4-3-2. Alarm Number Table

[Hex] indicates hexadecimal notation.

No.	Name	Description/Alarm Code	Corrective Action
01	Power supply unit error	An error occurred with the power supply unit. 0000XYZZ X = Alarm number 0: DC voltage alarm 1: Undefined 2: Control power error 3: Control status error 4: Regeneration overload 5: Heat sink overheat 6: CPU error 7: Spare Y = Power supply unit status bit 3 = 1: An alarm occurred with the power supply unit bit 2 = 1: DC power is being supplied bit 1 = 1: OPRON input is close bit 0 = 1: PWON input is close ZZ = Alarm data If X (alarm number) = 0 Indicates DC voltage by 7F[Hex] = 500 V. If X (alarm number) = 1 Indicates AC voltage by 40[Hex] = 200 V. If X (alarm number) = 2 1: +5 V voltage error 2: +12 V voltage error 3: -12 V voltage error If X (alarm number) = 3 1: Over current in power line 2: Power device error 3: Converter bridge short-circuit 4: Regeneration error If X (alarm number) = 4 Not defined If X (alarm number) = 5 Not defined If X (alarm number) = 6 Not defined	Check the source voltage. Check the operation conditions. Check the error No. of MPS/MPR unit. Change the MPS/MPR unit. Change the MIV unit.
02	Converter link error	An error occurred with the converter link and monitoring of the power supply unit was disabled. X00000YY X = 0 Communication error YY = Communication status X = 1 Time out error (communication is interrupted) YY = 0	Change the converter link cable. Change the MIV unit. Change the MPS/MPR unit.

No.	Name	Description/Alarm Code	Corrective Action
03	Inverter DC bus voltage error	DC bus voltage of the inverter unit raised or lowered excessively. XXXXYYYY XXXX = Over voltage value (Displayed in hexadecimal: 7FE0[Hex] = 500 volts) YYYY = Under voltage value (Displayed in hexadecimal: 7FE0[Hex] = 500 volts)	Check the source voltage. Change the MIV unit. Change the MPS/MPR unit.
04	Motor power line over current	The inverter unit detected over current through the motor power line. XXXXYYYY XXXX = Detected U-phase current value (Displayed in hexadecimal: 3FFF[Hex] = Max. momentary current) YYYY = Detected V-phase current value (Displayed in hexadecimal: 3FFF[Hex] = Max. momentary current)	Change the motor. Change the MIV unit.
05	Inverter overheat	Inverter unit temperature raised excessively. XXXXXXXX = 1 (fixed)	Check the operation conditions. Change the MIV unit.
06	Inverter overload (electronic thermal relay)	The overload protection function was activated since the inverter load exceeded the specified value. XXXXYYYY XXXX = Y of the protection curve at the detection of overload YYYY = Cumulative data at the detection of overload	Check the operation conditions. Reduce the cutting load torque. Check the servo data file. Change the MIV unit.
07	Commercial power source error	Input voltage to the power supply unit raised or lowered excessively. XXXXXXXX = Voltage value at the detection of error. (Displayed in hexadecimal: 01[Hex] = 0 volt) (Displayed in hexadecimal: 80[Hex] = 400 volts)	Check the source voltage. Change the diameter and length of the power cable. Change the MPS/MPR unit.
08	Not used (Inverter version error)		

No.	Name	Description/Alarm Code	Corrective Action
09	Motor winding changeover error	An error occurred at the changeover of winding. XXXXXXXX 00000001[Hex]: Detection of ON at the LOW side MC 00000002[Hex]: Detection of ON at the HIGH side MC 00000003[Hex]: Detection of ON of both LOW side and HIGH side MC 00000004[Hex]: Winding changeover time out 10100001[Hex]: Servo data file error	Change the winding changeover magnet switch.
10	Encoder communication error	An error occurred in communication through the encoder link. XXYYZZZZ XX = FF[Hex] (fixed) YY = 00[Hex]: Detection of error at motor attached encoder. 01[Hex]: Detection of error at shaft attached encoder. 02[Hex]: Detection of error at separately installed encoder. 03[Hex]: Detection of error at absolute scale. ZZZZ = Encoder link status at the detection of error bit 15 = 1: Error in the communication with the separately installed encoder bit 14 = 1: Error in the communication with the absolute scale 2 bit 13 = 1: Error in the communication with the shaft attached encoder or absolute scale bit 12 = 1: Error in the communication with the motor attached encoder bit 11 = 1: AT mode send loop error	Check the encoder of the corresponding axis. Change the encoder link cable. Change the MIV unit.

No.	Name	Description/Alarm Code	Corrective Action
10	Encoder communication error	bit 10 = 1: Receive IF section data number over error bit 9: Undefined bit 8: Undefined bit 7: Undefined bit 6 = 1: Modulation code error bit 5 = 1: CRC error bit 4 = 1: Format error bit 3 = 1: Double send error bit 2 = 1: Double receive error bit 1 = 1: Parity error bit 0 = 1: Timeout error	Check the encoder of the corresponding axis. Change the encoder link cable. Change the MIV unit.
11	Encoder error	The motor attached encoder failed to detect the position data. XXYYZZZZ XX = Error code of encoder YY = Detailed status of encoder ZZZZ = Multi-turn position data If the multi-turn position data exceeded the allowable turn range: XX = 0 (fixed) YY = 1 (fixed) ZZZZ = Multi-turn position data	Change the motor attached encoder.
12	Encoder initialization error	An error occurred in the initialization processing of the motor attached encoder. XXYYZZZZ XX = Initialization processing sequence number at the detection of error 0: Reset 1: Network address setting 2: Basic communication information request 3: Communication version change 4: Device information acquire 5: Parameter change 6: AT mode start YY = Error contents 0: Communication error 1: Send start time-over error 2: Send finish time-over error 3: Receive finish time-over error 4: Response address error 5: Response code error 6: Parameter error	Change the motor attached encoder. Change the encoder link cable. Change the MIV unit.

No.	Name	Description/Alarm Code	Corrective Action
12	Encoder initialization error	ZZZZ = Data If YY = 0 Encoder link status at the detection of error If YY = 1, 2, 3 Sent frame information If YY = 4 Network address of the device that gave response If YY = 5 Received frame information If YY = 6 The number showing the parameter that detected the error. 1: Insufficient number of received parameters 2: Incompatibility of basic communication information 3: Incompatibility of multi-turn detection range	Change the motor attached encoder. Change the encoder link cable. Change the MIV unit.
13	Shaft attached encoder error	The shaft attached encoder failed to detect the position data. XXYYZZZZ Format is the same as explained in alarm No.11.	Change the shaft attached encoder.
14	Shaft attached encoder initialization error	An error occurred in the initialization processing of the shaft attached encoder. XXYYZZZZ Format is the same as explained in alarm No. 12	Change the shaft attached encoder. Change the encoder link cable. Change the MIV unit.
15	Absolute scale error	The absolute scale failed to detect the position data. XXYYZZZZ Format is the same as explained in alarm No. 11.	Change the absolute scale.
16	Absolute scale initialization error	An error occurred in the initialization processing of the absolute scale. XXYYZZZZ Format is the same as explained in alarm No. 12	Change the absolute scale. Change the encoder link cable. Change the MIV unit.

No.	Name	Description/Alarm Code	Corrective Action
17	Magnetic encoder error	The magnetic encoder failed to detect the position data, or mismatch occurred between the magnetic encoder gear tooth number and servo data file setting value. XXXXYYYY XXXX = Contents of error 000A [Hex] = A-phase voltage error 000B [Hex] = B-phase voltage error 000C [Hex] = Magnetic encoder pulse signal error Other = Servo data file setting value at magnetic encoder count-over (PG gear tooth number × 4) YYYY = Error data If XXXX = 000A [Hex]: A-phase voltage value If XXXX = 000B [Hex]: B-phase voltage value If XXXX = 000C [Hex]: 0 (fixed) In other cases: Magnetic encoder count value	Check the servo data file. Change the magnetic encoder. Change the magnetic encoder cable.
18	Resolver error	The resolver failed to detect the position data. XXXXXXXX = 1 (fixed)	Change the resolver. Change the resolver cable. Change the MIV unit.
19	PG count-over	Mismatch between the 1-turn count value of the magnetic encoder and the setting value in the servo data file. XXXXYYYY XXXX = Servo data file setting value (PG 1-turn count value) YYYY = Count value	Check the servo data file. Change the magnetic encoder. Change the magnetic encoder cable.
20	Motor overheat	Motor temperature raised excessively. XXXXYYYY XXXX = 0 (fixed) If YYYY = 0010 [Hex] Overheat If YYYY = 0011 [Hex] Motor overheat (ICB1 only) If YYYY = 0012 [Hex] Encoder overheat (ICB1 only) If YYYY = 0013 [Hex] Overheat of motor and encoder (ICB1 only)	Check the operation conditions. Change the motor of the corresponding axis. Change the motor attached encoder. Change the encoder link cable.

No.	Name	Description/Alarm Code	Corrective Action
21	Servo link communication error	A communication error occurred with the servo link and commands from the NC cannot be received. XXXXYYYY XXXX = 0 (fixed) YYYY = Bits indicate the details of communication error. (Servo link error status at the detection of error) bit 15 = 1: Second B buffer error bit 14 = 1: Second A buffer error bit 13 = 1: First B buffer error bit 12 = 1: First A buffer error bit 11 = 1: MT buffer error bit 10 = 1: Relay processing error bit 9 = 1: Receive interface section data number error bit 8 = 1: Wire breakage error bit 7 = 1: Address pointer error bit 6 = 1: Modulation code error bit 5 = 1: CRC error bit 4 = 1: Format error bit 3 = 1: Double send error bit 2 = 1: Double receive error bit 1 = 1: Parity error bit 0 = 1: Time-out error	Change the servo link cable. Change the MIV unit. Change the FCP board.
22	Servo link cable breakage	The servo link cable was broken and commands from the NC cannot be received. XXXXYYYY XXXX = Wire breakage position 0000[Hex]: Immediately upstream the corresponding unit 8000[Hex]: Upstream the corresponding unit YYYY = Servo link error status at the detection of error	Change the servo link cable. Change the MIV unit. Change the FCP board.
23	Servo link protocol error	Format or timing of the data sent from the NC to the inverter unit is erroneous. XXXXXXXX 1: A-buffer software synchronization error 2: A-buffer format code error 3: B-buffer software synchronization error 4: B-buffer format code error 5: B-buffer block number error	Check the NC software. Change the MIV unit. Change the FCP board.

No.	Name	Description/Alarm Code	Corrective Action
24	Servo data error	The servo data sent from the NC during initialization or operation cannot be processed. XXXXYYZZ XXXX = ID number of the error detected data [Hex] YY = Set number of the error detected data ZZ = Details of error 1: Outside the setting range 2: Setting timing error 3: Data not transmitted 4: Calculation error 5: Other	Check the servo data file. Check the NC software. Change the MIV unit.
25	Command error	Contents of the positioning commands are incorrect. Error in set/mode/coordinate system change XXXXYYYY XXXX 0010[Hex]: Positioning mode Point number over 0011[Hex]: Positioning mode Negative command value 0012[Hex]: Positioning mode Command value > 1 turn of control objective 0013[Hex]: Positioning mode Positioning point table not transmitted 0014[Hex]: Positioning mode Not rotary axis 0015[Hex]: Positioning mode Command format is not point. 0016[Hex]: Positioning mode Positioning sub mode error 0021[Hex]: Set changeover designation Set number over 0022[Hex]: Mode Undefined mode 0023[Hex]: Mode Positioning/tool path mode conditions 0024[Hex]: Coordinate system Coordinate system designation error	Check the servo data file. Check the NC software. Change the MIV unit.

No.	Name	Description/Alarm Code	Corrective Action
25	Command error	0030[Hex]: Undefined bit data of the servo link A-buffer is turned ON. 0031[Hex]: Undefined bit data of the servo link B-buffer is turned ON. 0040[Hex]: Mode was changed to AT mode although time synchronization instruction has not been received. YYYY = Error data If XXXX is 0010 - 0016 [Hex], it indicates the positioning sub mode. 0: Program mode 1: Search mode 2: Pulse handle mode 3: Teaching mode	Check the servo data file. Check the NC software. Change the MIV unit.
26	CON speed over	An incremental value of position command (SRCOND) sent from the NC to the inverter unit exceeded the allowable value. XXXXXXXX = Specified CON velocity 2^-16 [pr/Tp] The following data indicates special cases. 1: An error occurred in preliminary check since the value is too large. 2: The internal position command value (SRCON) exceeded the absolute stroke value of the encoder. (Only for a linear axis)	Check the servo data file. Check the NC software.
27	Speed command over	The speed command value exceeded the allowable value. XXXXXXXX = Specified velocity command value. 2^-32 [mrev/Tv]	Reduce inertia and friction resistance in mechanical system. Change the MIV unit. Change the motor. Check the source voltage.
28	DIFF over	In the position control, position error is excessively large. XXXXXXXX = Detected position error 2^-16 [pr]	Reduce inertia and friction resistance in mechanical system. Change the MIV unit. Change the motor.

No.	Name	Description/Alarm Code	Corrective Action
29	APA speed over	Feedrate of an axis is abnormally fast in comparison to the rapid feedrate of that axis, or detected values changed abnormally due to the failure of the position encoder. XXXXXXXX = Detected APA velocity 2^-16 [pr/Tf] The following data indicates special cases. 1: In a linear axis, stroke was exceeded. 2: In a rotary axis, stroke (360°) was exceeded. 3: In an axis with a limited stroke, its stroke was exceeded.	Change the MIV unit. In the case of BL motor: Change the motor attached encoder. Change the encoder link cable. In the case of VAC motor: Change the magnetic encoder. Change the magnetic encoder cable.
30	Full-closed loop error	Error amount between the detected position data by the full-closed loop position encoder and the motor attached position encoder exceeded the allowable value. XXXXXXXX = Number of error detection times	Execute full-closed loop synthesized offset value. Change the absolute scale or shaft attached position encoder. Reduce lost motion amount in the drive system.
31	Speed over	Actual motor speed is excessively high. XXXXXXXX = Detected speed 2^-32 [mrev/Tv]	Change the MIV unit. In the case of BL motor: Change the motor attached encoder. Change the encoder link cable. In the case of VAC motor: Change the magnetic encoder. Change the magnetic encoder cable.

No.	Name	Description/Alarm Code	Corrective Action
32	Speed deviation too large	Deviation between the command speed and actual speed was excessively large. XXXXYYYY XXXX = Detected torque (sum of torque in 3.2-msec period) ±2^-12 [MAXTRQ] If Tv = 0.4 msec 7FFF[Hex] corresponds to the maximum momentary torque. If Tv = 0.8 msec. 3FFF[Hex] corresponds to the maximum momentary torque. YYYY = Detected acceleration rate (average in 3.2-msec period) ±2^-16 [vr/3.2 ms/3.2 ms] ≒0.1 [rpm/ms] If Error data is "0" due to underflow. XXXXYYYY = 00000001 [Hex]	Reduce cutting torque Change the MIV unit. Change the motor.
33	Collision detection	The NC torque limiter function detected the interference of an axis from the relationship of "motor output = motor acceleration rate". XXXXYYYY XXXX = Detected torque (sum of torque in 3.2-msec period) ±2^-12 [MAXTRQ] If Tv = 0.4 msec 7FFF[Hex] corresponds to the maximum momentary torque. If Tv = 0.8 msec. 3FFF[Hex] corresponds to the maximum momentary torque. YYYY = Detected acceleration rate (average in 3.2-msec period) ±2^-16 [vr/3.2 ms/3.2 ms] ≒0.1 [rpm/ms]	Eliminate the interference in the mechanical drive system. Check the setting value of NC torque limiter. Change the motor attached encoder. Change the MIV unit. Change the motor.
34	Emergency stop time over	At the activation of an emergency stop function, the machine could not stop within the preset time. XXXXXXXX 1: Emergency stop time over 2: Deceleration time over in emergency stop 3: Deceleration time over in alarm stop	Check the servo data file. Check the NC software. Change the MIV unit. Change the motor.
35	Not used (servo axis belt breakage)		

No.	Name	Description/Alarm Code	Corrective Action
36	Separately installed encoder initialization error	An error occurred in the initialization processing of the separately installed encoder. XXYYZZZZ Format is the same as explained in alarm No. 12.	Change the separately installed encoder. Change the encoder link cable. Change the MIV unit.
37	APA error	Calculation error occurred during the calculation of APA. XXXXXXXX 1: Linear axis division stroke over 2: Semi-closed loop position data conversion error ([pr] → [pf]) 3: Underflow in synthesizing 4: Overflow in synthesizing 5: Hybrid control input overflow 6: Hybrid control initialization overflow	Change the motor attached position encoder, and the shaft attached position encoder or the absolute scale. Check the servo data file. Change the MIV unit.
38	Motor overload (electronic thermal relay)	The overload protection function was activated since the motor load exceeded the specified value. XXXXYYYY XXXX = γ of the protection curve at the detection of overload YYYY = Cumulative data at the detection of overload	Check the operation conditions. Reduce the cutting load torque. Check the servo data file. Change the MIV unit. Change the motor.

4-3-3. Warning Number Table

[Hex] indicates hexadecimal notation.

No.	Name	Description/Alarm Code	Corrective Action
01	Power supply unit error	There is a possibility that the power supply unit is faulty. 0000XYZZ X = Alarm number 0: DC voltage alarm 1: Undefined 2: Control power error 3: Control status error 4: Regeneration overload 5: Heat sink overheat 6: CPU error 7: Spare Y = Power supply unit status bit 3 = 1: Undefined bit 2 = 1: DC power is being supplied bit 1 = 1: OPRON input is close bit 0 = 1: PWON input is close ZZ = Alarm data If X (alarm number) = 0 Indicates DC voltage by 7F [Hex] = 500 V If X (alarm number) = 1 Indicates AC voltage by 40 [Hex] = 200 V If X (alarm number) = 2 1: +5 V voltage error 2: +12 V voltage error 3: –12 V voltage error If X (alarm number) = 3 1: Over current in power line 2: Power device error 3: Converter bridge short-circuit 4: Regeneration error If X (alarm number) = 4 Not defined If X (alarm number) = 5 Not defined If X (alarm number) = 6 Not defined	Check the source voltage. Check the operation conditions. Check the MVI unit. Check the MPS/MPR unit.
05	Inverter overheat	There is a possibility of overheat of inverter. XXXXXXXX = 1 (fixed)	Check the operation conditions. Check the MVI unit.

No.	Name	Description/Alarm Code	Corrective Action
07	Commercial power source error	There is a possibility that the input voltage is incorrect. XXXXXXXX = Voltage value at the detection of error. (Displayed in hexadecimal: 01[Hex] = 0 volts) (Displayed in hexadecimal: 80[Hex] = 400 volts)	Check the source voltage. Check the power cable. Check the MPS/MPR unit.
20	Motor overheat	There is a possibility of overheat of motor. XXXXXXXX = 1 (fixed)	Check the operation conditions. Check the VAC motor. Check the BL motor. Check the motor attached encoder.
25	Command error	Processing of the command is impossible. XXXXYYYY XXXX = 0 (fixed) YYYY 0001[Hex]: Undefined data ID No. (data communication interface) 0002[Hex]: Address/address pointer mismatch (data communication interface) 0003[Hex]: Specified SDF set number error (data communication interface) 0004[Hex]: Communication/miscellaneous code error (data communication interface) 0005[Hex]: Size error (data communication interface) 0006[Hex]: Write disable (data communication interface) 0007[Hex]: Outside the limit range (data communication interface) 0100[Hex]: Deceleration distance over (positioning)	Check the servo data file. Check the NC software. Check the MIV unit.