Honeywell

Excel 50
CONTROLLER

HONEYWELL EXCEL 5000 OPEN SYSTEM

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 3rd-party products. It can also serve as a standalone 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 EPROM or 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 available either as a

- **configurable controller** with a separate application module for each group of applications (XD50FL-AH03-EN, XD50FCL-HT02-GE, etc.). In this case, a specific application is chosen using the Lizard® application selector and then entered as a code number via the MMI or an external interface. The number of LONMARK NVs (typically about 60) is determined by the chosen application; or as a
- **freely programmable controller** with an application module, engineered using Honeywell's CARE programming tool, and a maximum of 46 LONMARK NVs.

FEATURES

- **Various state-of-the-art communication options:** Open LONWORKS® bus or C-bus communication; modem or ISDN terminal adapter at up to 38.4 Kbaud; wireless communication via GSM; dial-up through TCP/IP networks
- **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, configured with the PC-based Lizard application selector
- **Easy and flexible installation:** Screw terminals; mounting inside cabinet (DIN rail) or in cabinet front door
- **Hardware / software options:** With or without: XI582AH operator interface; Excel Online (formerly XI584) operator and service software; MMI (for buswide access to other controllers)

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 XI582AH operator interface or the PC-based XI584 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 Excel 50 is available in two standalone versions (with or without EPROM) or with different application modules and 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. Connection to a Siemens M20 terminal permits wireless communication via GSM.

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

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SPECIFICATIONS

Versions

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

Application Modules
The application modules are available with configurable applications. Flash EPROM versions can be upgraded by direct firmware download via serial port or C-Bus. Contact your local Honeywell affiliate for more information on the available applications.

Table 1. Module versions

module	description
XD50B-F	same as XD50-F, plus: Chinese
XD50B-F-TW	same as XD50-F, plus: Taiwanese
XD50B-FC	same as XD50-FC
XD50B-FL	same as XD50-FL
XD50B-FCL	same as XD50-FCL, plus: Chinese
XD50B-FCL-TW	same as XD50- FCL, plus: Taiwanese
XD50-E	standalone[1]
XD50-F	standalone[2]
XD50-FC	C-Bus[2]
XD50-FCS	C-Bus/Meter-Bus[2]
XD50-FL	LONWORKS® BUS[2]
XD50-FCL	C-Bus/LONWORKS® BUS[2]
XD50-FLS	LONWORKS®/Meter-Bus
XD52-FC	C-Bus[3]
XD52-FCS	C-Bus / Meter-Bus[3]
[1]64 KB EPROM (boot); 128 KB RAM; 512 KB EPROM (firmware and application)	
[2]64-KB EPROM (boot); 256 KB RAM; 1 MB Flash EPROM (firmware and application)	
[3]64 KB EPROM (boot); 640 KB RAM; 1 MB Flash EPROM (firmware and application)	

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.

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 Ω resistor)
	Resolution:	10-bit
	Sensor:	NTC 20kΩ, -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)
4 analog outputs (universal)	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 quickblow).

Man-Machine-Interface (Optional)

Keypad
Eight function keys, four fast-access keys.

Display
LCD, four lines, 16 characters per line, adjustable contrast, backlight.

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 XI582AH XI584, 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.

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 real-time clock for 72 hours (thus, no problems disposing of dead batteries).

Power Consumption
Max. 10 VA without load at digital outputs.

Environmental Ratings

Operating temperature: 0...50 °C (32 to 122°F)
Storage temperature: -20...+70 °C (-4 to 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

Four versions for the different communication options, downloadable via the PC-based XI584 operator and service software or C-Bus (not standalone version with EPROM).

Housing

Plug-in plastic module, fixed with screws.

Application Module LEDs and Ports

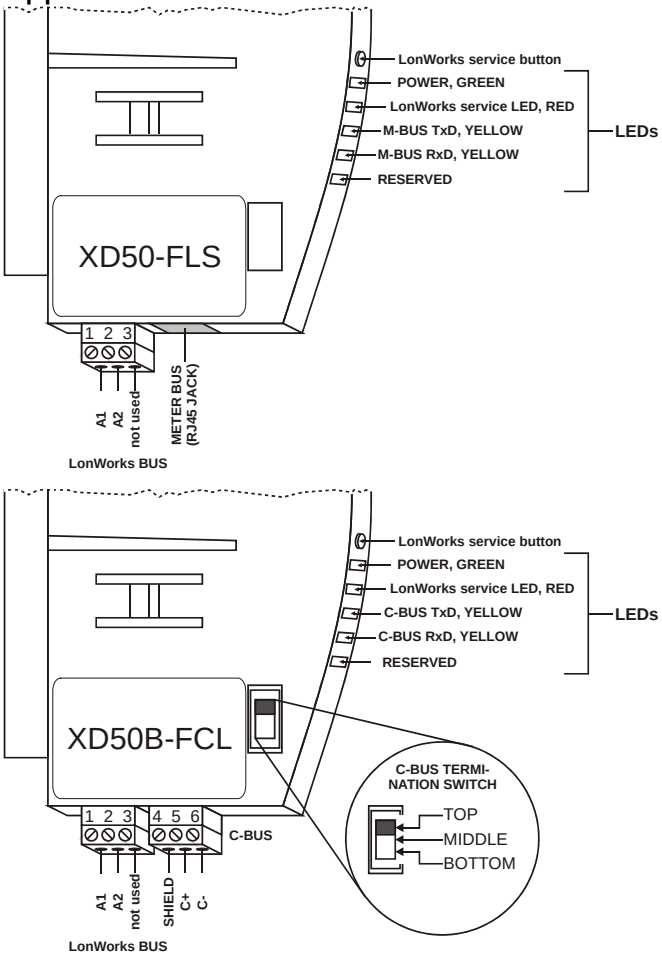


Fig. 1. Application modules (examples)

Terminal Blocks

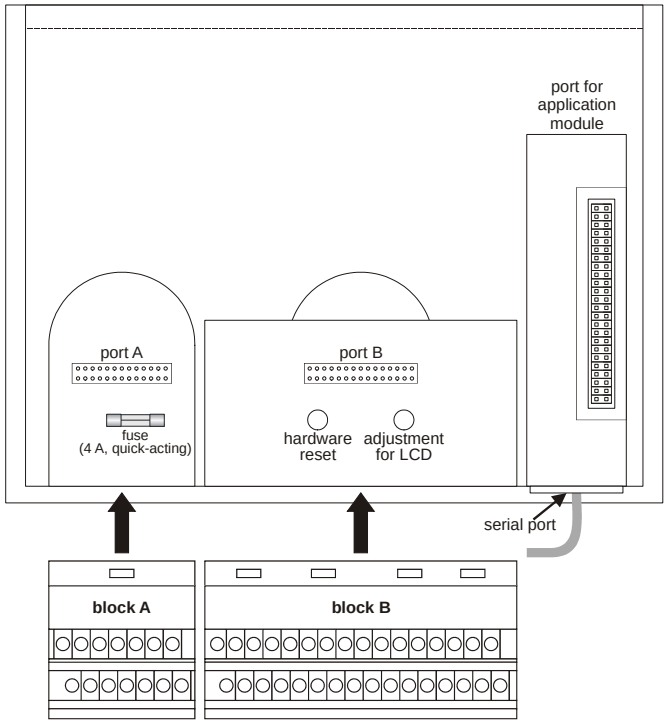


Fig. 2. Removable screw terminal blocks

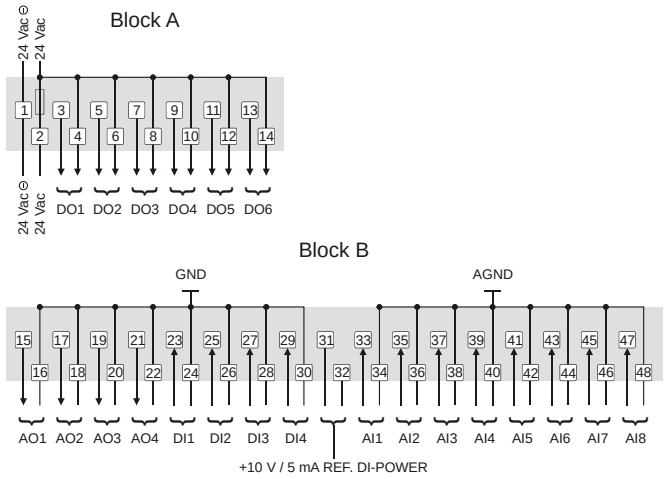
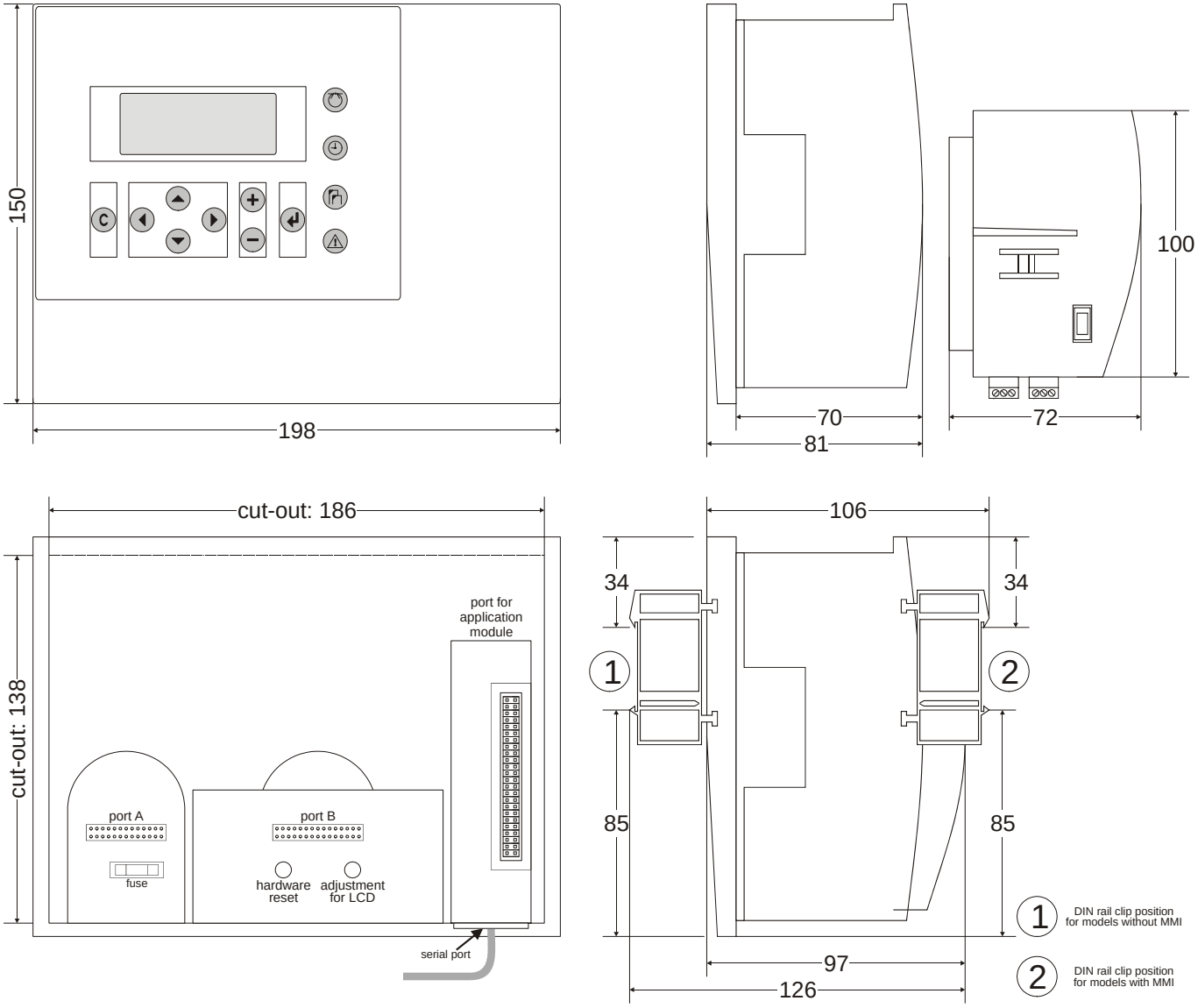


Fig. 3. Terminal assignment of screw terminal blocks

Dimensions



Honeywell

Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sàrl, Ecublens, Route du Bois 37, Switzerland by its Authorized Representative:

Automation and Control Solutions
Honeywell GmbH
Böblinger Straβe 17
D-71101 Schönaich
Germany

http://europe.hbc.honeywell.com

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