Manual abstract:

Keeping the best... The new series shares many of the outstanding features that made its predecessor such a success including easy settingup using DIP and rotary switches, a large 7-segment LED display and choice of ON/OFF or PID control with Self-Tuning. What's more, it still provides an indication of output and alarm status and direction of deviation from set point. 1 100-240 VAC Select Functional set-up P SW1 SW2 SW3 SW4 SW5 SW6 SV protection ON/OFF - PID control fast or slow process Heat or Cool Input shift ON - OFF Thermocouple or RTD Celsius or Fahrenheit Input type range Alarm modes Voltage Voltage Relaytput (puls) Relay ou (puls) output output output 24 VAC/VDC S e t- u p 2 Packing Excellent control, especially in this disturbancesensitive application. Frying The flat front makes the use of the E5CSV hygienic and it's easy and safe to clean thanks to its IP66 rating. Sealing Clear indication that the correct temperature has been reached thanks to the deviation indicator. Enhancing the rest..

. Building on the success of the previous E5CS, however, the new E5CSV series offers much more. Like an Auto-Tune function and the fact that as standard you can now select multiple input types (thermocouple/RTD). A new 3.5 digit display also means that E5CSV can show a larger range, now extending up to 1999 °C.

The series also meets new RoHS requirements and complies with the stringent IP66 standard. What's more, depth has been reduced to a mere 78 mm. Benefits of E5CSV temperature controllers: · Easy setting-up using DIP and rotary switches · Meets broad range of basic temperature-control requirements with only 4 models · No expert knowledge needed to optimise performance because of Self- and Auto-Tuning functions · Reduced chance of malfunction thanks to set-value protection · End-user friendly since the menu only has 3 parameters · Excellent legibility with a large (13.5 mm) single-line, 3.5 digit, 7 segment LED display · Clear status overview thanks to PV-SV deviation indicator, output and alarm indicator · Easy connection to a broad range of temperaturesensor types Mount 3 > > Re a d y.

. . >> Set... >> Go! PV SP Advanced Industrial Automation 4 Alarm value Adjust Temperature Controllers E5CSV Easy Setting Using DIP Switch and Simple Functions in DIN 48 x 48 mm-size Temperature Controllers · Easy setting using DIP and rotary switches. · Multi-input (thermocouple/platinum resistance thermometer). · Clearly visible digital display with character height of 13.5 mm. · RoHS compliant.

Model Number Structure Model Number Legend Models with Terminal Blocks E5CSV-@ 1 T @ -500 1234 5 1. Output type R: Relay Q: Voltage for driving SSR 2. Number of alarms 1: 1 alarm 3. Input type T: Thermocouple/platinum resistance thermometer (multi-input) 4. Power supply voltage Blank: 100 to 240 VAC D: 24 VAC/VDC 5. Terminal cover 500: Finger protection cover Ordering Information List of Models Size 1/16 DIN 48 x 48 x 78 mm (W x H x D) Power supply voltage 100 to 240 VAC 24 VAC/VDC Number of alarm points 1 1 Relay Voltage (for driving SSR) Relay Voltage (for driving SSR) Control output TC/Pt multi-input Incl. @@@@@@@@Platinum resistance thermometer inputs: (±1% of PV or ±2° C, whichever is greater) ±1 digit max. 0.1% FS 1 to 999° C (automatic adjustment using auto-tuning/self-tuning) 1 to 1,999 s (automatic adjustment using auto-tuning/self-tuning 1 to 1,999 s (automatic adjustment using auto-tuning/self-tuning) Absolute-value alarm: Same as the control range Other: 0% to 100% FS Alarm hysteresis: 0.2° C or ° F (fixed) 2/20 s 500 ms 20 M min.

(at 500 VDC) 2,000 VAC, 50/60 Hz for 1 min between current-carrying terminals of different polarity Malfunction 10 to 55 Hz, 20 m/s2 for 10 min each in X, Y, and Z directions Destruction 10 to 55 Hz, 0.75-mm single amplitude for 2 hr each in X, Y, and Z directions Malfunction 100 m/s2 min., 3 times each in 6 directions Destruction 300 m/s2 min., 3 times each in 6 directions Life expectancy Weight Degree of protection Memory protection EMC Electrical 100,000 operations min. (relay output models) Approx.

120 g (Controller only) Front panel: Equivalent to IP66; Rear case: IP20; Terminals: IP00 EEPROM (non-volatile memory) (number of writes: 1,000,000) EN 55011 Group 1 Class A EN 55011 Group 1 Class A EN 61000-4-2: 4 kV contact discharge (level 2) 8 kV air discharge (level 3) Radiated Electromagnetic Field Immunity: EN 61000-4-3: 10 V/m (80-1000 MHz, 1.4-2.0 GHz amplitude modulated) (level 3) 10 V/m (900 MHz pulse modulated) Conducted Disturbance Immunity: EN 61000-4-6: 3 V (0.15 to 80 MHz) (level 2) Noise Immunity (First Transient Burst Noise): EN 61000-4-4 Burst Immunity: 2 kV power-line (level 3), 1 kV I/O signal-line (level 3) Surge Immunity: EN 61000-4-5: Power line: Normal mode 1 kV; Common mode 2 kV Output line (relay output): Normal mode 1 kV; Common mode 2 kV Voltage Dip/Interrupting Immunity: EN 61000-4-11 0.5 cycle, 100% (rated voltage) UL 61010C-1 (listing), CSA C22.

2 No.1010-1 EN 61326, EN 61010-1, IEC 61010-1, VDE 0106 Part 100 (finger protection), when the terminal cover is mounted. EMI Radiated: EMI Conducted: ESD Immunity: Control period Sampling period Insulation resistance Dielectric strength Vibration resistance Shock resistance Approved standards Conformed standards Note: 1. The following exceptions apply to thermocouples. · U, L: ±2° C ±1 digit max. · R: ±3° C ±1 digit max. at 200° C or less 2. The following exceptions apply to platinum resistance thermometers. Input set values 0, 1, 2, 3 for E5CSV: 0.5% FS ±1 digit max.

Input set value 1 for E5CSV: 0.5% FS ±1 digit max. 2 Temperature Controllers E5CSV Temperature Controllers E5CSV 5 Installation · All models in the E5CSV Series conform to DIN 43700 standards. · The recommended panel thickness is 1 to 4 mm. · Be sure to mount the E5CSV horizontally. Mounting the E5CSV 1. For waterproof mounting, waterproof packing must be installed on the Controller. Waterproofing is not possible when group mounting several Controllers. 2. Insert the E5CSV into the mounting hole in the panel.

3. Push the adapter from the terminals up to the panel, and temporarily fasten the E5CSV. 4. Tighten the two fastening screws on the adapter. Alternately tighten the two screws little by little to maintain a balance.

Tighten the screws to a torque of 0.29 to 0.39 N·m. Dimensions Note: All units are in millimeters unless otherwise indicated. Controller E5CSV 84 48×48 6 78 Panel Cutout Dimensions 45+0.

6 0 L 45+0.6 0 L = (48 × N-2.5)+1 0 Mounting side-by-side (group mounting of N Controllers) 45+0.6 0 44.8×44.8 60 min. Note: Terminals cannot be removed. Hard Protective Cover The Y92A-48B Protective Cover (hard type) is available for the following applications.

°C Adapter for flush mounting Panel Y92F-30 Adapter for flush mounting 92A -48 B · To protect the set from dust and dirt. @@@@The recommended panel thickness is 1 to 4 mm.

2. @@@@@@Otherwise, unwanted current paths will cause measurement errors. 2. Models with 100 to 240 VAC and 24 VAC/VDC are separate. @@@@@@@@@@Keeping the Up Key pressed continues to increase the display value. @@Pressing the Down Key decreases the SP/alarm value display. Keeping the Down Key pressed continues to decrease the display value. @@This item is not displayed when the Control Mode Switch 4 is OFF. @@1. Insert the tool into the two tool insertion holes (one on indication range is the range that can be displayed for the control range (-99 to 1999). @@@@@@@@@@@@@@Operation Settings Use the control mode switches (ON 1 2 3 4 5 6 3. Alarm Modes the alarm mode. (The default is 2). Set value 2 3 4 5 6 456) to change the Select the number of the alarm mode switch 901 78 23 when changing control mode. (All switches are OFF for the default settings.

) ON Alarm type Alarm function OFF Upper- and lowerlimit Upper-limit Alarm output operation OFF ON OFF ON OFF SP X SP X SP X SP X SP X SP Y 0 X X X SP X X 1 0, 9 6 1 Function selection ON/OFF PID control PID ON/OFF control Control period Direct/ reverse operation Input shift display Temperature Sensor selection 1 ON OFF 2 3 4 5 2 ON OFF ON 2s 20 s Direct operation (cooling) Reverse operation (heating) Enabled Disabled Platinum resistance thermometer input Thermocouple input 3 Lower-limit ON OFF 4 OFF ON OFF ON OFF ON OFF Upper- and lowerlimit range Upper- and lowerlimit with standby sequence (See note 2.) Upper-limit with standby sequence (See note 2.) Lower-limit with standby sequence (See note 2.) Absolute-value upper-limit ON OFF 5 ON OFF 6 ON OFF Temper- ° F ature °C unit 7 ON OFF Note: The previous name Pt100 has been changed to JPt100 in accordance with revisions to JIS. The previous name J-DIN has been changed to L in accordance with revisions to DIN standards.
8 ON OFF Note: 1. No alarm. The alarm value (alarm operation display) will not be displayed when the setting is 0 or 9 even if the selection key is pressed. Alarm Setting Range X: 0 to FS (full scale); Y: Within temperature range The value of X is the deviation setting for the SP (set point). 2. Standby Sequence Function (The standby sequence operates when the power is turned ON.) Rising Temperature Upper-limit alarm SP Lower-limit alarm Alarm ON output OFF Dropping Temperature Upper-limit alarm SP Lower-limit alarm Alarm ON output OFF Note: Turn OFF the power before changing the DIP switch settings on the E5CSV. Each of the switch settings will be enabled after the power is turned ON. For details on the position of the temperature range switch, control mode switches, and alarm mode switch, refer to page 4. 6 Temperature Controllers E5CSV Temperature Controllers E5CSV 9 4.

Using the Control Mode Switches (1) Using ON/OFF Control and PID Control (1.1) ON/OFF Control The control mode is set to ON/OFF control as the default setting. ON To perform cooling control of freezers, etc., turn ON switch 3. ON 1 2 3 4 5 6 1 Control output 2 ON OFF 3 4 5 6 Switch 1 OFF: ON/OFF control Control output ON OFF SP SP (1.2) PID Control Turn ON switch 1 to use PID control. ON 1 2 3 4 5 6 Switch 1 ON: PID control 1. Set the control period. @@Set direct/reverse operation for the output. @@@@@@Press the Up and Down Keys to set the shift value.
ON Shift Example Input shift display h0 (no shift) h9 (+9° C shift) l9 (-9° C shift) Measured temperature 100° C 100° C 100° C Temperature display 100° C 109° C 91° C 1 2 3 4 5 6 Note: When control mode switch 4 is turned OFF (no input shift display), the input shift is not displayed but the shift value is enabled. To disable input shift, set the input shift value to h0. The shift range depends on the setting unit. Setting unit Input shift display 1° C L99 to H99 0.1° C -9.
9 to +9.9° C L9.9 to H9.9 Compensation range -99 to +99° C 5. Protect Switch ON Protect Switch P X 1 2 3 4 5 6 When the protect switch is ON, Up Key and Down Key operations are prohibited to prevent setting mistakes.
8 Temperature Controllers E5CSV Temperature Controllers E5CSV 11 OMRON EUROPE B.V. Wegalaan 67-69, NL-2132 JD, Hoofddorp, The Netherlands. Tel: +31 (0) 23 568 13 00 Fax: +31 (0) 23 568 13 88 www.omron-industrial.com Austria Tel: +43 (0) 1 80 19 00 www.omron.at Belgium Tel: +32 (0) 2 466 24 80 www.omron.be Czech Republic Tel: +420 234 602 602 www.

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