1398-DDM-009

ULTRA 100 universal servo drive / controlled axis work

This field guide organizes the documented 1398-DDM-009 power, command and feedback interfaces into a practical verification sequence. Use the machine-approved drawings and drive parameter record for the actual axis.

Power and motion boundary

AC LINE
100–240 V single phase

DRIVE
1398-DDM-009 / 1000 W

MOTOR
Matched brushless servo

LOAD
Guarded machine axis

Pre-work record

Check	Evidence to retain
Identity	Full drive code without X or DeviceNet suffix; motor and feedback codes
Power	Single-phase supply, protective devices, AC filter and separate I/O source
Control	Chosen command mode, input scaling, ENABLE assignment and stored parameters
Motion	Direction, travel limits, safe test range and load isolation plan

Isolation before touching hardware

Disconnect the line supply and external I/O supply. Wait for the DC bus to discharge and verify safe voltage with the site procedure before handling power or motor wiring. Keep the axis mechanically secured until the command direction and feedback are proved.

Variant gate

The -009 is the universal drive. The -009X is a separately catalogued indexing drive. Compare the full label and existing control method before fitting a unit that shares the same 1000 W power class.

Connect and configure

Separate power, command, feedback and status

Interface map

Path	Documented relationship	Practical check
AC input	100–240 V AC nominal; single phase; 47–63 Hz	Verify supply, grounding and protection
Motor output	Drive PWM output to matched brushless servo	Verify phase, cable and thermostat path
Feedback	Motor encoder and Hall signals	Verify connector and signal integrity
Command	±10 V analog, presets, follower or step pulses	Select one approved operating mode
I/O source	External 12–24 V DC	Check ENABLE and selectable I/O
Setup	RS-232 or four-wire RS-485	Match host settings and read parameters

Configuration sequence

01 Record baseline

Save the existing motor and application parameter set before changing wiring.

02 Select command

Confirm analog, preset, encoder follower, step/direction or CW/CCW mode from the axis design.

03 Set host link

Match RS-232 or four-wire RS-485 wiring, baud rate and parity with the setup host.

04 Prove current limit

Identify whether the 0–10 V external limit input or software parameter controls peak current.

Command-source boundary

The ±10 V monitoring output has ripple and is specified for observation, not motion control. Keep it separate from the external command input, and verify the analog source can drive the 13.3 kΩ input when analog mode is selected.

Setup values to read back

Record	Manufacturer range / option
Serial rate	1200, 2400, 4800, 9600 or 19200 baud
Serial parity	Even, odd or none
Encoder output	Differential driver; motor signal divided by 1, 2, 4 or 8

Controlled commissioning

Observe command, drive status and axis response

Acceptance matrix

Stage	Action	Expected observation / if not
1 Before enable	Check line, I/O supply and host setup	Drive status is readable; investigate supply or fault indication otherwise
2 Enable path	Test the dedicated active-high ENABLE	Status changes as designed; inspect 12–24 V source and wiring otherwise
3 Command polarity	Apply a low-risk command with load restrained	Motion direction matches drawing; inhibit and inspect wiring otherwise
4 Feedback	Compare motor response and encoder sense	Stable closed-loop response; inspect encoder/Hall path otherwise
5 Protection	Exercise site-approved fault/reset test	Fault and relay outputs match the machine logic

Diagnostic decision chain

NO STATUS

Check AC line and DC bus warning

NO ENABLE

Check external I/O supply and ENABLE

WRONG MOTION

Inhibit, inspect command and feedback

FAULT

Record code; check load, heat and wiring

Handover record

Retain the full drive/motor markings, parameter file, serial settings, command mode, I/O supply measurement, direction test and any fault history. Return the machine only after the site-approved motion and guarding checks are complete.

Service and reference

Model-specific decisions for later maintenance

Fault isolation priorities

Symptom	First evidence	Next controlled action
Status dark	AC input and upstream protection	Verify safe power path and bus status
ENABLE ignored	External I/O source and input level	Test assignment and relay status
No motion	Command mode and scaling	Check low-risk input signal and motor enable
Unstable motion	Motor encoder/Hall feedback	Compare cabling and saved motor data
Current limit early	0–10 V limit input or software setting	Review motor and load duty

Source and variant record

Rockwell Automation, ULTRA 100 Series Drives Installation Manual, publication 1398-5.2 / 1398-UM002. Catalog 1398-DDM-009 is the 1000 W universal drive; its -009X indexing sibling is a distinct entry.

Related Allen-Bradley catalogue pages

Navigation only. Confirm each full catalog number and installed-system fit before ordering.

Allen-Bradley 1746-HSCE
SLC 500 high-speed counter

Allen-Bradley 1794-IV16
FLEX I/O sourcing input

Allen-Bradley 1756-L62
ControlLogix controller

Allen-Bradley 1756-DNB
ControlLogix DeviceNet

Allen-Bradley 1756-PSCA2
ControlLogix power supply

Allen-Bradley 1756-OV32E
ControlLogix output

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