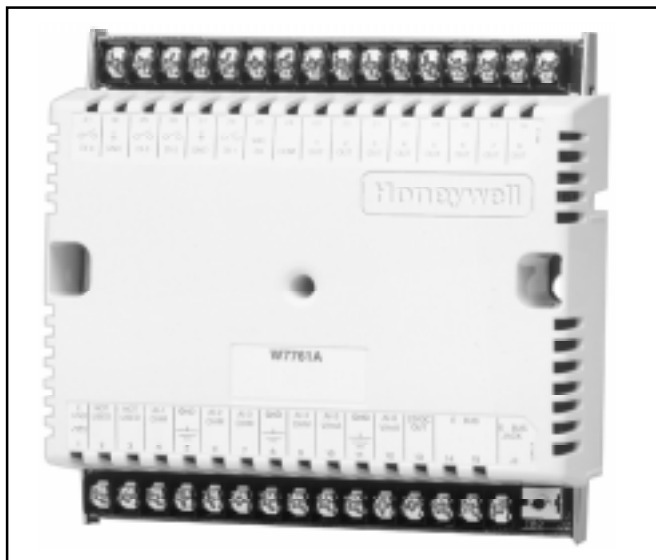


## Excel 10 W7761A Remote Input/Output Device

**EXCEL**5000 **OPEN**™  
S Y S T E M

### SPECIFICATION DATA



### FEATURES

- LonMark® certified.
- Uses Echelon® LonWorks® network (E-Bus) communications protocol.
- High-speed 78 kilobit communications network.
- Free Topology Transceiver (FTT) network technology is insensitive to polarity, simplifying installation.
- Controls fans, lighting or miscellaneous loads from the zone manager.
- Monitors ancillary points at the zone manager.

### GENERAL

The W7761A is the Remote Input/Output (RIO) Device in the Excel 10 product line family. The RIO is a LonMark® compliant device designed to monitor/control HVAC equipment, lighting, and other miscellaneous loads in a distributed network. Each physical input on the RIO can be monitored by the Excel 5000 Zone Manager. Each physical output on the RIO is individually controllable from the Excel 5000 Zone Manager.

## DESCRIPTION

The W7761A is the Remote Input/Output (RIO) Device in the Excel 10 product line family. The RIO is a LonMark® compliant device designed to monitor/control HVAC equipment, lighting, and other miscellaneous loads in a distributed network. Each physical input on the RIO can be monitored by the Excel 5000 Zone Manager. Each physical output on the RIO is individually controllable from the Excel 5000 Zone Manager.

## Control Techniques Supported:

### Output capacity:

W7761A—Eight Triac digital outputs

- Floating (Series 60) control.
- PWM.
- Remote connection of various actuators.

## SPECIFICATIONS

The W7761A is field mounted at or near the remote sensors and actuators that it monitors and controls. The W7761A can be mounted on a panel or on DIN rail using two each 2TK2D Augat DIN rail adapters (purchase locally). Field wiring 14 to 22 AWG (2.0 to 0.34 mm<sup>2</sup>) attaches to screw terminals. To access the network for E-Bus communications an operator plugs into the E-Bus jack with an E-Bus Serial Interface Cable.

## Inputs/Outputs:

The W7761A Device supports the following hardware features:

- Four 20 Kohm NTC (10,000 through 80,000 ohm) or PT3000 (250 through 12,000 ohm) resistive analog inputs.
- Two 0.2 to 10 Vdc or 4 to 20 mA (user selectable) voltage/current analog inputs.
- Four dry contact digital inputs.
- Eight 24 Vac Triac digital outputs (500 mA MAX).
- One 22 Vdc power supply for auxiliary devices with a maximum current of 50 mA.

## Analog Inputs:

### Space Temperature:

Type: RTD.

Supported Sensors: T7770A; T7780B.

### Discharge Air Temperature:

Type: RTD.

Supported Sensors: C7100A1015\*, C7770A1006, C7031B1033, C7031C1031, C7031D1062, C7031F1018, C7031J1050, C7031K1017.

### Outdoor Air Temperature:

Type: RTD.

Supported Sensors: C7170A1002.

### Return Air Temperature:

Type: RTD.

Supported Sensors: C7100A1015\*, C7770A1006, C7031B1033, C7031C1031, C7031D1062, C7031F1018, C7031J1050, C7031K1017.

### Outdoor Air Humidity:

Type: Voltage/Current.

Supported Sensors: C7600B1000 and C7600B1018 (2 to 10V), C7600C1008 (4 to 20mA).

### Return Air Humidity:

Type: Voltage/Current.

Supported Sensors: C7600B1000 and C7600B1018 (2 to 10V), C7600C1008 (4 to 20mA).

### Outdoor Air Enthalpy:

Type: Current.

Supported Sensors: C7400A1004 (4 to 20mA).

### Return Air Enthalpy:

Type: Current.

Supported Sensors: C7400A1004 (4 to 20mA).

### Air Filter Differential Pressure:

Type: Voltage.

Supported Sensors: Third party 2 to 10V, 0 to 5 inw (0 to 1.25 kPa) differential pressure sensors.

### CO<sub>2</sub> Sensor:

Type: Voltage.

Supported Sensors: Third party 0 to 10V, 0 to 2000 ppm CO<sub>2</sub> sensors.

### Monitor Sensor for network use:

Type: Voltage.

Supported Sensors: Third party 2 to 10V, 2 to 10 volts displayed.

## Digital Inputs:

Dry-contact inputs are sensed using a 9 milliamp at 4.8 volts detection circuit. It is very important that the device used contains high quality, noncorroding contacts with resistivity that does not degrade; that is, increase over time. Use noble metal (such as gold or silver), or pimpled or sealed contacts to assure consistent, long-term operation.

Four of the following Digital Inputs (DIs) can be configured when using the W7761A:

- Fan Status: Contact Closed = Fan on
- IAQ Switch: Contact Closed = Poor Air Quality
- Time Clock: Contact Closed = Occupied Mode; Contact Open = Unoccupied Mode
- Schedule Master: Contact Closed = Local time clock is used as master time clock
- Economizer Enable Signal: Contact Closed = Economizer Enabled for cooling use

\* The PT3000 sensor is not recommended for floating control (real time - discharge or return configured as space sensor). The PT3000 sensor is intended for monitoring or differential (staged) control

- Smoke Monitor: Contact Closed = Smoke Detected
- Dirty Filter: Contact Closed = Dirty Filter
- Shutdown Signal: Contact Closed = Shut off all equipment
- Occupancy Switch: Contact Closed = Room is Occupied; Contact Open = Room is Unoccupied
- Window Monitor: Contact Closed = Window is Closed

### Triac Outputs:

Triac Outputs on the W7761A Model:

- Power ratings: 20 Vac to 30 Vac at 25 mA MIN to 500 mA MAX current for any voltage.

## Power Supply Requirements

24 Vac with a valid range of 20 to 30 Vac at 50/60 Hz. Controller uses 6 VA maximum at both 50 and 60 Hz.

## CPU

Motorola or Toshiba 3150 Neuron™ processor, containing three eight-bit CPU's. Each Neuron has a unique 48-bit network identification number.

## Memory Capacity

The W7761A Device uses a 64K ROM/PROM (16K reserved for network operations, 48K usable for algorithm code).

512 bytes EEPROM  
2K RAM

## Specified Space Temperature Sensing Range

55° to 85°F (13° to 29°C) when configured and connected to a T7770A Wall Module or a T7780B Digital Display Wall Module (DDWM).

## Communications

The W7761A Device uses a FTT transformer-coupled communications port running at 78 kilobits per second (kbs). Using the transformer-coupled communications interface offers a much higher degree of common mode-noise rejection while assuring dc isolation. The E-Bus is insensitive to polarity, eliminating installation errors due to miswiring.

The maximum E-Bus network length is 5000 ft (1524m). With the addition of a Q7751A Router, the maximum length of the E-Bus network can increase to 10,000 ft (3048m).

The maximum number of nodes per E-Bus segment is 60.

The maximum number of nodes per Q7750A Zone Manager FTT network is 120.

Approved cable types for E-Bus communications wiring is Level IV 22 AWG (0.34 mm<sup>2</sup>) plenum or nonplenum rated unshielded, twisted pair, solid conductor wire. For nonplenum areas, use Level IV 22 AWG (0.34mm<sup>2</sup>) such as U.S. part AK3791 (one pair) or U.S. part AK3782 (two pair). In plenum areas, use plenum-rated Level IV 22 AWG (0.34 mm<sup>2</sup>) such as US part AK3791 (one pair) or US part AK3792 (two pair). Additionally, Echelon® approved cable can be used. Contact Echelon® Corp. Technical Support for the recommended vendors of Echelon® approved cables.

### Dimensions (H/W/D):

W7761A: 5-5/8 x 6 x 2-1/8 in. (143 x 152 x 54 mm).

### Environmental Ratings:

Operating Temperature: -40° to 150°F (-40° to 65.5°C).  
Shipping Temperature: -40° to 150°F (-40° to 65.5°C).

### Relative Humidity:

5% to 95% noncondensing.

### Vibration:

V2 level compliant.

### Corrosion:

The W7761A is not sealed against corrosive vapors or compounds.

### Approval Bodies:

- The W7761A is listed under UL 916 (E87741) and is also listed under cUL (E87741).
- The W7761A meets FCC part 15 Class B requirements.
- The W7761A conforms to requirements per European Consortium standards EN50081-1 (CISPR 22 Class B) and EN 50082-1 (IEC 801-2, IEC 801-3 and IEC 801-4) for CE mark labeling.

### Accessories:

- T7770A Wall Module.
- T7780B Digital Display Wall Module.
- Excel 10 C7770A Air Temperature Sensor.
- Excel 10 Q7750A FTT Zone Manager.
- Excel 10 Q7751A,B Router.
- Excel 10 Q7752A Serial Interface.
- Excel 10 Connector Cable 205979 from the Excel 10 Q7752A Serial Interface to an Excel 10 Controller or Wall Module.
- Excel 10 Q7740A,B FTT Repeaters
- 209541B FTT Termination Module

**Honeywell**

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