

MicroLogix 1200 Programmable Controllers

Bulletin 1762 Controllers and Expansion I/O Modules

Allen-Bradley
by ROCKWELL AUTOMATION

User Manual

Original Instructions

Expansion I/O Modules

Catalog Number	Description
Digital	
1762-IA8	8-point 120V AC input module
1762-IQ8	8-point sinking/sourcing 24V DC input module
1762-IQ16	16-point sinking/sourcing 24V DC input module
1762-IQ32T	32-point sinking/sourcing 24V DC input module
1762-OA8	8-point 120/240V AC Triac output module
1762-OB8	8-point sourcing 24V DC output module
1762-OB16	16-point sourcing 24V DC output module
1762-OB32T	32-point sourcing 24V DC output module
1762-OV32T	32-point sinking 24V DC output module
1762-OW8	8-point AC/DC relay output module
1762-OW16	16-point AC/DC relay output module
1762-OX6I	6-point isolated AC/DC relay output module
1762-IQ8OW6	8-point sinking/sourcing 24V DC input and 6-point AC/DC relay output module
Analog	
1762-IF4	4-channel voltage/current analog input module
1762-OF4	4-channel voltage/current analog output module
1762-IF2OF2	Combination 2-channel input 2-channel output voltage/current analog module
Temperature	
1762-IR4	4-channel RTD/resistance input module
1762-IT4	4-channel thermocouple/mV input module

Communication Cables

Use only the following communication cables with the MicroLogix 1200 controllers:

- 1761-CBL-PM02, series C or later
- 1761-CBL-HM02, series C or later
- 1761-CBL-AM00, series C or later
- 1761-CBL-AP00, series C or later
- 1761-CBL-PH02, series A or later
- 1761-CBL-AH02, series A or later
- 2707-NC8, series A or later
- 2702-NC9, series B or later
- 2707-NC10, series B or later
- 2707-NC11, series B or later

Programming

Program the MicroLogix 1200 controller using RSLogix 500 software, version 4.00.00 or later. To use the new features of the series B MicroLogix 1200 controllers, including the full ASCII instruction set, you must use RSLogix 500 software, version 4.50.00 or later. Communication cables for programming are available separately from the controller and software.

Communication Options

The MicroLogix 1200 can be connected to a personal computer. It can also be connected to a DH-485 network, or a Modbus network as an RTU master or RTU slave with an Advanced Interface Converter (1761-NET-AIC). The controller can also be connected to DF1 Half-duplex networks as an RTU master or RTU slave. Series B controllers may also be connected to serial devices using ASCII.

See Communication Connections on page 53 for more information on connecting to the available communication options.

The 1762-LxxxxxR controllers provide an additional communication port called the Programmer/HMI Port. This port supports DF1 Full-duplex protocol only. The controller cannot

Figure 38 - 1762-IQ32T Wiring Diagram

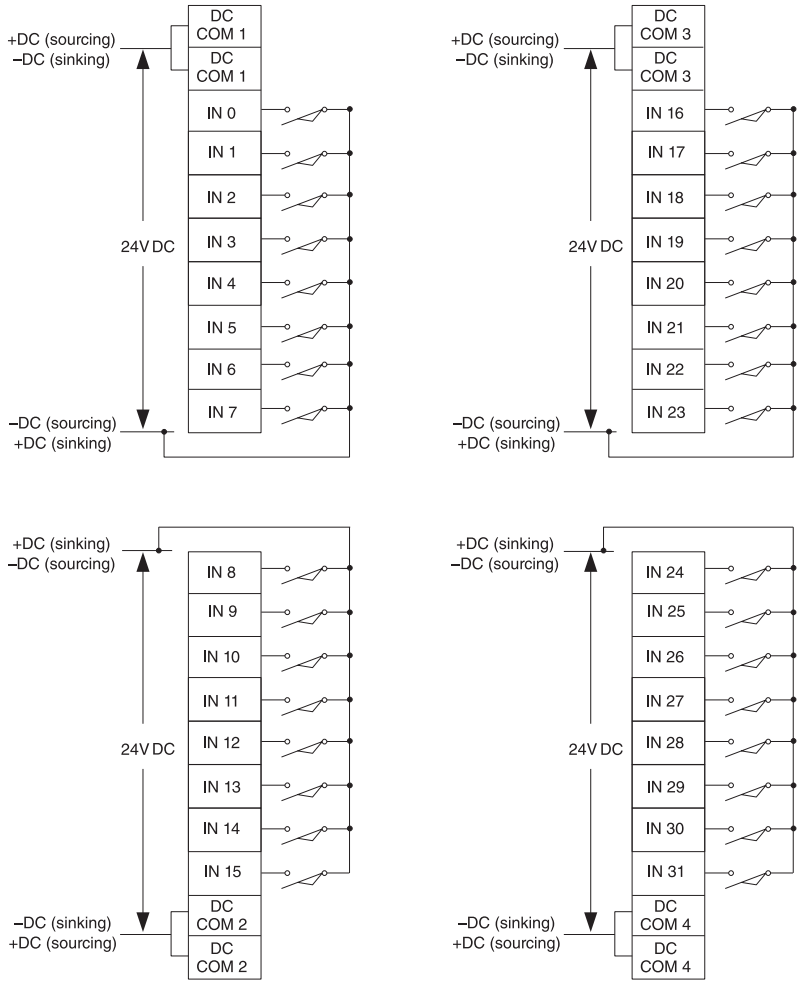
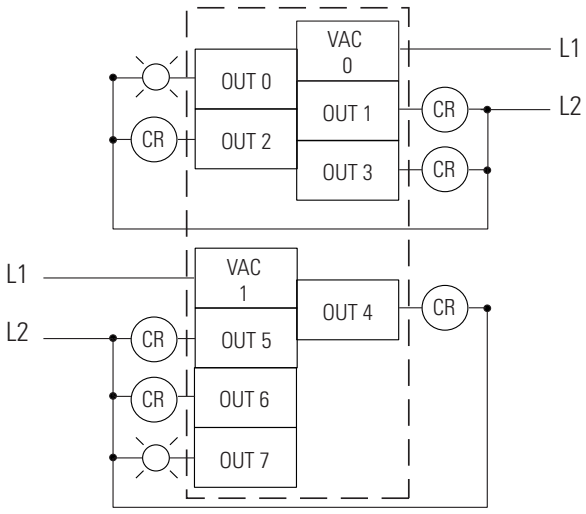


Figure 39 - 1762-OA8 Wiring Diagram



Input Specifications – 1762-IA8, 1762-IQ8, 1762-IQ16, 1762-IQ32T, 1762-IQ8OW6 (Continued)

Attribute	1762-IA8	1762-IQ8	1762-IQ16	1762-IQ32T	1762-IQ8OW6
Heat dissipation, max	2.0 W	3.7 W	4.3 W at 26.4V DC 5.4 W at 30V DC(3)	5.4 W at 26.4V DC 6.8 W at 30V DC	5.0 W at 30V DC 4.4 W at 26.4V DC (The Watts per point, plus the min W, with all points energized)
Signal delay, max	On delay: 20.0 ms Off delay: 20.0 ms	On delay: 8.0 ms Off delay: 8.0 ms	On delay: 8.0 ms Off delay: 8.0 ms	On delay: 8.0 ms Off delay: 8.0 ms	On delay: 8.0 ms Off delay: 8.0 ms
Off-state voltage, max	20V AC	5V DC	5V DC	5V DC	5V DC
Off-state current, max	2.5 mA	1.5 mA	1.5 mA	1.0 mA	1.5 mA
On-state voltage, min	79V AC (min) 132V AC (max)	10V DC	10V DC	10V DC	10V DC
On-state current	5.0 mA min at 79V AC 47 Hz 12.0 mA nom. at 120V AC 60 Hz 16.0 mA max at 132V AC 63 Hz	2.0 mA min at 10V DC 8.0 mA nom. at 24V DC 12.0 mA max at 30V DC	2.0 mA min at 10V DC 8.0 mA nom. at 24V DC 12.0 mA max at 30V DC	1.6 mA min at 10V DC 2.0 mA min at 15V DC 5.7 mA max at 26.4V DC 6.5 mA max at 30.0V DC	10 mA at 5V DC
Inrush current, max	250 mA	Not applicable	Not applicable	Not applicable	250 mA
Nominal impedance	12 kΩ at 50 Hz 10 kΩ at 60 Hz	3 kΩ	3 kΩ	4.7 kΩ	3 kΩ
IEC input compatibility	Type 1+	Type 1+	Type 1+	Type 1	Type 1+
Isolated groups	Group 1: inputs 0…7 (internally connected commons)	Group 1: inputs 0…7 (internally connected commons)	Group 1: inputs 0…7; Group 2: inputs 8…15	Group 1: Inputs 0…7; Group 2: Inputs 8…15; Group 3: Inputs 16…23; Group 4: Inputs 24…31	Group 1: inputs 0…3; Group 2: inputs 4…7
Input group to backplane isolation	Verified by one of the following dielectric tests: 1517V AC for 1 s or 2145V DC for 1 s 132V AC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V ACAC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s 75V DC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)
Vendor ID code	1				
Product type code	7				
Product code	114	96	97	99	98

(1) Sinking/Sourcing Inputs – Sinking/sourcing describes the current flow between the I/O module and the field device. Sourcing I/O circuits supply (source) current to sinking field devices. Sinking I/O circuits are driven by a current sourcing field device. Field devices connected to the negative side (DC Common) of the field power supply are sinking field devices. Field devices connected to the positive side (+V) of the field supply are sourcing field devices.
(2) For derating chart, see MicroLogix 1762-IQ16 DC Input Module Installation Instructions, publication 1762-IN010.
(3) Only applicable for series B and series C I/O modules.

Output Specifications – 1762-OA8, 1762-OB8, 1762-OB16, 1762-OB32T, 1762-OV32T

Attribute	1762-OA8	1762-OB8	1762-OB16	1762-OB32T	1762-OV32T
Shipping weight, approx. (with carton)	215 g (7.58 oz.)	210 g (7.41 oz.)	235 g (8.29 oz.)	200 g (7.05 oz.)	200 g (7.05 oz.)
Voltage category	100…240V AC	24V DC	24V DC	24V DC sourcing	24V DC sinking
Operating voltage range	85…265V AC at 47…63 Hz	20.4…26.4V DC	20.4…26.4V DC	10.2…26.4V DC	10.2…26.4V DC
Number of outputs	8	8	16	32	32
Bus current draw, max	115 mA at 5V DC (0.575 W)	115 mA at 5V DC (0.575 W)	175 mA at 5V DC (0.88 W)	175 mA at 5V DC 0 mA at 24V DC	175 mA at 5V DC 0 mA at 24V DC
Heat dissipation, max	2.9 W	1.61 W	2.9 W at 30 °C (86 °F) 2.1 W at 55 °C (131 °F)	3.4 W at 26.4 DC	2.7 W at 26.4V DC
Signal delay, max – resistive load	On delay: 1/2 cycle Off delay: 1/2 cycle	On delay: 0.1 ms Off delay: 1.0 ms	On delay: 0.1 ms Off delay: 1.0 ms	On delay: 0.5 ms Off delay: 4.0 ms	On delay: 0.5 ms Off delay: 4.0 ms
Off-state leakage current, max	2 mA at 132V 2.5 mA at 265V	1.0 mA	1.0 mA	0.1 mA at 26.4V DC	0.1 mA at 26.4V DC
On-state current, min	10 mA	1.0 mA	1.0 mA	1.0 mA	1.0 mA
On-state voltage drop, max	1.5V at 0.5 A	1.0V DC	1.0V DC	0.3V DC at 0.5 A	0.3V DC at 0.5 A
Continuous current per point, max	0.25 A at 55 °C (131 °F) 0.5 A at 30 °C (86 °F)	0.5 A at 55 °C (131 °F) 1.0 A at 30 °C (86 °F)	0.5 A at 55 °C (131 °F) 1.0 A at 30 °C (86 °F)	0.5 A at 60 °C (140 °F)	0.5 A at 60 °C (140 °F)
Continuous current per common, max	1.0 A at 55 °C (131 °F) 2.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	2.0 A at 60 °C (140 °F)	2.0 A at 60 °C (140 °F)

Output Specifications – 1762-0A8, 1762-0B8, 1762-0B16, 1762-0B32T, 1762-0V32T (Continued)

Attribute	1762-0A8	1762-0B8	1762-0B16	1762-0B32T	1762-0V32T
Continuous current per module, max	2.0 A at 55 °C (131 °F) 4.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	4.0 A at 60 °C (140 °F)	4.0 A at 60 °C (140 °F)
Surge current, max	5.0 A (Repeatability is once every 2 s for a duration of 25 ms.	2.0 A (Repeatability is once every 2 s at 55 °C (131 °F), once every second at 30 °C (86 °F) for a duration of 10 ms.)	2.0 A (Repeatability is once every 2 s at 55 °C (131 °F), once every second at 30 °C (86 °F) for a duration of 10 ms.)	2.0 A (Repeatability is once every 2 s at 60 °C (140 °F) for 10 ms)	2.0 A (Repeatability is once every 2 s at 60 °C (140 °F) for 10 ms)
Isolated groups	Group 1: Outputs 0…3 Group 2: Outputs 4…7	Group 1: Outputs 0…7	Group 1: Outputs 0…15	Group 1: Outputs 0…15 Group 2: Outputs 16…31 (internally connected to common)	
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)		Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s 75V DC working voltage (IEC Class 2 reinforced insulation)	
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (IEC Class 2 reinforced insulation)	Not applicable		Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s 75V DC working voltage (IEC Class 2 reinforced insulation)	
Vendor ID code	1				
Product type code	7				
Product code	119	101	103	100	102

Output Specifications – 1762-0W8, 1762-0W16, 1762-0X6I, 1762-IQ80W6

Attribute	1762-0W8	1762-0W16	1762-0X6I	1762-IQ80W6
Shipping weight, approx. (with carton)	228 g (0.50 lbs.)	285 g (0.63 lbs.)	220 g (0.485 lbs)	280 g (0.62 lbs.)
Voltage category	AC/DC normally open relay	AC/DC normally open relay	AC/DC Type C Relay	AC/DC normally open relay
Operating voltage range	5…265V AC 5…125V DC	5…265V AC 5…125V DC	5…265V AC 5…125V DC	5…265V AC 5…125V DC
Number of outputs	8	16	6	6
Bus current draw, max	80 mA at 5V DC (0.40 W) 90 mA at 24V DC (2.16 W)	140 mA at 5V DC (0.70 W)(1) 180 mA at 24V DC (4.32 W)(1)	110 mA at 5V DC (0.55 W) 110 mA at 24V DC (2.64 W)	110 mA at 5V DC 80 mA at 24V DC
Heat dissipation, max	2.9 W	6.1 W(1)	2.8 W	5.0 W at 30V DC 4.4 W at 26.4V DC (The Watts per point, plus the min W, with all points energized)
Signal delay, max – resistive load	On Delay: 10 ms Off Delay: 10 ms	On Delay: 10 ms Off Delay: 10 ms	On Delay: 10 ms (max) 6 ms (typical) Off Delay: 20 ms (max) 12 ms (typical)	On-delay: 10 ms (max) Off-delay: 10 ms (max)
Off-state leakage, max	0 mA	0 mA	0 mA	0 mA
On-state current, min	10 mA	10 mA	100 mA	10 mA
On-state voltage drop, max	Not Applicable			
Continuous current per point, max	2.5 A. See Table 14		7 A See Table 15.	2.5 A See Table 14.
Continuous current per common, max	8 A	8 A	7 A See Table 15.	8 A
Continuous current per module, max	16 A	16 A	30 A See Table 16.	8 A
Surge current, max	See Table 14.		See Table 15.	See Table 14.
Isolated groups	Group 1: Outputs 0…3 Group 2: Outputs 4…7	Group 1: Outputs 0…7 Group 2: Outputs 8…15	All 6 Outputs Individually Isolated.	Group 3: Outputs 0…5
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (IEC Class 2 reinforced insulation)			