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You can read the recommendations in the user guide, the technical guide or the installation guide for HONEYWELL R7426C. You'll find the answers to all your questions on the HONEYWELL R7426C in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual HONEYWELL R7426C  
User guide HONEYWELL R7426C  
Operating instructions HONEYWELL R7426C  
Instructions for use HONEYWELL R7426C  
Instruction manual HONEYWELL R7426C

**Honeywell**

## R7426A,B,C

### TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK

INSTALLATION & START-UP INSTRUCTIONS

### MicroniK 200



Fig. 1. Temperature Controller

**Contents**

- General..... 1
- Before Installation Note..... 1
- Mounting..... 1
- Wiring..... 2
- Power Supply and Grounding..... 2
- Configuration and Control Parameters..... 3
- Configuration Settings..... 6
- Parameter Settings and Adjustment..... 8
- Operating Overview..... 11
- Notes (with RTC, only)..... 19

**GENERAL**

This document provides instructions and procedures for installing and starting up the Micronik 200 R7426A,B,C controllers. No special tools are required for mounting and installation. The user interface and liquid-crystal display allow accurate and easy parameter setting and output adjustment.

**BEFORE INSTALLATION NOTE**

- Visually inspect equipment for shipping damage. Report any damage to the appropriate Honeywell representative.
- Refer to job drawings for specific installation information and mounting location.
- Verify the controllers will be adequately separated from the main power supply, relays, or other equipment which can possibly generate electromagnetic interference.
- Verify that the ambient temperature and the humidity at the controllers will not exceed 0...50°C (32...122°F) and 5 to 95% rh.
- Use shielded wiring in areas with high EMI.
- All wiring should be separated from power lines by at least 150 mm (6").
- Do not install controllers near frequency converters or other high-frequency sources.

**MOUNTING**

The controllers can be mounted in an electric cabinet or other suitable enclosure. They are suitable for back panel, DIN rail, wall, or front panel mounting. The corresponding mounting sequence, as well as dimensions and panel cut-out, are illustrated in the mounting instruction sheet EN1B-0202GES1 supplied with the controllers.

If the compensation sensor signal (T3) is received from another controller (parallel connection of compensation sensor inputs), the jumper W303 has to be cut before mounting the controller (see Fig. 2). This disconnects the sensor from the internal power supply.

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CE
EN1B-0202GES1 R0507C



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**Manual abstract:**

@@Report any damage to the appropriate Honeywell representative. @@@Verify that the ambient temperature and the humidity at the controllers will not exceed 0...50°C (32...122°F) and 5 to 95% rh. Use shielded wiring in areas with high EMI. All wiring should be separated from power lines by at least 150 mm (6").

Do not install controllers near frequency converters or other high-frequency sources. Fig. 1. Temperature Controller · Contents General..

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*... 1 Before Installation Note .....*

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*..... 1 Mounting..*

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*. 1 Wiring ....*

.....  
.....  
.....  
.....  
.....  
.....  
.....

*..... 2 Power Supply and Grounding..*

.....  
.....  
.....  
.....  
.....

*.... 2 Configuration and Control Parameters .....*

.....  
.....  
.....

..... 3 Configuration Settings ....

.....  
.....  
.....  
.....

.....  
.....  
.....

... 6 Parameter Settings and Adjustment .....

.....  
.....  
.....

..... 8 Operating Overview.

.....  
.....  
.....  
.....

.....  
.....  
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..... 11 Notes (with RTC, only).

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.....  
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.... 19 . . . MOUNTING The controllers can be mounted in an electric cabinet or other suitable enclosure. They are suitable for back panel, DIN rail, wall, or front panel mounting. The corresponding mounting sequence, as well as dimensions and panel cut-out, are illustrated in the mounting instruction sheet EN1B-0202GE51 supplied with the controllers. If the compensation sensor signal (T3) is received from another controller (parallel connection of compensation sensor inputs), the jumper W303 has to be cut before mounting the controller (see Fig. 2). This disconnects the sensor from the internal power supply.

Copyright © 2007 Honeywell GmbH All Rights Reserved EN1B-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK WIRING Screwless type, spring loaded terminals are provided on the controllers for panel and field wiring. These terminals are suitable for solid conductors as well as tinned or with multicore cable end, stranded wires up to 1.5 mm2. To make a termination, push the wire into the terminal or insert a small screwdriver from the front of the controller into the spring-release hole and insert the wire. Check for proper connection by short pull on the wire. Table 1. Terminal Connection controller to CPA/SPA potentiometer R7426A,B,C T7412B1016 T7412B1057/1008 T7412B1024 T7412C1030/1006 T7412B1040 W303 Fig. 2. Parallel Connection of Compensation Sensor T3 Table 3. Jumper States state description closed T3 supplied by this controller W303 T3 supplied from another open controller 1) Default jumper position = closed.

Cut (open) jumper W303 only if the T3 input is fed from another controller (parallel connection, max. six devices). This disconnects the T3 input from the internal power supply jumper 1) Wiring should be done only according to the actual job wiring diagrams or wiring diagrams shown in the mounting instruction sheet EN1B-0202GE51. The wiring to the CPA/SPA potentiometers is described in Table 1. All wiring must conform to applicable codes, ordinances, and regulations.

The maximum allowed wiring length per wire size are shown in Table 2. terminal 2 terminal 4 terminal 2 terminal 4 terminal 5 terminal 1 terminal 3 terminal 4 terminal 6 - terminal 4 terminal 5+6 - R7426A,B,C 43193982-001 - - Table 2. Wire Dimensions length max. type of wiring run wires 1.0 mm2 1. 5 mm2 from controller to all local input and output 100 m 150 m standard devices POWER SUPPLY AND GROUNDING 1. Refer to job drawings and verify correct supply voltage to transformer (230 Vac) and controller (24 Vac). 2. Connect line power conductors to transformer primary. Line power must be supplied from a breaker panel with dedicated controller circuit. Do not turn the line power on until all wiring has been checked against job drawings. 3. Connect transformers 24 Vac secondary to the controller terminals 18 and 19. Connect one conductor to terminal marked 24 V and the other to terminal marked 24 V. If controllers are interconnected all terminals 19 must be connected to the same potential 24 V level.

4. Do not connect the secondary side of the transformer to the installation ground. EN1B-0203GE51 R0507C 2 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK The controllers R7426A,B,C include two groups of settings\*) (I and II) for control and configuration parameters that are automatically selected during programming. For parameter Ctrltyp = Lo, setting I is selected, and for parameter Ctrltyp = Hi1/Hi2, setting II is selected. config. par. no. name description default setting R7426 ABC actual value CONFIGURATION AND CONTROL PARAMETERS C.01 DIR/REVV1 Selects the output action of Y1 to adapt the valve or damper direction C.02 DIR/REVV3 Selects the output action of Y3 to adapt the valve or damper direction C.

03 DIR/REVV2 Selects the output action of Y2 to adapt the valve or damper direction Dir Direct acting output signal Rev Reverse acting output signal C.04

CtrlType1 Control type selects the setpoint operating range and default parameter setting I or II. setpt. operating range setting Dir Dir Dir x x x \*) Lo for I x x  
 x C.05 CPATYP Lo 0.  
 ..50°C for ventilation systems (factory preset) Hi1 0...  
 130°C for heating systems Hi2 0...130°C with pump ON/OFF operation Selects the Control Point /SetPoint Adjustment type. CPA potentiometer range range I II II 0 x x x sensor / remote setpoint unit type numbers C.06 YRange C.07 Startup C.08 Y1Mode C.09 Y3Mode C.10 Y2Mode C.  
 II YMode internal T7412B1016 (Pt 1000) T7412B1057 / T7412C1030 (Pt 1000) 2 100k...0 CPA: ±5K T7412B1008 / T7412C1006 (NTC 20k) 43193982-001  
 SPA: T7412B1024 (BALCO 500) 3 10...20k 15 ... 30°C T7412B1040 (Pt 1000) 4 0.  
 ..10k CPA: ±5K HCW 23 (setpt wheel printed with +/- 5 K) 5 0...  
 100k SPA: 15...30°C 43193982-001 SPA: 0..  
 .50°C 43193982-001 6 0...100k or 0...130°C Selects the output control range for all outputs (Y1, Y2, and Y3) 0 2 ...  
 10 Vdc 1 0 ... 10 Vdc Enables the start-up routine OFF Disabled ON Enabled Y1 output mode selects an individual output function for Y1 Y3 output mode  
 selects an individual output function for Y3 Y2 output mode selects an individual output function for Y2 0 Synchronous /floating 1 2 stage ON/OFF 2 3 stage  
 binary coded ON/OFF 3 Pulse-width modulation 4 Unconfigured Selects the output mode for sequence operation or multistage ON/OFF func. 0 Damper,  
 cooling and heating (Y1,Y2, Y3) Sequence control for heating or cooling (Y1,Y2, Y3); 1 or 6-stage ON/OFF Sequence control for heating (Y1, Y3) and cooling  
 (Y2); 2 or 4-stage ON/OFF for heating (Y1, Y3), and cooling (Y2) Sequence control for cooling (Y1, Y3) and heating (Y2); 3 or 4-stage ON/OFF for cooling  
 (Y1, Y3), and heating (Y2) 4 Two-position damper control (Y1), heating (Y3) and cooling (Y2) 5 15-stage binary coded ON/OFF for heating (Y1, Y3), and  
 cooling (Y2) Table 4. Configuration parameters R7426A,B,C 0 1 internal CPA: ±5K 953...1053 CPA: ±5K 1 x OFF x x 4 4 x x x x 0 x x x x x x x x x x x x x x x  
 3 EN1B-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK config. par.  
 no. name description default setting I / II R7426 ABC actual value C.



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...+130°C 1) NTC sensor is detected automatically if, during powerup, the sensor temperature is within -30.

...+85°C and the configuration parameter *Senstyp* = 0. NTC sensor is selected manually if the configuration parameter *Senstyp* is set to 1. Automatic identification of sensor type is selected if the configuration parameter *Senstyp* = 0 (default). After power up reset, the controller detects automatically the type of sensor connected to the main temperature input T1. For correct auto detection, it is necessary that the measured temperature be in the specified range (see Table 10). The same type of sensor must be used for all temperature inputs (T1, T2 and T3). *YxMode* provided by output function of Y2 6-stage ON/OFF sequence control 4-stage ON/OFF sequence control heating 4-stage ON/OFF sequence control cooling 15-stage binary coded ON/OFF sequence control H.

two-position damper control 1) 1 2 4 (x=1, 2, Y1,Y2,Y3 n.a. and 3) 4 (x=1 and 3) 4 (x=1 and 3) Y1,Y3 according to Y2Mode Output Control Function Y1CTRF (C.15) The R7426A controller performs cooling control if the configuration parameter Y1CTRF is set to 0. A rise in the measured variable will increase the output value (direct acting).

The control action must be reversed for heating control by setting the control parameter Y1CTRF to 1. A rise in the measured variable will decrease the output value. If the configuration parameter is set to 2, the R7426A controller provides summer/winter changeover control by a potential-free contact connected to the occupancy input (terminals 1 and 4). In the case of the R7426B,C controller, the configuration parameter Y1CTRF has to be set to 0 (default) to perform mixed air damper control and to 1 for energy recovery systems. 3 Y1,Y3 5 n.

a. Y1,Y3 Y2 and Y3 1) 4 n.a. Y1 individual (cooling and heating) In the case of the R7426B,C controller, the output Y1 can be configured for two-position damper control by setting the configuration parameter YMode to 4. 7 ENIB-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL TIME CLOCK Summer / Winter Time Change AddHour / SubHour (C.16 / C.17) These configuration parameters are only available on controllers with RTC. The configuration parameter AddHour or SubHour are required to adjust the month for summer/winter time change or vice versa. The actual clock is incremented by one hour at 2:00 on the last sunday of the month for winter/summer time change (AddHour). The actual clock is decremented by one hour at 2:00 on the last sunday of the month for summer/ winter time change (SubHour).

Default Programming DefProg (C.23) Setting the control parameter DefProg to 1 resets all control and configuration parameters to defaults (see Table 4 and Table 5). Default programming is indicated by a display of def. After default programming, the parameter DefProg is reset to 0. PARAMETER SETTINGS AND ADJUSTMENT Main Setpoint W1 (P.01) The main setpoint is either set by the control parameter W1 or by the external setpoint potentiometer if the configuration parameter CPATYP = 3, 5 or 6. Prestart Gradients PSTG\_H / PSTG\_C (C.18 / C.19) The configuration parameter PSTG\_H or PSTG\_C are necessary for the optimum start program on controllers with RTC. For heating and cooling applications, these parameters determine the prestart gradient to reach the comfort setpoint at occupancy start.

If the comfort setpoint will be reached earlier or later than expected, the controller corrects the prestart gradient by selfadaption routine to optimize the start cycle. The optimum start cycle for heating or cooling can be disabled by setting PSTG\_H or PSTG\_C to 0. High/Low Limit Setpoint Wlim (P.02) For high or low limit control, the control parameter Wlim is used as setpoint. During limit control, the throttling range Xp2 and reset time tr2 are active.

Limit control will be active only if the T2 temperature signal (control parameter T2ext = 0) is available or alternatively the sensor T1 (control parameter T2ext = 1) is used also for limit control. For cascade control, the limit setpoint Wlim determines the control point at which the submaster setpoint (Wcas) maintains the limit value and is not shifted anymore by the master control loop. High or low limit control is in accordance with the configuration parameter LimTyp (C.13). Optimum Start Self Adaption Speed Adapt (C.

21: Controller with RTC only) This parameter is used by the self-adaption routine to optimize the energy consumption during the start cycle. For this optimization, a corrected prestart gradient is calculated once per day. The adaption to the actual prestart gradient for the next optimum start cycle is determined by the self adaption speed Adapt (0% = adaption disabled and 100% = max. adaption speed). Submaster Setpoint Wcas (P.06) The R7426A,B,C controllers provide cascade control which uses two control loops, master and submaster to maintain the master setpoint CTRP1. Cascade control will be active if temperature sensor T2 is connected and the control parameter Wcas is set to any value other than OFF. This adjustment sets the control point of the submaster control loop, discharge temperature (T2), at zero room temperature deviation. If the room temperature deviates, the submaster setpoint Wcas is automatically altered. Cascade control is disabled if the submaster setpoint Wcas is set to OFF.

Low limit of CTRP2 is performed if control parameter LimTyp = 0 and high limit of CTRP2 is performed if control parameter LimTyp = 1. Damper Prestart Time tvd (C.20: Controller with RTC only) The damper prestart time tvd is active with the optimum start program only and is used to set the time before occupancy start (scheduled comfort mode) at which the output signal Y1 (damper) switches to normal operation to supply fresh air to the space in mixed air applications. Serial Communication Address Adr (C.22) The configuration parameter Adr sets the serial communication address. The serial communication bus allows the connection of the PC-based Operator's Terminal to one or several controllers. It provides access to all application configuration and control parameters, time schedules, input and output values of the connected controllers and easy setting of these via the bus by mouse click or keyboard. Reset Span Adjustment Rcas (P.07) The reset span adjustment Rcas determines the reset effect in Kelvin. The submaster setpoint Wcas is altered if the temperature (T1) deviates by 50% of the throttling range Xp1.

Throttling Range Xp1 / Xp2 (P.08 / P09) Proportional band (throttling range Xp) adjustment determines the temperature change, required at the main sensor (T1) and ENIB-0203GE51 R0507C 8 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL TIME CLOCK limit or cascade sensor (T2) to operate the output device from full open (100%) to full closed (0%) or vice versa. Xp1 is the throttling range for the main control loop, Xp2 is used if limitation or cascade control (submaster control loop) is active (see Table 11).



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Table 11. Throttling range and reset time reference application R7426A Controller Main Temp.

Control High or Low Limit Temperature Control Cascade Control Master Submaster R7426B,C Controller Main Temp. Seq. Control Mixed Air Damper Energy Recovery Heating Cooling R7426B,C Controller Temperature Cascade Sequence Control Master Submaster - Mixed Air Dampers - Energy Recovery - Heating - Cooling sens. Xp1 Xp2 Xpc Xph tr1 tr2 T1 T2 T1 T2 x x x x x x x x Setting Guidelines for Proportional Band of P and P+I Control To estimate the proportional band (throttling range Xp) for stable control under all different load conditions, the control or correcting range Xh of the heating or cooling coil must be known. This is the maximum air temperature increase produced by the heating coil or decrease of a cooling coil if the control valve is fully open. The proportional band Xp for discharge air control can be calculated by using the following rule-of-thumb formula:  $Xp = Xh \cdot 5$  For room temperature control, the following rule-of-thumb formula can be used:  $Xp = Xh \cdot \frac{t_{max} \text{discharge air}}{10}$  The  $t_{max}$  (Xh) of the discharge air for mixed air damper control is the maximum difference between outdoor air (OA) temperature and return air (RA) temperature.  $Xh = RA - O_{Amin}$  The often-specified accuracy for room control of  $\pm 1$  ( $Xp = 2K$ ) allows a discharge air alteration of 20 °C. In P+I control the same proportional band can be used as for P control. The following rule-of-thumb formulae are used for P+I control:  $Xp = Xh \cdot 4 \dots 5$   $T1 \ T2 \ T2 \ T2 \ x \ x \ x \ x \ Xh \ t_{max} \text{discharge air or } 8 \dots 10 \ 8$ .

.. @@@4. @@@@3. @@@See Fig. 4. @@@@discharge temperature T2 (see Table 11). @@@@Calculation of summer/winter compensation control schedule room temp. (T1) 20°C 22°C Aut Wi = Winter outdoor air temp. @@@@Above the compensation changeover point (Wcomp) summer compensation and below Wcomp winter compensation is performed.

Summer / Winter Compensation Authority Su / Wi (P.04 / P.05) These authority settings determine the reset effect (OATComp) the compensation sensor (T3) has on the main setpoint W1 in percentages. Outside temperature reset in summer and winter time are commonly used applications. To calculate winter and summer authority, the throttling range must be considered in proportional-only control according to Table 12.

Night Mode Offset NOFFS (P.26: Controller with RTC only) This control parameter is used to set the night mode offset. During night mode, freeze protection is active and the occupied / unoccupied function is inactive. Night Cycle NightLow and NightHigh (P.24 and P.

25: with RTC, only) The control parameters NightLow and NightHigh are used by the night cycle program (controller mode = OFF) to assign unoccupied night low or high limits for the protection of a space and its contents against temperature extremes. ENIB-0203GE51 R0507C 10 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL TIME CLOCK Y (%) 100 UNOCCUPIED OCCUPIED If the controller is in OFF mode, the time schedule program overrides the minimum position by the ON/OFF input for plant/system shut off and the damper is driven into the fully closed position at OFF condition together with the heating and cooling valve actuators. RuntimeX, x = Y1, Y2, or Y3 (P.21...P.23) SOFFS Xpc SOFFS Xph T (°C) CTRPH CTRPC Fig. 5. Night cycle NightLow and NightHigh The night cycle program automatically cycles between the user selected upper and lower limits and turns on full heating or cooling with forced return air recirculation or full energy recovery whenever the limits are reached.

The switching hysteresis is fixed to 1 K. This function can be disabled for heating and/or cooling by setting NightLow and/or NightHigh to OFF. The control parameters RuntimeX (x = Y1 for R7426A; x = Y1, Y2 or Y3 for R7426B) are available only on R7426A, B controllers. The controller converts the deviation signal to a proportional output pulse which drives the actuators depending on the RuntimeX parameter value. An automatic synchronization function ensures correct positioning of the actuators. The run time for synchronization is derived by control parameter RuntimeX multiplied by 1.25. By selection of the output to pwn mode, the pulse-width modulated output is suitable for driving electric heat current valves and is controlled from the heating signal. The total cycle time is set by the control parameter RuntimeX. OPERATING OVERVIEW Display and Operation Elements The MicroniK 200 user interface is described in Fig.

6. NOTE: Pushing the + or - button increments/decrements values or scrolls through the parameter list: · pushing one time: single step · pushing without release: automatically inc./dec. or scroll · after 3 sec pushing without release: fast automatically increment/decrement or scroll Calibration of Temperature Sensors T1CAL, T2CAL, or T3CAL (P.17.

..P.19) The controllers include a calibration setting and are factory calibrated. In case of an offset as a result of long wiring lengths the temperature sensor inputs (T1, T2, and T3) can be adjusted separately by the control parameters T1CAL, T2CAL and T3CAL.

Return Air Offset RetOffs (P.20) The control parameter RetOffs is available only on R7426B,C controllers and is used to activate economizer mode (RetOffs OFF) for mixed air damper (Y1CTRF = 0) or energy recovery system control (Y1CTRF = 1). If the main temperature sensor (T1) is installed in the exhaust air, the control parameter RetOffs should be set to 0. In applications with the main sensor installed in the room and with a constant offset between room and exhaust air conditions, this offset value can be adjusted within 0...5 K by the control parameter RetOffs. This will be added to the actual measured room temperature value to simulate exhaust air conditions. The economizer mode is disabled if the value of the control parameter RetOffs is programmed to OFF or if no outdoor air temperature sensor is connected. DISPLAY FREEZE PROTECTION TIME\* OFF LOW BATTERY\* CONTROLLER MODE NIGHT\* STANDBY COMFORT Date Off °C % rh min sec K ENGINEERING UNITS VALUE MoTuWeTh Fr SaSu H1 H2 H3 WEEKDAYS / GROUPS\* HOLIDAY SCHEDULE TYPES\* \*ON CONTROLLERS WITH REAL-TIME CLOCKS, ONLY.

PUSH BUTTONS SELECTION OR ESCAPE ADJUSTMENT OR SELECTION PARAMETER / VALUE CONFIRMATION Minimum Position MINPOS (P.14) The control parameter adjustment MINPOS is available on R7426B,C controllers only and determines the minimum open position to which an outdoor air damper actuator can be driven from the controller. In mixed air damper applications it maintains the minimum outdoor air damper setting, even though the temperature input condition calls for a fully closed position. Fig. 6. User interface 11 ENIB-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL TIME CLOCK Changing Operating Modes Fig.



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7 shows the six operating modes. After power-up the controller version is displayed and the controller enters the standard display mode. In this mode, selected input or output values and on controllers with real-time clock the time or the date are displayed. The controller mode is permanently displayed by a corresponding icon (Fig.

6). Pushing the + and - button simultaneously for approximately 1 sec causes the controller to leave the standard display mode and to enter the parameter/configuration selection mode (Fig. 9). This mode is used for application configuration and to select parameters for adjustment. Pushing the SET button causes the controller to accept the selected parameter or configuration no.

and to enter the adjustment mode (Fig. 10), which is used to adjust configuration / parameter values. After adjustment, the controller returns to selection mode by pushing the SET or SEL button. Pushing the SEL button leads back to standard display mode. POWER UP Pushing the SET and SEL button simultaneously for approx.

1 sec causes the controller to leave the standard display mode and to enter the output data selection mode (Fig. 11). Pushing the SET button causes the controller to accept the selected output data no. and to enter the output adjustment mode (Fig. 12). This mode is used for manual override of output values. The return to standard display mode is shown in Fig. 7. Pushing the SET and - button simultaneously for approx. 1 sec causes the controller to leave the standard display mode and to enter the clock / schedule selection mode (Fig.

13) on controllers with real-time clock, only. AUTOMATIC DISPLAY AND FOR APPROX. 1 SEC AND FOR APPROX. 1 SEC OUTPUT ADJUSTMENT MODE OUTPUT SELECTION MODE STANDARD DISPLAY MODE PARAM./CONFIG. SELECTION MODE PARAM./CONFIG. ADJUSTMENT MODE OUTPUT FIXING NO OUTPUT FIXING AND RELEASE OF OUTPUT FIXING FOR APPROX. 1 SEC NO PARAMETER VALUE CHANGE CLOCK / SCHEDULE SELECTION CONTROLLERS WITH REAL-TIME CLOCKS, ONLY. Fig.

7. Operating overview EN1B-0203GE51 R0507C 12 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK Time Out After approximately 10 min of inactivity (no button has been pressed: time out), each mode returns automatically to standard display mode. Inputs that have not been confirmed by the SET button are ignored by the controller and old parameter values will be retained. A TIME & WEEKDAY ON CONTROLLERS WITH REAL-TIME CLOCK, ONLY We °C B A SUBMASTER / LIMIT SETPOINT CTRP2 Date °C DATE We COMPENSATION TEMPERATURE T3 °C MAIN TEMPERATURE T1 % rh HUMIDITY DEVIATION XWrh R7426B,C, ONLY °C MAIN SETPOINT CTRP1 % OUTPUT Y1 \*) °C LIMITATION / CASCADE TEMPERATURE T2 % OUTPUT Y2 \*) B \*) THE OUTPUT DATAS (Y1, Y2, AND Y3) ARE DISPLAYED BETWEEN THE FOLLOWING RANGES: R7426B,C, ONLY % OUTPUT Y3 \*) OUTPUT TYPE FLOATING 0..

.10VDC 2...10VDC CONTROL RANGE 0.

..100% 0...100% 0...100% OUTPUT RANGE 0..

.100% 0...120% --> 0...12V (DIR) -20...

100% --> 12...0V (REV) -25..

.125% --> 0...12V A \*) DURING THE AUTOMATIC SYNCHRONIZATION FOR A CORRECT POSITIONING OF THE ACTUATORS, Syn IS DISPLAYED TOGETHER WITH THE CORRESPONDING OUTPUT NUMBER.

Fig. 8. Standard display mode 13 EN1B-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK Displaying Actual Values In the standard display mode, one of nine actual values, the actual time, or the date can be selected and displayed by pushing the SEL button. The icons of the permanently displayed controller mode are described in the following table: Table 13. Icons controller mode / status display Off OFF - icon Night1) Moon - icon Standby Halfsun - icon Comfort Sun - icon Freeze Protection Alarm and Freeze protection icon in Operation2) addition Low battery 1) 2) 3) Battery icon Sun icon is flashing 1Hz On controllers with real-time clock, only. 2) Status information is displayed together with actual icon for the controller mode. 3) In order to improve battery lifetime, low battery detection is performed only once a day and after power up. If a displayed date is programmed to be a holiday, the corresponding holiday icon is displayed on controllers with real-time clock. 1) °C °C FIRST DISPLAYED CONFIGURATION PARAMETER: FOR R7426C FOR R7426A,B ACTUAL PARAMETER VALUE Optimum Start 1) NOTE: CONTROL OR CONFIGURATION PARAMETERS WHICH ARE NOT AVAILABLE ON THE GIVEN CONTROLLER VERSION ARE SKIPPED. Fig.

9. Parameter/Configuration Selection Mode Selecting Parameters The parameter/configuration selection mode is used to select control and configuration parameters (Fig. 9) for adjustment. The displayed parameter no. corresponds with the number in Table 4 and Table 5. Default programming is indicated by a display of def. Pushing the + or - button scrolls through the parameter list. Pushing the SET button enters the adjustment mode. OR TO ADJUST PARAMETER VALUE °C Fig. 10.

Parameter/Configuration Adjustment Mode Selecting Output Values The output selection mode is used to select the output no. (see Fig. 11) for manual override adjustment. An activated manual override is indicated by a displayed F (fixed). Pushing the + or - button scrolls through the output list.

Pushing the SET button enters the adjustment mode. Adjusting Configuration / Parameter Values The adjustment mode is used to adjust configuration and parameter values (Fig. 10). In this mode, the selected parameter no. is displayed and the corresponding value flashes.

Pushing the + or - button increments or decrements the value of the selected parameter. Ranges are shown in Table 4 and Table 5. An adjustment example is shown in Fig. 18. Pushing the SEL button retains the old parameter value. Pushing the SET button accepts the parameter value and returns to parameter/configuration selection mode. Manually Overriding Output Values The output adjustment mode is used for manual override adjustment of output values (see Fig. 12). In this mode, the selected output no. is displayed and the actual output value flashes.

Pushing the + or - button increments or decrements the value of the selected output for manual override purpose. The output range is displayed in correspondence with the nominal control range. To return to output selection mode, three options are available: · Pushing the SET-button after adjustment activates the manual override (fixing) of output value. · Pushing the SEL button, causes that the output value is still determined by the control loop (no fixing).

Resetting Param. Values to Default Values Pushing simultaneously the + and - button during the power up or setting the control parameter DefProg to 1 resets all control and configuration parameters to defaults (see Table 4 and Table 5). Default programming is indicated by a display of def. EN1B-0203GE51 R0507C 14 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK · To release the manual override (fixed) of the output, select the output, enter output adjustment mode and push the + and - button simultaneously.



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Pushing the SEL button leads back to standard display mode. WITH : MANUAL OVERRIDE IS ACTIVE % R7426B AND R7426C, ONLY % WITHOUT : CONTROL LOOP IS ACTIVE Fig.

11. Output Selection Mode % OUTPUT SELECTION % OUTPUT SELECTION OR TO ADJUST OUTPUT VALUE % OUTPUT VALUE ADJUSTMENT % OUTPUT VALUE ADJUSTMENT AND % AUTOMATIC DISPLAY FOR APPROX. 1 SEC % % OUTPUT SELECTION MANUAL OVERRIDE NO MANUAL OVERRIDE RELEASE OF MANUAL OVERRIDE Fig. 12. Output value adjustment for manual override 15 EN1B-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK Using the Schedules (with RTC, only) Two schedules, one for programming the schedule points and one for holiday programming, are available.

The standard schedule is used to switch the controller mode (off, night, standby or comfort) at programmed schedule points (S1 ... S6), which can be set for each weekday or weekday group as well as for several holiday types (H1, H2 and H3). If the comfort or standby mode is taken from the schedule and if the occupancy switch is connected, the controller mode is determined by the occupancy input as follows: · Occupied (contact closed): Controller mode = Comfort (sun - icon) · Unoccupied (contact open): Controller mode = Standby (halfsun - icon) The OFF and night controller modes are not influenced by the occupancy input.

Table 14 shows an example of the weekly schedule programmed with the following default values: · Mo ... Su from 6:00 till 18:00 = Comfort mode · Mo ... Su from 18:00 till 6:00 = Night mode The holiday schedule is used to program each day of the year (01.01 ...

31.12.) as a holiday (day type = H1, H2 or H3) or as point 1 point 2 point 3 1) day 2) 2) time SMode time SMode time a normal day (day type = H0 is default). The function is described as follows: · H0: no holiday - the weekday schedule applies · H1: free programmable as for a weekday, but only valid for the current day. · H2: as H1 function - free programmable, additional holiday type, e.g. last or first day after a longer holiday period. NOTE: After day is passed, day type (H1 or H2) is reset at 24:00 to normal. · H3: free programmable as for a weekday, but is valid every year and repeated annually. The schedule points of the used holiday types (H1, H2 or H3) must be programmed in the standard schedule.

Table 15 shows a programmed example of the holiday schedule (2.7. till 28.7. = holiday type H1 and 1.

5. = holiday type H3). The H1 and H2 holidays will not be influenced if the user changes the actual date. If power supply is interrupted for more than one day, all H1 and H2 holidays within the date of power supply error and the actual date will be deleted. point 4 2) point 5 2) point 6 2) SMode time SMode time SMode time SMode 2) Mo 6:00 comfort --:ignore --:ignore --:ignore --:ignore Tu 6:00 comfort --:ignore --:ignore --:ignore --:ignore We 6:00 comfort --:ignore --:ignore --:ignore --:ignore Th 6:00 comfort --:ignore --:ignore --:ignore --:ignore Fr 6:00 comfort --:ignore --:ignore --:ignore --:ignore Sa 6:00 comfort --:ignore --:ignore --:ignore --:ignore Su 6:00 comfort --:ignore --:ignore --:ignore --:ignore H1 0:00 off --:ignore --:ignore --:ignore --:ignore H2 0:00 off --:ignore --:ignore --:ignore --:ignore H3 0:00 off --:ignore --:ignore --:ignore --:ignore 1) Weekday or holiday type; 2) Programmed controller mode (schedule mode) Table 14.

Example of weekly schedule and holiday types (default) day Jan. H0 H0 H0 H0 Feb. H0 H0 H0 H0 March H0 H0 H0 H0 April H0 H0 H0 H0 May H3 H0 H0 H0 June H0 H0 H0 H0 July H0 H1 H1 H1 August H0 H0 H0 H0 Sept. H0 H0 H0 H0 Oct. H0 H0 H0 H0 18:00 18:00 18:00 18:00 18:00 18:00 18:00 --:----:----:-- night night night night night night night ignore ignore ignore 1. 2. 3. 4. Nov. H0 H0 H0 H0 Dec.

H0 H0 H0 H0 28. H0 H0 H0 H0 H0 H0 H1 H0 H0 H0 H0 H0 29. H0 H01) H0 H0 H0 H0 H0 H0 H0 H0 H0 H0 30. H0 H0 H0 H0 H0 H0 H0 H0 H0 H0 31. H0 H0 H0 H0 H0 H0 H0 H0 1) If the 29th of February is programmed to be a H1 or H2 holiday and the current year is not a leap year, this holiday will be deleted on March 1. Table 15. Example of annual schedule (no default) EN1B-0203GE51 R0507C 16 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK

Selecting Clock and Schedules (with RTC, only) DATE & TIME SELECTION DATE & TIME ADJUSTMENT Programming Standard Schedule (with RTC, only) The standard schedule programming is used to program up to 6 schedule points for each weekday as well as for three holiday types. The controller mode (off, night, standby or comfort) will be switched at these programmed schedule points. The first step of the schedule programming (see Fig. 15) is to select a weekday or holiday type as follows: 1.

Mo ... Su as single 2. H1 .. H3 as single 3. Mo ..

. Fr grouped 4. Sa and Su grouped 5. Mo ... Su grouped The switching time is adjustable in steps of 10 min. To ignore a schedule point, the displayed switching time must be set to '-:--' by adjusting it between step 23:50 and 0:00 or by pushing the + and - button simultaneously. Pushing the SEL button returns to the selection mode, ignoring adjustments which have not been confirmed by the SET button. STANDARD SCHEDULE SELECTION STANDARD SCHEDULE PROGRAMMING HOLIDAY SCHEDULE SELECTION HOLIDAY SCHEDULE PROGRAMMING Fig.

13. Clock and schedules selection mode The clock and schedule selection mode is provided to select real-time clock (RTC), standard schedule (SCH), or holiday schedule (Hol) for programming (see Fig. 13). Pushing the + or - button scrolls through the selection list. Adjusting Date and Time (with RTC, only)

This mode is used to adjust date and time (real-time clock) by the input sequence shown in Fig. 14. During date adjustment, the weekday is calculated automatically and need not be programmed. The 29th of February is adjustable only for leap years. Pushing the SEL button returns to the selection mode, ignoring adjustments which have not been confirmed by the SET button. Due to battery change or low battery, the date / time can be invalid and is displayed as --.

--. -- / --:-- on the LCD. @@@@15. @@@14. @@@31.

12.) as a holiday (day type = H1, H2 or H3) or as a normal day (day type = H0 is default). Pushing the + or - button during the first step of the holiday programming (see Fig. 16) toggles between all programmed holidays ( H0) and displays them (type and date). If none of the 365 days of a year is programmed to be a holiday, the actual date is displayed, marked as normal day (H0).

Pushing the SET button selects the displayed holiday and enters the adjustment for date and day type. To program a new holiday, select any holiday, adjust date (and holiday type if necessary) and confirm the changes by pushing the SET button. To reset a holiday to normal day, day type H0 has to be set for the specific day.



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Pushing the SEL button returns to the selection mode, ignoring adjustments which have not been confirmed by the SET button. Interpreting Error Messages  
Different analog input errors can be identified by the controller (Error handling). The defective analog input (T1, T2, T3 or Xwrh) will be displayed in the standard display mode (see Fig. 17) after the corresponding value is selected. NOTE: For the external CPA/SPA potentiometer input, no error message is indicated if the potentiometer or wiring is defective. In this case, for control point or setpoint calculation, the following values are used: ·for CPATYP 0, 1 or 2 CPA value = 0 ·for CPATYP 3 SPA value = control parameter W1 DISPLAY SHOWN IF NO SENSOR IS CONNECTED DURING POWER-UP DISPLAY SHOWN AFTER ERROR IDENTIFICATION DURING OPERATION STANDARD DISPLAY °C % rh °C % rh STANDARD DISPLAY AND : MAIN TEMPERATURE SENSOR T1 IS DEFECTIVE : LIMITATION OR CASCADE TEMPERATURE SENSOR T2 IS DEFECTIVE : COMPENSATION TEMPERATURE SENSOR T3 IS DEFECTIVE : ERROR OF HUMIDITY DEVIATION INPUT XWrh TEMPERATURE DISPLAY IN °C HUMIDITY DEVIATION DISPLAY IN % rh OR TO TOGGLE/DISPLAY PROGRAMMED HOLIDAY AND We AND SPACE AND OR TO ADJUST MONTH Sa Fig. 17.

Error handling A OR TO ADJUST DAY Th B PUSH SIMULTANEOUSLY FOR APPROX. 2 SEC PARAMETER ADJUSTMENT MODE PUSH UNTIL NEEDED VALUE IS DISPLAYED STANDARD DISPLAY MODE °C OR TO ADJUST DAY TYPE (H0, H1, H2, OR H3) We °C °C PARAMETER SELECTION MODE °C PARAMETER SELECTION MODE °C Fig. 16. Holiday schedule programming B THIS EXAMPLE DESCRIBES THE ADJUSTMENT OF THE COMPENSATION CHANGEOVER POINT Wcomp (P03). A Fig. 18. Adjustment example EN1B-0203GE51 R0507C 18 R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK NOTES (WITH RTC, ONLY) day Jan. Feb. March April ) May June July

August Sept. Oct.

Nov. Dec. 1. 2. 3.

4. 5. 6. 7. 8.

9. 10. 11. 12. 13. 14. 15. 16. 17. 18.

19. 20. 21. 22. 23. 24. 25. 26. 27. 28.

1) 29. 30. 31. 1) If the 29th of February is programmed to be a H1 or H2 holiday and the current year is not a leap year, this holiday will be deleted on March 1. Table 16.

Annual schedule 19 EN1B-0203GE51 R0507C R7426A,B,C TEMPERATURE CONTROLLER WITH AND WITHOUT REAL-TIME CLOCK day 1) point 1 time SMode 2) point 2 time SMode 2) point 3 time SMode 2) point 4 time SMode 2) point 5 time SMode 2) point 6 time SMode 2) Mo Tu We Th Fr Sa Su H1 H2 H3 1) Weekday or holiday type; 2) Programmed controller mode (schedule mode) Table 17. Weekly schedule and holiday types 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 Straße 17 D-71101 Schönaich Phone: (49) 7031 63701 Fax: (49) 7031

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