Honeywell Excel 50 Controller Instruction Manual

Honeywell

Excel 50
CONTROLLER
HONEYWELL EXCEL 5000 OPEN SYSTEM

Contents

SPECIFICATION DATA

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 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 Vari- ables according to the LonMark™ Interoperability Guidelines V.3.0. It can serve 22 integrated I/Os and supports peer-topeer 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 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.

FEATURES

- Various state-of-the-art communication options: Open LONWORKS® bus, Meter-bus, or C-bus communication
- Unique features in open LONWORKS® networks: NVBooster® 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

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 – all with Flash EPROM – are available in five bus-wide access versions and one standalone version. They feature a variety of bus interfaces (see Table 1.) Large RAMs provide for increased trending capability. 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

- XL50A-MMI and XL50A-CY (with Man-Machine Interface);
- XL50A (without MMI.)

Versions with MMI

Both the XL50A-MMI and the XL50A-CY feature a keypad (with eight function keys and four fast-access keys) and an LCD display.

- The LCD display of the XL50A-MMI has four lines, 16 characters per line, adjustable contrast, and backlight.
- The LCD display of the XL50A-CY features 128 X 64 dot graphics, adjustable contrast, and backlight.

Application Modules

The Excel 50 controller can be upgraded by direct firmware download via serial port or C-Bus. Contact your local Honeywell affiliate for more information on the available firmware and applications.
Table 1. Module versions

module	description
XD50C-F	Stand-alone; 2 MB Flash EPROM; 256 KB RAM; European and Chinese languag e support
XD50C-FC	Bus-wide access via C-Bus; 2 MB Flash EPROM; 256 KB RAM; European and C hinese language support
XD50C-FL	Bus-wide access via LONWORKS® Bus; 2 MB Flash EPROM; 256 KB RAM; Eur opean andChinese language support
XD50C-FCL	Bus-wide access via C-Bus / LONWORKS® Bus; 2 MB Flash EPROM; 256 KB R AM; European and Chinese language support
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 R AM

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, ±20 %, 50/60 Hz from external transformer.
Current
3 A (2 A if digital output current 1.5 A.) In case of power failure, the super gold capacitor saves RAM content and realtime 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 (univers al)	Voltage: 0…10 V (software-controlled switches for high impedance) Current: 0…20 mA (via external 499 resistor) Resolution: 10-bit Sensor: NTC 20k, -58…+302 °F (-50…150 °C)
four digital inputs	Voltage: max. 24 Vdc (2.5 V = logical status of 0, 5 V = logical status of 1,) 0…0. 4 Hz (0…15 Hz for three of four inputs when used as totalizer, 4th input only for static parameter requirements)
four analog outputs (univers al)	Voltage: 0…10 V, max. 11 V, ±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.
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
Purpose:	for home (residential, commer- cial, and light-industrial) environments
Construction:	for incorporate mounting in cabinets
RFI, EMI Pollution degree:	according to CE regulations
Action:	Class II
TySoftware:	Type 1
	Class A
ClImpulse voltage:	500 V

Protection Standards
IP54 (when front-door mounted with MMI in a cabinet conforming to IP54 and use of ACC3 mounting clamps and sealing ring.)
IP20 (when wall-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
The firmware is downloadable via the PC-based XL-Online operator and service software or C-Bus.
Housing
Plug-in plastic module, wired with screws.
Application Module LEDs and Ports

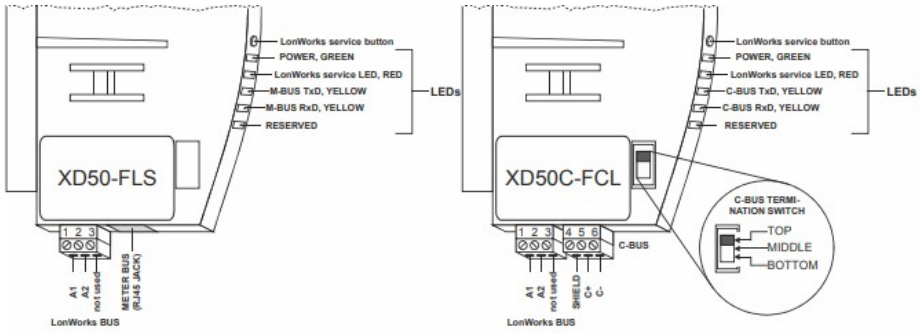


Fig. 1. Application modules (examples)

Terminal Blocks

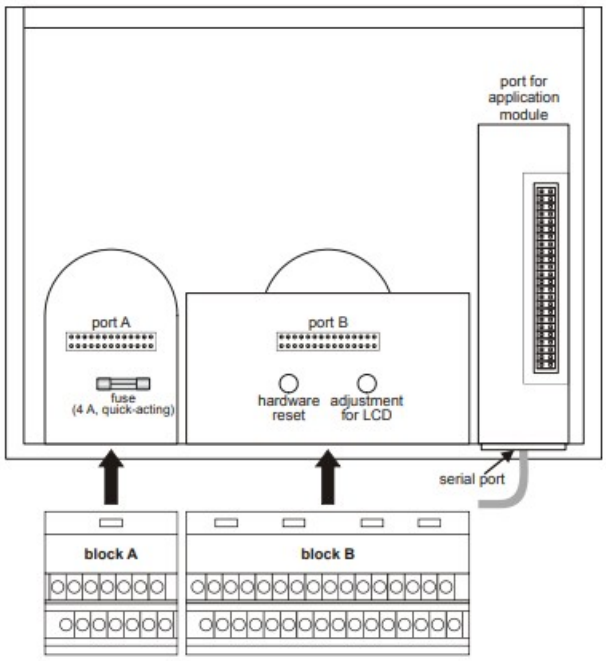


Fig. 2. Removable screw terminal blocks

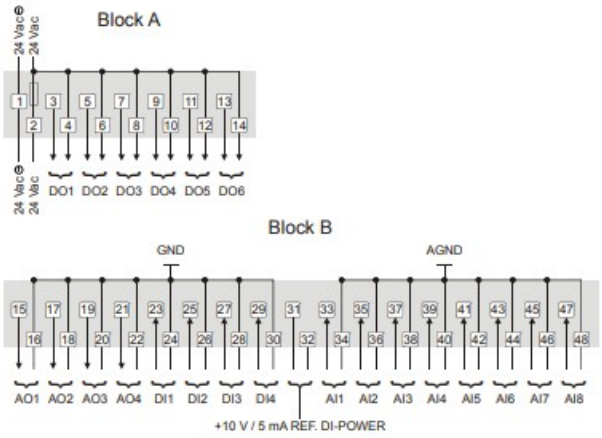
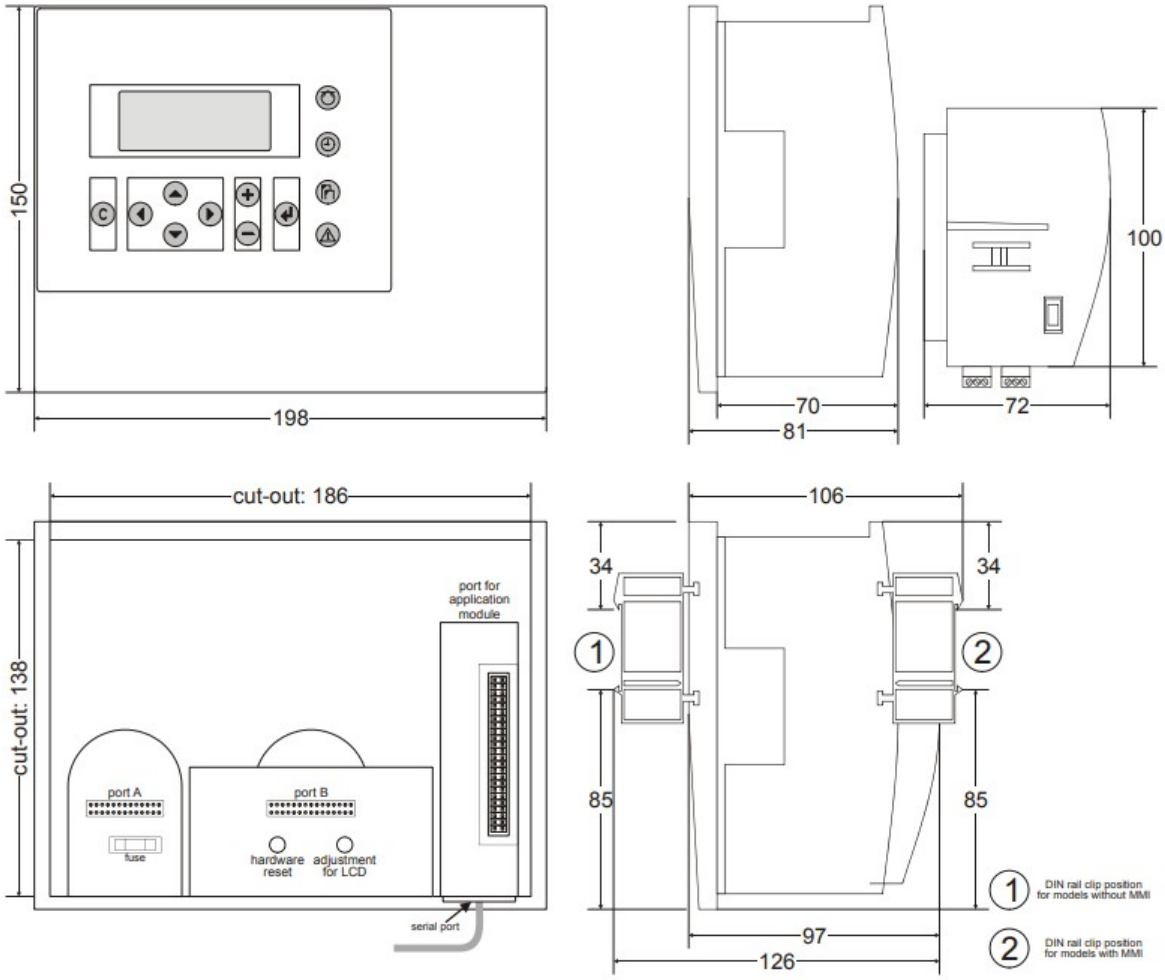


Fig. 3. Terminal assignment of screw terminal blocks

Dimensions



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EN0B-0088GE51 R0215
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Documents / Resources

	Honeywell Excel 50 Controller [pdf] Instruction Manual Excel 50, Excel 50 Controller, Controller

References

- **User Manual**