reset

9 displays in Supervision mode



Inverter Description:

Controller Operation with 3 modes including 1 error mode.



Error Trouble Shooting:

EEr Memory Device (EEPFROM)	Ad_Err Analog digital transferring	OC Current protection
OE Overpower protection	LE1 Rotation power over low protection	GF Landing protection
OH Overheat protection	OL Motor over load protection	OL1 Inverter over load protection
OL0 Over load inspection protection	thr Outside collect heat protection	PAdF KP-202C Operation error protection
SC Inverter inside fuse blown	Err 00 Controller broke	Err 01 Controller link broke
LE On stop status, power overload	OL0. Overload inspection signal	bb. Cut output signal
Fr. Feel rotation signal	dtF. Direction terminal operation error	db. On stop statues, over power
Wr_F Writing error		

Error protection list and trouble shooting:

Error	Protection Containing	Trouble shooting
Over current O.C.	Output current is over rated current 220%, trip coil.	Inverter output incurred a short circuit, overload, acceleration too short, unnatural stop than start, special motor with different character.
Overvoltage protection O.E.	Motor reduces speed, back voltage or electrical power too high which makes DC over sensor measurement 200V series approach to 410V DC 400V series approach to 820V DC	Lengthening "deceleration time", or using high torque action and adding motion breaker to reduce input voltage.
Overload Protection O.L.	Motor is overload, internal electric overload relay protection.	Reducing motor loading.
Overload protection OL1	Inverter is overloaded, reaches to rated current 150% in 1 min.	Increasing inverter capacity.
Overheat protection O.H.	Radiator is over heated or outside thermal relay action tripped coil.	Improve cooling, clean dust and dirt on radiator fins.
Electrical power low protection L.E.	Inverter inside DC voltage reduced 33%, Inverter will display LE.	Increasing power capacity, reduce electrical line loss.
"____" alternating display setting frequency	Clockwise/anti-closck wise operation commands inappropriate protection. (during F_001=0)	Check clockwise/anti-clockwise control terminal
GF Protection	Landing protection, fuse is broken while output 3 phase current is unbalanced.	Will be motor power leakage, changing inverter.
EEr	Memory device error (EEPROM)	Change inverter
Err_01, Err_00	Controller link error	Check controller and inverter link.
S.C.	Inverter fuse is broken, IGBT power mode damage.	Change inverter
PAdF controller error protection	Tearing down or plugging in while inverter is rotating.	Press Reset
Ad_Err	AD transformer error	Change inverter
OLO	Overload error	Reduce motor loading capacity
Thr	External thermal relay error	Release error external terminal
Db.	Measuring external DC voltage is overloaded when machine stops. 200V series approach to 410V DC 400V series approach to 820V DC	Check input voltage and make sure the inverter voltage is under the range of rated voltage.

The inverter will display the protection error. After the error is corrected, the inverter will continue operation or press the STOP RESET one time.