

(5) Servo alarms

Number	Message	Contents
400	SERVO ALARM: n-TH AXIS OVER-LOAD	The n-th axis (axis 1-8) overload signal is on. Refer to diagnosis display No. 201 for details.
401	SERVO ALARM: n-TH AXIS VRDY OFF	The n-th axis (axis 1-8) servo amplifier READY signal (DRDY) went off. Refer to procedure of trouble shooting.
404	SERVO ALARM: n-TH AXIS VRDY ON	Even though the n-th axis (axis 1-8) READY signal (MCON) went off, the servo amplifier READY signal (DRDY) is still on. Or, when the power was turned on, DRDY went on even though MCON was off. Check that the servo interface module and servo amp are connected.
405	SERVO ALARM: (ZERO POINT RETURN FAULT)	Position control system fault. Due to an NC or servo system fault in the reference position return, there is the possibility that reference position return could not be executed correctly. Try again from the manual reference position return.
407	SERVO ALARM: EXCESS ERROR	The difference in synchronous axis position deviation exceeded the set value.
409	SERVO ALARM: n AXIS TORQUE ALM	Abnormal servo motor load has been detected. Alternatively, abnormal spindle motor load has been detected in Cs mode.
410	SERVO ALARM: n-TH AXIS - EXCESS ERROR	The position deviation value when the n-th axis (axis 1-8) stops is larger than the set value. Refer to procedure of trouble shooting.
411	SERVO ALARM: n-TH AXIS - EXCESS ERROR	The position deviation value when the n-th axis (axis 1-8) moves is larger than the set value. Refer to procedure of trouble shooting.
413	SERVO ALARM: n-th AXIS - LSI OVERFLOW	The contents of the error register for the n-th axis (axis 1-8) exceeded $\pm 2^{31}$ power. This error usually occurs as the result of an improperly set parameters.
414	SERVO ALARM: n-TH AXIS - DETECTION RELATED ERROR	N-th axis (axis 1-8) digital servo system fault. Refer to diagnosis display No. 200 and No.204 for details.
415	SERVO ALARM: n-TH AXIS - EXCESS SHIFT	A speed higher than 511875 units/s was attempted to be set in the n-th axis (axis 1-8). This error occurs as the result of improperly set CMR.
416	SERVO ALARM: n-TH AXIS - DISCONNECTION	Position detection system fault in the n-th axis (axis 1-8) pulse coder (disconnection alarm). Refer to diagnosis display No. 201 for details.
417	SERVO ALARM: n-TH AXIS - PARAMETER INCORRECT	This alarm occurs when the n-th axis (axis 1-8) is in one of the conditions listed below. (Digital servo system alarm) <ol style="list-style-type: none"> 1) The value set in Parameter No. 2020 (motor form) is out of the specified limit. 2) A proper value (111 or -111) is not set in parameter No.2022 (motor revolution direction). 3) Illegal data (a value below 0, etc.) was set in parameter No. 2023 (number of speed feedback pulses per motor revolution). 4) Illegal data (a value below 0, etc.) was set in parameter No. 2024 (number of position feedback pulses per motor revolution). 5) Parameters No. 2084 and No. 2085 (flexible field gear rate) have not been set. 6) A value outside the limit of {1 to the number of control axes} or a non-continuous value (Parameter 1023 (servo axis number) contains a value out of the range from 1 to the number of axes, or an isolated value (for example, 4 not preceded by 3).was set in parameter No. 1023 (servo axisnumber).

Number	Message	Contents
420	SERVO ALARM: n AXIS SYNC TORQUE (M series)	During simple synchronous control, the difference between the torque commands for the master and slave axes exceeded the value set in parameter No. 2031.
421	SERVO ALARM: n AXIS EXCESS ER (D)	The difference between the errors in the semi-closed loop and closed loop has become excessive during dual position feedback. Check the values of the dual position conversion coefficients in parameters No. 2078 and 2079.

● **Details of servo alarm No.414**

The details of servo alarm No. 414 are displayed in the diagnosis display (No. 200 and No.204) as shown below.

	#7	#6	#5	#4	#3	#2	#1	#0
200	OVL	LV	OVC	HCA	HVA	DCA	FBA	OFA

#7 (OVL) : An overload alarm is being generated.

#6 (LV) : A low voltage alarm is being generated in servo amp.

#5 (OVC) : A overcurrent alarm is being generated inside of digital servo.

#4 (HCA) : An abnormal current alarm is being generated in servo amp.

#3 (HVA) : An overvoltage alarm is being generated in servo amp.

#2 (DCA) : A regenerative discharge circuit alarm is being generated in servo amp.

#1 (FBA) : A disconnection alarm is being generated.

#0 (OFA) : An overflow alarm is being generated inside of digital servo.

	#7	#6	#5	#4	#3	#2	#1	#0
204		OFS	MCC	LDA	PMS			

#6 (OFS) : A current conversion error has occurred in the digital servo.

#5 (MCC) : A magnetic contactor contact in the servo amplifier has welded.

#4 (LDA) : The LED indicates that serial pulse coder C is defective

#3 (PMS) : A feedback pulse error has occurred because the feedback cable is defective.

● **Details of servo alarms No. 400 and No.416**

The details of servo alarms No. 400 and No. 416 are displayed in the diagnosis display (No. 201) as shown below.

	#7	#6	#5	#4	#3	#2	#1	#0
201	ALD			EXP				

When OVL equal 1 in diagnostic data No.200 (servo alarm No. 400 is being generated):

#7 (ALD) 0 : Motor overheating
1 : Amplifier overheating

When FBAL equal 1 in diagnostic data No.200 (servo alarm No. 416 is being generated):

ALD	EXP	Alarm details
1	0	Built-in pulse coder disconnection (hardware)
1	1	Separately installed pulse coder disconnection (hardware)
0	0	Pulse coder is not connected due to software.