

ONE VFD PER PUMP

PARAMETER	DESCRIPTION	ABB DEFAULT	One VFD Per Pump MPCSV Setup	COMMISSIONING DATA		
				//	//	//
Group 99	START-UP DATA					
9901	language	0 (english)	0 ENGLISH			
9902	applic macro	6 (PID CTRL)	STANDARD			
9905	motor nom volt	230/400 V *)	415			
9906	motor nom curr	IN **)	Motor Nameplate			
9907	motor nom freq	50 Hz	50 Hz			
9908	motor nom speed	1440 rpm	Motor Nameplate			
9909	motor nom power	2-30 Kw ***)	Motor Nameplate			
9910	motor cos phi	0.83	Motor Nameplate			
Group 01	OPERATING DATA					
0102	speed	-				
0103	output freq	-				
0104	current	-				
0105	torque					
0106	power	-				
0107	DC-bus voltage	-				
0109	output voltage	-				
0110	ACS400 temp	-				
0111	external ref 1	-				
0112	external ref 2	-				
0113	ctrl location	-				
0114	run time (r)	-				
0115	kWh counter (r)	-				
0116	appl blk output	-				
0117	DI1-DI4 status	-				
0118	AI1	-				
0119	AI2	-				
0121	DI5 & relays	-				
0122	AO	-				
0124	actual value 1	-				
0125	actual value 2	-				
0126	control dev	-				
0127	PID act value					
0128	last fault	0				
0129	previous fault	0				
0130	oldest fault	0				
0131	ser link data 1					
0132	ser link data 2					
0133	ser link data 3					
0134	process var 1					
0135	process var 2					

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0136	run time					
0137	MWh counter					
Group 10	COMMAND INPUTS					
1001	ext1 commands	1 (DI1)	DI 1 (1)			
1002	ext2 commands	6 (DI5)				
1003	direction	1 (FORWARD)	FORWARD (1)			
Group 11	REFERENCE SELECT					
1101	keypad ref sel	1 (ref1 (Hz))				
1102	ext1/ext2 sel	2 (DI2)	Ext 1			
1103	ext ref1 select	1 (AI1)	AI1			
1104	ext ref1 min	0 Hz				
1105	ext ref1 max	50 Hz				
1106	ext ref2 select	1 (AI1)				
1107	ext ref2 min	0%				
1108	ext ref2 max	100%				
Group 12	CONSTANT SPEEDS					
1201	const speed sel	3 (DI3)	DI3			
1202	const speed 1	5 Hz	50 Hz			
1203	const speed 2	10 Hz				
1204	const speed 3	15 Hz				
1205	const speed 4	20 Hz				
1206	const speed 5	25 Hz				
1207	const speed 6	40 Hz				
1208	const speed 7	50 Hz				
Group 13	ANALOGUE INPUTS					
1301	minimum ai1	0%				
1302	maximum ai1	100%				
1303	filter ai1	0.1 s				
1304	minimum ai2	0%				
1305	maximum ai2	100%				
1306	filter ai2	0.1 s				
Group 14	RELAY OUTPUTS					
1401	relay output 1	3 (FAULT(-1))				
1402	relay output 2	2 (RUN)				
1403	relay 1 on delay	0 s				
1404	relay 1 off delay	0 s				
1405	relay 2 on delay	0 s				
1406	relay 2 off delay	0 s				
Group 15	ANALOGUE OUTPUT					
1501	ao content	103				
1502	ao content min	0.0 Hz				
1503	ao content max	50 Hz				
1504	minimum ao	0 mA				
1505	maximum ao	20.0 mA				

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1506	filter ao	0.1 s				
Group 16	SYSTEM CONTROLS					
1601	run enable	4 (DI4)	NOT SELECTED			
1602	parameter lock	1 (open)				
1604	fault reset sel	0 (KEYPAD)	START / STOP			
1605	local lock	0 (open)	1 (LOCK)			
1607	param. save	0 (done)				
Group 20	LIMITS					
2003	max current	1.5*IN **)				
2005	overvolt ctrl	1 (enable)				
2006	undervolt ctrl	1 (enable time)				
2007	minimum freq	0 Hz				
2008	maximum freq	50 Hz				
Group 21	START/STOP					
2101	start function	1 (ramp)				
2102	stop function	1 (coast)	2 (ramp)			
2103	torq boost curr	1.2*IN **)				
2104	stop dc inj time	0 s				
2105	premag sel	0 (NOT SEL)				
2106	premag max time	2.0 s				
2107	start inhibit	1 (on)	Off			
Group 22	ACCEL/DECEL					
2201	acc/dec 1/2 sel	0 (NOT SEL)				
2202	acceler time 1	5 s	1			
2203	deceler time 1	5 s	1			
2204	acceler time 2	60 s				
2205	deceler time 2	60 s				
2206	ramp shape	0 (linear)				
Group 25	CRITICAL FREQ					
2501	crit freq sel	0 (off)				
2502	crit freq 1 lo	0 Hz				
2503	crit freq 1 hi	0 Hz				
2504	crit freq 2 lo	0 Hz				
2505	crit freq 2 hi	0 Hz				
Group 26	MOTOR CONTROL					
2603	Ir compensation	10 V	10 V			
2604	Ir comp range	50 Hz				
2605	low noise	0 (off)				
2606	U/f ratio	1 (linear)	SQUARE (2)			
2607	slip comp ratio	0%	100%			
Group 30	FAULT FUNCTIONS					
3001	AI<min function	1 (fault)				
3002	panel loss	1 (fault)				

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3003	external fault	0 (not sel)				
3004	mot therm prot	1 (fault)				
3005	mot therm time	500 s				
3006	mot load curve	100%				
3007	zero speed load	70%				
3008	break point	35 Hz				
3009	stall function	0 (not sel)				
3010	stall current	1.2* IN **)				
3011	stall freq hi	20 Hz				
3012	stall time	20 s				
3013	underload func	0 (not sel)				
3014	underload time	20 s				
3015	underload curve	1				
Group 31	AUTOMATIC RESET					
3101	nr of trials	0				
3102	trial time	30 s				
3103	delay time	0 s				
3104	ar overcurrent	0 (disable)				
3105	ar overvoltage	0 (disable)				
3106	ar undervoltage	0 (disable)				
3107	ar AI<min	0 (disable)				
Group 32	SUPERVISION					
3201	superv 1 param	103				
3202	superv 1 lim lo	0.0 Hz				
3203	superv 1 lim hi	0.0 Hz				
3204	superv 2 param	103				
3205	superv 2 lim lo	0.0 Hz				
3206	superv 2 lim hi	0.0 Hz				
Group 33	INFORMATION					
3301	sw version	-				
3302	test date	-				
Group 34	PROCESS VARIABLES					
3401	display sel	1(standard)				
3402	p var 1 sel	104				
3403	p var 1 multip	1				
3404	p var 1 divisor	1				
3405	p var 1 scaling	1				
3406	p var 1 unit	1 (A)				
3407	p var 2 sel	103				
3408	p var 2 multip	1				
3409	p var 2 divisor	1				
3410	p var 2 scaling	1				
3411	p var 2 unit	3 (Hz)				

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Group 40	PID CONTROL					
4001	PID gain	1.0				
4002	PID integ time	60 s				
4003	PID deriv time	0 s				
4004	PID deriv filter	1 s				
4005	error value inv	0 (no)				
4006	actual val sel	1 (act1)				
4007	act1 input sel	2 (AI2)				
4008	act2 input sel	2 (AI2)				
4009	act1 minimum	0%				
4010	act1 maximum	100%				
4011	act2 minimum	0%				
4012	act2 maximum	100%				
4013	PID sleep delay	60 s				
4014	PID sleep level	0 Hz				
4015	wake-up level	0%				
4016	PID param set	6 (set 1)				
4017	wake-up delay	0.50 s				
4018	sleep selection	0 (internal)				
4019	set point sel	2 (external)				
4020	internal setpnt	40%				
Group 41	PID CONTROL (2)					
4101	PID gain	1.0				
4102	PID integ time	60 s				
4103	PID deriv time	0 s				
4104	PID deriv filter	1 s				
4105	error value inv	0 (no)				
4106	actual val sel	1 (act1)				
4107	act1 input sel	2 (AI2)				
4108	act2 input sel	2 (AI2)				
4109	act1 minimum	0%				
4110	act1 maximum	100%				
4111	act2 minimum	0%				
4112	act2 maximum	100%				
4119	set point sel	2 (external)				
4120	internal setpnt	40.0 %				
Group 50	COMMUNICATION					
5001	ddcs bit rate	1 (1 Mbits/s)				
5002	ddcs node nr	1				
5003	comm fault time	1 s				
5004	comm fault func	0 (not sel)				
5005	protocol sel	0 (not sel)				
5006	comm commands	0 (not sel)				
5007	ddcs bus mode	1 (fieldbus)				

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Group 51	EXT COMM MODULE					
5101-5115	fieldbuspar1 - 15	-				
Group 52	STANDARD MODBUS					
5201	station number	1				
5202	comm speed	96 (9600 bits/s)				
5203	parity	0 (none)				
5206	bad messages	-				
5207	good messages	-				
5208	buffer overruns	-				
5209	frame errors	-				
5210	parity errors	-				
5211	crc errors	-				
5212	busy errors	-				
5213	ser fault mem 1	-				
5214	ser fault mem 2	-				
5215	ser fault mem 3	-				
Group 81	PFC CONTROL					
8103	reference step 1	0%				
8104	reference step 2	0%				
8105	reference step 3	0%				
8109	start freq 1	50 Hz				
8110	start freq 2	50 Hz				
8111	start freq 3	50 Hz				
8112	low freq 1	25 Hz				
8113	low freq 2	25 Hz				
8114	low freq 3	25 Hz				
8115	aux mot start d	5 s				
8116	aux mot stop d.	3 s				
8117	nr of aux mot	1				
8118	autochng interv	0.0 h (not sel)				
8119	autochng level	50%				
8120	interlocks	4 (DI4)				
8121	reg bypass ctrl	0 (no)				
8122	PFC start delay	0.5 s				

To set the VFD for 480V 2 phase operation:

1. Go to 33.01 and push ENTER & RESET buttons until the display blinks
2. Make sure that the symbol **!** is visible on the bottom right hand side of the display
3. Change parameter 6309 to "4" – This masks the DC Bus ripple fault

Repeat steps 1 & 2 to remove the **!** symbol.