N2 Bus Connections

The connections for the N2 Network are located on the terminal block labeled CN2 at the bottom of the SC-OPE 3. The connections for CN2 are labeled on the back of the SC-OPE 3 on the circuit board. The connections for N2 are shown in the following table.

N2 Bus Connections

CN2 Pin #	CN2 Name	N2 Bus Connection
1	TX+	N2+
2	TX-	N2-
3	GND	REF

RS-485 Bias Voltages

RS-485 Bias Voltages can be added by adding two 1 K resistors to terminal block CN2 at the bottom of the SC-OPE 3. One resistor needs to be placed between TX+ (pin 1) and Vcc (pin 9). The other resistor goes between TX- (pin 2) and GND (pin 3).

RS-485 End-Of-Line (Termination) Resistor

If needed, an RS-485 termination resistor can be added across the TX+ (Pin 1) and TX- (Pin 2) positions on CN2. It is recommended that a 120 Ohm ¼ Watt resistor be used.

N2 Implementation Notes

1) Overriding of AI and BI points is not supported. Overrides of AI and BI points will be acknowledged but the Override Value will be ignored and the Override Flag will not be set.

2) Out of range values on Overrides of AO, ADI, and ADF points will be NAK'd.

3) Certain ADI and ADF points contain read-only values and cannot be overridden. These particular points are noted in the following Point Table. Overrides of these ADI and ADF points will be acknowledged but the Override Value will be ignored and the Override Flag will not be set.

4) When an Override is Released, the point value will remain at the current Override value and will not revert back to its value prior to the Override. This pertains to all point types.

N2 Point Map

The following table contains the Network Point Type (NPT), Network Point Address (NPA), Engineering Units (UNITS), Point Description, Range/Value, and Notes for each point supported in version 1.04 of the SC-OPE 3 for the RAM RS300/FP300 inverter.

NPT	NPA	UNITS	POINT DESCRIPTION	RANGE/VALUE	NOTES
AI	1	Hz	Current Frequency (D001)	0-400	No Adjust/ No Override
AI	2	Hz	Preset Frequency (F001)	0-400	No Adjust/ No Override
AI	3	A	Output Current Monitor (D002)	0-6553.5	No Adjust/ No Override
AI	4	%	PID Feedback Monitor (D004)	0-99999.99	No Adjust/ No Override
AI	5		Frequency Conversion Monitor (D007)	0-99999.99	No Adjust/ No Override
AI	6	%	Torque Monitor (D012)	-300-300	No Adjust/ No Override
AI	7	V	Output Voltage Monitor (D013)	0-6553.5	No Adjust/ No Override
AI	8	kW	Input Power Monitor (D014)	0-6553.5	No Adjust/ No Override
BI	1		Inverter Offline	0=Online 1=Offline	No Adjust/ No Override
BI	2		Stop Flag	0=Off 1=Stopped	No Adjust/ No Override
BI	3		Run Flag	0=Off 1=Running	No Adjust/ No Override
BI	4		Tripping Flag	0=Off 1=Tripped	No Adjust/ No Override
BI	5		Acceleration Flag	0=Off 1=Accelerating	No Adjust/ No Override
BI	6		Deceleration Flag	0=Off 1=Decelerating	No Adjust/ No Override
BI	7		Constant Speed Flag	0=Off 1=Constant Speed	No Adjust/ No Override
BI	8		Forward Flag	0=Off 1=Forward	No Adjust/ No Override
BI	9		Reverse Flag	0=Off 1= Reverse	No Adjust/ No Override
BI	10		Input Terminal 1	0=Open 1=Closed	No Adjust/ No Override
BI	11		Input Terminal 2	0=Open 1=Closed	No Adjust/ No Override
BI	12		Input Terminal 3	0=Open 1=Closed	No Adjust/ No Override
BI	13		Input Terminal 4	0=Open 1=Closed	No Adjust/ No Override
BI	14		Input Terminal 5	0=Open 1=Closed	No Adjust/ No Override
BI	15		Input Terminal 6	0=Open 1=Closed	No Adjust/ No Override

NPT	NPA	UNITS	POINT DESCRIPTION	RANGE/VALUE	NOTES
BI	16		Input Terminal 7	0=Open 1=Closed	No Adjust/ No Override
BI	17		Input Terminal 8	0=Open 1=Closed	No Adjust/ No Override
BI	18		Output Terminal 1	0=Open 1=Closed	No Adjust/ No Override
BI	19		Output Terminal 2	0=Open 1=Closed	No Adjust/ No Override
BI	20		Output Terminal 3	0=Open 1=Closed	No Adjust/ No Override
BI	21		Output Terminal 4	0=Open 1=Closed	No Adjust/ No Override
BI	22		Output Terminal 5	0=Open 1=Closed	No Adjust/ No Override
AO	1	Hz	Frequency Setting (A020/A220/A320)	0.00-400.00	
AO	2	Sec	Acceleration Time Setting (F002/F202/F302)	0.00-3000.00	
AO	3	Sec	Deceleration Time Setting (F003/F203/F303)	0.00-3000.00	
BO	1		Forward Run Command	0=No Action, 1=Run Forward	
BO	2		Reverse Run Command	0=No Action, 1=Run Reverse	
BO	3		Stop/Reset Command	0=No Action, 1=Stop/Reset	
ADF	1	Hz	1st Multi-speed 0 (A020)	0.00-400.00	
ADF	2	Hz	2nd Multi-speed 0 (A220)	0.00-400.00	
ADF	3	Hz	3rd Multi-speed 0 (A320)	0.00-400.00	
ADF	4	Hz	Multi-speed 1 (A021)	0.00-400.00	
ADF	5	Hz	Multi-speed 2 (A022)	0.00-400.00	
ADF	6	Hz	Multi-speed 3 (A023)	0.00-400.00	
ADF	7	Hz	Multi-speed 4 (A024)	0.00-400.00	
ADF	8	Hz	Multi-speed 5 (A025)	0.00-400.00	
ADF	9	Hz	Multi-speed 6 (A026)	0.00-400.00	
ADF	10	Hz	Multi-speed 7 (A027)	0.00-400.00	
ADF	11	Hz	Multi-speed 8 (A028)	0.00-400.00	
ADF	12	Hz	Multi-speed 9 (A029)	0.00-400.00	
ADF	13	Hz	Multi-speed 10 (A030)	0.00-400.00	
ADF	14	Hz	Multi-speed 11 (A031)	0.00-400.00	
ADF	15	Hz	Multi-speed 12 (A032)	0.00-400.00	
ADF	16	Hz	Multi-speed 13 (A033)	0.00-400.00	
ADF	17	Hz	Multi-speed 14 (A034)	0.00-400.00	
ADF	18	Hz	Multi-speed 15 (A035)	0.00-400.00	
ADF	19	Sec	1st Acceleration Time (F002)	0.01-3600.00	
ADF	20	Sec	2nd Acceleration Time (F202)	0.01-3600.00	
ADF	21	Sec	3rd Acceleration Time (F302)	0.01-3600.00	
ADF	22	Sec	1st Deceleration Time (F003)	0.01-3600.00	
ADF	23	Sec	2nd Deceleration Time (F203)	0.01-3600.00	
ADF	24	Sec	3rd Deceleration Time (F303)	0.01-3600.00	
ADF	25		PID - P Gain (A072)	0.2-5.0	
ADF	26	Sec	PID - I Gain (A073)	0.0-3600.0	
ADF	27	Sec	PID - D Gain (A074)	0.00-100.00	

NPT	NPA	UNITS	POINT DESCRIPTION	RANGE/VALUE	NOTES
ADF	28		PID – Scale (A075)	0.01-99.99	
ADF	29	Hz	Orientation Speed (P015)	0.50-60.00	
ADF	30	Sec	Orientation Completion Delay Time (P018)	0.00-9.99	
ADF	31	Hr	Accumulated Run Time (D016)	0.0-999999.9	No Adjust/ No Override
ADF	32	Hr	Accumulate On Time (D017)	0.0-999999.9	No Adjust/ No Override
ADF	33	Hz	Terminal Set Frequency	0.00-99999.99	No Adjust/ No Override
ADF	34	V	P-N (DC Bus) Voltage	0.0-6553.5	No Adjust/ No Override
ADF	35	V	Input Voltage	0.0-6553.5	No Adjust/ No Override
ADF	36	Hz	Trip 1 Frequency (D081)	0.00-99999.99	No Adjust/ No Override
ADF	37	A	Trip 1 Output Current (D081)	0.00-655.35	No Adjust/ No Override
ADF	38	V	Trip 1 P-N Voltage (D081)	0.0-6553.5	No Adjust/ No Override
ADF	39	Hr	Trip 1 Run Time (D081)	0.0-999999.9	No Adjust/ No Override
ADF	40	Hr	Trip 1 Power On Time (D081)	0.0-999999.9	No Adjust/ No Override
ADF	41	Hz	Trip 2 Frequency (D082)	0.00-99999.99	No Adjust/ No Override
ADF	42	A	Trip 2 Output Current (D082)	0.00-655.35	No Adjust/ No Override
ADF	43	V	Trip 2 P-N Voltage (D082)	0.0-6553.5	No Adjust/ No Override
ADF	44	Hr	Trip 2 Run Time (D082)	0.0-999999.9	No Adjust/ No Override
ADF	45	Hr	Trip 2 Power On Time (D082)	0.0-999999.9	No Adjust/ No Override
ADF	46	Hz	Trip 3 Frequency (D083)	0.00-99999.99	No Adjust/ No Override
ADF	47	A	Trip 3 Output Current (D083)	0.00-655.35	No Adjust/ No Override
ADF	48	V	Trip 3 P-N Voltage (D083)	0.0-6553.5	No Adjust/ No Override
ADF	49	Hr	Trip 3 Run Time (D083)	0.0-999999.9	No Adjust/ No Override
ADF	50	Hr	Trip 3 Power On Time (D083)	0.0-999999.9	No Adjust/ No Override
ADF	51	Hz	Trip 4 Frequency (D084)	0.00-99999.99	No Adjust/ No Override
ADF	52	A	Trip 4 Output Current (D084)	0.00-655.35	No Adjust/ No Override
ADF	53	V	Trip 4 P-N Voltage (D084)	0.0-6553.5	No Adjust/ No Override
ADF	54	Hr	Trip 4 Run Time (D084)	0.0-999999.9	No Adjust/ No Override
ADF	55	Hr	Trip 4 Power On Time (D084)	0.0-999999.9	No Adjust/ No Override

NPT	NPA	UNITS	POINT DESCRIPTION	RANGE/VALUE	NOTES
ADF	56	Hz	Trip 5 Frequency (D085)	0.00-99999.99	No Adjust/ No Override
ADF	57	A	Trip 5 Output Current (D085)	0.00-655.35	No Adjust/ No Override
ADF	58	V	Trip 5 P-N Voltage (D085)	0.0-6553.5	No Adjust/ No Override
ADF	59	Hr	Trip 5 Run Time (D085)	0.0-999999.9	No Adjust/ No Override
ADF	60	Hr	Trip 5 Power On Time (D085)	0.0-999999.9	No Adjust/ No Override
ADF	61	Hz	Trip 6 Frequency (D086)	0.00-99999.99	No Adjust/ No Override
ADF	62	A	Trip 6 Output Current (D086)	0.00-655.35	No Adjust/ No Override
ADF	63	V	Trip 6 P-N Voltage (D086)	0.0-6553.5	No Adjust/ No Override
ADF	64	Hr	Trip 6 Run Time (D086)	0.0-999999.9	No Adjust/ No Override
ADF	65	Hr	Trip 6 Power On Time (D086)	0.0-999999.9	No Adjust/ No Override
ADI	1	Pulse	Orientation Stop Position (P014)	0-4095	
ADI	2		Orientation Direction (P016)	0:Forward 1:Reverse	
ADI	3	Pulse	Orientation Completion Range (P017)	0-10000	
ADI	4		Electronic Gear Numerator (P020)	1-9999	
ADI	5		Electronic Gear Denominator (P021)	1-9999	
ADI	6		AT Terminal Selection (A005)	0:Changing O and OI 1:Changing O and O2	
ADI	7		PID Selection (A071)	0:Off 1:On	
ADI	8		PID Feedback Selection (A076)	0:From OI 1:From O	
ADI	9		Operation Direction Monitor (D003)	0:Stopped 1:Forward 2:Reverse	No Adjust/ No Override
ADI	10		Trip Counter (D080)	0-65535	No Adjust/ No Override
ADI	11		Factor/Status of Trip 1 (D081)	0-255	No Adjust/ No Override
ADI	12		Factor/Status of Trip 2 (D082)	0-255	No Adjust/ No Override
ADI	13		Factor/Status of Trip 3 (D083)	0-255	No Adjust/ No Override
ADI	14		Factor/Status of Trip 4 (D084)	0-255	No Adjust/ No Override
ADI	15		Factor/Status of Trip 5 (D085)	0-255	No Adjust/ No Override
ADI	16		Factor/Status of Trip 6 (D086)	0-255	No Adjust/ No Override