

## Excel 50 CONTROLLER

### HONEYWELL EXCEL 5000 OPEN SYSTEM

#### SPECIFICATION DATA



### FEATURES

- **Various state-of-the-art communication options:** Open LONWORKS® bus, Meter-bus, or C-bus communication; modem or ISDN terminal adapter at up to 38.4 Kbaud
- **Unique features in open LONWORKS® networks:** NV-Booster® reduces the number of required NVs and thus also the number of required controllers; NV bindings can be restored after controller reset (and thus need not be redone after exchanging controllers); 46 NVs supported for LONWORKS® integration
- **Reduced engineering and start-up costs:** Huge variety of pre-tested and fully documented applications
- **Easy and flexible installation:** Screw terminals; mounting inside cabinet (DIN rail) or in cabinet front door
- **Operating options:** Integrated operator interface, XI582 Remote Interface, XI882 Remote Touch-Panel Interface, and XL-Online PC-based interface

### GENERAL

The Excel 50 controller has built-in communication capability, allowing it to be integrated into a Honeywell EXCEL 5000® System or into an open LONWORKS® network communicating with Excel 10 controllers as room/zone controllers or with 3<sup>rd</sup>-party products. It can also serve as a stand-alone controller. Typical areas of application include heating systems, district heating systems, and air conditioning plants for restaurants, shops, offices, and small branch government buildings.

The Excel 50 supports standard LonMark™ Network Variables according to the LonMark™ Interoperability Guidelines V.3.0. It can serve 22 integrated I/Os and supports peer-to-peer communication; thus, in the case of larger-scale applications, several different controllers can be linked and accessed. The system firmware is stored in Flash EPROM (or, in the case of the XD50-E, in EPROM) located in the application module (a separate module plugged into the controller housing.) Flash EPROM allows easy upgrading of the operating system via download.

The Excel 50 is a freely programmable controller engineered using Honeywell's CARE programming tool. For LONWORKS® interoperability, a maximum of 46 LonMark™ NVs are available.

### DESCRIPTION

The Excel 50 controller is available in two housing versions, one with and one without a Man-Machine-Interface (MMI.) The MMI version allows buswide access to other controllers. The XI582 operator interface or the PC-based XL-Online operator and service software can be used in conjunction with either version. The housing can be mounted inside a cabinet on a DIN-rail or in a cabinet front door.

The Excel 50 has eight analog inputs, four analog outputs, four digital inputs (three of which can be used as totalizers,) and six digital outputs. The digital outputs allow the direct drive of 3-position actuators (up to the max. load.) The controller can be wired either with screw terminal blocks directly at the housing.) Pre-wiring is possible in both cases, and a controller can be replaced without rewiring.

The application modules are available in seven bus-wide access versions (all with Flash EPROM) and three stand-alone versions (two with and one without Flash EPROM) featuring a variety of bus interfaces (see Table 1.) Large RAMs provide for increased trending capability. A modem or ISDN terminal adapter can be connected to the serial port of all models equipped with Flash EPROM to allow remote access at up to 38.4 Kbaud.

All changeable parts or switches are accessible without opening the housing. Communication capabilities and memory are easily upgraded by replacing application modules.

## SPECIFICATIONS

### Versions

#### Housing

- XL50-MMI (with Man-Machine Interface);
- XL50 (without MMI.)

The MMI features a keypad (with eight function keys and four fast-access keys) and an LCD display (with four lines, 16 characters per line, adjustable contrast, and backlight.)

#### Application Modules

The nine Flash EPROM versions can be upgraded by direct firmware download via serial port or C-Bus. In the case of the XD50-E (which lacks Flash EPROM,) updating is possible via EPROM burner. Contact your local Honeywell affiliate for more information on the available firmware and applications.

**Table 1. Module versions**

module	description
XD50B-F	Stand-alone; 2 MB Flash EPROM; 256 KB RAM; European and Chinese language support
XD50B-F-TW	Stand-alone; 2 MB Flash EPROM; 256 KB RAM; Taiwanese language support
XD50B-FC	Bus-wide access via C-Bus; 2 MB Flash EPROM; 256 KB RAM; European and Chinese language support
XD50B-FL	Bus-wide access via LONWORKS® Bus; 2 MB Flash EPROM; 256 KB RAM; European and Chinese language support
XD50B-FCL	Bus-wide access via C-Bus / LONWORKS® Bus; 2 MB Flash EPROM; 256 KB RAM; European and Chinese language support
XD50B-FCL-TW	Bus-wide access via C-Bus / LONWORKS® Bus; 2 MB Flash EPROM; 256 KB RAM; Taiwanese language support
XD50-E	Stand-alone; 512 KB EPROM; 128 KB RAM
XD50-FCS	Bus-wide access via C-Bus / Meter-Bus; 1 MB Flash EPROM; 256 KB RAM
XD50-FLS	Bus-wide access via LONWORKS® / Meter-Bus; 2 MB Flash EPROM; 256 KB RAM
XD52-FCS	Bus-wide access via C-Bus / Meter-Bus; 1 MB Flash EPROM; 640 KB RAM

#### Mounting Options

Front door mounted with sealing ring.  
Cabinet mounted on DIN-rail (rail clips shipped with device.)

#### I/O Terminal Connection

Screw terminal blocks directly attached to housing.

### Power Supply

#### Voltage

24 Vac,  $\pm 20\%$ , 50/60 Hz from external transformer.

#### Current

3 A (2 A if digital output current  $\leq 1.5$  A.) In case of power failure, the super gold capacitor saves RAM content and real-time clock for 72 hours (thus, no battery disposal necessary.)

#### Power Consumption

Max. 10 VA without load at digital outputs.

### Input/Output Specifications

type	characteristics
eight analog inputs (universal)	Voltage: 0...10 V (software-controlled switches for high impedance) Current: 0...20 mA (via external 499 $\Omega$ resistor) Resolution: 10-bit Sensor: NTC 20k $\Omega$ , -58...+302 °F (-50...150 °C)
four digital inputs	Voltage: max. 24 Vdc ( $\leq 2.5$ V = logical status of 0, $\geq 5$ V = logical status of 1,) 0...0.4 Hz (0...15 Hz for three of four inputs when used as totalizer, 4 <sup>th</sup> input only for static parameter requirements)
four analog outputs (universal)	Voltage: 0...10 V, max. 11 V, $\pm 1$ mA Resolution: 8-bit Relay: via MCE3 or MCD3
six digital outputs	Voltage: 24 Vac per triac Current: max. 0.8 A, 2.4 A for all six triacs together

All inputs and outputs protected against overvoltage up to 24 Vac and 35 Vdc. Digital outputs protected against short circuits via a changeable fuse (built-in fuse, 5 x 20 mm, 4 A quick-blow.)

### Bus and Port Connections

#### C-Bus Connection

Optional; located on application module. Up to 76.8 Kbaud, switch provided for selectable termination.

#### LONWORKS® Bus Connection

Optional; located on application module. 78 Kbaud, FTT-10A Free Topology Transceiver, using LonTalk® protocol.

#### Controller Serial Port Connection

9-pin Sub-D connector, RS 232, 9.6 Kbaud for XI582, XL-Online, or with Flash EPROM versions up to 38.4 Kbaud for modem/ISDN terminal adapter connection.

#### Meter-Bus Connection

Optional; located on application module. RS232 serial link with RJ45 connector (PW3 Meter-Bus adapter also required.)

#### I/O Connectors

I/O Connector A: 26-pin port, digital outputs and power.  
I/O Connector B: 34-pin port, analog and digital inputs, analog outputs.

### Environmental Ratings

Operating temperature: 0...50 °C (+32...+122°F)  
Storage temperature: -20...+70 °C (-4...+158°F)  
Relative humidity: 5...93% non-condensing

### Protection Standards

IP54 (when front-door mounted with MMI in a cabinet conforming to IP54 and use of ACC3 mounting clamps and sealing ring.)

IP30 (when cabinet-mounted: both with and without MMI.)

UL94-0: Flame-retardant class of housing material.

### Certifications

- CE
- UL 916 and cUL
- Meets FCC Part 15, Subpart J for Class A equipment.

## Application Module

### Firmware

In the case of the Flash EPROM versions, the firmware is downloadable via the PC-based XL-Online operator and service software or C-Bus. In the case of the XD50-E (which lacks Flash EPROM,) updating is via EPROM burner.

### Housing

Plug-in plastic module, wired with screws.

## Application Module LEDs and Ports

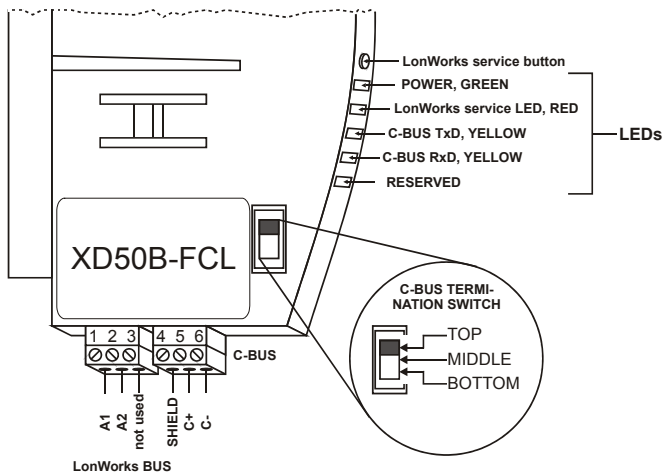
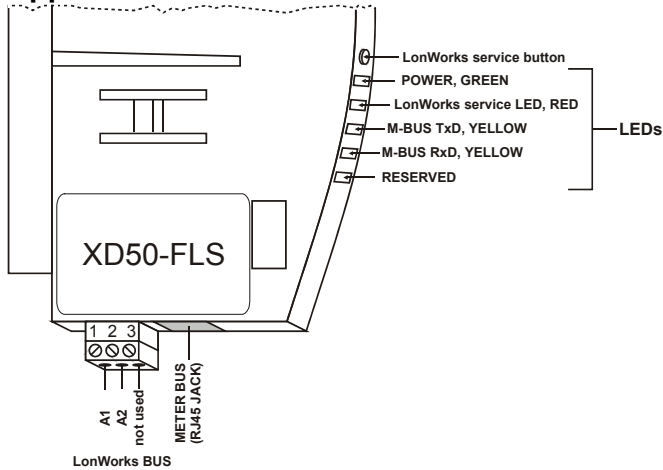


Fig. 1. Application modules (examples)

## Terminal Blocks

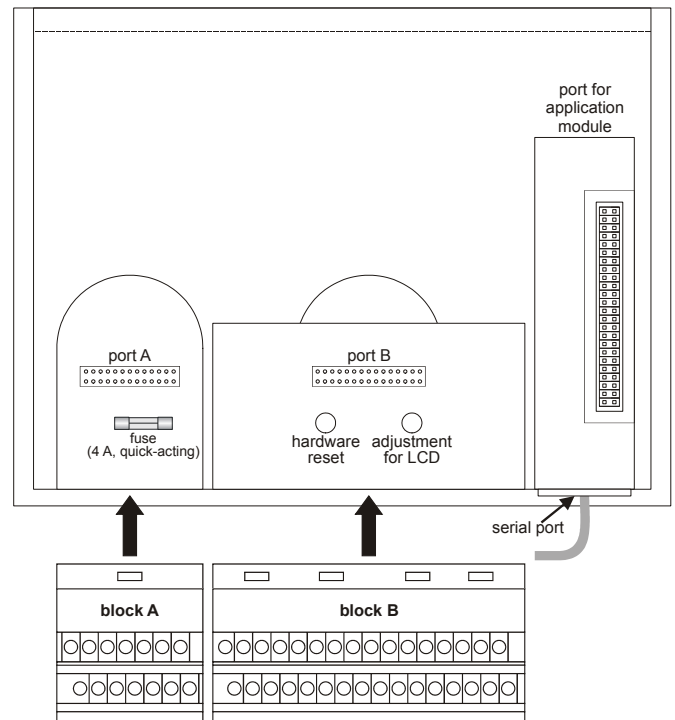


Fig. 2. Removable screw terminal blocks

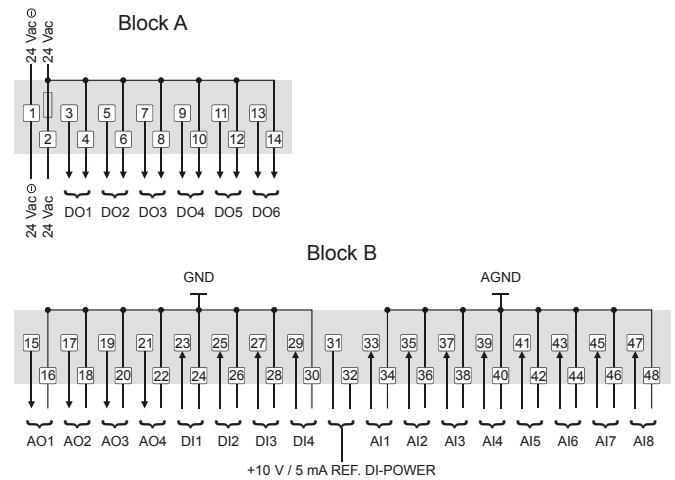
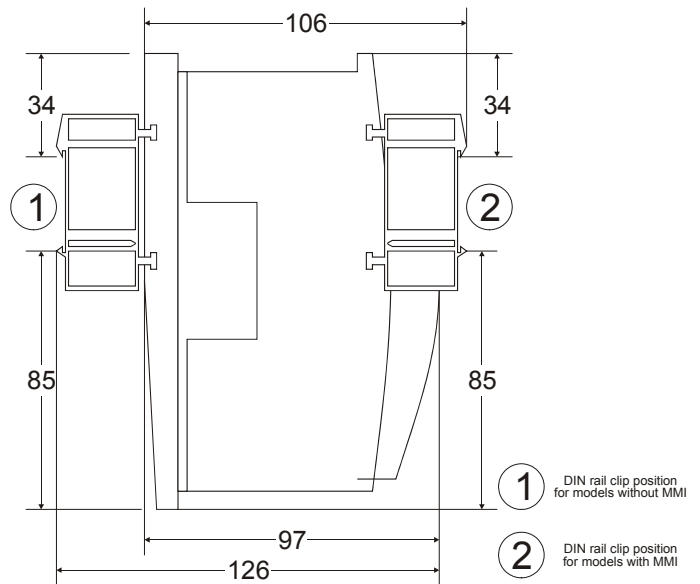
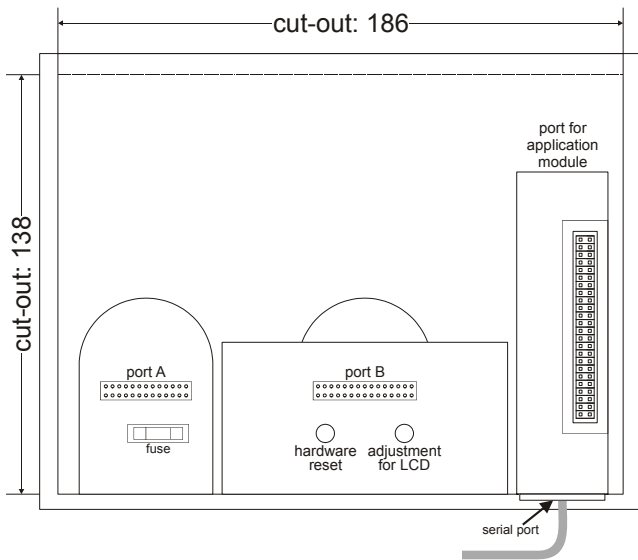
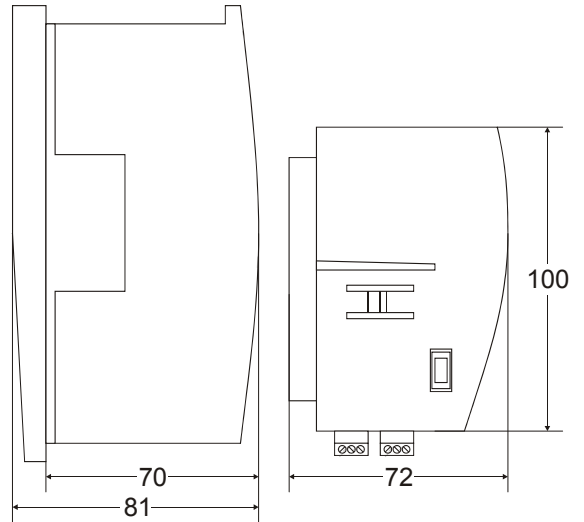
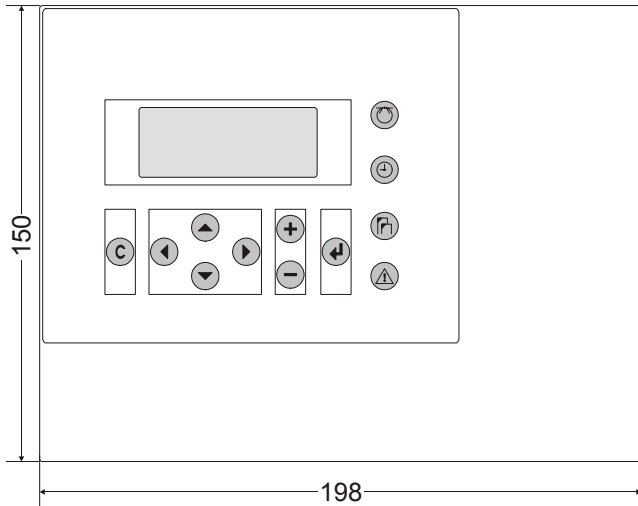


Fig. 3. Terminal assignment of screw terminal blocks

**Dimensions**



**Honeywell**

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