(6) Servo alarms

Number	Meaning	Contents and actions
400	SERVO ALARM: 1, 2TH AXIS OVERLOAD	1–axis, 2–axis overload signal is on. Refer to diagnosis display No. 720 or 721 for details.
401	SERVO ALARM: 1, 2TH AXIS VRDY OFF	1–axis, 2–axis servo amplifier READY signal (DRDY) went off.
402	SERVO ALARM: 3, 4TH AXIS OVERLOAD	3–axis, 4–axis overload signal is on. Refer to diagnosis display No. 722 or 723 for details.
403	SERVO ALARM: 3, 4TH AXIS VRDY OFF	3–axis, 4–axis servo amplifier READY signal (DRDY) went off.
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 axis card and servo amplifierr are connected.
405	SERVO ALARM: ZERO POINT RE-TURN 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.
406	SERVO ALARM: 7, 8TH AXIS OVER LOAD 7, 8TH AXIS VRDY OFF	7–axis, 8–axis overload signal is on. Refer to diagnosis display No. 726 or 727 for details. 7–axis, 8–axis servo amplifier READY signal (DRDY) went off.
4n0	SERVO ALARM: n–TH AXIS – EX-CESS ERROR	The position deviation value when the n–th axis stops is larger than the set value. Note) Limit value must be set to parameter for each axis.
4n1	SERVO ALARM: n–TH AXIS – EX-CESS ERROR	The position deviation value when the n–th axis moves is larger than the set value. Note) Limit value must be set to parameter for each axis.
4n3	SERVO ALARM: n–th AXIS – LSI OVERFLOW	The contents of the error register for the n–th axis exceeded 2^{31} power. This error usually occurs as the result of an improperly set parameters.
4n4	SERVO ALARM: n–TH AXIS – DETECTION RELATED ERROR	N–th axis digital servo system fault. Refer to diagnosis display No. 720 and No.727 for details.
4n5	SERVO ALARM: n–TH AXIS – EX-CESS SHIFT	A speed higher than 4000000 units/s was attempted to be set in the n–th axis. This error occurs as the result of improperly set CMR.
4n6	SERVO ALARM: n–TH AXIS – DIS-CONNECTION	Position detection system fault in the n–th axis pulse coder (discon-nection alarm).
4n7	SERVO ALARM: n–TH AXIS – PA-RAMETER INCORRECT	This alarm occurs when the n–th axis is in one of the conditions listed below. (Digital servo system alarm) 1) The value set in Parameter No. 8n20 (motor form) is out of the specified limit. 2) A proper value (111 or –111) is not set in parameter No. 8n22 (motor revolution direction). 3) Illegal data (a value below 0, etc.) was set in parameter No. 8n23 (number of speed feedback pulses per motor revolution). 4) Illegal data (a value below 0, etc.) was set in parameter No. 8n24 (number of position feedback pulses per motor revolution). 5) Parameters No. 8n84 and No. 8n85 (flexible field gear rate) have not been set. 6) An axis selection parameter (from No. 269 to 274) is incorrect. 7) An overflow occurred during parameter computation.
490	SERVO ALARM: 5TH AXIS OVER LOAD	5–axis, 6–axis overload signal is on. Refer to diagnosis display No. 724 or 725 for details.

Number	Meaning	Contents and actions
491	SERVO ALARM: 5, 6TH VRDY OFF	5–axis, 6–axis servo amplifier READY signal (DRDY) went off.
494	SERVO ALARM: 5, 6TH AXIS VRDY ON	The axis card ready signal (MCON) for axes 5 and 6 is off, but the servo amplifier ready signal (DRDY) is not. Alternatively, when the power is applied, the DRDY is on, but the MCON is not. Ensure that the axis card and servo amplifier are connected.
495	SERVO ALARM: 5, 6TH AXIS ZERO POINT RETURN	This is a position control circuit error. It is likely that a return to the reference position failed because of an error in the NC or the servo system. Retry a return to the reference position.

NOTE

If an excessive spindle error alarm occurs during rigid tapping, the relevant alarm number for the tapping feed axis is displayed.

● **Details of servo alarm No.4n4**

The detailed descriptions of servo alarm number 4n4 are displayed with diagnosis numbers 720 to 727 in the sequence of axis numbers.

	#7	#6	#5	#4	#3	#2	#1	#0
720 to 727	OVL	LV	OVC	HCAL	HVA	DCAL	FBAL	OFAL

OVL : An overload alarm is being generated.
(This bit causes servo alarm No. 400, 402, 406, 490).

LV : A low voltage alarm is being generated in servo amp.
Check LED.

OVC : A overcurrent alarm is being generated inside of digital servo.

HCAL : An abnormal current alarm is being generated in servo amp.
Check LED.

HVAL : An overvoltage alarm is being generated in servo amp.
Check LED.

DCAL : A regenerative discharge circuit alarm is being generated in servo amp. Check LED.

FBAL : A disconnection alarm is being generated.
(This bit causes servo alarm No.4n6.)

OFAL : An overflow alarm is being generated inside of digital servo.