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**User manual HONEYWELL EXCEL 50**  
**User guide HONEYWELL EXCEL 50**  
**Operating instructions HONEYWELL EXCEL 50**  
**Instructions for use HONEYWELL EXCEL 50**  
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**Honeywell**

**Excel 50**  
CONTROLLER

HONEYWELL EXCEL 5000 OPEN SYSTEM

INSTALLATION INSTRUCTIONS

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EN1B-0101GE51 R0909G



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*Manual abstract:*

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37 ENIB-0101GE51 R0909G 4 EXCEL 50 INSTALLATION INSTRUCTIONS 5 ENIB-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS REVISION OVERVIEW On the following pages, changes have been made compared to the previous release of this document: Page: 39 Change: Deletion of APPENDIX 1: Smoke Control. ENIB-0101GE51 R0909G 6 EXCEL 50 INSTALLATION INSTRUCTIONS GENERAL · When performing any work (installation, mounting, start-up), all instructions given by the manufacturer and in particular the safety instructions provided in these Installation Instructions are to be observed. · The Excel 50 Controller may be installed and mounted only by authorized and trained personnel. · If the unit is modified in any way, except by the manufacturer, all warranties concerning operation and safety are invalidated. · Make sure that certain local standards and regulations are observed at all times. Examples of such regulations are VDE 0800 and VDE 0100. · Use only accessory equipment coming from or approved by Honeywell. · Before the system is dismantled, disconnect the power supply. Do this by removing the terminal block or by installing an additional 3rd-party switch onto the DIN rail close to the controller; see the following caution and note. NOTE: The Excel 50 Controller has Pollution Degree 2, making it suitable for use in residential controls, commercial controls, in a clean environment, or nonsafety controls for installation on or in appliances. Safety Instructions CAUTION Disconnect the power supply before you start to install the Excel 50 Controller. Do not reconnect the power supply until you have completed installation. IMPORTANT To comply with CE requirements, devices with a voltage in the range of 50 to 1000 Vac or 75 to 1500 Vdc which are not provided with a supply cord and a plug or with other means for disconnection from the supply having a contact separation of at least 3 mm in all poles, must have the means for disconnection incorporated in the fixed wiring. NOTE: To comply with CE requirements, the device should always be powered up using a Honeywell ETR2 or Honeywell-approved third-party transformer. CAUTION Disconnect the power supply before removing or plugging in the application module.

7 ENIB-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Hardware Overview port for application module port A port B XW586 fuse (4 A, quick-acting) hardware adjustment for LCD reset serial port Fig. 4. Meter-Bus adapter NOTE: The PW3 (or PW20) M-Bus adapter and XW586 MBus adapter cable or connect the application module serial port to the Meter-Bus adapter as described in section "Meter-Bus Connection Procedure". 5. Break plastic tabs covering the slots on the controller for the DIN rail mounting clips using a screwdriver.

6. Attach the DIN rail mounting clips at the housing as shown in Fig. 13. 7. Mount the controller on the DIN rail. Application Module CAUTION Always insert the application module before connecting the power supply. CAUTION -- Always disconnect the power supply before unplugging the application module. Plug in the application module until it snaps into the controller housing. Fig. 13.

Inserting application module NOTE: If the application module has been replaced or removed and re-inserted, please push the reset button (behind I/O terminals) after power on. Fig. 12. Cabinet mounting with MMI ENIB-0101GE51 R0909G 12 EXCEL 50 INSTALLATION INSTRUCTIONS ELECTRICAL CONNECTIONS When connecting the controller, both VDE, National Electric Code NEC (or equivalent) and any local regulations concerning grounding and zero voltage must be observed. Electrical work should be carried out by a qualified electrician. The electrical connections must be made at the terminal blocks. Maximum torque for fastening the wiring terminal screws is 0.5 Nm (4.5 lb-in). Direct wiring of the Excel 50 is performed using screw terminal blocks included in the delivery.

For proper installation, follow these instructions. Read all of section "Electrical Connections" carefully. Terminal Details 24 Vac 24 Vac Block A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 24 Vac 24 Vac DO1 DO2 DO3 DO4 DO5 DO6 GND Block B 27 26 28 29 30 31 32 33 34 35 36 37 38 AGND 15 16 17 18 19 20 21 22 23 24 25 39 40 41 42 43 44 45 46 47 48 SCREW TERMINAL BLOCKS AO1 AO2 AO3 AO4 DI1 DI2 DI3 DI4 AI1 AI2 AI3 AI4 AI5 AI6 AI7 AI8 31, 30 = +10 V / 5 mA REF. 32, 30 = DI-POWER Fig. 15.

Screw Terminal Blocks A and B NOTE: The output (18...30 Vdc) of terminal 32 in screw terminal block B is not stabilized. If you wish to connect terminal 32 to a digital input via a potentialfree relay, see Fig. 24 on page 20. Cabling Cable Routing BLOCK A BLOCK B Fig. 14. Wiring options The two screw terminal blocks A and B (order no.: XS50) are attached directly to the controller housing.



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Table 2. Terminal blocks name screw terminal block code XS50 Block A XS50 Block B no. of terminals 14 34 All signal (input/output, low voltage) cables are communication circuits in accordance with VDE 0100, VDE 0800 and local regulations and should therefore be routed separately from line voltage. All circuits are power-limited. Table 3.

Min. distances to line voltage cable type unshielded cable shielded cable min. distance 4 in. (100 mm) 3/8 in. (10 mm) IMPORTANT Avoid joining sensor cables. 13 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Shielding IMPORTANT The max. length of a signal cable with 24 Vac supply is 550 ft (170 m). The max. length of a two-wire, 0..

.10 Vdc signal cable is 1,300 ft (400 m). The secondary side of the transformer must not be connected to earth ground. max. 170 m min. 2.5 mm<sup>2</sup> 1 2 PRIMARY VOLTAGE Y (0...10 Vdc) GND sensor GND 24 Vac TRANSFORMER 24 Vac Fig.

16. Sensor shielding Shielding of sensor and actuator cables with low protective voltages is not necessary if the general guidelines on cable routing are observed (see section "Cable Routing", page 13). If these guidelines cannot be observed, shielded cable must always be used. The shielded cable must be grounded as shown in Fig. 16. IMPORTANT Shielding of I/O cables that are connected to peripherals such as sensors and actuators must be grounded at the control cabinet side, only; this is in order to avoid ground loops. All Honeywell actuators are RFI suppressed in accordance with VDE 0871/B and VDE 0875/N. Lightning Protection Please check with your local Honeywell representative for information on lightning protection. NOTE: Use Honeywell surge protectors or Honeywell approved third-party surge protectors. Fig.

17. Power for Excel 50 with 24 V actuator (single transformer) If the distance between the controller and actuator or sensor with 24 Vac supply is greater than 550 ft (170 m), a separate external transformer for the actuator or sensor is necessary. max. 400 m min. 0.5 mm<sup>2</sup> 1 2 PRIMARY VOLTAGE GND 24 Vac Y (0...10 Vdc) GND TRANSFORMER 24 Vac GND PRIMARY VOLTAGE TRANSFORMER Fig. 18.

Power for Excel 50 with 24 V actuator (separate transformers) IMPORTANT We recommend installing a fuse on the secondary side of the transformer in order to protect the devices against miswiring. Cable Lengths and Cross Sectional Areas Table 4. Signal types and cross-sectional areas cross-sectional area type of signal Power supply (24 Vac) Low-current signals\* 300 ft (100 m) 16 AWG ( 1.5 mm<sup>2</sup>) 550 ft (170 m) 14 AWG ( 2.5 mm<sup>2</sup>) 1,300 ft (400 m) - 20 AWG ( 0.

5 mm<sup>2</sup>) \*E.g. for 0..

10 V sensors, totalizers, digital inputs, 0...10 V signals for actuators. EN1B-0101GE51 R0909G 14 EXCEL 50 INSTALLATION INSTRUCTIONS Analog Inputs Technical Description The analog inputs convert data from passive sensors and active sensors with voltage output. The analog inputs can be used as current inputs for active sensors, but then an external resistor parallel to the sensor is necessary. It is also possible to feed digital signals to the analog inputs (see also section "Sensors and Transducers" on page 18). Analog Inputs Used as Digital Inputs (O.S. 2.

03.xx or lower) 10 Vdc 31 max. 10 mA 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 AGND 0000062a 32 AII NOT CONNECTED NORMALLY CLOSED L 230 Vac/ 50 Hz 120 Vac/ 60 Hz N NORMALLY OPEN AI2 AI3 AI4 AI5 AI6 NOT CONNECTED NORMALLY OPEN L 230 Vac/ 50 Hz 120 Vac/ 60 Hz N AI7 AI8 Technical Specification Number: Eight analog inputs Types of input signals: NTC 20 k 0 to +10 V (max. +11 V) 0 (4) to 20 mA (with an external resistor of 499 ±0.25% [see Fig. 19]) Each input is switched automatically via software either as input for NTC 20 k (low impedance) or voltage source 0...+10V (max. +11 V, high impedance).

NTC 20k: Range = -58 ... +302 °F (-50 ..

. +150 °C) Voltage source: Range = 0...10 V IMPORTANT The analog inputs are protected against short circuit and overvoltage up to 24 Vac and 40 Vdc. If any input is sourced with more than 40 Vdc or negative voltage, the other inputs will be influenced. This could result in wrong values. 0-5V Fig. 20. Analog inputs used as digital inputs For normally-open contacts, a digital signal must be switched via the changeover contact of an additional relay. Unconnected analog inputs have a default voltage of 8.5 V. This is interpreted by the controller as a logical 1. This means that, in general, no external relay is needed for normally-open contacts. IMPORTANT The relay contact must be suitable for switching low voltage.

In the case of long cable distances, the analog input signal may be sensitive to interference. In this case, an external relay may also be used for normally-closed contacts. 4 3 2 33 34 31 A 1 2 31 32 AII 10 Vdc max. 5 mA SAF25 10 11 12 I = 1 mA 0 - 10 V 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 AGND 33 34 31 SENSOR NTC 20 k AI2 AI3 VMP I = 1 mA B ACTIVE SENSOR AI4 AI5 AI6 0-10V TRANSFORMER FOR ACTIVE SENSOR C 0(4) to 20 mA AI7 RI AI8 499 0.25% Fig. 19. Analog inputs, sensor connections 00000061 15 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Analog Inputs Used as Digital Inputs (O.S. 2.04.

xx or higher) 0000062m Unconnected inputs have a default voltage of 0 V. Table 5. Accuracy of analog inputs with NTC sensors range -58...

-40°F (-50...-40°C) -40..

..-22°F (-40...-30°C) -32...-4°F (-30...

-20°C) -4...14°F (-20...-10°C) 14...32°F (-10.

..0°C) 32...

50°F (0...10°C) 50..

..122°F (10...50°C) 122...158°F (50...

70°C) 158...194°F (70...90°C) 194...212°F (90.

..100°C) 212...

248°F (100...120°C) 248..

..302°F (120...150°C) deviation / ± Kelvin (without sensor tolerance) NTC (20 k) 5.5 K 3.0 K 1.8 K 1.1 K 0.8 K 0.

6 K 0.4 K 0.6 K 1.0 K 1.5 K 2.4 K 5.3 K 32 AII NOT CONNECTED NORMALLY OPEN 230 Vac/ 50 Hz 120 Vac/ 60 Hz L 10 Vdc 31 max. 5 mA 33 34 35 36 37 38 39 40 41 42 AGND AI2 AI3 AI4 N POWER 31 10 Vac 31 NOT CONNECTED NORMALLY CLOSED L AI6 AI7 AI8 43 44 45 46 47 48 230 Vac/ 50 Hz 120 Vac/ 60 Hz N Fig. 21. Analog inputs used as digital inputs EN1B-0101GE51 R0909G 16 EXCEL 50 INSTALLATION INSTRUCTIONS Pull-Up Resistor Handling 10 V Case 1 10 V Case 2 5V Case 3 24.

9 k (pull-up) A D 49.9 k 24.9 k (pull-up) A D 49.9 k 18.2 k (pull-up) A D 100 k 150 k 150 k 100 k Fig.

22. Input circuit diagram Table 6. Pull-up resistor handling pull-up device deactivated by @ (8 configured configured activated by DIP by plug-in for DI on AI switch input circuit diagram (Fig. 22) load-free voltage for voltage with NTC input or or lowhighimpedance impedance input input voltage hardware

*XF521, fixed NO YES case 2 8.89 V XF521A NO 10 V 8.*

*89 V XF526 fixed NO YES case 2 8.89 V XFL521, YES(3 config.(6 case 1 XFL521A/B optional YES 0V switch-off Smart I/O NO 5V YES(4 YES(7 case 3 5V  
XFC XL20 fixed NO YES case 2 8.89 V XL25A / optional YES(2 YES(5 case 1 0V XL50A switch-off 10 V NO 8.*



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89 V XLI100, fixed YES case 2 8.89 V XLI100A NO XLI100B YES configurable optional case 1 0V (1 switch-off XLI100C YES NO YES(5 (1 controller firmware 2.03; (2 controller firmware 2.02; (3 controller firmware 2.03 (local/shared mode), CARE 5.00.

01 (open mode); (4 CARE 5.00.01; (5 controller firmware < 2.04; (6 controller firmware < 2.04 (local/shared mode), CARE 5.01.xx (open mode); (7 CARE 5.01.xx; (8 Assigning "@" as first digit of input characteristic name (e.g. : "@0-10V") in CARE text editor disables the pull-up resistor. 17 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Sensors and Transducers Table 7. Sensors suitable for use with Excel 50 (external transducer not required) sensor type AF20 Outside Air Temperature Sensor VF20A Strap-On Temperature Sensor KTF20 Boiler Temperature Sensor LF20 Duct Temperature Sensor AQS51 or C7110C1001 CO2 Sensor C7110A1005 Air Quality (Mixed Gas) Sensor T7560C1006 Combined Room Temp. / Humidity Sensor or H7012B1023 Room Humidity Sensor range -20.. +30° C 0...+110° C 0.. ..+100° C -30...+100° C 0...2000 ppm CO2 0..

.100% 6...40°C 20...95% relative humidity characteristic in controller (set using CARE) NTC 0...  
10 V = 0..2000 ppm 0...  
10 V = 0...100% NTC 0..

10 V = 0...100% Table 8. Room Temperature Sensors suitable for use with Excel 50 (external transducer not required) sensor type T7460A1001 Room Temperature Sensor T7460B1009 Room Temperature Sensor TF22 Room Temperature Sensor range 6...40°C setpoint wheel 6...40°C setpoint wheel 6...40°C setpoint wheel operating knob 6...40°C setpoint wheel occupancy button\* 6...40°C setpoint wheel occupancy button\* fan speed, 3 stages 6..

..40°C setpoint wheel occupancy button\* fan speed, 5 stages 6...  
40°C setpoint wheel occupancy button\* fan speed, 5 stages 6...40°C 20..  
.95% r.h. 6..40°C 0...2000 ppm CO2 setpoint wheel occupancy button\* 6..

.40°C 20...95% r.h. setpoint wheel occupancy button\* fan speed, 5 stages characteristic in controller (set using CARE) NTC linear input NTC linear input NTC linear input NTC linear input NTC linear input NTC linear input NTC 0..10 V = 0..  
.100% NTC 0..10 V = 0..  
.2000 ppm linear input NTC 0...10 V = 0..

..100% linear input - T7460C1007 Room Temperature Sensor T7460E1002 Room Temperature Sensor T7460F1000 Room Temperature Sensor T7460A1000 Room Temperature Sensor T7460C1006 Combined Room Temperature / Humidity Sensor C7110D1009 Combined Room Temperature / Humidity Sensor T7560B1008 Combined Room Temperature / Humidity Sensor \*supported in AH03 EN1B-0101GE51 R0909G 18 EXCEL 50 INSTALLATION INSTRUCTIONS Table 9. Humidity Sensor suitable for use with Excel 50 (external transducer not required) sensor type H7015B1020 Duct Humidity Sensor H7508A1042 Outside Humidity Sensor characteristic in controller (set using CARE) 0..10 V = 0...100% additional remarks set jumper to 0..

.10 V Table 10. Flue Gas Sensors suitable for use with Excel 50 (external transducer required) sensor type AGF1 characteristic in controller (set using CARE) 0...10 V = 0...400 °C additional remarks requires LC-MV-1xPT1000.0-400°C: converts PT1000 to 0..  
..10 V: order from: [www.rinckelectronic.de](http://www.rinckelectronic.de) Table 11.

Differential (+ Static Duct) Pressure Sensor suitable for use with Excel 50 (no external transducer required) sensor type DPT500 Differential (+ Static Duct) Pressure Sensor range 0...500 Pa 0..

.1000 Pa characteristic in controller (set using CARE) 0..10 V = 0...500 Pa 0..10 V = 0..

.1000 Pa additional remarks set jumper to 0...500 Pa set jumper to 0...1000 Pa Table 12. Differential Pipe Pressure Sensors suitable for use with Excel 50 (external transducer not required) sensor type FHBN 3+ED1 FHBN 5 +ED1 FHBN 10 +ED1 range 0 2.5 bar 0 5 bar 0 10 bar characteristic in controller (set using CARE) 0..  
..10 V = 0...  
250 kPa 0...10 V = 0..

.500 kPa 0...10 V = 0...1000 kPa additional remarks ED1 is an integrated transducer with 0...

10 V output Digital Inputs Technical Description V 10 5 2.5 0 1 0 Fig. 23. Input switching voltages The digital input signals can be DC voltage signals. If an input voltage is higher than 5 V, the digital signal switches to logic "1" status. With a hysteresis of 2.5 V, the input signal must fall below 2.5 V before the digital status switches to logic "0". Three out of four digital inputs can be used as totalizers. With V2.

04.00 and higher firmware, the online point attribute "Normally Open / Normally Closed" (NO/NC) defines the relation between the physical state (open/closed) and its logical status. See Table 13. Technical Specification Number: 4 digital inputs Type of signals: DC signal (max. 24 Vdc) Input resistance: 10k IMPORTANT The digital inputs are protected against short circuit and overvoltage up to 24 Vac and 40 Vdc.

Parameter Requirements: If the digital inputs are used for normal digital or analog signals, the signals must meet the static and dynamic requirements stated in Table 13 and Table 14. If three out of four digital inputs are used as totalizers, the signals at the totalizer inputs must fulfill the static and dynamic requirements stated in Table 13 and Table 15 while the signal at the fourth input must meet only the static requirements of Table 13. Table 13. Static parameters of digital inputs contact position open closed open closed NO/NC attribute NO NO NC NC logical status 0 1 1 0 input voltage 2.5 V 5V 2.5 V 5V t t 19 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Table 14. Dynamic parameters of digital inputs frequency max. 0.4 Hz pulse duration min. 1.25 s pause interval min. 1.25 s bounce time max. 50 ms IMPORTANT The external supply of the relay modules must be 24 Vac, the same as of the supply of the controllers. The analog outputs are protected against overvoltage up to 24 Vac and 35 Vdc.

Supply: Several relay modules can be connected in series via the bridged terminal pair: 24 Vac: Terminals 11/12 of the relay 24 Vac (-): Terminals 13 to 16 of the relay Table 15. Dynamic parameters of totalizers frequency max. 15 Hz pulse duration min. 20 ms pause interval min. 30 ms bounce time max. 5 ms Connection Examples Fig. 24. Digital inputs, connection examples Fig. 25. Analog outputs, connection of relay MCD 3 MCD 3: Relay terminal 17 controls the changeover contact K3.

Relay terminal 18 controls the ON contacts K1, K2. Ground can be looped through terminals 2/3. Analog Outputs Technical Description Analog outputs can

*be used, for example, to operate valve or damper actuators. The characteristic curves for these actuators can be defined via MMI. These outputs are programmable.*

*Each analog output can also be used as a digital output. Technical Specification Number: Four analog outputs Analog output details: Table 16. Technical specifications of analog outputs voltage 0...*

*10 V, max. 11 V current resolution min. step max. 1 mA 8-Bit 0.043 mV accuracy  $\pm 100$  mV  $\pm 1$  digit Relay Modules The relay modules facilitate the control of peripheral devices with high load via the analog outputs of the controller. The connection examples (for the relay modules MCD 3 and MCE 3) are shown here.*



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These outputs are programmable. Fig. 26. Analog outputs, connection of relay MCE 3 MCE 3: Relay terminal 16 controls the ON contact K3.

Relay terminal 17 controls the changeover contact K2. Relay terminal 18 controls the changeover contact K1. EN1B-0101GE51 R0909G 20 EXCEL 50 INSTALLATION INSTRUCTIONS Digital Outputs Technical Description The digital outputs are switched by a triac that can be connected directly to an external relay. These outputs are programmable. Connection Examples Technical Specification Number: Six digital outputs Output stages: Low signal High signal Type Load: Per output Total Cos 0V 24 Vac Close, only min. 0.01 A max. 0.8 A max. 2.

4 A 0.5 to 1 Fig. 27. Digital outputs, connection of relay IMPORTANT The digital outputs are protected against short circuit current via internal fuse, but they are not protected against overload. All digital outputs are protected via only a single fuse; if any digital output is shortcircuited, the fuse will be blown and will interrupt the main power.

In that case, the controller does not work. If the CPU is running into the WATCHDOG as a result of a software or hardware error, all digital outputs will be set to low signal, which means all digital outputs are inactive. Beginning with V2.04.00 firmware, the online point attribute "Normally Open / Normally Closed" (NO/NC) defines the relation between the physical state (relay ON/OFF) and its logical status.

See Table 17. Table 17. Digital output parameters relay ON/OFF ON OFF ON OFF NO/NC attribute NO NO NC NC logical status 1 0 0 1 Fig. 28. Digital outputs, direct connection of 3-position actuators Power Supply The Excel 50 Controller is powered by an external transformer. Transformer requirements for one Excel 50 Controller: Voltage 24 Vac  $\pm 20\%$  Current 3 A, if fully equipped (6 DO's x 0.4 A) 2 A, if current of DO's does not exceed 1.8 A Power 72 VA, if fully equipped The transformer, already installed in the cabinet, can be used to supply several controllers, communication devices or peripherals (actuators, etc.) if the transformer provides sufficient power. 21 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS PRIMARY VOLTAGE SECONDARY VOLTAGE 1450 Series Table 20.

1450 Series transformers part # 1450 7287 -001 -002 -003 -004 -005 primary side 120 Vac 120 Vac 120 Vac 240/220 Vac 240/220 Vac 240/220 Vac secondary side 24 Vac, 50 VA 2 x 24 Vac, 40 VA and 100 VA from separate transformer 24 Vac, 100 VA and 24 Vdc 600 mA 24 Vac, 50 VA 2 x 24 Vac, 40 VA and 100 VA from separate transformer 24 Vac, 100 VA and 24 Vdc, 600 mA Fig. 29. Transformer example -006 CRT-Series Table 18. No. of controllers connected to one transformer transformer CRT 2 CRT 6 CRT 12 Excel 50 controller 1 (1.8 A max.) 2 4 All transformers of the 1450 series are designed for 50/60 Hz AC and have insulated accessory outputs. The transformers include built-in fuses, line transient/surge protection and AC convenience outlets and meet NEC class 2 requirements. Standard Transformers Standard commercially available transformers must fulfill the following specifications: Table 21.

Requirements for standard transformers output voltage 24.

5 Vac to 25.5 Vac 24.5 Vac to 25.5 Vac 24.5 Vac to 25.

5 Vac impedance 1.15 0.40 0.17 AC current max. 2 A max.

6 A max. 12 A Use quick-acting backup fuse 10 A (or automatic H16 or L16) to protect the transformer primary side. On the primary side of the CRT 2, there is a fusible output of type M 0.315 A (T) 250 V for the purpose of fine fusing. Table 19. Overview of CRT Series AC/DC current transformer CRT 2 CRT 6 CRT 12 max. AC current 2A 6A 12 A max. DC current 0.5 A = 500 mA 1.3 A = 1300 mA 2.

5 A = 2500 mA Screw Terminal Block Installation 1. 2. Make sure that the power supply of the cabinet is disconnected. Make sure that the power supply of the cabinet is disconnected and that the application module is plugged in the housing. Choose the min. cross sectional areas for all cables to and from sensors, actuators, valves, relays, etc. you want to connect to the Excel 50 Controller from Table 4. Connect sensors, transducers, etc. to the analog input terminals. 3.

4. Fig. 30. AC/DC current graphs EN1B-0101GE51 R0909G 22 EXCEL 50 INSTALLATION INSTRUCTIONS 11. 12.

Connect the 24 Vac (-) on the secondary side of the transformer to terminal 1 on Screw Terminal block A. Connect the 24 Vac on the secondary side of the transformer to terminal 2 on Screw Terminal block A. Fig. 32. Connecting the power supply IMPORTANT If there already are additional transformers, for example supplying actuators or active sensors: -- Connect the 24 Vac (-) (secondary side) of the transformers together.

13. Attach the terminal blocks to the housing as shown in Fig. 33. Fig. 31. Connecting a cable to a screw terminal IMPORTANT When installing a separate external transformer, do not connect the cabinet ground to the controller system ground. 5. If the distance between the controller and an actuator or sensor with 24 Vac supply is greater than 550 ft (170 m): a) Choose a transformer from the transformers listed in section "Power Supply". b) Connect the chosen transformer directly to the actuator or sensor. 6.

Connect sensors, transducers, etc. to the digital input terminals. 7. Connect valves, actuators, relays, etc. to the analog output terminals. 8. Connect relays, actuators etc. to the digital output terminals. 9. Select one of the transformers of the CRT series or 1450 series (Table 19 or Table 20) or use a commercially available standard transformer fulfilling the requirements in Table 21.

10. Make sure that the application module is plugged into the controller housing. Fig. 33. Attaching of screw terminal blocks WARNING High Voltage Risk of death or electrical shock.

-- Do not connect line power supply directly to the terminals. -- Insulate devices with 120 Vac / 230 Vac by a transformer. IMPORTANT The transformer feeding the Excel 50 Controller must be in the same cabinet. If field devices with DC load are used, when selecting the transformer, the max. DC current must be considered.

The secondary side of the transformer must not be connected to earth ground. 23 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Adjusting the MMI Display Contrast Front Door Mounted with MMI 1. 2. @@@@34. Adjusting the display contrast 3. @2. 3. Dismount the controller from the DIN rail. @@@@34. IMPORTANT Turn the display contrast potentiometer gently.

@@@4. Attach screw terminal block B to Port B. 5. @@@@A further communication option is connection to a Meter-Bus. @@@@Table 22. @35.

@@@@@Table 23. @@@@@@IMPORTANT Electrostatic discharge can damage the application module. @cable length is 4,000 ft (1,200 m). @@@@@@Note that baud rate and max.

bus length are related to each other. Table 24. C-Bus cable types cable type J-Y-(ST)Y 2 x 2 x 0.8 A-Y-(ST)Y 2 x 2 x 0.8 AK 3702 AK 3740A Belden 9842 Belden 9841 AK 3702 AK 3740A description shielded, twisted pair shielded, twisted pair unshielded, twisted pair shielded twisted pair shielded unshielded, twisted pair shielded recommended for Europe Inside cabinet Europe Outside cabinet US not approved for Europe US (low-cost) not approved for Europe Europe US also possible US US not approved for Europe US (low-cost) not approved for Europe -- Use repeaters to extend to the max.

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C-Bus length (see section "C-Bus Extension by Using Repeaters"). It may take up to two minutes to re-initialize the bus when adding or removing a controller to/from the C-Bus. During this time, communication on the C-Bus is lost. LONWORKS Network Interface Excel 50 Controllers may be equipped with an application module (see Table 21) containing an FTT-10A Free Topology Twisted Pair Transceiver which allows communication with other device on a LONWORKS network. FTT-10A transceivers communicate at 78 Kbaud and provide transformer isolation so that the bus wiring does not have a polarity; that is, it is not important which of the two bus terminals are connected to each wire of the twisted pair.

See also Fig. 35. FTT devices can be wired in daisy chain, star, loop or any combination thereof as long as the max. wire length requirements given below are met. The recommended configuration is a daisy chain with two bus terminations. This layout allows for max. bus length, and its simple structure presents the least number of possible problems, particularly when adding on to an existing bus. NOTE: A doubly-terminated bus may have stubs of up to 10 ft (3 m) from the bus to each node. Table 26. Doubly-terminated bus specifications Each end of the shield on the C-Bus should be connected to the shield terminal of the respective device.

Do not connect it to the cabinet ground or any other ground points. C-Bus Extension by Using Repeaters The C-Bus length can be extended by using repeaters. Each repeater extends the bus length by 4,000 ft (1,200 m). For the US the repeater is available either with or without housing. In Europe, only the version with housing is allowed. Table 25. Order no. for repeaters description US order no. without housing 14507324-001 with housing 14507324-002 European order no. XD 509 Belden 85102 Belden 8471 cable type max.

bus length 2,700 m (8,900 ft) 2,700 m (8,900 ft) 1,400 m (4,600 ft) 900 m (3,000 ft) 900 m (3,000 ft) Level IV, 22 AWG JY (St) Y 2x2x0.8 TIA568A Categ. 5 24AWG, twisted pair C-Bus Connection Procedure 1. Choose a suitable C-Bus cable from Table 24. IMPORTANT Make sure that all bus devices connected to the same C-Bus are set to the same baud rate; otherwise, proper communication cannot be ensured.

2. Set the DIP switch according to Table 23. IMPORTANT The C-Bus must be connected through the individual controllers (open ring). Star connection is not permitted because uncontrollable line reflections could occur. 3.

Connect the cable shield to C-Bus terminal 4 (Fig. 35). 4. Connect the C+ cable to C-Bus terminal 5 (Fig. 35). 5. Connect the C- cable to C-Bus terminal 6 (Fig. 35). 6. If the max.

C-Bus length for the chosen cable (Table 24) is exceeded: NOTES: The cable types listed above are as recommended by Echelon. The cable recommended by Honeywell is the level IV, 22 AWG, solid core, nonshielded cable. Belden part numbers are 9H2201504 (plenum) and 9D220150 (nonplenum). The FTT specification includes two components that must be met for proper system operation. The distance from each transceiver to all other transceivers and to the termination must not exceed the max. node-to-node distance. If multiple paths exist, the max. total wire length is the total amount of wire used.

EN1B-0101GE51 R0909G 26 EXCEL 50 INSTALLATION INSTRUCTIONS Table 27. Free topology (singly-terminated) specifications cable type Belden 85102 Belden 8471 Level IV, 22AWG max.

node-to-node distance 1,650 ft (500 m) 1,300 ft (400 m) 1,300 ft (400 m) max. total wire length 1,650 ft (500 m) 1,650 ft (500 m) 1,650 ft (500 m) 1,650 ft (500 m) 1,500 ft (450 m) JY (St) Y 2x2x0.8 1,050 ft (320 m) TIA568A Category 5 825 ft (250 m) 24AWG, twisted pair IMPORTANT Do not use different wire types or gauges on the same LONWORKS network segment. The step change in line impedance characteristics would cause unpredictable reflections on the network. NOTE: In the event that the limit on the total wire length is exceeded, FTT physical layer repeaters (FTT 10A) can be added to interconnect segments and increase the overall length by an amount equal to the original specification for that cable type and bus type for each repeater used. For example, adding repeaters for a doubly-terminated bus using JY (St) Y 2x2x0.8 cable increases the max. length 3,000 ft (900 m) for each repeater. Fig. 36.

LONWORKS Service LED behavior LONWORKS Bus Termination One or two Termination Modules, part no. 209541B or part no. XAL-Term, are required for a LONWORKS Bus with FTT devices on it, depending upon the configuration. LONWORKS Service LED Diagnostics The LONWORKS service LED is used to diagnose the state of the Excel 50 controller. In general: -- The controller is applicationless if the LED illuminates continuously\*. -- The controller has an application but, if the LED is blinking, it is not configured. -- The controller is running normally if L2 is OFF. The LONWORKS service LED is located on the application module. Pushing the LONWORKS service button will force a new commissioning of the Excel 50. While commissioning, LED L2 continuously illuminates red for less than 1 minute and afterwards return to the normal state (L2 = OFF).

A more detailed diagnosis can be carried out by observing the duration of the ON and OFF states of the service LED in connection with power ON / OFF. The following figure illustrates the different service LED behaviors. These are the most common behaviors, but others are possible since the state of the service LED is under firmware control and can be affected both by hardware and software anomalies. 27 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Table 28 describes each of the behaviors shown in the previous figure under different contexts. Again, this list is not exhaustive and therefore does not provide explanations for every possible service LED behavior. Table 28. LONWORKS Service LED behavior descriptions behavior 1 2 3 4 5 6a context Power-up of the controller Power-up of the controller Power-up / reset of the controller Anytime Anytime First power-up, Applicationless firmware state exported First power-up, Unconfigured firmware state exported First power-up, Configured firmware state exported Anytime likely explanation Controller hardware is defective. Controller hardware is defective. The controller is applicationless. May be caused by the Neuron chip firmware when a mismatch occurs on application checksums.

Possible corrupt EEPROM. Use a newly programmed PROM, or EEBLANK and follow bring-up procedure. The controller is unconfigured. The OFF duration is approx. 1 second.

Service LED should then turn ON and stay ON, indicating an applicationless state. The controller is defective return to factory. The OFF duration is 1... 15 seconds depending on the application size and system clock. Service LED should then begin flashing as in behavior 5, indicating an unconfigured state. The OFF duration is indefinite (1...15 seconds to load internal EEPROM; stays OFF, indicating configured state.) The controller is configured and running normally.



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The controller is configured and running normally. 6b 6c 7 Controller Serial Port Table 29. Signals of serial port signal type Signal ground Transmit Receive Carrier detect Clear to send Data terminal ready 5V controller output x x x x x x controller input MMI Connection For direct communication the external operator interface XI582 and the PC-based XL-Online can be connected to the serial port.

When the cable from XI582 or XL-Online is plugged in during normal operation of an Excel 50 Controller with MMI, the functionality of the Excel 50 MMI is disabled. After unplugging the external MMI it takes up to 30 sec until the local MMI activates again. Fig. 37. Serial port The serial port has a 9-pin sub-D connector and has a default communication speed of 9.6 Kbaud. Cable Specifications Ready-made cables with the shield already connected to the computer module plug end are available for the connection of external MMIs. EN1B-0101GE51 R0909G 28 EXCEL 50 INSTALLATION INSTRUCTIONS Table 30.

Cable specifications MMI type cable XI582 (remote MMI) XW 582 XL-Online (PC-based MMI) XW 585 length 17 ft (5 m) 17ft (5 m) Modem or ISDN Terminal Adapter Connections For remote communications, a modem or ISDN terminal adapter can be connected directly to the serial port of all Flash-EPROM versions of the Excel 50 Controller. NOTE: Remote communication via modem or ISDN terminal adapter requires firmware version 2.

01.00 or higher. For connection to the XL-Online, a standard null modem cable may be used. to XL50 54321 9876 SHIELD YELLOW TxD BROWN +5VE GREEN RxD WHITE GND XI582 1 2 3 4 port for application module XW582 port A port B Fig. 38.

Connecting XL50 via XW582 to XI582 to XL50 54321 9876 SHIELD to XL-Online 9876 serial port RxD RTS TxD GND 54321 Fig. 40. Excel 50, modem connection (rear view) The serial port of the Excel 50 controller accepts a standard modem cable with a female 9-pin connector. Use the cable that is supplied with the modem/ISDN terminal adapter. The communication speed is 9.

6 Kbaud by default but can be set as high as 38.4 Kbaud. For more details, see section "Remote Communication". XW585 Fig. 39. Connecting XL50 via XW585 to XL-Online Changing Between MMI and Modem Connection The XL50 will detect when an MMI or modem/ISDN terminal adapter is connected and will adjust the communication speed automatically according to the preset values. This automatic detection can take up to 5 seconds. 29 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS REMOTE COMMUNICATIONS Firmware version number 2.01.00 or later supports the direct connection of modems or ISDN terminal adapters for communications to up to three remote XBS building supervisors.

NOTE: XBSi building supervisors are not supported for remote communication. NOTE: Communication via ISDN is applicable only for Europe. Resetting the Modem For those cases where it is not clear if the modem to be used is in its factory setting, the modem can be reset to its factory setting by using the RESET MODEM command in the StartUp sequence or through the HW Config. part of the System Info. sequence on the MMI. This will allow a quick and easy modem reset without having to run the modem set-up software or the Windows™ terminal program. The RESET MODEM command causes the following commands to be sent to the modem: 1. ATZ: Executes hardware reset on modem 2. AT&FX3&W: Resets modem to factory configuration settings, configures the modem to not wait for the public phone system dial tone, and writes this to nonvolatile memory. Modem Requirements · Modem must support Hayes compatible command set (not V150 or V151 = Microsoft command set) · Modem must support alpha-numeric return codes · Modem must follow serial baud rate of the CPU · Modem must support auto-bauding (baud rate fall-back) · When carrier detect (connect) is reported, the carrier must be ON simultaneously at both modems (on CPU side and on XBS side) use same modem · After a switch-on of the DTR line by the CPU or XBS, the modem must accept a dial command after 3 seconds · Modem must answer AT commands in less than 3 seconds Set-Up for Special Modem Behavior If special modem/ISDN terminal adapter behavior is required, the communication device should be set up according to the instructions provided with it.

This typically involves running a set-up program on a computer with the device connected to the computer serial port or using the Windows™ terminal program. Set-Up for In-House Telephone Systems A common case of special modem behavior is when the modem is connected to an in-house telephone network requiring a prefix to be dialed before the destination number to provide access to the public telephone network. There are two important aspects of the special initialization of the modem to consider: 1. Do not wait for the public network dial tone. Typically, the init command ATX3 will trigger the modem to dial without waiting for a public network dial tone.

Save this modem set-up in the modem EEPROM with the command AT&W. Check the modem handbook to verify the correct commands. Note that these commands are executed automatically with the RESET MODEM command in the Excel 50 Controller Start-Up Sequence. 2. Add the prefix required for accessing the public telephone network to the destination telephone number.

Depending on the in-house telephone system, a certain prefix may have to be added to the destination number in the XBS system configuration/site definition screen before sending the set-up to the remote Excel 50. No Set-Up for Standard Modem Behavior If no special modem behavior is required, there is no need to set up or initialize the modem/ISDN terminal adapter. The Excel 50 Controller will automatically detect the device (MMI or modem) attached to the serial port, set the appropriate communication speed, and automatically adapt to alphanumeric return codes used by the modem. This automatic detection and adjustment can take up to 5 seconds. NOTE: It is highly recommended to use a state-of-the-art modem and leave it in its factory setting. Automatic Baudrate Synchronization The default communication speed between the Excel 50 Controller and the local modem/ISDN terminal adapter is 9.6 Kbaud. The communication speed between the Excel 50 and XBS modems/ISDN terminal adapters is automatically synchronized by the two devices to the highest speed that both of the devices are capable of. This feature is called autobauding and is provided by all state-of-the-art modems / ISDN terminal adapters when left in their factory default settings. The communication speed between the XBS and its modem / ISDN terminal adapter is part of the modem set-up at the XBS.

Set-Up for Limited Communication Speed The communication speed of the modem can be fixed to a lower rate in case of data transmission errors due to telephone line limitations. See section "Start-Up Sequence".



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Auto / Manual Answer Detection The Excel 50 Controller will automatically detect whether the modem/ISDN terminal adapter is initialized in auto-answer or manual answer mode, and it will set the modem to the manual answer mode (S0=0). Troubleshooting In case of any problems, the handbook of the modem or ISDN terminal adapter must be consulted. A "Frequently Asked Questions and Troubleshooting" document is available via the Honeywell Technical Assistance Center (TAC) or, for Honeywell employees, on the HIVE. EN1B-0101GE51 R0909G 30 EXCEL 50 INSTALLATION INSTRUCTIONS METER-BUS CONNECTION (NOT AVAILABLE IN N. AMERICA) The meter bus adapter PW3 is connected with the cable XW586 to the RJ45 plug of the XD50-FCS-HE01-xx ("xx" depends upon the language). The cable XW586 has a length of 1.8 m. Table 31.

Cable XW586 RJ45 Plug, Pin Number 1 2 3 4 5 6 7 8 RS232 function DCD RxD TxD DTR GND DSR RTS CTS Not used 9-Pin -Sub-D Connector Pin No. 1 2 3 4 5 6 7 8 9 3. XW586 INSERT POWER SUPPLY WIRES Fig. 42. PW3 Meter-Bus adapter connections Connect PW3 Meter-Bus Adapter to Excel 50 Controller using XW586 cable.

Up to three meter-bus devices can communicate with Excel 50 via the application card XD50-FCS-HE01-xx and the connected meter bus adapter PW3. Meter-Bus Connection Procedure 1. Install PW3 Meter-Bus Adapter on DIN rail. Insert a screwdriver into the slot in the DIN rail clamp on the underside of the PW3 and pry downward to loosen clamp until the unit snaps onto the rail. See Fig.

41. 0000108a Fig. 43. Connecting Excel 50 to Meter-Bus adapter 4. DIN RAIL Connect 24 V power to the Meter-Bus Adapter according to Fig. 1. Insert wires into the terminals on the underside of the PW3 and tighten the screws on the front of the unit. 3 1 2 Fig. 41. Mounting of PW3 2.

Connect Meter-Bus devices to PW3 Meter-Bus Adapter. See Table 32 for a list of supported devices. Insert wires into the terminals on the top of the PW3 and tighten the screws on the front of the unit. CAUTION Never connect V- of the PW3 to pin 2 of the Excel 50 Controller and V+ to pin 1. This could cause damage to the Excel 50. 31 EN1B-0101GE51 R0909G 0000106a INSERT METER-BUS WIRES EXCEL 50 INSTALLATION INSTRUCTIONS 00000123 LEDs POWER, GRN METER BUS TxD, YEL C-BUS TxD, YEL C-BUS RxD, YEL METER BUS RxD, YEL C-BUS TERMINATION SWITCH 456 METER BUS (RJ45 JACK) Fig. 1. PW3 Meter Adapter power connections Meter-Bus activity can be monitored using the LEDs on the HE01 application module (see Fig. 2). SHIELD C+ C- C-BUS Fig.

2. XD50-FCS Application Module LEDs EN1B-0101GE51 R0909G 32 EXCEL 50 INSTALLATION INSTRUCTIONS Table 32. Supported M-Bus meters values temperatures auxiliary inputs reference day cooling cooling TFORW T 1 2 date energy aux1 aux2 energy volume power flow TRET energy energy ABB SVM 840 (H) X -X X X X X -----ABB RV F2 (H) X -X X X X X -----Actaris CF50 (H) X -X X X X X -----Actaris CF55 (H) X -X X X X X -----Berg BLMi4611 (E) -----X X ---DZG Elektro S302 (E) X -----Hydrometer BR 440 (H) X -X X X X X --X X ---Hydrom. Energy-Int 5 (Danf. Infocal-5) (H) X -X X X X X -----Hydrometer BR 772 Sharky-Heat (H) X X X X X X X X --X X X4) --Hydrometer BR 773 Sharky-Heat (H) X X X -X X -X X -X ---Hydrometer BR 773 Sharky-Heat, m2 (H) X X X X X X X X X X X ---Kamstrup Multical 3 (H) X -X X X X X -----Kundo G07 (H) X -X X X X X -----Landis & Staefa Sonogy WSD3 (H) X -X X X X -----raab karcher Sensonic (H) X -X X X X X -----Relay PadPuls MIC (E) X -----Relay PadPuls MIC (W) --X -----Relay PadPuls M4L (E) X -----X X ---Relay PadPuls M4L (W) --X -----X ----Schlumberger5) CF50 (H) X -X X X X X -----Schlumberger5) CF50 (H), ref.

day mode -----Schlumberger5) Integral-MK MaXX (H) X -X X X X ---X ---Sensus Metering Systems PolluCom E (H) X -X X X X X -----Siemens/Pollustat 2WR4 (H) X -X X X X X -----Siemens/P. 2WR4 (H), fast-read mode X -X X X X ---X ---Sontex Supercal 539 (H) X -X X X X -----Sontex Supercal 539 Plus (H) X -X X X X X -X X -X X Sontex Supercal 539 Heat/Cooling (H) X X X X X X ---X X --Sontex Supercal 539 Heat/Cooling Plus (H) X X X X X X -X --X X X -Spanner Pollux6) PolluTherm (H) X -X X X X X ---X ---techem delta-tech Kompakt (H) X -X -X X -----techem delta-tech Split (H) X -X -X X ---X ---Viterra Sensonic II / T25 (H) X -X X X X X ---X ---Wehrle1) (W) --X -----Zenner multidata S11 (H) X -X X X X X -----All devices support baudrates of 300 and 2400, except 1) baudrate of 2400, only; 2) baudrates of 300, 2400, and 9600; 3) baudrate of 300, only. 4) Tarif Energy1 can be used for cooling energy. The counter must be configured for cooling energy; 5) Schlumberger is owned by Actaris; 6) Spanner Pollux is owned by Sensus Metering Systems. manufacturer, type (H = heating, E = energy, W = water) Table 33.

Unsupported M-Bus meters manufacturer Pollustat Schlumberger ABB device type B501 Cvble M-bus Zähler Deltameter meter category heat heat electric 33 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS START-UP SEQUENCE After powering up the controller or after a RESET the initial screen of the Start-Up sequence appears. A RESET can be achieved by pressing the 'DOWN' and " keys simultaneously. NOTE: The screens of the Start-Up sequence are always displayed in English as they are a part of the operating system. NOTE: In the case of XL50A controllers, if the firmware present in the application module is less than 2.07.00, then the screen of XL50A controllers with MMI will show all lines fully activated, and the screen of XL50A-CY will be blank. The latest firmware can be downloaded using XL-Online or XL-Touch to continue with further operations. NOTE: The sequence shown is for embedded applications. The Start-Up sequence for standard and custom CARE applications is similar but does not include entry of configuration codes. Press the CANCEL key to abort the operation or to cancel an incorrect entry before ENTER has been pressed.

The value previously displayed will be restored. If 'Ctr. No.' is selected: Set the controller number using the '+' or " keys. Confirm with ENTER. IMPORTANT If no controller number is set or if the number shown is not reconfirmed, the controller will not go online on the C-Bus after start-up. Move the cursor to the 'NEXT' field with the ARROW keys. Confirm with ENTER. Modem Part: <active/inactive> Appl. Mem.

Size 128 KB . NEXT This screen provides information about whether modem communication is enabled and about application memory size. Enabling modem communication and changing the value for application memory are done in a later screen. NEXT is highlighted. Confirm with ENTER. Honeywell XL 50 V 2.04.00 NEXT This is the first screen of the Start-Up sequence. It shows the version of the company name, the controller name and the firmware version. Confirm with ENTER.



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Date: 13.06.1998 Time: 17:35 Ctr No: 1 NEXT Select: -- the 'Date' field to enter the current date. -- the 'Time' field to enter the current time. -- the 'Ctr. No' field to enter the controller number. Confirm with ENTER. If 'Date' is selected: Set the date using the '+' or '-' keys. Use the arrow keys to move from field to field. Confirm with ENTER.

Select BACK. Confirm with ENTER to return to the previous screen. NOTE: The date must be entered in the following format: DD. MM. YYYY; for example, the 23rd of July 1997 must be entered as 23. 07. 1997. Press the CANCEL key to abort the operation or to cancel an incorrect entry before ENTER has been pressed. The value previously displayed will be restored. If 'Time' is selected: Set the time using the '+' or '-' keys.

Use the arrow keys to move from field to field. Confirm with ENTER. Use the CANCEL key to return to the previous screen. NOTE: The time must be entered in the following format: HH:MM in 24 hour clock format; for example: 9:30 a.m. must be 09:30 and 9:30 p.m. must be 21:30. Contr. Setup Select Applic.

Requ. Download DP Wiring Check Select: -- 'Contr. Setup' to configure the controller-specific hardware interfaces. -- 'Select Applic.' to choose the application manually. -- 'Requ. Download' to download an application via XLOnline or the C-Bus. -- 'DP Wiring Check' to set up the test mode with default user addresses. Confirm with ENTER. Controller Setup If 'Contr.

Setup' has been selected, the following screen will appear: HW-Interf. Cfg. B-Port C-Bus 1 LON-Bus 34 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS The contents of this listbox will depend upon the exact hardware configuration of the controller. The listed interfaces to be configured will be from among the following: · B-Port · C-Bus. · LON-Bus · Meter Bus · Modem NOTE: In order to support use of the XL-Online User Interface, the C-Bus configuration option may appear even on controllers that do not have an application module containing a C-Bus connection. IMPORTANT If no controller number is set or if the number shown is not reconfirmed, the controller will not go online on the C-Bus after start-up. Move the cursor to the 'BACK' field with the arrow keys. Confirm with ENTER. LON-Bus (i.e.

LonWorks Network) Select 'LON-Bus' and confirm with ENTER. The following screen appears: B-Port Select 'B-Port' and confirm with ENTER. The following screen appears: LON-Bus Config. Contr. Neuron ID <neuron ID number> Bus ID BACK IMPORTANT The bus ID is a non-unique number (i.e. different Excel 500 controllers can have the same bus ID in common) between 0 and 99 (inclusive) which the user can edit after a reset during the controller's start-up sequence or by changing the configuration property nciXL500BusSetup. The factory default is "0", which enables C-Bus and Standard LONWORKS communication. Assigning a bus ID other than "0" will enable LONWORKS communication with Building Management functionality and disable C-Bus communication. This screen displays the unique identification number for the Neuron chip in the controller. Move the cursor to the 'BACK' field with the arrow keys. Confirm with ENTER. B-Port Config. Baudrate: 9600 BACK Move the cursor with the arrow keys to the field to set baud rate for the B-Port. Use the '+' and '-' keys to edit the fields. Confirm with ENTER. NOTE: Live CARE is now capable of autodetecting the controller baud rate setting, then switching it temporarily to 38.4 Kbaud. When Live CARE is disconnected, the controller will switch back to the previous baud rate setting automatically within 15 seconds. Move the cursor to the 'BACK' field with the arrow keys.

Confirm with ENTER. C-Bus Select 'C-Bus' and confirm with ENTER. The following screen appears: Meter-Bus Select 'M-Bus' and confirm with ENTER. The following screen appears: C-Bus Config. Baudrate: 76800 Contr.No: BACK NOTE: If you set the bus ID to a non-zero value, the C-bus baudrate will be immediately disabled (i.e. it is then no longer editable). See also section "LON-Bus (i.e. LonWorks Network)" below. If 'Baudrate' is selected: Move the cursor with the arrow keys to the field to set baud rate for the C-Bus. Use the '+' and '-' keys to edit the fields. Confirm with ENTER. If 'Contr.

No.' is selected: Set the controller number using the '+' or '-' keys. Confirm with ENTER. M-Bus Config. Baudrate: 9600 BACK Move the cursor with the arrow keys to the field to set baud rate for the Meter Bus.

Use the '+' and '-' keys to edit the fields. Confirm with ENTER. Move the cursor to the 'BACK' field with the arrow keys. Confirm with ENTER. Modem Communication Select 'Modem' and confirm with ENTER. The following screen appears: 35 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Enable/Disable Modem Part: <ENABLE/DISABLE> NEXT This screen allows the user to enable modem communication. If modem communication is enabled, 'DISABLE' will appear, while 'ENABLE' will appear if it is currently disabled. To change the current setting, move the cursor to the enable/disable field, and select it by pressing ENTER. Change the setting with the '+' or '-' keys. Confirm with ENTER.

If modem communication has been enabled, the following two screens appear, otherwise the sequence returns to the ENABLE/DISABLE screen. If a new value for Appl. Mem. Size has not been entered, the cursor is at NEXT. Confirm with ENTER and continue to the next screen. To increase the size of the buffer, use the arrow keys to select the digits for 'Appl. Mem. Size' and use the '+' and '-' keys to enter a new value. Then select RESTART and confirm with ENTER. The controller will reset again, and the 'Start-Up' sequence starts again from the beginning.

IMPORTANT If the application being downloaded exceeds the Maximum Application Size entered in this screen, an error message will occur and the download will not be executed. When this screen appears again, the cursor is at NEXT. The new application memory size and the new number of trend samples calculated by the controller are shown. Confirm with ENTER and continue to the next screen. Modem Config. Baudrate: 9600 GSM PIN \*\*\*\*\* Reset Modm NEXT NOTE: GSM communication is not supported. This screen appears only if modem communication is enabled. Select: -- 'Baudrate.' to set the baud rate for the modem/ISDN terminal adapter. -- 'Reset Modem' to return modem to factory settings, erasing any custom modem initialization.

See section "Remote Communications" for more information. Move the cursor with the arrow keys to the appropriate fields.



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Use the '+' and '-' keys to edit the fields. Or select Reset Modem to send a reset command to the modem (if one is not yet attached to the controller, the controller will send a reset when one is detected). **IMPORTANT** Resetting the modem will restore the factory defaults and erase any custom initialization. Confirm with ENTER. Move the cursor to the 'NEXT' field with the arrow keys. Confirm with ENTER. Select Application Contr. Setup Select Applic.

Requ. Download DP Wiring Check If 'Select Applic.' is then selected, the following screen will appear listing applications and their burn dates: Select Applic. AH01 <applic.> <date.> 1 <applic.> <date.> Select the application using the ARROW keys. Confirm with ENTER. Honeywell XL 50 V 2.

03.00 AH01 V 1.00 NEXT The initialization screen of the chosen application will appear. It presents information about the versions of the controller and the application. Confirm with ENTER.

If the Excel 50 controller is connected to a C-Bus, the following screen will appear: Appl. Mem. Size 128 KB RESTART Rem. Trend Buf. 104 Entries BACK This screen is used to increase the size of the adjustable remote trend buffer by reducing the application memory size.

The number of entries (trend samples) that can be stored in the buffer for Remote Building Central A is determined by a calculation by the controller based upon the Application Memory Size entered in this screen (remote trend buffer = (128 Kbytes minus the Application Memory Size) \* 1024 bytes / 47 bytes). The default for the Application Memory Size is 128; the min. Application Memory Size is 38 Kbytes. The default number of Remote Trend Buffer Entries is 104.

Append Busnumber to User Addr. ? YES NEXT Move the cursor to the 'YES' field. Confirm with ENTER. EN1B-0101GE51 R0909G 36 EXCEL 50 INSTALLATION INSTRUCTIONS **IMPORTANT** If more than one Excel 50 Controller having the same application program is connected to the C-Bus, the user addresses must have the bus numbers appended to them. Move the cursor to the 'NEXT' field using the ARROW keys. Confirm with ENTER.

<1. time program>Init MON 13.06. 10:27 TO: 20:30 20°C TODAY NEXT Request Download Contr. Setup Select Applic. Requ. Download DP Wiring Check If 'Requ. Download' has been selected from the screen shown above, the following screen appears. C1 -1 C3 -1 C5 -1 CONFIG C2 -1 C4 -1 C6 -1 The codes of the configurable application can be changed in this screen. The application codes can be generated with the 'LIZARD-Excel 50 Application Selector'.

This screen does not appear with standard and custom CARE applications. **NOTE:** Not all applications have six configuration code numbers.

@@@ Setup Select Applic. Requ. Download DP Wiring Check If 'DP Wiring Check' has been selected from the screen shown above, default user addresses are generated following the following pattern: · AI0101: Analog input, board 1, input 1 · AO0201: Analog output, board 2, output 1 · DI0301: Digital input, board 3, input 1 · DO0401: Digital output, board 4, output 1 **NOTE:** The board numbers shown above are internal references and are not relevant to the user.

In Excel 50 Controllers the numbers are fixed for the I/O type, i.e. analog inputs are always AI01, digital inputs are always DI03, etc. After generating the default addresses, the following screen appears: If the 'LIZARD-Excel 50 Application Selector' is not available, please contact your local Honeywell branch for support. Select the appropriate code and change its value using the '+' and '-' keys.

Move the cursor to the 'CONFIG' field. Confirm with ENTER. If the codes entered in the screen are allowed, the default screen of normal operation will show up: <1. time program>Init MON 13.06. 10:27 TO: 20:30 20°C TODAY NEXT If one or more codes entered are not allowed, the initialization screen will show up again. Change the screens by selecting NEXT and confirming with ENTER until you have reached the configuration screen again. Codes which are not allowed have the value '-1' instead of the previously entered code. Change the codes until all codes are correct. You will now come to the default screen of normal operation: Default Points Alarm History 37 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Select -- 'Default Points' to display I/O points for checking values and manually setting outputs for testing.

-- 'Alarm History' to display current alarms. This feature allows the system to be checked out by a single person opening and closing inputs and then later reading the alarm buffer to see if they were detected by the controller. Confirm with ENTER. If 'Default Points' has been selected, the following screen will be displayed showing all default user addresses and their current values. To view an alarm, move the cursor to select the default user address from the list box using the arrow keys. Confirm with ENTER. The following screen will appear: <date.> <user addr.> <value> <alarm text> <time> Press CANCEL to return to the previous screen. **IMPORTANT** Reset the controller after using the test options to clear the alarm buffer.

<user addr.> <user addr.> <user addr.> <user addr.> <val> <val>1 <val> <val> To manually set outputs, move the cursor to select the output point from the list box using the arrow keys.

Confirm with ENTER. In the case of analog points, the following screen is displayed. <user addr.> STATE/VALUE: 0.00% Press ENTER to select the value. Change the value using the '+' or '-' keys. Confirm with ENTER. In the case of digital points, the following screen is displayed. <user addr.> STATE/VALUE: 0 % Press ENTER to select the value. Change the value/state using the '+' or '-' keys. Confirm with ENTER. Press CANCEL to return to the previous screen (list of user addresses). If 'Alarm History' has been selected, the following screen will be displayed showing all points in alarm as well as any system alarms (max. 100 entries): <user addr.>

> <user addr.> <user addr.> <user addr.> 1 **NOTE:** Alarms are generated for changes of state/value on inputs, which allows shorting and opening the inputs at the switches and/or sensors and then checking the alarm buffer to verify the wiring. EN1B-0101GE51 R0909G 38 EXCEL 50 INSTALLATION INSTRUCTIONS 39 EN1B-0101GE51 R0909G EXCEL 50 INSTALLATION INSTRUCTIONS Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sàrl, Rolle, Z.A. La Pièce 16, Switzerland by its Authorized Representative: Automation and Control Solutions Honeywell GmbH Böblinger Strasse 17 71101 Schönaich / Germany Phone: (49) 7031 63701 Fax: (49) 7031 637493 <http://ecc>.



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