Vindum Pump Errors & Warnings
October 2025

Contents

Overview

The control system for VP-Series and VIPR-Series pumps includes a library of error/warning codes. Many of these codes are shared for both series of pumps, though some are specific to one series or the other.

There are two "families" of error codes:

1. Command Response Errors/Warnings; and, 2) Operating Errors/Warnings. Command Response Errors indicate that a problem was encountered with a command that was sent to the pump, such that the command could not be executed.
2. Operating Errors/Warning provide feedback of a problem that stopped the pump while it was running.

Within the Operating Errors/Warnings, there are two classifications:

1. Pump Errors indicate a problem with a component of the pump, such as a power supply unit;
2. Cylinder Errors are cylinder-specific and indicate a problem with a component, such as a pressure transducer or valve on the specific cylinder.

This document explains both Command Response Errors and Operating Errors.

Command Response Errors

Command Response Error Code	Error Description	Explanation	Corrective Action
000	No Command Errors	Confirms that command was accepted with no errors.	None required
001	Message too Short	Pump did not receive a command containing 8 bytes of data	Resend command
002	Pump type not defined	User attempted to change the pump type to one that doesn't exist.	Only pre-defined pump types are allowed.
003	Cannot decode first command	Invalid base command (e.g., rate, pressure, etc.)	Resend command
004	New firmware version required for this command	VPware issued a command that is not recognized by the pump's firmware.	Install the latest firmware and VPware software onto pump in order to use all VPware capabilities.
005	Transducer type not defined	User attempted to change transducer type to one that is not valid/doesn't exist.	Only Vindum-defined pump types are recognized.
007	Cannot change piston direction when pump is running. Stop pump to change piston direction	User attempted to reverse piston direction while pump was running.	Pump must be stopped to change piston direction.
009	Bad CRC A cyclical redundancy check is included in each command sent to the pump, to ensure that the command was properly sent and read.	When the pump calculated the CRC it found that the CRC values did not add to zero, indicating a problem with command sent to the pump.	Resend the command. If error persists, recheck the syntax of the command.
010	Cylinder not selected in Command.	User issues a command that required a cylinder designation but did not specify the cylinder.	Need to include cylinder designation in the command.
012	Both pistons are too far extended to start pump in the specified paired mode. Fully retract one piston and select it to start specified paired mode.	Paired mode start requires one piston to be retracted (fluid deliver modes) or extended (fluid receive modes) in order to start.	Use Configure/Application Settings menu, "SMART START" option for pump to automatically reposition piston(s) for all paired mode starts. If needed, pump will refill before starting.
014	Both pistons are too far retracted to start pump in the specified paired mode. Fully extend one piston and select it to start specified paired mode.	Paired mode start requires one piston to be retracted (fluid de-liver modes) or extended (fluid receive modes) in order to start.	Use Configure/Application Settings menu, "SMART START" option for pump to reposition piston(s) for all paired mode starts. Pump will refill before starting, if needed.
020	Cylinder A has an error that must be corrected before starting pump. Check Status & Pump Configuration screens to identify the problem.	Pump will not start until any errors that are present have been corrected.	Identify & correct errors. See VPware Status Screen, error messages, or check Pump Con-figuration settings. Contact VEI support if unable to identify the source of the problem.
021	Cylinder A is currently running and cannot start	User pressed pump "Start" with pump already running.	Avoid pressing "Start" buttons when pump is already running.

Command Response Error Code	Error Description	Explanation	Corrective Action
023	Cylinder B has an error that must be corrected before starting the pump. Check Status & Pump Configuration screens to identify the problem.	The pump will not start until any errors that are present have been corrected.	Identify & correct errors. See VPware Status Screen, error messages, or check Pump Con-figuration settings. Contact VEI support if unable to identify the source of the problem.
024	Cylinder B is currently running and cannot start.	User pressed pump "Start" with pump already running.	Avoid pressing "Start" buttons when pump is already running.
037	FET temperature limit is set too low	This command is not for customer use	Ignore Error Code
038	Power Supply temperature limit is set too low	This command is not for customer use	Ignore Error Code
039	PCB temperature limit is set too low	This command is not for customer use	Ignore Error Code
046	Max pressure is too high for this pump model.	User entered a pressure that is in excess of this pump model's capability	Ensure that user cannot enter a max pressure that is beyond the pump model's rating.
050	Pressure gain is out of range	User attempted to enter a transducer gain value that is beyond the limit of this transducer model.	Apply tighter limit to the transducer gain values that user can specify.
051	Save Safety Pressure to Flash, value out of range	Tells pump to save the Safety Pressure to flash. 1 = save, 0 = do not save.	The value can only be 1 or 0.
060	No Cylinder B.	Most likely a single cylinder VIPR	Will need to pair two VIPR pumps.
082	Cannot set mode while pump is running. Stop cylinder(s) prior to changing pump mode.	Pump must be stopped in order change the pump mode in VPware.	Stop pump to change operating mode.
130	Return rate out of range, must be less than max rate	User entered a return rate that is beyond the max speed of the pump	Ensure return rate does not exceed the pump's maximum rate capability.
232	Piston A is too far extended for it to start in selected paired mode. Fully retract Piston A and then start selected paired mode with Piston A.	If started, the selected piston (A or B) will reach the end of its stroke before the other piston can refill and pressurize, so pump will not allow start using selected piston.	1) Reposition the piston you want to start with, then re-start; or, 2) Change Paired Mode Start Setting to SMART START on Configure/Application Settings window.
233	Piston A is too far retracted for it to start in selected paired mode. Fully extend Piston A and then start selected paired mode with Piston A.	User has chosen to specify piston for paired receive mode, but the selected piston is too far retracted and will not allow enough time for the other piston to discharge before reaching end of stroke.	1) Extend the piston you want to start with, then restart pump; or, 2) Change the SMART START setting on the Configure/Application Settings to "Pump Selects the Starting Cylinder…."
234	Piston B is too far extended for it to start in selected paired mode. Fully retract Piston B and then start selected paired mode with Piston B.	If started, the selected piston (A or B) will reach the end of its stroke before the other piston can refill and pressurize, so pump will not allow start using selected piston.	1) Reposition the piston you want to start with, then re-start; or, 2) Change Paired Mode Start Setting to SMART START on Configure/Application Settings window.
301	Cannot open/close valve while pump is running.	The pump's four fluid control valves can only be opened/closed when the pump is stopped.	Stop the pump to change valve position. Manual valve control is only required for "IR" and "IPD"

Command Response Error Code	Error Description	Explanation	Corrective Action
302	Set Rate A out of range.	User entered a set rate for CylA that is beyond the capability of this pump.	Ensure that target rates allowed are withing the bounds of the pump model.
303	Set Rate B out of range.	User entered a set rate for CylB that is beyond the capability of this pump.	Ensure that target rates allowed are withing the bounds of the pump model.
304	Safety pressure is above max pressure.	User attempted to enter a safety pressure that is beyond the Max Pressure value	Change Max Pressure or reduce the value of safety pressure.
306	Cylinder pressure is too high, cannot reset transducer zero pressure. Ensure that the cylinder is open to atmospheric pressure and retry resetting zero pressure. Also check the transducer gain setting to ensure it has not been changed accidentally. If transducer continues to indicate high pressure and pressure zero cannot be reset, the transducer may be damaged or defective.	User attempted to zero the pressure transducer with a cylinder pressure that is above 250 psi (17.23 bar)	Cylinder pressure must be below 250 psi (17.23 bar) in order to zero the pressure transducer. User should open valve so that cylinder pressure is at atmospheric pressure, then zero the pressure transducer.
308	Valve delay is too long. Maximum is 2 seconds.	Valve delay is not for user to set.	This command is not for customer use.
309	Fill open pressure must be between <Min pump pressure> and <Max pump pressure>.	User attempted to set the Low Pressure Open to a value that is out of range.	Enter value that is within range
310	Do you want to have both fill and deliver valve on the cylinder open at the same time.	Having both valves on a cylinder open at the same time creates a fluid flow path through the cylinder which can lead to high-pressure fluid flowing back through the pump.	Provide warning but allow user to have both fill and deliver valves on the same cylinder open at the same time.
311	Max pressure set too high.	User attempted to configure Max Pressure to a value that is out of range.	Enter Max Pressure value that is within the range of this pump model.
312	Safety pressure is now too high based on max pressure.	This can happen if the user changes the Max Pressure to a value that is below the previously entered Safety Pressure value.	Either increase Max Pressure value or lower Safety Pressure value.
313	Max rate set too high.	User attempted to enter a Max Rate value that is outside the range of the pump model's capability.	Enter value that is within range
314	Set rate exceeds the max rate setting.	User changed Max Rate value to one that is below the set rate value.	Target/Set Rate must be below the Max Rate setting.
315	Ramp step size must be greater than 10.	Not user settable	Ignore Error Code
316	Return rate multiplier must be greater than 1.1	We now allow return rate multiplier to be equal or more than 1.0	This error has been deprecated.

Command Response Error Code	Error Description	Explanation	Corrective Action
317	Pistons are out of position to start pump in bi-directional paired mode. Position both pistons in the center before starting specified paired mode.	Bi-directional pressure mode requires pistons to be positioned at approximately the middle of their stroke before starting so that they can respond to pressure increase and decreases.	Reposition pistons to center of stroke manually, or, Use Configure/Application Settings menu, “SMART START” option for pump to automatically reposition cylinder(s) for all paired mode starts. Pump will position pistons before starting, if needed.
318	Recirculation flow pump 1 max rate error	The sum of pumping rates of the flow pumps exceeds the flow rate capability of this recirculation pump.	Reduce the rate of one or more of the flow pumps that are linked to this recirc pump.
319	Recirculation flow pump 2 max rate error	The sum of pumping rates of the flow pumps exceeds the flow rate capability of this recirculation pump.	Reduce the rate of one or more of the flow pumps that are linked to this recirc pump.
320	Recirculation flow pump 3 max rate error	The sum of pumping rates of the flow pumps exceeds the flow rate capability of this recirculation pump.	Reduce the rate of one or more of the flow pumps that are linked to this recirc pump.
325	Contact Vindum for Firmware upgrade to use this option	User may have updated VPware software, but has not installed updated firmware on the pump, which this command requires.	Always update pump firmware whenever installing a newer version of VPware.
326	User Option Module 2 is active and start commands have been locked out.	15-pin (DE-15) Option Module connection is controlling the pump, so VPware Start command is disabled.	Use Option Module command to issue Start command to pump. To re-engage VPware control, go to VPware Configure / Option Module Configuration screen and change setting to “None” in order to de-activate Option Module control.
327	Please select Option Module 3 to run in Delta Pressure.	User needs to transfer control to Option Module 3 in order to use a delta-pressure transducer.	Engage Option Module 3 to use delta pressure transducer.
328	Please connect a transducer and cable to the Option module Port.	User has attempted to engage Option Module 3 but pump senses that no transducer cable is connected to the Option Module port.	Connect delta-pressure transducer and cable to Option Module port on pump.
329	Configure Control is locked for this item.	User has attempted to change the Pump Configuration parameter which is currently locked out to prevent changes.	Disengage the “Lock” on the parameter that you want to change.
330	Comp Pump pressure too high.	This error is only applicable to recirc systems and software (sold separately).	Lower pressure target for compensation pump.
331	Recirculation cable on Compensation pump is not attached.	User attempted to engage Recirculation Mode without cabling needed for that setup.	Do not attempt to active Recirculation without purchasing the software and cable from Vindum.
332	Recirculation cable on Flow pump 1 is not attached.	User attempted to engage Recirculation Mode without cabling needed for that setup.	Do not attempt to active Recirculation without purchasing the software and cable from Vindum.
333	Recirculation cable on Flow pump 2 is not attached.	User attempted to engage Recirculation Mode without cabling needed for that setup.	Do not attempt to active Recirculation without purchasing the software and cable from Vindum.
334	Recirculation cable on Flow pump 3 is not attached.	User attempted to engage Recirculation Mode without cabling needed for that setup.	Do not attempt to active Recirculation without purchasing the software and cable from Vindum.

Command Response Error Code	Error Description	Explanation	Corrective Action
335	Auto Return Rate is too low.	User attempted to enter a value that is less than the 10 seconds minimum	Recommended Auto Return Rate value is 12 seconds.
336	Pump mode not supported.	User entered an undefined pump mode.	Enter valid pump modes.
337	Short stroke mode error	Short stroke mode can only be used with deliver paired modes.	Open short stroke window under tools and turn off short stroke mode.
338	Both pistons are too far extended to start pump in Paired Rate Deliver-Geared mode. Fully retract one piston and select it to start Paired Rate Deliver-Geared mode.	This piston position is required to start a pump in Paired Rate Geared mode	Use IR-Manual pump mode to move pistons to the correct position, then start pump in Geared mode.
339	Both pistons are too far retracted to start pump in Paired Rate Deliver-Geared mode. Fully extend one piston and select the other to start Paired Rate Deliver-Geared mode.	This piston position is required to start a pump in Paired Rate Geared mode	Use IR-Manual pump mode to move pistons to the correct position, then start pump in Geared mode.
340	Servo value for proportional gain is out of range.	User entered an invalid number	Value must be less than 8001
342	The auto-refill pressurization pressure is out of range (Applies to VIRP pumps only)	User entered a value for Pressure After Refilling that is beyond the Max Pressure setting of this pump.	Lower Pressure After Refilling value or increase Max Pressure value.
344	The valve type value is out of range (VIPR pumps only)	User entered an invalid valve type.	Enter valid valve type
350	Modbus Server ID value out of range	An invalid server ID value was specified – legal values are from 1 to 247	Enter a legal value for server ID
351	Invalid Modbus serial port configuration parameters	One or more invalid values were specified for the Modbus interface baud rate, parity, or stop bits	Recheck Modbus serial port configuration parameters.
352	Invalid Modbus data configuration parameters	One or more invalid values were specified for the Modbus interface rate units, pressure units, or endian-ness setting	Recheck Modbus data configuration parameters.
353	Delta pressure needs the deliver valve B open to start.	Pump cannot see any changes to delta pressure without a deliver valve open to compare pressure.	Open deliver valve B
354	Delta pressure needs the deliver valve A open to start.	Pump cannot see any changes to delta pressure without a deliver valve open to compare pressure.	Open deliver valve A
355	Dead value is more than 30%	Pump will not operate with more than 30% dead volume	Please enter a value less or equal to 30%.
356	Recirculation is in the wrong mode.	Recirculation needs to be in 2 phase.	Change mode to 6-cylinder recirculation mode. Then try the check box again.
500	[OPC UA] Attempted to write a read-only variable	Self-explanatory	Only write to write-able variables
501	[OPC UA] Value to write is out of the legal range	Attempted to write a value that is out of range for this parameter.	Enter value that is within acceptable range.
503	[OPC UA] Write failure	Failed to write to target variable.	Review command for errors

Pump and Cylinder Operating Errors

Pump Operating Error Codes

Error Code Mask (decimal)	Error Code Mask (32-bit hex)	Common Error Code Explanation	VPware Error/Warning Dialog Box	Error/Warning Description	Corrective Action
0001	0x0000 0001	Power Supply Over-Temperature	Pump stopped due to excessive power supply temperature. Possible causes: 1) Air vents on bottom and sides of pump are obstructed; 2) Nearby heat source or high ambient temperature; 3) Excessive oven temperature or insufficient heat shielding from oven (High Temp Pumps).	Temperature of power supply unit has exceeded maximum operating temperature.	Ensure that air vents on sides and bottom of pump are not blocked. Move pump away from nearby heat sources and/or lower the ambient temperature and increase cool air circulation. If necessary, turn off pump and let it cool.
0002	0x0000 0002	Motor Controller Over-Temperature	Pump stopped due to excessive motor controller temperature. Possible causes: 1) Air vents on bottom and sides of pump are obstructed; 2) Nearby heat source or high ambient temperature; 3) Excessive oven temperature or insufficient heat shielding from oven (High Temp Pumps).	One or both FETs (motor drivers) have over-heated. This could indicate a problem with one of the motors or with the pump's internal circuitry.	Power-Off the pump and let it cool. Ensure that air vents on sides and bottom of pump are not blocked. Move pump away from nearby heat sources and/or lower the ambient temperature and increase cool air circulation.
0004	0x0000 0004	Power Supply Error	Power Supply Disconnect/Failure. Possible causes: 1) Pump was powered off or disconnected from wall outlet; 2) E-Stop was activated; 3) Failure of pump's power supply unit. Check power cord & pump's power switch and ensure E-Stop wire loop and connector are firmly inserted (back of pump). If error remains, contact Vindum Engineering support.	Pump has detected a low-voltage issue with power supply from 56V or 12V elements of internal power supply unit.	Ensure that power supply cord is firmly connected and that E-Stop connector and jumper wires are not loose. If problem remains, power pump off/on. Is the green LED inside plexiglass near top between pump cylinders lit? Are the other LEDs lit? Open/close a valve and listen for release of compressed air. Report answers to these questions to Vindum Engineering to help with further evaluation of problem.
0008	0x0000 0008	Pressure Transducer Cable Error	Transducer is not connected or has malfunctioned. Check that the connector on the transducer cable is screwed into the transducer and that the other end of the cable is connected to the transducer port on the pump. If that does not fix the problem, the transducer has malfunctioned. Please contact Vindum Engineering support (support@vindum.com) to report the problem.	Problem with pressure transducer cable or signal from pressure transducer(s).	Ensure pressure transducer cable is connected, then check Status screen for pressure transducer status. If "Pressure cable attached" box is RED and transducer cable is attached, do not use pump; contact Vindum Engineering.

Error Code Mask (decimal)	Error Code Mask (32-bit hex)	Common Error Code Explanation	VPware Error/Warning Dialog Box	Error/Warning Description	Corrective Action
0016	0x0000 0010	Valve Cable Error	Valve cable error detected. Possible causes: 1) Interruption of power supply to pump; or 2) Loose valve cable connection. Check valve cable connector on back of pump and individual cables connecting to solenoid pilot valve assembly on backside of cylinders. If error remains, contact Vindum Engineering Support.	Often this error is displayed as the result of an interruption of the 56V power supply in the pump. This loss of power is detected by the valve cable and reported as a valve cable error. However, it can also be due to a problem with electrical connection between pump circuitry and solenoid pilot valves.	First check to see if an event has caused an interruption to the 56V power supply, such as exceeding the Safety Pressure. Any loss of power to the pump will generate this valve cable error. If no power supply interruption is present, ensure that 15-pin valve connector on back of pump is securely connected. Check Pump Status screen, "Valve cable" indicator; if box is RED, there is a persistent problem with electrical connection to the solenoid pilot valves. Contact Vindum Engineering support.
0032	0x0000 0020	Communication Error	NA		
0064	0x0000 0040	Transducer Calibration Warning	WARNING! Pressure difference of over 250psi (17.25bar) has been observed during cylinder switchover. Pumping will not be pulse-free. To fix this problem, check the atmospheric pressure reading of each transducer and Reset Pressure Zero following instructions on Pump Configuration screen. Also check the Pressure Transducer Gain settings to ensure they have not been changed. If needed, recalibrate the transducer gain values following instructions in the Pump User Manual.	This warning indicates that there is a significant discrepancy between pressure transducer A and B with the pump operating in paired modes. The pump will continue to operate, but flow will likely not be pulse-free.	Recalibrate both pressure transducers. Run pump in paired-pressure-delivery mode and graph the pump pressure to check for pressure spikes during piston switch-over, which is evidence of excessive transducer offset.
0128	0x0000 0080	Pump Flash Memory Error	Pump Flash Memory Error Detected, either reading from or writing to pump's memory. This is an unusual event; please contact Vindum Engineering for help.	Error detected in pump's flash memory. This is a very unusual event.	Try powering pump off & on and check pump configuration window for abnormal values that could be causing this issue. If the problem persists, email support@vindum.com or call +1 281-782-8312.
0256	0x0000 0100	Cylinder Extend Error	Pump stopped due to both pistons extending to their maximum extension setpoint. Increase the Return Rate Multiplier setting (Configure Screen) so that non-active piston can retract more quickly to get in position to maintain constant flow operation.	Pump is unable to retract the passive piston fast enough to get into correct position to maintain pulse-free continuous flow.	Increase the Return Rate Multiplier so that non-pumping piston has more time refill and repressure the passive cylinder in order to maintain pulse-free flow.

Error Code Mask (decimal)	Error Code Mask (32-bit hex)	Common Error Code Explanation	VPware Error/Warning Dialog Box	Error/Warning Description	Corrective Action
0512	0x0000 0200	Cylinder Retract Error	Pump stopped due to both pistons retracting to their maximum retraction set-point. Increase the Return Rate Multiplier setting (Configure Screen) so that non-active piston can extend more quickly to get in position to maintain constant flow operation.	Pump is unable to extend the passive piston fast enough to get into correct position to maintain pulse-free continuous flow.	Increase the Return Rate Multiplier so that non-pumping piston has more time refill and repressure the passive cylinder in order to maintain pulse-free flow.
2048	0x0000 0800	Pump Configuration Error: Pump, Transducer or Transducer Calibration gains are out of range. Please check configuration screen.	Invalid entry for Pump Type or Transducer Type. Go to VPware Configure/Pump Configuration window and use drop-down list to select correct values. Pump Type is inscribed on pump cylinders and Transducer Type is listed on transducer body. Pump will not run without valid entries.	Pump or transducer type stored in pump's RAM does not match any valid type. Indicates a potential error in pump memory where these values are stored.	Open Pump Configure screen and ensure that the values for pump type and transducer type are correct. If this problem persists, contact Vindum Engineering support.
4096	0x0000 1000	Open/close gains are mismatched between cylinders.	Proportional or Differential Gain values are mismatched for paired mode operation. If using the pump in paired operating modes, the Gain values for cylinder A and Cylinder B should have matching values. For example, the Open-valve Prop. Gain for CylA and CylB should be the same value.	For Vindum pumps to operate correctly in dual-cylinder (paired) modes, the Proportional and Differential Gain settings of the cylinders must be the same.	For paired pumping modes, ensure that Proportional & Differential Gain settings of both cylinders are the same. Values for Open Valve and Closed Valve parameters may be different, but the PID settings should match CylA to CylB.
8192	0x0000 2000	Option Module Control: VPware or another program sent a command to pump while Option Module control is activated.	WARNING! Option Module is in control of the pump. Go to the configure screen and change the option module selection to none.		Do not send commands to pump via VPware when the Option Module is engaged. Set Option Module to "None" to restore pump control to VPware.
16384	0x0000 4000	Option Module Over Voltage: Input to Option Module >3.3V	WARNING! Option Module is in control of the pump. Analog input to the option module is greater than 3.3 Volts. Pump will set the rate or pressure to maximum, based on mode selected.	This is a warning that the Options Module has detected an input voltage greater than its maximum of 3.3V.	Ensure that external voltage to the Options Module does not exceed 3.3V. Voltage in excess of 3.3V is read by the pump as a "max pressure" or "max rate" command (depending on the pump mode being used).
32768	0x0000 8000	Auto Return Rate is Too High.	Auto Return Rate value, in seconds, is too large for the specified pump rate (i.e., implied piston retract speed exceeds pump's capability). Piston will retract at pump's maximum speed but repressure time will be less than the Auto Return Rate value entered.	Increasing the Auto Return Rate value increases the piston retract speed on the passive cylinder (when refilling).	Lower the Auto Return Rate Multiplier setting to slow the return rate speed. The recommended Auto Return Rate time is 12 seconds.

Error Code Mask (decimal)	Error Code Mask (32-bit hex)	Common Error Code Explanation	VPware Error/Warning Dialog Box	Error/Warning Description	Corrective Action
65536	0x0001 0000	Sensor Cable Error.	Piston position sensor error detected. This sensor board provides the exact piston position that is needed to operate the pump. Please contact Vindum Engineering support for help with this issue.	This error may be due to a loose sensor cable or a defect in the piston position sensor board. Diagnostic testing is required.	This is an unusual error that may require replacement of the piston position sensor board if it occurs.
131072	0x0002 0000	Rate Limited Error: Pump unable to reach target pressure due to max rate set by user.	Unable to reach pressure setpoint due to Pumping Speed Limit setting. Increase Pumping Speed Limit to avoid this.	User has limited the max pumping rate on the Pump Configuration window of VPware. Pump is unable to reach the target pressure due to the speed limitation	Open the Pump Configuration window of VPware and increase the Max Rate value.
262144	0x0004 0000	Pressure Limited Error: Pump unable to reach target rate due to max pressure limit set by user.	The Pumping Pressure Limit was triggered, so the pumping rate has been reduced to keep the pressure under the Pumping Pressure Limit	The target rate has caused the cylinder pressure to exceed the Max Pressure value entered by user, so rate is being reduced to keep pressure below the Max Pressure value.	Increase the Max Pressure entry on the VPware Pump Configuration page. This will allow the pump to increase it's rate without hitting the Max Pressure limit.
524288	0x0008 0000	Motor Voltage Low	Not used	Ignore	Ignore
10485576	0x0010 0000	VIPR pumps in paired mode. No ECAN communication, check user interface cable connection.	The link between two paired pumps has failed. The pumps have been stopped and unpaired. Check the cable linking the pumps.	The ECAN cable (available from Vindum) is needed to operate two VIPR pumps in paired pumping modes (continuous, pulse-free, pumping).	Ensure that the ECAN cable is connected to both of the VIPR pumps that you want to pair for continuous pumping.
2097152	0x0020 0000	RS232 and USB cables connected at the same time. The two cables have communication conflicts.			Remove one the communication cables from the pump.

Cylinder-Specific Operating Error Codes

These errors are specific to Cylinder A or B.

Error Code Mask (decimal)	Error Code Mask (32-bit hex)	Cylinder Error Code Explanation	VPware Error/Warning Dialog Box	Error/Warning Description	Corrective Action
0001	0x0000 0001	Motor Current Error	Cylinder/Pump stopped after detecting excessive motor power draw. Ensure that there is nothing impeding movement of pump's drive mechanism. If problem persists, contact Vindum Engineering support.	Pumps motor(s) are drawing excessive current, so pump stopped.	Look for anything impeding movement of the ball screws. Ensure that you have the latest pump firmware installed on your pump. Contact Vindum Support or call +1 281-782-8312 if you cannot resolve.
0002	0x0000 0002	Motor Stall Error	Motor Stall detected. This commonly occurs when the motors stop suddenly in response to another error, such as exceeding safety pressure, and requires no corrective action. If motor stall occurs absent other errors, power the pump Off/On to allow the motor position sensors to reset themselves. If the error persists, contact Vindum Engineering support.	The motor position sensor has detected that the motor position (i.e., rotation) is not where the encoder expects it to be. This is often an outcome of another issue, rather than the cause of the error. Motor stalls can also occur due to foreign objects impeding movement of the ball screw.	Motor stall errors often occur due to the pump rapidly stopping due to such factors as exceeding the safety pressure limit or activation of the emergency stop circuit. Motor stalls often correct themselves once the pump stops, so no corrective action is required. Also check for any foreign object blocking movement of the ball screws or pistons. If the problem persists, try turning the power off/on a few times.
0008	0x0000 0008	Over-Pressure Warning	**VP-Series Pumps:** Safety Pressure Exceeded, Pump Stopped. To relieve cylinder pressure, set cylinder mode to \"IR\" and retract piston. **VIPR-Series Pumps:** Pump stopped because cylinder pressure exceeded the safety pressure value. To relieve the cylinder pressure, open the Fill/Empty window, set the pump to \"Rate\" mode, leave the valves closed, and retract the piston. The pump will be ready to use once the cylinder pressure is below the safety pressure setting.	Cylinder pressure has exceeded the Safety Pressure setting, so pump has stopped. This is a very common error that can have serval causes.	A common cause of this error is presence of air or gas mixed with liquid phase in the cylinder. Ensure you have fully purged air from the cylinders—use Auto-Prime Sequence. If using the pump in pressure modes with a very small system, you may need to adjust the Open Valve Prop. gain lower to prevent over-shooting the target pressure. Refer to Vindum Pump User Guide, Pump Configuration Section, Proportional & Differential Gain Settings.

Error Code Mask (decimal)	Error Code Mask (32-bit hex)	Cylinder Error Code Explanation	VPware Error/Warning Dialog Box	Error/Warning Description	Corrective Action
0016	0x0000 0010	Piston Travel Limit Warning	**VP-Series Pumps:** Piston travel limit reached and piston movement stopped to prevent damage to pump. Check & reset transducers' "zero-pressure offset", as this is a common cause of this error. This error can also occur if external high-pressure fluid has driven the pump piston(s) opposite of the intended flow direction of the pump operating mode. Use \"Bi-Directional Pressure Mode\" to allow for receiving or delivering fluid without stopping pump. **VIPR-Series Pumps:** Piston is fully retracted but cylinder pressure is above the target pressure. You may want to stop the pump, relieve the cylinder pressure, and extend the piston some before restarting. This will allow for more stroke to lower the pressure to the target.	For VP-Series pumps, this is a warning that the stand-by (non-active) piston has reached its maximum retract point so that further movement is not possible. Typically, this means that the stand-by piston is fully retracted (pump in deliver mode). The pump will continue to operate but pulse-free flow is likely com-promised.	The most probable causes of this warning are: 1) When operating at very low pressure with transducers that are out-of-calibration on the Pressure Zero Offset. Stop and reset the Zero-Pressure Offset on the Pump Configuration window. 2) High pressure outside the pump is driving the piston opposite of the intended direction. Check the system pressures upstream and downstream of the pump and correct the pump's set pressure or switch to Bi-Directional mode if direction of flow can change with system pressure.
0032	0x0000 0020	Failure to Reach Pressure Warning	**VP-Series Pumps:** WARNING! Standby cylinder failed to match pressure of active cylinder within preset range of piston travel (typically ~30% of total piston stroke). Failure to match active cylinder pressure will result in a pressure pulse when pump switches between cylinders.	Warning message that standby cylinder (non-pumping cylinder) failed to reach the pressure of the active (pumping) cylinder within 30% of its available stroke. The pump will continue to operate but flow will not be pulse-free. Possible causes include highly compressible gas/fluid or a fluid leak in the pump. The pump will continue to operate but will not be pulse-free until the standby cylinder is able to match the pressure of the active cylinder.	This situation arises most often when pumping highly compressible fluids or gases. Pre-pressuring the inlet fluid/gas can help the stand-by cylinder pressurize using less of its stroke to match the pumping pressure of the other cylinder, thereby reducing any pressure pulse at cylinder switchover.

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0064	0x0000 0040	The cylinder went past the limit of safe travel. Retract/Extend is not displayed in this error.	No dialog box is displayed with this warning.	The microprocessor was doing too many other actions and did not stop the cylinder in time. This could lead to a motor stall error, as the cylinder might hit a hard stop. Metal on Metal.	Contact Vindum Engineering Support for instructions for further testing.
0128	0x0000 0080	Transducer Cable Not Connected	Transducer reading is below .35 volts. Transducer is not connected or has failed.	Low transducer output voltage suggests that the transducer is not connected or has failed. This is a serious problem, as continued use of pump can lead to damage and/or personal injury.	Stop the pump immediately. Check for loose cable connections to the transducers. If this does not correct the problem, contact Vindum Engineering.
0256	0x0000 0100	Bad position, one or more piston position sensors are stuck on	One of the piston position sensors has malfunctioned, which prevents the pump from starting. Please contact Vindum Engineering (support@vindum.com) for support.	Both VP and VIPR pumps have a sensor board that relays piston position to the pump's CPU. This error means that the pump has detected that one or more of the sensor(s) is stuck "ON", rather than being ON when the piston passes its position.	Contact Vindum Engineering Support for instructions for further testing.
0512	0x0000 0200	Bad position, one or more piston position sensors is missing	One or more of the piston position sensors for this cylinder is damaged or missing, which prevents the pump from starting. Please contact Vindum Engineering (support@vindum.com) for support.	One or more of the sensors on the piston position sensor board is not responding. The pump refers to these sensors when first powered on, to determine the piston position. This is not possible if sensor(s) are damaged or missing.	Contact Vindum Engineering Support for instructions for further testing.
1024	0x0000 0400	Poor fill warning (VIPR Pumps only)	Cylinder failed to reach pressure setting within the poor-fill threshold. Possible causes include highly compressible gas/fluid or a fluid leak in the pump. The pump will continue to operate. You may need to pre-pressurize highly compressible gases or fluids.	VIPR pump failed to reach target pressure withing the stroke percentage set by the user, so VPware stopped the pump. This can be caused by: 1) air/gas in the cylinder; 2) Refill speed set too fast, causing void in pump's cylinder; or 3) Inlet fluid is too viscous, which created a void in the cylinder when refilling.	There are several possible remedies: 1) Place fluid to be pump at same level or above pump level; 2) Pressurize high-viscosity fluids to help push them into the pump for filling; 3) Ensure fittings/connectors are not loose, as loose fittings can allow air into pump cylinder when filling; and 4) Ensure inlet valve is working properly (open and working properly).