Allen-Bradley 1746-OW16

01 Function and selected configuration

Product function

Allen-Bradley 1746-OW16 provides contact-based field switching where an SLC 500 installation needs relay outputs rather than semiconductor output stages. Its two common groups define how external load supplies and circuit returns are organized.

Selected configuration

16 relay outputs, two common groups of eight, removable terminal block. The relay contacts switch externally supplied loads; the backplane powers the module electronics and relay operation. Group-common wiring must follow the exact terminal diagram rather than a semiconductor-module wiring pattern.

Functional path

SLC output command

Backplane interface

Relay contacts

External load circuits

Output topology	Sixteen relay points in two groups of eight
Switching range	5-125 V DC or 5-265 V AC
Backplane demand	170 mA at 5 V DC and 180 mA at 24 V DC

Maximum on and off signal delay is 10 ms for a resistive load. Contact load type, switching duty and suppression influence the application, so the specified delay is not a high-speed pulse-output capability.

1746-OW16 / Technical operating envelope

02 Technical operating envelope

Relay outputs	16
Common groups	2; 8 points per common
DC switching range	5-125 V DC
AC switching range	5-265 V AC
5 V backplane current	170 mA
24 V backplane current	180 mA
Maximum on delay	10 ms; resistive load
Maximum off delay	10 ms; resistive load

Off-state leakage	0 mA maximum
Minimum load	10 mA at 5 V DC
AC module continuous current	16 A
Continuous current per common	8 A
Field termination	Removable terminal block
Terminal wire limit	2 mm2 (14 AWG); max. 2 wires
Terminal wiring torque	0.9 N m maximum

The 16 A AC module and 8 A common limits do not authorize that current at every point. Individual contact limits, load type and switching duty remain separate constraints.

Field power separation

The externally supplied load voltage is distinct from the 5 V and 24 V chassis rails. Disconnect both chassis and field energy before module or terminal work.

Load assessment

Minimum load, individual contact duty and aggregate common limits all matter. A suitable voltage range alone does not qualify the relay for a particular inrush current or switching frequency.

1746-OW16 / System integration and applications

03 System integration and applications

AC control circuits

Switch suitable AC loads while observing the common-group arrangement and contact ratings.

DC discrete loads

Use the external DC circuit within the specified operating range and applicable contact limits.

Mixed machine functions

Allocate sixteen discrete commands across two common groups according to the wiring design.

Legacy SLC service

Maintain an existing SLC output position with the correct terminal mapping and accepted output behavior.

System and supply context

1746-OW16 belongs to the SLC 500 chassis system and uses externally supplied relay load circuits. Verify the installed chassis, slot allocation, terminal block and programmed output addresses.

Application boundary

Suitable uses are contact-switched discrete loads within the approved ratings. Application examples do not imply a universal safety rating, high-speed duty capability or interchangeability with newer I/O families.

Does 1746-OW16 supply the voltage that powers the external load?

No. The contacts switch an externally supplied circuit. Backplane consumption powers the module; it is not a field-load power budget.

1746-OW16 / Engineering selection decisions

04 Engineering selection decisions

Are the 1746-OW16 outputs individually isolated from every other point?

No. They are arranged as two groups of eight points per common. Keep each load circuit within the correct common group and follow the exact terminal diagram.

How much SLC backplane capacity does 1746-OW16 require?

Allocate 170 mA from the 5 V DC rail and 180 mA from the 24 V DC rail, then include the demands of the other chassis modules.

What does the 1746-OW16 minimum-load specification mean for a small signal?

The specified minimum is 10 mA at 5 V DC. A circuit below the required operating load should not be assumed to have the same reliable relay-contact behavior.

Why is suppression considered for inductive loads switched by 1746-OW16?

Inductive switching creates transients that stress contacts. Select suppression appropriate to the actual load and supply; it supports contact life but does not increase the permitted relay rating.

Assess contact duty	Check load type, inrush, switching frequency and the individual contact rating.
Verify terminal identity	Keep the removable block matched to its module and circuit labels.

1746-OW16 / Configuration boundary and references

05 Configuration boundary and references

Lifecycle and support

Discontinued by Rockwell Automation effective November 24, 2022. The manufacturer classifies replacement as an engineering replacement.

Replacement assessment

Plan migration at system level, including controller, I/O platform, wiring and software. A newer relay-output module is not automatically a drop-in replacement for the SLC chassis.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains configuration and selection boundaries. The independent installation guide organizes preparation, connection, testing and handover. It does not replace the applicable manufacturer installation instructions.

Technical basis

SLC 500 Digital I/O Modules, 1746-IN027D-EN-P, December 2012.

Related product navigation

- Allen-Bradley 1746-P4
- Allen-Bradley 1746-IA16
- Allen-Bradley 1746-IB16

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries