Technical Data

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

1769 Compact I/O Modules Specifications

Catalog Numbers

Digital I/O Modules	1769-IA8I, 1769-IA8IK, 1769-IA16, 1769-IA16K, 1769-IM12, 1769-OA8, 1769-OA16, 1769-OA16K, 1769-IG16, 1769-IQ16, 1769-IQ16K, 1769-IQ16F, 1769-IQ32, 1769-IQ32K, 1769-IQ32T, 1769-IQ6XOW4, 1769-OB8, 1769-OB8K, 1769-OB16, 1769-OB16K, 1769-OB16P, 1769-OB32, 1769-OB32K, 1769-OB32T, 1769-OG16, 1769-OV16, 1769-OV32T
Contact I/O Modules	1769-OW8, 1769-OW8I, 1769-OW8IK, 1769-OW16, 1769-OW16K
Analog I/O Modules	1769-IF4, IF4K, 1769-IF4I, 1769-IF4XOF2, 1769-IF4XOF2K, 1769-IF4FXOF2F, 1769-IF8, 1769-IF8K, 1769-IF16C, 1769-IF16V, 1769-IR6, 1769-IT6, 1769-OF2, 1769-OF2K, 1769-OF4, 1769-OF4K, 1769-OF4CI, 1769-OF4VI, 1769-OF8C, 1769-OF8V
Specialty Modules	1769-ARM, 1769-ASCII, 1769-BOOLEAN, 1769-HSC, 1769-SM2
Accessories	1769-ECL, 1769-ECLK, 1769-ECR, 1769-ECRK, 1769-ECL, 1769-ECLK, 1769-ECR, 1769-ECRK, 1769-CLL1, 1769-CRR1, 1769-CRL1, 1769-CLL3, 1769-CRR3, 1769-CRL3

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

- With a 1769 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 movable bus connector.

Summary of Changes

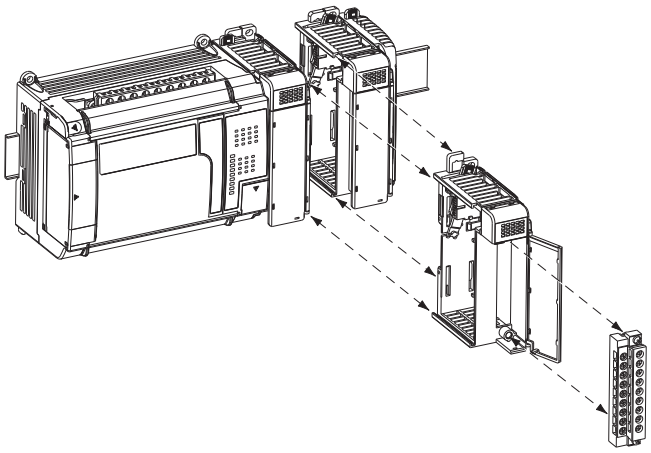
This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Added modules: 1769-IA16K, 1769-IA8IK, 1769-IF4K, 1769-IF4XOF2K, 1769-IF8K, 1769-IQ16K, 1769-IQ32K, 1769-OA16K, 1769-OB16K, 1769-OB32K, 1769-OB8K, 1769-OF2K, 1769-OF4K, 1769-OW16K, 1769-OW8IK, 1769-SM2	Throughout
Updated certifications	3

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 attach the module to 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.



Environmental Specifications(1)

Attribute	1769-IA8I, 1769-IA8IK, 1769-IA16, 1769-IA16K, 1769-IF4, 1769-IF4K, 1769-IF4XOF2, 1769-IF4XOF2K, 1769-IM12, 1769-IQ16, 1769-IQ16K, 1769-IQ16F, 1769-IQ32, 1769-IQ32K, 1769-IQ6XOW4, 1769-IR6, 1769-IT6, 1769-OA8, 1769-OA16, 1769-OA16K, 1769-OB8, 1769-OB8K, 1769-OB16, 1769-OB16K, 1769-OB16P, 1769-OB32, 1769-OB32K, 1769-OV16, 1769-OW8, 1769-OW8I, 1769-OW8IK, 1769-OW16, 1769-OW16K, 1769-ARM, 1756-HSC	1769-IG16, 1769-IF4FXOF2F, 1769-IF4I, 1769-IF8, 1769-IF8K, 1769-IF16C, 1769-IF16V, 1769-IQ32T, 1769-OB32T, 1769-OG16, 1769-OV32T, 1769-OF2, 1769-OF2K, 1769-OF4, 1769-OF4K, 1769-OF4CI, 1769-OF4VI, 1769-OF8C, 1769-OF8V, 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)	
Temperature, nonoperating IEC 60068-2-1 (Test Allen-Bradley®, 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)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Nonoperating Damp Heat)	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	
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	

(1) Environmental Specifications for the 1769-SM2 module are found on page 60.

Place Compact I/O Modules

You can DIN rail or panel mount the controller and I/O modules. The number of local I/O modules that are supported depends on the controller.

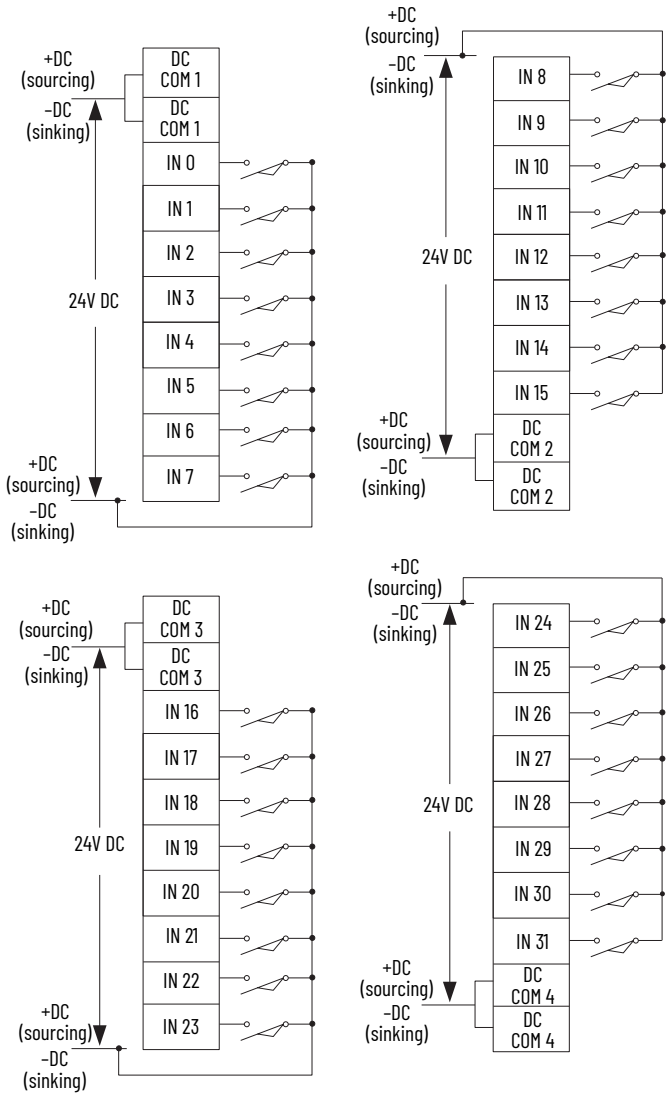
Controller	Supports	Location	Considerations
1769-L24ER-QB1B 1769-L24ER-QBFC1B 1769-L27ERM-QBFC1B	4 local modules	Right side of the controller	The additional modules are connected directly to the controller. There are no additional banks of local I/O.
1769-L30ER 1769-L30ERM 1769-L30ER-NSE	8 local modules	1 separate bank	Standard 1769 power supplies power the additional banks and connect to the main rack by using standard 1769 expansion cables.
1769-L33ER 1769-L33ERM	16 local modules	2 separate banks	
1769-L36ERM	30 local modules	3 separate banks	
1769-L23E-QB1B 1769-L23E-QBFC1B 1769-L23-QBFC1B	2 local modules, V17 and earlier	Right side of the packaged controller	The additional modules are connected directly to the packaged controller. There are no additional banks of local I/O.
1769-L23E-QB1B	3 local modules, v18 and later		
1769-L35CR 1769-L35E	30 local modules	3 separate banks	Standard 1769 power supplies power the additional banks and connect to the main rack by using standard 1769 expansion cables.
1769-L32C 1769-L32E 1769-L31	16 local modules	3 separate banks	
1768-L43	16 local modules	3 separate banks	As many as eight 1769 local modules can be attached to the 1768 backplane. The remaining modules can be in one or two additional I/O banks. Standard 1769 power supplies power the additional banks and connect to the main rack by using standard 1769 expansion cables.
1768-L45	30 local modules	3 separate banks	

Each 1769 Compact I/O module has a distance rating. In 1769 systems, the distance rating is the number of modules between the specific module and the 1769 power supply. In a 1768 system, the distance rating is the number of modules between the specific I/O module and the 1768 controller.

1769-IQ32T

Compact 24V DC sink/source, terminated input module

Input Wiring



Technical Specifications - 1769-IQ32T

Attribute	1769-IQ32T
Inputs	32 terminated (8 points/group)
Voltage category	24V DC sink/source
Operating voltage range	20.4...26.4V DC @ 60 °C (140 °F)
Digital filter, off to on	0 s, 100 ms, 500 ms, 1 ms, 2 ms, 4 ms, 8 ms
Digital filter, on to off	0 s, 100 ms, 500 ms, 1 ms, 2 ms, 4 ms, 8 ms
Input delay, off to on	0.1 ms, typical 0.42 ms, max
Input delay, on to off	0.25 ms, typical 1.0 ms, max
Current draw @ 5.1V	170 mA
Heat dissipation, max	4.77 W
Off-state voltage, max	11V DC
Off-state current, max	1.7 mA
On-state voltage, min	19V DC
On-state current, min	2 mA
Inrush current, max	5 mA
Input impedance, nom	5.6 kW
Isolation voltage	Verified by one of these dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s, input point to bus and group to group 75V DC working voltage (IEC Class II reinforced insulation)
Weight, approx	280 g (0.61 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)
Wire size	(22...14 AWG) solid (22...16 AWG) stranded
Wire type	Cu-90 °C (194 °F)
IEC input compatibility	Type 1+
Replacement connector	1746-N3 (1 connector, 40 terminals)
Vendor ID code	1
Product type code	7
Product code	76
Enclosure type rating	None (open-style)

For **Environmental Specifications**, see page 2.

For **Certifications**, see page 3.