Allen-Bradley 1747-L30C

01 Fixed-I/O Programmable Logic Controller / system role

Product function and operating context

Allen-Bradley 1747-L30C coordinates a compact machine sequence with separate field-output supply groups, making output common wiring and restart behavior central to replacement work.

DC sinking inputs are intended for compatible sourcing field devices. Input 0 has a high-speed-counter function and different current and off-state characteristics from the other inputs, so its wiring and use deserve a separate review.

Integration checkpoints

- Compact machine sequencing
- Pulse event capture
- Mixed field-load circuits
- Legacy control-system maintenance

Controller architecture	Integrated fixed I/O
Field outputs	Separately supplied relay groups
Service focus	Program retention, output mapping and controlled restart

The relay output commons divide the twelve outputs into isolated groups. Different field voltages may be assigned to the appropriate groups, but the group and individual contact limits still apply; the AC controller supply does not automatically supply the relay loads.

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02 Technical operating envelope

Digital inputs	18 DC sinking
Input operating voltage	10-30 V DC
Relay outputs	12
AC supply range	85-265 V AC
Sensor power	24 V DC, 200 mA

High-speed input	Input 0
Program capacity	1K instructions
Relay maximum continuous current	2.5 A per output; 8 A per group
Relay voltage range	5-265 V AC or 5-125 V DC
Operating temperature	0-60 degrees C

Apply the 1747-L30C execution and the stated configuration-dependent limits; shared family material does not assign features from another variant.

Output group separation

Follow the four relay supply groups shown for this exact controller. Preserve the field commons and protective devices; do not bridge groups merely because they share a controller housing.

Counter input distinction

Input 0 has different current demand and off-state limits from ordinary DC inputs. Check sensor drive capability and the high-speed application before transferring a signal to or from that terminal.

Contact duty

Continuous-current limits do not replace make/break ratings. Inductive loads and switching frequency require a contact-duty and suppression review in addition to the steady-state load calculation.

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03 System integration and applications

Compact machine sequencing

Coordinate hardwired DC inputs and relay-driven field devices.

Pulse event capture

Use the designated high-speed input with the appropriate program.

Mixed field-load circuits

Retain the documented relay-group supply separation.

Legacy control-system maintenance

Restore a verified application and its approved restart behavior.

Application and compatibility boundary

Program memory is capacitor-backed RAM with optional battery support and optional nonvolatile memory devices. Capture the installed application and backup arrangement before replacement, then verify scan-dependent behavior, forced I/O and restart interlocks in the complete machine sequence.

Available unit verification

Check the L30C marking, AC-power/DC-sinking-input execution, relay terminal groups and installed memory accessories. Confirm the controller, terminal covers, memory module, backup battery if supplied, programming accessories and any expansion chassis in the quotation. Evaluate the actual interfaces and included accessories against the installed arrangement.

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04 Engineering selection decisions

Why can 1747-L30C be powered while none of its field loads operate?

Relay contacts require their field-side supply through the assigned output commons. Controller power alone does not energize the external load circuits.

Can the relay commons on 1747-L30C be bridged during rewiring?

Only if the approved circuit design permits it. The outputs are arranged in isolated supply groups, and bridging can defeat separation between circuits or different voltages.

Why is input 0 on 1747-L30C not identical to the other DC inputs?

It supports the high-speed counter and has different input current and off-state characteristics. Verify the source capability and intended counter function before using it as an ordinary terminal.

What should be preserved before removing 1747-L30C from a machine?

Back up the application and record I/O mapping, forces, communication settings and memory-backup arrangement. A replacement controller without that application context cannot reproduce the machine sequence reliably.

Does the maximum continuous relay current on 1747-L30C cover every inductive load?

No. Make/break ratings and switching transients also apply. Check the actual load duty and suitable suppression instead of using only the steady-state current.

How can sensor loading affect the auxiliary supply on 1747-L30C?

The total sensor demand must remain within the available user-power capacity, including the input-0 requirement where applicable. A supply that collapses under load can create multiple input faults.

Why should a restart test on 1747-L30C include output forces and interlocks?

A restored program can still contain forcing or a different starting state. Confirm that controlled power restoration cannot bypass the intended sequence or energize an unintended output.

Can a scan-time estimate alone validate a counting application on 1747-L30C?

No. Confirm whether the signal uses the high-speed path or ordinary scanned input logic, then assess pulse width, input response and program behavior together.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and manufacturer-support stage for this exact model is not confirmed.

Replacement assessment

Preserve the fixed-I/O wiring, application and memory arrangement. A migration to a modular or newer controller requires an engineered I/O, software and sequence conversion rather than a wiring-only substitution.

Available unit details

Offered reference: Allen-Bradley 1747-L30C. Condition: New, original product. Check the L30C marking, AC-power/DC-sinking-input execution, relay terminal groups and installed memory accessories. Confirm the controller, terminal covers, memory module, backup battery if supplied, programming accessories and any expansion chassis in the quotation; companion equipment is included only when itemized.

Document roles: The original excerpt retains manufacturer tables and drawings; this brief addresses selection and system context; the separate installation guide covers field procedures and acceptance.

Technical basis: Allen-Bradley SLC 500 Fixed Hardware Style Installation and Operation Manual, 1747-6.21.

Related product navigation

- Allen-Bradley 1746-OB32
- Allen-Bradley 1746-IM8
- Allen-Bradley 1746-NI16I

Related products for separate application assessment; verify the platform and interface. No interchangeability is implied.

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