

EXCERPT

**GROUP 31
STANDARD AND
HAZARDOUS LOCATION
ROTARY DRIVES**

BECK®

INSTRUCTION MANUAL



ELECTRIC ACTUATORS FOR INDUSTRIAL PROCESS CONTROL

MAINTENANCE TROUBLESHOOTING

CONDITIONS	POSSIBLE CAUSES	CORRECTIONS
1. Drive will not run in either direction with input signal applied.	<ul style="list-style-type: none"> a. S1 toggle switch left in Manual (M) position. b. No 120 V ac line supply. No lamps lit on control board. c. Fuse F-1 open. No lamps lit on control board. d. External auto/man switch in wrong position (Position-all). e. Torque on driven load shaft exceeds drive torque rating. "S" LED on. f. Input signal below range or reversed. "L" LED on. g. Control board failure. 	<ul style="list-style-type: none"> a. Return S1 toggle switch to Automatic (A) position. b. Check fuses and switches in power panel. c. Check for possible shorts, then replace fuse. Use only Beck part no. 11-1370-10 for proper protection of triacs. d. Return switch to auto position. e. Check operation with Handswitch and remove obstruction. f. Input signal voltage between terminal 11 and 12 (+) must be between 1 - 5 V dc. g. Replace control board.
2. Drive runs in one direction only in Auto (A) and both directions with S2 toggle switch in Forward (F) and Reverse (R).	<ul style="list-style-type: none"> a. Zero adjustment incorrect. b. Loss of signal feature activated and set to drive shaft to full forward or reverse position. "L" LED on. c. Loss of feedback signal. d. Control board failure. 	<ul style="list-style-type: none"> a. Readjust Zero. See calibration instructions, page 22. b. Check input signal against LOS trigger. c. Check feedback signal at terminals 13, 14, or 15. d. Replace control board.
3. Drive runs in the wrong direction with input signal applied.	<ul style="list-style-type: none"> a. Input signal reversed. "L" LED on. b. Wiring to limit switches reversed. 	<ul style="list-style-type: none"> a. Check polarity of input signal. Terminal 12 is positive, 11 negative. b. Check limit switch connections. See Limit Switch adjustment, page 18.
4. Drive shaft position oscillates.	<ul style="list-style-type: none"> a. Excessive noise on input signal. b. Control board failure. 	<ul style="list-style-type: none"> a. Check input signal. b. Replace control board.
5. Drive does not stop at normal or desired limit of shaft travel.	<ul style="list-style-type: none"> a. Span or Zero adjusted incorrectly. b. Limit switches adjusted incorrectly. c. Loss of input signal. "L" LED on. d. Limit switch failure. 	<ul style="list-style-type: none"> a. Check control board calibration. See calibration procedure, page 22. b. Readjust limit switches. See limit switch adjustment, page 18. c. Restore input signal to drive. d. Replace limit switch. See page 32 for drives with Option 1, or 33 for drives with Options 2 or 3.
6. Loss of signal feature does not function.	<ul style="list-style-type: none"> a. Control board failure. 	<ul style="list-style-type: none"> a. Replace control board. See page 33.

CONDITIONS	POSSIBLE CAUSES	CORRECTIONS
7. Drive activates to full forward or reverse position and stays.	<ul style="list-style-type: none"> a. S1 toggle switch left in Forward (F) or Reverse (R) position & S2 toggle switch set to Manual (M). b. Loss of input signal when LOS move to position is selected. "L" LED on. c. Loss of feedback signal d. Control board failure. 	<ul style="list-style-type: none"> a. Set S1 toggle switch to Stop (center) position & set S2 toggle switch to Automatic (A). b. Restore input signal to drive. c. Check feedback signal at terminals 13, 14 or 15. d. Replace control board. See page 33.
8. Drive movement erratic while driving from full reverse to full forward and runs normally from full forward to full reverse.	<ul style="list-style-type: none"> a. Feedback potentiometer dirty. Loss of wiper contact moves drive in reverse direction. b. Feedback potentiometer open. 	<ul style="list-style-type: none"> a. Replace feedback potentiometer. See page 33. b. Replace feedback potentiometer. See page 33.
9. Drive moves uncontrollably to some position then oscillates.	<ul style="list-style-type: none"> a. Feedback potentiometer open. 	<ul style="list-style-type: none"> a. Replace feedback potentiometer. See page 33.
10. Power (P) LED light out.	<ul style="list-style-type: none"> a. No power. b. Control section transformer failure. 	<ul style="list-style-type: none"> a. Check power sources. b. Replace control section transformer. See page 33.
11. Feedback signal decreases when it should increase.	<ul style="list-style-type: none"> a. Plug P4 in wrong position on control board. 	<ul style="list-style-type: none"> a. Check feedback calibration procedure. See page 22.
12. Feedback signal does not reach maximum signal, but low end calibration is correct.	<ul style="list-style-type: none"> a. Output is overloaded: <ul style="list-style-type: none"> -- load resistance is too low for voltage range. -- load resistance is too high for current range. b. Low voltage. c. Feedback potentiometer not set correctly. d. Incorrect drive feedback configuration. 	<ul style="list-style-type: none"> a. Check load resistance against suggested feedback signal terminal hookup. b. Check line voltage at terminal board. c. Check feedback calibration procedure. See page 20. d. Check feedback calibration procedure for correct R2 component on terminal board. See page 22.
13. Drive does not reach desired travel limit.	<ul style="list-style-type: none"> a. Mechanical stop improperly set. b. Physical obstruction, e.g. valve jammed or load exceeds rating of drive. "S" LED on. 	<ul style="list-style-type: none"> a. Check mechanical stop installation and adjustment procedure. See page 13. b. Check operation with Handswitch and remove obstruction.
14. Motor continues running after 68 seconds of stall.	<ul style="list-style-type: none"> a. Jumper J3/J4 on control board is set to J4 (see Fig. 10, p. 23). 	<ul style="list-style-type: none"> a. Set Jumper J3/J4 to the J3 position.