



PT2404S, PT2424S, PT2426S Platinum 2 VFD P2 VFD - Diagnostics and Troubleshooting

The VFD manual supplied with the Platinum 2 control panels should be consulted for in-depth troubleshooting. An excerpt of the codes is shown below.

Drive does not start, no code displayed

- If the display does not light up, check the power supply to the drive and check the wiring of inputs AI1 and AI2 and the connection to the RJ45 connector.
- The assignment of the "Fast stop" or "Freewheel stop" functions will prevent the drive from starting if the corresponding logic inputs are not powered up. The ATV312 then displays [Freewheel stop] (nSt) or [Fast stop] (FSt). This is normal since these functions are active at zero so that the drive will be stopped if there is a wire break.
- Check that the run command input(s) have been actuated in accordance with the chosen control mode (the [2/3 wire control] (tCC) parameter in the [INPUTS / OUTPUTS CFG] (I-O-) menu, page 47).
- If an input is assigned to the limit switch function and this input is at zero, the drive can only be started up by sending a command for the opposite direction (see page 89).
- If the reference channel (page 53) or the control channel (page 54) is assigned to a communication network, when the power supply is connected, the drive will display [Freewheel stop] (nSt) and remain in stop mode until the communication bus sends a command.
- If the LED on the DC bus is lit and nothing appears on the display, check that there is no short-circuit on the 10 V power supply.
- If the drive displays [Ready] (rdy) and refuses to start, check that there is no short-circuit on the 10 V power supply and check the wiring of inputs AI1 and AI2 and the connection to the RJ45 connector.
- In the factory setting, the "RUN" button is inactive. Set the [Ref.1 channel] (Fr1) parameter, page 29, and the [Cmd channel 1] (Cd1) parameter, page 59, to control the drive locally.

Fault detection codes which require a power reset after the fault is cleared

The cause of the fault must be removed before resetting by cycling power to the drive. [PRECHARGE FAULT] (CrF), [OVERSPEED] (SO), [AUTO-TUNING FAULT] (tnF), and [BRAKE CONTROL FAULT] (bLF) can also be reset remotely using a logic input (the [Fault reset] (rSF) parameter in the [FAULT MANAGEMENT] (FL-) menu, page 92).

Code	Name	Probable cause	Remedy
b L F	[BRAKE CONTROL FAULT]	<ul style="list-style-type: none"> • Brake release current not reached • Brake engage frequency threshold [Brake engage freq] (bEn) = [No] (nO) (not set) whereas the brake control [Brake assignment] (bLC) is assigned 	<ul style="list-style-type: none"> • Check the drive/motor connection. • Check the motor windings. • Check the [Brake release I FW] (lbr) setting in the [APPLICATION FUNCT.] (Fun-) menu, page 85. • Apply the recommended settings for [Brake engage freq] (bEn), pages 84 and 85.
C r F	[PRECHARGE FAULT]	<ul style="list-style-type: none"> • Precharge relay control or damaged precharge resistor 	<ul style="list-style-type: none"> • Replace the drive.
E E F	[EEPROM FAULT]	<ul style="list-style-type: none"> • Internal memory 	<ul style="list-style-type: none"> • Check the environment (electromagnetic compatibility) • Replace the drive.
I F 1	[INTERNAL FAULT]	<ul style="list-style-type: none"> • Unknown rating 	<ul style="list-style-type: none"> • Replace the drive. • Restart the drive. • Contact a Schneider Electric representative.
I F 2	[INTERNAL FAULT]	<ul style="list-style-type: none"> • HMI card not recognized • HMI card incompatible • No display present 	
I F 3	[INTERNAL FAULT]	<ul style="list-style-type: none"> • EEPROM 	
I F 4	[INTERNAL FAULT]	<ul style="list-style-type: none"> • Industrial EEPROM 	



Diagnostics and troubleshooting (continued)

Fault detection codes which require a power reset after the fault is cleared (continued)

Code	Name	Probable cause	Remedy
D C F	[OVERCURRENT]	<ul style="list-style-type: none"> Parameters in the [SETTINGS] (SEI-) and [MOTOR CONTROL] (drC-) menus are incorrect. Inertia or load too high Mechanical locking 	<ul style="list-style-type: none"> Check the parameters in [SETTINGS] (SEI-) , page 32, and [MOTOR CONTROL] (drC-) page 43. Check the size of the motor/drive/load. Check the state of the mechanism.
S C F	[MOTOR SHORT CIRCUIT]	<ul style="list-style-type: none"> Short-circuit or grounding at the drive output Significant ground leakage current at the drive output if several motors are connected in parallel 	<ul style="list-style-type: none"> Check the cables connecting the drive to the motor, and the motor insulation. Reduce the switching frequency Connect chokes in series with the motor
S O F	[OVERSPEED]	<ul style="list-style-type: none"> Instability or Driving load too high 	<ul style="list-style-type: none"> Check the motor, gain and stability parameters Add a braking resistor Check the size of the motor/drive/load.
k n F	[AUTO TUNING FAULT]	<ul style="list-style-type: none"> Special motor or motor whose power is not suitable for the drive Motor not connected to the drive 	<ul style="list-style-type: none"> Use the L ratio or the [Var. torque] (P) ratio (see [U/F mot 1 selected] (UF), page 44). Check that the motor is present during auto-tuning. If an output contactor is being used, close it during auto-tuning.

Fault detection codes that can be reset with the automatic restart function after the cause has disappeared

See the [Automatic restart] (Atr) function, page 91.

These detected faults can also be reset by turning the drive off then on again or by means of a logic input (the [Fault reset] (rSF) parameter, page 92, in the [FAULT MANAGEMENT] (FLT-) menu, page 91).

Code	Name	Probable cause	Remedy
C n F	[NETWORK FAULT]	<ul style="list-style-type: none"> Communication detected fault on the communication card 	<ul style="list-style-type: none"> Check the environment (electromagnetic compatibility) Check the wiring. Check the time out. Replace the option card. See the [CANopen fault mgt] (COL) parameter page 95 to define the stop mode with a (CnF).
C O F	[CANopen FAULT]	<ul style="list-style-type: none"> Interruption in communication on the CANopen bus 	<ul style="list-style-type: none"> Check the communication bus Refer to the relevant product documentation.
E P F	[EXTERNAL FAULT]	<ul style="list-style-type: none"> Depending on user 	<ul style="list-style-type: none"> Depending on user
L F F	[4-20mA LOSS]	<ul style="list-style-type: none"> Loss of the 4-20 mA reference on input AI3 	<ul style="list-style-type: none"> Check the connection on input AI3.
O b F	[OVERBRAKING]	<ul style="list-style-type: none"> Braking too sudden or driving load 	<ul style="list-style-type: none"> Increase the deceleration time Install a braking resistor if necessary. Activate the [Dec ramp adapt.] (bra) function, page 64, if it is compatible with the application.
O H F	[DRIVE OVERHEAT]	<ul style="list-style-type: none"> Drive temperature too high 	<ul style="list-style-type: none"> Check the motor load, the drive ventilation and the environment. Wait for the drive to cool before restarting.



Diagnostics and troubleshooting (continued)

Fault detection codes that can be reset with the automatic restart function after the cause has disappeared (continued)

Code	Name	Probable cause	Remedy
<i>D L F</i>	[MOTOR OVERLOAD]	<ul style="list-style-type: none"> Triggered by excessive motor current [Cold stator resist.] (rSC) parameter value incorrect 	<ul style="list-style-type: none"> Check the [Mot. therm. current] (Ith) setting, page 33, of the motor thermal protection, check the motor load. Wait for the drive to cool before restarting. Remeasure [Cold stator resist.] (rSC), page 42.
<i>D P F</i>	[MOTOR PHASE LOSS]	<ul style="list-style-type: none"> Loss of one phase at drive output Output contactor open Motor not connected or motor power too low Instantaneous instability in the motor current 	<ul style="list-style-type: none"> Check the connections from the drive to the motor. If an output contactor is being used, set [Output Phase Loss] (OPL) to [Output cut] (OAC) ([FAULT MANAGEMENT] (FL-) menu, page 94). Test on a low-power motor or without a motor: In factory settings mode, motor output phase loss detection is active ([Output Phase Loss] (OPL) = [Yes] (YES)). To check the drive in a test or maintenance environment without having to switch to a motor with the same rating as the drive (particularly useful in the case of high-power drives), deactivate motor phase loss detection ([Output Phase Loss] (OPL) = [No] (nO)). Check and optimize the [IR compensation] (UFR), [Rated motor volt.] (UnS), and [Rated mot. current] (nCr) parameters, and perform an [Auto tuning] (tUn) operation, page 43.
<i>D S F</i>	[MAINS OVERVOLTAGE]	<ul style="list-style-type: none"> Line voltage is too high. Disturbed line supply 	<ul style="list-style-type: none"> Check the line voltage.
<i>P H F</i>	[INPUT PHASE LOSS]	<ul style="list-style-type: none"> Drive incorrectly supplied or a fuse blown Failure of one phase Three-phase ATV312 used on a single-phase line supply Unbalanced load <p>This protection only operates with the drive on load</p>	<ul style="list-style-type: none"> Check the power connection and the fuses. Reset Use a three-phase line supply. Disable the detection by setting [Input phase loss] (IPL) = [No] (nO) ([FAULT MANAGEMENT] (FL-) menu, page 94).
<i>S L F</i>	[MODBUS FAULT]	<ul style="list-style-type: none"> Interruption in communication on the Modbus bus Remote display terminal enabled ([HMI command] (LCC) = [Yes] (YES), page 61) and terminal disconnected. 	<ul style="list-style-type: none"> Check the communication bus Refer to the relevant product documentation. Check the link with the remote display terminal.



Diagnostics and troubleshooting (continued)

Fault detection codes that are reset as soon as their cause disappears

Code	Name	Probable cause	Remedy
CFF	[INCORRECT CONFIG.]	<ul style="list-style-type: none"> The current configuration is inconsistent. Addition or removal of an option 	<ul style="list-style-type: none"> Return to factory settings or retrieve the backup configuration, if it is valid. See the [Restore config.] (FCS) parameter, page 46.
CFI	[INVALID CONFIG]	<ul style="list-style-type: none"> Invalid configuration The configuration loaded in the drive via the serial link is inconsistent 	<ul style="list-style-type: none"> Check the configuration loaded previously. Load a consistent configuration.
USF	[UNDERVOLTAGE]	<ul style="list-style-type: none"> Insufficient line supply Transient voltage dip Damaged precharge resistor 	<ul style="list-style-type: none"> Check the voltage and the voltage parameter. Tripping threshold in [UNDERVOLTAGE] (USF) ATV312●●●●M2: 160 V ATV312●●●●M3: 160 V ATV312●●●●N4: 300 V ATV312●●●●S6: 430 V Replace the drive.

Diagnostics and troubleshooting (continued)

Fault detection codes that are reset as soon as their cause disappears

Code	Name	Probable cause	Remedy
CFF	[INCORRECT CONFIG.]	<ul style="list-style-type: none"> The current configuration is inconsistent. Addition or removal of an option 	<ul style="list-style-type: none"> Return to factory settings or retrieve the backup configuration, if it is valid. See the [Restore config.] (FCS) parameter, page 46.
CFI	[INVALID CONFIG]	<ul style="list-style-type: none"> Invalid configuration The configuration loaded in the drive via the serial link is inconsistent 	<ul style="list-style-type: none"> Check the configuration loaded previously. Load a consistent configuration.
USF	[UNDERVOLTAGE]	<ul style="list-style-type: none"> Insufficient line supply Transient voltage dip Damaged precharge resistor 	<ul style="list-style-type: none"> Check the voltage and the voltage parameter. Tripping threshold in [UNDERVOLTAGE] (USF) ATV312●●●●M2: 160 V ATV312●●●●M3: 160 V ATV312●●●●N4: 300 V ATV312●●●●S6: 430 V Replace the drive.