Troubleshooting Guide

Original Instructions

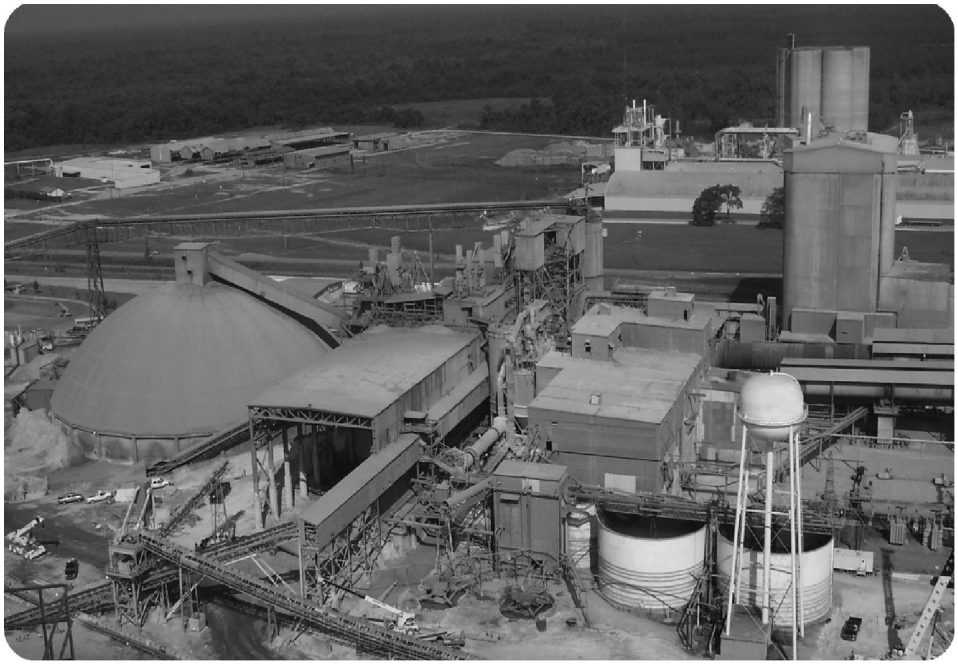
Allen-Bradley

PowerFlex 7000 Medium Voltage AC Drives

Bulletin Numbers 7000A, 7000, 7000L





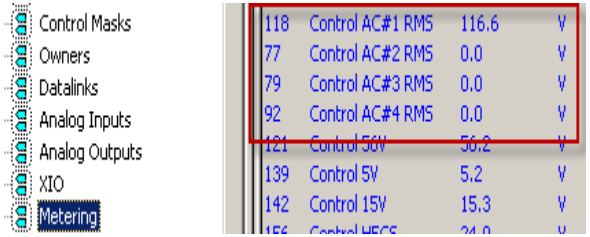




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Fault Messages

All Drive Types	PF7000A	PF7000B	PF7000C	Marine Drive	Heat pipe Drive	Fault Message	Fault Code	Description	Recommended Action(s)
X						AC/DC#1 AC Fail	58	There can be up to 4 AC/DC power supplies in a drive, designated 1, 2, 3 and 4. Each power supply will have its input control voltage measured and monitored for reliable drive operation. An AC Fail is detected when the input to any of the AC/DC power supplies goes below 85Vrms. 120Vac is measured directly on the ACB at terminals J1 14-15. The drive displays the measured value in the Metering group parameters 118, 77, 79, and 92 for power supplies 1 to 4 respectively.	• Verify the input AC voltage to the power supply, typically 110Vac or 120Vac. • Be sure that the AC/DC power supply monitor signal is connected to the ACB. • Check the Metering group in the drive variables to view the control power value the drive is measuring. • The example below shows that the drive is detecting a single AC/DC power supply whose input voltage is 116.6V. 
X						AC/DC#2 AC Fail	59		
X						AC/DC#3 AC Fail	60		
X						AC/DC#4 AC Fail	61		
X						AC/DC#1 DC Fail	48	There can be up to 4 AC/DC power supplies in a drive, designated 1, 2, 3 and 4. Each power supply has its own sensing circuit and will monitor its DC output voltage. The AC/DC power supply triggers a DC Fail signal when an output drops below 49Vdc. The drive monitors the DC Fail signals from the inputs connected to terminals J18, J19, J20 and J21. The drive monitors the 56VDC supply via connection J15 1-2 on the ACB.	• Verify that the power supply is energized and is using the appropriate input control power. • Measure the output voltage and confirm whether the output level is below the trip level. • Verify that the fault detection wiring is per the drawings, and measure the voltage on the trip signals. For example, Terminal J18 2-3 is 5Vdc when healthy, and 0V in a faulted state. • Verify that the power supply internal cooling fan is operational, cycle control power if needed. • If the cooling fan is not operational, replace the power supply. • Check parameter 121 in the Metering group of the drive variables to view the measured DC voltage.
X						AC/DC#2 DC Fail	49		
X						AC/DC#3 DC Fail	50		
X						AC/DC#4 DC Fail	51		
X						Adapter 1 Loss	17	There has been a loss of communication between the Drive Processor Module (DPM) and the DPI adapter 1-6.	• Cycle control power to the drive. • Change the adapter and/or DPM if all attempts to restore communication fail. • Ensure that the adapter is plugged into the ACB, powered, and working properly.
X						Adapter 2 Loss	18		
X						Adapter 3 Loss	19		
X						Adapter 4 Loss	20		
X						Adapter 5 Loss	21		
X						Adapter 6 Loss	22		

All Drive Types	PF7000A	PF7000B	PF7000C	Marine Drive	Heat pipe Drive	Fault Message	Fault Code	Description	Recommended Action(s)
X						Inv PSD Fault	690	Inverter power structure diagnostic fault: The safety control system has detected a fault in one or more SGCTs. Incorrect SGCT unit feedback was detected.	• Resolve all other faults first • Ensure there are OIB2s are installed in the OIBBS, not the OIBs • Ensure proper configuration setting of the SPS with drive hardware • Check the LV wiring from the input device feedback • Check the LV wiring/connectors to the OIBBS and ACB. • Verify correct STO configuration settings • Turn off all the power supplies to the drive and replace the SGCTs according to the procedures in the User Manual. • Cycle the control power. • If the same fault still trips the drive, contact the manufacturer for the OIBBS spare part(s) for replacement.
X						Inv S1 Stuck	672	Inverter S1 stuck: The inverter OIBBS diagnostic subsystem has detected a fault.	• Cycle the control power. • If the same fault still trips the drive, contact the manufacturer for the OIBBS spare parts for replacement.
X						Inv S2 Stuck	673	Inverter S2 stuck: The inverter OIBBS diagnostic subsystem has detected a fault.	• Cycle the control power. • If the same fault still trips the drive, contact the manufacturer for the OIBBS spare parts for replacement.
X						Inv S3 Timeout	676	Inverter S3 timeout: The inverter OIBBS diagnostic subsystem has detected a fault. A problem of timing function on the OIBBS has been detected.	• Cycle the control power. • If the same fault still trips the drive, contact the manufacturer for the OIBBS spare parts for replacement.
X						Inv STOInp Invld	675	Inverter safety input invalid: The inverter OIBBS diagnostic subsystem has detected an invalid control input state.	• Verify the wiring of the inverter OIBBS. • Cycle the control power. • If the same fault still trips the drive, contact the manufacturer for the OIBBS spare parts for replacement.
X						Inv Temp Out Rng	667	Inverter temperature out of range: The inverter OIBBS diagnostic subsystem has detected an out of range temperature.	• Verify the airflow in the low voltage control compartment. • Shut off the control power to let the temperature in the control compartment cool. • Cycle the control power. • If the same fault still trips the drive, contact the manufacturer for the OIBBS spare parts for replacement.
	X	X			X	Inv TFBFbk Error	499	The drive has lost the fiber-optic signal from the specified temperature feedback board.	• Verify that bit-1 of parameter P274 is set correctly. • Check for damaged fiber-optic cable or loose connection.
X						Inv WtchDg T Out	665	Inverter watchdog timeout: A failure of the Inverter OIBBS diagnostic subsystem was detected.	• Verify all the connections for OIBBS, OIB2 on inverter side. • This fault will only reset upon cycling control power. • Cycle the control power, and if the same fault still trips the drive, contact the manufacturer for spare parts of the OIBBS, OIB2 and/or the connections for replacement.

Item	Description	Part Number
SCR Matched set of two		
350A	Matched set of two 350A SCR	81001-335-72-R
800A	Matched set of two 800A SCR	81003-437-52-R
SCR Matched set of three		
350A	Matched set of three 350A SCR	81001-335-73-R
800A	Matched set of three 800A SCR	81003-437-53-R
Power Supplies		
AC/DC	Single phase input, 56V DC output, AC/DC 1000W	80026-529-01-R
AC/DC	Single phase input, 56V DC output, AC/DC 1500W	80026-524-01-R
AC/DC	Single phase input, 56V DC output, AC/DC 300W	80026-088-01-R
DC/DC	56V DC input, Absopulse	80026-518-01-R
IGDPS	56V DC / 20V DC	80026-044-06-R