



# EWPC 902

controllers with single output

## WHAT IT IS

The EWPC 902 is a new series of microprocessor based and fully programmable process controllers for single setpoint applications. Three different versions of this controller are available: EWPC 902/T for Temperature, EWPC 902/R for Relative humidity and EWPC 902/P for Pressure control.

## HOW IT IS MADE

- **Dimensions:** front 74x32 mm (2.913x1.260"), depth 67 mm (2.637")
- **Mounting:** flush panel mount with mounting bracket
- **Protection:** the instrument front-panel is waterproof IP65; an optional snap-on cover can be supplied to provide additional protection of the rear terminal block
- **Connections:** screw terminal block (2.5 mm<sup>2</sup>; one wire each terminal only, in compliance with VDE norms)
- **Display:** 12.5 mm LED (0.50")
- **Push buttons:** located on front panel
- **Output:** one (1) SPDT relay 8(3)A 250V AC
- **Auxiliary output:** 12 Vdc/60 mA (for transducer power supply, e.g. humidity sensor, pressure transducer, etc.)
- **Inputs (depending on model):** PTC / RTD (Ni100, Pt100) / TC (J, K) / 4...20 mA (Ri = 41 Ω) for EWPC 902/T; EWHS 28/31 for EWPC 902/R and EWPA 007/030 for EWPC 902/P
- **Resolution:** 1 °C (°F) or 0,1 °C (°F). The right-most digit can also be set to read-out in 0 or 5 only, or in all 10 digits
- **Accuracy:** better than 0.5% of full scale
- **Power supply (depending on model):** 12 Vac/dc or 24 Vac/dc

## GENERAL DESCRIPTION

The EWPC 902 (/T, /R, /P) is a new series of microprocessor based and fully programmable process controllers for single setpoint applications.

The front keypad of these controllers offers several alpha-numeric menu prompts to configure the controller for each specific application (see further).

Three different versions of this controller are available: EWPC 902/T for Temperature, EWPC 902/R for Relative humidity and EWPC 902/P for Pressure control.

The EWPC 902 (/T, /R, /P) is supplied in the popular "32x74" ELIWELL housing.

## FRONT KEYPAD

**SET:** push to display the setpoint temperature. The setpoint can be changed within 5 seconds with the "UP" or "DOWN" button. The control will automatically switch back to normal operating mode within 5 seconds; the last entered setpoint will stay in memory.

**UP:** used to increase the setpoint value, as well as the parameter when in programming. When held down for a few seconds, the change rate accelerates.

**DOWN:** used to decrease the setpoint value, as well as the parameter when in programming. When held down for a few seconds, the change rate accelerates.

**Led "ON":** status light of the output.

## PARAMETER PROGRAMMING

Programming is easily accessed by holding the "SET" button down for more than 4 seconds.

The first parameter is displayed; other parameters are accessed with the "UP" and "DOWN" button. With the "SET" button, the actual setting of each parameter is displayed. To change a parameter setting, push the "SET" plus the "UP" or "DOWN".

The system will automatically return to its normal operating mode a few seconds after the programming procedure is completed or interrupted.

## DESCRIPTION OF PARAMETERS

**d1:** setpoint differential.

The switching differential (hysteresis) can be set with positive value (make on rise) or with negative value (make on fall). See parameter "HC1".

**LS1:** Lower Set.

This is the lower limit below which the user cannot change the setpoint; normally set at the lowest value recommended for the sensor.

**HS1:** Higher Set.

Similar to "LS1", however setting an upper limit for the setpoint.

**od:** output delay.

This provides a delay selection for the outputs in applications where noise may cause brief erroneous signals from the sensor to the controller. Factory set at "0".

**Lci:** Lower current input (for EWPC 902/R, EWPC 902/P and EWPC 902/T with current input only).

Read-out corresponding to 4 mA input signal (factory set at 20 %R.H for EWPC 902/R).

**Hci:** Higher current input (for EWPC 902/R, EWPC 902/P and EWPC 902/T with current input only).

Read-out corresponding to 20 mA input signal (factory set at 100 %R.H for EWPC 902/R).

**CAL:** CALibration.

This offers an adjustment up or down of the read-out, if needed. Factory set at "0".

**PSE:** Probe SElection.

Input type (for RTD or Thermocouples only).

RTD models: Ni = Ni100; Pt = Pt100.

T/C models: FE = TcJ; Cr = TcK.

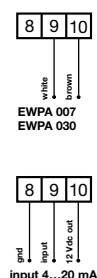
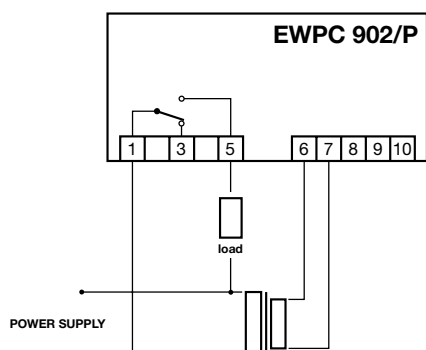
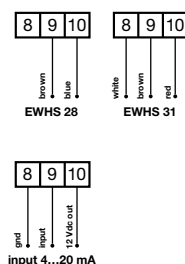
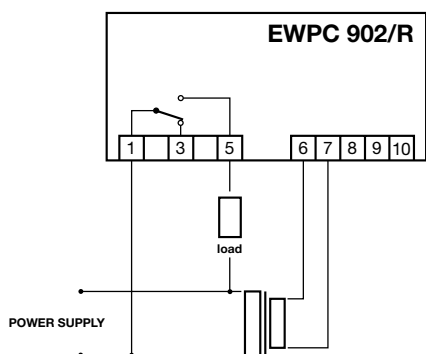
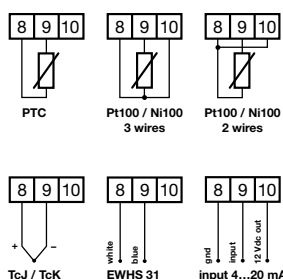
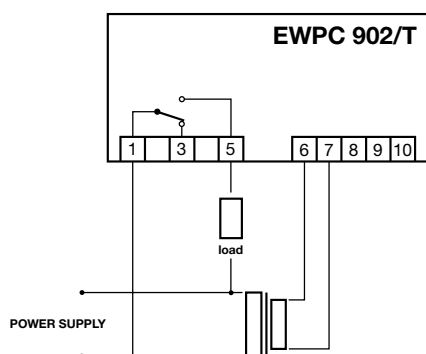
**HC1:** Heating / Cooling.



## DEFAULT SETTINGS - STANDARD MODELS

Parameter	Description	Range	Default	Unit
d1	differential	min / max	1 (C) / -1 (H)	various
LS1	Lower Set	min / max	min	various
HS1	Higher Set	min / max	max	various
od	output delay	min / max	0	seconds
Lci	Low current input	min / max	20 (%R.H.)	various
Hci	High current input	min / max	100 (%R.H.)	various
CAL	CALibration	min / max	0	various
PSE	Probe SElection	Ni / Pt / Fe / Cr	/	flag
HC1	Heating / Cooling	H / C	H / C	flag
rP1	relay Protection	ro / rc	ro	flag
LF1	Led Function	di / in	di	flag
dP	decimal Point	on / oF	on / oF	flag
hdd	half digit display	n / y	n	flag
tAb	tAble of parameters	/	/	/

## CONNECTIONS



Relay switch function.

H = heating (humidification; reverse action);

C = cooling (dehumidification; direct action).

**rP1**: relay Protection 1.

Determines the status of the relay in case of sensor defect. Factory set at "ro".

ro = relay open;

rc = relay closed

**LF1**: Led Function 1.

Determines whether the status light is ON or OFF in relation to output 1.

di = direct = light ON when output 1 is energized;

in = reverse = light OFF when output 1 is energized.

**dP**: decimal Point.

Choose whether the resolution is required with or without decimal point.

oF = without decimal point;

on = with decimal point.

NOTES: (a) the decimal point of models with current or voltage input is shifted: the actual value of parameters "Lci" and "Hci" must be multiplied by 10; (b) on all versions, if a unit is changed from without decimal point to with decimal point, all parameter values expressed in degrees will automatically be divided by 10, including the setpoint ! (c) the decimal point selection is not available on models for thermocouple input.

**hdd**: half digit display.

The right-most digit can be set to read-out in 0 or 5 only, or in all 10 digits.

hdd = n: e.g. 070, 071, 072 etc. (if without decimal point) or 70.0, 70.1, 70.2 etc. (if with decimal point);

hdd = y: e.g. 070, 075, 080, etc. (if without decimal point) or 70.0, 70.5, 80.0, etc. (if with decimal point).

Useful when measuring values varying rapidly (e.g. %R.H.).

**tAb**: tAble of parameters.

This shows the configuration of the parameters as set in the factory; can not be modified (for factory identification and diagnostic purposes only).

## INSTALLATION

The instrument is designed for flush panel mount. Prepare a 29x71 mm panel cut-out; insert the instrument through the front and fasten with the U-bracket supplied with the unit. The ambient temperature around the instrument should be kept between -5 and 65 °C (23...149 °F).

## ELECTRICAL WIRING

The instrument is equipped with an internal screw terminal block suitable for ≤ 2.5 mm<sup>2</sup> wiring (one wire each terminal only, in compliance with VDE norms).

Make sure that the power supply corresponds with the rating shown on the instrument, i.e. 12 Vac/dc ±15% (EWPC 902/T and EWPC 902/R in this version are recognized according to VDE and UL) or 24 Vac/dc ±15%.

Refer to the instrument label for the applicable terminals to be used for the sensor cable. If an ELIWELL humidity or pressure sensor is used (EWPC 902/R or EWPC 902/P) keep in mind that it can be powered by the controller.

Separate the wiring of the input signals from those of the power supply and switched output wiring.

### ERROR ANNOUNCEMENT

Any sensor input defect will be displayed as follows: “- - -” in case of shorted sensor; “EEE” in case of sensor break, or sensor absence. The “EEE” error message also appears in the event of overrange or under-range of the system temperature.

It is recommended to doublecheck the sensor wiring before diagnosing a probe as defective.

### TECHNICAL DATA

**Housing:** black ABS plastic, autoextinguish.

**Dimensions:** front 74x32 mm (2.913x1.260”), depth 67 mm (2.637”).

**Mounting:** flush panel mount with mounting bracket.

**Protection:** the instrument frontpanel is waterproof IP65; an optional snap-on cover can be supplied to provide additional protection of the rear terminal block.

**Connections:** screw terminal block (2.5 mm<sup>2</sup>; one wire each terminal only, in compliance with VDE norms).

**Display:** 12.5 mm LED (0.50”).

**Push buttons:** located on front panel.

**Data storage:** non-volatile EEPROM memory.

**Operating temperature:** -5...65 °C; (23...149 °F).

**Storage temperature:** -30...75 °C; (-22...167 °F).

**Output:** one (1) SPDT relay 8(3)A 250V AC.

**Auxiliary output:** 12 Vdc/60 mA (for transducer power supply, e.g. humidity sensor, pressure transducer, etc.).

**Inputs** (depending on model): PTC / RTD (Ni100, Pt100) / TC (J, K) / 4...20 mA ( $R_i = 41 \Omega$ ) for EWPC 902/T; EWHS 28/31 for EWPC 902/R and EWPA 007/030 for EWPC 902/P.

**Resolution:** 1 °C (°F) or 0,1 °C (°F). The right-most digit can also be set to read-out in 0 or 5 only, or in all 10 digits.

**Accuracy:** better than 0.5% of full scale.

**Power supply** (dep. on model): 12 Vac/dc  $\pm 15\%$  or 24 Vac/dc  $\pm 15\%$ .

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