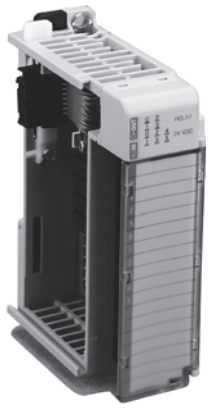
Allen-Bradley

1769 Compact I/O Modules Specifications

Catalog Numbers 1769 Series



The 1769 Compact I/O™ modules can be used in the following applications:

- With a CompactLogix™ controller
- For expansion I/O in a MicroLogix™ 1500 controller assembly
- In an assembly with a 1769-ADN DeviceNet adapter
- In an assembly with a 1769-AENTR Ethernet adapter.

Unless connected to a MicroLogix 1500 base, each bank of I/O modules must include its own power supply.

Install the I/O modules on a panel with two mounting screws or on a DIN rail. The modules mechanically lock together with a tongue-and-groove design and have an integrated communication bus that is connected from module to module by a moveable bus connector.

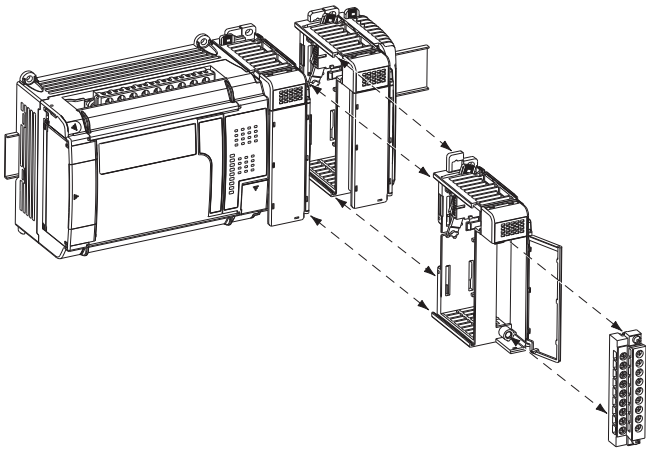
Summary of Changes

This manual contains new and updated information. Changes throughout this revision are marked by change bars, as shown to the right of this paragraph.

Topic	Page
Updated information for Compact I/O modules applications	1
Updated specifications in Table 51	51
Updated description of 1769-ARM module	102

I/O Module Overview

Each I/O module includes a built-in removable terminal block with fingersafe cover for connections to I/O sensors and actuators. The terminal block is behind a door at the front of the module. I/O wiring can be routed from beneath the module to the I/O terminals.



- Once the modules are locked together, the system becomes a rugged assembly.
- Upper and lower tongue-and-groove slots guide the module during installation and secure the module within the system.
- Removable terminal blocks help ease the wiring task.
- Self-lifting, field-wire pressure plates cut installation time.
- The patented bus connector with the lock function enables consistent and system communication.
- A color bar is provided on the front of the module.
- Digital and field circuits are optically isolated.

Available 1769 I/O Modules

I/O Type	Cat. No.	Page	Cat. No.	Page
AC digital	1769-IA8I 1769-IA16 1769-IM12	6 8 35	1769-OA8 1769-OA16	57 60
DC digital	1769-IG16 1769-IQ16 1769-IQ16F 1769-IQ32 1769-IQ32T 1769-IQ6XOW4	33 37 39 41 43 45	1769-OB8 1769-OB16 1769-OB16P 1769-OB32 1769-OB32T 1769-OG16 1769-OV16 1769-OV32T	63 64 67 69 72 90 92 94
Contact	1769-OW8 1769-OW8I	96 98	1769-OW16	100
Analog	1769-IF4 1769-IF4I 1769-IF4XOF2 1769-IF4FXOF2F 1769-IF8 1769-IF16C 1769-IF16V 1769-IR6 1769-IT6	10 13 16 19 24 28 30 48 53	1769-OF2 1769-OF4 1769-OF4CI 1769-OF4VI 1769-OF8C 1769-OF8V	74 76 79 82 85 87
Specialty	1769-ARM 1769-ASCII	102 103	1769-BOOLEAN 1769-HSC	105 109

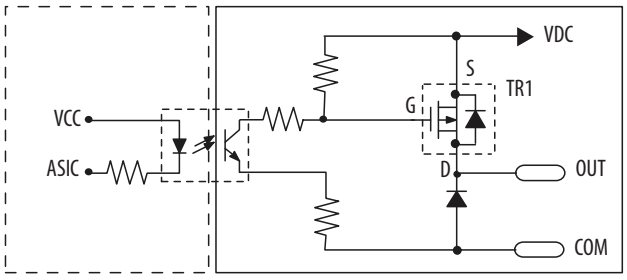
Table 1 - Environmental Specifications - 1769 I/O Modules

Attribute	1769-IA8I, 1769-IA16, 1769-IM12, 1769-OA8, 1769-OA16, 1769-IQ16, 1769-IQ16F, 1769-IQ32, 1769-IQ6XOW4, 1769-OB8, 1769-OB16, 1769-OB16P, 1769-OB32, 1769-OV16, 1769-OW8, 1769-OW8I, 1769-OW16 1769-IF4, 1769-IF4XOF2, 1769-IR6, 1769-IT6 1769-ARM, 1756-HSC	1769-IG16, 1769-IQ32T, 1769-OB32T, 1769-OG16, 1769-OV32T 1769-IF4I, 1769-IF8, 1769-IF16C, 1769-IF16V, 1769-OF2, 1769-OF4CI, 1769-OF4VI, 1769-OF8C, 1769-OF8V, 1769-IF4FXOF2F 1769-ASCII, 1769-BOOLEAN
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0…60 °C (32…140 °F)	0…60 °C (32…140 °F)
Temperature, storage IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40…85 °C (-40…185 °F)	-40…85 °C (-40…185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat)	5…95% noncondensing	5…95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	Operating: 5 g @ 10…500 Hz Relay operating: 2 g	5 g @ 10…500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	Panel mount 30 g DIN rail mount 20 g	Panel mount 30 g DIN rail mount 20 g
Shock, relay operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	Panel mount 7.5 g DIN rail mount 5 g	—
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	Panel mount 40 g DIN rail mount 30 g	Panel mount 40 g DIN rail mount 30 g

1769-0B32T

Compact solid-state 24V DC source, terminated output module

Simplified Output Circuit Diagram



1769-0B32T

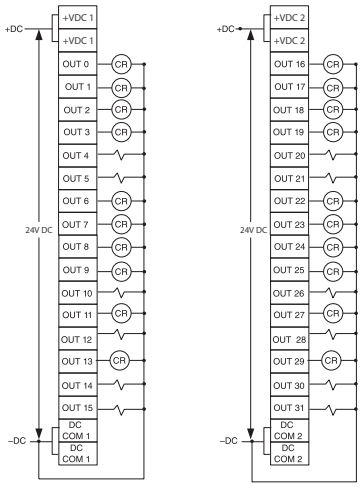


Table 71 - Technical Specifications - 1769-0B32T

Attribute	1769-0B32T
Outputs	32 terminated (16 points/group)
Voltage category	24V DC source
Operating voltage range	10.2…26.4V DC
Output delay, on	0.5 ms
Output delay, off	4.0 ms
Current draw @ 5.1V	220 mA
Heat dissipation, max	4.76 W
Off-state leakage current, max(1)	0.1 mA @ 26.4V DC
On-state current, min	1.0 mA
On-state voltage drop, max	0.3V DC @ 0.5 A
Current per point, max	0.5 A
Current per module, max	4.0 A
Surge current(2)	2.0 A for 10 ms, repeatable every 2 s
Isolation voltage	Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s, output point to bus 75V DC working voltage (IEC Class 2 reinforced insulation)
Weight, approx	230 g (0.51 lb)
Dimensions (HxWxD), approx	118 x 35 x 87 mm (4.65 x 1.38 x 3.43 in.) Height with mounting tabs 138 mm (5.43 in.)
Slot width	1
Module location	DIN rail or panel mount
Power supply	1769-PA2, 1769-PB2, 1769-PA4, 1769-PB4
Power supply distance rating	8 modules
Terminal screw torque	0.68 N•m (6 lb•in)
Retaining screw torque	0.46 N•m (4.1 lb•in)

Table 71 - Technical Specifications - 1769-OB32T

Attribute	1769-OB32T
Wire size	(22…14 AWG) solid (22…16 AWG) stranded
Wire type	Cu-90 °C (194 °F)
Replacement connector	1746-N3 (1 connector, 40 terminals)
Vendor ID code	1
Product type code	7
Product code	79
Enclosure type rating	None (open style)

(1) To limit the effects of leakage current through solid-state outputs, a loading resistor can be connected in parallel with your load. Use a 5.6 kΩ, 1/2 W resistor for transistor outputs, 24V DC operation.
(2) Use a 1N4004 diode reverse-wired across the load for transistor outputs switching 24V DC inductive loads.

Table 72 - Certifications - 1769-OB32T

Certification[1]	1769-OB32T
c-UL	C-UL certified (under CSA C22.2 No. 142) UL 508 listed Class I, Division 2 Group A,B,C,D Hazardous Locations (UL 1604, C-UL under CSA C22.2 No. 213)
CE	CE compliant for all applicable directives
C-Tick	C-Tick compliant for all applicable directives Australian Radiocommunications Act, compliant with: • AS/NZS CISPR 11; Industrial Enclosure

(1) When marked. See the Product Certification link at http://www.rockwellautomation.com/global/certification/overview.page for Declarations of Conformity, Certificates, and other certification details.