



EWDR 902

controllers one output DIN rail

WHAT IT IS

The EWDR 902 is a series of micro-processor based and fully programmable process controllers for single setpoint applications.

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

HOW IT IS MADE

- **Housing:** 4-DIN module 70x85 mm (2.75x3.34"), plastic resin PC+ABS extinguishing grade V0
- **Depth:** 61 mm (2.40")
- **Mounting:** DIN-rail (Omega 3) or surface mount
- **Connections:** screw terminal block (2.5 mm²)
- **Display:** 12.5 mm LED (0.50")
- **Push buttons located on front panel**
- **Output:** one (1) SPDT relays 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 EWDR 902/T; EWHS 28/31 for EWDR 902/R and EWPA 007/030 for EWDR 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):** 230, 110, 24 Vac; 18...36 Vac, 24...48 Vdc; 12 Vdc

GENERAL DESCRIPTION

The EWDR 902 is a series of micro-processor 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).

This series of instrument is designed for surface or DIN-rail mounting.

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

FRONT KEYPAD

SET: pushed once the setpoint value will be displayed for 3 seconds (Led "OUT" blinks). The setpoint can be changed with the "UP" or "DOWN" button.

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 "OUT": status light of the output. Blinks when in setpoint display/change mode or during programming.

PARAMETER PROGRAMMING

Programming is easily accessed by holding the "SET" button down for more than 4 seconds; the first parameter is displayed while the status light Led "OUT" remains blinking during the programming period. 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 EWDR 902/R, EWDR 902/P and EWDR 902/T with current input only).

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

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

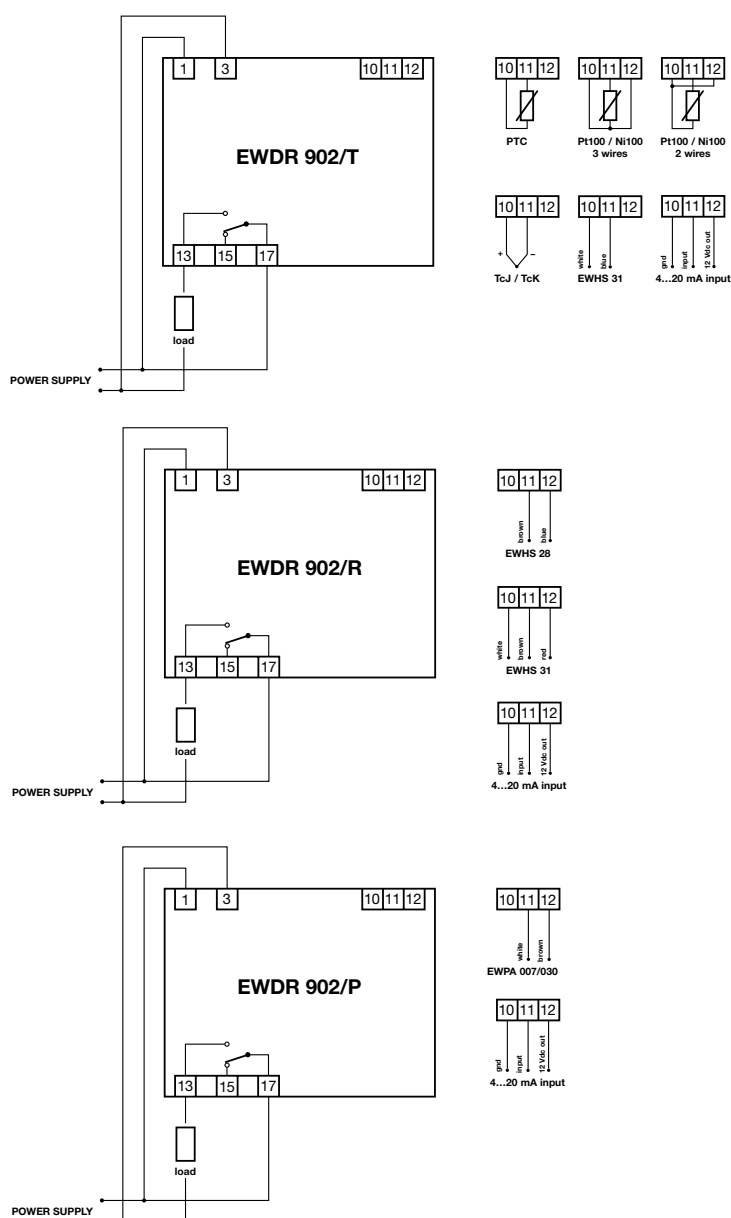
Read-out corresponding to 20 mA input signal (factory set at 100% R.H. for EWDR



DEFAULT SETTINGS - STANDARD MODELS

Parameter	Description	Range	Default	Unit
d1	differential	min / max	1 (C) / -1 (H)	°C / °F
LS1	Lower Set	min / max	min	°C / °F
HS1	Higher Set	min / max	max	°C / °F
od	output delay	min / max	0	seconds
Lci	Lower current input	min / max	20 (%R.H.)	°C / °F
Hci	Higher current input	min / max	100 (%R.H.)	°C / °F
CAL	CALibration	min / max	0	°C / °F
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



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.

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

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).

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 wall or DIN-rail mounting.

The operating temperature range for correct operation is from -5 to 65 °C. Do not install the instrument in moist and/or dirty places; it is suitable for operation in environments with an ordinary pollution level. Leave enough room for air circulation by the cooling holes of the instrument.

ELECTRICAL WIRING

The instrument is equipped with an internal screw terminal block suitable for max 2.5 mm² wiring.

Make sure that the power supply corresponds with the rating shown on the instrument.

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 (EWDR 902/R or EWDR 902/P) keep in mind that it can be powered by the controller.

The probe cables (and the power supply cables of instrument with very low safety voltage, eg. 12 V) shall be kept far from the relay and the power supply (in case of high voltage) cables, both for EMC and for safety reasons.

The coordinated European safety regulations state that the relay contacts (and generally speaking, all parts subject to dangerous voltage) shall be kept away from the very low safety voltage connections (probe, power supply) using insulation systems and distances providing at least a double or reinforced insulation.

However EMC requirements for correct operation suggest/impose better accuracy in such separation by using separated insulating pipes and special cable fixing systems.

The relay output contacts are voltage free and independent; do not exceed the resistive rating of 8 Amp at 250 Vac. For larger loads, please use an external contactor or relay. To comply with safety regulations in 24 Vac powered instruments, a special protection device (eg. a delayed fuse) shall be connected in series with the power supply to limit the absorbed current in case of fault (the protection shall be dimensioned considering that instruments absorb 4 VA max).

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: 4-DIN module 70x85 mm (2.75x3.34"), plastic resin PC+ABS extinguishing grade V0.

Depth: 61 mm (2.40").

Mounting: DIN-rail (Omega 3) or surface mount.

Connections: screw terminal block (2.5 mm²).

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 relays 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 EWDR 902/T; EWHS 28/31 for EWDR 902/R and EWPA 007/030 for EWDR 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): 230, 110, 24 Vac ±10%; 18...36 Vac, 24...48 Vdc; 12 Vac/dc ±15%.

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Invensys Climate Controls s.p.a.

via dell'Industria, 15
Zona Industriale Paludi
32010 Pieve d'Alpago (BL)
ITALY

Telephone +39 0437 986111

Facsimile +39 0437 986066

Email eliwell@invensysclimate.com

Internet <http://www.climate-eu.invensys.com>

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