

What this Document contains

If you have followed all the instructions in this manual in sequence, you should have few problems installing the ABB Servo Drives. If you do have a problem, this document will help you to navigate then diagnose and resolve the problem. The following pages contain information on how to understand and resolve issues that can occur. Before we get to this it's important to first discuss the fault diagnosis system used in ABB Motion products.

Problem diagnosis

There are 3 ways to get information on the faults that have occurred;

- In Mint WorkBench, connect to the drive and use the **Error Log tool** to view recent errors, get the descriptions and then check the help files for more information.
- The **drive status display** indicates errors and general status information. When an error occurs, the drive displays a sequence starting with the symbol "E" or "b", followed by the five-digit error code.
- The drive also has two **Network status LEDs** that indicate the status of a used RTE master. You can check the drives hardware manual for more information on how to diagnose the LED status.

How to reset faults

The drive can be used in different configurations so, to answer this question we must first consider which configuration we are using;

- In **Analog Mode** the user can set **RESETINPUT(0) = [input]** or in parameters group: "**Error Handling > Reset Input**" to a Digital input.
- In **Direct mode** if the drive is running a **mint program** and it goes into an error state, it will automatically try to call the ONERROR event.
- If configured as a **DS402 RTE Slave**, the drive is using the DS402 state machine so disabling and re-enabling the drive will reset any active error, though its best to issue a reset first.

SupportMe

If you cannot solve the problem or the problem persists, the Support Me can be used. This is a feature is available from the Mint WorkBench Help menu, or by clicking the "+" button on the toolbar. The SupportMe can be used to gather information which can then be, saved as a text file, copied to another application or e-mailed to the ABB support line (CN-motionsupport@cn.abb.com).

Power-cycling the ABB Motion drive

The term 'power-cycle the drive' is used in the Troubleshooting sections. If the mains AC supply (or DC supply) is removed, wait for 2 minutes before reapplying the supply.

Safety

WARNING! Only qualified electricians are allowed to service the drive. Read the Safety instructions on the first pages of the Hardware manual before working on the drive.

Error categories

Controllers use an error handling system that allocates a unique number for each error. This means that an error code does not need to be deciphered to determine exactly which individual error has occurred.

Errors are recorded in two ways:

- Error List: This is designed to be manipulated by the Mint program. The controller's error list can store up to 256 entries on MicroFlex e190 and MotiFlex e180.
- Error Log: This is a historical record of errors and is displayed in Mint WorkBench using the [Error Log tool](#). On MicroFlex e190 and MotiFlex e180, 5 KB of memory is reserved for the error log, where each error is dynamically sized. This allows approximately 100 or more errors to be stored.

Entries in the error list can be viewed by type or sequentially, for which there are additional keywords (shown in brackets in the following lists). Errors are arranged in several categories, with each error having a unique code. The error list categorizes errors, with each category using a range of error numbers:

Error category	Error code range	Type
Boot Up errors	b and 0-9	Asynchronous
MML run-time errors	0 - 999	Synchronous
Host application errors	1000 - 1999	Synchronous
Compilation errors	2000 - 2999	-
Program run-time errors	3000 - 3999	Synchronous
Autotuning errors	4000 - 4999	Asynchronous
Parameter errors	6000 - 6999	Asynchronous
Parameter warnings	7000 - 7999	Asynchronous
Communication errors	8000 - 8999	Asynchronous
Axis errors	10000 - 19999	Asynchronous
Axis warnings	20000 - 29999	Asynchronous
Controller errors	30000 - 39999	Asynchronous
Controller warnings	40000 - 49999	Asynchronous
Controller events	50000 - 59999	Asynchronous

Some errors are classed as 'warnings'. Warnings are less critical than errors and are disabled by default but can be individually enabled using [ERRORCODEENABLE](#). Warnings are stored and handled in the same way as errors, so all references to error handling should be taken to include the warning categories.

When an error occurs, an entry is added to the error list containing the following information:

- Error code: The unique error code number.
- Error line: The program line number (if applicable, -1 shows the error is **not** caused by a line in the Program).
- Error data: Four 32-bit words of additional data. This will vary for each error group, but might contain the relevant axis number, bus number or node ID if applicable, -1 otherwise.
- Time stamp: The value of [SYSTEMSECONDS](#) when the error occurred.

Each time an error is added to the error list, the [ONERROR](#) event is called. However, individual errors can be prevented from calling the [ONERROR](#) event by using the [ERRORCODEENABLE](#) keyword.

Synchronous errors ([Back to top](#))

Synchronous errors are generally programming errors. They occur at a line of code that is either incorrect or is trying to do something that cannot be done at that time. Errors in the *MML run-time errors* and *Mint run-time errors* categories are synchronous errors. When a synchronous error occurs*, Mint will look for an event called [ONERROR](#). If this is defined, it will be called. If not, an error message will be printed to the terminal and the Mint program will be terminated (aborted) immediately.

Example

```
SCALEFACTOR(0) = -3           'Must be a positive scalefactor
```

This generates the error 'Data specified out of range' which has the code 3. If there is no Mint [ONERROR](#) event, the error message printed to the terminal would be:

Error 3: Data specified out of range on line n

With an [ONERROR](#) event, then an entry would be added to the error list and the [ONERROR](#) event would be called. Synchronous errors do not cause motion to terminate and require no special action to recover from. However, the cause of a synchronous error should always be investigated and removed since it generally indicates a programming problem.

* Error 3102 (Stack overflow), error 3103 (Index out of range) and error 3108 (Stack underflow) are 'fatal' and will not call the [ONERROR](#) event.

Asynchronous errors ([Back to top](#))

Asynchronous errors can occur at any time and are not directly related to a line of Mint code. When an asynchronous error occurs, an entry is added to the error list and the [ONERROR](#) event will be called if it is defined in the Mint program. If no [ONERROR](#) event is defined, the Mint program will continue to run. The controller will automatically take action according to the error code; this is known as the 'default action':

- For Axis Warnings and Controller Warnings there is no default action. Motion will not be stopped.
- For Autotuning errors, the default action is to crash stop and disable the axis.
- For Axis Errors the default action can be specified for some error codes and is fixed for others.
- For Controller Errors, the default action varies according to the error code.

ONERROR event ([Back to top](#))

If there are any entries in the error list, then the Mint [ONERROR](#) event will be called **if it is defined in the Mint program**. It is not essential to handle all errors within the error handler as it will be called again if there are any entries remaining in the error list. It is recommended to always include an **ONERROR** event.

Using the error list ([Back to top](#))

There are two keywords that can read an entry from the error list; [ERRORREADNEXT](#) and [ERRORREADCODE](#) :

- **ERRORREADNEXT** reads the next entry from the error list. This also allows errors from specific categories and axes to be read.
- **ERRORREADCODE** allows the error list to be searched for a specific error code. This also allows the list to be searched only for errors on a specific axis.

If [ERRORREADNEXT](#) or [ERRORREADCODE](#) finds a matching entry in the error list, then details about that error are placed in the **ERR ...** keywords and the entry is removed from the list. The **ERR ...** keywords are as follows:

[ERRCODE](#) - the error code.

[ERRSTRING](#) - description of the error code.

[ERRLINE](#) - the line number on which the error occurred for synchronous error types.

[ERRDATA](#) - the axis number involved in the error. Can also provide the object index and object sub index for errors caused by PDO operations.

[ERRTIME](#) - the time (in System Seconds) when the error occurred.

Depending on the error code, the [ERRLINE](#) and [ERRDATA](#) keywords may not have any relevant information, in which case they will return -1. The following example reads the next entry from the error list and prints the information to the terminal:

Event ONERROR

```
If ERRORREADNEXT(_egALL, -1) Then
  Print "Error code: ", ERRCODE Print
  "Description:           ",
  ERRSTRING
  Print "Axis (if applicable):           ", ERRDATA(1)
  Print "Line number (if applicable):    ", ERRLINE Print
  "Time: ", ERRTIME
```

End If

End Event

For more examples of error handling, see [Error event: ONERROR](#) . It is also possible to mask errors from being generated by using [ERRORCODEENABLE](#) , and to read if an error is present (without removing it from the list) by using [ERRORPRESENT](#) . Errors may also be cleared using [ERRORCLEAR](#) .

Changing the default action of motion errors ([Back to top](#))

It is possible to select the default action taken on an axis errors using the keywords listed below:

Mint Keyword	Controls default action for error
ABORTMODE	Abort error (10000).
LIMITMODE	Forward and reverse hardware limit errors (10001 & 10002).
SOFTLIMITMODE	Forward and reverse software limit errors (10003 & 10004).
FOLERRORMODE	Following error (10005).
ERRORINPUTMODE	External error input active (10007).
ADCERRORMODE	ADC limit error (10008).
VELFATALMODE	Velocity error (10006).

The possible modes are:

Mode	Action
0	Ignore the error condition.
1	Call the error event ONERROR . Crash stop the axis and drop the enable line.
2	Call the error event ONERROR . Crash stop the axis, leave the axis enabled.
3	Call the error event ONERROR . Perform a controlled stop on the axis at the rate specified by the ERRORDECEL or TORQUEREFERRORFALLTIME , leave the axis enabled.
4	<i>Reserved</i>
5	Call the error event ONERROR only.
6	<i>Reserved</i>
7	Crash stop the axis and drop the enable line, don't generate an error. This is equivalent to Mode 1, except that no error is generated.
8	Crash stop the axis, leave the axis enabled, don't generate an error. This is equivalent to Mode 2, except that no error is generated.
9	Perform a controlled stop on the axis at the rate specified by the ERRORDECEL or TORQUEREFERRORFALLTIME , leave the axis enabled, don't generate an error. This is equivalent to Mode 3, except that no error is generated.

Each of the errors for each of the axes can be given a separate mode and the controller will react accordingly. As the above table shows, the **ONERROR** event will be called immediately. The error list entry is created when the error first occurs. See the individual keywords to see which modes are supported for each keyword.

Recovering from errors ([Back to top](#))

If there are any entries in the error list then the **ONERROR** event will be called. Errors should therefore be removed from the list otherwise the Mint program will keep calling **ONERROR**, holding out all other tasks and events. Synchronous errors should simply be removed from the error list. This happens when they are read with **ERRORREADNEXT** or **ERRORREADCODE**. Alternatively, **ERRORCLEAR** can be used to discard errors without reading them. For example, in a system expecting only synchronous error 'ecNODE_NOT_LIVE' (error 22) to occur, any other errors can be displayed by the program:

```
If ERRORREADCODE(_ecFWD_HARD_LIMIT, 0) Then
  'Take some action here
End If

'Display info about others
If ERRORREADNEXT(_egMINT_API, -1) Then
  Print "Error code: ", ERRCODE Print
  "Description:          ",
  ERRSTRING
  Print "Axis (if applicable):      ", ERRDATA(1)
  Print "Line number (if applicable): ", ERRLINE
  Print "Time: ", ERRTIME
End If

ERRORCLEAR(_egMINT_RUNTIME, -1)
```

Asynchronous errors must be handled before an axis may perform further motion. Use the **ERRORREADNEXT** and **ERRORREADCODE** keywords to read and remove errors from the list. Once all the errors on an axis have been cleared, the axis may be enabled and motion performed. The **ERRORPRESENT** keyword provides an easy way to check if an axis is in error:

```
If ERRORPRESENT(_egAXIS_ERROR, 0) Then
  Print "Drive is in error" Else
  DRIVEENABLE(3) = _TRUE
End If
```

ERRORCLEAR can also be used to clear axis errors. The **CANCEL** keyword will also clear all errors and stop any motion that is in progress on a specified axis.

```
If ERRORPRESENT(_egAXIS_ERROR, 0) Then
  'These do the same thing
  CANCEL(0)
  Pause(IDLE(0))

  ERRORCLEAR(_egAXIS_ERROR, 0)
End If
```

Error Codes explained ([Back to top](#))

In the above examples and the following lists some of the Errors are shown with a corresponding “_ec....” error codes. These codes are enumerations for the error codes and can be used in the Mint program, for example in the error checking routine.

The error output ([Back to top](#))

The **GLOBALERROROUTPUT** keyword can be used to specify an output that will be **deactivated** if there are any errors in the error list. The output must be manually activated.

Boot Up Errors

Boot up errors will indicate issues encountered by the drive while initializing. These can be categorized in one of two ways; those captured by the firmware (**bxxxx**) and “lock ups” during initialization not captured by firmware where a single character is displayed permanently on the drive display (‘-’ to **9**).

Code	Error	Cause	What to do	Where to look?
-	Initialization error (check memory unit insertion) or recovery mode.	Possible Cause #1 The memory module is not fitted correctly. #2 Confused shipment of activated and inactive MU.	<p>Try powering the drive down removing the Memory module and reconnecting it</p> <p>If you have other connections such as to an RTE master, then disconnect it</p> <p>Sometimes a damaged encoder can drag the control board voltage down so remove the encoder connection, then Power up again.</p> <p>If the problem persists, replace the drive.</p>	<p>Memory Module or Firmware or Connected External Hardware</p>
-	Suspend active	Cannot get to Firmware loading stage. Note: This can also mean the Mint SUSPEND command is active.		
-	Firmware loading	Firmware Cannot be loaded from memory card		
0	The system is disabled (OFF)	Normal State During boot up should not stay in this state permanently		
1	The system is initialized (INIT)	Normal State During boot up should not stay in this state permanently		
2	The MML is booted (MML_BOOT)	Normal State During boot up should not stay in this state permanently		
3	The MML is initialized (MML_INIT)	Normal State During boot up should not stay in this state permanently		
4	The MML is ready to use (MML_READY)	Normal State During boot up should not stay in this state permanently		
5	The object dictionary is created (OD_CREATE)	Normal State During boot up should not stay in this state permanently		
6	The object dictionary values are set to default (OD_RESET)	Normal State During boot up should not stay in this state permanently		
7	The object dictionary handling is done (OD_DONE)	Normal State During boot up should not stay in this state permanently		

Code	Error	Cause	What to do	Where to look?
8	Default configuration (DEFAULT)	Normal State During boot up should not stay in this state permanently. Note: a state of "8" also states that drive is enabled so don't confuse a normal enabled drive with one that is stuck in an error state!	Try powering the drive down removing the Memory module and reconnecting it also if you have other connections such as to an RTE master then disconnect it, also sometimes a damaged encoder can drag the control board voltage down so remove the encoder connection, then Power up again. If problem persists, replace the drive.	Memory Module or Firmware or Connected External Hardware
9	Default communication profile configuration (DEFAULT_COMM)	Normal State During boot up should not stay in this state permanently	Possible causes are; <ul style="list-style-type: none"> Encoder configuration is different with the Hardware type (FB-xx) – to solve this correct configuration and power cycle. Drive's parameter configuration is causing a problem - to solve this problem, put the drive-in recovery mode, power cycle drive, Open workbench, and selected the file manager of MFE180, Delete the cmcf file, power the drive up, the drive shall in factory default status. If problem persists, replace the drive. 	
b00000 - b06409	Various	The drive displayed a boot error code in case of a fatal error during boot up. The code is displayed on the seven-segment starting with a 'b'.	Try powering the drive down, removing the memory module and reconnecting it. Disconnect all connections apart from the logic supply power source (sometimes a damaged encoder can drag the control board voltage down so remove the encoder connection) then power up again. If problem persists, replace the memory module. If the problem still persists, replace the drive.	
b06410	Error Applying Mint Motion Library Command	During the Firmware upgrade process the parameters are stored then re-instated after a Firmware upgrade to make the drive operational again. Normally this Error indicates that the new firmware version has a new parameter so it cannot set it as the old parameter file doesn't tell it what to configure it to.	Connect Mint WorkBench to the drive, access the command line and enter the "FDF" or "FACTORYDEFAULTS" command and power cycle the drive (note that IP address will return to 192.168.0.1). Either recommission the drive or download a previously saved parameter (PTX) file to continue.	
b06411 - b13066	Various	The drive displayed a boot error code in case of a fatal error during boot up. The code is displayed on the seven-segment starting with a 'b'.	Try powering the drive down, removing the memory module and reconnecting it. Disconnect all connections apart from the logic supply power source (sometimes a damaged encoder can drag the control board voltage down so remove the encoder connection) then power up again. If problem persists, replace the memory module. If the problem still persists, replace the drive.	

Autotuning errors

Autotuning errors for drives are assigned unique numbers in the range **4000-4999**. Autotuning error codes are generated by the Autotune tool. The following list of error codes is not continuous as some codes are reserved for future use.

Code	Error	Cause	What to do	Where to look?
4000	No autotuning error (<code>_ecAUTOTUNE_SUCCESS</code>)	There is no autotuning error.	No Action	Na
4001	Drive rating data invalid	One of the following conditions has not been met 1. Drive bus nominal voltage < 1 2. Drive rated current <= 0	Check memory module is connected correctly, check power supply level is correct	Hardware
4002	Drive speed max invalid	DriveSpeedMax <= 0 Only check AutoTune test ID <code>autoDESIGN_MOTION_CONTROL</code> .	Re-run commissioning and check that DriveSpeedMax is set correctly	Drive parameters
4003	Config doesn't support that test (<code>_ecCONFIG_NOT_RIGHT_TYPE</code>)	The autotuning operation does not support this controller configuration.	This error will not occur unless the configuration has been manually changed using the CONFIG keyword.	Mint Workbench Parameter View Check; Configuration
4004	Axis error has occurred (<code>_ecAXIS_ERROR</code>)	An asynchronous axis error or drive error has occurred during the autotuning operation.	See the Mint WorkBench Motion toolbar for more information on the error.	Mint WorkBench or Drive display
4005	Calculated torque constant invalid	Drive had calculated a Torque Constant which is too small.	Check motor data is correct.	Mint WorkBench
4006	Inductance value is zero	For the selected motor the winding inductance is zero	To avoid this error, make sure that a motor has been selected from the database in the Drive Setup Wizard. Alternatively, if a custom motor has been selected and you are unsure of motor data, check that the "Measure motor resistance and inductance" test has been selected and run using the Autotune tool.	Motor Data
4007	Resistance value is zero (<code>_ecZERO_RESISTANCE_VALUE</code>)	For the selected motor the winding resistance is zero	To avoid this error, make sure that a motor has been selected from the database in the Drive Setup Wizard. Alternatively, if a custom motor has been selected and you are unsure of motor data, check that the "Measure motor resistance and inductance" test has been selected and run using the Autotune tool.	Motor Data

Code	Error	Cause	What to do	Where to look?
4008	User has aborted test (_ecUSER_TEST_ABORT)	The autotuning operation has been manually aborted.	This will occur if the Autotune tool's STOP button is clicked while tests are being performed.	Mint WorkBench
4009	Cannot capture data during test (_ecCAPTURE_FAILED)	Many of the autotuning operations use the data capture facility. This error message can occur if the capture facility is in use prior to performing the autotuning operation.	Not normally a problem, but to prevent this before autotuning, type CP=0 in the Command window to halt any capture operations.	Mint WorkBench
4010	Resistance too low, possible short circuit (_ecPOSSIBLE_SHORT_CIRCUIT)	This error can occur during the Measure motor resistance and inductance test and indicates that the effective motor winding resistance is very low.	Check that there are no short circuits between the U, V and W terminals of the motor and that the motor power cable is wired correctly.	Mint WorkBench
4011	Autotuning doesn't support feedback device (_ecUNSUPPORTED_FEEDBACK_)	The Test the feedback or Feedback calibration test (EnDat absolute encoders only) does not operate on this feedback type.	This error will not normally occur because Mint WorkBench will not allow autotuning on unsupported feedback types. ie the combination of Motor and Feedback device is not supported by Mint Workbench.	Mint WorkBench
4012	Encoder resolver rotation sense is wrong (_ecFEEDBACK_SENSE_WRONG)	During the Measure the voltage constant and Measure the motor inertia tests, a torque is applied to the motor. This error will occur if the resulting motion is in the opposite direction to the torque (a positive torque should cause positive velocity).	The most common cause of this error is an incorrectly wired or set up feedback device (encoder or resolver), or an incorrectly wired motor. Select the Test the feedback option. This will indicate if there is a problem with the wiring or setup of the drive and will automatically compensate for certain wiring errors. Note that the Test the feedback test should ideally be run with the motor disconnected from the load. This error can also occur when autotuning a motor connected to some types of load. In particular, loads with a lot of compliance (e.g. belt drives) or torque offsets (e.g. gravitational loading) can cause problems for autotuning. Another cause of the error may be because the position feedback is noisy, perhaps due to long cables on resolver feedback systems, for example. In either of these cases, it may be necessary to manually tune the system using the Fine-tuning tool.	Feedback, Motor, Connected Load, Noise

Code	Error	Cause	What to do	Where to look?
4013	Hall sequence doesn't behave as expected (_ecHALL_FAULT_OR_NO_ROTATION)	The Hall sequence doesn't behave as expected. This error can occur during the Test the feedback test when using an incremental encoder + Halls feedback system.	The error can occur for a number of reasons, so try the following tests: <ul style="list-style-type: none"> •Return to the Confirm Motor Information page of the Drive Setup Wizard to check these values. If the resolver is not a standard ABB product, check that the specification is compatible in the drives hardware manual •A common cause of this error is an incorrectly wired or set up encoder/resolver. Try manually moving the rotor and watching the position field in the Axis tab. If the position does not change, or it changes erratically, this indicates a problem with the encoder wiring. •Run the Test the feedback test again. Ideally, the Test the feedback test should be run with the motor disconnected from the load, although it will operate successfully where the load is purely inertial, or load friction is small. Note: watch the movement of the rotor. For rotary motors, the shaft should rotate through just over one revolution in one direction followed by one revolution in the opposite direction. For linear motors, the rotor should move through just over one pole pitch in one direction followed by one pole pitch in the opposite direction. If the rotor moves significantly more or less than these distances, this indicates that the number of motor poles is not set correctly (rotary motors), or the pole pitch is not set correctly (linear motors). If the motion during the test is not smooth, this indicates that friction is high and the test will not be able to obtain conclusive results.	Feedback Specification, Motor, Connected Load, Noise
4014	Resolver value doesn't behave as expected (_ecRESOLVER_FAULT_OR_NO_ROTATION)	The resolver value doesn't behave as expected through one electrical cycle. This error can occur during the feedback test when using a resolver feedback system.		Feedback Specification, Motor, Connected Load, Noise
4015	Position control update rate invalid	Position loop control rate (ControlRate(0, 1)) < 1.	Change control rate to expected value (normally 4000)	Mint Workbench Parameter view

Code	Error	Cause	What to do	Where to look?
4016	Mathematic error in gain calculations (<code>_ecGAIN_CALC_S_FAILED</code>)	This error can occasionally occur during the Calculate current loop gains or Calculate the speed and position gains tests, indicating a numerical problem in the gain equations. It can also indicate a problem with the values of motor resistance and inductance (<code>MOTORRS</code> and <code>MOTORLS</code>) when it occurs during current loop gain calculations, or with the values of inertia and damping (<code>LOADINERTIA</code> and <code>LOADDAMPING</code>) when it occurs during speed/position loop gain calculations.	The error can usually be cleared by changing the design bandwidth for the appropriate operation (click Options... in the Autotune tool). If that fails, try running the entire autotuning sequence again.	Mint Workbench Tuning
4017	Drive setup is invalid	This error can potentially occur in any of the autotuning operations, although it is rare. It indicates a problem with the fundamental setup of the drive such as the settings for motor rated current or peak current.	Try running the Commissioning Wizard again, making sure that the I am starting a new application. Reset memory to factory defaults option on the Welcome page is selected.	Mint Workbench Tuning
4018	Can't fit model to voltage/current data (<code>_ecCANNOT_FIT_RESISTANCE_MODEL</code>)	During the Measure motor resistance and inductance test, a gradually increasing voltage is applied to the motor and the generated current is logged. The process is stopped when the drive current reaches 80% of the specified motor rated current value. The resulting voltage/current characteristic is used to calculate the resistance of the windings and certain parameters of the drive's power stage.	Check the wiring between the drive and motor and the motor windings for open circuits	Motor Wiring
4019	Can't fit model to voltage/current transient (<code>_ecCANNOT_FIT_INDUCTANCE_MODEL</code>)	During the Measure motor resistance and inductance test, stator inductance is measured by applying a voltage step to the motor and logging the generated current waveform. Inductance is then calculated from the resulting voltage/current characteristic. Error 4019 indicates that this calculation cannot be performed because of insufficient data or an unusual characteristic.	Try skipping the Measure motor resistance and inductance test. To do this, manually enter the motor resistance and inductance in the Confirm Motor Information page of the Drive Setup Wizard (most motor manufacturers will supply this information) and confirm that the test is not selected in the Autotune tool. Once autotuning is complete, check that the response of the current controllers is satisfactory using the Fine-tuning tool's Current tab.	Mint Workbench Tuning

Code	Error	Cause	What to do	Where to look?
4020	Can't fit load model speed data (_ecCANNOT_FIT_LOAD_MODEL)	During the Measure the motor inertia test, a torque waveform is applied by the motor and the motor speed logged. A simple inertia/damping model is then fitted numerically to the resulting torque/speed characteristic. Error 4020 indicates that the fitting process failed. A common cause for this is lack of sufficient information to fit the load model.	Click Options... in the Autotune tool and then select the Limits tab. Increase the value in the Max Travel box to allow the motor to rotate further during the test and consequently log more data. The model fitting process can also fail for certain types of load. For example, loads with high coulomb or static friction will not conform well to an inertial load model. Likewise, gravitational loading (i.e. vertical axes) will cause problems for autotuning. If the Measure the motor inertia test continues to fail then the subsequent Calculate the speed and position gains test will also fail, as it requires values for load inertia and damping. It may be necessary to manually tune the system using the Fine-tuning tool's Speed and Position tabs.	Mint Workbench Tuning
4021	Motor test timed out (_ecAUTOTUNE_TEST_TIMEOUT)	During the Measure the voltage constant and Measure the motor inertia tests, current is applied to the motor to accelerate the motor and load. Error 4021 indicates that the rotor did not reach a sufficient speed, or travel a sufficient distance, within the duration of the test. Error 4021 can occur if the torque (or force) generated by the motor is insufficient to overcome friction in the load.	Click Options... in the Autotune tool and then select the Limits tab. Increase the value in the Max Torque box to allow the motor to generate sufficient torque to overcome friction. If the Measure the motor inertia test continues to fail then the subsequent Calculate the speed and position gains test will also fail, as it requires values for load inertia and damping. It may be necessary to manually tune the system using the Fine-tuning tool's Speed / Velocity and Position tabs.	Mint Workbench Tuning
4022	Motor travelled too far during test (_ecAUTOTUNE_TEST_OVERTRAVEL)	During the Measure the voltage constant and Measure the motor inertia tests, current is applied to the motor to accelerate the motor and load. Once the motor has reached a sufficient speed, the direction of applied current is reversed to bring the rotor to a halt within specified travel limits. Error 4022 indicates that the test was unable to impose these limits.	Click Options... in the Autotune tool and then select the Limits tab. Increase the value in the Max Travel box to allow the motor to rotate further during the test. Also, try reducing the value in the Max Speed box. If the Measure the motor inertia test continues to fail then the subsequent Calculate the speed and position gains test will also fail, as it requires values for load inertia and damping. It may be necessary to manually tune the system using the Fine-tuning tool's Speed / Velocity and Position tabs.	Mint Workbench Tuning

Code	Error	Cause	What to do	Where to look?
4023	Not enough test data to analyze (<code>_ecINSUFFICIENT_TEST_DATA</code>)	This error can occur during any of the autotuning tests, namely the Measure motor resistance and inductance test, the Measure the voltage constant and Measure the motor inertia tests, and the Feedback calibration test (for absolute encoders only). Generally, error 4023 means that insufficient data was logged during the test to obtain accurate parameter measurement.	See errors 4018, 4019 and 4020 for the reasons why these tests fail.	Mint Workbench Tuning
4024	Flux model parameters are invalid (<code>_ecINVALID_FLUX_MODEL</code>)	The Measure the motor inertia test will fail with this error if the voltage constant has not been defined.	To determine the voltage constant, either select a standard motor from the database in the Drive Setup Wizard , enter a voltage constant value in the Confirm Motor Information page of the Drive Setup Wizard (see manufacturer's motor data), or run the Measure the voltage constant test.	Motor Parameters
4025	Load model is invalid (<code>_ecINVALID_LOAD_MODEL</code>)	If this error occurs during the Measure the motor inertia test, it suggests that the characteristics of the load are such that inertia cannot be accurately calculated.	See error 4020 for more information.	Mint Workbench Tuning
		Error 4025 can also occur during the Calculate the speed and position gains test if the values of load inertia and damping have not been defined.	In this case, run the Measure the motor inertia test to measure load inertia and damping.	Mint Workbench Tuning
4026	Encoder parameter invalid	Either; <code>ENCODERRESOLUTION < 1</code> or <code>ENCODERCYCLESIZE = 0</code> .	Correct Encoder parameters and re run autotune tests	Encoder Parameters
4027	Motor inductance is not set	When motor type is AM, <code>Lm</code> or <code>Llr</code> ≤ 0 .	To avoid this error, make sure that a motor has been selected from the database in the Drive Setup Wizard. Alternatively, if a custom motor has been selected and you are unsure of motor data, check that the "Measure motor resistance and inductance" test has been selected and run using the Autotune tool.	Motor Parameters

Code	Error	Cause	What to do	Where to look?
4028	Can't set stator resistance (_ecCANNOT_SET_STATOR_RESISTANCE)	Can't set stator resistance.	<p>Error codes 4026 to 4054 will occur if the associated drive parameter, calculated by one of the autotuning tests, or set by the user is outside the allowable range of values. These errors should not normally occur. If the problems persist, make sure that a motor has been selected from the database in the Drive Setup Wizard. Alternatively, if a custom motor has been selected and you are unsure of motor data, check that the "Measure motor resistance and inductance" test has been selected and run using the Autotune tool. If the problem persists, you will need to manually tune the control loops in the drive</p>	Motor Parameters or characteristics
4029	Can't set stator leakage inductance (_ecCANNOT_SET_STATOR_INDUCTANCE)	Can't set stator leakage inductance.		Motor Parameters or characteristics
4030	Motor pole pitch invalid	Calculated motor pole pitch ≤ 0 .		Motor Parameters or characteristics
4031	Motor pole number invalid	Calculated motor poles < 2 .		Motor Parameters or characteristics
4032	Load inertia is not set	Calculated load inertia ≤ 0 .		Motor Parameters or characteristics
4033	Can't set maximum motor flux (_ecCANNOT_SET_MOTOR_MAX_FLUX)	Can't set motor flux model time constant.		Motor Parameters or characteristics
4035	Can't set load inertia (_ecCANNOT_SET_LOAD_INERTIA)	Can't set load inertia.		Motor Parameters or characteristics
4036	Can't set load damping (_ecCANNOT_SET_LOAD_DAMPING)	Can't set load damping.		Motor Parameters or characteristics
4037	Can't set controller proportional gain (_ecCANNOT_SET_GAIN_KIPROP)	Can't set controller proportional gain.		Motor Parameters or characteristics
4038	Can't set current controller integral gain (_ecCANNOT_SET_GAIN_KIINT)	Can't set current controller integral gain.		Motor Parameters or characteristics
4039	Can't set speed controller proportional gain (_ecCANNOT_SET_GAIN_KVPRO)	Can't set speed controller integral gain.		Motor Parameters or characteristics

Code	Error	Cause	What to do	Where to look?
4040	Can't set speed controller integral gain (_ecCANNOT_SET_GAIN_KVINT)	Can't set speed controller integral gain.	Error codes 4026 to 4054 will occur if the associated drive parameter, calculated by one of the autotuning tests, or set by the user is outside the allowable range of values. These errors should not normally occur. If the problems persist, make sure that a motor has been selected from the database in the Drive Setup Wizard. Alternatively, if a custom motor has been selected and you are unsure of motor data, check that the "Measure motor resistance and inductance" test has been selected and run using the Autotune tool. If the problem persists, you will need to manually tune the control loops in the drive	Motor Parameters or characteristics
4041	Can't set position proportional gain (_ecCANNOT_SET_GAIN_KPROP)	Can't set position proportional gain.		Motor Parameters or characteristics
4042	Can't set position derivative gain (_ecCANNOT_SET_GAIN_KDERIV)	Can't set position derivative gain.		Motor Parameters or characteristics
4043	Can't set position integral gain (_ecCANNOT_SET_GAIN_KINT)	Can't set position integral gain.		Motor Parameters or characteristics
4044	Can't set velocity feedforward gain (_ecCANNOT_SET_GAIN_KVELFF)	Can't set velocity feedforward gain.		Motor Parameters or characteristics
4045	Can't set velocity feedback gain (_ecCANNOT_SET_GAIN_KVEL)	Can't set velocity feedback gain.		Motor Parameters or characteristics
4046	Can't set acceleration feedforward gain (_ecCANNOT_SET_GAIN_KACCEL)	Can't set acceleration feedforward gain.		Motor Parameters or characteristics
4047	Inertia test failed (_ecINERTIA_TEST_FAILED)	Inertia measurement failed		Motor Parameters or characteristics
4048	Voltage constant test failed (_ecVOLTAGE_CONSTANT_TEST_FAILED)	Voltage constant measurement failed		Motor Parameters or characteristics
4049	Can't set offset angle (_ecCANNOT_SET_ANGLE_OFFSET)	Can't set motor feedback offset angle (Possible encoder Error or wrong config)		Motor Parameters or characteristics
4050	Can't set observer gain K1 (_ecCANNOT_SET_OBSERVER_GAIN_K1)	Can't set observer gain K1.	Motor Parameters or characteristics	

Code	Error	Cause	What to do	Where to look?
4050	Can't set observer gain K1 (_ecCANNOT_SET_OBSERVER_GAIN_K1)	Can't set observer gain K1.	Error codes 4026 to 4054 will occur if the associated drive parameter, calculated by one of the autotuning tests, or set by the user is outside the allowable range of values. These errors should not normally occur. If the problems persist, make sure that a motor has been selected from the database in the Drive Setup Wizard. Alternatively, if a custom motor has been selected and you are unsure of motor data, check that the "Measure motor resistance and inductance" test has been selected and run using the Autotune tool. If the problem persists, you will need to manually tune the control loops in the drive	Motor Parameters or characteristics
4051	Can't set observer gain K2 (_ecCANNOT_SET_OBSERVER_GAIN_K2)	Can't set observer gain K2.		Motor Parameters or characteristics
4052	Can't set observer gain KJ (_ecCANNOT_SET_OBSERVER_GAIN_KJ)	Can't set observer gain KJ.		Motor Parameters or characteristics
4053	Can't enable integral position control (_ecCANNOT_SET_KINTEGRAL_MODE)	Can't enable integral position control.		Motor Parameters or characteristics
4054	Can't set integral term limit (_ecCANNOT_SET_KINTEGRAL_LIMIT)	Can't set integral term limit.		Motor Parameters or characteristics
4055	Invalid autotuning operation number (_ecINVALID_OPERATION)	This will only occur if Mint WorkBench attempts to run an autotuning operation not supported by the firmware.	Check Drive parameters and Re run Autotuning tests	Mint Workbench Tuning
4060	Cannot enable drive (_ecCANNOT_ENABLE_DRIVE)	A drive cannot be enabled unless; the hardware enable is configured but not active or the AC supply (or shared DC bus supply) is present.	Go to Mint Workbench Parameter view and Check; Enabling > DriveEnableInput setting is correct - if so ensure that the input is active before running autotune. To check drives connected voltage Go to Mint Workbench Parameter view and Check; Drive > DriveBusVolts is at the correct level (325VDC for 230VAC supply, 565VDC for 400VAC supply)	Drive Config, Electrical Supply
4061	Drive communications error (_ecDRIVE_COMMS_ERROR)	Communication between the host PC and the controller has failed.	Check the serial or USB cable.	PC, Mint Workbench, Grounding of Drive and PC power supply
4062	Absolute encoder is wired incorrectly (_ecABS_ENCODER_WIRING_INCORRECT)	This error can occur for absolute encoders (that use a mix of digital and analog signals) if the direction of increasing absolute position, as read from the communications channel, is different to the direction of the count derived from the sine and cosine signals. This will only occur if the sine and cosine channels are wired incorrectly.	Check SIN COS Wiring of Endat 2.1 Encoder	Encoder Wiring

Code	Error	Cause	What to do	Where to look?
4063	Encoder fault (_ecPOSSIBLE_ENCODER_FAULT)	General Encoder fault	Check encoder configuration, wiring and encoder operation when rotating by hand.	Encoder Parameters, Encoder wiring, noise
4065	Test move will take too long	Test move takes too long	Check that test moves are set so that they will not take an excessive amount of time, also check scaling is set correctly by checking SCALEFACTOR	Mint Workbench Tuning
4066	Test move velocity is too high	Calculated velocity > DriveSpeedMax in velocity autotune.	Re-run commissioning and check that DriveSpeedMax is set correctly	Drive parameters
4067	Motor rated current undefined	Motor rated current < 0.2A	Check Motor data is correct, if the motor current is below 0.2A then it's too small to be controlled by the drive	Motor parameters
4068	Current control loop is not tuned	Current loop has not been tuned before performing the Rotor parameters autotuning (applicable to asynchronous motors only)	Re-run Autotuning	Mint Workbench Tuning
4069	Autotuning doesn't support motor type	Cannot do the wanted Autotune for this motor type.	Check Motor data is correct	Motor parameters
4070	Can't set flex control proportional gain	Can't set flux control loop proportional gain.	Check Motor data is correct	Motor parameters
4071	Can't set flex control integral gain	Cannot be shown because there is no error in API.	Check Motor data is correct	Motor parameters
4074	Can't set magnetizing inductance	Cannot set motor Lm.	Check Motor data is correct	Motor parameters

Axis errors

These errors are assigned unique numbers in the range **10000-19999**. The accompanying **_ec** error codes can be used in error handling routines to test for particular errors, for example:

If ERRCODE = _ecADC_ERROR Then...

See [Error Event: ONERROR](#) for other examples.

Code	Error	Cause	What to do	Where to look?
10000	Motion aborted (_ecABORT)	This error is caused by using the ABORT keyword or breaking a Mint program. See ABORT and ABORTMODE	The ABORT keyword has been issued by the mint program. This may be normal in the operation. If it's not, find the issue with the Mint program.	Mint Program
10001	Forward hard limit hit (_ecFWD_HARD_LIMIT)	Drive has been configured to have a Forward Limit input and its currently active.	Check Drive configuration, Mint Program and/or Parameter file. See LIMITFORWARD and LIMITMODE.	Wiring to Digital Inputs, Drive Configuration
10002	Reverse hard limit hit (_ecREV_HARD_LIMIT)	See LIMITREVERSE and LIMITMODE	Check Drive configuration, Mint Program and/or Parameter file. See LIMITREVERSE and LIMITMODE	Wiring to Digital Inputs, Drive Configuration
10003	Forward soft limit hit (_ecFWD_SOFT_LIMIT)	The axis may be configured to have a maximum and minimum limit of travel in software. If the axis position exceeds one of these limit values, a motion error will be generated.	Check Drive configuration, Mint Program and/or Parameter file. See SOFTLIMITFORWARD and SOFTLIMITMODE.	Mint Program or Parameter File
10004	Reverse soft limit hit (_ecREV_SOFT_LIMIT)	The axis may be configured to have a maximum and minimum limit of travel in software. If the axis position exceeds one of these limit values, a motion error will be generated.	Check Drive configuration, Mint Program and/or Parameter file. See SOFTLIMITREVERSE and SOFTLIMITMODE	Mint Program or Parameter File
10005	Fatal following error exceeded (_ecFOLLOWING_ERROR)	FOLERRORFATAL sets the maximum permissible following error before an error is generated. The following error is defined as the demand position minus the actual motor position. If the following error exceeds the value set by FOLERRORFATAL (maximum following error) an error may be generated. Note: If this error occurs when using a Smart Inc encoder, see Smart Inc encoders in Mint Help.	If this error occurs the axis may not be free to move, is moving when it should not (for example a suspended load with a bad motor brake) or there could be a limitation within the drive (e.g. current or speed limit) or motor size (e.g. Inertia) that stops it moving to the target position with the given ACCEL /DECEL rates before the following error is beyond the value set by the user. See FOLERRORFATAL and FOLERRORMODE.	Mint Program or Parameter File or Generated profile target Position

Code	Error	Cause	What to do	Where to look?
10006	Fatal velocity error exceeded (<code>_ecVEL_FATAL</code>)	VELFATAL, velocity error checking allows the measured velocity (VEL) of an axis to be compared to its demand velocity (VELDEMAND). If the difference between the two values exceeds the limit set with VELFATAL, then an error will be created.	Check the Mint program or other source of velocity demand is not attempting to run the axis faster than the programmed DRIVESPEEDMAX	Mint Program or Parameter File or Generated profile target Velocity
10007	Error input active (<code>_ecERROR_INPUT</code>)	An input is defined as an ERRORINPUT and it has active an error condition.	See ERRORINPUT and ERRORINPUTMODE	Mint Program or Parameter File or Generated profile target Velocity
10009	Invalid trajectory (<code>_ecPROFILE_ERROR</code>)	Trajectory generation error. The controller was unable to perform the requested profile. This can occur during CAM moves if an invalid element is detected (e.g. a negative master distance). An axis performing a cam profile can skip over very short slave segments if the master velocity is such that the slave segment is less than one profiler tick in length. If more than 5 slave segments are skipped in one profiler tick, this error will be generated. The axis will be crash stopped and disabled.	Check Mint CAM parameter file for anomalous Data points. Excel is a helpful tool to help with this.	Mint Program
10010	Drive enable input is inactive (<code>_ecDRIVE_ENABLE_INACTIVE</code>)	DRIVEENABLEINPUTMODE is configured to <code>_emCRASH_STOP_DISABLE</code> and the input defined by DRIVEENABLEINPUT has become inactive whilst the drive was enabled	Check Digital Input status and correct	Wiring to Digital Inputs, Drive Configuration
10011	Drive I.T exceeded limit (<code>_ecDRIVE_OVERLOAD</code>)	The drive overload algorithm has integrated up to 100% and has tripped the drive to protect it. This will happen if the RMS current for the application exceeds the DRIVERATEDCURRENT value	Check tuning, check motion profile (especially acceleration and deceleration). If necessary, select a larger drive (which may also require an alternative motor)	System design
10012	Power base is not ready to enable (<code>_ecPOWER_BASE_NOT_READY</code>)	The Power base has been asked to enable but is not ready. For it to be so it must have the correct voltage and supply and not be overheated.	Check of power base ambient conditions and supply voltage. Include interlocks in any program being used that check DRIVEENABLEREADY	Power base condition

Code	Error	Cause	What to do	Where to look?
10013	Power module has an error (<code>_ecPOWER_MODULE_FAULT</code>)	There's circuit detection in power unit and the signal is connected to the DSP. The power unit generated an error while in operation.	Possible causes of this are Over temperature, Over Current, Brake chopper Short circuit or poor earthing or shielding (particularly of motor power cables). Power cycle to clear the error.	Power base condition
10014	Over current trip (<code>_ecOVER_CURRENT</code>)	Based on the drives currently configured DRIVERATINGZONE the drive has detected a motor overcurrent state. Measured current should not exceed the maximum current. The maximum current is related with the over current and the rated current.	Check the motor is free to rotate, has been sized correctly and there are no short circuits on the drive output wiring.	Motor wiring
10015	Over speed trip (<code>_ecOVER_SPEED</code>)	The drive has detected the apparent motor velocity has exceeded the trip threshold set by DRIVESPEEDMAX and the VELFATAL parameters Note: If this error occurs when using a Smart Inc encoder, see Smart Inc encoders	Setting a high application max speed and 200% velocity threshold may be necessary when using Smartabs). For other feedback types check the integrity of the feedback wiring and the earthing /shielding of all cables to/from the drive	Configuration / wiring
10016	Over voltage trip (<code>_ecBUS_OVER_VOLTAGE</code>)	The drive has shut down to protect itself after the measured dc bus voltage exceeded the preset limit. This can often occur during deceleration, particularly with large inertial loads	Decrease deceleration rate, add a regen resistor if one is not fitted. Consider use of common dc bus if there are multiple drives where some regenerate and some motor	System design
10017	Under voltage trip (<code>_ecBUS_UNDER_VOLTAGE</code>)	The drive has shut down to protect itself after the measured dc bus voltage fell below a preset limit. This can occur during acceleration, particularly with large inertial loads Note: if DRIVEBUSUNDERVOLTSOVERRIDE is 0, low limit will use internal drive data, otherwise will use DRIVEBUSUNDERVOLTSOVERRIDE	Decrease the acceleration rate. If the fault occurs when the axis is not accelerating check the supply connections to the drive. A larger motor/drive combination may be required if the needed acceleration cannot be achieved	System design / wiring
10018	Motor I ² .T exceeded limit (<code>_ecMOTOR_OVERLOAD</code>)	The motor overload algorithm has integrated up to 100% and has tripped the drive to protect the motor. This will happen if the RMS current for the application exceeds the MOTORRATEDCURRENT value	Check tuning, check motion profile. If necessary select a larger motor (which may also require an alternative drive)	System design

Code	Error	Cause	What to do	Where to look?
10019	Motor temperature trip (_ecMOTOR_TEMP_INPUT)	#1. Motor Over Temperature has been detected on the drive and the drives hardwired Thermistor X10 input has detected Motor overheating from the connected motor PTC sensor	When using feedback temperature monitoring, X10 connections TH1 and TH2 should be connected with a wire link (short-circuited) to suppress the normal temperature trip function. Note: MOTORTEMPERATURE TRIP does not monitor the drive's X10 motor thermistor input. Also look for a fault with feedback cable or wiring.	Motor Temperature or Thermistor Wiring or Thermistor operation
10019 10020	Motor temperature trip (_ecMOTOR_TEMP_INPUT) Phase search failure (_ecPHASE_SEARCH_FAILED)	#2. Motor Over Temperature has been detected on the drive and the Motor Encoder is of a serial variety (such as Hiperface DSP which provides motor thermistor resistance as part of the feedback data). If this value exceeds MOTORTEMPERATURETRIP the drive trips with a motor overtemperature error	Set MOTORTEMPERATURE TRIP to a resistance that is suitable for the motor's thermistor device. e.g. MOTORTEMPERATURE TRIP(0) = 1200. Also look for a fault with feedback cable or wiring. Note: MOTORTEMPERATURE TRIP operates only with motors that have a positive temperature coefficient (PTC) thermistor, where resistance increases with temperature, or with motors that have a switch that goes open-circuit at high temperatures.	Motor Temperature or Thermistor Wiring or Thermistor operation Configuration
		Phase search must be completed to control a motor with type "encoder only"	Phase search must be completed to control a motor with type "encoder only"- if it does not finish successfully check encoder settings in drive and check the correct number of motor poles has been configured.	
10021	Hall signals lost or incorrect (_ecHALL_SIGNAL_LOSS)	This error indicates that a feedback type of halls only or Encoder + Halls is used and has detected an error. If this is so the halls sensor state is checked by the drive and that the Hall state detected is illegal (0 or 7).	This error would normally indicate a faulty encoder in the motor (the encoders include simulated hall signals) or bad wiring to the motor encoder. Check the quality of installation, wiring and encoder type selection. Note: You can use Mint Workbench to scope the Encoder Hall State to look for problems.	Encoder or encoder wiring

Code	Error	Cause	What to do	Where to look?
10022	Encoder signals lost or incorrect (<code>_ecENCODER_SIGNAL_LOSS</code>)	This indicates that either there has been a total break or total disruption with the encoder signals.	Check the quality of installation, wiring and encoder type selection. Note: You can use Mint Workbench to scope Encoder Hall State and Encoder to look for problems. Note: To get more information on this error connect to the Drive with Mint Workbench go to "Parameters > Encoder > Channel 0 > Encoder Parameter(Encoder0, Fault Register)" If this contains a value other than 0 you can use this value to give you more help on the error. See help file subject: ENCODERPARAMETER. Check all earthing and shielding arrangements are as per the instruction manual	Encoder or encoder wiring
10023	Encoder power supply loss (<code>_ecENCODER_SUPPLY_LOSS</code>)	Power supply to encoder has been lost or has dropped below the minimum level for the selected encoder type. Note: encoder voltage is supplied by the drive. Encoder power is given from power board, then transferred from 8v to 5v by control board.	Check that there are no shorts in the encoder wiring to the encoder supply (e.g. ensure the shields are not shorting to the supply or other signal pins). If the wiring is OK and the problem persists, then it is likely one of the internal power supplies is failing.	Encoder or encoder wiring
10026	PDO data is not present (Mn to Cn) (<code>_ecPDO_DATA_MISSING_MN_TO_CN</code>)	EtherCAT or EPL PDO data from the manager (MN) to the remote axis (CN) has been lost. This error occurs if the remote axis detects that at least two consecutive PDO packets have not been received correctly.	This error will occur on the drive if it has lost its connection to the Manager. Check that the Manager is running, configured correctly and the network is operating correctly	RTE Master controller or Network
10027	Remote motion command failed (<code>_ecREMOTE_MOTION_FAILED</code>)	Unable to load motion on the remote axis. Generally speaking, this error indicates MML in drive is not ready for operation.	This can be caused by a number of reasons, such as incorrect operating mode, the motor brake being enabled or the move buffer being full.	Drive Configuration or Mint Program

Code	Error	Cause	What to do	Where to look?
10028	Encoder not ready to operate (_ecENCODER_NOT_READY)	The drive is configured to use a Serial Encoder and it is not able to provide position information.	The encoder may take several seconds to become ready and this error will be generated if an attempt is made to enable the axis before the encoder is ready. This error can also occur if the resolution configured on the drive is not compatible with the encoder. The axis will be crash stopped and disabled. Note: To get more information on this error connect to the Drive with Mint Workbench go to "Parameters > Encoder > Channel 0 > Encoder Parameter(Encoder0, Fault Register)" If this contains a value other than 0 you can use this value to give you more help on the error. See help file subject: ENCODERPARAMETER	Drive Configuration or Mint Program
10029	Supply phase loss detected (_ecSUPPLY_PHASE_LOSS)	The three phase drive has detected that one of the AC supply phases may have been lost. The drive can normally only operate using a three phase supply. MotiFlex e100 drives have dedicated phase monitoring hardware, MotiFlex e180 drives monitor the ripple on the dc bus and if this becomes excessive then they assume an input phase has been lost	Check the connection of the input phases. If the connections are OK and a MotiFlex e180 is tripping spuriously (e.g. because the application requires harsh repeated accel and decel cycles) then you can disable phase loss detection using PHASELOSSMODE(0) = 0	Electrical Supply
10030	PDO data is not present (Cn to Mn) (_ecPDO_DATA_MISSING_CN_TO_MN)	PDO data from the remote axis (CN) to the manager (MN) has been lost. This error occurs if the manager detects that at least two consecutive PDO packets have not been received correctly.	This error will occur on the NextMove e100 if it detects a drive disappears from the network. This may be "normal" for an optional node (and the error must be handled via the ONERROR event). If this error is unexpected check the drive is not resetting and check the integrity of the Ethernet (EPL) cabling	RTE Master controller or Network
10031	Heat sink too hot to phase search (_ecPHASE_SEARCH_TOO_HOT)	Phase search has been prevented due to excessive heatsink temperature	Allow drive to cool down	N/A

Code	Error	Cause	What to do	Where to look?
10032	PDO value out of range (_ecPDO_VALUE_OUT_OF_RANGE)	When controlling an axis using Real time Ethernet one of the PDOs sent to the drive were out of range. This is often the velocity reference PDO and can be caused when an axis is geared to a master axis/encoder and the master position/encoder value is changed via the program to a new value causing an infinite velocity demand	Connect to the drive whilst the error is active and use the Error Log to determine which PDO is out of range. If it's velocity then check the Mint program to ensure axes that are geared to master references are not geared when those master references position/encoder values are written to	RTE Master controller
10033	STO active (_ecSTO_ACTIVE)	Either one or both of the Safe Torque Off inputs is not powered. This error can occur only when the drive is enabled.	Check drive STO inputs, if used check the wiring of the safety circuit or for open guards or Emergency stops etc.	Safety System or Drives STO input
10034	STO hardware fault (_ecSTO_HARDWARE_FAULT)	Either one or both of the internal fault circuit outputs has been asserted, indicating an internal hardware fault in the STO circuits. This error can occur when the drive is enabled or disabled.	Check drive STO inputs, if used check the wiring of the safety circuit or for open guards or Emergency stops etc.	Safety System or Drives STO input
10035	STO input mismatch (_ecSTO_INPUT_MISMATCH)	The drive has detected a mismatch in its internal STO registers. This error can occur when the drive is enabled or disabled.	Check the two drive STO inputs are in the same state with a multimeter. It may be necessary to adjust STOMISMATCHTIME to account for any timing discrepancies in the connected safety circuit.	Safety System or Drives STO input
10036	Encoder reading wrong or Hall fault (_ecENCODER_READING_WRONG)	The drive has detected that the measured Hall transition angle differs from the electrical angle used in the control by at least 70 degrees.	Check the quality of installation, wiring and encoder type selection. Note: You can use Mint Workbench to scope Encoder Hall State and Encoder to look for problems. Check that all earthing / shielding is as per the drive installation manual	Encoder or wiring
10037	All axis errors cleared (_ecAXIS_ERRORS_CLEARED)	This information message can appear in the error log to indicate that all axis errors have been cleared.	No action required	N/A
10038	Encoder battery dead (_ecENCODER_BATTERY_DEAD)	This information message can appear at startup, or when the drive is enabled, if the battery backup supply for a Smart Abs encoder has failed.	Change the Encoder battery	SmartABS Encoder battery

Code	Error	Cause	What to do	Where to look?
10039	Resolver signals lost or incorrect (<code>_ecRESOLVER_SIGNAL_LOSS</code>)	An error has occurred when using the Resolver Adapter (OPT-MF-201 or FB-03). The error is caused by the loss of resolver signals.	Check the wiring to the motor's feedback device, the integrity of the motor connector, and the connections inside to the adapter. Note: To get more information on this error connect to the Drive with Mint Workbench go to "Parameters > Encoder > Channel 0 > Encoder Parameter(Encoder0, Fault Register)" If this contains a value other than 0 you can use this value to give you more help on the error. See help file subject: ENCODERPARAMETER. Check all earthing / shielding is as per the drive installation manual	Resolver or wiring
10040	Hiperface DSL encoder error (<code>_ecHIPERFACE_DSL_ENCODER_ERROR</code>)	An error has occurred when reading the position over Hiperface DSL.	Check the wiring to the motor's feedback device, the integrity of the motor connector, and the connections inside to the adapter. Note: To get more information on this error connect to the Drive with Mint Workbench go to "Parameters > Encoder > Channel 0 > Encoder Parameter(Encoder0, Fault Register)" If this contains a value other than 0 you can use this value to give you more help on the error. See help file subject: ENCODERPARAMETER. Check all earthing / shielding is as per the drive installation manual	Resolver or wiring
10041	Output frequency over limit (<code>_ecOUTPUT_FREQ_OVER_LIMIT</code>)	The drive has detected that the output frequency exceeded 550 Hz. This restriction is required to meet relevant European Export Control Regulation.	Check all earthing / shielding is as per the drive installation manual Reduce your application's speed.	Control System
10042	Drive speed Maximum is out of range (<code>ecDRIVESPEED_MAX_OUT_OF_RANGE</code>)	Motor velocity is above parameter DRIVESPEEDMAX(0)	Go to parameters > Drive > DRIVESPEEDMAX and check value is set correctly. Check Commanded Drive Speed is not too high.	Parameters

Axis warnings

These errors are assigned unique numbers in the range **20000-29999**. Axis warnings can be disabled using [ERRORCODEENABLE](#). There is no default action on axis warnings; motion will not be stopped. The accompanying `_ec` warning codes can be used in error handling routines to test for particular warnings, for example:

If ERRCODE = `_ecREMOTE_DRIVE_WARNING` Then...

See [Error Event: ONERROR](#) for other examples.

Code	Error	Cause	What to do	Where to look?
20003	All axis warnings cleared (<code>_ecAXIS_WARNINGS_CLEARED</code>)	This information message can appear in the error log to indicate that all axis warnings have been cleared.	No Action required	N/A
20004	Encoder battery low (<code>_ecENCODER_BATTERY_LOW</code>)	When using an encoder with battery backup (e.g. Smart Abs multi-turn) a battery low condition has been reported.	Consider changing the Encoder battery	SmartABS Encoder battery
20005	Phase loss detected (<code>_ecPHASE_LOSS_WARNING</code>)	One of the AC supply phases has been lost. Check the AC supply wiring to the drive.	The drive has detected that one of the AC supply phases has been lost. The drive can only operate using a three phase supply. Note: If incorrect detection then you can turn the detection off in the command line using; <code>PHASELOSSMODE(0) = 0</code>	Electrical Supply
20006	Motor temperature not read (<code>_ecMOTOR_TEMP_NOT_READ_WARNING</code>)	The Hiperface DSL feedback device has indicated a motor overtemperature condition.	Check the motor temperature	Motor or Encoder

Communication errors

These errors are assigned unique numbers in the range **8000-8999**.

Code	Error	Cause	What to do	Where to look?
8000	EtherCAT AL status code (_ecETHERCAT_AL_STATUSCODE)	This error is listed together with a Profile Code in the Mint WorkBench Error Log. Note: The displayed profile code must be converted to hexadecimal to give the specific EtherCAT error code.	This error status indicates that the EtherCAT master has been sent an error code by the drive. Check the error log to determine what the "real" drive error code is.	Mint Workbench Error Log
8001	CIP configuration error (_ecCIP_CFG_ERROR)	This error is listed together with a Profile Code in the Mint WorkBench Error Log. The displayed profile code must be converted to hexadecimal to give the specific CIP general status code.	This error status indicates that the EtherCAT master has been sent a CIP error code by the drive. Check the error log to determine what the "real" drive error code is.	Mint Workbench Error Log
8002	POWERLINK error code (_ecPOWERLINK_ERROR)	This error is listed together with a Profile Code in the Mint WorkBench Error Log. The displayed profile code must be converted to hexadecimal to give the specific POWERLINK error code.	This error status indicates that the POWERLINK master has been sent an error code by the drive. Check the error log to determine what the "real" drive error code is.	Mint Workbench Error Log
8003	PROFINet error code (ecPROFINET_CFG_ERROR)	This error is reported when multicast MAC filter configuration fails.	This error status indicates that the PROFINet master has tried to configure the device ID but has failed.	Master Configuration

Compilation errors

These errors are assigned unique numbers in the range 2000-2999. Mint generates errors based upon the programming rules of the Mint language. These errors are called compilation error codes and are reported by Mint WorkBench in the Build tab of the Output window when an attempt is made to run a program that contains errors. The error codes are subdivided into four groups:

- 2100+ [general errors](#)
- 2150+ [lexical errors](#)
- 2200+ [syntax errors](#)
- 2300+ [semantic errors](#)

General Errors

Code	Error	Cause	What to do	Where to look?
2102	Lexically incorrect	This should never occur and indicates that a predefined symbol has a name that does not conform to the naming rules for identifiers.	Check Mint program for none standard symbol names and remove them then redownload Mint Program	Mint Code
2103	Anachronism	This is not an error, but merely an indication that Mint now has a better feature than the one that has been used.	For example, labeled subroutines called with GoSub and ended with Return should be replaced with the true subroutines now provided by Mint. Also, if the newer constructs are used, they will be displayed in the Mint WorkBench tree view for easier program navigation.	Mint Code
2104	Too many errors	This is generated when the maximum number of errors allowed is exceeded.	Check Mint program for none standard symbol names and remove them then redownload Mint Program	Mint Code

Lexical Errors

Code	Error	Cause	What to do	Where to look?
2150	Unterminated string	This occurs when a string literal is not terminated with a closing double quote before the end of the line is reached.	Check Mint program correct mistakes, then redownload Mint Program	Mint Code
2152	Bad ASCII code	This occurs when an incorrect ASCII code is specified within a string literal. Valid ASCII codes are \" to specify a double quote, \\ to specify a backslash, and \hh where hh is a two digit hexadecimal number.	Check mint program for an invalid character such as \£ , or an invalid ASCII code such as \Fg, will cause the error.and remove them then redownload Mint Program	Mint Code
2153	Bad number	This occurs when a badly formed number is encountered, such as "1.128r-6" or "0xffgfff".	Check mint program for none standard number formats, correct them and then redownload Mint Program	Mint Code

Syntax Errors

Code	Error	Cause	What to do	Where to look?
2200	Unexpected end of file	This occurs when end of file is reached while processing a construct that has not been terminated.		
2201	Unexpected symbol	This indicates that a symbol has been encountered that is either out of context or not a recognized language element.		
2202	Expected end of line	This occurs when the end of a line is required but is not present.		
2203	Expected Then	This occurs while parsing an If statement that does not have a Then clause immediately after the conditional expression.		
2204	Unexpected Else	This occurs while parsing an If block that has already had it Else clause processed, thus making further Else clauses illegal.		
2205	Expected End If	This occurs when a block If statement is terminated with something other than End If.		
2206	Expected Case	This occurs when a block If statement is terminated with something other than End If.		
2207	Expected End Select	This occurs when a Select statement is terminated with something other than End Select.		
2208	Expected End While	This occurs when a While statement is terminated with something other than End While, Endw or Wend .		
2209	Expected Until	This occurs when a Repeat statement is terminated with something other than Until.		
2210	Expected End Loop	This occurs when a Loop statement is terminated with something other than End Loop or Endl .		
2211	Expected identifier	This occurs when an identifier is expected and was not found, or example, tasks, events, subroutines and functions, amongst others, all require an identifier.		
2212	Expected assignment operator	This occurs when an assignment operator is expected, such as after a For loop variable, or after the name of a Define, but one is not found.		
2213	Expected To	This occurs while parsing a For statement when there is no To keyword after the initial value expression.		
			Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Workbench Build window
Code	Error	Cause	What to do	Where to look?

2214	Expected Next	This occurs when a for statement is terminated with something other than Next.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Workbench Build window
2215	Incorrect identifier in Next	This occurs when the optional loop counter identifier is used, but which does not match that which is used.		
2216	Expected expression	This occurs when an expression is required, but one is not present. For example x=myFunc(a,b,) would generate this error, as there is no expression after the last comma.		
2217	Unexpected Return	This occurs when a Return statement is used anywhere other than the outer scope, i.e. inside a subroutine, task, etc.		
2218	Unexpected Sub	This occurs when an attempt is made to declare a subroutine anywhere other than the outer scope or the outer scope of a task. For example, it is illegal to declare a subroutine inside any of the following: Startup module, event, subroutine, function or any block construct.		
2219	Unexpected Function	This occurs when an attempt is made to declare a function anywhere other than the outer scope or the outer scope of a task. For example, it is illegal to declare a function inside any of the following: Startup module, event, subroutine, function or any block construct.		
2220	Expected (This occurs when an opening bracket is expected, but not found. For example, subroutine and function parameter lists must be bracketed and intrinsic functions (Sin, Cos, Atan2, Task Status , etc.) must have their parameters bracketed.		
2221	Expected)	This occurs when a closing bracket is expected, but not found. For example, subroutine and function parameter lists must be bracketed and intrinsic functions (Sin, Cos, Atan2 , Task Status , et .) must have their parameters bracketed.		
2222	Expected open square bracket	This occurs when the Axes statement is not immediately followed by [.		
2223	Expected close square bracket	This occurs when an expression list initiated with [is not terminated with].		
2224	Expected comma	This occurs when items required to be separated by a comma are not.		
2225	Unexpected comma	This occurs when a parameter list has a trailing comma with no expression after it.		
2226	Expected End Sub	This occurs when a subroutine declaration is terminated with something other than End Sub.		
Code	Error	Cause		

2227	Expected data type	This occurs when something other than integer, float or string follows an As clause.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Workbench Build window
2228	Expected End Function	This occurs when a function declaration is terminated with something other than End Function.		
2229	Unexpected Task	This occurs when an attempt is made to declare a task at anywhere other than the outer scope.		
2230	Expected End Task	This occurs when a task declaration is terminated with something other than End Task.		
2231	Unexpected Event	This occurs when an attempt is made to declare an event at anywhere other than the outer scope.		
2232	Expected End Event	This occurs when an event declaration is terminated with something other than End Event.		
2233	Unexpected Startup	This occurs when an attempt is made to declare a Startup module at anywhere other than the outer scope.		
2234	Expected End Startup	This occurs when a Startup module declaration is terminated with something other than End Startup.		
2235	Non-reference array parameter	This occurs when an array parameter is specified as being passed by value using the ByVal keyword. This is illegal, as arrays are always passed by reference.		
2236	Cannot initialize parameters	Parameters receive their initial values from the call statement, and so it makes no sense, and is illegal, to try and initialize them.		
2237	Else without If	This occurs when an Else clause is encountered outside an If statement.		
2238	End If without If	This occurs when an End If clause is encountered outside an If statement.		
2239	Case without Select	This occurs when a Case clause is encountered outside a Select statement.		
2240	End Select without Select	This occurs when an End Select clause is encountered outside a Select statement.		
2241	End While without While	This occurs when an End While clause is encountered outside a While statement.		
Code	Error	Cause	What to do	Where to look?

2242	Until without Repeat	This occurs when an Until clause is encountered outside a Repeat statement.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Workbench Build window
2243	End Loop without Loop	This occurs when an End Loop clause is encountered outside a Loop statement.		
2244	Next without For	This occurs when a Next clause is encountered outside a For statement.		
2245	End Sub without Sub	This occurs when an End Sub clause is encountered outside a subroutine declaration.		
2246	End Function without Function	This occurs when an End Function clause is encountered outside a function declaration.		
2247	End Task without Task	This occurs when an End Task clause is encountered outside a task declaration.		
2248	End Event without Event	This occurs when an End Event clause is encountered outside an Event declaration.		
2249	End Startup without Startup	This occurs when an End Startup clause is encountered outside a Startup module declaration.		
2250	Block not found	This occurs when an unqualified Exit or Continue statement is used without being in a block that can be exited or continued.		
2251	Sub block not found	This occurs when an Exit statement qualified with Sub is used without being in a subroutine.		
2252	Function block not found	This occurs when an Exit statement qualified with Function is used without being in a function.		
2253	Task block not found	This occurs when an Exit statement qualified with Task is used without being in a task.		
2254	Event block not found	This occurs when an Exit statement qualified with Event is used without being in an event.		
2255	Startup module not found	This occurs when an Exit statement qualified with Startup is used without being in the Startup module.		
2256	While block no found	This occurs when an Exit or Continue statement qualified with While is used without being in a While statement.		
Code	Error	Cause	What to do	Where to look?

2257	Repeat block not found	This occurs when an Exit or Continue statement qualified with Repeat is used without being in a Repeat statement.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Workbench Build window
2258	For block not found	This occurs when an Exit or Continue statement qualified with For is used without being in a For statement.		
2259	Loop block not found	This occurs when an Exit or Continue statement qualified with Loop is used without being in a Loop statement.		
2260	Unexpected end of statement	This occurs when a statement ends unexpectedly, for example Input followed by no input variable.		
2261	Expected statement separator	This occurs when a statement separator is expected but not found, for example: While Rnd() $<$ 0.5 Print "Mint" .		
2262	Can only size a string in a Dim statement	This occurs when an attempt is made to size a string outside a Dim statement, for example: Function abc(s As String * 12)		
2263	Expected End Critical	This occurs when a critical block is terminated with something other than End Critical.		

Semantic Errors

Code	Error	Cause	What to do	Where to look?
2301	Multiple declaration	This occurs when an identifier is used twice in the same scope for declaring an object such as a variable, subroutine, task, etc.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2302	Event preclusion	This occurs when events that are mutually exclusive are declared.		
2303	Unused declaration	This occurs when an object is declared but never used. This is not an error but indicates that the object in question could safely be removed.		
2304	Identifier not found	This occurs when an attempt is made to use something that has not been declared, such as a variable or subroutine.		
2305	Identifier name shared with predefined s	This occurs when a user defined object is given the same name as a predefined symbol, such as an MML routine, event name or constant.		
2306	Cannot call tasks or events	This occurs when an attempt is made to call a task or event as if was a subroutine or function.		
2307	Expected value	This is generated whenever a value is required, but one is not present. For example, the string literal "Value" is not a value, but the literal 1.0 and variable x are values.		
2308	Attempt to modify constant	This occurs when a constant is supplied as a parameter to a subroutine or function that modifies the parameters value.		
Code	Error	Cause	What to do	Where to look?

2309	Expected variable	This occurs whenever a variable is expected, but something else is supplied, such as a constant or literal.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2310	Expected constant	This occurs whenever a constant is expected, but something else is supplied, such as a variable.		
2311	Expected variable or value	This occurs when a parameter is supplied to a subroutine or function call that is neither a variable nor a value, such as a task or event name.		
2312	Expected Null	This occurs when an MML routine is called that accepts an array parameter that may be null but is supplied with a constant value other than zero (null).		
2313	Bad parameter in call	This occurs when a supplied parameter is illegal, for example: ? An incorrect value is supplied to an intrinsic function, like <code>Acos(-1.2)</code> , <code>Str(s, 37)</code> , <code>Asc("")</code> , etc. ? An invalid compound parameter is used, like <code>GO([0, 1, 2])</code> , <code>CONTOURPARAMETER(0, [_ctpSTOP_ANGLE, _ctpSLEW_ANGLE]) = 10, 15</code> , etc. ? A compound parameter is used with an intrinsic function, which is not currently allowed.		
2314	Bad cast	This occurs when an attempt is made to cast an object to a type that is incompatible. An example of this would be the implicit casting of a string to an integer during an assignment, for example <code>j="Hello world"</code> .		
2315	Incorrect number of parameters.	This occurs when a call is made with the wrong number of parameters and can occur with subroutines/functions and MML routines.		
2316	Incorrect number of indices	This occurs when an array is indexed with the wrong number of indices For array parameters, where the number of indices and index ranges are not explicitly specified, the first usage determines the number of indices.		
2317	Cannot index a scalar	This occurs when an attempt is made to index a scalar.		
2318	Wrong call class used	This occurs when a callable routine is used in the wrong context. Examples of this are functions called as subroutines, subroutines called as functions, MML command routines used as get/set routines and read only MML routines being written to.		
2319	Call of non-callable object	This occurs when an attempt is made to call an object that is not callable, such as an event or a task.		
2320	Declaration hides other	This occurs when a declaration hides a declaration in an outer scope that shares the same name.		
2321	Expected task	This occurs when a task name is expected but is not found. The <code>TaskSuspend</code> , <code>TaskPriority</code> and <code>TaskStatus</code> keywords all require qualifying with a task name, and the <code>Run</code> and <code>End</code> commands may be qualified with a task name.		
2322	Integer out of range	This occurs when the compiler evaluates a constant integer expression, and the result lies outside the range of a 32-bit signed integer.		
Code	Error	Cause	What to do	Where to look?

2323	Float out of range	This occurs when the compiler evaluates a constant floating-point expression, and the result falls outside the range of a 4-byte IEEE float.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2324	Character out of range	This occurs when the value supplied to the Chr() function lies outside the range 0 to 255.		
2325	Division by zero	This occurs when the compiler evaluates a constant expression and contains a division by zero.		
2326	Using clause ignored	This is displayed when the Using clause is used with character and string data. Note: This error is obsolete. It will not appear in more recent versions of Mint WorkBench that support string variables.		
2327	Hex or Bin modifiers used with non-zero	The Hex and Bin print modifiers imply integer output, and so specifying a number of decimal places other than zero makes no sense.		
2328	Expected array	This occurs when an MML call that requires an array parameter is not supplied with an array.		
2329	Expected float array	This occurs when an MML call that requires an array of floats and is supplied with an array of another type.		
2330	Expected integer array	This occurs when an MML call that requires an array of integers and is supplied with an array of another type.		
2331	Too many right-hand sides	This occurs when the number of right-hand side values supplied in a statement exceeds the number of left-hand sides. This often occurs when using the square bracket notation.		
2332	Cannot jump into For loop	This occurs when a label inside the body of a For loop is referenced from outside the loop. This is not allowed because the initialization stage of the For loop will be bypassed leading to undefined behavior.		
2333	Too many tasks	This occurs on controllers that support only a limited number of tasks when more than the maximum number of tasks allowed are declared. Some controllers, such as the Flex+Drive II, support only a single task.		
2334	Unexpected semi-colon	This occurs when an attempt is made to use a semi-colon with a MML routine that does not require it. The semi- colon is only appropriate for use with axis related commands that either use an axis string (or have the axes specified in square brackets), or non axis related commands that make use of square bracket notation.		
2335	Function result not assigned	This occurs when a function is declared, but the statements in the function's body do not include an assignment to the function's name to specify the return value. The process used for checking this error does not confirm that all paths through the function are valid.		
2336	Expected task/event/startup	This occurs when a module name used with the scope override operator:: is not the name of a Task, Event or Startup module.		
2337	Expected string	This occurs when a string is expected in an assignment to a string array, but something else is supplied.		
Code	Error	Cause	What to do	Where to look?

2338	String constant too long	<p>This occurs when the string assigned to a string variable is longer than the variable. For example: Dim variable_name As String * 10 variable_name 0123456789abcd</p> <p>The string assigned to variable name is longer than 1 character, so the error occurs. Similarly, the error can occur if a string array is initialized with a string that is too long. The default length for string variables is 64 characters. See Strings.</p>		
2339	Implicit cast may/will lose precision	<p>This warning occurs when a value is assigned to a destination of a different type. Depending on the value being assigned, this can lead to a significant change in the value, such as when assigning a float to an integer where any fractional data will be lost, or when an integer is assigned to a float where some of the lower digits may be lost. To check for this, if an integer was assigned to a float and the float assigned back to another integer, then would the two-integer values match? This check is performed on assignments, calls to subroutines/functions that take parameters and constant declarations where the type is explicitly specified. For example, the following program will generate two warnings about the assignments of i to x and x to j, and will display 123456789 and 123456784, highlighting the problem:</p> <pre>Dim i As Integer, j As Integer, x As Float i=123456789 : x=i : j=x Print i; j</pre>		
2340	Temporary use with parameter '<parameter	<p>This warns that a value passed to a subroutine will be stored in a temporary (invisible) variable so that the variable's address can be used as the reference. This is particularly important for strings, as using a temporary variable to contain an intermediate string result has the problem that the temporary variable may be too small, causing run-time string overflows. However, this warning is generated for any type of temporary variable that may have to be created. To avoid this warning, either ensure that the value is held in an appropriate variable before it is passed to the subroutine/function or, if the parameter is not intended to return a value, make it a value parameter by prefixing it with the ByVal keyword.</p>	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2341	Define '<define_name>' used before decla	<p>This error is generated when a define name is used before it has been defined (see Define) To avoid this error, ensure that Define appears before the name is used, for example: Define my_axes = 0,1,2,3 Print my_axes</p>		
2342	Use '<new keyword>' instead of '<old key	<p>This warning is generated when the specified 'old keyword' has been superseded by a differently named 'new keyword'. It is likely that both keywords operate in exactly the same way, so it will be possible to use the old keyword name without problems. However, it is better to use the new keyword name to maintain maximum compatibility with any future developments.</p>		
Code	Error	Cause	What to do	Where to look?

2343	Expected 'integer' found '<non-integer>'	This error is generated by the Shift an Rotate commands (when used as a statement) if the item to be shifted is not an integer, for example: D m x As Float Shift (x, 2)	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2344	Bad parameters '<parameter 1>' and '<par	This error is generated if bad parameters are used in a Using clause, such as a string. For example: Print "Position = ", POS(0) Using("6,3")		
2345	Unrecognized option '<name>' specified	This will be generated if an option name is used that is not recognized, such as "Option billygoatgruff 1".		
2346	Unsupported option '<name>' specified	This will be generated if an option is set that is unsupported by a certain target format, such as "Option CFormatting 1" on target formats below 10.		
2347	Bad value '<value>' specified for option	This will be generated if an option is assigned a value that is invalid/out of range, such as "Option OptLevel 6".		
2348	Option '<option>' set more than once	This will be displayed if the same option is set more than once in a program.		
2349	Option '<option>' not defined at the out	This will be displayed if an option is set inside a module of any type (Task, Sub, Function, Event or Startup).		
2350	String out of range	This will be displayed when the Asc function is supplied with an empty string.		
2351	Label out of scope	This will be displayed if a GoTo or GoSub (obsolete) specifies a label that is not situated in the same scope as the GoTo or GoSub statement.		
2352	Parameter Must Be Reference	This occurs when a parameter that must be passed by reference is specified as being ByVal.		
2353	Unexpected Size	This occurs when a size specification is used with a parameter declaration or with data types that cannot be sized. Only strings can be sized.		
2354	Incompatible Operands	This occurs when an operator is given operands that are incompatible, such as when trying to divide a float by a string.		
2355	Must Be Scalar	This occurs when an item that must be scalar has been given dimensions, such as a constant or a bitfield member.		
2356	Bad Module Nesting	This occurs when modules are incorrectly nested, such as would occur if an event were declared inside a subroutine.		
2357	Else After Else	This occurs when an Elself statement is encountered after an Else statement.		
2358	Multiple Else	This occurs when more than one Else statement is present.		
2359	Case After Case Else	This occurs when a Case statement is encountered after a Case Else statement.		
2360	Multiple Case Else	This occurs when more than one Case Else statement is present.		
2361	Expected Case	This occurs when a Case statement was expected, but something else was encountered.		
Code	Error	Cause	What to do	Where to look?

2362	Expected Scalar	This occurs when a scalar (a single value) is expected, but an aggregate such as an array or structure is encountered.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2363	Expected 1D Array	This occurs when a one-dimensional array is expected, but a multi-dimensional array is encountered.		
2364	Expected Array Or Null	This occurs when an array or Null is expected, but something else is encountered.		
2365	Result Indeterminate	This occurs when a result cannot be determined from the given operands/parameters.		
2366	Illegal Initialization	This occurs when an initialization is encountered that is not allowed, such as with parameters or structure members.		
2367	Expected Float	This occurs when a float is expected, but something else is encountered.		
2368	Used but Not Initialised	This occurs when a variable has been used but has not been assigned a value.		
2369	Expected Assignment	This occurs when an assignment is expected, but something else is encountered.		
2370	Incorrect Identifier in Next	This occurs when the expression used with Next does not match that used in the For.		
2371	Anachronism (old Method used)	This occurs when an out of date language feature is used. For example: - The use of GoSub or Return. - The use of labeled events, for example #OnError, #Timer etc. - When redundant decimals have been ignored. For example, in the statement Input i Using (6, 0), if i is an integer then the zero (which specifies the fractional places to display) is redundant. - The use of obsolete parameter formats, such as POS.0 or POS[0]. See Mint v5 (MT) to Mint v5.5. - The use of Axes, Bank, Bus or Terminal to set a default value. Each item should now be explicitly defined with each keyword. - Omitting an optional parameter to an MML function, like POS = 0. Each parameter should now be explicitly defined, e.g. POS(axis) = 0. - The use of an obsolete keyword, such as Adc0, In0, Out0, ik, rk, etc.		
2372	Expected String Array	This occurs when a string array is expected, but something else is encountered.		
2373	Block Invalid	This occurs when an invalid block type is encountered, such as when trying to continue a subroutine.		
2374	Unexpected Output Modifier	This occurs when an output modifier is unexpectedly encountered, such as when one is used in an Input statement.		
2375	Unexpected Using Clause	This occurs when a Using clause is encountered when it was not expected, such as with the prompt string of an Input statement.		
2376	Bad Is Operator	This occurs when an Is operator is used outside a Case expression.		
2377	Statement After Module	This occurs when executable statements are present after any module declaration.		
Code	Error	Cause	What to do	Where to look?

2378	Not In Outer Level	This occurs when something is incorrectly nested within a module, such as a task declaration.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2379	Bad Input Parameter	This occurs when an incorrect Input parameter is encountered, such as when there are no parameters or just a prompt string.		
2380	Too Few Right-Hand Sides	This occurs when not enough parameters are supplied to the right of an = symbol.		
2381	Incompatible Type	This occurs when an incompatible type is encountered, such as using something other than a floating-point or integer For loop counter, or when assigning structures of different types.		
2382	Expected Structure	This occurs when a structure is expected, but something else is encountered.		
2383	Expected Member	This occurs when a member is expected, but something else is encountered, which can occur with the structure member access operator and the scope override operator.		
2384	Float Equality	This occurs when a test for equality is made when either or both operands are floating point.		
2385	Expected Redirect	This occurs when a redirection is expected, but something else is encountered.		
2386	Expected Redirect Or Mml Api	This occurs when a redirection or a Mint function is expected, but something else is encountered.		
2387	Too Many Redirections	This occurs when too many redirections are used (the current maximum allowed is 15).		
2388	Expected Case Statement	This occurs when a Case statement is expected, but something else is encountered.		
2389	Expected Type Name	This occurs when a type name is expected, but something else is encountered.		
2390	Expected Time	This occurs when a variable of type Time is expected, but something else is encountered.		
2391	Expected Time Array	This occurs when an array of type Time is expected, but something else is encountered.		
2392	Recursive Structure	This occurs when a structure contains a member that is of the same type as the structure being declared, which can also be through mutually recursive structures.		
2393	Expected Brace	This occurs when a brace { is expected, but something else is encountered.		
2394	Unexpected Brace	This occurs when a brace { is encountered, but something else is expected.		
2395	Too Few Elements	This occurs when there are fewer initializers than structure members.		
2396	Too Many Elements	This occurs when there are more initializers than structure members.		
2397	Expected Variable or Mml Api	This occurs when a variable or a Mint function is expected, but something else is encountered.		
2398	Multiple Event Priority	This occurs when the Event Priority command is used more than once in a program.		
Code	Error	Cause	What to do	Where to look?

2399	Incorrect Event Enumeration	This occurs when an event enumeration is used that is not recognized in a call to Event Priority.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
2400	Expected Indexing	This occurs when an array indexing operation is expected but is not present.		
2401	Block Not Found	This occurs when an unqualified Exit or Continue statement is used without being in a block that can be exited or continued.		
2402	Expected Statement	This error results when a statement is expected, but something else is found. For example, Rnd + 1 is not a statement, and would generate this error if used as one.		
2406	Case Value Already Used	This warning is issued when a case value is used more than once, including overlapping ranges or ranges that include any previously used value		
2407	Expected Simple Type	This error is issued when a function return type is not a simple type. It must be an intrinsic type, like Float, and must not be an array.		
2408	Expected Semaphore	This error is issued when the expression in a semaphore block is not of type Semaphore.		
2409	Expected Bitfield	This error is issued when a bitfield is expected but something else is found, e.g. myBitfieldVar1		
2410	Expected Bit Range	This error is issued when a bitrange is expected but something else is encountered, for example declaring a bitfield member a using a As Float.		
2411	Result Determinate	This warning is issued when an expression's result is determinate, even though it is not composed entirely of literal values. For example, the expression (x > 10) = 2 will always be false because x > 10 the values 0 or 1, so can never be equal to 2. can only take		
2412	Expected Label	This error is issued when a GoTo statement uses something other than a label for its target, e.g. GoTo _false.		
2413	Statement Ignored	This occurs when a statement is encountered that has no effect and so is ignored, for example running a task from the Startup or Shutdown modules.		
2414	Bad Defined parameter	This occurs when the parameter to the Defined statement is not a simple identifier.		
2415	Defined function not in #If	This error is issued when the Defined function is used anywhere other than in a #If or #Elseif expression.		
2416	Bad #If expression	This indicates a #If expression that is invalid, for example: ? An expression that is non-numeric ? An expression that uses a variable or function call. ? An expression that uses a constant ahead of its declaration. ? An expression that uses an unevaluated constant. For example, Const _n = _m, _m = 12 will result in _n being unevaluated because it is a function of a constant declared after itself.		
2417	[User defined message]	This indicates the user generated error or warning specified in a #Error or #Warning statement.		
Code	Error	Cause		

2418	Empty statement	This occurs when a block statement (Loop, Case, etc.) or a module declaration (Sub , Function , etc.) contains no statements, which may indicate a problem such as incomplete, inefficient or incorrect code. Consider converting empty loops to use the Pause statement, which is more efficient in a multi-tasking program. Empty Case statements should be checked to ensure that C/C++ operation is not being assumed.	Check Mint Workbench Build window for the location of the error, correct it then redownload Mint Program	Mint Code
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Controller errors

These errors are assigned unique numbers in the range **30000-39999**.

Code	Error	Cause	What to do	Where to look?
30001	Controller over-temperature (_ecOVER_TEMPERATURE)	The drive has detected it is dangerously hot.	Check the drive ambient conditions allow for sufficient cooling. Note: TEMPERATURE will return the current temperature, in degrees Celsius, from the drive's internal temperature sensor. If the temperature exceeds the predefined TEMPERATURELIMITFATAL value (model dependent), then an overtemperature trip will be caused. TEMPERATURELIMITFATAL for each drive is; e190 3A is 80°C, e190 6A and 9A is 75°C e180 is 80°C	Drive Cabinet or Installation
30005	FPGA failed to initialize (_ecFPGA_INITIALIZATION_ERROR)	The controller FPGA has failed to initialize. If this error is received	Power cycle. If Error Persists, Replace the Drive	Drive
30007	Error accessing non-volatile memory (_ecNON_VOL_MEMORY_FAILURE)	Unable to access non-volatile memory.	Power cycle. If Error Persists, Replace the Drive	Drive
30008	Error applying parameter value (_ecPARAM_ERROR)	Errors have occurred during a parameter table download or during startup. Some of the parameters could not be applied correctly. See the Error Log for details of the failures. The controller's status display will flash only 'E', and will not be followed with the usual error code digits.	This Error is most commonly associated with either a parameter file (.ptx) issue. It is a common problem if the parameter file is generated from an older firmware version with either different parameters or different parameter limits. Read the Error log for specific guidance on the effected parameters.	Parameter file
30009	General internal controller error (_ecINTERNAL_ERROR)	An internal error has occurred. Read parameter failed	Power cycle. If Error Persists, Replace the Drive	Drive
30010	Fan is not operating correctly (_ecFAN_LOSS)	The drive has detected that an internal cooling fan has failed.	Check the bottom of the drive to determine that the fan inlets are not blocked, and the fan is rotating. If the drive fan does not turn, the general is the fan hardware failure, need to replace the fan.	Drive Fan

Code	Error	Cause	What to do	Where to look?
30023	Mint option card comms error tx (_ecMINT_OPTION_CARD_COMMS_ERROR_TX)	A communication error between the drive and the Mint option has been detected by the drive.	Power cycle and try again. If the problem persists, then there is probably a hardware failure - contact ABB technical support.	Mint Option Card
30029	Controller under-temperature (_ecUNDER_TEMPERATURE)	The controller has detected an ambient temperature lower than -5 °C.	The ambient temperature must be increased before the drive can be enabled.	Drive Cabinet or Installation
30030	All controller errors cleared (_ecCONTROLLER_ERRORS_CLEARED)	This information message can appear in the <u>error log</u> to indicate that all controller errors have been cleared.	No Action	N/A
30032	Hardware revision does not support EPL (_ecHARDWARE_DOES_NOT_SUPPORT_EPL)	The controller does not support Ethernet POWERLINK.	Earlier Hardware revisions of e180 (with GCU-01 control cards before Rev A) do not support EPL and on these old hardware revisions if the EPL address switches are not both set at '0' then this error will be generated. Old drives will still work in every other mode but if EPL is needed the Hardware will need to be exchanged	Check

Controller warnings

These errors are assigned unique numbers in the range **40000-49999**. There is no default action on controller warnings.

Code	Error	Cause	What to do	Where to look?
40006	Attempt to configure too many axes (<code>_ecTOO_MANY_AXES</code>)	The device configuration file has attempted to assign more axes than are available on the controller.	Re-run the System Configuration Wizard.	Configuration File
40007	CamBox segments have been skipped (<code>_ecCAM_BOX_OVERRUN</code>)	The cam box has skipped a segment. This can happen if the source is moving fast enough to cause a segment to be skipped.	See CAMBOX in Mint WorkBench Help, look at "position_array". Either slow down the source or increase the size of the segments	Mint Program
40012	A host event has failed with retries (<code>_ecEVENT_RETRY_WARNING</code>)	A host (i.e. ActiveX) event handler has failed to acknowledge an event that has been raised by the controller. There is a 'time-out' period of 1 second in which the host must acknowledge an event.	If the host does not acknowledge the event after 3 time-out periods, the controller generates warning 40012. See ERRDATA for details of the error.	Host application
40013	Attempted to assign too many servo axes (<code>_ecTOO_MANY_SERVO_AXES</code>)	During the processing of the .CMCF / .DCF (device configuration file), too many servo axes were configured.	To fix this issue, use the System Config Wizard to reduce the number of configured servo axes.	Mint Workbench
40014	Attempted to assign too many stepper axes (<code>_ecTOO_MANY_STEPPER_AXES</code>)	During the processing of the .CMCF / .DCF (device configuration file), too many stepper axes were configured.	To fix this issue, use the System Config Wizard to reduce the number of configured stepper axes.	Mint Workbench
40015	Attempted to assign too many virtual axes (<code>_ecTOO_MANY_VIRTUAL_AXES</code>)	During the processing of the .CMCF / .DCF (device configuration file), too many virtual axes were configured.	To fix this issue, use the System Config Wizard to reduce the number of configured virtual axes.	Mint Workbench
40016	Attempted to assign too many remote axes (<code>_ecTOO_MANY_REMOTE_AXES</code>)	During the processing of the .CMCF / .DCF (device configuration file), too many remote axes were configured.	To fix this issue, use the System Config Wizard to reduce the number of configured remote axes.	Mint Workbench
40021	All controller warnings cleared (<code>_ecCONTROLLER_WARNINGS_CLEARED</code>)	This information message can appear in the error log to indicate that all controller warnings have been cleared.	No Action Required	Hardware
40022	Last reset was not controlled (<code>_ecRESET_NOT_CONTROLLED</code>)	Last reset was not controlled	To fix this issue, use the System Config Wizard to reduce the number of configured servo axes.	Hardware
40023	Default MAC detected (<code>_ecDEFAULT_MAC_DETECTED</code>)	Default MAC has been detected, valid MAC address is not set.	Set valid MAC address	Hardware
40024	Could not open license file or Error reading license file (<code>_ecMISSING_LICENSE_FILE</code>)	Could not open license file or Error reading license file	If this error is received, please contact ABB technical support.	Hardware

Code	Error	Cause	What to do	Where to look?
40025	License file doesn't match hardware ID (_ecFOREIGN_LICENSE_FILE_PRESENT)	Wrong licensing version or platform, or Flash unique ID does not match the one in the license file	If this error is received, please contact ABB technical support.	Hardware
40026	Invalid License file (_ecINVALID_LICENSE_FILE_PRESENT)	License data hash does not match the one in the License File	If this error is received, please contact ABB technical support.	Hardware
40027	Warning applying parameter value (_ecPARAM_WARNING)	This warning will be generated if an attempt is made to write to a parameter that is no longer supported.	If necessary, recommission the drive to create a new parameter table	Mint Workbench
40028	Warning fan fault (_ecFAN_FAULT_WARNING)	The fan is possibly faulty, unplugged or jammed.	Firstly, ensure the latest firmware is in use (as the fan is controlled by firmware). Check the bottom of the drive to determine that the fan inlets are not blocked, and the fan is rotating. If the drive fan does not turn, see the drive installation manual for instructions on how to replace the fan	Hardware

Host application (ActiveX) errors

These errors are assigned unique numbers in the range **1000-1999**. They are generated by the ActiveX control and may be returned by Mint WorkBench or another host application. See the ActiveX [Error Codes](#) topic in Mint Online Help.

Code	Error	Cause	What to do	Where to look?
1003	erBAD_COMMAND	Unrecognized command code	Check ActiveX Controller (See MIL.h (for Visual C++), MIL.pas (for Delphi) and MIL.bas (for VB) for a complete list, in the folder: Windows XP: C:\Program Files\Mint WorkBench\Include. Windows 7: C:\Users\Public\Documents\Public Mint\Examples\Include)	ActiveX Controller
1004	erBAD_ADDRESS	Invalid file (bad address record)		
1005	erBAD_ERASE	Flash erase failed		
1006	erBAD_BURN	Flash programming failed		
1010	erTIMEOUT	A time-out occurred		
1011	erDPRAM_LOCATION	Dual Port RAM location out of range		
1012	erNOT_ENOUGH_MEM	Insufficient memory		
1013	erBAD_BOOT_DEVICE	Bad boot source id		
1014	erCARD_NOT_FOUND	Unable to locate NextMove		
1017	erINVALID_STRING_FORMAT	Non-NULL terminated string used as parameter		
1020	erCOMMAND_ABORTED	The front command was aborted by the user		
1024	erFRONT_DISABLED	The PC-Front interface has been disabled		
1025	erINVALID_HANDLE	The handle to the controller is not valid		
1027	erPROTOCOL_ERROR	Invalid protocol used		
1028	erFILE_ERROR	Error reading from or writing to the file		
1029	erINVALID_FILETYPE	Incorrect file type specified		
1033	erTEMP_FILE_ERROR	Error creating temp file		
1034	erCODE_ERROR	Internal error: please contact supplier		
1039	erPORT_NOT_OPEN	The serial port has not been opened, or the hardware (or device driver) is not present		
1043	erCHECKSUM_ERROR	Checksum failure		
1044	erNAK_RECEIVED	The controller reports corruption (NAK)		
1046	erERROR_OPENING_PORT	The port could not be opened		
1047	erINVALID_CARDNUMBER	The card number was out of range		
1053	erUSER_ABORT	The function was cancelled by the user		
1056	erRECEIVE_BUFFER_EMPTY	The receive buffer is empty		
1057	erTRANSMIT_BUFFER_FULL	The transmit buffer is full		
1058	erINVALID_RETRIES	An incorrect retry value was selected		
1060	erUNDEFINED_SERIAL_ERROR	An unrecognized serial error occurred		
1061	erPSERIAL_BUFFER_CORRUPTION	The pseudo-serial buffers are corrupt		
1062	erFUNCTION_NOT_SUPPORTED	The function is not available on this platform		
1063	erCANNOT_OPEN_FILE	The file is bad or doesn't exist		

Code	Error	Cause	What to do	Where to look?
1064	erINVALID_FORMAT	The file is not proper COFF format	<p>Check ActiveX Controller (See MIL.h (for Visual C++), MIL.pas (for Delphi) and MIL.bas (for VB) for a complete list, in the folder: Windows XP: C:\Program Files\Mint WorkBench\Include. Windows 7: C:\Users\Public\Documents\Public Mint\Examples\Include)</p>	ActiveX Controller
1065	erDATA_TOO_LONG	The data string was too long		
1066	erINCORRECT_ARRAY_SIZE	The array size or pointer is incorrect		
1067	erUNKNOWN_ERROR_CODE	The error code is unrecognized		
1068	erCONTROLLER_NOT_RUNNING	The controller is not running		
1070	erNO_DEVICE_DRIVER_SUPPORT	Device driver not installed, or not configured for this controller		
1079	erINVALID_PLATFORM	Invalid firmware for the controller		
1084	erBAD_DEVICE_DRIVER_CALL	The device driver call failed		
1086	erINVALID_EVENT	Could not register the event		
1087	erFUNCTION_NOT_AVAILABLE	Function not currently available		
1088	erBOOT_TEST_FAIL	Power-up self-test failed		
1089	erBUFFER_TOO_SMALL	Not enough memory to load data object		
1090	erREQUIRES_DEV_DRIVER	Requires a development build of the device driver		
1092	erICM_RX_TIMEOUT	Timeout on ICM (Host RX)		
1093	erICM_RX_SIZE_ERROR	Error in ICM protocol		
1094	erICM_PROCESS_TIMEOUT	Timeout on ICM (Host Process)		
1095	erDEV_DRV_UNKNOWN_IOCTL	Device driver mismatch		
1096	erBBP_ACK_TIMEOUT	No response from controller		
1101	erBBP_INVALID_DATA_LENGTH	Invalid data field length for transaction		
1107	erBBP_END_OF_BLOCK	End of block reached		
1108	erBBP_PACKET_ID_MISMATCH	Packet ID does not match		
1110	erNO_CAPTURED_DATA	No captured data is available to upload		
1127	erNO_LINK_TO_CONTROLLER	Must use a setXXXLink function		
1128	erFIRST_ARRAY_ELEMENT_IS_SIZE	The first element in the array must specify the number of elements (not including itself)		
1129	erPOS_ARRAY_REQUIRED	The position array is not optional		
1130	erARRAY_SIZE_MISMATCH	One or more array(s) are the wrong size		
1131	erPARAMETER_CANNOT_BE_NEGATIVE	The parameter cannot be negative		
1132	erCAN_INIT_FAILED	Initialization of CAN bus failed		
1133	erEEPROM_CRC_FAILED	EEPROM failed CRC check		
1134	erINSUFFICIENT_MEMORY	Insufficient memory to run application		
1135	erCANNOT_RUN_APP	Cannot run application for unknown reason		

Code	Error	Cause	What to do	Where to look?
1136	erEVENT_HANDLER_IN_USE	Event handler is in use by this or another application	Check ActiveX Controller (See MIL.h (for Visual C++), MIL.pas (for Delphi) and MIL.bas (for VB) for a complete list, in the folder: Windows XP: C:\Program Files\Mint WorkBench\Include. Windows 7: C:\Users\Public\Documents\Public Mint\Examples\Include)	ActiveX Controller
1137	erSERIAL_PORT_OPEN	Action not possible with serial port open		
1138	erBAD_PARAMETER1	Error in parameter 1		
1139	erBAD_PARAMETER2	Error in parameter 2		
1140	erBAD_PARAMETER3	Error in parameter 3		
1141	erBAD_PARAMETER4	Error in parameter 4		
1142	erBAD_PARAMETER5	Error in parameter 5		
1143	erBAD_PARAMETER6	Error in parameter 6		
1144	erAUTOTUNE_POLES_OR_PPR	Incorrect number of poles or feedback pulses during autotune		
1145	erAUTOTUNE_INDEX_PULSE_MISSING	Index pulse missing during autotune		
1146	erAUTOTUNE_UVW_SIGNAL_LOSS	UVW signal lost during autotune		
1147	erINCORRECT_UVW_PHASING	UVW phasing or polarity is incorrect		
1148	erLOGGING_NOT_ENABLED	Logging to file not enabled for RX or TX		
1149	erMINTCONTROLLER_NOT_FOUND	The MintController control could not be located in the same container		
1150	erMONOSPACED_FONT_REQUIRED	A monospaced (fixed pitch) font, such as Courier New, must be selected		
1151	erOBJECT_TOO_BIG	Application object too big		
1152	erMINT_CONTROLLER_ID	Must call setMintControllerID		
1153	erCAPTURE_UPLOAD_RESTART	Capture restarted during upload process		
1154	erINVALID_ANSI328_NODE	Maximum node ID for ANSI 328 host comms is 15		
1155	erINV_COMPILER_VERSION	Compiler version is not registered		
1156	erCOMPILER_NOT_REGISTERED	Compiler is not registered		
1157	erBAD_SYMBOL_TABLE	Bad symbol table		
1159	erNO_HOST_FIRMWARE	No host firmware available for drive		
1160	erINV_PARAM_TABLE	Parameter table version doesn't match controller		
1161	erINCOMPATIBLE_FIRMWARE	Incompatible firmware for controller		
1162	erBOOTLOADER_NOT_INITIALIZED	Boot loader not initialized to accept firmware		
1163	erBOOTLOADER_PROGRAMMING_FAILED	Boot loader programming failed		
1164	erCOMPILE_FAILED	Failed to compile Mint program		
1165	erBAD_FIRMWARE_OOPS	Incompatible firmware - you must download compatible firmware before using the controller		
Code	Error	Cause	What to do	Where to look?

1166	erCOMPONENT_REG_FAILED	Component registration failed	Check ActiveX Controller (See MIL.h (for Visual C++), MIL.pas (for Delphi) and MIL.bas (for VB) for a complete list, in the folder: Windows XP: C:\Program Files\Mint WorkBench\Include. Windows 7: C:\Users\Public\Documents\Public Mint\Examples\Include)	ActiveX Controller
1167	erNO_USB_DEVICES	Can't find any USB devices		
1168	erNON_UNIQUE_NODE_NUMBERS	Multiple devices with the same node ID		
1169	erNODE_NOT_FOUND	Node not found		
1170	erDEVICE_NOT_OPEN	Device not open, bad handle		
1171	erMODBUS_PACKET_TOO_BIG	Packet too big for protocol		
1172	erMODBUS_PACKET_TOO_SMALL	Packet too small for protocol		
1173	erINVALID_FLASH_TYPE	Flash type incorrect		
1174	erINVALID_FLASH_BLOCK	Flash block invalid		
1175	erINVALID_TEST_TYPE	Test type invalid		
1176	erINVALID_PACKET_ID	Packet ID invalid		
1177	erINVALID_SPI_DEVICE	SPI device invalid		
1178	erINVALID_DOWNLOAD_MODE	Download mode invalid		
1179	erMODBUS_EXCEPTION	Modbus exception		
1180	erMB_ILLEGAL_FUNCTION	Modbus exception 1		
1181	erMB_ILLEGAL_DATA_ADDRESS	Modbus exception 2		
1182	erMB_ILLEGAL_DATA_VALUE	Modbus exception 3		
1183	erMB_SLAVE_DEVICE_FAILURE	Modbus exception 4		
1184	erMB_EXCEPTION_ACK	Modbus exception 5		
1185	erMB_SLAVE_DEVICE_BUSY	Modbus exception 6		
1186	erMODBUS_PACKET_SYNC	Modbus protocol error		
1187	erMODBUS_RX_PACKET_SIZE	Modbus packet size incorrect		
1188	erMODBUS_WRITE_ERROR	Modbus packet not written		
1189	erMODBUS_NODE_INVALID	Modbus node address incorrect		
1190	erMODBUS_ARRAY_SIZE_INVALID	Modbus array size incorrect		
1191	erMODBUS_RX_TIMEOUT	Modbus receive time-out		
1192	erINVALID_INDEX	Index out of range		
1193	erMODBUS_EMPTY_PACKET	Empty Modbus packet received		
1194	erNOT_IN_BOOTBLOCK_MODE	Cannot download bootloader		
Code	Error	Cause	What to do	Where to look?

1195	erONLY_ONE_USB_DE VICE_FOR_FIRMWARE _UPDATE	Too many connections	Check ActiveX Controller (See MIL.h (for Visual C++), MIL.pas (for Delphi) and MIL.bas (for VB) for a complete list, in the folder: Windows XP: C:\Program Files\Mint WorkBench\Include. Windows 7: C:\Users\Public\Docu ments\Public Mint\Examples\ Include)	ActiveX Controller
1196	erMB_EXCEPTION_PID _ENCODING	Modbus exception		
1197	erMB_EXCEPTION_PID _UNKNOWN	Modbus exception		
1198	erMB_EXCEPTION_WR ONG_PACKET_TYPE	Modbus exception		
1199	erMB_EXCEPTION_TOK EN_CRC_ERROR	Modbus exception		
1200	erMB_EXCEPTION_DAT A_CRC_ERROR	Modbus exception		
1201	erMB_EXCEPTION_TIM EOUT_ERROR	Modbus exception		
1202	erMB_EXCEPTION_BAB BLE_ERROR	Modbus exception		
1203	erMB_EXCEPTION_UNE XPECTED_END_OF_PA CKET	Modbus exception		
1204	erMB_EXCEPTION_NAK	Modbus exception		
1205	erMB_EXCEPTION_SEN D_STALL	Modbus exception		
1206	erMB_EXCEPTION_OVE RFLOW	Modbus exception		
1207	erMB_EXCEPTION_SEN T_EMPTY_PACKET	Modbus exception		
1208	erMB_EXCEPTION_BIT_ STUFF_ERROR	Modbus exception		
1209	erMB_EXCEPTION_SYN C_ERROR	Modbus exception		
1210	erMB_EXCEPTION_WR ONG_TOGGLE_BIT	Modbus exception		
1211	erMB_EXCEPTION_REC EIVED_LENGTH_ERRO R	Modbus exception		
1212	erMB_EXCEPTION_REC EIVED_CRC_ERROR	Modbus exception		
1213	erEND_OF_FILE	End of file found		
1214	erUSB_PACKET_NUMB ER_MISMATCH	Packet number wrong		
1215	erNO_ICM_SUPPORT	No ICM support for fn		
1216	erWRITE_FAILED	The operation failed		
1217	erUSB_ONLY	Only supported over USB		
Code	Error	Cause	What to do	Where to look?

1218	erADDRESS_TOO_LARGE_FOR_DEVICE	EE Address too large	<p>Check ActiveX Controller (See MIL.h (for Visual C++), MIL.pas (for Delphi) and MIL.bas (for VB) for a complete list, in the folder: Windows XP: C:\Program Files\Mint WorkBench\Include. Windows 7: C:\Users\Public\Documents\Public Mint\Examples\Include)</p>	ActiveX Controller
1219	erINCOMPATIBLE_PARAMETERS	Incompatible parameter		
1220	erUSB_PORT_IN_USE	USB port in use		
1221	erCANNOT_BUFFER_COMMAND	Cannot buffer command		
1222	erCOMMAND_BUFFER_FULL	Command buffer full		
1223	erNO_COMMANDS_BUFFERED	No commands buffered		
1224	erCOM_SERVER_ERROR	Internal COM Error		
1225	erINVALID_TABLE_NUMBER	Invalid parameter table number		
1226	erINVALID_DATATYPE	Invalid data type		
1227	erUSB_DISCONNECT	USB communication failure		

MML run-time errors

These errors are assigned unique numbers in the range **0 - 999**. Run-time error codes are generated by the underlying functions of the [Mint Motion Library](#) (MML) keywords. These errors cannot be foreseen by Mint WorkBench when it compiles the program so only occur when the program is running. When Mint reports an error, the error is entered on the error list. The accompanying `_ec` error codes can be used in an [ONERROR event](#) to test for particular errors, for example:

If ERRCODE = `_ecFOLLOWING_ERROR` Then...

See [Error Event: ONERROR](#) for other examples.

Code	Error	Cause	What to do	Where to look?
0	No error (<code>_ecSUCCESS</code>)	The Err keyword will return 0 if no error has occurred.	No Action Required	N/A
1	Synchronous MML error (<code>_ecMML_ERROR</code>)	This is a generic error generated by the MML when there is no more specific information available.	Find cause in Mint program, heck the Mint Terminal Window for the error line, this will direct the user to the offending instruction	Mint Program
2	Axis specified out of range (<code>_ecINVALID_AXIS</code>)	The specified axis number is not supported by the controller (e.g. issuing <code>SPEED(50) = 5000</code>)	Amend the program to address a valid axis number. Single drives only accept <code>[CommandType](0)</code>	Mint Program
3	Data specified out of range (<code>_ecVALUE_OUT_OF_RANGE</code>)	The value assigned to the keyword is outside the accepted range of values for that keyword (e.g. <code>MOVER(0) = 8388608</code>)	Amend the program to use a value that is within the valid range.	Mint Program
4	Channel out of range (<code>_ecINVALID_CHANNEL</code>)	The specified channel parameter is not supported by the controller (e.g. <code>DAC(2000) = 35</code>). Other examples; Analog input channels/ Analog output channels/ Encoder channels/ Temperature channels/ digital input channels/ CamBox channels...	Amend the Mint program to use a valid channel.	Mint Program
5	No digital input assigned (<code>_ecNO_INPUT_SPECIFIED</code>)	The requested function references a digital input that hasn't been assigned.	Check configuration or Mint program for errors. For example, homing mode <code>HOME(0)=0</code> detects a digital input transition as the target for the initial phase. Error 5 will be caused if this HOME command is issued before a digital input has been assigned as a home input/	Mint Program or Configuration
6	No digital output assigned (<code>_ecNO_OUTPUT_SPECIFIED</code>)	The requested function references a digital output that hasn't been assigned.	Check Mint program for errors. For example, <code>COMPAREENABLE(1)=_TRUE</code> enables the compare function on digital output 1. Error 6 will be caused if this COMPAREENABLE command is issued before DO1 has been set as a compare output (using <code>COMPAREOUTPUT</code>).	Mint Program or Configuration

Code	Error	Cause	What to do	Where to look?
7	Digital input specified out of range (_ecINVALID_INPUT)	A digital input has been specified that is not supported by the controller	Check configuration or Mint program for errors. e.g. using INX(yy) where yy is beyond the values available in the controller.	Mint Program or Configuration
8	Digital output specified out of range (_ecINVALID_OUTPUT)	A digital output has been specified that is not supported by the controller.	Check configuration or Mint program for errors. e.g. using OUTX(yy) where yy is beyond the values available in the controller.	Mint Program or Configuration
9	Not enough heap memory for operation (_ecOUT_OF_MEMORY)	The controller has run out of dynamically allocated memory.	Reduce the amount of memory used. The following actions can reduce the amount of used memory: If the size of the move buffer(s) has been increased using MOVEBUFFERSIZE, try reducing the size. Reduce the size of any arrays declared in the program if possible	Mint Program or Configuration
10	Action not possible when axis in motion (_ecMOTION_IN_PROGRESS)	This error is caused by writing to a motion keyword while the axis is in motion.	Check the current AXISMODE is suitable for issuing the next keyword. If this occurs at the end of a move try 'Pause(IDLE) ' before issuing the next command.	Mint Program or Configuration
11	Incorrect axis configuration (_ecAXIS_NOT_RIGHT_TYPE)	This error is caused by writing to a keyword that is not supported by the configuration (CONFIG) of this axis (e.g. writing a value for KPROP to an axis configured as _cfSTEPPER).	Amend the Mint program to either remove the invalid command or change the axis configuration as required	Mint Program or Configuration
12	Axis is in error (_ecMOTION_ERROR)	This error is caused by writing to a motion keyword whilst the axis is in error.	Read the error list for axis errors to determine which motion errors are present. Improve the Mint program so that motion commands are not attempted whilst the axis is in the error state	Mint Program or Configuration
13	Table data incorrect or missing (_ecTABLE_ERROR)	An error exists in a spline or cam table.	Ensure that SPLINESTART (or CAMSTART) and SPLINEEND (or CAMEND) are valid segment values before setting the SPLINETABLE (or CAMTABLE). Check that the MASTERDISTANCE table does not specify any zero distance values.	Mint Program or Configuration
15	Incorrect ADC channel setup (_ecCHANNEL_NOT_RIGHT)	This error is caused when a function, for example HTACHANNEL, references an analog input that is configured as off - see ADCMODE	Ensure that the analog input is available and configured correctly before attempting to use it.	Mint Program or Configuration

Code	Error	Cause	What to do	Where to look?
17	Keyword not supported on this platform (_ecWRONG_PLATFORM)	A keyword has been used that is not supported by this controller, even though it may be supported by other models in the same family of controllers. This error will also be returned if an ActiveX host uses a keyword which is not supported by the controller.	Amend the program to only use supported keywords	Mint Program or Configuration
18	DB Error (_ecDB_ERROR)	DB Error	If this problem occurs, please contact ABB Technical Support	Hardware
24	Hardware not present _ecINVALID_HARDWARE	Hardware which is referenced in configuration or Mint program is not present	Check configuration and Mint Program	Hardware Configuration
36	Port value is out of range (_ecTERMINAL_OUT_OF_RANGE)	This error is caused when the specified terminal has not been associated as a BaldorCAN KeypadNode	Check configuration or Mint program for errors. E.g. check if it has not been assigned, see TERMINALDEVICE, or the maximum number of KeypadNodes (four) have already been added to the bus.	Mint Program or Configuration
37	Non-volatile data corrupted (_ecNON_VOLATILE_MEMORY_ERROR)	An error accessing EEPROM or NVRAM data has occurred. This could occur if the controller was power-cycled during a write operation to the EEPROM or NVRAM. If this error occurs during normal operation there may be a fault in the device, possibly due to it reaching its maximum number of write cycles (see EEPROM memory).	Use NVRAMDEFAULTS to reset memory. Check for correct earthing/shielding of the control system (electrical noise can corrupt these memory devices). If the earthing/shielding is correct and the problem reoccurs then the controller will need replacing	Mint Program or Configuration
39	Terminal Buffer is full (ecTERMINAL_BUFFER_FULL)	Terminal Buffer is full	Bit 0 of TERMINALMODE can be used to turn off handshaking, allowing further characters to be sent to the port even when the buffer is full	Mint Program or Configuration
40	Axis is not enabled (_ecDRIVE_DISABLED)	This error is caused by trying to start a move while the axis is disabled.	In a program, use DRIVEENABLE to enable the axis. In Mint WorkBench, click the clear errors button, then click the drive enable button.	Mint Program or Configuration
54	File too big (_ecFILE_TOO_BIG)	The program is too big for the available memory.	See Mint WorkBench help section "Reducing program size"	Mint program

Code	Error	Cause	What to do	Where to look?
59	Move buffer full (<code>_ecMOVE_BUFFER_FULL</code>)	The move cannot be loaded into the move buffer because it is full. The move buffer becomes full when several move statements have been issued, but the moves have not been triggered by a GO statement (or other triggering method, see Move buffer and GO). Note: This error cannot be captured by a Mint program, but it is returned to an ActiveX host and is transmitted within fieldbus response telegrams.	Try increasing the size of the move buffer (e.g. <code>MOVEBUFFERSIZE(0) = 30</code>) or checking that there are the required number of segments free before loading the next moves into it (e.g. If <code>MOVEBUFFERFREE(0) > 1</code> Then <code>LoadNextMove</code>)	Mint program
66	Function not available (<code>_ecMML_NOT_SUPPORTED</code>)	A keyword has been used that is not supported by this controller, even though it may be supported by other models in the same family of controllers. This error will also be returned if an ActiveX host uses a keyword which is not supported by the controller.	Remove unsupported Function from the Mint Program	Mint program
68	Action not possible in current mode (<code>_ecINVALID_MODE</code>)	This error occurs when attempting to change <code>CAMBOXDATA</code> while the associated CAMBox is enabled.	The CAMBox must be disabled before changing its data.	Mint program
70	Invalid Master Channel (<code>_ecINVALID_MASTER_CHANNEL</code>)	A master/slave move has been configured so that it is trying to follow itself, for example: <code>MASTERSOURCE(0) = _msPOS</code> <code>MASTERCHANNEL(0) = 0</code> <code>FOLLOW(0) = 1</code>	Amend mint program.	Mint program
72	Action not allowed in this Axis Mode (<code>_ecINVALID_AXISMODE</code>)	This error occurs when trying to load a move type that is not compatible with the current <code>AXISMODE</code> For example, issuing a <code>CAMPHASE</code> command when there is no CAM move in progress will cause this error. Also, if the axis is currently performing a <code>FOLLOW</code> move (axis mode <code>_mdFOLLOW</code>) then it is not possible to load a <code>MOVER</code> move (axis mode <code>_mdLINEAR</code>). It will be necessary for the axis to complete the move and become idle (or be stopped) before loading the next move type.	Amend Mint program	Mint program
74	Capture in progress (<code>_ecCAPTURE_IN_PROGRESS</code>)	It is not possible to upload capture data to the host application whilst data is still being captured.	Read the status of <code>CAPTUREMODE</code> to test for the <code>_cpIDLE</code> condition (41) before attempting to upload the capture data. Mint Workbench also displays the status of the capture process in the bottom right corner of the screen	Mint Program or Configuration

Code	Error	Cause	What to do	Where to look?
89	Hardware channel required is in use (<code>_ecCHANNEL_IN_USE</code>)	This error is caused when attempting to use a keyword (e.g. DAC) to access a hardware channel that is already assigned to another purpose (e.g. as a servo axis demand output), or when attempting to assign the same combination of LATCHSOURCE , LATCHSOURCECHANNEL and LATCHTRIGGERCHANNEL to more than one latch channel (see Latching).	Use the Mint WorkBench System Config Wizard to study the existing hardware configuration and either adjust the hardware configuration or amend the Mint program	Mint Program or Configuration
90	Action not possible when axis is enabled (<code>_ecDRIVE_ENABLE D</code>)	This error is caused by trying to change the configuration of an axis while it is still enabled.	In Mint WorkBench, click the drive enable button to disable the axis. In a program, use the DRIVEENABLE keyword to disable the axis.	Mint Program or Configuration
95	Output is already in use (<code>_ecOUTPUT_IN_U SE</code>)	This error is caused by trying to use a digital output that has already been assigned to another purpose, such as a drive enable output, compare output or global error output . For example, if digital output 1 has been assigned as the GLOBALERROROUTPUT , attempting to issue a MOVEOUTX command on digital output 1 will cause this error.	Amend Mint program	Mint Program or Configuration
96	Invalid capture channel mix (<code>_ecCAPTURE_CHA NNEL_MIX</code>)	This error is caused by trying to perform data capture (e.g. with CAPTURE or CAPTURECOMMAND) when no capture channels have been configured. Use CAPTUREMODE and other associated capture keywords to configure capture channels. The error will also be caused if the value supplied as a CAPTUREMODEPARAMETER is invalid for the channel's CAPTUREMODE	Correct the Capture Channel Configuration	Mint Program or Configuration
98	Invalid variable type for Remote Object (<code>_ecINVALID_VAR_ TYPE</code>)	This error is caused when specifying the incorrect variable type parameter to the REMOTEOBJECT keyword (e.g. the remote object may be expecting a signed 8-bit integer and the user specifies an unsigned 16 bit integer)	Amend Mint Program. Refer to manufacturer's documentation for object dictionary definition. See Mint Workbench help for REMOTEOBJECT for valid data types.	Mint Program or Configuration
112	Parameter is read only (<code>_ecREAD_ONLY</code>)	This error occurs when attempting to use ERRORCODEENABLE to disable a read-only error (axis errors 10000- 19999 and controller errors 30000-39999).	Action not possible	Mint Workbench
124	Mint program not found (<code>_ecOBJECT_NOT_FO UND</code>)	No Mint object (e.g. program) exists.	Check Mint program is downloaded.	Mint Workbench

Code	Error	Cause	What to do	Where to look?
125	A Mint program is already running (<code>_ecMINT_PROGRAM_RUNNING</code>)	This error is caused if a program is already running on the controller when a host application issues a <code>DoMintRun</code> command (or a <code>DoMintCommand</code> / <code>DoMintCommandEx</code> command). It makes no difference whether the currently running program was started from the host application or from within Mint WorkBench.	In the host application, use the <code>MintExecuting</code> function to test for a running program before using a <code>DoMintRun</code> , <code>DoMintCommand</code> , or <code>DoMintCommandEx</code> command. To stop the currently running program, click the stop button in Mint WorkBench.	Mint Workbench
126	The Mint command is invalid (<code>_ecINVALID_MINT_COMMAND</code>)	This error will be returned to an ActiveX host application if it attempts to access Mint status information that is not valid for the controller.	Amend ActiveX Program. See Mint Workbench Help: <code>MintStatus</code> / <code>MintExtendedStatus</code> .	Mint Workbench
132	Host busy (<code>_ecICM_HOST_BUSY</code>)	The controller has tried to signal an event to a host application, but the host has not acknowledged this event	Check operation of the host application. Power cycle. If error persists, contact ABB Technical Support	Mint Program or Configuration
133	Invalid platform code (<code>_ecINVALID_PLATFORM_CODE</code>)	This occurs when a Mint executable compiled for a specific controller type or target format is downloaded to a different controller or the correct type of controller running firmware that supports a different target format (i.e. earlier or later firmware)	If the correct controller type is being used check if it is installed with the correct firmware version. If firmware is not available, then recompile the Mint source code to create a new executable suitable for the current controller. If a different controller is being used, then either change the controller or recompile the Mint program source.	Mint Program or Configuration
134	Invalid image format (<code>_ecINVALID_IMAGE_FORMAT_CODE</code>)	This occurs when a Mint executable is downloaded to a controller that was compiled for a different controller type.	Amend Mint program This error condition should only be possible when using a means other than Mint WorkBench to download a program to the controller.	Mint Program or Configuration
142	Move buffer is not empty (<code>_ecMOVE_BUFFER_NOT_EMPTY</code>)	This occurs when trying to restore the move buffer from a backup (using <code>MOVEBUFFERBACKUP</code>), but the buffer is not empty, or the axis is not idle.	Amend Mint program, the buffer is cleared when the axis is disabled, unless <code>DRIVEDISABLEMODE</code> has been used to change this behavior. Use the <code>IDLE</code> keyword to test for the axis being idle.	Mint Program
143	Incorrect control mode (<code>_ecINCOMPATIBLE_CONTROL_MODE</code>)	This occurs when trying to use a command that is not valid in the existing control mode	Amend Mint program	Mint Program
144	Static variable not found (<code>_ecVARIABLE_NOT_FOUND</code>)	This error will be returned to an ActiveX host application if it attempts to use <code>DoDataFileDownload</code> , <code>DoDataFileUpload</code> or <code>VariableData</code> when the specified variable is not present.	Amend ActiveX Program.	ActiveX

Code	Error	Cause	What to do	Where to look?
145	Invalid handle for static variable (<code>_ecINVALID_STATIC_HANDLE</code>)	If the static handle wasn't found, then return an error	Amend ActiveX Program.	ActiveX
146	Invalid chunk specified for static (<code>_ecINVALID_STATIC_CHUNK</code>)	Invalid chunk specified for static	Amend ActiveX Program.	ActiveX
147	Static data overrun (<code>_ecSTATIC_DATA_OVERRUN</code>)	This error will be returned to an ActiveX host application if it attempts to use <code>DoDataFileDownload</code> or <code>VariableData</code> when the specified array is not large enough to contain the data.	Amend ActiveX Program.	ActiveX
148	Static data underrun (<code>_ecSTATIC_DATA_UNDERRUN</code>)	This error will be returned to an ActiveX host application if it attempts to use <code>DoDataFileDownload</code> or <code>VariableData</code> when the specified array is larger than the amount of received data.	Amend ActiveX Program.	ActiveX
149	Incorrect Ref Source (<code>_ecINCORRECT_REF_SOURCE</code>)	Reference source is not Host when trying to set a speed ref using Mint keyword	Amend ActiveX Program.	ActiveX
151	Phase search is in progress (<code>_ecPHASE_SEARCH_RUNNING</code>)	This error occurs when trying to update a phase search parameter (<code>PHASESEARCH...</code>) while a phase search is in progress.	Wait for Phase search to finish	Mint Program
162	Knife handler not installed (<code>_ecKNIFE_HANDLER_NOT_INSTALLED</code>)	This error occurs if a KNIFE move is loaded but a knife event has not been created.	Correct configuration or Mint Program. The knife event is called at each knife lift point, so it must be present in the program.	Mint Program
163	Knife axes not configured (<code>_ecKNIFE_AXES_NOT_CONFIGURED</code>)	This error occurs if a KNIFE move is loaded but the master axis has not been specified.	Correct configuration or Mint Program. Before issuing the first KNIFE command, use <code>KNIFEAXIS</code> to associate the knife rotation axis to the master axis of the vector move.	Mint Program
167	Too many tasks in Mint program (<code>_ecTOO_MANY_TASKS</code>)	This error should not normally occur, as it is only caused if a program specifies more than 65535 tasks.	Correct Mint program if there are more than 65535 tasks. If there aren't then either there is a problem with the Mint compiler, or the controller is faulty.	Mint Program
179	File handle is not valid (<code>_ecFILE_HANDLE_INVALID</code>)	File handle is not valid.	If problem persists, replace controller or memory unit if the controller has one	Hardware
180	File does not exist (<code>_ecFILE_NOT_FOUND</code>)	File does not exist.	If problem persists, replace controller or memory unit if the controller has one	Hardware
181	File is in use (<code>_ecFILE_IN_USE</code>)	File is in use.	If problem persists, replace controller or memory unit if the controller has one	Hardware

Code	Error	Cause	What to do	Where to look?
182	Attempting to store too many files (_ecTOO_MANY_FILES)	Attempting to store too many files.	If problem persists, replace controller or memory unit if the controller has one	Hardware
183	File has the wrong type (_ecFILE_TYPE_INCORRECT)	File has the wrong type.	If problem persists, replace controller or memory unit if the controller has one	Hardware
184	Too many files open (_ecTOO_MANY_FILES_OPEN)	Too many files open at once.	If problem persists, replace controller or memory unit if the controller has one	Hardware
185	Problems writing to file (_ecFILE_WRITE_INVALID)	Problems writing to file in flash.	If problem persists, replace controller or memory unit if the controller has one	Hardware
186	Problems reading from file (_ecFILE_READ_INVALID)	Problems reading from file in flash.	If problem persists, replace controller or memory unit if the controller has one	Hardware
188	Unable to assign software resource (_ecRESOURCE_UNAVAILABLE)	Unable to assign software resource.	If problem persists, replace controller or memory unit if the controller has one	Hardware
189	Unrecognized index of object (_ecINVALID_OBJECT_INDEX)	Invalid Object Dictionary index. The specified object does not exist in the object dictionary of the target device	Amend Mint program or PLC application	Mint program
190	Sub-index out of range for object (_ecINVALID_OBJECT_SUBINDEX)	Invalid Object Dictionary subindex. The specified sub-index of the object does not exist in the object dictionary of the target device	Amend Mint program or PLC application	Mint program
194	Failed to receive reply in time (_ecEPL_TIMEOUT)	Failed to receive a reply in time.	Check DCF file (create a new one if necessary). Close Mint Machine Centre if in use. Check EPL hardware connections. Try to ensure all redirected Mint calls are in a single program task.	Mint Program / Hardware
195	Axis will not accept remote commands (_ecAXIS_NOT_IN_REMOTE_MODE)	Axis will not accept remote commands. This can occur if axis PDOs are not operational (see REMOTEPDOVALID), axis PDOs are not yet ready (see AXISSTATUSWORD), or CONTROLREFSOURCE and/or CONTROLREFSOURCESTARTUP is not set to 1 (_crsRT_ETHERNET_402).	Amend Mint Program. Ensure the "doInitialiseEPL" routine from the Mint library is included. Ensure all remote axes are configured to startup in Real time Ethernet mode	Mint Program / Configuration

Code	Error	Cause	What to do	Where to look?
196	System must be disabled (_ecSYSTEM_ENABLED)	This error occurs when attempting to use the command window or a program to set a parameter that is defined by the controller's device configuration file (.CMCF / .DCF). The .CMCF / .DCF defines parameters relating to axis configuration, including the type (e.g. servo / stepper), demand output and feedback input.	Use the System Config Wizard to make changes to the axis configuration.	Configuration
197	No position encoder has been assigned (_ecINVALID_POS_ENCODER)	No position encoder has been assigned.	Use AXISPOSENCODER to specify a position encoder	Configuration
198	No velocity encoder has been assigned (_ecINVALID_VEL_ENCODER)	No velocity encoder has been assigned.	Use AXISVELENCODER to specify a position encoder	Configuration
199	No DAC has been assigned (_ecINVALID_DAC)	No DAC has been assigned. A servo axis (using an analog drive) has been configured but a DAC channel has not been assigned to use with this axis	Correct configuration in DCF file	Configuration
200	No pulse/dir output has been assigned (_ecINVALID_PDOU_TPUT)	A stepper axis has been configured but the associated step and direction output channel has not been specified	Correct configuration in DCF file	Configuration
201	A redirect call is already in progress (_ecREDIRECT_IN_PROGRESS)	A redirect call is already in progress.	Check the Mint program is not making redirected calls via multiple tasks. Close Mint Machine Centre if it's in use	Mint Program
202	Invalid Object Dictionary access (_ecINVALID_OBJECT_ACCESS)	Invalid Object Dictionary access.	Correct configuration / Mint Program	Configuration
203	Move is not supported by remote profiler (_ecMOTION_TYPE_NOT_SUPPORTED)	Move is not supported by remote profiler. The controller has attempted to issue a move type that is not supported by the remote drive	Use an alternative (supported) move type. If necessary, the remote axis may need to be configured as manager profiled rather than controlled node profiled (e.g. Cyclic Sync Position instead of Profiled Position)	Mint Program/ Configuration
204	Unable to pend event (_ecUNABLE_TO_PENDING_EVENT)	On older firmware versions, this error will occur if DPREVENT is used while there is still an event pending from its previous use.	Check Mint program. Use EVENTPENDING to check for the presence of a pending event. More recent firmware versions handle multiple calls to DPREVENT; see DPR Event: DPR .	Mint Program
205	Update rate not compatible with profiler (_ecINCOMPATIBLE_UPDATE_RATES)	Update rate not compatible with profiler.	Amend DCF configuration file	Configuration

Code	Error	Cause	What to do	Where to look?
206	Axis is not in a frame (<code>_ecAXIS_NOT_IN_A_FRAME</code>)	Axis is not in a frame. Ensure the axes being used for coordinated moves are all manager profiled	Amend DCF configuration file	Mint Program
207	Axes are not all in the same frame (<code>_ecAXES_NOT_IN_SAME_FRAME</code>)	This error occurs if the master axis used in a multi-axis move is changed. For example, issuing <code>VECTORR(0,1,2) = 100,200,300</code> followed by <code>VECTORR(1,0,2) = 50,100,150</code> causes the error because the first axis in the statements (the master axis for the move) has changed from 0 to 1. To avoid this error, carefully list each axis in order when issuing a multi-axis command such as <code>CIRCLER</code> , <code>HELIXR</code> or <code>VECTORR</code> , together with a value for each axis, even if it is zero.	Amend Mint program	Mint Program
213	Bank specified out of range (<code>_ecINVALID_BANK</code>)	Bank parameter is out of range. The program has tried to access a bank that has not been defined (e.g. <code>OUT(3) = 24</code> would cause this error if bank 3 did not exist)	Check Mint Program and Configuration File	Mint Program / Configuration
218	Motor brake is engaged (<code>_ecMOTOR_BRAKE_ENGAGED</code>)	Cannot execute a move while the motor brake is engaged.	Check Mint Program and Configuration File. When using automatic brake control, read <code>MOTORBRAKESTATUS</code> to determine the state of the brake output before attempting to execute the move. If using manual brake control, set <code>MOTORBRAKE</code> to 0 to disengage the brake before attempting to execute a move. Note! <code>MOTORBRAKE</code> must always be used with great care - see <code>MOTORBRAKE</code> for details.	Mint Program
219	Capture not running (<code>_ecCAPTURE_NOT_IN_PROGRESS</code>)	This error occurs if <code>CAPTURETRIGGER</code> is issued when a capture is not running.	Check capture is armed and waiting to be triggered before issuing <code>Capturetrigger</code>	Mint Program
220	Capture not waiting for trigger (<code>_ecCAPTURE_NOT_WAITING_FOR_TRIGGER</code>)	This error occurs if <code>CAPTURETRIGGER</code> is issued when the capture in progress does not require a trigger (i.e. pre-triggered capture is not being used).	Amend Mint program	Mint Program
222	The data cannot be mapped into the PDO (<code>_ecPDO_MAPPING_ERROR</code>)	The data object(s) cannot be mapped into the PDO, as either the object is not PDO mappable or the number and length of objects to be mapped is too great.	Check DCF file	Configuration

Code	Error	Cause	What to do	Where to look?
223	The data cannot fit into an ICM telegram (<code>_ecICM_TELEGRAM_OVERFLOW</code>)	The data cannot fit into an ICM telegram.	If a host application is in use and <code>doMultipleCommands</code> is used, then reduce the number of encapsulated calls	Host application
225	Warning during parameter application (<code>_ecPARAM_APPLICATION_WARNING</code>)	Parameter application warning. Occurs when downloading a parameter table to an e100 drive, if a parameter in the table was not supported by the drive or that instance of the parameter did not exist.	Check parameter table. This error occurs when either: <ul style="list-style-type: none"> • The argument list of a parameter update contains more than 2 parameters. • The value list of a parameter update contains more than 1 parameter. • The argument list of a parameter update contains the wrong number of parameters. • The type of the value is incorrect. • The parameter table generated by one product (e.g. MotiFlex e100 with resolver option) has been downloaded to a differently specified product (e.g. MotiFlex e100 with no option). 	Configuration
234	Power ready configuration incorrect (<code>_ecPOWER_READY_CONFIG_WRONG</code>)	Occurs when an attempt is made to assign the <code>POWERREADYINPUT / POWERREADYOUTPUT</code> to an input/output with an incorrect configuration (e.g. <code>INPUTMODE, INPUTACTIVELEVEL / OUTPUTACTIVELEVEL</code>). Also occurs if a subsequent attempt is made to alter the configuration of an input/output that has already been assigned as the <code>POWERREADYINPUT / POWERREADYOUTPUT</code> .	Check Mint Program and Configuration File	Mint Program / Configuration
236	Axis is stopping, cannot load move (<code>_ecSTOP_IN_PROGRESS</code>)	This error will be returned if an attempt is made to issue (load) another moves when the axis is stopping. This can occur is a <code>CANCEL</code> or <code>STOP</code> is issued whilst the axis is stopping or processing a <code>CANCEL</code> already, so be aware it does not just apply to moves.	Amend Mint program. The axis must be idle before another move can be issued - use <code>PAUSE IDLE (0)</code> to check for this condition	Mint program
246	Event not present/installed (<code>_ecEVENT_NOT_PRESENT</code>)	Event not present/installed	Amend Mint program.	Mint program
247	Event not supported (<code>_ecEVENT_NOT_SUPPORTED</code>)	Event not supported	Amend Mint program.	Mint program

Code	Error	Cause	What to do	Where to look?
251	Channel is mapped (<code>_ecCHANNEL_IS_MAPPED</code>)	This error will be returned if an attempt is made to set an analog output (DAC) when the output value is already mapped to (being controlled by) an enabled process data object PDO.	Check Mint program or Parameter file.	Mint Program / Configuration
252	Network error occurred during access (<code>_ecMBC_NETWORK_ERROR</code>)	This Modbus error corresponds to Modbus exception code -1 and will be returned if any of the socket operations failed. This can happen if a server does not exist or a TCP connection is closed during a transaction. A response time-out will also cause this error.	Check operation of the remote Modbus TCP device. Try increasing the Modbus TCP timeout for the client via the Configuration page in Workbench. Check Ethernet connections	Configuration / Hardware
253	Parameter error occurred during access (<code>_ecMBC_PARAMETER_ERROR</code>)	This Modbus error corresponds to Modbus exception code -2 and occurs if an invalid parameter is supplied to the read or write function. For example, issuing a Modbus command and specifying a server ID that does not exist.	Check configuration file.	Configuration
254	Protocol error occurred during access (<code>_ecMBC_PROTOCOL_ERROR</code>)	This Modbus error corresponds to Modbus exception code -3 and occurs if the Modbus server returns an unexpected result. This can happen if the server is not a Modbus server or there is a problem with the Modbus implementation on the server.	Check Ethernet connections. Check operation of remote Modbus device	Hardware
255	Illegal function exception (<code>_ecMBC_ILLEGAL_FUNCTION</code>)	This Modbus error corresponds to Modbus exception code 1 and occurs if the function code received in the query is not recognized or allowed by slave.	Check which Modbus functions are supported by the remote device and amend Mint program to only use the allowed commands	Mint program
256	Illegal data address exception (<code>_ecMBC_ILLEGAL_ADDRESS</code>)	This Modbus error corresponds to Modbus exception code 2 and occurs if the data address of some or all the required entities are not allowed or do not exist in the slave.	Amend Mint program so it does not address invalid Modbus registers	Mint program
257	Illegal data value exception (<code>_ecMBC_ILLEGAL_VALUE</code>)	This Modbus error corresponds to Modbus exception code 3 and occurs if the value is not accepted by the slave.	Amend Mint program so it does attempt to write an out of range Modbus register address on the server device	Mint program
258	Slave device failure exception (<code>_ecMBC_SLAVE_FAILURE</code>)	This Modbus error corresponds to Modbus exception code 4 and indicates that an unrecoverable error occurred while the slave was attempting to perform the requested action.	Check Ethernet connections. Check operation of remote Modbus device	Hardware
Code	Error	Cause	What to do	Where to look?

259	General Modbus client error (<code>_ecMBC_GENERAL</code>)	This error occurs if any other type of Modbus error (exception codes -5, -4, 5, 8, Ah, Bh) occurs.	Check configuration file. For example, a state error or function not supported error. A state error (exception -4) should not occur in normal operation. A function not supported error (exception -5) cannot occur if Mint WorkBench is used to configure Modbus, but if the configuration was setup from the network (via objects 4156 and 4157) then an invalid function code could be set. Currently only functions 3 and 4 (read) and 16 (write) are supported.	Configuration
260	Slave device busy exception (<code>_ecMBC_SLAVE_BUSY</code>)	This Modbus error corresponds to Modbus exception code 6 and occurs if the slave is still busy processing a previous command.	Amend Mint program to reduce the amount of Modbus calls being made to the server device	Mint program

Parameter errors

These errors are assigned unique numbers in the range **6000-6999**.

Code	Error	Cause	What to do	Where to look?
6001	Parameter value out of range (_ecPARAM_VALUE_OUT_OF_RANGE)	The value supplied for the parameter is out of range.	The value you have entered or that is stored in the parameter file (.ptx) you have loaded does not fit within the limits specified by the drive firmware version loaded. If needed update the firmware first then load the parameter file. To do this in Mint Workbench go to Tools > Download Firmware > Select and download firmware file. Once complete try again	Firmware or Parameter file
6004	Parameter definition has changed (_ecPARAM_DEFINITION_ERROR)	The specified parameter exists, but its definition has changed.	Check the latest documentation for the parameter.	Parameter file or user action

Program run-time errors

These errors are assigned unique numbers in the range **3000-3999**. These errors are caused by the non-specialized general programming keywords. The accompanying **_ec** error codes can be used in error handling routines to test for particular errors, for example:

If ERRCODE = `_ecSTRING_OVERFLOW` Then...

See [Error Event: ONERROR](#) for other examples.

Code	Error	Cause	What to do	Where to look?
3100	Division by zero (<code>_ecDIVIDE_BY_ZERO</code>)	This occurs when the denominator of a division is zero.	Rerun program and check Mint Workbench's Terminal window for the location of the error, correct it then redownload Mint Program	Mint Code
3101	Invalid argument (<code>_ecINVALID_ARGUMENT</code>)	This occurs when an invalid argument is supplied to an intrinsic function, for example: Dim a = -50 Print Log(a)		
3102	Stack overflow (<code>_ecSTACK_OVERFLOW</code>)	This usually occurs when a subroutine or function is called that allocates an array too large to fit in the remaining memory, or when a recursive function does not terminate before the internal stacks run out of free memory. It might also occur if an expression is too complex, or when a string is pushed onto the stack (either directly, from casting a value to string, converting a string to a reference, or using ErrStr).	This error is 'fatal' and will not call the ONERROR event. So you will need to DeBug the Mint Program manually to find the location of the error in the program	Mint Code
3103	Index out of range (<code>_ecINDEX_OUT_OF_RANGE</code>)	This occurs when an index outside the range of the declaration is used. An example of this is: Dim a(-5 To 5) : a(6)=0 This error is 'fatal' and will not call the ONERROR event.	Rerun program and check Mint Workbench's Terminal window for the location of the error, correct it then redownload Mint Program	Mint Code
3104	Integer out of range (<code>_ecINTEGER_OUT_OF_RANGE</code>)	This occurs when a floating-point value is cast to an integer using Int() or Round() , but the value is outside the range -2147483648 to 2147483647.		
3105	Bank out of range (<code>_ecBANK_OUT_OF_RANGE</code>)	This occurs when the bank is set to a value outside the range of <u>banks</u> supported by the controller.		
3106	Bus out of range (<code>_ecBUS_OUT_OF_RANGE</code>)	This occurs when the bus is set to a value outside the range of <u>buses</u> supported by the controller.		
3107	Axis out of range (<code>_ecAXIS_OUT_OF_RANGE</code>)	This occurs when a specified axis number is outside the range of <u>axes</u> supported by the controller.		
3108	Stack underflow (<code>_ecSTACK_UNDERFLOW</code>)	This occurs when a Return statement is encountered that was not called with GoSub (obsolete). This error is 'fatal' and will not call the ONERROR event.		
3109	String overflow (<code>_ecSTRING_OVERFLOW</code>)	This occurs when a string is assigned more characters than its declared length. The default length for a string variable is 64 characters, unless a different value is specified using a Dim statement.		

Code	Error	Cause	What to do	Where to look?
3110	Error registers not enabled (<code>_ecERROR_REGE_NOT_PRI MED</code>)	The Erl , Err , ErrAxis , ErrStr keywords are not normally supported on products with Ethernet but are not enabled.	If required, these keywords must be enabled by setting the run-time error registers (ErrorRegs) option to 2, which will prevent this error. Rerun program	Mint Code
3111	Evaluation error (<code>_ecEVAL_ERROR</code>)	This occurs when the Eval function cannot evaluate the supplied expression.	Rerun program and check Mint Workbench's Terminal window for the location of the error, correct it then redownload Mint Program	Mint Code
3112	MVM out of memory (<code>_ecMVM_OUT_OF_MEMORY</code>)	There is not enough memory to initialize the Mint program. Try reducing the size of the program by removing code and variables.	Rerun program and check Mint Workbench's Terminal window for the location of the error, correct it then redownload Mint Program	Mint Code