SERVICE

AMBER LED DESCRIPTION	* FLASH CODE (Amber LED)	RESET TIME (Minimum) Minutes	* * TYPE
Standby	ON, no flash	--	--
Variable Capacity Mode	1, pause	--	--
Variable Speed Range Cutback	1 (2 sec ON), longer pause (1 second OFF)	--	--
2-stage "LOW" Capacity	1, pause	--	--
2-stage "HIGH" Capacity	2, pause	--	--
2-stage "REDUCED" Capacity	4, pause	--	--
Invalid Model Plug/Inverter Size	25	N/A	System Malfunction
High Pressure Switch Open	31	6	Fault
Low Pressure Trip	32	6	Local
Lost Inverter Communications	33	6	Local
Brownout Event	46	6	Local
Lost Inverter Communications	48	6	System Malfunction
Compressor Over Current Fault	49	6	Local
Outdoor Air Temp Sensor Fault	53	N/A	Fault
Suction Temp Sensor Fault	54	N/A	Fault
Coil Temp Sensor Fault	55	N/A	Fault
OAT-OCT Thermistor Out of Range	56	N/A	Event
Suction Pressure Sensor Fault	57	N/A	Fault
Discharge Temperature Out of Range Event	59	15	Local
Fan Inverter Fault	61	6	Local
Fan Inverter Current Fault	63	6	Local
D C Voltage Low - SPD Limiting	65	N/A	Local
Outdoor Fan Dropped Out	66	6	Event
Stator Heater Fault	67	6	Event
10 Minute Stage 2 Warmup Delay	68	10	Event
Inverter / Compressor Internal Fault	69	15	System Malfunction
Compressor Dropped Out	71	6	Event
Suction Over Temperature Event	72	15	Local
Discharge Temp Out of Range Lockout	74	2 Hours	System Malfunction
Maximum Power Mode-Temp	75	N/A	Local
Fan Inverter Lockout	76	2 Hours	System Malfunction
Maximum Power Mode-Comp Current	77	N/A	Local
Compressor/Inverter Fault	79	6	Local
Suction Over Temp Lockout	82	4 Hours	System Malfunction
Low Pressure Lockout for 4 hours	83	4 Hours	System Malfunction
High Pressure Lockout for 4 hours	84	4 Hours	System Malfunction
Fan Inverter Current Lockout	86	6	System Malfunction
Compressor/Inverter Lockout	88	2 Hours	System Malfunction
Inverter VDC-Out Over Voltage Event	91	6	Local
Inverter VDC-Out Under Voltage Event	92	6	Local
Compressor Over Current Lockout	95	2 Hours	System Malfunction
VDC Under Voltage Lockout	96	2 Hours	System Malfunction
VDC Over Voltage Lockout	97	2 Hours	System Malfunction
High Torque Event	98	N/A	Event
High Torque Lockout	99	2 Hours	System Malfunction
--	OFF	N/A	No Power

* Short Flashes indicate the first digit in the status code followed by long flashes indicating the second digit of the status code.

* * Local Faults displayed only on amber LED and not on generic wall control or recorded in fault history.

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Fig. 39 – Fault Code Label

Table 6—Fault Code Actions

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
ON, no flash		Standby				
1, pause		Variable Capacity			Normal Operation for communicating system	
1 (2 sec ON), longer pause (1 second OFF)		Variable Capacity (Range Cutback)			Speed Limiting for communicating systems	
1, pause		2−stage "Low" Capacity			Low capacity for non−communicating	
2, pause		2−stage "High" Capacity			High capacity for non−communicating	
4, pause		2−stage "Reduced" Capacity			Speed Limiting for non−communicating systems	
25	System Malfunction	INVALID MODEL PLUG/INVERTER SIZE	NA	Both	Missing model plug	Install the correct model plug
					Wrong Model Plug Installed	Verify correct model plug installed
					Damaged Model Plug	Check model plug for corrosion or breakage; replace if necessary. Check Model Plug resistance per the wiring diagram
					Model Plug not fully engaged on board	Align per the silkscreen layout
					Incorrect Model Plug with Inverter Size	Replace plug or inverter with correct size (If model plug is for 2 Ton but Inverter is 3 Ton, fault code 25 will be shown)
					Damaged AOC control	Replace AOC control
31	Fault	HIGH PRESSURE SWITCH OPEN (Stage down for each occurrence, elevates to fault code 84 when it occurs while running on the lowest stage. Reduced capacity is cleared when system has been continuously running at any stage for 2 hours with reduced capacity.)	6 Minutes (then reduced stage operation)	Both	Refer to fault code 84	
32	Local	LOW PRESSURE TRIP (Elevates to fault code 83 after 3 occurrences)	6 Minutes	Both	Refer to fault code 83	
33	Local	LOST INVERTER COMMUNICATIONS (Occurs aftr 2 minutes of no communications between AOC and MOC) (Elevates to fault code 48 after 3 consecutive failures within 20 minute or 20 minutes continuous loss of connection)	NA	Both	Refer to fault code 48	
46	Local	BROWNOUT EVENT	6 Minutes	Both	Low line voltages	Check for line voltage approximately greater than180V. If voltage less than 180V and if persistent contact power provider
					Bad connection on L1 and L2	Check for connection on line and load side to verify connection is good.
					Inverter not reading proper voltage	Verify no action issue from the above list then replace inverter.
48	System Malfunction	LOST INVERTER COMMUNICATIONS (Elevated from fault code 33 after 3 occurrences)	NA	Both	Loose or disconnected harness (Hardness between AOC (PL20) and MOC)	Verify good harness connection
					Radio or Electrical noise	System will try to self−mitigate with repeated start attempts
					Possible damage to inverter	change out the Inverter drive
49	Local	COMPRESSOR OVER CURRENT FAULT (Elevates to fault code 95 after 5 occurrences)	6 Minutes	Both	Refer to fault code 95	

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
53	Fault	OUTDOOR AIR TEMP SENSOR FAULT	NA	Both	Sensor Harness not connected to AOC control	Ensure plug is connected to AOC control
					Broken or loose harness wire	Check harness for continuity; see resistance chart to check resistance at given temperature
					Broken or Damaged Sensor	Check harness for continuity; see resistance chart to check resistance at given temperature
					Hardware damage to AOC control	Replace AOC control
54	Fault	SUCTION TEMP SENSOR FAULT	NA	Both	Sensor Harness not connected to AOC control	Ensure plug is connected to AOC control
					Broken or loose harness wire	Check harness for continuity; see resistance chart to check resistance at given temperature
					Suction Thermistor not properly attached or in wrong location	Ensure Sensor is properly attached to the accumulator entry–tube
					Broken or Damaged Sensor	Check harness for continuity; see resistance chart to check resistance at given temperature
					Hardware damage to AOC control	Replace AOC control
55	Fault	COIL TEMP SENSOR FAULT	NA	Both	Sensor Harness not connected to AOC control	Ensure plug is connected to AOC control
					Broken or loose harness wire	Check harness for continuity; see resistance chart to check resistance at given temperature
					Coil Thermistor not properly attached or in wrong location	Ensure Sensor is properly clipped to the distributor entry–tube
					Broken or Damaged Sensor	Check harness for continuity; see resistance chart to check resistance at given temperature
					Hardware damage to AOC control	Replace AOC control
56	Event	OAT–OCT THERMISTOR OUT OF RANGE	NA	Cool	Heating when cooling is demanded	Check fuse on AOC control
						Check wiring between AOC and reversing valve
						troubleshoot reversing valve
						Inspect outdoor coil for obstructions
				Both	Coil Thermistor not properly attached or in wrong location	Ensure Sensor is properly clipped to the distributor entry–tube
					Outdoor Ambient Temperature sensor improperly installed (sensor body may be in contact with sheet metal)	Properly install OAT sensor
57	Fault	SUCTION PRESSURE SENSOR FAULT	NA	Both	Sensor Harness not connected to AOC control	Ensure plug is connected to AOC control
					Broken or loose harness wire	Check harness
					Electrical short destroyed Transducer electronics	Compare transducer reading to gauge reading at service valve (see transducer measurement chart); Check system for electrical shorts and correct; replace transducer
					Heat damage during brazing	Compare transducer reading to gauge reading at service valve (see transducer measurement chart); replace transducer

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
59	Local	DISCHARGE TEMP OUT OF RANGE EVENT (Stage down for each occurrence, elevates to fault code 74 after 5 occurrence. Reduced capacity is cleared if demand cycle is satisfied without ODT reaching limit, or system has been continuously running at any stage for 2 hours with reduced capacity)	15 Minutes	Both	Refer to fault code 74	
61	Local	FAN INVERTER FAULT (elevates to fault code 76 after 5 occurrences)	6 Minutes	Both	Fan motor failed to start	Troubleshoot outdoor fan motor & blade and make sure they are working
					Fan motor rotor misalignment	System will attempt to run again
					Refer to fault code 76	
63	Local	FAN INVERTER CURRENT FAULT (elevates to fault code 86 after 5 occurrences)	6 Minutes	Both	Refer to fault code 86	
65	Local	DC VOLTS LOW – SPEED LIMITING	NA	Both	Caused by other fault code shut down	System will attempt to run again
					Low supply line voltage (< 197 VAC)	Check supply voltage to ODU; if low contact utility provider
					Loose wire in control box area	Loose wire: check for loose wire in ODU
					Inverter internal damage	Replace Inverter
66	Event	OUTDOOR FAN DROPPED OUT	6 Minutes	Both	MOC is reporting that fan motor isn't running	Troubleshoot fan motor and make sure it is working
					3T Inverter enters test mode	Replace inverter with latest software
67	Event	STATOR HEATER FAULT	6 Minutes	Both	There is a demand for stator heat but MOC doesn't detect it	Check compressor winding resistance or miswire of compressor leads at terminals U,V,W
					Damaged inverter generating other inoperable fault codes such as 88, 95	Replace Inverter
68	Event	10 MIN STAGE 2 WARMUP DELAY	10 Minutes	Both	High voltage power cycle	No action
69	System Malfunction	INVERTER/COMPRESSOR INTERNAL FAULT (Elevates to this fault code after 5 hidden occurrences of itself)	15 Minutes	Cool	Overcharged System	Check system subcooling to determine charge status, if high remove charge using Charging Mode (follow proper charging procedures)
				Heat	Overcharged System	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method
				Both	Phase imbalance/ compressor or inverter miswire	Check compressor winding resistance or miswire of compressor leads at terminals U,V,W
					Flooded start	Troubleshoot EXV & TXV
					Inverter damage	Replace inverter
					Compressor damage	Replace compressor
71	Event	COMPRESSOR DROPPED OUT	6 Minutes	Both	MOC is reporting that compressor isn't running	Refer to TIC 2015–0017 for more details
					3T Inverter enters test mode	Replace inverter with latest software
72	Local	SUCTION OVER TEMPERATURE EVENT (elevates to fault code 82 after 3 occurrences)	15 Minutes	Both	Refer to fault code 82	

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
74	System Malfunction	DISCHARGE TEMP OUT OF RANGE LOCKOUT (Elevated from fault code 59 after 5 occurrences)	2 Hours	Cool	High Load conditions	Over charge: Check system charge
				Heat	Low Charge or Loss of Charge at low ambient heating conditions	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method
				Heat	Expansion Device Restriction	Heating: Trouble shoot EXV (coil, harnesses); Trouble shoot the TXV Power Cycle system, is EXV moving on power up (audible)
				Both	Sensor Harness not connected to AOC control	Ensure plug is connected to AOC control
					Broken or loose harness wire	Check harness for continuity; see resistance chart to check resistance at given temperature
					Broken or Damaged Sensor	Check harness for continuity; see resistance chart to check resistance at given temperature
					Indoor Unit Airflow too low or off	Troubleshoot indoor fan motor and make sure it is working
					Outdoor Unit Airflow too low or off	Troubleshoot outdoor fan motor and make sure it is working
					Reversing Valve Bypass or Reversing Valve not energized	Reversing Valve stuck halfway Ensure AOC fuse is good 24 VDC in cooling mode Check harness and connectors
				Both	Hardware damage to AOC control	Replace AOC control
				Both	Nuisance fault during non−operational mode	Refer to TIC 2015−0017 for more details
75	Local	MAXIMUM POWER MODE − TEMP (Temporary RPM reduction or stage lowering will result)	NA	Heat	Indoor Airflow too low or off	Check indoor airflow
				Both	Outdoor Airflow too low or off	Check ODU coil for clogging (ice or debris) and clean if necessary; Troubleshoot ODU fan motor and make sure it is working
					Blocked Inverter Heat Exchanger (fins)	Check Inverter fins for debris and clean if necessary
					Application violates guideline	Consult Application Guideline for compliance
76	System Malfunction	FAN INVERTER LOCKOUT (Elevated from fault code 61 after 5 occurrences)	2 Hours	Both	Fan blade bent/out of balance	Check outdoor fan blade Check for ice build up
					Fan blade restricted	Check outdoor fan blade clearance Check for ice build up
					Fan motor wiring	Check outdoor fan motor connectors and harness
					Fan motor	Replace outdoor fan motor
					Inverter damage	Replace inverter
77	Local	MAXIMUM POWER MODE − COMP CURRENT (Temporary RPM reduction or stage lowering will result)	NA	Cool	Overcharged System	Check system subcooling to determine charge status, if high remove charge using Charging Mode (follow proper charging procedures)
				Heat	Overcharged System	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method
				Both	Compressor is operating outside the allowed operational envelope	Inverter will reduce speed to a lower stage
					Incorrect refrigerant charge	Check refrigerant amount
					Outdoor Airflow too low or off	Check ODU coil for clogging (ice or debris) and clean if necessary; Troubleshoot ODU fan motor and make sure it is working
					Incoming power supply voltage	Check voltage versus unit rating plate for allowable range
					Loose or incorrect wire connections	Check incoming power leads and leads to the compressor plug

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
79	Local	COMPRESSOR/INVERTER FAULT (Elevates to fault code 88 after 5 occurrences)	6 Minutes	Both	Compressor fails to start	System will try to self−mitigate with repeated start attempts
					Refer to fault code 88	
82	System Malfunction	SUCTION OVER TEMP LOCKOUT (Elevated from fault code 72 after 3 occurrences)	4 Hours	Cool	Undercharged System	Check system subcooling to determine charge status, if low add charge using Charging Mode (follow proper charging procedures)
				Cool	Uninsulated vapor line	Insulate the vapor line
				Cool	Indoor TXV operation	Troubleshoot TXV
				Heat	Undercharged System	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method
				Heat	Outdoor EXV operation	Troubleshoot EXV
				Both	Reversing valve bypass	Troubleshoot reversing valve
83	System Malfunction	LOW PRESSURE LOCKOUT FOR 4 HOURS (Elevated from fault code 32 after 3 occurrences)	4 Hours	Cool	Service Valve left closed (Liquid or Vapor)	Ensure Service Valves are open
				Cool	Undercharged System	Check system subcooling to determine charge status, if low add charge using Charging Mode (follow proper charging procedures)
				Cool	Indoor Airflow too low or off	Check Indoor for clogging (ice or debris) and clean or de−ice if necessary; Troubleshoot Indoor fan motor and make sure it is working; follow Indoor Airflow troubleshooting instruction
				Cool	Restriction in Circuits or Tubing	Repair restriction
				Heat	EXV Malfunction	Troubleshoot EXV (see guide below)
				Heat	Service Valve left closed (Liquid Service Valve)	Ensure Liquid Service Valve is open
				Heat	Outdoor Airflow too low or off	Check Outdoor for clogging (ice or debris) and clean or de−ice if necessary; Troubleshoot Outdoor fan motor and make sure it is working; follow Outdoor Airflow troubleshooting instruction
				Heat	Undercharged System	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method
				Both	Restriction in Filter Drier	Check for temperature drop across filter drier and replace if necessary
				Both	Expansion Device Restriction	If short lineset (less than 15 ft.) Troubleshoot TXV (see guide below); replace if necessary

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
84	System Malfunction	HIGH PRESSURE LOCK-OUT FOR 4 HOURS (Elevated from fault code 31 when the stage (speed) can no longer be lowered)	4 Hours	Cool	Outdoor Airflow too low or off	Check Outdoor Coil for clogging (ice or debris) and clean or de−ice if necessary; Troubleshoot Outdoor fan motor and make sure it is working; follow Outdoor Airflow troubleshooting instruction
				Cool	Overcharged System	Check system charge using Cooling Charging Mode (follow proper charging procedures)
				Cool	TXV malfunction (In-door) causing an overcharged condi-tion	
				Cool	Restriction in EXV assembly plus Long Line Application leading to Over-charge when charg-ing in Cooling mode	Troubleshoot EXV
				Cool	Restriction in Circuits or Tubing	Repair restriction
				Heat	Indoor Airflow too low or off	Troubleshoot indoor fan motor and make sure it is operating; follow indoor airflow troubleshooting instruction. Check Indoor coil or filter for restriction (debris) and clean if necessary;
				Heat	Furnace plus Heat pump application: Furnace stuck on	If not in Defrost and Furnace is running same time as heat pump, troubleshoot Furnace
				Heat	Overcharged System	Remove refrigerant, evacuate and recharge system using weigh in method. Return to check charge to subcooling when conditions are favorable in cooling mode
				Heat	Reversing Valve Stuck in Cooling	troubleshoot reversing valve
				Both	Service Valve left closed (Liquid or Va-por)	Ensure Service Valves are open
				Both	Loose High Pressure Switch harness leads	Check HPS harness, pins and connectors
				Both	Pressure Switch dis-connected from the inverter	Check HPS connection to the inverter
				Both	Restriction of filter drier	Check for temperature drop across filter drier and replace if necessary
				Both	Non−condensable leading to high pres-sure situation	Remove refrigerant, replace filter drier, evacuate and recharge system
				Both	Faulty Pressure Switch	Check Discharge pressure with gauge, if less than 600 +/− 20 psig and switch is open (measure resistance) then replace pressure switch
				Both	Expansion Device Restriction	Troubleshoot TXV
						Troubleshoot EXV
86	System Malfunction	FAN INVERTER CURRENT LOCKOUT (Elevated from fault code 63 after 5 occurrences)	5 minutes	Both	Sudden supply volt-age change	Investigate incoming voltage
					Restriction on fan ro-tation / motor	Troubleshoot outdoor fan motor & blade and make sure they are working.
					Intermitent harness plug connection	Check harness and connectors. Make sure there is a positive lock between the harness and the board
					Fan blade bent/out of balance	Replace fan blade
					Inverter damage	Replace inverter

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
88	System Malfunction	COMPRESSOR / INVERTER LOCKOUT (Elevated from fault code 79 after 5 occurrences)	2 Hours	Both	Blocked Inverter Heat Exchanger (fins)	Check Inverter fins for debris and clean if necessary
					Condenser Airflow too low or off	Check Condenser (IDU in heating, ODU in cooling) for clogging (ice or debris) and clean if necessary; Troubleshoot fan motor and make sure it is working
					Evaporator Airflow too low or off	Check Evaporator (IDU in cooling, ODU in heating) for clogging (ice or debris) and clean if necessary; Troubleshoot fan motor and make sure it is working
					High Load conditions at cold ambient heating or high ambient cooling	Over charge: Check system charge
					Inverter damage	Replace inverter
91	Local	INVERTER VDC – OUT OVER VOLTAGE EVENT (Elevates to fault code 97 after 5 occurrences)	5 Minutes	Both	Compressor is suddenly unloaded	Check that the service valves are fully open
					Refer to fault code 97	
92	Local	INVERTER VDC – OUT UNDER VOLTAGE EVENT (Elevates to fault code 96 after 5 occurrences)	5 Minutes	Both	Refer to fault code 96	
95	System Malfunction	COMPRESSOR OVER CURRENT LOCKOUT (Elevated from fault code 49 after 5 occurrences)	2 Hours	Cool	Outdoor Airflow too low or off	Check ODU coil for clogging (ice or debris) and clean if necessary; Troubleshoot ODU fan motor and make sure it is working
				Both	High superheat	Troubleshoot TXV
						Troubleshoot EXV
						Check suction pressure transducer and suction temperature sensor
				Both	Compressor is operating outside the allowed operational envelope	Inverter will reduce speed to a lower stage
				Both	Incoming power supply voltage	Check voltage versus unit rating plate for allowable range
					Loose or incorrect wire connections	Check incoming power leads and leads to the compressor plug
					Phase imbalance	Check compressor winding resistance or miswire of compressor leads at terminals U,V,W
				Both	Refrigerant overcharge	Check refrigerant amount
					Inverter damage	Replace inverter
					Compressor internal damage	Replace compressor
96	System Malfunction	VDC UNDER VOLTAGE LOCKOUT (Elevated from fault code 92 after 5 occurrences)	2 Hours	Both	Low supply line voltage (< 197 VAC)	Check supply voltage to ODU; if low contact utility provider
					Inverter internal damage	Replace Inverter
97	System Malfunction	VDC OVER VOLTAGE LOCKOUT (Elevated from fault code 91 after 5 occurrences)	2 Hours	Both	High supply line voltage (> 253 VAC)	Check supply voltage to ODU; if high contact utility provider
					Inverter internal damage	Replace Inverter
98	Event	HIGH TORQUE EVENT (Event will cause stage down and when stage is at lowest level, will elevate to fault code 99)	NA	Both	Compressor is operating outside the allowed operational envelope	Inverter will reduce speed to a lower stage
				Both	Refer to fault code 99	

Flash Code	Type	Amber LED Description	Reset Time	Mode	Possible Causes	Actions
99	System Malfunction	HIGH TORQUE LOCKOUT (Elevated from fault code 98 when 98 occurs at lowest stage)	2 hours	Cool	Overcharged System	Check system subcooling to determine charge status, if high remove charge using Charging Mode (follow proper charging procedures)
				Heat	Overcharged System	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method
				Both	Miswire	Check miswire of compressor leads at terminals U,V,W
				Both	Outdoor Airflow too low or off	Check ODU coil for clogging (ice or debris) and clean if necessary; Troubleshoot ODU fan motor and make sure it is working
				Both	Expansion Device Restriction	Troubleshoot TXV
						Troubleshoot EXV
				Heat	Overcharged System	Check charge in heating mode per heating check charge chart. If pressures do not match then pull out charge, weigh in using heating charge method