



SD300 SINGLE PUMP CONFIGURATION



Document SD300-1

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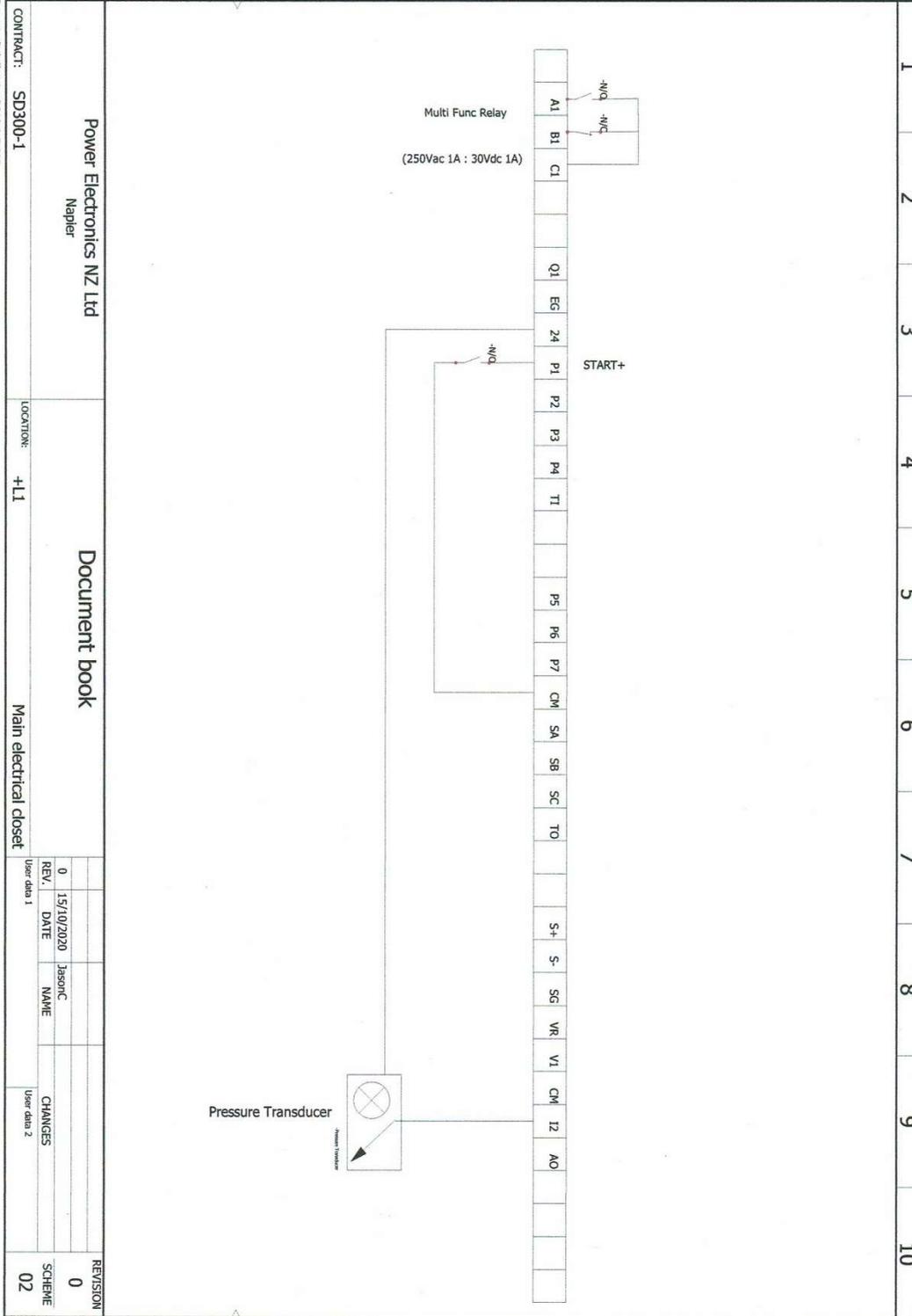
Parameters

PARAMETER	DEFAULT	DESCRIPTION	SET VALUE
ACC	20.0sec	Acceleration Time	Adjust accordingly
dEC	30.0sec	Deceleration Time	Adjust accordingly
Drv	1	Drive Mode	1: Start/stop by terminals FX-forward or Rx- reverse
FUNCTION GROUPS (dr/Ad/bA)			
dr-14	xx	Motor power setting	xxkW Set required kW rating
dr-15	0	Torque boost select	0: Man torque 1: Auto torque
Ad-24	0	Frequency limits select	0: No (Limits established by max. freq and start freq) 1: YES (Limits established by Hi and Low freq limits)
bA-11	4	Number of motor poles	4:1500rpm (set accordingly)
bA-13	xx	Motor rated current	xx Amps Set required current motor nameplate
bA-15	xx	Motor rated voltage	xx Volts Set required motor voltage nameplate
I/O GROUP (In) 0-20mA Analogue			
In-53	4.0mA	Minimum current of I2	4.0mA (Adjust min current accordingly)
In-54	0.00%	Min frequency for I2	0.00% (Adjust min transducer range as required)
In-55	20.0mA	Maximum current of I2	20.0mA Adjust max current accordingly)
In-56	100.0%	Max frequency for I2	100.0% (Adjust max transducer range as required)
In-65	1	Config Input P1	1: (FX Forward Run Command)
PID GROUP (AP)			
AP-1	0	PID function select	2 (Proc PID enabled)
AP-19	8.3	PID local set point	Enter desired pressure set point value
AP-20	0	PID set point source	0 (MREF – local keypad set in screen AP-19)
AP-21	0	PID feedback source	3 (I2 = 4-20mA)
AP-22	50	PID proportional gain	Adjust as necessary
AP-23	10.0	PID integral gain	Adjust as necessary
AP-24	0	PID differential gain	Leave at 0
AP-28	0	PID mode	1
AP-29	50.0	PID upper speed limit	Adjust as necessary
AP-30	0.0	PID lower speed limit	Adjust as necessary
AP-34	0.00	Pipe fill speed	Set to frequency to fill empty pipe
AP-35	0.0	Pipe fill pressure	Set to pressure pipe is determined to be full
AP-36	600	Pipe fill time	Set max time to operate in pipe fill mode
AP-37	60.0	Sleep delay time	Adjust as necessary
AP-38	0.00	Sleep speed	Set sleep below which SD300 will go to sleep
AP-39	35	Wake up pressure	Set pressure level to wake up at
AP-40	2	Wake up mode	Set to either 0 or 2
AP-42	0	PID engineering units	Select desired engineering units

denotes minimum necessary adjustments.

Connection Diagram

DesignSpark Electrical



CONTRACT: SD300-1

Power Electronics NZ Ltd
Napier

LOCATION: +11

Document book

Main electrical closet

REV.	DATE	NAME	CHANGES	REVISION
0	15/10/2020	Jason C		0
User data 1				
User data 2				
				02



15th October 2020



Terminal Numbers

Terminals CM / P1	: Start+ (NO contact)	Pump Start/Stop
Terminals 24 / I2	: 24VDC supply/4-20mA Input	Pressure Transducer

NOTE: the remote I/O control cables must be screened

Notes explanations of parameters

Note all scaling of the SD300 equates to a percentage value %.

Example- Pressure Transducer 0-10Bar (4-20mA) Scaling is already 0-100%, so if you wanted to maintain a set point pressure of 5 Bar in parameter AP-19 set the value 50.

On starting the SD300 if pipe fill is set it will firstly obtain these settings then will change into full PID control and will pressure regulate to keep the system pressure at the system pressure setpoint.

If all the water outlets are closed while the VSD is running then the VSD will ramp down under PID control until it reaches the Sleep speed at which point the VSD will turn off after the delay time and enter "Sleep Mode".

Note: Sleep mode will only work if the hydraulic system is fitted with a non return valve, permitting the trapping of water under pressure within the pipe work. The pressure transducer must be mounted on the outlet side of the non return valve.

Once in "Sleep Mode" the VSD continues to monitor the pressure feedback from the transducer. Should a water outlet be opened then the system pressure will drop, and once it drops to the "Wake" pressure level the drive will start and PID ramp back to the operational setpoint.

It is necessary to experiment with the "Sleep" and "Wake" levels to ensure a stable system.