Systems Integration

LONWORKS Solution to Danfoss Graham VLT 6000 Adjustable Frequency Drive

Table 1. VLT 6000 APOGEE Points, Application Number:9098, Program ID:80:00:08:3C:0A:04:04:04.

Point	Type	Description	Range/Units[a b c]
1	LAO	Drive Speed Set Point Value	%
2	LDO	Drive Speed Set Point State	Off/On
3	LAI	Drive Speed Feedback	%
5	LAI	Drive Output Current	A
6	LAI	Drive Output Voltage	VOLT
7	LAI	Drive Output Power	kW
8	LAI	Drive Total Running Hours	HR
9	LAO	Percent Reference Command	%
10	LAO	Frequency Reference Command	HERTZ
11	LENUM	Start Stop Command	0=Off 1=Low 2=Med 3=High 4=On 255=Nul
12	LENUM	Reset Fault Command	0=Off 1=Low 2=Med 3=High 4=On 255=Nul
13	LAO	Setpoint 1 Command	%
14	LAO	Setpoint 2 Command	%
15	LAO	Feedback 1 Command	%
16	LAO	Feedback 2 Command	%
17	LAO	Analog 4 Command	%
18	LAO	Analog 5 Command	%
19	LAI	DC Bus Voltage	VOLT
20	LDI	DI 33 State	Off/On

continued on next page...

Table 1. VLT 6000 APOGEE Points, Application Number:9098, Program ID:80:00:08:3C:0A:04:04:04. ***(continued)***

Point	Type	Description	Range/Units[a b c]
21	LDI	DI 32 State	Off/On
22	LDI	DI 29 State	Off/On
23	LDI	DI 27 State	Off/On
24	LDI	DI 19 State	Off/On
25	LDI	DI 18 State	Off/On
26	LDI	DI 17 State	Off/On
27	LDI	DI 16 State	Off/On
36	LDI	Reference High Warning	Ok/Warnng
37	LDI	Controller Card Fault Warning	Ok/Warnng
38	LDI	Power Card Fault Warning	Ok/Warnng
39	LDI	Feedback Time Out Warning	Ok/Warnng
40	LDI	RS485 Communication Warning	Ok/Warnng
41	LDI	Over Current Warning	Ok/Warnng
42	LDI	Current Limit Warning	Ok/Warnng
43	LDI	Thermistor Over Temperature Warning	Ok/Warnng
44	LDI	Motor Over Temperature Warning	Ok/Warnng
45	LDI	Inverter Over temperature Warning	Ok/Warnng
46	LDI	Under Voltage Fault	Ok/Fault
47	LDI	Over Voltage Fault	Ok/Fault
48	LDI	Under Voltage Warning	Ok/Warnng
49	LDI	Over Voltage Warning	Ok/Warnng
50	LDI	Input Phase Loss Warning	Ok/Warnng
51	LDI	Live Zero Warning	Ok/Warnng
52	LDI	Autoramping	Off/On
53	LDI	Start Delay	Off/On
54	LDI	Sleep Boost	Off/On
55	LDI	Sleep	Off/On
56	LDI	AMA Done	Off/On
57	LDI	AMA Running	Off/On
58	LDI	Reverse Start	Off/On
59	LDI	Ramping	Off/On
60	LDI	Reverse	Forwrd/Revrse
61	LDI	At Reference	Off/On
62	LDI	Running	Stop/Run
63	LDI	Remote/Local	Remote/Local

continued on next page...

Table 1. VLT 6000 APOGEE Points, Application Number:9098, Program ID:80:00:08:3C:0A:04:04:04. ***(continued)***

Point	Type	Description	Range/Units[a b c]
64	LDI	Hand-Off-Auto Off	Off/On
65	LDI	Auto - Hand	Auto/Manual
66	LDI	Run Request	Off/On
67	LDI	Run Permitted	Off/On
68	LDI	Unknown Fault	Ok/Fault
69	LDI	Trip Lock Fault	Ok/Fault
70	LDI	AMA Fault	Ok/Fault
71	LDI	Feedback Time Out Fault	Ok/Fault
72	LDI	RS485 Communication Fault	Ok/Fault
73	LDI	Short Circuit Fault	Ok/Fault
74	LDI	SMPS Fault	Ok/Fault
75	LDI	Ground Fault	Ok/Fault
76	LDI	Over Current Fault	Ok/Fault
77	LDI	Current Limit Alarm	Ok/Fault
78	LDI	Motor Thermostat Fault	Ok/Fault
79	LDI	Motor Thermal Fault	Ok/Fault
80	LDI	Inverter Thermal Fault	Ok/Fault
81	LDI	Under Voltage Fault	Ok/Fault
82	LDI	Over Voltage Fault	Ok/Fault
83	LDI	Phase Loss Fault	Ok/Fault
84	LAI	Output in Percent	%
85	LAI	Output In Frequency	HERTZ
86	LDI	Controller Ready	Notrdy/Ready
87	LDI	Drive Ready	Notrdy/Ready
88	LDI	Safety Open/Closed	Open/Closed
89	LDI	Alarm Present	Normal/Alarm
90	LDI	Warning Present	Ok/Warnng
91	LDI	At Reference	Off/On
92	LDI	Hand/Auto	Manual/Auto
93	LDI	Frequency Range	Fault/Ok
94	LDI	Drive Running	Stop/Run
95	LDI	Voltage Warning	Ok/Warnng
96	LDI	Current Limit Fault	Ok/Fault
97	LDI	Thermal Warning	Ok/Warnng
98	LAI	Drive Energy	kWh

continued on next page...

Table 1. VLT 6000 APOGEE Points, Application Number:9098, Program ID:80:00:08:3C:0A:04:04:04. ***(continued)***

Point	Type	Description	Range/Units[a] [b] [c]
99	LAI	DC Voltage	VOLT
100	LAI	Motor Temperature in Percent	%
101	LAI	Inverter Temperature in Percent	%
102	LAI	Feedback	%
103	LAI	Analog 1 Voltage	VOLT
104	LAI	Analog 2 Voltage	VOLT
105	LAI	Analog 3 Current	mA
200	LAO	Maximum Motor Speed CP Input	%
201	LAO	Minimum Motor Speed CP Input	%
203	LAO	Nominal Motor Speed in RPM CP Input	rpm
204	LAO	Nominal Motor Frequency CP Input	HERTZ
205	LAO	Minimum Ramp Up Time CP Input	sec
206	LAO	Minimum Ramp Down Time CP Input	sec

[a] Values noted for LDIs and LDOs are in the following format: OFF text/ON text.

[b] This column indicates the value/range or engineering units or both if known.

[c] The default English value is not italicized. An italicized entry indicates an SI value.

Table 2. VLT 6000 LONWORKS Network Variables, Program ID: 80:00:08:3C:0A:04:04:04.

Point	NVO Name	NVI Name	CP Name
1		nviDrvSpeedStpt.value	nviDrvSpeedStpt.value
2		nviDrvSpeedStpt.state	nviDrvSpeedStpt.state
3	nvoDrvSpeed		
5	nvoDrvCurnt		
6	nvoDrvVolt		
7	nvoDrvPwr		
8	nvoDrvRunHours		
9		nviRefPcnt	nviRefPcnt
10		nviRefHz	nviRefHz
11		nviStartStop	nviStartStop
12		nviResetFault	
13		nviSetpoint1	nviSetpoint1
14		nviSetpoint2	nviSetpoint2
15		nviFeedback1	nviFeedback1
16		nviFeedback2	nviFeedback2
17		nviSetAnalog4	nviSetAnalog4
18		nviSetAnalog5	nviSetAnalog5
19	nvoVoltage		
20	nvoDigitlInput.bit0		
21	nvoDigitlInput.bit1		
22	nvoDigitlInput.bit2		
23	nvoDigitlInput.bit3		
24	nvoDigitlInput.bit4		
25	nvoDigitlInput.bit5		
26	nvoDigitlInput.bit6		
27	nvoDigitlInput.bit7		
36	nvoWarning1.bit0		
37	nvoWarning1.bit1		
38	nvoWarning1.bit2		
39	nvoWarning1.bit3		

continued on next page...

Table 2. VLT 6000 LONWORKS Network Variables, Program ID: 80:00:08:3C:0A:04:04:04. ***(continued)***

Point	NVO Name	NVI Name	CP Name
40	nvoWarning1.bit4		
41	nvoWarning1.bit5		
42	nvoWarning1.bit6		
43	nvoWarning1.bit7		
44	nvoWarning1.bit8		
45	nvoWarning1.bit9		
46	nvoWarning1.bit10		
47	nvoWarning1.bit11		
48	nvoWarning1.bit12		
49	nvoWarning1.bit13		
50	nvoWarning1.bit14		
51	nvoWarning1.bit15		
52	nvoWarning2.bit0		
53	nvoWarning2.bit1		
54	nvoWarning2.bit2		
55	nvoWarning2.bit3		
56	nvoWarning2.bit4		
57	nvoWarning2.bit5		
58	nvoWarning2.bit6		
59	nvoWarning2.bit7		
60	nvoWarning2.bit8		
61	nvoWarning2.bit9		
62	nvoWarning2.bit10		
63	nvoWarning2.bit11		
64	nvoWarning2.bit12		
65	nvoWarning2.bit13		
66	nvoWarning2.bit14		
67	nvoWarning2.bit15		
68	nvoAlarmword.bit0		
69	nvoAlarmword.bit1		

continued on next page...

Table 2. VLT 6000 LONWORKS Network Variables, Program ID: 80:00:08:3C:0A:04:04:04. ***(continued)***

Point	NVO Name	NVI Name	CP Name
70	nvoAlarmword.bit2		
71	nvoAlarmword.bit3		
72	nvoAlarmword.bit4		
73	nvoAlarmword.bit5		
74	nvoAlarmword.bit6		
75	nvoAlarmword.bit7		
76	nvoAlarmword.bit8		
77	nvoAlarmword.bit9		
78	nvoAlarmword.bit10		
79	nvoAlarmword.bit11		
80	nvoAlarmword.bit12		
81	nvoAlarmword.bit13		
82	nvoAlarmword.bit14		
83	nvoAlarmword.bit15		
84	nvoOutputPcnt		
85	nvoOutputHz		
86	nvoStatusword.bit0		
87	nvoStatusword.bit1		
88	nvoStatusword.bit2		
89	nvoStatusword.bit3		
90	nvoStatusword.bit7		
91	nvoStatusword.bit8		
92	nvoStatusword.bit9		
93	nvoStatusword.bit10		
94	nvoStatusword.bit11		
95	nvoStatusword.bit13		
96	nvoStatusword.bit14		
97	nvoStatusword.bit15		
98	nvoDrvEnrg		
99	nvoDCVoltage		

continued on next page...

Siemens Building Technologies, Inc.
1000 Deerfield Parkway
Buffalo Grove, IL 60089-4513
U.S.A.

Table 2. VLT 6000 LONWORKS Network Variables, Program ID: 80:00:08:3C:0A:04:04:04. ***(continued)***

Point	NVO Name	NVI Name	CP Name
100	nvoTempMtr		
101	nvoTempInvrtr		
102	nvoFeedback		
103	nvoAnalog1		
104	nvoAnalog2		
105	nvoAnalog3		
200			nciMaxSpeed
201			nciMinSpeed
203			nciNmlSpeed
204			nciNmlFreq
205			nciRampUpTime
206			nciRampDownTime